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THE
CENTURY DICTIONARY
AND
CYCLOPEDIA

A WORK OF UNIVERSAL REFERENCE
IN ALL DEPARTMENTS OF KNOWLEDGE
WITH A NEW ATLAS OF THE WORLD

VOLUME XII

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PUBLISHERS' NOTE ON THE COMPLETED WORK

The publication of the Atlas, which is incorporated in the present edition, completed the plan of The Century Dictionary and Cyclopedia. As the Cyclopedia of Names grew out of the Dictionary and supplemented it on its encyclopedic side, so the Atlas grew out of the Cyclopedia, and serves as an extension of its geographical material. Each of these works deals with a different part of the great field of words,—common words and names,—while the three, in their unity, constitute a work of reference which practically covers the whole of that field. The two new volumes now issued make the material of the Dictionary and Cyclopedia complete. The total number of words and names defined or otherwise described in the completed work is over 500,000.

The special features of each of these several parts of the book are described in the Prefaces which will be found in the first, ninth, tenth, and eleventh volumes. It need only be said that the definitions of the common words of the language are for the most part stated encyclopedically, with a vast amount of technical, historical, and practical information in addition to a wealth of purely philological material; that the same encyclopedic method is applied to proper names—names of persons, places, characters in fiction, books—in short, of everything to which a name is given; and that in the Atlas geographical names, and much besides, are exhibited with a completeness and serviceableness seldom equaled. Of the Century Dictionary and Cyclopedia as a whole, therefore, it may be said that it is in its own field the most complete presentation of human knowledge—scientific, historical, and practical—that exists.

Moreover, the method of distributing this encyclopedic material under a large number of headings, which has been followed throughout, makes each item of this great store of information far more accessible than in works in which a different system is adopted.

The first edition of The Century Dictionary was completed in 1891, that of the Century Cyclopedia of Names in 1894, that of the Atlas in 1897, and that of the two new volumes in 1909. Each of the works published at the earlier dates has been subjected to repeated careful revisions, and the results of this scrutiny are comprised in this edition.

THE DE VINNE PRESS

THE
CENTURY DICTIONARY
SUPPLEMENT

PREPARED UNDER THE SUPERINTENDENCE OF
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MANAGING EDITOR OF THE CENTURY DICTIONARY
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OF NAMES AND THE CENTURY ATLAS

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ABBREVIATIONS USED IN THE ETYMOLOGIES AND DEFINITIONS.

a., adj.	adjective.
abbr.	abbreviation
abl.	ablative.
acc.	accusative.
accom.	accommodated,accommodation.
act.	active.
adv.	adverb.
AF.	Anglo-French.
agri.	agriculture.
AL.	Anglo-Latin.
alg.	algebra.
Amer.	American.
anat.	anatomy.
anc.	ancient.
antiq.	antiquity.
aor.	aorist.
appar.	apparently.
Ar.	Arabic.
arch.	architecture.
archæol.	archæology.
arith.	arithmetic.
art.	article.
AS.	Anglo-Saxon.
astrol.	astrology.
astron.	astronomy.
attrib.	attributive.
aug.	augmentative.
Bav.	Bavarian.
Beng.	Bengali.
biol.	biology.
Bohem.	Bohemian.
bot.	botany.
Braz.	Brazilian.
Bret.	Breton.
bryol.	bryology.
Bulg.	Bulgarian.
carp.	carpentry.
Cat.	Catalan.
Cath.	Catholic.
caus.	causative.
ceram.	ceramics.
cf.	L. *confer*, compare.
ch.	church.
Chal.	Chaldee.
chem.	chemical, chemistry.
Chin.	Chinese.
chron.	chronology.
colloq.	colloquial,colloquially.
com.	commerce, commercial.
comp.	composition, compound.
compar.	comparative.
conch.	conchology.
conj.	conjunction.
contr.	contracted, contraction.
Corn.	Cornish.
craniol.	craniology.
craniom.	craniometry.
crystal.	crystallography.
D.	Dutch.
Dan.	Danish.
dat.	dative.
def.	definite, definition.
deriv.	derivative, derivation.
dial.	dialect, dialectal.
diff.	different.
dim.	diminutive.
distrib.	distributive.
dram.	dramatic.
dynam.	dynamics.
E.	East.
E.	English (*usually meaning* modern English).
eccl., eccles.	ecclesiastical.
econ.	economy.
e. g.	L. *exempli gratia*, for example.
Egypt.	Egyptian.
E. Ind.	East Indian.
elect.	electricity.
embryol.	embryology.
Eng.	English.
engin.	engineering.
entom.	entomology.
Epis.	Episcopal.
equiv.	equivalent.
esp.	especially.
Eth.	Ethiopic.
ethnog.	ethnography.
ethnol.	ethnology.
etym.	etymology.
Eur.	European.
eyclam.	exclamation.
f., fem.	feminine.
F.	French (*usually meaning* modern French).
Flem.	Flemish.
fort.	fortification.
freq.	frequentative.
Fries.	Friesic.
fut.	future.
G.	German (*usually meaning* New High German).
Gael.	Gaelic.
galv.	galvanism.
gen.	genitive.
geog.	geography.
geol.	geology.
geom.	geometry.
Goth.	Gothic (Mœsogothic).
Gr.	Greek.
gram.	grammar.
gun.	gunnery.
Heb.	Hebrew.
her.	heraldry.
herpet.	herpetology.
Hind.	Hindustani.
hist.	history.
horol.	horology.
hort.	horticulture.
Hung.	Hungarian.
hydraul.	hydraulics.
hydros.	hydrostatics.
Icel.	Icelandic (*usually meaning* Old Icelandic, *otherwise called* Old Norse).
ichth.	ichthyology.
i. e.	L. *id est*, that is.
impers.	impersonal.
impf.	imperfect.
impv.	imperative.
improp.	improperly.
Ind.	Indian.
ind.	indicative.
Indo-Eur.	Indo-European.
indef.	indefinite.
inf.	infinitive.
instr.	instrumental.
interj.	interjection.
intr., intrans.	intransitive.
Ir.	Irish.
irreg.	irregular, irregularly.
It.	Italian.
Jap.	Japanese.
L.	Latin (*usually meaning* classical Latin).
Lett.	Lettish.
LG.	Low German.
lichenol.	lichenology.
lit.	literal, literally.
lit.	literature.
Lith.	Lithuanian.
lithog.	lithography.
lithol.	lithology.
LL.	Late Latin.
m., masc.	masculine.
M.	Middle.
mach.	machinery.
mammal.	mammalogy.
manuf.	manufacturing.
math.	mathematics.
MD.	Middle Dutch.
ME.	Middle English (*otherwise called* Old English).
mech.	mechanics, mechanical.
med.	medicine.
mensur.	mensuration.
metal.	metallurgy.
metaph.	metaphysics.
meteor.	meteorology.
Mex.	Mexican.
MGr.	Middle Greek, medieval Greek.
MHG.	Middle High German.
milit.	military.
mineral.	mineralogy.
ML.	Middle Latin, medieval Latin.
MLG.	Middle Low German.
mod.	modern.
mycol.	mycology.
myth.	mythology.
n.	noun.
n., neut.	neuter.
N.	New.
N.	North.
N. Amer.	North America.
nat.	natural.
naut.	nautical.
nav.	navigation.
NGr.	New Greek, modern Greek.
NHG.	New High German (*usually simply* G., German).
NL.	New Latin, modern Latin.
nom.	nominative.
Norm.	Norman.
north.	northern.
Norw.	Norwegian.
numis.	numismatics.
O.	Old.
obs.	obsolete.
obstet.	obstetrics.
OBulg.	Old Bulgarian (*otherwise called* Church Slavonic, Old Slavic, Old Slavonic).
OCat.	Old Catalan.
OD.	Old Dutch.
ODan.	Old Danish.
odontog.	odontography.
odontol.	odontology.
OF.	Old French.
OFlem.	Old Flemish.
OGael.	Old Gaelic.
OHG.	Old High German.
OIr.	Old Irish.
OIt.	Old Italian.
OL.	Old Latin.
OLG.	Old Low German.
ONorth.	Old Northumbrian.
OPruss.	Old Prussian.
orig.	original, originally.
ornith.	ornithology.
OS.	Old Saxon.
OSp.	Old Spanish.
osteol.	osteology.
OSw.	Old Swedish.
OTeut.	Old Teutonic.
p. a.	participial adjective.
paleon.	paleontology.
part.	participle.
pass.	passive.
pathol.	pathology.
perf.	perfect.
Pers.	Persian.
pers.	person.
persp.	perspective.
Peruv.	Peruvian.
petrog.	petrography.
Pg.	Portuguese.
phar.	pharmacy.
Phen.	Phenician.
philol.	philology.
philos.	philosophy.
phonog.	phonography.
photog.	photography.
phren.	phrenology.
phys.	physical.
physiol.	physiology.
pl., plur.	plural.
poet.	poetical.
polit.	political.
Pol.	Polish.
poss.	possessive.
pp.	past participle.
ppr.	present participle.
Pr.	Provençal (*usually meaning* Old Provençal).
pref.	prefix.
prep.	preposition.
pres.	present.
pret.	preterit.
priv.	privative.
prob.	probably, probable.
pron.	pronoun.
pron.	pronounced, pronunciation.
prop.	properly.
pros.	prosody.
Prot.	Protestant.
prov.	provincial.
psychol.	psychology.
q. v.	L. *quod* (or pl. *quæ*) *vide*, which see.
refl.	reflexive.
reg.	regular, regularly.
repr.	representing.
rhet.	rhetoric.
Rom.	Roman.
Rom.	Romanic, Romance (languages).
Russ.	Russian.
S.	South.
S. Amer.	South American.
sc.	L. *scilicet*, understand, supply.
Sc.	Scotch.
Scand.	Scandinavian.
Scrip.	Scripture.
sculp.	sculpture.
Serv.	Servian.
sing.	singular.
Skt.	Sanskrit.
Slav.	Slavic, Slavonic.
Sp.	Spanish.
subj.	subjunctive.
superl.	superlative.
surg.	surgery.
surv.	surveying.
Sw.	Swedish.
syn.	synonymy.
Syr.	Syriac.
technol.	technology.
teleg.	telegraphy.
teratol.	teratology.
term.	termination.
Teut.	Teutonic.
theat.	theatrical.
theol.	theology.
therap.	therapeutics.
toxicol.	toxicology.
tr., trans.	transitive.
trigon.	trigonometry.
Turk.	Turkish.
typog.	typography.
ult.	ultimate, ultimately
v.	verb.
var.	variant.
vet.	veterinary.
v. i.	intransitive verb.
v. t.	transitive verb.
W.	Welsh.
Wall.	Walloon.
Wallach.	Wallachian.
W. Ind.	West Indian.
zoögeog.	zoögeography.
zoöl.	zoölogy.
zoöt.	zoötomy.

KEY TO PRONUNCIATION.

a as in fat, man, pang.
ā as in fate, mane, dale.
ä as in far, father, guard.
â as in fall, talk, naught.
ȧ as in ask, fast, ant.
ã as in fare, hair, bear.

e as in met, pen, bless.
ē as in mete, meet, meat.
ė as in her, fern, heard.

i as in pin, it, biscuit.
ī as in pine, fight, file.

o as in not, on, frog.
ō as in note, poke, floor.
ö as in move, spoon, room.
ô as in nor, song, off.

u as in tub, son, blood.
ū as in mute, acute, few (also new, tube, duty: see Preface, pp. ix, x).
u̇ as in pull, book, could.
ü German ü, French u.

oi as in oil, joint, boy.
ou as in pound, proud, now.

A single dot under a vowel in an unaccented syllable indicates its abbreviation and lightening, without absolute loss of its distinctive quality. See Preface, p. xi. Thus:

ạ̄ as in prelate, courage, captain.
ẹ̄ as in ablegate, episcopal.
ọ̄ as in abrogate, eulogy, democrat.
ụ̄ as in singular, education.

A double dot under a vowel in an unaccented syllable indicates that, even in the mouths of the best speakers, its sound is variable to, and in ordinary utterance actually becomes, the short *u*-sound (of but, pun, etc.). See Preface, p. xi. Thus:

a̤ as in errant, republican.
e̤ as in prudent, difference.
i̤ as in charity, density.
o̤ as in valor, actor, idiot.

ā̤ as in Persia, peninsula.
ē̤ as in *the* book.
ṳ̄ as in nature, feature.

A mark (‿) under the consonants *t*, *d*, *s*, *z* indicates that they in like manner are variable to *ch*, *j*, *sh*, *zh*. Thus:

t̮ as in nature, adventure.
d̮ as in arduous, education.
s̮ as in pressure.
z̮ as in seizure.

th as in thin.
ŦH as in then.
ċh as in German ach, Scotch loch.
ṅ French nasalizing n, as in ton, en.
ly (in French words) French liquid (mouillé) l.
′ denotes a primary, ″ a secondary accent. (A secondary accent is not marked if at its regular interval of two syllables from the primary, or from another secondary.)

SIGNS.

< read *from*; i. e., derived from.
> read *whence*; i. e., from which is derived.
+ read *and*; i. e., compounded with, *or* with suffix.
= read *cognate with*; i. e., etymologically parallel with.
√ read *root*.
* read *theoretical* or *alleged*; i. e., theoretically assumed, or asserted but unverified, form.
† read *obsolete*.
★ references so marked are to the supplementary volumes.

SPECIAL EXPLANATIONS.

A superior figure placed after a title-word indicates that the word so marked is distinct etymologically from other words, following or preceding it, spelled in the same manner and marked with different numbers. Thus:

back^{1} (bak), *n.* The posterior part, etc.
back^{1} (bak), *a.* Lying or being behind, etc.
back^{1} (bak), *v.* To furnish with a back, etc.
back^{1} (bak), *adv.* Behind, etc.
back^{2}† (bak), *n.* The earlier form of *bat*^{2}.
back^{3} (bak), *n.* A large flat-bottomed boat, etc.

Various abbreviations have been used in the credits to the quotations, as "No." for *number*, "st." for *stanza*, "p." for *page*, "l." for *line*, ¶ for *paragraph*, "fol." for *folio*. The method used in indicating the subdivisions of books will be understood by reference to the following plan:

Section only	§ 5.
Chapter only	xiv.
Canto only	xiv.
Book only	iii.
Book and chapter	iii. 10.
Part and chapter	
Book and line	
Book and page	
Act and scene	
Chapter and verse	
No. and page	
Volume and page	II. 34.
Volume and chapter	IV. iv.
Part, book, and chapter	II. iv. 12.
Part, canto, and stanza	II. iv. 12.
Chapter and section or ¶	vii. § or ¶ 3.
Volume, part, and section or ¶	I. i. § or ¶ 6.
Book, chapter, and section or ¶	I. i. § or ¶ 6.

Different grammatical phases of the same word are grouped under one head, and distinguished by the Roman numerals I., II., III., etc. This applies to transitive and intransitive uses of the same verb, to adjectives used also as nouns, to nouns used also as adjectives, to adverbs used also as prepositions or conjunctions, etc.

The capitalizing and italicizing of certain or all of the words in a synonym-list indicates that the words so distinguished are discriminated in the text immediately following, or under the title referred to.

The figures by which the synonym-lists are sometimes divided indicate the senses or definitions with which they are connected.

The title-words begin with a small (lowercase) letter, or with a capital, according to usage. When usage differs, in this matter, with the different senses of a word, the abbreviations [*cap.*] for "capital" and [*l. c.*] for "lower-case" are used to indicate this variation.

The difference observed in regard to the capitalizing of the second element in zoölogical and botanical terms is in accordance with the existing usage in the two sciences. Thus, in zoölogy, in a scientific name consisting of two words the second of which is derived from a proper name, only the first would be capitalized. But a name of similar derivation in botany would have the second element also capitalized.

The names of zoölogical and botanical classes, orders, families, genera, etc., have been uniformly italicized, in accordance with the present usage of scientific writers.

M 3. As a symbol: (*c*) M denotes (1) magnetic moment: usually printed in old English; (2) a gaseous pressure of the millionth of an atmosphere. (*d*) μ denotes (1) magnetic permeability or the specific conductivity of any substance for lines of magnetic force; (2) the coefficient of friction. (*e*) *m* stands for the intensity or strength of a magnetic pole. (*f*) m^2 stands for *square meters*, m^3 for *cubic meters*.—**4.** As an abbreviation: (*a*) In titles, M. stands also for *Marquis*, *Matthew* (a book of the New Testament), and *Monsieur*. (*g*) In a ship's log-book, *m.* is an abbreviation (2) of *moderate*. (*h*) In a chart, *m.* stands for *mud*; in *meteor.*, for *mist*; in *ophthalmol.*, for *myopia*. (*i*) In *phar.*, M. or *m.* stands for *macerare* (macerate), *manipulus* (a handful), *mensura* (measure or by measure), *minimum* (minim), *misce* (mix), *mistura* (mixture). (*j*) In astronomical tables, M. or *m.* (abbreviation of L. *meridies*) indicates meridian or meridional: 12 M. stands for noon. See *A.M.* and *P.M.* (*k*) In *astron.*, M. stands for *Messier*, referring to his catalogue of 103 nebulæ and star-clusters: thus, 51M. or M.51 is the famous whirlpool nebula. (*l*) M. stands for *Monday*; M. or *m.*, for *mile* or *miles*, *mill* or *mills*, *month* or *months*, *moon*, *muster*; *m.*, for *married*, *masculine*, *middle*, *minutes*, *morning*, and the Latin *mille* (a thousand).

maal (mâl), *n.* [Norw. Dan. *maal* = Sw. *mål* = Icel. *māl*, speech, language.] In Norway, language: a term occurring in several compounds of some historic note, as *maalstræv*, 'the language struggle,' namely, the struggle to substitute the *landsmaal*, or 'popular speech,' as partly normalized by Aasen in his grammar (1848) and dictionary (1858 and 1873), in place of the *rigsmaal*, or 'national speech,' the literary Norwegian, nearly identical with Danish.

> The close of 1899 and the beginning of 1900 were occupied by a discussion, which drowned all other interests, and in which every Norwegian author took part, as to the adoption of the *landsmaal*, or composite dialect of the peasants, as the national language in place of the *rigs-maal* or Dano-Norwegian. Political prejudice greatly embittered the controversy, but the proposition that the *landsmaal*, which dates from the exertions of Ivar Aasen (*q. v.*) in 1850, should oust the language in which all the classics of Norway are written, was opposed by almost every philologist and writer in the country, particularly by Bjornson and Sophus Bugge (born 1833). On the other side, Arne Garborg's was almost the only name which carried any literary weight. *Encyc. Brit.*, XXXI. 275.

ma'am, *n.* At the British Court it is used, instead of 'madam,' in addressing the queen or a royal princess.

ma'amselle (mäm-zel'), *n.* An Englished form of *mademoiselle*.

maar (mär), *n.* [G. dial., a form of *meer*, sea: see *mere*¹.] In *geol.*: (*a*) A local German name originally applied to certain small crater-lakes in the recently extinct volcanic region of the Eifel, near Bonn, on the Rhine. The craters were believed to have resulted from explosive outbreaks, without emissions of lava. (*b*) Technically, any crater which has been produced by an explosion unaccompanied by lava. *Annals and Mag. Nat. Hist.*, Feb., 1904, p. 135.

maara-shell (mä'rä-shel), *n.* A large ornamental top-shell, *Turbo margaritaceus*, found in the South Pacific.

maatje (mät'ye), *n.* [D., a small measure, a deciliter, dim. of *maat*, measure: see *mete*¹, *n.*] The name given in Holland to the deciliter.

mabi (mä-bē'), *n.* [Carib.; cf. *mabby*, *mobby*, *mobee*.] **1.** A name in Porto Rico for a West Indian tree of the buckthorn family, *Colubrina reclinata*, yielding a heavy, hard, strong, dark-brown wood and a medicinal bark. See *naked-wood*.—**2.** A drink prepared from the bark of the mabi and also from that of *Colubrina Colubrina*. It is commonly sold in the markets and peddled in the streets of Porto Rico, where it is used as a beverage and as a remedy for indigestion.

mabolo (mä-bō'lō), *n.* [Bisaya *mabolo*.] In the Philippine Islands, the kamagon, *Diospyros discolor*, which bears an edible fruit covered with down. Also called *talang*. See ★*kamagon*.

mac (mak), *n.* Short for *macadam*. [Colloq.]

> Until of late years little attention was paid to "*Mac*," for it was considered in no way distinct from other kinds of street-dirt. *Mayhew*, London Labour, II. 197.

Mac., Macc. Abbreviations of *Maccabees*.

macabi (ma-kä'bi), *n.* The ladyfish.

macadam, *n.* **2.** The material used for a macadam pavement.—**Tar-macadam,** the material used in a form of macadam roadway or pavement in which the broken stone for the upper courses is treated with coal-tar for the purpose of increasing the strength and durability of bond, preventing the formation of dust, and rendering the surface of the roadway impervious to moisture.

macadamite (mak-ad'ạm-īt), *n.* An alloy containing about 72 per cent. of aluminium, 24 per cent. of zinc, and 4 per cent. of copper. It is said to possess a tensile strength of more than 44,000 pounds to the square inch. *Mineral Resources of U. S.*, 1902, p. 233.

macadoub (mak'a-döb), *n.* [Etym. uncertain; probably S. A. Indian.] A name given by natives of British Guiana to a luminous larviform insect, probably the larviform female of a coleopterous insect of the tribe *Phengodini*. Probably same as ★*railway-beetle* (which see).

> Mr. C. W. Anderson exhibited a specimen of a light-giving larva brought by him from near the boundary of British Guiana with Brazil, exhibiting when living a ruby light in its head, and a double row of phosphorescent spots along the body, two on each segment. These lights were not intermittent, but glowed continuously. This presumed coleopterous larva was called "*macadoub*" by the natives, and is not uncommon in the region named. *Athenæum*, Nov. 30, 1907, p. 694.

macana (mä-kä'nä), *n.* [Arawak of the Greater Antilles *macana*, a war-club; also in various idioms of the isthmus of Panama.] **1.** A war-club made of heavy wood, or sometimes of stone, formerly used by the Indians in parts of the West Indies. Through the Spaniards the word was circulated in many parts of Spanish America and became incorporated as a designation for Indian war-club in general in many Indian tongues, alongside of original native terms. It is used chiefly by Spanish authors, although the Indians occasionally use it also.

2. A common name of *Eigenmannia humboldti*, a fish of the family *Gymnotidæ*, found in rivers near Panama.

macaroni, *n.* **5.** A vulgar name in Jamaica for a Mexican quarter-dollar, or, afterward, for an English shilling. [Spelled *maccaroni*; also called *macaroni-piece*.]

macaronicism (mak-ạ-ron'i-sizm), *n.* [*macaronic* + *-ism*.] The literary style known as macaronic. See *macaronic*, *a.*, 3.

macaronism (mak-ạ-rō'nizm), *n.* [*macaron-i* + *-ism*.] The style and manners of a macaroni; dandyism. See *macaroni*, 3.

macasla (mä-käs'lä), *n.* [Bisaya *macasla*.] A shrub whose root affords a counterpoison, and whose fruit is poisonous to fish. A mixture containing the poison is thrown into the water. The fish are stupefied, rise to the surface, and are easily caught.

macauco (mä-kä-ō'kō), *n.* [W. Ind.] In Guiana and the British West Indies, the larva of a cerambycid beetle of the genus *Prionus*. This larva is, or was, eaten by both whites and blacks, after cleaning and roasting.

Macaulayese (mạ-kâ-lā-ēs'), *n.* The literary style of the historian and essayist, T. B. Macaulay (1800–1859).

maccaluba (mak-ạ-lö'bạ), *n.* [Sicilian name.] An eruptive vent whence gases (usually hydrocarbons), brines, mud, and, less often, boulders are blown out, building small cones which resemble normal volcanoes. Such vents have no apparent connection with true volcanoes but are due to the generation of gas in the depths.

> On the other hand, solfataras and pits of boiling mud (*maccalubas*) are very common in the volcanic regions where tuff is the predominating rock. The solfataras at Krisuvik and Mývatn [in Iceland] are very well known. *Geog. Jour.* (R. G. S.), XIII. 513.

M. Acct. An abbreviation of *Master of Accounts*.

mace⁴ (mās), *n.* [Origin obscure.] Swindling; a swindler; a swindling loan-office.—**On mace,** on tick.

mace⁴ (mās), *v. t.* and *i.*; pret. and pp. *maced*, ppr. *macing*. [See ★*mace* ⁴, *n.*] To swindle.

Maced. An abbreviation of *Macedonian*.

macédoine (mä-sā-dwon'), *n.* [F., a medley, a mess, lit. Macedonia; in allusion perhaps to the chronic confusion in modern Macedonia.] **1.** A mold of jelly containing a mixture of fruits; also, a mixture of vegetables served as a garnish to meat or, with a sauce, as a vegetable dish or as a salad.—**2.** Hence, figuratively, any mixture of unrelated things.

> That strange *macedoine* of mental and moral qualities—the late Count Gurowski—once remarked to James Russell Lowell, with that easy superiority of knowledge about this country which is the monopoly of foreigners, that we have no singing birds. *Springfield Republican*, June 23, 1902.

macene (mạ-sēn'), *n.* [*mac(e)*² + *-ene*.] A colorless liquid terpene, $C_{10}H_{16}$, contained in oil of mace. It has an odor of thyme.

macer² (mā'sėr), *n.* [*mace*⁴ + *-er*¹.] A swindler.

Maceration process. See ★*process*.

mach., machin. Abbreviations (*a*) of *machinery*: (*b*) of *machinist*.

machæracanthus (mạ-kē-ra-kan'thus), *n.* [NL., < Gr. *μάχαιρα*, knife, + *ἀκανθα*, thorn.] The fin-spines of a genus of Devonian selachians or sharks of large size: the only parts of these fishes yet known.

machærodontine (mạ-kē-rọ-don'tin), *a.* [*Machærodus* (*-odont-*) + *-ine*¹.] Related to or having the characters of *Machærodus*.

machairomancy (mạ-kī'rọ-man-si), *n.* [Gr. *μάχαιρα*, knife, sword, + *μαντεία*, divination.] Divination by means of a sword.

machan (ma-chän'), *n.* [Also *muchan*; < Hind. *machán*, an elevated platform.] In *tiger-shooting*, a high platform or some device to protect and conceal the hunter while he is watching for the tiger. The machan is usually built in a tree and is concealed by the branches.

> We stayed three days, trying every means which might enable us to shoot a specimen [buffalo], but without luck. We tried *machans* at night; we tried walking round the outskirts in bright moonlight, and nearly with success. *Geog. Jour.* (R. G. S.), XVIII. 262.

machete, *n.* **2.** (*b*) Same as *cutlas-fish*.—**3.** A small guitar with four strings, common in Portugal. Its usual tuning is an octave above that of the ordinary guitar.

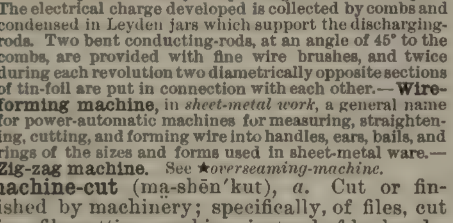
machetero (mȧ-chā-tā'rō), *n.* [Sp., < *machete*, machete.] A person who carries and uses a machete or cutlass.

machicot (mäsh-i-kō'), *n.* [OF. *machicot*, a minor singer in a choir.] In *music*, a singer who is skilful in machicotage.

machicotage (mäsh-i-kō-täzh'), *n.* [F., < *machicot*; see ★*machicot*.] In *medieval music*, the practice or effect of adding passing-notes and other embellishments to a plain-song melody.

machilla (mä-chil'ä), *n.* [East African.] A hammock or chair slung on a pole and carried by porters.

machine, *n.*—**Beating-out machine.** Same as ★*leveling-machine*.—**Belt-machine.** See ★*sandpapering-machine*.—**Bornhardt's machine,** a portable frictional electrical machine much used in France for firing explosives in blasting.—**Compound machine,** a dynamo-electric machine which has two field-windings, a shunt-winding which receives a small branch current at full voltage, and a series-winding having only a few turns of large size, which receives the full armature current, or a large part thereof, before it passes to the external circuit. —**Convertible cutting-machine,** an apparatus used by cracker-bakers. It can be changed from a cutting-machine into a panning-machine, or vice versa.—**Expanding machine,** a machine for expanding the end of a pipe or tube to secure it in a flange or tube-sheet.—**Fiber-cleaning machine.** See *leaf-★fiber machine.*—**Garnett machine,** a machine similar to a wool-carding machine, with two large cylinders and a number of small top-rollers, but with stronger carding-teeth, used for opening wool waste, especially yarn waste: named after the original builders, P. and C. Garnett, of Cleckheaton, England. See cut at ★*garnett.*—**Magneto-electric machine.** See *electric machine,* under *electric.*—**Matrix-rolling machine.** See *matrix.*—**Moving-picture machine.** See ★*picture.* —**Nail-making machine,** a machine for making cut nails, by cutting them from a strip and forging the heads; also, a machine in which wire nails are formed from wire of the same diameter as the body of the nail.—**Paper-cutting machine,** a machine with a long and heavy blade of steel that quickly cuts many sheets of paper to the required length or width.—**Rounding-and-backing machine,** in *bookbinding,* same as *rounding-machine* (*b*).—**Sand-disk machine.** See ★*sandpapering-machine.*—**Sash-sticking and -plowing machine.** See ★*sticker*1, 4.—**Screw-measuring machine,** a machine having a microscope and micrometer for measuring the diameters and pitch and angle of thread on a screw.—**Series-machine,** in *elect.,* a dynamo-electric machine in which the field exciting-coils are connected in series to the armature, so that the whole or a large part of the armature current traverses the field-coils, but only a small part of the voltage generated by the machine (or supplied to it, in a motor) is consumed by the field-coils, which then consist of relatively few turns of large wire or copper bars.—**Shunt-machine,** in *elect.,* a dynamo-electric machine in which the field exciting-coils are connected in shunt to the armature, and so receive only a small part of the total machine current, at full or nearly full machine voltage. The field-coils then contain very many turns of relatively small wire.—**Sigsbee machine.** Same as *Sigsbee* ★*sounding-machine.*—**Strip-covering machine.** See ★*strip-machine.*—**Synchronous machine,** in *elect.,* an alternating-current machine revolving in step with the alternations of the current traversing the machine. —**Tin-pickling machine,** a machine for hoisting and lowering the metal plates into the acid bath in the process of pickling and washing.—**Truing-up machine,** a machine for turning rollers to a uniform diameter, as those on a drawing-frame in cotton-manufacturing.—**Universal machine,** a name applied to certain types of milling and emery grinding-machines that perform various operations within the sphere of milling, gear-cutting, and grinding.—**Wimshurst machine,** a simple, self-exciting, highly efficient induction electrical machine. It consists of two well-varnished glass disks which are rotated in opposite directions about a fixed horizontal spindle.



Wimshurst Machine.

These disks carry, on their outer surfaces, narrow sections of tin-foil placed radially at equal angular distances apart. The electrical charge developed is collected by combs and condensed in Leyden jars which support the discharging-rods. Two bent conducting-rods, at an angle of 45° to the combs, are provided with fine wire brushes, and twice during each revolution two diametrically opposite sections of tin-foil are put in connection with each other.—**Wire-forming machine,** in *sheet-metal work,* a general name for power-automatic machines for measuring, straightening, cutting, and forming wire into handles, ears, bails, and rings of the sizes and forms used in sheet-metal ware.—**Zig-zag machine.** See ★*overseaming-machine.*

machine-cut (ma̤-shēn′kut), *a.* Cut or finished by machinery; specifically, of files, cut in a file-cutting machine, instead of by hand.

machine-fitted (ma̤-shēn′fit″ed), *a.* Finished or brought to an exact size in a machine-tool, instead of by hand.

machinely (ma̤-shēn′li), *adv.* By or as if by a machine; correctly. [Rare.]

> To the legion of the lost ones, to the cohort of the damned,
> To my brethren in their sorrow overseas,
> Sings a gentleman of England, cleanly bred, *machinely* crammed,
> And a trooper of the Empress, if you please.
> *R. Kipling,* Gentlemen-Rankers, in Barrack-room [Ballads, p. 63.

machine-screw (ma̤-shēn′skrö), *n.* A bolt or screw having a moderately fine machine or standard bolt-thread, a blunt end, and a fillister, flat, or button head to be set home by a screw-driver rather than a wrench: used for holding together parts of machines or other metal-work.

machine-thread (ma̤-shēn′thred), *n.* Cotton thread made especially for use on the sewing-machine; sewing-machine thread.

machinism (ma̤-shēn′izm), *n.* [*machine* + *-ism.*] The methods of the 'machine' in party politics, in the United States. *Kansas City Daily Star,* April 9, 1903.

machinization (ma̤-shē-ni-zā′sho̤n), *n.* [*machinize* + *-ation.*] The process or the result of machinizing.

machromin (ma̤-krō′min), *n.* [*ma*(*clurin*) + Gr. *χρῶμα,* color, + *-in*2.] A yellow substance, soluble in water, formed, together with phloroglucin, when maclurin is reduced with zinc and sulphuric acid. When oxidized it turns blue.

machuelo (mä-chö-ā′lō), *n.* [Sp., a small he mule.] Same as *thread-herring,* 2.

machuto (mä-chö′tō), *n.* [Sp.] The common mullet.

macies (mā′ṣi-ēz), *n.* [L.: see *meager, emaciate.*] Marasmus; emaciation.

macilence (mas′i-lens), *n.* Same as *macilency.*

macilent, *a.* **2.** Of literary products, thin; dry; jejune.

mackerel1, *n.* In Australia, a fish, *Scomber antarcticus,* Castln., similar to the chub mackerel, *Scomber Japonicus,* Houttuyn; in New Zealand, *Scomber australasicus,* Cuv. and Val. *E. E. Morris,* Austral English.—**Monterey Spanish mackerel,** a scombroid fish, *Scomberomorus concolor,* found on the California coast.

mackerel-bird (mak′e̤-rel-bėrd″), *n.* A local English name for young kittiwake gulls, *Larus tridactylus,* which begin to fly about the time that the mackerel come on the coast.

mackerel-breeze (mak′e̤-rel-brēz), *n.* A fresh breeze which has good sailing power. Compare *mackerel gale* (which see, under *gale*2).

mackerel-pocket (mak′e̤-rel-pok″et), *n.* A bag of netting immersed in the water to hold mackerel and keep them alive.

mackerel-spiller (mak′e̤-rel-spil″ėr), *n.* Same as ★*mackerel-pocket.*

mackintoshite (mak′in-tosh-īt), *n.* [Named after J. B. *Mackintosh,* New York, who died in 1891.] A silicate of uranium and thorium, occurring in black nodular masses and also, rarely, in square prisms: found with gadolinite in Llano County, Texas. It exhibits radioactivity in a marked degree.

mackite (mak′īt), *n.* [From a surname (?) + *-ite*2.] A trade-name for a material said to consist essentially of a mixture of asbestos and plaster of Paris, intended for use in house-construction as a fire-proof substitute for wood in floors, partition walls, pipe-coverings, etc.

Maclaurin expansion. Same as *Maclaurin's theorem* (which see, under *theorem*).—**Maclaurin's configuration.** See ★*configuration.*

macleyine (mak-lā′in), *n.* Same as ★*protopine.*

Maclurea (mak-lö′rẹ-ä̤), *n.* See *Maclurites.*

maclurin (mak-lö′rin), *n.* [*Maclura* + *in*2.] A pale yellow crystalline compound, $(OH)_3$-$C_6H_2.CO.C_6H_3(OH)_2 + H_2O$; protocatechuphloroglucinol. It occurs in yellow-wood, *Morus tinctoria* (or *Maclura aurantiaca*). When boiled with concentrated caustic potash or when heated with dilute sulphuric acid to 120° C., it yields phloroglucinol and protocatechuic acid. It loses its water of crystallization at 130° C. and melts at 200° C. See ★*morintannic acid.*

Macquaria (ma-kwā′ri-ä̤), *n.* [NL., from the river *Macquarie.*] A genus of serranoid fishes found in rivers of southeastern Australia.

macro-æsthesia (mak″rọ-es-thē′si-ä̤), *n.* [NL., < Gr. *μακρός,* long, large, + *αἴσθησις,* perception.] A form of paræsthesia in which objects give the sensation, when touched, of being larger than they really are.

macro-axis (mak′rọ-ak″sis), *n.* [NL., < Gr. *μακρός,* long, + L. *axis,* axis.] In *crystal.,* the macrodiagonal axis.

Macrobdella (mak-rob-del′ä̤), *n.* [NL., < Gr. *μακρός,* large, + *βδέλλα,* leech.] A genus of large leeches belonging to the family *Ichthyobdellidæ. M. decora* is sometimes used for blood-letting.

macrobian1 (ma-krō′bi-a̤n), *a.* and *n.* [Gr. *μακρόβιος,* long-lived, < *μακρός,* long, + *βίος,* life.] **I.** *a.* Long-lived.

II. *n.* One who has a long life; a macrobiote.

Macrobian2 (ma-krō′bi-a̤n), *a.* [LL. *Macrobius,* < Gr. *Μακρόβιος,* a personal name, lit. 'long-lived.'] Pertaining to Aurelius Theodosius Macrobius, a writer who lived probably in the first part of the fifth century after Christ. —**Macrobian sketches,** special map-illustrations furnished by Macrobius in connection with various passages in his commentary on Cicero's "Dream of Scipio," which discuss especially the question of the terrestrial zones, to which most of the sketches refer.

> Macrobius shares with Sallust the peculiarity of special map-illustration, arising out of specific passages in the works of each; but whereas the Sallust maps stand comparatively apart, these *Macrobian sketches,* as we have seen, are clearly members of a large and interesting family. *Geog. Jour.* (R. G. S.), XV. 383.

macrobiostigmatic (mak″rọ-bī-ọ-stig-mat′ik), *a.* [Gr. *μακρόβιος,* long-lived, + *στίγμα,* point (stigma): see *stigmatic.*] In *bot.,* having the stigma long-lived: said of a proterogynous flower in which the stigma continues receptive to pollen until the anthers mature.

macrobiostigmatous (mak-rọ-bī-ọ-stig′ma̤-tus), *a.* Same as ★*macrobiostigmatic.*

macrobrachia (mak-rọ-brā′ki-ä̤), *n.* [NL., < Gr. *μακρός,* long, + *βραχίων* (L. *brachium*), arm.] A condition in which the arms are abnormally long or large.

macrobranchiate (mak-rọ-brang′ki-āt), *a.* [Gr. *μακρός,* large, + *βράγχια,* gills, + *-ate*1.] Having large gills; also, of or pertaining to the large gill: as, the *macrobranchiate* segment, which contains the greater gill, in the body of *Nautilus.* Opposed to ★*microbranchiate.*

> In the body of the animal [Nautilus] two metameres are recognized—the microbranchiate segment, containing the smaller gill, the outer osphradium, pericardial gland, kidney, and kidney opening, with the generative opening on the right side and the opening of the pear-shaped body on the left; and the *macrobranchiate* segment, containing the greater gill and the inner osphradium, pericardial gland, kidney, and renal opening. *Annals and Mag. Nat. Hist.,* Jan., 1903, p. 135.

macrocentrosome (mak-rọ-sen′trọ-sōm), *n.* [Gr. *μακρός,* long, + E. *centrosome.*] In *cytol.,* the centrosome of Boveri, that is, a centrosome containing a central granule: probably the equivalent of the ★*entosphere* (which see). *Ziegler,* 1898.

macrocephalia (mak″rọ-se̤-fā′li-ä̤), *n.* [NL.] Same as ★*macrocephaly.*

macrocephalism (mak-rọ-sef′a̤-lizm), *n.* [*macrocephal*(*ous*) + *-ism.*] Same as ★*macrocephalia.*

macrocephalus (mak-rọ-sef′a̤-lus), *n.*; pl. *macrocephali* (-lī). [NL., < Gr. *μακροκέφαλος,* long-headed: see *macrocephalous.*] One who has an abnormally large head.

macrocephaly (mak-rọ-sef′a̤-li), *n.* [NL. *macrocephalia,* < Gr. *μακροκέφαλος,* long-headed. See *macrocephalous.*] The condition of having an abnormally, or unusually, large head; macrocephalia.

> The evolution of man from microcephaly to *macrocephaly* has been associated with the passages from macrodontic to a microdontic condition. *Science,* Oct. 30, 1903, p. 550.

macrochæta (mak-rọ-kē′tä̤), *n.*; pl. *macrochætæ* (-tē). [NL., < Gr. *μακρός,* long, + *χαίτη,* mane (bristle).] One of certain large bristles on the body of dipterous insects, used in classification. See ★*chætotaxy.*

macrochemistry (mak-rọ-kem′is-tri), *n.* [Gr. *μακρός,* long, large, + E. *chemistry.*] The chemistry of substances as observed in quantities easily perceptible by the unassisted eye: opposed to *microchemistry,* which deals with the chemical behavior of substances as seen under the microscope.

macrochilia (mak-rọ-kī′li-ä̤), *n.* [NL., < Gr. *μακρός,* long, large, + *χεῖλος,* lip.] Abnormal thickness of the lips.

macrochiria (mak-rō-kī′ri-ä̤), *n.* [NL., < Gr. *μακρός,* long, large, + *χείρ,* hand.] Abnormal size of the hands.

macrocnemia (mak-rok-nē′mi-ä̤), *n.* [NL., < Gr. *μακρός,* long, large, + *κνήμη,* tibia.] The condition in which the legs, especially below the knee, are of abnormal length or size.

macrocnemic (mak-rok-nē′mik), *a.* [*macrocnem*(*ia*) + *-ic.*] Same as ★*dolichocnemic.*

macrocosmology (mak″rọ-koz-mol′ọ-ji), *n.* [*macrocosm* + *-ology.*] A description or an account of the macrocosm.

macrocranial (mak-rọ-krā′ni-a̤l), *a.* [Gr. *μακρός,* long, + *κρανίον,* skull, + *-al*1.] In *anthrop.,* characterized by or exhibiting a skull of more than middle length.

> Dolichocephaly and chamaecephaly in both races are associated with *macrocranial* characters. *Biometrika,* Aug., 1902, p. 462.

macrocytase (mak-rọ-sī′tās), *n.* [Gr. *μακρός,* long, large, + E. *cytase.*] A cytase (complement) in the sense of Metchnikoff, derived from the large lymphocytes of the lymph-nodes, etc.

macrocyte (mak′rọ̄-sīt), *n.* [Gr. *μακρός*, long, large, + *κύτος*, a hollow (a cell).] A red blood-corpuscle of abnormally large size.

> In secondary anæmias . . . microcytes . . . disappear as convalescence sets in, and give place to *macrocytes*.
> *Buck*, Med. Handbook, I. 204.

macrocythemia (mak″rọ̄-sī-thē′mi-ạ̈), *n.* [Gr. *μακρός*, long, large, + *κύτος*, a hollow (a cell), + *αἷμα*, blood.] The occurrence of large red corpuscles in the blood.

macrocytosis (mak″rọ̄-sī-tō′sis), *n.* [NL., < Gr. *μακρος*, long, large, + *κύτος*, a hollow (a cell), + *-osis*.] Same as ★*macrocythemia*; also, the process of formation of macrocytes: a tendency to over-size of the red blood-corpuscles.

macrodactylia (mak″rọ̄-dak-til′i-ạ̈), *n.* [NL., < Gr. *μακροδάκτυλος*, long-fingered: see *macrodactyl*.] Abnormal length or thickness of the fingers or toes.

macrodactylism (mak-rọ̄-dak′ti-lizm), *n.* [*macrodactyl* + *-ism*.] Same as ★*macrodactylia*.

Macrodon (mak′rọ̄-don), *n.* [NL., < Gr. *μακρός*, long, + *ὀδούς* (*ὀδοντ-*), tooth.] A genus of fishes belonging to the family *Erythrinidæ*, found in fresh waters of South America.

macrodontic (mak-rọ̄-don′tik), *a.* [*macrodont* + *-ic*.] Same as ★*megadont*, 2.

macroërgate (mak-rō-ėr′gạ̄t), *n.* [Gr. *μακρός*, long, large, + *ἐργάτης*, worker.] A very large ergatoid ant (See ★*ergatoid*.) Wheeler has shown that the enormous size of some of the macroergates of *Pheidole commutata* is a swollen condition caused by the presence in the body of a parasitic worm of the genus *Mermis*.

> These *macroërgates* are compared with phenomena observed among other species, the author concluding that the character of the adult ants is not due to the efforts of the attendant workers alone, but also to a certain amount of initiative in the larvæ.
> *Science*, Dec. 13, 1901, p. 932.

macroflora (mak′rọ̄-flō-rạ̈), *n.* [Gr. *μακρός*, large, + NL. *flora*.] See the extract.

> The Italian botanists, Messieurs Levier and Sommier, have given a vivid account of what they call the *makroflora* of the Central Caucasus—those wild-flower beds, in which a man and a horse may literally be lost to sight, the product of sudden heat on a rich and sodden soil composed of the vegetable mold of ages. Has any competent hand celebrated the mikroflora of the highest ridges, those tiny, vivid forget-me-nots and gentians and ranunculuses that flourish on rock-island 'Jardins' like that of Mont Blanc, among the eternal snows, and enamel the highest rocks of the Basodano and the Lombard Alps?
> *Smithsonian Rep.*, 1904, p. 351.

macrogamete (mak-rọ̄-gam′ēt), *n.* [Gr. *μακρός*, long, + E. *gamete*.] A female germ-cell or ovum.

> Coccidium differs further from Monocystis in that the conjugating gametes are sexually differentiated, the small, active one, or microgamete, functions as the male cell, and the larger, quiescent one, or *macrogamete*, as the female or egg cell, while in the gregarine, on the other hand, the conjugating gametes are of equal size.
> *Pop. Sci. Mo.*, June, 1901, p. 192.

macrogametocyte (mak-rō-gam′e-tọ̄-sīt), *n.* [Gr. *μακρος*, long, large, + E. *gametocyte*.] In sporozoans, the mother-cell of a macrogamete or a female element: opposed to ★*microgametocyte*.

Macroglossini (mak″rọ̄-glo-sī′nī), *n. pl.* [NL., < Gr. *μακρός*, long, + *γλῶσσα*, tongue, + *-ini*.] A group of hawk-moths, or *Sphingidæ*, all of which have a remarkably long proboscis. They are called the *humming-bird hawk-moths*.

macrognathism (ma-krog′nạ-thizm), *n.* [*macrognath(ic)* + *-ism*.] The character or state of being macrognathic.

macrographic (mak-rọ̄-graf′ik), *a.* [*macrograph(y)* + *-ic*.] Relating to or characterized by large or coarse handwriting.

macrography (mak-rog′rạ-fi), *n.* [Gr. *μακρός*, long, large, + *-γραφια*, < *γράφειν*, write.] The use of very large characters in writing, sometimes carried to such an extreme by the insane that a word of three or four letters will run across the entire page.

macrogyne (mak′rọ̄-jin), *n.* [Gr. *μακρός*, long, large, + *γυνή*, female.] A female, or queen, ant of conspicuously larger stature than the normal female form of the species. *Wheeler*, 1907.

macrohemozoite, macrohæmozoite (mak″rọ̄-hem-ọ̄-zō′it), *n.* [Gr. *μακρός*, large, + *αἷμα*, blood, + *ζῷον*, animal, + *-ite*^{2}.] The large form of schizont in the development of the hemogregarine *Drepanidium serpentium*, which infests various snakes. Compare ★*microhemozoite*. *Lutz*.

macro-illuminator (mak″rō-i-lū′mi-nā-tọr), *n.* [Gr. *μακρός*, long, large, + E. *illuminator*.] In a microscope, a single achromatic combination of 1¼-inch clear aperture and 2-inch focus. This lens is mounted to fit into the substage, close to the object, so as to focus the image of the source of light on the objective. Objects up to fully 1 inch in diameter may be thus illuminated with absolute uniformity. It is valuable for photography with the holostigmat and planar types of lenses. *Jour. Roy. Micros. Soc.*, Feb. 1903, p. 91.

macrolecithal (mak-rọ̄-les′i-thạl), *a.* [Gr. *μακρός*, long, large, + *λέκιθος*, yolk of an egg.] Containing a large amount of food-yolk: said of certain eggs, like those of birds, reptiles, sharks, many insects, crustaceans, etc.: opposed to ★*microlecithal* or ★*alecithal*.

macrolepidopterous (mak″rọ̄-lep-i-dop′tẹ̈-rus), *a.* Of or pertaining to the *Macrolepidoptera*.

macrolophic (mak-rọ̄-lof′ik), *a.* [Gr. *μακρός*, long, large, + *λόφος*, crest, + *-ic*.] In *craniom.*, having a high incisor crest in the anterior nasal aperture and a sharp alveolar line. *Harrison Allen*, in *Jour. Acad. Nat. Sci. Phila.*, N. S., X. 419.

macromania (mak′rọ̄-mā″ni-ạ̈), *n.* [NL., < Gr. *μακρός*, long, large, + *μανία*, madness.] 1. Same as *megalomania*.—2. The persistent delusion that surrounding objects, including one's own body, are larger than they really are.

macromastia (mak-rọ̄-mas′ti-ạ̈), *n.* [NL., < Gr. *μακρός*, long, large, + *μαστός*, breast.] Abnormal size of the breasts or nipples.

macromazia (mak-rọ̄-mā′zi-ạ̈), *n.* [NL., < Gr. *μακρός*, long, large, + *μαζός*, breast.] Same as ★*macromastia*.

macromelia (mak-rọ̄-mē′li-ạ̈), *n.* [NL., < Gr. *μακρός*, long, large, + *μέλος*, limb.] Abnormal size of one or more of the limbs.

macromere, *n.* In *embryol.*: (*b*) One of the large yolk-laden cells, found about one pole of an egg in case of unequal segmentation, such as occurs in the hagfish, *Myxine*: contrasted with ★*micromere*.

macromerite (mak-rom′ẹ-rīt), *n.* [Gr. *μακρός*, long, + *μέρος*, a part, + *-ite*^{2}.] In *petrog.*, a rock whose component crystals are large enough to be seen by the unaided eye. Same as ★*phanerite*. *Vogelsang*.

macromerozoite (mak″rọ̄-mer-ọ̄-zō′it), *n.* [Gr. *μακρός*, large, + *μέρος*, part, + *ζῷον*, animal, + *-ite*^{2}.] In sporozoans, a macrosporozoite: contrasted with ★*micromerozoite*.

macromesentery (mak-rọ̄-mez′en-ter-i), *n.* [Gr. *μακρός*, large, + E. *mesentery*.] In anthozoans, a large complete mesentery bearing gonads and filaments: contrasted with ★*micromesentery*.

> The first twelve mesenteries are disposed in couples, and do not differ from those of Actinia except in size. The mesenterial pairs, I, II, and III, are attached to the stomodæum, and are called *macromesenteries* . . ., but IV, V, and VI are much shorter, and are called micromesenteries. *Encyc. Brit.*, XXV. 458.

macromicrometer (mak″rō-mī-krom′e-tėr), *n.* [Gr. *μακρος*, long, + *μικρός*, small, + *μέτρον*, measure.] Dolland's micrometer, with wires not magnified by the eyepiece. [Obsolete.]

macrophage (mak′rọ̄-fāj), *n.* [Gr. *μακρός*, long, large, + *φαγεῖν*, eat.] A very large phagocyte or wandering amœboid cell that devours other cells. Macrophages develop from small lymphocytes and are found in the lymphoid tissues of the alimentary canal.

macrophagocyte (mak-rọ̄-fag′ọ̄-sīt), *n.* [Gr. *μακρός*, long, large, + E. *phagocyte*.] Same as ★*macrophage*.

macrophonous (mak-rof′ọ̄-nus), *a.* [Gr. *μακρόφωνος*, < *μακρός*, large, + *φωνή*, sound, voice.] Having a loud, stentorian voice.

macrophotography (mak″rọ̄-phọ̄-tog′rạ-fi), *n.* [Gr. *μακρός*, long, + E. *photography*.] The production of an enlarged negative from a negative by means of the camera. *Woodbury*, Encyc. Dict. Photog., p. 274.

macrophysical (mak-rọ̄-fiz′i-kạl), *a.* [Gr. *μακρος*, long, large, + E. *physical*.] Of or pertaining to the physics of matter in the mass: opposed to *microphysical*, which relates to the ultimate structure of matter. *P. Drude*, Theory of Optics, p. vii.

macrophysics (mak-rọ̄-fiz′iks), *n.* The physics of the relations of large masses, or of bodies as a whole, the problems of ultimate structure being ignored.

macrophyte (mak′rọ̄-fīt), *n.* [Gr. *μακρός*, long, + *φυτόν*, plant.] A plant visible to the unassisted eye: contrasted with *microphyte*. See quotation under ★*dysphotic*.

macrophytic (mak-rọ̄-fit′ik), *a.* [*macrophyte* + *-ic*.] Having the character of a macrophyte; pertaining to macrophytes.

macropia (mak-rō′pi-ạ̈), *n.* [NL., < Gr. *μακρός*, long, large, + *ὤψ* (*ὠπ-*), eye.] Same as *megalopsia*.

macropine (mak′rọ̄-pin), *a.* [*Macropus* + *-ine*^{1}.] Pertaining to or having the characters of the kangaroos, *Macropodidæ*.

macroplasia (mak-rọ̄-plā′si-ạ̈), *n.* [NL., < Gr. *μακρός*, long, large, + *πλάσις*, a forming.] Overgrowth of a part of the body, or of any special tissue.

macropodal, *a.* **2.** In *bot.*, same as *macropodous*.

Macropodia, *n.* 2. [*l. c.*] The condition of having abnormally large feet.

macroprosopia (mak″rọ̄-prọ̄-sō′pi-ạ̈), *n.* [NL., < Gr. *μακρός*, long, large, + *πρόσωπον*, face.] The condition of having a disproportionately large face.

macroprosopous (mak″rọ̄-prọ̄-sō′pus), *a.* Characterized by macroprosopia.

macropsia (mak-rop′si-ạ̈), *n.* [NL., < Gr. *μακρός*, long, large, + *ὄψις*, view.] A state in which a visual defect makes objects appear to be of too great size. Also called *macropia* and *megalopsia*.

Macropterygidæ (mak-rop-tẹ-rij′i-dē), *n. pl.* [NL., < *Macropteryx* (*-yg-*) + *-idæ*.] A family of birds containing the tree-swifts of southeastern Asia. They have the vomer narrow; palatines exteriorly unnotched; posterior margin of sternum concave, with two perforations; and the tarsus shorter than the first digit.

Macropteryx (mak-rop′tẹ-riks), *n.* [NL., < Gr. *μακρός*, long, + *πτέρυξ*, wing.] A genus of birds containing the tree-swifts of southeastern Asia and the larger adjoining islands. They are distinguished from other swifts by many anatomical peculiarities and are placed in a separate family, the *Macropterygidæ*.

macrorhinia (mak-rō-rin′i-ạ̈), *n.* [NL., < Gr. *μακρός*, long, large, + *ῥίς* (*ῥιν-*), nose.] The condition of having a disproportionately large nose.

macrosceles (mak-ros′e-lēs), *n.* [NL., < Gr. *μακροσκελής*, long-legged: see ★*macroscelia*.] One who is long-legged.

macroscelia (mak-rọ̄-sē′li-ạ̈), *n.* [NL., < Gr. *μακροσκελής*, long-legged, < *μακρός*, long, large, + *σκέλος*, leg.] Same as ★*macrocnemia*.

macroscelic (mak-rọ̄-sē′lik), *a.* Pertaining to or characterized by macroscelia.

> What is more, in a race like the French, there are two distinct types, each having the same measurement, but the one class is long-legged (*macroscelic*, in the term of the anthropologists), the other short-legged (microscelic).
> *Smithsonian Rep.*, 1904, p. 528.

macroscope (mak′rọ̄-skōp), *n.* [Gr. *μακρός*, long, large, + *σκοπεῖν*, view.] An imaginary instrument, antithetic to the microscope, which should bring vast regions of the universe within the range of vision. See the extract.

> We may imagine a *macroscope*, which should shrink experience as the microscope expands it, thus disclosing to us more and more of immensity at once.
> *C. A. Strong*, Why the Mind has a Body, p. 230.

macroseism (mak′rọ̄-sīzm), *n.* [Gr. *μακρός*, long, large, + *σεισμός*, an earthquake.] A great earthquake; a heavy or intense earthquake.

> Prof. Milne pointed out the distinction which exists between *macroseisms*, or large earthquakes, and microseisms, or small earthquakes. The former he described as world-shaking disturbances, while as regarded the latter, there were about thirty thousand such disturbances every year, each of which disturbs from ten up to several hundreds of square miles of the earth's surface.
> *Sci. Amer. Sup.*, May 2, 1903, p. 22855.

macroseismic (mak-rọ̄-sīs′mik), *a.* [*macroseism* + *-ic*.] Of the nature of a macroseism; relating to an intense earthquake, or to one of great area or of long continuance.

> In the earthquakes with distant origins, the periods of the preliminary tremors do not depend upon their duration, the duration of preliminary tremors being proportional to the distance such earthquake motion may have travelled. This is probably true for other phases of motion, and it has also been shown to exist for *macroseismic* disturbances. *Nature*, July 9, 1903, p. 235.

macroseismograph (mak-rọ̄-sīs′mọ̄-gråf), *n.* [Gr. *μακρός*, long, large, + *σεισμός*, earthquake, + *γράφειν*, write.] A seismograph adapted for recording large movements of the earth, or macroseisms.

macrosepalous (mak-rọ-sep′ạ-lus), *a.* [Gr. *μακρός*, long, large, + NL. *sepalum*, sepal, + *-ous.*] In *bot.*, having long or large sepals.

macrosis (mak-rō′sis), *n.* [NL., ‹ Gr. *μάκρωσις*, lengthening, enlarging, **μακροῦν*, lengthen, enlarge, ‹ *μακρός*, long, large.] In *pathol.*, increase in size.

macrosmatic (mak-ros-mat′ik), *a.* [Gr. *μακρός*, long, large, + *ὀσμή*, smell, + *-atic*^{2}.] Having the organs of smell, especially the ethmoturbinals, well developed: contrasted with ★*microsmatic.* According to Turner, the application of this and related terms depends largely upon the number of ethmoturbinals, five being characteristic of most osmatic animals, anosmatic animals having four or less, and macrosmatic animals from six to eight.

> Echidna, on the other hand, is, to use Turner's nomenclature, "*macrosmatic.*"
> *Proc. Zool. Soc. London*, 1894, p. 9.

macrosmatism (mak-ros′mạ-tizm), *n.* [*macrosmat(ic)* + *-ism.*] A characteristic condition in mammals which consists in their having the organs of smell well developed. *Trans. Linnean Soc. London*, Zool., Jan., 1899, p. 298.

macrosomatia (mak″rọ-sọ-mā′shiạ̈), *n.* [NL., ‹ Gr. *μακρός*, long, large, + *σῶμα(τ-)*, body.] Great size of the body; gigantism.

macrosomatous (mak-rọ-sō′mạ-tus), *a.* [Gr. *μακρός*, long, large, + *σῶμα(τ-)*, body, + *-ous.*] In *anat.*, having a large body.

macrosome (mak′rọ-sōm), *n.* [Gr. *μακρός*, long, large, + *σῶμα*, body.] In *cytol.*, one of the larger granules scattered among the smaller ones (microsomes) in certain cell-nuclei. Some cytologists regard the macrosomes as composed of chromatin, the microsomes of achromatic substance. According to others, the macrosomes are true nucleoli, whereas the microsomes are true chromatin granules.

macrosomia (mak-rọ-sō′mi-ạ̈), *n.* [NL.: see ★*macrosome.*] Abnormal size of the body: gigantism.

macrosporic (mak-rọ-spō′rik), *a.* [*macrospore* + *-ic.*] Relating to or of the nature of a macrospore.

macrosporozoite (mak″rō-spō-rọ-zō′īt), *n.* [Gr. *μακρός*, large, + E. *sporozoite.*] In *Sporozoa*, a large endogenous sporozoite; a macromerozoite. Compare ★*microsporozoite. Podwyssotzki.*

> The discovery by Schaudinn and Siedlecki of a true fertilization in a certain number of Sporozoa, for which the present writer's announcement in 1896 of the sexual dimorphism of *macrosporozoites* and microsporozoites prepared the way.
> *Encyc. Brit.*, XXXII. 814.

Macrostoma, *n.* 2. *sing.* A genus of deep-sea fishes of the family *Myctophidæ.*—3. *sing.* The typical genus of the family *Macrostomidæ. M. hystrix* is found in stagnant water. *Van Beneden.*

Macrostomatidæ (mak″rọ-stọ-mat′i-dē), *n. pl.* [NL.] Same as ★*Macrostomidæ*, 2.

macrostomatous (mak-rọ-stom′ạ-tus), *a.* [Gr. *μακρός*, long, large, + *στόμα* (*τ-*), mouth, + *-ous.*] Having a mouth of unusually large size.

macrostomia (mak-rọ-stō′mi-ạ̈), *n.* [NL.] The state of having an abnormally large mouth.

Macrostomidæ, *n. pl.* 2. A family of rhabdocœlous turbellarians in which the female gonad is an ovary and the female pore is in front of the male pore. It contains the genera *Macrostoma*, *Omalostoma*, and *Mecynostoma.* Also called *Macrostomatidæ.*

macrostomoid (mak-ros′tọ-moid), *a.* Resembling the *Macrostomidæ*; having a large mouth or aperture, as a shell.

macrostomous (mak-ros′tọ-mus), *a.* Same as ★*macrostomatous.*

macrostomus (mak-ros′tọ-mus), *n.*; pl. *macrostomi* (-mī). [NL.] One who has a very large mouth.

macrostructural (mak-rọ-struk′tụ̈-ral), *a.* [Gr. *μακρός*, large, + E. *structure* + *-al*^{1}.] Of or pertaining to gross, as distinguished from microscopic, structure.—**Macrostructural metamorphism.** See ★*metamorphism.*

macrostylous (mak-rọ-stī′lus), *a.* [*macrostyle* + *-ous.*] Same as *macrostyle.*

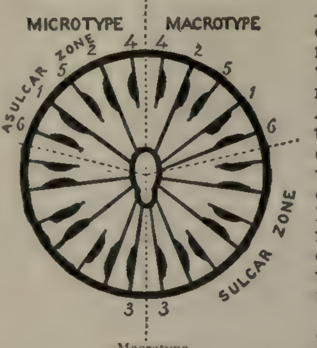
macrotia (mak-rō′ti-ạ̈), *n.* [NL., ‹ Gr. *μακρός*, long, large, + *οὖς* (*ὠτ-*), ear.] Abnormal size of the ears.

macrotrachelous (mak″rọ-trạ-kē′lus), *a.* [Gr. *μακρός*, long, + *τράχηλος*, neck, + *-ous.*] Having the preintestinal longer than the postanal part of the body, as certain rotifers.

macrotypal (mak′rọ-tī-pạl), *a.* [*macrotype* + *-al*^{1}.] Relating or pertaining to a macrotype: as, the *macrotypal* arrangement of the mesenteries in anthozoans.

macrotype (mak′rọ-tīp), *n.* [Gr. *μακρός*, large, + *τύπος*, type.] A modification of the usual arrangement of the mesenteries in certain *Zoanthidea*, in that the mesenteries 6, 6, which form couples with 1, 1, are macromesenteries: contrasted with ★*microtype.*

> Some such relationship may perhaps hold between the complete (*macrotype*) or incomplete (microtype) sixth protocnemic pair and the enlarged or diminutive alar septa.
> *Annals and Mag. Nat. Hist.*, May, 1902, p. 393.



Macrotype.

Diagram of the final arrangement of the mesenteries in the *Zoantheæ.* The left of the figure shows the microtypal; the right, the macrotypal arrangement. The five mesenterial pairs, 1, 1; 2, 2; 4, 4; 5, 5; 6, 6, occupy the asulcar aspect of the zooid, and it is seen that in this region the macromesentery of each couple is furthest from the sulcar directives. In this remaining sulcar region the macromesentery of each couple is nearest the directives. (From Lankester's "Zoology.")

Macrourus (mak-rö′rus), *n.* Same as *Macrurus*, 1.

macrovariolitic (mak″rọ-vā-ri-ọ-lit′ik), *a.* [Gr. *μακρός*, large, + E. *variolitic*]. Coarsely variolitic or spotted: applied to certain variolitic eruptive rocks. *Amer. Geol.*, Sept., 1904, p. 139.

macruran, *n.* **II.** *a.* Relating or pertaining to the *Macrura.*

> Spence Bate maintained that the Schizopoda ought not to form a separate order but to be ranged as a *macruran* tribe.
> *Encyc. Brit.*, XXX. 479.

macula-ring (mak′ụ̄-lạ̈-ring), *n.* A ring which surrounds the macula or spot of most acute vision in man and some of the apes. *Philos. Trans. Roy. Soc.* (London), 1901, ser. B, p. 74.

maculature, *n.* 3. In *etching*, an impression or proof taken upon a sheet of common absorbent paper laid upon the plate.

> One of these [the Hundred Guilder Plate], in the Museum of Amsterdam, is a '*maculature*,' an impression on a sheet of ordinary paper passed over the plate to remove the ink. *Rose Kingsley*, in Burlington Mag., V. 70.

macule, *n.* 2. In *pathol.*, same as *macula.*

> A *macule*, excoriation, or bulla on the site of the destruction.
> *Buck*, Med. Handbook, I. 147.

maculicolous (mak-ụ̄-lik′ọ-lus), *a.* [L. *macula*, a spot, + *colere*, inhabit, + *-ous.*] In *bot.*, found in definite spots upon the surface of leaves or stems: applied to fungi.

maculiferous (mak-ụ̄-lif-ẹ-rus), *a.* [L. *macula*, spot, + *ferre*, bear, + *-ous.*] Covered with spots; bearing spots.

maculopapular (mak″ụ̄-lọ-pap′ụ̄-lạ̈r), *a.* [L. *macula*, spot, + *papula*, pimple, + *-ar*^{3}.] Both macular and papular.

Mad., Madm. Abbreviations of *Madam.*

Madagass (mad-ạ-gas′), *n.* 1. Same as *Malagasy.*—2. A light-colored Jamaica negro whose hair is more nearly straight than is usual with the race.

madarin (mad′ạ-rin), *n.* Same as ★*mudarin.*

madaroma (mad-ạ-rō′mạ̈), *n.* [NL., ‹ Gr. *μαδαροῦν*, make bald, ‹ *μαδαρός*, bald.] Same as *madarosis.*

madarotic (mad-ạ-rot′ik), *a.* [*madarosis* (*-rot-*) + *-ic.*] Relating to or marked by madarosis, or a falling of the hair, especially of the eyelashes.

mad-bred (mad′bred), *a.* Bred by madness in the brain; madness-bred. [Rare.]

> This fell tempest shall not cease to rage
> Until the golden circuit on my head,
> Like to the glorious sun's transparent beams,
> Do calm the fury of this *mad-bred* flaw.
> *Shak.*, 2 Henry VI., iii. 1.

madder^1, *n.*—**Blue field-madder.** Same as *field-madder*: now adventive in Ontario and Massachusetts, also in Bermuda.—**Purple madder.** (*a*) See *madder lakes.* (*b*) Same as ★*purple-black.*—**Wild madder.** (*c*) The dyer's-cleavers, *Galium tinctorium.*

madder-bleach (mad′ėr-blēch), *n.* Originally, a very thorough bleaching process to which cotton cloth was subjected before it was printed with madder: now used in many cotton-bleacheries to designate the most thorough form of cotton-bleaching.

> In calico-printing with alizarine colors, or in fact with any colors where a particularly clear and white ground is desired the *madder-bleach* is used.
> *L. A. Olney*, Textile Chem. and Dyeing, II. 48.

maddish (mad′ish), *a.* [*mad*^{1} + *-ish.*] 1. Like a madman; characteristic of a madman.—2. Somewhat mad; rather mad.

Mad-dog weed. See ★*weed*^{1}.

madega (ma-dā′gạ̈), *n.* [Abyssinian.] A measure of capacity in Abyssinia, equal to 3.466 bushels. *C. H. Haswell*, Mech. and Engin. Pocket-book, p. 48.

madeleine (mäd-lān′), *n.* [F. *madeleine*, from *Madeleine*, a feminine name. See *maudlin.*] A small iced and decorated cake, usually made with a layer of jelly or jam.

mademoiselle, *n.* 4. A French governess: used as '*Fräulein*' is used for a German governess.

madescent (ma-des′ẹnt), *a.* [L. *madescens* (*-ent-*), ppr. of *madescere*, become moist, ‹ *madere*, be moist.] Slightly moist.

Madhuca (mad-hö′kạ̈), *n.* [NL. (Gmelin, 1791), ‹ Skt. *madhūka*, a bee, also the name of a tree, *Bassia latifolia* or *Madhuca Indica*, the mahwa-tree.] A genus of dicotyledonous trees belonging to the family *Sapotaceæ.* About 30 species are known, natives of the East Indies. (See *Bassia.*) Several species are valuable for the oil yielded by the seeds, and for their fleshy flowers, which are largely used as food in central India and yield a coarse spirit by distillation. The mahwa-tree, *Madhuca Indica*, is cultivated throughout India for these purposes. *M. butyracea*, the Indian butter-tree, yields a solid white oil known as *fulwa-butter.* *M. longifolia* of southern India is the principal source of illupi-oil. The bark, leaves, and oil of these trees are used in rheumatic and cutaneous diseases, and the timber is hard and durable. See *illupi.*

madnep, *n.* (*b*) *Heracleum lanatum*, the cow-parsnip or masterwort.

madness, *n.*—**Greenland dog-madness.** Same as ★*piblockto.*

mado (mā′dō), *n.* [Prob. aboriginal Australian.] A fish, *Therapon cuvieri*, of the family *Hæmulidæ*, found in Australian waters.

madonnina (ma-do-nē′nạ̈), *n.* [It., ‹ *madonna*, madonna.] A silver coin of Genoa, with a device of the immaculate conception on the reverse, worth 1*s.* 6¾*d.*; the double lira.

madras, *n.* 2. A thin cotton cloth, generally corded or figured, used for shirts, etc.

Madreporic gland, in echinoderms. Same as ★*axial organ.*

madreporidan (mad-rẹ-por′i-dan), *a.* Resembling or characteristic of the *Madreporidæ.*

madreporigenous (mad″rẹ-pọ-rij′e-nus), *a.* [*madrepore* + *-gen* + *-ous.*] Producing madrepore coral: as, *madreporigenous* polyps.

madriale (mä-drẹ-ä′le), *n.* [It.: see *madrigal.*] In *music*: (*a*) A madrigal. (*b*) An intermezzo: so called because madrigals were once much used as intermezzi in the opera.

madrina (mä-drē′nạ̈), *n.* [Sp., lit. 'godmother'; also sponsor, protectress, ‹ *madre*, ‹ L. *mater*, mother.] In South America, the leading animal of a mule-train, usually distinguished by some head-ornament, chiefly by a bell dangling from the neck. In Spain the term is also used to designate the rope or leather band by which two mules are tied together; and for a wooden support in the shape of a pillar or column.

madroño, *n.* The name was originally applied to the strawberry-tree, *Arbutus Unedo*, which is so called in Spain. It was transferred to its congener, *A. Menziesii*, of the American Pacific Coast. It is now also applied to *A. Xalapensis* and *A. Arizonica*, of the southwestern United States and northern Mexico.

madupite (ma-dū′pīt), *n.* [*Madùpa*, an Indian name for *Sweetwater*, a county in Wyoming, + *-ite*^{2}.] In *petrog.*, an aphanitic volcanic rock composed of diopside and phlogopite, with leucite in subordinate amount, also a little glass base. *Cross*, 1897.

Madurese (mad′ụ̄-rēs or -rēz), *a.* and *n.* **I.** *a.* Of or pertaining to Madura, an island in the Malayan archipelago, east of Java.

II. *n. sing.* and *pl.* A native or the natives of the island of Madura.

madwoman's-milk (mad′wụ̇m-ạnz-milk″), *n.* The sun-spurge, *Euphorbia Helioscopia.*

Ma. E. An abbreviation of *Master of Engineering.*

mæandrinoid (mẹ-an′dri-noid), *a.* Resembling the *Mæandrinidæ*, a family of corals.

mæandroid (mẹ-an′droid), *a.* [Gr. *μαίανδρος*, a meander, + *εἶδος*, form.] Having the form of a meander, as a brain-coral.

> Aporose, mainly colonial corals, massive, branching, or *mæandroid.*
> *Encyc. Brit.*, XXV. 462.

maestrale (mä-es-trä′le), *a.* [It., ‹ *maestro*, master.] See *stretto.*

Maestrichtian (mäs-trich′ti-ạn), *n.* [*Maestricht* + *-ian.*] In *geol.*, the designation of a substage of the Cretaceous in Belgium and northern France: equivalent to *Maestricht beds* (which see, under *bed*1).

maffia (mä′fi-ä or mä-fē′ä), *n.* [Also *mafia* (N. E. D., Internat. Encyc.); = F. *maffia* (Larousse), < It. *maffia* (marked *máffia*, Edgren), a Sicilian word of obscure origin not in the local glossaries and only lately inserted in Italian dictionaries.] 1. In Sicily, (*a*) a general sentiment of hostility to legal restraint or punishment, or to the invoking of the law for any purpose; also, (*b*) the collective number of those who sympathize with this hostility and often express it by criminal acts.—2. A supposed wide-spread secret society of Sicilians, or other Italians, leagued in opposition to the laws or for purposes of revenge by assassination. [This is the sense reflected in the American newspapers since 1888.]

> Here and there it [the insurrection in Sicily] was based upon a bastard Socialism, in other places it was made a means of municipal party warfare under the guidance of the local *maffia*. *Encyc. Brit.*, XXIX. 649.

> The *Maffia* is not, as is generally believed, one vast society of criminals, but is rather a sentiment akin to arrogance which imposes a special line of conduct upon persons affected by it. In substance the maffioso considers it dishonourable to have recourse to lawful authority to obtain redress for a wrong or a crime committed against him. *G. Mosca*, in Encyc. Brit., XXXII. 618.

maffick (maf′ik), *v. i.* [A back-formation from *mafficking*, taken as a verbal noun.] To give way to a frenzy of enthusiasm; celebrate a victory with a delirious uproar. [Slang, Eng.]

> The word had its origin in the scenes witnessed in London on May 18, 1900, the night after the raising of the siege of Mafeking was announced. . . . And because the celebration was so utterly unprecedented, because such scenes had been supposed to be impossible in London, or anywhere else where English is spoken, there was no word to describe it. Afterward, therefore, when the London mob has shown a disposition to celebrate in a similar manner, a brand-new word has been employed to describe these manifestations of enthusiasm—the word '*maffick*.' *N. Y. Times*, July 6, 1902.

maffick (maf′ik), *n.* [*maffick*, *v.*] A particular act of mafficking. See ★*maffick*, *v.* [Slang, Eng.]

> The Peace '*maffick*' has not yet been completely worked off. *Westminster Gazette*, June 4, 1902, p. 7. *N. E. D.*

mafficker (maf′i-kėr), *n.* One who 'mafficks,' or celebrates a joyful event with frenzied enthusiasm. [Slang, Eng.]

mafficking (maf′i-king), *n.* [From the name of *Mafeking*, a town in South Africa which became famous in the Boer war (1899–1900). Held by British troops under Colonel (later Major-General) R. S. S. Baden-Powell, it underwent a severe siege by the Boers. It was finally relieved on May 18, 1900. The announcement of the relief of Mafeking produced an extraordinary outburst of popular enthusiasm in London on the night of May 18. The name was humorously treated as a verbal noun in *-ing*, and the verb *maffick* was thus evolved.] A frenzied celebration of a victory, when the people of a city go wild with joy. See ★*maffick*, *v.* [Slang, Eng.]

> Probably in years to come the perfervid ebullitions which were described as "*Mafficking*" will be looked upon as beyond the bounds of physiological limits. *Lancet*, June 6, 1903, p. 1574.

mafficky (maf′i-ki), *a.* [*maffick* + *-y*1.] Inclined to be uproariously enthusiastic; frenzied with joy: as, a *mafficky* crowd. *N. Y. Times*, July 6, 1902. [Slang, Eng.]

maffioso (mä-fi-ō′sō), *n.*; pl. *maffiosi* (-sē). [It., < *maffia*.] One who sympathizes with the maffia; a member of the maffia.

mafoo (mä-fö′), *n.* [Chin. *ma fu*, a groom, servitors in general: *ma*, horse, + *fu*, a man (servant).] A groom; by extension, a coachman. [Anglo-Chinese.] *N. and Q.*, 10th ser., III. 305.

mag. An abbreviation of *magnetism*.

magaline (mag′a̤-lin), *n.* [*mag*(*netic*) + *-a-* + *line*2.] A practical unit of magnetic flux density equal to 1,000,000 gausses or lines per unit of cross-section.

magastromancy† (mā̤-gas′trọ̄-man-si), *n.* [Gr. *μάγος*, magus, + *ἄστρον*, star, + *μαντεία*, divination.] Magical astronomy.

> If there were any congruity or consistency betwixt prophecy and *magastromancy*. *Rev. J. Gaule*, The Magastromancer. *N. E. D.*

magautrap (mag′â-trap), *n.* [*mag*(*azine*) + *au*(*to-*) + *trap*1.] A machine for throwing clay pigeons used in trap-shooting. It contains a magazine from which the pigeons are discharged automatically.

> During the day others shot at targets from the *magautrap*. *Forest and Stream*, Feb. 21, 1903, p. 159.

magazine, *n.*—**Expense magazine**, a magazine for keeping small quantities of ammunition for immediate use, as distinguished from a storage magazine.—**Magazine flood-pipe.** See ★*flood-pipe*.

magazine-cock (mag-a̤-zēn′kok), *n.* A cock or valve in an ammunition-room which, when opened, permits sea-water to flow from the magazine flood-pipe into the room and to flood the ammunition in case of fire on board the vessel.

magazine-dress (mag-a̤-zēn′dres), *n.* A special woolen outside dress with slippers worn by men who handle powder in a magazine.

magazine-fuse (mag-a̤-zēn′fūz), *n.* A device for protecting electric circuits from excessive currents, in which, when the fuse is melted, it is replaced automatically by another.

magazine-passage (mag-a̤-zēn′pas″ā̤j), *n.* On shipboard, an alleyway in the magazine; a small passageway cut off from the magazine proper but communicating with it by small doors.

magazine-pistol (mag-a̤-zēn′pis″tọl), *n.* A repeating pistol; a pistol which has a magazine containing a number of cartridges which are fed automatically into the chamber so that all of them may be fired in rapid succession.

Magdalenian (mag-da̤-lē′ni-a̤n), *a.* and *n.* [See *magdalen*.] **I.** *a.* In *geol.*, noting one of the divisions of the postglacial series in France, based upon the character and workmanship of the human relics they contain. The name is derived from the caves of La Madeleine in Périgord, where well-finished flints are found associated with carved bone and ivory. It is equivalent to the ★*Glyptic period*.

II. *n.* The paleolithic epoch described above.

Magellania (maj-e-lā′ni-ä̤), *n.* [NL., < *Magellan* (in allusion to the Straits of Magellan?).] A genus of brachiopods having a long and deeply reflected loop. It appeared in Jurassic time, and still exists in southern seas.

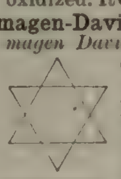
Magellanian (maj- or mag-e-lā′ni-a̤n), *a.* Same as ★*Magellanic*, 2.—**Magellanian series.** See ★*series*.

Magellanic, *a.* **2.** Pertaining to the region in the vicinity of the Straits of Magellan.—**Magellanic jacket**, a sailor's watch-coat, with a hood. *N. E. D.*

Magelona (maj-ẹ̄-lō′nä̤), *n.* [NL.] The typical and sole genus of the family *Magelonidæ*. *M. papillicornis*, of which the blood is madder-pink in color, is found between tide-marks along the coast of the United States. *F. Müller*, 1858.

Magelonidæ (maj-ẹ̄-lon′i-dē), *n. pl.* [NL., < *Magelona* + *-idæ*.] A family of marine, sand-inhabiting polychætous worms, having the body divisible into two regions by differences in the setæ, the prostomium large and flat, two long peristomial cirri, and a large eversible buccal region. The blood is madder-pink when oxygenated, but colorless when deoxidized. It contains the single genus *Magelona*.

magen-David (mä′gān-dä′vēd), *n.* [Heb. *magen David*, shield of David.] A cabalistic emblem consisting of two intertwined triangles, forming a six-pointed star. This emblem has been adopted by modern Jews, although it is of non-Jewish origin. The supposed miracle-working cabalists inscribe it upon parchment along with certain formulæ and use it as a protecting amulet. The Zionists have placed the *magen-David* on their flag. See *Zionist* ★*flag*.



Magen-David.

Magenta bronze. See *tungsten* ★*bronze*.—**New magenta**, a basic coal-tar color of the triphenyl-methane type. It dyes tannin-mordanted cotton a red which is brighter and bluer than magenta.

maggiolata (mäj-ō-lä′tä), *n.* [It., < *Maggio*, < L. *Maius*, May.] An Italian May-day song.

maggot, *n.*—**Beet leaf-maggot**, the larva of an anthomyiid fly, *Pegomya vicina*, which mines the leaves of the sugar-beet and other closely allied plants. See ★*Pegomya*, with cut.—**Cabbage-root maggot.** Same as *cabbage-maggot*.—**Corn-stalk maggot.** See ★*corn*1.—**Processional maggots.** See *snakeworm*.—**Red maggot**, the larva of the wheat-midge. See *wheat-midge*, 1.

Magian. I. *a.* **2.** [*l. c.*] Magic. [Rare.]

> Will he touch me with his searing hand, . . .
> Or tear me piecemeal with a bony saw,
> And keep me as a chosen food to draw
> His *magian* fish through hated fire and flame?
> *Keats*, Endymion, iii.

II. *n.* **2.** [*l. c.*] A wizard.

Magic parallelepiped, photograph. See ★*parallelepiped*, ★*photograph*.—**Magic square** (*general* and *ordinary*). See ★*square*1.

magicalize (maj′i-ka̤l-īz), *v. t.*; pret. and pp. *magicalized*, ppr. *magicalizing*. [*magical* + *-ize*.] To invest with a magical charm. [Rare.]

> The landscape, up to this point so Greek in its clear beauty, is suddenly *magicalised* by the romance touch. *M. Arnold*, Celtic Lit., p. 122.

magiric (ma-jī′rik), *a.* [Gr. *μαγειρικός*, < *μάγειρος*, a cook, also a butcher, earlier (by etym.) a baker, lit. 'kneader,' < *μάσσειν*, knead: see *mass*2, n.] Of or pertaining to cookery. *Soyer*. *N. E. D.*

magirist (ma-jī′rist), *n.* [*magir-ic* + *-ist*.] An expert in magirology.

magirology (ma-jī-rol′ọ̄-ji), *n.* [Gr. *μάγειρος*, a cook, + *-λογια*, < *λέγειν*, speak.] The art of cookery. [Rare.]

magistrate, *n.*—**Glasgow magistrate**, a red herring.

magistratial (maj-is-trā′shia̤l), *a.* [Irreg. < *magistrate* + *-ial*.] Same as *magisterial*. [Rare.]

> Then nodding with a *magistratial* air,
> To farther anecdote he call'd the fair.
> *Wolcot*, Bozzy and Piozzi, ii.

magna cum laude (mag′nä̤ kum lâ′dē). [L.] With great praise: a phrase used in conferring a degree which has been taken with high honors.

magnalium (mag-nā′li-um), *n.* [NL., < L. *magnus*, great.] An alloy of aluminium and magnesium combined in varying proportions. Magnalium containing 25–30 per cent. of magnesium is not affected by air or water and gives good castings; with 7½–10 per cent. of manganese, it takes on a good polish and is suitable for bells. The alloy also possesses great ductility and its melting-point lies between 600° and 700° C.

Magner's hitch. Same as *Magnus hitch* (which see, under *hitch*).

Magnesia bleach-liquor. Same as ★*magnesium hypochlorite*.—**Magnesia nigra**, an early name for pyrolusite or black oxid of manganese, for a long time looked upon as an inferior kind of magnetite or lodestone, incapable of attracting iron.—**Magnesia soap.** See ★*soap*.—**Magnesia usta**, an old pharmaceutical name for magnesium oxid produced by heating magnesium carbonate or magnesia alba. More commonly called *calcined magnesia*.—**Sorel's magnesia cement.** See ★*cement*.—**Milk of magnesia.** See ★*milk*.

Magnesic oxychlorid. Same as ★*magnesium oxychlorid*.

magnesiferous (mag-nẹ̄-sif′ẹ-rus), *a.* [*magnesium* + L. *ferre*, bear, + *-ous*.] Containing magnesium as a constituent: as, a *magnesiferous* limestone.

Magnesite bricks. See ★*brick*2.

magnesium, *n.*—**Deville and Caron's magnesium process.**—See ★*process*.—**Gratzel's electrolytic magnesium process**, a process which consists in electrolyzing a bath of carnallite for about thirty-six hours, a current of moderately high tension being employed. The reduced magnesium separates in globules which are collected and, on being remelted, yield a chemically pure metal.—**Magnesium fluting.** See ★*fluting*.—**Magnesium hypochlorite**, a substance used to some extent in bleaching, made by decomposing a solution of ordinary bleaching-powder with magnesium sulphate. Also called *magnesia bleach-liquor*.—**Magnesium manganite**, a compound obtained, instead of calcium manganite, in Waldon's modified process for recovering manganese in the manufacture of bleaching-powder. This process, though possessing certain advantages, has not come into general use.—**Magnesium nitride**, a yellow powder produced by heating metallic magnesium in nitrogen gas. It reacts energetically with water, forming magnesium hydroxid and ammonia. Its production furnishes the means of separating nitrogen from argon and the other inert gases of the atmosphere, and its action upon water, or that of the analogous but cheaper nitride of calcium, may become industrially important as a means of making ammonia from atmospheric nitrogen.—**Magnesium oxychlorid.** This substance, or the hydroxychlorid, is the essential material of Sorel's cement, used in building and in the manufacture of artificial stone. Also called *magnesic oxychlorid*.—**Magnesium peroxid**, a substance, MgO_2, produced by the interaction of sodium dioxid and magnesium sulphate. It is valuable in the modern use of hydroxyl in bleaching, having the advantage over the original sodium dioxid of not leaving a residue of corrosive character injurious to the fabric to be bleached. Also known as *magnesium dioxid*.—**Magnesium pyrophosphate**, the salt which is left on heating to redness ammoniomagnesium orthophosphate. It is the form in which phosphoric acid is most commonly determined in analysis.

magnet, *n.*—**Club-foot magnet**, a horseshoe magnet only one leg of which has a magnetizing coil.—**Lifting magnet**, an electromagnet used instead of hooks, chains, or clamps in lifting iron or steel sheets, bars, billets, rails, or structural shapes in a crane or derrick. It is made in many forms adapted to the shapes of the metal to be raised. The magnet, whatever its form, is suspended from the hoisting wire rope or chains of a traveling crane or the boom of a derrick, and is supplied with current through wires. The man who operates the crane controls the current by a small switch. When the magnet touches the metal to be lifted and the current is turned on, the magnet holds the metal until the current is cut off.—**Molecular magnets**, molecules of a substance, such as iron, each of which, according to Ewing's theory of magnetism, has a north and south pole.

> The phenomenon of magnetism consists of these *molec-*

ular magnets being placed with their poles pointing in the same direction.
W. Watson, Text-book of Physics, p. 729.

Normal magnet, a magnet the dimensions of which are such as to give the greatest attractive force at the ends possible with a given weight of iron.—**Vibration-magnet,** a suspended magnet from the rate of vibration of which the relative intensity of the field in which it swings is determined, or from the vibration of which one of the elements for the computation of the absolute horizontal intensity of the earth's magnetic field is derived.

magnetarium (mag-ne-tā′ri-um), *n.*; pl. *magnetaria* (-ä). [NL.] An instrument devised by H. Wilde (1890) for illustrating some of the phenomena of terrestrial magnetism. It consisted of a globe surrounded with a coil of wire and an outer concentric globe representing the earth's surface.

Magnetic alloy, an alloy which may be produced from non-magnetic metals by melting together copper, manganese, and aluminium in the proportion of about 60, 27, and 13 per cent., in the order named.—**Magnetic chuck, clutch, conductivity.** See ★*chuck*4, etc.—**Magnetic concentration,** the process of separating the magnetic from the non-magnetic particles of an ore by the action of a magnetic field.—**Magnetic concentrator,** a machine for concentrating magnetic minerals which occur with non-magnetic material. By the use of powerful magnetic fields this method of separation has lately been applied to feebly magnetic minerals.—**Magnetic creeping,** the phenomenon of gradual increase in the magnetization of a specimen of iron when subjected to a sudden magnetizing force.—**Magnetic curves.** (*b*) Lines of force, or lines of flow, or stream-lines, supposed to emanate from the polar regions of the sun and communicate energy to the earth from the sun by the motion of the ether. The coronal streamers that are seen during solar eclipses have the curvature of stream-lines and are therefore assumed by some to be true magnetic curves in a coronal field of force.—**Magnetic detector.** See ★*detector*.—**Magnetic explorer,** a device for exploring the magnetic field. It consists of a spiral of bismuth the resistance of which varies with the strength of the field, or sometimes of a small, flat coil of wire of known dimensions in circuit with a ballistic galvanometer.—**Magnetic fatigue.** See ★*fatigue*.—**Magnetic flux.** See ★*magnetism*, 1.—**Magnetic fringe,** that portion of the magnetic field of a generator, motor, or electromagnet which extends into the air-space outside of the edges or horns of the pole-pieces of the machine.—**Magnetic hammer, hysteresis, latitude, loop,** etc. See ★*hammer*1, etc.—**Magnetic permeance.** See ★*magnetism*, 1.—**Magnetic permeation, perturbation, phantom, polarization, pole, pressure, pulley, reactance.** See ★*permeation*, etc. —**Magnetic reluctivity.** See ★*magnetism*, 1.—**Magnetic resistivity, resonance, retardation, saturation,** etc. See ★*resistivity*, etc.—**Magnetic separator.** (*b*) Same as ★*magnetic concentrator*.—**Magnetic shield, shoal shunt,** etc. See ★*shield*, etc.—**Open magnetic circuit.** See ★*circuit*.—**Solar magnetic period.** See ★*period*.—**Unit of magnetic flux.** See ★*unit*.—**Unit magnetic reluctance.** See ★*reluctance*.

magnetiferous (mag-ne-tif′ẹ-rus), *a.* [L. *magnes* (*magnet-*), magnet, + *ferre*, bear, + *-ous*.] Having magnetic properties.

magnetification (mag-net″i-fi-kā′shọn), *n.* The production of magnetic flux; magnetization.

magnetify (mag-net′i-fī), *v. t.*; pret. and pp. *magnetified*, ppr. *magnetifying*. [*magnet*.] To render magnetic; magnetize. [Rare.]

magnetism, *n.* **1.** As in the electric circuit so in the magnetic circuit there exists a quantity component, the magnetic current, or *magnetic flux*, measured in lines of magnetic force, and a pressure component, the *magnetomotive force*, measured in absolute units, or frequently in ampere-turns. The ratio of magnetomotive force divided by magnetic flux is called the *magnetic resistance* or *reluctance*, and its reciprocal is called the *permeance*. *Magnetizing force* is the magnetomotive force per unit length of magnetic circuit; *magnetic induction* is the magnetic flux per unit section; *reluctivity* is the reluctance, and *permeability* the permeance per unit volume. To produce a magnetic circuit energy is required, which is partly or completely returned when the magnetic circuit is destroyed. No energy is required to maintain the magnetic circuit. Magnetic materials—that is, materials of high permeability, as iron, nickel, and cobalt—remain permanently magnetized after withdrawing the exciting magnetomotive force. The remaining permanent magnetism is called the *remanent magnetism*, the permanent magnetomotive force the *coercive force*. The coercive force, therefore, equals the magnetomotive force which has to be applied in the opposite direction to destroy the remanent magnetism. (See *magnetic* ★*hysteresis*.) The magnetic permeability, or conductivity for magnetism, is practically the same for all substances, with very few exceptions (the so-called *magnetic substances*), in which it is from hundreds to thousands of times greater. The magnetic substances are iron, cobalt, nickel, magnetite, liquid oxygen, and certain alloys of unmagnetic metals, as copper manganese and aluminium. All the other substances differ from one another in permeability only by a fraction of 1 per cent., and are called *paramagnetic* or *diamagnetic*, according as they are of higher or lower permeability than air.

magnetization, *n.*—**Longitudinal magnetization,** magnetization of a bar or ring such that lines of flux are parallel to the axis of the magnetized body.—**Magnetization by separate touch,** a method of magnetizing a bar of iron or steel in which two magnets are used. They are placed with opposite poles together at the center of the bar to be magnetized, and are simultaneously drawn apart along the bar.

magnetize, *v. t.*—**Unit of magnetizing force.** See ★*unit*.

magnetizer, *n.* **3.** Specifically, one who assumes to cure disease by means of so-called magnetic passes, magnetized water, etc. *Lancet*, June 16, 1900, p. 1761.

magneto, *n.* **2.** Specifically, the electric generator used as the source of the current in internal-combustion motors (the engines of motor-cars in particular) to cause the spark which ignites the combustible mixture. The magneto, which is in effect a dynamo, is driven from the motor-shaft and supplies current through a small storage battery for use in starting or before the magneto armature reaches speed. The magneto is not liable to stoppage of its current, nor to change of voltage, and the renewal of the battery-cell is eliminated. See ★*ignition*, 5, and *internal-combustion* ★*motor*.

magneto-acoustic (mag″ne-tō-ạ-kös′tik), *a.* Of or pertaining to magnetic and also to acoustic properties of a substance: as, the *magneto-acoustic* quality of a telephone diaphragm. *Elect. World and Engin.*, Aug. 29, 1903, p. 340.

magneto-alternater (mag″ne-tō-al′tėr-nā-tėr), *n.* An alternating current, generator, or motor with permanent field-magnets.

Magneto-cathode rays. See ★*ray*1.

magnetocrystallic (mag″ne-tō-kris-tal′ik), *a.* Same as *magne-crystallic*.

magneto-drop (mag′ne-tō-drop″), *n.* An annunciator or drop-signal operated by an electromagnet. *Elect. World and Engin.*, Dec. 12, 1903, p. 967.

magnetofriction (mag″ne-tọ-frik′shọn), *n.* A phenomenon observed when an electric discharge is acted upon by a powerful magnetic field.

> He [H. Pellat] describes how the positive column is squeezed together into a thin pencil and calls this phenomenon *magneto-friction*.
> *Sci. Amer. Sup.*, June 20, 1903, p. 22969.

magnetographic (mag″ne-tō-graf′ik), *a.* [L. *magnes* (*magnet-*), magnet, + γράφειν, write, + *-ic*.] Of or pertaining to the graphical recording of fluctuations in the intensity of terrestrial magnetism.

magneto-inductive (mag″ne-tō-in-duk′tiv), *a.* Of or pertaining to magnetic induction.—**Magneto-inductive capacity,** magnetic induction per unit of magnetizing force; permeability.

magnetometer, *n.*—**Differential magnetometer,** an instrument for testing the permeability of iron by means of a balanced, divided magnetic circuit: analogous in principle to the Wheatstone bridge.—**Vibration magnetometer,** a magnetometer of which the time of vibration is lengthened by attaching a plumb-bob to the magnet.

magnetometrically (mag″ne-tō-met′ri-kạl-i), *adv.* By a magnetometric method or process.

magnetomotive, *a.*—**Unit of magnetomotive force.** See ★*unit*.

magneto-motor (mag′ne-tō-mō″tọr), *n.* An electric motor the field of which is furnished by permanent magnets.

magneto-optical (mag″ne-tō-op′ti-kạl), *a.* Of or pertaining to the influence of the magnetic field upon optical phenomena or to optical phenomena dependent upon magnetic action; specifically, pertaining to the power of the magnetic field to cause rotation of the plane of polarization of light; magneto-optic.

magneto-phonograph (mag″ne-tō-fō′nọ-gråf), *n.* In *elect.*, a phonograph which records speech magnetically. It consists of a very small magnet attached to a diaphragm and acting on a moving steel tape or wire which is magnetized in waves by the vibrations of the magnet when some one speaks against the diaphragm. In repeating, the magnetized steel tape, moving in front of the magnet, sets the magnet, and thereby the diaphragm, in vibration and reproduces the sound. *Trans. Amer. Inst. Elect. Engin.*, 1901, p. 47.

magneto-regulator (mag″ne-tō-reg′ụ̄-lā-tọr), *n.* An electric potential regulator, consisting of two stationary coils at right angles, a primary and a secondary, and an iron core which is moved to change the path of the magnetic flux and thereby varies the secondary voltage or potential.

magnetostatic (mag″ne-tọ-stat′ik), *a.* Of or pertaining to a magnetic field whose lines are stationary.

magnetostatics (mag″ne-tō-stat′iks), *n.* That part of the science of magnetism which deals with stationary magnetic fields.

magneto-striction (mag″ne-tō-strik′shọn), *n.* Change of length or mechanical deformation of a body produced by the action of a magnetic field. *Physical Rev.*, March, 1902, p. 158.

magneto-stricture (mag″ne-tō-strik′tụ̄r), *n.* Same as ★*magneto-striction*.

magneto-therapy (mag″ne-to-ther′ạ-pi), *n.* The use of magnetism in the treatment of disease.

magnetropism (mag-net′rọ-pizm), *n.* [Short for **magnetotropism*, < μάγνης, magnet, + τρόπος, a turning, + *-ism*.] An alleged change of direction of growth of organisms under the action of a magnet.

magnet-wire (mag′net-wīr), *n.* Wire of the sort commonly used in winding electromagnets and similar apparatus; copper wire with a thin insulating layer of cotton or silk.

magnicaudate (mag-ni-kâ′dāt), *a.* [L. *magnus*, great, + E. *caudate*.] Having a large tail.

magnification, *n.* **4.** In the theory of optical images, the ratio f/x or x'/f', where f is the focal length of the object-space of the optical system and x the distance of the object from the principal focal plane of that space, or where f' and x' are the corresponding quantities in the image-space.—**5.** In *math.*, in conformal representation, the modulus of the derivative $\frac{dw}{dz} = \text{limit}\,\frac{\Delta w}{\Delta z}$.—**Normal magnification,** the magnification obtained from a lens-system when the exit-pupil equals the pupil of the eye.

magnificative (mag-nif′i-kạ̄-tiv), *a.* and *n.* [*magnificate* + *-ive*.] **I.** *a.* Serving to magnify.

II. *n.* In *gram.*, an augmentative, a word expressive of increased or large size: opposed to *diminutive*. *Whitney*, Life and Growth of Lang., xi. 214.

magnipotence (mag-nip′ọ̄-tẹns), *n.* [*magnipoten*(*t*) + *-ce*.] The possession of great power. [Rare.]

> Jehovah's mild *magnipotence*
> Smiles to behold His children play
> In their own free and childish way.
>
> *Coventry Patmore*, in Macmillan's Mag., Dec., 1861, 114.

magnipotent (mag-nip′ọ̄-tẹnt), *a.* [NL. **magnipotens* (*-ent-*), < *magnus*, great, + *potens*, powerful. See *potent*.] Having great strength and power.

> Satan, as he is a spirit, is *magnipotent*, but he never was omnipotent; and therefore there may be, and are, abundance of fine things which such People expect of him. *Defoe*, System of Magick, iii.

magnitude, *n.*—**Algebraic magnitude,** a magnitude considered as negative or positive. This character is usually indicated by a qualitative use of the algebraic signs + and −.—**Intensive magnitude,** a magnitude which evinces degrees of 'more' and 'less,' but which is not a measurable magnitude or quantity. Thus, sensations are intensive magnitudes, since they are directly given as 'louder,' 'weaker,' 'brighter,' 'fainter,' 'colder,' etc.; but they are not quantities, since a 'loud' sensation is not the sum of so-and-so many 'weak' sensations, and the difference between a 'loud' and a 'weak' sensation cannot itself be represented as a sensation-magnitude made up of so-and-so many sensation-units.—**Median magnitude,** in *biol.*, one above which and below which equal numbers of the variates occur.—**Star magnitude.** On the absolute scale (see *magnitude*, 5), Aldebaran is taken as the standard first-magnitude star and the scale is carried downward for the fainter stars. The equation which connects the magnitudes of two stars with their relative brightness is $\log \frac{b_m}{b_n} = \frac{4}{10}(n-m)$, in which m is the magnitude of the brighter star, and n that of the fainter one, while b_m and b_n are their respective brightnesses. In applying the scale to objects brighter than Aldebaran fractional and negative numbers must be used. Thus the magnitude of Vega is 0.3; that of Arcturus is ± 0.0; of Canopus −1.0; of Sirius, −1.4; of Venus, when brightest, about −4.0. That of the sun would be about −26. The earlier observers, Herschel, Struve, and Argelander, used scales of their own, differing widely for the telescopic stars. The absolute scale most nearly agrees with Argelander's, the standard first magnitude having been selected to secure such accordance as far as possible.

magnitudinous (mag-ni-tū′di-nus), *a.* [L. *magnitudo* (*-din-*), greatness, + *-ous*.] Having the quality of greatness in size, amount, importance, etc. [Rare.]

magnium (mag′ni-um), *n.* [NL. (Davy, 1808), < *magn*(*esia*) + *-ium*.] A former name of the element magnesium.

magnochromite (mag-nọ̄-krō′mīt), *n.* [*magn*(*esium*) + *chromite*.] A variety of chromite in which magnesium replaces a considerable part of the ferrous iron. The mineral from Grochau, Silesia, to which the name was first applied (1868), yielded 14 per cent. of magnesia. Mitchellite, from Webster, North Carolina, is essentially the same mineral. It gave 17.3 per cent. of magnesia.

magnofranklinite (mag-nọ̄-frangk′lin-īt), *n.* [*magn*(*etic*) + *franklinite*.] A variety of franklinite from Franklin Furnace, New Jersey, stated to be highly magnetic and to contain but little zinc.

Magnolia metal. See ★*metal*.

magnolin (mag′nọ̄-lin), *n.* [*magnolia* + -*in*^{2}.] An aromatic bitter principle contained in the bark and leaves of various species of magnolia.

magnolite (mag′nọ̄-līt), *n.* [*Magnolia* + -*ite*^{2}.] A mercury tellurate (perhaps Hg_2TeO_4) occurring in tufts of silky white crystals: found in the Magnolia district, Colorado.

magootee (ma-gö′tẹ̄), *n.* [E. Ind.] A flute-like musical instrument used by East Indian snake-charmers. In the reed a mirror is set, to which, while the instrument is being played, the snake's eyes are attracted with a hypnotizing effect.

magophony (mạ̄-gof′ọ̄-ni), *n.* [Gr. *μαγοφόνια*, < *μάγος*, magus, + *φόνος*, slaughter.] The massacre of the magi, an event in Persian history. *N. E. D.*

magpie, *n.* 6. A breed of small domesticated pigeons having the head, the under side of the body, and the long flight-feathers white, and the rest of the plumage clear black, red, yellow, or blue: the line between the two colors should be sharply defined. The name is derived from the suggestion of a magpie found in the black-and-white variety.—7. A black-and-white costume for women in which the contrasts are very marked, the masses of color being large.

magpied (mag′pīd), *p. a.* [*magpie* + -*ed*^{2}. Compare *pied*.] Variegated with black and white like a magpie: said of a black-and-white costume for women, at one time fashionable.

magpie-goose (mag′pī-gös), *n.* A black-and-white goose, *Anseranas melanoleucus*, found in Australia.

magpie-lark (mag′pī-lärk″), *n.* The pied grallina, *Grallina picata*.

M. Agr. Same as ★*Agr. M.*

magra (mä′grạ̈), *n.* [Aboriginal Australian.] A sort of sling or support by means of which the native Australian women carry their children on their backs.

magrepha (mä-grā′fä), *n.* [Heb.] A musical instrument mentioned in the Talmud as used in the temple at Jerusalem in the first century A.D.: usually supposed to be a rude organ. Its sound is said to have been excessively loud.

Magyarism (ma′dyar-izm), *n.* The political principles, sentiments, or aims of the Magyars; adherence to those principles or aims.

Magyarization (ma″dyar-i-zā′shọn), *n.* The act of Magyarizing, or the state of being Magyarized.

Magyarize (ma′dyar-īz), *v. t.*; pret. and pp. *Magyarized*, ppr. *Magyarizing*. To render Magyar in character, language, or sentiment.

mahajun (mạ-hä′jun), *n.* [Hindi *mahājan*, a great person.] A banker or merchant; a money-lender; a usurer. *Yule and Burnell*, Hobson-Jobson.

mahakavya (mạ-hä-käv′yạ̈), *n.* [Skt. *mahākāvya*, a great poem, < *mahā*, great, + *kāvya*, poem.] In *Skt. lit.*, a great or classical poem (a term specifically applied to six particular poems.)

> The artificial rules of prosody and poetics, according to which a poem, a *mahākāvya*, ought, according to the later writers on the Ars poetica, to be composed.
> *Encyc. Brit.*, XXVI. 432.

mahal (mạ-häl′), *n.* [Also *muhal*, *mahl*; < Hind. *mahall*, < Ar. *mahall*, < *halla*, lodge.] 1. Private apartments.—2. A palace; a summer house.—3. A territorial division; also, a division of land for farming and hunting purposes.

[Anglo-Indian in all uses.]

mahala (ma-hä′lạ̈), *n.* [Also *mahaly*, *mohale*: said to be a corruption of Sp. *mujeres*, women, adopted by California Indians, and later taken up by the whites.] 1. An Indian woman; a squaw. [Pacific coast of the U. S.]—2. A female salmon.

mahala-mats (ma-hä′lạ̈-matz), *n.* A prostrate shrub, *Ceanothus prostratus*, which forms carpets in the Sierra and northern Coast Range of California, especially under yellow pine. In spring it is covered with delicate clusters of blue flowers, and in late summer bears scarlet fruit among a rich green foliage. Also called *squaw's-carpet*.

mahamari (mä-hä-mä′rē), *n.* [Also *mahamurree*: < Hindi (?) *mahāmārī*, Hind. *mahamār*, pestilence, < *mahā*, great, + *mār*, beating, striking, in comp., killing, destroying.] The East Indian name for the plague, or a disease resembling it, which occurs on the southern slopes of the Himalayas.

> The native form of plague, known as *mahamari*, is confined to the southern slopes of the Himalaya.
> *Encyc. Brit.*, XXXI. 786.

mahant (mä-hunt′), *n.* [Hindi.] A religious superior. *N. E. D.*

Maharanee (mä-hä-rä′nē), *n.* [Hind. *mahārānī*, < *mahā*, great, + *rānī*, queen.] The wife of a maharaja.

> "Room for the *Maharanee* av Gokral-Seetarum." . . . She is a very estimable old queen of the Central Indian States, and they say she is fat.
> *R. Kipling*, Incarnation of Krishna Mulvaney.

maharif (mä-hä-rēf′), *n.* One of the large horse-antelopes of Central Africa, *Hippotragus bakeri*, a relative of the sable antelope, and, like that species, having long, decurved horns. It is pale liver-color, with a dark stripe over the shoulders.

mahatma (mạ-hat′mạ̈), *n.* [Skt. *mahātmā*, nom. sing. of *mahātman*, great-souled, of great intellect, very wise; as a noun, great spirit, universal soul; < *mahā*, great, + *ātman*, soul, spirit.] An alleged adept in Brahmanism: a name applied by modern European and American theosophists to certain imaginary persons who have acquired, by ascetic or 'astral' means, preternatural powers, and are asserted to exist in or near India. The term so used is modern and is due to European manipulation. No beings so named and endowed have any ancient recognition in Indian literature.

maha-white (mä-hä-hwīt′), *n.* In New Zealand, a name for one of the mullets, *Agonostomus forsteri*.

mahayana (mä-hä-yä′nạ̈), *n.* [Skt., 'the great vehicle,' < *mahā*, great, + *yāna*, vehicle, road, way, course.] A later form of Buddhism, originated by Nagarguna.

> The *Mahâyâna* or modern form of Buddhism in India.
> *Encyc. Brit.*, XXVI. 432.

Mahdiship (mä′dē-ship), *n.* The dignity or office of a Mahdi.

Mahdist, *n.* **II.** *a.* Of or pertaining to the Mahdists.

> As to the remainder of the region in question, the *Mahdist* troubles account sufficiently for the absence of white men during the recent years.
> *Geog. Jour.* (R. G. S.), XVIII. 47.

mahoe, *n.*—**Wild mahoe**, *Malvaviscus arboreus*, which, besides being an ornamental greenhouse plant, yields a coarse bast-fiber applied to various uses in South America. See ★*Malvaviscus*.

mahogany, *n.* 5. An old British collectors' name for a European and Asiatic noctuid moth, *Amphipyra tetra*.—**False mahogany**, the red bay or isabella-wood, *Persea Borbonia*. Also called *Florida mahogany*.—**Irish mahogany**, the European alder, *Alnus glutinosa*. **Philippine mahogany**, a name sometimes given to the wood of *Pterocarpus Indicus* and *P. echinatus*. Called in the Philippine Islands *narra* and *asana*. See ★*asana*.—**Valley mahogany**, *Cercocarpus parvifolius*, which grows in valleys and on mountain slopes, and is also called *mountain mahogany*.

maholi (mä-hō′li), *n.* [African.] A species of galago, *Galago maholi*, found in central Africa. See cut under *Galago*, 1.

Mahoning sandstone. See ★*sandstone*.

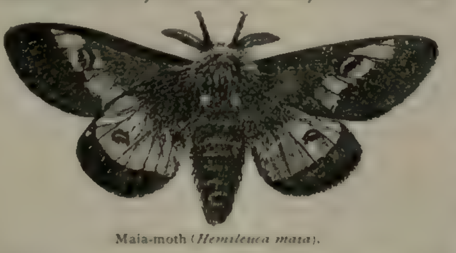
mahow (mạ-hou′), *n.* [S. African.] An intoxicating drink made from fermented mealie meal. [South Africa.]

> Excess mealie meal (this was burnt and drunk as a black liquor termed 'native coffee'), fermented makes a drink called '*mahow*' (intoxicating).
> *Lancet*, June 18, 1904, p. 1717.

mahzor (maċh′zōr), *n.*; pl. *mahzorim* (-zō-rēm). [Heb., < *hazar*, return.] 1. A cycle; a solar cycle of 28 years or a lunar cycle of 19 years.—2. A Jewish festival prayer-book. Each of the five principal festivals has a special liturgy.

mai (mä′ẹ̄), *n.* [Maori.] In New Zealand, a tree, the same as *matai*.

maia-moth (mā′yạ̈-môth), *n.* An American saturniid moth, *Hemileuca maia*, in color black with white markings. Its larvæ feed on oak-leaves.



Maia-moth (*Hemileuca maia*).

maid (mād), *v. i.* [*maid*, *n.*] To do the work of a maid: usually referring to a lady's-maid. *N. E. D.*

maiden. **I.** *n.* 7. A frame on which clothes are dried. [Prov. Eng.].—8. *pl.* See ★*mingles*.

II. *a.*—**Maiden number.** See ★*number*.

maiden-cane (mā′dn-kān), *n.* See ★*cane*^{1}.

maidenism (mā′dn-izm), *n.* [*maiden* + -*ism*.] The manner or bearing of a maiden; a maidenish peculiarity or idea. [Rare.]

> When he confessed these *maidenisms*, I despaired of his suiting the pleasant, prancing, pop-gun situation of butler at Prior's Lea, and was the less concerned to find him in treaty for another place.
> *Anna Seward*, Letters, III. 38.

maiden's-blush, *n.* 3. In Australia, either of two timber-trees, *Echinocarpus australis* of the linden family, and *Euroschinus falcatus* of the cashew family, the wood of which has a delicate rosy color when freshly cut.—4. In Tasmania, *Convolvulus erubescens*, a species of morning-glory.

maiden's-tears (mā′dnz-tērz), *n.* The bladder-campion, *Silene vulgaris*.

maïdism (mā′i-dizm), *n.* Same as ★*maïdismus*.

maïdismus (mā-i-dis′mus), *n.* [NL., < *maïd-*, false stem of *maïs*, maize, + -*ismus*, E. -*ism*.] Same as *pellagra*, a disease produced by eating damaged Indian corn. *Vaughan and Novy*, Cellular Toxins, p. 223.

maid's-hair (mādz′hãr), *n.* The yellow bedstraw, *Galium verum*; also the common bedstraw or goose-grass, *G. Aparine*.

mail^1, *n.* 9. The breast feathers of a hawk when full grown. *E. B. Mitchell*, Art and Practice of Hawking, p. 9.

mail^2, *n.*—**Open mail**, in the *postal service*, mail forwarded to any country for redistribution in that country or distribution onward to still other countries or places of final destination.

mail-boat (māl′bōt), *n.* A steamboat or steamship which carries the mail on lakes, rivers, or the sea. Also *mail-steamer*.

mail-chute (māl′shöt), *n.* A vertical mailing-tube, having a glass front, erected in a hotel or office-building, and passing through all or several floors; a chute for letters. At each floor is a letter-drop, and on the first floor a collecting-box. The box and chute are nearly air-tight and the inclosed air acts as an air-cushion to check the fall of the letters.

maile (mä′ẹ̄-lạ̄), *n.* [Hawaiian, etc., *maile*, *ma-i-le* = Maori *maire*.] A name widely used throughout the islands of the Pacific Ocean for plants having myrtle-like leaves, and especially applied in certain groups to *Gynopogon*, a genus of plants belonging to the *Apocynaceæ*, which have the agreeable fragrance of coumarin. The glossy branches of the Hawaiian maile, *Gynopogon olivæformis*, are in great favor with the natives for making garlands and for decorating their houses and lanais on festive occasions; and the lau-maile of Samoa, *G. bracteolosus*, is used by the natives for wreaths and garlands, but is not so highly esteemed by them as the more fragrant moso'oi blossoms. For other kinds of maile, see ★*maire*^{2}.

mailer^1, *n.* 2. A boat or steamer which carries mail; a mail-boat. [Colloq.]

mailer^2 (mā′lėr), *n.* [*mail*^{3} + -*er*^{2}.] 1. One who pays rent.—2. A squatter on waste ground (with the consent of the owner) who holds himself ready to be hired by the day. [Scotch, in both uses.]

mail-flag (māl′flag), *n.* A distinguishing pennant carried by vessels having the mail in transportation. The United States mail-flag is a swallow-tail pennant with a red field, a blue border, and a spread-eagle in the upper corner.

mailing-tube (mā′ling-tūb), *n.* A pasteboard tube, used as a cover for maps, engravings, photographs, and the like when sent in the mails.

mail-order (māl′ôr″dėr), *n.* In *com.* and *manuf.*, an order for goods, received by mail.—**Mail-order house**, a business house which conducts a retail business by receiving orders and cash by mail and distributing the goods through the mails. In England, called a *postal-trade house*.

mail-room (māl′röm), *n.* A room which is used in receiving and distributing mail-matter.

mail-steamer (māl′stē″mėr), *n.* A steamship that carries the mails.

maimakterion (mī-mak-tē′ri-on), *n.* [Gr. *Μαιμακτηριών*, so called from the festival, held in this month, of *Ζεῦς Μαιμάκτης*, Zeus 'the boisterous' or 'stormy,' < *μαιμάσσειν*, *μαιμάειν*, be eager, rage.] The fifth Attic month, containing the end of November and the beginning of December.

maimer (mām′ėr), *n.* One who maims or mutilates.

main¹, *n.*—**Forcing-main** or **force-main**, a main-pipe through which water or other fluid material is forced, by pumping, to a reservoir, tank, or system of pipes for distribution or supply: used in distinction from a *main supply-pipe*, which derives its motive pressure from gravity due to an elevated source of supply of the water or other fluid material transmitted.

main², *a.*—**Main clue-garnets**, the tackles which haul up the clues of the mainsail or course, and which on all sails above the courses are called *clue-lines*.—**Main clue-lines**, the purchases which haul up the clues of the main-topsail, topgallantsail, and royal.

main-backstays (mān′bak″stāz), *n. pl.* The backstays of the maintopmast and maintopgallantmast; also, the backstays of the main-royal-pole.

main-breadth (mān′bredth), *n.* The broadest part of a ship at any given timber or frame. Compare *bearing*, 10.

main-buntlines (mān′bunt″linz), *n. pl.* The buntlines belonging to the square sails on the mainmast.

main-center (mān′sen″tėr), *n.* **1.** A shaft or axle on which a walking-beam rocks in a beam-engine.—**2.** The center of the heaviest revolving part, as the shaft on which the levers vibrate in side-lever engines.

main-chains (mān′chānz), *n. pl.* The locality where are situated the iron links on plates for securing the shrouds of the mainmast. See *chain*, 7.

main-chuck (mān′chuk), *n.* A lathe-chuck which carries other chucks or clamps for grasping the work to be turned.

main-crosstrees (mān′krôs″trēz), *n. pl.* The crosstrees on the mainmast, situated at the meeting of the head of the topmast and foot of the topgallantmast on square-rigged vessels, and at the meeting of the head of the lower mast and foot of the topmast on fore-and-aft rigged vessels.

main-en-griffe (maṅ-oṅ-grēf′), *n.* [F.] Same as *claw-hand*.

main-gaff (mān′gaf), *n.* The spar to which the head of the fore-and-aft mainsail is bent.

main-keel (mān′kēl), *n.* In *wood ship-building*, a name used to distinguish the keel proper from the false keel. See cut under *keel*¹, 2.

mainland, *n.* **2.** The principal island of a group: as, the *mainland* of Orkney.

mainmast, *n.* **2.** *pl.* The lower topmast and topgallantmasts of the mast next abaft the foremast.

mainmort† (mān′môrt), *n.* [F. *mainmorte*, 'dead-hand': see *dead-hand* and *mortmain*.] **1.** Same as *mortmain*.—**2.** In *Fr. feudal law*, a right which the lord had (on the death of the chief of a family which is mainmortable) of taking the best movable in the house. *Chambers.*

mainmortable (mān-môr′ta̤-bl), *a.* and *n.* [F. *mainmortable*, < *mainmorte*. See ★*mainmort*.] **I.** *a.* Not having the right of alienating one's possessions in the event of dying childless, as serfs under the old feudal law of France; also, not subject to this right, as the possessions themselves.

II. *n.* A serf who, under the feudal law in France, did not have the right of alienating his possessions in the event of a childless death.

main-piece (mān′pēs), *n.* *Naut.*, the timber of which the rudder-head is composed; the principal part of a timber; the main section of a timber.

main-rope (mān′rōp), *n.* In *mining*, in the tail-rope system of haulage, the rope which draws out the loaded cars. See *tail-rope system*, under *tail-rope*.

mainsail, *n.* **2.** *pl.* The square sails on the mainmast: they are the course, or mainsail proper, the lower and upper topsails, the topgallantsail and royal, and also a skysail if the ship is lofty. Men-of-war usually carry single topsails instead of a divided sail.—**Mainsail haul!** an order to swing the main-yards so that the sails on the main may be filled on the new tack.

main-sheet, *n.* **2.** *pl.* Collectively, all the sheets of the square sails on the mainmast, but especially the sheets which belong to the main course.—**3.** In Jamaica, weak rum and water. [Slang.]

> We . . . have seen an old man invited to have a drink of "*main-sheet*" (Jamaican for a cool and seductive mixture of rum and water).
>
> *Blackwood's Mag.*, June, 1890, p. 784.

To haul aft the main-sheet. See ★*aft*¹.

main-shrouds (mān′shroudz), *n. pl.* The shrouds on the main lower mast.

mainstay, *n.* **3.** *pl.* All the stays which give support to the main lower mast, maintopmast, and maintopgallantmast.

Maintenance of way. See ★*way*¹.

maintop-bowline (mān′to̤-bō″lin), *n.* *Naut.*, something very long: as, his yarn was as long as the *maintop-bowline*. [Sailors' slang.]

maintopgallant (mān′top″gal-a̤nt), *n.* The name given to the rigging, yard, and sail belonging to the maintopgallant-mast.—**Maintopsail haul!** the order to swing the after-yards when tacking. This order is given in distinction from *mainsail haul*, which is the order proper when the mainsail is not clued up before tacking.

main-yard, *n.* **2.** *pl.* All the yards which belong to the mainmast, namely, the lower, lower topsail, upper topsail, topgallant, royal, and skysail yards.

main-yardman (mān′yärd-ma̤n), *n.* A sailor whose station is on the main-yard for the purposes of loosing, furling, and reefing the mainsail, or for sending the main-yard on deck.

Maioli (mī-ō′lē̤), *a.* The name of an Italian bookbinder (Thomas Maioli) of the first half of the eighteenth century: used as descriptive of his style, or of a style resembling his.

> The principal features of a *Maioli* design, I claim, are a perfect curve in scrollwork where it is used, a framework of flowing curved lines more than of figures of geometrical shape, ornaments of Moresque character, mostly in outline, sometimes azured, and an enrichment of part of the field with a studding of gold dots.
>
> *W. Matthews*, Modern Bookbinding, p. 71.

maiotic, *a.* See ★*miotic*. *Nature*, Nov. 29, 1906, p. 98.

maipuri (mī-pö′ri), *n.* [S. Amer.] An Indian name, used to some extent as a common name, for the South American tapir, *Tapirus terrestris*.

maire² (mä′i-rā), *n.* [Maori *maire* = Hawaiian, etc., *maile*, a widely spread name for plants with myrtle-like leaves.] **1.** *Eugenia Maire*, a small New Zealand tree of the myrtle family, with white bark and four-angled branches, oblong-lanceolate, acuminate leaves, and white flowers having a tuft of many stamens. The fruit is a red berry crowned by the thickened rim of the calyx. It is distinguished from the other maires of New Zealand as *maire-Tawhiki*, or 'myrtle of the god Tawhiki' (the Tafa'i of Samoan myths and Kahai of the ancient Hawaiians).—**2.** *Mida salicifolia*, a small New Zealand tree of the sandalwood family, having variable, myrtle-like or willow-like leaves and short axillary cymes of small green flowers.—**3.** One of several species of *Olea* indigenous to New Zealand: (*a*) The black maire, *O. Cunninghamii*, a lofty tree with white limbs, long coriaceous leaves, racemes of unisexual flowers, and fruit in the form of a drupe containing a bony nut. The wood is dense, hard, and durable. (*b*) The white maire, *O. lanceolata*, a smaller and less robust tree, yielding the New Zealand boxwood (which see, under ★*boxwood*). (*c*) The narrow-leaved maire, *O. montana*, a large bushy tree with leathery linear leaves and racemes of minute flowers. (*d*) The broad-leaved maire, *O. apetala*, which yields the ironwood of Norfolk Island.—**4.** In Tahiti, *Gynopogon stellatus*, a plant with ternate, myrtle-like leaves. Compare ★*maile*.

mairie (mā̃-rē′), *n.* [F., < *maire*, mayor.] In France, the public building which serves as the office, and usually as the residence, of the mayor of a town, or, in Paris, of one of the great divisions of a city.

mairogallol (mā-rō̤-gal′ol), *n.* A colorless compound, $C_{18}H_7O_{10}Cl_{11}$, which is formed by the action of chlorin on pyrogallol. It crystallizes in lustrous prisms, and melts at about 190° C.

maise² (māz), *n.* The mayweed, *Anthemis Cotula*.

maisin (mā′zin), *n.* [NL. *maïs*, maize, + *-in*².] A colorless pulverulent proteid, $C_{184}H_{300}O_{51}.N_{46}S$, found in the seeds of maize, which contain from 4 to 4½ per cent. of it.

maisonette (mā-zo̤-net′), *n.* [F., dim. of *maison*, house.] A small house. [Rare.]

> The Charlevilles have exchanged their *maisonette* in Berkeley Square for Queensberry House, Piccadilly, and, with their usual kindness, have invited us to two dinners and one rout whilst we remain.
>
> *Lady Morgan*, Autobiography, p. 38.

maiz, *n.* A simplified (and former) spelling of *maize*.

maize, *n.* **1.** Indian corn presents numerous varieties, which fall under 6 types, all referable to *Zea Mays*. According to E. L. Sturtevant, who based his classification on the character of the kernel (endosperm), these types (agricultural species) are as follows: (1) *Pop-corn*, distinguished by the small size of the kernel and by its property of popping with heat. See *pop-corn*. The kernel, split transversely, exhibits the chit (embryo) surrounded by corneous matter, glossy in appearance, sometimes having a thin line of starchy matter between. (2) *Flint corn*, which has larger kernels incapable of popping with heat; the chit is surrounded by starchy matter, and this by a corneous envelop; the kernels are in from 8 to 16 rows in different varieties, but usually in 8. (3) *Dent corn*, which has kernels with a transverse furrow at the top, the section showing corneous matter at the sides and starchy matter between, reaching from the chit to the summit; the kernels are usually in from 16 to 20 rows. (4) *Soft corn*, in which the grain is wholly starchy (amylaceous). (5) *Sweet corn*, which has kernels with a translucent appearance, usually corneous throughout, the starch being more or less reduced to sugar, the grains generally with a wrinkled surface, usually in 12 rows. (6) *Starchy sweet corn*, in which the lower half of the kernel is starchy, the upper half corneous and translucent. (7) *Pod-corn*, in which each kernel is inclosed in a separate husk, the whole ear being also in a husk. Each of these groups except the last two, admits, according to Sturtevant, of subdivision into three, according as the kernel is broader than deep, as broad as deep, or much deeper than broad. Pop-corn is divided into three subgroups: *golden pop-corn*, marked by the small size of the ear and kernel, and by its extreme earliness: regarded by some as a form of pearl pop-corn; *pearl pop-corn*, in which the kernels are densely aggregated and have a nacre-like color; and *rice pop-corn*, which has pointed kernels, and a tendency to yield cone-formed ears with the kernels imbricate rather than side by side. The pop-corn stalk usually grows from 5 to 7 feet high, and tends to bear many ears. Flint corn usually grows from 5 to 8 feet high, and inclines to bear two ears to the stalk. Though less prolific than dent corn, its varieties are planted in the more northerly regions on account of their shorter season, prevailing over New England, New York, and Canada. Dent corn ordinarily attains a height of from 8 to 12 feet, and bears but one ear to the stalk. Its varieties alone are planted in the corn-belt of the United States (see below). Soft corn was liked by the aborigines on account of its being more easily crushed, but it has no modern commercial standing. The best quality of sweet corn is produced in the more northerly regions, where it is grown chiefly for use as a fresh vegetable and for canning. Soft sweet corn consists, as far as is known, of a few Mexican varieties. Pod-corn is grown, under various names, merely as a curiosity. It is thought to approach nearest to the primitive form from which all these types have sprung. No wild species of maize is at present clearly known. Corn was grown by the American aborigines from Maine to Chile and Argentina, whence its cultivation has spread over the warmer parts of the globe. The world's product from 1902 to 1906 inclusive averaged 3,340,000,000 bushels, of which North America, chiefly the United States, yielded 2,680,000,000. Almost three fifths of the crop of the United States is produced (1907) by the seven States (named in the order of quantity) of Illinois, Iowa, Missouri, Nebraska, Kansas, Indiana, and Ohio, these being known as the *corn*, or *maize*, *surplus States* and forming the *corn-belt*. Among other important corn-producing States, are Texas and Oklahoma.—**Millo maize**, one of the non-saccharine sorghums, related to Kafir-corn, cultivated for forage in warmer parts of the United States.

maize-meal (māz′mēl), *n.* Same as *Indian meal* (which see, under *meal*¹).

maizenic (mā-zē′nik), *a.* Pertaining to or derived from maize.—**Maizenic acid**, an organic acid contained in the styles and stigmas of *Zea Mays*.

maize-thorn (māz′thôrn), *n.* Same as *mouse-thorn*.

maja (mä′hä), *a.* [Sp., fem. of ★*majo*.] Noting a Spanish woman of the lower classes who dresses gaily and is a belle in her circle. See ★*majo*.

> Now bring me, dear Dolores, my basquiña,
> My richest *maja* dress.
>
> *Longfellow*, Span. Student, ii. 1.

majagua (mä-hä′gwä), *n.* [West Indian Sp., from a native name.] **1.** A malvaceous tree, *Pariti tiliaceum*, native in Porto Rico, Cuba, Mexico, Central America, and South America, and widely distributed throughout the warm regions of the world. Its strong, flexible bast-fiber was in use by the natives of America before the advent of Europeans. In Porto Rico, nearly all the ropes in use are made from this fiber. Called also *emajagua*. See ★*balibago*, ★*fau*, 2.

2. A collective name used in Spanish-speaking countries for the bast-fibers of a number of malvaceous and similar plants. See *mahoe*.

majo (mä′hō), *a.* [Sp., gay, fine.] Noting a Spaniard of the lower classes, who is a gaily dressed dandy. The feminine is *maja*.

> Here, too [in the Vivarrambla], were the *Majos* and *Majas*, the rural beaux and belles, with fine forms, flashing eyes, and gay Andalusian costumes.
>
> *Irving*, Alhambra, p. 155.

majolist (ma-jol′ist), *n.* [*majol*(*ica*) + *-ist*.] A maker of majolica; a potter who makes pottery in the style of the old Italian majolica. Also *maiolist*.

major, *a.* **6.** In *pros.*, noting the longer of two types of verse which bear a common name.—**Major arc**, the arc on the same side of its chord as the center of the circle.—**Major circle**, a great circle.

majordomo, *n.* 2. See ★*water-master.*

major-generalcy (mā″jor-jen′e-ral-si), *n.* Same as *major-generalship.*

Majorism (mā′jor-izm), *n.* The doctrines of Georg Major. See *Majoristic.*

majorize (mā′jor-īz), *v. i.*; pret. and pp. *majorized*, ppr. *majorizing.* [*major* + *-ize.*] 1. To come of age.—2. In *Rugby foot-ball*, to convert a try into a goal, that is, to increase the points from three to five. *N. E. D.*

mak (mäk), *a.* [D., tame, domesticated.] In South African Dutch, tame: applied especially to Kafirs who have come under European influences.

makaisa (mä-kī′sä), *n.* [Tagalog *makaisa.*] In the Philippine Islands, *Croton Tiglium*, a shrub or small tree bearing poisonous fruit which is used by the natives for stupefying fish and crabs and for killing dogs. It is very acrid and is used medicinally as a counter-irritant, the seeds being made into a paste or plaster and applied externally to the body; taken internally, it acts as a drastic purgative. The natives sometimes administer the fourth part of a seed, but its action is so violent that the remedy is considered dangerous. This plant is also called *tuba*, or *tuba makaisa*, and by the Bisayans *makasla.* See *Croton*, 1 (with cut).

makara (mä′ka-rä), *n.* [Skt. *mákara.*] In *Hindu myth.* and *art*, a fantastic marine monster figured with the body and tail of a fish and the forelegs, neck, and head of an antelope, an alligator, or a shark: used as a symbolic or ornamental figure, and as the zodiacal sign Capricorn.

makasla (mä-käs′lä), *n.* [Bisayan *makasla.*] See ★*makaisa.*

make¹, *v.* **I.** *trans.* **24.** To reach; catch (a train, etc.): as, we *made* Paris in three hours. [Colloq.]

> He . . . jumped on board the steam-boat . . . "Just *made* it," he said: "and that's what I like to do."
> *Howells*, Silas Lapham, vi.

To make a balk. See ★*balk*1.—**To make a berth** (*naut.*), to reach an anchorage; obtain dockage.—**To make an anchorage** (*naut.*), to come to anchor; find an anchorage berth.—**To make a pair of spectacles**, in *cricket.* See ★*spectacle.*—**To make colors** (*naut.*), to display the ensign on board of naval vessels, yachts, etc.: a ceremony which takes place at 8 A.M.—**To make it so** (*naut.*), an order, given by the captain, which means that authority is given to strike the ship's bell eight strokes as the official announcement of meridian, or 12 o'clock by the sun.—**To make the course good** (*naut.*), to allow the vessel's head alternately to incline as much on one side of the given course as on the other, so that the mean of the two will give the course that it is desired to steer. This is done on sailing vessels when, owing to a heavy sea or other cause, the ship's head cannot be kept steady, but yaws away from the proper course.

II. *intrans.*—**To make clear** (*naut.*), to pass without touching; avoid.—**To make off.** (*b*) *Naut.*, to chop whale-blubber into pieces.

make¹, *n.* 7. In *bridge*, the declaration.

> In considering a heart *make*, the dealer should be influenced by the general strength of his hand and by the number of honours he holds in the trump suit.
> *J. B. Elwell*, Bridge, p. 13.

8. In *mining*, a system of metal-bearing veins which are not stratified; a network of veins. [Australia.]

make-and-break (māk′and-brāk′), *n.* A device for alternately closing and opening an electric circuit; an interrupter.

make-key (māk′kē), *n.* In *physiol.* and *exper. psychol.*, an electric key the action of which closes an electrical circuit.

> It [the Scripture-Dessoir reaction key] may also be used, though less accurately, as a *make key.*
> *E. B. Titchener*, Exper. Psychol., II. i. 165.

maker, *n.* **4.** In *bridge*, the declaring hand.

> When the *maker* is on your right, you have the advantage that your trumps are over his.
> *J. B. Elwell*, Bridge, p. 24.

5. In *shoemaking*, the laster (a man or boy) who places the closed uppers of a boot (in hand-sewn work) over the last and attaches the bottom material. *Webb*, Industrial Democracy, I. 418.

make-record (māk′rek″ord), *n.* In *physiol.* and *exper. psychol.*, a record (chronoscopic or chronographic) obtained by the use of a make-key.

> The lost time of the *make-records* may be reduced to a minimum by adjustment of the lower sliding block.
> *E. B. Titchener*, Exper. Psychol., II. i. 165.

makeshiftiness (māk′shif-ti-ness), *n.* The character of being makeshifty. *Ruskin*, Præterita, ii. 267.

makeshifty (māk′shif-ti), *a.* [*makeshift* + *-y*³.] Of the nature of a makeshift; characterized by the use of makeshifts. [Rare.]

make-spark (māk′spärk), *n.* A spark produced in the air-gap of the secondary circuit of an induction-coil or transformer when the primary circuit is made or closed.

makhna, makna, *n.* Same as ★*muckna.*

making-up (mā′king-up′), *n.* 1. The act or process of compensating.—2. In *printing*, the process of arranging composed type in columns and pages.

> Notes are a hindrance in composition and *making-up* . . . The composition and *making-up* of this matter must have been an affliction to be avoided.
> *De Vinne*, Practice of Typography, p. 171.

Making-up piece, a smooth convex plate fastened to the comb-cylinder of a Heilmann cotton-combing machine, between the needle and the fluted segments, to allow time for the auxiliary parts to act.

makita (mä-kē′tä), *n.* [Fijian.] In *bot.*, see ★*ais.*

mako (mä′kō), *n.* [Maori.] The tiger-shark (which see). The teeth of the mako are used for ornaments by the Maoris. *E. E. Morris*, Austral English.

Mal. An abbreviation (*a*) of *Malachi*, a book of the Old Testament; (*b*) of *Malayan.*

mal, *n.*—**Mal de caderas** [Sp. 'disease of the hips'], a chronic (at present, incurable) infectious (but not contagious) disease of horses in South America, caused by the presence of flagellate protozoa of the species *Trypanosoma equinum.* The parasites live in the blood plasma and are supposed to be transmitted by flies.—**Mal de los pintos.** Same as *pinta.*—**Mal de mer.** Same as *seasickness.*—**Petit mal**, a mild epileptic attack, not marked by strong convulsions or complete unconsciousness. Compare *grand mal.*

mala² (mā′lä), *n.* [L. *mala*, jaw, cheek: see *malar.*] A sclerite in the mouth-parts of certain *Myriapoda*, the third joint of the mandible, supporting the sclerites which homologize with the galea and lacinia of an insect's maxilla.

Malabar almond. Same as *country almond* (which see, under *almond*).

malabathrum (mal-a-bath′rum), *n.* [L. *malabathrum*, *malobathrum*, < Gr. *μαλάβαθρον*, *μαλόβαθρον*, < Skt. *tamālapattra*, 'leaf of the tamāla tree,' < *tamāla*, Hindi *tamal*, name of several trees, + *pattra*, leaf.] 1. The dried, aromatic leaves of several Indian species of *Cinnamomum*, especially *C. iners* and *C. nitidum*, formerly used in medicine. Also called *Indian* or *Malabar leaves.* (See *Malabar leaves*, under *leaf.*)—2. An ointment or perfume prepared from the malabathrum leaf.

malac. An abbreviation of *malacology.*

Malacanthidæ (mal-a-kan′thi-dē), *n. pl.* [NL., < *Malacanthus* + *-idæ.*] A family of trachinoid fishes of the temperate and tropical seas, including about six genera, the greater number of species being American.

Malacanthus (mal-a-kan′thus), *n.* [NL., < *μαλ*(*ακός*), soft, + *ἄκανθα*, thorn.] A genus of fishes found in West Indian waters.

Malaceæ (ma-lā′sē-ē), *n. pl.* [NL. (Small, 1903), < *Malus* + *-aceæ.*] A family of dicotyledonous choripetalous trees and shrubs of the order *Rosales*, the apple family, typified by the genus *Malus:* usually included in the family *Rosaceæ*, as the tribe or subfamily *Pomeæ* (which see).

Malache (mal′a-kē), *n.* [NL. (B. Vogel, 1772), < Gr. *μαλάχη*, the common mallow: see *mallow.*] A genus of dicotyledonous plants of the family *Malvaceæ.* See *Pavonia.*

malachite-green, *n.* **3.** One of the modern artificial dyes, a salt of tetramethyl-paradiamido-triphenylcarbinol: used in dying silk, wool, and cotton. Also called *benzaldehyde green*, *solid green*, and *Victoria green.*—**Malachite-green G.** Same as *ethyl green* (which see, under *green*¹).

malacia, *n.* **2.** A longing for some special article of food; specifically, a depraved appetite. *Syd. Soc. Lex.*

Malacocephalus (mal″a-kō-sef′a-lus), *n.* [NL., < Gr. *μαλακός*, soft, + *κεφαλή*, head.] A genus of deep-sea fishes of the family *Macruridæ.*

Malacocottus (mal″a-kō-kot′us), *n.* [NL., < Gr. *μαλακός*, soft, + NL. *Cottus.*] A genus of cottoid fishes found in the North Pacific.

Malacocotylea (mal″a-kō-kot-i-lē′ä), *n. pl.* [NL., < Gr. *μαλακός*, soft, + *κοτύλη*, cup, socket.] An order of endoparasitic *Trematoda* equivalent to *Digenea.* Also *Malacotylea.*

malacocotylean (mal″a-kō-kot-i-lē′an), *a.* and *n.* **I.** *a.* Having the characteristics of the *Malacocotylea.*

II. *n.* One of the *Malacocotylea.*

Malacoctenus (mal-a-kok′te-nus), *n.* [NL., < Gr. *μαλακός*, soft, + *κτείς* (*κτεν-*), comb.] A genus of blennioid fishes found on both coasts of tropical America.

malacoderm, *n.* **II.** *a.* Malacodermatous.

malacodermous (mal″a-kō-dėr′mus), *a.* Same as *malacodermatous.*

malacologic (mal″a-kō-loj′ik), *a.* [*malacolog*(*y*) + *-ic.*] Same as *malacological.*

malacophilous (mal-a-kof′i-lus), *a.* [Gr. *μαλακός*, soft (see *mollusk*), + *φιλεῖν*, love, + *-ous.*] In *bot.*, adapted to cross-fertilization by mollusks: applied to plants or their flowers.

malacophonous (mal-a-kof′ō-nus), *a.* [Gr. *μαλακόφωνος*, < *μαλακός*, soft, + *φωνή*, voice.] Soft-voiced; having a gentle voice.

malacopod (mal′a-kō-pod), *n.* A member of the *Malacopoda.*

malacostome (mal′a-kō-stōm), *n.* [Gr. *μαλακός*, soft (*μαλάκια*, mollusks), + *στόμα*, mouth.] The mouth of a mollusk.

malacotomist (mal-a-kot′ō-mist), *n.* [*malacotom-y* + *-ist.*] One who is versed in malacotomy; a student of the anatomy of mollusks.

Malacotylea (mal-a-cot-i-lē′ä), *n. pl.* Same as ★*Malacocotylea.*

malacozoölogy (mal″a-kō-zō-ol′ō-ji), *n.* [Gr. *μαλακός*, soft (*μαλάκια*, mollusks), + E. *zoölogy.*] The zoölogy of mollusks; malacology.

malactic (ma-lak′tik), *a.* and *n.* [Gr. *μαλακτικός*, < *μαλάσσειν*, make soft.] **I.** *a.* Making soft; emollient.

II. *n.* An emollient medicine.

maladif (mä-lä-dėf′), *a.* [F., < *malade*, sick: see *malady.*] Sickly; delicate.

> He [Hans Makart], . . . standing in the corner, silent, inanimate, save for his gleaming black eyes and his smoking cigarette—a fragile, *maladif* little figure, with a disproportionately impressive head.
> *M. G. van Rensselaer*, in Portfolio, 1886, p. 51.

maladminister (mal-ad-min′is-tėr), *v. t.* [*mal-* + *administer.*] To administer in a faulty, inefficient way, particularly public affairs.

> The people, themselves, in all countries, might confide in it [the true Scheme of Human Economy], to vindicate their respective interests, by its moderate representations, when necessary to their several sovereigns, or otherwise, as those interests might be *maladministered.*
> *G. Edwards*, Practical Plan, iii.

maladministrator (mal-ad-min′is-trā-tor), *n.* One who maladministers affairs, especially public affairs.

malafu (mal′a-fö), *n.* Same as *toddy*, 1.

Malaga pottery. See ★*pottery.*

Malagasy, *n.* **2.** The language of Madagascar.

malakin (mal′a-kin), *n.* [Gr. *μαλακός*, soft, + *-in*².] The trade-name of salicyl-paraphenetidine, $C_2H_5\overset{4}{O}C_6H_4\overset{1}{N}:\overset{2}{C}HC_6H_4\overset{1}{O}H$, prepared by the action of paraphenetidine on salicylic aldehyde. It crystallizes in silky, lustrous needles and is used in medicine as an antipyretic and antirheumatic.

malakon, *n.* See *malacon.*

malamethane (mal-a-meth′ān), *n.* [*mal-ic* + *methane.*] A colorless compound, $NH_2COCH(OH)CH_2COOC_2H_5$, formed by the action of dry ammonia on diethyl malate. Also called *ethyl malamate.*

malamic (mal-am′ik), *a.* [*malam*(*ide*) + *-ic.*] Noting an acid, a colorless compound, $NH_2COCH(OH)CH_2COOH$, prepared from diazosuccinic ester. It crystallizes in short, thick prisms and melts at 146° C.

malamide (mal-am′id), *n.* [*mal*(*ic*) + *amide.*] A colorless compound, $H_2NCOCH(OH)CH_2CONH_2$, prepared by the action of ammonia on ethyl malate. It crystallizes in rectangular prisms.

mala-mujer (mä″lä-mö-her′), *n.* [Sp. *mala*, bad, + *mujer*, woman.] A name applied in Mexico to several pernicious plants, some of which are armed with prickles. Among them are *Solanum rostratum*, called *sand-bur* in the southwestern United States; *Cnidoscolus urens* (*Jatropha urens* of Linnæus), which is armed with stinging hairs; and *Rhus Toxicodendron*, the poison oak, also called *guao* and *tetlatia.* See ★*guao* and ★*tetlatia.*

malamute (mal′a-mūt), *n.* [Name of an Alaskan Indian tribe.] A local name for the Eskimo dog, apparently used in Alaska.

> Few pure *malamutes* (native dogs descended from the Siberian wolf) are now employed in the mail service. Their legs are too short, their feet sink too readily through the snow.
> *Lida Rose McCabe*, in St. Nicholas, March, 1908, p. 387.

malapaho (mä-lä-pä′hō), *n.* [Philippine Sp., said to be Tagalog.] In the Philippine Islands, a name of several forest trees, especially of *Sindora Wallichii* and *Dipterocarpus vernicifluus.* The latter yields a valuable oleoresin. Also called *panao.*

malappropriate (mal-a̤-prō′pri-ā̤t), *a.* [*mal-* + *appropriate, a.*] Inappropriate.

malappropriation (mal-a̤-prō-pri-ā′sho̤n), *n.* [*mal-* + *appropriation.*] Misappropriation.

malapropian (mal-a̤-prop′i-a̤n), *a.* [*malaprop* + *-ian.*] Of the nature of or addicted to malapropism.

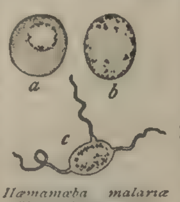
malapropoism (mal-ap-rō̤-pō′izm), *n.* [*mal-apropo(s)* + *-ism.*] Same as *malapropism.*

Bipartite Malar Bone.

malar, *a.*—**Malar division**, in *craniom.*, the condition, of the malar bone, of being divided by a suture into two bones; a bipartite malar.

malare (mā-lā′rē), *n.* [NL. (sc. *os*), the malar bone. See *malar.*] In *craniom.*, the most prominent point of the tuberositas malaris. *Von Török.*

malaria, *n.* Numerous investigations made in recent years have established the fact that malaria is a disease resulting from the presence within the red blood-corpuscles of a protozoan parasite, the *Hæmamœba malariæ*, or *Plasmodium malariæ.* The parasite has two cycles of existence, one in the human body, the other in the body of a mosquito of the genus ★*Anopheles* (which see, with cut). In the blood, reproduction of the parasite occurs only by fission or segmentation; but in the stomach-wall of the mosquito, which it reaches in the blood sucked by this insect from the skin of the sick, sexual reproduction occurs, the parasite giving birth to a large number of exceedingly minute forms, called sporozoids. These make their way through the tissues of the mosquito to its salivary glands, whence they are injected into the blood of the human subject whom this infected mosquito stings. On reaching maturity in the blood, the protozoan invades the red blood-corpuscles, and so completes the two cycles of its existence. The malarial paroxysm of chill, fever, and sweating occurs at the time of invasion of the blood-cells by a new brood of the parasites, either those resulting from segmentation of the protozoan within the human blood-vessels or those reproduced sexually in the body of the mosquito and thence injected into man. There are three varieties of the *Hæmamœba* which are concerned in the production of the three varieties of malaria, *tertian*, *quartan*, and *estivo-autumnal* or *pernicious.* Symptomatically, there are four forms of malaria: the *intermittent*, in which the interval between the paroxysms is fever-free; the *remittent*, in which the fever is continuous, but is marked by exacerbations with intercurrent chill and sweating; the *pernicious* or *congestive* form, in which the blood-poisoning is profound; and the *chronic* form, constituting what is called the *malarial cachexia*. See ★*Laverania.*—**Hybrid malaria**, malaria modified by association with some other disease.



Hæmamœba malariæ (*Plasmodium quartanæ*), the Parasite of Quartan Fever.

a, a developing form within the red blood-corpuscle; *b*, a full-grown body, the substance of the red corpuscle having disappeared; *c*, flagellate body.

(From Johns Hopkins Hospital Reports—Thayer and Hewetson.)

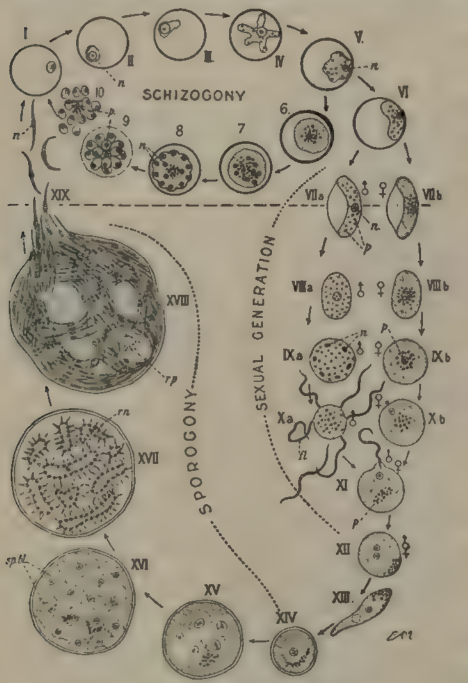
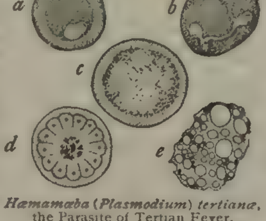


Diagram of the Complete Life-cycle of the Parasite of Pernicious Malaria, *Hæmamœba* (*Plasmodium*) *malignum* or *Laverania malariæ.*

The stages shown above the dotted line are those found in human blood; below the dotted line are seen the phases through which the parasite passes in the intermediate host, the mosquito. I-V and 6-10 show the schizogony; VI-XII, the sexual generation, which at VII splits into two lines, male (*a*) and female (*b*), to be united again by conjugation (XI and XII); XIII, the motile zygote; XIV-XIX, sporogony. I-III, young amœbulæ in blood-corpuscles, the last two showing the ring-form (which is, however, not quite correctly drawn). IV, older, actively amœboid trophozoite. V, still older, less amœboid trophozoite. 6, mature schizont. 7, schizont with nucleus dividing up. 8, young rosette stage. 9, fully formed rosette stage, merozoites round a central residual mass of protoplasm containing the pigment, and blood-corpuscle beginning to break down. 10, merozoites free in the blood by breaking down of the corpuscle. VI, young, indifferent gametocyte. VIIa, male crescent. VIIb, female crescent. VIIIa and VIIIb, the gametocytes becoming oval. IXa and IXb, spherical gametocytes; in the male (IXa) the nucleus has divided up. Xa and Xb, formation of gametes; in the male (Xa) the so-called flagella or male gametes (*fl*) are thrown out—one of them is seen detached; in the female (Xb) a portion of the nucleus has been thrown out. XI, a male gamete penetrating a female gamete at a cone of reception formed near the nucleus. XII, zygote with two pronuclei in proximity. XIII, zygote in the motile stage (vermicule or oökinete). XIV, encysted zygote (oöcyst). XV, commencing multiplication of the nuclei in the oöcyst. XVI, oöcyst with numerous sporoblasts. XVII, commencing formation of sporozoites; the nucleus of each sporoblast has divided to form numerous nuclei, each of which is growing out in a little tongue of protoplasm to become a sporozoite, but a few nuclei remain behind as residual nuclei. XVIII, full-grown oöcyst crammed with ripe sporozoites; on one side the cyst has burst and the sporozoites are escaping. XIX, free sporozoites, showing their changes of form. *n*, nucleus of the parasite; *p*, melanin pigment; *fl*, flagella; *sp.bl*, sporoblasts; *r.n.*, residual nuclei; *r. p*, residual protoplasm. (Chiefly after Neveu-Lemaire, from whom the plan and arrangement of the different stages are borrowed, with slight modifications; details of the figures are founded on the figures of Grassi, Schaudinn (Leuckart's "Zoologische Wandtafeln"), Ross, and others.)

(From Lankester's "Zoology.")



Hæmamœba (*Plasmodium*) *tertianæ*, the Parasite of Tertian Fever.

a, a young form within a red blood-corpuscle; *b*, a developing pigmented form within the corpuscle; *c*, a full-grown body; *d*, a segmenting body; *e*, a degenerating form undergoing vacuolization.

(From Johns Hopkins Hospital Reports—Thayer and Hewetson.)

malarial, *a.*—**Malarial cachexia.** See ★*cachexia.*—**Malarial crescent.** Same as ★*crescent*, 4 (*e*).—**Malarial fever of cattle.** Same as *Texas fever.*

II. *n.* One who suffers from or is subject to malaria.

malariated (mā̤-lā′ri-ā-ted), *a.* [*malaria* + *-ate*² + *-ed*².] Infected with malaria.

malarigenous (mal-ā̤-rij′e-nus), *a.* [*malaria* + L. *-genus*, -producing.] Producing malaria; malarious. [Rare.]

malarin (mal′ā̤-rin), *n.* [*malar(ia)* + *-in*².] The trade-name of acetophenone-paraphenetidine citrate, $(C_2H_5OC_6H_4N:C(CH_3)C_6H_5)_3$-$C_6H_8O_7$. It is prepared by the action of acetophenone on paraphenetidine, forms a crystalline powder, and is used in medicine as a febrifuge. Also called *acetophenone-phenetidide.*

malarioid (mā̤-lā′ri-oid), *a.* [*malari(a)* + *-oid.*] Like or resembling malaria. *Syd. Soc. Lex.*

malariologist (mā̤-lā-ri-ol′ō̤-jist), *n.* Same as *malarialist.*

malarrangement (mal-a̤-rānj′me̤nt), *n.* [*mal-* + *arrangement.*] Bad, defective arrangement.

malashaganay (mä-lä-shä′ga̤-ni), *n.* [*Amer. Ind.*] Same as *fresh-water drum*, which see, under *drum*¹, 11 (*b*).

Malaspina glacier. See ★*glacier.*

malaxation, *n.* **2.** In *entom.*, with certain solitary wasps, the act of kneading or bruising with their jaws insects already stung, in order more thoroughly to paralyze them before storing them away in their burrows as food for their future young.

Malay cat. See ★*cat*¹.

Malayic (mā̤-lā′ik), *a.* [*Malay* + *-ic.*] Same as *Malay.*

Malayo-African (mā̤-lā″ō-af′ri-ka̤n), *a.* Malayan and African; connected with Malaysia and Africa. *Keane*, Ethnology, p. 331.

Malayo-Chinese (mā̤-lā″ō-chī-nēs′), *a.* Malayan and Chinese; connected with Malaysia and China. *Keane*, Ethnology, p. 333.

Malayo-European (mā̤-lā′ō-ū-rō̤-pē′an), *a.* Connected with Malaysia and Europe. *Keane*, Ethnology, p. 333.

Malayoid (mā̤-lā′oid), *a.* [*Malay* + *-oid.*] Similar to the Malays.

Malayo-Indonesian (mā̤-lā″ō-in-dō̤-nē′si-a̤n), *a.* Connected with Malaysia and Indonesia. *Keane*, Ethnology, p. 333.

Malayo-Malagasy (mā̤-lā″ō-mal-a̤-gas′i), *a.* Malayan and Malagasy; connected with Malaysia and Madagascar. *Keane*, Ethnology, p. 285.

Malayo-Papuan (mā̤-lā″ō̤-pap′ṳ̄-a̤n), *a.* and *n.* **I.** *a.* Common or relating to both Malays and Papuans.

II. *n.* One of mixed Malay and Papuan blood.

malchite (mal′kīt), *n.* [*Malchen*, Mount Melibocus, Hesse, Germany, + *-ite*².] In *petrog.*, a fine-grained to aphanitic, porphyritic, igneous rock, composed of labradorite and hornblende, with a subordinate amount of quartz. *Osann*, 1892.

malconduct (mal-kon′dukt), *n.* [*mal-* + *conduct.*] Wrong, faulty, or improper conduct; especially, maladministration of public affairs: as, *malconduct* in office.

malcontentism (mal-ko̤n-tent′izm), *n.* [*malcontent* + *-ism.*] The condition or state of being malcontent or dissatisfied.

maldigestion (mal-di-jes′tyo̤n), *n.* [*mal-* + *digestion.*] Imperfect digestion.

mal-di-gomma (mal-dē-gom′ä̤), *n.* [It.: *mal*, disease; *di*, of; *gomma*, gum, also the name of a disease.] Same as ★*foot-rot*, 2.

malduck (mal′duk), *n.* The fulmar petrel, *Fulmarus glacialis.* Also *malmarsh.*

male¹, *n.* **3.** A 'male' precious stone. In the middle ages and until quite recent times, all the darker gems, such as sapphire, ruby, and topaz, were known as 'male' gems; the lighter blue, lighter red, or lighter yellow were called 'female' gems.—**Dwarf male.** (*b*) The minute, parasitic male which is attached to the body of the ordinary hermaphrodite individual in certain cirripeds. It is supposed to secure the cross-fertilization of the hermaphrodite. See *complemental*, 2.

Malebolgian (mal-ē̤-bol′ji-a̤n), *a.* [*Malebolg(e)*, < It. *male*, fem. pl. of *malo*, evil, + *bolge*, pl. of *bolgia*, budget, + *-ian.*] Pertaining to or resembling Malebolge, the eighth circle in Dante's description of Hell.

Malebolgic (mal-ē̤-bol′jik), *a.* Same as ★*Malebolgian.*

malediction, *n.* **2.** In *anc. eccles. law*, a curse annexed to the donation of lands to churches or religious institutions against those who should violate their rights. *Cowell.*

maleducation (mal″ed̤-ṳ̄-kā′sho̤n), *n.* [*mal-* + *education.*] Faulty, imperfect education. *Emerson.*

malefactory (mal-ē̤-fak′tō̤-ri), *a.* [NL. **malefactorius*, < *malefactor.*] Ill-doing; criminal. [Rare.]

> One of the boasts of Riversley was that while the rest of the world ate and drank poison, the Grange lived on its own solid substance, defying *malefactory* Radical tricksters.
> *G. Meredith*, Adventures of Harry Richmond, xlix.

male-fern, *n.* **2.** The dried rhizome of *Dryopteris Filix-mas* of Schott, or of *Dryopteris marginalis* of Gray, used as an anthelmintic. The chaff, together with the dead portions of the rhizome and stipes, should be removed, and only such portions used as have retained their internal green color.—**Oleoresin of male-fern.** See ★*oleoresin.*

maleness (māl′nes), *n.* The character of being male. [Rare.]

> The discovery of these morphological facts does not in the least shift the old-time attribute of *maleness* as applied to the stamen or of femaleness as applied to the pistil. *L. H. Bailey*, in Science, June 5, 1896, p. 826.

mal-entendu (mäl′oṅ-toṅ-dü′), *a.* and *n.* [F. *mal*, ill, + *entendu*, understood.] **I.** *a.* Wrongly understood; mistaken.

II. *n.* A misunderstanding.

Maletra burner. See ★*burner.*

malfeasant (mal-fē′za̤nt), *a.* and *n.* [F. *malfaisant*, < *mal*, ill, + *faisant*, ppr. of *faire*, do. Compare *damage feasant.*] **I.** *a.* Doing ill; guilty of misconduct in office.

II. *n.* An ill-doer; a malefactor.

malgovernment (mal-guv′ėrn-me̤nt), *n.* [*mal-* + *government.*] Bad government; misgovernment.

malgrace (mal-grās′), *n.* [OF. *male grace*, 'bad grace.' See *mal-* and *grace.*] **1†.** Ill grace; ill favor; disfavor.—**2.** Something of ill grace or ill favor; something unbecoming.

> May these not see in us some *malgrace* which it needs the gentleness of Christ to get over and forget, some savagery of which we are not aware, some gaucherie that repels though it cannot estrange them?
> *Geo. MacDonald*, Weighed and Wanting, iv.

malice, *n.* **5.** The common dwarf mallow, *Malva rotundifolia.*—**Particular malice**, actual malevolence; positive ill-will: it is directed toward a definite person or persons and is distinguished from *legal malice*, that is, the doing of a wrongful act without spite; and from Blackstone's *universal malice*, which is intentional but not definite.

malignite (ma-lig′nīt), *n.* [*Maligne* river, Canada, + *-ite*².] In *petrog.*, a name given by Lawson (1896) to phaneric igneous rocks composed of orthoclase with ægirite-augite, biotite, sodic amphibole, nephelite, melanite, sphene, and apatite. Some varieties of malignite are rich in melanite, others in nephelite.

malik (mä'lik), *n.* [Ar.] The head man of a village in parts of India and central Asia.

About this time a letter arrived from the Prince Sultán Dániyál, reporting that (*Malik*) Ambar had collected his troops in Bidar. *Elliot*, Hist. Ind., VI. 104.

mali-mali (mä'li-mä'li), *n.* A form of chronic chorea or tic prevalent in the Philippine Islands.

malipes (mal'i-pēz), *n.* Singular of *malipedes.*

malism (mā'lizm), *n.* [L. *malus*, bad, + *-ism.*] The doctrine that the world is evil, or that, on the whole, evil prevails over good: a less extreme doctrine than pessimism.

Malism, to me a convenient expression, is acknowledged on all hands. *H. Goodwin*, Science and Faith, p. 243. *N. E. D.*

malist (mā'list), *n.* [L. *malus*, bad, + *-ist.*] One who believes that the world is bad, but not the worst possible.

Bad as things are, he does not believe that the world is getting worse and worse . . . he is a '*malist.*' *Cheyne*, Job & Solomon, p. 202. *N. E. D.*

malistic (ma-lis'tik), *a.* [*malist* + *-ic.*] Pertaining to or of the nature of malism.

malitza (mä-lit'sä), *n.* [Samoyed ?] A kind of fur coat or tunic reaching to the knees, and open only at the neck and hem, worn by the Samoyeds. It is made with the hair inside, and with mitts attached to the sleeves. See extract under ★*loupthu.*

malkuth (mal-köth'), *n.* [Heb. kingdom, < *malak*, to rule, < *melek*, king.] The tenth Sephira, forming the Adam Kadmon. See ★*Sephiroth* and ★*Adam Kadmon.*

mallagong (mal'a̤-gong), *n.* [Australian.] A native name for the Australian duck-mole or platypus, *Ornithorhynchus paradoxus:* used to some extent locally as a common name. Also, in books, *mallangong* and *mullagong.*

Malleable castings. See ★*casting.*

malleableize (mal'ẹ̄-a̤-bl-īz), *v. t.*; pret. and pp. *malleableized*, ppr. *malleableizing.* [*malleable* + *-ize.*] To make malleable, as iron or other metals. [Rare.]

malleal (mal'ẹ̄-a̤l), *a.* and *n.* [*malleus* + *-al*¹.] **I.** *a.* Of or relating to the malleus.

II. *n.* Same as *interoperculum.* *Starks*, Synonymy of the Fish Skeleton, p. 515.

malleate (mal'ẹ̄ āt), *a.* [*malleus* + *-ate*¹.] In rotifers, having the mallei stout, the manubria and unci being of equal length: as, the *malleate* type of trophi.

malleatory (mal'ẹ̄-ā̤-tō-ri), *a.* [NL. **malleatorius*, < L. *malleator*, a hammerer, < *malleare*, *v.*, hammer: see *malleate.*] Of or pertaining to a hammerer or hammering.—**Malleatory spasm** or **chorea.** Same as *malleation*, 3.

mallee² (mäl'ē), *n.* Same as *molly*³.

mallee-scrubber (mal'ē-skrub″ėr), *n.* In Australia, a name given to cattle that run wild in the mallee-scrub, or thickets of dwarf eucalyptus, *Eucalyptus dumosa* and *E. oleosa.* The brush-turkey, *Leipoa*, is similarly known as the *mallee-bird.*

mallein (mal'ẹ̄-in), *n.* [L. *malle(us)*, glanders, + *-in.*] A sterilized filtered extract of glycerin-bouillon cultures of the bacillus of glanders, containing substances from the bodies of the bacilli and their soluble products which have not been destroyed by heat.

malleh-bug (mal'e-bug), *n.* Same as *miana-bug* (which see).

mallemak, *n.* See *mallemuck.*

mallemot (mä-le-mōt'), *n.* [Cape D. *mallemót*, < *mal*, foolish, + *mot*, moth.] A name given in South Africa to a poisonous wasp.

malleotomy (mal-ẹ̄-ot'ō̤-mi), *n.* [*malleus* + Gr. *-τομια*, < *ταμεῖν*, cut.] **1.** An operation for separating the malleoli by division of the ligament which holds them in apposition.—**2.** An operation of division of the malleus in the middle ear in cases of ankylosis of the ossicles.

mallochorion (mal-ō̤-kō'ri-o̤n), *n.* [NL., < Gr. *μαλλός*, a lock of wool, + *χόριον*, membrane. See *chorion.*] In *embryol.*, the presumably primitive form of the mammalian chorion, characterized by a uniform covering of villi.

malloplacenta (mal″ō̤-plā̤-sen'tä), *n.* [NL., < Gr. *μαλλός*, a lock of wool, + NL. *placenta.*] In *embryol.*, a non-deciduate placenta corresponding to the mallochorion, that is, having uniformly distributed villi. Such a placenta occurs in many ungulates and in cetaceans.

mallotoxin (mal-ō̤-tok'sin), *n.* [Gr. *μαλλός*, lock of wool, + E. *toxin.*] Same as ★*rottlerin.*

mallow, *n.*—**Bristly-fruited mallow**, *Modiola Caroliniana*, a low plant of the mallow family with pedately cleft leaves, red flowers, and hispid-aristate carpels, found from Virginia to Florida and Texas, and also in Central and South America.—**European mallow**, *Malva Alcea* of Europe, cultivated in, and escaped from, gardens in some parts of the United States. Also called *vervain-mallow.*—**Globe mallow.** The name is applied especially to the species *Sphæralcea acerifolia*, the maple-leaved globe mallow, and *S. cuspidata*, the sharp-fruited globe mallow, of western North America.—**High mallow.** See *high-mallow.*—**Low mallow**, the dwarf mallow, *Malva rotundifolia.*—**Running mallow.** Same as *dwarf mallow:* so called from its procumbent, spreading habit.—**Swamp-mallow**, the swamp rose-mallow, *Hibiscus Moscheutos.*—**Virginia** or **Virginian mallow**, *Sida hermaphrodita.* See *Sida*, 1.—**Water-mallow**, the swamp rose-mallow.—**White mallow**, the marsh-mallow, *Althæa officinalis.*

malm, *v. t.* **2.** To mix (clay and chalk) for making bricks.

malma (mal'mä̤), *n.* [Kamchatkan.] Same as *Dolly Varden trout* (which see, under *trout*¹).

malo (mä'lō), *n.* [Fijian and Hawaiian, the paper-mulberry, a malo or girdle made from it, Maori *maro*, a girdle.] **1.** In the Fiji Islands, Hawaii, and other parts of Polynesia, the paper-mulberry, *Papyrius papyrifera.*—**2.** A cloth or girdle made from the fiber of the paper-mulberry. See *Broussonetia*, ★*kapa*, *tapa*, ★*aute*, and ★*wauke.*

malobago (mä-lō-bä'gō), *n.* [Bicol *malubago.*] Same as ★*balibago.*

malobservance (mal-o̤b-zėr'va̤ns), *n.* [*mal-* + *observance.*] Wrong observance: as, *malobservance* of the Sabbath.

malobservation (mal″ob-zėr-vā'sho̤n), *n.* [*mal-* + *observation.*] Incorrect observation; the act of seeing or observing wrongly.

Further experiment [in "crystal-gazing"] may reveal some normal explanation, while scepticism (which seldom takes the trouble to examine the alleged facts with any care) can always repose on a theory of *malobservation* and imposture. *Encyc. Brit.*, XXXII. 53.

malofrontal (mā-lō-fron'ta̤l), *a.* [L. *mala*, jaw, + *frons* (*front-*), forehead, + *-al*¹.] In *craniom.*, pertaining to both the malar and the frontal bone.

malonic (ma-lon'ik), *a.* [*mal(ic)* + *-on* + *-ic.*] Noting an acid, a colorless compound, $CH_2(COOH)_2$, found in the sugar-beet and prepared by the hydrolysis of cyanacetic acid; propanediacid. It crystallizes in triclinic plates and melts and decomposes into carbon dioxid and acetic acid at 132° C. Malonic esters and their sodium derivatives are extensively used for organic syntheses.

malorganization (mal-ôr″ga̤n-i-zā'sho̤n), *n.* [*mal-* + *organization.*] Imperfect or wrong organization.

malorganized (mal-ôr'ga̤n-īzd), *a.* [*mal-* + *organized.*] Imperfectly or wrongly organized.

Malo-Russian, *n.* **II.** *a.* Pertaining or relating to the Little-Russians.

malpais (mäl-pä-ēs'), *n.* [Sp., 'bad land': see *mal-*, *pais*, *peasant.*] The ragged surface of a lava-flow. [Southwestern U. S.]

In the old times, up to the present generation, in their trading visits to the Pimas the Hopi took the trail through Chaves Pass, an available one for them to cross the rugged *malpais* of the Mogollones. *J. W. Fewkes*, in Smithsonian Rep., 1896, p. 520.

malposed (mal-pōzd'), *a.* [*mal-* + *pose*² + *-ed*².] Badly placed; wrongly placed.

Malposed teeth are not only unsightly but prone to disease. *Encyc. Brit.*, XXVII. 417.

malpraxis (mal-prak'sis), *n.* [*mal-* + *praxis.*] Malpractice.

malt¹, *n.*—**Pale malt**, in *brewing*, malt which has been dried in a kiln, but at a comparatively low temperature, so that it has less color than yellow or amber malt.—**Slack malt**, malt which, after having been dried, has absorbed moisture from the atmosphere. It produces inferior beer, and requires to be redried before use.

Malta gray. Same as *methylene* ★*gray.*

maltan (mâl'tan), *n.* [*malt*¹ + *-an.*] The term used in organic chemistry to designate an atomic complex which is supposed to be present in the starch molecule and which gives rise to maltose and its derivatives when the starch is hydrolyzed.

maltase (mâl'tās), *n.* [*malt*¹ + *-ase.*] A ferment which causes the cleavage of maltose into two molecules of dextrose. Maltase, like lipase, has been shown to be capable of reversible action in concentrated solutions. It occurs widely distributed in both the animal and the vegetable world.

maltate (mâl'tāt), *n.* [*malt*¹ + *-ate*¹.] A compound of malt with another substance.

Maltee (mâl'tē), *a.* Same as *Maltese* (cat). *Dialect Notes*, III. iii, 193. [Colloq.]

Maltese cross. (*b*) A plant, *Lychnis Chalcedonica.* Also called *cross-of-Jerusalem.*—**Maltese lace.** See ★*lace.*

maltesite (mâl-tēs'īt), *n.* [*Maltese* (see def.) + *-ite*².] A variety of chiastolite or macle (andalusite) which is found in the crystalline schists of eastern Finland. It occurs in large nodules that exhibit a Maltese cross of the pure mineral separated by areas of impure material. See cut under *chiastolite.*

malt-grist (mâlt'grist), *n.* See the extract.

When wanted the malt is again scoured, and is ground or rather crushed in specially-constructed malt mills, which press the grains so that the hulls remain intact while the interior starch body is finely powdered. It is now termed "*malt-grist*," and it is stored in grist hoppers, where it is kept in readiness for the mash-tub underneath. *Sci. Amer.*, June 18, 1904, p. 480.

maltha, *n.* **2.** Haeckel's term for the gelatinous ground-substance or mesoglœa and contained cells of various kinds, which forms the skeletogenous layer in sponges.

malthacite (mal'thä̤-sīt), *n.* [Gr. *μαλθακός*, soft (a variant of *μαλακός*, soft), + *-ite*².] A white or yellowish clay which occurs in scales, also massive. It is related to fullers' earth.

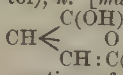
malthite (mal'thīt), *n.* [*maltha* + *-ite*².] A general term sometimes used to embrace the viscous bitumens of varying consistency, namely, maltha, mineral tar, brea, and chapapote.

Malthusianize (mal-thū'si-a̤n-īz), *v. i.*; pret. and pp. *Malthusianized*, ppr. *Malthusianizing.* [*Malthusian* + *-ize.*] To become a supporter of the doctrines of Malthus. [Rare.]

malt-jelly (mâlt'jel″i), *n.* The trade-name of an extract of malt to which isinglass, gelatin, or agar-agar has been added at a boiling temperature and the liquid gelatinized by cooling.

malto-. A combining form used in organic chemistry to designate a relation to maltose.

maltodextrine (mâl-tọ-deks'trin), *n.* A variety of dextrine or starch-gum, produced, in 'mashing' brewers' malt, as an intermediate product between starch and fermentable glucose. Its claim to be considered a distinct substance is not clearly established.

maltol (mâl'tol), *n.* [*malt*¹ + *-ol.*] A colorless compound,  $\mathrm{CH}\left\langle\begin{array}{c}\mathrm{C(OH):CH}\\ \mathrm{O}\\ \mathrm{CH:C(OH)}\end{array}\right\rangle\mathrm{CH}$ (?), formed during the roasting of malt. It crystallizes in long needles and gives a violet color with ferric chlorid.

maltometer (mâl-tom'e-ter), *n.* [*malt*¹ + Gr. *μέτρον*, measure.] A hydrometer with a special scale, used to determine the strength of brewers' wort or extract of malt.

maltonic (mâl-ton'ik), *a.* [*malt*¹ + *-on* + *-ic.*] Pertaining ultimately to malt.—**Maltonic acid.** Same as ★*gluconic acid.*

maltosazone (mâl-tōs-az'ōn), *n.* [*maltose* + *azone.*] A crystalline compound, $C_{12}H_{24}O_9(N.NH_2)_2$, prepared by the action of maltose on hydrazine acetate. The name is also used, less correctly, for *phenyl maltosazone.*

maltoside (mâl'tọ-sid), *n.* [*maltose* + *-ide*¹.] In *organic chem.*, the name of a class of compounds which are both intramolecular anhydrids and ethers. They are formed from alcohols and maltose by the action of hydrochloric acid, closely resemble the corresponding glucosides from glucose, and are hydrolyzed by certain enzyms.

malt-screen, *n.*—**Waterfall malt-screen**, a sieve or screen placed in a sloping position and having several strips of wood crossing it horizontally, by passing over which malt is cleansed from dust, rootlets, and plumules, preparatory to its use by the brewer.

maltzyme (mâlt'zim), *n.* [*malt*¹ + Gr. *ζύμη*, ferment.] A specially prepared form of diastase or malt extract.

malu (mä'lö), *n.* [*Melanesian.*] The initiation ceremonies of the Melanesians performed at the time of puberty of boys.

malum, *n.* **2.** In *pathol.*, a disease.—**Malum coxæ**, hip-disease.—**Malum perforans**, perforating ulcer of the foot.—**Malum senile.** (*a*) Arteriosclerosis. (*b*) Inflammation of the sclera in the aged. (*c*) A chronic destructive disease of one of the larger joints, usually the hip, which occurs in advanced life.

malunion (mal-ū'nyo̤n), *n.* [*mal-* + *union.*] Union of the fragments of bone in a faulty position after a fracture.

Malvaviscus (mal-va̤-vis'kus), *n.* [NL. (Adanson, 1763, adopted from Dillenius, 1732), < L. *Malva*, mallow, + *viscum*, bird-lime, in allusion to the mucilaginous or fleshy fruit.] A genus of plants of the family *Malvaceæ.* They are shrubs closely allied to *Abutilon*, from which they differ in having a 10- to 12-bracted involucre. There are from twenty to thirty species, native to warm parts of America. *M. arboreus*, known to gardeners as *Achania Malvaviscus*, is a window-garden or greenhouse plant, with alternate, shallowly 3-lobed leaves and scarlet flowers which remain nearly or quite closed and bear a projecting column of stamens.

Malvern quartzite. See ★*quartzite.*

malwa (mäl'wä), *n.* An intoxicating liquor made from ripe bananas and fermented millet. [Africa.]

mam. An abbreviation of *mammalogy.*

mamaki (mạ-mä'kē), *n.* [Hawaiian.] 1. A name in Hawaii of a shrub of the nettle family, *Pipturus albidus*, found on all the islands of the group, and one of the two principal plants from which kapa is prepared.—2. The kapa or cloth made from this plant.

mamaloi (mä-mä-lō'i), *n.* [Also *maman-loi*, < *mama*, mother, + Bantu *loi*, sorcerer.] The priestess in voodoo ceremonies. [Haiti.]

Mamamouchi (mȧ-mȧ-mö-shē'), *n.* [F., a factitious word.] A pompous title, from that supposed to have been conferred by the Sultan on M. Jourdain in Molière's play, 'Le Bourgeois Gentilhomme'; hence, one who takes such a title; an ostentatious, self-important, and ridiculous pretender.

mamane (mä-mä'nạ), *n.* [Native name.] A leguminous tree, *Sophora chrysophylla*, growing at great elevations in the Hawaiian Islands, which has pinnate leaves, racemes of pale-yellow flowers, and fruit in the form of a four-winged pod deeply constricted between the seeds. The wood is hard and durable, and is suitable for posts in building. It was used by the ancient Hawaiians for making their *oo*, or digging implements, and the *holua*, or sleds, in which they coasted down the mountain sides.

mamanite (mā'ma̤-nit), *n.* [*Maman* (see def.) + *-ite*².] A mineral closely related to polyhalite in aspect and characters, but stated to differ in the proportion of the bases. It occurs with carnallite at the salt-mine of Maman in Persia.

mamelonated (mam'ẹ-lọn-ā-ted), *a.* [*mamelon.*] Having rounded, nipple-shaped elevations on the surface.

Mameluke bit, a heavy iron bit used by the Brazilian mamelucos.—**Mameluke point,** the double-edged cutting-point of the Mameluke saber.—**Mameluke sleeve,** a fashion of sleeve worn by women in Paris under the First Empire. *N. E. D.*

mamillariform (mam-i-lā'ri-fôrm), *a.* Same as *mammilliform.*

mamma², *n.*—**Supernumerary mammæ,** breasts in excess of the normal number. They may be situated near the natural ones, or may be found in the axilla, groin, or abdominal wall. Also called *accessory mammæ.*

mammæform, *a.* An erroneous form for *mammiform.*

mammalgia (ma-mal'ji-a̤), *n.* [L. *mamma*, breast, + Gr. *ἄλγος*, pain.] Neuralgic pain in the breast.

mammality (ma-mal'i-ti), *n.* The state or condition of being a mammal. *J. Fiske.*

Mammary arteries, three main trunks which supply the breast, the *internal* arising from the subclavian artery, and the *superior* and *inferior external* derived from the axillary artery.

mamma-shrimp (mam'a̤-shrimp), *n.* A West Indian crab, probably of the family *Homolidæ.*

mammato-cumulus, *n.* 2. Same as *mammiform cloud* (which see, under ★*cloud*¹).

mammilla, *n.*—**Spinning mammilla,** one of the mammilliform spinnerets of a spider.

mammillaplasty (ma-mil'ạ-plas-ti), *n.* [L. *mammilla*, nipple, + Gr. *πλαστός*, < *πλάσσειν*, form.] A surgical operation for restoring a defective nipple or raising a depressed one.

mammoid (mam'oid), *a.* [*mamm*(*a*)² + *-oid.*] Pertaining to or resembling a mamma in character or shape: as, the *mammoid* process of the temporal bone of man. [Rare.]

mammoniacal (mam-ọ-nī'a̤-ka̤l), *a.* Same as ★*mammonic.*

mammonic (ma-mon'ik), *a.* [*Mammon* + *-ic.*] Related to or influenced by Mammon or worldliness. [Rare.]

mammonitish (mam'ọn-ī-tish), *a.* Resembling Mammon; worldly; avaricious. *N. E. D.*

mammular (mam'ụ-la̤r), *a.* [*mammula* + *-ar*³.] Having or consisting of mammulæ.

mammulose (mam'ụ-lōs), *a.* [*mammula* + *-ose.*] Same as ★*mammular.*

mammy, *n.* 3. Same as *stone-lugger*, 2.

mamo (mä'mō), *n.* [Hawaiian.] 1. The sickle-billed sunbird, *Drepanis pacifica*, one of the honey-suckers of Hawaii: exterminated for the sake of its yellow feathers, which were used in making feather cloaks worn by the chiefs. It was black with golden-yellow rump and lower back. See cut under *Drepanis.*—2. A cloak made wholly or partly from the feathers of this bird.

mamsell, mamselle (mam-zel'), *n.* [F. *mamselle, mamzelle*, short for *mademoiselle.*] Mademoiselle. [Colloq.]

> Put on Miss Maria's bonnet this instant, *Mamsell.* . . . I shall take care, *Mamsell*, that you return to Switzerland to-morrow. *Thackeray*, Fitz-Boodle Papers, Pref., p. 170.

man¹, *n.* 14. In Cumberland, Westmoreland, and Lonsdale, a cairn or pile of stones marking a summit or prominent point of a mountain. Compare *Low Man, High Man*, as local names for particular cairns, also applied to portions of the mountains themselves. *N. E. D.*—**Blue-sky man.** See ★*sky*¹.—**Corner man.** (*a*) One of the two end-men of a company of negro minstrels. (*b*) A loafer who hangs about street-corners. [Eng. in both uses.] (*c*) In building a camp or barn of logs, one who notches the logs so that they will fit closely and make a square corner. (*d*) One who makes a corner in stocks or commodities.—**Second man.** (*b*) In *domestic service*, a butler's first assistant, to whom, among other duties, the care of the silver is intrusted.—**The man in the street,** the ordinary man; one who takes the commonplace view of things; the type of commonplaceness.

> *The man in the street*, finding no worth in himself which corresponds to the force which built a tower or sculptured a marble god, feels poor when he looks on these. *Emerson*, Self-Reliance, Essays, 1st ser., p. 62.
>
> A Greenwich nautical almanac he has, and so being sure of the information when he wants it, *the man in the street* does not know a star in the sky.
>
> *Emerson*, Self-Reliance, Essays, 1st ser., p. 83.

Third man, in *cricket.* (*a*) A fielder who stands beyond point, but farther from the wicket, and more behind it. (*b*) His position in the field.—**Ward man,** a police officer detailed as a detective in the service of his captain. The office was abolished in New York in 1894. [U. S.]—**White man.** (*a*) A man of the Caucasian race. (*b*) An honest, upright man. [Slang, U. S.]

man² (mân), *n.* [Per. *mān*, Hind. *mān*, usually *man*, Skt. *māna*, a measure, a weight, < √*mā*, measure: hence E. *maund.*] A measure of weight in Persia, varying in value, in different localities, from about 6 to about 25 pounds.

Man., Manit. Abbreviations of *Manitoba.*

mana¹ (mä'nä), *n.* [Jap. *mana*, the true or real characters, from *ma*, just, true, perfectly, exactly, + *na*, name.] The Chinese characters as used by the Japanese.

> Chinese characters have been adopted by only one people with an agglutinative language, the Japanese, who along with these characters (*Mana*) use another method of writing (Kana), which is syllabic.
>
> *Deniker*, Races of Man, p. 141.

mana² (mä'nä), *n.* [Maori and Tahitian *mana*, authority, influence; Samoan and Hawaiian *mana*, supernatural power, etc.: a word common to many Polynesian and Melanesian languages.] 1. Power in general; authority; influence. [New Zealand.]—2. Magical or supernatural power.

> A degraded and conventionalised representation of a bird, probably of the sacred bird of the West Pacific, the frigate bird, which possesses *mana* (spiritual or magical power) in an eminent degree.
>
> *Nature*, May 14, 1903, p. 36.

manaca, or **manacaa** (mä'na̤-kä'), *n.* [Tupi.] In Brazil, the name of a shrub belonging to the solanum family, *Brunfelsia Hopeana*, the tough woody root of which is used as a remedy for rheumatism and syphilis. See ★*Brunfelsia.*

manada (mä-nä'dä), *n.* [Sp.] A Spanish term for a herd of cattle or drove of sheep; adopted to some extent in California and southern Texas.

managemental (man-ạj-men'ta̤l), *a.* [*management* + *-al*¹.] Relating to management or to the management; of the nature of management. [Rare.]

managerially (man-ạ-jē'ri-a̤l-i), *adv.* In the manner of a manager; in the capacity of a manager.

manal (mā'na̤l), *a.* [L. *man*(*us*), hand, + *-al*¹.] Of or pertaining to the manus or hand.—**Manal formula,** in *zoöl.*, a statement of the distance between the distal ends of the second to fifth metacarpals of a bat, measured when the wing is extended as in flight.

mañana (män-yä'na̤), *n.* and *adv.* [Sp., the morning, the morrow; < L. *mane*, the morning.] I. *n.* To-morrow: used as a synonym of easy-going procrastination.

> Six hours [to wait]! What difference did it make? There was a flavor of the *mañana por la mañana* of the Spaniards . . . in the acceptance of the situation that appealed to me.
>
> *F. Hopkinson Smith*, A Pot of Jam, in At Close Range, [p. 243.

Land of Mañana, the land of To-morrow: applied to any region characterized by the easy-going procrastination of its inhabitants; a land where the Spanish disregard of the value of time prevails.

> A lethargic sloth beyond that of sluggish ox or somnolent swine, which was an irritating marvel to the patient padres of the eighteenth century, and is to-day a byword in the even-tempered *land of Mañana.*
>
> *Pop. Sci. Mo.*, March, 1902, p. 421.

II. *adv.* On the morrow; to-morrow; on any future day; by and by.

> "Lazzarillo," despairingly, "order the horses, it is time to go."
>
> "Oh! *mañana*, señora; we go *mañana.*"
>
> "But the luggage?"
>
> "Oh! aie, *mañana*," murmured Lazzarillo, provokingly, putting off the evil day.
>
> *S. J. Cunningham*, Through the Byways of Andalusia, v.

mananguete (mä-nän-gā'tā), *n.* [Philippine Sp.] A person who sells tuba, a drink made of palm-sap. [Philippine Is.]

mananosay (man-a-nō'sā), *n.* Same as *maninose.*

manarvel (mạ-när'vẹl), *v. t.* Same as *manavel.*

Manasquan formation. See ★*formation.*

manazo (mä-nä'zō), *n.* The Japanese name of a small shark, *Mustelus manazo*, of the family *Carchanidæ.*

man-breasted (man'bres″ted), *a.* Presenting a human appearance as far as the breast or upper part of the body is concerned, as the merman.

> And in the light the white mermaiden swam,
> And strong *man-breasted* things stood from the sea,
> And sent a deep sea-voice thro' all the land.
>
> *Tennyson*, Guinevere, l. 244.

man-broker (man'brō″kėr), *n.* A sailors' boarding-house keeper; a sailors' shipping-agent.

mancala (män'ka̤-lä), *n.* [Ar. *manqala*, a game played with 72 small shells on a board of 12 holes, lit. 'place of transferring or moving' (compare the meaning of *draughts*, lit. 'moves'), < *ma-*, a prefix forming nouns of place and time, + *naqala*, transfer, remove.] A game played on a board containing two or more rows of cup-shaped holes in which pebbles are placed and transferred from hole to hole according to certain rules. The game has been carried by the Arabs over the greater part of Africa and eastward to the Malay Archipelago. It is known locally as *naranj* (Maldive Islands); *chanka* (Ceylon); *chongkak* (Malay Peninsula); *poo* (Liberia); *chuncajon* (Philippine Islands); *gabatta* (Abyssinia); *abangah* (Niam Niam); *wawe* (West Indies); *chuba* (as published and played in the United States).

Mancalias (man-kā'li-as), *n.* [NL., irreg. < L. *mancus*, defective, + *-alias*, "a quasi-diminutive termination to correspond with *Ceratias.*"] A genus of fishes of the family *Ceratiidæ*, inhabiting the open seas, usually at considerable depths.

Manchester cotton. See *Kendal* ★*cotton.*

Manchesterism (man'ches-tėr-izm), *n.* The economic philosophy and policy of the so-called *Manchester school*; especially, the principles of free trade and *laissez-faire.* *Kidd*, Western Civilization, p. 23.

Manchurian subregion. See ★*subregion.*

mancinism (man'si-nizm), *n.* [It. *mancinismo*, < *mancino*, left-handed, < *manco*; left-handed, maimed, defective, < L. *mancus*, defective.] Left-handedness or left-sidedness.

> It seems that sufficient care has not yet been taken to determine what constitutes left-handedness. The relative strength of the two hands is not enough to decide this, for *mancinism*, or left-sidedness, is a matter of relative skill as well as of relative strength.
>
> *H. H. Ellis*, The Criminal, p. 110.

mancipant (man'si-pant), *n.* [L. *mancipans* (*-ant-*), < *mancipare*, deliver. See *mancipate* and *mancipation.*] One who disposes of property by mancipation; a mancipator.

mancipatio (man-si-pā'shi-ō), *n.* [L.] Same as *mancipation*, 1.

mancipative (man'si-pā-tiv), *a.* [*mancipate* + *-ive.*] In *Rom. law*, having the character of mancipation (which see); mancipatory.

> A *mancipative* will was executed by the same process.
>
> *Poste*, Gaius, II. § 103.

mancipator (man'si-pā-tọr), *n.* [L. *mancipator*, < *mancipare*, deliver. See *mancipate* and *mancipation.*] In *Rom. law*, one who disposed of property by mancipation; a mancipant.

> Mancipation . . . is an imaginary sale which is only within the competence of Roman citizens, and consists in the following process: in the presence of not fewer than five witnesses, citizens of Rome above the age of puberty, and another person of the same condition, who holds a bronze balance in his hands and is called the balance holder, the alienee holding a bronze ingot in his hand, pronounces the following words: This man I claim as belonging to me by right quiritary and be he purchased to me by this ingot and this scale of bronze. He then strikes the scale with the ingot, which he delivers to the *mancipator* as by way of purchase money.
>
> *Poste*, Gaius, I. § 119.

mancipee (man-si-pē'), *n.* [Irreg. *mancip*(*ate*)

+ *-ee*1.] The purchaser of property by mancipation, or the executor of a mancipatory will.

mancipium (man-sip′i-um), *n.* [L. See *mancipate.*] In *Rom. law*, the power over a freeman acquired by mancipation, that is, exercise of the paternal power to sell a son. The son then came into a condition similar to that of a slave, but to the purchaser alone. The transaction could be only among Roman citizens.

Bondage was an institute of the Civil law, slavery of the law of nations. [The custom did not exist in Justinian's time.] *Poste*, Gaius, pp. 30, 85.

Mandaic (man-dā′ik), *a.* Same as *Mandæan.*

mandant, *n.* **II.** *a*†. Commanding; ordering: chiefly in the phrase *member mandant*, the brain, as the controller of the body.

mandarah (man′dạ-rä̤), *n.* [Ar. *mandarah*, place of seeing, ‹ *nadara*, see.] In some Oriental countries, a reception-room.

mandarin, *n.* **6.** Same as *mandarin orange* (which see, under *orange*1).

mandarinize (man′dạ-rin-īz), *v. t.*; pret. and pp. *mandarinized*, ppr. *mandarinizing.* [*mandarin* + *-ize.*] To raise to the position of mandarin; make a mandarin of. [Rare.]

mandarinship (man′da-rin-ship), *n.* [*mandarin* + *-ship.*] The office, authority, or rank of mandarin.

mandate (man′dāt), *v. t.*; pret. and pp. *mandated*, ppr. *mandating.* [L. *mandare*, pp. *mandatus*, commit, enjoin, command. See *mandate, n.*] **1**†. To command.—**2.** To commit (a sermon, speech, etc.) to memory by repeating (it) aloud to one's self before delivery. [Scotch.]

My father . . . flung away his life without stint every Sabbath-day, his sermons being laboriously prepared, loudly *mandated*, and at great expense of body and mind, and then delivered with the utmost vehemence and rapidity.
J. Brown, Letter to J. Cairns, 1860, in Horæ Subsecivæ, [p. 97.

mandatee (man-dạ-tē′), *n.* One to whom a mandate is given; a mandatary.

mandation (man-dā′shọn), *n.* [*mandate, v.*, + *-ion.*] The act of committing (a sermon, or speech, etc.) to memory. See ★*mandate*, 2.

mandative (man′dạ-tiv), *a.* [ML. *mandativus*, ‹ L. *mandare*, command.] **1.** Relating to or of the nature of command.—**2.** In *gram.*, noting the imperative use of the future.

mandelic (man-del′ik), *a.* [G. *mandel*, almond, + *-ic.*] Noting an acid, a colorless compound, $C_6H_5CH(OH)COOH$, prepared by the hydrolysis of bitter-almond oil or by the action of hydrochloric acid on a mixture of benzaldehyde and hydrocyanic acid. It forms large rhombic crystals, melts at 118° C., and may be resolved into its optical isomers. Also called *phenylglycolic acid* or *paramandelic acid.*

mandible1, *n.* (*e*) In polyzoans, an operculum.

mandibled (man′di-bld), *a.* Provided with a mandible or operculum, as the avicularia of certain *Polyzoa.*

An acute *mandibled* avicularium.
Annals and Mag. Nat. Hist., June, 1903, p. 591.

mandibula (man-dib′ụ̄-lạ̈), *n.* In *ichthyol.*, same as *dentary.*

Mandibular condyle, fenestra, fontanelle, foot, goniometer, index. See ★*condyle*, etc.

mandibularis (man-dib-ụ̄-lā′ris), *n.* [NL. See *mandibular.*] The masseter muscle.

mandilion2 (man-dil′yọn), *n.* [NGr. *μανδήλιον*, *μανδίλιον*, a handkerchief, *τὸ ἅγιον μανδήλιον*, 'the sacred handkerchief' of the legend; orig. identical with *mandilion*1, a garment.] A handkerchief on which, according to an ecclesiastical legend, a portrait of Jesus was painted, and which was sent by him to Abgarus, prince of Edessa. In the earliest version of the legend, that of Eusebius, the portrait is not mentioned. Three churches claim to possess the original relic, the Sainte-Chapelle at Paris, the church of San Silvestro in Capite in Rome, whence the relic was transferred to the Vatican in 1870, and the church of S. Bartolommeo in Genoa. The mandilion is not to be confused with the sudarium of St. Veronica.

man-door (man′dōr), *n.* In *mining*, a small trap-door on a traveling road.

mandragorine (man-drag′ọ̄-rin), *n.* [*mandragora* + *-ine*2.] A hydroscopic resinous alkaloid, $C_{17}H_{23}NO_3$, contained in the root of *Mandragora autumnalis* and *M. vernalis.* It melts at 77–79° C., and its salts are mydriatics.

mandragorite (man-drag′ọ̄-rīt), *n.* [*mandragora* + *-ite*2.] One who consumes mandragora as a narcotic. [Rare.]

mandrake, *n.*—**Wild mandrake.** (*a*) See *wild*1. (*b*) The enchanter's nightshade, *Circæa Lutetiana.*

mandram (man′dram), *n.* [West Indian.] A mixture, used in the West Indies as an appetizer, consisting of sliced cucumbers, chopped shallots, lime-juice, wine, and peppers. Also *mandrang.*

mandrel-press (man′drel-pres), *n.* A hand-press used to push a mandrel into a metal object for the purpose of holding it in a lathe or other machine-tool: also used to push the mandrel out again when the work is done. It is usually made as an attachment to a lathe and is sometimes a separate machine. Also called an *arbor-press.*

mandriarch (man′dri-ärk), *n.* [LGr. *μανδριάρχης*, ‹ Gr. *μάνδρα*, monastery.] The founder or head of a monastic order. *N. E. D.* [Rare.]

mandrin (man′drin), *n.* [F. *mandrin*, a mandrel, former, strike, etc.: see *mandrel.*] A stiff wire used to give shape and rigidity to a soft catheter during its introduction.

mandruka (man-drö′kạ̈), *n.* A trade-name of a kind of honeycomb-sponge of fine quality.

Honeycomb sponges are various in quality, these being known as *Mandruka*, and found in deep water, are perfect forms, and have a close fiber and no horny fibers protruding from the surface, and are characteristic for their small root. *Sci. Amer. Sup.*, Feb. 14, 1903, p. 22670.

manflight (man′flīt), *n.* The flight of a human being through the air by means of a flying- or a gliding-machine. *Aeronautic Annual*, 1895, p. 145.

manga, *n.* **2.** A cone-shaped bag for the filtration of amalgam. *Phillips and Bauerman*, Elem. of Metallurgy, p. 746.

mangan (mang′gạ̈n), *n.* [Gr. *μάγγανον*, a machine, war-engine: see *mangonel.*] Same as *mangonel.*

mangan-, mangano-. A prefix used with mineral names to indicate the presence of manganese: as, *manganapatite*, *manganosiderite*, etc.

manganandalusite (mang″gạ̈n-an-dạ̈-lū′sīt), *n.* A variety of andalusite of a grass-green color, which contains considerable manganese: found in muscovite-quartzite at Vestanå, Sweden.

manganberzeliite (mang″gan-bėr-zē′li-īt), *n.* A variety of berzeliite from Långban, Sweden, peculiar in containing both manganese and sodium.

manganblende (mang′gạ̈n-blend), *n.* Same as *alabandine.*

manganbrucite (mang-gan-brö′sīt), *n.* A massive variety of brucite which contains considerable manganese: found at Jakobsberg, Sweden.

Manganese bronze. (*b*) Same as *manganese brown.* See *brown.*—**Manganese dioxid,** the common black oxid of manganese, found in nature as the mineral pyrolusite: valuable in the manufacture of glass, steel, bleaching-powder, and in other industries. Its composition is represented by the formula MnO_2.—**Manganese peroxid,** manganese dioxid, MnO_2, also known as black oxid of manganese. As found in nature it constitutes the mineral pyrolusite. See *manganese.*—**Manganese silicate,** a compound which occurs in nature in several minerals (as rhodonite, tephroite, and bementite) and as a constituent of many more complex silicates.—**Red manganese.** (*b*) Rhodonite.

manganesious (mang-gạ̈-nē′shius), *a.* [*manganese* + *-i-ous.*] Same as *manganous.*

manganic2 (mang-gan′ik), *a.* [Gr. *μαγγανικός* (used in reference to charms), adj., ‹ *μάγγανον*, a machine: see ★*mangan.*] Relating to the form of civilization in which machinery is used: opposed to ★*naturistic*, 2.

Professor Rouleau, of Berlin, divides culture into phases which he calls '*manganic*' and 'naturistic'; the former term applies to the use of machinery and the domestication of nature's forces, the latter to that condition of culture in which the hand was aided by the simplest appliances. *Pop. Sci. Mo.*, Feb., 1902, p. 338.

manganin (mang′gạ̈-nin), *n.* [*mangan*(*ese*) + *-in*2.] An alloy of 84 per cent. copper, 12 per cent. nickel, and 4 per cent. manganese, used, generally in the form of wire, to make electrical resistance-coils, since its resistance varies little with changes of temperature.

manganite, *n.* **2.** A substance which may be viewed as a compound of manganese dioxid with the monoxid of a more basic or electropositive metal.—**Calcium manganites,** compounds which represent the product of the union of lime and manganese dioxid in different proportions. They constitute the 'Weldon mud' obtained in the process, patented by W. Weldon, for recovering manganese in available form from the still liquor of the manufacture of chlorid of lime.

manganitic (man-ga-nit′ik), *a.* Pertaining to or containing manganite.

manganocolumbite (mang″gạ̈-nọ̄-kọ̄-lum′bīt), *n.* Same as *mangancolumbite.*

manganosphærite (mang″gạ̈-nọ̄-sfē′rīt), *n.* An iron-manganese carbonate occurring in globular aggregations: found at the Louise Mine near Horhausen, Germany.

Manganous acid, a hypothetical acid, H_2MnO_3, corresponding to the manganites. It is not known as an actually obtainable substance.—**Manganous oxid,** manganese monoxid or protoxid, MnO.

manganpectolite (mang-gan-pek′tọ̄-līt), *n.* A variety of pectolite containing several per cent. of manganese protoxid: found at Magnet Cove, Arkansas.

mange2, *n.*—**Texas mange.** Same as *winter itch.*

mangel, *n.* An abbreviation of *mangel-wurzel.*

mangle2, *n.* **2.** See *plate-straightening* ★*rolls.*

mangle-padded (mang′gl-pad″ed), *a.* In *calico-printing*, noting cloth which has been saturated, or padded, with a mordant or color in a mangle.

man-god (man′god), *n.* A deity regarded as being in form or origin or in other respects a man.

The old tradition of the fish-headed *man-god* Oannes, who taught men to read and to write, and to sow, and to reap, and to build. *Nature*, Feb. 11, 1904, p. 338.

mango-fish, *n.* **2.** *Polynemus paradoxus*, a fish found in the East Indies.

mango-fool (mang′gō-föl), *n.* Mangos beaten to a pulp and mixed with cream or milk. *N. E. D.*

mangostin (mang′gọ̄-stin), *n.* [*mangost*(*een*) + *-in*2.] A tasteless golden-colored compound, $C_{20}H_{22}O_5$, contained in the husk of the fruit of *Garcinia mangostana* from India. It crystallizes in thin plates melting at 190° C.

mangrove, *n.*—**Black mangrove.** Same as ★*courida.*—**Button mangrove,** *Conocarpus erecta*: same as *buttonwood*, 1.—**Five-petaled mangrove,** *Ceriops Candolleana*, a tree which yields a medicinal bark. See *Tengah* ★*bark.*—**Four-petaled mangrove,** *Rhizophora mucronata* and *R. Mangle.* See *Rhizophora* and *mangrove*, 1.—**Mangrove grouper.** See ★*grouper.*—**Many-petaled mangrove,** *Bruguiera gymnorhiza.*—**Milky mangrove.** Same as ★*blinding-tree.*—**Native mangrove,** in Tasmania, a variety of *Acacia longifolia*, abundant on the sea-coast and an excellent tree for binding coast sands.—**Red-flowered mangrove,** *Lumnitzera littorea.*—**Red mangrove.** (*b*) In Australia: (1) *Bruguiera Rheedii*, a small tree which yields a good tan-bark and a hard, durable, yellowish-brown wood; (2) *Heritiera littoralis*, a tree of the family *Sterculiaceæ.* See *Heritiera* and *sundari.*—**River-mangrove,** *Ægiceras majus*, a small tree of the family *Myrsinaceæ*, which grows on swampy shores from India and Ceylon to China, the Philippine Islands, and northern Australia. It forms impenetrable thickets like the common mangrove.

mangrove-fly (mang′grōv-flī), *n.* A West African fly of the genus *Glossina*, a tsetse-fly.

The genus Tabanidæ, to which "hippo" and "*mangrove*" *flies* belong, has a wide distribution, which extends all over the country and along the Nile, and in no way agrees with that of sleeping sickness. The bite of these flies is, however, severe, and they may be regarded as possible carriers of disease.
Jour. Trop. Med., Nov. 2, 1903, p. 343.

mangrove-minnow (mang′grōv-min″ō), *n.* See ★*minnow.*

Manhattanese (man-hat-ạ̈n-ēs′), *a.* and *n.* [*Manhattan* + *-ese.*] **I.** *a.* Of or pertaining to the island of Manhattan (New York) or to its inhabitants.

Unlike most "stellar vehicles," however, "Her Own Way" is very far from being a one-part piece. It brings together a number of highly piquant *Manhattanese* types of to-day, sketched with captivating drollery.
The Forum, Jan.–March, 1904, p. 410.

II. *n.* **1.** One who lives upon the island of Manhattan.—**2.** The characteristic phraseology of a New-Yorker.

manhole (man′hōl), *v. i.*; pret. and pp. *manholed*, ppr. *manholing.* To enter or use a manhole, as for the purpose of examining or repairing machinery. [Nonce-word.]

"Mister McAndrews, dont you think steam spoils romance at sea?"
Damned ijjit! I 'd been doon that morn to see what ailed the throws,
Manholin', on my back—the cranks three inches from my nose. *R. Kipling*, McAndrew's Hymn, l. 147.

manhole-plate (man′hōl-plāt), *n.* The cover of a manhole.

manhole-ring (man′hōl-ring), *n.* A ring, usually of steel or wrought-iron, riveted to a boiler-shell around a manhole to strengthen and stiffen the shell at that point and form a flat surface for the joint with the lid.

mania, *n.*—**Alcoholic mania,** delirium tremens.—**Mania mitis,** delirium.—**Reasoning mania,** paranœa.

manic (mā′nik), *a.* [Gr. *μανικός*, mad, insane, ‹ *μανία*, madness: see *mania.*] Relating to or affected with mania. *Buck*, Med. Handbook, V. 120.

Manicaria (man-i-kā'ri-ạ̈), *n.* [NL. (Gaertner, 1791), < L. *manicæ*, sleeve, glove, gauntlet; from the appearance of the spathes.] A genus of palms. It contains but one species, *M. saccifera*, the bussu of the Brazilian natives, which is found from the Amazon region to Central America. See *bussu-palm*.

manic-depressive (mā″nik-dẹ̄-pres'iv), *a.* Both manic and melancholic: noting a form of insanity in which mania and melancholia alternate. *Baldwin*, Dict. of Philos. and Psychol., II. 393.

manicurist (man'i-kūr-ist), *n.* [*manicure* + *-ist.*] One who practises manicure; a manicure.

> The surgeons, though they had ceased to rank with *manicurists* and barbers, were often little better than bone-setters. *Nature*, July 26, 1900, p. 294.

manifest, *n.*—**Master's manifest** (*naut.*), the document, signed by the master and submitted to the customs authorities, showing to what port the cargo is destined, and giving an itemized account of it, and the names of the shippers and consignees.

manifestational (man″i-fes-tā'shọn-ạl), *a.* Of, pertaining to, or of the nature of manifestation.

manifold¹, *n.* **5.** In *math.*, given a general conception capable of various determinations or determination-modes, the totality of the determinable particulars is a *manifold*, of which each is an element. The manifold is continuous or discrete, according as the passage from one determination to another is continuous or discrete.

> Now since every point of the colour *manifold* is completely determined by three magnitudes which are given in fact and cannot be arbitrarily chosen, it is plain that measurement by superposition—involving, as it does, motion, and therefore change in these determining magnitudes—is totally out of the question. *B. A. W. Russell*, Foundations of Geom., p. 67.

6. Same as ★*manifold-valve.*—**Algebraic manifold,** one whose elements combine by an addition which is associative and commutative.—**Infinite manifold,** one that is equivalent to a part of itself.—**Numerable manifold,** a manifold between which and the whole or a part of the scale of natural numbers a one-to-one correspondence can be established.—**Ordered manifold,** a manifold arranged in order by a definite criterion.—**Progressive manifold,** an ordered manifold in which (1) there is one element anterior to all the rest; and (2) every element x is followed by a definite next element x', so that $x < x'$ and no element falls within the interval (x, x').—**Self-constituted manifold,** a manifold wherein only the properties which the elements represent are used to define the relations between elements. The manifold of integral numbers is self-constituted, since all relations of such numbers can be defined in terms of them.—**Uniform manifold,** one in which each element bears the same relation as any other element to the manifold considered as a whole. The perimeter of a circle, the points being elements, forms a uniform manifold, but not the surface of a circle.

manifold² (man'i-fōld), *n.* [Also *mannifold*, *manifolds*; *many* + *fold*¹, *n.*] The third stomach of a ruminant; the manyplies; the intestines generally. [Eng. dial.]

manifolder (man'i-fōl-dėr), *n.* Any contrivance, such as a manifold-writer, for making a number of facsimile copies of a document, a sketch, or the like, at one time; also, the person who uses such a contrivance for this purpose.

manifold-valve (man'i-fōld-valv″), *n.* A number of valves combined in one valve-body or -chamber. Each valve has a separate opening below it to which a pipe can be connected, but the chamber above the valves is common to all. Usually called *manifold*.

manigraphy (ma-nig'rạ-fi), *n.* [Gr. *μανία*, madness, + *-γραφια*, < *γράφειν*, write.] The description of the various forms of insanity.

man-in-the-ground (man'in-thẹ̈-ground″), *n.* Same as *wild* ★*gourd* (*b*).

maniple, *n.* **5.** In the middle ages, a garment worn under the armor.

manism (mā'nizm), *n.* [L. *man*(*es*) (see *manes*, 1) + *-ism.*] The worship of the manes or shades of the dead. *G. S. Hall*, Adolescence, II. 179.

Manisuris (man-i-sö'ris), *n.* [NL. (Linnæus, 1771), < Gr. *μανός*, loose, scanty, + *οὐρά*, tail. The allusion is to the character of the inflorescence.] A genus of grasses. See *Rottbœllia*.

Manitoban (man-i-tō'bạn), *a.* and *n.* **I.** *a.* Of or pertaining to Manitoba.

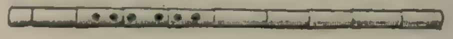
II. *n.* An inhabitant of Manitoba.

manitoism, manitouism (man'i-tō-izm, -tö-izm), *n.* Same as ★*demonism*, 2.

manitology (man-i-tol'ọ̄-ji), *n.* [*manit*(*o*) + *-ology.*] The study of manitos.

> We should do great injustice to the Indian character, not to mention by far the most prominent of their beliefs, so far as they govern his daily practices. We allude to the doctrine of Manitoes, or what may be denominated *Manitology*. *Schoolcraft*, Ind. Tribes of U. S., I. 36.

manjairah (man-jī'rạ̈), *n.* [Syrian.] A Syrian direct flute with six holes.



Manjairah.

manjak (man'jak), *n.* [West Indian.] A variety of bitumen found in Uvalde county, Texas, and in Barbados. *Smithsonian Rep.*, 1889, p. 445.

manjee (man'jē), *n.* [Also *manjie*, *mangee*, *maungee*; < Hind. *mānjhī*, Beng. *mājī*, *māghī*, lit. 'one who stands in the middle,' < Skt. *madhya*, middle. See *mid*¹.] The master, or steersman, of a boat or any native river-craft; also a title borne by the head men among the Paharis or Hill-people of Rajmahal. *Yule and Burnell*, Hobson-Jobson.

> The principal Gaut *mangies* of Calcutta have entered into engagements at the Police Office to supply all persons that apply there with boats. *India Gazette*, Feb. 17, 1781.

manjua (män-hö'ä), *n.* [Cuban, of native origin.] Same as *striped* ★*anchovy*.

manjuari (män-hö-ä-rē'), *n.* [Cuban, of native origin.] Same as *alligator-gar* (which see, under *gar*¹).

mankalah, *n.* See ★*mancala*.

manlid (man'lid), *n.* The cover of a manhole of a steam-boiler. [British.]

manlihood (man'li-hụd), *n.* Manliness. *N. E. D.* [Rare.]

Mannaheim (män'ạ̈-hīm), *n.* [Icel. **Manna heim*, 'home of men,' *Mannheimar*, pl. 'homes of men.'] In *Norse myth.*, the earth.

manna-insect (man'ạ̈-in″sekt), *n.* A scale-insect, *Gossyparia mannifera* (formerly known as *Coccus manniparus*), which lives on the tamarisk and has been fancied to have produced the manna of the children of Israel.

mannan (man'ạ̈n), *n.* [*manna* + *-an.*] A colorless compound, or mixture of compounds, found in the seeds of certain leguminous and other plants and in the tubers of several orchids. It constitutes a reserve food of the plant, and is readily converted into mannose by the action of soluble ferments.

mannane (man'ān), *n.* [*manna* + *-ane.*] Same as ★*mannan*.

manna-oak (man'ạ̈-ōk), *n.* See ★*oak*.

manneotetrose (man″ẹ̄-ọ̄-tet'rōs), *n.* [*manna* + Gr. *τέτρα-*, four, + *-ose.*] A sugar, $C_{24}H_{42}O_{21}$, obtained from manna. It forms small monoclinic crystals. Also called *stachyose*.

manneristic (man-ėr-is'tik), *a.* [*mannerist* + *-ic.*] Characterized by mannerism.

> I have much to say on the danger which (I think) at present besets the Apostolical movement of getting peculiar in externals, i.e. formal, *manneristic*. *J. H. Newman*, Letters, II. 237.

mannersome (man'ėr-sum), *a.* Mannerly. [Eng. dial.]

> Mary was obliged to bite her tongue to keep it in any way *mannersome*; when the door was thrown open, and in came her mother. *R. D. Blackmore*, Cripps, xxviii.

mannid (man'id), *n.* [Also *mannide*; *manna* + *-id*¹.] One of a class of organic substances which occur widely distributed in the vegetable world and on decomposition yield mannite, $C_6H_{14}O_6$.

mannie (man'i), *n.* [Dimin. of *man.*] A little man; a boy. [Scotch.]

> "Well, *mannie*," he added, "it's nane of my affairs; but ye seem a decent-spoken lad." *R. L. Stevenson*, Kidnapped, ii.

mannitan (man'i-tạn), *n.* [*mannite* + *-an.*] The name of two compounds, $C_6H_{12}O_5$. They are formed by prolonged boiling of mannite with concentrated hydrochloric acid, and are distinguished as *amorphous* and *crystalline*. The former is semisolid and feebly dextrorotatory; the latter forms monoclinic tables and is strongly levorotatory.

mannitic, *a.* **2.** Pertaining to mannitic acid or manna.—**Mannitic acid,** a strongly acid syrupy compound, $C_6H_{12}O_7$, prepared by the oxidation of mannite. It reduces silver and copper salts in alkaline solution when warmed.

mannitine (man'i-tin), *n.* [*mannite* + *-ine*².] A colorless liquid, $C_6H_8N_2$, prepared by the distillation of a mixture of mannite and ammonium chlorid. It boils at 170° C.

mannoheptite (man-ọ̄-hep'tīt), *n.* [*manna* + Gr. *ἑπτά*, seven, + *-ite*².] Same as ★*perseite*.

mannoheptose (man-ọ̄-hep'tōs), *n.* [*manna* + Gr. *ἑπτά*, seven, + *-ose.*] The name of three stereomeric compounds. The i-derivative is a colorless syrup, $C_7H_{14}O_7$, prepared from the corresponding mannoheptonic anhydrid. It is not fermentable with beer-yeast.

mannonic (ma-non'ik), *a.* [*manna* + *-one* + *-ic.*] Noting an acid, a hypothetical compound, $C_6H_{12}O_7$, known only in the form of its anhydrid and salts. Three stereomeric substances with this name are known. The d-derivative, which is the most important, is prepared by the oxidation of mannose.

mannononose (man-ọ̄-non'ōs), *n.* [*manna* + *-one* + *-ose.*] A colorless dextrorotatory carbohydrate, $C_9H_{18}O_9$, prepared by the reduction of mannonic anhydrid. It forms small crystals melting at about 130° C.

manno-octose (man-ọ̄-ok'tōs), *n.* [*manna* + Gr. *ὀκτώ*, eight, + *-ose.*] A colorless syrupy carbohydrate, $C_8H_{16}O_8$, prepared by the reduction of manno-octoic anhydrid.

mannose (man'ōs), *n.* [*manna* + *-ose.*] The name of three stereomeric compounds, C_6H_{1}-O_6. The dextro-derivative is found in groundnuts and is prepared by the oxidation of mannite.

mano (mä'nō), *n.* [Sp., lit. 'the hand,' < L. *manus*, the hand.] A cylindrical stone, slightly tapering to each end, used for grinding grain or cocoa. See also ★*metate*.

> The grinding-stone concordantly changes from a simple roller or crusher to a *mano* (or muller), and finally to a pestle, at first broad and short, but afterwards long and slender. *Smithsonian Rep.*, 1899, p. 37.

manoao (mä-nō-ä'ō), *n.* [Maori.] A small tree of the yew family, *Dacrydium Colensoi*, yielding a hard, close-grained yellowish-brown wood. Called also *New Zealand yellow pine* and *tarwood*.

manœuver, *n.*—**Gridiron manœuver** (*naval*), a British tactical manœuver of a fleet in double column, in which the ships in each column turn inward simultaneously and pass through the intervals between the ships of the other column, then again turn simultaneously, thus forming double column in the inverse order.

manograph (man'ọ̄-gráf), *n.* [Gr. *μανός*, rare, thin (see *manometer*), + *γράφειν*, write.] A device in which a beam of light, moving over a ground-glass screen, shows the pressure in the cylinder at any point of the stroke for a given engine: used on high-speed engines, as of motor-cars, which are too small for ordinary indicators.

Manometabola (man″ọ̄-me-tab'ọ̄-lạ̈), *n. pl.* [NL., < Gr. *μανός*, thin, + *μεταβολή*, change.] In *entom.*, a division of Packard's *Heterometabola* including those insects which undergo a slight or gradual metamorphosis but which are active in all stages. It includes the *Orthoptera*, *Dermaptera*, *Platyptera*, *Thysanoptera*, and *Hemiptera* (the *Coccidæ* excepted).

manometer, *n.* **2.** In *physiol.*, an instrument used for determining blood-pressure.

> Hürthle's differential *manometer* has proved to be an instrument of great value and precision. A double-bored tube cannula is introduced so that one tube reaches the right auricle and the other the right ventricle. In observations on the left side of the heart, one tube is placed in the left ventricle and the other in the aorta, and each of these tubes is brought in connexion with a tambour. *Encyc. Brit.*, XXXI. 733.

Regnault manometer, a form of manometer in which any desired adjustment of the mercury is effected by means of a three-way cock.

Manometric unit. See ★*unit*.

manorrin (ma-nor'in), *n.* [Ojibway name.] The wild rice, *Zizania aquatica*.

manostat (man'ọ̄-stat), *n.* [Gr. *μανός*, rare, thin, + *στατός*, verbal adj. of *ἱστάναι*, stand. See *static*.] A device for keeping constant the pressure of the gas in some apparatus; a pressure regulator. *Jour. Phys. Chem.*, Feb., 1907, p. 107.

manque (mańk), *n.* [F., a lack.] In *roulette*, one of the numbers from 1 to 18.

> If he places his money on *Manque*, he is considered to wager that the ball will fall into one of the numbers from 1 to 18 inclusive. *Amer. Hoyle*, p. 376.

manquea (män-kā'ä), *n.* [Sp., < *manquear*, pretend to be maimed.] An infectious disease of young cattle existing enzoötically throughout tropical and subtropical South America. It is characterized by the formation of abscesses of the size of a walnut or a hen's egg upon the legs. The cause is a minute oval bacterium which closely resembles the bacillus of fowl-cholera.

> To Mr. O. Voges, of Buenos Ayres, is due the credit of having discovered the smallest bacillus which has yet been identified. It is much smaller than the influenza bacillus, and is only just discernible when magnified about 1500 times. These very minute rods were obtained from abscesses which cattle suffer from in South America, producing a disease known as *manquea* amongst other names. It is usually found in quite young cattle, and is easily recognisable by the characteristic lameness of one leg which it produces.
> *Nature*, March 13, 1902, p. 445.

manqueta (män-kā′tä), *n.* [Also *maquata*; W. African.] The native name for a fossil gum-resin found in Angola. It resembles copal gum.

Man-rope stanchion. See ★*stanchion.*

M. A. N. S. An abbreviation of *Member of the Academy of Natural Sciences.*

mansard, mansarde (man-särd′), *n.* [F.: see *Mansard roof.*] In French, a mansard roof; a dormer-window; hence, a chamber lighted by such a window; a chamber in the roof: in English used in all these senses. See *Mansard roof*, under *roof*^{1}.

man's-motherwort (manz′muᴛʜ″ėr-wėrt), *n.* The castor-oil bean, *Ricinus communis.*

mant (mant), *v. i.* and *t.* [Origin obscure.] To stammer. [Scotch.]

manta, *n.* 5. A wrap of black cloth, cashmere, or silk extensively worn by women on the west coast of South America, especially in the forenoons and to church and funerals. It is worn less now than formerly, when it was in general use on the streets.

Mantchu, *n.* and *a.* See *Manchu*^{1}.

mantel, *n.* 4. In *geom.*, lateral surface: as, the *mantel* of a frustum.—**Mantel figures**, statuettes or figurines for the decoration of mantels or small apartments; commonplace and commercial sculpture.

manteltree, *n.* 2. Same as *mantelpiece. N. E. D.*

mantic, *a.*—**Mantic bees**, bees supposed to have prophetic power. Bees played an important part in Greek mythology and in the oracles.

> In the Homeric Hymn to Hermes we get a seeming personification of *mantic bees* in the neighborhood of Delphi. *A. B. Cook*, in Jour. Hellenic Studies, XV. 7.

II. *n.* Divination; an object used in divination.

> In these eight lectures are discussed, first, the methods of religious psychology and various views concerning the essence of religion, its development and diverse forms, subjective faith and the specific utterances of faith, offerings, vows, castigations, sacramental acts and objects, *mantics*, revelations, prayer, symbols and symbolic acts, religious art, presentations in words, doctrine, dogma and free knowledge, religious ethics and religious communities.
> *Amer. Jour. Relig. Psychol. and Education*, May, 1904, [p. 107.

manticoceran (man-ti-kos′ẹ-ran), *a.* Relating or belonging to the genus *Manticoceras.*

Manticoceras (man-ti-kos′ẹ-ras), *n.* [NL., < Gr. μαντικός, prophetic, + κέρας, horn.] A genus of nautiloid cephalopods or goniatites with broad lateral sutural saddles which cover the principal part of the lateral surface of the whorl: characteristic of the lower Upper Devonian (zone of *Manticoceras intumescens*) and equivalent to *Gephyroceras.*

mantid (man′tid), *n.* and *a.* **I.** *n.* A member of the family *Mantidæ.*

II. *a.* Having the characters of or belonging to the orthopterous family *Mantidæ.*

mantispid (man-tis′pid), *n.* and *a.* **I.** *n.* A member of the family *Mantispidæ.*

II. *a.* Having the characters of, or belonging to, the neuropterous family *Mantispidæ.*

mantle, *n.* 2. (*d*) (3) Also, the plumage of the back and upper parts of the closed wings, which, as in gulls and terns, is often quite distinct in color from the rest of the plumage and suggests a mantle.

> Great Black-backed Gull. *Mantle* intense slate-color nearly black, with a purplish reflection.
> *Coues*, Key to North Amer. Birds, p. 743.

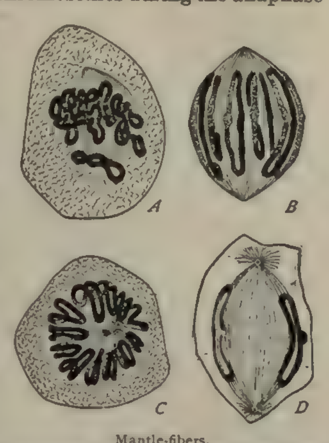
Incandescent mantle, a mantle consisting of refractory earths possessing high radiating power, rendered luminous by heating to incandescence in the flame of a Bunsen burner, as in the Welsbach light. As now made, these mantles consist of more than 99 per cent. of thorium oxid mixed with less than 1 per cent. of cerium oxid; without this admixture they would give but little light.

mantle-cavity (man′tl-kav″ị-ti), *n.* In a bivalve, the whole space included between the pallial lobes, containing the gills, visceral mass, and foot.

mantle-fibers (man′tl-fī″bėrz), *n. pl.* In *cytol.*, a bundle of delicate achromatic fibers which connect the chromosomes during the anaphase stages of karyokinetic cell-division. See *interzonal* ★*fibers.*

mantle-fusion (man′-tl-fū″zhọn), *n.* In bivalves, union of the edges of the mantle-lobes. As the result of such fusions the anal and branchial siphons and the opening for the protrusion of the foot are formed.

mantle-line (man′tl-līn), *n.* Same as *pallial line.*



Mantle-fibers.
Heterotypical Mitosis in Spermatocytes of the Salamander. (Flemming.)

A, prophase: chromosomes in the form of scattered rings, each of which represents two daughter-chromosomes joined end to end. *B*, the rings, ranged about the equator of the spindle and dividing; the swellings indicate the ends of the chromosomes. *C*, the same, viewed from the spindle-pole. *D*, diagram (Hermann) showing the central spindle, asters, and centrosomes, and the contractile mantle-fibers attached to the rings (one of the latter dividing).
(From Wilson's "The Cell.")

mantle-lobe (man′tl-lōb), *n.* In brachiopods, either the dorsal or the ventral reduplication of the body-wall, closely applied to the internal surface of the corresponding valve and containing a prolongation of the cœloma. *Parker and Haswell*, Textbook of Zool., I. 333.

mantle-rock (man′tl-rok), *n.* Residual deposits, consisting of the insoluble portions of rocks which have been exposed to the atmospheric agencies. The layer covers the more solid and unaltered rock like a mantle. Compare *laterite*, ★*regolith*, ★*saprolite.*

> It is not to be inferred, however, that any part of the *mantle rock* (soil and subsoil) now remaining in this area is necessarily millions of years old. It is possible that all products of decay in the distant past have been carried away by erosion, and that all which now remain are the product of decay within relatively recent times.
> *R. D. Salisbury*, in Geol. Surv. of New Jersey, 1897, p. 7.

manual. I. *a.*—**Manual stop.** See ★*stop*^{1}.—**Manual training-school**, a school where the pupils are taught various crafts by actual practice; also, a class or school in which the manual methods of instruction are taught.

II. *n.*—**Manual of arms.** See ★*arm*^{2}.

manualist, *n.* 2. One who teaches the deaf and dumb by means of the manual alphabet or method.

manubalist (man′ụ-bạ-list), *n.* [F. *manubaliste*, < ML. **manubalista*, < L. *manus*, hand, + *ballista, balista.* See *ballista.*] In medieval armor, a hand-weapon by which projectiles were thrown. The term includes the arbalist.

manuf. An abbreviation (*a*) of *manufacture*; (*b*) of *manufacturer*; (*c*) of *manufacturing*; (*d*) of *manufactory.*

manuka (mä-nö′kä or män′ö-kä), *n.* [Maori.] Either *Leptospermum scoparium*, a low shrub, called *white* or *scrub manuka*, or *L. ericoides*, a tree, called *red manuka.* The wood of the latter is very hard and durable and is a favorite with the natives for making spears, paddles, fishing-rods, etc. The leaves of *L. scoparium* are sometimes used as a substitute for tea, whence it is called *tea-tree.*

manul^2 (mä′nọl), *n.* [Origin obscure.] In the pearl-fisheries of Ceylon, a pearl-oyster bank which consists of soft or loose sand, as distinguished from a *paar*, which consists of rock or hard bottom. See ★*paar.*

manumitter (man-ụ-mit′ėr), *n.* One who manumits or frees; an emancipator.

> The Church was the great *manumitter* and improver of the condition of the serf in the middle ages; and in the present age religious feeling has been at the bottom of the great movement against slavery.
> *J. B. Mozley*, Eight Lectures on Miracles, vii.

manure, *n.* The advent of commercial fertilizers has made it necessary to distinguish *farm* or *natural manures* and *artificial manures.* Recent usage tends to restrict the term *manure* to the former. In scientific agriculture, only those applications are properly manures which directly supply plant-food, and those which serve mainly to improve the soil physically (as gypsum, lime, marl) are distinguished as *soil amendments* or *improvers.* This distinction affects also, to some extent, the term *fertilizer.* See *artificial* ★*manure.*—**Artificial manure**, manure provided by manufacture (as superphosphates), or by mining (as kainite), or at least requiring transportation from points where found (as guano). Chemical fertilizers are here included and materials of organic origin, such as ground bone, tankage, etc. In America these are usually termed *commercial fertilizers*, soil amendments being often included.—**Barn-yard manure.** See *farm-yard* ★*manure.*—**Chemical manure**, an inorganic fertilizer which consists of one or more chemical compounds (muriate of potash, nitrate of soda, etc.) containing a manurial ingredient.—**Cold manure**, an animal manure which ferments slowly, as that of cattle and hogs.—**Complete, normal**, or **general manure**, a fertilizer which supplies all the elements of plant-food in which soils are liable to be deficient, namely, nitrogen, phosphorus, and potassium. See ★*manurial ingredient.*—**Farm-yard, barn-yard**, or **stable manure**, the solid and liquid excrements of stock kept in and about stables, more often mixed with litter. This is a complete manure, but the ingredients are not in due proportion. The urine is more valuable than the solids.—**Fresh manure.** Same as *green* ★*manure* (*b*).—**Green manure.** (*a*) Any fresh vegetable substance, as weeds, prunings, seaweed, etc., used as a fertilizer; in recent use, chiefly, a standing crop plowed under for fertilizing. See *green* ★*manuring.* (*b*) Unfermented dung. Also called *fresh* or *long manure.*—**Liquid manure.** See *manure.*—**Long manure**, barn-yard manure which contains unrotted litter; hence, fresh manure.—**Short manure**, well-rotted barn-yard manure.—**Stable manure.** See *farm-yard* ★*manure.*

manure-fly (mạ-nūr′flī), *n.* See ★*mushroom-gnat.*

manure-sick (mạ-nūr′sik), *a.* In such a state as to receive no benefit from manuring: said of land. Apparent cases of this kind are probably due to the lack of some essential ingredient in the application. *Storer*, Agriculture, p. 47.

Manurial ingredient, constituent, or **element**, one of the substances required in a complete manure.

manuring (mạ-nūr′ing), *n.* [Verbal n. of *manure, v. t.*] The addition of any substance to the soil to increase its fertility; fertilizing.—**Green manuring**, the plowing under of a green crop, usually one sown for the purpose, to serve as a manure. Legumes (clover, cow-pea, etc.) are chiefly used, owing particularly to their nitrogen-gathering capacity; but buckwheat, rye, etc., are useful on poor soils. It is often better to harvest the legume, the root growth still enriching the soil; but this is not usually called green manure. See *ameliorating, renovating*, and *nitrogen-fixing* ★*crop.*

Manus cava, a deformity of the hand marked by a deep hollow of the palm.—**Manus valga**, a form of club-hand in which the hand is deflected to the ulnar side.—**Manus vara**, a form of club-hand in which the hand is deflected to the radial side.

manutype (man′ū-tīp), *n.* [L. *manus*, hand, + Gr. τύπος, type.] Printed matter made with letters separately impressed or formed by hand.

manutype (man′ụ-tīp), *v. t.*; pret. and pp. *manutyped*, ppr. *manutyping.* To make by hand from types, or with pen or pencil, isolated letters in imitation of print: erroneously applied to type-writing.

manward (man′wạ̈rd), *adv.* and *a.* Toward man; with regard to man.

> The correlative change in the conception of His *manward* activities and relations.
> *A. M. Fairbairn*, Philos. Chris. Relig., p. 543.

man-wise (man′wīz), *adv.* and *a.* Pertaining to or in the manner of any relation of individual to individual, rather than of group to group. *E. A. Ross*, Social Control, p. 29.

Manx penny. See ★*penny.*

many-minded (men′i-mīn″ded), *a.* Having many successive states of mind in regard to some matter, but unable to come to a decision about them; lacking in decision; vacillating.

manywhere (men′i-hwãr), *adv.* [Also formerly *maniquare, many wheres*; < *many* + *where.*] In many places. [Rare.]

> This kind of Praier . . . was *many wheres* received.
> *Jewell*, Repl. Harding, p. 483. *N. E. D.*

> Smoothed and polished rocks occur also "*manywhere*," if I may coin the word, in our northern districts, where the rocks are hard enough to receive and retain their characteristic marks.
> *Sir J. Lubbock*, Scenery of England, p. 52.

manzai (män-zī′), *n. pl.* [Jap.] Strolling ballet-singers and -dancers who go about at the beginning of the new year. *Hepburn*, Jap.-Eng. Dict.

manzana (män-thä′nạ̈), *n.* [Sp., a block of houses, a square measure.] 1. A group of houses surrounded on every side by streets; a square or block.—2. A unit, equivalent to about 1¾ acres, employed in Central America for measuring land.

manzanillo (man-zạ-nil′ō; Sp. pron. män-thä-nēl′yō), *n.* [Sp. See *manchineel.*] The common manchineel, *Hippomane Mancinella.* *C. Lumholtz*, Unknown Mexico, II. 64.

maomao (mä-ō-mä′ō), *n.* The Maori name of a New Zealand sea-fish, *Neptotichthys violaceus*, one of the *Stromateidæ.* *E. E. Morris*, Austral English.

maon, *n.* See *mahone.*

Maori. I. *n.*—**Pakeha Maori** ('foreign Maori'), a white man who lives among the Maoris and has adopted their customs.—**White Maori**, a local name for calcium tungstate or scheelite. [New Zealand.]

II. *a.*—**Maori chief.** See ★*chief.*—**Maori hen,** the weka rail, or wood-hen, a large New Zealand land-rail of the genus *Ocydromus.*

Maorian (mä-ō′ri-an̤, or mou′ri-an̤), *a.* Same as *Maori.* -**Maorian subregion.** See ★*subregion.*

Maorilander (mä′ō̤-ri-lan″dėr, or mou′ri-lan″dėr), *n.* [*Maoriland* (New Zealand) + *-er*^{2}.] A native or an inhabitant of New Zealand.

map^1, *n.*—**Cultural map.** See ★*cultural.*—**T-O map,** a map issued by the topographical office of the ordnance survey of England: a purely topographical map, containing nothing relating to land divisions. *Geog. Jour.* (R. G. S.), XV. 379.

mapau (mä′pou), *n.* [Maori.] Any one of several New Zealand trees resembling one another in foliage, especially *Myrsine Urvillei.* The name, with a descriptive adjective prefixed, is usually applied by the settlers to other trees, and is frequently corrupted into *maple.*—**Black mapau,** the tawhiri, *Pittosporum tenuifolium:* so named from the color of the bark.—**Red mapau,** the settlers' name for the mapau of the natives, *Myrsine Urvillei,* on account of the dark-red wood.—**White mapau.** (*a*) *Carpodetus serratus,* an ornamental shrub or small tree of the saxifrage family, with mottled green leaves and large panicles of white flowers. (*b*) The tarata, *Pittosporum eugenioides.* See ★*tarata.*

maple^1, *n.* 3. In New Zealand, a common settlers' corruption of ★*mapau.*—4. In Australia, *Chariessa Moorei,* the scrub silky oak (which see, under ★*oak*).—**Black maple.** (*a*) Same as *black sugar-maple.* (*b*) The sugar-maple.—**California maple,** the broad-leaved maple.—**Creek maple,** the silver maple, *Acer saccharinum.*—**Cut-leaved maple.** (*a*) Any horticultural form of the silver maple, or other species of maple with dissected leaves. (*b*) The box-elder, *Acer Negundo.*—**Drummond's maple,** *Acer Drummondii,* of the coast region from New Jersey to Texas: by some regarded as a subspecies of *A. rubrum.*—**European maple** or **field-maple,** the common European maple, *Acer campestre.*—**Ground maple,** *Heuchera villosa,* an herb of the eastern United States which has hairy stems and leaves shaped like those of the maple. Also called *American sanicle.*—**Guelder-rose maple,** the maple-leaved arrow-wood, *Viburnum acerifolium.*—**Hard maple.** (*b*) The black sugar-maple.—**Low maple,** the mountain-maple.—**Maple-leaf-cutter.** See ★*leaf-cutter.*—**Moose-maple,** the mountain-maple.—**Northern maple,** the dwarf maple.—**Oregon maple,** the broad-leaved maple.—**Red River maple.** (*a*) The silver maple. (*b*) The box-elder.—**River-maple,** the silver maple.—**Rocky Mountain maple,** the dwarf maple.—**Shoe-peg maple,** the red maple: so called from the use of its wood for shoe-pegs.—**Sugar-maple.** (*b*) A local name in some places for the box-elder.—**Swamp-maple.** (*b*) The silver maple. (*c*) The mountain-maple.—**Vine-maple.** (*b*) The Canada moonseed, *Menispermum Canadense.*—**Water-maple.** (*a*) See *water-maple.* (*b*) The silver maple. (*c*) The mountain-maple.—**White maple.** (*a*) See *white*^{1}. (*b*) The red maple: so called from its white wood. Compare *shoe-peg* ★*maple.*

maple-aphis (mā′pl-ā″fis), *n.* One of several species of plant-lice, as *Pemphigus acerifolii,* which infest the leaves of the maple.

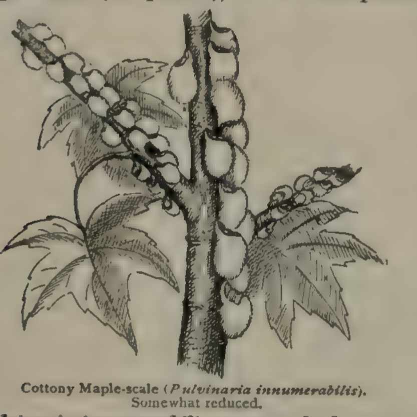
maple-ash (mā′pl-ash), *n.* The ash-leafed maple, *Acer Negundo.*

maple-blight, *n.* See ★*blight.*

maple-borer, *n.* Besides the species mentioned are the following: (*a*) A cerambycid beetle, *Glycobius speciosus.* (*b*) Any one of several horntail borers of the family *Uroceridæ,* as *Xiphydria albicornis* and *Oryssus sayi.* (*c*) The larva of a buprestid beetle, *Dicerca divaricata.* (*d*) Any one of several scolytid beetles, as *Xyloterus politus* and *Corthylus punctatissimus.* (*e*) A calandrid beetle, *Stenoscelis brevis.* (*f*) A ptinid beetle, *Xestobium affine.* (*g*) The larva of the leopard-moth, *Zeuzera pyrina.*—**Beautiful maple-borer,** an American cerambycid beetle, *Plagionotus speciosus,* black in color and banded with yellow. Its larvæ bore in the trunk of the sugar-maple.

maple-louse (mā′pl-lous), *n.* A plant-louse that infests the maple.—**Woolly maple-louse,** an American aphidid, *Pemphigus acerifolii,* occurring abundantly on the leaves of the maple and secreting an abundance of white wool-like wax.

maple-scale (mā′pl-skāl), *n.* 1. The species, *Pulvinaria innumerabilis,* commonly known as the *cottony maple-scale.*—2. *Aspidiotus tenebricosus,* a destructive diaspine coccid.



Cottony Maple-scale (*Pulvinaria innumerabilis*).
Somewhat reduced.

maple-worm (mā′pl-wėrm), *n.* Any one of several lepidopterous larvæ which defoliate maple-trees.—**Green-striped maple-worm,** the larva of an American ceratocampid moth, *Anisota rubicunda,* occurring abundantly in the northern Mississippi valley and the eastern United States, where it feeds on the leaves of species of maple. See *Anisota,* with cut.

mapo (mä′pō), *n.* [Cuban Sp.] Same as *sleeper*^{1}, 8 (*c*).

mappy (map′i), *a.* [*map*^{1} + *-y*^{3}.] Having the appearance of a map; in *pathol.,* noting the condition called *geographical tongue.*

maquahuitl (mä-kwä-hwē′tl), *n.* [Nahuatl *maitl,* hand, + *quauitl,* stick, tree.] A sword-like weapon of wood the edges of which are set with sharp flakes of obsidian.

maquata, *n.* [W. African.] Same as ★*manqueta.*

maquette (mä-ket′), *n.* [F., < It. *macchietta,* dim. of *macchia,* a spot, < L. *macula,* a spot: see *macula.*] The first sketch, in wax or clay, from which a work in sculpture is elaborated. Wax maquettes are often employed by painters in arranging compositions.

> M. J. B. E. Detaille has, after a long delay, executed four *maquettes,* each comprehending three large panels.
> *Athenæum,* Jan. 24, 1903, p. 122.

maqui^2 (mä′kwē), *n.* [It. dial.] A tract of land on the shores of the Mediterranean, especially in Corsica, characterized by a silicious soil and occupied by a sclerophyllous vegetation more luxuriant and taller than that of the garrigues, but mainly bush, with a few trees, in France chiefly *Pinus Pinaster* and *Quercus Suber.* See ★*garrigue.*

> Only in the Mediterranean countries, in the so-called *Maquis,* do we find anything similar.
> *Bot. Gazette,* XXVII. 14.

> The macchie or *maquis* of Algeria in no way differs from that of Corsica, Sardinia, and other places; it consists of lentisk, arbutus, myrtle, cistus, tree-heath, and other Mediterranean shrubs. *Smithsonian Rep.,* 1890, p. 260.

Mar. An abbreviation (*a*) of *March;* (*b*) [*l. c.* or *cap.*] of *maritime.*

M. Ar. An abbreviation of *Master of Architecture.*

Mara^2 (mär′ä̤), *n.* [Skt. *māra,* death, plague, god of love, tempter, as adj. killing, cf. *mara,* death, < √ *mṛ,* die. See *mortal.*] In *Hind. myth.,* the tempter; the spirit of evil.

marabotin (mä-rä-bọ-tēn′), *n.* [Sp., related to *morabitino.* See *maravedi.*] 1. A coin struck by the Almoravides and Almohades in the eleventh and twelfth centuries.—2. A name given to the Arabic derham, or dinar, which circulated in the south of France as late as the eleventh and twelfth centuries.

marabunta (mar-a̤-bun′tä̤), *n.* [Negro-Eng. (in Dutch Guiana) *marabonsoe;* also cited as Pg., *marabonda,* a social wasp; prob. a native W. Ind. or Guiana name.] In British Guiana and the West Indies, a common name for various species of bees and wasps.

maracock† (mar′a̤-kok), *n.* [Also *maricock, amaracoc, maracot,* etc.; Algonkin.] The fruit of certain American passion-flowers, especially of the 'may-pop,' *Passiflora incarnata,* native of Virginia, and the granadilla, *P. quadrangularis,* of Brazil and the West Indies; also the plant itself. *N. E. D.*

maral (mä-räl′), *n.* [Pers. *marāl.*] The red deer of Persia and the Caucasus, *Cervus maral.*

marami (ma-rä′mi), *n.* [Aboriginal Australian.] A crawfish-like crustacean of the genus *Astacopsis,* found in Australia.

marantic (ma-ran′tik), *a.* [Gr. *μαραντικός,* wasting, withering, < *μαραίνειν,* waste, wither.] Wasting: same as *marasmic.*

> A general *marantic* condition with chronic pulmonary tuberculosis and chronic nephritis.
> *Jour. Exper. Med.,* Jan. 15, 1901, p. 344.

marare (mä-rä′rā̤), *n.* [Maori.] A labroid fish, *Coridodax pullus,* of New Zealand.

Marasmic thrombus. See ★*thrombus.*

marasmolite (ma-raz′mọ-līt), *n.* [Gr. *μαρασμός,* decay, + *λίθος,* stone.] A partially decomposed sphalerite, or zinc-blende, containing free sulphur.

Marasmus infantilis or **lactantium,** the wasting of young infants without evident cause: often due to insufficient nourishment.

marattiaceous (ma-rat-i-ā′shius), *a.* Belonging to or having the characters of the *Marattiaceæ,* a family of ferns.

marble, *n.*—**Bird's-eye marble,** a name for an ornamental stone, consisting of the fossil coral *Acervularia davidsoni,* which in Iowa is carved into small objects. Sections of the coralline cells suggest eyes.—**Calico marble,** a trade-name for the mottled Triassic marble quarried near the Potomac at the Point of Rocks, Maryland: used in the Capitol at Washington.—**Egyptian marble,** a black marble veined with yellow.—**Florentine marble.** Same as ★*landscape-marble.*—**Mandelato marble,** a light-red marble with white spots.—**Melbury marble,** a name for septaria of the Melbury district, in west Dorset, England.—**Mozambique marbles,** a trade-name for a variety of crude india-rubber in small balls, black or brown on the outside, lighter in color within, the product of several speices of *Landolphia* from Mozambique.—**Palombino marble,** a compact, fine-grained white marble found in ancient monuments.—**Peacock marble,** a green marble.—**Stalagmite marble.** Same as *onyx marble.*

marble-band (mär′bl-band), *n.* Mussel-band limestone.

marbled, *a.* 3. Having the lean and fat properly blended: applied by butchers to meat.

> Hereford meat, in the technique of the trade, is always 'beautifully *marbled,*' or, in other words, its lean and its fat are very evenly blended.
> *Rep. Kan. State Board Agr.,* 1901–02, p. 248.

Marbled luster. See ★*luster*^{2}.—**Marbled white.** Same as ★*half-mourner.*

marble-fish (mär′bl-fish), *n.* In Geelong, a name of the tupong. *E. E. Morris,* Austral English.

marble-flower (mär′bl-flou″ėr), *n.* The poppy, *Papaver somniferum.*

marble-gall (mär′bl-gâl), *n.* A gall made by *Cynips Kollari.*

marbleization (mär″bl-i-zā′sho̤n), *n.* [*marbleize* + *-ation.*] The state of being marbled or marked by veins and cloudings. Also called *marmoration.*

> A secondary œdema, . . . accompanied with a more or less distinct *marbleization* of the superficial veins.
> *Buck,* Med. Handbook, I. 463.

marble-paper (mär′bl-pā′pėr), *n.* Paper printed in colors and designs imitating marble.

Marble-rag (mär′bl-rag″), *n.* In *Eng. geol.,* a division of the Upper Purbeckian or Portland Oölites, lying at the summit of the Jurassic series and consisting of limestone with fresh-water fossils (*Unio*) overlain by clays and shales.

marble-seal (mär′bl-sēl), *n.* The seal *Phoca fetida.*

marble-veal (mär′bl-vēl), *n.* Potted veal interspersed with lumps of tongue, having a mottled surface when cut. *N. E. D.*

marblewood, *n.* 2. In Australia, the whitish, mottled heart-wood of the Queensland olive, *Olea paniculata.* It is hard, tough, close-grained, and durable, and when newly cut has a rose-like fragrance.

Marc brandy-oil. Same as *fusel-oil.*

marcal (mär′ka̤l), *n.* [Also *mercal, merkal,* < Tamil *marakkāl.*] A measure of capacity used in the Madras Presidency, equal, at Madras, to 2.70 gallons.

Marcan (mär′ka̤n), *a.* [L. *Marc*(*us*), Mark, + *-an.*] Of or pertaining to St. Mark or to the Gospel attributed to him.

> The *Marcan* tradition.
> *H. B. Swete,* in Exposition, June, 1903, 415.

marcella (mär-chel′lä̤), *n.* [It.] The Venetian silver lira: so called on the accession of Nicolo Marcello (1473).

marcello (mär-chel′lō), *n.* [It.] A silver coin of Francesco III., Gonzaga, Duke of Mantua (1540–50).

Marcellus shale. See ★*shale*^{2}.

marcescence (mär-ses′e̤ns), *n.* The character or state of being marcescent.

marcgraviaceous (märk-grā-vi-ā′shius), *a.* Belonging to the plant family *Marcgraviaceæ.*

march^1, *n.*—**Approver in the marches,** in *Eng. criminal law,* an approver who had a license to sell and purchase beasts in the marches. See *march*^{1}.—**March place,** in *mining,* the room or drift next the march or property line. [Scotch.]—**March stones,** in *mining,* stones set at intervals on the surface to indicate the line of march; boundary stones. [Scotch.]

march^2, *v. i.*—**Time and marching,** in *topog.,* the name applied to a method of determining linear distances by observing the time required by a person marching or walking at a regular rate of speed over the distance to be measured.

> The position of intermediate points other than points of triangulation has been fixed by "*time and marching*" observations. *Geog. Jour.* (R. G. S.), XV. 620.

march^2, *n.*—**Route march,** a march of troops in which the first consideration is the health and comfort of the soldiers. It is the ordinary march of an army when distant from the enemy.

march^4† (märch), *n.* The celery plant, *Apium graveolens,* and parsley, *Petroselinum Petroselinum.* Also *merch.*

March. An abbreviation of *Marchioness.*

M. Arch. An abbreviation of *Master of Architecture.*

Marchand's adrenals. See ★*adrenal.*

marchantiaceous (mär-kan-ti-ā′shius), *a.* Belonging or related to the family of liverworts, *Marchantiaceæ.*

Marchantiales (mär-kan-ti-ā′lēz), *n. pl.* [NL. (Engler, 1892), < *Marchantia* + *-ales.*] An order of cryptogamic plants of the class *Hepaticæ*, characterized by a thalloid, dorsiventral proembryonal generation, the antheridia and archegonia borne in groups on the surface of the thallus or on stalked receptacles, the sporogonia consisting of a spherical capsule with or without a short stalk. It embraces the two families *Marchantiaceæ* and *Ricciaceæ* (which see), and is coördinate with the *Jungermanniales* and *Anthocerotales*, the three orders constituting the class *Hepaticæ*, or liverworts. See ★*Jungermanniales* and ★*Anthocerotales.*

marchasite, marchesite, *n.* Same as *marcasite.*

marchesa (mär-kā′zä), *n.*; pl. *marchese* (-zā). [It.] An Italian marchioness; a lady having the rank of marchioness.

marchese (mär-kā′ze), *n.*; pl. *marchesi* (mär-kā′zē). [It.] An Italian nobleman ranking between a duke and a count; a marquis.

March-fly (märch′flī), *n.* Any member of the dipterous family *Bibionidæ.*

Marchi's tract. See ★*tract*^{1}.

marcia (mär′chē-ä), *n.* [It., a march. See *march*^{2}, *n.*] In *music*, same as *march*^{2}, 5: as, *tempo di marcia*, in march rhythm and time; *marcia funebre*, a funeral march, etc.

marciale (mär-chē-ä′le), *a.* [It., < *marcia*, a march.] In *music*, like a march in rhythm and style.

Marcite (mär′sīt), *n.* [L. *Marcus*, Gr. Μάρκος, + *-ite*^{2}.] Same as *Marcosian.*

marco (mär′kō), *n.* [Sp. See *mark*^{2}.] A Spanish and Spanish-American unit of weight for gold and silver, equal to half a libra. It is commonly equal to about .507 of a pound avoirdupois.

marconigram (mär-kō′ni-gram), *n.* [*Marconi* (see def.) + Gr. γράμμα, anything written.] A message by wireless telegraph sent by the Marconi system.

The British battleship Revenge . . . received a number of private *Marconigrams.*
Ithaca Jour., March 18, 1902, quoted in Dialect Notes, [II. vi.

marconigraph (mär-kō′ni-gráf), *n.* [*Marconi* + Gr. γράφειν, write.] The wireless telegraph of Marconi.

A school for *Marconigraph* operators.
Daily Chron., March 21, 1903. *N. E. D.*

marconigraph (mär-kō′ni-gráf), *v.* [*marconigraph*, *n.*] I. *intrans.* To send messages by means of Marconi's system of wireless telegraphy.

II. *trans.* To transmit by wireless telegraphy.

marconigraphy (mär-kō′ni-gráf-i), *n.* [*marconigraph* + *-y.*] The system of wireless telegraphy developed by Marconi.

The history of the series of inventions and discoveries which have culminated in Transatlantic *Marconigraphy.* *Nature*, April 23, 1903, p. 583.

marconism (mär-kō′nizm), *n.* [*Marcon*(*i*) + *-ism.*] The art of wireless telegraphy according to the Marconi system. *N. E. D.*

marconist (mär-kō′nist), *a.* and *n.* I. *a.* Of or pertaining to the Marconi system of wireless telegraphy. *Encyc. Dict.*

II. *n.* A telegraphic operator who uses the Marconi system of wireless telegraphy. *Encyc. Dict.*

marcuccio (mär-kö′chē-ō), *n.* [It., aug. of *marco*: see *mark*^{2}.] A Venetian copper coin struck under the Doge Bertuccio Valieri (1656–58).

marcylite (mär′si-līt), *n.* [For R. B. *Marcy* (1812–87).] A name given by C. U. Shepard to an impure copper ore of uncertain character, probably in part an impure atacamite, in part a decomposed chalcopyrite containing oxid of copper and water: from a locality in Arkansas.

mardling (märd′ling), *n.* Duckweed; especially, the lesser duckweed, *Lemna minor.*

mare^1, *n.*—**Flying mare,** a trick in wrestling, consisting in seizing the opponent's wrist, turning it back, and working the arm palm down over the shoulder, thus using the arm for a lever, throwing him over the shoulder.

mare^4 (mā′rē), *n.*; pl. *maria* (-ri-ä). [L., a sea: see *mere*^{1} and *marine.*] A sea; specifically, in *astron.*, a name for certain dark regions on the surface of the moon which were supposed by Galileo and other early observers to be seas or oceans, and are now regarded as plains; also a name for certain dark regions on the planet Mars.

The craters are so different in size from those of the earth, many being over a hundred miles in diameter, and so numerous, overlapping and irregularly distributed that the causes leading to their formation must be very different from those of volcanoes upon the earth, and for these forms Shaler proposes the name of vulcanoids. The *maria*, or great plains, evidently belong to a category distinct from the vulcanoids, being characterized by their larger size, smoother and darker floors.
Amer. Jour. Sci., Oct. 1904, p. 314.

Mare liberum [L.], a free sea; an open sea: distinguished from *mare clausum* (which see).

maregram, maregraph. See ★*marigram, marigraph.*

maremma (mä-rem′ä), *n.*; pl. *maremme* (-ā). [It.] A marshy and unhealthy region lying along the sea-shore.

mareograph (mā′rē-ō-gráf), *n.* Same as *marigraph.*

mareometer (mā-rē-om′e-tėr), *n.* Same as *marigraph.*

mare-ridden (mãr′rid″n), *p. a.* Nightmare-ridden; witch-ridden.

Between his neck and his collar was a large live shore-crab, holding on tight with both hands.
"Gentles! good Christians! Save me! I am *mare-rode!*"
Kingsley, Westward Ho! ii.

mare's-tail, *n.* 1. (*c*) The horseweed, *Leptilon Canadense.* (*d*) The heath-aster, *Aster ericoides.*

marg. An abbreviation (*a*) of *margin*; (*b*) of *marginal.*

margarimeter (mär-ga-rim′e-tėr), *n.* [Irreg. < *margari*(*n*) + Gr. μέτρον, measure.] An apparatus for determining, by observation of the density at 100° C., the proportion of oleomargarin in adulterated butter.

margarodid (mär-ga-rod′id), *a.* and *n.* Having the characters of or belonging to the lepidopterous family *Margarodidæ*; a member of the *Margarodidæ.*

margarous (mär′ga-rus), *a.* [*margar*(*ic*) + *-ous.*] Noting an acid, a substance resembling margaric acid, now known to be a mixture.

Margate chalk. See ★*chalk.*

Margelidæ (mär-jel′i-dē), *n. pl.* [NL., < *Margelis* (*-lid-*) + *-idæ.*] A family of *Anthomedusæ*, having 4 or more simple or branched tentacles, with 4 or 8 separate manubrial gonads. The simple unbranched tentacles may be uniformly distributed or grouped in 4 or 8 sets. It contains several genera, among which are *Margelis, Lizzia, Cytæis, Limnorea*, and *Hippocrene.*

Margelis (mär-jē′lis), *n.* [NL., < Gr. μαργηλίς, a pearl.] The typical genus of the family *Margelidæ.* *Steenstrup*, 1849.

margin, *n.*—**Anal margin.** See ★*anal.*—**Margin of cultivation.** See ★*cultivation.*—**Margin of power,** surplus of power; a margin over and above that required under normal conditions.—**Margin of safety.** Same as ★*factor of safety.*

marginal, *a.*—**Marginal anchor,** in some *Lucernaridæ*, as *Haliclystes*, a peculiar form of marginal body.—**Marginal contrast, eye.** See ★*contrast*, ★*eye*^{1}.—**Marginal funnel,** in medusoids, one of the conical prominences on the subumbral surface above the velum, having an excretory pore at the apex.—**Marginal moraine, plate, tubercle.** See ★*moraine*, etc.—**Marginal utility.** See ★*utility.*

II. *n.* 1. One of the bones which form the border of the carapace in turtles, except in the *Trionychoidea*, in which they are lacking: same as *marginal* ★*plate.* See cut under *carapace*, 1.—2. In the ammonoid cephalopods, or ammonites, one of the small inflections which sometimes develop on the sides of the antisiphonal lobe of the sutures.—3. In *conch.*, one of the outermost teeth on the radula of gastropods; one of the uncini.—4. In asteroid echinoderms, one of the series of thick plates round the margin of the arms and disk.

marginal-pygal (mär″ji-nal-pī′gal), *a.* Noting the posterior median bony plate in the carapace of a turtle.

margination (mär-ji-nā′shon), *n.* The act of marginating or the condition of having a margin; a marginated appearance.

No statement in a properly-edited historical source ought to appear without its being at once obvious, either from the nature of the print or from distinctly-marked *margination.* *Archaeol. Inst. Jour.*, LV. 128.

marginoplasty (mar′jin-ō-plas″ti), *n.* [L. *margo* (*margin-*), edge, margin, + Gr. πλαστός, formed, + *-y*^{3}.] A surgical operation for restoring an edge or border, as of the lip or eyelid.

margin-plate (mär′jin-plāt), *n.* In *iron shipbuilding*, a longitudinal plate which limits the double bottom at the turn of the bilge. The lower edge is connected to the outside plating by an angle-bar, and the upper edge is flanged over horizontally, and the inner-bottom plating riveted to it. See cuts at *double* ★*bottom* and ★*bracket*^{1}, 9 (*b*).—**Margin-plate bracket,** the triangular plate fitted on the margin-plate to give a connection for the foot of the frame angle-bar above the inner bottom.

margin-stop (mär′jin-stop), *n.* In a typewriter, an adjustable stop-motion which controls the traverse of the carriage in one or both directions. It consists of a stop supported by a graduated margin-stop bar and fitted with a locking device to hold it in any desired position. It is so named because, through the limiting of the traverse of the carriage and the leaving of a portion of the paper held by the carriage outside the feeding distance of the carriage, that part or edge is left blank and forms the margin of the printed sheet.

marg. trans. An abbreviation of *marginal translation.*

marguerite, *n.* 3. In decorative design, a small flat rosette which resembles the common daisy.

The daisies or *marguerites* of the outer border had central bosses consisting of convex disks of rock crystal, set probably on a blue paste background.
A. J. Evans, in Annual of Brit. School at Athens, [VII. 78.

marguerite-fly (mär′ge-rēt-flī″), *n.* A phytomyzid fly, *Phytomyza chrysanthemi*, the larva of which mines the leaves of composite plants in greenhouses.

maria, *n. pl.* See ★*mare*^{4}.

mariamolle (mä-rē-ä-mol′e), *n.* [Prop. as in Sp., *maria mole, Maria mole*: *Maria*, Mary; *molle, mole*, < L. *mollis*, soft.] A pomacentroid fish, *Eupomacentrus fuscus*, found about coral reefs from the West Indies to Brazil.

marian^4 (mä-rē-än′), *n.* [W. Ind. Sp., given as "a negro word meaning tough and lean."] *Holocentrus marinus*, a chætodontoid fish found in the West Indies.

Mariana (mā-ri-ā′nä), *n.* [NL. (Hill, 1762), from *Carduus Marianus*, the Linnæan name of the milk-thistle, or Virgin Mary's thistle.] A genus of dicotyledonous plants of the family *Asteraceæ.* See *Silybum.*

Marianist (mā′ri-an-ist), *n.* [*Marian*^{2} + *-ist.*] A member of a now extinct religious association of knights, founded in the thirteenth century at Bologna to succor and protect the unfortunates who suffered from the strife between the Guelfs and Ghibellines.

maricao (mä-rē-kä′ō), *n.* [Porto Rican.] The surette, *Byrsonima spicata.* Also called *doncella.* See *surette.*

maricultural (mā-ri-kul′tūr-al), *a.* Of or relating to mariculture.

Such maps would be purely agricultural and *maricultural*, dependant upon the harvests of the land and sea.
Science, Oct. 9, 1903, p. 461.

mariculture (mā′ri-kul-tūr), *n.* [L. *mare*, sea, + *cultura*, culture.] The development of the resources of the sea, especially with respect to food-fish: coined in distinction from *agriculture.*

Marienglas (mä-rē′en-gläs), *n.* [G., 'Mary's glass.'] A German name applied to plates of selenite (gypsum) and also to muscovite. Sometimes called *Fraueneis* ('[Our] Lady's ice').

Marie's disease. See ★*disease.*

marigot (mar′i-got), *n.* [F.] A branch or side channel in a river. [West Africa.]

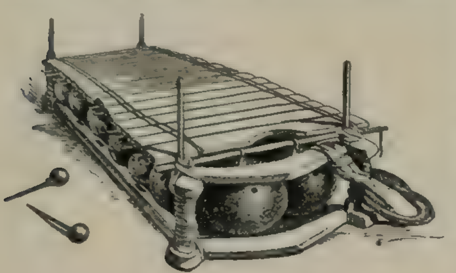
Passing up a *marigot* or branch channel, worn down by porters' feet to a deep wet ditch, we soon reached the half-way place, a second sandy oasis, the site of the village of Zumgboji. *R. F. Burton*, Mission to Gelele, I. 35.

marigram (mar′i-gram), *n.* [Also *maregram, mareogram*; < L. *mare*, sea, + Gr. γράμμα, a writing, γραμμή, a line.] The line traced by the marigraph as a record of fluctuations of sea-level.

mariguana (mä-rē-gwä′nä), *n.* Same as ★*marihuana.*

marihuana (mä-rē-hwä′nä), *n.* [Mex.] In Mexico, any one of several plants having narcotic properties; in many localities, *Cannabis Indica*, and in the state of Sonora, *Nicotiana glauca.*

marimba (ma-rim′bä), *n.* [Also *merimba*; W. African: Kimbundu (Angola) *marimba.*] 1. An African musical instrument formed of a number of strips of wood of various sizes yielding different notes when struck by a hammer. The sound is often reinforced by resonators formed from calabashes placed underneath.



Marimba.

Instruments of the bar type are found frequently in our orchestras and bands under various names, as xylophone; they are familiar in children's toys and are widely distributed in savage and half-civilized lands under the names of *marimba*, balafong, harmonicon, etc.
Smithsonian Rep. (Nat. Mus.), 1900, p. 436.

2. In the Kongo region and Angola, a name of a musical instrument with iron keys; the [illegible].

marimonda (mar-i-mon'dạ̈), *n.* [Amer. Sp.] A name applied to various spider-monkeys, particularly to the white-bellied species, *Ateles beelzebuth*.

marina (mä-rē'nạ̈), *n.* [It., fem. of *marino*. See *marine*.] An esplanade or promenade by the sea. *N. E. D.*

marine. I. *a.*—**Marine band, blue, chorology.** See ★*band*3, etc.—**Marine interest.** Same as *maritime interest.*—**Marine laboratory, metal, salt.** See ★*laboratory*, etc.

II. *n.*—**Dead marine.** Same as *marine*, 5.—**Mercantile marine,** the merchant service; the vessels, officers, and crews belonging to the merchant-marine.—**Merchant marine.** Same as *mercantile* ★*marine.*

mariner, *n.* 2. A Tasmanian name for the bronze-colored shell of any one of several species of the marine gastropod *Elenchus*, especially *E. bellulus*. Also called *warrener*, and *pearly necklace shell*. *E. E. Morris.*

marinist2 (ma-rē'nist), *n.* [*marin(e)* + *-ist.*] One who attributes various changes on the earth's surface, such as the formation of terraces, planes, etc., to marine action: opposed to ★*subaërialist.*

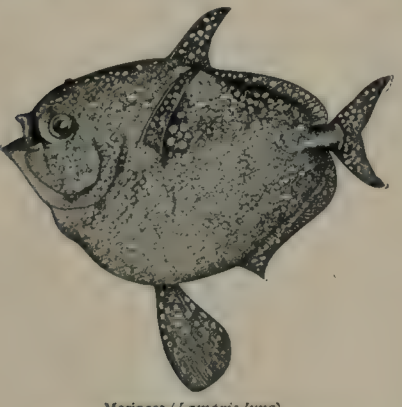
Mariolatrous (mā-ri-ol'a̤-trus), *a.* Characterized by Mariolatry; of the nature of Mariolatry.

Mariology (mā-ri-ol'ọ̄-ji), *n.* [*Mary* + *-ology.*] The doctrines and opinions of the various Christian sects with regard to the Virgin Mary.

Mariology is exhaustively treated in the four hundred and fifty pages which are here devoted to it. The work is divided into three parts.
Dublin Rev., Jan., 1903, p. 211.

Mariotte's spot. Same as *blind spot.*

mariposa (mar-i-pō'sạ̈), *n.* [Sp.] 1. A butterfly.—2. A beautiful fish, *Lampris luna*, of large size, found in the open Atlantic and Pacific.—3. The mariposa-lily.



Mariposa (*Lampris luna*).
(From Jordan's "Guide to the Study of Fishes.")

mariposite (mar-i-pō'sīt), *n.* [*Mariposa* + *-ite*2.] A micaceous mineral, varying from soft green to white, observed with pyrite in the gold ore of the Mariposa region, California.

marisca (ma-ris'kạ̈), *n.* [NL., < L. *marisca*, a fig, pl. *mariscæ*, piles.] One of the excrescences in hemorrhoids.

mariscal (ma-ris'ka̤l), *a.* [*marisca* + *-al*1.] Hemorrhoidal.

Maritime cause, in *law*, an action arising from the commercial relation of persons on navigable waters.—**Maritime exchange,** a meeting-place for ship-brokers and others interested in ships and shipping, where business of a marine nature is transacted.—**Maritime jurisdiction,** the jurisdiction of courts of admiralty.—**Maritime loan.** See ★*loan*1.—**Maritime service,** in *law*, a service rendered upon public navigable waters and having relation to commerce or navigation.

mariupolite (mar″i-ö-pō'līt), *n.* [*Mariupol*, on the Sea of Azov, Russia, + *-ite*2.] In *petrog.*, a nephelite-syenite composed of albite, ægirite, and nephelite, with a small amount of lepidomelane and zircon. It is free from potash feldspar. *Morozewicz.*

marivaudage (mar″i-vō-däzh'), *n.* [*Marivaux*, a French writer of the 18th century.] In *lit.*, a style resembling that of Marivaux, whose writings were a mixture of subtle metaphysics and bizarre trivialities, with over-refined sentiments which were mingled with the most ordinary colloquialisms: the word has come to note an affected attempt at refinement.

Characteristic of *sensibilité* in sense and of *marivaudage* in manner.
Saintsbury.

mark1, *n.* 17. In *ordnance* (followed by a Roman numeral), an expression used to distinguish different designs of the same size and type of gun or mount: as, 6-inch B. L. R., *mark* II (a 6-inch caliber breech-loading rifle-gun of a design indicated as marked two).—**Black mark, china mark.** See ★*black*, ★*china*1.—**By the mark** (*naut.*), the cry of the leadsman when he obtains soundings of 2, 3, 5, 7, 10, 13, 15, 17, or 20 fathoms. On the hand lead-line there are 9 marks and 11 deeps, the latter being the unmarked fathoms of the line, namely, the 1, 4, 6, 8, 9, 11, 12, 14, 16, 18, and 19.—**Easy mark,** one who from his simplicity of character or unsuspecting nature is easily imposed upon. [Slang, U. S.]—**Good mark.** (*a*) A mark placed in a school- or class-register against the name of a pupil for being 'good' in behavior or diligent in study. (*b*) In Australia, a person, conspicuous in the community for his integrity and high business standing, who would rather allow himself to be imposed upon than seem to impose upon another; an 'easy mark' for the unscrupulous. [Slang.]—**Lead-line mark** (*naut.*), one of the nine markings on the hand lead-line, or one of the knots on the deep-sea lead-line, which is continued from 20 to 100 fathoms.—**Marks and deeps** (*naut.*), the fathoms of the lead-line from 1 to 20; the 9 marks and 11 deeps of the hand lead-line. See *lead-line*, 1.—**Port-wine mark.** Same as *capillary* ★*nævus.*—**Sharp-up mark.** Same as ★*square-mark.*

mark2, *n.* 5. [Finnish *markka.*] A current silver coin of Finland, equal to 100 pennia (see ★*penni*), and equivalent to $19\frac{30}{100}$ cents.—6. A silver coin of Schleswig-Holstein, equal to 16 skillings, and equivalent to 24 cents.

mark5, *n.* Same as *marc*2.

markasol (mär'ka̤-sol), *n.* [Trade-name.] Bismuth borophenate, an antiseptic powder used in surgery for dusting purposes.

mark-buoy (märk'boi), *n.* In submarine-cable work, a buoy anchored to mark any desired position or point.

mark-caller (märk'kâl″ėr), *n.* In sorting logs, one who stands at the lower end of the sorting-jack and calls the different marks so that the logs may be guided into the proper channels or pockets.

marker, *n.* 1. (*e*) In *archery*, a person stationed near the target, especially in clout-shooting, to signal to the archers the result of each shot.

2. (*b*) Specifically, a counter (an oblong piece of bone) used in faro. One marker is placed on a player's bet, and another on a card so far removed from it that he cannot take in both bets by any of the usual ways of placing bets on the lay-out. From the fact that the marker is not a chip, and has no value except to point out the superior value elsewhere, arose the colloquial expression: "he is not a *marker* to so-and-so."

7. At *poker*, any object placed upon the table to show that a player who has no chips is still in the pool: sometimes used in table-stakes to indicate that the player is supposed to have as much money in front of him as any other person at the table.—8. In *railroading*, a flag, lamp, or other signal placed upon an engine or train, or upon an electric car, to indicate its character, destination, etc. The green flag at the end of a train is a marker, as is also a red tail-light, or an extra light upon a locomotive.—**Deprez marker** or **signal,** a delicate form of electromagnetic time-marker, capable of recording five-hundredths of a second.—**Magnetic marker,** in *physiol.* and *exper. psychol.*, a time-marker consisting essentially of a writing-lever actuated by an electromagnet which is in circuit with an electric fork. The Deprez and Pfeil time-markers are typical magnetic markers. *Scripture*, Exper. Phonet., p. 91.—**Pfeil's marker,** in *physiol.* and *exper. psychol.*, an electromagnetic time-marker used in connection with an electric fork to trace a time-line upon the smoked surface of a kymograph drum. See *Deprez* ★*marker.* *Scripture*, Exper. Phonet., p. 91.

market, *n.* 7. On the *stock-exchange*, one of the classes into which the business of the exchange is divided; a group of jobbers engaged in a particular kind of business. [Eng.]

Every great *market* is organized with a view not merely to the purchase and sale of a commodity at once, or "on the spot," but also with a view to the future requirements of buyers and sellers.
Encyc. Brit., XXX. 540.

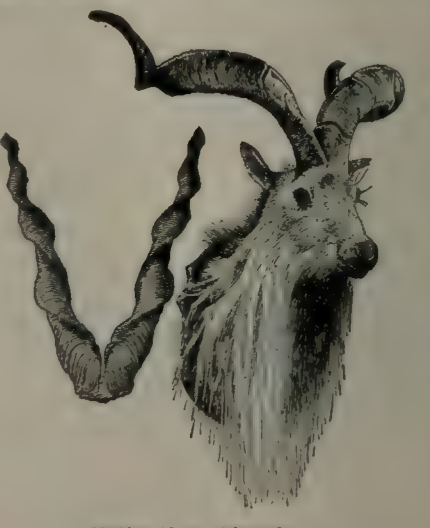
market-boat (mär'ket-bōt), *n.* A dinghy or other small boat used by the stewards to bring off marketing for the various messes.

market-gardening (mär'ket-gär″dn-ing), *n.* The occupation of raising vegetables for sale, particularly when conducted on such a scale as to constitute a business; truck-gardening.

market-scales (mär'ket-skālz), *n.* A counter-scale adapted to the weighing of meat and fish.

market-wire (mär'ket-wīr), *n.* Soft steel and brass wire in small sizes, suitable for the retail hardware trade.

markhor, *n.* Four subspecies are recognized, the extremes being represented by the Astor and the Suliman markhor. In the first, named from the village of Astor in northwestern Kashmir, the horns are long, massive, and form an open spiral. In the Suliman variety, found in the Suliman range, the horns are comparatively short and straight, with the keel running around them like the thread of a screw.



Markhor (*Capra falconeri*).
Head of Astor Markhor.
Horns of Suliman Markhor (larger scale).

marking, *n.*—**Lapham** or **Laphamite markings,** a peculiar form of the Widmannstättian figures, first observed by I. A. Lapham in the meteoric iron of Trenton, Wisconsin, and called Lapham or Laphamite markings by J. Lawrence Smith. In this form of the figures there are broad bands of kamacite inclosing areas of plessite.

marking-bowl (mär'king-bōl), *n.* A roller provided with coloring-matter for marking off warps into lengths or sections for the loom.

marking-cross (mär'king-krôs), *n.* A cross placed upon church vestments or furniture to mark them as exclusively devoted to sacred uses. Altar-cloths and corporals usually have five, in reference to the wounds of Christ.

marking-disk (mär'king-disk), *n.* In a Morse ink-writer (a machine for taking telegraph messages), the rotating disk which carries the letters and signs and marks the signals.

marking-hammer (mär'king-ham″ėr), *n.* A hammer bearing a raised device used to stamp logs, to indicate ownership. Also called *marking-iron.*

marking-hatchet (mär'king-hach″et), *n.* A hatchet for marking trees. A raised die is cut on the head for stamping the face of the blaze.

marking-iron, *n.* 2. Same as ★*marking-hammer.*

marking-plate (mär'king-plāt), *n.* A three-cornered metal plate with a small spike, used to mark an angle of a tennis-court.

marking-plow, *n.* 2. An ice-plow fitted with a guide, used to mark ice for cutting.

marking-tape (mär'king-tāp), *n.* In *tennis*, a tape used to outline and mark the various divisions of a tennis-court.

markland (märk'land), *n.* [*mark*2 + *land*1.] A division of land, originally of the annual value of a mark. *N. E. D.*

marksman, *n.* 1. (*b*) A soldier who makes 60 per cent. at target practice at ranges up to 600 yards.

mark-weed (märk'wēd), *n.* The poison-ivy, *Rhus radicans.*

marl1, *n.*—**Chloritic marl.** See ★*chloritic.*—**Etruria marl,** a subdivision of the Carboniferous system in

England. It is regarded by British geologists as a part of the Upper series of the coal-measures, attains a thickness of 1,100 feet, is underlain by the Blackband group and overlain by the Newcastle-under-Lyme group. Its bottom and top are characterized by *Spirorbis* beds.—**Gainfahren marl,** a phase of the Miocene series of Austria. It is considered by Austrian geologists as a part of the second substage of the Mediterranean or marine stage and is characterized by an abundance of lamellibranchs and gastropods.—**Gargas marl,** a subdivision of the Cretaceous system in Vaucluse, France. It is the lowest member of the Aptian or upper division of the Lower Cretaceous. It is also well developed in northwestern Germany.—**Grinzing marl,** a phase of the Miocene Tertiary in Austria. It is considered by Austrian geologists to be a part of the second substage of the Mediterranean or marine stage.—**Salt marl,** the lowest division of the Cambrian rocks in the Salt Range of India. It is 1,500 feet thick and without fossils.—**Swamp marl,** beds of fresh-water shells found beneath swamps and left by the *Mollusca* which inhabited the lake or pond which has given rise to the swamp. They are sought as a source of lime in making hydraulic cement.

Marlburian (märl-bu'ri-an), *n.* [Erroneously ‹ *Marlborough.*] A graduate of Marlborough College.

> I will read you the last letter received from a nephew of mine, aged twenty-one, a *Marlburian*, who . . . is settled on a Texan ranche.
> *T. Hughes*, Rugby, Tennessee, III. iii.

marmairolite (mär-mī'rọ-līt), *n.* [Gr. *μαρμαίρειν*, glisten, + *-lite.*] A mineral from Sweden, occurring in fine crystalline needles of a pale yellow color: probably a variety of the amphibole called *richterite.*

marmarize (mär'ma̤-rīz), *v. t.*; pret. and pp. *marmarized*, ppr. *marmarizing.* [Gr. *μάρμαρος*, marble, + *-ize.* See *marmarosis.*] To convert (limestone) into marble by metamorphism; subject to marmarosis.

> On the east side of the great intrusive mass of Fair Head the chalk is likewise *marmarised.* Another smaller . . . illustration of the same change occurs at Camps Quarry near Edinburgh.
> *Geikie*, Text-book of Geol., p. 603.

marmelos (mär'mẹ-los), *n.* [NL., ‹ Pg. *marmelo*, quince.] The Bengal quince, *Ægle marmelos.*

marmit (mär'mit), *n.* [F. *marmite*, pot or kettle.] A pot fitted with a hook by which it may be hung; a kettle; a soup-kettle.

marmite (mär-mēt'), *n.* [F.] A pot; a kettle; specifically, an earthenware pot in which soup is made and served.—**La petite marmite,** a soup made of strong stock and vegetables.

marmoration, *n.* **3.** Same as ★*marmorization.*

marmorization (mär'mọ-ri-zā'sho̤n), *n.* [*marmorize* + *-ation.*] In *geol.*, the process of recrystallization during metamorphism, whereby sedimentary limestones become marble.

> *Marmorization* of the limestone is abundant in the region and by no means confined to the contact belt, but, as Mr. King observes, spreads out over large areas in the limestone beds that have no definite relation to any known outcrop of eruptive rock.
> *Amer. Jour. Sci.*, Aug., 1903, p. 144.

marmorize (mär'mọ-rīz), *v. t.*; pret. and pp. *marmorized*, ppr. *marmorizing.* [L. *marmor*, marble, + *-ize.* Compare ★*marmarize.*] To change from a sedimentary limestone to crystalline marble, more especially under the influence of an intrusive dike or other mass of eruptive rock. *Geikie*, Text-book of Geol., p. 772.

marmorosis (mär-mọ-rō'sis), *n.* [L. *marmor*, marble + *-osis.*] Same as *marmarosis.*

maro (mä'rō), *n.* Same as ★*malo.*

maroon¹. **I.** *a.*—**Maroon formation.** See ★*formation.*

II. *n.*—**Acid maroon.** See ★*acid-maroon.*—**Alizarin maroon,** a mordant dyestuff derived from anthracene. It is a mixture of *a*- and *β*-amidoalizarin and amidopurpurin. With a chromium mordant it produces a maroon color. It is not as fast as alizarin red.—**Maroon S,** an impure acid-magenta.

maror (mä-rōr'), *n.*; pl. *merorim* (me-rō'rim). [Heb. *marōr*, ‹ *marar*, bitter.] A bitter herb, eaten at the seder meal on the first two evenings of Passover.

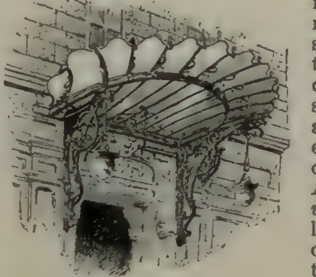
marouflage (mä-rö-fläzh'), *n.* [F., ‹ *maroufler*, back (a painting) with a back lining glued on, ‹ *maroufle*, a tenacious paste.] The process or the act of applying a mural painting to a wall by coating the back of the canvas with a strongly adhesive paste and applying it. This device allows mural paintings to be in oil colors, and also allows the work to be done at a distance from the building for which it is intended.

Marq. An abbreviation of *Marquis.*

Marquette (mär-ket'), *n.* In *geol.*, that section of the Huronian system which is found in the Marquette iron range in the northern peninsula of Michigan and west of the city of Marquette. It consists of metamorphosed sedimentary rocks, and of eruptives of several kinds, and is separated by an unconformity into three well-marked divisions, a lower, a middle, and an upper. *Geikie*, Text-book of Geol., p. 628.

Marquettian (mär-ket'i-a̤n), *a.* In *geol.*, noting a group of rocks carrying the Marquette iron ores: a name given by Alexander Winchell. The group is placed by him below the true Huronian. See ★*Marquette.*

marquise, *n.* **3.** In *gem-cutting*, an ellipsoidal double-pointed form of cut which has been used extensively for diamonds and the more brilliant stones, although many of the common stones, such as amethysts, etc., are now cut in this way. Also called *navette.*—**4.** A light shelter over an entrance doorway: usually carried on brackets or cantalivers, more rarely on slender posts. The roofing itself is often of glass.—**5.** Same as *marquee.*—**Marquise ring,** a finger-ring in which is set a cluster of gems having the form of a pointed oval.



Marquise.

marral, *n.* See ★*murral.*

marram-grass (mar'a̤m-grȧs), *n.* Same as *marram.*

marriage, *n.*—**Class-marriage.** See ★*class-marriage.*—**Common-law marriage,** a marriage not solemnized by any form or ceremony, but created by an actual and consummated agreement between the parties. It may be evidenced by their conduct and reputation. Such a marriage is valid in the United States, except in those states where statutes have abolished it. See *marriage*, 2.—**Detinue of goods in frank marriage.** See ★*detinue.*—**Marriage officer,** a diplomatic or consular agent, or other duly authorized person, before whom marriage between British subjects in a foreign land may be solemnized and be valid.

> Under it [the Foreign Marriage Act, 1892] a marriage between British subjects on land is as valid as a marriage duly solemnized in England, . . . if celebrated in accordance with the local law or in the presence of a "*marriage officer.*"
> *Encyc. Brit.*, XXX. 548.

Restraint of marriage, a legal term used with reference to conditions attached to bequests, gifts, etc., in which the beneficiary, in order to obtain the bequest or gift, is limited in the free choice of marriage. Conditions in restraint of marriage are, if general, usually void.—**Royal marriage,** in such games as penuchle and bezique, the king and queen of the trump suit.

marriageability (mar″āj-a̤-bil'i̤-ti), *n.* The state of being marriageable, or the degree to which a person may be considered marriageable.

marriage-flight (mar'ạj-flīt), *n.* Same as *nuptial* ★*flight.*

marrite (mär'īt), *n.* [For Dr. John Edward *Marr*, of Cambridge, England.] A lead-gray to steel-gray mineral which occurs very sparingly in highly modified monoclinic crystals in the dolomite of the Binnenthal in Switzerland: the chemical composition has not been determined.

marron¹, *n.*—**Marrons glacés,** French or Italian chestnuts boiled in a syrup of sugar and water and flavored with vanilla and a few drops of lemon-juice. They are softened and sweetened all through, not having a glaze of sugar like glacé oranges, etc.

marrow¹, *n.*—**Oblongate marrow,** the medulla oblongata.

marrubiin (ma-rö'bi-in), *n.* [*Marrubi-um* + *-in*².] A neutral compound contained in *Marrubium vulgare.* It crystallizes in large plates or needles melting at 106° C.

marry¹, *v. i.*—**To marry over the broomstick.** See ★*broomstick.*

Mars, *n.* **2.** The question of the planet's climate hinges upon its temperature. It is undeniable that the white caps which alternately form and disappear about its poles behave with respect to the planet's seasons exactly as snow caps would. This strongly suggests conditions of temperature resembling our own, and a corresponding climate. On the other hand, the rarity of the planet's atmosphere, the infrequency of clouds, its smallness, and its distance from the sun (reducing its supply of solar heat to less than half of ours) seem to require a temperature far below the melting-point of ice, and suggest that the white caps may be due to the precipitation of some substance with a much lower freezing-point than water. The question can hardly be settled until our heat-measuring instruments become sensitive enough to determine the planet's temperature by direct observation.—**Canals of Mars.** See ★*canal*¹.

Marseilles pottery. See ★*pottery.*

marsh, *n.* **2.** In Australia, a drained meadow. See the extract.

> A '*marsh*' here is what would in England be called a meadow, with this difference, that in our *marshes*, until partially drained, a growth of tea-trees (Leptospermum) and rushes in some measure encumbers them; but, after a short time, these die off, and are trampled down, and a thick sward of verdant grass covers the whole extent.
> *Mrs. Meredith*, My Home in Tasmania, I. 163, quoted in [E. E. Morris, Austral English.

marshallik (mär'sha̤-lik), *n.* [Yiddish.] A professional merrymaker. Also *marshalok.* See ★*badhan.*

marsh-bass (märsh'bȧs), *n.* The large-mouthed black-bass, *Micropterus salmoides.*

marsh-berry (märsh'ber″i), *n.* The Old World cranberry, *Oxycoccus Oxycoccus.* Also *bogberry*, *fenberry*, and *marshwort.*

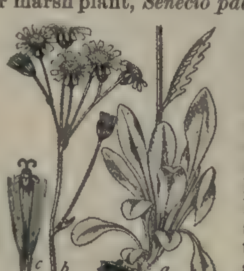
marsh-clover (märsh'klō″vėr), *n.* The bog-bean, *Menyanthes trifoliata.*

marsh-cow (märsh'kou), *n.* A name given by Rütimeyer to a race of cattle of small size the remains of which were found in Swiss lake-villages. *Lyell*, Antiq. of Man, p. 24.

marsh-crocodile (märsh'krok″ọ-dīl), *n.* A common species of southern Asia, *Crocodilus palustris*, somewhat smaller and less dangerous than the muggar, or salt-water crocodile, *C. porosus.*

marsh-deer (märsh'dēr), *n.* The larger South American deer, *Cervus* or *Odocoileus palustris.*

marsh-fleawort (märsh'flē″wėrt), *n.* A swamp or marsh plant, *Senecio palustris*, found in high northern latitudes in North America, Greenland, Europe, and Asia, extending southward in the western hemisphere to Iowa and Wisconsin. It has spatulate, entire, radical leaves, those of the stem being few and toothed. The heads are numerous, mostly in a terminal corymb, the rays pale yellow but showy.



Marsh-fleawort (*Senecio palustris*).
a, lower part of stem with leaves; *b*, upper part of stem with flowers; *c*, floret. (From Britton and Brown's "Illustrated Flora of the Northern States and Canada.")

marshite (märsh'īt), *n.* [Named after C. W. *Marsh.*] Cuprous iodide (Cu_2I_2) occurring in oil-brown tetrahedral crystals at the Broken Hill mines, New South Wales.

marshman (märsh'ma̤n), *n.*; pl. *marshmen* (-men). A person living in the marshes: used in Yorkshire to designate a particular group of people.

> Apparently the bird was well known to the Yorkshire "carr-men" and "*marsh-men*" half a century ago, but no examples are known to science save the type and the one procured by Mr. Coburn. *Nature*, Jan. 15, 1903, p. 252.

marsh-orchis (märsh'ôr″kis), *n.* See ★*orchis*².

Marsh's arsenic apparatus, test. See ★*apparatus*, ★*test*¹.

marsh-treader (märsh'tred″ėr), *n.* Any bug of the heteropterous family *Hydrometridæ* or *Limnobatidæ.* *L. O. Howard*, Insect Book, p. 282.

marsileaceous (mär-sil-ẹ-ā'shius), *a.* Belonging to the *Marsileaceæ*, a family of cryptogamic plants.

marsipobranchian (mär″si-pọ-brang'ki-a̤n), *n.* A member of the order *Marsipobranchii*, a group of vertebrates containing the lampreys and hagfishes.

Marsupial plate. See ★*plate.*

Marsupialida (mär-sū-pi-al'i-da̤), *n. pl.* The *Cubomedusæ.*

marsupialization (mär-sū″pi-a̤l-i-zā'sho̤n), *n.* [*marsupial* + *-ize* + *-ation.*] The formation of a pouch in a membrane, such as the peritoneum.

marsupialize (mär-sū'pi-a̤l-īz), *v. t.*; pret. and pp. *marsupialized*, ppr. *marsupializing.* [*marsupial* + *-ize.*] To render marsupial in character; provide with a pouch.

marsupite (mär-sū'pīt), *n.* [NL. *Marsupites.*] A member of the genus *Marsupites.*

Marsupites (mär-sū-pī'tēz), *n.* [Gr. *μάρσιπος*, a pouch, + *-ιτης*, E. *-ite*².] The only genus of the family *Marsupitidæ*, including flexible crinoids of free-swimming habit having no column and few and large calyx plates. It occurs in the Upper Cretaceous of Europe.

mart⁵ (märt), *n.* [See *marten*¹.] The marten. [Eng. dial.]

martaban (mär'ta̤-ban), *n.* [Ar. *martabāni.*] Old celadon porcelain, popularly supposed to have been made at Martaban in Pegu. Sometimes called *green porcelain.* Large jars of this kind are mentioned by Ibn Batuta, the Algerian traveler, in the fourteenth century.

The Arabs and Persians call this peculiar porcelain *martabani*, and value it very highly from its fancied property of detecting poisoned food by changing color.
S. W. Bushell, Oriental Ceram. Art, p. 148.

martelé (mär-te-lā′), *a.* [F., pp. of *marteler*, hammer, strike: see *martel, v.*] **1.** Hammered; produced by hammering: applied to metal work.—**2.** In *music*, same as *martellato.*

martensite (mär′ten-sīt), *n.* [From a personal name.] A very hard carbide of iron, approximately of the composition Fe$_{24}$C, formed in the recalescence of steel at 850° C. in cooling from a temperature of 1,000° C. or over. It remains unchanged if the metal is then suddenly cooled, as by plunging it into cold water, but on slow cooling is decomposed into iron and the carbide Fe$_3$C. On the other hand, it appears that this latter compound, known as *cementite*, may split into martensite and carbon in the form of graphite.

martensitic (mär-ten-sit′ik), *a.* [*martensite* + *-ic.*] Pertaining to, or characterized by martensite: designating the state of steel when its iron and carbon are combined to form martensite.

Martha Washington china. See ★*china*^{1}.

Martian, *a.* **II.** *n.* An (imaginary or possible) inhabitant of Mars.

These exemplary *Martians* wear no clothes but the exquisite fur with which nature has endowed them, and which constitutes a part of their immense beauty.
Du Maurier, The Martian, viii.

martin^3 (mär′tin), *n.* A shortened form of *freemartin.*

Purebred steer, spayed or *martin* heifer, two years old and under three.
Rep. Kan. State Board Agr., 1901–02, p. 211.

martingale, *n.* **4.** In *fencing*, a bit of twine, fastened to the hilt of a foil, which is caught round one finger of the sword hand to prevent the foil from falling to the ground in case of disarmament.—**Standing martingale,** a long martingale connected to the girth and collar of a harness, with branched ends which are attached to the rings of the bridle-bit.

martinoe (mär′ti-nō), *n.* [Probably a corruption of *Martynia.*] The unicorn-plant, *Martynia Louisiana.*

Martin's albumin negative process. See ★*process.*

martiology (mär-ti-ol′ọ̄-ji), *n.* [L. *Mars* (*Mart-*), Mars, + Gr. *-λογια*, < *λέγειν*, speak.] The study of the planet Mars: same as *areography*, which is the accepted term. [Rare.] *L. F. Ward*, Pure Sociol., p. 69.

martyrium (mär-tir′i-um), *n.*; pl. *martyria* (-ä̤). [LGr. *μαρτύριον*, a martyr's shrine, < *μάρτυρ*, martyr: see *martyr.*] A place in which the relics of martyrs are preserved, usually a crypt or underground chapel like the famous one of the church of Saint-Denis, France, which still retains much of the original Roman construction.

martyrolatry (mär-tė-rol′a̤-tri), *n.* [*martyr* + *-olatry.* See *idolatry.*] Worship of the Christian martyrs.

The Christianity which he despised—the only Christianity which he knew—was mainly associated with a superstitious *martyrolatry* and a grovelling relic-worship. The Galileans, he said, "abandon the worship of the gods to worship the mouldering remains of the dead."
Farrar, Lives of the Fathers, I. 702.

marum, *n.* **2.** Same as *herb mastic* (which see, under *herb*).

marut (mä-rụt′), *n.* [Skt. *marút*, wind, wind-god.] In *Hindu myth.*, a wind-god; a storm-god.

Marxian (märk′si-a̤n), *a.* Pertaining to the socialistic or the historical views formulated by Karl Marx. *Kidd*, Western Civilization.

Marxist (märks′ist), *n.* A socialist of the school which accepts the views of Karl Marx, or a historian or sociologist who accepts Marx's economic interpretation of history. *Kidd*, Western Civilization.

marzacotto (märt-sä-kot′ō), *n.* [It. *marzacotto*, formerly a sort of ointment, also a potters' tool (Florio, 1598).] In *ceram.*, a thin coating of transparent glaze, made of oxid of lead, potash, and sand: used by Italian potters on their painted stanniferous enamel to increase the brilliancy of the colors. See ★*coperta.*

mas. An abbreviation of *masculine.*

M. A. S. An abbreviation of *Master of Applied Science.*

masamacush (mas′a̤-ma̤-kush″), *n.* [Prob. North Amer. Indian.] A common name of the Great Lake trout, *Cristivomer namaycush*, found in the Great Lakes, and widely distributed over northern North America.

masar, *n.* See ★*mazar.*

masarid (mas′a̤-rid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Masaridæ.*

II. *a.* Having the characters of or belonging to the family *Masaridæ.*

mascagnite (mas-kän′yīt), *n.* [*Mascagni* + *-ite*^{2}.] Same as *mascagnin.*

mascaret (mȧs-kä-rā′), *n.* [F. *mascaret*, < Gascon *mascaret*, of unknown origin.] A tidal bore.

The tide begins to make itself felt at Poses, 11 miles above Elbeuf, and between Caudebec and Villequier the *mascaret*, or bore, has its greatest development.
Encyc. Brit., XXXII. 508.

Maschil (mäs-kēl′), *n.* [Heb.] An epithet prefixed to thirteen psalms (32, 42, 44, 45, 52–55, 74, 78, 88, 89, and 142). It probably means 'a contemplative composition,' but the true significance is not certainly known.

mascot, *n.* **II.** *a.* Of the nature of a mascot; having luck-bringing qualities; lucky: as, *mascot* snakes; a *mascot* dog or goat.

mascularity (mas-kụ̄-lar′i-ti), *n.* [L. *mascul(us)*, male, + *-ar* + *-ity.*] Masculinity.

To some the unmentionables might savor of *mascularity.*
Kane, Grinnell Exp., xlvi. 425. *N. E. D.*

mash^1, *n.*—**Sour mash,** mash in which fermentation is begun by having put back into it some of a mash in which fermentation has already been going on.—**Sweet mash,** in *brewing*, mash in which fermentation has been started with yeast.—**Thick-mash process,** a method of preparing wort in brewing, chiefly employed in Bavaria, other parts of Germany, and Bohemia. It involves the removal of portions of the malt from the mash-tub to be boiled and returned to the mash-tub, so that much of the diastase is rendered inactive, while the starch of the boiled portion is brought to the condition of starch-paste and thus is more readily acted on, the production of glucose is regulated, and the amount of malt-extract in the wort is increased.—**Thin-mash process,** the method of preparing wort in brewing most common in France and England. It involves simple infusion of malt with water at 60° to 70° C., with continuous stirring in a mash-tub with a false bottom, the clear infusion being drawn off after a time from beneath this, and more water at the same temperature as before run on upon the malt for a second mashing. None of the malt is heated to the boiling-point of water.

mashed (masht), *p. a.* In *geol.*, noting rocks which are dynamically crushed and granulated.

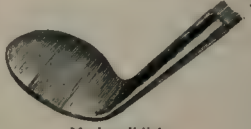
Also, northwest of Cranberry the gangue minerals and even magnetite are developed in the mass of the red granite along more or less *mashed* zones.
Contrib. to Econ. Geol., U. S. Geol. Surv., 1902, p. 245.

mashie, *n.* Same as ★*mashy*^{2}.

mashing, *n.* **4.** In *geol.*, the granulation of a rock in dynamic metamorphism. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. 762.

mashrebeeyah, meshrebeeyah (mash-, mesh-rẹ-bē′yä̤), *n.* [Ar. *mashrabīya.*] A window with openwork of light wooden bars, leaving free access to the air, and used as a place where a porous water-bottle may be put for cooling: usually, in Cairo and other Levantine cities, a projecting bay-window or oriole window, fitted on three sides with such openwork.

mashy^2, **mashie** (mash′i), *n.* In *golf*, a club with an iron head and a more or less lofted face.


Mashy-niblick.

mashy-niblick (mash′i-nib″lik), *n.* A golf-club with a small, deep iron head, lofted: used for approaching and playing out of hazards and bad lies.

mask^3, *n.* **9.** In *zoöl.*: (*c*) The skin of the forehead and upper part of the face of any quadruped, taken off at about the level of the eyes.—**10.** In *base-ball*, a protection for the face worn by the catcher. See ★*cage*, 8.—**Brewer's mask,** an apparatus used to facilitate inhalation of ethyl chlorid in the induction of surgical anæsthesia.—**Uterine mask,** chloasma occurring during pregnancy, or in certain cases of disease of the womb.

maskalonge, *n.*—**Chautauqua maskalonge,** a great pike or maskalonge, *Esox ohiensis*, found in Chautauqua Lake and in the Ohio Basin.

masked, *p. a.* **5.** In *pathol.*, same as ★*larval*, 2.

masking, *n.* **2.** In *photog.*, a device adopted in printing from an imperfect negative, consisting in pasting tissue-paper on the reverse side of the negative over the portions of the picture which print too deeply. *Woodbury*, Encyc. Dict. of Photog., p. 276.

masochism (maz′ọk-izm), *n.* [From Leopold von Sacher-*Masoch*, an Austrian novelist, who described the perversion.] A form of sexual perversion in which the victim craves, and takes pleasure in, physical abuse from one of the other sex: the opposite of *sadism.*

masochistic (maz-ọ̄-kis′tik), *a.* Characterized by or of the nature of masochism. *G. S. Hall*, Adolescence, II. 127.

mason-ant (mā′sn-ȧnt), *n.* Any ant which makes habitations of mud, such as *Lasius brunneus* or *Formica fusca* of Europe. *Kirby and Spence*, Entomology, p. 271.

Masonic china. See ★*china*^{1}.

masonry, *n.*—**Dry masonry,** work done without the use of mortar of any kind, especially where the stones are closely fitted and leave only fine joints between them.—**Polygonal masonry,** masonry which shows on the face of a wall many-sided blocks, the face being smooth, but the joints at irregular angles with each other. Thus five-sided and six-sided stones, and even more complicated pieces, are set in a wall by patient fitting of one to another, while very small splinters are used to make the surface more uniform.—**Trapezoidal masonry,** masonry in which the faces of the outer stones are four-sided but not rectangular. They may even have the top and bottom beds horizontal and parallel.

masonwork (mā′sn-wėrk), *n.* Masonry. [Colloq.]

masopin (mas′ọ̄-pin), *n.* A colorless compound, C$_{22}$H$_{36}$O, contained in the resin from a Mexican tree. It crystallizes in needles melting at 155° C. Also called *masopin resin.*

masrite (mas′rīt), *n.* [See ★*masrium.*] A fibrous alum from Egypt, supposed to contain a new element called *masrium.*

masrium (mas′ri-um), *n.* [NL., < Ar. *Masr*, Egypt, + *-ium.*] The name given to a supposed new chemical element of the same family with barium, strontium, and calcium, occurring as sulphate in the mineral masrite from Egypt. There has been no confirmation of its existence. The place to which the approximate atomic weight reported would assign it in the periodic classification of the elements seems to belong to the more recently discovered radium.

mass^1, *n*.—**Nuptial mass,** a mass celebrated at a church wedding, with special prayers and blessings for the couple married.

mass^2, *n.* **8.** In *phar.*, a preparation of thick, pasty consistency with which is incorporated some active medicinal substance: the mass is made up into pills of definite size and weight for administration.—**9.** In the *fine arts*, any large and simple expanse of form, light, shade, or color, in which the details of a composition arrange themselves.—**Achromatic mass.** See ★*achromatic.*—**Active mass.** (*a*) In *phys. chem.*, the amount of the active substance contained in the unit volume; the concentration of the active substance, or the number of gram-molecules (or gram-equivalents) contained in one cubic centimeter or one liter, as the case may be. (*b*) In *electrochem.*, the concentration of that fraction of the electrolyte which, at the given dilution, is dissociated into ions, and is therefore capable of carrying the electric current.—**Apparent mass,** the mass of a moving particle due to its electrostatic charge and to its velocity. It differs from the ordinary mass dealt with in mechanics, which is independent of the velocity.—**Electromagnetic mass,** mass due to the electric charge of a moving particle.

The *electromagnetic mass* is a vector quantity of the nature of a tensor, with the same kind of symmetry as an ellipsoid of rotation. *Science Abstracts*, VI., Sec. A, 238.

Gravitational mass, mass in the sense in which the term is used in ordinary mechanics: so called to distinguish it from the electromagnetic mass of a moving electron or charged particle.—**In mass** (*milit.*), in compact formation, as a close column.—**Lateral masses of the sacrum.** See ★*sacrum.*—**Law of conservation of mass.** See ★*conservation.*—**Law of mass action.** See ★*action.*—**Linear mass of points,** a mass not discrete: a term used by Hankel.—**Longitudinal mass,** in the dynamics of an electrically charged particle, mass which opposes acceleration in the line of motion.—**Mass resistivity.** See ★*resistivity.*—**Tigroid masses.** Same as *Nissl* ★*bodies.*—**Transverse mass,** in the dynamics of an electrically charged particle, mass which affects acceleration perpendicular to the line of motion.—**Vallet's mass,** a mixture of ferrous carbonate with sugar and honey brought by evaporation of water to a thick, pasty condition, used in medicine in the form of Vallet's pills. The sugar protects the iron from the action of the air tending to form ferric oxid or hydroxid.

Mass. An abbreviation of *Massachusetts.*

massa^2 (mas′ä̤), *n.* A copper coin of Ceylon.

massage^2, *n.*—**Douche massage,** massage combined with the application of a douche to the same part.—**Vibratory massage,** rapid and light percussion of a part, for therapeutic purposes, made by means of a special instrument.

Massaria (ma-sā′ri-ä̤), *n.* [NL. (De Notaris, 1844), named for Giuseppe Filippo *Massara* (1792–1839), an Italian botanist.] A genus of pyrenomycetous fungi having the perithecia separate and imbedded in the host. The spores are large, several-septate, brown, and usually surrounded by a conspicuous hyaline envelop. Many species have been described. They occur on dead trunks and branches. *M. inquinans* is a common species in Europe and America, found on the maple and other trees.

Massariaceæ (ma-sā-ri-ā'sẹ-ē), *n. pl.* [NL., < *Massaria* + *-aceæ.*] A family of pyrenomycetous fungi named from the genus *Massaria* and having the same general characters.

massecuite (mȧs-kwēt'), *n.* [F., 'baked mass.'] In the manufacture of sugar and in sugar-refining, the semi-fluid mixture of separating sugar crystals and residual syrup, produced by completed evaporation, from which, after cooling, the syrup is to be removed by drainage or by the use of the centrifugal machine.

masser^{3} (mas'ėr), *n.* [F. *masser.*] A masseur. [Great Britain.]

> A single *masser* should have strength enough to do the work without too obvious exhaustion, which gives the patient an unpleasant impression.
> *Encyc. Brit.*, XXX. 573.

masseur, *n.* **2.** An instrument designed for mechanical massage of the tissues.

massing^{1} (mȧs'ing), *n.* [*mass*^{1}, *v.*] The act denoted by the verb *mass*^{1}.

massing^{2} (mȧs'ing), *n.* [*mass*^{2}, *v.*] The act denoted by the verb *mass*^{2}.

massing^{3} (mas'ing), *n.* Same as *massage.* [Rare.]

> Without going so far as to make *massing* a closed profession, it is obviously desirable to have some guarantee of competency. *Encyc. Brit.*, XXX. 573.

massive, *a.* **6.** In *zoöl.*: (*b*) Noting a compact sponge of any kind which grows more or less equally in all directions: contrasted with *incrusting, dendritic, flabellate,* etc.—**7.** In *pathol.*, extensive; involving a large mass of tissue.

II. *n.* Same as *massif.*

> Mount Cochrane, . . . which rises 12,140 feet above sea-level. This powerful *massive* competes with Mounts San Valentin and San Clemente as to which is the highest of Patagonia. *Geog. Jour.* (R. G. S.), XVI. 206.

massive-solid (mȧs'iv-sol'id), *a.* Having the quality of being both solid and homogeneous.

> Judging from the heated conditions of the material extruded during a *massive-solid* eruption at the time it rises into the air, and reasoning also from the known variations in the physical and mineralogical features of the igneous rocks which depend on the conditions under which they solidify, we should expect the lavas extruded in a *massive-solid* condition to present at least three leading physical characteristics.
> *Amer. Jour. Sci.*, April, 1904, p. 263.

massless (mȧs'les), *a.* [*mass*^{2} + *-less.*] In *physics*, devoid of mass.

masson (mȧ-soṅ'), *n.* A silver coin of Lorraine in the eighteenth century. It was struck under Leopold I. (1690–1729), and was named from Masson, the director of the mint.

Masson's disk. See ★*disk.*

massotherapeutics (mas″ọ-ther-ạ-pū'tiks), *n.* [*mass(age)* + *therapeutics.*] Treatment of disease by means of massage. Also *massotherapy.*

massoy (mas'oi), *n.* [Also *massay, massoi, mussoi*; Malay *masui.*] The bark of an East Indian tree, *Cinnamomum Kiamis.* *N. E. D.*

mast^{1}, *n.*—**Bonaventure mast** (*naut.*), the after-mast of a four-masted vessel of the Elizabethan period, which corresponded to the jigger-mast of to-day.—**Fore-trysail mast.** Same as ★*fore-spencer mast.*—**Lower-mast,** the first mast above the deck; the mast that steps in the keelson and passes through the deck.—**Mast-and-guy system,** a method of providing longitudinal strength in wooden river-steamers having shallow hulls. Strong keelsons in the bottom support a series of vertical poles or masts on each side of the vessel, which are tied and braced together with iron rods or chains, thus forming a structure analogous to a bridge-girder. **Mast-yard plates,** the iron plates of which the yards of some vessels are constructed.

mastaba (mas'tạ-bạ̈), *n.* [Ar. *mastaba* or *mastaba*, a stone or mud bench.] The earliest form of Egyptian tomb, a building oblong or square in plan and having sloping sides and a flat roof. It covers the sepulchral pit.

mastaxed (mas'takst), *p. a.* Possessing a mastax, or chitinous gizzard, as rotifers.

> He also describes a new *mastaxed* male.
> *Nature*, Feb. 5, 1903, p. 327.

mast-cell (mȧst'sel), *n.* A name given to certain large wandering cells of the leucocyte type, found in the blood and connective tissues under normal but more especially under pathological conditions, such as those of leucemia, chronic inflammation, etc. See cut under ★*lymphocyte.* *Buck*, Med. Handbook, I. 75.

mast-cloth (mȧst'klôth), *n.* The middle breadth of canvas in a square sail, which receives the chafing of the mast; also, a covering of canvas sometimes laced on the after-mast of a steamship, so as to receive the soot and smoke from the stack when at sea.

master^{1}. **I.** *n.*, **9.** (*e*) In medieval musical gilds, especially those of the mastersingers, one who had attained the highest rank of proficiency.—**Master of misrule** (*naut.*), the title given by his messmates to the elected master of ceremonies during the recreation-hour obtained from the captain for the purpose of indulging in all kinds of pranks and absurdities. It was a well-known custom on old-time vessels to grant this privilege to the crew as a mark of appreciation for some good work done by them.—**Master of the Crown Office.** See ★*crown.*—**Small master,** a painter of small easel-pictures.

> The great majority of pieces due to the brush of this most exquisite of all '*small masters*' [Watteau] were no doubt engraved.
> *Claude Phillips*, in Burlington Mag., V. 235.

II. *a.*—**Master card.** See ★*card*^{1}.—**Master controller.** See ★*controller.*—**Master record.** See ★*record.*

master-general (mȧs'tėr-jen″ẹ-rạl), *n.* An officer of the British Army from 1483 to the Crimean war, who was charged with the supply and transportation of the army and in the early days controlled the artillery and engineers. Also called *master-general of ordnance.*

master-keyed (mȧs'tėr-kēd), *a.* Fitted to a master-key.

> A series of locks is said to be "*master-keyed*" when so constructed that each lock can be operated by its own key, which fits it but no other lock in the series, and also by another key which will operate every lock in the series, this latter being designated as a "master-key" or "pass-key."
> *H. R. Towne*, Locks and Builders' Hardware, p. 121.

master-mechanic (mȧs″tėr-mẹ̄-kan'ik), *n.* A chief mechanic; one who has charge of the machinery, etc., of shops.

master-song (mȧs'tėr-sông), *n.* The art in general, or some accredited composition, of the mastersingers or meistersänger. See *mastersinger.*

master-strap (mȧs'tėr-strap), *n.* A heavy steel strap used in wood-bending machines to insure smooth bending of the wood.

master-tap (mȧs'tėr-tap), *n.* A tap used to cut a die for any screw, but not used in cutting threads in the nuts, a larger tap being used for that purpose to afford a slight clearance.

Masthead compass. See ★*compass.*

mast-hinge (mȧst'hinj), *n.* *Naut.*, a kind of socket for quickly stepping and unstepping the mast of a small sail-boat.

mast-hole (mȧst'hōl), *n.* In *ship-building*, the hole through the partners of a deck to receive the mast. See *partner*, 3.

mastic, *n.*—**Oil of mastic.** See ★*oil.*

masticator, *n.* (*d*) An attachment to a feed-cutter. It crushes, shreds, and mixes hay, corn, or other material cut in the feed-cutter, and is designed to render the feed more digestible and palatable.

mastigobranch (mas'ti-gọ-brȧngk), *n.* Same as ★*mastigobranchia.* *Annals and Mag. Nat. Hist.*, Nov., 1903, p. 536.

mastigobranchia (mas″ti-gọ̄-brang'ki-ạ̈), *n.*; pl. *mastigobranchiæ* (-ē). [NL., < Gr. *μάστιξ* (*μαστιγ-*), whip, + *βράγχια*, gills.] A bush-like or plumose epipodial appendage of the throacic limbs of decapod crustaceans, serving to clean the gills.

> First maxillipeds with a 2-lobed *mastigobranchia.* . . . The *mastigobranchiæ* are extremely rudimentary, consisting of a minute tubercle with a mere trace of a plume.
> *Trans. Linnean Soc. London*, Zool., Feb., 1903, p. 440.

mastigobranchial (mas″ti-gọ̄-brang'ki-ạl), *a.* [*mastigobranchia* + *-al*^{1}.] Pertaining to or characteristic of a mastigobranchia.

> First maxillæ 2-branched; second pair 3-branched, with wide *mastigobranchial* plate.
> *Trans. Linnean Soc. London*, Zool., Feb., 1903, p. 440.

mastigophoran (mas-ti-gof'ọ-rạn), *a.* and *n.* **I.** *a.* Relating or pertaining to the *Mastigophora.*

II. *n.* Any one of the *Mastigophora.*

Mastigopus (mas-tig'ọ-pus), *n.* [NL., < Gr. *μάστιξ* (*μαστιγ-*), a whip, + *πούς*, foot.] The final stage in the development from the larval to the adult condition of certain decapod crustaceans, as the *Sergestidæ.* The external changes involved consist largely in modifications of the appendages of the antennary and mouth parts and of the ambulatory limbs. *Proc. Zool. Soc. London*, 1896, p. 944.

mastigosis (mas-ti-gō'sis), *n.* [Gr. *μαστίγωσις*, < *μαστιγοῦν*, whip, flog, < *μάστιξ*, a whip, a scourge.] Whipping; flagellation.

mastigospore (mas'ti-gọ-spōr), *n.* [Gr. *μάστιξ* (*μαστιγ-*), a whip, + *σπορά*, seed.] In *phytogeog.*, a plant which distributes itself by means of ciliate or flagellate propagative cells, as in *Protococcus*, etc., or by plant-bodies similarly motile, as in *Bacteriaceæ* and *Volvocaceæ.* *F. E. Clements.*

masting (mȧst'ing), *n.* On a sailing-vessel, the arrangement of the masts and their supports.

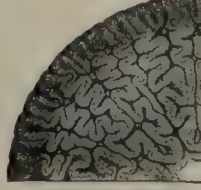
> This method of procedure has long been followed in the Royal Navy, where the data as to *masting*, etc., obtained and tabulated long ago for the now obsolete classes of sailing ships, have furnished rules for practice up to the present time, and have made serious accidents, such as dismasting, almost unknown.
> *White*, Manual of Naval Arch., p. 343.

mastodonic (mas-tọ-don'ik), *a.* [*mastodon* + *-ic.* The regular type is *mastodontic.*] Relating to or having the characters of a mastodon; mastodontic; gigantic. *Kane*, Grinnell Exp., xxxi. 269. *N. E. D.*

mastodonsaurian (mas″tọ-don-sâ'ri-ạn), *a.* and *n.* **I.** *a.* Pertaining to, resembling, or having the characters of *Mastodonsaurus.*

II. *n.* A member of the labyrinthodont genus *Mastodonsaurus.*

Mastodonsaurus (mas″tọ-don-sâ'rus), *n.* [NL., < Gr. *μαστός*, teat, + *ὀδούς* (*ὀδοντ-*), tooth, + *σαῦρος*, lizard.] A genus of very large labyrinthodont amphibia having a skull one and one quarter meters in length, the outer surface of which is highly sculptured, the premaxillæ pierced for the passage of two tusks of the lower jaw, and the teeth of very complicated structure. The body skeleton is known only in part. It occurs in the Triassic of Europe and India.



Section of a tooth of a *Mastodonsaurus.*

mastoid. I. *a.*—**Mastoid antrum,** the mastoid cells taken collectively.—**Mastoid disease.** Same as *mastoiditis.*—**Mastoid empyemia.** See ★*empyemia.*—**Mastoid sinus.** See ★*sinus.*

II. *n.* **3.** Same as *pterotic.* *Starks*, Synonymy of the Fish Skeleton, p. 510.

mastoidale (mas″toi-dā'lē), *n.* [NL., neut. of **mastoidalis*, < *mastoides*, mastoid.] In *craniom.*, the lowest point of the mastoid process. *Von Török.*

mastoidectomy (mas-toi-dek'tọ-mi), *n.* [NL. *mastoides*, mastoid, + Gr. *ἐκτομή*, excision.] A surgical operation for the excavation of the mastoid process. *Lancet*, April 4, 1903, p. 957.

mastoideum, *n.* **2.** Same as *opisthotic.* *Starks*, Synonymy of the Fish Skeleton, p. 511.

mastoiditis, *n.*—**Sclerosing mastoiditis,** chronic mastoiditis in which the walls of the cells become thickened, almost or quite obliterating the latter.

mastoidotomy (mas-toi-dot'ọ-mi), *n.* [NL. *mastoides*, mastoid, + Gr. *τομή*, a cutting.] A surgical operation for opening into the mastoid cells in cases of mastoiditis, in order to provide for drainage and free exit of the pus.

mastomenia (mas-tọ-mē'ni-ạ̈), *n.* [NL., < *μαστός*, breast, + *μῆνες*, menses.] A form of vicarious menstruation in which there is bleeding from the breasts.

mastoncus (mas-tong'kus), *n.*; pl. *mastonci* (-ton'sī). [Gr. *μαστός*, breast, + *ὄγκος*, mass.] A mammary tumor.

mastopexy (mas'tọ-pek-si), *n.* [Gr. *μαστός*, breast, + *πῆξις*, fastening.] A surgical operation for raising and supporting pendulous breasts.

mastorrhagia (mas-tọ-rā'ji-ạ̈), *n.* [NL., < Gr. *μαστός*, breast, + *-ραγια*, < *ῥηγνῦναι*, break.] Hemorrhage from the breast.

mast-partners (mȧst'pärt″nėrz), *n. pl.* Same as *partners.* See *partner*, 3.

mast-plate (mȧst'plāt), *n.* In *iron ship-building*, one of the plates of which an iron mast is constructed.

mastrous, *a.* **2.** Great; remarkable. Also used adverbially: as, a *mastrous* large school. [Prov. Eng.]

M. Ast. S. An abbreviation of *Member of the Astronomical Society.*

mast-step (mȧst'step), *n.* In *ship-building*, a support above the keel or on a deck on which the heel of the mast rests and by which it is prevented from moving sideways. In racing-yachts, the step is built up into a structure of cross girders to distribute the load over a large area of the lightly constructed bottom.

mast-tackle (mȧst'tak″l), *n.* A purchase for hoisting or lowering a mast; a purchase secured to the masthead for the purpose of handling heavy weights.

masut (mä-söt′), *n.* [Said to be Russian; cf. Russ. *maslo*, oil, butter.] The Russian name for crude petroleum from the Caucasus, which has lost the more volatile hydrocarbons by exposure to the air. The name is also applied, but less properly, to the residue from the distillation of such petroleum after all illuminating oil has been driven off. This residue is properly called ★*astatki* (which see).

mat^1, *n.* 9. In *phytogeog.*, a mat-like aggregation of tufts from basal branches. Compare ★*mat-plant*. *Pound and Clements.*—**Abdominal mat.** See ★*abdominal.*—**Chafing-mat** (*naut.*), a mat-like binding wound around a hawser or rope, or laid under the end of a plank or spar, to prevent chafing or wear.—**Chinese mat**, a particular style of package in which the poorest grades of cassia-bark are marketed. It consists of two small rolls sewn into a mat; in the center are heavy foreign materials, outside of that cinnamon-chips of very inferior quality, and on the extreme outside neatly arranged quills of fair size and quality.—**Cork-mat** (*naut.*), a bag filled with granulated cork, used to prevent chafing; a cork fender.—**Dock-mat**, a rope fender used in a dock to protect the side of a vessel.

Matabele (mä-tä-bā′le), *n.* [From a tribe name.] A name given in South Africa to a large predatory true ant which is said to capture white ants and keep them as slaves in its own colonies.

matador, *n.* 4. In *skat*, every trump in unbroken sequence with the highest trump, if in the same player's hand or on the same side as the highest trump. See ★*skat*^{2}.

Matagne schists. See ★*schist*.

matalan (mä′tä-län), *n.* [E. Ind.] A small Hindu flute used with bayadere dances.

matama (mä-tä′mä), *n.* [East African.] A native name for a kind of millet, *Sorghum vulgare*, much cultivated by the natives of Africa. Also called *Kafir-corn* and *durra*.

> The native food resources are *matama*, maize, manioc, and in some parts bananas. *Nature*, May 7, 1903, p. 15.

matanza (mä-tän′thä), *n.* [Sp., < *matar*, kill.] 1. The act of butchering or slaughtering.—2. The place where cattle are slaughtered.

Matawan formation. See ★*formation*.

match^1, *n.*—**Three-ball match.** See ★*ball*^{1}.

match^1, *v. t.* 5. In *building*, to bring to a uniform width or thickness by any process, either by sorting and arranging the material or by cutting down some pieces to correspond with others: thus, planks are said to be of *matched* width.—6. In *logging*. See ★*mate*^{1}, *v. t.*, 3.

match^2, *n.*—**Parlor-match**, the trade-name for a friction-match made without sulphur, or with so little that the disagreeable suffocating smell from its combustion is practically avoided.—**Settlers' matches**, the long pendulous strips of bark which hang from eucalypts and other trees during decortication, and which, when thoroughly dry, are used for torches and kindling. [Australia.]

Match-makers' disease. See ★*disease*.

match-play (mach′plā), *n.* [*match*^{1}, *n.*, + *play*^{1}, *n.*] In *golf*, play in which the score is reckoned by counting the holes lost or won on either side.

mate^1, *n.* 6. In *geom.*, the element that is paired with a given element in a correlation.—**Chief mate** (*naut.*), the deck-officer next below the master in rank; the one upon whom the command of the vessel would fall in the event of the death or disability of the captain.—**Extra second mate.** Same as *navigating* ★*mate*.—**Junior mate** (*naut.*), any of the mates lower in rank than the chief mate.—**Machinist's mate**, a chief petty officer of a man-of-war, who stands watch in the engine- and fire-rooms when the vessel is under way.—**Mate of the deck** (*naut.*), the officer of the watch.—**Mate of the hold** (*naut.*), the officer who has charge of, and is responsible for, the condition of the hold.—**Mate of the hull** (*naut.*), an old-fashioned rating for the officer specially assigned to the work on the hull, spars, and the standing and running rigging in the fitting out or repairing of a vessel. This officer was generally the chief mate, although a junior mate was sometimes selected.—**Mate of the watch** (*naut.*), the officer in charge of the deck; the mate on watch who has charge of the ship.—**Navigating mate** (*naut.*), the mate assigned to duty in the chart-room. On some steamships a navigating mate called an *extra second mate* is carried, whose specific duty it is to look after the navigation of the ship as an aid to the captain. This officer stands no regular bridge watch, but is supposed to be on the alert day and night to ascertain the ship's place in latitude and longitude, to lay out the ship's course, and to determine the deviation of the compass by azimuths of the sun, moon, and stars.—**Senior mate** (*naut.*), the chief mate.

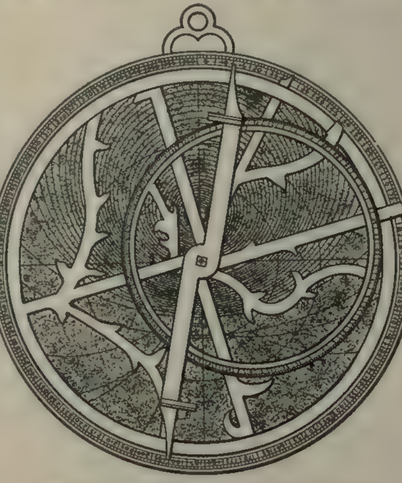
mate^1, *v. t.* 3. In *logging*, to place together in a raft (logs of similar size); match.

mate^3, *n.*—**Forced mate**, in *chess*, a mate at a certain stage of the game, which cannot be avoided even by the best possible rejoinders.

mate^4, *n.* 2. Same as ★*congonha*.

mateceric (mä-te-ser′ik), *a.* [*mate*^{4} + L. *cera*, wax, + *-ic*.] Noting an acid, a colorless compound, obtained from the wax of *yerba-maté*.

mater^2, *n.* 3. The large metallic disk which forms the foundation of an astrolabe, and carries at its circumference the graduation upon which the indications of the alidade or index are read. *Sci. Amer.*, Aug. 12, 1905, p. 120.



Astrolabe of Regiomontanus, showing the Mater.

Material point, placenta. See ★*point*^{1}, ★*placenta*.

materialism, *n.*—**Psychophysical materialism**, the doctrine that the problem of psychology is to determine the dependence of immediate experience upon the body. *W. Wundt* (trans.), Outlines of Psychol., p. 17.

material-man (mā-tē′ri-al-man), *n.* One who keeps for sale the materials used in some trade, especially those used by builders.

materteral (mā-tėr′te-ral), *a.* [L. *matertera*, maternal aunt.] Characteristic of a maternal aunt. *W. Taylor*, Monthly Rev., CII. 447. *N. E. D.*

matezite (mat′ē-zīt), *n.* 1. A carbohydrate which occurs in crude india-rubber from Madagascar. It is the mono-methyl ether of optically inactive inosite.—2. Same as ★*pinite*.

matezo-dambose (mat′ē-zō-dam′bōs), *n.* A name given to d-inosite obtained by treating pinite (matezite) with hydriodic acid.

mat-grass, *n.* 3. In Australia, *Manisuris compressa*, a grass with creeping or ascending flattened stems, esteemed for pasturage and said to keep green the whole year in dry climates.—4. Same as *tussock-grass*, 2. *Hannan*, Textile Fibres of Commerce, p. 139.

math. An abbreviation (*c*) of *mathematician*.

Mathematical induction. (*b*) See ★*induction*.

mathematicophysical (math-ē-mat″i-kō-fiz′i-kal), *a.* Of or pertaining to mathematical physics; noting the study of physics by mathematical methods.

mathematics, *n.*—**Mixed mathematics**, mathematics into which the consideration of the properties of matter enters.—**Pure mathematics**, mathematics apart from its applications. Compare *applied mathematics*.—**Qualitative mathematics**, mathematics rigorously kept free from every quantitative idea, being neither positively nor negatively quantitative: for instance, pure projective geometry as founded and expounded by von Staudt (1847).

mathetic (ma-thet′ik), *a.* [Gr. *μαθητικός*, relating to learning. See *mathesis*.] Of or pertaining to mathesis or learning. *Bentham*.

Matico camphor. See ★*camphor*.

matildite (ma-til′dīt), *n.* [*Matilda* (see def.) + *-ite*^{2}.] A sulphobismutite of silver ($AgBiS_2$), occurring in gray prismatic crystals, also massive: from the Matilda mine, near Morococha, Peru. Also found in Colorado.

mâtin^2 (mä-taṅ′), *n.* [F.] A French breed of large dogs, somewhat resembling the great Dane, but rough-coated; also used to some extent for sheep-dogs. Also *mâtin-dog*.

mâtin-dog, *n.* See ★*mâtin*^{2}.

mating, *n.*—**Apolegamic mating**, preferential mating; conscious and intentional sexual selection.—**Assortative mating, assortive mating, homogamous mating**, the pairing or mating of animals, or of human beings, with some common distinctive characteristic, considered apart from the question whether the mating is due to conscious selection of or preference for this characteristic or is unintentional or unconscious; sexual selection in its widest sense.

> We could hardly want stronger evidence of the existence of *assortative mating* in man, i.e. of the actuality of sexual selection. *Biometrika*, Nov., 1903, p. 373.

Autogamic mating, the pairing or mating of like with like.

> Pearson adds, "Variations do not occur accidentally, or in isolated instances; *autogamic* and assortive mating are realities." *T. H. Morgan*, Evol. and Adapt., p. 269.

Endogamic mating or **breeding**, mating or breeding within the limits of the tribe or family.—**Heterogamous mating**, the pairing or mating or marriage of unlike individuals, as contrasted with *homogamous* ★*mating*.—**Homogamous mating.** Same as *assortative* ★*mating*.—**Pangamic mating**, marriage or mating or pairing at random within the limits of the race, without conscious or unconscious preference or selection.—**Preferential mating**, marriage or pairing or mating with one individual of the opposite sex rather than another, as the result of preference or selection; sexual selection as commonly understood.—**Selective mating**, homogamous or assortative mating with or without conscious preference.

matipo (mä′tē-pō), *n.* [Maori.] A name for several of the New Zealand trees also called *mapau*, particularly for those better known as *tarata* and *tawhiri*. See ★*mapau*, ★*tarata*, and ★*tawhiri*.

matka (mat′kä), *n.* [Russ. *matka*, mother, dim. of *mati*, mother.] A Russian name of the mother fur-seal, used on the Pribilof Islands.

matlow (mat′lō), *n.* A corruption of French *matelot*, sailor.

> They get into her an' bale out another young Christmas-treeful of small reckonin's—brass mostly. Simultaneous it hits the Pusser that 'e 'd better serve out mess pork for the poor *matlow*.
> *R. Kipling*, Traffics and Discoveries, p. 54.

mato (mä′tō), *n.* [Porto Rican.] 1. A hard, round seed of any one of several leguminous plants, used by children for playing marbles; especially, a seed of *Guilandina Crista*, *G. major*, *Ormosia monosperma*, or *Stizolobium urens*, or one of the plants itself. They are usually distinguished from each other, as *mato azul*, *mato amarillo*, etc.—2. A game of marbles played with these seeds.

Matonia (ma-tō′ni-ä), *n.* [NL. (Robert Brown, 1830), named for Dr. *Maton*, a London physician.] A small genus of peculiar Malaysian ferns, the only living representatives of the family *Matoniaceæ*. The best-known species, *M. pectinata*, which occurs also as a fossil, has rigid fan-shaped fronds, from 1 to 2 feet wide and palmately divided, the divisions pectinately pinnatifid, and the sori, which are borne singly at the confluence of several veinlets toward the base of the segment, large, globose, with a peltate stipitate superior indusium inclosing six sessile radial sporangia which are laterally connate. A second, rare species, *M. sarmentosa*, is of very different habit but of like fructification.

Matoniaceæ (ma-tō-ni-ā′sē-ē), *n. pl.* [NL., < *Matonia* + *-aceæ*.] One of the eight families of ferns comprising the *Eufilicineæ*, or homosporous leptosporangiate *Filicales*, and typified by the genus *Matonia*. There are, besides, some half-dozen genera of fossil plants placed in this family. See ★*Matonia*.

mat-plant (mat′plant), *n.* A plant of a prostrate radiating habit.

> The *mat-plant*, such as a purslane or carpet-weed, adapted to life on a flat plane.
> *C. MacMillan*, Minnesota Plant Life, ii.

matranee (ma-trä′nē), *n.* [Also *metrahnee*; Hind. *mehtarānē*, fem. of *mehtar*, a sweeper, or scavenger.] A female sweeper or scavenger.

matrical (mat′ri-kal), *a.* [L. *matrix* (*matric-*) + *-al*^{1}.] In *histol.*, of or pertaining to a matrix, like the matrix of a tissue such as cartilage.

> The nutrition of the cartilage is probably effected by impenetration of fluids along the fine bundles of fibers, which in this way come to stand out clearly amid the *matrical* substance.
> *Jour. Roy. Micros. Soc.*, April, 1903, p. 163.

matrimony, *n.* 4. It is played with a lay-out on which bets are placed, the players winning the counters in each division according to the combinations held. These are: *matrimony*, any king and queen; *intrigue*, any queen and jack; *confederacy*, any king and jack; a *pair*, any two cards of the same denomination, and *best*, the ace of diamonds. Two cards are given to each player.

matrine (mā′trin), *n.* A crystalline dextrorotatory alkaloid, $C_{15}H_{24}ON_2$, contained in the roots of *Sophora angustifolia*. It melts at 80° C.

matriotism (mā′tri-ot-izm), *n.* [L. *mater*, mother: on the analogy of *patriotism.*] Loyalty to one's mother country. [Rare.]

> I am delighted with your *matriotism.* "Rome, Venice, Cambridge!" I take it for an ascending scale, Rome being the first step and Cambridge the glowing apex.
> *Lowell*, Letters, I. 270.

matrix, *n.*—**Rank of a matrix.** See ★*rank*^{2}.

matrix-bar (mā'triks-bär), *n.* A combination of matrices, usually 12 in number, on one plate or bar of metal, as arranged for typemaking on the monoline machine.

matrix-gem (mā'triks-jem), *n.* An opal, turquoise, ruby, or other gem intimately mixed with the matrix material and cut with it.

mat-rush (mat'rush), *n.* The great bulrush, *Scirpus lacustris.*

matsa (mä'tsä), *n.*; pl. *matsoth* (mät-sōt'). [Also *mazza*, pl. *mazzoth*; Heb. √*matsats*, suck, taste.] Unleavened bread. See *Passover.*

matted^{2} (mat'ed), *p. a.* Dull; lusterless; covered with a mat glaze: as, *matted* steel; *matted* glass; *matted* pottery.

matter, *n.*—**Bredichin's matter**, matter of which comets' tails are formed, according to the hypothesis of Bredichin.

> He [Bredichin] has found that it is merely necessary to postulate three kinds of matter, issuing from the nucleus with three initial velocities, and subject to repulsion from the sun with three sets of forces of repulsion—i.e., as compared with ordinary gravitative attraction for the whole of the phenomena of all sorts of comets to be very completely accounted for. . . . With the comparatively slow separation of the atoms of *Bredichin's matter* from the nucleus, each one describing its own hyperbola convex to the sun, the tail at any moment represents the then position of any number of atoms which left the nucleus for some distance back.
> *Nature*, Sept. 10, 1903, p. 450.

Fourth state of matter, a term proposed by Crookes for the condition in which gases exist when the pressure is so low that the particles have a mean free path greater than the dimensions of the containing vessel. A gas under such pressures is also called a *hypergas* or *radiant matter.* See *radiant matter.*—**Gray matter** or **substance.** See ★*gray.*—**Law of conservation of matter.** See ★*conservation.*—**Matter in pais**, in *law*, in the country; not in court.

Matteuccia (ma-tū'chiạ̈), *n.* [NL. (Todaro, 1866), named in honor of Carlo *Matteucci*, an Italian physicist and statesman.] A small genus of dimorphous polypodiaceous ferns, having the fronds borne in a close, upright crown from an ascending rhizome. In the single American species, the ostrich-fern, *M. Struthiopteris* (*Onoclea Struthiopteris*, *Struthiopteris Germanica*), which occurs also in Europe, the bright-green sterile fronds are broadly lanceolate and bipinnatifid, from 3 to 6 feet high, with the lower pinnæ reduced in size. The sterile fronds, which appear late in the season, are much smaller and usually devoid of leafy tissue, with the crowded sori wholly concealed beneath the strongly revolute margins of the contracted, bead-like pinnate divisions. There is, besides, an Asiatic species, in most respects similar.

Matthean (ma-thē'ạ̈n), *a.* [L. *Matthæ*(*us*) + *-an.*] Of or pertaining to St. Matthew or to the Gospel attributed to him.

matting^{2}, *n.* **3.** In stained glass, color laid on to deaden a surface or to render glass less transparent.

mattoid (mat'oid), *n.* [It. *mattoide*, madman, < *matto*, < ML. *mattus*, stupid, dull, + *-oide*, E. *-oid.*] One who exhibits symptoms of mental degeneration but is not positively insane; a semi-insane person; a crank: a term used by Lombroso to designate a semi-insane person whose ideas and aims (often of a literary or artistic character), while they may simulate those of talent and even of genius, are marked by radical absurdities which the patient is unable, through mental weakness, to perceive.

mattowacca (ma-tō-wak'ạ̈), *n.* [Appar. an Amerindian name.] Same as *gizzard-shad.*

mattras, *n.* Same as *matrass.*

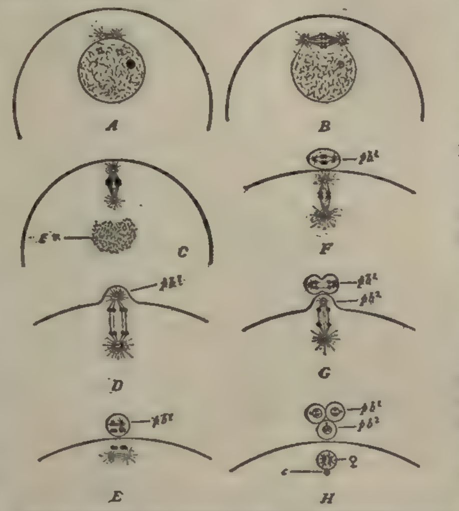
Mattress blanket. See ★*blanket.*

mattress-wire (mat'res-wīr), *n.* Fine steel wire used for making wire mattresses.

matura (mā-tū'rạ̈), *n.* Same as *imago.* [Rare.]

> Exception is taken to the use of the words "imago" and "imagine," introduced by Linnæus, as representing the final stage of insect metamorphosis, and "*matura*" (maturo = to ripen) is suggested and employed as a substitute, conforming conveniently with the accepted terms for the earlier stages—larva and pupa.
> *Nature*, March 30, 1905, p. 521.

maturation, *n.* **3.** In *cytol.* and *embryol.*, the final stage in the development of the germ-cells (ovum and spermatozoön). This stage is characterized by certain changes in the chromosomes, especially a reduction in their number to one half of that of the chromosomes in the somatic or body cells. *Parker and Haswell*, Zoology, I. 18.



Diagrams showing the essential facts in the maturation of the egg. The somatic number of chromosomes is supposed to be four. *A*, initial phase, two tetrads have been formed in the germinal vesicle; *B*, the two tetrads have been drawn up about the spindle to form the equatorial plate of the first polar mitotic figure; *C*, the mitotic figure has rotated into position, leaving the remains of the germinal vesicle at *g.v.*; *D*, formation of the first polar body, each tetrad divides into two dyads; *E*, first polar body formed, two dyads in it and in the egg; *F*, preparation for the second division; *G*, second polar body forming and the first dividing, each dyad divides into two single chromosomes; *H*, final result, three polar bodies and the egg-nucleus, ♀, each containing two single chromosomes (half the somatic number); *c*, the egg-centrosome which now degenerates and is lost. (From Wilson's "The Cell.")

mature, *a.* **5.** In *phys. geog.* and *geol.*, noting the stage of maximum development; specifically, noting a stage in the cycle of erosion when the fullest development of variety in forms and of activity in processes is attained.

> The usual outlines of a *mature* lake-shore in consequence of wave-action. *Geog. Jour.* (R. G. S.), XVI. 447.

Mature river, topography. See ★*river*2, ★*topography.*

maturer (mạ̄-tūr'ėr), *n.* One who, or that which, matures; whatever serves to ripen or bring to maturity; something added, as to ale, to ripen or mature it: as "sorrow is a great *maturer* of judgment," *Addison.*

maturescence (mat-ụ̄-res'ẹns), *n.* [See *maturescent.*] The process of becoming mature; maturation.

maturity, *n.* **4.** In *phys. geog.*, that stage in the geographical cycle or cycle of erosion when the fullest development of variety in forms and of activity in processes is attained. It lies between the uncarved forms of youth and the worn-down forms of old age.

Matuta (mā-tū'tạ̈), *n.* [NL., < L. *Matuta*, a surname of Ino, a sea-deity.] The typical genus of the family *Matutidæ.* It is noted for its powers of swimming and burrowing. *Fabricius*, 1798.

Matutidæ (mā-tū'ti-dē), *n. pl.* [NL., < *Matuta* + *-idæ.*] A family of oxystomatous brachyurous crustaceans, having much the same characters as the *Calappidæ* except that the third maxillipeds have the three terminal joints concealed beneath the triangular acute fourth joint. It includes the genera *Matuta* and *Hepatus.*

matutinary (mạ̄-tū'ti-nạ̄-ri), *a.* [L. *matutin*(*us*) + *-ary.* See **matutinal.**] Same as *matutinal.* [Rare.]

> We were aroused at four o'clock this morning; had some eggs and coffee, and were ready to start between five and six; being thus *matutinary*, in order to get to Terni in time to see the falls.
> *Hawthorne*, Fr. and Ital. Note-books, I. 239.

maty^{3} (mā'ti), *n.*; pl. *maties* (-tiz). [Dim. of *mate*^{1}.] **1.** A mate; a companion.—**2.** A dockyard carpenter, shipwright, or artificer. [Eng.]

mau (mou), *n.* A tsetse-fly.

maud^{2} (mâd), *n.* [Origin obscure.] A salmon-net stretched around four stakes in the form of a square.

maudlinize (mâd'lin-īz), *v. t.*; pret. and pp. *maudlinized*, ppr. *maudlinizing.* To make maudlin-drunk. [Rare.]

> *Mi.* Pledge her, good brother.
> *Gab.* I do—
> *Mi.* I hope 't will *maudlenize* him.
> *R. Brome*, Covent-Garden Weeded, iv. 1.

Maugrabee (mâ' gra-bee), *n.* Same as *Mograbin.*

Maugrabin, *n.* Same as *Mograbin.*

maul^{1}, *n.* Specifically—2. In *well-boring*, a heavy block of wood used like the ram of a pile-driver to drive pipe into the ground for water or preliminary to boring in the rock below.—**Double-headed maul**, a large iron hammer the two ends of which are equal in size, both of them steel-faced, and which is used for driving bolts.—**Single-headed maul**, a large iron hammer having a flat head, steel-faced at one end and with a point at the other.

maul^{5} (mâl), *n.* Same as *mold*^{2}, *n.* [Prov.]—**Black mauls**, a fungous disease of willows, in Ireland, attributed to a pyrenomycetous fungus, *Physalospora gregaria.*

maulavi, *n.* Same as ★*maulvi.*

maulvi (moul'vi), *n.* [Also *moulvi*, *maulavi*, *molavee*, etc. Hind. *maulavī*, *maulvī*, in popular speech *mulvī*, also *maulī*, *maulbī*, < Ar. *maulawī* (*maulavī*, *maulvī*): see *molla.*] In Hindu Mohammedan use, a judge; a doctor (of the law): a common title of learned men, professors of the law and literature.

maungee, *n.* See ★*manjee.*

mauve, *n.*—**Acid mauve.** See ★*acid-mauve.*

maux (mâks), *n.* [See *mawk*^{2}.] A slattern; a woman of low character; a prostitute. [Obs. or dial.]

mauzeliite (mou-zā'li-īt), *n.* [Named after R. *Mauzelius*, a Swedish chemist, who analyzed it.] A titano-antimonate of lead and calcium occurring in dark-brown octahedrons at Jakobsberg, Sweden.

mavourneen (mạ-vör'nēn), *n.* [Ir. *mo*, my; *mūirnīn*, darling, dim. *muirn*, joy, affection.] My darling; darling: an Irish term of endearment.

> Kathleen *mavourneen!* the grey dawn is breaking.
> *Annie Barry Crawford.*

maw-bound, *a.* **II.** *n.* Same as ★*grain-sick.*

Mawworm^{2} (mâ'wėrm), *n.* A man who resembles Mawworm, a character in Bickerstaffe's play "The Hypocrite," 1769; a hypocritical pretender to sanctity. *N. E. D.*

> A man naturally likes to look forward to having the best. He would be the very *Mawworm* of bachelors who pretended not to expect it.
> *George Eliot*, Middlemarch, I. ii.

Mawwormish (mâ'wėrm-ish), *a.* Characteristic of Mawworm. See *Mawworm*^{2}.

> He [Luther] was no sour Sabbatarian, no *mawwormish* mar-joy. He had music in his soul.
> *Karl Blind*, in Gentleman's Mag., CCLV. 488.

max^{2} (mäks), *n.* [A native name in Yucatan.] A Central American curculionid beetle whose larva burrows into the sisal plant in Yucatan.

> Next to fire, a large, long-nosed black beetle is the greatest enemy of the cultivated sisal. It is known to the natives as the "*max.*"
> *Sci. Amer. Sup.*, May 9, 1903, p. 22869.

maxillary. **I.** *a.*—**Maxillary index.** See ★*index.*—**Maxillary neuralgia.** Same as *facial* ★*neuralgia.*

II. *n.* **2.** The posterior of the two bones which border the upper jaw in osseous fishes. It usually bears teeth in the soft-rayed fishes, but in the spiny-rayed fishes the teeth are confined to the premaxillary.—**Supplemental maxillary**, an auxiliary bone found on the upper or posterior edge of the maxillary of some species of fishes.

maxillitis (mak-si-lī'tis), *n.* [NL., < *maxilla* + *-itis.*] Inflammation of the maxilla or jaw.

maxillolabial (mak-sil-ō-lā'bi-ạl), *a.* [L. *maxilla*, jaw, + *labium*, lip, + *-al*^{1}.] Pertaining to both the maxilla and the labium. *Buck*, Med. Handbook, I. 435.

Maximianist (mak-sim'i-ạ̈n-ist), *n.* [*Maximianus* + *-ist.*] An adherent of one of the extreme sects of the Donatist heresy in the fourth century: so called from its leader Maximianus, bishop of Carthage.

Maximilianea (mak-si-mil-i-ā'nẹ̄-ạ̈), *n.* [NL. (Martius, 1819), named in honor of *Maximilian* I. (1756–1825), King of Bavaria, who supported Martius in his earlier botanical exploration of Brazil.] A genus of plants of the family *Cochlospermaceæ.* They are trees or shrubs, with palmately lobed leaves preceded by the conspicuous yellow flowers, which are borne in small racemes or panicles. There are about 13 species, widely distributed in the tropics, but confined to arid habitats. *M. Gossypium*, of India, is a small tree which produces kuteera gum, a substitute for gum tragacanth. In *M. nilotica*, an African species, the permanent stem from which the flower and leaf shoots spring is almost subterranean. The thickened underground portion of the West African *M. tinctoria* produces a yellow dye. See *Cochlospermum.*

maximite (mak'sim-īt), *n.* [Named from its inventor, Hudson *Maxim.*] An explosive, invented by Hudson Maxim, consisting largely of picric acid: used as a bursting-charge for large projectiles.

> *Maximite*, the new high explosive which has been adopted by the United States Government as a bursting

> charge for shell, is one of the most powerful high explosive compounds known to science, being about fifty per cent. more powerful than pure nitro-glycerine. Among commercial high explosives, it is equalled only in shattering force by nitro-gelatine and pure picric acid. . . . The experiments at Sandy Hook which finally resulted in the adoption of *Maximite* were very thorough and exhaustive.
>
> *H. Maxim*, in Jour. Mil. Serv. Institution U. S., Nov., [1901, pp. 347, 348.

maximum, *a.*—**Maximum stress.** See ★*stress*^{1}.—**Principle of maximum work.** See ★*work.*

maxtle (mäsh′tle), *n.* [Mex. Sp., ‹ Nahuatl (of Mexico) *maxtlatl.*] The popular name in Mexico, New Mexico, and Central America for the breech-clout.

maxwell (maks′wel), *n.* [Named for J. Clerk *Maxwell*, an eminent mathematician and physicist.] The c. g. s. unit of magnetic flux; the flux which, acting upon a unit magnet-pole, will repel it with a force of one dyne; the flux per square centimeter of cross-section in a field of unit flux density.

mayacaceous (mā-ya-kā′shius), *a.* Belonging to the plant family *Mayacaceæ.*

Mayad clover. See *Trifolium.*

Mayall's albumin negative process. See ★*process.*

Mayan (mī′a̤n or mä′ya̤n), *a.* and *n.* [*Maya* + *-an.*] **I.** *a.* Of or pertaining to the Mayas.

II. *n.* A linguistic family of North America including numerous languages spoken in southern Mexico and Central America.

maycock^2 (mā′kok), *n.* [Also *macock*; formerly also *macokos*; from one or more Indian forms corresponding to Virginian (Powhatan?) *mahawk*, gourd, Delaware (Lenâpé) *machgachk*, pumpkin.] A species of squash or pumpkin. *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 247. [Now local in Virginia.]

May-dewing (mā′dū″ing), *n.* The custom of washing the face in dew on May-day, or on the first Sunday in May, to secure lasting beauty of complexion. The custom still exists in some places in England. See *May-dew, n.*

> The quaint old custom of *May-dewing*, or washing the face in dew, on the first Sunday in May . . . was observed yesterday by a large number of Blackburn girls and women. *Standard* (London), May 8, 1905.

Mayepea (mā-ep′ẹ̄-a̤), *n.* [NL. (Aublet, 1775), prob. from a native Guiana name of the type species, *Mayepea Guianensis.*] A genus of dicotyledonous trees or shrubs belonging to the family *Oleaceæ.* See *Linociera.*

Mayfield (mā′fēld), *n.* Same as *placitum.*

> The frequent popular assemblies, whereof under the names of the Mallum, the Placitum, the *Mayfield*, we hear so much under Clovis and Charles were now never summoned. *J. Bryce*, Holy Roman Empire, p. 126.

May-gowan (mā′gou″a̤n), *n.* The common daisy. Also *ewe-gowan.*

May-haw, *n.* This species has the largest flowers and the largest and best-flavored fruit of the genus. In southwestern Louisiana the fruit is largely gathered for the market, being utilized for jellies, etc. Also called *summer haw.*

May Hill sandstone. See ★*sandstone.*

mayoral^2 (mä-yō-räl′), *n.* [Sp., ‹ *mayor*, greater. See *major.*] A head shepherd; an overseer; a leader of a pack-train.

> Our mules toiled along slowly and painfully, urged by the incessant cries of the *mayoral*, or conductor, and his mozo. As the *mayoral's* whip could only reach the second span, the business of the latter was to jump down every ten minutes, run ahead and belabor the flanks of the foremost mules, uttering at the same time a series of sharp howls, which seemed to strike the poor beasts with quite as much severity as his whip.
>
> *B. Taylor*, Lands of the Saracens, p. 406.
>
> Here our conversation was cut short by the *Mayoral* of the diligence, who came to tell us that the mules were waiting; and before many hours had elapsed, we were scrambling through the square of the ancient city of Burgos. *Longfellow*, Outre-Mer, p. 173.

mayorazgo (mä-yō-räth′gō), *n.* [Sp., ‹ *mayor*, ‹ L. *major*, elder. See *major.*] In *Sp. law*, same as *majorat*, 1.

maysin (mā′zin), *n.* [NL. *mays, maïs*, maize, + *-in*^{2}.] See ★*maisin.*

may-star (mā′stär), *n.* Same as *star-flower* (*a*).

Maytenus (mā′te-nus), *n.* [NL. (Molina, 1782), from *mayten*, the Chilean name of *Maytenus Boaria.*] A genus of plants of the family *Celastraceæ.* They are upright trees or shrubs with alternate evergreen leaves and small white, yellow, or reddish flowers, either single in the axils of the leaves or in axillary, often clustered, cymes. There are about 70 species, natives of tropical and subtropical America. One, *M. phyllanthoides*, grows wild as far north as southern Florida. *M. Boaria*, a Chilean species, is planted as an ornamental tree in California as far north as San Francisco. It has pendulous branches, small ovate-lanceolate, glandular-serrate, thin leaves, and inconspicuous flowers followed by fruit with scarlet arils.

May-term (mā′tėrm), *n.* The Easter-term at the University of Cambridge, England. [Eng. colloq.]

May-week (mā′wēk), *n.* The week of the May races at Cambridge, England. *N. E. D.*

May-wine (mā′wīn), *n.* Same as *May-drink.*

may-wings (mā′wingz), *n.* Same as ★*gay-wings.*

mazagran (mä-zä-grän′), *n.* [*Mazagran*, a village of Algeria.] Black coffee sweetened and served with cracked ice in a long, slender glass.

mazamorra (mä-thä-mor′a̤), *n.* [Sp. *mazamorra.*] **1.** In Spanish use, breadcrumbs used in a soup or mush.—**2.** In Peru, a dish consisting of a sweet mush made of various fruits; also, a kind of custard.—**3.** In Bolivia, a mud-flow or mud-slide. Such slides occur frequently in the gorges around La Paz, the capital of Bolivia, during the rainy season, and are very dangerous for inexperienced travelers. The mud, however, soon hardens and forms a deep and sterile crust. Portions of the once fertile gorge of the La Paz river have been completely ruined by mud-flows which, in places, attained a thickness of ten to twenty feet.

mazar (mä-zär′), *n.* [Also *masar*, ‹ Ar. *mazār*, a shrine visited by pilgrims, ‹ *zār*, he visited, *ziyārah*, a visit.] A tomb of a saint regarded as a shrine. Also *masar.*

Mazeutoxeron (maz-ụ̄-tok′sẹ-ron), *n.* [NL. (Labillardière, 1798).] A genus of plants of the family *Rutaceæ.* They are shrubs or small trees, usually clothed with stellate hairs, and have ovate or lanceolate opposite entire leaves, and rather large pendent white, green, yellow, or red flowers, with the four petals connate at the base or nearly to the apex into a bell-shaped or tubular corolla, and 8 usually exserted stamens. There are 6 or more species, natives of Australia. *M. speciosum* (*Correa speciosa* of Aiton), the native fuchsia of Australia, and other species are sometimes cultivated in greenhouses.

mazic (mā′zik), *a.* [Gr. μᾶζα, a cake (representing NL. *placenta* in its L. sense, a cake), + *-ic.*] Of or pertaining to the placenta; placental.

mazolysis (mạ-zol′i-sis), *n.* [NL., ‹ Gr. μᾶζα, a cake (representing NL. *placenta*), + λύσις, a loosening.] Separation of the placenta.

mazopathia (maz-ọ̄-path′i-a̤), *n.* [NL., ‹ Gr. μᾶζα, a cake (representing NL. *placenta*), + πάθος, disease.] Any placental disease.

mazuca (ma-zö′ka̤), *n.* [Also *masooka*; appar. an aboriginal name.] A sciænoid fish, *Leiostomus xanthurus*, found on the Atlantic and Gulf coasts of the United States.

mazun (mä-tsön′), *n.* See the extract.

> Lastly, mention should be made of the "*mazun*" of the Armenians from the milk of the bison or goat, but is also prepared from the milk of cows, and possesses a pleasant acid taste similar to that of kefir. It serves as acidifying material in the case of churning wherewith the butter assumes a pleasant aroma. Moreover, it serves as a beverage, and also for the production of various milk foods. The preparation is carried on in a way similar to that of kefir and koumiss, the lactic acid and alcohol fermentation probably takes place here also in a symbiotic manner. *Sci. Amer. Sup.*, Jan. 25, 1908, p. 63.

M. B. An abbreviation (*a*) of the Latin *Medicinæ Baccalaureus*, Bachelor of Medicine; (*b*) of the Latin *Musicæ Baccalaureus*, Bachelor of Music; (*c*) of "mark of the beast," in allusion to the popular belief that the garment described below smacked of popery.—**M. B. waistcoat**, a kind of waistcoat with no opening in front, worn by Anglican clergymen (originally, about 1840, only by adherents of the Tractarian party, but afterwards by many belonging to other schools). *N. E. D.*

mbalolo (mbä′lō-lō), *n.* The native name in Samoa and Fiji for the palolo worm, *Palolo viridis.* An indication of the relative abundance of these worms is the fact that October is called *mbalolo lailai* (little), and November, *mbalolo levu* (large).

mbco. A contraction of *marks banco.*

M. B. F. & H. An abbreviation of the Latin *Magna Britannia, Francia et Hibernia*, Great Britain, France and Ireland.

mbira (mbē′ra̤), *n.* [S. African.] A South African musical instrument allied to the zanze.

M. B. Sc. An abbreviation of *Master of Business Science.*

M. C. An abbreviation (*b*) of the Latin *Magister Chirurgiæ*, Master of Surgery; (*c*) of *Master of Ceremonies.*

M/c. An abbreviation of *metallic currency.*

McBurney's point. See ★*appendicitis.*

McCay's circles. See ★*circle.*

M. C. E. An abbreviation of *Master of Civil Engineering.*

Mch. A contraction of *March.*

M. C. L. An abbreviation of *Master of Civil Law.*

M. C. P. An abbreviation of *Member of the College of Preceptors.*

M. C. S. An abbreviation of *Madras Civil Service.*

M. D. An abbreviation (*c*) of *Middle Dutch*; (*d*) [*l. c.*] of *months* (*after*) *date.*

Md. A contraction of *Maryland.*

m/d. An abbreviation of *month's date.*

M. D. E. An abbreviation of *Master of Domestic Economy.*

Mdlle. A contraction of the French *Mademoiselle*, Miss.

Mdm. A contraction of *Madam.*

M. D. S. An abbreviation of *Master of Dental Surgery.*

M. D. V. Same as ★*V. D. M.*

mdse. A contraction of *merchandise.*

M. E. An abbreviation (*d*) of *Master of Engineering*; (*e*) of *Mechanical Engineer*; (*f*) of *Military Engineer*; (*g*) of *Most Excellent.*

Me. A contraction of *Maine.*

meadow, *n.*—**Mountain meadow**, an open grassy valley-floor or basin among mountains.

> The *mountain meadows* and deer parks, which constitute a feature of considerable importance because of their area in the mountain regions of both the eastern and the western portions of the United States.
>
> *Yearbook of U. S. Dept. Agr.*, 1900, p. 585.

meadow-bell (med′ō-bel), *n.* The harebell.

meadow-grass, *n.*—**Alkali meadow-grass.** See ★*alkali-grass*, 2.—**Pungent meadow-grass.** Same as ★*stink-grass.*

meadow-lily (med′ō-lil″i), *n.* Same as *Canada* ★*lily.*

meadow-parsnip, *n.*—**Golden meadow-parsnip**, *Zizia aurea*, an umbelliferous plant which closely resembles the meadow-parsnip and has bright yellow flowers: found throughout North America east of the Great Plains.

meadow-shoe (med′ō-shö), *n.* A flat iron disk or sole designed to be attached to a horseshoe to prevent the horse from sinking in soft or wet ground.

meadow-wink (med′ō-wingk), *n.* A name sometimes given to the bobolink.

meakin (mē′kin), *n.* The spiked water-milfoil, *Myriophyllum spicatum*, found throughout most of the northern hemisphere.

meaking (mē′king), *n.* *Naut.*, the act of running old oakum out of the deck or bottom seams of a vessel, preparatory to recalking.

meal^1, *n.*—**Germ-oil meal**, a trade-name of the ground cake left after expressing oil from the germs of the kernels of maize or Indian corn. It is used as food for cattle.—**Whole meal**, meal or flour from which the bran has not been removed by bolting.

meal-hour (mēl′our), *n.* The hour or time at which a meal is or should be served; specifically (*naut.*), the interval during which the meal-pennant is displayed. The term has no reference to length of time.

mealiness, *n.* **3.** In *photog.*, a defect in silver-printing, in which the surface of the print presents a peculiar mottled appearance, due generally to a too weak sensitizing-bath. *Woodbury*, Encyc. Dict. of Photog., p. 277.

mealing (mē′ling), *a.* Pertaining to the reduction of some substance, as a cereal, to meal by grinding.

> A very interesting *mealing* outfit was encountered on the hillside above the dwelling and near the margin of the mine. *Rep. U. S. Nat. Mus.*, 1900, p. 169.

mealing-plate (mē′ling-plāt), *n.* A plate having teeth for grinding materials, such as acorns, to meal.

> Plates 10 and 11 serve to illustrate two of the first steps in the acorn industry, the carrying and hulling of the acorns, and the use of the *mealing plate* in grinding.
>
> *Rep. U. S. Nat. Mus.*, 1900, p. 172.

mealing-trough (mē′ling-trôf), *n.* A trough or box of wood or stones about 2 feet wide, 8 inches high, and several feet long, separated by partitions into several compartments (usually three), each of which contains a metate or slab for grinding corn: used by the Indians of the Southwest and Mexico.

meal-moth, *n.*—**Indian meal-moth.** See ★*moth.*

meal-tree (mēl′trē), *n.* The wayfaring-tree, *Viburnum Lantana.*

meal-worm, *n.* **2.** In *angling*, a worm bred in meal or flour, used for bait in fishing.

> The *meal-worm*, which is perhaps the least troublesome, breeds amongst the refuse sweepings of flour mills.
>
> *H. Cholmondeley-Pennell*, Mod. Pract. Angler, p. 229.

mealy, *a.* **6.** Starchy; farinaceous. See ★*starchy*^{2}, 2.

mealy-back (mē′li-bak), *n.* A local name for a grasshopper. [Australia.]

mealy-wing (mē′li-wing), *n.* Any member of the homopterous family *Aleurodidæ*; a white fly.

mean³. **I.** *a.*—**Mean longitude.** (*b*) The middle longitude; the point half-way between two longitudes; the meridian equidistant between two other meridians.—**Mean point,** of a polygon or polyhedron, the mass-center of a system of equal particles situated at the vertexes or summits.—**Mean sphere, spheroid.** See ★*sphere*, ★*spheroid*.

II. *n.* **10.** The abscissa of the center of gravity of the variates or of the frequency polygon. It is found by the formula $M=\frac{\Sigma(V.f)}{n}$ where V is the magnitude of any class, *f* its frequency, and *n* the number of variates. —**Mean of the altitudes,** in *nav.*, the average obtained in a series of altitudes by dividing the aggregate of the degrees, minutes, and seconds of an arc by the figure which represents the number of altitudes taken.—**Mean of the latitudes,** in *nav.*, the middle latitude (which see, under *latitude*).—**Mean of the tides,** the average high- or low-water mark.—**Weighted mean,** the mean value of a series of observations, obtained by assigning to each its proper weight or importance, instead of assuming all to be of equal significance in the computation of the result.

meander, *n.* **4.** In *phys. geog.*, a self-developed river-curve suitable to the volume of the stream.

> The terms "*meander*" and "shut in," and the like, have a definite enough geomorphological meaning, as appears clearly from Mr. Marbut's use of them, but we cannot help feeling that they sound crude and angular, more conformable in style to the German language than to our own. *Geog. Jour.* (R. G. S.), IX. 666.

meandriform (mẹ-an′dri-fôrm), *a.* Meandrine: labyrinthine.

meandriniform, *a.* Same as *mæandriniform*.

meanness, *n.* **4.** A mean, vindictive spirit. [Dialectal, southern U. S.]

> He say he gwine lef he mark on you, marster, and Marse Bruce, an' on dat ole man . . . and de young lady over dyah. . . . Dat man 's got *meanness* in him!
> *Thomas Nelson Page*, On Newfound River, xvi.

meas. An abbreviation of *measure*.

measles, *n.* **5.** In *photog.*, a defect in silver-printing consisting in semi-opaque blotches caused by imperfect fixation by the insoluble silver hyposulphite visible when the prints are held to the light. In time these spots become yellow.—**Bastard measles,** rubella.—**Black measles,** a malignant form of measles formerly of not infrequent occurrence, perhaps the result of the method of treatment adopted. *Syd. Soc. Lex.*—**Confluent measles.** (*a*) A form of measles in which the eruption is so thick that the separate lesions coalesce. (*b*) Same as *scarlet fever*.—**Hemorrhagic measles.** Same as *black measles*.—**Pork measles,** an infection of pork with the bladder-worm stage (*Cysticercus cellulosæ*) of *Tænia solium*, the 'armed' tapeworm of man. See also ★*cysticercosis*.—**Spanish measles.** Same as *anthracnose*.

measure, *n.* **12** (*c*) Specifically, in *organ-building*, the proportion of the diameter of flue-pipes, or of a stop of such pipes, to their length: as, a diapason pipe is made on a wider or larger *measure* than a gamba pipe. —**Double measure,** in *carp.*, molded or having moldings on both sides: said of a door, a casement-window, a screen of joiner's work, and the like. [Eng.]—**Measure-and-a-half,** having moldings and sunken panels on one side: said of a door. Compare *single* ★*measure* and *double* ★*measure*. [Eng.]—**Measure of a dihedral,** the angle of two perpendiculars to the edge of a dihedral, one in each face.—**Measure of an arc,** the sect connected with an arc such that if the arc is cut into two arcs, this sect is the sum of their sects and is not less than the chord of the arc nor, if the arc is minor, greater than the sum of the sects on the tangents from the extremities of the arc to their intersection.—**Measure of an area,** the sum of the measures of the areas of all the triangles into which an area is cut in any given partition, the measure of the area of a triangle being half the product of a base and its corresponding altitude.—**Measure of length,** in terms of a given unit, the number specifying how often the unit is contained in the length.—**Measure of time,** in *astrol.*, the method of ascertaining the periods of events by converting the arc of direction into time. See *equation of arcs of* ★*direction*.—**Measure of volume,** the sum of the measures of volume of all the tetrahedra in any given partition, the measure of the volume of a tetrahedron being one third the product of the area of a face and its corresponding altitude.—**Paris measure,** the system of measures employed in France previous to the adoption of the metric system. The term is applied most frequently to measures of length, such as the Paris foot (pied), Paris inch (pouce), and Paris line (ligne).—**Riemann's measure of curvature.** When the infinite number of two-dimensional ordinary measures of curvature at a point are constant and equal to all the measures of curvature at any other point, there exists what Riemann calls a manifold of constant curvature.—**Single measure,** having no moldings or relief, as a panel framed on either side: said of a door. Compare *double* ★*measure* and ★*measure-and-a-half*. [Eng.]—**Surveyors' measure,** the system of denominate multiple units for linear measurements in land-surveying, in which the primary unit is the surveyors' chain of 4 rods or 66 feet, divided into 100 smaller units called 'links.' See *chain*, 3.

measure-bar (mezh′ṳ̄r-bär), *n.* In *musical notation*, same as *bar*¹, 11: used only when it is necessary to distinguish an ordinary bar from a ★*line-bar* (which see).

measure-sign (mezh′ṳ̄r-sīn), *n.* In *musical notation*, same as *rhythmical signature* (which see, under *rhythmical*).

measuring-day (mezh′ṳ̄r-ing-dā), *n.* In *mining*, the day when the mine foreman or other official measures the work done by the contract miners. [Scotch.]

measuring-motion (mezh′ṳ̄r-ing-mō″shọn), *n.* A mechanism for measuring the size or amount of the product of a machine: as, for example, the size of a full lap on a ribbon lap-machine, in cotton-manufacturing. *Thornley*, Cotton Combing Machines, p. 17.

measuring-roller (mezh′ṳ̄r-ing-rō″lėr), *n.* A roller, or small beam, as part of the warp-delivering mechanism of a loom for measuring the amount of yarn woven. *T. W. Fox*, Mechanism of Weaving, p. 443.

measuring-spout (mezh′ṳ̄r-ing-spout), *n.* In a boiler-room where the coal is stored in overhead bunkers, a chute for delivering the coal to the floor in front of the fire-doors of a battery of boilers. It consists of a sheet-metal chute which has gates above and below, and is controlled by a locking-rod so that the upper gate cannot be opened to admit the coal to the chute until the lower gate is closed. When the chute is full and the supply is cut off, the chute contains a fixed weight of coal. When the coal is discharged below, a counting device registers the weight delivered. The spout swings about a fixed center to distribute the coal to two or more boilers.

measuring-weir (mezh′ṳ̄r-ing-wēr), *n.* A low, small, submerged dam, or obstruction of wood, metal, or masonry which affords a method of measuring water, particularly that used in irrigation and in water-power.

measuring-wheel, *n.* **2.** Same as ★*curvometer*. *Geog. Jour.* (R. G. S.), XVIII. 442.

measuring-worm, *n.*—**Pine measuring-worm.** See *pine* ★*span-worm*.

meat¹, *n.* **8.** *pl.* The trade-name for cotton-seed from which the remains of fiber ('lint') and husk ('hulls') have been removed and which is ready for crushing.

meat-crusher (mēt′krush″ėr), *n.* A small machine having two corrugated rollers between which steaks are passed to make them tender.

meat-flour (mēt′flour), *n.* Meat dried at a low temperature and ground to a powder. *Syd. Soc. Lex.*

meat-fruit (mēt′fröt), *n.* The fruit of *Artocarpus incisa*. *Syd. Soc. Lex.*

meat-man (mēt′man), *n.* A butcher; a man who sells meat. *Dialect Notes*, III. iii. 194. [U. S.]

meatoscope (mẹ-ā′tọ-skōp), *n.* [L. *meatus*, meatus, + Gr. *σκοπεῖν*, view.] A form of speculum employed in examining the anterior extremity of the urethra.

meatoscopy (mē-a̤-tos′kọ-pi), *n.* [*meatoscope* + *-y*³.] The inspection, especially by instrumental means, of any meatus, such as the anterior extremity of the urethra or the vesical orifices of the ureters.

meatotome (mẹ-ā′tọ-tōm), *n.* [NL. *meatus*, meatus, + Gr. *-τομος*, < *ταμεῖν*, cut.] A knife employed in the operation for enlargement of a meatus.

meatotomy (mē-a̤-tot′ọ-mi), *n.* [*meatotome* + *-y*³.] Division of the rim of a meatus, usually of the urethra, in order to enlarge it.

meat-rocker (mēt′rok″ėr), *n.* A meat-mincing knife which has a curved blade and a handle at each end: used with a rocking motion.

M. E. C. An abbreviation of *Member of Executive Council*.

mecenic (mẹ-sen′ik), *a.* [*mec*(*onic*) + *-ene* + *-ic.*] Noting an acid, a colorless compound, $HOC_5HO(COOH)_2$, prepared from meconic acid. It crystallizes in prisms and melts at 146° C.

M. E. Ch. An abbreviation of *Methodist Episcopal Church*.

mechanic, *n.* **5.** A professional card-shuffler usually employed to deal faro in brace games. [Slang.]

mechanical. I. *a.*—**Mechanical arithmetic, effect, equivalent of light, momentum, sense.** See ★*arithmetic*, etc.

II. *n.* **2.** *pl.* The trade-name for common articles, such as overshoes, of vulcanized india-rubber, made by molding, and often of old reworked material.

mechanical-esthetic (mẹ-kan″i-kal-es-thet′-ik), *a.* In *psychol.*, noting T. Lipps's theory of the geometrical-optical illusions. See *law of mechanical-esthetic* ★*unity*.—**Mechanical-esthetic theory.** See ★*theory*.

mechanicalism (mē-kan′i-ka̤l-izm), *n.* [*mechanical* + *-ism.*] The character of being mechanical; mechanical action or procedure; specifically, in *philos.*, the mechanical interpretation of the universe.

> Yet, admitting what that patient *mechanicalism* may have done for modern civilization, one must not . . . under-estimate the force of personality.
> *Athenæum*, May 6, 1905, p. 558.

mechanicophysical (mẹ kan″i-kō-fiz′i-ka̤l), *a.* Pertaining to, or dependent on, both mechanics and physics.—**Mechanicophysical theory of evolution.** See ★*evolution*.

mechanicotherapeutics (mẹ-kan″i-kō-ther-a̤-pū′tiks), *n.* The treatment of disease by mechanical means, such as gymnastics, massage, vibration, etc.

mechanicotherapy (mẹ-kan″i-kō-ther′a̤-pi), *n.* Same as ★*mechanicotherapeutics*.

mechanics, *n.*—**Abstract mechanics.** Same as *rational* ★*mechanics*.—**Animal mechanics,** the science of mechanics as applied to the human body or to the body of any animal.—**Applied mechanics,** the statical and dynamical investigation of machines and engineering construction.—**Celestial mechanics,** that portion of astronomy which deals with the motions of the heavenly-bodies.—**Developmental mechanics.** See ★*developmental*.—**Non-Euclidean mechanics,** rational mechanics in which the geometry interwoven is non-Euclidean.—**Pure mechanics.** Same as *rational* ★*mechanics*.—**Rational mechanics.** (*a*) See *rational*. (*b*) The science which explains natural phenomena by depicting them with mathematical precision as dependent solely upon relations of motion.—**Social mechanics,** that part of sociology which treats of social forces and their operation in so far as they act mechanically and according to the laws of motion. *L. F. Ward*, Dynamic Sociol., 503.—**Statistical mechanics,** that portion of mechanics which deals with a great number of systems of the same nature differing in configuration and velocities, not merely infinitesimally, but also in such a way as to embrace every conceivable combination of configuration and velocities.

> The laws of *statistical mechanics* apply to conservative systems of any number of degrees of freedom, and are exact. *J. W. Gibbs*, Statistical Mech., Pref., p. viii.

Technical mechanics, the mechanics of construction and manufacture.—**Theoretical mechanics.** Same as *rational* ★*mechanics*.

mechanotherapy (mek″a̤-nọ-ther′a-pi), *n.* [Gr. *μηχανή*, a machine, + *θεραπεία*, healing.] Cure by mechanical means; mechanicotherapeutics.

mechloic (mẹ-klō′ik), *a.* [*me*(*conin*) + *chlo*(*rin*) + *-ic.*] Noting an acid, a colorless compound, said to be formed by the action of chlorin on meconin. It crystallizes in quadratic prisms and melts at 150° C. It does not contain chlorin.

mecistocephali (mẹ-sis-tọ-sef′a̤-lī), *n. pl.* In *anthrop.*, persons having a cephalic index less than 71. *Huxley*, Scientific Memoirs, III. 215.

mecistocephalic (mẹ-sis″tọ-se-fal′ik), *a.* Same as ★*mecistocephalous*. *Jour. Anthrop. Inst.*, 1872, p. 314.

mecistocephalous (mẹ-sis-tọ-sef′a̤-lus), *a.* [Gr. *μήκιστος*, longest, tallest, greatest, + *κεφαλή*, head, + *-ous.*] In *anthrop.*, having a cephalic index less than 71.

mecistocephaly (mẹ-sis-tọ-sef′a̤-li), *n.* [See ★*mecistocephalous*.] The character of being mecistocephalous.

> While A is the widest, B is the narrowest normal skull I have met with, its index being only 629. It is, therefore, an extremely marked example of *mecistocephaly*.
> *Huxley*, Scientific Memoirs, III. 218.

meck (mek), *n.* [D. *mik*, a forked stick.] A notched piece of wood in a whale-boat, upon which to rest the harpoons.

Meckelectomy (mek-e-lek′tọ-mi), *n.* [*Meckel*(*'s ganglion*) + Gr. *ἐκτομή*, excision.] Excision of Meckel's ganglion.

Meckelian bar. Same as *Meckelian rod*. See *rod*¹.

Meckel's diverticulum. See ★*diverticulum*.

Mecklenburgian epoch. See ★*epoch*.

mecocephalic (mē″kō-se-fal′ik), *a.* [Gr. *μῆκος*, length, + *κεφαλή*, head, + *-ic.*] Same as *dolichocephalic*. *Huxley*.

mecodont (mē′kọ-dont), *a.* Pertaining to or having the characters of the *Mecodonta*.

Mecodonta (mē-kọ-don′ta̤), *n. pl.* [NL., < Gr. *μῆκος*, length, + *ὀδούς*, tooth.] A division of the *Salamandridæ*, having the palatal teeth situated on the inner sides of the palatal processes, forming two parallel rows diverging behind.

meconial (mẹ-kō′ni-a̤l), *a.* [L. *meconi*(*um*) + *-al*¹.] Of or pertaining to meconium, in any sense.

meconinic (mek-ọ-nin′ik), *a.* [*meconin* + *-ic.*] Pertaining to meconinic acid or meconin. —**Meconinic acid,** a hypothetical compound, $C_{10}H_{12}O_5$, known only in the form of its salts and of its anhydrid meconin.

meconism (mek′ǫ-nizm), *n.* [Gr. *μήκων*, poppy, + *-ism.*] Chronic opium poisoning in those addicted to the use of that drug.

meconoisin (mē-kǫ-noi′sin), *n.* A neutral principle, $C_8H_{10}O_2$, contained in opium.

mecopter (mḗ-kop′tėr), *n.* A member of the order *Mecoptera*: a scorpion-fly.

med. An abbreviation (*c*) of *medieval;* (*d*) of *medicinal.*

M. E. D. An abbreviation of *Master of Elementary Didactics.*

medaddy-bush (mḗ-dad′i-bůsh), *n.* The American fly-honeysuckle, *Lonicera ciliata.*

medal, *n.* 2. A small metal badge, usually with a ribbon attached, presented for distinguished service.

He [Lord Roberts] was created K. C. B., G. C. B., and a baronet, received the *medal* with four clasps, and the bronze star, and was given the command of the Madras army. *Encyc. Brit.*, XXXII. 264.

medalary, medallary (med′ąl-ą̄-ri), *n.* [*medal* + *-ary*^{1}.] A collection of medals. [Rare.]

These gentlemen [Visconde de Castilhos and Councillor A. J Viale] kindly showed me the *medallary* struck for the tercentenary festival. The collection is remarkable only for portraying as many men as there are medals.
R. F. Burton, in Athenæum, Jan. 28, 1882, p. 125.

medalize, medallize (med′ąl-īz), *v. t.*; pret. and pp. *medalized*, ppr. *medalizing.* [*medal, n.*, + *-ize.*] To portray on a medal.

Not less remarkable for their technical merit are two medals in which Mr. Legros has transformed two of his models into "personages" of the fifteenth or sixteenth century. . . . Mr. Legros has also *medallised* Mr. Constantine Ionides. *Mag. of Art*, V xvii.

medallionist (mḗ-dal′yǫn-ist), *n.* A worker of medallions. *N. E. D.*

medal-play (med′ąl-plā), *n.* In *golf*, play in which the score is reckoned by counting the total number of strokes taken to complete the round.

medano (mā′dä-nō), *n.* [Sp. *médano, mégano*, a heap of sand, = Pg. *medão*, a heap (*de areia*, of sand), < Sp. Pg. *meda* = OF. *moie* = It. *meta*, Lombard *meda*, a heap, < L. *meta*, a conic post, goal-post, also a conic hill, etc.] A crescentic sand-dune; a barchan.

The dunes called barchanes usually have their greatest extension in a longitudinal direction. This form occurs in the Sahara, in Central Asia, in Peru (where they are called *medanos*), and probably in other localities also.
Geog. Jour. (R. G. S.), IX. 290.

Med. Dir. An abbreviation of *Medical Director.*

medesimo tempo (mą-dā′si-mō tem′pō). Same as ★*istesso.*

medial, *n.* 2. In *entom.*, same as *median vein* (*b*) (which see, under *median*^{1}).—3. In *geom.*, same as ★*median*^{1}, 1.

medialization (mē″di-ąl-i-zā′shǫn), *n.* [*medialize* + *-ation.*] The making of a consonant medial (sonant).

A similar *medialization* is found with ch, s, which in Abenaki are often heard after vowels as j and z respectively. . . . The tendency to *medialization* in ancient times, however, must have been very slight, if it existed at all. *Amer. Anthropologist*, Jan.–March, 1902, p. 24.

medialize (mē′di-ą-līz), *v. t.*; pret. and pp. *medialized*, ppr. *medializing.* [*medial* + *-ize.*] To render medial.

It is quite possible that the earlier Abenakis may have only partially *medialized* their consonants after vowels.
Amer. Anthropologist, Jan.–March, 1902, p. 25.

median^1, *a.* 2. Noting the middle number of a series; having as many before as behind (or above as below) a certain number: distinguished from *average:* as, the *median* age of the population was found to be 21 (that is, there were as many persons above 21 as below it), while the *average* age was found to be 25.—**Median line.** (*d*) A straight through a vertex of a triangle and the mid-point of the opposite side.—**Median magnitude.** See ★*magnitude.*—**Median point.** (*a*) In *geom.*, the cointersection point of a triangle's medians; its centroid. (*b*) Such a point on the x-axis of the frequency polygon that the ordinate from it bisects the polygon of rectangles or the continuous curve.—**Median section.** Same as *golden section* (which see, under *golden*).

II. *n.* 1. In *geom.*: (*a*) A sect whose end-points are the bisection-points of opposite sides of a quadrilateral. (*b*) A sect from a vertex of a triangle to the bisection-point of the opposite side.—2. The measure or observation which has as many of the separate measures or observations above as below it.

This principle may be applied to other kinds of means besides the arithmetic, in particular the *median* (that point which has as many of the given observations above as below it). . . . If the observations do not obey the normal law—especially if the extremities are abnormally divergent—the precision of the *median* may be greater than that of the arithmetic mean.
Encyc. Brit., XXVIII. 287.

3. In *entom.*, the median vein of an insect's wing.

mediaometer (mē″di-ą-om′e-tėr), *n.* [L. *media*, pl. of *medium*, + Gr. *μέτρον*, measure.] An instrument for measuring the amount of refractive errors of the various media of the eye.

mediastinal, *a.* **II.** *n.* In *entom.*, the submarginal vein of the wing of a cockroach. *Amer. Jour. Sci.*, Aug., 1904, p. 118.

mediastino-pericarditis (mē″di-as-tī″nǫ-per″i-kär-dī′tis), *n.* [NL.] Inflammation of the pericardium and of the adjacent mediastinal structures.

Mediastino-pericarditis seemed not to be so rare as had been supposed. Since attention had been directed to it four cases had been discovered by the physicians of the Heidelberg medical clinic; three of them were operated on successfully and one died from influenza.
Lancet, July 18, 1903, p. 188.

mediastinotomy (mē″di-as-ti-not′ǫ-mi), *n.* [NL. *mediastinum* + Gr. *-τομια*, < *ταμεῖν*, cut.] Incision into the cavity of the mediastinum. *Therapeutic Gazette*, Jan., 1903, p. 59.

Mediastinum cerebelli. Same as *falx cerebelli.*—**Mediastinum cerebri.** Same as *falx cerebri.*

medic^3, *n.*—**Toothed medic,** *Medicago denticulata.* See ★*bur-clover.*

Medical botany. See ★*botany.*—**Medical corps,** the surgeon officers of the navy, consisting of a surgeon-general, medical directors, medical inspectors, surgeons, passed assistant surgeons, and assistant surgeons.

medicamentary (med″i-kạ-men′tạ̄-ri), *a.* [*medicament* + *-ary*^{1}.] Medicamental; medicinal.

medicamentation (med″i-kạ-men-tā′shǫn), *n.* [*medicament* + *-ation.*] Same as *medication.*

medication, *n.*—**Cataphoretic medication.** See ★*cataphoretic.*—**Epidermic medication.** See *epidermic method*, under *epidermic.*

medicator (med′i-kā-tǫr), *n.* [*medicate* + *-or*^{1}.] 1. One who medicates; one who prescribes or prepares medicines.

The art of a *medicator* of poisons.
Scott, Demonol., I. 67. *N. E. D.*

2. An instrument for carrying remedies into a cavity of the body, as the larynx; an applicator.

medicatory (med′i-kạ̄-tō-ri), *a.* [*medicat*(*e*) + *-ory.*] Medicative; medicinal.

medicin, *n.* and *v. t.* A simplified spelling of *medicine.*

medicine, *n.*—**Bureau of Medicine and Surgery.** See ★*bureau.*—**Compound medicines,** remedies which contain a mixture of several drugs. -**Preventive medicine,** that branch of medical science which has to do with the prevention of disease by means of personal and public hygiene.—**Psychological medicine** medical science in its relation to mental diseases.—**Rational medicine,** the practice of the healing art based upon actual knowledge, and reasoning from the known to the unknown: opposed to *empiricism.*—**Statical medicine,** the treatment of disease governed by observation of the varying relations of ingestion, excretion, and body weight.—**Suggestive medicine,** the treatment of disease by means of (hypnotic) suggestion.

medicine-ball (med′i-sin-bâl), *n.* A large ball, of considerable weight, used in exercising. It is thrown from one player to another.

medicine-bowl (med′i-sin-bōl), *n.* A bowl which contains sacrifices or sacred objects, used in the religious ceremonials of the North American Indians. *Amer. Anthropologist*, 1901, p. 215.

medicine-lodge (med′i-sin-loj), *n.* A lodge used for the performance of religious ceremonials among North American Indians. *Giddings*, Inductive Sociol., p. 207.

medicine-spoon (med′i-sin-spön), *n.* A spoon, usually of porcelain, the bowl of which is partially decked over but which has an aperture at the tip through which a fluid may be poured, without spilling, into the mouth.

medicine-tree (med′i-sin-trē″), *n.* Same as ★*horseradish-tree*, 2.

medicisterna (mē″di-sis-tėr′nạ̈), *n.* [NL., < L. *medius*, middle, + *cisterna*, cistern.] The arachnoid canal (which see, under *canal*^{1}).

medico, *n.* 2. A name, among Spanish-speaking people of America, for *Teuthis cæruleus* and other species of the same genus, fishes found in warm seas and called *surgeon-* and *doctor-fish*, in English. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 486.

medicomechanical (med″i-kō-mḗ-kan′i-kąl), *a.* Of or pertaining to mechanicotherapy. *Buck*, Med. Handbook, I. 1.

medicommissure (mē-di-kom′i-şūr), *n.* [L. *medi*(*us*) + E. *commissure.*] The middle or soft commissure of the brain. *Wilder* and *Gage.*

medicophysical (med″i-kō-fiz′i-kąl), *a.* Both medical and physical; relating both to the state of health or disease of the body and its parts and to the physical condition; specifically, noting the examination required of recruits in the army and navy, engineers, applicants for life-insurance, etc. *Buck*, Med. Handbook, VI. 180.

medicopsychological (med″i-kō-sī″kǫ-loj′i-kąl), *a.* Of or pertaining to medicopsychology. *Nature*, July 6, 1905, p. 227.

medicopsychology (med″i-kō-sī-kol′ǫ-ji), *n.* The science of the mind in relation to the science of medicine; the medical or pathological study of mental conditions.

medicotopographical (med″i-kō-top-ǫ-graf′i-kąl), *a.* Of or pertaining to topography in its relation to disease or health; noting the medical study of the relation of the topography of a locality to health.

A *medicotopographical* and general account of Marwar, Sirohi, Jaisalmir. *Geog. Jour.* (R. G. S.), XV. 192.

medicozoölogical (med″i-kō-zō-ǫ-loj′i-kąl), *a.* Of or pertaining to the science of zoölogy in its relation to the study of medicine; noting the study of zoölogy in its bearing upon the study of diseases in man. *Science*, Jan. 30, 1903, p. 198.

medidural (mē-di-dū′rąl), *a.* [*medi*(*an*) + *dural.*] Relating to the central part of the dura mater.

medifrontal (mē-di-fron′tąl), *a.* Same as ★*mediofrontal.* *Amer. Anthropologist*, Oct.–Dec., 1903, p. 631.

medilateral (mē-di-lat′ẹ-rąl), *a.* [L. *medius*, middle, + *latus* (*later-*), side, + *-al*^{1}.] On or near the middle of the side; half-way between back and belly. *Trans. Linnean Soc. London*, Zool., Feb., 1903, p. 409.

medio (mā′di-ō), *n.* [Sp. *medio*, middle, < L. *medius*, middle.] A silver coin of Mexico and the Spanish American states, equal to one half a real.

medio-anterior (mē″di-ō-an-tē′ri-ǫr), *a.* In or toward the anterior and median region of the animal body. Same as ★*anteromedial.* *Trans. Amer. Micros. Soc.*, Nov., 1903, p. 140.

mediocarpal (mē″di-ō-kär′pąl), *a.* [L. *medius*, middle, + NL. *carpus* + *-al*^{1}.] Situated in the middle of the carpus or wrist: as, the *mediocarpal* articulation.

mediocenter (mē″di-ō-sen′tėr), *n.* [L. *medius*, middle, + *centrum*, center.] The center of the nine-point circle.

mediocircle (mē″di-ō-sėr′kl), *n.* [L. *medius*, middle, + *circulus*, circle.] The circle determined by the mid-points of the sides of a triangle.

mediocolic (mē″di-ō-kol′ik), *a.* [L. *medius*, middle, + NL. *colon* + *-ic.*] Relating to the middle portion of the colon.

mediofrontal (mē″di-ō-fron′tąl), *a.* [L. *medius*, middle, + *frons* (*front-*), front, + *-al*^{1}.] Situated in the middle line of the frontal region.

mediolingual (mē″di-ō-ling′gwąl), *a.* [L. *medius*, middle, + *lingua*, tongue, + *-al*^{1}.] Relating to the median portion of the tongue. *Scripture*, Exper. Phonetics, p. 395.

medio-occipital (mē″di-ō-ok-sip′i-tąl), *a.* [L. *medius*, middle, + *occiput* (*occipit-*) + *-al*^{1}.] Situated in the middle line of the occipital region.

mediopalatal (mē″di-ō-pal′ą̄-tąl), *a.* [L. *medius*, middle, + *palatum*, palate, + *-al*^{1}.] 1. Relating to the central portion of the palate. *Scripture*, Exper. Phonetics, p. 297.—2. Same as ★*mesuranic.* *Turner.*

mediopontine (mē″di-ō-pon′tin), *a.* [L. *medius*, middle, + *pons* (*pont-*) (see def.) + *-ine*^{1}.] Situated in the middle portion of the pons Varolii.

medioposterior (mē″di-ō-pos-tē′ri-ǫr), *a.* [L. *medius*, middle, + *posterior*, hinder.] In or toward the posterior and median region of the animal body. Same as ★*posteromedian.* *Trans. Amer. Micros. Soc.*, Nov., 1903, p. 141.

medioprepalatal (mē″di-ō-prē-pal′ą̄-tąl), *a.* [L. *medius*, middle, + *præ*, before, + *palatum*, palate, + *-al*^{1}.] Relating to the center of the anterior portion of the palate. *Scripture*, Exper. Phonetics, p. 436.

medioseptum (mē″di-ō-sep′tum), *n.*; pl. *mediosepta* (-tạ̈). In *ornith.*, a vertical division between the two narial chambers.

Adventitious ossicles occurring in the soft membranous *medio-septa* of these vertebrates.
Proc. Zool. Soc. London, 1891, p. 124.

mediostapedial (mē″di-ō-stạ-pē′di-ạl), *n.* The median portion of the columella in birds and reptiles. In birds, its inner end is fused with the stapedial plate that fits into the fenestra ovalis. *W. K. Parker.*

Medism (mē′dizm), *n.* [Gr. Μηδισμός, < Μηδίζειν, Medize.] **1.** In *Gr. hist.*, the favoring of the principles or the furtherance of the interests of the Medes or Persians; in a rhetorical use, an unpatriotic sympathy with or tolerance of any foreigners.

An analogy may be found in the *medism* of the Delphic oracle, which yet, by a species of national self-deception, did not forfeit its claim to Hellenic respect, in spite of its failure in the hour of trial.
W. T. Woodhouse, in Jour. Hellenic Studies, XVIII. 46.

2. A Median or Persian idiom.

medisylvian (mē-di-sil′vi-ạn), *a.* [L. *medius*, middle, + *Sylvius* (see def.) + *-an.*] Relating to or situated in the middle portion of the fissure of Sylvius. *Amer. Anthropologist*, Oct.–Dec., 1903, p. 621.

Medit. An abbreviation of *Mediterranean.*

meditemporal (mē-di-tem′pọ-rạl), *a.* [L. *medius*, middle, + *tempus* (*tempor-*), temple, + *-al*^{1}.] Relating to or situated in the middle portion of the temporal lobe of the brain. *Amer. Anthropologist*, Oct.–Dec., 1903, p. 627.

mediterranean, *a.* **3.** [*cap.*] (*b*) Same as ★*Iberian*^{1}, 3.—**Mediterranean class**, a group of domesticated fowls which comprises breeds derived from southern Europe, including the Andalusian, Leghorn, Minorca, and Spanish breeds.—**Mediterranean passports, stage.** See ★*passport*, ★*stage*.—**Mediterranean province.** See ★*province*.

medithoracic (mē″di-thọ-ras′ik), *a.* Same as *mesothoracic.*

medithorax (mē-di-thō′raks), *n.* [L. *medius*, middle, + NL. *thorax.*] Same as *mesothorax.*

medium, *n.*—**Löffler's medium**, a nutritive medium which is extensively used in the cultivation of the diphtheria organism. It is composed of three parts of calves' or lambs' blood-serum, with one part of ordinary bouillon, made from veal, plus one per cent. of glucose, the whole being solidified and sterilized.—**Passive medium**, a liquid or solution in which living cells or tissues, taken from the body, can be examined without undergoing any, or but very little, change in their microscopic structure: opposed to *active medium.*

mediumization (mē″di-um-i-zā′shọn), *n.* The process of mediumizing or transforming into a spiritualistic medium.

Till we can do this, we must feel the effects of the acidity, as I may call it, which characterizes the crude and unsettled spiritual existence reached by our present system of *mediumization.*
W. D. Howells, Undiscovered Country, ii.

mediumize (mē′di-um-īz), *v. t.*; pret. and pp. *mediumized*, ppr. *mediumizing.* [*medium* + *-ize.*] To make a spiritualistic medium of; render a medium. [Rare.] *N. E. D.*

Medize (mē′dīz), *v. i.*; pret. and pp. *Medized*, ppr. *Medizing.* [Gr. μηδίζειν, < Μῆδοι, the Medes.] In *Gr. hist.*, to be unduly partial to the Medes or Persians or to imitate them; be unpatriotically or disloyally subservient to the Persians.

The leading men of Thebes . . . decidedly *medised* or espoused the Persian interest.
Grote, Greece, II. xi. v. 101. *N. E. D.*

medlar, *n.* **Rock-medlar.** Same as *Savoy medlar.* See ★*Amelanchier.* **Savoy medlar.** See *Savoy medlar.*

Medo-Persian (mē′dō-pėr′shan), *a.* and *n.* **I.** *a.* Pertaining to or including both Medes and Persians.

II. *n.* One of the Medo-Persian people or nation.

medow, *n.* A simplified spelling of *meadow.*

medulla, *n.* **1.** (*g*) The semi-fluid endosarc of a protozoön.

The protoplasm is differentiated into a firmer superficial layer, the cortex, . . . and a semi-fluid central mass, the *medulla*, . . . and is covered superficially by a thin cuticle. *Parker and Haswell*, Zoology, p. 45.

Medulla dorsalis, the spinal cord.

Medullary canal. Same as *medullary cavity* (*b*).—**Medullary fold, narcosis, nucleus, sheath.** See ★*fold*^{1}, etc.—**Medullary streak.** Same as *medullary furrow.*

medullate (med′u-lāt), *v. i.*; pret. and pp. *medullated*, ppr. *medullating.* To produce the white substance of Schwann around the axis-cylinder of a nerve-fiber; form a medullated nerve.

The tract which ascends from the internal geniculate body *medullates* separately from the other intracerebral systems.
Philos. Trans. Roy. Soc. (London), 1898, ser. B, p. 2.

medullation (med-u-lā′shọn), *n.* [*medulla* + *-ation.*] The formation or acquisition of a medulla or marrow or pith. *Buck*, Med. Handbook. II. 319.

medullic (mẹ-dul′ik), *a.* [L. *medulla*, marrow, + *-ic.*] Noting an acid, a colorless compound, $C_{20}H_{41}COOH$, found, in combination with glycerol, in beef-suet and beef-marrow.

medullization (med″u-li-zā′shọn), *n.* [L. *medulla*, marrow, + *-ize* + *-ation.*] Inflammatory softening of the substance of bone.

medullo-encephalic (med″u-lō-en″se-fal′ik), *a.* Same as *cerebrospinal.*

medusid (mẹ-dū′sid), *n.* A jelly-fish of the family *Medusidæ.*

medusome (mẹ-dū′sōm), *n.* [*Medusa* + *-ome.*] In siphonophores, a modified medusoid person.

Free-swimming colonies of modified medusoid persons (*medusomes*).
J. A. Thomson, Outlines of Zoology, p. 143. *N. E. D.*

meet^1, *v. t.*—**To meet her** (*naut.*), to put the rudder so as to check the swing of the vessel's head.

meet^1, *n.* **3.** In *geom.*: (*a*) The straight line common to two planes. (*b*) A point which is on each of two straights: also called their *cross.*

meeting, *n.* **5.** *pl.* In *mining*, the point in a mine-shaft where the ascending and descending cages meet. When the coal was raised in creels or corves the shaft was bulged at the meetings. *Barrowman*, Glossary.

mefitic, mefitis. Amended spellings of *mephitic, mephitis.*

megabar (meg′ạ-bär), *n.* [Gr. μέγα, great, + βάρ(ος), weight.] A proposed unit of atmospheric pressure; a gaseous pressure such that the force on each centimeter of surface is one megadyne. The megabar is equivalent to the pressure exerted by 75.015 centimeters of mercury. It is 10^6 c. g. s. units of pressure.

megabarie (meg-ȧ-bä-rē′), *n.* [Also *megabary*, *megabarye*; F. *megabarie*, < *megabar* + *-ie*^{3}, *-y*^{3}.] A unit of atmospheric pressure recommended by the International Physical Congress in Paris (1900). Same as ★*megabar.*

The *megabary*, equal to 10^6 C.G.S. units, may, for practical purposes, be considered equal to the pressure of a column of mercury 75 cm. high at 0°. C. under normal conditions of gravity. *Science*, Jan. 18, 1901, p. 101.

megabary (meg′ạ-bär-i), *n.* Same as ★*megabarie.*

megacaryocyte (meg-ạ-kar′i-ọ-sīt), *n.* [Gr. μέγα, great, large, + κάρυον, nut, nucleus, + κύτος, a hollow (a cell).] A large cell with lobulated nucleus found in the spleen of the human embryo and of young animals.

megacephaly (meg-ạ-sef′ạ-li), *n.* [*megacephalous.*] The condition of being megacephalous, either normally or pathologically.

megacerotine (meg-ạ-ser′ọ-tin), *n.* [*Megaceros* (*-cerot-*) + *-ine*^{1}.] Relating to or having the characters of *Megaceros* or *Cervus giganteus*, the extinct Irish deer.

megachilous (meg-ạ-kī′lus), *a.* [Gr. μέγας, great, + χεῖλος, lip.] **1.** In *entom.*, having a large lip.—**2.** Of or pertaining to the genus *Megachile.*

megaclon (meg′ạ-klon), *n.* [Gr. μέγας, large, + κλών, twig (see ★*clon*).] In the nomenclature of the sponge-spicules, a large-sized rhabdoclon. See ★*rhabdoclon.*

megacoulomb (meg′ạ-kö-lom′), *n.* [*mega-* + *coulomb.*] A practical unit of electric charge or quantity equal to a million coulombs.

megacranous (meg-ạ-krā′nus), *a.* [Gr. μέγας, great, + κρανίον, cranium, + *-ous.*] In *craniom.*, having a skull of large volume—2,120–2,270 cubic centimeters in males and 1,850–1,950 cubic centimeters in females.

megadont, *a.* **2.** In *craniom.*, having a dental index of more than 44.

megadynamics (meg″ạ-dī-nam′iks), *n.* [Gr. μέγας, great, + E. *dynamics.*] In *geol.*, the dynamics of the earth, viewed in their large relations, as connected with great upheavals or subsidences of the crust.

Without the postulate of pervasive rigidity, conditioned by modifications due to molecular change, and to local solution-fusion, I am unable to find agencies competent to satisfy the demands of the *megadynamics* of the earth.
T. C. Chamberlin, in Econ. Geol., Oct.–Nov., p. 721.

megafrustule (meg-ạ-frus′tūl), *n.* [Gr. μέγας, great, + E. *frustule.*] In *biol.*, a frustule of large size.

megagamete (meg-ạ-gam′ēt), *n.* [Gr. μέγας, great, + E. *gamete.*] A large gamete or germ-cell, as distinguished from a microgamete; a macrogamete. The ovum is a megagamete, the spermatozoön a microgamete; the two unite to form a zygote.

It is obvious that the *megagamete* corresponds with the ovum of the higher animals, the microgamete with the sperm, and the zygote with the oosperm or impregnated egg. *Parker and Haswell*, Zoology, I. 72.

megagnathous (me-gag′nā-thus), *a.* [Gr. μέγας, great, + γνάθος, jaw.] In *anthrop.*, having large jaws.

Megaladapidæ (meg″ạ-lạ-dap′i-dē), *n. pl.* [*Megaladapis*, the type genus, + *-idæ.*] A family of lemurs which contains extinct species of comparatively great size: based on bones from Pleistocene and cave deposits of Madagascar. *Megaladapis insignis* was as large as a donkey, and is surmised by A. S. Woodward to have been aquatic in its habits. *Forsyth Major*, 1893.

megalencephalic (meg-ạ-len-se-fal′ik), *a.* [Gr. μέγας (μεγαλ-), great, + E. *encephalic.*] Characterized by hypertrophy of the encephalon.

megalo-. [Gr. μεγαλο-, combining form of μέγας, great: see *meg-*, *mega-*.] A prefix, meaning 'great' or 'large'; specifically, in *phys.*, a prefix sometimes used in place of the shorter forms *meg-* and *mega-* to denote that a unit is multiplied by one million.

megaloblast (meg′ạ-lọ-blȧst), *n.* [Gr. μέγας (μεγαλ-), great, + βλαστός, germ.] A large nucleate cell found in the bone-marrow in the embryo: also a megalocyte, or large red blood-corpuscle occurring in certain forms of anemia in extra-uterine life. *R. C. Cabot*, Clinical Exam. of the Blood, p. 89.

megaloblastic (meg″ạ-lọ-blas′tik), *a.* [*megaloblast* + *-ic.*] Of or pertaining to megaloblasts; of the nature of a megaloblast.

The presence of the nucleated erythrocytes of the *megaloblastic* type was evidence of a severe, though not necessarily fatal, anæmia.
Med. Record, Jan. 31, 1903, p. 196.

megalocardia (meg″ạ-lọ-kär′di-ạ̈), *n.* [NL., < Gr. μέγας (μεγαλ-), great, large, + καρδία, heart.] The condition of having an abnormally large heart.

megalocephalia (meg″ạ-lọ-se-fā′li-ạ̈), *n.* Same as ★*macrocephalia.*

megalocephalic (meg″ạ-lọ-se-fal′ik), *a.* [Gr. μεγαλοκέφαλος, < μέγας (μεγαλ-), great, large, + κεφαλή, head, + *-ic.*] Same as *megacephalic.*

megalocephaly (meg″ạ-lọ-sef′ạ-li), *n.* [*megalocephal*(*ic*) + *-y*^{3}.] Same as ★*macrocephaly.*

megalochirous (meg″ạ-lọ-kī′rus), *a.* [Gr. μέγας (μεγαλ-), great, + χείρ, hand.] Characterized by large hands or prehensile organs.

megaloconidium (meg″a-lọ-kō-nid′i-um), *n.*; pl. *megaloconidia* (-ạ̈). [NL., < Gr. μέγας (μεγαλ-), great, large, + NL. *conidium.*] Same as *macroconidium.*

megalocornea (meg″ạ-lọ-kôr′nẹ-ạ̈), *n.* [NL., < Gr. μέγας (μεγαλ-), great, large, + NL. *cornea.*] Abnormally large size of the cornea.

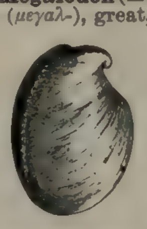
Megalocottus (meg″ạ-lọ-kot′us), *n.* [NL., < Gr. μέγας (μεγαλ-), great, large, + NL. *Cottus.*] A genus of cottoid fishes found in the North Pacific.

megalocytosis (meg″ạ-lō-sī-tō′sis), *n.* [*megalocyte* + *-osis.*] The production or formation of megalocytes, or very large red blood-corpuscles.

megalodactylia (meg″ạ-lọ-dak-til′i-ạ̈), *n.* [NL., < Gr. μέγας (μεγαλ-), great, large, + δάκτυλος, finger.] Same as ★*macrodactylia.*

megalodactylism (meg″ạ-lō-dak′ti-lizm), *n.* [Gr. μέγας (μεγαλ-), great, large, + δάκτυλος, finger, + *-ism.*] Same as ★*macrodactylism.*

Megalodon (meg′ạ-lọ-don), *n.* [NL., < Gr. μέγας (μεγαλ-), great, large, + ὀδούς (ὀδοντ-), tooth.] An extinct genus of *Pelecypoda* typifying the family *Megalodontidæ.* It is characterized by ponderous heart-shaped shells with amphidetic area, opisthodetic ligament, and large and heavy cardinal teeth. The earliest species are Devonian, but the shells are most abundant in the Triassic rocks. Properly *Megalodus.*



Megalodon (*Eumegalodon*) *cucullatus*, Goldf. Devonian; Paffrath, near Cologne. One half natural size. (From Zittel's "Palæontology.")

megalodont (meg′ạ-lọ-dont), *a.* [Gr. μεγαλόδους (-οδοντ-), < μέγας (μεγαλ-), great, large, + ὀδούς (ὀδοντ-), tooth.] Having large teeth; megadont.

megalodontous (meg″a-lọ-don′tus), *a.* [Gr. μέγας (μεγαλ-), great, + ὀδούς (ὀδοντ-), tooth.] Characterized by large teeth.

megalogastria (meg″ạ-lọ-gas′tri-ạ̈), *n.* [NL., < Gr. μέγας (μεγαλ-), great, large, + γαστήρ, stomach.] The condition in which the stomach is abnormally large.

megaloglossia (meg″ạ-lọ-glos′i-ạ̈), *n.* [Gr. μέγας (μεγαλ-), great, large, + γλῶσσα, tongue.] Same as *macroglossia.*

megalomaniac (meg″ạ-lọ-mā′ni-ak), *a.* and *n.*

[*megalomania* + *-ac.*] I. *a.* Pertaining to or characterized by megalomania.

> But in that courteous, cultured throng I doubt whether one-fifth felt sympathy with the *megalomaniac* ideals paraded before their eyes. *Nation*, May 11, 1899.

II. *n.* One who suffers from megalomania.

megalomaniacal (meg″a̤-lọ-mā̤-nī′a̤-ka̤l), *a.* Relating to or suffering from megalomania. *G. S. Hall*, Adolescence, II. 536.

megalomartyr (meg″a̤-lọ-mär′tėr), *n.* [Gr. *μέγας* (*μεγαλ-*), great, + *μάρτυρ*, witness.] A great or eminent martyr.

> Among those holy martyrs whom the Greeks honour with the title of *Megalomartyrs* (i.e. = Great Martyrs) as St. George, St. Pantaleon, &c. four are distinguished by them above the rest as principal patrons.
> *Butler*, Lives of the Primitive Fathers, II. 93.

> It was the Chief of the "*Megalomartyrs*," or Dii Selecti, who had convoked this crowd of christian people.
> *Is. Taylor*, Anc. Chr., II. 186.

Megalonychidæ (me-gal-ọ-nik′i-dē), *n. pl.* [NL., < *Megalonyx* (*-onych-*) + *-idæ.*] The great ground-sloths of the genus *Megalonyx* considered as sufficiently distinct from those represented by *Megatherium* to warrant their separation as a distinct family. *Zittel*, 1892.

megalopa, *n.* 2. Same as ★*megalopa stage.* — **Megalopa stage**, in the development of crabs, an advanced larval stage in which the animal has large eyes, an extended abdomen, and well-developed pleopods.

> It is therefore interesting to find that in the zoea and through the larval and post-larval (*megalopa*) *stages*, the shore-crab possesses a primary and a secondary chromatophore system of a very clearly defined character.
> *Philos. Trans. Roy. Soc.* (London), 1902, ser. B, p. 318.

megalophonic (meg″a̤-lọ-fon′ik), *a.* Same as *megalophonous.*

megalophthalmus (meg″a̤-lof-thal′mus), *n.* [NL., < Gr. *μεγαλόφθαλμος*, large-eyed, < *μέγας* (*μεγαλ-*), great, large, + *ὀφθαλμός*, eye.] A condition in which the eyes are of abnormally great size. *Buck*, Med. Handbook, II. 9.

megalopia (meg-a̤-lō′pi-ä̤), *n.* [NL., < Gr. *μέγας* (*μεγαλ-*), great, large, + *ὤψ* (*ὠπ-*), eye.] Same as *megalopsia.*

megalopod (meg′a̤-lọ-pod), *a.* and *n.* [Gr. *μέγας* (*μεγαλ-*), great, large, + *πούς* (*ποδ-*), foot.] Having large feet; megalopodous; macropod.

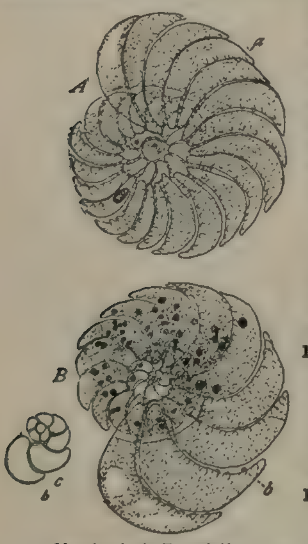
megalopodous (meg-a̤-lop′ọ-dus), *a.* [Gr. *μέγας* (*μεγαλ-*), great, + *πούς* (*ποδ-*), foot.] Characterized by large feet.

megalopore (meg′a̤-lō-pōr), *n.* [Gr. *μέγας* (*μεγαλ-*), great, large, + *πόρος*, pore.] A large pit or pore in the shell of a chitinoid mollusk, containing a sense-organ: opposed to ★*micropore.*

megaloscope (meg′a̤-lọ-skōp), *n.* [Gr. *μέγας* (*μεγαλ-*), great, large, + *σκοπεῖν*, view.] A form of endoscope in which the part brought into view is magnified.

megalosphere (meg′a̤-lọ-sfēr), *n.* [Gr. *μέγας* (*μεγαλ-*), great, large, + E. *sphere.*] The large original or central chamber of a megalospheric foraminifer. Compare ★*microsphere.* *Nature*, April 6, 1905, p. 550.

megalospheric (meg″a̤-lọ-sfer′ik), *a.* [*megalospher*(*e*) + *-ic.*] Having a single large nucleus and a large central chamber, as certain foraminifers in which the species consists of two kinds of individuals. Compare ★*microspheric.* *Knowledge and Sci. News*, March, 1904, p. 48.



Megalospheric Foraminifer.

Polystomella crispa. *A*, the megalospheric, *B*, the microspheric forms, decalcified. *a*, communication between the chambers; *b*, retral processes; *c*, the central chambers of the microspheric forms more highly magnified. The canal system is omitted in these figures for the sake of clearness. (From Lankester's "Zoology.")

megamaxwell (meg-a̤-maks′-wel), *n.* A unit of magnetic flux equal to 1,000,000 maxwells.

megamere (meg′a̤-mēr), *n.* [Gr. *μέγας*, great, large, + *μέρος*, part.] One of the large blastomeres of the segmenting ovum in certain animals, as opposed to the micromeres. See *macromere.*

megameter (meg′a̤-mē-tėr), *n.* [*mega-* + *meter.*] A unit of length equal to one million meters.

megamho (meg′a̤-mō), *n.* [*mega-* + *mho.*] A practical unit of electric conductance equal to 1,000,000 mhos or 1×10^{-3} c. g. s. units.

megamil (meg′a̤-mil), *n.* [*mega-* + *mil.*] A proposed practical unit of length, equal to one million mils or one thousand inches. [Rare.]

megampere (meg-am-pãr′), *n.* [*mega-* + *ampere.*] A practical unit of electric current equal to a million amperes.

meganephric (meg-a̤-nef′rik), *a.* [Gr. *μέγας*, large, + *νεφρός*, kidney, + *-ic.*] Characterized by the possession of large nephridia: as, a *meganephric* worm.— **Meganephric nephridia.** See ★*nephridium.*

meganucleus (meg-a̤-nū′klẹ̄-us), *n.*; pl. *meganuclei* (-ī). [NL., < Gr. *μέγας*, great, + E. *nucleus.*] Same as *macronucleus.*

megaphone, *n.* 2. A large speaking-trumpet of a conical form.

megaphonic (meg-a̤-fon′ik), *a.* [*megaphon*(*e*) + *-ic.*] Of or pertaining to a megaphone; of the nature of a megaphone; transmitted by means of a megaphone: as, a *megaphonic* message.

> Several individuals can be examined at once by duplicating the ear tubes or by substituting a *megaphonic* horn for the tubes. *Science*, June 24, 1904, p. 960.

megaphotographic (meg″a̤-fō-tọ-graf′ik), *a.* Pertaining to or produced by megaphotography.

megaphotography (meg″a̤-fọ-tog′ra-fi), *n.* [Gr. *μέγας*, great, + E. *photography.*] The photography of the heavenly bodies and of celestial phenomena. *Nature*, May 24, 1900, p. 79.

megaphyllous (meg-a̤-fil′us), *a.* [Gr. *μέγας*, large, + *φύλλον*, leaf, + *-ous.*] In *bot.*, large-leaved.

> It is natural to look to the pteridophytes for guidance as to the origin of foliar development in the sporophyte, for they are the most primitive plants with leafy sporophytes. They may be disposed according to the prevalent size of their leaves in a series, leading from microphyllous to *megaphyllous* types. *Science*, Oct. 21, 1904, p. 529.

megaprosopous (meg-a̤-pro-sō′pus), *a.* [Gr. *μέγας*, great, large, + *πρόσωπον*, face, + *-ous.*] In *craniom.*, said of a skull having a large face, the volume of which is 720–780 cubic centimeters in males and 580–625 cubic centimeters in females.

megapul (meg′a̤-pul), *n.* [*mega-* + *pul.*] In *physics*, a proposed unit of measurement of the time-integral of forces; one million dynes acting for one second.

megarrhine, megarhine (meg′a̤-rīn), *a.* [Gr. *μέγας*, great, + *ῥίς* (*ῥιν-*), nose.] Characterized by a large nose, as *Rhinoceros megarhinus*, an extinct species of rhinoceros.

megascleric (meg-a̤-sklē′rik), *a.* [*megasclere* + *-ic.*] Pertaining to or characteristic of a megasclere.

megascleron (meg-a̤-sklē′ron), *n.*; pl. *megasclera* (-rä̤). [NL.] In sponge-spicules, a megasclere.

megasclerum (meg-a̤-sklē′rum), *n.*; pl. *megasclera* (-rä̤). [NL.] Same as *megasclere.*

megasphere (meg′a̤-sfēr), *n.* [Gr. *μέγας*, great, large, + *σφαῖρα*, sphere.] The large primordial chamber in the shells of some *Foraminifera:* contrasted with ★*microsphere.* See ★*megalosphere.*

megasporophyl, megasporophyll (meg-a̤-spō′rō-fil), *n.* [Gr. *μέγας*, great, large, + *σπορά*, seed (spore), + *φύλλον*, leaf.] 1. In the *Spermatophyta*, a carpel.—2. In the *Pteridophyta*, a sporophyl which bears megaspores (macrospores).

megastome (meg′a̤-stōm), *n.* [Gr. *μέγας*, great, large, + *στόμα*, mouth.] A univalve shell having a large aperture or mouth.

megatherial (meg-a̤-thē′ri-a̤l), *a.* [NL. *megatherium* + *-al*[1].] Pertaining to or resembling the megatherium; huge; unwieldy.

> Beautiful problems of the past of our island and the evolution of life were defaced by the disorderly offspring of a quite *megatherial* wit—if one may coin such an antithesis to "etherial." *Nature*, July 26, 1894, p. 301.

megathermic (meg-a̤-thėr′mik), *a.* [*megatherm* + *-ic.*] Having the character of a megatherm; composed of or characterized by megatherms.

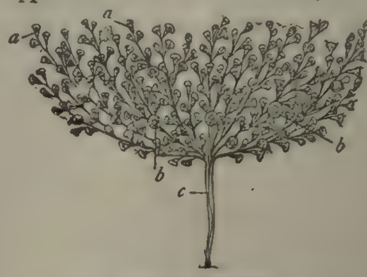
> Yet in these latter extensions [Southern Florida and Southern Brazil] the *megathermic* flora is already perceptibly impoverished.
> *A. F. W. Schimper* (trans.), Plant Geog., p. 226.

megatorque (meg′a̤-tôrk), *n.* [*mega-* + *torque.*] A proposed practical unit for the measurement of the moments of forces; one million torques or one million times the moment of a dyne acting with a lever-arm of one centimeter.

megatypy (meg′a̤-tī-pi), *n.* [*megatyp*(*e*) + *-y*[3].] In *photog.*, the process of making megatypes or enlargements.

megawatt (meg′a̤-wot), *n.* [*mega-* + *watt.*] A unit of power or activity equal to 1,000,000 watts.

megazoöid (meg-a̤-zō′oid), *n.* [Gr. *μέγας*, great, large, + E. *zoöid.*] A large zoöid, or animal, as opposed to a small individual, or microzoöid, of the same species. Such mega- and microzoöids occur, for example, in the bell-animalcule, *Vorticella.* In this animal the microzoöids are formed as free-swimming buds by the large, pedunculate, and sessile megazoöids.



Colony of Megazoöids.

a, nutritive zoöid; *b*, reproductive zoöid; *c*, axial fiber. (From Parker's "Biology," after Saville Kent.) (From Lankester's "Zoology.")

megillah (me-gil′ä̤), *n.*; pl. *megilloth* (-ōt). [Heb., < *gâlāl*, roll.] One of five books in the Old Testament (namely, Canticles, Ruth, Lamentations, Ecclesiastes, and Esther) which are recited in the synagogue in the following order: Canticles on Passover, Ruth on the feast of Weeks, Ecclesiastes on the feast of Tabernacles, and Esther on Purim; Lamentations is given on the fast of the ninth of Ab. They derive their name from the fact that they are written on parchment rolls or scrolls.

megilloth, *n.* Plural of ★*megillah.*

megistocephalous (me-gis-tọ-sef′a̤-lus), *a.* [Gr. *μέγιστος*, superl. of *μέγας*, great, large, + *κεφαλή*, head.] Having a very large head.

megohmmeter (me-gōm′e-tėr), *n.* An instrument similar in type to an ohmmeter but suitable for the measurement of very high electric resistances.

megosmatic (meg-os-mat′ik), *a.* [Gr. *μέγας*, great, + E. *osmatic.*] Same as ★*macrosmatic.*

megoxycyte (me-gok′si-sīt), *n.* [Gr. *μέγας*, great, + *ὀξύς*, sharp, + *κύτος*, hollow (cell).] A coarsely granular oxyphil or eosinophil blood-corpuscle, or leucocyte. *Durham*, 1897.

mehari (mā-hä′rē), *n.* One of a race of swift Arabian camels taking name from Mehara, a region in Arabia where it is raised, and of great value in campaigning and in exploring expeditions.

> His little troop was mounted on *meharis*, used by the Touaregs—rapid camels, which are to the ordinary camels of the caravan what race-horses are to cart horses. Thanks to the mobility of his caravan, M. Foureau could perform long raids without being attacked by the Touaregs.
> *Nat. Geog. Mag.*, Feb., 1905, p. 77.

meharist (mā-hä′rist), *n.* [F. *mehariste*, < *mehari* + *-ist.*] A trooper mounted on a mehari.

> A new and decisive operation was undertaken. At the commencement of February, 1904, Major Laperrine, quitting In-Sala at the head of a troop of "*meharistes*" and taking his route south, succeeded in traversing the Sahara and meeting a second troop of "*meharistes*" which had set out from Timbuctoo.
> *Nat. Geog. Mag.*, Feb., 1905, p. 79.

mehmandar (mā′man-där), *n.* [Pers.] In Persia and India, an official appointed to act as courier to a traveler of distinction. *N. E. D.*

mehtar (mā′tä̤r), *n.* [Also *mater*; < Hind. *mehtar*, a sweeper (ironically a 'prince'), < Pers. *mihtar*, a great personage, a prince.] A sweeper; a scavenger.

> Among the more minute of his elaborate recommendations is one that in campaigns in warm countries where dust storms and flies are always prevalent a "*mehtar*" establishment from India should be attached to each unit with the duty to cover up the excreta immediately after the latrine has been used. *Lancet*, Aug. 29, 1903, p. 627.

Meibomia (mī-bō′mi-ä̤), *n.* [NL. (proposed by Heister, established by Adanson in 1763), named after B. *Meibom* (1678–1740), a German botanist.] A genus of dicotyledonous plants of the family *Fabaceæ*. See *Desmodium*.

Meibomian cyst. Same as *chalazion*.

meiler (mē′lėr), *n.* [G. *meiler*, MHG. *mīler*; origin obscure. The corresponding Bohem. *milėr*, Pol. *millerz*, are from the G.] A pile of wood to be burned into charcoal, irrespective of the shape; also, specifically, a rectangular pile about 25–30 feet in length, 8 feet wide, and sloping from a height of 2 feet at one end to 7 or 8 feet at the other, this upward slope tending to develop a draft in the direction of the length of the pile and so to secure uniform progress in the burning. *Groves and Thorp*, Chem. Technol., I. 105.

meiobar (mī′ọ-bär), *n.* [Gr. *μείων*, less, + *βάρος*, weight.] An area of low barometric pressure on the daily weather-map: a term introduced by Prestel in 1870.

meiotic, *a.* See ⋆*miotic*. *Nature*, Sept. 26, 1907, p. 556.

Meissner's bodies. Same as *Meissner's corpuscles*.

Meister (mīs′tėr), *n.* [G.] Master.

Mejidieh, *n.* Same as *Medjidie*.

Mekong yellow. See ⋆*yellow G* and *R*.

M. E. L. An abbreviation of *Master* (or *Mistress*) *of English Literature*.

Melæna neonatorum, hemorrhage from the stomach or bowels in the new-born infant, denoted by the passage of altered blood in the stools.—**Melæna spuria,** simulation of melæna neonatorum, in which the blood comes from a fissured nipple of the nurse, not originally from the intestinal tract of the child.

melænic (me-lē′nik), *a.* [*melæna* + *-ic.*] Relating to or marked by melæna.

melalgia (mel-al′ji-ä), *n.* [NL., < Gr. *μέλος*, limb, + *ἄλγος*, pain.] Neuralgic pain in one or more of the limbs.

melam (mel′am), *n.* [Gr. *μέλι*, honey, + E. *am(monia)*.] A colorless granular, pulverulent, indifferent compound, $C_6H_9N_{11}$, formed by the rapid heating of ammonium thiocyanate at 300° C.

melamdim, *n.* Plural of ⋆*melammad*.

melamine (mel′am-in), *n.* [*melam* + *-ine*2.] A colorless compound, $H_2NC<{N.C(NH_2) \atop N:C(NH_2)}>N$, formed, together with melam, by heating ammonium cyanate. It crystallizes in monoclinic prisms. Also called *cyanuramide*, *triguanide*, and *triurethriamidin*.

melammad (me-lam′ad), *n.*; pl. *melamdim* (-dēm). [Heb. (Yiddish *m'lamed*), < *lamad*, learn, teach.] A teacher in a rabbinical school; especially, the teacher of a *heder*, or elementary Jewish school.

Melampsora (mel-amp-sō′rä), *n.* [NL. (Castagne, 1843), < Gr. *μέλας* (*μελαν-*), black, + *ψώρα*, scab, scale.] A genus of uredineous fungi having 4 spore forms (spermagonia, æcidia, uredo- and teleutospores), all produced on the same host. The æcidia are without peridia and paraphyses, and the teleutospores form a dark crust on the surface of the host. The species are numerous and common, causing rusts of various plants. *M. farinosa* is usually abundant on the leaves of various willows.

Melampsoraceæ (mel″amp-sọ-rā′sē-ē), *n. pl.* [NL., < *Melampsora* + *-aceæ.*] A family of uredineous fungi named from the genus *Melampsora*. The teleutospores are sessile and usually form flattened masses in the tissue of the host.

melancholia, *n.*—**Involution melancholia,** melancholia occurring in advanced life, during the period of senile involution. *Jour. Philos. Psychol. and Sci. Methods*, Dec. 5, 1907, p. 698.—**Melancholia attonita,** a form of melancholia in which the sufferer shows absolute indifference to all his surroundings.

melanconiaceæ (mel-an-kō-ni-ā′sẹ-ē), *n. pl.* [NL., < *Melanconium* + *-aceæ.*] A family of *Fungi Imperfecti* named from the genus *Melanconium*. Also written *Melanconieæ*.

melanconiaceous (mel-an-kō-ni-ā′shius), *a.* Pertaining to or belonging to the fungous family *Melanconiaceæ*.

Melanconiales (mel-an-kō-ni-ā′lēz), *n. pl.* [NL., < *Melanconium* + *-ales.*] An order of *Fungi Imperfecti* containing the single family *Melanconiaceæ*. The spores are usually borne in superficial cavities without the formation of a special wall or pycnidium. See ⋆*Glœosporium* and *Melanconium*.

Melanconidaceæ (mel-an-kō-ni-dā′sẹ-ē), *n. pl.* [NL., < *Melanconis* (*Melanconid-*) + *-aceæ.*] A family of pyrenomycetous fungi named from the genus *Melanconis* and containing 9 genera.

Melanconis (mel′an-kō-nis), *n.* [NL. (Tulasne, 1863), referring to the black spores, < Gr. *μέλας* (*μελαν-*), black, + *κόνις* (*κονιδ-*), dust.] A genus of pyrenomycetous fungi, type of the family *Melanconidaceæ*. It has the perithecia arranged in a valsoid stroma and producing elongate necks which break through the surface of the bark. The spores are ellipsoid or elongate and uniseptate. *M. modonia* is a common species occurring on dead branches of chestnut.

melanephidrosis (mel-a̤-nef-i-drō′sis), *n.* [Gr. *μέλας* (*μελαν-*), black, + NL. *ephidrosis*.] A form of sweating-sickness marked by dark perspiration.

mélangeur (me-loṅ-zhėr′), *n.* [F. **mélangeur*, m., *mélangeuse*, f., < *mélanger*, mix, < *mélange*, a mixture.] In *candy-making*, a mill for grinding and mixing cocoa. One type consists of a granite roller (sometimes two) traveling in a pan or metal bed. In another the bed revolves, and the rollers, held in one position, revolve by friction with the bed. It is used in mixing cocoa and sugar in making chocolate.

melanian2 (me-lā′ni-a̤n), *a.* [F. *mélanien*, < Gr. *μέλας* (*μελαν-*), black.] In *anthropol.*, used as the equivalent of ⋆*Negrito* and also of *Negroid*. *Owen*.

melanidrosis (mel″an-i-drō′sis), *n.* [NL., < Gr. *μέλας* (*μελαν-*), black, + *ἱδρ(ώς)*, sweat, + *-osis.*] The sweating of a dark-colored fluid.

melanize (mel′a̤-nīz), *v. t.*; pret. and pp. *melanized*, ppr. *melanizing*. [Gr. *μέλας* (*μελαν-*), black, + *-ize.*] To render melanistic; produce melanism in.

melano (mel′a̤-nō), *n.* [Gr. *μέλας* (*μελαν-*), black.] An abnormally black or melanistic animal; a black animal that would normally be colored.

> The small specimen is a *melano*, but shows indications of the normal spotted condition.
> *Annals and Mag. Nat. Hist.*, 1902, p. 59.

melanocancroid (mel″a̤-nọ-kang′kroid), *n.* [Gr. *μέλας* (*μελαν-*), black, + E. *cancroid*.] An epithelial tumor containing much pigment matter.

melanocerite (mel″a̤-nọ-sē′rīt), *n.* [Gr. *μέλας* (*μελαν-*), black, + E. *cer(ium)* + *-ite*2.] A fluosilicate of the cerium and yttrium metals, calcium, and other elements. It occurs in brown to black rhombohedral crystals, and is found sparingly in southern Norway.

melanochalcite (mel″a̤-nọ-kal′sīt), *n.* [Gr. *μέλας* (*μελαν-*), black, + *χαλκός*, copper, + *-ite.*] A pitch-black massive mineral substance forming a thin zone about a kernel of cuprite in nodules the exterior zones of which are made up of malachite and chrysocolla. In composition it is a silicocarbonate of copper with copper hydroxid. It is found near Bisbee, Arizona.

melanochlorous (mel″a̤-nọ-klō′rus), *a.* [Gr. *μέλας* (*μελαν-*), black, + *χλωρός*, yellow.] Variegated with black and yellow. *Mayne*.

melanochroid (mel″a̤-nọ-krō′id), *a.* [*melanochro(ic)* + *-id*2.] Same as *melanochroic*. *Keane*, Ethnology, p. 167.

melanocratic (mel″a̤-nọ-krat′ik), *a.* [Gr. *μέλας* (*μελαν-*), black, + *κρατεῖν*, rule, + *-ic.*] In *petrog.*, noting igneous rocks characterized by a preponderance of dark-colored minerals, or rather of minerals, chiefly ferromagnesian, that are normally dark-colored: contrasted with ⋆*leucocratic* rocks. *Brögger*, 1896.

melanocyte (mel′a̤-nọ-sīt), *n.* [Gr. *μέλας* (*μελαν-*), black, + *κύτος*, a hollow (a cell).] In *pathol.*, a lymphocyte, or wandering amœboid cell, containing dark pigment-granules.

melanoderma (mel″a̤-nọ-dėr′mä), *n.* [Gr. *μέλας* (*μελαν-*), black, + *δέρμα*, skin.] Dark discoloration of the skin; melasma.

melanodermic (mel″a̤-nọ-dėr′mik), *a.* [*melanoderm(a)* + *-ic.*] Having a dark-colored skin. *Buck*, Med. Handbook, I. 110.

melanogallic (mel″a̤-nọ-gal′ik), *a.* [Gr. *μέλας* (*μελαν-*), black, + E. *gallic*2.] Noting an acid, an amorphous, odorless, tasteless compound, $C_6H_4O_2$, formed by heating gallic or tannic acid. Also called *gallhuminic acid* and *metagallic acid*.

melanogen (me-lan′ọ-jen), *n.* [Gr. *μέλας* (*μελαν-*), black, + *-gen*, -producing.] The colorless mother substance, or chromogen, of urinary melanin.

Melanogrammus (mel″a̤-nọ-gram′us), *n.* [NL., < Gr. *μέλας* (*μελαν-*), black, + *γραμμή*, line.] A genus of gadoid fishes, known as haddock, found on both coasts of the North Atlantic.

melanoid, *a.* **II.** *n.* A pigment resembling or belonging to the melanins.

melanoidin (mel-a̤-noi′din), *n.* [*melanoid* + *-in*2.] A melanin derived from the albumins: a term introduced by Schmiedeberg.

Melano-Papuan (mel″a̤-nọ-pap′ụ-a̤n), *a.* Connected with the black races and the Papuan race (which is itself one of the black races of Melanesia). *Keane*, Ethnology, p. 288.

melanophore (mel′a̤-nọ-fōr), *n.* [Gr. *μέλας* (*μελαν-*), black, + *-φορος*, bearing, < *φέρειν*, bear.] 1. A large cell which contains dark pigment-granules. Typical examples occur in the common fence-lizard, *Anolis*, which turns from green to brown. *Nature*, Jan. 28, 1904, p. 304.—2. The dark-brown chromatophore of the algæ.

melanophyl, melanophyll (mel′a̤-nọ-fil), *n.* [Gr. *μέλας* (*μελαν-*), black, + *φύλλον*, leaf.] The yellow-brown coloring-matter of the diatoms, composed of diatomin and chlorophyl, and supposed to be similar to the phæophyl of the brown algæ.

melanoplakia (mel″a̤-nọ-plā′ki-ä), *n.* [NL., < Gr. *μέλας* (*μελαν-*), black, + *πλάξ* (*πλακ-*), a flat thing.] The formation of dark patches on the tongue.

melanose2 (mel′a̤-nōs), *a.* [*melanosis*.] Characteristic of or affected with melanosis.

melanosed (mel′a̤-nōst), *p. a.* Affected with melanosis.

melanostibian (mel″a̤-nọ-stib′i-a̤n), *n.* [Gr. *μέλας* (*μελαν-*), black, + NL. *stibi(um)* + *-an.*] An antimonate of iron and manganese occurring in black foliated masses: found in Sweden.

Melanostigma (mel″a̤-nọ-stig′mä), *n.* [NL., < Gr. *μέλας* (*μελαν-*), black, + *στίγμα*, point.]

Melanostigma pammelas.
(From Bulletin 47, U. S. Nat. Museum.)

A genus of fishes, belonging to the family *Zoarcidæ*, found in the deep sea off both coasts of North America.

melanotrichous (mel-a̤-not′ri-kus), *a.* [Gr. *μελανόθριξ* (*τριχ-*,) black-haired, < Gr. *μέλας* (*μελαν-*), black, + *θρίξ* (*τριχ-*), hair.] Having black hair; black-haired.

melanotype, *n.* **2.** A glass negative mounted on black and used as a positive.—**3.** A black print.

Melanthiaceæ (me-lan-thi-ā′sẹ-ē), *n. pl.* [NL. (Lindley, 1830), earlier *Melanthaceæ* (Robert Brown, 1810), < *Melanthium* + *-aceæ.*] A family of monocotyledonous plants of the order *Liliales*, the bunch-flower family, typified by the genus *Melanthium* (which see). It is included by many authors in the *Liliaceæ*, but is distinguished from it mainly by the septicidal capsule and the absence of bulbs. The family includes the hellebore, the bellwort, the bog-asphodel, and the blazing-star or devil's-bit.

melanthiaceous (me-lan-thi-ā′shius), *a.* Belonging to the plant family *Melanthiaceæ*.

melanthin (mel′an-thin), *n.* [Gr. *μέλας* (*μελαν-*), black, + *ἄνθος*, flower, + *-in*2.] A glucoside, $C_{20}H_{33}O_7$(?), contained in the seeds of *Nigella sativa*.

melanure (mel′a̤-nūr), *n.* [NL. *melanura* (see def.), < Gr. *μελάνουρος*, black-tailed, < *μέλας* (*μελαν-*), black, + *οὐρά*, tail.] A sparoid fish, *Oblada melanura*, found in the Mediterranean.

melanurenic (mel″a̤-nụ-ren′ik), *a.* [*melanur(ic)* + *-en-* + *-ic.*] Noting an acid, the same as ⋆*ammelide*.

melanuresis (mel″a̤-nụ-rē′sis), *n.* [NL., < Gr. *μέλας* (*μελαν-*), black, + *οὔρησις*, urination.] The passage of dark-colored urine, usually containing melanin.

melaphyre, *n.* It is proposed, in the field classification accompanying the quantitative system of classification of igneous rocks (see ⋆*rock*1), to restore the term *melaphyre* to its early significance and apply it to all dark-colored porphyries, of any composition.

Melasma gravidarum, discoloration of the skin occurring in pregnant women.—**Melasma universale,** a discoloration of almost the entire surface of the body, occurring in the aged.

Melasmia (me-las′mi-ä), *n.* [NL. (Léveillé, 1846), < Gr. *μέλασμα*, a black spot, black color.] A genus of *Fungi Imperfecti*, of the family *Leptostromataceæ*, having dimidiate pycnidia in a black scutellate stroma. The species are mostly stages in the development of *Rhytisma*.

M. acerina is the pycnidial condition of *Rhytisma acerinum.* See ★*Rhytisma.*

melassic, *a.* 2. Noting an acid, a colorless compound, $C_6H_6O_3$ (?), formed by the action of alkali on glucose.

melassigenic (me-las-i-jen′ik), *a.* [*melasses* (F. *mélasse*), molasses, + *-genic.*] Producing molasses, or tending to increase the proportion of molasses to crystallized sugar obtained in sugar-making. A large amount of mineral salts in beet-juice or cane-juice and the '*inversion*' of much of the sucrose present are melassigenic in effect.

Melbourn rock. See ★*rock*¹.

Melbury marble. See ★*marble.*

Melchizedekian (mel-kiz-e̤-dek′i-a̤n), *n.* [LL. **Melchisedecianus*, MGr. Μελχισεδεκιανοί, < Μελχισεδέκ, Melchizedek.] One of a sect which was founded about 210 A.D. as a branch of the Theodotians. The sect affirmed that Melchizedek was not a man, but a divine power, without father or mother, the true priest, who was intercessor not only for men but for angels and thus superior to Christ.

Melchizedekite (mel-kiz′e̤-dek-īt), *n.* [MGr. Μελχισεδεκῖται, pl.] Same as ★*Melchizedekian.*

meld (meld), *v. t.* [G. *melden*, mention, announce.] In *penuchle*, to announce (any counting combination in the hand), such as sequence in trumps, 150; in card-games in general, to declare.

> When a player *melds* any combination, he must lay down the cards of which his meld consists face upwards on the table beside him; he can make use of any of these exposed cards to play to a trick, but the remainder (if any) must remain exposed until the talon is exhausted.
> *Amer. Hoyle*, p. 204.

meld (meld), *n.* [*meld*, *v.*] In *penuchle*, the announcement of any counting combination in the hand: as, a *meld* of 60 queens; in card-games in general, a declaration. *Amer. Hoyle*, p. 202.

Meldola's blue. Same as *new blue.*

mêlée, *n.* 2. That part of the game of halma in which the pieces of the two players occupy the same part of the board.

melem (mel′em), *n.* [*mel*(*am*) + *-em* (a mere substitution).] A white amorphous compound, $C_6H_6N_{10}$(?), left undissolved when melam is digested with potassium hydroxid.

melene (mel′ēn), *n.* [Gr. μέλι, honey, + *-ene.*] A colorless, crystalline, olefinic hydrocarbon, $C_{30}H_{60}$, prepared by the distillation of beeswax. It melts at 62° C.

meletin (mel′e̤-tin), *n.* [*mel*(*in*) + *-et* + *-in*².] A decomposition-product of melin, probably identical with quercitin.

melezibiose (mel-ē̤-zib′i-ōs), *n.* [*melezi*(*tose*) + *biose.*] A disallowed form for ★*melezitose.*

melezitose (mē-lez′i-tōs), *n.* [F. *mélézitose*; cf. ★*melizitose.*] A colorless dextrorotatory carbohydrate, $C_{18}H_{32}O_{16}+2H_2O$, obtained in southern France from the sweet exudation of the young twigs and needles of the larch, *Abies Larix*, and from *Alhagi Camelorum* from Asia. It forms small, lustrous, hard, monoclinic crystals, and melts at 140° C. In France it is sometimes used in place of sugar. In India it is employed as an aperient. Also called *melezitriose.*

melezitriose (mel-ē̤-zit′ri-ōs), *n.* Same as ★*melezitose.*

Melian (mē′li-a̤n), *a.* Of or pertaining to the Island of Melos (one of the Cyclades) or to its productions.

> Of the last kind is the most of the Rhodian ware, and that which lay thickly just below the surface at Phylakopi, and is not of *Melian* manufacture.
> *Encyc. Brit.*, XXXI. 57.

melianthaceous (mel″i-an-thā′shius), *a.* Belonging to the plant family *Melianthaceæ.*

melibiase (me-lib′i-ās), *n.* [Gr. μέλι, honey, + *biase* (?).] Same as ★*raffinase.*

melibiose (me-lib′i-ōs), *n.* [Gr. μέλι, honey, + E. *biose.*] A colorless pulverulent dextrorotatory carbohydrate, $C_{12}H_{22}O_{11}$, prepared by the action of dilute acids on melitriose (raffinose).

melic² (mel′ik), *n.* [L. *melic*(*a*).] A plant of the genus *Melica.*

melicera (mel-i-sē′rä̤), *n.* [NL., < Gr. μέλι, honey, + κηρός, wax.] Same as *meliceris*; also, same as *porrigo*, and *favus*, 2.

meliceria (mel-i-sē′ri-ä̤), *n.* Same as ★*melicera.*

meliceroma (mē̤-lis-ē̤-rō′mä̤), *n.*; pl. *meliceromata* (-ma̤-tä̤). [NL., as *melicer*(*is*) + *-oma.*] Same as *meliceris.*

Melicerta (mel-i-sėr′tä̤), *n.* [NL., < L. *Melicerta*, Gr. Μελικέρτης, name of a sea-god.] The typical genus of the family *Melicertidæ.* *Schrank*, 1803.

Melicertidæ (mel-i-sėr′ti-dē), *n. pl.* [*Melicerta* + *-idæ.*] A family of social rotifers, of the order *Rhizota*, having a corona without setigerous lobes, the mouth lateral, the velum in the form of a continuous marginal band bent upon itself at the dorsal surface in such a manner as to encircle the corona twice, and the trophi malleoramate. It includes the genera *Melicerta*, *Lacinularia*, *Megalotrocha*, *Trochosphæra*, *Conochilus*, *Limnias*, *Cephalosiphon*, and *Œcistes.*

melicha, *n.* See ★*meliha.*

melichroous (me-lik′rō̤-us), *a.* [Gr. μελίχροος, honey-colored, < μέλι, honey, + χροά, color.] Having the color of honey.

Melichthys (me-lik′this), *n.* [Gr. μέλ(ας), black, + ἰχθύς, a fish.] A genus of balistoid fishes found in tropical seas.

meliha, melicha (mel′i-ċhä̤), *n.* [Heb., < *mālaḥ*, *v.*, salt, *melaḥ*, *n.*, salt.] The Jewish process of salting meat in preparing it for kosher food. See ★*kashern.*

melilite-basalt (mel′i-līt-ba̤-sâlt″), *n.* See ★*basalt.*

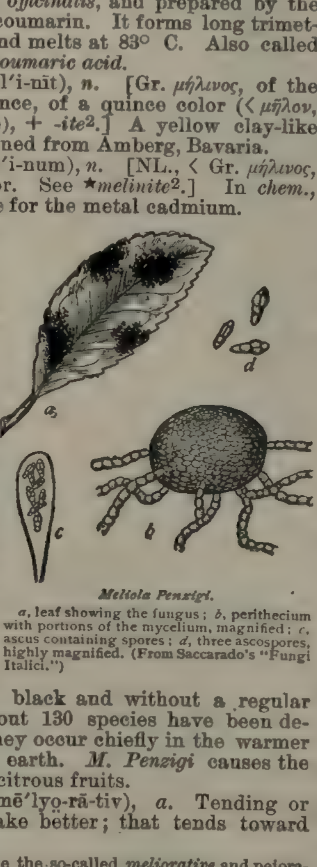
melilot, *n.*—**Blue melilot**, the Swiss melilot or old sow, *Trigonella cærulea.* It is a native of southeastern Europe and has blue flowers collected into heads.

melilotic (mel-i-lot′ik), *a.* [*Melilotus* + *-ic.*] Noting an acid, a colorless compound, $HO.\overset{2}{C}_6H_4CH_2CH_2\overset{1}{C}OOH$, found in yellow melilot, *Melilotus officinalis*, and prepared by the reduction of coumarin. It forms long trimetric crystals and melts at 83° C. Also called *orthohydroxycoumaric acid.*

melinite² (mel′i-nīt), *n.* [Gr. μήλινος, of the apple or quince, of a quince color (< μῆλον, apple, quince), + *-ite*².] A yellow clay-like mineral obtained from Amberg, Bavaria.

melinum (mel′i-num), *n.* [NL., < Gr. μήλινος, of quince color. See ★*melinite*².] In *chem.*, an early name for the metal cadmium.

Meliola (mel-i-ō′lä̤), *n.* [NL. (Fries, 1825), in allusion to the shape of the perithecia, dim. < Gr. μῆλον, apple.] A genus of ascomycetous fungi of somewhat doubtful relationship, placed by some authors in the order *Perisporiales.* The mycelium forms a sooty layer on the surface of the leaves. The perithecia are black and without a regular opening. About 130 species have been described, and they occur chiefly in the warmer regions of the earth. *M. Penzigi* causes the sooty mold of citrous fruits.



Meliola Penzigi.

a, leaf showing the fungus; *b*, perithecium with portions of the mycelium, magnified; *c*, ascus containing spores; *d*, three ascospores, highly magnified. (From Saccarado's "Fungi Italici.")

meliorative (mē′lyo̤-rā-tiv), *a.* Tending or serving to make better; that tends toward betterment.

> Here would come the so-called *meliorative* and pejorative developments in word-meaning, whereby, e.g., steward, "the sty-ward," becomes the title of a great officer of the realm and the name of a line of kings; or, on the other side, sou (Lat. solidus) passes from the name of a gold coin to that of one of proverbially insignificant value.
> *Encyc. Brit.*, XXXI. 678.

melis (mel′is), *n.* [G., < Gr. μέλι, honey.] A kind of lump-sugar made in Germany by warming up the 'massecuite' from the vacuum-pan until most of the small crystals which have begun to form are redissolved, filling into molds and allowing the whole to solidify.

melissic (mē̤-lis′ik), *a.* [Gr. μέλισσα, honey, + *-ic.*] Of or pertaining to honey.—**Melissic acid**, a colorless compound, $C_{29}H_{59}COOH$, prepared by heating melissyl alcohol with calcium and potassium hydroxids at 220° C. It crystallizes in silky, lustrous plates and melts at 90° C. It is the highest known member of the series of normal aliphatic acids. **Melissyl alcohol**, a substance found in beeswax.

melissylene (mē̤-lis′i-lēn), *n.* [Gr. μέλισσα, honey, + *-yl* + *-ene.*] Same as ★*melene.*

melitagra (mel-i-tag′rä̤), *n.* [NL., < Gr. μέλι, (μελιτ-), honey, + ἄγρα, a catching.] Same as *impetigo.*—**Melitagra florescens**, eczema of the face, with yellow, honeycomb-like crusts. *Dunglison.*

melitagria (mel-i-tag′ri-ä̤), *n.* Same as ★*melitagra.*

melitagrous (mel-i-tā̤g′rus), *a.* [*melitagra* + *-ous.*] Pertaining to, of the nature of, or suffering from, melitagra or impetigo.

melitis (mē-lī′tis), *n.* [NL., < Gr. μῆλον, cheek, + *-itis.*] Inflammation of the cheek.

Melitodes (mel-i-tō′dēz), *n.* [NL., < Gr. μελιτώδης, like honey, < μέλι(τ-), honey, + εἶδος, form.] The typical genus of the family *Melitodidæ.* *Verrill*, 1864.

Melitodidæ (mel-i-tō′di-dē), *n. pl.* [NL., < *Melitodes* + *-idæ.*] A family of gorgonacean *Alcyonaria*, having the axis jointed and consisting of alternate portions of calcareous and soft horny substance, and without an epithelial layer around the central rod. It contains several genera, among them being *Melitodes*, *Mopsella*, *Clathraria*, and *Parisis.*

melitriose (me-lit′ri-ōs), *n.* Same as *melitose*, or ★*raffinose.*

melizitase (mel-i-zī′tās), *n.* [*melizit*(*ose*) + *-ase.*] A ferment which causes the inversion of melizitose (a higher polysaccharide).

melizitose (mel-i-zī′tōs), *n.* [Varied from *melezitose.* Cf. *melitose.*] A carbohydrate, of the composition $C_{18}H_{32}O_{16}$, found in various kinds of manna.

mellaginous (me-laj′i-nus), *a.* [NL. *mellago* (*mellagin-*), a substance like honey, + *-ous.*] Of the nature of or resembling honey.

Melletes (me-lē′tēz), *n.* [NL., < Gr. μελλητής, loiterer. The fish remains in shallow pools as the tide recedes.] A genus of cottoid fishes known from Alaska.

melligenous (me-lij′e-nus), *a.* [L. *mel* (*mell-*), honey, + -γενης, -producing.] Honey-producing; that yields honey. [Rare.]

mellogen (mel′ō̤-jen), *n.* [L. *mel* (*mell-*), honey, + *-gen*, -producing.] A black, brittle, amorphous compound, $C_{11}H_2O_4.1\frac{1}{2}H_2O$, prepared by the electrolysis of acidified water with gas-carbon electrodes. It does not melt.

Mellone hydrid. Same as ★*cyamellone.*

mellonide (mel′ō̤-nid), *n.* [*mellone* + *-ide*¹.] The general name, in organic chemistry, of salts of mellone.

mellophanic (mel-ō̤-fan′ik), *a.* [L. *mel* (*mell-*), honey, + Gr. -φανης, < φαίνεσθαι, appear.] Noting an acid, a colorless compound, $C_6H_2(\overset{1.2.3.5}{COOH})_4$, prepared by the oxidation of the corresponding tetramethyl-benzene. It forms small, ill-defined crystals and melts at 238° C. Also 1, 2, 3, 5-*benzene-tetra-carboxylic acid.*

melodial (me-lō′di-a̤l), *a.* [*melody* + *-al*¹.] Pertaining to melody; melodic.

melodramatize (mel-ō̤-dram′a̤-tīz), *v. t.*; pret. and pp. *melodramatized*, ppr. *melodramatizing.* [*melodrama* (*t-*) + *-ize.*] To make a melodrama of; render melodramatic.

melody, *n.*—**Melody curve**, in *phonetics*, a curve or graphic tracing which represents the melodic course (changes of tonal pitch) of a spoken word or sentence. *Scripture*, Exper. Phonetics, p. 479.

melody-organ (mel′ō̤-di-ôr″ga̤n), *n.* An organ so constructed that the highest tone of chords can be made louder or more emphatic than the other tones.

melody-string (mel′ō̤-di-string″), *n.* Same as *chanterelle*, 1.

Melogramma (mel-ō̤-gram′ä̤), *n.* [NL. (Fries, 1849), < Gr. μέλας, black, + γράμμα, anything written.] A genus of pyrenomycetous fungi of the family *Melogrammataceæ.* It has the perithecia more or less buried in a black somewhat cushion-shaped or elevated stroma. The spores are elongate, brown, and several-septate. *M. vagans* is a common species on dead branches of *Carpinus* in Europe and America.

Melogrammataceæ (mel″ō̤-gram-a̤-tā′sē̤-ē), *n. pl.* [NL., < *Melogramma* (*Melogrammat-*) + *-aceæ.*] A family of pyrenomycetous fungi named from the genus *Melogramma* and containing 8 genera.

melolonthin (mel-ō̤-lon′thin), *n.* [*Melolonth*(*a*) + *-in*².] A colorless compound, $C_5H_{12}O_3N_2S$, contained in the cockchafer, *Melolontha vulgaris.* It crystallizes in silky, lustrous plates, and decomposes without melting.

melon¹, *n.*—**Bacteriosis of the melon.** See ★*bacteriosis.*—**Indian melon**, the barrel-cactus, *Echinocactus.* *Jour. Amer. Folk-lore*, April–June, 1902, p. 109. [Colorado.]—**Melon vine-borer.** Same as *squash* ★*vine-borer.*

melon-beetle (mel′on-bē″tl), *n.* Any one of several beetles infesting melon plants, notably the chrysomelids *Diabrotica vittata*, *D. duodecimpunctata*, and, in the western United States, *D. trivittata*. See ★*cucumber-beetle.*

meloncus (mẹ̄-long′kus), *n.*; pl. ***melonci*** (-lon′sī). [Gr. *μῆλον*, cheek, + *ὄγκος*, a mass.] Tumor of the cheek.

melon-fly (mel′on-flī), *n.* A trypetid fly, *Dacus cucurbitæ*, whose larvæ bore into melons, cucumbers, and other cucurbitaceous fruit in Hawaii.

melon-fruit (mel′on-fröt), *n.* The papaw. *Bartlett.*

melongena (mel-on-jē′nạ̈), *n.* [Also *melinzane*, *melangeno*; < It. *melanzana*.] The egg-plant, *Solanum Melongena*.

melon-hood (mel′on-hůd), *n.* A kind of fungus, *Hygrophorus pratensis*. *N. E. D.*

melonist (mel′on-ist), *n.* [*melon*^{1} + *-ist.*] One who cultivates melons. *N. E. D.*

melonite (mel′ọ̄-nīt), *n.* [Named from the *Melonese* mine, in Calaveras county, California.] A nickel telluride (perhaps Ni_2Te_3), which occurs in reddish-white granular forms with metallic luster: found in California and also in Colorado.

melon-louse (mel′on-lous), *n.* An American plant-louse, *Aphis gossypii*, which damages the leaves and young shoots of melons, as well as of cotton, orange, and many other trees and plants. See cut under ★*cotton-aphis.*

melon-moth (mel′on-môth), *n.* The adult of the melon-caterpillar (which see).

melonry (mel′on-ri), *n.* [*melon*^{1} + *-ry.*] A place where melons are grown.

melon-ware (mel′on-wãr), *n.* Pottery made in the form and coloring of a small melon. Melon-ware was made extensively in the eighteenth century by Whieldon, Wedgwood, and other English potters.

melon-wood (mel′on-wůd), *n.* A yellow Mexican wood resembling sandalwood, used for furniture. *Treas. Bot.*

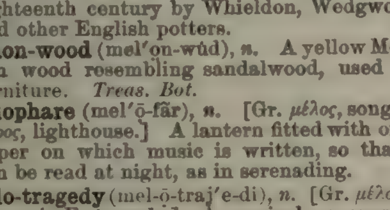
melophare (mel′ọ̄-fãr), *n.* [Gr. *μέλος*, song, + *φάρος*, lighthouse.] A lantern fitted with oiled paper on which music is written, so that it can be read at night, as in serenading.

melo-tragedy (mel-ọ̄-traj′e-di), *n.* [Gr. *μέλο(ς)*, song, + E. *tragedy.*] A musical or operatic tragedy.

> He [Alfiere] composed a sort of drama, altogether new, which he called a *melo-tragedy*. His object here was to unite the music . . . with the grandeur and pathos of tragedy. *J. Hobhouse*, Hist. Illustr. Ch. Har., p. 402.

melotype (mel′ọ̄-tīp), *n.* [Appar. irreg. < Gr. *μέλας*, black, + *τύπος*, type. The name would allude confusedly to the dark room that is not required.] 1. In *photog.*, a photographic process which permits development at any time and does not require a dark room.—2. A picture made by this process.

melting-furnace, *n.* 2. A gas-furnace used to melt gold, silver, copper, nickel, or other hard metals placed within it in a crucible. For melting lead, type-metal, and other soft metals an iron pot is used instead of a crucible.—**Rotary melting-furnace**, an oil- or gas-furnace having two cylindrical steel chambers lined with fire-clay and placed end to end on rollers for convenience in rotating one or the other, independently, in charging and pouring out the melted metal. The cut shows a lengthwise section through the furnace. The pipes at the ends are for the oil and the air-blast, and the hand-wheels are used to rotate each chamber. The furnace-chambers are divided into halves for convenience in putting in the lining, and in operation are closed air-tight. Each chamber has an opening at the top, one being shown open and the other closed, and there is an opening from one chamber to the other for the passage of the flames. In operation each chamber is charged with metal, and oil or gas turned on at one end. The flame of the burning gas melts the metal in the first chamber, and the waste heat passes through to the second chamber, heating the metal in part and escaping at the top. The illustration shows two chambers at this point of the operation. The gas is then turned off, the cover of the first chamber is removed, and the chamber is turned over until the liquid metal pours out into the ladle on the floor. The chamber is turned back and recharged, the top being left open. The top of the second chamber is then closed and the gas is turned on at that end, when the whole process is reversed and, by thus alternating the two chambers, the work of the furnace becomes practically continuous.



Section of Rotary Melting-furnace.

a, furnace; *b*, fire-clay lining; *c*, gas or oil and air inlet; *d*, frame supporting furnace; *e*, rollers on which furnace rotates; *f*, hand-wheel for rotating furnace; *g*, *g*, outlets for products of combustion, one closed, one open; *h*, *h*, controls of fuel and air supply, one open, one closed; *i*, ladle ready to receive liquid metal when furnace is turned over.

melting-hole (mel′ting-hōl), *n.* A furnace for melting steel in the crucible process. *Phillips and Bauerman*, Elements of Metallurgy, p. 348.

mem (mām), *n.* [Heb. *mēm* (*mäyim*, waters), Samaritan *mēm*, Syr. Ar. *mīm*, etc.; in Gr. *μῶ*, later *μῦ*. See *M.*] The thirteenth letter (מ) in the Hebrew alphabet, corresponding to the English *m*. Its numerical value is XL.

mem. An abbreviation (*b*) [*cap.*] of *member*; (*c*) of the Latin *memento*, remember; (*d*) of *memoir*.

member, *n.* 4. (*f*) In the classification of the sedimentary rocks adopted by the United States Geological Survey, one of the component elements of a formation.

5. In *Eng. law*, a place where a custom-house has been kept of old time, with officers or deputies in attendance. Such localities were lawful places of exportation or importation. *Bouvier*, Law Dict.

memberment (mem′bėr-mẹnt), *n.* [*member* + *-ment.*] The manner of arrangement of parts in a complex body. *Buck*, Med. Handbook, VII. 313.

membrana (mem-brā′nạ̈), *n.*; pl. *membranæ* (-nē). [L.] Same as *membrane.*—**Membrana flaccida**, the tympanic membrane where it passes over the notch of Rivini.—**Membrana granulosa**, a layer of yellow granules lining the Graafian follicle.—**Membrana propria**, one of various membranes which cover or line organs or cavities, such as the pia mater, the membrane covering the cartilage of the Eustachian tube, a fibrous addition to the periosteum of the sternum, etc.—**Membrana putaminis**, the membrane lining the inner surface of the shell of a bird's egg.—**Membrana reticulata**, a finely reticulate membrane which covers the organ of Corti in the ear.—**Membrana serosa.** (*a*) Same as *serous membrane.* (*b*) Same as *false amnion.*—**Membrana tympani.** Same as *tympanic membrane* (which see, under *membrane*).

membranate (mem′brạ̄-nāt), *a.* [NL. *membranatus*, < *membrana*. See *membrane.*] Having a membrane or membranes; covered with membranes. *Robson*, Brit. Flora, iii. 7.

membranated (mem′brạ̄-nā-ted), *a.* Same as ★*membranate.*

membrane, *n.*—**Acherson's membrane**, a sheath of casein which incloses the milk-globules, preventing their coalescence.—**Alar membrane.** See ★*alar.* **Basilar membrane of the eye.** See ★*basilar.*—**Bowman's membrane.** Same as *Bowman's* ★*layer.*—**Cargile membrane**, a thin animal membrane, such as gold-beaters' skin, employed to prevent adhesions of opposed raw surfaces after an operation. *Med. Record*, March 7, 1903, p. 387.—**Dermal membrane**, in sponges, the outer porous skin.—**Descemet's membrane.** Same as *membrane of Demours.*—**Drum membrane.** Same as *tympanic membrane.*—**Huxley's membrane** or **layer**, a portion of the inner root-sheath of the mammalian hair which consists of polygonal cells with clearly defined nuclei.—**Membrane of Duddell.** Same as *membrane of Demours.*—**Osborne membrane**, in lepidopterous larvæ, the stretched part of the membrane around the rectum and in the anal legs. It is shed with the last larval skin in the transformation to pupa. Also called *retaining membrane.*—**Peripodal membrane**, in *entom.*, that portion of the hypodermis of holometabolic insects which lines the peripodal cavity.—**Peritoneal membrane**, in tracheate arthropods, the epithelial layer of the tracheæ. Also called *ectotrachea.*—**Peritrophic membrane**, a chitinous tube within the alimentary canal of many insects which eat solid indigestible food: probably a secretion of the chylific stomach.—**Reissner's membrane.** See *membrane of Reissner.*—**Retaining membrane.** Same as *Osborne* ★*membrane.*—**Reticulate membrane**, the net-like membrane covering the organ of Corti in the ear.—**Shrapnell's membrane.** Same as ★*membrana flaccida.*—**Tympaniform membrane**, the membrana tympaniformis, which takes part in the formation of the syrinx in birds and is stretched between the lower bronchial half-rings. It is described as *membrana interna* and *membrana externa*, according to its position on the internal or external side of the bronchus.—**Virginal membrane.** Same as *hymen*^{2}.—**Vitreous membrane.** Same as *membrane of Bruch.*

membrane-pipe (mem′brān-pīp), *n.* In *phonet.*, a pipe with membranous reeds; a tube across the end of which membranes are stretched: used to illustrate the action of the vocal cords.

> *Membrane pipes* . . . form convenient instruments for illustrating the effect of tension on the pitch of the membrane, but are decidedly liable to mislead in implying that the vocal bands vibrate like membranes and that the tension is obtained wholly by bringing the points of support further apart. *Scripture*, Exper. Phonetics, p. 257.

membranin (mem′brạ̄-nin), *n.* [*membrane* + *-in*^{2}.] A hyalogen (possibly a glucoalbumin) found in Descemet's membrane and the capsule of the crystalline lens.

Membranipora (mem-brạ̄-nip′ọ̄-rạ̈), *n.* [NL., < L. *membrana*, membrane, + Gr. *πόρος*, pore.] The typical genus of the family *Membraniporidæ*. *Blainville.*

Membraniporidæ (mem″brạ̄-ni-pō′ri-dē), *n. pl.* [*Membranipor(a)* + *-idæ.*] A family of chilostomatous ectoproctous polyzoans, having the zoarium calcareous or membranocalcareous, the zoœcia forming an irregular continuous expansion, or in linear series with raised margins, and more or less membranous in front. It contains the genera *Membranipora*, *Electra*, *Biflustra*, *Amphiblestrum*, *Megapora*, and *Foveolaria*.

membranoid (mem′brạ̄-noid), *a.* [*membran(e)* + *-oid.*] Resembling a membrane; membraniform.

membrette (mem-bret′), *n.* [F., < *membre*, member.] An alette; also, less accurately, any small shallow pilaster.

Memorandum clause. See ★*clause.*

memory, *n.*—**Affective memory.** See ★*affective.*—**Associative memory**, in *physiol.*, that capacity of the organism in virtue of which a given stimulus produces not only the effects to which it is adequate, but also the effects of other stimuli which formerly affected the organism coincidentally with the given stimulus: sometimes regarded as a criterion of the existence of mind in the organism stimulated.—**Emotional memory**, affective memory.—**Functional memory**, in *psychol.*, a memory connected always with the exercise of some bodily function and not meditated by free ideas. See the extract.

> The second category contains those animals possessing primitive instincts . . . and *functional memory*, i. e., memory connected always with some bodily function. The animal perceives, in the external world, the conditions of satisfying the primary instincts; but this consciousness is strictly connected with the return of functional need, and leaves no independent image in the nervous organism. *Amer. Jour. Psychol.*, XII. 264.

Intellectual memory, in *psychol.*, memory of sensations and of their derivatives: opposed to ★*affective memory.* *T. Ribot* (trans.), Psychol. of Emotions, p. 163.—**Kinesthetic memory**, in *psychol.*: (*a*) Memory of bodily movement. Such memory may be mediated by images of sight, hearing, etc., or by kinesthetic images. *Baldwin*, Dict. of Philos. and Psychol., I. 599. (*b*) Memory as mediated by kinesthetic images in the narrower sense.—**Mediate memory.** Same as *mediate* ★*association.* *W. Wundt* (trans.), Outlines of Psychol., p. 243.—**Memory apparatus**, in *psychol.*, an apparatus for the study of memory and association which consists, in principle, of a screen with a window, behind which pass at regular intervals series of words, pictures, nonsense-syllables, etc.—**Memory-consciousness**, in *psychol.*, mind as it is when we are remembering something; the disposition or arrangement of mind during an act or process of recall. *E. B. Titchener*, Exper. Psychol., I. i. 1.—**Motor memory**, in *psychol.*, memory by means or in terms of motor or kinesthetic images. *Amer. Jour. Psychol.*, XI. 7.—**Muscular memory.** Same as *motor* ★*memory.* *F. Galton*, Human Faculty, p. 106.—**Pitch memory**, in *psychol.*, memory of tonal pitch; specifically, the ability accurately to recall the pitch of a tone or clang, or the key of a melody. *Amer. Jour. Psychol.*, XII. 409.

memory-cell (mem′ọ̄-ri-sel), *n.* A special cortical cell supposed to be the seat of the memory-image of a sensation: opposed to *sensory cell*.

> We assume, therefore, that the sensation of the rose is produced in certain ganglion-cells, and that these numerous sensory cells transmit their excitation further to one other ganglion-cell, a *memory-cell*.
> *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 156.

memory-idea (mem′ọ̄-ri-ī-dē″ạ̈), *n.* In *psychol.*, a reproduced idea; an idea of a remembered object or event.

> *Memory-ideas* are aroused by sense-perceptions, and again interrupted by new impressions.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 282.

memory-image (mem′ọ̄-ri-im″ạ̄j), *n.* In *psychol.*, the reproduction in kind of a sensation or sense-perception; the sensation or sense-perception as it is pictured in memory.

> *Memory-images*, it is true, cannot be directly aroused through external sense impressions, but follow them after a longer or shorter interval.
> *W. Wundt* (trans.), Outlines of Psychol., p. 22.

Memphite, *n.* 2. The language now spoken in the neighborhood of ancient Memphis, and forming one of the main divisions of Coptic; also, formerly, the adjacent Coptic dialect now called *Bohairic*.

Memphitic empire, the ancient empire or earliest period of Egyptian history, from the first to the tenth dynasties inclusive: characterized, especially in the fourth and fifth dynasties, by the realism and dignity of its sculpture and the importance of its monuments, such as the Great Sphinx and the great pyramids of Gizeh.

menachite (men′ạ-kīt), *n.* [*Menachan*, prop. *Menaccan*, a locality in Cornwall, + *-ite*^{2}.] An imperfectly examined ingredient in black magnetic sand, later identified by Klaproth with the metal titanium which he discovered.

menagerist (me-naj′ẹ-rist), *n.* One who forms, owns, or exhibits a menagerie, or collection of wild animals.

Menandrian (me-nan′dri-a̤n), *n.* A member of one of the most ancient branches of the Gnostics, so called from the leader, Menander, thought to have been a disciple of Simon Magus. He asserted that he was the Messiah, offering salvation through baptism in his name, and promising immortality to his followers.

mend, *v. t.*—**To mend the furl.** Same as *to mend* ★*sail.*

mendee (men′dē), n. [Also *mindy*, *mendy*; Hind. *mendhi.*] The plant *Lawsonia alba*, a variety of henna. It affords the henna dye extensively used in Mohammedan countries for dyeing the hands and the hair. *Yule and Burnell.*

Mendelian (men-dē′li-a̤n), *a.* [*Mendel* (see def.) + *-ian.*] Of or pertaining to Gregor Johann Mendel (1822–84), an Austrian naturalist and ecclesiastic, or to the theoretical interpretations of his experiments in heredity or of others of like character: as, the *Mendelian* law of heredity. See *ancestral* ★*inheritance.*

With the discovery of the *Mendelian* principle the problem of evolution passes into a new phase.
Bateson and Saunders, Rep. Evol. Com. Roy. Soc., 1902, [I. 125.

Mendelian hybrid. See ★*hybrid.*

Mendelianism (men-dē′li-a̤n-izm), *n.* Same as ★*Mendelism.*

The "purity of the germ ' idea applies quite as well to the law of ancestral inheritance as to *Mendelianism* and is in harmony with it. *Science*, Feb. 5, 1904, p. 214.

Mendelism (men′del-izm), *n.* [*Mendel* + *-ism.*] The theory of hybridity and heredity proposed by Gregor Johann Mendel (1822–84) and revived in later years by De Vries, Bateson, and others. See *ancestral* ★*inheritance.*

The breeder wants to preserve the desirable characters or traits and eliminate the undesirable ones, but under the strict interpretation of *Mendelism* this is difficult.
Science, March 20, 1903, p. 451.

Mendelize (men′del-īz), *v. i.*; pret. and pp. *Mendelized*, ppr. *Mendelizing.* To conform to Mendel's law of ancestral inheritance. See *ancestral* ★*inheritance.*

We do not know what plants will *Mendelize* until we try. *L. H. Bailey*, Plant Breeding, p. 171.

Mendelssohnian (men-del-sō′ni-a̤n), *a.* In *music*, pertaining to or in the style of the German composer Felix Mendelssohn-Bartholdy (1809–47).

mendole (mañ-dōl′), *n.* [F. *mendole*, It. *mendole.*] A small Mediterranean fish, *Smaris gagarella*, or some similar species: formerly called *cackerel.*

meneclinoid (men-e-klin′oid), *n.* [Gr. *μήνη*, the moon, + *κλίνειν*, bend, + *-oid.*] In *math.*, a catenary.

Menelaion (men-e-lā′yon), *n.* [Gr. *Μενελάϊον*, *Μενελάειον*, < *Μενέλαος*, Menelaus.] A temenos or shrine in honor of Menelaus, the Homeric hero. The Menelaion at Sparta was excavated in 1889–90.

menelcosis (men-el-kō′sis), *n.* [NL., < Gr. *μῆνες*, menses, + *ἕλκωσις*, ulceration.] Bleeding from an ulcer as a form of vicarious menstruation.

Menevian (me-nē′vi-a̤n), *a.* [*Menevia*, the medieval Latin name of St. David's.] Of or pertaining to St. David's, in Wales.—**Menevian group.** See ★*group*^{1}.

M. Eng. An abbreviation of *Master of Engineering.*

menhidrosis (men-hi-drō′sis), *n.* Same as ★*menidrosis.*

Menidia (mẹ̄-nid′i-ä̤), *n.* [NL., < Gr. *μήν*, moon, + dim. *-ιδιον.*] A genus of atherinoid fishes, of numerous species, all American, some of them entering or inhabiting fresh water: known as *silversides.*

menidrosis (men-i-drō′sis), *n.* [NL., < Gr. *μῆνες*, menses, + *ἱδρώς*, sweat.] Sweating of blood as a form of vicarious menstruation.

meningic (mẹ̄-nin′jik), *a.* Same as *meningeal.*

meningina (men-in-jī′nä̤), *n.* [NL., < Gr. *μῆνιγξ*, membrane, pia mater.] The pia mater and cerebral layer of the arachnoid regarded as one membrane.

meninginitis (mẹ̄-nin-ji-nī′tis), *n.* [NL., < *meningina* + *-itis.*] Inflammation of the meningina; leptomeningitis.

meningism (mẹ̄-nin′jizm), *n.* [Gr. *μῆνιγξ*, membrane, + *-ism.*] A morbid condition marked by the symptoms of meningitis, but without the actual presence of that disease; pseudomeningitis.

Meningitic streaks. Same as *taches cérébrales*, which see under *tache*^{4}.

meningitis, *n.*—**Basilar meningitis**, inflammation of the membranes covering the base of the brain: usually of tuberculous origin.—**Cerebral meningitis**, inflammation of the membranes of the brain.—**Cerebrospinal meningitis.** (*a*) See *cerebrospinal* and *meningitis*: also see *epidemic cerebrospinal* ★*meningitis.* (*b*) See ★*forage-poisoning.*—**Epidemic cerebrospinal meningitis.** See *meningitis.* It was first described in 1805, since which time several severe epidemics of the disease have occurred in various parts of the world. The disease is caused by a micro-organism, *Diplococcus intracellularis meningitidis*, or Weichselbaum's diplococcus, present in the cerebrospinal fluid. The death-rate from the disease is high, and even if recovery takes place incurable deafness, blindness, paralysis, or mental feebleness may be left behind. The treatment that has given the best results is by means of hot baths and the administration of large doses of sodium salicylate. Good results have been obtained by the injection of an antitoxic serum. Benefit often follows the withdrawal of a portion of the cerebrospinal fluid through a puncture in the lumbar region of the spine.—**Otitic meningitis**, involvement of the membranes of the brain in an inflammatory process arising in the middle ear.—**Spinal meningitis**, inflammation of the membranes of the spinal cord.

meningocephalitis (mẹ̄-ning″gọ̄-sef-a̤-lī′tis), *n.* [NL., < Gr. *μῆνιγξ*, membrane, + *κεφαλή*, head, + *-itis.*] Inflammation of the cerebral membranes and adjacent portion of the brain.

meningocerebritis (mẹ̄-ning″gọ̄-ser-ẹ̄-brī′tis), *n.* [NL., < Gr. *μῆνιγξ*, membrane, + L. *cerebrum*, brain, + *-itis.*] Same as ★*meningocephalitis.*

meningococcic (mẹ̄-ning″gō-kok′sik), *a.* [NL. *meningococc*(*us*) + *-ic.*] Pertaining to or derived from meningococci.

In the foregoing table there are given the results of the tests with seven different antigonococcic serums and a *meningococcic* serum in conjunction with the various homologous extracts and two control extracts.
Jour. Med. Research, Dec., 1907, p. 229.

meningococcus, *n.* See ★*diplococcus intracellularis meningitidis* (with cut).

meningo-encephalitis (mẹ̄-ning″gọ̄-en-sef-a̤-lī′tis), *n.* Same as ★*meningocephalitis. Jour. Trop. Med.*, July, 1903, p. 202.

meningo-encephalocele (mẹ̄-ning″gọ̄-en-sef′-a-lō-sēl), *n.* [Gr. *μῆνιγξ*, membrane, + *ἐγκέφαλος*, brain, + *κήλη*, tumor.] Hernia of the brain with its membranes.

meningo-encephalomyelitis (mẹ̄-ning″gọ̄-en-sef″a̤-lọ̄-mī-e-lī′tis), *n.* [NL., < Gr. *μῆνιγξ*, membrane, + *ἐγκέφαλος*, brain, + *μυελός*, marrow, + *-itis.*] Inflammation of the brain and spinal cord with their membranes.

meningomalacia (mẹ̄-ning″gọ̄-ma-lā′si-ä̤), *n.* [NL., < Gr. *μῆνιγξ*, membrane, + *μαλακία*, softness.] Softening of any membrane.

meningomyelitis (mẹ̄-ning″gọ̄-mī-e-lī′tis), *n.* [NL., < Gr. *μῆνιγξ*, membrane, + *μυελός*, marrow, + *-itis.*] Inflammation of the spinal membranes and more or less of the substance of the spinal cord.

meningomyelocele (mẹ̄-ning-gọ̄-mī′e-lọ̄-sēl), *n.* [Gr. *μῆνιγξ*, membrane, + *μυελός*, marrow, + *κήλη*, tumor.] Spina bifida in which the tumor consists of both membranes and nervous substance.

meningorrhagia (mẹ̄-ning-gọ̄-rā′ji-ä̤), *n.* [NL., < Gr. *μῆνιγξ*, membrane, + *-ραγια*, < *ῥηγνύναι*, break.] Hemorrhage from the membranes of the brain or spinal cord.

meningorrhea (mẹ̄-ning-gọ̄-rē′ä̤), *n.* [NL. *meningorrhoea*, < Gr. *μῆνιγξ*, membrane, + *ῥοία*, a flow.] Same as ★*meningorrhagia.*

menischesis (mẹ̄-nis′kẹ̄-sis), *n.* [NL., < Gr. *μῆνες*, menses, + *σχέσις*, retention.] Failure of menstruation to establish itself at puberty.

Meniscium (mẹ̄-nis′i-um), *n.* [NL. (Schreber, 1791), < Gr. *μηνίσκος*, a crescent, alluding to the arcuate connecting veins.] A genus of coarse polypodiaceous ferns resembling various species of *Goniopteris* and *Dryopteris* and having fronds 1–7 feet high, usually once pinnate. The primary pinnate veins of the pinnæ are uniformly connected by opposing veinlets arcuately joined in pairs, each with an excurrent free veinlet, the elliptical or somewhat curved sori being borne at the point of union. The species, about 10 in number, are mostly tropical, one (*M. reticulatum*) occurring in subtropical Florida.

Meniscotheriidæ (mẹ̄-nis″kọ̄-thẹ̄-rī′i-dē), *n. pl.* [*Meniscotherium*, the type genus, + *-idæ.*] A family of ungulate mammals, belonging to the suborder *Condylarthra*, which comprises species of small size with lophodont molars. All are extinct, and their remains are found in the Lower Eocene. *Cope*, 1882.

meno (mā′nō), *adv.* [It., < L. *minus*, less: see *minus.*] In *music*, less: as, *meno* allegro, less quick; *meno* forte, less loud; *meno* mosso, slower; etc.

Menognatha (mẹ̄-nog′na̤-thä̤), *n. pl.* [NL., irreg. < Gr. *μένειν*, remain, + *γνάθος*, jaw.] In Brauer's classification of insects, a group of superordinal rank which includes those forms which feed by means of jaws both as young and as adults.

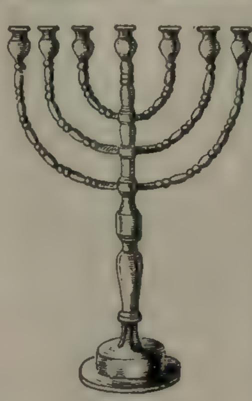
menognathous (mẹ̄-nog′na̤-thus), *a.* Pertaining to, or having the characters of, the *Menognatha.*

Menominee (me-nom′i-nē), *n.* [From a local name, one of many derived from the name of the *Menominee* Indians of the region mentioned.] 1. That section of the Huronian system which constitutes the Menominee iron range along the river of this name and on the border of Michigan and Wisconsin. It consists of metamorphosed sedimentary and eruptive rocks, and is separable into a lower and an upper portion.—2. *Coregonus quadrilateralis*, one of the whitefishes found in the Great Lakes and north to Alaska.

Other important items [of fishes taken from Lake Michigan] were "*Menominee*" worth $14,307, and bluefin worth $12,794, all other products being represented by lower values. *Rep. U. S. Fish Com.*, 1902, p. 597.

menophania (men-ọ̄-fā′ni-ä̤), *n.* [NL., < Gr. *μῆνες*, menses, + *-φανια*, < *φαίνεσθαι*, appear.] The appearance of menstruation at puberty.

menorah (me-nō′rä̤), *n.* [Heb. *menōrāh*, < *nūr*, light.] A candlestick: specially applied to the seven-branched candlestick in the synagogue.—**Menorath ha-zahab**, the golden candlestick in the Tabernacle (Ex. xxv. 31).



Menorah.

Menorhyncha (men-ọ̄-ring′kä̤), *n. pl.* [NL., irreg. < Gr. *μένειν*, remain, + *ῥύγχος*, snout, bill.] In Brauer's classification of insects, a group of superordinal rank which includes those forms which take food by suction both as young and as adults.

menorhynchous (men-ọ̄-ring′kus), *a.* Of or pertaining to the *Menorhyncha.*

menoschesis (mẹ̄-nos′kẹ̄-sis), *n.* Same as ★*menischesis.*

menosepsis (men-ọ̄-sep′sis), *n.* [NL., < Gr. *μῆνες*, menses, + *σῆψις*, putrefaction.] Decomposition of retained menstrual discharges; also, blood-poisoning resulting therefrom.

menoseptic (men-ọ̄-sep′tik), *a.* Pertaining to or affected with menosepsis.

Menospora (mẹ̄-nos′pọ̄-rä̤), *n.* [NL., < Gr. *μήνη*, moon, + *σπορά*, seed (spore).] The typical genus of the family *Menosporidæ. Léger*, 1892.

Menosporidæ (men-ọ̄-spor′i-dē), *n. pl.* [NL., < *Menospora* + *-idæ.*] A family of gregarines which consists of solitary forms having the epimerite on a long neck and crescent-shaped spores. It contains the genera *Menospora* and *Hoplorhynchus.*

menostasia (men-os-tā′si-ä̤), *n.* [NL.] Same as *menostasis.*

menostatic (men-os-tat′ik), *a.* [*menostasis.*] Pertaining to or marked by menostasis, or retention of the menses.

mensur. An abbreviation of *mensuration.*

mensuralist (men′sṳ̄-ra̤l-ist), *n.* [*mensural* + *-ist.*] A composer of measurable music.

The figures adopted by earlier *mensuralists.*
Woodbridge, Oxf. Hist., I. 132. *N. E. D.*

mental^{1}, *a.*—**Law of mental growth**, in Wundt's psychology, one of the three laws of mental development, coördinate with the laws of heterogony of ends and of development toward opposites.

The *law of mental growth* is an application, to more comprehensive mental syntheses, of the law of psychical resultants, which declares that every psychical compound shows attributes which, while intelligible from the attributes of its elements, are by no means the mere sum of the attributes of these elements.
W. Wundt (trans.), Outlines of Psychol., p. 369.

Mental physiology, physiological psychology; psychology approached by way of physiology, or developed in connection with physiological facts and laws. W. B.

Carpenter wrote a "Principles of Mental Physiology, with their applications to the training and discipline of the mind, and the study of its morbid conditions," which reached its sixth edition in 1888. The phrase has now fallen into disuse.—**Mental science.** See ★*science.*

mentalism (men′tạl-izm), *n.* [*mental*¹ + *-ism.*] 1. Mental activity or process.

> Deranged nervous function—a deranged *mentalism*, if I may be permitted to coin such a word—of an epileptic or allied nature.
> *Maudsley*, Mental Dis., vii. 243. *N. E. D.*

2. The metaphysical opinion that matter is a mode of mind or consciousness; the opposite of materialism.

> It may be held broadly that 'matter in ultimate analysis is a mode of mind or consciousness,' without raising the question of a conscious self or subject. . . . Such view I think is often called Idealism. I propose to label it '*Mentalism*' in broad antithesis to 'Materialism.' If, again, the Mentalist's ontology expressly excludes the notion of self or subject . . . then perhaps we may designate him as an atomistic *Mentalist*.
> *Sidgwick*, in Mind, Jan., 1900, p. 20. *N. E. D.*

Menthaceæ (men-thā′sẹ-ē), *n. pl.* [NL. (Ward, 1905), < *Mentha* + *-aceæ.*] A great family of dicotyledonous sympetalous plants of the order *Polemoniales*, the mint family, typified by the genus *Mentha*, the mint genus. It is characterized primarily by a labiate corolla, whence it was called *Labiatæ* by Bernard Jussieu in laying out the garden of the Trianon—a name which has been generally adopted and is still widely used, although not based on that of any genus of the family. See *Labiatæ.*

menthenol (men′thẹ-nol), *n.* Same as ★*terpineol.*

menthenone (men′the-nōn), *n.* [*Mentha* + *-en* + *-one.*] A colorless ketonic compound, $C_{10}H_{16}O$, contained in peppermint-oil and prepared by the action of dilute hydrochloric acid on nitrosomenthene. It boils at 206.3° C. and has a well-marked odor of peppermint.

menthiodol (men-thī′ọ-dol), *n.* [*menth(ol)* + *iodol.*] Iodol containing one per cent. of menthol.

menthophenol (men-thọ-fē′nol), *n.* [*menth(ol)* + *phenol.*] An antiseptic and anesthetic fluid made by melting together 3 parts of menthol and 1 part of phenol: generally used very much diluted with water.

menticulture (men′ti-kul-tụ̈r), *n.* [L. *mens* (*ment-*), mind, + *cultura*, culture. See *culture.*] The cultivation or training of the mind.

mento-anterior (men″tō-an-tē′ri-ọr), *a.* [L. *mentum*, chin, + *anterior*, before.] Noting a position of the fetus, during labor, in which its chin points anteriorly in relation to the body of the mother.

mento-iliac (men-tō-il′i-ak), *a.* [L. *mentum*, chin, + E. *iliac.*] Noting a position of the fetus, during labor, in which its chin points to one or the other iliac fossa of the mother.

mentolabial (men-tō-lā′bi-ạl), *a.* [L. *mentum*, chin, + *labium*, lip, + *-al*¹.] Relating to both the chin and the lips.—**Mentolabial furrow**, the hollow just above the chin.

mentoposterior (men″tō-pos-tē′ri-ọr), *a.* [L. *mentum*, chin, + *posterior*, behind.] Noting a position of the fetus, during labor, in which its chin is directed posteriorly in relation to the body of the mother.

menyanthaceous (men″i-an-thā′shius), *a.* Belonging to the plant family *Menyanthaceæ.*

menyanthol (men-i-an′thol), *n.* [*menyanth(in)* + *-ol.*] A colorless volatile oily compound, C_8H_8O, prepared by the hydrolysis of the glucoside menyanthin. It has an odor like that of oil of bitter almonds.

M. E. P. An abbreviation of *mean effective pressure.*

Mephistophelic (mef″is-tọ-fel′ik), *a.* Same as *Mephistophelian.*

Mephitic air. See ★*air*¹.

mer. An abbreviation of *meridian.*

meralgia (mẹ-ral′jiạ̈), *n.* [NL., < Gr. *μηρός*, the thigh, + *ἄλγος*, pain.] Pain in the thigh.—**Meralgia paræsthetica**, various disagreeable and painful sensations in the skin of the thigh.

Meramec (mer′ạ-mek), *n.* A name suggested by E. O. Ulrich, from the Meramec river in Missouri, where these strata outcrop, for a group of Lower Carboniferous limestones of the upper Mississippi valley, embracing the St. Louis, Spergen Hill, and Warsaw of earlier writers.

merc. An abbreviation (*a*) of *mercurial*; (*b*) of *mercury.*

mercantil, *a.* A simplified spelling of *mercantile.*

Mercantile agency. See ★*agency.*

mercaptal (mėr-kap′tạl), *n.* [*mercapt(an)* + *al(dehyde).*] The name of a class of compounds containing the group $\genfrac{}{}{0pt}{}{R}{H}{>}C(SAlk)_2$, where R is any hydrocarbon radical and Alk is an alkyl-group such as methyl or ethyl. The compounds are oils with a highly offensive smell, and are also called *thioacetals.* They are related to mercaptan in the same way that the acetals are to alcohol.

mercapto-. A combining form used in organic chemistry to denote a derivative of a mercaptan, that is, a compound containing the group R S, where R is an alkyl radical such as methyl or ethyl.

mercaptol (mėr-kap′tol), *n.* [*mercapt(an)* + *-ol.*] The name in organic chemistry of a class of compounds containing the group $\genfrac{}{}{0pt}{}{R}{R}{>}C(SAlk)_2$, where R is any hydrocarbon radical and Alk is an alkyl-group such as methyl or ethyl. The compounds are prepared by the action of ketones on mercaptans and are related to the mercaptols in the same way that acetals are to acetoles or as aldehydes are to ketones.

mercapturic (mėr-kap-tū′rik), *a.* [*mercapt(an)* + *-uric.*] Used only in the following phrase.—**Mercapturic acid**, a name (introduced by Baumann) of certain complex substances which appear in the urine of dogs after they are fed with hyalogen substitution-products of benzol, the aromatic radical appearing in combination with a sulphur-group of the nature of cystein.

mercatorial¹ (mėr-kạ-tō′ri-ạl), *a.* [L. *mercatorius*, mercantile.] Mercantile; of or pertaining to merchants or commerce. [Now rare.]

Mercatorial² (mėr-kạ-tō′ri-ạl), *a.* [From *Mercator* (Lat. for Gerhard *Kremer*, 1512–1594), a Flemish geographer, and the inventor of a system of map-projection extensively used by navigators.] Of or pertaining to Mercator's projection (which see, under *projection*) or to Mercator's chart (which see, under *chart*).

> The *Mercatorial* bearing between two stations is the mean of their reciprocal true bearings.
> *Encyc. Brit.*, XXXIII. 99.

Merced series. See ★*series.*

mercenaria (mėr-se-nā′ri-ạ̈), *n.* The specific name of the quahog, or hard-shell clam, adopted to some extent as a book-name.

mercerization, *n.* The most valuable application of mercerization at the present time is the lustering of cotton yarn, which is accomplished by subjecting the yarn under tension to the action of caustic-soda solution and then thoroughly removing the caustic soda by washing before the tension is relieved. Egyptian or sea-island cotton is best suited for the purpose, and with yarns of these cottons a high silky luster may be obtained. Two-ply yarn is commonly used, and the nature of the twist of the yarn has been found to have more or less influence upon the result.

merch (mėrch), *n.* Same as ★*march*⁴.

merchandizable (mėr′chạn-dīz-ạ-bl), *a.* Suited for being classed as merchandise; marketable.

Merchant mill. See ★*mill*¹.

Merchantable volume. See ★*volume.*

merchanteer (mėr-chạn-tēr′), *n.* A merchant vessel: a merchantman. [Rare.]

merchanter† (mėr′chạn-tėr), *n.* A merchantman.

merchet, *n.* Same as *marchet.*

Mercurean, *a.* and *n.* Same as *Mercurian.*

Mercurian, *a.* II. *n.* 1. In *astrol.*, one born under the influence of the planet Mercury. *N. E. D.*—2. An (imaginary) inhabitant of the planet Mercury.

Mercuric iodide. See ★*iodide.*—**Mercuric oxid**, red oxid of mercury (H_gO), the substance, early known as calx of mercury, from which Priestley, in 1774, first obtained oxygen in separate form.

mercurius (mėr-kū′ri-us), *n.* [ML. See *Mercury.*] The metal mercury.—**Mercurius philosophorum** (Mercury of the philosophers, that is alchemists), a name used in the fourteenth and fifteenth centuries to denote the essence of metallic character, or that which should have the power of imparting metallic character in the highest degree to base metals.

Mercury, *n.*—**Black mercury**, the poison-ivy, *Rhus radicans.*—**Black oxid of mercury**, mercurous oxid, Hg_2O.—**Green iodide of mercury.** See ★*iodide.*—**Inch of mercury.** See ★*inch*¹.—**Maiden's mercury**, the girl's mercury.—**Mercury arc.** See *electric* ★*arc.*—**Mercury-arc rectifier.** Same as *mercury-vapor* ★*rectifier.*—**Mercury lamp**, a lamp the light of which is derived from an electric discharge through mercury vapor *in vacuo.* In its original form the mercury lamp was devised by Professor Arons of Berlin (1892). The Arons lamp consists of a vacuum-tube with mercury terminals, of the form shown in Fig. 1. When the tube is carefully pumped out and an arc is established in the vacuum between the terminals *a* and *b*, a strong light of characteristic greenish color is emitted. To establish the arc the lamp is tipped until the mercury flows through the bend of the tube from one leg to the other, thus forming a temporary bridge for the path of the current, which is immediately broken upon restoring the lamp to its vertical position. Much heat is developed by the electric arc in such lamps, particularly at the cathode, the surface of which emits more light than any other portion of the arc, and on this account it is difficult to maintain such lamps in long-continued operation without breaking the glass. To overcome this difficulty, and to render the mercury lamp more suitable for certain spectroscopic work requiring great intensity of light, Lummer modified the form of the tube as shown in Fig. 2 and surrounded the entire tube, with the exception of the flattened ends, *w*, *w′*, which serve as windows, with a metallic case through which a flow of cold water is maintained. Another mercury lamp was devised by Abbe of Jena, for the special purpose of testing lenses, the form being such as to throw the light of the arc vertically upwards. An interesting and useful modification is that of Fabry and Perot, Fig. 3, in which the cathode consists of mercury contained in an inner tube, *c*. The mercury of the anode fills the annular space between this tube and the exterior of the lamp. The Cooper-Hewitt lamp, a form of mercury arc-lamp for commercial lighting, consists essentially of a straight tube of glass about 5 centimeters in diameter and 40 centimeters long. One terminal is formed by mercury contained in the bottom of the tube and the other terminal, in the top of the tube, is of iron. The arc is established by tipping the lamp, until the mercury flows from the bulb in a thin stream the entire length of the tube, and then restoring it to its vertical position. The light, which fills the entire tube, is greenish in color, as in all mercury lamps, but possesses an actinic intensity of great value for photographic purposes. In some commercial mercury lamps an attempt has been made to remedy the lack of red in the light of the mercury arc by placing in the same circuit incandescent lamps with carbon filaments. The light of all mercury arc-lamps differs from that commonly used for purposes of illumination in having a bright-line spectrum, that of mercury vapor. The strongest line in this spectrum is the green line of wave-length 5461, to which the characteristic color of the light is due. The only other visible lines are a yellow pair at 5770–90 and violet lines of wave-lengths 4358 and 4047. (See Fig. 4.) There is also a strong ultra-violet triplet, 3650–55–63, and to this, together with the violet lines, the extraordinary actinic intensity of the mercury lamp is due. The infra-red spectrum of the mercury arc consists of a group of lines lying between 1 μ and 2 μ and another group between 4 μ and 6 μ. The intensity of this region as compared with that of the visible spectrum is, however, much smaller than in the case of the continuous spectra of sources of light usually employed for illumination and the radiant efficiency of the mercury lamp is therefore comparatively high, probably about 20 per cent. By substituting for the glass vacuum-tube a tube of fused quartz, Hereaus has succeeded in producing a mercury lamp capable of sustaining very high temperatures and of furnishing light the intrinsic brightness of which far exceeds that of the other forms. This lamp, on account of the greater transparency for ultra-violet rays of the quartz tube, is especially valuable in certain lines of work in which an intense ultra-violet spectrum is demanded. **Mercury perchlorid.** Same as *corrosive sublimate.*—**Mercury-vapor rectifier.** See ★*rectifier.*—**Scotch mercury**, the foxglove.—**Siemens mercury unit.** See ★*unit.*

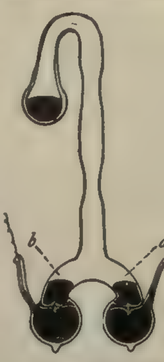


Fig. 1. Arons Lamp.

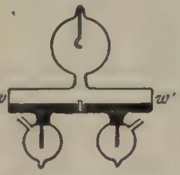


Fig. 2. Lummer Lamp.

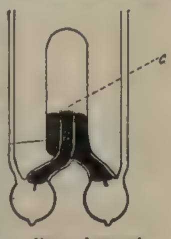


Fig. 3. Lamp of Fabry and Perot.

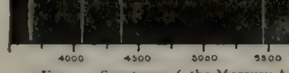


Fig. 4. Spectrum of the Mercury Arc.

mercury-break (mėr′kụ-ri-brāk″), *n.* An interrupter for induction-coils, in which mercury is used. See *interrupter* (*a*).

mercury-spark (mėr′kụ-ri-spärk″), *n.* See ★*spark*¹.

mercury-switch (mėr′kụ-ri-swich″), *n.* See ★*switch.*

mercury-trough (mėr′kụ-ri-trôf″), *n.* In *chem.*, a trough (generally of porcelain, cast-iron, or wood) used to hold mercury over which, in glass jars or tubes, gases are collected which, on account of their solubility, can not well be collected over water: essentially, a pneumatic trough containing mercury instead of water.

mercury-tube (mėr′kụ̄-ri-tūb″), *n.* See ★*tube.*

mercury-valve (mėr′kụ̄-ri-valv″), *n.* A valve in which mercury is used as a seal between the parts.

mercury-weed (mėr′kụ̄-ri-wēd), *n.* The three-seeded mercury, *Acalypha Virginica.*

mercy, *n.* **5.** In *criminal law,* partial remission of a punishment to which a convict is subject, as distinguished from pardon, or total remission.—**To be in mercy,** said of a convict who is liable to punishment at the discretion of the judge.

merdurinous†, *a.* [L. *merda,* dung, + E. *urinous.*] Consisting of both dung and urine. *B. Jonson.*

mere⁶ (mēr), *n.* [Gr. μέρος, a share, part.] In the reticulum or supporting skeleton of the extinct silicious sponges of the family *Dictyospongidæ,* one of the divisions or meshes produced by the intersection of the primary vertical and horizontal spicular bundles. It is subdivided by the spicules of subordinate rank into lesser areas or quadrangles — dimeres, tetrameres, hexameres.

mere⁷ (mer′e), *n.* [Maori.] A Maori war-club; a *casse-tête,* or war-ax, from 12 to 18 inches in length, made of any suitable hard material, as stone, hard wood, or whalebone. Outside of New Zealand the word is only known as the name of a little trinket of greenstone made in imitation of the New Zealand weapon in miniature, mounted in gold or silver, and used as a brooch, locket, ear-ring, or other article of jewelry. *E. E. Morris,* Austral English.

Merevale shales. See ★*shale*².

merganser, *n.*—**White merganser,** the smew, *Merganser albellus,* the smallest and whitest of the mergansers. See *smew* (with cut).

mergence (mėr′jens), *n.* The act of merging or sinking into something else, with consequent loss of original identity or form; the state of being merged.

> A gradation between a "bird-like canoe-charm," through a "human-headed bird canoe-charm," to a "canoe fetich," the latter having a very prognathous human head. The *mergence* of a frigate-bird's into a human head may be due . . . to one design acting upon the other.
> *Haddon,* Evolution in Art, 266.

merger², *n.* **3.** A merging of the interests and control of two or more corporations, engaged in the same line, or in allied lines, of business, into a single corporation which exchanges its stock for that of the merging corporations, which however preserve, nominally at least, their separate identity.

> So too, who shall doubt but that the present monopolistic movements, the trusts and the *mergers,* when we shall have learned to guard that which is good and prevent that which is bad, will result in greater benefits to mankind and a higher civilization?
> *Science,* July 31, 1903, p. 129.

meridian. I. *a.*—**Meridian furrow.** See ★*furrow.*—**Meridian zenith distance,** the complement of the meridian altitude, or what that altitude lacks of 90° 00′ 00″.

II. *n.* **6.** In ctenophorans, a costa or *meridional* row of swimming-plates.

> It possesses eight *meridians* (costæ) of iridescent paddles in constant vibration, which run from near one pole towards the other. *Encyc. Brit.,* XXVII. 300.

Astronomic meridian, on the celestial sphere, a great circle which passes through the poles of the earth's axis and the zenith of the spectator.—**Brass meridian.** See *meridian of a globe.*—**Celestial meridians,** hour-circles; great circles of the celestial sphere which pass through its poles and correspond exactly to the meridians on the earth.—**Gnomonic meridian,** a meridian in gnomonic projection.—**National meridian,** the meridian which passes through the national observatory of a country; the prime or first meridian of a nation; the zero-point in longitude for that nation, and from which calculations are made.—**Principal meridian.** (*a*) A first or prime meridian. (*b*) The meridian from which the meridians bounding townships are measured.—**Terrestrial meridian,** a geographic meridian.—**Zero meridian,** the meridian from which longitude east or west is reckoned.

> The International Congress at Washington in October, 1894, which adopted for the nations represented the uniform *zero-meridian* of Greenwich for maritime purposes.
> *Science,* June 21, 1901, p. 979.

Meridiana (mẹ̄-rid-i-ā′nạ̈), *n.* [NL. (Hill, proposed in 1761, established in 1768), < L. *meridianus,* pertaining to midday. See *meridian.* The name alludes to the habitual opening of the flowers at noon.] A genus of dicotyledonous herbs of the family *Asteraceæ.* See *Gazania* and *treasure-flower.*

meridianal (mẹ̄-rid′i-a-nạl), *a.* [*meridian* + *-al*¹.] Lying in the direction of a meridian; meridional.

> The great *meridianal* systems, e. g. the Urals and the Rocky mountains. *Geog. Jour.* (R. G. S.), XV. 540.

meridian-passage (mẹ̄-rid′i-ạn-pas″ạ̄j), *n.* The crossing of a heavenly body over the meridian of the observer.

meridional, *a.* **II.** *n.* One who dwells in the south; specifically, an inhabitant of the south of France.

> Daudet was able to paint a real sober picture of the *Meridional* in Numa Roumestan.
> *M. V. Crawford,* Stud. For. Lit., p. 50. *N. E. D.*

meriedric (mer-i-ē′drik), *a.* Same as *merihedric.*

merihedral (mer-i-hē′drạl), *a.* Same as ★*merihedric.*

merihedric, *a.* **2.** In *group-theory,* designating isomorphism in which two groups are multiply isomorphic.—**3.** In *crystal.,* same as *hemihedral.*

merihedrism (mer-i-hē′drizm), *n.* [*merihedr(ic)* + *-ism.*] Merihedric isomorphism. See ★*merihedric,* 2.

merimba (me-rēm′bạ̈), *n.* See ★*marimba.*

merino, *n.*—**Pure merinos,** in Australia, and especially in New South Wales, the very first families (socially): from the fact that the pure merinos are the most valuable sheep. [Slang.]

> The *pure merinos* . . . pride themselves on being of the purest blood in the colony.
> *P. Cunningham,* Two Years in New South Wales, II. [116.

merise† (me-rēs′), *n.* [F.] A kind of small black cherry. *N. E. D.*

merism (mer′izm), *n.* [Gr. μερισμός, division into parts, < μερίζειν, divide into parts, < μέρος, a part.] The repetition of parts in an organism in such a way as to form a regular pattern, as in radial and bilateral symmetry, serial homology, etc. *W. Bateson,* Study of Variation, p. 23.

merismoid (me-ris′moid), *a.* [Gr. μέρισμα, a part, + *-oid.*] Characterized by a branched or laciniate cap: said of sporophores.

Merismopedia (mer″is-mọ̄-pē′di-ạ̈), *n.* [NL. (Meyen, 1839), < Gr. μέρισμα, a part, + πεδίον, a plain (taken in the sense of πούς, foot).] **1.** A genus of unicellular fresh-water blue-green algæ, characterized by spherical cells which divide regularly in two directions, thus having the cells arranged in groups of fours.—**2.** [*l. c.*] In *bacteriol.,* a name applied to cocci arranged in large rectangular plates.

merist (mer′ist), *n.* [Gr. μεριστής, < μερίζειν, divide.] One who divides. [Rare.]

> The administrators of the three great divisions of law are severally Archons, *Merists,* and Dicasts. . . . The *Merists* are properly the Domini, or Lords of houses and nations. *Ruskin,* Munera Pulveris, p. 117, note.

meristic (me-ris′tik), *a.* [Gr. μεριστικός, < μεριστός, divided, < μερίζειν, divide. See ★*merism.*] Pertaining to or exhibiting merism. *W. Bateson,* Study of Variation, p. 22.—**Meristic homology, variation.** See ★*homology,* ★*variation.*

meristically (me-ris′ti-kạl-i), *adv.* By means of merism, or in a meristic manner. *W. Bateson,* Study of Variation, p. 26.

merit, *n.*—**Certificate of merit.** See ★*certificate.*—**Order of merit.** See ★*order.*

merle¹, *n.* **2.** A West Indian name for orioles of the genus *Cassicus.*

merluce (mėr′lūs), *n.* [NL. *merlucius, merluccius:* said to be formed (irregularly) from F. *mer,* L. *mare,* sea, + L. *lucius,* pike.] The European hake, *Merlucius merluccius,* belonging to the family *Merluciidæ.*

mero (mā′rō), *n.* [Sp. Pg. *mero.*] The spotted jewfish, *Epinephelus guaza,* found off the coasts of southern Europe and western Africa.

merocarpal (mer-ọ̄-kär′pạl), *a.* [*merus* + *carpus* + *-al*¹.] Pertaining to the merus and the carpus, or to the fourth and fifth joints of a malacostracan trunk-leg; as, the *merocarpal* joint. *Proc. Zool. Soc. London,* May–Dec., 1901, II. 555.

merocrystalline (mer-ọ̄-kris′tạ-lin), *a.* [Gr. μέρος, part, + E. *crystalline.*] In *petrog.,* partly crystalline. *Fletcher,* 1895. Also *semi-crystalline, hypocrystalline, hypohyaline.*

merocyte (mer′ọ̄-sīt), *n.* [Gr. μέρος, part, + κύτος, a hollow (a cell).] In *embryol.,* one of the nucleate masses of protoplasm lying in the unsegmented yolk of a meroblastic ovum, such as the ovum of sharks, birds, etc.

merognathite (mẹ̄-rog′nạ-thīt), *n.* [Gr. μέρος, part, + E. *gnathite.*] In crustaceans, the fourth joint of a gnathite.

merogonic (mer-ọ̄-gon′ik), *a.* [*merogon(y)* + *-ic.*] Of or pertaining to merogony, or the development of fertilized fragments of eggs. *E. B. Wilson,* in *Biol. Bulletin,* April 5, 1903, p. 218.

merogony (me-rog′ọ̄-ni), *n.* [Gr. μέρος, part, + -γονια, < -γονος, -born.] The development, partial or perfect, of an organism from part of an egg or part of an embryo. If the two blastomeres of the two-celled stage of the segmenting egg of a ctenophore are isolated, each forms a half-embryo. In *Amphioxus* each forms a perfect embryo of half the normal size.

merohedric (mer-ọ̄-hē′drik), *a.* Same as *merihedric.*

merology (me-rol′ọ̄-ji), *n.* [Gr. μέρος, part, + -λογια, < λέγειν, speak.] Same as *histology.*

meromorph, *a.* **II.** *n.* A change in one or more of a number of parts in series, such as the change of the appendages of the antennary somite of a crustacean into eyes.

meromorphosis (mer-ọ̄-môr′fọ̄-sis), *n.* [Gr. μέρος, part, + μόρφωσις, forming.] In *biol.,* the incomplete replacement of a lost part. See ★*holomorphosis.*

meront (mer′ont), *n.* [Gr. μέρος, part, + ὤν (οντ-), being.] In certain sporozoans, as *Thelohania,* a form of trophozoite which multiplies by simple schizogony, a second division sometimes taking place before the first is finished, so that three or four individuals may be connected in a group or chain.

meroplankton (mer-ọ̄-plangk′tọn), *n.* [NL., < Gr. μέρος, part, + NL. *plankton.*] The organisms, considered collectively, that pass part of their lives in the depths of the ocean and part at or near the surface.

meroplanktonic (mer″ọ̄-plangk-ton′ik), *a.* [Gr. μέρος, part, + E. *planktonic.*] Swimming in the ocean at one stage of life and passing the rest of life vagrant or sessile on the sea-bottom, as part of the diatoms and *Oscellaria,* the planktonic fucoids, the metagenetic medusæ, some *Turbellaria* and annelids, the pelagic larvæ of hydroids and corals, and many helminths, echinoderms, *Acalepha,* and gastropods. *Haeckel* (trans.), Planktonic Studies, p. 583.

> Thus the *meroplanktonic* stage, which we may assume existed in the ancestors of Fulgur and Sycotypus, was apparently suppressed even in the earliest species of Fulgur, as otherwise the distribution would be more world-wide. *Amer. Nat.,* Aug., 1903, p. 516.

merorachischisis (mer″ọ̄-rā-kis′ki-sis), *n.* [Gr. μέρος, part, + ῥάχις, spine, + σχίσις, cleaving.] Partial fissure of the spinal cord. Also *merorrhachischisis.*

merosthenic (mē-ros-then′ik), *a.* [Gr. μηρός, thigh, + σθένος, strength, + *-ic.*] Strong in the hinder parts; having the hinder parts more developed and stronger than the fore parts: opposed to *prosthenic.*

merosymmetrical (mer″ọ̄-si-met′ri-kạl), *a.* [*merosymmetr(y)* + *-ical.*] In *crystal.,* exhibiting partial symmetry. See ★*symmetry,* 6.

merosymmetry (mer-ọ̄-sim′e-tri), *n.* [Gr. μέρος, part, + E. *symmetry.*] In *crystal.,* partial symmetry; a lower grade of symmetry than that exhibited in holosymmetrical forms. See ★*symmetry,* 6.

merotomy (me-rot′ọ̄-mi), *n.* [Gr. μέρος, part, + -τομια, < ταμεῖν, cut.] In *histology,* a dividing into several parts or segments.

> The experiments of "*merotomy,*" that is to say of amputation, tried by Waller on nerves, on infusoria by Brandt, etc., teach us the necessity of the presence of the cellular body and the nucleus.
> *Smithsonian Rep.,* 1902, p. 404.

merotropy (me-rot′rọ̄-pi), *n.* [Gr. μέρος, part, + -τροπια, < τρέπειν, turn.] A name which has been suggested for a phenomenon, generally termed *desmotropy,* which is exhibited by certain organic chemical compounds. See ★*desmotropy.*

Merozoa (mer-ọ̄-zō′ạ̈), *n. pl.* [NL., < Gr. μέρος, part, + ζῷον, animal.] A grade of *Cestoidea* in which the adult worm consists of two distinct parts, the head or scolex, and the genital region or body. It contains the *Dibothridiata* and the *Tetrabothridiata,* in which groups are included nearly all cestoid worms: contrasted with *Monozoa.*

merozoite (mer-ọ̄-zō′īt), *n.* [Gr. μέρος, part, < ζῷον, animal, + *-ite*².] In the life-cycle of a sporozoön, one of the cells to which a dividing spore gives rise. They appear as buds radiating from the parent cell and afterward become free.

> When fully developed, the spores, or, as they are technically known, the *merozoites,* drop off the parent cell and work their way through the fluids of the digestive tract until they come to the cells lining it, and then, like the

> sporozoites, they penetrate the cells, grow at their expense, and again reproduce spores as before.
> *Pop. Sci. Mo.*, June, 1901, p. 192.

Mersey jolly-tail. See ★*jollytail.*

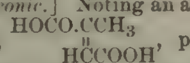
Mertensidæ (mėr-ten′si-dē), *n. pl.* [NL., < *Mertensia*, the typical genus, + *-idæ.*] A family of tentaculate ctenophorans which have the body compressed in the stomachal plane, the subtentacular ribs longer than the substomachal, and no wing-like appendages at the sensory pole. It contains the genera *Euchlora* and *Charistephane.*

merulioid (me-rö′li-oid), *a.* [*Merulius* + *-oid.*] Resembling or pertaining to the genus *Merulius.*

Merulius (me-rö′li-us), *n.* [NL. (Haller, 1768), < L. *merula*, a blackbird: see *merle*¹. The name alludes to the black color of the fungus, especially in its later stages.] A genus of hymenomycetous fungi of the family *Polyporaceæ*. They have a soft, waxy, usually resupinate hymenium, with reticulate or sinuous folds forming shallow pits. *M. lacrymans*, sometimes called the *house-fungus*, is the cause of a destructive dry-rot of coniferous wood. See cut under *dry-rot.*

merycole (mer′i-kōl), *n.* [Irreg. < *merycol*(*ogy*), or < *mery*(*cism*) + L. *colere*, cultivate.] One who practises merycism.

merycology (mer-i-kol′ō̤-ji), *n.* [*meryc*(*ism*) + Gr. *-λογια*, < *λέγειν*, speak.] The study of the causes, nature, and treatment of rumination in man.

mesaconic (mes-a̤-kon′ik), *a.* [Gr. *μέσος*, middle, + E. *aconic.*] Noting an acid, a colorless compound,  $\begin{array}{c}HOCO.CCH_3\\ \|\\ HCCOOH\end{array}$, prepared by boiling citraconic acid with dilute nitric acid. It crystallizes in slender needles, melting at 202° C.

Mesadenia (mes-a̤-dē′ni-ä̤), *n.* [NL. (Rafinesque, 1832), < Gr. *μέσος*, middle, + *ἀδήν*, gland; in allusion to the central projection of the receptacle.] A genus of plants of the family *Asteraceæ*. They are tall perennial, mostly smooth, often milky-juiced herbs with terminal corymbs of small, few-flowered, inconspicuous heads, the flowers all tubular and perfect. There are about 16 species, natives of North and Central America, of which 11 occur within the United States. They are commonly called *Indian plantain.*

mesa-dwelling (mā′sä̤-dwel′ing), *n.* A house, usually a communal dwelling, built upon a mesa or limited table-land with steep sides, as in the western part of the United States.

mesaortitis (mes″ā-ôr-tī′tis), *n.* [NL., < Gr. *μέσος*, middle, + *ἀορτή*, aorta, + *-itis.*] Inflammation of the middle coat of the aorta.

mesaræum (mes-a-rē′um), *n.*; pl. *mesaræa* (-ä̤). [NL., < Gr. *μεσάραιον*, mesentery, < *μέσος*, middle, + *ἀραιά*, belly, flank, fem. of *ἀραιός*, porous.] Same as *mesentery.*

mesaticephalism (mes″a̤-ti-sef′a̤-lizm), *n.* The condition of being mesaticephalic.

mesaticephalous (mes″a̤-ti-sef′a̤-lus), *a.* Same as *mesaticephalic.*

mesaticephaly (mes″a̤-ti-sef′a̤-li), *n.* [*mesaticephal-ic* + *-y*³.] In *anthrop.*, the condition of being mesaticephalic; mesaticephalism.

> We place systematically after the Tibetans and the Indo-Chinese, who are subbrachycephalous, the Chukluks, whose average indication, 79.9, stands at the extreme limit of *mesaticephaly*, and not far from them, the Tungus-Manchu (300,000 individuals), another breaking up of Prichard's "Allophylians," with their clearly mesaticephalous skull, which is at the same time excessively flattened. *Smithsonian Rep.*, 1895, p. 514.

mesaticercic (mes″a̤-ti-sėr′sik), *a.* [Also *mesatikerkic*; < Gr. *μέσατος*, midmost, + *κερκίς*, radius of the arm.] Having the forearm of average length in proportion to the length of the arm; neither brachycercic nor dolichocercic; having a radiohumeral index between 75 and 80. *Turner.*

mesatikerkic (mes″a̤-ti-kėr′kik), *a.* See ★*mesaticercic.*

mesatilekanic (mes″a̤-ti-le-kan′ik), *a.* [Gr. *μέσατος*, midmost, + *λεκάνη*, dish, bowl (pelvis).] Same as ★*mesatipellic. Turner.*

mesatipellic (mes″a̤-ti-pel′ik), *a.* [Gr. *μέσατος*, midmost, + *πέλλα*, dish (pelvis).] In *anthrop.*, said of a male who has an index of the pelvic brim between 90 and 95. Also *mesopellic. Jour. Anthrop. Inst.*, 1900, p. 149.

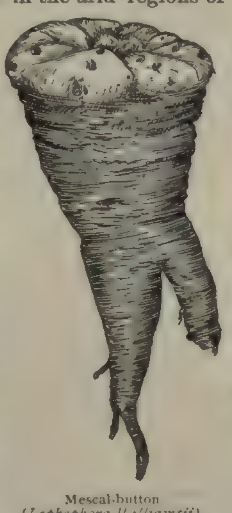
mesatipelvic (mes″a̤-ti-pel′vik), *a.* [Gr. *μέσατος*, midmost, + L. *pelvis*, bowl (pelvis).] Same as ★*mesatipellic.*

Mesatlantis (mes-at-lan′tis), *n.* [Gr. *μέσος*, middle, + *Ἀτλαντίς*, Atlantic.] The mid-Atlantic or tropical Atlantic sea-region of Sclater, which comprises the Atlantic ocean from a little north of the tropic of Cancer down to about the tropic of Capricorn. *Geog. Jour.* (R. G. S.), X. 219.

mesaxonic (mes-ak-son′ik), *a.* [Gr. *μέσος*, middle, + *ἄξων*, axis, + *-ic.*] Having the third digit of the foot the largest, thus forming the axis of the foot: contrasted with ★*paraxonic.*

> They (Perissodactya) are all digitigrade quadrupeds, with the axis of both feet passing through the digit No. III (hence *mesaxonic*).
> *A. S. Woodward*, Outlines of Vertebrate Palæontology, [p. 319.

mescal-buttons (mes-käl′but″nz), *n. pl.* [*mescal* (Nahuatl *mexcalli*) + E. *buttons.*] The dried tops of a succulent, spineless, turnip-shaped cactus growing in the arid regions of Texas and northern Mexico, known botanically as *Lophophora Williamsii*, and called by the natives in various localities *peyote*, *hikuli*, and *wokowi*. The plant scarcely rises above the ground: it has a flat top divided into a number of radiating convex ribs bearing low tubercles, each with an areole in the center which bears a tuft of silky hairs from which the pink flowers appear. The tops of the plants are collected by the Indians and dried, forming button-like masses an inch or more in diameter and about a quarter of an inch thick. These buttons have narcotic properties and in Texas are sometimes called *dry whisky*. They are either chewed dry or are added to tizwin, mescal, or other alcoholic drinks. They produce a delirious exhilaration which enables the Indians to perform certain ceremonial dances for many successive hours without fatigue. The effect seems to resemble that of opium, though in some cases a condition of exaltation is induced resembling that produced by Indian hemp. Several alkaloids have been isolated from the plant, some of which resemble morphine, others strychnine, in their effects upon animals. One of them, called *pellotine*, has been introduced as a hypnotic; another, called *mescaline*, seems to be the cause of the exaltation.


Mescal-button
(*Lophophora Williamsii*).
One third natural size.

mescaline (mes-kal′in), *n.* [*mescal* + *-ine*².] Methyl-3, 4, 5-trimethoxybenzylamine, $(CH_3O)_3C_6H_2.CH_2NHCH_3$, an alkaloid found in mescal-buttons. It crystallizes in needles which melt at 151° C.

mescalism (mes-käl′izm), *n.* [*mescal* + *-ism.*] The habit of using mescal or mescal-buttons. *Amer. Anthropologist*, Oct.–Dec., 1902, p. 789.

mescal-pit (mes-käl′pit), *n.* A pit filled with stones on which mescal roots are roasted.

mescroyance†, *n.* [OF. See *miscreant.*] Unbelief. [Rare.]

> There may be any quantity of intermediate mind, in various conditions of bog, . . . but the elements of Croyance and *Mescroyance* are always chemically separable out of the putrescent mess.
> *Ruskin*, Fors Clavigera, lxxii. 383.

mescroyant†, *n.* [OF. See *miscreant.*] An unbeliever.

mesdem (mes-dem′), *n.* [Egyptain ?] A substance used in ancient Egypt as a cosmetic and a medicine. It seems to have been either antimony sulphid or lead sulphid, more probably the latter. *E. von Meyer* (trans.), Hist. Chem., p. 18.

mese⁴ (mes′ē), *n.* [Gr. *μέση*, the middle string or note.] In *Gr. music*, the middle or central tone of the system. See cut under *tetrachord.*

mesectoblast (me-sek′tō̤-blȧst), *n.* [Gr. *μέσος*, middle, + E. *ectoblast.*] Same as ★*ectomesoblast.*

> This mass of *mesectoblast*, with enclosed auditory pit, bears a considerable resemblance to the common anlage of auditory pit and lateral line system referred to above. It subsequently extends into the adjacent gill arches, where its further history was not followed.
> *Science*, April 11, 1902, p. 575.

mesembryo, *n.* **2.** The blastula stage of a polyzoan. *Cumings*, 1904.

Mesencephalic flexure, fossa. See ★*flexure*, ★*fossa*¹.

mesencephalospinal (mes-en-sef″a̤-lō̤-spī′na̤l), *a.* Of or pertaining to both the mesencephalon, or mid-brain, and the spinal chord.

mesenchymatal (mes-eng-kī′ma-ta̤l), *a.* Same as *mesenchymal*. *L. O. Howard*, in Science, Dec. 21, 1906, p. 812.

mesenchyme, *n.* **2.** In *embryol.*, the whole or a portion of the middle germ-layer, or mesoblast, when this layer is not epithelial, but consists of stellate, loosely interconnected, or even disconnected cells like those seen in primitive forms of connective tissue.

> About the proton of the liver and the vascular spaces surrounding it there is considerable *mesenchyme.*
> *Trans. Amer. Micros. Soc.*, Nov., 1903, p. 58.

mesenchymic (mes-eng-kim′ik), *a.* Of or pertaining to mesenchyme.

mesenteriform (mez-en-ter′i-fôrm), *a.* Resembling a mesentery.

> Deep carmine, *mesenteriform*, consisting of suberect plicately aggregated laminæ; the margin minutely ragged or crispate, and furnished with a few scattered pores of irregular shape. *Dana*, Zooph., p. 708.

mesenteritic (mes″en-te̤-rit′ik), *a.* [*mesenterite* + *-ic.*] Relating to or affected with mesenteritis.

mesenteroblast (mes-en′te̤-rō̤-blȧst), *n.* [*mesenteron* + Gr. *βλαστός*, germ.] In *embryol.*, the mesenteron; the middle portion of the intestine or alimentary tract, arising from the entoderm, as distinguished from the stomodeal and proctodeal portions of the embryonic gut, which are of ectodermal origin.

mesenteron, *n.* **2.** In sea-anemones and similar polyps, the main digestive cavity or stomach; in *Mollusca*, the stomach and intestine. Compare *stomodæum* and *proctodæum.*

mesenterophthisis (mes-en-te̤-rof′thi-sis), *n.* [NL., < *mesenteron* + Gr. *φθίσις*, consumption.] Tuberculosis of the mesenteric glands.

mesentery, *n.*—**Directive mesenteries**, in the *Hexacoralla*, the mesenteries which correspond to the extremities of the longitudinal mouth. They are distinguished from the other mesenteries of the animal by the fact that the muscular thickenings on the walls of the pairs do not face each other, as they do in all other pairs of the body. —**Edwardsian mesentery**, in anthozoans, one of the eight mesenteries first formed: so called because exhibited typically by the adult stage of *Edwardsia*.—**Uterine mesentery.** Same as *mesometry.*

mesentoderm (mes-en′tō̤-dėrm), *n.* [Gr. *μέσος*, middle, + E. *entoderm.*] In *embryol.*, a cell-layer or single blastomere not yet differentiated into mesoderm and entoderm proper, but exhibiting peculiarities of both of these germ-layers.

mesentomere (mes-en′tō̤-mēr), *n.* [*mes*(*omere*) + *entomere.*] In *embryol.*, a blastomere which has not yet divided into mesomeres and entomeres.

> The cleavage of the egg of the nudibranch, Fiona marina, is of the spiral type well known for molluscs. From the *mesentomere* . . . arises the primary mesoblast and also enteroblasts, these latter being concerned in the formation of the intestine.
> *Amer. Nat.*, July–Aug., 1904, p. 505.

mesepisternal (mes-ep-i-stėr′na̤l), *a.* Of or pertaining to the mesepisternum.

mesepithelium (mes-ep-i-thē′li-um), *n.* [Gr. *μέσος*, middle, + NL. *epithelium.*] Same as *mesothelium.*

mesh¹, *n.* **6.** One of the subdivisons of a head or ear of wheat; a wheat spikelet.

> The spikelets (*meshes*) are two to four grained.
> *U. S. Dept. Agr.*, Bur. Plant Industry, 1901, Bulletin 3, [p. 10.

meshorer (me-shō′rėr), *n.* [Heb. *meshōrēr*, < *shīr*, sing.] A singer who assists the cantor or hazzan in the synagogue.

mesh-pin (mesh′pin), *n.* An oval piece of wood over which the mesh of nets is formed, the loops being knotted on its edge.

meshummad (me-shö′mad), *n.* [Heb., < *shamad*, destroy.] Literally, one who is destroyed: a term of disdain and hatred applied to one who abandons Judaism for another faith; a pervert.

mesh-winding (mesh′wīn″ding), *n.* See ★*winding*¹.

mesiad (mes′i-ad or mē′zi-ad), *adv.* [*mesi*(*al*) + *-ad*³.] In *zoöl.*, to or toward the middle line or plane of the body.

> When the bones of the shoulder-girdle in a grebe are articulated as in life, there is quite an interval between their sternal ends, *mesiad*. *Amer. Nat.*, Jan., 1904, p. 22.

Mesial length. See ★*length.*

mesicerin (mes-i-sē′rin), *n.* [*mesi*(*tine*) + Gr. *κηρός*, wax, + *-in*².] A colorless crystalline compound, $C_6H_3(\overset{1.\,3.}{C}H_2\overset{5}{O}H)_3$, prepared by boiling the corresponding bromide with water and lead carbonate. Also called 1′, 3′, 5′-*trihydroxymethylbenzene.*

mesidine (mes'i-din), *n.* [*mesi*(*tine*) + *-id* + *-ine*2.] A colorless liquid, $H_2\overset{2}{N}C_6H_2(\overset{1\ 3\ 5}{CH_3})_3$, prepared by the reduction of nitromesitylene. It boils at 229–230° C. Also called *amino*-1, 3, 5-*trimethylbenzene.*

mesilla (mạ-sēl'yä), *n.* [Sp., dim. of *mesa*: see *mesa.*] A small mesa.

mesiocaudad (mes″i-ọ̄-kâ'dad), *adv.* [*mesi*(*al*) + *caudad.*] In the median line and toward the tail. *Proc. Zool. Soc. London*, 1899, p. 1024.

Mesirenia (mes-i-rē'ni-ạ̈), *n.* [Gr. *μέσος*, middle, + NL. *Irenia*, the Pacific region.] The mid-Pacific sea-region of Sclater, consisting of that part of the Pacific which lies between the tropics of Cancer and Capricorn.

mesite (mes'īt), *n.* [Gr. *μεσίτης*, being in the middle. See *Mesites, mesitine*(*-spar*).] An old name for a mixture of methyl acetate and mesityl oxid, prepared by distilling crude wood-alcohol or crude acetic acid from wood with sulphuric acid.

mesitene (mes'i-tēn), *n.* [*mesite* + *-ene.*] Same as ★*mesite.*

mesitine (mes'i-tin), *n.* Same as *mesitine-spar.*

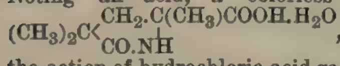
mesitol (mes'i-tol), *n.* [*mesit*(*ine*) + *-ol.*] A colorless crystalline compound, $H\overset{2}{O}C_6H_2$-$(\overset{1,3,5}{CH_3})_3$, prepared by the action of nitrous acid on mesidine. It melts at 65–69° C. Also called 1, 3, 5-*trimethylphenol.*

mesitonic (mes-i-ton'ik), *a.* [*mesit*(*ine*) + *-one* + *-ic.*] Noting an acid, a colorless compound, $(CH_3)_2C(COOH)CH_2COCH_3$, prepared by the action of hydrochloric-acid gas, potassium cyanide, and alcohol on acetone. It crystallizes in small prisms or large plates, melts at 74° C., and boils at 138° C. under 15 millimeters pressure.

Mesityl oxid, a colorless liquid olefinic ketone, $(CH_3)_2$-$C{:}CHCOCH_3$, prepared by the action of hydrochloric-acid gas, sulphuric acid, or zinc chlorid on acetone. It has an odor of peppermint and boils at 129.5–130° C. Also called *isopropylidine-acetone* and 2-*methyl*-2-*pentenone.*

mesitylenic (mes″i-ti-lē'nik), *a.* [*mesitylene* + *-ic.*] Of or pertaining to mesitylene.—**Mesitylenic acid**, a colorless compound, $(\overset{1.\ 3}{CH_3})_2C_6H_3\overset{5}{C}OOH$, prepared by the action of dilute nitric acid on mesitylene. It forms monoclinic crystals and melts at 166° C. Also called 1, 3-*dimethylbenzoic acid* (5).

mesitylic (mes-i-til'ik), *a.* [*mesityl* + *-ic.*] Noting an acid, a colorless compound,



$$(CH_3)_2C{<}\begin{matrix}CH_2.C(CH_3)COOH.H_2O\\ CO.NH\end{matrix}$$

, prepared by the action of hydrochloric-acid gas, potassium cyanide, and alcohol on acetone. It crystallizes in long prismatic needles, melts, when anhydrous, at 174° C., and may be distilled.

meso-. [Gr. *μέσο-ς*, middle.] A combining form used in organic chemistry to indicate optical inactivity through internal compensation. See ★*mesoform.*

mesoappendix (mes″ọ̄-a-pen'diks), *n.* [*mes*(*entery*) + *appendix.*] The mesentery of the vermiform appendix. *Buck*, Med. Handbook, I. 421.

mesobacteria (mes″ọ̄-bak-tē'ri-ạ̈), *n. pl.* [Gr. *μέσος*, middle, + NL. *bacteria*, pl. of *bacterium.*] Medium-sized rod-shaped bacteria. *Billroth.*

mesobenthic (mes-ọ̄-ben'thik), *a.* [*mesobenthos* + *-ic.*] Of or pertaining to the mesobenthos; living upon or in the bottom between the outer edge of the continental slope and the bottom of the deep ocean. *Encyc. Brit.*, XXXIII. 934.

mesobenthos (mes-ọ̄-ben'thos), *n.* [NL., < Gr. *μέσος*, middle, + *βένθος*, depth: see ★*benthos.*] The animals and plants which live upon or in the bottom between the outer edge of the continental slope and the bottom of the deep ocean, considered collectively and in contrast with the dwellers in or upon the bottom of the continental slope and those that live upon or in the bottom of the deep ocean. See ★*benthos*, ★*epibenthos*, and ★*hypobenthos.*

> The mud-line is the real upper limit of this zone [continental slope]: it typically begins at about 100 fathoms, but may begin at 5 to 20 fathoms in deep sheltered firths, or be pushed down to 300 fathoms where currents are strong. The fauna of this zone may be termed the *mesobenthos*; it is not so abundant, nor so sharply characterized, as the epibenthos and yet is sufficiently distinct to deserve at any rate a provisional name.
> *Encyc. Brit.*, XXXIII. 933.

mesoblast, *n.* 2. In *cytol.*, the middle one of three concentric protoplasmic layers supposed to surround the cell-nucleus.

> The normal and developed cell has three concentric envelopes which may be called blasts, the whole enclosing a nucleus, so that the structure which we found in the earth as spheres is repeated here as blasts. These are the exoblast, *mesoblast*, and endoblast.
> *J. W. Powell*, Truth and Error, p. 69.

Sporadic mesoblast, mesoblast in the form of disconnected cells or cell-clusters, as distinguished from typical mesoblast in a continuous cell-layer or epithelium. *Philos. Trans. Roy. Soc.* (London), 1894, Ser. B, p. 313.

mesobregmate (mes-ọ̄-breg'māt), *a.* [Gr. *μέσος*, middle, + *βρέγμα*, sinciput.] In *craniom.*, having a moderately rounded vertex. *J. C. Prichard.*

mesobronchium (mes-ọ̄-brong'ki-um), *n.*; pl. *mesobronchia* (-ạ̈). In *ornith.*, a tube or prolongation of the bronchus running backward into one of the abdominal air-sacs.

Mesocambrian (mes-ọ̄-kam'bri-ạn), *n.* In *geol.*, the middle Cambrian.

Mesocampyli (mes-ọ̄-kam'pi-lī), *n. pl.* [NL., < Gr. *μέσος*, middle, + *καμπύλος*, curved.] In Hyatt's classification of the cephalopods, a suborder of the *Ammonoidea* of uncertain value, comprising certain Devonian goniatites or forms intermediate in structure between the *Microcampyli* and *Eurycampyli.*

meso-Carboniferous (mes″ọ̄-kär-bọ-nif'ẹ-rus), *a.* Middle Carboniferous.

> Title: 'The *Meso-Carboniferous* Age of the Union and Riversdale formations in Nova Scotia.'
> *Science*, March 7, 1902, p. 392.

mesocardium (mes-ọ̄-kär'di-um), *n.*; pl. *mesocardia* (-ä). [NL., < Gr. *μέσος*, middle, + *καρδία*, heart.] In *embryol.*, the membrane which connects the developing heart with the anterior body-wall on the ventral side and with the intestine on the dorsal side.

mesocarpaceous (mes″ọ̄-kär-pā'shius), *a.* Belonging or pertaining to the *Mesocarpaceæ*, a family of algæ.

mesocephal (mes-ọ̄-sef'al), *n.* [Gr. *μέσος*, middle, + *κεφαλή*, head.] In *anthrop.*, a mesocephalic individual. *Deniker*, Races of Man, p. 316.

mesocephali (mes-ọ̄-sef'a-lī), *n. pl.* [NL.] In *anthrop.*, mesocephalic individuals. *Keane*, Ethnology, p. 328.

mesocephalic, *a.* 3. Of or relating to the mesencephalon.

Mesocestoides (mes″ọ̄-ses-toi'dēz), *n.* [NL., < Gr. *μέσος*, middle, + NL. *Cestoides.*] The typical genus of the family *Mesocestoididæ.* *Vaillant*, 1863.

Mesocestoididæ (mes'ọ̄-ses-toi'di-dē), *n. pl.* [NL., < *Mesocestoides* + *-idæ.*] A family of tapeworms, of the order *Tetracotylea*, having the head unarmed but provided with four terminal suckers, and the genital pores separate on the ventral surface. It contains the genus *Mesocestoides*, parasitic in the dog and cat, especially in Iceland.

mesochondrium (mes-ọ̄-kon'dri-um), *n.*; pl. *mesochondria* (-ạ̈). [NL., < Gr. *μέσος*, middle, + *χόνδρος*, cartilage.] The transparent matrix or intercellular substance in which the cellular elements of hyaline cartilage are embedded.

mesochroi (me-sok'rọ̄-ī), *n. pl.* [NL., < Gr. *μέσος*, middle, + *χρόα*, color.] In *anthrop.*, individuals or races of a medial (namely, a yellow) color. See the extract under ★*leucochroi.*

mesochroic (mes-ọ̄-krō'ik), *a.* [*mesochroi* + *-ic.*] In *anthrop.*, of or pertaining to the mesochroi; having a medial (namely, a yellow) color: contrasted with ★*leucochroic* and *æthochroic.*

mesochrone (mes'ọ̄-krōn), *n.* [Gr. *μέσος*, middle, + *χρόνος*, time.] A mean-time curve. *P. Serret*, 1855.

mesococcus (mes-ọ̄-kok'us), *n.*; pl. *mesococci* (-sī). [NL., also *mesococcos*, < Gr. *μέσος*, middle, + NL. *coccus.*] A medium-sized coccus: applied to such forms of bacteria. *Billroth.*

mesoconch (mes'ọ̄-kongk), *a.* [Gr. *μέσος*, middle, + *κόγχη*, shell.] Same as ★*mesoconchous.*

mesoconchic (mes-ọ̄-kong'kik), *a.* Same as ★*mesoconchous.*

mesoconchous (mes-ọ̄-kong'kus), *a.* [Gr. *μέσος*, middle, + *κόγχη*, shell, + *-ous.*] In *craniom.*, having an orbital index of middle value, that is, of from 80.1 to 85.0: a term used by German anthropologists.

mesoconchy (mes'ọ̄-kong-ki), *n.* [*mesoconch* + *-y*3.] In *craniom.*, the condition or character of being mesoconchous. *Biometrika*, March–July, 1904, p. 214.

Mesocoracoid arch. See *precoracoid* ★*arch.*

mesocotyl (mes-ọ̄-kot'il), *n.* [Gr. *μέσος*, middle, + E. *cotyl*(*edon*).] An intercalary internode developed between the cotyledons in certain plants, which renders them alternate instead of opposite.

> A further irregularity in the case of Klugia Zeylanica and some species of Streptocarpus is the displacement of the cotyledons from the opposite to an alternate position; this is attributed to the intercalary development of an internode between the cotyledons, to which the name of *mesocotyl* is given. *Nature*, Sept. 8, 1904, p. 453.

mesocracy (me-sok'ra-si), *n.* [Gr. *μέσος*, middle, + *-κρατια*, rule, < *κρατεῖν*, be strong, rule.] Government by the middle class. *N. E. D.*

mesocratic (mes-ọ̄-krat'ik), *a.* [Gr. *μέσος*, middle, + *κρατεῖν*, rule. See ★*mesocracy.*] 1. Pertaining to, or characterized by, mesocracy.—2. In *geol.*, having light and dark minerals in about equal amounts: contrasted with ★*leucocratic* and ★*melanocratic.*

> The main body of the boss is made up of a coarsely crystalline, *mesocratic*, hornblende gabbro.
> *Amer. Geol.*, Sept., 1904, p. 134.

mesocribrum (mes-ọ̄-krib'rum), *n.* [Gr. *μέσος*, middle, + L. *cribrum*, a sieve.] The median one of three main side sacs arising from the embryonic cribrum.

> The mammalian cribrum.—W. Blendinger has investigated this structure in a series of mammals. In origin it consists of lateral, more or less vertical, folds, the cribral sacs. On the embryonic cribrum there arise three main side sacs, pro-, *meso*-, and meta*cribrum*, the entrance to which is perpendicular to the main axis of the nasal canal.
> *Jour. Roy. Micros. Soc.*, Feb., 1905, p. 42.

mesocyst (mes'ọ̄-sist), *n.* [Gr. *μέσος*, middle, + *κύστις*, a bag. See *cyst.*] The double layer of peritoneum attaching the gall-bladder to the liver when the former is completely surrounded by serous membrane. *Syd. Soc. Lex.*

Mesoderm band, one of the strands of mesodermal cells which arise from the germinal groove of the embryo of an insect.

mesodesm (mes'ọ̄-desm), *n.* [See *Mesodesma.*] In *bot.*, the layer of undifferentiated parenchyma lying between the several strands of a polystele. *Encyc. Brit.*, XXV. 416.

Mesodesma, *n.* 2. [*l. c.*] A fold of peritoneum which subtends one of the uterine ligaments.

mesodesmic (mes-ọ̄-des'mik), *a.* Of or pertaining to a mesodesm.

mesodiastolic (mes-ọ̄-dī-as-tol'ik), *a.* [Gr. *μέσος*, middle, + E. *diastolic.*] Occurring in the middle of the diastole. *N. E. D.*

Mesodon (mes'ọ̄-don), *n.* [NL., < Gr. *μέσος*, middle, + *ὀδούς* (*ὀδοντ-*), tooth.] A genus of Jurassic fishes, similar to *Microdon* (which see), but having teeth on the vomero-palatine in five rows and three or four irregular small rows on the splenial.

mesodont, *a.* 3. In *craniom.*, having a dental index between 42 and 44.

II. *n.* In *entom.*, one of a group of stag-beetles which have, like the amphiodonts, a mandibular development intermediate between the teleodont and priodont types.

mesodorsal (mes-ọ̄-dôr'sal), *a.* [Gr. *μέσος*, middle, + E. *dorsal.*] Situated in the middle of the dorsal region or back.

meso-epididymis (mes-ọ̄-ep-i-did'i-mis), *n.* [NL., < Gr. *μέσος*, middle, + NL. *epididymis.*] A double layer of the tunica vaginalis, resembling the mesentery, that unites the epididymis to the scrotum.

mesoform (mes'ọ̄-fôrm), *n.* [Gr. *μέσος*, middle, + E. *form.*] In *organic chem.*, a compound which contains two or more asymmetric (optically active) carbon atoms in the molecule, but which has its optical activity diminished or extinguished because one or more of the carbon atoms has the dextrorotatory and one or more the levorotatory configuration, thus more or less completely neutralizing each other's optical effect. Such compounds are also said to be internally compensated, in contradistinction from the racemic or externally compensated isomers. The two forms are distinguished, in practice, by the fact that the racemic isomer is capable of resolution into two optically active substances, which is not the case with the meso-compound.

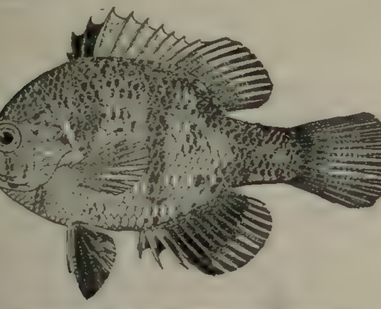
mesognathia (mes-og-nath'i-ạ̈), *n.* [NL., < Gr. *μέσος*, middle, + *γνάθος*, jaw.] In *anthrop.*, the condition of having middle-sized jaws.

mesognathion (mes-og-nath'i-on), *n.*; pl. *mesognathia* (-ạ̈). [Gr. *μέσος*, middle, + *γνάθος*, jaw.] An external premaxillary bone.

mesognathism (me-sog'nā-thizm), *n.* [*mesognath-ic* + *-ism.*] In *anthrop.*, the condition or character of being mesognathous.

mesogonion (mes-ọ̄-gō'ni-on), *n.*; pl. *mesogonia* (-ạ̈). [NL.] See ★*mesogonium.*

Mesogonistius (mes″ọ-gọ-nis′ti-us), *n.* [Gr. *μέσος*, middle, + *γωνία*, angle, + *ἱστίον*, sail.] A genus of fresh-water sunfishes, of the family *Centrarchidæ*, found in the eastern United States.



Black-banded Sunfish (*Mesogonistius chætodon*).
From Bulletin 47, U. S. Nat. Museum.)

mesogonium (mes-ọ-gō′ni-um), *n.*; pl. *mesogonia* (-ä). [NL., < Gr. *μέσος*, middle, + *γόνος*, generation.] In *Trachomedusæ*, one of the thin vertical laminæ of the subumbrella which pass across the bell-cavity from the manubrium to the radial canals, underlying the generative sacs and dividing each into two. Also *mesogonion*.

mesogyrate (mes-ọ-jī′rāt), *a.* [Gr. *μέσος*, middle, + L. *gyratus*, pp. of *gyrare*, turn.] Twisted toward the middle, as the beaks of some pelecypod mollusks: contrasted with ★*prosogyrate* and ★*opisthogyrate*.

mesogyrous (mes-ọ-jī′rus), *a.* [Gr. *μέσος*, middle, + *γῦρος*, a turn, gyre, + *-ous*.] In *ornith.*, having the second or middle loop of the intestine arranged in the form of a spiral, as in all *Passeres*.

mesohepar (mes-ọ-hē′pär), *n.* [Gr. *μέσος*, middle, + NL. *hepar*. See *hepar*.] A fold of peritoneum attached to the free edge of the right lobe of the liver in many animals. *Syd. Soc. Lex.*

mesohypoblast (mes-ọ-hī′pọ-blȧst), *n.* Gr. *μέσος*, middle, + *ὑπό*, under, + *βλαστός*, germ.] Same as ★*mesentoderm*.

mesohypsicephalic (mes-ọ-hip″si-se-fal′ik), *a.* [*meso(cephalic)* + *hypsicephalic*.] In *craniom.*, being both mesocephalic and hypsicephalic. *Man*, 1901, p. 190.

mesolecithal (mes-ọ-les′i-thal), *a.* [Gr. *μέσος*, middle, + *λέκιθος*, yolk, + *-al*¹.] In *embryol.*, a term applied to certain eggs, like those of most arthropods, in which the yolk in an early developmental stage lies in the center and is enveloped by a layer of blastodermic cells: same as *centrolecithal* and ★*perilecithal*.

Mesolithic (mes-ọ-lith′ik), *a.* [Gr. *μέσος*, middle, + *λίθος*, a stone, + *-ic*.] In *prehistoric archæol.*, relating to the period intermediate between the Paleolithic and Neolithic periods: a term employed in the classification of post-glacial deposits which contain human relics, or of such relics themselves, and referring to the relative character and degree of workmanship displayed therein. Contrasted with *Eolithic*, *Paleolithic*, and *Neolithic*. *Deniker*, Races of Man, p. 308.

mesologic (mes-ọ-loj′ik), *a.* Same as *mesological*.

mesomegacranious (mes-ọ-meg-ạ-krā′ni-us), *a.* [Gr. *μέσος*, middle, + *μέγα*, great, + *κρανίον*, skull.] In *craniom.*, having a skull of medium volume, that is, measuring from 1,810 to 1,950 cubic centimeters in males and from 1,610 to 1,730 cubic centimeters in females.

mesomegaprosopous (mes-ọ-meg-ạ-pros′ọ-pus), *a.* [Gr. *μέσος*, middle, + *μέγα*, great, + *πρόσωπον*, face.] In *craniom.*, said of a skull which has a face of middle size, the volume of which is from 580 to 640 cubic centimeters in males and from 480 to 530 cubic centimeters in females.

mesomental (mes-ọ-men′tạl), *a.* [Gr. *μέσος*, middle, + L. *omentum* + *-al*¹.] Relating to the central portion of the omentum.

mesomere (mes′ọ-mēr), *n.* [Gr. *μέσος*, middle, + *μέρος*, part.] In *embryol.*: (*a*) In the segmenting egg, a blastomere, or cell which gives rise to the mesoblast. (*b*) In the vertebrate embryo, a mesoblastic somite, or protovertebra.

mesometatarse (mes-ọ-met′ạ-tärs), *n.* Same as ★*mesometatarsus*.

mesometatarsus (mes-ọ-met-ạ-tär′sus), *n.*; pl. *mesometatarsi* (-sī). [Gr. *μέσος*, middle, + NL. *metatarsus*.] The middle metatarsal bone.

mesomula (me-som′ụ-lạ̈), *n.*; pl. *mesomulæ* (-lē). [Gr. *μέ(σος)*, middle, + (?) *σῶμα*, body, + dim. *-ula*.] A young embryo which consists of an epithelial mesoderm and entoderm separated by a mass of mesenchyme.

Mesomycetes (mes-ọ-mī-sē′tēz), *n. pl.* [NL., < Gr. *μέσος*, intermediate, + NL. *Mycetes*.] A group of fungi including the *Hemiascales* and the *Hemibasidiales*, regarded by some authors as intermediate between the *Phycomycetes* and the higher fungi, *Ascomycetes* and *Basidiomycetes*. *Brefeld*.

mesomycetous (mes″ọ-mī-sē′tus), *a.* Of or pertaining to the *Mesomycetes*, a group of fungi.

mesonasal (mes-ọ-nā′zạl), *a.* [Gr. *μέσος*, middle, + E. *nasal*.] Relating to or situated in the middle of the nose.

Mesonemertini (mes″ọ-nē-mėr-tī′nī), *n. pl.* [NL., < Gr. *μέσος*, middle, + NL. *Nemertini*.] A group or order of nemerteans having the lateral nerves in the dermal muscular layer; the body-wall consisting of ectoderm, dermis, an external circular, an internal longitudinal, and usually an intermediate diagonal layer of muscles; the mouth behind the brain; no cæcum; and the proboscis without stylets. It includes the family *Cephalothricidæ*. Compare ★*Protonemertini*, ★*Metanemertini*, and ★*Heteronemertini*.

mesonephridium (mes″ọ-ne-frid′i-um), *n.*; pl. *mesonephridia* (-ạ̈). [NL., < Gr. *μέσος*, middle, + NL. *nephridium*.] A nephridium of mesodermal origin.

mesopatagium (mes-ọ-pat-ạ̄-jī′um), *n.*; pl. *mesopatagia* (-ạ̈). [Gr. *μέσος*, middle, + NL. *patagium*. See *patagium*.] That part of the wing-membrane of a bat lying between the fifth digit of the hand and a line drawn from the center of the posterior margin to the elbow.

> Within the *mesopatagium* the subordinate lines incline either toward the forearm or the manus.
> *Harrison Allen*, Monograph of the Bats of North America, p. 3.

mesopectus (mes-ọ-pek′tus), *n.* [Gr. *μέσος*, middle, + L. *pectus*, breast.] Same as *mesosternum*, 2.

mesopellic (mes-ọ-pel′ik), *a.* [Gr. *μέσος*, middle, + *πέλλα*, dish (pelvis), + *-ic*.] Same as ★*mesatipellic*. *Brinton*, Races and Peoples, p. 49.

mesophile (mes′ọ-fil), *a.* [G. *mesophil* (Warming, 1895), < Gr. *μέσος*, middle, + *φίλος*, loving.] Same as ★*mesophilous*. *C. Mohr*.

mesophilic (mes-ọ-fil′ik), *a.* [Gr. *μέσος*, middle, + *φίλος*, loving.] Preferring, or adapted to live under, a condition of medium temperature or moisture; mesophilous: noting especially bacteria which grow best in cultures which are maintained at a medium temperature (15–45° C.). *Buck*, Med. Handbook, I. 686.—**Mesophilic bacteria.** See ★*bacterium*.

mesophilous (me-sof′i-lus), *a.* Mesophilic; in *phytogeog.*, mesophytic.

mesophryon (me-sof′ri-on), *n.* [NL., < Gr. *μεσόφρυον*, < *μέσος*, middle, + *ὀφρύς*, eyebrow.] The region between the eyebrows.

mesophyte (mes′ọ-fit), *n.* [Gr. *μέσος*, middle, + *φυτόν*, plant.] 1. A plant which is adapted to live under conditions of medium moisture and dryness; a plant intermediate between the hydrophytes and the xerophytes.—2. Same as *mesophytum*.

mesophytic (mes-ọ-fit′ik), *a.* [*mesophyte* + *-ic*.] Of the nature of or pertaining to mesophytes.

mesoplankton (mes-ọ-plangk′ton), *n.* [Gr. *μέσος*, middle, + NL. *plankton*.] The animals that float or swim in the water below the 100-fathom line and above the 500-fathom line, considered collectively and in contrast with the fauna of the deep ocean and the fauna and flora of the surface. See ★*hypoplankton* and ★*epiplankton*.

> A. [Arachmactio] albida . . . occurred in over 61 per cent. of epiplankton hauls, never in a *mesoplankton* haul, and may fairly be taken to be a purely epiplankton form.
> *Proc. Zool. Soc. London*, 1903, I. 117.

mesoplanktonic (mes″ọ-plangk-ton′ik), *a.* [*mesoplankton* + *-ic*.] Pertaining to or of the nature of mesoplankton. *Nature*, Nov. 5, 1903, p. 23.

mesoplasm (mes′ọ-plazm), *n.* [Gr. *μέσος*, middle, + *πλάσμα*, anything formed.] An intermediate layer between the ectoplasm and the endoplasm of some sporozoans. *Cohn*.

mesoplastral, *a.* II. *n.* Same as *mesoplastron*.

mesoplax (mes′ọ-plaks), *n.* [NL., < Gr. *μέσος*, middle, + *πλάξ*, anything flat.] In the *Pholadidæ*, a family of teleodesmaceous *Pelecypoda*, one of the accessory shelly plates, thus termed when situated above the beaks of the two valves. See also ★*prosoplax*, ★*metaplax*, and ★*hypoplax*.

mesopod (mes′ọ-pod), *n.* Same as *mesopodium*.

mesopore (mes′ọ-pōr), *n.* [Gr. *μέσος*, middle, + *πόρος*, pore.] In the *Bryozoa*, the angular or irregular cells which occupy interzoœcial spaces in some of the paleozoic genera (*Monticulipora*).

mesopotamic (mes″ọ-pọ-tam′ik), *a.* [See *Mesopotamian*.] Situated between two rivers: as, a *mesopotamic* region.

mesopsychic (mes-ọ-sī′kik), *a.* [Gr. *μέσος*, middle, + *ψυχή*, mind, + *-ic*.] In *psychol.*, belonging to the mid-period of mental development: opposed, on geologic analogy, to ★*paleopsychic* and ★*cenopsychic*. *G. S. Hall*, Adolescence, II. 358.

mesopterygoid, *n.* 2. In *ichth.*, a bone between the pterygoid and metapterygoid which usually helps to wall in the orbital cavity behind and below. It is not infrequently absent.

mesoptile (mes′op-til), *n.* [Gr. *μέσος*, middle, + *πτίλον*, feather.] A feather of the plumage of nestling birds, intermediate between the down and the mature feather: it bears on its tip the down and is in turn attached at its base to the neossoptile: correlative with ★*teleoptile* and ★*neossoptile*.

> This so-called nestling plumage, which is always intermediate in point of time and position between the other two named, may be called the *mesoptile*.
> *Rep. Fur Seal Investigations*, III. 424.

mesoptychial (mes-op-tik′i-ạl), *a.* [Gr. *μέσος*, middle, + *πτύξ* (*πτυχ-*), fold, + *-ial*.] Relating to the anterior middle part of the chest: as, the *mesoptychial* scales of lizards.

mesorchis (mes-ôr′kis), *n.* [NL.] Same as *mesorchium*.

mesorchium, *n.* 2. In *ichth.*, the tissue which suspends the genital gland from the dorsal wall of the abdominal cavity in the males.

mesorcinol (mes-ôr′si-nol), *n.* [Gr. *μέσος*, middle, + E. *orcinol* (?).] A colorless compound, $(HO)_2C_6H(\overset{1.\ 3.\ 5}{CH_3})_3$, prepared by the action of nitrous acid on aminomesitol. It sublimes in small lustrous plates, melts at 149–150° C. and boils at 274.5–275.5° C. Also called 1, 3, 5-*trimethylphendiol*.

mesorhinian, *a.* II. *n.* In *anthrop.*, a mesorhinian individual or type.

mesorhiny (mes′ọ-rin-i), *n.* [*mesorhine* + *-y*³.] In *anthrop.*, the condition or character of being mesorhine.

mesorostral (mes-ọ-ros′trạl), *a.* [Gr. *μέσος*, middle, + L. *rostrum*, beak, + *-al*¹.] Pertaining to or situated upon the median line of the beak: specifically, referring to the beak or prolongation of the head of such a cetacean as a dolphin.

mesosalpinx (mes-ọ-sal′pingks), *n.* [Gr. *μέσος*, middle, + *σάλπιγξ*, trumpet.] The upper part of the broad ligament between the Fallopian tube and the ovary.

Mesosauri (mes-ọ-sâ′rī), *n. pl.* [NL., < Gr. *μέσος*, middle, + *σαῦρος*, lizard.] An order of plesiosaurs established by Boulenger to contain species having vertebræ with a persistent notochord, four sacral vertebræ, and paddles with five fingers of not more than five phalanges each. The type genus, *Mesosaurus*, is from the Trias of South Africa.

mesoscelocele (mes-ọ-sel′ọ-sēl), *n.* [Gr. *μέσος*, middle, + *σκέλος*, leg, + *κήλη*, tumor.] Perineal hernia.

mesosclerometer (mes″ọ-sklẹ-rom′e-tėr), *n.* [Gr. *μέσος*, middle, + *σκληρός*, hard, + *μέτρον*, measure.] An instrument for testing the hardness of minerals by the rotation of a weighted needle pressed against the surface. See *sclerometer*.

mesoseismal (mes-ọ-sīs′mạl), *a.* [Gr. *μέσος*, middle, + *σεισμός*, earthquake.] Pertaining to or situated in the center of intensity of an earthquake: as, the *mesoseismal* area.

mesoseme, *a.* II. *n.* In *craniom.*, a skull which exhibits mesoseme measurements.

mesosome (mes'ọ-sōm), *n.* [*mesosoma.*] 1. In crustaceans, the pereion or thorax. Compare ★*metasome* and *urosome.*—2. Same as *mesosoma.*

mesospore, *n.* 2. A unicellular teleutospore which occurs in certain species of *Puccinia*, as *P. obscura, P. Scirpi*, etc., associated with the ordinary two-celled form.

mesostasis (me-sos'tạ-sis), *n.* [Gr. *μέσος*, middle, + *στάσις*, a placing.] 1. In *petrog.*, same as *base*^{2}, 8.

> These rocks [dolerites of the Western Isles of Scotland and of Iceland] . . . are described as possessing "intersertal structure," a structure characterized, according to the definition . . . by the presence of a hypocrystalline interstitial substance (*mesostasis*) wedged in between the feldspars. *Nature*, March 15, 1888, p. 459.

2. In *phytogeog.*, the condition of being mesostatic.

mesostatic (mes-ọ-stat'ik), *a.* [Gr. *μέσος*, middle, + *στατικός*, causing to stand.] 1. In *petrog.*, of or pertaining to mesostasis.—2. In *phytogeog.*, having place under essentially uniform conditions of medium moisture: said of a succession of vegetations. *F. E. Clements.*

mesosternite (mes-ọ-stėr'nīt), *n.* [Gr. *μέσος*, middle, + E. *sternite.*] Same as *mesosternal sternite.* See *mesosternal.*

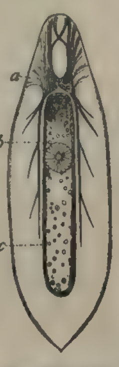
mesosthenic (mes-os-then'ik), *a.* [Gr. *μέσος*, middle, + *σθένος*, strength, + *-ic.*] 1. Of ordinary or medium strength.—2. Strong in the median or middle part.

Mesostoma (me-sos'tọ-mạ̈), *n.* [NL.] Same as ★*Mesostomum.*

Mesostomatidæ (mes″ọ-stọ-mat'i-dē), *n. pl.* Same as ★*Mesostomidæ.*

Mesostomidæ (mes-ọ-stom'i-dē), *n. pl.* [NL., < *Mesostomum* + *-idæ.*] A family of fresh-water and marine rhabdocœlous turbellarians, having one or two generative openings and a rosette-shaped, ventrally placed pharynx. It includes several genera, among them being *Mesostomum, Castrada*, and *Promesostomum.*

Mesostomum (me-sos'tọ-mum), *n.* [NL., < Gr. *μέσος*, middle, + *στόμα*, mouth.] The typical genus of the family *Mesostomidæ.* Also *Mesostoma. Dugés.*



Alimentary Canal and Nervous System of *Mesostomum ehrenbergii* (after Graff).

a, the two cerebral ganglia with two eye-spots; *b*, two lateral nerve-trunks; *c*, alimentary canal with mouth and pharynx.

mesostyle (mes'ọ-stīl), *n.* [Gr. *μέσος*, middle, + *στῦλος*, pillar.] 1. In *bot.*, a style of intermediate length, as in trimorphic plants. Compare ★*metastyle* and ★*parastyle.*—2. In *anat.*, the median one of the three enamel-covered ridges on the outer side of the molar tooth of a horse: correlated with ★*parastyle* and ★*metastyle.*

> Microchœrus in all probability comes in the same group, and when more fully known should furnish a closer approximation to the Indrisinæ than Necrolemur, on account of the development of a *mesostyle* in the upper molars. *Amer. Jour. Sci.*, March, 1904, p. 214.

mesosystolic (mes″ọ-sis-tol'ik), *a.* [Gr. *μέσος*, middle, + E. *systolic.*] Occurring in the middle of the systole. *N. E. D.*

mesotarsal (mes-ọ-tär'sal), *a.* [NL. *mesotars*(*us*) + *-al*^{1}.] Relating to the median horizontal line of the tarsus; pertaining to the metatarsus. *Parker and Haswell*, Zoology, II. 366.—**Mesotarsal joint,** a joint or articulation in the median horizontal plane of the tarsus, such as the ankle-joint of birds and reptiles, in which the joint is between the bones of the tarsus and not between the tibia and the tarsus.

mesotartaric (mes″ọ-tär-tar'ik), *a.* [Gr. *μέσος*, middle, + E. *tartaric*^{1}.] Noting an acid, a colorless optically inactive compound, $HOOC\text{-}CH(OH).CH(OH)COOH.H_2O$, prepared by the prolonged boiling of d-tartaric acid with water or hydrochloric acid. It crystallizes in rectangular plates and melts at 140–143° C. The compound can not be resolved into optically active isomers, and its lack of activity is consequently regarded as being intramolecular, the one asymmetric carbon atom exactly neutralizing the other. See ★*mesoform.*

mesotendon (mes-ọ-ten'dọn), *n.* [Gr. *μέσος*, middle, + L. *tendo*, tendon.] The synovial fold which connects a tendon and its sheath.

mesotheca (mes-ọ-thē'kạ̈), *n.*; pl. *mesothecæ* (-sē). [Gr. *μέσος*, middle, + *θήκη*, case.] The middle one of the three laminæ of the perigonium in *Hydrozoa. N. E. D.*

mesothecium (mes-ọ-thē'si-um), *n.*; pl. *mesothecia* (-ạ̈). [Gr. *μέσος*, middle, + NL. *thecium.*] 1. The middle layer of cells in the wall of an anther.—2. The thecium of lichens. *Jackson*, Gloss. Bot. Terms.

mesothermal (mes-ọ-thėr'mạl), *a.* [Gr. *μέσος*, middle, + *θέρμη*, heat, + *-al*^{1}.] Relating to or exhibiting a moderate temperature or quantity of heat.

mesothermic (mes-ọ-thėr'mik), *a.* [*mesotherm* + *-ic.*] Having the character of a mesotherm; composed of or characterized by mesotherms

> The most important family of the north temperate zone among the Polycarpicae, that of the Ranunculaceæ, is *mesothermic* and microthermic. *A. F. W. Schimper* (trans.), Plant-Geog., p. 236.

mesothet (mes'ọ-thet), *n.* [Gr. *μέσος*, middle, + *θετόν* (neuter), placed. See *thesis.*] A middle or intermediate term or thing. See *mesothesis.* [Rare.]

> Mackaye sat in his usual place . . . while opposite to him was Farmer Porter. . . . A curious pair of 'poles' the two made; the *mesothet* whereof, by no means a 'punctum indifferens,' but a true connecting spiritual idea, stood on the table—in the whisky bottle. *Kingsley*, Alton Locke, xxi.

mesothetic (mes-ọ-thet'ik), *a.* [*mesothesis.*] Of the nature of mesothesis; intermediate; serving to connect extremes or opposites. [Rare.]

> An honest development of the true idea of Protestantism, which is paving the way to the *mesothetic* art of the future. *Kingsley*, Yeast, xv. *N. E. D.*

mesothorium (mes-ọ-thō'ri-um), *n.* [Gr. *μέσος*, middle, + NL. *thorium.*] A disintegration-product of thorium, intermediate between thorium and radiothorium.

> These preparations must contain the intermediate product between thorium and radiothorium. He [Dr. Otto Hahn] therefore reaches the conclusion that it is this intermediate product, for which he suggests the name "*mesothorium*," and not the radiothorium, which is separated from the thorium in the technical process of preparing pure thorium nitrate. *B. B. Boltwood*, in Amer. Jour. Sci., Aug., 1907, p. 96.

mesotonic (mes-ọ-ton'ik), *a.* [Gr. *μέσος*, middle, + E. *tonic.* See *tone*^{1}.] Of the nature of or characterized by middle or mean tones. See *mean* ★*tone* and *temperament*, 5.

> This is known as the System of Mean Tones, or the *Mesotonic* System, as it will be here termed. It was the earliest system of temperament, and is claimed by Zarlino and Salinas. *A. J. Ellis*, in Proc. Roy. Soc. (London), XIII. 408.

mesotriæne (mes-ọ-trī'ēn), *n.* [Gr. *μέσος*, middle, + *τρίαινα*, trident.] In the nomenclature of the spicular elements of sponges, a triæne in which the rhabdome is produced, leaving the three cladisks near the middle of the shaft. See *triæne.*

mesotroch (mes'ọ-trok), *n.* [Gr. *μέσος*, equal, + *τροχός*, a wheel.] A band of cells bearing cilia and encircling the middle of the body in the larvæ of certain marine worms (annelids). Compare ★*prototroch*, ★*paratroch*, etc.

mesotropic (mes-ọ-trop'ik), *a.* [Gr. *μέσος*, middle, + *-τροπος*, < *τρέπειν*, turn, + *-ic.*] In *phytogeog.*, controlled by conditions changing from wet or dry to medium: said of a succession of vegetations. *F. E. Clements.*

mesotropy (me-sot'rọ-pi), *n.* [*mesotrop*(*ic*) + *-y*^{3}.] The character or condition of being mesotropic.

mesoturbinal (mes-ọ-tėr'bi-nạl), *n.* [Gr. *μέσος*, middle, + E. *turbinal.*] The middle turbinate bone.

meso-uterine (mes-ọ-ū'tẹ-rin), *a.* [Gr. *μέσος*, middle, + E. *uterine.*] Pertaining to the middle of the uterus: applied to the fold of peritoneum which supports the uterus.

mesoxalyl (mes-ok'sạ-lil), *n.* [*mesoxal*(*ic*) + *-yl.*] In *organic chem.*, the bivalent radical $-COCO.CO-$ or its hydrated form $-COC(OH)_2\text{-}CO-$. It is the radical of mesoxalic acid.

mesquite^{2}, *n.*—**Bristly mesquite,** one of the black gramas, *Bouteloua hirsuta*, ranging from Illinois and Wisconsin to the Rocky Mountains. It is a tufted perennial, from 6 to 16 inches high, named from its hairy spikes. It is valuable chiefly because it will produce feed on very poor soils.—**Curly** or **creeping mesquite,** *Hilaria cenchroides*, a delicate perennial grass with slender, creeping stems and upright shoots a few inches to nearly a foot high. It is one of the most valuable grasses for grazing on the dry plains and mesas in the southwestern United States. It forms a close mat in summer, cures on the roots, and when not rotted by late rains affords excellent pasture in the fall and winter. During severe drought it appears dead, but quickly revives throughout upon the advent of warm rains.—**Early mesquite,** the true buffalo-grass, *Bulbilis dactyloides.*—**Grape-vine mesquite.** Same as *vine-*★*mesquite.*—**Hairy mesquite.** Same as ★*side-oats.*—**Running mesquite.** Same as *curly* ★*mesquite.*—**Seed-mesquite,** *Bouteloua Texana*, a small, densely tufted grass found in Texas, Oklahoma, and Arkansas. It is an important grass in stock-ranges, chiefly along the Rio Grande. Also called *Texas grama.*—**Velvet-mesquite.** Same as *velvet-grass.* See *Holcus.*—**Vine-mesquite,** *Panicum obtusum*, a stoloniferous panic-grass with upright stems 1–2 feet high and runners often 8 or 10 feet long. It ranges from Colorado and Texas into Mexico, being found chiefly on irrigated ground or on damp soil, most often in shade. Its character indicates agricultural value. Sometimes called *grape-vine mesquite* or *grass*, and in New Mexico *wire-grass.*

mess^{1}, *n.*—**Chief Master-at-arms' mess,** the chief petty officers' mess, presided over by the master-at-arms, the highest chief petty officer of a naval vessel.—**Orderly sergeants' mess,** the marines' mess for the sergeants and other non-commissioned officers of the marine guard.—**Steerage mess,** the midshipmen's mess.—**Ward-room mess,** the commissioned officers' mess: generally for those above the rank of ensign.—**Warrant-officers' mess,** the mess of the boatswain, gunner, carpenter, sail-maker, and warrant machinists.

message-hook (mes'ạ̄j-hůk), *n.* A wire hook upon which are filed the sheets of paper on which telegraphic messages have been written.

message-rate (mes'ạ̄j-rāt), *n.* A fixed rate of payment per message sent by telephone, as distinguished from a subscription entitling to unlimited service. *N. E. D.*

message-stick (mes'ạ̄j-stik), *n.* A stick bearing carved marks, carried by a messenger. The marks serve as reminders and are a device for securing the accurate delivery of the message. Message-sticks are used particularly in Australia.

message-string (mes'ạ̄j-string), *n.* A knotted string to which a number of symbolic objects are attached: used to convey messages from one person or tribe to another, and found, for instance, among the Jebu tribe in Africa. See also ★*knot-writing. Ratzel* (trans.), Hist. of Mankind, II. 406.

mess-beef (mes'bēf), *n.* Beef packed in barrels for use on board ship.

mess-boy (mes'boi), *n.* *Naut.*, the one who waits on the officers' table on a merchant steamer.

messel^{3} (mes'el), *n.* In *Arabic music*, a method or system of fixing and measuring intervals which involves their description in terms derived by dividing the vibration-number of the lower tone by that of the higher: thus, the *messel* of an octave was 2, of a fifth 1½, etc. It is supposed that the messel theorists, by at least the fourteenth century, had established the modern thirds and sixths as distinguished from those of the Pythagorean system.

messenger, *n.*—**To fleet the messenger.** See ★*fleet*^{1}.

messenger-rope (mes'en-jėr-rōp), *n.* 1. In power-transmission, a rope-drive for operating a drum or machine.—2. A rope used to support guide-sheaves.

messenger-strand (mes'en-jėr-strand), *n.* A strand in a messenger-wire or a single wire used to support a cable.

messenger-wire (mes'en-jėr-wīr), *n.* A wire or wire rope used to support an aërial cable. The cable is attached to the messenger-wire at frequent intervals by cable-clips.

Messianism (me-sī'ạn-izm), *n.* [*Messian*(*ic*) + *-ism.*] Belief in a Messiah.

messieurs. Plural of *monsieur.*

Messinese (mes-i-nēs'), *a.* and *n.* [*Messina*, a city in Italy, + *-ese.*] I. *a.* Of or pertaining to Messina.

II. *n.* An inhabitant of Messina.

Messinian (me-sin'i-ạn), *a.* and *n.* [*Messina*, a city in Italy, + *-ian.*] I. *a.* Of or pertaining to Messina; in *geol.*, noting a division of the Tertiary in Italy commonly regarded as appertaining to the base of the Pliocene, though by some authors considered as the top of the Miocene. It is constituted of deposits indicating alternations of marine and brackish-water conditions.

II. *n.* 1. An inhabitant of Messina.—2. In *geol.*, the Messinian formation.

messire (me-sēr'), *n.* [F., < L. *meus senior.* See *monsieur.*] Sir: a French title of honor prefixed originally to the names of persons of high rank, but later used more loosely as a form of address.

mess-kid (mes'kid), *n.* Same as *kid*^{3}, 1.

mess-man (mes'mạn), *n.* Same as ★*mess-boy.*

Messrs. An abbreviation of the French *Messieurs.*

mess-whistle (mes'hwis″l), *n.* *Naut.*, the pipe to meals; the winding of the boatswain's call as a summons to meals.

mestiza (mes-tē'zạ̈), *n.* Feminine of *mestizo.*

Mestizo wool. See ★*wool.*

mesto (mā̤s'tọ̄), *a.* [It., < L. *mæstus*, sad, < *mærere*, be sad.] In *music*, sad, gloomy.

mesuranema (mes-ụ̄-ran'ẹ̄-mạ̈), *n.* [NL., also *mesouranema*, < Gr. *μέσος*, middle, + *οὐρανός*, heaven.] In *astrol.*, mid-heaven; the tenth house of the heavens, being the maternal house, or house of dignities.

mesuranic (mes-ụ̄-ran'ik), *a.* [Gr. *μέσος*, middle, + *οὐρανός*, palate, + *-ic.*] In *craniom.*, having a palatomaxillary index between 110 and 115. *Turner.*

met. An abbreviation (*a*) of *metaphor*, *metaphorical*, *metaphorically*; (*b*) of *metaphysical*, *metaphysically*, *metaphysics*; (*c*) of *metropolitan*.

met-. A combining form sometimes used in organic chemistry in place of *meta-*.

meta-. (*d*) In *inorganic chem.*, among the different types of periodic, phosphoric, arsenious, arsenic, boracic, and silicic acids, a prefix used in the name of that which contains the least proportion of hydrogen. (*e*) As a prefix to the names of benzene derivations, it signifies that atoms or radicals substituting two, three, or four of the hydrogen atoms of benzene have the positions (if all six hydrogen atoms of the original benzene be numbered consecutively from 1 to 6) 1 and 3, 1, 2, and 4, or 1, 2, 3, and 5, respectively. This arrangement is spoken of as *asymmetric*. In *geol.*, it is used to denote change, transformation, or metamorphism, but differently in different instances. In one case the rock-name to which it is prefixed accords with the present character of the rock, and the prefix *meta-* indicates that it has been developed by processes of metamorphism: as, *meta-diorite*, a diorite which has resulted from metamorphism, possibly of a gabbro. In another case the rock name describes the rock as it was before metamorphism: as, *meta-diabase*, for an altered diabase.

meta-andesite (met-ạ-an'dẹ̄-zīt), *n.* An altered or partly metamorphosed andesite.

> Much of the lava contains porphyritic quartz, and in general may be designated metarhyolite, but a large part, being without free quartz and less siliceous, has the appearance of *metaandesite*. A peculiarity of many of these rocks is that they are rich in soda.
> *Contrib. to Econ. Geol.*, U. S. Geol. Surv., 1902, p. 124.

meta-arthritic (met''ạ-är-thrit'ik), *a.* [Gr. *μετά*, after, + E. *arthritic*.] Consequent upon arthritis as an effect.

metabasalt (met'ạ-bạ-sâlt'), *n.* An altered or partly metamorphosed basalt. *Amer. Jour. Sci.*, Feb., 1904, p. 145.

metabelian (met-ạ-bē'li-ạn), *a.* [Gr. *μετά*, with, + E. *Abelian*^{2}.] In *math.*, noting a group whose cogredient group of isomorphisms is Abelian.

metabiosis (met''ạ-bī-ō'sis), *n.* [NL., < Gr. *μετά*, with, + *βίωσις*, a way of life.] The dependence of an organism upon another which furnishes something that is necessary for its existence.

metabiotic (met''ạ-bī-ot'ik), *a.* [*metabiosis* (*-ot-*) + *-ic.*] In *biol.*, dependent upon another for some condition of existence. See ★*metabiosis*.

metabole (me-tab'ō-lē), *n.* [Gr. *μεταβολή*, changing, change, < *μεταβάλλειν*, turn about, change.] Development with metamorphosis, such as characterizes many insects: contrasted with ★*ametabole*, or development without metamorphosis.

metabolin (me-tab'ọ-lin), *n.* [*metabol(ic)* + *-in*^{2}.] Same as *metabolite*.

metabolizable (me-tab'ọ-lī-zạ-bl), *a.* [*metabolize* + *-able*.] Capable of metabolic transformation: said of foods received into the animal system. See *metabolism*.

metabolon (me-tab'ọ-lon), *n.*; pl. *metabola* (-lạ̈). [Gr. *μεταβόλον*, neut. of *μεταβόλος*, changeable, < *μεταβάλλειν*, turn about, change.] A temporary and transitional form of matter produced by the disintegration of radioactive substances such as thorium or radium. The metabolon differs from a chemical element in having only a temporary existence.

> The various *metabolons* from the radio-elements are distinguished from ordinary matter by their great instability and consequent rapid rate of change.
> *E. Rutherford*, Radio-activity, p. 324.

metacanthid (met-ạ-kan'thid), *n.* and *a.* **I.** *n.* A member of the heteropterous family *Metacanthidæ*.

II. *a.* Having the characters of, or belonging to, the family *Metacanthidæ*.

metacarpal. **I.** *a.*—**Metacarpal ligament, phalanx.** See ★*ligament*, ★*phalanx*.

II. *n.* **2.** One of the six primary feathers of a bird's wing which are attached to the metacarpal bones.

metacarpodigital (met-ạ-kär-pọ-dij'i-tạl), *n.* One of the primaries of a bird's wing: the term was devised by Wray, who divided the primaries into digitals, those attached directly to the digits, and metacarpals, those joined to the metacarpus.

metacarpophalanx (met-ạ-kär-pọ-fā'langks), *n.*; pl. *metacarpophalanges* (-fạ-lan'jēz). [NL., < *metacarpus*, 2, + *phalanx*.] A pectoral ray; one of the rays of the pectoral fin in fishes. *Starks*, Synonymy of the Fish Skeleton, p. 523.

metacarpus, *n.* **2.** Same as *actinost*. *Starks*, Synonymy of the Fish Skeleton, p. 523.

metacasein (met-ạ-kā'sẹ̄-in), *n.* [*meta-* + *casein*.] A certain phase in the rennin reaction (coagulation of milk), during which the paracasein is precipitated only by higher temperatures.

metacenter, *n.* **2.** In *biol.*, an organism or an organ which, while one of the descendants from an archetype, itself becomes a new archetype around which new divergent or apocentric modifications are produced.

> With reference to any particular group of forms such a new centre of modification may be termed a *metacentre*.
> *Encyc. Brit.*, XXVIII. 343.

Curve of metacenters or **transverse metacenters.** See ★*curves of ship calculations*.

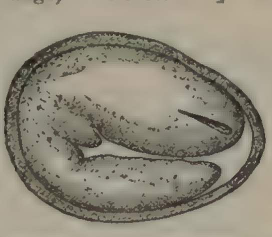
metacentral (met-ạ-sen'trạl), *a.* Same as *metacentric*. *Trans. Linnean Soc. London*, Zool., Oct., 1901, p. 229.

metacentric, *a.* **2.** In *biol.*, pertaining to a new center around which new diverging modifications are produced. *P. C. Mitchell.*—**Metacentric diagram,** in *naval arch.*, a diagram showing the curves of metacenters and of centers of buoyancy in a conventional method. See cut and description under ★*curves of ship calculations*.—**Metacentric height.** See ★*height*.

metacentricity (met''ạ-sen-tris'ị-ti), *n.* [*metacentric* + *-ity*.] The property of being metacentric, in either sense of that word.

metacerium (met-ạ-sē'ri-um), *n.* [NL., < Gr. *μετά*, with, + NL. *cerium*.] A supposed new chemical element announced by Brauner as probably present as an oxid mixed with oxid of cerium. No confirmation of its existence has been had.

metacestode (met-ạ-ses'tōd), *n.* [Gr. *μετά*, after, implying change, + E. *cestode*.] A sexless, encysted stage of certain tapeworms, as *Bothriocephalus*. If imperfectly cooked fish infested with the parasite in this stage is eaten by man, the metacestode develops into the mature tapeworm. Also called *plerocestode*.



Metacestode of *Bothriocephalus* encysted in the smelt (after Leuckart). (From Lankester's "Zoology.")

metachemic (met-ạ-kem'ik), *a.* [Gr. *μετά*, beyond, + E. *chemic*.] **1.** Of or pertaining to metachemistry; metachemical.—**2.** In *petrog.*, noting changes in the chemical constitution of rocks; metasomatic. *Dana*, 1886.

> In none of the specimens studied was there any schistosity, so that the alteration has been *metachemic*.
> *22d An. Rep. U. S. Geol. Surv.*, ii. 793.

metachemical (met-ạ-kem'i-kạl), *a.* [Gr. *μετά*, after, + E. *chemical*.] Transcending chemistry; standing beyond the bounds of true chemistry: metachemic.

> What Mendeléef denominates the *metachemical* and vague ('verschwommene') theory of electrons.
> *Science*, March 4, 1904, p. 395.

Metachlamydeæ (met''ạ-kla-mid'ē-ē), *n. pl.* [NL. (Engler, 1898), < Gr. *μετά*, after, + *χλαμύς* (*χλαμυδ-*), cloak, envelop, + *-eæ*.] A series of dicotyledonous plants, embracing all those having a double floral envelop (calyx and corolla), with the parts of the inner envelop (corolla) coherent. Although coextensive with the ★*Sympetalæ* (which see), it is not to be confounded with that (which is a division) and is coördinate with the series ★*Archichlamydeæ* (which see). The plants of this series appeared later in the geological history of plants and possess a higher organization than those of the *Archichlamydeæ*.

metachlamydeous (met''ạ-kla-mid'ẹ̄-us), *a.* [*Metachlamydeæ* + *-ous*.] Belonging to the plant series *Metachlamydeæ*; having the divisions of the corolla coherent.

metachlorite (met-ạ-klō'rīt), *n.* [*meta-* + *chlorite*.] A dull leek-green chloritic mineral, related to daphnite.

metachromasy (met-ạ-krō'mạ-si), *n.* [Gr. *μετά*, with, after, + *χρῶμα*, color.] An anomalous manner of staining, whereby a single stain will color different tissue elements in different tints or in altogether different colors: a term introduced by Ehrlich. Not all dyes have metachromatic properties. The most notable ones are methyl-violet, thionin, methylene-azure, cresyl violet RR, and toluidin blue.

> The cells which contain granules contain also a store of ferment (zymogen), whilst the cells that are destitute of granules exhibit the reaction of mucin (*metachromasy*).
> *Lancet*, July 18, 1903, p. 177.

metachromatic (met''ạ-krọ-mat'ik), *a.* [Gr. *μετά*, beyond, + *χρῶμα* (*χρωματ-*), color, + *-ic*.] **1.** Pertaining to or characterized by metachromatism or color-change.—**2.** Pertaining to or exhibiting metachromasy; metachromic.—**Metachromatic bodies,** granules in the interior of certain bacteria which take on a different stain from the rest of the cell; metachromic granules.

metachromatism (met-ạ-krō'mạ-tizm), *n.* [Gr. *μετά*, after, + *χρῶμα(τ-)*, color, + *-ism*.] Change of color; specifically, variation of color due to changes in the temperature of a body; change of color by change of physical conditions, as in the case of a double salt consisting of silver chlorid and mercuric iodide, which changes from yellow to red on being heated and returns to yellow after cooling.

metachromatosis (met-ạ-krō-mạ-tō'sis), *n.* [Gr. *μετά*, after, + *χρῶμα(τ-)*, color, + *-osis*.] An alteration in color.

metachrome (met'ạ-krōm), *n.* [See ★*metachromatic*.] A body or substance that changes color.

metachromic (met-ạ-krō'mik), *a.* [Gr. *μετά*, after, + *χρῶμα*, color, + *-ic*.] **1.** Staining in a color different from that of the dye used—for example, red with a blue or violet dye; metachromatic.—**2.** Differentiated by means of special stains: applied to granules and other contents of the cell.—**Metachromic granules,** in *bacteriol.*, minute bodies within the protoplasm of bacteria which are brought out by special staining methods; metachromatic bodies.

metachromism (met-ạ-krō'mizm), *n.* **1.** Same as ★*metachromatism*.—**2.** Same as ★*metachromasy*.

Metacineta (met''ạ-si-nē'tạ̈), *n.* [NL., < Gr. *μετά*, after, + *κινητός*, < *κινεῖν*, move.] The typical and only genus of the family *Metacinetidæ*. *Bütschli*, 1888.

Metacinetidæ (met''ạ-si-net'i-dē), *n. pl.* [*Metacineta* + *-idæ*.] A family of *Suctoria*, consisting of thecate forms having the base of the cup drawn out into a long stalk and the walls perforated for the exit of the tentacles. It contains the single genus *Metacineta*.

metacinnamene (met-ạ-sin'ạ-mēn), *n.* [*meta-* + *cinnamene*.] Same as ★*metastyrolene*.

metacneme (met'ak-nēm), *n.* [Gr. *μετά*, after, + *κνήμη*, tibia.] In anthozoans, one of the later mesenteries which appear after the twelve primary mesenteries. Compare ★*protocneme*.

metacnemic (met-ak-nē'mik), *a.* [*metacneme* + *-ic*.] Resembling, or pertaining to, a metacneme. *Annals and Mag. Nat. Hist.*, May, 1902, p. 397.

metacœle, *n.* **2.** The trunk-cavity formed as a pair of entodermal outgrowths in the *Hemichorda*.

> And a *metacœle* (trunk cavity), formed as a pair of endodermal outgrowths, which may possibly have been originally archenteric diverticula.
> *Encyc. Brit.*, XXIX. 249.

metacœloma (met-ạ-sẹ̄-lō'mạ̈), *n.*; pl. *metacœlomata* (-mạ-tạ̈). [NL., < Gr. *μετά*, after, + *κοίλωμα*, a hollow.] In *embryol.*, that portion of the true body-cavity, or cœloma, which becomes the pleuroperitoneal cavity of the adult.

metaconal (met-ạ-kō'nạl), *a.* [*metacone* + *-al*^{1}.] Of or pertaining to the metacone. *Proc. Zool. Soc. London*, 1896, p. 570.

metacone (met'ạ-kōn), *n.* [Gr. *μετά*, after, + *κῶνος*, cone.] The outer, hindmost cusp on the upper molar of such a tooth as that of a horse or horse-like mammal. See cut under ★*tooth*, 1. *Parker and Haswell*, Zoology, II. 529.

metaconid (met-ạ-kon'id), *n.* [*metacone* + *-id*.] The anterior or intermediate cusp on the inner side of a lower molar of a mammal: typically present in the teeth of the extinct *Hyracotherium* and in existing monkeys.

> Treating them for the present as subspecies, the animal I should call H. a. leucurus has the tooth small and narrow . . ., low . . ., and simple, the antero-internal cusp not or scarcely divided into its constituent paraconid and *metaconid*, . . . and with but one low cusp on the centre of the talon.
> *Annals and Mag. Nat. Hist.*, June, 1904, p. 409.

metaconule (met-a̤-kon′ụl), *n.* [Gr. *μετά*, with, + E. *conule.*] The posterior smaller or intermediate cusp on the upper molar tooth of a mammal. See cut under ★*tooth*, 1. *Amer. Geol.*, April, 1905, p. 244.

metacopaivic (met-a̤-kọ-pā′vik), *a.* [Gr. *μετά*, with, + E. *copaiva* + *-ic.*] Noting a crystalline acid, $C_{22}H_{34}O_4$, contained in Maracaibo copaiva balsam. It is possibly identical with gurjunic acid.

metacoracoid (met-a̤-kor′a-koid), *n.* [Gr. *μετά*, with, + E. *coracoid.*] The coracoid proper, as distinguished from the epicoracoid.

> Similarly the doubly ossified condition of the coracoid may now be held diagnostic, for it is known that the epicoracoidal element, originally thought to characterize the monotremes alone, is always present, and that reduction to a varying degree characterizes the *metacoracoid*, which retires, as in man, as the so-called coracoid epiphysis.
> *Smithsonian Rep.*, 1902, p. 588.

metacrasis (met-a̤-krā′sis), *n.* [Gr. *μετά*, after, + *κρᾶσις*, mingling.] **1.** Kinetic metabolism; transmutation of energy. *Jackson*, Gloss. Bot. Terms.—**2.** In *geol.*, that variety of metamorphism which involves the recrystallization of old materials into new compounds without the necessary addition of new matter: thus, shales may be changed to mica schists. *Geikie*, Text-book of Geol., p. 765.

metacresol-anytol (met-a̤-krē′sol-an″i-tol), *n.* A 40-per-cent. solution of metacresol in anytol: used in erisypelas.

metacribrum (met-a̤-krib′rum), *n.* [Gr. *μετά*, with, + L. *cribrum*, a sieve.] The outermost of the three main side sacs arising from the embryonic cribrum. See ★*mesocribrum. Jour. Roy. Micros. Soc.*, Feb., 1905, p. 42.

metacrisis (me-tak′ri-sis), *n.* [Gr. *μετά*, after, + *κρίσις*, a separating.] In *petrog.*, a term introduced by Bonney (1886) to signify recombination or a change, such as the conversion of a mud into a mass of quartz with mica and other silicates.

metacrolein (met-a-krō′lẹ-in), *n.* [*meta-* + *acrolein.*] A colorless crystalline compound, $(C_3H_4O)_3$, prepared by the action of sodium hydroxid on β-chlorpropionic aldehyde. It has a highly offensive odor and melts at 50° C.

metacrystal (met-a-kris′tal), *n.* [Gr. *μετά*, after, + E. *crystal.*] A relatively large crystal, simulating the phenocrysts of eruptive rocks, but formed in both sediments and eruptives during metamorphism. Examples are garnets and staurolite in schists; andalusite in contact-zones; etc. *A. C. Lane*, in Bulletin Geol. Soc. Amer., XIV. 388.

metacyclic, *a.* **2.** Solvable by radicals: as, a *metacyclic* equation. See ★*equation.*

metacyesis (met″a̤-sī-ē′sis), *n.* [Gr. *μετά*, after, + *κύησις*, gestation.] Ectopic gestation in which the embryo, at first in the uterus, is carried to some outside part where it undergoes further development.

metadesmine (met-a̤-des′min), *n.* [*meta-* + *desmine.*] A more or less completely dehydrated stilbite (desmine).

metadiabase (met-a̤-dī′a̤-bās), *n.* [*meta-* + *diabase.*] Same as *epidiorite.*

metadiazin (met″a̤-dī-az′in), *n.* [*meta-* + *diazin.*] Same as ★*pyrimidine.*

metadiorite (met-a̤-dī′ọ-rīt), *n.* [*meta-* + *diorite.*] In *petrog.*, a phaneric rock, having the composition of diorite, which has been produced by the alteration or metamorphism of another rock, most frequently by the alteration of pyroxene to hornblende. *Dana.*

metadiscoidal (met″a̤-dis-koi′da̤l), *a.* [Gr. *μετά*, after, + E. *discoid* + *-al*^{1}.] In *embryol.*, noting the placenta of certain mammals such as the primates (man and apes), in which the villi are restricted to a disk-shaped chorionic area on the ventral side of the embryo. *Parker and Haswell*, Zoology, II. 562.

meta-element (met′a̤-el″ẹ-ment), *n.* [Gr. *μετά*, after, + E. *element.*] In *chem.*, a term suggested by Sir William Crookes for the very similar but in some respects different components into which crude yttrium seems to split up on oft-repeated fractional crystallization of its salts. He connected these supposed analogues of closely related organic radicals with his ideas as to the genesis of the generally recognized elements of chemistry from a single primitive form of matter.

metafysics, *n.* An amended spelling of *metaphysics.*

metagabbro (met-a̤-gab′rō), *n.* [Gr. *μετά*, after, + E. *gabbro.*] An altered or partly metamorphosed gabbro. *Amer. Jour. Sci.*, Feb., 1904, p. 145.

metagadolinite (met-a̤-gad′ọ-lin-īt), *n.* [Gr. *μετά*, after, + E. *gadolinite.*] An uncertain alteration-product of gadolinite.

metagallic (met-a̤-gal′ik), *a.* [*meta-* + *gallic*^{2}.] Same as ★*melanogallic.*

Metagene (met′a̤-jēn), *a.* and *n.* [Gr. *μετά*, after, + *-γενης*, -producing.] In *geol.*, a term suggested by Heilprin (1887) as an equivalent of *Miocene.*

metageometer (met″a̤-jẹ-om′e-tėr), *n.* [*metageometry*, after *geometer.*] One who is skilled in metageometry.

metageometrical (met″a̤-jē-ọ-met′ri-ka̤l), *a.* [*metageometry* + *-ic-al.*] Of or pertaining to metageometry.

metageometrician (met″a̤-jẹ-om-e-trish′a̤n), *n.* [*metageometric* + *-ian.*] Same as ★*metageometer.*

> Our *metageometricians* tried to derive the basic geometrical principles from pure reason but failed.
> *Science*, Jan. 16, 1903, p. 106.

metageometry (met″a̤-gẹ-om′e-tri), *n.* [Gr. *μετά*, after, + E. *geometry.* Compare *metaphysics.*] A system of geometry which omits or reverses some one or more of the explicit or implicit postulates of ordinary geometry, such as that space has but three dimensions, that all points of space have like neighboring places, that every pair of unbounded straight lines which are in one plane and do not cut one another at a finite distance cut one another at infinity, etc. See ★*non-Euclidean.*

> The fifth book of *Metageometry.* . . . M. Barbarin calls fifth book of '*Metageometry*' that which corresponds to the fifth book of the 'Elements of Legendre' or to the eleventh of Euclid. *Science*, Sept. 16, 1904, p. 364.

metaglobulin (met-a̤-glob′ụ-lin), *n.* [*meta-* + *globulin.*] Same as *fibrinogen.*

Metagnatha (me-tag′na̤-thạ̈), *n. pl.* [NL., < Gr. *μετά*, after, + *γνάθος*, jaw.] In Brauer's classification of insects, a group of superordinal rank including those forms which take their food by means of jaws when young, but by suction when adult.

metagnathous, *a.* **2.** Of or pertaining to the *Metagnatha.*

metagram (met′a̤-gram), *n.* [Gr. *μετά*, over, + *γράμμα*, a letter.] A word altered by removing some of its letters and substituting others.

metagraph (met′a̤-gråf), *n.* [Gr. *μετά*, between, + *γράφειν*, write.] In *craniom.*, an instrument used for drawing diagrams of the inner form of the skull.

metagraphic (met-a̤-graf′ik), *a.* [*metagraph*(*y*) + *-ic.*] **1.** Of the nature of metagraphy; transliterative.—**2.** Pertaining to, or drawn by means of, the metagraph.

metagrobolism (met-a̤-grob′ọ-lizm), *n.* [*metagrobol*(*ize*) + *-ism*).] The act of puzzling; mystification. [Humorous.]

> By whose [the mendicant friars' and Jacobins'] gyronomomic circumbilivaginations, as by two celivagous filopendulums, all the autonomatic *metagrobolism* of the Romish church, when tottering and emblustricated with the gibble gabble gibberish of this odious error and heresy, is homocentrically poised.
> *Rabelais* (trans.), iii. 38.

metagrobolize (met-a̤-grob′ọ-līz), *v. t.*; pret. and pp. *metagrobolized*, ppr. *metagrobolizing.* [F. *metagraboulizer* (Rabelais), to puzzle (Cotgrave).] To puzzle; puzzle out. [Humorous.]

> Ha, ha, a pair of breeches is not so easily got; I have experience of it myself. Consider, Domine, I have been these eighteen days in *matagrabolising* this brave speech.
> *Rabelais* (trans.), i. 158.

> I find my brains altogether *metagrabolized* and confounded, and my spirits in a most dunsical puzzle.
> *Rabelais* (trans.), iii. 59.

> "You see," quoth Stalky, as they strolled up to prep. with the ignoble herd, "if you get the houses well mixed up an' scufflin', it 's even bettin' that some ass will start a real row. Hullo, Orrin, you look rather *metagrobolized.*"
> *R. Kipling*, Stalky & Co., p. 124.

metakinesis (met″a̤-ki-nē′sis), *n.* [NL., < Gr. *μετά*, after, + *κίνησις*, motion.] **1.** Same as *metaphase.*

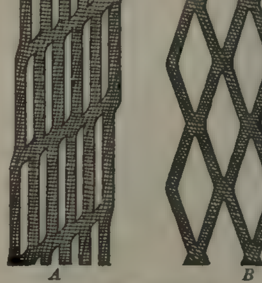
> Heuser ('84) seems to have been the first to call attention to the double character of the daughter chromosomes in the diaster stage of Tradescantia virginica, but he interpreted the separation of the daughter segments during *metakinesis* of the first mitosis as a transverse division.
> *Bot. Gazette*, April, 1903, p. 251.

2. Any mental process or manifestation of consciousness. See the extract.

> We call manifestations of energy 'kinetic' manifestations, and we use the term 'kinesis' for physical manifestations of this order. Similarly, we may call concomitant manifestations of the mental or conscious order 'metakinetic,' and may use the term '*metakinesis*' for all manifestations belonging to this phenomenal order. According to the monistic hypothesis, every mode of kinesis has its concomitant mode of *metakinesis*, and when the kinetic manifestations assume the form of the molecular processes in the human brain, the metakinetic manifestations assume the form of human consciousness.
> *C. L. Morgan*, Animal Life and Intelligence, p. 467.

metakinetic (met″a̤-ki-net′ik), *a.* [*metakinesis.*] Of or pertaining to metakinesis, in either sense of that word; specifically, pertaining to mind or consciousness or to a manifestation of mind or consciousness. See ★*metakinesis*, 2. *L. F. Ward*, Pure Sociol., p. 156.

metal, *n.* **11.** In *mining:* (*a*) Cast-iron. (*b*) Hard rock; whin or igneous rock. (*c*) *pl.* A general name for coal-bearing strata. *Barrowman*, Glossary.—**Albata metal,** an alloy composed of 40 parts of copper, 32 of zinc, and 8 of nickel.—**Alfenid metal,** an alloy composed of 60 parts of copper, 30 of zinc, and 10 of nickel, with traces of iron. It is a kind of German silver.—**Alger metal,** an alloy composed of 90 parts of tin and 10 of antimony. It is suitable as a protector from corrosion.—**Argusoid metal,** an alloy composed of 55.5 per cent. of copper, 23.2 of zinc, 13.4 of nickel, 3.5 of lead, and 4 of tin, with traces of iron.—**Ashberry metal,** an alloy somewhat resembling Britannia metal (which see, under *metal*). It is composed of 78–82 parts of tin, 14–20 of antimony, 2–8 of copper, 1–2 of zinc, 1–2 of nickel, and 1 part of aluminium. It is harder than Britannia metal and is used chiefly for the manufacturing of forks, spoons, coffee-pots, tea-pots, etc., for which Britannia metal is generally employed.—**Baudoin metal,** an alloy composed of 72 parts of copper, 16.6 of nickel, 1.8 of cobalt, 2.5 of tin, and 7.1 of zinc. About ½ per cent. of aluminium may also be added.—**Bobierre metal,** an alloy of 66 parts of copper and 34 of zinc. It is used for sheathing ships.—**Bourbon metal,** an alloy composed of equal parts of aluminium and tin. It solders readily.—**Coarse metal,** the impure metal obtained in one of the intermediary processes of extraction.—**Colloidal metals.** See ★*colloidal.*—**Delta metal,** an alloy consisting chiefly of brass or bronze with a small proportion of iron, and sometimes containing also manganese or lead. The iron is chemically dissolved in the brass or the bronze, and the alloy is characterized by great strength and toughness, durability, and resistance to corrosion. It is especially valuable for ship-building, massive engineering, sanitary work, etc.—**Direct metal,** molten cast-iron taken directly from the blast-furnace and used in the subsequent metallurgical processes before it has solidified.—**Dull metal,** molten metal which has stood in a ladle until it thickens, or into which pieces of solid metal have been thrown to cool it. Dull metal is preferable for heavy castings because it shrinks less, crystallizes more closely, and is less liable to blow-holes and spongy places than hot metal.—**Expanded metal,** sheet-metal lathing and lattice for use in making screens and lockers and for reinforcing concrete. It is made by cutting in sheet-metal a series of short slits arranged in parallel lines, one line breaking joint with the next, and then pulling the sheet out sidewise until the slits are drawn open and form a diamond-mesh net. It is extensively used in fireproof and steel-concrete construction. See *reinforced* ★*concrete.*—**Fine metal,** the regulus or matte, containing from 60 to 80 per cent. of copper, obtained in the fourth stage of the Welsh method of copper-smelting (which see, under ★*method*). The name serves to distinguish it from the regulus obtained in the second stage of the process, which is known as *coarse metal.* See *white metal*, under *metal.*—**French metal,** metallic antimony of a marketable degree of purity. Also called *star metal.*—**Hercules metal,** a trade-name of an alloy of copper and a little aluminium.—**Karmarsch metal,** an alloy composed of tin, copper, and antimony in varying proportions. It is used as a bearing-metal.—**Magnolia metal,** a trade-name of an anti-friction alloy, used for the bearings of machinery, etc., consisting of about 78 per cent. of lead, 18 of antimony, and 4 of tin.—**Perforated metal,** a trade-name of iron, brass, copper, or other sheet-metal perforated in a perforating-press, with square, round, or oblong holes arranged in various patterns: used for screens, riddles, sieves, lamp-fixtures, and other purposes. Compare *expanded* ★*metal.*—**Platinum metals,** a natural group of elements of metallic character, found associated in the mineral kingdom, and having close relations with one another as to chemical behavior. There are six in all, forming two subgroups of three each, platinum, iridium, and osmium in the one, palladium, rhodium, and ruthenium in the other.—**Rare-earth metals.** See ★*earth*^{1}.—**Ruoltz metal,** an alloy which contains from 20 to 30 per cent. of silver, 25 to 30 per cent. of nickel, and 35 to 50 per cent. of copper: used for manufacturing jewelry.—**Spence's metal,** a compound obtained by dissolving metallic sulphids (mostly those of iron, lead, and zinc in varying proportions) in melted sulphur. It melts at 160° C., takes perfect impressions, and is at-



Expanded Metal.
A, lathing; B, net.

tacked by few acids. It is used for soldering gas-pipes, and is especially valuable for making air-tight connections between glass tubes.—**Star metal**, a trade-name of refined metallic antimony showing on the surface the star-like crystalline markings which indicate a near approach to purity.—**White metal.** (*b*) A metallic alloy used for the bearings of machinery, usually consisting of tin and lead hardened by antimony, zinc, or copper, and distinguished by greater fusibility and the absence of yellow color from the bronzes used for the same purpose. (*c*) A metallic alloy used for the production, by casting in iron or brass molds, of cheap ornamental articles to be electroplated, usually consisting of lead and tin hardened by antimony, with occasional addition of other metals.

Metal-ammonia compounds. See ★*ammonia.*

Metal-ammonium compounds. See ★*ammonium.*

metalbumin (met-al-bū′min), *n.* [*meta-* + *albumin.*] Same as ★*pseudomucin* (which see).

metalepsis, *n.* 2. In *chem.*, same as *metalepsy.*

metalik (me-tal′ik), *n.* [Turk.] A Turkish coin worth ten paras or about one cent.

metaline, *n.* 3. A trade-name of a non-rusting antifriction alloy, intended to be used as a lubricant in bearing surfaces. It is inserted as plugs or short pencil-like rods radially in holes in the bearing.

metallaceous (met-a̤-lā′shius), *a.* [*metal* + *-aceous.*] Resembling or analogous in character to the metals.

metalleity (met-a̤-lē′i-ti), *n.* [F. *métalléité*, < L. *metalleus*, metallic.] The property of being metallic; metallic character. *Coleridge.*

Metallic acid, an acid of which the radical consists of a metal in combination with oxygen, as chromic acid (H_2CrO_4). The term is frequently but incorrectly applied to an acid oxid of a metal or a metallic anhydrid, as chromium trioxid (CrO_3). **Metallic return.** See ★*return*1.

metallician (met-a̤-lish′a̤n), *n.* [*metallic* + *-i-* + *-an.*] A racing book-maker: from the fact that book-makers used metallic books and pencils. *Hotten*, Slang Dict.

metallocyanide (met″a̤-lō̤-sī′a̤-nīd), *n.* [L. *metallum*, metal, + E. *cyanide.*] Any cyanide of a metal.

metallogenetic (met″a̤-lō̤-jē̤-net′ik), *a.* [Gr. *μέταλλον*, metal, + E. *genetic.*] Producing metals.—**Metallogenetic province**, a region of similar or related ore-deposits. *L. de Launay*, Compte rendu, 10th Int. Geol. Congr., 1906, I. 555.

metallogeny (met-a̤-loj′e-ni), *n.* [Gr. *μέταλλον*, metal, *-γενης*, -producing.] That special branch of geology which treats of the genesis of the metalliferous deposits.

> On the possible rôle of slipping in *metallogeny.*
> *Nature*, April 13, 1905, p. 576.

metallograph (me-tal′ō̤-gräf), *n.* [See *metallography.*] A print produced by metallography. See *metallography*, 3.

metallographer (met-a̤-log′ra̤-fėr), *n.* [*metallograph*(*y*) + *-er*2.] A metallographist; a metallurgist. *Athenæum*, April 1, 1905, p. 406.

Metallographic province, a mining region in which the ore-deposits possess a general similarity of type. Compare ★*metallogenetic*, which is to be preferred because not already established in a totally different sense. *J. E. Spurr*, in U. S. Geol. Surv., Prof. Paper 42, p. 276.

metallographical (met″a̤-lō̤-graf′i-ka̤l), *a.* [*metallograph*(*y*) + *-ical.*] Relating to or connected with metallography.

metalloptric (met-a̤-lop′trik), *a.* [Gr. *μέταλλον*, taken in sense of L. *metallum*, metal, + Gr. *-οπτρον*, < *ὀπ-*, see.] Relating to the minute structure of metals and their alloys as studied with the aid of the microscope.

> The report takes up the work done by the different departments, these covering heat and mechanics, optical research, electric thermometers, pressure indicators, photometry, saccharimetry, *metalloptric* researches and chemistry. *Elect. Rev.*, Sept. 10, 1904, p. 400.

metalloscope (me-tal′ō̤-skōp), *n.* [Gr. *μέταλλον*, taken in sense of L. *metallum*, metal, + Gr. *σκοπεῖν*, view.] An instrument for investigating microscopically the structure of metals. The metal under examination is polished and then etched, this process disclosing its crystalline structure. *Science*, Oct. 30, 1903, p. 575.

metallotechny (met′a̤-lō̤-tek-ni), *n.* [Gr. *μέταλλον*, metal, + *τέχνη*, art.] The art of working in metals. *N. E. D.*

metallurgy, *n.*—**Physical metallurgy**, the study of the physical properties of metals and alloys. This branch of metallurgy is occupying a large share of the attention of scientists at the present time. *Electrochem. and Metal. Industry*, July, 1905, p. 248.

metal-mark (met′a̤l-märk), *n.* Any butterfly of the family *Riodinidæ.*—**Large metal-mark**, an American riodinid butterfly, *Calephelis borealis.*—**Small metal-mark**, an American riodinid butterfly, *Calephelis cænius*, which occurs in the southern United States. Its early stages are unknown.

metalogisis (met-a̤-loj′i-sis), *n.* [Gr. *μετά*, after, + *λόγισις*, numeration, calculation.] A changing of numerical status or relations. [Rare.]

> At the upper surface the disintegrated rocks form an overplacement of soils which undergo such chemical reaction that the substances of vegetal life are produced. This material, exposed for longer or shorter periods, is transported by streams to lakes or to the sea and sinks to the bottom, where it is recombined into various substances, especially as carbonate of lime, chloride of sodium, other salts, clay, and coal. All of this transmutation is a numerical change in the relation of the atoms to the molecules of the substances developed. Let us call it *metalogisis.*
> *J. W. Powell*, Truth and Error, p. 55.

metaloph (met′a̤-lof), *n.* [Gr. *μετά*, after, + *λόφος*, crest.] A crest, or fold of enamel, developed on the postero-internal angle of such an upper molar as that of a horse. *Amer. Museum Jour. Sup.*, Jan., 1903, Guide Leaflet No. 9, p. 20.

metalorganic (met″a̤l-ôr-gan′ik), *a.* [Prop. *metallorganic*, < *metal* (L. *metallum*) + *organic.*] Pertaining to a compound consisting of a metal in combination with one or more organic radicals, such as zinc methyl, $Zn(CH_3)_2$, or magnesium ethyl iodide, $MgIC_2H_5$.

metal-spinning (met′a̤l-spin″ing), *n.* In *sheet-metal work*, the forming of brass, copper, and other vessels on a spinning-lathe. A flat disk is placed in the lathe and made to revolve at a high speed in a vertical plane. A suitable tool is then held in the hand, supported on the tool-rest, and pressed against the disk, causing it to bend into the desired form. Vases, bowls, plates, jars, pans, and other vessels are in this way pressed or spun directly from flat disks of sheet-metal. See ★*spinning-lathe.*

metamathematical (met-a̤-math-ē̤-mat′i-ka̤l), *a.* [*metamathematic*(*s*) + *-al*1.] Pertaining to or of the nature of metamathematics.

metamerical (met-a̤-mer′i-ka̤l), *a.* [*metamere* + *-ical.*] Of or pertaining to metameres, or segments of the body; metameric.

metameride (me-tam′e̤-rid), *n.* [*metamer* + *-ide.*] Same as *metamer.*

metamorfose, metamorfosis. Simplified spellings of *metamorphose, metamorphosis.*

metamorphic, *a.* 3. Noting races formed by intercrossing of archimorphic races in those parts of the world where distinct archimorphic races come into contact. Examples of metamorphic races are the Malay, Ethiopians, and Hottentots. *G. T. Fritsch.*

metamorphism, *n.*—**Contact metamorphism**, in *petrog.*, the metamorphism developed in rock in the immediate neighborhood of igneous rocks. See *metamorphism.*—**Macrostructural metamorphism**, metamorphism which produces changes of structure sufficiently coarse to be easily discernible with the unassisted eye. *Geikie*, Text-book of Geol. (4th ed.), p. 765.—**Microstructural metamorphism**, changes in the microscopic structure of rocks which may not be visible without magnification. *Geikie*, Text-book of Geol. (4th ed.), p. 765.

metamorphist (met-a̤-môr′fist), *n.* [*metamorph*(*ism*) + *-ist.*] In *geol.*, an advocate of the theory of metamorphism.

metamorphopsy (met″a̤-môr-fop′si), *n.* Same as *metamorphopsia.*

metamorphosis, *n.* 5. In *music*, either the same as *variation* (see *variation*, 9), or that extension or transformation of a theme or subject which often appears in modern music in the progress or development of an extended movement. From Beethoven onward the recognition of the essentially plastic nature of musical ideas (see *idea*, 9) has steadily advanced and constitutes one of the salient characteristics of recent composition.—**Stadia of metamorphosis**, instars. See ★*instar*2.

metamorphous (met-a̤-môr′fus), *a.* Same as *metamorphic.*

metamorphy, *n.* 2. In *biol.*, the abnormal replacement of a part of the body of an organism by another part, as in a flower in which the pistil is replaced by a leaf-shoot.

Metamynodon (met-a̤-min′ō̤-don), *n.* [NL., irreg. < Gr. *μετά*, after, + *ἀμύνειν*, ward off, defend, + *ὀδούς*, tooth.] A genus of aquatic, hornless rhinoceroses occurring in the White River Oligocene deposits of North America. It is characterized by formidable canine tusks, small but prominent eye-sockets, a broad, flat skull, and the presence of four completely functional digits in the manus. The latter character widely separates this animal from the true rhinoceroses.

Metanemertini (met″a̤-nē-mėr-tī′nī), *n. pl.* [NL., < Gr. *μετά*, after, + NL. *Nemertini.*] A group or order of nemerteans having the brain and lateral nerves lying within the dermal muscles of the body-parenchyma, the body-wall as in the *Mesonemertini*, the mouth in front of the brain, the proboscis usually with stylets, and a cæcum generally present. It includes several families, among which are the *Eunemertidæ, Amphiporidæ, Tetrastemmidæ*, and *Malacobdellidæ.*

metanephric (met-a̤-nef′rik), *a.* [*metanephr*(*on*) + *-ic.*] Of or pertaining to the *metanephron.*

> Another organ which, though not peculiar to the Mammalia, is yet a diagnostic feature of terrestrial vertebrates, is the *metanephric* kidney, and that there is possibly a relationship between terrestrial modes of locomotion and the evolution of this organ I will now endeavor to show. *Proc. Zool. Soc. London*, 1903, I. 338.

Metanephric duct, a duct that in higher vertebrates becomes the ureter. *Parker and Haswell*, Zoology, II. 110.

metanephros (met-a̤-nef′ros), *n.* Same as *metanephron.*

metanepionic (met-a̤-nep-i-on′ik), *a.* [Gr. *μετά*, between, + *νήπιος*, an infant.] In the nomenclature of the stages of growth and decline (auxology), noting a substage of the nepionic condition intermediate between the ananepionic and the paranepionic conditions. See ★*nepionic.*

> For about half a volution or less, the shell is smooth, although lines of growth become more pronounced. At more or less regular intervals stronger lines of growth appear (ananepionic). In the later portion of the nepionic stage (*metanepionic*) longitudinal wrinkles or ribs appear which characterize the ambital portion of the whorl, and may be traced upward to the suture between the two whorls. *Amer. Nat.*, Aug., 1903, p. 518.

metantimonate (met-an′ti-mō̤-nāt), *n.* [*meta-* + *antimonate.*] A salt of antimonic acid, as sodium antimonate, the production of which by precipitation, owing to its slight solubility, is sometimes used as a test for sodium in its compounds.

metantimonic (met-an-ti-mon′ik), *a.* [*meta-* + *antimonic.*] Noting an acid, $HSbO_3$, obtained by heating ortho-antimonic acid to 175° C. The metantimonic acid of Frémy ($H_4Sb_2O_7$) is now called *pyro-antimonic* acid, thus preserving analogy with the different phosphoric acids.

metanucleolus (met″a̤-nṳ̄-klē′ō̤-lus), *n.* [NL.] Same as ★*metanucleus.*

> After a time the chromatin emerges and is re-distributed in the nuclear framework, or it postpones its emergence until the formation of the directive spindle where it takes the form of chromosomes. In both cases there is a residue (Häcker's "*metanucleolus*"), which is either a product of metabolism or superfluous chromatin.
> *Jour. Roy. Micros. Soc.*, April, 1904, p. 187.

metanucleus (met-a-nū′klē̤-us), *n.* [NL., < Gr. *μετά*, after, + NL. *nucleus.*] The nucleolus of the ovum after its extrusion into the cytoplasm from the nucleus or germinal vesicle. *V. Haecker*, 1892.

meta-organism (met-a̤-ôr′ga̤n-izm), *n.* [Gr. *μετά*, after, + E. *organism.*] See the extract.

> That this body of ours . . . is interpenetrated with a '*meta-organism*' of identical shape and structure, and capable sometimes of detaching itself from the solid flesh. *Myers*, Phantasms of Living, II. 278. *N. E. D.*

metapectin (met-a̤-pek′tin), *n.* [*meta-* + *pectin.*] A colorless amorphous-acid compound, $C_{32}H_{48}O_{32}$(?), prepared by boiling parapectin with dilute acid.

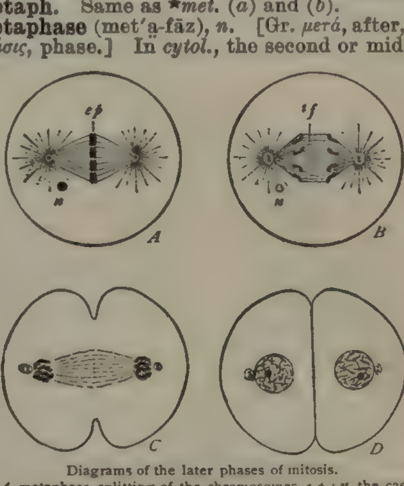
metapectus (met-a̤-pek′tus), *n.* [NL., < Gr. *μετά*, after, + L. *pectus*, breast.] Same as *metasternum*, 2.

> Meso- and *Metapectus* with a double row of dark green nodules placed on transverse spots of the same color; metapleura with a row of spines.
> *Annals and Mag. Nat. Hist.*, June, 1904, p. 440.

metapeptic (met-a̤-pep′tik), *a.* [*metapepsis.*] Pertaining to, or characterized by, metapepsis.

metaph. Same as ★*met.* (*a*) and (*b*).

metaphase (met′a̤-fāz), *n.* [Gr. *μετά*, after, + *φάσις*, phase.] In *cytol.*, the second or middle



Diagrams of the later phases of mitosis.

A, metaphase, splitting of the chromosomes, *e.p.*; *n*, the cast-off nucleolus; *B*, anaphase, the daughter-chromosomes diverging, between them the interzonal fibers, *i.f.*, or central spindle': centrosomes already doubled in anticipation of the ensuing division: *C*, late anaphase or telophase, showing division of the cell-body, midbody at the equator of the spindle and beginning reconstruction of the daughter-nuclei; *D*, division completed. (From Wilson's "The Cell.")

stage of karyokinetic cell-division, or mitosis, in which the chromosomes are collected to form the equatorial plate of the spindle and undergo longitudinal fission. Compare ★*anaphase* and ★*telophase*. *Strasburger*, 1884.

metaphasis (me-taf'ā̤-sis), *n.* [NL.] Same as ★*metaphase*.

metaphenylene (met-a̤-fē'nil-ēn), *n.* [*meta-* + *phenylene*.] The phenylene radical in which the two valence bonds extend from carbon atoms that are in the meta position. See ★*meta-* (*e*).—**Metaphenylene blue.** See ★*blue*.

metaphonical (met-a̤-fon'i-ka̤l), *a.* Pertaining to, or of the nature of, metaphony or umlaut.

metaphony (me-taf'ọ-ni), *n.* [F. *métaphonie*, < Gr. μετά, over, + φωνή, sound.] Umlaut. [Rare.]

> Since the usual term 'mutation' is altogether vague, designating any kind of vowel-shifting whatever, I have ventured to introduce into the English terminology the word '*metaphony*' for German 'Umlaut,' as al eady in my French edition.
> *V. Henry*, Comp. Grammar of Eng. and German, p. 43.

metaphragmal (met-a̤-frag'ma̤l), *a.* [*metaphragma* + *-al*1.] Of or pertaining to the metaphragm or metaphragma.

metaphysicize (met-a̤-fiz'i-sīz), *v. i.*; pret. and pp. *metaphysicized*, ppr. *metaphysicizing*. [*metaphysic* + *-ize*.] To engage in metaphysical reflection or argument; think metaphysically.

> He [Walking Stewart] had also this singularity about him—that he was everlastingly *metaphysicizing* against metaphysics.
> *De Quincey*, Note Book of an English Opium-eater, p. 243.

metaphysiologist (met-a̤-fiz-i-ol'ọ-jist), *n.* [*metaphysiolog*(*y*) + *-ist*.] A student of metaphysiology.

> Modern metaphysicians and *metaphysiologists* have been staggered by the impropriety of assigning Secretion, Digestion, &c., to the spiritual agent active in Thought and Will.
> *G. H. Lewes*, in Fortnightly Rev., April, 1876, p. 486.

metaphysiology (met-a̤-fiz-i-ol'ọ-ji), *n.* [Gr. μετά, after, + E. *physiology*.] A science or theory of life transcending physiology.

> There is still the radical separation between the conceptions of Creation and Evolution in the explanation of the Cosmos; and between the conceptions of *metaphysiology*, and physiology in the explanation of Life and Mind.
> *G. H. Lewes*, in Fortnightly Rev., April, 1876, p. 479.

Metaphyta (met-a-fī'tä̤), *n. pl.* [NL. (Haeckel, 1889), < Gr. μετά, beyond, + φυτόν, pl. φυτά, plant.] A great division of the vegetable kingdom including all multicellular plants, or plants possessing tissues, that is, all except the *Protophyta* (which see). It corresponds in plant life to the *Metazoa* in animal life.

metaphyte (met'a̤-fīt), *n.* [Gr. μετά, after, + φυτόν, plant.] In *bot.*, a multicellular plant: corresponding to *metazoön* in zoölogy. See ★*Metaphyta*.

metaphytic (met-a̤-fit'ik), *a.* [*metaphyt*(*e*) + *-ic*.] Pertaining to metaphytes, or of the nature of a metaphyte.

metaplasm2, *n.* **2.** In *cytol.*, a collective term applied to lifeless or non-living substances or inclusions such as yolk-bodies, starch, pigment, etc., in the cell-protoplasm, as distinguished from the living substances. *Hanstein*, 1868.

> These non-living substances altogether belong to the group known as *metaplasm* or paraplasm, in contradistinction to the substance which is the real living element of the cell—the protoplasm.
> *S. Watase*, Biol. Lectures, 1893, p. 85.

metaplasmic (met-a̤-plaz'mik), *a.* [*metaplasm* + *-ic*.] Consisting of, or pertaining to, metaplasm.

> After the formation of the daughter nuclei, they again begin to fill with the linin granules or reticulum (the so-called *metaplasmic* substance of Strasburger) until, at the time of maturity, they are so dense as to make any distinction between the granular material and chromatin reticulum very difficult. *Bot. Gazette*, July, 1903, p. 11.

metaplasmosism (met-a̤-plas'mọ-sizm), *n.* [NL., < Gr. μετά, after, implying change, + πλάσμα, anything formed, + *-os*(*is*) + *-ism*.] A pathological change in a cell or its constituents. *Haeckel*. [Rare.]

metaplax (met'a̤-plaks), *n.* [NL., < Gr. μετά, after, + πλάξ, a plate.] In the *Pholadidæ* (a family of teleodesmaceous *Pelecypoda*), one of the accessory shelly plates, thus termed when situated behind the beaks of the two valves. See also ★*prosoplax*, ★*mesoplax*, and ★*hypoplax*.

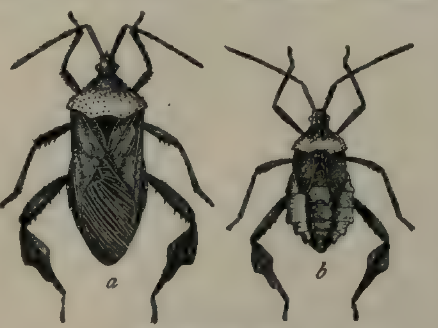
metaplexus (met-a̤-plek'sus), *n.* [NL., < Gr. μετά, after, + NL. *plexus*.] The choroid plexus in the fourth ventricle of the brain.

metapneumonic (met″a̤-nụ̄-mon'ik), *a.* [Gr. μετά, after, + NL. *pneumonia* + *-ic*.] Following upon pneumonia; occurring as a sequel of pneumonia.

metapod (met'a̤-pod), *n.* [Also *metapode*; < NL. *metapodium*.] Same as *metapodium*.

metapodion (met-a̤-pō'di-on), *n.*; pl. *metapodia* (-ä̤). [NL., < Gr. μετά, after, + πόδιον, dim. of πούς, foot.] In hymenopterous insects with a petiolated abdomen, the part of the abdomen situated behind the petiole.

metapodius (met-a-pō'di-us), *n.*; pl. *metapodii* (-ī). [NL., < Gr. μετά, after, + πούς (ποδ-), foot.] A large American coreid bug, *Metapodius femoratus*, the thick-thighed metapodius, occurring abundantly in the southern United States. It is both carnivorous and phytophagous, and is an important enemy of the cotton-caterpillar and army-worm.



Metapodius femoratus.
a, adult; *b*, nymph. Enlarged one fourth.

metapole (met'a̤-pōl), *n.* [Gr. μετά, after, + πόλος, pole.] If BCX, ACY, and ABZ are triangles constructed externally on the sides of ABC, and BCX′, ACY′, and ABZ′ triangles constructed internally, and all six are similar to Δ T, the straights AX, BY, and CZ cointersect in T_1, prime metapole of ABC and T; the straights AX′, BY′, and CZ′ in T_2, second metapole of ABC and T.

metapolitical (met″a-pọ-lit'i-ka̤l), *a.* [*metapolitic*(*s*) + *-al*1.] Of or pertaining to metapolitics.

> The metaphysical, or as I have proposed to call them, *metapolitical* reasonings hitherto discussed, belong to government in the abstract. But there is a second class of reasoners who argue for a change in our government from former usage. *Coleridge*, The Friend, II. iv.

metapolitician (met″a̤-pol-i-tish'a̤n), *n.* [*metapolitics*.] One who indulges in metapolitics or abstract political theorizing.

> The *metapoliticians*, as they have aptly been called, who bewilder themselves with abstractions.
> *Southey*, Ess., I. 390. *N. E. D.*

metaprotaspis (met″a-prọ-tas'pis), *n.* [NL., < Gr. μετά, after, + NL. *protaspis*.] A subdivision of the protaspis or larval stage in the trilobites intermediate between the anaprotaspis and paraprotaspis conditions. See ★*protaspis*.

metaprotein (met-a̤-prō'tẹ-in), *n.* [*meta-* + *protein*.] A protein derivative which results from the action of acids or alkalies upon albumins. The group includes the acid albumins and alkaline albuminates.

metapsychical (met-a-sī'ki-ka̤l), *a.* A term formed on the analogy of *metaphysical* to denote phenomena beyond the range of ordinary consciousness; occult or transcendental: applied to the phenomena of psychical research. *Athenæum*, April 22, 1905.

metapsychology (met-a̤-sī-kol'ọ-ji), *n.* A term formed on the analogy of *metaphysics* to denote philosophical speculation regarding the mind, its origin, functions, etc., which is beyond the reach of verification by mental experience; metempirical psychology.

metapterygoid, *n.* **2.** In *ichth.*, the posterior of the three pterygoid elements, the mesopterygoid and the pterygoid being anterior to it. It is articulated behind with the hyomandibular.

metapyric (met-a̤-pir'ik), *a.* [Gr. μετά, after (signifying change), + πῦρ, fire, + *-ic*.] In *petrog.*, noting a metamorphosed igneous rock: thus, a *metapyric* gneiss is one derived from a granite. *Gregory*, 1894.

metaquinite (met-a̤-kwin'īt), *n.* [Gr. μετά, after, + E. *quina* + *-ite*2.] Dihydroxyhexahydrodiphenyl, $C_6H_5C_6H_9(OH)_2$: made by reducing phenyldiketohexamethylene with sodium and alcohol. It melts at 157° C.

metarachidial (met″a̤-rā̤-kid'i-a̤l), *a.* [*metarachis* (assumed stem *-rachid-*) + *-ial*.] Of or pertaining to a metarachis: as, the *metarachidial* aspect of a sea-pen.

metarachis (me-tar'a-kis), *n.*; pl. *metaraches* (-kēz). [Gr. μετά, after, + ῥάχις, spine.] In *Pennatulacea*, that face of the rachis on which the zoöids are borne: opposed to ★*prorachis*.

metargon (met-är'gon), *n.* [Gr. μετά, beyond, + E. *argon*.] A supposed element found in atmospheric air: afterward found to be merely carbon monoxid.

metarhyolite (met-a-rī'ọ-līt), *n.* [Gr. μετά, after, + E. *rhyolite*.] An altered or partly metamorphosed rhyolite.

> Much of the lava contains porphyritic quartz, and in general may be designated *metarhyolite*, but a large part, being without free quartz and less siliceous, has the appearance of metaandesite. A peculiarity of many of these rocks is that they are rich in soda.
> *Contrib. to Econ. Geol.*, U. S. Geol. Surv., 1902, p. 124.

metaschematism (met-a-skē'ma̤-tizm), *n.* [NL. *metaschematismus*, < Gr. μετασχηματισμός, < μετασχηματίξειν, to transform.] A change in the form of a disease, as when hemoptysis follows suppression of the menses. *Syd. Soc. Lex.*

metascolecite (met-a̤-skol'ẹ-sīt), *n.* [*meta-* + *scolecite*.] A partly dehydrated scolecite, differing from the original mineral in physical characters.

metaseptum (met-a̤-sep'tum), *n.*; pl. *metasepta* (-tä̤). [NL., < Gr. μετά, after, + NL. *septum*, partition.] In corals. See the extract.

> In recent corals the septa beyond the primary septa—*metasepta*—are found to appear bilaterally, in a dorso-ventral sequence, within each of the six primary systems, the adult radial symmetry being secondary. In certain Palæozoic corals the *metasepta* arise in a regular dorso-ventral succession within only four of the six primary systems. *Science*, March 6, 1903, p. 388.

metasitism (met'a̤-sī-tizm), *n.* [Gr. μετά, after, implying change, + σῖτος, food (σιτεῖν, eat), + *-ism*.] **1.** Change from the method of nutrition which is characteristic of plants to that which is characteristic of animals. [Rare.]

> In the same way we can derive the phycomycetes by *metasitism* from the siphonea, the fungi from the algæ.
> *Haeckel* (trans.), Wonders of Life, p. 616.

2. Cannibalism, especially among protozoans. *Haeckel*.

metasocial (met-a̤-sō'sha̤l), *a.* [Gr. μετά, after, + E. *social*.] Pertaining to the stage of social evolution which begins with the conquest and subjugation of one group or race by another, and continues through fusion or amalgamation. *L. F. Ward*, Pure Sociol., p. 274.

metasomatic, *a.* **3.** Relating to the alternations of air and water within the earth, which are suggestive of breathing, and eventually produce important geological changes.

metasomatism, *n.* **2.** Chemical change occurring in a body of ore or in a rock-mass at a considerable depth in the earth's crust: distinguished from *weathering*, which occurs at or near the surface.

metasomatist (met-a-sō'ma̤-tist), *n.* [Gr. μετά, over, + σῶμα (σωματ-), body, + *-ist*.] One who believes in the lithological theory of metasomatosis.

metasomatome (met-a̤-sō'ma̤-tōm), *n.* [Gr. μετά, after, + σῶμα(τ-), body, + *-ome*.] One of the constrictions or spaces between successive mesoplastic somites, or protovertebræ, in vertebrate embryos.

metasome, *n.* **2.** In some crustaceans, as the amphipods, the first three segments of the pleon or abdomen. Compare ★*mesosome* and *urosome*.

metasperm (met'a̤-spėrm), *n.* [Gr. μετά, over, + σπέρμα, seed.] A member of the *Metaspermæ*; an angiosperm.

Metaspermæ (met-a̤-spėr'mē), *n. pl.* [NL. (Strasburger, 1872), < Gr. μετά, after, + σπέρμα, seed.] Same as *Angiospermæ* (which see) and ★*Archispermæ*. The term is designed to emphasize the fact that these plants appeared later in the geological series, none being certainly known earlier than the Lower Cretaceous. See ★*Metachlamydeæ*.

metaspermic (met-a̤-spėr′mik), *a.* [*Metasperm*(*æ*) + *-ic.*] Of, or consisting of, *Metaspermæ*.

metastability (met″a̤-stā̤-bil′i̤-ti), *n.* [*meta-* + *stability*.] The character of being metastable; specifically, in *thermodynam.*, equilibrium of the type, neither strictly stable nor unstable, possessed by a medium under certain conditions such as those which exist in the case of an under-cooled liquid.

metastable (met-a̤-stā′bl), *a.* [*meta-* + *stable*^{2}.] **1.** In *phys. chem.*, having a stability of such sort that a minute impressed change of conditions may produce a disturbance not proportional to the impressed change. Pure water in a smooth vessel may be cooled a few degrees below the freezing-point without the formation of ice. The water is then in a metastable condition. If a hundredth of a grain of ice at the temperature of the freezing-point be brought in contact with the water, a certain fraction of it becomes ice, while the temperature of the whole rises to the freezing-point; and if ten or a thousand grains of ice be used, the fraction frozen and the final temperature are precisely the same. A somewhat closely analogous condition in mechanics is called an unstable equilibrium; but the word equilibrium, in chemistry, has been applied to the permanence of a given relation between *two* or more substances and cannot consistently be applied to the stability of a single substance.

> Among supersaturated solutions there are some which under definite conditions can be kept indefinitely, if germs are excluded, without formation of the solid phase. Such solutions are called *Metastable*.
> *H. W. Morse and G. W. Pierce*, in Proc. Amer. Acad. of [Arts and Sciences, May, 1903.

2. In *thermodynam.*, in a state intermediate between stable equilibrium and unstable equilibrium, but approaching stability as nearly as the conditions will permit.

metastasis, *n.* **4.** In *petrog.*, a change within a rock or mineral in the nature of recrystallization or molecular rearrangement, without the addition or subtraction of material: as the crystallization of a limestone, or the devitrification of glass.

metastasize (me-tas′ta̤-sīz), *v. i.*; pret. and pp. *metastasized*, ppr. *metastasizing*. [*metastasis* + *-ize.*] In *pathol.*, to produce new foci of disease in more or less distant parts by means of metastasis: referring usually to malignant growths.

> As might be expected the tendency to *metastasize* is much greater in certain tumors than in others.
> *Jour. Med. Research*, Nov., 1907, p. 187.

metastatic, *a.* **2.** Relating to or characteristic of the *Metastatica* or *Holostomatidæ*; involving a change of host but no alternation of generations: as, the *metastatic* mode of development of certain trematodes.

Metastatica (met-a̤-stat′i-kā̤), *n. pl.* The *Holostomatidæ*. *Leuckart.*

Metastigmata (met-a̤-stig′ma̤-tā̤), *n. pl.* [NL., < Gr. μετά, after, + στίγμα, point, mark.] In Canestrini's classification of the *Acarina*, a group corresponding to the superfamily *Ixodoidea*, or ticks.

metastigmate (met-a̤-stig′māt), *a.* and *n.* **I.** *a.* Having the characters of or belonging to the *Metastigmata*.

II. *n.* A member of the *Metastigmata*.

metastome (met′a̤-stōm), *n.* Same as *metastoma*.

metastomial (met-a̤-stō′mi-a̤l), *a.* [*metastomium* + *-al*^{1}.] Of or pertaining to the metastomium.

metastomium (met-a̤-stō′mi-um), *n.* [NL., < Gr. μετά, behind, + στόμα, mouth.] The region of the body behind the mouth; the metastoma.

metastrophe (me-tas′trọ-fẹ), *n.* [Gr. μετά, after, + στροφή, a turning.] Change or interchange; specifically, in *crystallog.* See the extract.

> A solid figure is symmetrical to an axis when every radius vector moving in a plane perpendicular to the axis and meeting a point of the figure would also meet corresponding points at the same distances from the axis at each revolution through an arc-angle of $\frac{2\pi}{n}$.
>
> The aspect of such a solid figure will not therefore be changed by a revolution of the solid round this axis through the angle $\frac{2\pi}{n}$, and any portion of its surface so revolving will move into a position in which it will be congruent with another portion of the surface entirely corresponding to it.
>
> Def.—Congruence of this kind will be termed *metastrophe*, and such corresponding parts will be said to be metastrophic to each other.
> *N. Story-Maskelyne*, Crystallography, p. 99.

metastrophic (met-a̤-strof′ik), *a.* [Gr. μετά, after, + στροφή, a turning, + *-ic.*] Of, characterized by, or of the nature of, metastrophe; interchangeable: said specifically of the faces, edges, and solid angles of a crystal with reference to rotation about an axis of symmetry. See ★*symmetry*, 6.

metastyle (met′a̤-stīl), *n.* [Gr. μετά, after, + E. *style*^{2}.] 1. In *bot.*, an unusually long style: said chiefly of trimorphic plants. Compare ★*mesostyle* and ★*parastyle*.—2. The posterior enamel-covered ridge on the outer side of such a molar as that of a horse: correlative with ★*parastyle* and ★*mesostyle*.

> Rudimentary conules, and para-, meso-, and *metastyles*.
> *H. F. Osborn*, in Bulletin Amer. Mus. Nat. Hist., 1902, [p. 210.

metastyrene (met-a̤-stī′rēn), *n.* Same as ★*metastyrolene*.

metastyrol (met-a̤-stī′rol), *n.* [*meta-* + *styrol*.] See ★*metastyrolene*.

metastyrolene (met-a̤-stī′rọ-lēn), *n.* [*meta-* + *styrolene*.] A transparent, highly refractive, solid polymer of styrolene, $(C_8H_8)_n$, contained in liquid storax and formed spontaneously from styrolene, into which it is retransformed by distillation. Also called *metastyrene*, *metacinnamene*, and, incorrectly, *metastyrol*.

metasyncrisis (met-a̤-sin′kri-sis), *n.* [Gr. μετασύγκρισις, < μετασυγκρίνειν, use diaphoretics.] In *med.*, the elimination of morbid matter, particularly through the pores of the skin. *N. E. D.*

metasyphilis (met-a̤-sif′i-lis), *n.* [*meta-* + *syphilis*.] Hereditary syphilis.

metasyphilitic (met-a̤-sif-i-lit′ik), *a.* 1. Relating to or of the nature of hereditary syphilis.—2. Occurring as a sequel of syphilis.

metatactic (met-a̤-tak′tik), *a.* [*metataxis*.] Pertaining to, or of the nature of, metataxis.

Metatarsal artery, phalanx. See ★*artery*, ★*phalanx*.

metatarsale, *n.* **2.** *pl.* The bones of the metatarsus considered collectively.

metataxic (met-a̤-tak′sik), *a.* Same as ★*metatactic*.—**Metataxic change.** See ★*change*.

metataxis (met-a̤-tak′sis), *n.* [Gr. μετά, after (indicating change), + τάξις, arrangement.] In *petrog.*, mechanical modification such as transverse cleavage, produced in a rock by metamorphism. *Irving*, 1889.

metate (me-tä′te), *n.* [Mex. Sp. *metate*, < Nahuatl *metatl*, *metlatl*.] A primitive hand-mill of stone, usually on three, formerly also on four, legs of the same block. In ancient times the Mexican metate was often elaborately carved, whereas the Peruvian batan is a rude slab. The metate is in common use in the North American Southwest.

Metate from Pueblo Viejo.
(From 22nd An. Rep. Bureau Amer. Ethnol.)

> Thus it is found that the nether millstone, which may be either a ledge or other mass in place of a portable bowlder, is, in the early stage of use, a flat or slightly concave *metate*, which after more extended use becomes a deeply concave *metate*, still later a shallow mortar, and at length a deep mortar which may eventually be worn through, if the original mass is not more than 9 to 15 inches in thickness. *Smithsonian Rep.*, 1899, p. 37.

metathetical, *a.* **2.** In *chem.*, involving transposition of constituents between two compounds which interact chemically with each other.

> In order that water may act hydrolytically upon barium chloride, for example, with liberation of hydrogen chloride and substitution of oxygen for chlorine, the temperature of the system must approach low redness, while magnesium chloride is attacked at a much lower temperature, and aluminum chloride is extremely sensitive to the *metathetical* action of water.
> *Amer. Jour. Sci.*, May, 1904, p. 365.

metatitanic (met″a̤-tī-tan′ik), *a.* [*meta-* + *titanic*.] Noting an acid, a substance thrown down as a white precipitate on boiling a solution of orthotitanic acid in aqueous hydrochloric acid. Its formula is H_2TiO_3, analogous to that of metasilicic acid.

metatrophia (met-a̤-trō′fi-ä̤), *n.* [NL., < Gr. μετά, with, + ἀτροφία, atrophy.] The atrophy of malnutrition. Also *metatrophy*.

metatrophic (met-a̤-trof′ik), *a.* [Gr. μετά, after, + τροφή, nourishment, + *-ic.*] Dependent upon organic matter, both nitrogenous and carbonaceous: applied to bacteria which are thus dependent for their existence. They are the most numerous and widely distributed of the micro-organisms. See ★*prototrophic* and ★*paratrophic*.

metatropic (met-a̤-trop′ik), *a.* [*metatrop*(*y*) + *-ic.*] Pertaining to, or characterized by, metatropy.

metatropy (me-tat′rọ-pi), *n.* [Gr. μετά, after (indicating change), + τροπή, a turning.] In *petrog.*, metamorphic processes consisting in physical changes, into which chemical action does not enter or enters only to a slight extent. *Irving*, 1889.

metatungstate (met-a̤-tung′stāt), *n.* [*meta-* + *tungstate*.] A salt of metatungstic acid. The metatungstates are not precipitated by the addition of an acid unless the solution is boiled for some time, when ordinary tungstic acid is thrown down.

metatungstic (met-a̤-tung′stik), *a.* [*metatungst*(*ate*) + *-ic.*] Noting a metallic acid, forming small yellow crystals of the composition $H_2W_4O_{13}.7H_2O$, obtained by decomposing barium metatungstate by dilute sulphuric acid. It differs from ordinary or normal tungstic acid in being soluble in water.

metatype (met′a̤-tīp), *n.* [Gr. μετά, after, + τύπος, type.] 1. A tabulation of the normal or average individuals of a race, in respect to any characteristic, as a basis for statistical comparison with exceptional or aberrant individuals. See the extract under ★*metatypic*.

> It is these *metatypes* that we should compare anatomically with the criminals if we would make comparison between the anatomic characters of the two classes.
> *Smithsonian Rep.*, 1890, p. 630.

2. In the nomenclature of types in natural history, a topotype identified by the nomenclator himself.

metatypic (met-a̤-tip′ik), *a.* [*metatype* + *-ic.*] Pertaining to, or of the nature of, a metatype.

> In order to characterize criminals in general, it is necessary to obtain the averages, which can be compared with the averages of other individuals of the same race, the same sex, the same social class, etc. These latter individuals must themselves be the average of their respective race, sex, or class, and their averages thus taken should become the type or standard. Honest or virtuous men (a category not less vague than that of criminals) will then be without doubt the *metatypic*.
> *Smithsonian Rep.*, 1890, p. 631.

metavanadate (met-a̤-van′a̤-dāt), *n.* [*metavanad*(*ic*) + *-ate*^{1}.] A salt of metavanadic acid, as sodium metavanadate, $NaVO_3$, and ammonium metavanadate, NH_4VO_3. The latter of these gives a deep-black color with tincture of galls which has been proposed for use as writing-ink; it has also been used in the development of aniline black on cotton cloth.

metavanadic (met″a̤-vā̤-nad′ik), *a.* [*meta-* + *vanadic*.] Noting an acid, a substance obtained in brilliant scales of a golden color by prolonged boiling of cupric metavanadate with sulphurous acid. Its formula is HVO_3. It has been used as a golden bronzing-powder.

metavoltaite (met-a̤-vol′tä̤-īt), *n.* Same as ★*metavoltine*.

metavoltine (met-a̤-vol′tin), *n.* [Gr. μετά, after, + E. *voltine*.] A hydrous sulphate of potassium, sodium, and ferric iron which occurs in minute yellow hexagonal scales. It is related in composition to voltaite.

metazone (met′a̤-zōn), *n.* [Gr. μετά, behind, + E. *zone*.] The posterior of the three zones into which the pronotum of the *Acridiidæ*, *Locustidæ*, and *Gryllidæ* is divided.

> Melanoplus decoratus sp. nov. Related to decorus. Vertex rather strongly protuberant, especially in female. Pronotum with mid-carina strong on *metazone*, weak or indistinct on prozone. *Psyche* (Boston), XI. 12.

Met. E. An abbreviation of *Metallurgical Engineer*.

metel^2 (mē′tel), *n.* [Ar.] 1†. The thorn-apple, *Datura Stramonium*.—2. The specific name given by Linnæus to the hairy thorn-apple, *Datura Metel*.

metembryo, *n.* **2.** The gastrula stage of a polyzoan. *Cumings*, 1904.

metempsychosist (me-temp-si-kō′sist), *n.* [*metempsychos*(*is*) + *-ist.*] One who believes in metempsychosis. *N. E. D.*

Metencephalic fossa. See ★*fossa*^{1}.

metencephalospinal (met-en-sef″a̤-lọ-spī′na̤l), *a.* In *neurol.*, of or pertaining to both the metencephalon, or cerebellum, and the spinal cord.

metensarcosis (met″en-sär-kō′sis), *n.* [Gr.

μετά, over, + *ἐνσάρκωσις*, < *ἐν*, in, + *σάρξ*, flesh.] The transference of the flesh of one body to another. *N. E. D.* [Rare.]

> See especially the conclusion of the 'great scene (iii. 6) [of Congreve's "Mourning Bride"]; and Almeria's offer (iv. 7) to clothe the rotten bones of her (supposedly) dead lover with her own flesh – a species of *metensarcosis* altogether original. The bathos of the concluding lines equals that of the moral of Buckingham's Julius Caesar.
> *A. W. Ward*, A Hist. of English Dramatic Literature, [II. 589, note.

metenteron, *n.* 2. In sea-anemones and polyps, one of the radially arranged cavities given off from the stomach or mesenteron; an intermesenteric chamber.

meteorgraph (mē′tē̦-or-gråf), *n.* [*meteor* + Gr. *γράφειν*, write.] 1. A device for quickly recording the exact location of the path of a shooting star. Neumayer's arrangement consisted of a plate supported at any angle on the ordinary equatorial mounting of a telescope. The records were made by hand-drawn pencil lines on this plate.—2. A meteorograph.

Meteoric paper. See ★*paper*.

meteorics (mē-tē̦-or′iks), *n.* The study of the atmosphere; meteorology.

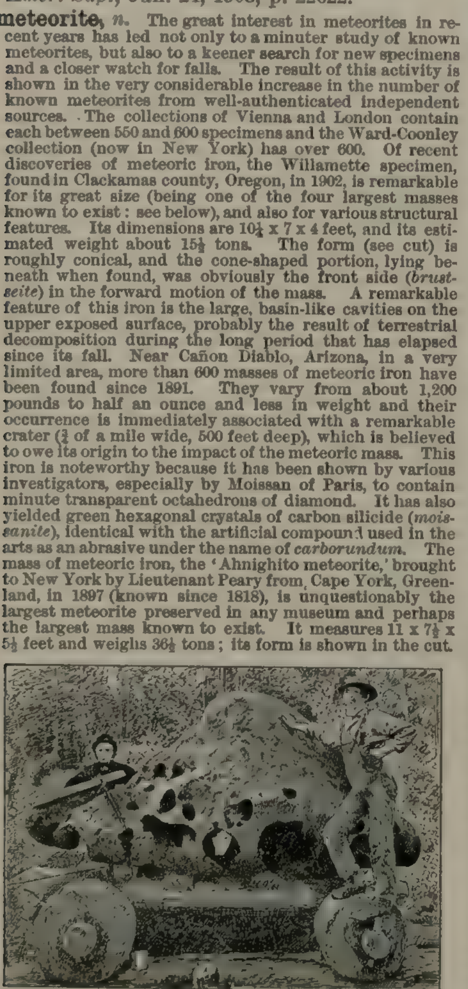
meteorin (mē′tē̦-ō̦-rin), *n.* [*meteor* + *-in*².] A supposed new metal reported by A. T. Abel as separated from the Cranbourne (Australia) meteoric iron. It was later shown by Flight to be identical with Reichenbach's tænite, and was named by him edmondsonite (after George Edmondson, Director of Queenwood College, Hampshire).

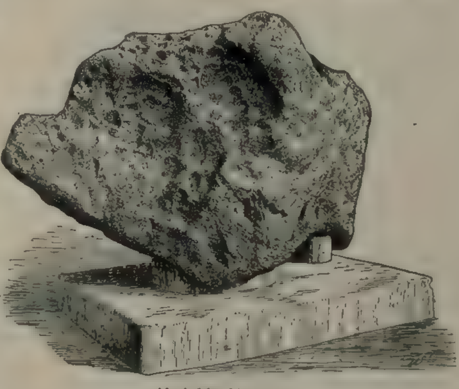
meteorist (mē′tē̦-ō̦-rist), *n.* [*meteor* + *-ist*.] One who is versed in the study of meteors. *N. E. D.*

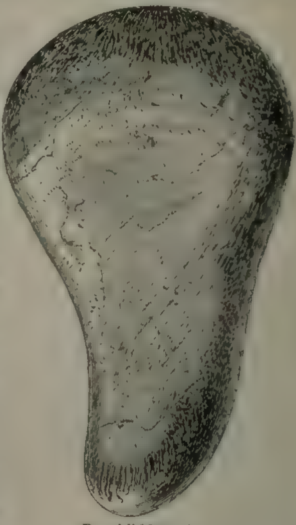
meteoristic (mē″tē̦-ō̦-ris′tik), *a.* [*meteorism*.] Pertaining to or affected with meteorism.

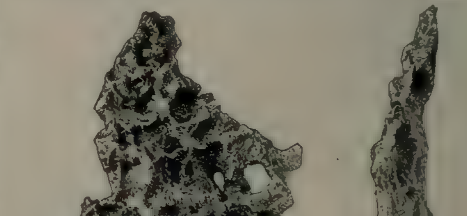
meteorit (mē′tē̦-ō̦-rit), *n.* [G. (?): see *meteorite*.] An alloy of aluminium and phosphorus. It is a chemical mixture and can be melted and cast. It has a comparatively high tensile strength and can be worked like brass. *Sci. Amer. Sup.*, Jan. 24, 1903, p. 22622.

meteorite, *n.* The great interest in meteorites in recent years has led not only to a minuter study of known meteorites, but also to a keener search for new specimens and a closer watch for falls. The result of this activity is shown in the very considerable increase in the number of known meteorites from well-authenticated independent sources. The collections of Vienna and London contain each between 550 and 600 specimens and the Ward-Coonley collection (now in New York) has over 600. Of recent discoveries of meteoric iron, the Willamette specimen, found in Clackamas county, Oregon, in 1902, is remarkable for its great size (being one of the four largest masses known to exist: see below), and also for various structural features. Its dimensions are 10½ x 7 x 4 feet, and its estimated weight about 15½ tons. The form (see cut) is roughly conical, and the cone-shaped portion, lying beneath when found, was obviously the front side (*brustseite*) in the forward motion of the mass. A remarkable feature of this iron is the large, basin-like cavities on the upper exposed surface, probably the result of terrestrial decomposition during the long period that has elapsed since its fall. Near Cañon Diablo, Arizona, in a very limited area, more than 600 masses of meteoric iron have been found since 1891. They vary from about 1,200 pounds to half an ounce and less in weight and their occurrence is immediately associated with a remarkable crater (¾ of a mile wide, 500 feet deep), which is believed to owe its origin to the impact of the meteoric mass. This iron is noteworthy because it has been shown by various investigators, especially by Moissan of Paris, to contain minute transparent octahedrons of diamond. It has also yielded green hexagonal crystals of carbon silicide (*moissanite*), identical with the artificial compound used in the arts as an abrasive under the name of *carborundum*. The mass of meteoric iron, the 'Ahnighito meteorite,' brought to New York by Lieutenant Peary from Cape York, Greenland, in 1897 (known since 1818), is unquestionably the largest meteorite preserved in any museum and perhaps the largest mass known to exist. It measures 11 x 7½ x 5½ feet and weighs 36½ tons; its form is shown in the cut. A somewhat higher weight (estimated as 46 tons) is given for the iron of Bacubirito, Sinaloa, Mexico (known since 1871), while that of Chupadero, Chihuahua, Mexico (1852), weighs about 16 tons. The meteoric origin of the Ahnighito iron is well established, although the iron of Disko Island and those of some other localities on the west coast of Greenland are certainly terrestrial. The great mass of Santa Catharina, Brazil, remarkable for its high percentage of nickel (34 per cent.), is now generally regarded as terrestrial; this type is called *catarinite* by Meunier. Some doubt also has been cast upon the meteoric origin of the iron from Oktibbeha county, Mississippi, which contains 60 per cent. of nickel (*oktibbehite* type, Meunier). The meteorites which have been seen to fall between 1890 and 1906 number about 30. These include three irons, those of Quesa, Spain (1898), of Bugaldi, New South Wales (1900), and of Ngoureyma, in Northwest Africa (1900); the latter-named mass weighed 37½ kilograms, and its remarkable appearance is shown in the adjoining cut. The minute microscopic and chemical examination of meteoric irons has led to more definite knowledge of the composition of the various iron-nickel alloys, *kamacite*, *tænite*, and *plessite* forming the triad (or trias) of Reichenbach (see *Widmannstättian figures*, under *Widmannstättian*); of these, kamacite contains from 4.8 to 7.4 per cent. of nickel, tænite from 16.7 to 38.1 per cent., and plessite is regarded as a eutectic mixture of the two species. Reichenbach's *lamprite* (*glanzeisen*) has been shown, however, to be not nickel-iron, but in part iron carbide (including *cohenite* (Fe, Ni)$_3$C), and in part *schreibersite*. The *edmondsonite* of Flight (*meteorin* of Abel) is only tænite. The *wickelkamacite* of Brezina (*hülleisen* of Reichenbach) is kamacite, not in regular form as usual, but of irregular outline inclosing accessory constituents, sulphids, graphite, silicates, etc. The iron sulphid of meteoric irons is now conceded to be troilite (FeS), not pyrrhotine (Fe_7S_8). The list of chemical elements identified in meteorites has been increased by the following, several of them detected in traces only and a few perhaps needing confirmation: gold, silver, platinum, iridium, palladium, lead, gallium, selenium; the stone of Saline township, Kansas, contains free phosphorus. The identification of leucite, a mineral of rather rare occurrence in terrestrial igneous rocks, as an essential constituent of the meteoric stone of Schafstädt is an interesting point; it is probably also present in the Pavlovka stone (1882). The classification of meteorites now generally adopted is essentially that of Gustav Rose (Berlin, 1863) as extended and elaborated by later writers, particularly A. Brezina of Vienna. The fundamental division is that between the *meteoric irons*, or *siderites*, consisting essentially of metallic iron (probably in all cases nickel-iron), and the *meteoric stones*, or *aërolites*, in which silicates predominate, the metallic nickel-iron sometimes (though rarely) entirely absent. As a transition-group between the irons and stones belong those meteorites in which the iron forms a continuous, sponge-like mass inclosing silicates (chiefly olivin and bronzite); these are often embraced under the general name of *siderolites*, and sometimes (as below, Brezina) divided into *siderolites* and *lithosiderites*, according as the iron, on a cross-section, appears as separate grains or forms a continuous web. The system of Brezina (catalogue of the Ward-Coonley collection, 1904) recognizes further the following prominent divisions: I. STONES: (*a*) *achondrites*, chondri generally absent, metallic iron absent or only sparingly present; (*b*) *chondrites*, chondri prominent, bronzite, olivin, and iron essential; (*c*) *chondrites*, with enstatite, anorthite, and iron essential; (*d*) *siderolites*, iron inclosing silicates, iron in separate grains in section. II. IRONS: (*e*) *lithosiderites*, iron and silicates, the iron continuous in section; (*f*) *octahedrites*, irons with octahedral structure as shown in Widmannstättian figures; (*g*) *hexahedrites*, irons with cubic structure and cleavage; (*h*) *ataxites*, structure interrupted or indistinct. These divisions are further separated into groups or types briefly characterized as follows: (*a*) ACHONDRITES: (1) *chladnite* (abbreviated Chl), consisting chiefly of bronzite (named, like the mineral chladnite (=enstatite), after the physicist Chladni (1756–1827), who wrote about meteors); (2) *chladnite* with bronzite, black or metallic veined (Chla); (3) *angrite* (A), chiefly augite (named after the meteorite of Angra dos Reys, Brazil; date of fall, 1869); (4) *chassignite* (Cha), chiefly olivin (Chassigny, France, 1815); (5) *bustite* (Bu), bronzite and augite (Busti, India, 1852); (6) *amphoterite* (Am), bronzite and olivin (named by Tschermak); (7) *rodite* (Ro), bronzite and olivin, brecciated or breccia-like (La Roda, Spain, 1871); (8) *eucrite* (Eu), augite with anorthite (named by Rose in 1863; also used for a terrestrial rock: see *eucrite*); (9) *shergottite* (She), augite with maskelynite (Sherghotty, India, 1865); (10) *howardite* (Ho), bronzite, olivin, augite, and anorthite (named by Rose after Edward Howard, who first determined the true nature of meteoric iron: Philos. Trans. Roy. Soc., 1802); (11) *howardite*, brecciated (Hob); (12) *leucituranolite* (L), leucite, anorthite, augite, and glass (named by C. Klein, 1904). (*b*) CHONDRITES: (1) howarditic chondrite (Cho); (2) the same, veined (Choa); (3) chondrite, white and friable (Cw); (4) the same, veined (Cwa); (5) the same, brecciated (Cwb); (6) intermediate chondrite (Ci), firm, with white and gray chondri; (7) the same, veined (Cia); (8) the same, brecciated (Cib); (9) gray chondrite (Cg), firm gray mass with chondri; (10) the same, veined (Cga); (11) the same, brecciated (Cgb); (12) *orvinite* (Co), black, infiltrated mass, discontinuous crust (Orvinio, Italy, 1872); (13) *tadjerite* (Ct), black, semiglassy, without crust (Tadjéra, Africa, 1867); (14) black chondrite (Cs), dark or black mass; chondri of various colors; (15) the same, veined (Csa); (16) *ureilite* (U), black mass, chondritic or granular, iron in veins, etc. (Novo Urei, Russia, 1886); (17) carbonaceous chondrite (K), dull-black friable chondri with free carbon and little or no iron; (18) the same, spherulitic (Kc); (19) the same, spherulitic, veined (Kca); (20) spherulitic chondrite (Cc), mass friable, chondri not breaking with matrix; (21) the same, veined (Cca); (22) the same, brecciated (Ccb); (23) *ornansite* (Cco), friable mass of chondri (Ornans, France, 1868); (24) *ngawite* (Ccn), friable, brecciated mass of chondri (Ngawi, Java, 1883); (25) spherulitic chondrite, crystalline (Cck); (26) the same, veined (Ccka); (27) the same, brecciated (Cckb); (28) crystalline chondrite (Ck); (29) the same, veined (Cka); (30) the same, brecciated (Ckb). (*c*) ENSTATITE-ANORTHITE CHONDRITES: crystalline chondrite (Cck), enstatite, anorthite, and iron with round chondri. (*d*) SIDEROLITES: (1) *mesosiderite* (M), sponge-like mass of iron inclosing crystalline olivin and bronzite (name given by G. Rose, 1862: see *mesosiderite*); (2) *grahamite* (Mg), the same, with also plagioclase (J. Lorimer Graham of New York city); (3) *lodhranite* (Lo), granular crystalline olivin and bronzite in iron (Lodhran, India, 1868). (*e*) LITHOSIDERITES: (1) *siderophyre* (S), bronzite grains with accessory asmanite in iron (named by Tschermak); (2)–(5) groups of *pallasites*, iron inclosing olivin (Pk), (Pr), (Pi), (Pa), differing chiefly in relation to the olivin (named from Pallas iron, Krasnoyarsk, Siberia, 1749). (*f*) OCTAHEDRITES: groups (1)–(3), fine octahedrites (Off), (Ofv), (Of), showing thin lamellæ of varying types, widths 0.3–0.4 millimeters; (4) medium octahedrite (Om), lamellæ 0.5–0.10 millimeters; (5) broad octahedrite (Og), lamellæ 1.5–2.0 millimeters; (6) broadest octahedrite (Ogg); (7)–(11) brecciated octahedrites, fine, medium, etc., different types (Obk), (Obn), (Obz), (Obzg), (Obc); (12) octahedrite, Hammond group (Oh). (*g*) HEXAHEDRITES: (1) normal, not granular (H); (2) granular (Ha); (3) brecciated (Hb). (*h*) ATAXITES: groups (1)–(8) (respectively designated as Dc, Dsh, Db, Dl, Dn, Ds, Dp, and Dm), differing chiefly either in amount of nickel or in structure; the Siratic group (Ds, and named from a place in Senegal) is poor in nickel, but contains rhabdite. Daubrée divided all meteorites into four grand divisions, according to the amount of iron present, namely: *holosiderites*, containing no silicates; *syssiderites*, an iron mass inclosing silicates; *sporadosiderites*, stones with disseminated grains of iron; *asiderites*, stones containing


Willamette Meteorite.
Side view showing holes piercing the base.
In the American Museum of Natural History, New York.


Ahnighito Meteorite.
(11 feet wide.)
In the American Museum of Natural History, New York.


Bugaldi Meteorite.
One half natural size, showing the drip from the under side, tail end.
In Technological Museum, Sydney, N. S. W.


Ngoureyma Meteorite.
Top and side views, about one seventh natural size.

no metallic iron. He further divided the sporadosiderites into *polysiderites*, iron abundant; *oligosiderites*, iron less abundant; and *cryptosiderites*, iron not visible to the eye. This classification was further developed by Meunier, who distinguished fifty-three groups, named in most cases after some typical meteorite; these begin with the highly nickeliferous irons *oktibbehite* and *catarinite* (see above), also *tazewellite*, *nelsonite*, *braunite*, etc., and end with *orgueillite* and *bokkewellite*.

Meteoritic hypothesis. See ★*hypothesis.*

meteorogram (mē´tẹ-ọ-rọ-gram), *n.* [Gr. *μετέωρον*, a meteor, + *γράμμα*, a writing.] The record of atmospheric conditions made by a meteorograph.

> Six possible sources of constant error have been recognized as influencing the records. These are (1) instrumental errors, (2) errors in exposure of instruments when comparing with standards, (3) errors in reading from *meteorograms*, etc.
>
> *U. S. Monthly Weather Rev.*, March, 1904, p. 121.

meteorograph, *n.*—**Aërial meteorograph,** a very light form of meteorograph, designed to be raised to a great height by means of kites or a sounding-balloon.

Meteoroidal hypothesis. Same as *meteoritic* ★*hypothesis.* *Amer. Geol.*, July, 1903, p. 14.

meteorol. An abbreviation of *meteorological.*

Meteorological chart. See *weather-map.*—**Meteorological equator, photography.** See ★*equator*, ★*photography.*

meteorology, *n.*—**Cosmical meteorology,** the general relation of the earth's atmosphere to cosmical processes, more especially to the radiation from the sun to the earth, or the radiation of the earth into space.—**Dynamic meteorology,** the study of the forces that produce the motions of the atmosphere; the combined thermodynamics, hydrodynamics, and aërodynamics of the atmosphere; the physics of the atmosphere; theoretical meteorology.—**Planetary meteorology,** the study of the relations between atmospheric phenomena and the motions or positions of the moon and planets. Since no such relations are accepted by the best authorities, this study is also spoken of as a *false* or *pseudo-meteorology.*—**Statical meteorology,** that branch of meteorology which treats of the condition and the phenomena of the atmosphere at any moment, without much regard to the underlying causes; statistical meteorology: climatology.

meteoroscope, *n.* **2.** An instrument for observing and registering the apparent path of a meteor.

meter[1], *n.* **4.** In *photog.*, an instrument for determining the time of exposure.

> Exposure *Meters.* When gelatine dry plates came into general use, and were made of many different degrees of sensitiveness, the want of a guide to the proper exposure for the various makes of plates under different conditions of lighting began to be felt, and several methods were devised for meeting the want. *Encyc. Brit.*, XXXI. 701.

Meter of water, a unit of gaseous pressure; the pressure exerted by a vertical column of water one meter in height. A meter of water exerts a pressure of 1000 kilograms, or a metric ton, on a square meter of surface, hence its numerical convenience as a unit. Also called *meter of water column.*—**Pendulum meter,** an electric meter which has an oscillatory instead of a rotatory motion.—**Power-factor meter,** a recording instrument for indicating the power factor of an alternating-current circuit.—**Quantity meter,** an integrating meter for electric circuits which usually reads or records in ampere-hours or coulombs.

meter-angle (mē´tėr-ang″gl), *n.* In *optics*, the unit of convergence corresponding to one diopter of accommodation.

meter-bridge (mē´tėr-brij), *n.* A slide-wire bridge the calibrated wire of which is one meter long. See ★*slide-wire bridge.*

meter-candle (mē´tėr-kan″dl), *n.* Same as ★*candle-meter.*

meter-gram (mē´tėr-gram), *n.* A practical unit used in describing or specifying the properties of wire or other electrical conductors; a wire one meter long and weighing one gram.

meter-lens (mē´tėr-lenz), *n.* A lens having a focal distance of one meter.

meter-millimeter (mē″tėr-mil´i-mē-tėr), *n.* A practical unit used in describing or specifying the properties, especially the resistance, of wires; a wire one meter long and one millimeter in diameter.

meter-pump (mē´tėr-pump), *n.* A device for obtaining samples of air for analysis. *Buck*, Med. Handbook, II. 567.

metethereal (met-ẹ̄-thē´rẹ-al), *a.* [Gr. *μετά*, after, + E. *ethereal.*] Existing beyond the ether. See the extract. [Rare.]

> Metetherial.—That which appears to lie after or beyond the ether; the *metetherial* environment denotes the spiritual or transcendental world in which the soul exists.
>
> *F. W. H. Myers*, Human Personality, I. Gloss. p. xix. [*N. E. D.*

meth-. A combining form sometimes used in organic chemistry in place of *methyl.*

Meth. An abbreviation of *Methodist.*

methacetin (meth-as´e-tin), *n.* [*meth(yl)* + *acetin.*] A trade-name of para-oxymethylacetanilide, a white crystaliine powder, for use as an antipyretic and antiseptic remedy.

methaform (meth´ạ-fôrm), *n.* Same as ★*chloretone*, or ★*acetone chloroform.*

methanal (meth´a-nal), *n.* [*methane* + *-al*[3].] Same as *formaldehyde.*

Methane type, the constitution of those organic compounds which may be considered as being derived from methane (CH_4), by the replacement of one or more of the hydrogen atoms by radicals or elements.

methanol (meth´ạ-nol), *n.* [*methane* + *-ol.*] The official, scientific name for methyl alcohol, CH_3OH.

methazonic (meth-a-zon´ik), *a.* [*meth(yl)* + *azone* + *-ic.*] Noting an acid, a colorless, unstable, explosive compound, $CH_2N_2O_3$, prepared by the action of alcohol and sodium hydroxid on nitromethane. It crystallizes in needles and melts at 58–60° C.

methenyl (meth´ẹ-nil), *n.* [*meth(yl)* + *-ene* + *-yl.*] The trivalent organic radical $\geqslant$CH. Also called *methine.*

methide (meth´id), *n.* [*meth(yl)* + *-ide*[1].] A class-name applied in organic chemistry to compounds of the univalent radical methyl, $-CH_3$. It is chiefly used in the case of metallic derivatives.

methilepsia (meth-i-lep´si-ạ̈), *n.* [NL., < Gr. *μέθυ*, wine, + *λῆψις*, taking, seizure.] Same as *methomania.*

methionic (meth-i-on´ik), *a.* [*me(thyl)* + *thionic.*] Noting an acid, a colorless crystalline deliquescent, very stable compound, $CH_2(SO_3H)_2$, prepared by the action of fuming sulphuric acid on lactic acid, and formed, in small quantity, by the action of sulphuric acid on ether.

method, *n.*—**Apagogic method,** reductio ad absurdum.—**Apostoli method,** in *med.*, the treatment of fibroid tumors of the uterus by means of electrolysis.—**Argelander's method,** in *astron.*, a method of observing the light-fluctuations of a variable star by visual comparison with neighboring stars of nearly the same brightness.—**Bradley's method,** in *optics*, a method of determining the velocity of light from the aberration of the fixed stars and the velocity of the earth in its orbit, due to the astronomer Bradley (1727). See *velocity of* ★*light.*—**Brand's method,** in *med.*, the treatment of typhoid and other fevers by means of cool baths.—**Brandt's method,** in *med.*, manual pressure through the abdominal walls upon the Fallopian tubes, designed to force out contained pus or other fluid.—**Bravais's method,** in *meteor.*, a method of determining the true altitude and motion of a cloud. It consists in observing the images of a cloud as seen in one mirror far below the observer and in another mirror near him. The two mirrors may be turned so that the two images perfectly overlap or coincide. The lower mirror may be always horizontal and may be the smooth surface of a lake. The angle between the two mirrors and their distance apart enable the observer to compute the altitude of the cloud.—**Cascade method.** See ★*cascade*1.—**Collodion sac method.** See ★*collodion.*—**Credé's method,** in *med.*: (*a*) The instillation of a solution of nitrate of silver into the eyes of a new-born child, as a preventive of gonorrheal ophthalmia. (*b*) Compression of the uterus made by the hand of the accoucheur in order to squeeze out the placenta after the birth of the child.—**Deslandre's spectrographic method.** See ★*spectrographic.*—**Double-slit method,** the method of the ★spectroheliograph (which see).—**Dry method.** Same as *dry way* (which see, under *dry*).—**Dumas's method,** in *phys.*, a process for the determination of vapor-densities invented by the chemist Dumas. It consists in heating the liquid to be vaporized in a glass bulb of known volume. When the liquid has entirely disappeared, the neck of the bulb is sealed and the bulb is weighed. From the mass of the vapor, thus determined, and its volume, the vapor-density is computed.—**Error methods,** in *psychophys.*, a name introduced by Wundt in 1883 to include average error and right and wrong cases. See *gradation* ★*methods.*—**Fizeau-Cornu method,** in *optics*, the method employed by Fizeau and subsequently by Cornu for measuring the velocity of light. See *velocity of* ★*light.*—**Flechsig's myelination method.** See ★*myelination.*—**Foucault's method,** in *optics*, the method employed by Foucault for measuring the velocity of light. See *velocity of* ★*light.*—**Frobenius's method,** in *math.*, a method of integrating linear differential equations in series. It has the advantage of exhibiting the connection between the two solutions found by it.—**Galton's method,** in *psychol.*, a name sometimes applied to the questionary method, which, though not invented by Galton, was used by him with conspicuous success in the study of visualization. Tables of questions (questionaries) dealing with some psychological topic are prepared and sent to a large number of persons. The replies are collated with a view to the induction of psychological uniformities, the determination of the range of mental variation, etc.—**Gibbs's vector method.** See ★*vector.*—**Golgi method,** in *histol.*, a method of distinguishing the nerve-cells and their branches by staining them with silver nitrate.

> The *Golgi method* of differentiating the nervous elements has so revolutionized our knowledge of the structure of the nervous system that no text-book on that subject ten years old is of any value except as history.
>
> *Amer. Inventor*, Dec. 15, 1903, p. 298.

Gradation methods, in *psychophys.*, a name introduced by Wundt in 1883 to include minimal changes and mean gradations. *E. B. Titchener*, Exper. Psychol., II. ii. 316.—**Graffin method,** in *photog.*, a process, especially adapted to the photographing of manuscripts, invented by Mgr. Graffin of Paris. See the extract.

> The apparatus for the *méthode Graffin* consists essentially of a prism, or mirror, inclined at an angle of 45 degrees, in front of the object glass of the camera, in order to reverse the image before its passage into the object glass, in such a way that, twice reversed, it is reproduced as a positive on the sensitive paper. The proof will be negative; the black letters of the manuscript or book copied will appear in white against a black or dark background. The order of the letters and their position will be normal, by reason of the double reversal. The plate-holder contains sheets of bromide paper, preferably rapid. One great advantage of the method is that the manuscript or book to be photographed may be placed horizontally on the table or chair, or on the floor. The work is done with rapidity, almost as fast as one can turn the pages. Only one copy can be made by this process, which cannot therefore serve for the production of a large number of copies. *The Nation*, March 5, 1908.

Gram's method, in *bacteriol.*, a method of staining based upon the principle that certain bacteria after being stained with aniline dyes retain the color on subsequent treatment with a solution of iodopotassic iodide, while others are decolorized.—**Hampe's method,** in *chem.*, a method for the determination of oxygen which consists in reducing the oxid of finely divided copper (brought to a bright-red heat) in a current of hydrogen, the loss in weight giving a measure of the amount of oxygen.—**Hehner method,** in *chem.*, an analytical process applied to butter, and to other fats and oils, which determines the percentage of insoluble fatty acids which can be obtained from the particular fat.—**Inverse method of fluxions.** See *fluxion.*—**Isthmus method,** a method of testing the magnetic permeability of iron under great magnetizing force, in which the sample, in the form of a short bobbin, is so placed between the poles of an electromagnet as to form part of a closed magnetic circuit.

> In applying the *isthmus method* it is desirable to be able to turn the bobbin round suddenly between the magnet poles.
>
> *J. A. Ewing*, Magnetic Induction in Iron and other [Metals, p. 150.

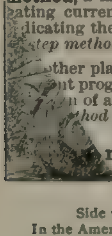
Keeler's spectrographic method. See ★*spectrographic.*—**Kjeldahl method,** in *chem.*, a method of determining nitrogen in organic compounds, suggested by Kjeldahl. It consists in boiling the substance with concentrated sulphuric acid, with or without the addition of a little copper or potassium sulphate or mercuric oxid: this oxidizes the carbon to carbon dioxid, and the hydrogen to water, and converts the nitrogen into ammonia. The liquid is then made alkaline and the ammonia boiled off. The method is used chiefly for the examination of fertilizers, foodstuffs, etc.—**Laborde's method,** in *med.*, a method of inducing respiration in cases of threatening asphyxiation, as in drowning, by means of rhythmical tractions on the tongue.—**Littrow's method** (*naut.*), a navigation rule, named after its author, by which to determine the ship's longitude from the employment of circum-meridian altitudes.—**Measurement methods,** metric methods; psychophysical metric methods; in *psychophys.*, methods for the determination of the stimulus and differential limen, and of subjectively equivalent stimuli and stimulus-differences: typified by the four classical methods of just noticeable differences, mean gradations, average error, and right and wrong cases.—**Method of average error,** one of the four classical methods of psychophysics, in which a variable stimulus is equated for sensation to a constant stimulus and the errors of adjustment are combined to furnish a representative or average error. The method was introduced into psychophysics by Fechner. *E. B. Titchener*, Exper. Psychol., II. i. 70.—**Method of characteristics,** a geometric method at the basis of enumerative geometry, founded by Chasles on his correspondence-principle (1864).—**Method of Clément and Desormes,** in *phys.*, a method for the determination of the ratio of the two specific heats of a gas. The gas, contained in a closed receptacle, is suddenly compressed by means of a piston, and the change of pressure due to this approximately adiabatic change of volume is immediately noted. The pressure is read again after the gas has cooled. This gives the result of an isothermal change of volume. The ratio of these two changes is the ratio of the specific heats.—**Method of complete series,** in *psychophys.*, a mode of the method of just noticeable differences (which see, under ★*difference*) which combines into one the partial series required for the determination of the upper and lower differential limens.—**Method of constant stimuli,** in *psychophys.*, the method of right and wrong cases as employed with a number of stimuli for the determination of the stimulus limen.—**Method of constant stimulus-differences,** in *psychophys.*, the method of right and wrong cases as employed with a number of stimuli, above and below the standard stimulus, for the determination of the differential limen.—**Method of doubled stimuli,** in *psychophys.*, a method, proposed by J. Merkel, the object of which is the determination of a stimulus that is subjectively the double of the given stimulus.—**Method of equal and unequal cases,** in *psychophys.*, a modification of the method of right and wrong cases, proposed in 1888 by J. Merkel.—**Method of equal-appearing intervals, of equal sense-distances, of mean gradations, of supraliminal differences,** in *psychophys.*, a method the object of which is the equation of two supraliminal sense-distances. In the usual form of the method, the two extreme stimuli are given, and the third, intermediate stimulus is varied up and down by small steps until it appears to divide the total sense-distance into halves. Other forms of the method are, however, possible; and the principle may also be employed for the just noticeable differentiation of supraliminal sense-distances.—**Method of equivalents,** in *psychophys.*, a form of the Fechnerian method of average error in which the stimuli or stimulus-differences to be equated are applied to different parts of the sense-organ.—**Method of infinitesimals,** the method of Leibnitz for the calculus.—**Method of just noticeable differences, method of least differences, method of minimal differences.** See ★*difference.*—**Method of limits.** (*b*) In *psychophys.*, a form or mode of the method of just noticeable differences (which see, under ★*difference*), developed by G. E. Mueller. It is characterized by rules of procedure which make its results comparable with the results of the method of constant stimulus-differences (method of right and wrong cases).—**Method of minimal changes,** in *psychophys.*, a form or mode of the method of just noticeable differences (which see, under ★*difference*), developed by Wundt. It is characterized by the attention paid to the psychological variable errors, especially to expectation and practice. —**Method of multiple reproduction, method of single reproduction,** in *psychophys.*, forms of the Fechnerian method of average error employed in work upon the estimation of time-intervals. In the former, a standard or normal interval is given, and the observer reproduces this interval (say, by tapping on a key) three, five, ten, or so many times, the length of the normal and of the reproduced intervals being graphically recorded; in the latter, the normal interval is bounded by two clicks or strokes, and the observer is required to make a third stroke as soon as a time has elapsed which he judges to be equal to the normal. The length of the two intervals is recorded as before.—**Method of paired comparisons.** See ★*comparison.*—**Method of passage,** in *bacteriol.*, a method of increasing the virulence of pathogenic bacteria by inoculating a number of animals one from the other in a series.—**Method of reactions,** in *metal.*, a method of double decomposition, in which to a molten bath or to a solution of a combination of bases and acids a reagent is added which is itself a salt or compound of base and acid; the acid of the metallic solution goes to the base of the reagent, and the acid of the reagent unites with the bases in the solution. Such double decompositions are usual with the silicates and carbonates in reduction processes.—**Method of reciprocal polars,** in *geom.*, a method of duplicating or dualizing all descriptive and many metric properties of curves and surfaces by consideration of polar reciprocals. It was first systematically employed by Poncelet.—**Method of right and wrong answers,** in *psychophys.*, a simplified form of the method of right and wrong cases, introduced by J. Jastrow and E. Kraepelin, in which the judgment 'doubtful' is forbidden and all judgments have accordingly the form 'greater' or 'less.'—**Method of right and wrong cases,** in *psychophys.*, a method in which a single slight stimulus-difference, or a number of stimulus-differences ranging from small to large above and below the standard stimulus, is presented to the observer, who is required to judge in each case of the relation of the component stimuli (as second stimulus greater, less, much greater, relation doubtful, etc.). From the distribution of the judgments in accordance with the theory of probabilities a differential limen and its measure of precision may be determined. Like the method of constant stimuli (which see, above), the method is available for the determination of a stimulus limen. It is evidently, in a way, the counterpart and supplement of such methods as that of minimal changes. There, stimuli are varied until a required judgment has been passed; here, stimuli are constant and the observer's judgments are variable.—**Method of Roy and Ramsden,** in *phys.*, a method for the measurement of the linear expansion of bars, in which the elongation is observed directly through microscopes focused upon cross-lines ruled upon the specimen. See ★*dilatometer.*—**Method of substitutions,** in *alg.*, a method based upon replacing a quantity by another or by a function of several others. —**Method of two, three, five,** etc., **cases,** in *psychophys.*, Wundt's names for various forms of the method of right and wrong cases. In the first, there are two possibilities of judgment (equal and unequal, or positive and negative); in the second, three (greater, doubtful, less); in the third, five (much greater, greater, etc.).—**Methods of adjustment.** See ★*adjustment.*—**Methods of difference,** in *psychophys.*, a name proposed in 1891 by E. Kraepelin to include right and wrong cases, right and wrong answers, and equal and unequal cases. See ★*methods of limits.*—**Methods of enumeration,** in *psychophys.*, a term introduced by Wundt in 1895 to include the methods of two, three, five, etc., cases, and extended in 1902 to average error: opposed in the first case to *methods of* ★*adjustment*, and in the second to *gradation* ★*methods.*—**Methods of limits,** in *psychophys.*, a name proposed in 1891 by E. Kraepelin to include minimal changes, mean gradations, and average error.—**Mixed method,** the combination upon one printing-plate of the different processes of line-engraving, etching, mezzotint, with rouletting.

> Line-engraving has been killed by etching, mezzotint, and that bastard form of line-engraving known as the "*mixed method*"—a combination of etching, graving, and machine-ruling, such as is seen in Thomas Landseer's "Stag at Bay." *Encyc. Brit.*, XXVIII. 267.

Napier's method (*naut.*), a graphic representation of the deviation. The margin of a compass card is shown as cut out at the N-point and straightened into a vertical line, divided into 32 equal parts which correspond to the 32 points of the compass, and into 360 degrees of its circumference. Also called *Napier's card*, *compass-error card*, *curve*, *diagram*, and *deviation diagram.*—**Newton's method of approximation,** in *alg.*, a method for obtaining the roots of equations.—**O'Dwyer's method,** in *med.*, a method of relieving obstructive dyspnœa by intubation of the larynx.—**Ogata's method,** in *med.* (*a*) A method of resuscitation of an asphyxiated new-born infant by alternately approximating the feet and the head and letting the body fall, holding the infant by the feet only. (*b*) A method of resuscitation, in cases of asphyxia from chloroform or ether, by stroking the lower portion of the chest with the fingers in order to stimulate respiration and the action of the heart.—**Open method,** in *med.*, the treatment of wounds by free exposure to the air, as contrasted with the use of air-tight antiseptic dressings.—**Patch method.** See ★*patch.*—**Point-to-point method,** a method of determining wave-forms of alter- ating currents, in which each point upon the curve dicating the wave is found separately. Also called *step- tep method.*

> ther places there is an apparent want of knowledge nt progress, as, for example, where the oscillograph n of as an instrument of little value, the *point-to- hod* being described as more practical. *Nature*, May 14, 1903, p. 31.

method, in topographical surveying of an a or territory, the traverse method of de- relative positions of several points by sur- of consecutive lines joining those points: ative to the method of triangulation, in veyed form the sides of contiguous tri- of whose sides are determined by trig-



Side view

In the American

A somewhat higher
for the iron of Bacub.

> On the other side, the *polygonal method* permitted, as has already been stated, the carrying on of the operations of the survey along the route of each expedition. *Geog. Jour.* (R. G. S.), XVI. 331.

Questionary method. See *Galton's* ★*method.*—**Reckoning method,** in *psychophys.*, a method of enumeration (Germ. Abzählungsmethode) typified by the method of right and wrong cases. *W. Wundt* (trans.), Outlines of Psychol., p. 257.—**Reserve-seed method.** See ★*seed.* —**Reserve-sprout method.** See ★*sprout.*—**Römer's method,** in *optics*, the method employed by Romer (1675) for computing the velocity of light from observations upon the eclipses of Jupiter's moons, made when the earth and that planet were in conjunction and when they were in opposition. See *velocity of* ★*light.*—**Rousseau's method,** in *photom.*, a graphic method devised by Rousseau for finding the mean spherical intensity of a source of light. See *Rousseau's* ★*figure.*—**Sayre's method,** in *surg.*, the treatment of lateral curvature of the spine, or of Pott's disease, by means of a corset of plaster of Paris applied while the patient is suspended by bands under the arms.—**Scattered-seed method.** See ★*seed.*—**Schleich method,** in *med.*: (*a*) Induction of local anæsthesia by distention of the tissues with a weak cocaine solution subcutaneously injected. (*b*) Induction of general anæsthesia by a mixture of chloroform, ether, and petroleum ether administered by inhalation.—**Schott method,** in *med.*, the treatment of heart-disease by baths in effervescent water and by special exercises.—**Seebeck's and Holmgren's method,** in *exper. psychol.*, a rough method of testing partial color-blindness. Colored cards or worsteds are given to the subject, who is required to sort and match them without naming the colors.—**Serial method,** in *psychophys.*, any method which implies the presentation to the observer of a graded series of stimuli; specifically, in the sphere of sensation, a gradation method; in the sphere of affection, a form of the method of impression. As applied to affective processes, the serial method requires that a series of stimuli be presented to the observer one at a time, and be referred by him to one or other of certain prearranged categories of affective intensity, as very pleasant, moderately pleasant, indifferent, moderately unpleasant, very unpleasant. The results are recorded in graphic form.—**Single-tree method,** that method of conservative lumbering in which reproduction from self-sown seed under the shelter of the old stand is invited by the cutting of single trees. This cutting may be made throughout the forest, as in some wood-lots, or in definite portions of the forest in turn. Also called *selection system, selection method, shelter-wood selection system.* —**Stand method,** that method of conservative lumbering in which reproduction is secured from self-sown seed by means of successive cuttings made throughout the mature stand, thus leading to the production of a new stand approximately even aged. These successive cuttings encourage seed production, create conditions favorable to the growth of seedlings, and gradually remove the remaining trees of the mature stand as the young growth develops. The series of cuttings, which vary in number and duration according to the degree of difficulty with which reproduction is effected, is divided into the following four kinds: (1) *Preparatory cuttings* fit the stand for its reproduction by the removal of dead, dying, or defective trees, and prepare the ground for the germination of seeds. A stand in which one or more preparatory cuttings have been made is in the *preparatory stage.* (2) *Seed cuttings* encourage seed production by the further opening of the stand, and admit light in quantity favorable for the development of young growth. A forest in which one or more seed cuttings have been made is in the *seedling stage.* (3) *Removal cuttings* gradually remove the mature stand which would otherwise retard the development of the young trees. A stand in which one or more removal cuttings have been made is in the *removal stage.* (4) The *final cutting* is the last of the removal cuttings, in which all of the old stand still remaining is cut. Also called *shelter-wood compartment system, method of successive thinnings, compartment system*, and *high forest compartment system.*—**Statistical method.** (*a*) See *statistical method*, under *statistical.* (*b*) In *phys.*, the method of statistical mechanics in which a great number of systems, similar in nature but differing as to configurations and velocities, are simultaneously considered.—**Step-by-step method.** Same as *point-to-point* ★*method.* —**Sturm's method,** in *alg.*, a method for ascertaining how many real roots of an equation lie between any given limits.—**Sylvester's dialytic method,** in *alg.*, a method of elimination. See *dialytic*, 3.—**Sylvester's method,** in *med.*, a method of artificial respiration for the resuscitation of a drowning person. Inspiration is effected by drawing the arms up over the head, the subject lying on the back, and expiration by folding the arms over the chest and producing pressure.—**Tentative method,** specifically, a procedure followed by skilled experts in opening locks of either the tumbler, pin, or combination keyless type, in which advantage is taken of possible lost motion due to poor mechanical construction, to detect, by feeling the yielding of the bolt, the position of pins or tumblers. This element of weakness has been reduced or eliminated in the more modern constructions, such as the so-called "paracentric" or deeply corrugated section of the key-way in flat-key types, and by the timelock combinations.—**Thiersch's method of skin-grafting.** See ★*skin-grafting.*—**Unitary method of chemistry.** See *unitary* ★*theory.*—**Welsh method of copper-smelting,** a process of smelting copper in reverberatory furnaces, employed largely in South Wales. It is conducted in six stages. In the first stage the pyritic ore (the ore usually employed) is roasted in a reverberatory furnace to expel the arsenic and a part of the sulphur, and a large proportion of the sulphid of iron present in the pyrites is changed into oxid of iron, while the copper oxid is converted into sulphid. In the second stage of the process the oxid of iron is removed by melting and by causing it to combine with silica: this part of the process is also carried out in a reverberatory furnace, and a coarse metal is obtained containing about 33 per cent. of copper. In the third stage the granulated coarse metal is calcined again for the purpose of oxidizing more of the sulphid of iron. In the fourth stage the calcined coarse metal is fused together with some slag containing silica and ores containing oxid and carbonate of copper. The fused mass separates by gravity into the matte or regulus, containing from 60 to 80 per cent. of copper, and a metallic slag consisting chiefly of silicate of iron, but containing also some copper. The regulus, which is called, according to its appearance, either *cake blue metal*, *cake white metal*, or *pimple metal*, is placed again in the reverberatory furnace. This constitutes the fifth stage of the process, in which the sulphur is partly removed and blister-copper obtained. In the sixth and last stage the metal is refined and toughened by being subjected to oxidizing agencies while molten, during which the arsenic escapes as vapor, while the other metals are converted to oxids.—**Wet method.** Same as *wet way.*—**Will and Varrentrapp's method,** in *chem.*, a process, devised by the two chemists named, for determining quantitatively the nitrogen of organic substances submitted to analysis. It consists essentially in heating, in a tube of hard glass, a weighed portion of the substance mixed with a large excess of soda-lime (a mixture of sodium and calcium hydroxids), thus converting the nitrogen present into ammonia, which is carried as gas into an excess of hydrochloric acid and so fixed as ammonium chlorid. In the ammonium chlorid the ammonia, and from it by calculation the nitrogen, may be determined either by the gravimetric or the volumetric method. This process has for a number of years been in most cases replaced by that of Kjeldahl.—**Zero method.** Same as *null-method* (which see, under *method*).

methodaster (meth′ọ-das-tėr), *n.* [Irreg. < *method* + *-aster*. The formation does not express the meaning intended.] One who makes an ignorant use of scientific methods, or magnifies unduly the importance of methods.

> The *methodaster* and macerator blunts the intuitions, the best thing in youth, drags down thoughts that fly and makes them crawl at a slow, senescent pace. More yet, it tends to pedantry that shields ignorance from exposure, teaches the art of seeming wise with empty minds, . . . and whips up a modicum of knowledge to deceptive proportions. *G. S. Hall*, Adolescence, II. 496.

Methodist. I. *n.*—**Calvinistic Methodists,** Methodists who accept the Calvinistic teachings of Whitefield, in the controversy of 1740, as opposed to the Arminian doctrine of John Wesley. They are found chiefly in Wales.

II. *a.*—**Reformed Methodist Church.** See ★*church.*

Methodological parallelism, physiologico-psychological parallelism; a methodological form of the doctrine of psychophysical parallelism. See the quotation.

> From this [psychoneural parallelism] we must distinguish a second sense of parallelism founded on the disparity just mentioned as also pertaining to the psychical and neural correlates. We may call this physiologico-psychological, or, more briefly, *methodological parallelism*. It rejects, as illogical, the attempt to penetrate to psychical facts from the standpoint of physiology. . . . It also forbids the psychologist to piece out his own shortcomings with tags borrowed from the physiologist. The conceptions of the two sciences are to be kept distinct as the facts themselves to which they relate are distinct. . . . This methodological convention, as we may call it, implies a more stringent interpretation of causation than that expounded by J. S. Mill. *Encyc. Brit.*, XXXII. 66.

Methody (meth′ọ-di), *n.* Same as *Methodist.* [Vulgar or dial.]

methol (meth′ol), *n.* [*meth*(*yl*) + *-ol.*] 1. Same as ★*carbinol*, ★*methanol*, or *methyl alcohol* (which see, under *alcohol*).—2. A colorless hydrocarbon, said to be found in crude wood-alcohol. It is probably a mixture.

methonal (meth′ọ-nal), *n.* [*meth*(*yl*) + *-one* + *-al*³.] A synthetic organic compound, $(CH_3)_2C(SO_2CH_3)_2$, similar in composition and action to sulphonal; dimethylsulphone-dimethylmethane. It is hypnotic.

methose (meth′ōs), *n.* [*meth*(*yl*) + *-ose.*] A colorless, sweet, syrupy carbohydrate, $C_6H_{12}O_6$, prepared by the condensation of formaldehyde under the influence of magnesium hydroxid. It is probably a mixture.

methoxy-group (me-thok′si-gröp), *n.* [*meth*(*yl*) + *oxy-* + *group*¹.] The monovalent organic radical $-OCH_3$, derived from methyl alcohol.

methoxyl (meth-ok′sil), *n.* Same as ★*methoxy-group.*

Methven screen. See ★*light standard.*

Methyl acetanilide, a coal-tar product with properties similar to acetanilide, sold under the trade-name *exalgin*: principally used as an analgesic.—**Methyl aldehyde.** Same as *formaldehyde.*—**Methyl alkali blue.** See ★*blue.*—**Methyl blue.** See *methyl-blue.*—**Methyl chlorid,** a colorless gas, CH_3Cl, prepared by the action of sodium chlorid and sulphuric acid on methyl alcohol, and formed by treating methane with chlorin. It has an ethereal odor and boils at −23.73° C. It is sometimes used, mixed with ethyl chlorid, to produce anæsthesia. Also called *chlormethane.*—**Methyl eosin, orange.** See ★*eosin*, ★*orange*¹.—**Methyl violet.** See ★*methyl-violet.*

methylate, *v. t.* 2. To substitute in (a compound) the methyl radical $-CH_3$, for an equivalent of some other radical or element. —**Methylated spirit.** Alcohol thus denaturized or rendered unfit for drinking (with the addition of one half of one per cent. of benzene) is by law exempt from the internal revenue tax in the United States, and therefore becomes available for manufacturing uses at much reduced cost. Similar regulations have been adopted in other countries, and other materials than crude wood-spirit have been employed to denaturize the common or ethyl alcohol.

methylate (meth′i-lāt), *n.* [*methyl* + *-ate*¹.] A derivative of methyl alcohol.—**Sodium methylate,** a colorless compound, CH_3ONa, prepared by the action of sodium on methyl alcohol.

methylation (meth-i-lā′shọn), *n.* [*methylate* + *-ion.*] The act of methylating. See ★*methylate.*

Methylene acetylenazin. Same as ★*glyoxaline.* —**Methylene benzoate,** a crystalline compound, $(C_6H_5CO_2)_2CH_2$, prepared indirectly from formaldehyde and benzoic acid. It melts at 99° C. and boils at 255° C. —**Methylene blue.** See *methylene-blue.*—**Methylene dibenzamide,** a crystalline compound, $(C_6H_5CONH)_2CH_2$, formed by the action of ammonia on methylene benzoate. It melts at 118° C.—**Methylene gray, green, violet.** See ★*gray,* etc.—**New methylene-blue.** (*a*) A basic coal-tar color of the thiazin type. It dyes tannin-mordanted cotton a fuller and redder blue than methylene-blue. (*b*) A basic color of the oxazin type, distinguished as *new methylene-blue GG.*

methylenitan (meth-il-en′i-tan), *n.* [*methylene* + *-ite*² + *-an.*] A yellow syrupy or amorphous carbohydrate, $C_6H_{10}O_5$, prepared by boiling trioxymethylene with lime-water. It is not fermentable and is probably a mixture.

methylglycine (meth-il-glī′sin), *n.* Same as ★*sarcosine.* Also *methylglycosine.*

methylguanidin (meth-il-gwä′ni-din), *n.* A poisonous substance, of the nature of a ptomaïne, which has been found in decomposing cadavers.

methylindol (meth-il-in′dol), *n.* Same as *skatol.*

methylmethane (meth-il-meth′ān), *n.* Same as ★*ethane.*

methylosis (meth-i-lō′sis), *n.* [Gr. μετά, after, + ὕλη, matter, + *-osis.*] In *geol.,* that variety of metamorphism which involves change of chemical substance. *Geikie,* Text-book of Geol., p. 765.

methylpelletierine (meth″il-pel-e-tēr′in), *n.* A colorless, hygroscopic, dextrorotatory, liquid alkaloid, $C_9H_{17}ON$, contained chiefly in the root of the pomegranate-tree. It boils at 215° C.

methylpentose (meth-il-pen′tōs), *n.* [*methyl* + *pentose.*] A pentose in which one hydrogen atom has been replaced by the methyl-group: used especially of rhamnose or isodulcite.

methylphenacetin (meth″il-fẹ-nas′e-tin), *n.* [*methyl* + *phenacetin.*] A colorless synthetic compound formed by the action of methyl iodide on phenacetin. It is hypnotic.

methylsalol (meth-il-sal′ol), *n.* [*methyl* + *salol.*] A colorless crystalline synthetic compound, a methyl derivative of salol: used in rheumatism.

methyluramine (meth″il-ūr-am′in), *n.* [*methyl* + *ur*(*ic*) + *amine.*] A methyl derivative of guanidin, $NH:C:(NH_2)(NH.CH_3)$, obtained on oxidation of creatine, to which it is closely related: same as ★*methylguanidin.* It has also been found in putrefying meat.

methylurethane (meth″il-ūr-eth′ān), *n.* [*methyl* + *ur*(*ic*) + *ethane.*] A crystalline synthetic hypnotic obtained by the action of cyanogen chlorid on methyl alcohol.

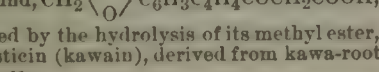
methyl-violet, *n.* **2.** One of several basic colors of the triphenylmethane group. They consist chiefly of the hydrochlorids of pentamethyl and hexamethyl pararosaniline or their benzyl derivatives.

methyostylic (meth″i-ọ-stil′ik), *a.* Relating to, or having that arrangement of the visceral arches termed, methyostyly.

methyostyly (meth-i-os′ti-li), *n.* [Gr. μετά, after, + E. *hyo*(*id*) + Gr. στῦλος, pillar, + *-y*³.] That condition of the visceral arches in which their component parts are more or less shifted from their primitive conditions, and the metapterygoid, symplectic, and adjacent parts assist the hyomandibular in the support of the lower jaw: a condition found in the *Teleostei,* or bony fishes.

> *Methyostyly,* in allusion either to the prominence of the metapterygoid, or to the fact that *methyostyly* represents a morphological advance upon earlier modes.
> *Biol. Bulletin,* June, 1904, p. 59.

methystic¹ (me-this′tik), *a.* [Gr. μεθυστικός, intoxicating, < μεθύειν, be intoxicated, < μέθυ, strong drink: see *mead*¹. Compare *amethyst.*] That intoxicates; intoxicating.

methystic² (me-this′tik), *n.* [NL. *methyst*(*icum*) + *-ic.*] Noting an acid, a colorless compound,  $CH_2\left\langle\begin{matrix}O\\O\end{matrix}\right\rangle C_6H_3C_4H_4COCH_2COOH$, prepared by the hydrolysis of its methyl ester, methysticin (kawain), derived from kawa-root (*Piper methysticum*). It crystallizes in silky, lustrous, prismatic needles and melts at 180° C.

methysticin (me-this′ti-sin), *n.* [NL. *methystic*(*um*) + *-in*².] Same as ★*kawain.*

métier (mā-tyā′), *n.* [F. *métier,* OF. *mestier, mester,* = It. *mestiero,* < L. *ministerium,* attendance, service, office, occupation, work: see *ministry* and *mystery*².] Trade; profession; with reference to literature or art, one's particular kind or line of ability.

> Messrs. Morris & Co.'s furniture was not of William Morris's own design, flat ornament being essentially his *métier.* *A. Vallance,* William Morris, p. 92.

métissage (mā-tẹ-säzh′), *n.* [F., < *métis,* of mixed race: see *métis.*] Mixture of races.

métisse (mā-tēs′), *n.* [F., fem. of *métis:* see *métis.*] A woman of mixed blood, particularly of mixed Indian and white descent.

Metius's ratio. See ★*ratio.*

metoche (met′ọ-kē), *n.* [Gr. μετοχή, a sharing, < μετέχειν, share in, take part in, < μετά, among, + ἔχειν, have.] In *arch.:* (*a*) The arrangement of a dentil-course or of a Doric frieze with its triglyphs and metopes: a term used by Vitruvius (III. 3) [although some authorities make the term *metatome*]. (*b*) The space between two dentils: used by French writers, by a false analogy with *metope.*

metochy (met′ọ-ki), *n.* [Gr. μετοχή, a sharing.] The relation between ants and those of their guests which are tolerated and not disagreeable to them. *Cambridge Nat. Hist.,* VI. 183.

metodontiasis (met″ọ-don-tī′a-sis), *n.* [NL., < Gr. μετά, after, + ὀδούς (ὀδοντ-), tooth, + *-iasis.*] **1.** Faulty development of the teeth.—**2.** The second dentition.

metœstrous (met-es′trus), *a.* Of or pertaining to the metœstrum. See the extract under ★*metœstrum.*

metœstrum (met-es′trum), *n.*; pl. *metœstra* (-trä̤). [Gr. μετά, after, + οἶστρος, vehement impulse.] The period of decline which follows the height of the period of sexual desire in female mammals.

> *Metœstrum,* or the Metœstrous Period.—If conception does not take place during œstrus the activity of the generative organs gradually subsides during a definite period, which I have called the *metœstrum;* and this is followed . . . by a long period of rest.
> *W. Heape,* in Quart. Jour. Micros. Sci., Nov., 1900, p. 8.

metol (met′ol), *n.* [*met*(*hyl*) + *-ol.*] A trade-name of methyl-*p*-amino-*m*-cresol hydrochlorid, $CH_3\overset{4}{N}HC_6H_3O\overset{1}{H}\overset{3}{C}H_3.HCl$. It is used in photography as a developer.

meton. An abbreviation of *metonymy.*

metonym (met′ọ-nim), *n.* [Gr. μετά, after, + ὄνυμα, a name (see *onym*).] A name given to a group (usually a genus) after a different name had been applied to another member (usually a species) of the same group. According to the American code of botanical nomenclature, a metonym is invalid.

> A name is rejected when there is an older valid name based on another member of the same group (*metonym*).
> *Code of Bot. Nomenclature,* p. 175.

metopantralgia (met″ọ-pan-tral′ji-ä̤), *n.* [NL., < Gr. μέτωπον, forehead, + ἄντρον, cave (cavity), + ἄλγος, pain.] Pain in the frontal sinuses.

metopantritis (met″ọ-pan-trī′tis), *n.* [NL., < Gr. μέτωπον, forehead, + ἄντρον, cave (cavity), + *-itis.*] Inflammation of the frontal sinuses.

Metopias (me-tō′pi-as), *n.* [NL., < Gr. μετωπίας, having a broad forehead, < μέτωπον, forehead.] **1.** A genus of labyrinthodont *Amphibia* from the Keuper of Würtemberg, attaining large size and having a broadly triangular skull with anterior orbits, weak dentition, and slightly infolded dentin: the pectoral plates are large and the ribs very heavy.—**2.** A genus of Silurian trilobites.

metopion (me-tō′pi-on), *n.*; pl. *metopia* (-ä̤). [NL., < Gr. μετώπιον, forehead, prop. neut. adj., < μέτωπον, the forehead.] In *anthrop.,* the point in which a line connecting the tubera of the frontal bone intersects the median line. *Amer. Anthropologist,* Jan.–March, 1901, p. 35.

metopodynia (met″ọ-pọ-din′i-ä̤), *n.* [Gr. μέτωπον, forehead, + ὀδύνη, pain.] Neuralgic pain in the forehead.

metopomancy (met′ọ-pọ-man-si), *n.* [Gr. μέτωπον, the forehead, brow, front, face, + μαντεία, divination.] Divination by means of the characteristics of the face.

metoxenous (mẹ-tok′se-nus), *a.* [Gr. μετά, among, + ξένος, a stranger.] Heterœcious.

metranate (met′ra̤-nāt), *n.* [*metran* + *-ate*³.] The office or jurisdiction of a metran or head of the Abyssinian church.

> The Patriarchate of Alexandria, and *Metranate* of Ethiopia. *J. M. Neale,* Hist. Eastern Church, I. 111. *N. E. D.*

metraneurism (mẹ-tran′ụ-rizm), *n.* [Gr. μήτρα, uterus, + ἀνευρυσμός, dilation (see *aneurism*).] Same as ★*metrectasia.*

metraterm (mē′tra̤-tėrm), *n.* [Gr. μήτρα, uterus, + L. *term*(*inus*), end.] In certain trematodes, the short, thick-walled terminal portion of the uterus.

> The uterus terminates in a short heavy-walled region devoid of eggs, known as the *metraterm.*
> *Buck,* Med. Handbook, VII. 862.

metratonia (mē-tra̤-tō′ni-ä̤), *n.* [NL., < Gr. μήτρα, uterus, + ἀτονία, atony.] Atony of the uterus.

metratrophia (mē-tra̤-trō′fi-ä̤), *n.* [Gr. μήτρα, uterus, + ἀτροφία, atrophy.] Atrophy of the uterus.

metrectasia (mē-trek-tā′si-ä̤), *n.* [NL., < Gr. μήτρα, uterus, + ἔκτασις, extension.] Dilatation of the non-pregnant uterus.

metrectomy (mẹ-trek′tọ-mi), *n.* [Gr. μήτρα, uterus, + ἐκτομή, excision.] Same as *hysterectomy.*

metrelcosis (mē-trel-kō′sis), *n.* [NL., < Gr. μήτρα, uterus, + ἕλκωσις, ulceration.] Ulceration of the uterus, especially of its neck.

metremphysema (mē″trem-fi-sē′mä̤), *n.* [NL., < Gr. μήτρα, uterus, + ἐμφύσημα, inflation.] Same as *physometra.*

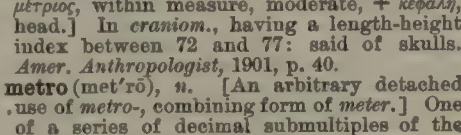
metret (met′ret), *n.* [*meter*³, *metre*², the measure of length, + dim. *-et,* used here with a particular implication.] A decimal submultiple of the meter, in the scheme of magnitudes devised about 1860 by G. J. Stoney. See ★*metro* and ★*uno.*

> We shall use the syllable -et for decimal submultiple. Thus the sixthet will mean the sixth of these -ets, that is, a unit in the sixth place of decimals. In this nomenclature the tenthet of a meter is the same as the tenth-*metret,* i. e., the tenth of the series of *metrets* or decimal submultiples of a meter.
> *G. J. Stoney,* in Smithsonian Rep., 1899, p. 208.

metria (mē′tri-ä̤), *n.* [NL., < Gr. μήτρα, uterus.] Any local inflammatory condition following childbirth.

metric¹, *a.*—**Metric property,** in *geom.,* a property which involves measure or quantity.—**Metric relation,** a relation which involves measure or quantity.

metric², *a.*—**Metric** or **metrical pattern,** in *music,* the scheme of long and short tones, resting upon and conformable to the fundamental rhythm, according to which a particular melody or phrase is laid out. For instance, the *metric pattern* of the first line of "The Bluebells of Scotland," as compared with its *rhythmic pattern,* may be expressed thus:



What is here called a *metric pattern* is, however, often called a *rhythm,* thus reversing the use of the terms. See *meter*², 2, and *rhythm,* 2.

metric³, *a.*—**Metric horse-power.** See ★*horse-power.*

metrics¹, *n.*—**Projective metrics,** in *geom.,* the treatment of metric relations as projective relations to the absolute.

metriocephalic (met″ri-ọ-se-fal′ik), *a.* [Gr. μέτριος, within measure, moderate, + κεφαλή, head.] In *craniom.,* having a length-height index between 72 and 77: said of skulls. *Amer. Anthropologist,* 1901, p. 40.

metro (met′rō), *n.* [An arbitrary detached use of *metro-,* combining form of *meter.*] One of a series of decimal submultiples of the meter: as, *metro*-sixteen, the sixteenth of this series of metros. See the extract and ★*uno.* *G. J. Stoney.*

> A *metro*-ten is the tenth of the *metros* or decimal units of the metre. In other words it is 10^{10} metres.
> *Rep. Brit. Ass'n Advancement of Sci.,* 1901, p. 572, note.

metrocace (mẹ-trok′a̤-sẹ), *n.* [Gr. μήτρα, uterus, + κάκη, bad condition.] Gangrenous inflammation of the uterus.

metrocampsis (mē-trọ-kamp′sis), *n.* [Gr. μήτρα, uterus, + κάμψις, flexion.] Flexion of the uterus.

metrocele (mē′trọ-sēl), *n.* [Gr. μήτρα, uterus, + κήλη, tumor.] Same as *hysterocele.*

metrodynia (mē-trọ-din′i-ä̤), *n.* [NL., < Gr. μήτρα, uterus, + ὀδύνη, pain.] Uterine colic.

metrol. An abbreviation (*a*) of *metrological;* (*b*) of *metrology.*

metroncus (mẹ̄-trong′kus), *n.*; pl. *metronci* (-tron′sī). [NL., < Gr. *μήτρα*, uterus, + *ὄγκος*, mass.] A tumor of the uterus; also, metrophyma.

metroneurosis (mē″trọ-nụ-rō′sis), *n.* [NL., < Gr. *μήτρα*, uterus, + NL. *neurosis.*] Any neurosis originating from uterine disease or pregnancy.

metronym (mē′trọ-nim), *n.* [Gr. *μήτηρ*, mother, + *ὄνομα*, *ὄνυμα*, name. Compare *metronymic.*] A personal name derived from the mother or from the maternal family.

> The acceptance of *metronyms* in the genealogies as proofs of female kinship, while patronyms are rejected.
> *Nature*, May 5, 1904, p. xiii.

metronymic, *a.* **2.** In *anthrop.*, relating to that form of society in which the child takes its name from the mother's family, or in which the child is reckoned as a member of the maternal family.

> The older [group] may be named *metronymic.* In a *metronymic* group all the relationships are traced through mothers; relationships on the father's side are ignored.
> *Giddings*, Elem. of Sociol., p. 188.

metronymy (mẹ-tron′i-mi), *n.* [*metronym* + *-y*^{3}.] The system of tracing name and kinship in the female line.

> *Metronymy* and Patronymy.—It is necessary to distinguish between two different types of ethnical organization, one of which is older than the other.
> *Giddings*, Elem. of Sociol., p. 187.

metrop. Same as ★*met.* (*c*).

metropathia (mē-trọ-path′i-ạ̈), *n.* [NL., < Gr. *μήτρα*, uterus, + *πάθος*, disease.] Uterine disease. Also *metropathy.*

metrophlogosis (mē″trọ-flọ-gō′sis), *n.* [NL., < Gr. *μήτρα*, uterus, + *φλόγωσις*, inflammation.] Severe inflammation of the uterus.

metrophotographic (met″rọ-fō-tọ-graf′ik), *a.* Pertaining to or obtained by means of metrophotography.

> A most useful variation on ordinary *metrophotographic* observations, for it is obvious that the representation of orographic features as effected by this well known process conveys a far more readable impression to the eye of the nature of the country photographed, the rise and fall of undulations, the gradation of slopes, &c., than any flat photograph can possibly convey.
> *Nature*, Oct. 8, 1903, p. 546.

metrophotography (met″rọ-fọ-tog′rạ-fi), *n.* [Gr. *μέτρον*, measure, + E. *photography.*] **1.** The art of making topographic maps from measurements of stereophotographs of great interobjective distance. *Nature*, Aug. 18, 1904, p. 392.—**2.** The taking of stereophotographs for use in map-making.

metrophyma (mē-trō-fī′mạ̈), *n.*; pl. *metrophymata* (-mạ-tạ̈). [NL., < Gr. *μήτρα*, uterus, + *φῦμα*, a swelling.] Same as ★*metroncus.*

metropolitanship (met-rō-pol′i-tạn-ship), *n.* [*metropolitan* + *-ship.*] The office or jurisdiction of a metropolitan.

metropolypus (mē-trọ-pol′i-pus), *n.* [NL., < Gr. *μήτρα*, uterus, + *πολύπους*, polypus.] A polypus of the uterus.

metroproptosis (mē″trọ-prop-tō′sis), *n.* [NL., < Gr. *μήτρα*, uterus, + *πρόπτωσις*, falling forward, prolapse.] Same as ★*metroptosis.*

metroptosis (mē-trop-tō′sis), *n.* [NL., < Gr. *μήτρα*, uterus, + *πτῶσις*, falling.] Falling of the uterus. Also *metroproptosis.*

metrorrhagic (mē-trọ-rā′jik), *a.* [*metrorrhagi(a)* + *-ic.*] Pertaining to or suffering from metrorrhagia or uterine hemorrhage.

metrorrhexis (mē-trọ-rek′sis), *n.* [NL., < Gr. *μήτρα*, uterus, + *ῥῆξις*, rupture.] Rupture of the uterus during childbirth.

metrosalpingitis (mē-trọ-sal-pin-jī′tis), *n.* [NL., < Gr. *μήτρα*, uterus, + NL. *salpingitis.*] Inflammation of the uterus and Fallopian tubes, or of the latter alone.

metrosalpinx (mē-trọ-sal′pingks), *n.* [NL., < Gr. *μήτρα*, uterus, + *σάλπιγξ*, trumpet.] Same as *Fallopian tube.*

metroscope^2 (met′rọ-skōp), *n.* [Gr. *μέτρον*, measure, + *σκοπεῖν*, view.] A speed-measuring device or tachometer which indicates both speed and distance traveled.

metrostaxis (mē-trọ-stak′sis), *n.* [Gr. *μήτρα*, womb, + *στάξις*, a dropping.] Hemorrhage of the uterus.

metrostenosis (mē″trọ-ste-nō′sis), *n.* [NL., < Gr. *μήτρα*, uterus, + *στένωσις*, narrowing.] Abnormal contraction of the cavity of the uterus.

metrosteresis (mē″trọ-ste-rē′sis), *n.* [NL., < Gr. *μήτρα*, uterus, + *στέρησις*, deprivation.] **1.** Removal of the uterus.—**2.** Absence of the uterus.

metrostyle (met′rọ-stīl), *n.* [Gr. *μέτρον*, a measure, + E. *style*^{2}.] A speed-controller used in certain mechanical piano-players. It consists of an index that can be moved to right or left to correspond with a line traced on the revolving music-roll, its movement affecting a lever by which the tempo of the music may be increased or diminished.

metrosynizesis (mē″trọ-sin-i-zē′sis), *n.* [NL., < Gr. *μήτρα*, uterus, + *συνίζησις*, collapse, shrinking.] Adhesion of the uterus to neighboring structures, the result of inflammation.

metro-ten (met′rō-ten), *n.* A unit of length equal to 1×10^{10} meters. See ★*metro.*

metrotomy (mẹ-trot′ọ-mi), *n.* [Gr. *μήτρα*, uterus, + *-τομια*, < *ταμεῖν*, cut.] Same as *hysterotomy.*

metuloid (met′ụ-loid), *a.* and *n.* [L. *metula*, a small pyramid, an obelisk, + *-oid.*] **I.** *a.* Resembling a small pyramid or obelisk.

II. *n.* An object that resembles a small pyramid.

> *Metuloids*, modified cystidia, encrusted with lime, which project from the hymenium of Peniophora, giving it a velvety appearance. *Jackson*, Glossary. *N. E. D.*

metzograph (met′zọ-grȧf), *n.* [*Metz*, a surname, + Gr. *γράφειν*, write.] A form of screen, for process-work in photography, in which lines or dots are avoided and an irregularly grained effect is produced by the use of glass with a wavy surface.

meuse, *n.* See *muse*^{3}, *n.*

Mex. An abbreviation (*a*) of *Mexican*; (*b*) of *Mexico.*

mexcal, *n.* Same as *mescal.*

Mexican bead-tree, bean-weevil, boll-weevil, calendar, cherry, chicken-bug. See ★*bead-tree*, ★*bean-weevil*, ★*weevil*, etc.—**Mexican coca.** Same as *Mexican clover.* See *Richardsonia.*—**Mexican coral bean, luster.** See ★*bean*^{1}, ★*luster*^{2}.—**Mexican snapper.** Same as *red snapper.* See *snapper*^{1} (*g*) (3).—**Mexican sole, stinkwood, strips.** See ★*sole*^{2}, ★*stinkwood*, ★*strip*^{2}.—**Mexican walnut.** Same as *rock-walnut* (which see, under *walnut*). See also ★*walnut.*

Mexicana fiber. See ★*fiber*^{1}.

Mexicanize (mek′si-kạn-īz), *v. t.*; pret. and pp. *Mexicanized*, ppr. *Mexicanizing.* [*Mexican* + *-ize.*] To make like the Mexicans; assimilate to the customs and institutions of Mexico.

> These Indians, now practically *Mexicanized.*
> *An. Rep. Bur. Amer. Ethnol.*, 1897–98, p. xvi.

meymacite (mā′mạ-sīt), *n.* [*Meymac* (see def.) + *-ite*^{2}.] A hydrated tungstic oxid derived from the alteration of scheelite, found at Meymac, Corrèze, France.

mezure, *n.* and *v.* A simplified spelling of *measure.*

mezzano (med-zä′nō), *a.* [It. *mezzano* (pl. *mezzani*), middle, medium, < L. *medianus*, middle: see *median*^{1}.] Of medium size: applied to a macaroni larger than spaghetti and smaller than the largest macaroni.

> The macaroni called "*Mezzani*," which is a name designating size, not quality, is the preferable kind for macaroni dishes made with cheese.
> *Century Cook Book*, p. 225.

mezzeria (med-ze-rē′ä), *n.* [It., < *mezzo*, middle, half, < L. *medius*, half: see *medium.*] In Italy, a system of halving the produce of the soil between landowner and landholder: same as *metayage.* See the extract.

> A system . . . in certain provinces of Italy and France, where it was once almost universal, and is still very common, is called *mezzeria* and métayage or halving. . . . These expressions . . . merely signify that the produce is divisible in certain definite proportions, which must obviously vary . . . and which do in practice vary so much that the landlord's share is sometimes as much as two-thirds, sometimes as little as one-third.
> *Encyc. Brit.*, I. 415.

mezzograph (mez′ọ or med′zọ-grȧf), *n.* [*mezzo(tint)* + *-graph.*] A photographic print imitating the effect of a mezzotint. *N. E. D.*

mezzotype (mez′ọ- or med′zọ-tīp), *n.* [*mezzo(tint)* + *type.*] A kind of paper for photographic printing. *N. E. D.*

mf. 2. In *elect.*, an abbreviation of *microfarad.*

mfd. An abbreviation (*a*) of *manufactured*; (*b*) in *electrotechnics*, of *microfarad.*

mfg. An abbreviation of *manufacturing.*

mfr. An abbreviation of *manufacturer.*

mg. An abbreviation of *milligram.*

M. G. An abbreviation (*c*) of Latin *Musicæ Graduatus*, Graduate of Music.

M. G., M. Goth. Abbreviations of *Mœsogothic.*

mgm. An abbreviation of *milligram.*

Mgr. An abbreviation (*b*) [*l. c.*] of *milligram*; (*c*) [*l. c.*] of *manager.*

M. Gr. An abbreviation of *Middle Greek.*

M. H. An abbreviation (*a*) of *Master of Horticulture*; (*b*) of *Most Honorable.*

M. Hon. An abbreviation of *Most Honorable.*

mhor (mōr), *n.* An East Indian name of the great whale-shark, *Rhinodon typicus.*

mhorr (môr), *n.* [Ar.] A West African gazel, named by E. T. Bennett *Gazella mhorr*, having horns annulated with ten or twelve prominent rings. *N. E. D.*

M. H. R. An abbreviation of *Member of the House of Representatives.*

M. H. S. An abbreviation (*a*) of *Massachusetts Historical Society*; (*b*) of *Member of the Historical Society.*

mi. An abbreviation (*a*) of *mile*; (*b*) of *mill* or *mills*; (*c*) of *milliampere.*

miam (mī′ạm), *n.* Same as ★*mia-mia.*

mia-mia (mī′mī), *n.* [Also *mi-mi*, *my-my*, *miam*; a native name.] A native hut or shelter of the Australian aborigines.

> The word is aboriginal, and has been spelt variously. *Mia-mia* is the most approved spelling, *mi-mi* the most approved pronunciation. *E. E. Morris*, Austral English.

miasmatology (mī″az-mạ-tol′ọ-ji), *n.* Same as *miasmology.*

miasmic (mī-az′mik), *a.* Same as *miasmatic.*

Miauli, essence of. See ★*essence.*

miazin (mī-az′in), *n.* Same as ★*pyrimidine.*

Mic. An abbreviation of *Micah*, a book of the Old Testament.

mica^2, *n.*—**Water-mica**, a trade-name for clear, colorless muscovite.

> The clear kind is known to the trade as "*water mica*," and this, as a rule, contains no iron, but much of the large-sized muscovite is unfortunately colored to some extent, which detracts greatly from its value.
> *Jour. Franklin Inst.*, Sept., 1905, p. 200.

micacious (mī-kā′shius), *a.* [L. *micare*, shine.] Shining; sparkling; glittering.

> There is the Cyclopean stile, of which Johnson is the great example; the sparkling, or *micacious*, possessed by Hazlitt, and much affected in Reviews and Magazines; the oleaginous, in which Mr. Charles Butler bears the palm, or more appropriately the olive branch.
> *Southey*, Doctor, interchap. xxii.

micacization (mī″kạ-sī-zā′shọn), *n.* [*micacize* + *-ation.*] In *geol.*, the process of becoming charged with mica during metamorphism. *Geikie*, Text-book of Geol., p. 790.

micacize (mī′kạ-sīz), *v. i.*; pret. and pp. *micacized*, ppr. *micacizing.* [Irreg. < *mica*^{2} + *-c-* + *-ize.*] In *geol.*, to become charged with mica, as in the production of mica-schists from shales.

> The Liassic shales by degrees become *micacised.*
> *Geikie*, Text-book of Geol., p. 803.

micanite (mī′kạ-nīt), *n.* [*mica*^{2} + *-n-* + *-ite*^{2}.] A trade-name of mica in sheets of considerable size made by cementing together a number of small clear pieces split very thin: used as an insulating material for electric circuits. *Elect. Rev.*, Oct. 8, 1904, p. 575.

micarelle (mī′kạ-rel), *n.* [*mica*^{2}: from its appearance.] A micaceous mineral which has externally the form of scapolite and results from its alteration. *Chester.*

M. I. C. E. An abbreviation of *Member of the Institute of Civil Engineers.*

Micellian water. See ★*water.*

Mich. An abbreviation (*b*) of *Michigan.*

Michelangelo, bar of. See ★*bar*^{1}.

michron (mī′kron), *n.* [Gr. *μι(κρός)*, small (see *micron*), + *χρόνος*, time.] A unit of time proposed by Lord Kelvin; the time corresponding to the period of vibration of an ether-wave whose length in vacuo is one micron.

Mick (mik), *n.* [An abbreviation of *Michael.*] A slang name for an Irishman. See *micky.*

micr-. In *phys.*, etc., a prefix used instead of *micro-* before a second element beginning with a vowel. See *micro-.*

micracoustic (mik-rạ-kös′tik), *a.* [*micr(o-)* + *acoustic.*] Having the property of rendering faint sounds audible; magnifying weak sounds.

micræsthete, *n.* Same as ★*micresthete.*

micrallantoid (mik-ra-lan′toid), *a.* [*micr(o-)* + *allantoid.*] Characterized by a small allantois. *W. Turner*, Anat., II. 869.

Micrampelis (mi-kram′pe-lis), *n.* [NL. (Rafinesque, 1808), < Gr. *μικρός*, little, + *ἀμπελίς*, dim. of *ἄμπελος*, a vine.] A genus of dicotyledonous plants belonging to the family *Cucurbitaceæ.* (See *Echinocystis.*) *Micrampelis Oregona* is the wild gourd of Oregon, and *M. macrocarpa* and *M. fabacea* are the chilicothe and bitter-root of California. See ★*chilicothe.*

micranatomy (mik-rạ-nat′ọ-mi), *n.* [NL., < Gr. *μικρός*, small, + E. *anatomy.*] Microscopical anatomy.

micrandrous (mik-ran′drus), *a.* [Gr. *μικρός*, small, + *ἀνήρ* (*ἀνδρ-*), male, + *-ous.*] In *bot.*, of or pertaining to the dwarf male plants of the *Œdogoniaceæ.*

Micraster (mik-ras′tėr), *n.* [NL., ‹ Gr. *μικρός*, small, + *ἀστήρ*, star.] A genus of fossil sea-urchins or *Echinoidea* having a heart-shaped tumid test. It is very abundant in the Cretaceous rocks and occurs also in the early Tertiary.

micrencephalic (mik″ren-se-fal′ik), *a.* Same as *micrencephalous.*

micrencephalism (mik-ren-sef′a̤-lizm), *n.* [*micrencephal*(*y*) + *-ism.*] Same as ★*micrencephaly.*

micrencephalus (mik-ren-sef′a̤-lus), *n.*; pl. *micrencephali* (-lī). [NL.] 1. A micrencephalous individual.—2. Same as ★*micrencephaly.*

The conditions known as microcephalus and *micrencephalus.* *Buck*, Med. Handbook, I. 140.

micrencephaly (mik-ren-sef′a̤-li), *n.* [Gr. *μικρός*, small, + *ἐγκέφαλος*, brain, + *-y*³.] In *anthrop.*, the condition or character of being micrencephalous, or small-brained.

micrergate (mī-krėr′gāt), *n.* [Gr. *μικρός*, small, + *ἐργάτης*, worker.] A worker ant of smaller stature than the typical worker form of the species. The workers of the first brood of offspring reared by a young ant-queen are normal micrergates. *Wheeler.*

micresthete (mik′res-thēt), *n.* [Gr. *μικρός*, small, + *αἰσθητός*, ‹ *αἰσθάνεσθαι*, perceive.] In chitons, one of the numerous fine branches given off by a megalesthete. Each branch ends in a swelling which occupies a micropore and carries a small chitinous cap.

micrify (mik′ri-fī), *v. t.* [Gr. *μικρός*, small. See *magnify.*] To make small; minify.

This power which he [the poet] exerts . . . to magnify the small, to *micrify* the great. *Emerson*, Nature, p. 67. *N. E. D.*

Micristodus (mī-kris′tọ̄-dus), *n.* [NL., ‹ Gr. *μικρός*, small, + *ἰστός*, an upright projection, + *ὀδούς*, tooth.] A genus of very large sharks of the family *Rhinodontidæ*, found in the Gulf of California.

micristological (mik″ris-tọ̄-loj′i-ka̤l), *a.* Relating or pertaining to micristology.

micro-aërophile (mī-krọ̄-ā′ẹ-rọ̄-fil), *a.* and *n.* [Gr. *μικρός*, small, + E. *aërophile.*] I. *a.* Same as ★*micro-aërophilous.*

II. *n.* A micro-aërophilous organism.

micro-aërophilic (mī″krọ̄-ā-ẹ-rọ̄-fil′ik), *a.* Same as ★*micro-aërophilous.*

Clostridium Pasteurianum, which Winogradsky found to possess nitrogen-assimilating properties, is an anaerobe, but it also grows in symbiosis with aerobic forms; it is, therefore, *microaerophilic.* *Science*, March 6, 1903, p. 371.

micro-aërophilous (mī″krọ̄-ā-ẹ-rof′i-lus), *a.* [*micro-aërophile* + *-ous.*] Requiring but little free oxygen: a term used to designate bacteria and other organisms. See *anaërobic.*

micro-ampere (mī′krọ̄-am-pãr′), *n.* A unit employed in the measurement of very small electric currents; one millionth of an ampere or 1×10^{-7} c. g. s. units of current.

micro-analysis (mī″krọ̄-a̤-nal′i-sis), *n.* Analysis by means of the microscope.

micro-anemometry (mī″krọ̄-an-e-mom′e-tri), *n.* [Gr. *μικρός*, small, + E. *anemometry.*] The determination of wind-velocity on a very small scale, specifically by Barus's filar micrometer.

microbacillar (mī-krọ̄-bas′i-lär), *a.* [Gr. *μικρός*, small, + E. *bacillus* + *-ar*³.] Same as *bacterial.* *Buck*, Med. Handbook, VII. 88.

microbacillary (mī-krọ̄-bas′i-lạ̄-ri), *a.* Same as *bacterial.*

microbalance (mī′krō-bal-ans), *n.* [Gr. *μικρός*, small, + E. *balance.*] A delicate balance for weighing 1 milligram or less. It consists of a capillary glass tube 30 centimeters long and 0.5 millimeter thick, bent at a right angle so as to make one part a pointer 9 centimeters long. The tube is attached, by water-glass, to a quartz fiber 5 centimeters long and fastened to a pronged support. The instrument is thus built on the principle of the torsion balance. A hooked platinum wire melted into the end of the glass beam carries a platinum basket of 20 milligrams weight which holds the objects to be weighed. The deflection of the pointer is read from a scale, and platinum-wire riders serve as weights. The mechanism was devised by Nernst.

microbarograph (mī-krọ̄-bar′ọ̄-gråf), *n.* [*micro-* + *barograph.*] A barograph designed to record minute and rapid variations in the pressure of the atmosphere. *Nature*, Aug. 18, 1904, p. 368.

microbicidal (mī-krō-bi-sī′da̤l), *a.* [*microbicide* + *-al*¹.] Destructive to microbes.

microbioscope (mī-krọ̄-bī′ọ̄-skōp), *n.* [Gr. *μικρός*, small, + E. *bioscope.*] An apparatus for showing or recording the movements of micro-organisms. *Nature*, Nov. 5, 1903, p. 18.

Microbiotheriidæ (mī″krọ̄-bī-ọ̄-thẹ̄-rī′i-dē), *n. pl.* [*Microbiotherium*, the type genus, + *-idæ.*] A family of small marsupial mammals, containing extinct species from the Miocene of Patagonia. *Ameghino*, 1887.

microbism (mī′krọ̄-bizm), *n.* A condition due to the presence of microbes.

The various explanations of "return" cases were considered, including, besides the ordinary ones of failure of disinfection or a true "return" of infection, the possibility of a relapse of the original disease, of latent *microbism*, or of missed cases. *Lancet*, June 18, 1904, p. 1724.

microblast (mī′krọ̄-blåst), *n.* [Gr. *μικρός*, small, + *βλαστός*, germ.] An unusually small nucleated red blood-corpuscle. See cut under ★*blood*, 1.

microbrachia (mī-krọ̄-brā′ki-a̤), *n.* [NL., ‹ Gr. *μικρός*, small, + *βραχίων* (L. *brachium*), arm.] A condition in which the arms are abnormally small.

microbrachius (mī-krọ̄-brā′ki-us), *n.*; pl. *microbrachii* (-ī). [NL.] One who has abnormally small, but not deformed, arms.

microbranchiate (mī-krọ̄-brang′ki-āt), *a.* [Gr. *μικρός*, small, + *βράγχιον*, gill, + *-ate*¹.] Relating or pertaining to the small gill. Contrasted with ★*macrobranchiate.*

In the body of the animal [Nautilus] two metameres are recognised—the *microbranchiate* segment, containing the smaller gill, the outer osphradium, pericardial gland, kidney, and kidney opening, with the generative opening on the right side and the opening of the pear-shaped body on the left; and the macrobranchiate segment, containing the greater gill and the inner osphradium, pericardial gland, kidney, and renal opening. *Annals and Mag. Nat. Hist.*, Jan., 1903, p. 135.

microcalory (mī-krọ̄-kal′ọ̄-ri), *n.* [Gr. *μικρός*, small, + E. *calory.*] One thousandth of a small calory.

microcaltrop (mī-krō-kal′trop), *n.* [Gr. *μικρός*, small, + E. *caltrop.*] Same as *microcaltrops.*

Microcampyli (mī-krọ̄-kam′pi-lī), *n. pl.* [NL., ‹ Gr. *μικρός*, small, + *καμπύλος*, curved.] In Hyatt's classification of the cephalopods, a suborder of the *Ammonoidea.* It is the primitive suborder of forms which possess a ventral siphuncle and are characterized by undivided ventral lobes and very slightly developed saddles.

microcanonical (mī″krọ̄-ka̤-non′i-ka̤l), *a.* [Gr. *μικρός*, small, + E. *canonical.*] In *statistical mech.*, of or pertaining to a distribution in phase such that all the systems of an ensemble have the same energy. *J. W. Gibbs*, Statistical Mech., p. 114.—**Microcanonical distribution, ensemble.** See ★*distribution*, ★*ensemble.*

microcanonically (mī″krọ̄-ka̤-non′i-ka̤l-i), *adv.* In a microcanonical manner.

microcardia (mī-krọ̄-kär′di-a̤), *n.* [NL., ‹ Gr. *μικρός*, small, + *καρδία*, heart.] A condition in which the heart is abnormally small.

microcardius (mī-krọ̄-kär′di-us), *n.*; pl. *microcardii* (-ī). [NL.] A monster having a very small and imperfect heart.

microcarpous (mī-krọ̄-kär′pus), *a.* [Gr. *μικρός*, small, + *καρπός*, fruit.] In *bot.*: (*a*) Having small fruit. (*b*) Of mosses, having small urns.

microcentrosome (mī-krọ̄-sen′trọ̄-sōm), *n.* [Gr. *μικρός*, small, + *κέντρον*, center, + *σῶμα*, body.] In *cytol.*, the central granule of the astrosphere in the dividing-cell; the centriole of Boveri. *Ziegler*, 1898.

microcentrum (mī-krọ̄-sen′trum), *n.*; pl. *microcentra* (-tra̤). [NL., ‹ Gr. *μικρός*, small, + *κέντρον*, center.] In *cytol.*, the centrosome or cluster of centrosomes united by a primary centrodesmus in the astral system of certain cells. *Heidenhain*, 1894.

microcephal (mī-krọ̄-sef′a̤l), *n.* [*microcephal*(*ous*).] A microcephalous individual. *Jour. Amer. Folk-lore*, April–June, 1902, p. 121.

microceratous (mī-krọ̄-ser′a̤-tus), *a.* [Gr. *μικρός*, small, + *κέρας* (*κερατ-*), horn, + *-ous.*] In *entom.*, having small antennæ.

Microchæta, *n.* 2. [*l. c.*; pl. *microchætæ* (-tē).] One of certain small bristles which occur on the body of a dipterous insect and are used in classification. See ★*chætotaxy.*

The supra-alars are unusual; the cephalic one is small, often so small as to be little or not at all distinguishable from the *microchaetae.* *Kansas Univ. Quarterly*, July, 1900, p. 224.

microchemic (mī-krọ̄-kem′ik), *a.* Same as *microchemical.*

microchiria (mī-krọ̄-kī′ri-a̤), *n.* [NL., ‹ Gr. *μικρός*, small, + *χείρ*, hand.] A condition in which the hands are abnormally small. Also *microcheiria.*

Microchœridæ (mī-krọ̄-kē′ri-dē), *n. pl.* [*Microchœrus*, the type genus (Gr. *μικρός*, small, + *χοῖρος*, hog), + *-idæ.*] A family of small lemur-like animals, comprising extinct species of small size whose remains occur in Eocene strata. *Lydekker*, 1887.

microclase (mī′krọ̄-klās), *n.* [Gr. *μικρός*, small, + *κλάσις*, fracture.] A name given by Wiik to the feldspar usually called *anorthoclase.*

microcnemia (mī-krok-nē′mi-a̤), *n.* [Gr. *μικρός*, small, + *κνήμη*, tibia.] The condition of having the leg short below the knee. See ★*brachycnemic.*

microcnemic (mī-krok-nē′mik), *a.* Same as ★*brachycnemic.*

micrococcal (mī-krọ̄-kok′a̤l), *a.* [*micrococc*(*us*) + *-al*¹.] Pertaining to, or of the nature of, a micrococcus.

Micrococcus lanceolatus. See ★*diplococcus pneumoniæ* (with cut).—**Micrococcus melitensis**, the pathogenic micro-organism of Malta fever.—**Micrococcus neoformans**, an alleged pathogenic micro-organism of cancer: its existence is doubtful.

Microcodon (mī-krō-kō′don), *n.* [Gr. *μικρός*, small, + *κώδων*, bell.] The typical genus of the family *Microcodonidæ.* *Ehrenberg*, 1830.

Microcodonidæ (mī″krọ̄-kọ̄-don′i-dē), *n. pl.* [NL., ‹ *Microcodon* + *-idæ.*] A family of illoricate rotifers, of the order *Ploima*, containing the genera *Microcodon* and *Microcodides.*

Microcotyle (mī-krọ̄-kot′i-lē), *n.* [NL. (Van Beneden and Hesse, 1863), ‹ Gr. *μικρός*, small, + *κοτύλη*, a cup, socket.] The typical genus of the family *Microcotylidæ.*

Microcotylidæ (mī″krọ̄-kọ̄-til′i-dē), *n. pl.* [NL., ‹ *Microcotyle* + *-idæ.*] A family of trematodes, of the order *Heterocotylea*, having two buccal and many small posterior suckers borne on a variously shaped marginal cotylophore. It contains the genera *Microcotyle*, *Gastrocotyle*, and *Axine.*

microcranous (mī-krọ̄-krā′nus), *a.* [Gr. *μικρός*, small, + *κρανίον*, cranium.] In *craniom.*, having a skull of small volume, from 1,540 to 1,630 cubic centimeters in males, and from 1,420 to 1,500 cubic centimeters in females.

microcryptocrystalline (mī″krọ̄-krip-tọ̄-kris′ta̤-lin), *a.* [Gr. *μικρός*, small, + E. *cryptocrystalline.*] In *petrog.*, microscopically cryptocrystalline, that is, composed of crystals so minute that their form cannot be seen with a microscope, their presence being recognized by the phenomenon of aggregate polarization.

The closest approach to typical andesitic microstructure occurs in the dike cutting shales in the ridge south of Winter Creek. . . . The transition from a groundmass of brown *microcryptocrystalline* matrix with distinct lath-shaped feldspar microlites and magnetite grains to one that is gray in thin section with larger feldspar laths and a slightly micropoikilitic structure can be observed in one rock section. *U. S. Geol. Surv.*, Monographs, XXXII. 64.

microcrystal (mī-krọ̄-kris′ta̤l), *n.* [*micro-* + *crystal.*] A microscopic crystal.

microcrystallography (mī-krọ̄-kris-ta̤-log′ra̤-fi), *n.* [*micro-* + *crystallography.*] Microscopic crystallography.

microcytase (mī-krọ̄-sī′tās), *n.* [Gr. *μικρός*, small, + E. *cytase.*] A cytase (complement) in the sense of Metchnikoff, derived from the polymorphonuclear leucocytes.

microdactylism (mī-krọ̄-dak′ti-lizm), *n.* [Gr. *μικρός*, small, + *δάκτυλος*, finger or toe, + *-ism.*] A condition in which the fingers and toes are abnormally short. *Buck*, Med. Handbook, IV. 498.

microdactyly (mī-krọ̄-dak′ti-li), *n.* Same as ★*microdactylism.*

microdentous (mī-krọ̄-den′tus), *a.* [Gr. *μικρός*, small, + L. *dens* (*dent-*), tooth, + *-ous.*] Having abnormally small teeth.

Microdesmus (mī-krọ̄-des′mus), *n.* [NL., ‹ Gr. *μικρός*, small, + *δεσμός*, band.] A genus of small fishes of the family *Cerdalidæ*, found off the Pacific coast of tropical America.

microdiactine (mī″krọ̄-dī-ak′tin), *n.* [Gr. *μικρός*, small, + *δι-*, twice, + *ἀκτίς* (*ἀκτιν-*), ray.] A small diactine sponge-spicule.

microdiæne (mī-krọ̄-dī′ēn), *n.* [Gr. *μικρός*, small, + *δι-*, two-, + *-αινα* as in *τρίαινα*, trident.] In the nomenclature of the sponge-spicules, a triod of minute size having two arms of like curvature.

microdichotriæne (mī-krọ-dī-kọ-trī′ēn), *n.* [Gr. *μικρός*, small, + *δίχα*, in two, + *τρίαινα*, trident.] A small or reduced dichotriæne.

> Spicules calthrops-like microtriænes and spined microxeas; *microdichotriænes* absent.
> *Proc. Zool. Soc. London*, 1902, II. 218.

Microdiscus (mī-krọ-dis′kus), *n.* [Gr. *μικρός*, small, + *δίσκος*, disk.] A primitive Cambrian genus of trilobites of the family *Agnostidæ*, with slightly segmented cephalon and pygidium. See *Agnostus*.

microdont, *a.* **2.** In *craniom.*, having a dental index less than 42.

microdontic (mī-krọ-don′tik), *a.* [*microdont* + *-ic.*] Same as ★*microdont*, 2.

microdontism (mī-krọ-don′tizm), *n.* [*microdont* + *-ism.*] The character or state of being microdont; microdentism.

microdontous (mī-krọ-don′tus), *a.* [*microdont* + *-ous.*] Same as *microdont*.

microdyne (mī′krō-dīn), *n.* [Gr. *μικρός*, small (see *micron*), + E. *dyne.*] A unit of force equal to one millionth of a dyne.

micro-ergate (mī-krọ-ėr′gāt), *n.* See ★*micrergate.*

microfauna (mī-krọ-fâ′nä), *n.*; pl. *microfaunæ* (-nē). [NL., < Gr. *μικρός*, small, + L. *fauna.*] A fauna in which all the animals are of minute or diminutive size; a congeries of microscopic animals, or sometimes a depauperated fauna. *Geog. Jour.* (R. G. S.), X. 323.

microflora (mī-krọ-flō′rä), *n.*; pl. *microfloræ* (-rē). [Gr. *μικρός*, small, + L. *flora.* See *flora.*] A flora in which all the plants are of minute size; a congeries of microscopic plants: opposed to ★*macroflora.* *Smithsonian Rep.*, 1904, p. 351.

microform (mī′krọ-fôrm), *n.* [Gr. *μικρός*, small, + E. *form.*] A microscopic organism, or one that is too small to be studied without a microscope.

microfungus (mī-krō-fung′gus), *n.*; pl. *microfungi* (-fun′jī). [NL., < Gr. *μικρός*, small, + L. *fungus*, fungus.] A minute fungus which must be magnified in order that its gross morphology may be discerned: distinguished from mushrooms and other large forms.

microgamete (mī-krō-gam′ēt), *n.* [Gr. *μικρός*, small, + E. *gamete.*] **1.** The smaller of the two conjugating cells or gametes of a colonial rhizopod. See ★*macrogamete.*—**2.** A male germ-cell; a spermatozoön. *Encyc. Brit.*, XXXII. 209.

> Coccidium differs further from Monocystis in that the conjugating gametes are sexually differentiated, the small, active one, or *microgamete*, functions as the male cell, and the larger quiescent one, or macrogamete, as the female or egg cell, while in the gregarine, on the other hand, the conjugating gametes are of equal size.
> *Pop. Sci. Mo.*, June, 1901, p. 192.

microgametocyte (mī″krọ-gam′e-tọ-sīt), *n.* [Gr. *μικρός*, small, + E. *gametocyte.*] In sporozoans, the mother-cell of a microgamete or male element: contrasted with ★*macrogametocyte.*

> Another interpretation would regard this as the male element (mother-*microgametocyte*), in which the falciform bodies represent the *microgametocytes* and from the latter the microgametes may arise somewhat as described by Siedlecki for Adelea ovata, i. e. after the *microgametocyte* has reached the macrogamete.
> *Jour. Exper. Med.*, March 17, 1902, p. 310.

microgametophyte (mī-krọ-gam′e-tọ-fīt), *n.* [Gr. *μικρός*, small, + E. *gametophyte.*] A male gametophyte when the sexes are diœciously separated.

microgametophytic (mī″krọ-gam-e-tọ-fit′ik), *a.* [Gr. *μικρός*, small, + E. *gametophyt(e)* + *-ic.*] Of the nature of or relating to a microgametophyte.

> The question here arises if we are to regard the rich prothallial endowment of the Podocarpineæ as the retention of a feature possessed by the ancestral Coniferales or as a recent cenogenetic adaptation, which has arisen at a later stage of evolution. This question can only be answered by a consideration of the *microgametophytic* conditions found in the Gymnosperms in general, particularly the more ancient of those still living.
> *Amer. Nat.*, June, 1907, p. 361.

microgauss (mī′krọ-gous), *n.* In *elect.*, one millionth part of a gauss or of a c. g. s. unit: a practical unit of magnetic induction.

microgilbert (mī-krō-gil′bėrt), *n.* In *elect.*, one millionth part of a gilbert or of a c. g. s. unit: a practical unit of magnetomotive force.

micrognathia (mī-krog-nā′thi-ä), *n.* [NL., < Gr. *μικρός*, small, + *γνάθος*, jaw.] In *anthrop.*, the condition of having small jaws.

micrognathic (mī-krog-nath′ik), *a.* Same as ★*micrognathous.*

micrognathism (mī-krog′nạ-thizm), *n.* Same as ★*micrognathia.*

micrognathous (mī-krog′nạ-thus), *a.* [Gr. *μικρός*, small, + *γνάθος*, jaw, + *-ous.*] In *anthrop.*, having small jaws.

Microgobius (mī-krō-gō′bi-us), *n.* [NL., < Gr. *μικρός*, small, + NL. *Gobius.*] A genus of gobioid fishes found on the Atlantic coast of the United States.

microgram, *n.* **2.** A photograph or a drawing of a microscopic object.

microgranitoid (mī-krọ-gran′i-toid), *a.* [*microgranit(e)* + *-oid.*] Resembling microgranite.

micrograph, *n.* **2.** An instrument for photographing microscopic objects.—**3.** Same as ★*microgram*, 2.

> The authors [of "Alloys of Copper and Cuprous Oxide"] studied by metallographical methods the various alloys of copper and cuprous oxide and show that area measurements of enlarged *micrographs* of pure coppers containing less oxygen than the eutectic give good valuations of the oxygen contained.
> *Elect. World and Engin.*, March 12, 1904, p. 532.

micrographical (mī-krọ-graf′i-kạl), *a.* Same as *micrographic.*

micrography, *n.* **2.** The art or process of photographing or depicting microscopic objects; photomicrography.

microgyne (mī′krō-jīn), *n.* [Gr. *μικρός*, small, + *γυνή*, a female.] A female or queen ant of smaller stature than the typical female form of the species. *Wasmann.*

microgyria (mī-krọ-jir′i-ạ), *n.* [NL., < Gr. *μικρός*, small, + *γῦρος*, a turning (see *gyrus*).] A condition in which the cerebral convolutions are abnormally small. *Jour. Med. Research*, March, 1907, p. 104.

microhemozoite, microhæmozoite (mī-krọ-hem-ọ-zō′īt), *n.* [Gr. *μικρός*, small, + *αἷμα*, blood, + *ζῷον*, animal, + *-ite*^{2}.] The smaller form of schizont in the development of the hemogregarine *Drepanidium serpentium.* Compare ★*macrohemozoite.* *Lutz.*

microhenry (mī-krọ-hen′ri), *n.*; pl. *microhenries* (-riz). [Gr. *μικρός*, small, + E. *henry.*] In *elect.*, one millionth part of a henry or one thousand c. g. s. units: a practical unit of inductance.

microhistological (mī″krō-his-tọ-loj′i-kạl), *a.* [*microhistolog(y)* + *-ic.*] Of or pertaining to microhistology.

microhistology (mī″krọ-his-tol′ọ-ji), *n.* [Gr. *μικρός*, small, + E. *histology.*] Microscopic histology; micristology.

microjoule (mī′krọ-joul), *n.* [Gr. *μικρός*, small, + E. *joule.*] A practical unit of work equal to ten ergs.

microkinetic (mī″krọ-ki-net′ik), *a.* [Gr. *μικρός*, small, + E. *kinetic.*] Pertaining to or consisting of minute, continued, and rapid motions or movements, such as those of tremor, titillation, formication, etc. [Rare.]

> The aimless and archaic movements of infancy . . . in the form of isolated automatic tweaks or twinges, and perhaps even the still more *microkinetic* gleanings of fibrillary formications, are . . . by slow processes of combined analysis and synthesis . . . made over into habits and conduct that fit the world of present environment.
> *G. S. Hall*, Adolescence, I. 163.

microlecithal (mī-krọ-les′i-thạl), *a.* [Gr. *μικρός*, small, + *λέκιθος*, yolk of an egg, + *-al*^{1}.] In *embryol.*, having very little food-yolk: applied to certain ova, such as those of sponges, marine worms, echinoderms, etc.: opposed to ★*macrolecithal* or ★*bradylecithal.*

microlepidotous (mī″krọ-lep-i-dō′tus), *a.* [Gr. *μικρός*, small, + *λεπιδωτός*, scaled.] Having minute scales.

Microlepidotus (mī″krọ-lep-i-dō′tus), *n.* [NL., < Gr. *μικρός*, small, + *λεπιδωτός*, scaled, < *λεπίς* (*λεπιδ-*), scale.] A genus of fishes of the family *Hæmulidæ*, found in the Gulf of California.

Microlestes (mī-krọ-les′tēz), *n.* [NL., < Gr. *μικρός*, small, + *λῃστής*, robber.] A genus of small marsupial mammals from the Triassic rocks of England and Germany.

microline (mī′krọ-līn), *n.* [*micro-* + *line*^{2}, *n.*] A proposed unit of measurement of microscopic objects. See the extract.

> The size of microscopic objects could . . . be recorded simply, by saying they were one, two, three, or more *Microlines* in diameter.
> *Rep. Brit. Ass'n Advancement of Sci.*, 1857, p. 115.

micrologic (mī-krọ-loj′ik), *a.* [*microlog(y)* + *-ic.*] **1.** Marked by minute investigation; micrological.—**2.** Of or pertaining to micrology; microscopical.

microlophic (mī-krọ-lof′ik), *a.* [Gr. *μικρός*, small, + *λόφος*, crest, + *-ic.*] In *craniom.*, having a low incisor crest in the anterior nasal aperture and an indistinct alveolar line. *Harrison Allen*, Jour. Acad. Nat. Sci., Phila., N. S., X. 419.

microm (mī′krom), *n.* [An alteration of *micron.*] Same as *micron*: proposed as a substitute for *micron* by Lord Kelvin, to avoid confusion with the unit of time, the *michron*, also suggested by him.

micromagnetometer (mī-krọ-mag-ne-tom′e-tėr), *n.* [Gr. *μικρός*, small, + E. *magnetometer.*] An instrument devised by Pender and Cremieu for the determination of very weak magnetic fields. It consists essentially of a horizontal bar carrying a vertical bar-magnet at one end and suspended by a torsion-fiber. A field of 0.00001 c. g. s. unit gives a large deflection. *Elect. World and Engin.*, April 18, 1903, p. 666.

micromania (mī-krọ-mā′ni-ä), *n.* [Gr. *μικρός*, small, + *μανία*, madness.] **1.** A delusion that objects, especially the parts of one's own body, are growing smaller.—**2.** An insane self-depreciation.

micromaniac (mī-krō-mā′ni-ak), *a.* and *n.* [*micromani(a)* + *-ac.*] **I.** *a.* Pertaining to or suffering from micromania.

II. *n.* **1.** One who is afflicted with micromania.—**2.** One who has a mania for littleness, weakness, or inefficiency. [Rare.]

> Alas, the Unity of Italy is undermined by the *micromaniacs* who aim at shutting Italy in her shell, at isolating her from the great nations, forbidding her to share the active initiatives on whose development her glorious destinies depend.
> *Crispi* (trans.), in The Nation, May 11, 1899, p. 350.

micromanometer (mī″krọ-mạ-nom′e-tėr), *n.* [Gr. *μικρός*, small, + E. *manometer.*] A very small, delicate manometer for measuring minute differences of pressure.

micromazia (mī-krọ-mā′zi-ä), *n.* [NL., < Gr. *μικρός*, small, + *μαζός*, breast.] A condition in which the breasts are abnormally small.

micromelia (mī-krọ-mē′li-ä), *n.* [NL., < Gr. *μικρός*, small, + *μέλος*, limb.] A condition in which the limbs are abnormally small.

micromelic (mī-krọ-mel′ik), *a.* [*micromel(ia)* + *-ic.*] Relating to or characterized by micromelia; having small extremities; dwarfish.

micromembrane (mī-krọ-mem′brān), *n.* [Gr. *μικρός*, small, + E. *membrane.*] A very thin layer of finely porous material, such as is used in experiments on osmose.

micromere, *n.* **2.** One of the small blastomeres, or cells, which result from the early cleavage of the egg: opposed to ★*macromere* or ★*megamere.*

> The eggs undergo a total, but unequal segmentation, with small cells (*micromeres*) at one pole, and larger, yolk-laden cells (macromeres) at the other.
> *J. S. Kingsley*, Vertebrate Zool., p. 222.

micromerism (mī-krom′ẹ-rizm), *n.* [*micromere* + *-ism.*] A collective term for the theories that assume that living protoplasm is made up of a great number of excessively minute units, or biomolecules, each endowed with the peculiar properties of living substance, namely, assimilation, growth, and reproduction.

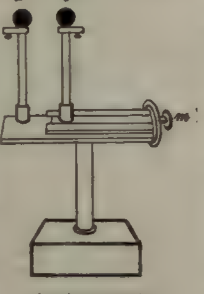
> These [speculative] theories have been ably brought together and discussed by Delage, who has included them all under the term "*micromerism*," since they agree in the assumption that the living substance contains, or consists of, a vast number of excessively minute particles—*i. e.*, aggregates or combinations of molecules, which give to the protoplasm its specific properties and tendencies ("idioplasm" of Nägeli). *Encyc. Brit.*, XXXII. 41.

micromerozoite (mī″krọ-mer-ọ-zō′īt), *n.* [Gr. *μικρός*, small, + *μέρος*, part, + *ζῷον*, animal, + *-ite*^{2}.] In sporozoans, a microsporozoite: contrasted with ★*macromerozoite.*

micromesentery (mī-krọ-mez′en-ter-i), *n.* [Gr. *μικρός*, small, + E. *mesentery.*] In some anthozoans, a small, incomplete mesentery devoid of gonads and filaments. Compare ★*macromesentery.*

micrometallurgy (mī-krō-met′ạl-ėr-ji), *n.* [Gr. *μικρός*, small, + E. *metallurgy.*] The study of metals, particularly as to structure and crystalline form, under the microscope.

micrometer, *n.*—**Dioptric micrometer**, a form of double-image micrometer having the divided lens in the eye-tube.—**Electric micrometer**, a micrometer for the precise measurement of lengths, in which contacts are indicated electrically, thus permitting an accuracy of determination to within less than one micron.—**Micrometer caliper.** See ★*caliper.*—**Micrometer eyepiece.** See *ocular* ★*micrometer.*—**Ocular micrometer**, an eyepiece micrometer which consists usually of a cross-hair or set of cross-hairs mounted upon a slide in the eyepiece of a microscope or other optical instrument, and moved through the field by means of a micrometer-screw.—**Repsold's transiting** or **registering micrometer,** a micrometer fitted to a transit-instrument and so arranged that with it the observer can follow a star with the wire, keeping it continually bisected. The passage of the wire across certain definite points of the field is automatically registered on the chronograph by electricity, and the resulting observation is nearly, if not quite, free from personal equation.—**Ring-micrometer,** an opaque, accurately circular ring, supported by arms, or by being cemented upon a glass plate, in the focal plane of the object-glass of a telescope. It is used to determine the difference of declination and right-ascension between two or more bodies by observations of their transits across the ring. It has the advantage of simplicity and does not require an equatorial mounting, but it is less accurate than the filar micrometer.—**Spark-micrometer,** an instrument devised by Riess for the determination of large differences of electrical potential by means of the length of the spark in air between adjustable knobs of metal. The spark passes between the balls *a* and *b*, the distance between which is varied by means of the micrometer-screw *m*.—**Square-bar micrometer,** an instrument similar to the ring-micrometer, except that the ring is replaced by a square composed of four parallel-sided strips, crossing at right angles and so placed that one of its diagonals is exactly east and west, thus requiring an equatorial mounting of the telescope. It has an advantage over the ring-micrometer in the easier reduction of observations and in the accuracy of results.



Spark-micrometer.

micrometer-cock (mī-krom′e-tėr-kok), *n.* A valve capable of delicate adjustment by means of a micrometer-screw.

micro-microfarad (mī″krọ̄-mī-krọ̄-far′ad), *n.* In *elect.*, a practical unit for the measurement of very small capacities; one millionth of a microfarad, or 1×10^{-21} of a c. g. s. unit of the electromagnetic system.

micromil (mī′krō-mil), *n.* [Gr. *μικρός*, small, + E. *mil(lion).*] A unit of length equal to one millionth of a mil; 1×10^{-9} inches, or about 2.540×10^{-8} millimeters.

micromorph (mī′krọ̄-môrf), *n.* [Gr. *μικρός*, small, + *μορφή*, form.] A specimen of a size smaller than the normal.

> *Micromorphs* . . . occur . . . in many parts of the Inferior Oolite.
>
> *Hudleston*, Gasterop. (Palæont. Soc.), p. 112.

micromotoscope (mī-krọ̄-mō′tọ̄-skōp), *n.* [Gr. *μικρός*, small, + E. *motoscope.*] In *photog.*, an instrument for photographing microscopic organisms in motion.

micromyelia (mī″krọ̄-mī-ē′li-ä̤), *n.* [NL., < Gr. *μικρός*, small, + *μυελός*, marrow.] A condition presented by a small or imperfectly developed spinal cord.

microne (mī′krōn), *n.* Same as *micron.*

micronephric (mī-krọ̄-nef′rik), *a.* [Gr. *μικρός*, small, + *νεφρός*, kidney, + *-ic.*] Pertaining to or characteristic of a micronephridium: as, the *micronephric* type of nephridia in annelids. Compare ⋆*meganephric.*

micronephridium (mī″krọ̄-nef-rid′i-um), *n.*; pl. *micronephridia* (-ä̤). [NL., < Gr. *μικρός*, small, + NL. *nephridium.*] A diplonephridium. Compare ⋆*mesonephridium.*

micronuclear (mī-krọ̄-nū′klẹ̄-ä̤r), *a.* [*micronucleus.*] Pertaining to, or of the nature of, a micronucleus.

micro-organismal (mī″krọ̄-ôr-gạ-niz′mạl), *a.* [*micro-organism* + *-al*^{1}.] Of or pertaining to micro-organisms, such as bacteria and *Protozoa.*

> The *microorganismal* differences between fresh and stale sewage are also dwelt upon.
>
> *Science*, June 26, 1903, p. 1006.

Microperca (mī-krọ̄-pėr′kä̤), *n.* [NL., < Gr. *μικρός*, small, + *πέρκη*, perch.] A genus of percoid fishes confined to the fresh waters of the eastern United States.

microperthite (mī-krọ̄-pėr′thīt), *n.* [Gr. *μικρός*, small, + E. *perthite.*] A perthite in which the interlaminated structure of the orthoclase (or microcline) and albite is only distinctly discernible by aid of the microscope in a thin section. See ⋆*cryptoperthite.*

micropetalous (mī-krọ̄-pet′ạ-lus), *a.* [Gr. *μικρός*, small, + *πέταλος*, a petal.] Having minute petals.

microphag (mī′krọ̄-fag), *n.* Same as ⋆*microphage.*

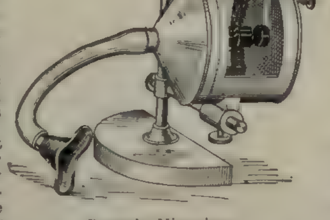
microphage (mī′krọ̄-fāj), *n.* [Gr. *μικρός*, small, + *-φαγος*, < *φαγεῖν*, eat.] A small phagocyte, or wandering leucocyte, which engulfs or devours other cells, bacteria, etc.: opposed to ⋆*macrophage.*

> Metchnikoff has attempted to show that the chief function of the polynuclears or "*microphages*" is to take up bacteria and inert particles, whilst for animal cells they show negative chemiotaxis, remaining inactive; the macrophages doing all the work of phagocytosis when foreign animal cells or fragments of cells are introduced into the peritoneal cavity.
>
> *Jour. Med. Research*, July, 1906, p. 9.

microphagocyte (mī-krọ̄-fag′ọ̄-sīt), *n.* [Gr. *μικρος*, small, + E. *phagocyte.*] Same as ⋆*microphage.*

microphitic (mī-krọ̄-fit′ik), *a.* [Gr. *μικρός*, small, + E. *ophite* + *-ic.*] In *petrog.*, microscopically ophitic; noting a texture of igneous rocks, which have crystals of lime-soda feldspar inclosed in crystals of augite, as some diabases (ophites) or basalts.

microphone, *n.*—**Pencil-microphone,** a microphone the contacts of which are formed between rods or pencils of carbon.—**Rousselot microphone,** in *exper. psychol.* and *phonetics*, a microphone, devised by the Abbé Rousselot, which consists essentially of a metallic mouthpiece connected by rubber tubing to a cylindrical metallic box in which three carbon tips are suspended. The adjustment is effected by means of a screw set in the opposite end of the box. The screw is connected with a metallic spring to which one of the carbon tips is attached, and thus regulates the distance between the tips. The wires by which the carbon tips are included in an electric circuit enter through the top of the box.



Rousselot Microphone.

microphonic, *a.* **2.** Of an intensity so small as to be audible only by the aid of the microphone.

> At a time when Vesuvius became active, Rocca di Papa was agitated by microseisms, and the shocks were found to be accompanied by the very same *microphonic* noises as before. *G. H. Darwin*, The Tides, p. 117.

microphonograph (mī-krọ̄-fō′nọ̄-gråf), *n.* [Gr. *μικρός*, small, + E. *phonograph.*] **1.** A phonograph to the membrane of which a microphone is attached, thus intensifying the sounds.—**2.** See ⋆*telegraphone.*

> The telephonograph, or, as it is sometimes called, the "telegraphone," the "*microphonograph.*"
>
> *W. J. Hammer*, in Smithsonian Rep., 1901, p. 307.

microphony, *n.* **2.** In *physics*, the art of enhancing or magnifying the intensity of sound; the use of the microphone.

microphotogram (mī-krọ̄-fō′tọ̄-gram), *n.* Same as *microphotograph.*

microphotographic (mī-krō-fō-tọ̄-graf′ik), *a.* [*microphotograph(y)* + *-ic.*] Pertaining to, or of the nature of, microphotography.

microphthalmous (mī-krof-thal′mus), *a.* Same as *microphthalmic.*

microphysical (mī-krọ̄-fiz′i-kạl), *a.* [Gr. *μικρός*, small, + E. *physical.*] Of or pertaining to the physics of the ultimate particles of matter: opposed to ⋆*macrophysical.*

microphysics (mī-krọ̄-fiz′iks), *n.* [Gr. *μικρός*, small, + E. *physics.*] The physics of minute masses or of the ultimate particles and structure of matter: opposed to ⋆*macrophysics*, which deals with bodies taken as a whole.

micropia (mī-krō′pi-ä̤), *n.* [NL., < Gr. *μικρός*, small, + *ὤψ* (*ὠπ-*), eye.] Defect of vision in which objects appear of smaller size than they really are.

microplankton (mī-krọ̄-plangk′tọn), *n.* [Gr. *μικρος*, small, + NL. *plankton.*] The microscopic animals and plants that float or swim in the water.

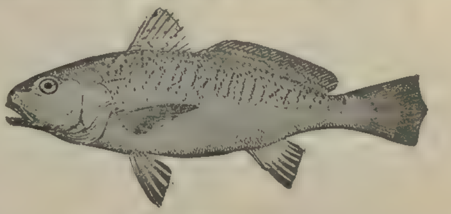
> The *microplankton* of the Sicilian coast has not been included. *Jour. Roy. Micros. Soc.*, Oct., 1903, p. 638.

microplasia (mī-krọ̄-plā′si-ä̤), *n.* [NL., < Gr. *μικρός*, small, + *πλάσις*, formation.] A condition in which the size normal to the species is not attained; dwarfism.

micropodal (mī-krop′ọ̄-dạl), *a.* [Gr. *μικρός*, small, + *πούς* (*ποδ-*), foot, + *-al*^{1}: see *Micropoda.*] Having small—especially abnormally small—feet; micropodous.

micropodous (mī-krop′ọ̄-dus), *a.* [Gr. *μικρός*, small, + *πούς* (*ποδ-*), foot, + *-ous.*] Having small—especially abnormally small—feet; micropodal.

Micropogon (mī-krop′ọ̄-gon), *n.* [NL., < Gr. *μικρός*, small, + *πώγων*, beard.] A genus of sciænoid fishes found in the warmer parts of the Atlantic and Pacific in America.



Micropogon undulatus.
(From Bulletin 47, U. S. Nat. Museum.)

micropoikilitic (mī-krọ̄-poi-ki-lit′ik), *a.* [Gr. *μικρός*, small, + E. *poikilitic.*] In *petrog.*, microscopically poikilitic; noting a texture in igneous rocks produced by the presence in one crystal of many small crystals of other minerals variously oriented.

> The microstructure of the groundmass is "*micropoikilitic,*" with more minute feldspars maintaining a fluidal arrangement. *U. S. Geol. Surv.*, Monographs, XXXII. 63.

micropolariscope (mī″krọ̄-pọ̄-lar′i-skōp), *n.* [Gr. *μικρός*, small, + E. *polariscope.*] A microscope with a polarizing attachment. The polarizer is placed beneath the stage and the analyzer above the objective or at the eyepiece. It is used in the examination of crystals, tissues, and other objects.

Micropora (mī-krop′ọ̄-rä̤), *n.* [NL., < Gr. *μικρός*, small, + *πόρος*, pore.] The typical genus of the family *Microporidæ.* *Gray*, 1848.

micropore (mī′krọ̄-pōr), *n.* [Gr. *μικρός*, small, + *πόρος*, pore.] A small pit or pore in the shell of a chitinoid mollusk containing a microscopic sense-organ: opposed to ⋆*megalopore.*

Microporidæ (mī-krọ̄-por′i-dē), *n. pl.* [NL., < *Micropora* + *-idæ.*] A family of chilostomatous polyzoans, of the order *Gymnolæmata*, having zoœcia in which the front wall is wholly calcareous and the margins elevated. It includes the genera *Micropora*, *Setosella*, *Caleschara*, *Steganoporella*, and *Vincularia.*

microprojection (mī″krọ̄-prọ̄-jek′shọn), *n.* [Gr. *μικρός*, small, + E. *projection.*] In *physics*, the art of projecting upon a screen greatly enlarged images of minute objects by means of a lantern with a microscopic attachment. *Jour. Roy. Micros. Soc.*, Oct., 1904, p. 582.

microprosopous (mī″krọ̄-pro-sō′pus), *a.* [Gr. *μικρός*, small, + *πρόσωπον*, face, + *-ous.*] In *craniom.*, said of a skull which has a small face, with a volume of from 470 to 510 cubic centimeters in males, and from 405 to 435 cubic centimeters in females.

microprosopus, *n.* **2.** In the Cabala, the 'lesser face'; a cabalistic name which includes all the Sephiroth below Kether (crown) and denotes the workings of the Adam Kadmon in the universe: opposed to *macroprosopon*, the name applied to the Kether Sephira.

micropterism (mī-krop′tẹ-rizm), *n.* [*micropter(ous)* + *-ism.*] The character of being micropterous or short-winged or short-finned; specifically, the condition of having the wings reduced in size or vestigial, as in certain dimorphic bugs (*Hemiptera*) and in some insular insects and birds.

micropterygid (mī-krop-ter′i-jid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Micropterygidæ.*

II. *a.* Having the characters of, or belonging to, the family *Micropterygidæ.*

Micropterygidæ (mī-krop-tẹ-rij′i-dē), *n. pl.* [NL., < *Micropteryx* (*-ptеryg-*) + *-idæ.*] A notable family of lepidopterous insects, forming, with the family *Hepialidæ*, Comstock's suborder *Jugatæ.* They are very small moths which resemble the tineids in appearance and habits. Their larvæ are usually leaf-miners. See ⋆*Jugatæ.*

Micropteryx (mī-krop′tẹ-riks), *n.* [NL. (Huebner, 1816, as *Micropterix*; Zeller, 1839, as *Micropteryx*), < Gr. *μικρός*, small, + *πτέρυξ* (*πτερυγ-*), wing.] The type genus of the lepidopterous family *Micropterygidæ.* The species are small, possess no mandibles, have a short tongue, moderate labial palpi, and posterior tibiæ thinly hairy above. The genus has few species and is confined to southern and central Europe.

Micropus, *n.* 4. [*l. c.*] A person with abnormally small, but not necessarily deformed, legs.

micropyle, *n.* 2. In *zoöl.*: (*c*) In certain sporozoans, a minute opening in the oöcyst through which the microgamete enters to fertilize the macrogamete.

microrefractometer (mī-krọ-rē-frak-tom′e-tėr), *n.* [*micro-* + *refractometer.*] A refractometer specially constructed for the detection of differences in the minute structure of blood corpuscles. *N. E. D.*

microrheometer (mī″krọ-rẹ-om′e-tėr), *n.* [Gr. *μικρός*, small, + E. *rheometer.*] A galvanometer for small currents.

micros. An abbreviation (*a*) of *microscopic, microscopical*; (*b*) of *microscopy.*

Microsauri (mī-krọ-sâ′rī), *n. pl.* [NL.] Same as *Microsauria.*

microscelic (mī-krọ-sel′ik), *a.* [Gr. *μικρός*, small, + *σκέλος*, leg.] Having short legs.

> What is more, in a race like the French, there are two distinct types, each having the same measurement, but the one class is long-legged (macroscelic, in the term of the anthropologists), the other short-legged (*microscelic*).
> *Smithsonian Rep.*, 1904, p. 528.

microsclerometer (mī″krọ-sklẹ-rom′e-tėr), *n.* [Gr. *μικρός*, small, + *σκληρός*, hard, + *μέτρον*, measure.] An instrument for measuring the hardness of minerals; a delicate form of sclerometer. *U. S. Geol. Surv.*, 1897–98, p. 511.

microscleron (mī-krọ-sklē′ron), *n.*; pl. *microsclera* (-rä). [NL.] A microsclere.

microscope, *n.*—**Metallographical microscope,** a form of microscope for the investigation of metals and alloys. Light admitted above the objective from the side is reflected down through the objective, which acts as a condenser, to the object which is viewed under this illumination.—**Projection microscope,** a form of magic lantern adapted to the projection of enlarged images of minute objects. The projecting lenses of the lantern are replaced by high-power microscope lenses.—**Reading microscope,** a vernier- or scale-reading microscope: used on instruments of precision.

microscope (mī′krọ-skōp), *v. t.*; pret. and pp. *microscoped*, ppr. *microscoping.* To enlarge with or as with a microscope; examine very minutely as with a microscope: as, to *microscope* one's faults.

microscopize (mī-kros′kọ-pīz), *v. i.*; pret. and pp. *microscopized*, ppr. *microscopizing.* To use the microscope; work with a microscope.

> I may read, draw, or *microscopise* at pleasure, and as to books, I have a carte blanche from the Captain to take as many as I please. *Huxley*, in Life and Let., II. 29.

microsecond (mī-krọ-sek′und), *n.* [Gr. *μικρός*, small, + E. *second.*] One millionth of a second: a unit employed in the measurement of exceedingly small intervals of time.

microseismology (mī″krō-sīs-mol′ọ-ji), *n.* [*microseism* + *-ology.*] The scientific study of microseisms or small earth-tremors.

microseismometer (mī″krọ-sīs-mom′e-tėr), *n.* [Gr. *μικρός*, small, + E. *seismometer.*] An apparatus for detecting slight earth-tremors, and showing their direction, intensity, and duration.

microsiphuncle (mī-krọ-sī′fung-kl), *n.* [*micro-* + *siphuncle.*] Same as *microsiphonula.*

microslide (mī′krọ-slīd), *n.* A glass slide upon which an object for observation under a microscope is mounted.

microsmatic (mī-kros-mat′ik), *a.* [Gr. *μικρός*, small, + *ὀσμή*, smell, + *-atic.*] Having the organs of smell small or feebly developed: opposed to ★*megosmatic* and ★*macrosmatic. Proc. Zool. Soc. London*, 1894, p. 9.

microsmatism (mī-kros′mạ-tizm), *n.* [Gr. *μικρός*, small, + *ὀσμή*, smell, + *-t-* + *-ism.*] The fact or condition of having the organs of smell small or feebly developed: contrasted with ★*macrosmatism.*

microsomatia (mī″krọ-sọ-mā′shiä), *n.* [NL., < Gr. *μικρός*, small, + *σῶμα*(*τ-*), body.] Same as *microsomia.*

microsomatous (mī-krọ-sō′mạ-tus), *a.* [Gr. *μικρός*, small, + *σῶμα* (*σωματ-*), body.] Having a small body; being of minute size.

microsome, *n.* 2. One of the minute granules found in the protoplasm of animal and plant cells and by some biologists regarded as the ultimate units of living matter. The microsomes of the nucleus are known as karyomicrosomes, those of the cytoplasm of the cell as cytomicrosomes. See cut under ★*aster*¹, 7.

Microspathodon (mī-krọ-spath′ọ-don), *n.* [NL., < Gr. *μικρός*, small, + *σπάθη*, sheath, + *ὀδούς* (*ὀδοντ-*), tooth.] A genus of fishes of the family *Pomacentridæ*, found about rocky islands of the American tropics.

microspectral (mī-krọ-spek′trạl), *a.* [Gr. *μικρός*, small, + NL. *spectrum* + *-al*¹.] Of or pertaining to the spectra of objects in the field of the microscope, or to microspectroscopy. *Science Abstracts*, VI. Sec. A, p. 110.

microspectroscopic (mī-krọ-spek-trọ-skop′ik), *a.* [*microspectroscop*(*e*) + *-ic.*] Pertaining to, or observed by means of, the microspectroscope.

microspectroscopy (mī″krọ-spek-tros′kọ-pi), *n.* [*microspectroscope* + *-y*³.] The scientific use of the microspectroscope.

microspermous (mī-krọ-spėr′mus), *a.* [See *Microspermæ.*] Having minute seeds; pertaining to or characteristic of the *Microspermæ.*

microsphere (mī′krọ-sfēr), *n.* [Gr. *μικρός*, small, + *σφαῖρα*, sphere.] 1. A microscopic spherical organism: applied by Cohn to the micrococci found in vaccine lymph and in small-pox pustules. *N. E. D.*—2. In the calcareous *Foraminifera*, the small primordial chamber of the test: an index of the dimorphism expressed by these bodies, as with like exteriors some have a microsphere and others a large primordial chamber or megasphere.—3. In *cytol.*, the central portion of the astrosphere in the dividing cell. The center of the microsphere is occupied by the centrosome. *Kostanecki and Siedlecki*, 1896.

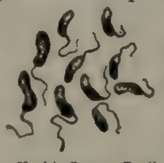
microspheric (mī-krọ-sfer′ik), *a.* [Gr. *μικρός*, small, + *σφαῖρα*, sphere.] Pertaining to or of the nature of a microsphere, in any sense; specifically, having a small central chamber and a large number of small nuclei: as, a *microspheric* individual in some dimorphic foraminifers. Compare ★*megalospheric.*

microspherulitic (mī-krọ-sfer-ọ-lit′ik), *a.* [*micro-* + *spherulitic.*] In *geol.*, minutely spherulitic in structure.

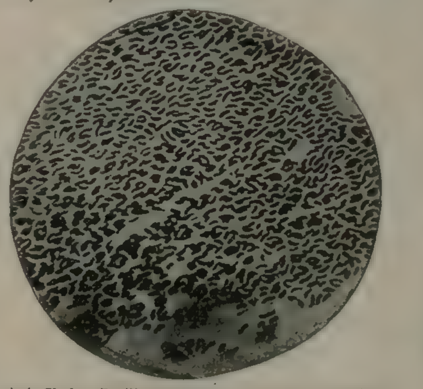
microsphyxia (mī-krọ-sfik′si-ä), *n.* [NL., < Gr. *μικρός*, small, + *σφύξις*, pulsation.] A state in which the pulse is very small.

microspined (mī′krọ-spīnd), *a.* [Gr. *μικρός*, small, + E. *spined.*] Covered with or bearing minute spines or spinules.

Microspira (mī-krọ-spī′rä), *n.* [NL. (Schröter, 1886), < Gr. *μικρός* + *σπεῖρα*, spire.] A genus of bacteria, with cells mostly comma-shaped or short spiral, sometimes united in chains, and usually provided with a single polar flagellum, rarely 2 or 3. *M. comma*, the comma bacillus of Koch, is the most important pathogenic species, being generally accepted as the specific cause of Asiatic cholera. *M. Metschnikovi* is associated with fowl-cholera. Other species occur in sea-water, sewers, and rivers.



Koch's Comma Bacillus (*Microspira comma*). Highly magnified. (After Lehmann-Neumann.) (From Fischer's "Vorlesungen über Bakterien.")



Asiatic Cholera Bacillus (*Microspira comma*). Magnified 1,000 times.
(From Buck's "Reference Handbook of the Medical Sciences.")

microsplenic (mī-krọ-splen′ik), *a.* [*micro-* + *splenic.*] In *pathol.*, not accompanied by enlargement of the spleen. *N. E. D.*

microsporange (mī-krọ-spō′ranj), *n.* Same as *microsporangium.*

Microsporidia (mī″krọ-spō-rid′i-ä), *n. pl.* [NL., < Gr. *μικρός*, small, + *σπόρος*, seed, + dim. *-ιδιον.*] Same as ★*Cryptocystes. Nature*, Aug. 27, 1903, p. 408.

microsporozoite (mī″krō-spō-rọ-zō′īt), *n.* [Gr. *μικρός*, small, + E. *sporozoite.*] In sporozoans, a small endogenous sporozoite; a micromerozoite. Compare ★*macrosporozoite.*

> In 1894, the present writer discovered that in this schizogonic phase (then considered as a separate specific form) there existed cysts with macrosporozoites and others with *microsporozoites*, and he (like Schuberg) propounded the theory of a sexual dimorphism and of a fertilization. *Encyc. Brit.*, XXXII. 815.

microstat (mī′krọ-stat), *n.* [Gr. *μικρός*, small, + *στατός*, < *ἵστασθαι*, stand.] The stage and finder of a microscope.

Microstomatidæ (mī″krọ-stọ-mat′i-dē), *n. pl.* [NL.] Same as *Microstomidæ.*

microstomatous (mī-krọ-stom′ạ-tus), *a.* [Gr. *μικρός*, small, + *στόμα*(*τ-*), mouth, + *-ous.*] Having a small mouth or aperture, as a univalve shell.

microstomia (mī-krẹ-stō′mi-ä), *n.* [NL., < Gr. *μικρός*, small, + *στόμα*, mouth.] Unusually small size of the mouth.

Microstomus (mī-kros′tọ-mus), *n.* [NL., < Gr. *μικρός*, small, + *στόμα*, mouth.] A genus of flounders found in rather deep water in the northern seas.

microstrongyle (mī-krọ-stron′jil), *n.* [Gr. *μικρός*, small, + *στρογγύλος*, round (see *strongyle*).] In sponge-spicules, a small or reduced strongyle.

> The *microstrongyles*, which are 18 x 2 μ in size, are occasionally centrotylote.
> *Proc. Zool. Soc. London*, 1900, p. 131.

microstrongylon (mī-krọ-stron′ji-lon), *n.*; pl. *microstrongyla* (-lä). [NL.] A microstrongyle.

microstructural (mī-krọ-struk′tụ̈-rạl), *a.* [*microstructure* + *-al*¹.] Of minute or microscopical structure; of or pertaining to microstructure.

microstructure, *n.* Applied especially to metals and alloys, the study of the microstructure of which is now a very important department of engineering.

> A brief statement of the effect on the *microstructure* of nickel steels of tempering, annealing, working, chilling, etc. The tempering and working produce very similar results. *Jour. Phys. Chem.*, April, 1904, p. 305.

microstyle (mī′krọ-stīl), *n.* [NL., < Gr. *μικρός*, small, + *στῦλος*, pillar.] A minute monaxial sponge-spicule with sharp ends.

microtechnic (mī-krọ-tek′nik), *n.* [Gr. *μικρός*, small, + E. *technic.*] The handling or construction of the microscope and its accessories; the manipulation of minute objects, as in microscopy.

microtetrod (mī-krọ-tet′rod), *n.* [Gr. *μικρός*, small, + *τετρα-*, four, + *ὁδός*, way.] A small tetraxial sponge-spicule.

microthermic (mī-krọ-thėr′mik), *a.* [*microtherm* + *-ic.*] Having the character of a microtherm; composed of or characterized by microtherms.

Microthoracidæ (mī-krọ-thọ-ras′i-dē), *n. pl.* [NL., < *Microthorax* (*-thorac-*) + *-idæ.*] A family of holotrichous ciliate infusorians, consisting of small asymmetrical forms, with the mouth in the hinder part of the body, the cilia scattered and sometimes limited to the oral region, and sometimes one or two undulating membranes. It contains several genera, among them being *Microthorax*, *Cinetochilum*, and *Ancistrum.*

microthorax (mī-krọ-thō′raks), *n.* [Gr. *μικρός*, small, + *θώραξ*, thorax.] 1. In *entom.*, a fourth thoracic segment anterior to the prothorax, in the *Dermaptera.*—2. [NL.] [*cap.*] The typical genus of the family *Microthoracidæ. Engelmann*, 1862.

Microthyriaceæ (mī-krọ-thir-i-ā′sẹ-ē), *n. pl.* [NL., < *Microthyrium* + *-aceæ.*] A family of ascomycetous fungi of the order *Perisporiales*, named from the genus *Microthyrium.* It contains 21 genera, most of which are tropical or subtropical.

Microthyrium (mī-krọ-thir′i-um), *n.* [NL. (Desmazières, 1840), < Gr. *μικρός*, small, + *θύριον*, door.] A genus of ascomycetous fungi having membranous perithecia, with a shield-like covering on the surface of the host. The spores are elongate, 2-celled, and hyaline. The species are mostly tropical. *M. microscopicum* occurs on leaves of various trees and shrubs in Europe and America.

microtia (mī-krō′ti-ä), *n.* [NL., < Gr. *μικρός*, small, + *οὖς* (*ὠτ-*), ear.] The condition of having abnormally small ears.

Microtinæ (mī-krọ-tī′nē), *n. pl.* [NL., < *Microtus* + *-inæ.*] A subfamily of mouse-like rodents, containing a large number of species and forming one of the most important divisions of the *Muridæ*. By the law of priority this name replaces the familiar *Arvicolinæ*.

microtine^1 (mī′krọ-tin), *n.* [G. *mikrotin*, < Gr. *μικρότης*, littleness, + *-in*^{2}.] A name sometimes given to the glassy forms of the plagioclase feldspars occurring as minute phenocrysts in igneous rocks.

microtine^2 (mi-krō′tin), *a.* [*Microtus* + *-ine*^{1}.] Resembling, or having the characters of, the small rodents of the genus *Microtus*. *Smithsonian Rep.*, 1900, p. 86.

microtome (mī′krọ-tōm), *v. t.*; pret. and pp. *microtomed*, ppr. *microtoming*. [*microtome*, *n.*] To cut (a tissue or organ) into thin sections with the aid of a microtome.

> The following nerves of muscles were *microtomed* for detection of some fibres.
> *Philos. Trans. Roy. Soc.* (London), ser. B, 1898, p. 95.

microtriæne (mī-krọ-trī′ēn), *n.* [Gr. *μικρός*, small, + *τρίαινα*, trident.] In sponge-spicules, a small or reduced triæne.

microtriod (mī-krọ-trī′od), *n.* [Gr. *μικρός*, small, + *τρι-*, three, + *ὁδός*, way.] In the nomenclature of the sponge-spicules, a triod of minute size.

Microtus (mi-krō′tus), *n.* [NL., < Gr. *μικρός*, small, + *οὖς* (*ὠτ-*), ear.] The typical genus of the subfamily *Microtinæ*, containing those species of small rodents long placed in the genus *Arvicola*. There are over 20 synonyms for this genus. See *Arvicola*. *Schrank*, 1798.

microtylostyle (mī-krọ-tī′lọ-stīl), *n.* [Gr. *μικρός*, small, + *τύλος*, knot, knob, + *στῦλος*, pillar.] A minute monaxial sponge-spicule with one knobbed end.

microtylote (mī-krọ-tī′lōt), *n.* [Gr. *μικρός*, small, + E. *tylote*.] A small tylote. *Sollas*, in Encyc. Brit., XXII. 417.

microtypal (mī′krọ-tī-pal), *a.* [*microtype* + *-al*^{1}.] Pertaining to or characteristic of a microtype: as, the *microtypal* arrangement of mesenteries in the *Zoanthidæ*.

microtype (mī′krọ-tīp), *n.* [Gr. *μικρός*, small, + *τύπος*, type.] The normal arrangement of mesenteries in certain *Zoanthidea*, each couple comprising a macromesentery and a micromesentery. Compare ★*macrotype*. *Annals and Mag. Nat. Hist.*, May, 1902, p. 393.

microwatt (mī′krọ-wot), *n.* [Gr. *μικρός*, small, + E. *watt*.] A unit of power or activity equal to ten ergs per second; a millionth of a watt.

microxea (mī-krok-sē′ä), *n.*; pl. *microxeæ* (-ē). [NL., < Gr. *μικρός*, small, + *ὀξεῖα*, fem. of *ὀξύς*, sharp.] In sponge-spicules, a small or reduced oxea. *Proc. Zool. Soc. London*, 1902, II. 218.

microxycyte (mī-krok′si-sīt), *n.* [Gr. *μικρός*, small, + *ὀξύς*, sharp, + *κύτος*, hollow (cell).] A finely granular oxyphil or eosinophil blood-corpuscle, or leucocyte. *Durham*, 1897.

microzoögonidium (mī-krọ-zō″ọ-gọ-nid′i-um), *n.*; pl. *microzoögonidia* (-ä). [*micro-* + *zoögonidium*.] A minute zoögonidium.

microzoöscopic (mī″krọ-zō-ọ-skop′ik), *a.* [Gr. *μικρός*, small, + *ζῷον*, animal, + *σκοπεῖν*, view, + *-ic*.] Of or pertaining to the seeing of microscopic organisms; characterized by the seeing of tiny animals.

> In a recent study of the dreams of hysterics and epileptics De Santis found that those of the former were most frequently of pain, next of fear, and were less often erotic. Dreams of large animals predominate, while in alcoholism those of tiny animals or *microzoöscopic* dreams were most frequent. *G. S. Hall*, Adolescence, I. 276.

microzyma (mī-krọ-zī′mä), *n.*; pl. *microzymæ* (-mē). [NL., < Gr. *μικρός*, small, + *ζύμη*, ferment.] One of the very minute bodies which, according to some biologists, represent the ultimate elements of living substance, or protoplasm, like the pangens, plasomes, gemmules, etc.

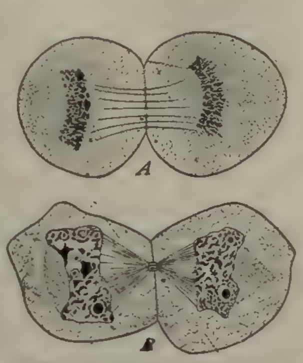
Micruræ (mi-krö′rē), *n. pl.* [NL., < Gr. *μικρός*, small, + *οὐρά*, tail.] A group of *Nemertini*, forming a subdivision of the family *Lineidæ*, characterized by a small filamentous tail. It contains the genera *Micrura*, *Cerebratulus*, and *Langia*. See ★*Amicruræ*.

Mida^2 (mī′dä), *n.* [NL. (Cunningham, 1838), stated to be from a native New Zealand name.] A genus of dicotyledonous trees or shrubs belonging to the family *Santalaceæ*. See *Fusanus*.

midas-fly (mī′das-flī), *n.* Any dipterous insect of the family *Mididæ* or *Midasidæ* or *Midaidæ*, as it is variously spelled. *Comstock*, Manual of Insects, p. 461.

midaxillary (mid-ak′si-lā-ri), *a.* Situated in the center of the axilla. *Buck*, Med. Handbook, I. 452.

midbody, *n.* **2.** The cell-plate; a structure almost invariably found in plant- and often in animal-cells, as a series of deeply staining thickenings or granules in the equatorial plane of the achromatic spindle toward the end of mitotic cell-division.



Midbody in embryonic cells of *Limax*. (Hoffmann.)

A, earlier stage, showing thickenings along the line of cleavage; *B*, later stage, showing spindle-plate and cytoplasmic plate. (From Wilson's "The Cell.")

mid-digital (mid-dij′i-tal), *n.* One of the two primaries attached to the first phalanx of the second digit of a bird's wing. *Parker and Haswell*, Text-book of Zool., II. 356.

middle, *n.*—**Middle of the road**, an epithet applied, especially in the presidential campaign of 1896, to those members of the Populist party who urged the nomination of a Populist by their party convention and opposed the acceptance of the nominee of the Democratic party: said to be derived from the habit, in some parts of the Southwest, of keeping in the middle of the road, the better to protect one's self from enemies lying in ambush. [U. S. political slang.]—**Persian middle**, in the Arab-Persian musical theory of the early Middle Ages, a central tone in the system of tones which served as a point of reference in the calculation of intervals: the ★*mese* of Greek musical theory.—**To break out middles**, to open lengthwise with a double mold-board or a scooter-plow the middle of an existing cotton bed. Also *to burst* or *burst out middles*. Compare ★*middle-buster*. [Southern U. S.]

middle-body (mid′l-bod″i), *n.* In *naval arch.*, the part of a ship's form in the middle of the length where the cross-sections are all of nearly the same size and shape. The *parallel middle-body* is that part in which they are of exactly the same dimensions.

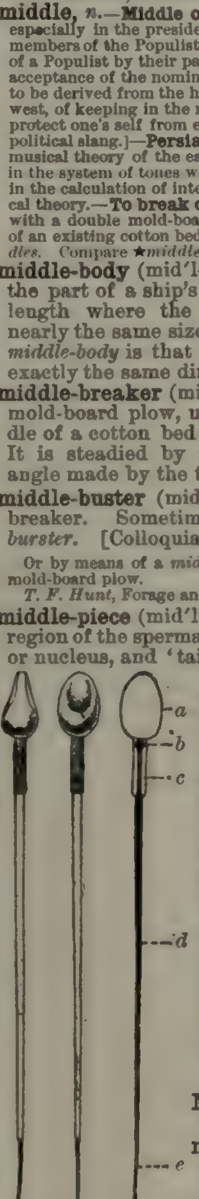
middle-breaker (mid′l-brā″kėr), *n.* A double mold-board plow, used to break out the middle of a cotton bed and for similar purposes. It is steadied by a land-bar bisecting the angle made by the two mold-boards. [U. S.]

middle-buster (mid′l-bus″tėr), *n.* A middle-breaker. Sometimes corrected to *middle-burster*. [Colloquial, Southern U. S.]

> Or by means of a *middle "buster,"* which is a double mold-board plow.
> *T. F. Hunt*, Forage and Fiber Crops in America, p. 362.

middle-piece (mid′l-pēs), *n.* A differentiated region of the spermatozoön between its 'head,' or nucleus, and 'tail,' or flagellum.

> It is clear, however, that the term *middle-piece* has been applied to structures of quite different morphological nature, which agree only in lying behind the nucleus. Thus in the salamander the inner centrosome gives rise to the main body of the *middle-piece*; in the rat or in man it gives rise only to the small disc-shaped body lying in the "neck" in front of the so-called *middle-piece*; while in Helix or the elasmobranch it is transformed into a long filament traversing a cytoplasmic "*middle-piece*" which forms a considerable part of the flagellum. The term *middle-piece* has thus become highly ambiguous and should only be employed, if at all, as a convenient descriptive term which has no definite morphological meaning.
> *E. B. Wilson*, The Cell (ed. 1900), [pp. 170, 171.



Human spermatozoa.

The two at the left after Retzius (81); the one at the extreme left is seen in profile; the other in surface view; the one at the right is drawn as described by Jensen. *a*, head; *b*, terminal nodule; *c*, middle-piece; *d*, tail; *e*, end-piece of Retzius. (From Huber's trans. of Böhm-Davidoff's "Histology.")

Middlesex shale. See ★*shale*^{2}.

middleshot (mid′l-shot), *a.* In *hydraul.*, receiving water at its circumference about opposite the center or middle: said of a water-wheel with a horizontal axis, in which the relation of the diameter of the wheel to the available head makes the type intermediate between the breast-wheel and the under-shot.

middletonite (mid′l-tọn-īt), *n.* [*Middleton* collieries, near Leeds, + *-ite*^{2}.] A hydrocarbon occurring in minute rounded pea-like masses of a yellowish-brown color between layers of coal at the Middleton collieries, near Leeds, England.

middle-watcher (mid′l-woch″ėr), *n.* The lunch served to the officer of the deck during the mid-watch. This is customary in the navy and on board passenger-steamships. [Slang.]

middling, *n.* **5.** *pl.* The finest kind of wheat bran.

> The bran known as "*middlings*" is usually considered the best to use, because it is finer and contains more flour than the coarse grades.
> *Flemming*, Practical Tanning, p. 9.

mid-door (mid′dōr), *n.* In *mining*, the middle one of three landing-places in a shaft. Also called *mid-working*. [Scotch.]

mide (mē′dā), *n.* [Ojibwa *midewin*.] A religious society of the Ojibwa Indians, consisting of a number of persons initiated by supernatural powers. The members are grouped in classes and a record of the initiations of each member is kept by him on birch-bark charts. The traditions of the mide tell of the initiation of the society by the creator or transformer. The ceremonies are performed in a rectangular open lodge. The members of the mide order are believed to possess supernatural powers and to be able to cure disease.

> Among the Indians of North America there are also special healers (medicine-men) who are held in great esteem, and who sometimes form a corporation (*Mide*), into which admission can only be gained after a professional examination in the "doctors' cabin."
> *Deniker*, Races of Man, p. 227.

midewiwin (mẹ-dā′wi-win), *n.* [Ojibwa.] A religious society of the Ojibwa Indians, the members of which are imagined to have the power to converse with spirits and, after death, to reach the land of the spirits. See ★*mide*.

midfacial (mid-fā′shal), *a.* Situated in the middle of the face.

midfilial (mid-fil′yal), *a.* [*mid* + *filial*.] Of or pertaining to a statistical offspring of composite sex which is the statistical mean of the sons and the transmuted daughters.

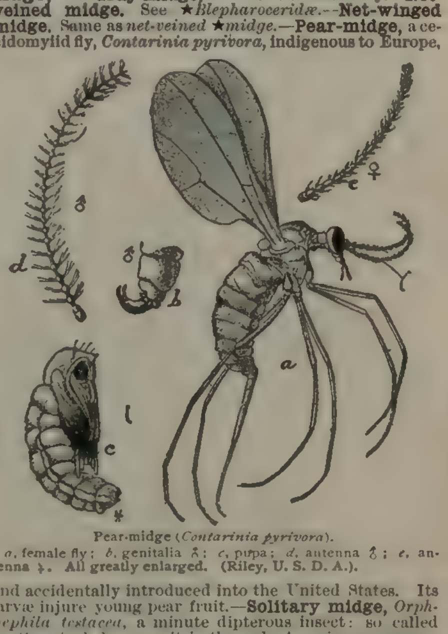
> The proportion between the *Mid-Filial* and the Mid-Parental deviation is constant, whatever the Mid-Parental stature may be.
> *Francis Galton*, Natural Inheritance, p. 97.

Midford sands. See ★*sand*^{1}.

midfrontal (mid-fron′tal), *a.* Situated in the center of the forehead.

mid-galley (mid′gal″i), *n.* The middle of a vessel; the galley or caboose, situated amidships below decks (midway between the upper deck and the hold) in old-time vessels.

midge, *n.*—**Gray midge**, a kind of artificial fly.—**Net-veined midge.** See ★*Blepharoceridæ*.—**Net-winged midge.** Same as *net-veined* ★*midge*.—**Pear-midge**, a cecidomyiid fly, *Contarinia pyrivora*, indigenous to Europe, and accidentally introduced into the United States. Its larvæ injure young pear fruit.—**Solitary midge**, *Orphnephila testacea*, a minute dipterous insect: so called by Comstock because it is the only American representative of its family, the *Orphnephilidæ*.—**Violet-midge**, a cecidomyiid fly, *Contarinia violicola*, whose larvæ fold the leaves of the violet, bringing the upper surfaces of the leaves together so as to form a kind of gall. Also called *violet gall-fly*.—**Winter midge**, a trypetid fly, *Trichocera hiemalis*, occasionally found flying in winter and occurring as far north as Greenland.



Pear-midge (*Contarinia pyrivora*).

a, female fly; *b*, genitalia ♂; *c*, pupa; *d*, antenna ♂; *e*, antenna ♀. All greatly enlarged. (Riley, U. S. D. A.).

mid-gear (mid′gēr), *n.* That position of a Stephenson link where both the eccentrics have the same effect on the valve, that is, where the link-block is at the middle of the link; that position of the valve-gear of an engine in which the engine will run neither forward nor backward.

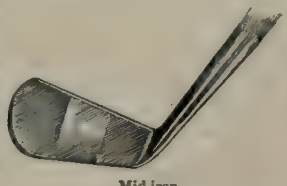
mid-grandparent (mid-grand′pãr-ent), *n.* An ideal person of composite sex who is the algebraical sum of the grandfathers and grandmothers.

It is doubtful . . . whether the parthenogenetic grandmothers ought not to be treated as "*midgrandparents.*" *Biometrika*, April, 1902, p. 364.

mid-heaven, *n.* **3.** In *astrol.*, the degree culminating on the cusp of the tenth house.

mid-intestine (mid-in-tes′tin), *n.* In *entom.*, that portion of the digestive tract of an insect which lies between the proventriculus and the ileum. Also called *chylific stomach* and *ventriculus.*

mid-iron (mid′ī″ėrn), *n.* A golf-club with an iron head, in form between that of a cleik and that of a mashy: used for approaching.



Mid-iron.

mid-kidney (mid-kid′ni), *n.* The Wolffian body; the mesonephros. *Parker and Haswell*, Text-book of Zoology, II. 110.

midnightly (mid′nīt-li), *a.* and *adv.* **I.** *a.* Occurring at midnight or every midnight.

II. *adv.* At midnight; every midnight. *N. E. D.*

mid-orbital (mid-ôr′bi-tal), *a.* Of or relating to the center of the orbit of the eye; relating to the center of the superior boundary of the eye.

From the *mid-orbital* region onward it [the frontal] becomes band-shaped, ultimately being produced into an outwardly directed and blunt angle underlying the nasal. *Proc. Zool. Soc. London*, 1903, I. 270.

mid-parental (mid-pā-ren′tal), *a.* [*mid*^{1} + *parental.*] Of or pertaining to statistical mid-parentage.

This value of two thirds will therefore be accepted as the amount of Regression, on the average of many cases, from the *Mid-Parental* to the Mid-Filial stature, whatever the *Mid-Parental* stature may be. *Francis Galton*, Natural Inheritance, p. 98.

mid-periphery (mid-pe-rif′e-ri), *n.* In *physiol.* and *psychol. optics*, the middle zone of the retina, colors falling upon which are all seen either as blue or as yellow. *Baldwin*, Dict. Philos. and Psychol., II. 791.

mid-product (mid′prod″ukt), *n.* A substance formed in the course of chemical decomposition which stands between the original material and the end-products. Also *intermediary product.*

midriatic, *a.* and *n.* Same as *mydriatic.*

Midship beam, the breadth of a vessel amidships; the horizontal timber at the broadest part of a ship.

midshipman, *n.* **2.** In 1902, Congress abolished the title of naval cadet in the United States navy and restored the title of midshipman. These officers are not commissioned officers, but receive appointments on probation, on the nomination of the President of the United States, of senators, or of congressmen, and the passage of an entrance examination to the Naval Academy. The course of instruction at the Naval Academy lasts four years and is followed by two years at sea, after which midshipmen are promoted to ensigns or second lieutenants of marines upon passing a final examination.—**Midshipman apprentice,** a cadet on board certain merchant and revenue-service vessels; a title given to a midshipman of the East India service who was serving his first year, after which time he became a full midshipman, and after two years as such became eligible for promotion to the office of fourth mate.

midship-section (mid′ship-sek″shon), *n.* In *naval arch.*, the line formed by the intersection of a transverse vertical plane at the middle of the length of a vessel with the surface of the hull; also, a plan of this transverse section on which is delineated the arrangement of the structural parts of the vessel, and on which are marked in great detail the sizes or scantlings of all the structural parts.

mid-shore (mid′shōr), *n.* That strip of a shore which lies between ordinary high-tide mark and the dunes; the middle beach. *A. F. W. Schimper* (trans.), Plant-Geog., p. 180.

mid-spoon (mid′spön), *n.* A wooden golf club, with a lofted face, of which the capacity in distance is between that of a long and that of a short spoon.

mid-stroke (mid′strōk), *n.* In steam-engines, the middle point or position in the stroke or travel of a piston or valve.

mid-tarsal (mid-tär′sal), *a.* Relating to the central portion of the tarsus.

If they act alone they either turn the foot inwards (tibialis posticus), or turn it outwards (peronei), and thus invert or evert the foot at the *mid-tarsal* articulation. *Lancet*, July 4, 1903, p. 56.

mid-ventral (mid-ven′tral), *a.* Situated in the middle of the ventral surface.

The median vein lies along the *mid-ventral* line of the swollen abdomen, scarcely noticeable posteriorly, but increasing anteriorly as it picks up several lateral branches. *Amer. Nat.*, Feb. 1904, p. 123.

mid-ventricle (mid-ven′tri-kl), *n.* The cavity of the midbrain, or mesencephalon, in the embryonic vertebrate. Its medioventral portion becomes the iter, or aqueduct of Sylvius, while its dorsolateral portions become the optic ventricles, or optocœles, of a more advanced stage of development.

midwall (mid′wâl), *a.* and *n.* [*mid*^{1} + *wall*^{1}.] **I.** *a.* In *arch.*, placed in the middle of a wall.—**Midwall shaft,** a shaft or baluster placed in the middle of the thickness of the wall, in an early type of English belfry-windows. *N. E. D.*

II. *n.* In *mining*, a close wooden partition dividing a shaft.

midway, *n.* **3.** A middle way or path: also attributively: as, 'the *Midway* Plaisance,' a part of the exhibition park at the World's Fair in Chicago (1893), projecting from the park at a point midway between the north and south sides.

Considerable areas were devoted to "side-shows," and the *midway* Plaisaunce, as it was termed, resembled a gigantic fair. *Encyc. Brit.*, XXVIII. 351.

Hence—**4.** A place for booths and side-shows at a fair.

midweek (mid′wēk), *n.* and *a.* **I.** *n.* The middle of the week.

II. *a.* Set for or occurring in the middle of the week: as, the *midweek* sailings; a *midweek* holiday.

mid-working (mid′wėr″king), *n.* See ★*mid-door.*

midyear (mid′yēr), *n.* and *a.* **I.** *n.* The middle of the year: as, rents due at the *midyear.*

II. *a.* Set for or occurring in the middle of the year.

To teachers the series of meetings is a series of *midyear* institutes. *Yearbook U. S. Dept. Agr.*, 1901, p. 154.

midzu-ame (mēd′zö-ä′mä), *n.* [Jap. *midzame*, < *midz* (*mi-dz*), water, + *ame*, a kind of jelly made from flour.] A syrup made in Japan by the addition of water to ame. See ★*ame.*

M. I. E. E. An abbreviation of *Member of the Institute of Electrical Engineers.*

miemite (mē′e-mīt), *n.* [*Miemo* (see def.) + *-ite*^{2}.] A variety of the mineral dolomite, of pale asparagus-green color, from Miemo in Tuscany.

Miersiidæ (mēr′si-i-dē), *n. pl.* [NL., < *Miersia*, a genus, + *-idæ.*] See ★*Acanthephyridæ.*

miersite (mī′ėr-zīt), *n.* [Named from Prof. H. A. *Miers* of Oxford, England.] Silver iodide (Ag_2I_2) which occurs in yellow tetrahedral crystals at the Broken Hill mines, New South Wales.

miesite (mē′sīt), *n.* [*Mies* (see def.) + *-ite*^{2}.] A brown variety of pyromorphite containing a small amount of calcium: from Mies, Bohemia.

mièvrerie (myev-re-rē′), *n.* [F., < *mièvre*, arch, roguish (of children). Childish piquancy or prettiness.

The ivory Madonnas of the late thirteenth and early fourteenth centuries gradually lose their austere dignity, relax into elegance and *mièvrerie.* *R. E. Fry*, in Burlington Mag., V. 280.

mignonette, *n.*—**Mignonette-vine.** (*b*) See ★*Boussingaultia.*

mignonette-disease (min-yo-net′di-zēz″), *n.* See ★*leaf-blight of mignonette.*

migraine, *n.*—**Ophthalmic migraine,** severe paroxysmal headache due to eye-strain.

migrainine, *n.* See ★*migranine.*

migrainoid (mi-grā′noid), *a.* Resembling migraine. *Buck*, Med. Handbook, VI. 243.

migranine (mi-grā′nin), *n.* A mixture of 90 parts of antipyrin, 9 parts of caffein, and 6 parts of citric acid: said to be specific in migraine.

migration, *n.* **5.** In *phytogeog.*, the movement of plants from one area into another. According to F. E. Clements this is properly a narrower term than *invasion.* See ★*invasion*, 4.—**Arctic migration,** a supposed migration of animals from the arctic region into Europe.

One of the most important problems, as far as the origin of the European fauna is concerned, is the question whence came the animals which Doctor Scharff has termed the "*Arctic migration.*" He, with many others, contends that until toward the end of the glacial period there existed a continuous land connection between America and Europe, far north between Greenland, Spitzbergen, and Scandinavia, the latter being again connected by a land bridge with Scotland across the North Sea, and England with France. Across this continuous land bridge these animals are supposed by him to have wandered into central Europe. *Smithsonian Rep.*, 1902, p. 255.

Law of migration, segregation or isolation in space brought about by migration, considered as an explanation of the origin of species. *Eimer* (trans.), Organic Evolution, p. 7.—**Ontogenetic migration,** the successive changes of locality that take place in the normal life-history of many fishes before they reach their adult stage. *Nat. Science*, June, 1897, p. 390. [Rare.]

migrational (mī-grā′shon-al), *a.* [*migration* + *-al*^{1}.] Pertaining to or characterized by migration.

In the case of freely moving animals, the psychological guidance is an essential factor in the success of the individual; while in the case of plants and low types of animal life, the suitable situation is reached by a wide distribution of a vast number of seeds, spores, or germs, and the same situation is maintained by a loss of *migrational* power as soon as the germs begin to develop. *J. T. Gulick*, in Linnean Soc. Jour. Zool., XX. 223.

migrative (mī′grā-tiv), *a.* Migratory.

The Blackcap is a *migrative* species, visiting us early in the spring, and retiring in September. *Montagu*, Ornithological Dict. (ed. 1831), p. 42.

migratorial (mī-grā-tō′ri-al), *a.* Same as *migratory.*

mihanere (mē-ha-nā′re), *n.* [A Maori pronunciation of the E. *missionary.*] A convert to Christianity. [New Zealand.]

mijakite, *n.* Same as ★*miyakite.*

mika (mē′kä), *n.* [Aboriginal Australian.] An operation, practised by the natives of Australia, consisting in a partial opening of the lower side of the urethra of the male, resulting in an artificial hypospadia.

Mikado yellow. See ★*yellow.*

mikadoate (mi-kä′dō-āt) *n.* The office of mikado. *N. E. D.*

mikrom, *n.* See ★*microm.*

mikron, *n.* See *micron.*

mikveh (mik′ve), *n.* [Also *mikvah*; Heb. *miqweh, miqwah*, a bath, lit. 'a gathering,' especially of water (Gen. i. 10.).] Among orthodox Jews, a bath for the purpose of ritual purification.

mil^1 (mil), *n.* [L. *mille*, a thousand.] A unit of length used in measuring the diameter of wires, equal to 0.001 of an inch.—**Circular mil,** a unit of area used in measuring the areas of cross-sections of wires, equal to 0.7854 of a square mil.

mil^2 (mil), *n.* [L. *mille*, thousand.] A copper coin of Hongkong, the thousandth part of a dollar, corresponding to a Chinese 'cash.'

mil, *n.* and *v.* A simplified spelling of mill.

miladi (mi-lā′di), *n.* A French or Italian form of the English *my lady*: applied on the continent of Europe to titled Englishwomen. Also spelled *milady.*

Telescopes were being used, and loud statements made that the boat held somebody who had been drowned. One said it was the milord who had gone out in a sailing boat; another maintained that the prostrate figure he discerned was *miladi*; a Frenchman who had no glass would rather say that it was milord who had probably taken his wife out to drown her. *George Eliot*, Daniel Deronda, lv.

milady, *n.* Same as ★*miladi.*

milammeter (mi-lam′e-tėr), *n.* See ★*milliammeter.*

milampere (mil-am-pãr′), *n.* Same as *milliampere.*

milcher (mil′chėr), *n.* An animal that gives milk; a milch animal, as a cow or a goat. More commonly *milker.*

mildew, *n.*—**Beech-seedling mildew,** a fungus, *Phytophthora omnivora*, which attacks the seedlings of beech and other trees.—**Corn-mildew.** See ★*corn-mildew.*—**Cucumber-mildew.** (*a*) A disease of cucumbers, usually confined to greenhouses, due to *Erysiphe Cichoracearum.* (*b*) A disease of cucumbers, melons, pumpkins, and similar plants, caused by *Plasmopara Cubensis.*—**Downy mildew.** See *grape-mildew* and ★*Plasmopara.*—**European surface-mildew,** a disease of various plants due to the fungus *Oïdium Tuckeri.* See *mildew*, 1, and *grape-mildew.*—**Filbert-mildew.** See ★*filbert-mildew.*—**Frosty mildew,** a fungous disease of the peach caused by *Cercosporella persica.*—**Peach-mildew,** a disease of peaches which produces white powdery patches upon the fruit: due to the fungus *Podosphæra Oxyacanthæ.* Compare *cherry-blight.*—**Rose-mildew,** a fungous disease of the rose, due to either *Peronospora sparsa* or *Sphærotheca pannosa.*—**Strawberry-mildew,** a fungous disease which attacks the leaves of strawberries: due to *Sphærotheca Castagnei.*

mile, *n.*—**International geographical mile,** one fifteenth of a degree of the earth's equator, equal to about 4.61 statute miles of 5,280 feet.—**Passenger-mile.** See ★*passenger-mile.*—**Ton-mile.** See ★*ton-mile.*

mile-hunter (mīl'hun″tėr), *n.* A bicycler or automobilist who is eager to increase the distance he has traveled or can travel. [Slang.]

milen (mī'len), *n.* [Origin obscure.] In *glass-manuf.*, the scar left by the pontil, as on the bottom of a blown-glass bottle. Sometimes called *punt.*

miler (mī'lėr), *n.* In *track-athletics*, one who runs the mile distance. Similarly, *half-miler*, *quarter-miler*, and *two-miler*. [Colloq.]

mil-foot (mil'fůt), *n.* A wire one mil (or one thousandth of an inch) in diameter and one foot in length: a practical unit used in describing or specifying the properties of wire or other electric conductors.

milhenry (mil-hen'ri), *n.* See ★*millihenry.*

miliaceous (mil-i-ā'shius), *a.* [L. *milia* + *-aceous.* See *milia* and *Milium.*] Of the nature of, or characteristic of, millet or millet-seed.

miliaria, *n.* 1. (*b*) An eruption of minute vesicles due to obstruction of the sweat-glands. Also called *prickly heat.*

miliary, *a.* II. *n.* In the *Echinoidea*, one of the very small tubercles on the surface of the test which serve as bases for the lesser spines.

milieu (mē̤-yė'), *n.* [F., < *mi* (< L. *medius*), middle, + *lieu* (< L. *locus*), place.] The middle place or point; the mean; a point equally removed from extremes; also, surrounding conditions; social environment.

militaristic (mil″i-tā̤-ris'tik), *a.* [*militarist* + *-ic.*] Of or pertaining to militarists or militarism; military.

> A political organization and a moral tendency that are common to all nascent civilization of the *militaristic* order. *Athenæum*, July 15, 1905, p. 73.

militarize (mil'i-tā̤-rīz), *v. t.*; pret. and pp. *militarized*, ppr. *militarizing.* 1. To render military in character, feeling, bearing, or conduct.

> He was brought up in Germany, becoming more and more *militarised.* *Spectator*, Sept. 1, 1900, p. 266.

2. To place under military control; subject to military methods: as, to *militarize* the government.

Military top. See ★*top*¹.

militia, *n.*—**Naval militia**, State forces in the United States which form a part of, and are on a footing with, the national guard. The general duties of the former are similar to those of the latter, but in addition they are supposed to exercise a special supervision along the water-front, both on shore and afloat, and in time of war to be eligible for absorption into the regular naval forces of the country.

milk, *n.* 5. An emulsion; any liquid which holds small particles of solid matter in suspension. *Phillips and Bauerman*, Elements of Metallurgy, p. 385.—**Bitter milk**, milk which has been made bitter by the growth of bacteria, especially of *Bacillus Weigmanni.*—**Fortified milk**, milk rendered more nutritious by the addition of the white of egg or cream.—**Laboratory milk**, milk in which the essential components, namely, fat, albumins, and lactose, have been added according to a special formula.—**Medicated milk**, milk containing medicinal substances first given to the mother that they might be excreted in the milk, and so exert a therapeutic action on the child.—**Milk of magnesia**, a milk-white aqueous liquid holding magnesium hydrate in permanent suspension: it is antacid.—**Modified milk**, cows' milk the composition of which has been altered by the addition of water, salts, sugar, etc., in fixed proportions, so as to adapt it to the needs of the infant at different ages. Also called *rectified milk.*—**Separated milk**, milk from which the cream has been removed by means of a separator. See ★*centrifugal method* and ★*separator*, 2 (*e*).—**Slimy milk**, milk which has become slimy by the growth of bacteria (*Bacterium subriscosum*).—**Soapy milk**, fermented milk which appears to be frothy and has a soap-like taste.—**Sour milk**, milk containing lactic acid which is produced by the growth of certain bacteria, especially *Bacterium acidi-lactici*, and related forms.—**Starch milk**, water which contains in suspension enough starch granules to give it the appearance of milk.—**Vegetable milk.** See the extract.

> In a recent number of a Japanese journal a Mr. T. Kalajama described a process for the manufacture of a *vegetable milk*, the properties of which would render it highly suitable for use in tropical countries. The preparation is obtained from a well-known member of the leguminous family of plants (namely, the Soja bean), which is a very popular article of food among the Chinese. The beans are first of all softened by soaking, and are then pressed and boiled in water. The resultant liquid is exactly similar to cows' milk in appearance, but it is entirely different in its composition. This Soja bean-milk contains 92.5 per cent water, 3.02 per cent proteine, 2.13 per cent fat, 0.03 per cent fiber, 1.88 per cent non-nitrogenous substances, and 0.41 per cent ash.
> *Sci. Amer.*, Nov. 2, 1907, p. 306.

Witches' milk, a whitish fluid sometimes present in the breasts of new-born infants.

milk, *v. t.*—**To milk the street**, in stock-exchange business, to make a profit out of the smaller traders in stocks (known as 'the street') by first manipulating the market in such a way as to give promise of a rise in prices, thus inducing the smaller traders to purchase the particular stock affected, and after supporting it for a time, depressing the price suddenly before the smaller traders have had time to cover.

milk-brother (milk'bruᴛʜ″ėr), *n.* A foster-brother.

milk-bush (milk'bůsh), *n.* 1. Same as *milk-hedge.*—2. A shrub of the genus *Wrightia*, a native of India.—3. A shrub, *Wrightia saligna*, a native of Queensland. *E. E. Morris*, Austral English.—4. See the extract.

> The common *milkbush* of the karroo and karroid regions of the interior [South Africa], viz. Euphorbia mauritanica. *Nature*, Jan. 17, 1907, p. 288.

milk-cell (milk'sel), *n.* The cell in which the milky juice or latex of plants is contained. *N. E. D.*

milk-escutcheon (milk'es-kuch″o̤n), *n.* Same as *escutcheon*, 2 (*c*).

milk-fish, *n.* 2. An Australian holothurian which emits a whitish, viscid fluid from its skin. Also known as *tit-fish.* *E. E. Morris*, Austral English.

milk-flour (milk'flour), *n.* Skimmed milk transformed by an exsiccator into a highly soluble powder which, when dissolved at a temperature of 60–70° C. above zero in a proper quantity of water, gives a solution with the same taste, smell, and other qualities as common milk. The flour, or powder, can be easily transported, and can be kept a long time without being spoiled. *Sci. Amer. Sup.*, April 18, 1903, p. 22827.

milk-fungus (milk'fung″gus), *n.* Any fungus of the genus *Lactarius.*

milk-gowan (milk'gou″a̤n), *n.* The dandelion.

milk-grass (milk'grȧs), *n.* The corn-salad, *Valerianella olitoria.*

milking, *n.* 4. In *card-playing*, same as ★*fuzzing.*

milk-ipecac (milk'ip″ē̤-kak), *n.* See ★*ipecac.*

milk-knot (milk'not), *n.* A condition in which there are small nodular swellings in the secreting breast, occurring especially where an effort has been made to suppress the secretion; also, one of the nodular swellings.

milk-nucleon (milk'nū″klē̤-on), *n.* A substance of the character of Siegfried's phosphocarnic acid, occurring in milk.

milk-plant (milk'plant), *n.* Same as *milk-pea.* See *Galactia*, 2.

milk-powder (milk'pou″dėr), *n.* A powder prepared from desiccated milk. *Evening Post*, Feb. 10. 1906.

milkpox (milk'poks), *n.* A disease, believed to be a modified form of smallpox, prevalent among the Kafirs in South Africa. Also called *amaas.*

milk-premolar (milk'prē-mō″lä̤r), *n.* Same as *milk-molar.*

> In this communication the author [Oldfield Thomas] suggested the use of the term "*milk-premolars*," in lieu of milk-molars. *Proc. Zool. Soc. London*, 1899, p. 924.

milk-purslane (milk'pėrs″lā̤n), *n.* See *purslane.*

milk-ranch (milk'rȧnch), *n.* A large dairy-farm. [Slang, western U. S.]

milk-route (milk'röt), *n.* The district or the round of customers served by a milkman or his employees, or the business built up by him in this round or route: as, to buy or to establish a *milk-route.*

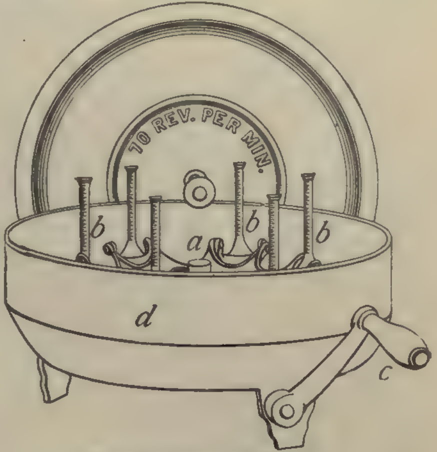
milk-scales (milk'skālz), *n. pl.* A spring-balance for weighing cans of milk. One form employs a case for a card ruled in vertical lines, one of the spaces between the lines being assigned to each cow of a herd. The index travels over the whole front of the case and carries a series of knobs which when pressed record the weights on the card. The card is placed in the case, the milk from a particular cow is weighed, then the attendant presses the button on the index and records the weight in the space assigned to the cow that gave the milk. When all the milk is weighed the card shows the actual and comparative weight of milk for each cow in the herd.

milk-separator (milk'sep″a̤-rā-to̤r), *n.* See ★*separator*, 2 (*e*).

milk-shield (milk'shēld), *n.* Same as *escutcheon*, 2 (*c*).

milk-spot (milk'spot), *n.* In *pathol.*: (*a*) A whitish spot sometimes found on serous membranes, especially on the layer of pericardium attached to the heart. They are occasionally found post mortem in the aged. *Lancet*, April 18, 1903, p. 1075. (*b*) A white mucous patch in secondary syphilis. (*c*) A kind of tooth-rash. *Syd. Soc. Lex.*

milk-tester, *n.* 2. A machine used to ascertain the percentage of fat in a sample of milk. The sample is placed in a standard glass vial which has a long, slender neck graduated on the outside. The vial is then placed in a centrifugal machine and the fat is driven out of the milk, its position in relation to the graduated scale indicating the percentage of it in the milk. Several vials may be tested at once.—**Babcock's centrifugal** or **milk-tester**, an apparatus for determining the percentage of butter-fat in milk, used extensively in creameries. The test is made by adding acid to a weighed quantity of milk and separating the watery portion from the liquid fat by centrifugal force. The percentage of fat is shown by the thickness of the layer of liquid fat as measured in divisions of the graduated neck of the test-bottle.



Babcock Centrifugal or Milk-tester.

a, centrifugal table; *b*, glass jar for milk, cream rising in graduated neck; *c*, handle to operate machine; *d*, casing.

milk-thrombus (milk'throm″bus), *n.*; pl. *milk-thrombi* (-bī). A nodular swelling in the breast arising from obstruction of the flow of milk in the ducts.

milk-train (milk'trān), *n.* In *railroading*, a train which carries milk, and is wholly or in part composed of milk-cars.

Milk-tree wax. See ★*wax*².

milk-vetch, *n.* 2. A plant of any one of the three genera *Phaca*, *Orophaca*, and *Homalobus*, closely related to *Astragalus* and formerly included in that genus.

milkweed, *n.* 3. (*c*) The tall blue lettuce, *Lactuca spicata.*—**Running milkweed**, the hairy angle-pod, *Vincetoxicum hirsutum*, of the eastern United States.—**Wandering milkweed**, the spreading dogbane, *Apocynum androsæmifolium.*

milkweed-beetle (milk'wēd-bē″tl), *n.* A beetle that infests the milkweed.—**Red milkweed-beetle**, any beetle of the lamiid genus *Tetraopes.* They are bright red, usually spotted with black.

milkweed-butterfly (milk'wēd-but″ėr-flī), *n.* 1. See *archippus.*—2. Same as *monarch* ★*butterfly.*

mill¹, *n.* 12. In *leather-manuf.*, an arrangement consisting of one or two large stone rollers which revolve vertically in a pit. *C. T. Davis*, Manuf. of Leather, p. 377.—13. The raised or ridged edge or flange made in milling, stamping, rolling, or pressing anything, as a coin or a screw.—**Bogardus mill**, a machine for grinding materials between two horizontal revolving plates, the upper of which is eccentric to the lower.—**Chaser mill.** Same as *edge-runner mill* (which see, under *mill*¹).—**Cheese-curd mill**, in *dairying*, a small crushing-mill for breaking and grinding cheese-curd; a curd-breaker or -crusher.—**Dry mill**, any machine in which the abradant or cleaning material is dry. It is sometimes steam-heated to keep the abradant hot and to drive off moisture.—**Exhaust mill.** See ★*tumbling-mill.*—**Gastric mill.** See ★*gastric.*—**Glacial mill.** See ★*glacial.*—**Hungarian mill**, a rotating mill for removing small particles of gold from quartz by mixing with mercury; one of the many forms of pan-amalgamators: so called because used in Hungary.—**Huntington mill**, in *mining*, a crushing-machine in the form of a heavy cast-iron pan containing several rollers on vertical shafts hung like pendulums from a revolving frame, and crushing the ore by centrifugal force as they roll on the inside of the rim.—**Lauth's mill**, a three-high rolling-mill in which the middle roll has a diameter only about one half of that of the top and bottom rolls. The middle roll runs loose, being driven by the friction of the piece going through.—**Merchant mill.** (*a*) A rolling-mill for rolling merchant bars, billets, angles, channels, beams, etc. (*b*) The entire plant for producing merchant bars and shapes, including the buildings, boilers, engines, mills, and accessories.—**Pharyngeal mill**, in rotifers. Same as *mastax*, 1.—**Ramsbottom's mill**, a rolling-mill in which the rolls are driven, without the intervention of a fly-wheel, by a pair of direct-acting horizontal engines, which are reversed after each pass of the bloom or ingot, so that the rolling is performed alternately in opposite directions.—**Wagner's mill**, a rolling-mill consisting of two horizontal rolls mounted in the usual way, and a pair of vertical rolls working in bearings. The distance between the vertical rolls can be regulated at will, so that bars and flats of various sizes can be produced with the same rolls. It is a kind of universal mill.—**Wet mill**, a mill in which moist or wet abradants can be used

mill^1, *v. t.* 12. In *sugar-manuf.*, to pass (sugar-cane) through a cane-mill. See *sugar-mill.*

Milla^1 (mil′ä̤), *n.* [NL. (Cavanilles, 1793), named in honor of J. *Milla*, a Spanish court gardener of Madrid.] A genus of plants of the family *Liliaceæ*, closely allied to *Hookera* and *Triteleia*: distinguished by the salver-shaped perianth with 3-nerved, nearly separate segments, 6 nearly sessile stamens, and waxy-white, star-like flowers borne (from 1 to 5) on a slender scape. *M. biflora*, the only species, a native of New Mexico, Arizona, and Mexico, is a choice garden plant. It may be planted in the border in spring and the bulbs removed in autumn, or used as a pot-plant under glass.

milla^2 (mēl′yä), *n.* [Sp.: see *mile.*] In Spain, a mile, especially a nautical mile or knot; the mile of some Spanish-American countries (as the Argentine Republic, Nicaragua, Salvador, and Venezuela), equivalent to 1.15 statute miles.

millage (mil′āj), *n.* Rate (as of taxation) reckoned in mills per dollar.

mill-beetle (mil′bē″tl), *n.* The cockroach.

mill-brow (mil′brou), *n.* Same as ★*mill-run.*

mill-bush (mil′bu̇sh), *n.* The iron lining or bushing placed in the eye of a millstone, where the shaft or arbor comes.

mill-dog (mil′dog), *n.* A dog or clamp used to secure a log in a saw-mill.

mill-dressed (mil′drest), *p. a.* Cut or planed in a mill or by mechanical power: said of stones, marble, etc., but more especially of boards, planks, clapboards, and the like, used for house-building. Also *mill-planed.*

mille (mil), *n.* In certain card games, a counter representing ten 'fishes' or points. *N. E. D.*

milled, *p. a.* 5. Worked in a mill or by machinery: said especially of boards and planks which are cut and then planed by the power-mill.

millefleurs (mēl-flėr′), *n.* [F. *eau de mille-fleurs*, lit. water of a thousand flowers.] Perfume made from several kinds of flowers.

> It was a sad day for you, when you appeared in your neat pulpit with your fragrant pocket-handkerchief (and your sermon likewise all *millefleurs*), in a trim, prim, freshly mangled surplice, which you thought became you.
> *Thackeray*, Newcomes, v.

millefoliate (mil-e-fō′li-ā̤t), *a.* [L. *mille*, thousand, + *foli*(*um*), leaf, + *-ate*^{1}.] Having leaves that are very much incised, so as to resemble many smaller leaves. *Syd. Soc. Lex.*

Millegrana (mil-ẹ̄-grā′nä̤), *n.* [NL. (Adanson, 1763), a name applied to the plant by some of the early botanists, in allusion to the many capsules and seeds produced by it: < L. *mille*, a thousand, + *granum*, a seed.] A genus of dicotyledonous plants of the family *Linaceæ*. See *Radiola.*

millenary, *n.* 4. A thousandth anniversary; a celebration of an event that had happened one thousand years before.

millenniad (mi-len′i-ad), *n.* [L. *millenni*(*um*) + *-ad*^{1}.] A period of a thousand years; a very long period of years.

millennian (mi-len′i-a̤n), *a.* and *n.* [*millennium* + *-an.*] I. *a.* Same as *millennial.*

II. *n.* A millennialist.

millenniary (mi-len′i-ā̤-ri), *a.* Same as *millennial.*

milleograph (mil′ẹ̄-ọ̄-gra̍f), *n.* [Also *milliograph*; irreg. < L. *mille*, thousand, + Gr. *γράφειν*, write.] A modification of Edison's mimeograph used in printing numbers of any special form up to 500. It utilizes a wax stencil-paper, the pressure of a stencil-point, or a type-writer stroke, and an inked pad below the paper when printing directly. The writing may be transferred to a lithographic stone and more copies printed.

milleporous (mil′e-pō-rus), *a.* [See *millepore.*] Having the characters of the millepores; having numerous pores.

miller, *n.* 7. A cicada. [Australia.]—**To drown the miller** (*naut.*), to put a generous quantity of water into the grog to make it go around.

Millerian (mi-lē′ri-a̤n), *a.* Relating or pertaining to the English mineralogist W. H. Miller (1801–80), and specifically noting the system of crystallographic notation introduced by him.—**Millerian axes,** the three equal, obliquely inclined axes to which, following Miller, the forms of rhombohedral crystals are sometimes referred. See ★*system.*—**Millerian indices.** See *index*, 8.—**Millerian notation** or **symbols.** See ★*symbol*^{1}.

millet^1, *n.*—**Ankee-millet.** Same as ★*ankee.*—**Arabian millet.** (*b*) Same as *Johnson* ★*grass.*—**Arizona millet,** *Chætochloa macrostachya*, a native American grass, closely related to the foxtail-millets and making a good hay. It is common in central Texas and ranges to Mexico and South America.—**Australian millet.** Same as *Johnson* ★*grass.*—**Barn-yard millet,** any of the cultivated forms of *Echinochloa Crus-galli*, the barn-yard grass. The best are of an upright habit with a close head, the Japanese barn-yard millet, recently introduced into the United States, being one of the most promising. (Compare ★*ankee.*) The name has been extended to the Shama millet, or jungle-rice, and the Sanwa millet, species of the same genus. See *jungle-*★*rice* and *Sanwa* ★*millet.*—**Broom-corn millet, brown millet,** the true millet, *Panicum miliaceum.*—**Cat-tail millet.** (*b*) Same as *foxtail-*★*millet.*—**Chaparral-millet,** *Panicum Reverchoni*, an excellent pasture-grass of the highlands of central Texas.—**Common millet,** a slender form of foxtail-millet with narrow, nodding heads, affording the best hay. See *foxtail-*★*millet.*—**Ditch-millet.** Same as *millet coda* or *khoda* (which see, under *millet*1). This is cultivated in northern India as a rainy-season crop on poor soil, the grain supplying food chiefly to the poorer classes. A variety is called *hureek* (which see).—**False millet.** Same as *Polish* ★*millet.*—**Foxtail-millet,** any of the varieties of *Chætochloa Italica*, as distinguished from *true* or *broom-corn millet*, the name referring to the cylindrical brushy heads. According to Hackel, the probable original of this cultural species is the common green foxtail. Millets of this class have long been grown as cereals as well as for forage in the Old World, but in America they are sown only for forage. Four standard varieties are known in the United States, namely, *common millet, German millet, golden wonder millet*, and *Hungarian millet.*—**German millet,** a robust broad-leaved form of foxtail-millet, yielding an abundant coarse forage but not bearing drought.—**Giant millet,** a very robust foxtail-grass, *Chætochloa magna*, found in water or wet ground on the Atlantic coast from Delaware to Texas, also in the West Indies and in Central America. It promises to be serviceable in reclaiming swampy lands along the coast.—**Golden millet.** Same as *German* ★*millet.*—**Golden wonder millet,** a stout and tall variety of foxtail-millet with a large head, yielding more seed than others: as forage it is coarse.—**Hog-millet.** Same as *broom-corn* ★*millet.*—**Horse-millet.** Same as *pearl millet* (which see, under *millet*1).—**Hungarian millet,** a foxtail-millet resembling the common millet in size, marked by the prominent brown or purple beards of the heads: it is next to common millet in quality of hay. Known as *Chætochloa Italica Germanica.*—**Indian millet.** (*b*) In the United States, one of the various mountain-rices, *Eriocoma cuspidata.* It is a valued bunch-grass of the Western arid country, thriving in soil too dry and sandy for most other grasses. *Oryzopsis micrantha*, of the Dakotas and Montana, has been called *small Indian millet.*—**Japanese barn-yard millet.** See *barn-yard* ★*millet.*—**Japanese panicle millet.** Same as *broom-corn* ★*millet.*—**Morocco millet.** Same as *Johnson* ★*grass.*—**Polish millet,** the common crab-grass, *Syntherisma sanguinalis.* In Bohemia (presumably also in Poland) this grass is grown as a cereal, the seeds being used for a mush or porridge.—**Ragi millet,** *Eleusine coracana.* See *Eleusine* and *raggee.*—**Russian millet.** Same as *broom-corn* ★*millet.*—**Sanwa millet,** *Echinochloa Crus-galli frumentacea*, a very quick growing millet, in India yielding forage and a cheap food. It has been introduced experimentally into the United States. See *barn-yard* ★*millet.*—**Shama millet.** Same as *jungle-*★*rice.*—**Swamp-millet,** *Isachne globosa*, a slender creeping grass with upright stems and open panicles of very small spikelets, native in southern Asia and in Australia. It grows on the banks of rivers and in swamps, and is well adapted by its running rootstocks to fixing soils exposed to washing; it is also said to be liked by cattle.—**Texas millet,** *Panicum Texanum*, a leafy branching annual grass of much merit as a hay-grass, native and abundant near the Colorado River of Texas. Also called *Colorado grass, Austin grass, concho-grass* (which see), and *bottom-* or *river-grass.*—**Water-millet,** a stout and tall semi-aquatic grass, *Zizaniopsis miliacea*, of the southern United States, allied to the wild rice, *Zizania.* It grows from extensively creeping rootstocks, and inhabits both fresh- and salt-water marshes.—**Wild millet.** (*a*) The millet-grass, *Milium effusum* (see *Milium*, 1). (*b*) The green foxtail, *Chætochloa viridis.* (*c*) Same as *Indian* ★*millet* (*b*).

millet^2 (mil′et), *n.* [Turk. *millet* (< Ar. *millah*), people, community, sect, creed.] A people; a nation.

> All Moslems, to whatever race they may belong, are included in the *millet*, or nation, of Islam. The Rûm, or Roman (*i.e.*, Greek) *millet* comprises all those who acknowledge the authority of the Œcumenical Patriarch.
> *Encyc. Brit.*, XXX. 395.

millet-grass, *n.*—**Many-flowered millet-grass,** a European mountain-rice, *Oryzopsis miliacea*, not highly esteemed at home, but proving to be of value on granitic soils in California.

millet-rice (mil′et-rīs), *n.* Same as *jungle-*★*rice.*

mill-fever (mil′fē″vėr), *n.* A form of low fever prevalent among the young hands in linen-mills. *N. E. D.*

mill-gearing (mil′gēr″ing), *n.* Gears; belts, pulleys, and other forms of transmission machinery.

mill-headed (mil′hed″ed), *a.* Having a milled head.

mill-hole (mil′hōl), *n.* An auxiliary shaft connecting a stope or other excavation with the level below.

mill-house (mil′hous), *n.* A mill; a building for milling or grinding.

milliad (mil′i-ad), *n.* [L. *mille*, thousand. See *myriad.*] A millennium; a period of a thousand years.

milliammeter (mil-i-am′e-tėr), *n.* [L. *mille*, a thousand, + E. *ammeter.*] In *elect.*, an instrument for the measurement of small electric currents, in which the scale is graduated to read in thousandths of an ampere. Also *milammeter.*

milliamperage (mil″i-am-pãr′ā̤j), *n.* [L. *mille*, a thousand, + E. *amperage.*] In *elect.*, current strength expressed in milliamperes, or thousandths of an ampere.

milliamperemeter (mil″i-am-pãr′mē-tėr), *n.* Same as ★*milliammeter.*

millicalory (mil′i-kal″ọ̄-ri), *n.* [L. *mille*, a thousand, + E. *calory.*] The calory; a gram-calory.

millicoulomb (mil′i-kö-lom″), *n.* [L. *mille*, a thousand, + E. *coulomb.*] A thousandth of a coulomb, or 1×10^{-4} c. g. s. units: a practical unit of electrical quantity or charge.

millième (mēl-yām′), *n.* [F., < L. *millesimus*, thousandth.] A current subsidiary coin of Egypt and the Soudan, equal to one tenth of a piaster.

> The subsidiary coinage consists of pieces of 20, 10, 5, 2, and 1 piastres in silver; 5, 2, and 1 *milliemes* in nickel; and ½ and ¼ *millieme* in bronze.
> *Encyc. Brit.*, XXVII. 700.

milligauss (mil′i-gous), *n.* [L. *mille*, a thousand, + E. *gauss.*] In *elect.*, a practical unit of magnetic induction equal to a thousandth of one gauss or of one c. g. s. electromagnetic unit.

milligilbert (mil′i-gil-bėrt), *n.* [L. *mille*, a thousand, + E. *gilbert.*] In *elect.*, a practical unit of magnetomotive force equal to one thousandth of a gilbert or of one c. g. s. unit.

milligrade (mil′i-grăd), *a.* [L. *mille*, a thousand, + *gradus*, step. See *centigrade.*] Divided into a thousand degrees: as, a *milligrade* scale. *Bentham.*

millihenry (mil′i-hen-ri), *n.*; pl. *millihenries* (-riz). [L. *mille*, a thousand, + E. *henry.*] In *elect.*, a practical unit of inductance equal to one thousandth of a henry. Also *milhenry.*

millim (mil′im), *n.* [*millim*(*eter*).] A millimeter; the third metret or decimal submultiple of a meter in the scheme of magnitudes devised (about 1860) by G. J. Stoney, F. R. S. The decim or decimeter is the first metret, the centim the second. See ★*metro* and ★*metret.*

> The third subsection w, from *millims* (millimeters) down to tenths of a micron, covers the entire range of the microscope. *Smithsonian Rep.*, 1899, p. 213.

millimeter, *n.*—**Circular millimeter.** See ★*cross-section units.*

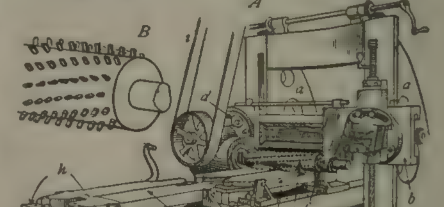
millimicrohm (mil′i-mik-rōm), *n.* [L. *mille*, a thousand, + E. *microhm.*] A c. g. s. unit of resistance: 1×10^{-9} ohms. *H. DuBois*, The Magnetic Circuit, p. 306.

millimicron (mil′i-mī-kron), *n.* [L. *mille*, a thousand, + *μικρός*, small (see *micron*).] A unit of length ($\mu\mu$) equal to 10 Ångström units, .001 microns, or .000001 millimeters: sometimes employed in microscopy or in stating wave-lengths of light. *C. Hering*, Conversion Tables, p. 31.

millimol (mil′i-mol), *n.* [L. *mille*, a thousand, + E. *mol*(*ecule*).] In *phys. chem.*, the one thousandth part of a gram-molecule, an amount of any element or compound whose weight in milligrams is numerically equal to the molecular weight of the substance. *C. Hering*, Conversion Tables, p. 60.

Milling blue, green, orange, red, scarlet, yellow. See ★*blue*, etc.—**Process milling,** milling of wheat to make flour by one of the processes invented for that purpose.

milling-attachment (mil′ing-a̤-tach″ment), *n.* A milling-machine combined with other machine-tools, such as a boring-machine, a drilling-machine, or a planer. The most simple of these



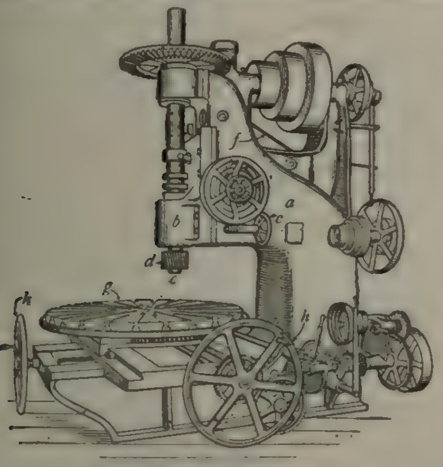
Planer Milling-attachment.

A, planer; *B*, milling-cutter with inserted teeth; *a*, housing of planer; *b*, cross-rail; *c*, traveling-bed; *d*, milling-attachment bolted to tool-saddle of cross-rail; *e*, out-board support for spindle of milling-attachment; *f*, milling-cutter; *g*, work (slabs) in vises secured to traveling-table of planer; *h*, vises; *i*, temporary belt delivering power to milling-attachment.

attachments is a bracket-table fixed to the side of a lathe and next to the live-head. The lathe-spindle, extending over the work on the table, becomes the horizontal spindle of the milling-machine to which any horizontal type of cutter can be fixed. Combined boring-, drilling-, and milling-machines are of many forms, and among them are included many of the largest and most powerful machines used in modern machine-shops.—**Planer milling-attachment,** a small milling-machine attached directly to the planer-rail in place of the usual cutting-tool. The spindle may be horizontal or vertical, and within certain limits any form of cutter may be employed. The traveling-bed of the planer is used as the feed-table, and as it has a very long traverse several pieces of work may be placed upon it in a line to pass in turn under the cutter, with great economy of time and labor. Thin or long and narrow pieces of work can also be clamped together side by side and, with suitable cutters, all may be milled at the same time. These milling-attachments may also be in pairs on the same planer and cut two sides of the work at the same time. See cut.

milling-cutter, *n.* **2.** A cutting-tool adapted for use in a milling-machine. Milling-cutters are made in a great variety of forms and are used for many purposes. Many are in the form of cylinders, with the cutting edges placed in straight or spiral lines along the sides of the cylinder or radially at the end, when they are called *end-mills*. Others are disks, with the blades on the edge and sides of the edge, or, as in circular saws, with the blades on the edge only, as in the screw-slotting cutter. Others, called *face-cutters*, have the blades placed radially at the end of the shank.

milling-machine, *n.* **1.** This name, originally given to a simple form of metal-finishing machine, is now applied to a large and important class of tools ranging in size from a small bench-machine to large and powerful machines employed upon the massive pieces of metal used in constructing motors and machinery. Milling-machines having two spindles are called *duplex millers*. Single-spindle machines may also employ several cutters and are then *gang* or *multiple millers*. Special forms of milling-machines are also made which employ the general form of the lathe and the planer. The milling-machine has largely occupied the field of the planer, shaper, and slotting-machine, and has made it possible to finish or machine metal forms hitherto not attainable at all or only by means of slower and more expensive tools. It has thus greatly modified all machine-shop practice and made it possible to finish the many novel and complicated forms now demanded in the metal industries. See *profiling-machine*.—**Boring-, drilling-, and milling-machine.** See ★*boring-machine*.—**Plain milling-machine,** a milling-machine consisting of a standard which supports a horizontal or vertical spindle (operated by suitable belting or gearing) to which some form of revolving cutter, called a *milling-cutter*, may be attached. Beneath the spindle is a feed-table to which the piece of metal to be milled or machined is fixed. The action of the machine is a combination of the revolution of the cutter and the movement of the feed-table which pushes the work against it. The serrations or teeth of the cutter chip or cut off minute shavings of metal as the work passes under it. Since the cutters have a great variety of forms the machine is adapted to a wide range of work. Such machines are divided into two classes, those having horizontal and those having vertical spindles. See ★*milling-cutter*.—**Universal milling-machine,** a milling-machine fitted with longitudinal, cross, and revolving feeds, in which boring, drilling, gear-cutting, milling, etc., can be done by rotating cutters or mills.



Large Vertical Milling-machine.

a, frame supporting spindle; *b*, vertical sliding support for spindle; *c*, spindle; *d*, milling-cutter; *e*, control of sliding support to adjust cutter to work; *f*, cable to counterweight for sliding support, counterweight inside the frame; *g*, table for work with rotary, cross, and longitudinal feed having hand or power control; *h*, *h*, control of feed.

milling-saw (mil′ing-sâ), *n.* A milling-cutter resembling a large circular saw used in cutting hot or cold metals. Hot iron is cut at a high and cold iron at a low speed.

milliograph (mil′i-ọ̄-gråf), *n.* Same as ★*milleograph*.

millionairedom (mil-yọn-ãr′dum), *n.* Millionaires collectively; the state of being a millionaire; millionairism.

millionairism (mil-yọn-ãr′izm), *n.* The state of being a millionaire.

> Your millionaire, for example,—and *millionairism* is getting so common as to be almost vulgar,—your millionaire never tires of telling you how he worked the multiplication table until cents became dimes.
> *E. Eggleston*, Faith Doctor, v.

millionary, *a.* **2.** Possessing millions (of dollars, or pounds, etc.).

> All this to feed the avidity of a few *millionary* merchants. *Jefferson*, Writings, IV. 284. *N. E. D.*

> He had a dread that these *millionary* people, with wasteful private cars, might take undue interest in his companion. *R. Kipling*, Captains Courageous, ix.

millisavart (mil′i-sa-värt″), *n.* [L. *mille*, a thousand, + E. *savart*.] In *acoustics*, an interval pitch equal to one thousandth of a savart.

> In acoustics it is common to measure large intervals of pitch in octaves and smaller ones in "commas." M. A. Guillemin proposes to adopt instead of these units the savart and the *millisavart*. By the savart is meant an interval of ten to one, which equals three octaves plus a major third. The *millisavart*, which is the thousandth part of the savart, represents the interval between two French standard diapasons giving one beat per second.
> *Nature*, Aug. 21, 1902, p. 398.

millivoltmeter (mil′i-vōlt-mē″tėr), *n.* [L. *mille*, a thousand, + E. *voltmeter*.] In *elect.*, a direct-reading instrument for the measurement of small differences of potential, in which the scale is graduated to read in thousandths of a volt.

milliweber (mil′i-vā″bėr), *n.* [L. *mille*, thousand, + *weber*. See *weber*.] The thousandth part of a weber.

mill-lands (mil′landz), *n. pl.* Certain lands which by legal custom appertained to a cornmill, especially in Scotland. *N. E. D.*

mill-leat (mil′lēt), *n.* An artificial channel for the conveyance of water to a mill. *N. E. D.*

millocracy (mi-lok′rạ-si), *n.* [See *millocrat*.] Mill-owners as a ruling or dominant class.

> In hydra-wrestle, giant '*Millocracy*' so-called, a real giant, though as yet a blind one and but half-awake, wrestles and wrings in choking nightmare.
> *Carlyle*, Past and Present, III. 1.

mill-pick, *n.* **2.** Same as *pickax*.

mill-pile (mil′pīl), *n.* A number of puddling-bars charged together into a reheating- or balling-furnace. They are heated to a welding temperature and then passed through the rolls, by which they are welded together and a new bar is formed from the pile.

mill-planed (mil′plānd), *a.* Planed, as a board or plank, in a power-mill. A mill-planed board is not considered as finished for any purpose requiring smoothness, but should be worked over by hand.

mill-power (mil′pou″ėr), *n.* A unit of water-power the value of which varies in different localities. For example, at Holyoke, Massachusetts, it is equivalent to 38 cubic feet of water per second discharging under a head of 20 feet; at Minneapolis, Minnesota, it is equivalent to 30 cubic feet of water per second discharging under a head of 22 feet. *Trans. Amer. Soc. Mech. Engin.*, XXIV. 983.

mill-run (mil′run), *n.* **1.** The work of an amalgamating-mill between two clean-ups.—**2.** A test of a given quantity of ore by actual treatment in a mill.

mill-saw (mil′sâ), *n.* A straight saw placed in a gate or frame which is given a reciprocating motion; one of the saws in a gang-saw. See cut under *saw*[1], 1.

mill-staff (mil′ståf), *n.* A staff used to test the flatness of the face of a millstone.

millstone-hoist (mil′stōn-hoist), *n.* A hoisting-screw or -jack for lifting and handling millstones.

mill-table (mil′tā″bl), *n.* Same as ★*roller-table*.

mill-worked (mil′wėrkt), *p. a.* Same as ★*mill-dressed*.

milo (mē′lō), *n.* [Hawaiian and Samoan *milo* = Tahitian, Mangarevan, etc., *miro*, name of several trees.] In Polynesia, *Thespesia populnea*, a widely spread tropical tree belonging to the mallow family, with broadly ovate, entire, pointed leaves, and showy yellow hollyhock-like flowers which change to a purplish-pink color on withering. The heart-wood, which is hard, smooth-grained, and durable, is used by the Hawaiians for making bowls, or 'calabashes,' for holding poi. The Samoans use it in boat-building. Also called *Polynesian rosewood*. See *Thespesia* (with cut) and ★*banalo*.

milpa (mil′pạ̈), *n.* [Mex. Sp., < Nahuatl *milpan*, in the country; *milli*, a cultivated field.] **1.** Among the ancient Aztecs, a garden-bed assigned out of the communal land to a particular family. *Ratzel* (trans.), Hist. of Mankind, II. 131.—**2.** A cultivated field, especially a field of maize. [Mexico.]

Miltonism (mil′tọn-izm), *n.* A peculiarity of Milton's style or an imitation of it.

> Cowper's blank verse detains you every step with some heavy *Miltonism*; Chapman gallops off with you his own free pace. *Lamb*, Letters, CXIX. 238.

Miltonist (mil′tọn-ist), *n.* A supporter of John Milton, especially of his views on divorce.

> A party, distinguished by the name of *Miltonists*, attested the power of his pen, and gave consequence to his pleading for divorce. *Symmons*, Life of Milton, p. 250.

Miltonize (mil′tọn-īz), *v. t.* and *i.*; pret. and pp. *Miltonized*, ppr. *Miltonizing*. [*Milton* + *-ize*.] To render Miltonic in character or style; to imitate Milton's style.

> Mr. Johnstone has conscientiously gone to Milton for his model, and *Miltonises* as best he may. The metre is a faint Miltonic echo. *The Academy*, April 4, 1903, p. 336.

miltos (mil′tos), *n.* [Gr. *μίλτος*, red lead, minium.] Minium, a red earth found in the Cyclades, from which the ancients made the red paint so common in their decorations.

milt-pain (milt′pān), *n.* A disease of swine.

milt-sickness (milt′sik″nes), *n.* A disease of the spleen in cattle.

mimaluse (mim′ạ-lös), *a.* and *n.* [Chinook jargon, also *mimaloose*, *memaloose*, dead, to die (*mimaluse illahee*, a cemetery, a sepulcher); < Chinook *imemalus*, a dead person.] **I.** *a.* Dead. [Columbia River, Washington, and British Columbia.]

II. *n.* A dead body.

M. I. M. E. An abbreviation (*a*) of *Member of the Institute of Mechanical Engineers*; (*b*) of *Member of the Institute of Mining Engineers*.

M. I. Mech. E. An abbreviation of *Member of the Institute of Mechanical Engineers*.

mimeograph (mim′ẹ̄-ọ̄-gråf), *v. t.* To multiply (copies of a writing or document) by means of a mimeograph; manifold by the use of a mimeograph.

mimesid (mī-mes′id), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Mimesidæ*.

II. *a.* Having the characters of, or belonging to, the family *Mimesidæ*.

mimesis, *n.* **3.** The occurrence of symptoms, without organic basis or in the course of some disease, which simulate those of another disease.

Mimetic resemblance. See ★*resemblance*.

mi-mi (mī′mī), *n.* Same as ★*mia-mia*. [Australia.]

mimiambi (mim-ī-am′bī), *n. pl.* [L., < Gr. *μιμίαμβοι*, pl., < *μῖμος*, mime, + *ἴαμβος*, iambus. See *iambic*.] Mimes composed in iambic verse: as, the *mimiambi* of Herondas.

mimiambic (mim-ī-am′bik), *a.* [*mimiambi*.] Pertaining to or having the characteristics of mimiambi; being a writer of mimiambi: as, a *mimiambic* poet.

mimicry, *n.*—**Aggressive mimicry,** the resemblance of certain predaceous and parasitic insects to the insects on which they prey. Examples are abundant in the tropics, where certain spiders mimic the ants on which they prey. *Volucella* and *Psithyrus* mimic the bees on which their larvæ feed.—**Batesian mimicry.** See ★*Batesian*.—**Müllerian mimicry,** synaposematic resemblance. See ★*resemblance*.

miminy-piminy (mim″i-ni-pim′i-ni), *a.* and *n.* [Arbitrary and imitative.] Absurdly precise, delicate, or over-refined; finicking; niminy-piminy; also, something that exhibits these traits.

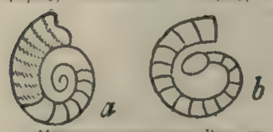
> She went and dropped her curtsey at the parlour door, and in a *miminy piminy* voice said she was come to make her submission, and would he forgive her, and give her another trial? *C. Reade*, Hard Cash, xxx.

> It is a tortuous, tottering, wriggling, fidgetty translation of every thing from the vulgar tongue, into all the tantalizing, teasing, tripping, lisping *mimminee-pimminee* of the highest brilliancy and fashion of poetical diction.
> *Hazlitt*. English Poets, viii.

mimoceracone (mim-ọ̄-ser′ạ-kōn), *n.* [*Mimoceras*, a genus of cephalopods, + Gr. *κῶνος*, a cone.] A cone or shell like that of the cephalopod genus *Mimoceras*, that is, loosely coiled in a spiral and straight for a short distance at the initial end: an elementary expression in the development of genera of the *Ammonoidea*.

mimoceran (mī-mos′ẹ-rạn), *a.* [*Mimoceras* + *-an*.] Pertaining to or having the characters of the genus *Mimoceras*.

Mimoceras (mī-mos′ẹ-ra̤s), *n.* [NL., < Gr. *μῖμος*, imitator, + *κέρας*, horn.] A genus of ammonoid cephalopods regarded as of extremely primitive character. Its shell is coiled in a spiral and the initial whorl is free from the next. It is of Lower Devonian age.



Mimoceras compressus, Beyr. sp. Lower Devonian; Wissenbach, Nassau.
a, natural cast; *b*, nepionic individual enlarged.
(From Zittel's "Palaeontology.")

mimography (mī-mog′ra̤-fi), *n.* [Gr. *μῖμος*, a mimic, + *-γραφια*, < *γράφειν*, write.] 1. The art of writing gesture-language by means of conventional pictorial symbols: designed for recording the gestures used by the deaf and dumb, or of primitive tribes that use gesture-language.—2. Writing which consists of symbols that represent gesture-language.

mimophyre (mim′ọ-fīr), *n.* [Gr. *μῖμος*, a mimic, + E. (*por*)*phyr*(*y*).] In *petrog.*, a name suggested by Brongniart (1813) for porphyritic volcanic tuffs, and for porphyritic metamorphic rocks which resemble porphyries or porphyroids.

Mimosa, *n.* 3. [*l. c.*] Same as *thiazol ★yellow*.

mimosaceous (mī-mō-sā′shius), *a.* Belonging to the plant family *Mimosaceæ*; resembling or having the characters of the mimosa.

Mimosella (mī-mọ-sel′a̤), *n.* [NL., < *Mimosa* + dim. *-ella*.] The typical genus of the family *Mimosellidæ*. *Hincks*, 1851.

Mimosellidæ (mī-mọ-sel′i-dē), *n. pl.* [NL., < *Mimosella* + *-idæ*.] A family of ctenostomatous gymnolæmatous polyzoans, having the movable deciduous zoœcia contracted below, with an aperture on the ventral side. It contains the single genus *Mimosella*.

mimosis (mī-mō′sis), *n.* [NL., < *μῖμος*, a mimic, + *-osis*.] Same as *mimesis*.

mimotannic (mī-mọ-tan′ik), *a.* [*mimo*(*sa*) + *tannic*.] Pertaining to the tannin derived from the mimosa.—**Mimotannic acid**, a variety of tannic acid found in mimosa, acacia, and similar species of plants.

mimsey (mim′zi), *a.* [*mim*, *a.* Cf. *flimsy*.] Prim; prudish; contemptible. *Eng. Dial. Dict.*

mimsy (mim′zi), *a.* [A nonsense-formation, < *mi*(*serable*) + (*fli*)*msy*.] Miserable and flimsy: a ★blend-word, or ★brunch-word (which see). *Lewis Carroll*, Through the Looking-glass, p. 128.

Min. An abbreviation of *minister*.

Mina³ (mī′na̤), *n.* [NL. (Cervantes, 1824), named in honor of Francisco Javier *Mina* (1789–1817), a Spanish soldier, killed in Mexico.] A genus of plants of the family *Convolvulaceæ*, closely related to *Ipomœa* and *Quamoclit*. *Mina lobata* of the gardens, a native of Mexico, is a twining herb with cordate 3-lobed leaves and small flowers in scorpioid clusters, the bag-shaped corolla of which is a rich crimson when it first opens, but changes to yellow.

minacciando (mi-nät-chē-än′dō), *a.* [It., ppr. of *minacciare*, menace: see *menace*, *v.*] In *music*, threatening: noting passages to be so rendered. Also *minaccioso*.

minaccioso (mi-nät-chẹ-ō′sō), *a.* [It., < *minaccio*, a menace: see *menace*, *n.*] In *music*, same as ★*minacciando*.

minage (mẹ-näzh′), *n.* [F. and OF. *minage*, < *mine*, a measure of grain, < L. *hemina*, < Gr. *ἡμίνα*, a Sicilian measure.] In French use, formerly: (*a*) The measurement of grain by the 'mine' (a measure somewhat less than two bushels). (*b*) The selling of grain by the 'mine.' (*c*) A tax exacted from the tenant by his lord upon the amount of grain produced. (*d*) A tribute paid upon grain. *Kidd*, Social Evolution, p. 222, note.

minah (mī′na̤), *n.* [E. Ind.] In the peninsula of India, a stambha, especially one built of masonry. Compare *lat*⁶.

minargent, *n.* 2. A trade-name of several alloys intended for ornamental use. One of them consists of copper alloyed with nickel, aluminium, and tungsten.

minchiate (min-ki-ä′tā), *n.* [It., pl.] A card-game chiefly played in Tuscany, a modification of tarot; also, as plural (the original use), the cards used in the game. *N. E. D.*

mind¹, *n.*—**Social mind**, the concurrent feeling, agreeing thought, and concerted volition of two or more individual minds. *Giddings*, Prin. of Sociol., p. 132.

mind-blindness (mīnd′blīnd″nes), *n.* Inability to recognize the visual impressions of external objects conveyed to the brain by functionally sound organs of vision.

mind-curist (mīnd′kūr″ist), *n.* One who believes in mind-cure; one who holds the doctrine that mental influence is the only or the chief cure for bodily ills.

> A clear and adequate reason may be given to explain why that psycho-physiological transformation and the advent of Faith should be conditioned, or at least greatly facilitated, by self-surrender understood in the sense of a relaxation of the deeper, the unconscious, will—that kind of giving up, of relaxation, which the *Mind-Curist*, the Christian Scientist and the Hypnotizer, wisely attempt to bring about in their subjects by way of preparation.
> *Amer. Jour. Relig. Psychol. and Education*, May, 1904, [p. 80.

mind-deafness (mīnd′def″nes), *n.* Same as *mental ★deafness*.

mindlessness (mīnd′les-nes), *n.* The condition of being devoid of mind or intelligence; absence of mind.

> God created the world. The question between faith and science even now is not whether the universe was created by Mind. If it requires Mind to construe the universe, could *mindlessness* have constructed it?
> *W. Alexander*, Primary Convictions, v. 12.

mine², *n.* 1. Specifically, in *Scotch mining*: (*a*) The underground works of a colliery or metalliferous working. (*b*) A drift or roadway from the surface, either level or on the slope of the seam. (*c*) A mine passage in rock: usually qualified, as stone-*mine*, cross-cut *mine*, etc.—**Back-set mine.** See ★*back-mine*.—**Buoyant mine.** See *submarine ★mine*.—**Contact mine.** See *submarine ★mine*.—**Dormant mine.** See *submarine ★mine*.—**Electro-contact mine.** See *submarine ★mine*.—**Floating mine**, an explosive mine that floats on or near the surface of the water.—**Observation mine.** See *submarine ★mine*.—**Small mine**, the dust and small fragments of iron ore left from calcining iron ore in Staffordshire, England. See *mine*², 6.—**Submarine mine**, in naval warfare, a large charge of explosive in a water-tight casing placed under water at such a depth that, by its explosion, it may sink or seriously damage a vessel passing in its vicinity. Such mines are of two principal classes: *contact mines*, designed to explode by contact with the vessel; and *observation mines*, designed to explode, at the will of an operator on shore, by the closing of an electric circuit connected to the mine when he observes an enemy's vessel passing over it. An *electro-contact mine* is controlled by an electric circuit by which its condition can be tested and by which it can be made temporarily inoperative for the passage of friendly vessels. Mines are also distinguished as *ground-mines*, which rest on the bottom; and *buoyant mines*, which are anchored to the bottom but remain suspended in the water below its surface by their buoyancy. *Dormant mines* are contact mines which are ordinarily held down to the bottom, but which can be released at the will of an operator on shore, and then become buoyant mines. Submarine mines are arranged systematically in groups in harbors and channels, and such a group is called a *mine-field*.—**Submerged mine.** Same as *contact mine* (which see, under ★*mine*²).

mine-car (mīn′kär), *n.* A small car used in mines for bringing ore or coal to the surface.

mine-dust (mīn′dust), *n.* Screenings of calcined ironstone. [Scotch.]

mine-field (mīn′fēld), *n.* A body of navigable water in which submarine mines are anchored for the purpose of preventing an enemy's ships from entering a channel, harbor, or roadstead; also, the group of mines itself. The mines may be so arranged that they can be exploded from a station on shore or may be contact mines which explode on being struck by a vessel. The mines are charged with guncotton or some other very powerful explosive. See *submarine ★mine*.

mine-master (mīn′mȧs″tėr), *n.* 1. One who is charged with the laying of military mines.—2. The superintendent of a mine.

mine-pig (mīn′pig), *n.* Pig-iron made from mine or ore, as distinguished from cinder-pig. *N. E. D.*

miner, *n.* 1. The term is sometimes limited to one who mines for minerals other than coal, a coal-miner being called a *collier* in Great Britain.—**Miners' anemia.** See ★*anemia*¹.—**Miners' asthma, lung, phthisis.** Same as *anthracosis*. **Miners' disease.** Same as ★*ancylostomiasis*.—**Miners' elbow, horn.** See ★*elbow*, ★*horn*.—**Miners' nystagmus.** See *nystagmus*.—**Miners' right.** See ★*right*.—**Miners' worm.** See ★*worm*.—**Miners' worm disease.** See ★*ancylostomiasis*.

mineral. I. *n.* 3. In *mining*, ore.—**Bathgate mineral.** Same as *Boghead coal*.—**Contact mineral**, a mineral characteristically developed along the contact of an igneous intrusion and its walls, such as vesuvianite and garnet in limestones, andalusite in slates.—**Critical mineral**, in *petrog.*, in the quantitative classification of igneous rocks, an abnormative mineral present in a rock in notable amount, that is, in sufficient amount to render the mode of the rock ★abnormative (which see).—**Green mineral**, malachite.—**Orange mineral**, an oxid of lead, of a bright orange color, which has the chemical formula Pb_3O_4. It has the same chemical composition as red lead, but is finer in texture and more brilliant in color. It is made by oxidizing white lead in a reverberatory furnace, while red lead is made by oxidizing metallic lead in a similar way.

II. *a.*—**Mineral jelly**, a hydrocarbon obtained in the distillation of crude petroleum.

> The *mineral jelly* is a hydrocarbon having the formula $C_{16}H_{24}$, and is obtained by the fractional distillation of crude petroleum oil at a temperature of over 200° C.
> *Encyc. Brit.*, XXXII. 23.

mineralize, *v. t.* 2. To impregnate with mineral substances, as metallic salts: thus, the water of a particular spring may be spoken of as more or less strongly *mineralized*.—3. In *mining*, to introduce, in solution or otherwise, a new mineral or ore into (surroundings where it did not previously exist, as, for example, into a fissure or into shattered or porous rock). The rock is then said to be *mineralized*.

> On the other hand, it is certainly most remarkable that so little auriferous quartz has been found; at the time of my visit hundreds of quartz claims had been staked, but very few had been shown to contain any gold whatever; neither do the quartz boulders of the White Channel appear to be auriferous, or even *mineralized*.
> *Pop. Sci. Mo.*, July, 1902, p. 235.

Mineralizing agent, in *petrog.*, a volatile substance, such as water vapor, chlorin, fluorin, or boric acid, which, while not actually entering into the composition of a given mineral, facilitates its crystallization. It is believed by some petrographers, especially the French, that mineralizing agents are necessary to the crystallization of the highly silicious rocks, such as granite. The exact rôle played by the substances in question is not as yet understood.

mineralizer, *n.* 2. In *petrog.*, a dissolved gas in an igneous magma which promotes crystallization, or leads to the production of particular minerals which contain the elements of the gas, such as boron, chlorin, fluorin, hydrogen. Compare ★*crystallizer*, 2.

mine-run (mīn′run), *n.* The entire unscreened output of a coal-mine.

minervite (mi-nėr′vīt), *n.* [*Minerve* (see def.) + *-ite*².] A hydrous aluminium phosphate which occurs in soft plastic masses in the Grotte de Minerve, valley of the Aude, France.

mine-tin (mīn′tin), *n.* Tin ore or tinstone extracted directly from the solid rock: opposed to *stream-tin*, which is obtained by washing the gravel and sand of the beds of streams.

mingles (ming′glz), *n. pl.* In *mining*, iron frames or standards carrying the pillow-blocks of pit-head pulleys. Also *maidens*. *Barrowman.* [Scotch.]

mingo¹ (ming′gō), *n.* [Origin obscure.] A name of various fishes of the family *Monacanthidæ*.—**Long mingo**, a common name of *Alutera punctata*, a fish of the family *Monacanthidæ*, known from the West Indies to Brazil.

mingo² (ming′gō), *n.* [A variant of *mungo*¹.] A kind of shoddy with short fibers. *Encyc. Brit.*, I. 176.

Ming porcelain. See ★*porcelain*¹.

minha (min′hä, min′ċhä), *n.* [Heb., a present, an offering.] The second of the three daily services in the Jewish liturgy; the afternoon prayer.

minhag (min′häg), *n.*; pl. *minhagim* (min-hă′-gēm). [Heb., < *nahag*, drive, go along the road, behave.] Conduct; usage; custom: applied to religious practices and customs which, though not based upon scriptural injunctions, have come to be considered binding.

miniaceous (min-i-ā′shius), *a.* [L. *miniaceus*, cinnabar-red. See *minium* and *miniate*.] Vermilion in color; miniate. *Dana*, Zoöph., p. 643.

miniator (min′i-ạ-tọr), *n.* [*miniate*, *v. t.*] One who miniates or paints with vermilion, as a manuscript; an illuminator; a miniaturist.

minification (min-i-fi-kā′shọn), *n.* [*minify* (*-fic-*) + *-ation*.] The act or result of minifying; reduction in size: opposed to *magnification*.

> In the instrument upon the table the eye-piece has a magnifying power of 10—that is to say, a magnifying power which exactly balances the ten-fold *minification* before spoken of.
> *Jour. Roy. Micros. Soc.*, June, 1904, p. 281.

minimal, *a.* 2. Relating to the minimus or fifth digit of the hind foot.

> The membrane attached to the ankle . . . is disposed to cross it by an oblique, raised fold and be secured to the *minimal*, *i. e.* little toe side.
> *H. Allen*, Bats of North America, p. 2.

Minimal basis, in Kronecter's method of treating the theory of functions, a basis from which all possible factors have been removed so as to reduce it to its lowest possible order.—**Minimal surface.** See *surface*.

minimetric (min-i-met′rik), *a.* [*mini*(*m*) + Gr. *μέτρον*, measure, + *-ic*.] In *analyt. chem.*, relating to, or obtained by means of, the measurement of minims, as by counting the number of drops required to complete a reaction.

> On the estimation of carbon monoxide and carbonic acid in vitiated air, by M. Ferdinand Jean. An application of the *minimetric* method to the examination of air, requiring no skilled manipulation in its use.
> *Nature*, Nov. 13, 1902, p. 47.

minimifidian (min″i-mi-fid′i-a̤n), *a.* and *n.* [L. *minimus*, least, + *fides*, faith.] Exhibiting or requiring the smallest degree of faith: one who has the least faith. [Rare.]

> And as we agree in the opinion that the *Minimi-fidian* party err grievously in the latter point, so I must concede to you, that too many Pædo-baptists (assertors of Infant Baptism) have erred, though less grossly in the former. *Coleridge*, Aids to Reflection, p. 284.

minimism (min'i-mizm), *n.* [L. *minim*(*us*), least, + *-ism.*] In *theol.*, the disposition to minimize the implications of an accepted dogma; the minimizing view of what is involved in a dogma, especially that of papal infallibility. *N. E. D.*

> The doctrine of *Minimism*, adopted by Newman from Bishop Fessler . . . gives liberty to the theologian to examine whether the Papal decree on any given point is or is not infallible.
> *William Palmer*, Narr. Events, Suppl., iv. 278. *N. E. D.*

mining-case (mī'ning-kās), *n.* A frame in a gallery or shaft, made with four planks.

mining-engine (mī'ning-en″jin), *n.* 1. A man-engine.—2. Any engine used about a mine, as a hoisting-engine or mine-locomotive.

mining-locomotive (mī'ning-lō-kọ-mō″tiv), *n.* A small locomotive, built very low, usually operated by compressed air or electricity, and used for hauling cars in underground passages and mines.

mining-machine (mī'ning-ma-shēn″), *n.* A channeler: a machine for cutting coal.

mining-piece (mī'ning-pēs″), *n.* A coin struck from gold, silver, or copper ore worked in France, Germany, Russia, and Sweden. *W. C. Hazlitt.*

mining-pump (mī'ning-pump), *n.* A pump adapted for taking water from deep mines.

Minion chapel. See ★*chapel.*

ministrer (min'is-trėr), *n.* One who ministers or serves. *N. E. D.*

minjak, *n.* See ★*minyak.*

mink-frog (mingk'frog), *n.* A small spotted frog, *Rana septentrionalis*, of eastern North America: so called from its peculiar odor.

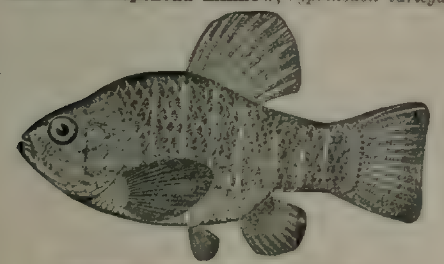
minkle (ming'kl), *n.* [An arbitrary modification of *minnow.*] A minnow. [Rare.]

> The hum-bird shook his sun-touched wings around,
> The bluefinch caroll'd in the still retreat;
> The antic squirrel capered on the ground
> Where lichens made a carpet for his feet:
> Through the transparent waves, the ruddy *minkle*
> Shot up in glimmering sparks his red fin's tiny twinkle.
> *J. R. Drake*, Bronx, st. 4.

Minn. An abbreviation of *Minnesota.*

minnie-bush (min'i-bush), *n.* A shrub, *Menziesia pilosa*, of the heath family, found in mountain woods from Pennsylvania to Georgia. It bears elliptical or obovate leaves, and greenish-purple urn-shaped flowers in terminal drooping umbels.

minnow, *n.* 3. A name sometimes given to a very small fish of New Zealand, *Galaxias attenuatus*, of the family *Galaxidæ*. Also called *whitebait.* The Maori name is *inanga.* *E. E. Morris*, Austral English.—**Eastern mud-minnow**, *Umbra pygmæa* of Atlantic coastwise streams of the United States.—**Leather-sided minnow.** (*a*) *Leuciscus aliciæ* of the Great Basin of Utah. (*b*) See *leatherside.*—**Mangrove minnow**, *Fundulus bermudæ* of the Bermudas.—**Pursy minnows**, species of the genus *Cyprinodon*, small fishes found in brackish waters of America.—**Sheepshead minnow**, *Cyprinodon variegatus*, a pœcilioid fish found in brackish water from Cape Cod to the Rio Grande.—**Silver-sided minnow**, *Leuciscus hydrophlox*, a cyprinoid fish found in the Salt Lake basin.—**Spot-tailed minnow**, the spawn-eater, *Notropis hudsonius.*—**Star-headed minnow**, *Fundulus nottii*, a pœcilioid fish inhabiting swamps and streams in Florida and the neighboring States.



Sheepshead Minnow (*Cyprinodon variegatus*).
(From Bulletin 47, U. S. Nat. Museum.)

Minoan (mi-nō'ạn), *a.* [Gr. *Μινῷος*, of Minos (< *Μίνως*, Minos), + *-an.*] Of or pertaining to Minos, the traditional monarch and lawgiver of Crete, and especially to the palace of Minos, a prehistoric edifice on the site of ancient Cnosus, in Crete, the excavation of which was begun by Arthur J. Evans in 1900.

> Dr. Arthur Evans, F.R.S., explained his preliminary scheme for the classification and approximate chronology of the periods of *Minoan* culture in Crete, from the close of the Neolithic to the early Iron age. To the period as a whole it is proposed definitely to attach the name *Minoan*, as indicating the probable duration of successive dynasties of priest-kings, the tradition of which has taken abiding form in the name of Minos. It is proposed to divide this *Minoan* era into three main periods, early, middle, and late, each with a first, second, and third subperiod.
> *Nature*, Oct. 6, 1904, p. 563.

Minoan period, that period of Cretan history and culture which extended from the close of the Neolithic to the early iron age, or from about 3500 B.C. to 1100 B.C. *A. J. Evans*, in Man, Nov., 1904, p. 172.—**Minoan pottery.** See ★*pottery.*

minor. I. *a.*—**Minor arc**, the arc on the opposite side of its chord from the center of the circle.

II. *n.*—**Complementary minor.** Same as *complementary determinant* (which see, under *determinant*).

minorat (mi-nọ-rä'), *n.* [F., < NL. *minoratus*, < L. *minor*, younger.] The custom that prevailed in some European countries, and still survives in some parts of Germany and Austria, by which the youngest rather than the eldest possible heir had the succession. Compare *majorat.* Similar to *borough-English* (which see).

Minorca (mi-nôr'kạ̈), *n.* [From the island of *Minorca.*] A breed of domesticated fowls of the Mediterranean class, somewhat similar to the Leghorns, but longer-bodied and heavier. They are good table fowls, lay the year around, and are non-sitters.

Minorcan (mi-nôr'kạn), *a.* and *n.* I. *a.* Of or pertaining to Minorca, one of the Balearic islands.

II. *n.* An inhabitant of the island of Minorca.

Min. Plen. An abbreviation of *Minister Plenipotentiary.*

Min. Res. An abbreviation of *Minister Resident.*

M. Inst. C. E. An abbreviation of *Member of the Institute of Civil Engineers.*

minster-house (min'stėr-hous), *n.* The official residence of the canons of a cathedral. *Stand. Dict.*

M. Inst. M. E. An abbreviation (*a*) of *Member of the Institute of Mechanical Engineers;* (*b*) of *Member of the Institute of Mining Engineers.*

mint[1], *n.*—**Keeper of the exchange and mint.** Same as *master of the mint* (which see, under *mint*[1]).

mint[2], *n.*—**Apple mint.** See *apple-mint.*—**Balm-mint.** (*a*) See *balm*, 7. (*b*) The crisped or curled mint, *Mentha crispa.*—**Brandy-mint**, peppermint.—**Brown mint**, spearmint.—**Cross-mint**, the crisped or curled mint.—**Field-mint.** (*a*) The corn-mint. (*b*) The catmint or catnip, *Nepeta Cataria.*—**Fish-mint.** (*a*) The water-mint, *Mentha aquatica.* (*b*) The horsemint, *M. longifolia.* (*c*) The bergamot-mint, *M. citrata.*—**Lamb-mint.** (*a*) Peppermint. (*b*) Spearmint.—**Mountain mint.** (*a*) See *mountain-mint.* (*b*) The Oswego tea, *Monarda didyma.* (*c*) The wood-calamint, *Clinopodium Calamintha.*—**Round-leaved mint.** Same as *round-leaved horsemint.*—**Woolly mint**, *Mentha alopecuroides*, a white-woolly, leafy-stemmed perennial of the Old World, naturalized in the United States.

mintage, *n.* 4. A coin bearing the initial of a particular mint: thus the San Francisco mint is represented by a small S on the reverse.

minting-mill (min'ting-mil), *n.* A press suitable for coining: used in mints to make coins from bullion bars or blanks.

minuscular (mi-nus'kụ-lạ̈r), *a.* Pertaining to, or of the nature of, a minuscule; written in minuscules.

> Alpha . . . Sometimes the two letters, of which the ω is almost always of that uncial form which resembles the *minuscular*, are hung by chains from the arms of the cross. *Schaff-Herzog*, Relig. Encyc. I.

minute[2], *n.* 2. (*b*) In *geom.*: (2) The sixtieth part of a degree of a perigon.—**Centesimal minute.** See *centesimal division*, under *centesimal.*—**Decimal minute.** See ★*decimal.*—**Horse-power minute**, one sixtieth of a horse-power hour.—**Metric horse-power minute**, one metric horse-power exerted for one minute; one sixtieth of a metric horse-power hour.—**Minute of the equator**, the sixtieth part of a degree of longitude measured on the parallel of the equator; the maximum value of a minute of longitude.—**Sidereal minute.** See *sidereal* ★*second.*

Minyadidæ (min-i-ad'i-dē), *n. pl.* [NL., < *Minyas* (*-ad-*) + *-idæ.*] A family of actinarian zoantharians which have the pedal disk transformed into an apparatus for floating. It includes the genera *Minyas*, *Dactylominyas*, *Acerominyas*, and *Phyllominyas.*

minyak (min'yăk), *n.* [Also (in G. or D. spelling) *minjak;* < Malay *minyak*, Dyak *minyak*, oil, balsam, resin.] Oil, fat, or resin: a Malayan word used in several phrase-names in different dialects, as *minyak lagam*, a balsam or oleoresin obtained from an unknown tree in Sumatra, and resembling gurjun balsam in character; *minyak-tengkawang*, a solid vegetable fat (also known as *Borneo tallow*) obtained from the fruit of various species of *Hopea* in Borneo and Sumatra, and used in soap- and candle-making.

minyan (mēn'yan), *n.*; pl. *minyanim* (mēn-yă'-nēm). [Heb., < *manah*, count, reckon.] In Jewish use, count; number; specifically, the number of ten males above thirteen years of age required for public worship and other religious practices in the synagogue.

Minyas (min'i-as), *n.* [NL., < Gr. *Μινύας*, a race of nobles at Orchomenos.] The typical genus of the family *Minyadidæ.* *Cuvier.*

Minytrema (mī-nit'rẹ-mạ̈), *n.* [NL., < Gr. *μινύς*, small, + *τρῆμα*, hole.] A genus of suckers found from the Great Lake region to North Carolina and west to Texas.

Mioclænidæ (mī-ọ-klē'ni-dē), *n. pl.* [NL.] A family of small ungulate mammals, of the suborder *Condylarthra*, containing a few species from the Lower Eocene of New Mexico. *Osborn and Earle*, 1895.

miogyrous (mī-ọ-jī'rus), *a.* [Gr. *μείων*, less, + *γῦρος.* See *gyre.*] In *bot.*, rolled inward a little. *Jackson*, Gloss.

Miolithic (mī-ọ-lith'ik), *a.* [Gr. *μείων*, lesser, + *λίθος*, stone, + *-ic.*] Relating or pertaining to the period intermediate between the Paleolithic and the Neolithic.

Miona bug. See ★*bug*[2].

miophone (mī'ọ-fōn), *n.* [Gr. *μείων*, less, + *φωνή*, sound.] A microphonic instrument for the medical testing of the muscles. *Houston*, Elect. Dict., p. 426.

Miopliocene (mī-ọ-plī'ọ-sēn), *n.* [Gr. *μείων*, lesser, + E. *pliocene.*] In *geol.*, a term at one time applied to the Bolderian and Anversian divisions of the Tertiary system in Belgium, the fauna of which was supposed to indicate a mingling of Miocene and Pliocene forms.

miosis, *n.* (*c*) In *cytol.*, the reduction-process in organisms, including mitapsis (or synapsis) and the subsequent heterotypic and homotypic divisions. This process results in reducing to one half the number of chromosomes in the nuclei. *Farmer* and *Moore.* Improperly spelled *maiosis.* (*d*) Used by error or substitution for *myosis.*

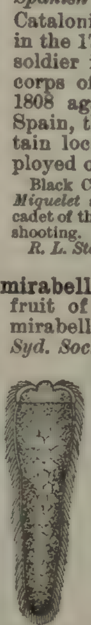
miotherm (mī'ọ-thėrm), *n.* [Gr. *μείων*, less, + *θέρμη*, heat.] A plant which inhabits cool temperate regions.

miotic (mī-ot'ik), *a.* [*miosis* (*miot-*) + *-ic.*] Noting or characterizing the stage in the life-history of an organism at which miosis or reduction occurs. *Farmer* and *Moore.*

miquelet (mik'ẹ-let), *n.* [F. *miquelet*, < Sp. *miquelete*, < *Miquelot*, a bandit chief.] In *Spanish hist.*: (*a*) A member of a body of Catalonian banditti who infested the Pyrenees in the 17th century. (*b*) A Spanish guerrilla soldier in the Peninsular War; also one of a corps of irregulars employed by Napoleon in 1808 against the Spaniards. (*c*) In modern Spain, the designation of the soldiers of certain local regiments of infantry, chiefly employed on escort duties. *N. E. D.*

> Black Camisard and White Camisard, militiaman and *Miquelet* and dragoon, Protestant prophet and Catholic cadet of the White Cross, they had all been sabring and shooting.
> *R. L. Stevenson*, Travels with a Donkey in the Cevennes, [p. 235.

mirabelle (mir-ạ-bel'), *n.* [F.] A plum, the fruit of *Prunus armenoides.* The Corsican mirabelle is the fruit of *Physalis alkekengi.* *Syd. Soc. Lex.*



Miracidium. Highly magnified.

miracidium (mī-ra-sid'i-um), *n.*; pl. *miracidia* (-ạ̈). [NL., < Gr. *μειρακίδιον*, a little boy, dim. of *μειράκιον*, a boy (*μεῖραξ*, a girl).] The free-swimming larva of the liver-fluke. The body is ciliated and the larva swims about seeking for a definite mollusk, its future host, into which it bores its way by means of the snout, which, in certain species, is armed with a stylet.

> The embryo . . ., which is designated a *miracidium*, is somewhat elongated in form, with a conical tip, and sometimes also a sharp boring spine at the anterior end.
> *Buck*, Med. Handbook, VII. 863.

Miraculous berry. See ★*berry*[1].

miramolin (mi-ram'ọ-lin), *n.* [Sp. *miramamolín*, a corruption of Ar. *amiru'l muminin*, 'Commander of the Faithful.'] The Emperor of Morocco. [Obsolete or archaic.]

> Surely that grape-juice, bubbling at the stalk,
> Is some gray scorching Saracenic wine
> The Kaiser quaffs with the *Miramoline.*
> *Browning*, Sordello, iii. 212.

mire-blob (mīr'blob), *n.* The marsh-marigold, *Caltha palustris.* Also *May-blob, horse-blob, water-blob.*

miric (mir'ik), *a.* [*m*(*agnesium*) + *ir*(*on*) + *-ic.*] In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*¹), a term indicating that a rock magma is characterized by the presence of magnesia and ferrous oxid.

mirid (mir'id), *n.* and *a.* **I.** *n.* A member of the heteropterous family *Miridæ.*

II. *a.* Having the characters of or belonging to the family *Miridæ.*

miriki (mē-rẹ-kē'), *n.* [Tupi *mirikí, murikí.*] A woolly monkey, *Eriodes arachnoides,* of eastern Brazil, having the thumb absent or imperfectly developed.

mirlic (mėr'lik), *a.* [*m*(*agnesia*), + *ir*(*on*) + *l*(*ime*) + *-ic.*] In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*¹), a term indicating that a rock magma is characterized by the presence of magnesia, ferrous oxid, and lime.

mirliton (mēr-lẹ-toṅ'), *n.* [F.; origin obscure.] 1. A kind of toy flute. See *kazoo.*—2. The chayote, *Chayota edulis.* [Louisiana.]

mirnyong (mėrn'yong), *n.* [Also *mirrnyong;* aboriginal Australian.] A shell-mound or shell-heap of the natives of Australia and Tasmania. *E. E. Morris,* Austral English.

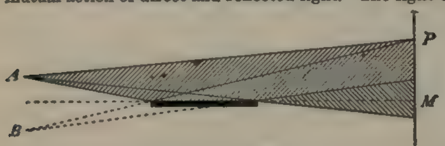
> Australia: numerous *mirrnyongs* (ash-heaps, shell-mounds, &c.) mainly confined to the eastern and southern regions. *Keane,* Ethnology, p. 94.

miro² (mē'rō), *n.* [Maori *miro.*] A bird of the genus *Miro,* two or three species of which are found on Chatham Island and in New Zealand, where they are called *robins.* Also called *miro-miro.*

mirobia (mẹ-rō'bi-ạ̈), *n.* The local name in the harbor of Valetta, Malta, for an oscillation with a period of 20 minutes and an amplitude of 14 meters: probably a tidal seiche controlled by the average depth of the Mediterranean Sea off the harbor.

mirograph (mir'ō-grȧf), *n.* [Irreg. < L. *mirari,* admire, + Gr. γράφειν, write.] In *photog.*, a form of cinematograph in which the intermittent movement of the film is effected by means of a disk provided with an eccentric flange which engages a notch in the film. Rotation of the disk is secured by a crank and gearing.

mirror, *n.*—**Achromatic mirror stereoscope.** See ★*stereoscope.*—**Dentists' mirror,** a small looking-glass with a long handle for insertion into a patient's mouth in the examination of the teeth.—**Fresnel's mirrors,** mirrors for the production of interference of light by reflection. The usual arrangement consists of two plane mirrors, set at an angle with each other slightly less than 180°, which reflect overlapping beams of light to a screen with such difference of path as to give interference fringes. Three mirrors, known as *Fresnel's three mirrors,* are also used.—**Laryngeal mirror,** in *phonetics,* a small circular mirror set upon a light wooden handle, used for observation of the larynx during action of the vocal cords.—**Lloyd's single mirror,** a mirror of polished metal, or of black glass, for displaying interference bands by the mutual action of direct and reflected light. The light is reflected at a nearly grazing incidence. *T. Preston,* Theory of Light, p. 122.—**Mercury mirror.** (*a*) A level surface of mercury: used as a mirror in astronomical observations. (*b*) A glass backed with an amalgam of tin or silver.—**Revolving mirror,** a device extensively used in the study of periodic phenomena of high frequency, such as the oscillations of an electric spark, the fluctuations in brightness of an alternating-current arc, or the changes of pressure at the node of a set of standing sound-waves. It consists of a plane mirror or symmetrically arranged set of such mirrors capable of revolving about a central axis parallel to the faces of the mirrors. The method depends upon persistence of vision.—**Rüdorff mirrors,** two small mirrors placed on either side of the screen in the sight-box of a photometer, at an angle to each other of 120–140°, and presenting the two sides of the screen simultaneously to the eye. Erroneously attributed to Rüdorff.

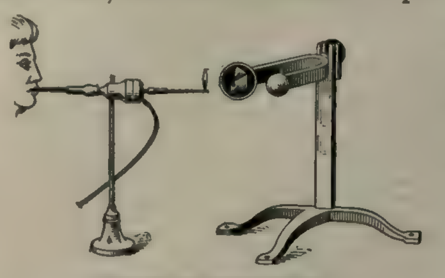


Lloyd's Single Mirror.
A, direct light; *B*, reflected light; *M*, plane of mirror; *P*, interference band.
(From Preston's "Theory of Light.")

mirror-barometer (mir″o̤r-bạ-rom'e-tėr), *n.* A mercurial barometer with a small mirror which is moved by the mercury and indicates the height of the column by reflected light.

mirror-box (mir'o̤r-boks), *n.* A device used in testing many grass seeds, consisting of a box open on one side and fitted with an adjustable mirror which throws the light upward through a pane of glass upon which the seeds are placed. This makes it possible to discern the presence or absence of seeds within the glumes.

mirror-fork (mir'o̤r-fôrk), *n.* A tuning-fork having a small mirror attached to one or both of the tines, used for the observation or projection of Lissajous's curves, for the observation of the flame of a manometric capsule, etc. *Scripture,* Exper. Phonetics, p. 270.



Mirror-fork and manometric flame.

mirror-glass (mir'o̤r-glȧs), *n.* Glass suitable for mirrors. See ★*mirror-plate.*

mirrorize (mir'o̤r-īz), *v. t.*; pret. and pp. *mirrorized,* ppr. *mirrorizing.* To reflect in, or as in, a mirror. [Rare.]

mirror-knob (mir'o̤r-nob), *n.* A head or disk of glass, metal, or pottery attached to a long screw or spike, formerly inserted into a wall to form a rest for a mirror or picture-frame. The metal knobs were frequently embellished with painted or enameled medallions, while those of glass were usually pressed into decorative patterns.

mirror-photography (mir'o̤r-fọ-tog″rạ-fi), *n.* Same as ★*multiphotography.*

mirror-plate (mir'o̤r-plāt″), *n.* Plate-glass of fine quality suitable for mirrors.

mirror-pseudoscope (mir'o̤r-sū″dọ-skōp), *n.* In *exper. psychol.*, an instrument in which the pseudoscopic effect is produced, not by prisms or lenses, but by an arrangement of plane mirrors. *E. B. Titchener,* Exper. Psychol., I. ii. 296.

mirror-scale (mir'o̤r-skāl), *n.* A scale etched in millimeters on the surface of a strip of glass about 5 millimeters in thickness, which is then silvered on the second surface: used in reading barometers, manometers, etc. See *Jolly's* ★*balance.* *M. W. Travers,* Exper. Study of Gases, p. 56.

mirror-speech (mir'o̤r-spēch), *n.* Pronunciation of words as if the syllables or letters were reversed: as '*lamina*' or '*malian*' for '*animal.*'

mirror-thermometer (mir'o̤r-thėr-mom″e-tėr), *n.* A thermometer constructed on the same principle as the ★*mirror-barometer* (which see).

mirror-velvet (mir'o̤r-vel″vẹt), *n.* A soft, pliable velvet with the pile pressed down, giving the surface a high gloss.

mirror-writing (mir'o̤r-rī″ting), *n.* Same as *mirror-script.*

mirthsome (mėrth'sum), *a.* Mirthful; joyous.

Mis. An abbreviation of *Missouri.*

misandry (mis'an-dri), *n.* Man-hatred; a bad opinion of man, as being unfair or oppressive toward women.

misanthropia (mis-a̤n-thrō'pi-ạ̈), *n.* Same as *misanthropy.*

misarchism (mis'ä̤r-kizm), *n.* [Gr. μισεῖν, hate, + ἀρχή, rule, + *-ism.*] Hatred of or opposition to government in any form; the doctrine that government as such is evil or an evil.

misarchist (mis'ä̤r-kist), *n.* [*misarch*(*ism*) + *-ist.*] One who regards government as inherently evil, or at best a necessary evil, yet without going to the extreme position of the anarchist.

> These *misarchists* see the beneficent influence of natural law in the industrial world interfered with by what seems to them an extraneous power. *L. F. Ward,* Outlines of Sociol., p. 228.

misbecum, *v. t.* An amended spelling of *misbecome.*

misc. An abbreviation (*a*) of *miscellaneous;* (*b*) of *miscellany.*

miscegenate (mis'ẹ̄-je-nāt), *v. i.*; pret. and pp. *miscegenated,* ppr. *miscegenating.* [*miscegenation.*] To enter into sexual relations with an individual of another race, especially of a race of another color (black or white).

miscegenate (mis'ẹ̄-je-nāt), *n.* A person begotten by miscegenation.

miscegenationist (mis″ẹ̄-je-nā'sho̤n-ist), *n.* One who favors miscegenation, particularly the union of whites and blacks.

miscegenator (mis'ẹ̄-je-nā-to̤r), *n.* One who miscegenates or unites sexually with an individual of another race.

miscegenesis (mis-ẹ̄-jen'e-sis), *n.* [L. *miscere,* mix, + *genesis.* See *genesis.*] Same as *miscegenation.*

miscegenetic (mis″ẹ̄-jẹ̄-net'ik), *a.* [*miscegenesis.*] Pertaining to, or of the nature of, miscegenesis or miscegenation; produced by miscegenation.

mischarge, *n.* **2.** A mixture of gas and air in an internal-combustion engine, introduced into the cylinder, but not ignited. The charge may fail of ignition either as the result of a governing action, because the speed is too high, or because the mixture was not of the normal proportion of fuel and air. Such mischarges often ignite after leaving the cylinder either in exhaust-passages or -pipes, or beyond.

> The devices for changing the motor speed by varying the charge or by *mischarge,* work well above the minimum speed at which the motor will run, say about 200 revolutions per minute. *Hiscox,* Horseless Vehicles, p. 24.

mischief, *n.*—**Painted mischief,** the devil's picture-books; playing-cards. *Farmer.*

> There are plenty of ways of gambling . . . without recourse to the '*painted mischief.*'
> *Daily News* (London), March 18, 1879. *N. E. D.*

misconjunction (mis-ko̤n-jungk'sho̤n), *n.* [*mis-*¹ + *conjunction.*] A false or erroneous conjunction.

> There is no *misconjunction* so absurd as that of safety and wrong, because it is a moral *misconjunction,* showing our mortal state itself to be out of joint, even down to its lowest foundations.
> *Bushnell,* Moral Uses of Dark Things, p. 128.

misconvey (mis-ko̤n-vā'), *v. t.* [*mis-*¹ + *convey.*] To convey a meaning other than that intended: used reflexively.

> I hope he has *misconveyed* himself to H. E. Manning, for Manning identifies him in some very painful points with the Rationalism of Germany.
> *E. S. Purcell,* Life Card. Manning, I. xiii.

miscook (mis-kůk'), *v. t.* [*mis-*¹ + *cook.*] To cook badly; spoil in cooking; also, figuratively, to mismanage. *N. E. D.* [Chiefly Scotch.]

miscorrection (mis-ko̤-rek'sho̤n), *n.* [*mis-*¹ + *correction.*] A false or erroneous correction.

miscreate (mis-krẹ̄-āt'), *v. t.*; pret. and pp. *miscreated,* ppr. *miscreating.* [*mis-*¹ + *create.*] To create faultily; create erroneously; mar or render monstrous in the making.

> The lesson is forcibly taught . . . that our life might be much easier and simpler than we make it . . . that we *miscreate* our own evils. *Emerson,* Essays, Ser. I. iv.

> Seeing superb manly beauty in the place of the thick-featured sodden satyr of her *miscreating* fancy, the irresistible was revealed to her on its divinest whirlwind.
> *G. Meredith,* Tragic Comedians, iv.

miscue (mis-kū'), *v. i.*; pret. and pp. *miscued,* ppr. *miscuing.* [*miscue, n.*] **1.** In *billiards,* to make a miscue.—**2.** In *theat.*, to miss one's cue or answer a wrong cue.

misdateful (mis-dāt'fůl), *a.* [*misdate* + *-ful.*] Full of misdates; very inaccurate in chronology. [Rare.]

> Poor Bielfield being in this Chapter very fantastic, *misdateful* to a mad extent, and otherwise, except as to general effect, worth little serious belief.
> *Carlyle,* Frederick the Great, XIII. ix.

misdemeanant, *n.*—**First-class misdemeanant.** In *Eng. law,* prisoners convicted of misdemeanor and not sentenced to hard labor are, by the Prisons Act (28 and 29 Vict. c. 126, s. 67), divided into two classes, one of which is called the first division. In the discretion of the court a convict can be placed in this division, and he is then not regarded as a criminal convict, but is known as a *first-class misdemeanant,* or a *misdemeanant of the first division.*

misdescriptive (mis-des-krip'tiv), *a.* [*mis-*¹ + *descriptive.*] That describes erroneously.

misenglish † (mis-ing'glish), *v. t.* [*mis-*¹ + *English.*] To mistranslate into English. *N. E. D.*

miserabilism (miz'ẹ̈-rạ-bil-izm), *n.* [*miserable* + *-ism.*] The state of being miserable; miserablism; specifically, a complainingly pessimistic view of, or attitude towards, life. See the extract.

> The third . . . of these unscientific species combines the characteristic evils of both wrathful and quietistic pessimism. It has been aptly termed *Miserabilism* (Miserabilismus). The miserabilistic pessimist spends his life in sulky grumbling at his lot, without making the slightest effort to improve it. He is not active, nor has the grace to be resigned.
> *J. W. Barlow,* Ultim. Pessimism, p. 8. *N. E. D.*

miserabilistic (miz″ẹ̈-rạ-bi-lis'tik), *a.* Pertaining to, characteristic of, or practising miserabilism. [Rare.]

miserablism (miz′ẹ-rạ-bl-izm), *n.* [*miserable* + *-ism.*] The state of being miserable; miserabilism.

> What was the mental state of Jesus's followers when he died and while he yet lay in the tomb? . . . The truth they relied on was branded as folly and crime. . . . Dispersion, denial, *miserablism*, and absolute despair must have followed, and the teachings of Jesus might have been forgotten. *G. S. Hall*, Adolescence, II. 335.

misère (mi-zãr′), *n.* [F., lit. 'misery.'] In *card-playing*, as in solo whist, boston, etc., a declaration to lose tricks instead of to win them. *Amer. Hoyle*, p. 248.—**Open misère** or **misère ouverte**, in *card-playing*, a declaration to lose a certain number of tricks with the cards exposed on the table. *Amer. Hoyle*, p. 248.—**Petite misère ouverte**, in *boston*, the declaration to lose 12 tricks, after having discarded a card which is not shown, the single player's remaining twelve cards being exposed on the table, but not liable to be called.

misericorde, *n.* **4.** Relaxation of monastic rule; indulgence.

> "As we have," he said, "in the course of this our toilsome journey, lost our meridian, indulgence shall be given to those of our attendants who shall, from very weariness, be unable to attend the duty at prime, and this by way of *misericord* or indulgentia." *Scott*, Monastery, II. ii.

5. An apartment in a monastery in which certain relaxations of the rule were permitted; especially, one in which those monks ate to whom special allowances were made in food and drink. *N. E. D.*

misericordious † (miz″ẹ-ri-kôr′di-us), *a.* [OF. *misericordieux.* See *misericorde.*] Merciful; compassionate.

misery, *n.* **6.** See ★*misère.*

misexpressive (mis-eks-pres′iv), *a.* [*mis-*^{1} + *expressive.*] Expressing a meaning other than that intended.

> Law made by the supreme legislature is called promulged law, and law emanating immediately from a subordinate source is called unpromulged law. But the terms promulged and unpromulged, as thus applied, are not less *misexpressive* than written and unwritten. *J. Austin*, Lect. on Jurisprudence, II. 542.

misfeature (mis-fē′ṭūr), *n.* [*mis-*^{1} + *feature, n.*] A distorted feature; a bad feature or trait. *N. E. D.*

> He [man] has his Winter too of pale *misfeature*,
> Or else he would forego his mortal nature.
> *Keats*, Sonnet, Human Seasons.

misfeature (mis-fē′ṭūr), *v. t.*; pret. and pp. *misfeatured*, ppr. *misfeaturing.* [*mis-*^{1} + *feature, v.*] To mar the features of; distort or misrepresent the features of.

> The strange *misfeaturing* mask that I saw so amazed me, that I
> Stumbled on deck, half mad.
> *Tennyson*, The Wreck, ix.

misfere †, *v. i.* [See *misfare, v. i.*] **1.** To do wrong; misbehave.—**2.** To be unfortunate; fare ill.

misfigure (mis-fig′ūr), *v. t.*; pret. and pp. *misfigured*, ppr. *misfiguring.* [*mis-*^{1} + *figure, v.*] To disfigure. [Obs. or dial.]

misfire (mis-fīr′), *v. i.*; pret. and pp. *misfired*, ppr. *misfiring.* [*mis-*^{1} + *fire, v.*] To miss fire: said of a firearm.

> The weapons were all exceedingly clumsy and unwieldy, tiresome to charge and discharge, and continually *missfiring.* *W. W. Greener*, The Gun, p. 43.

misgiv, *v.* A simplified spelling of *misgive.*

mishcup (mish-kup′), *n.* [Narragansett.] Same as ★*scup*^{2}.

mishcuppauog (mish-ku-pâ′og), *n. pl.* [Narragansett *mishkuppaúog*, plural: see ★*mishcup*, *scup*^{2}, and *scuppaug.*] A plural of ★*mishcup.*

mishwap (mish′wäp), *n.* [Algonkin (of Labrador).] An Indian lodge. [Labrador.]

misidentification (mis-ī-den″ti-fi-kā′shọn), *n.* False or inaccurate identification.

> The chief defects in practice were (1) frequent failure to identify, (2) liability to *mis-identification.* *Encyc. Brit.*, XXV. 468.

misimpression (mis-im-presh′ọn), *n.* [*mis-*^{1} + *impression.*] An erroneous impression or idea.

misinclined (mis-in-klīnd′), *p. a.* [*misincline, v.*] **1.** Wrongly inclined.—**2.** Disinclined.

misintelligence, *n.* **3.** Ignorance; faulty intelligence or knowledge. [Rare.]

> The whole condition of things at the South is shameful, and I am ready for a movement now to emancipate the whites. No doubt the government is bound to protect the *misintelligence* of the blacks, but surely not at the expense of the intelligence of the men of our own blood. *Lowell*, Letters, II. 174.

mislocate (mis-lō′kāt), *v. t.*; pret. and pp. *mislocated*, ppr. *mislocating.* [*mis-*^{1} + *locate.*] To locate or place wrongly.

mismay (mis-mā′), *v. t.* [*mis-* for *dis-may.*] To dismay. [Obs. or Scotch.]

mismove (mis-möv′), *n.* [*mis-*^{1} + *move, n.*] A mistaken move; a false move.

misnome (mis-nōm′), *v. t.*; pret. and pp. *misnomed*, ppr. *misnoming.* [*misnome(r).*] To misname. [Rare.]

> This My Novel, or Varieties in English Life was *misnomed* and insulted as "a Continuation of the Caxtons," with which biographical work it has no more to do . . . than I with Hecuba. *Bulwer*, in Blackwood's Mag., LXXI. 86.

misocapnic (mis-ọ-kap′nik), *a.* [Gr. *μισεῖν*, hate, + *καπνός*, smoke, + *-ic.*] Smoke-hating; disliking tobacco-smoke.

> Not having . . . before his eyes the fear of that *misocapnic* Solomon James I. or of any other lying Stuart, that not to . . . Sir Walter Raleigh, but to Sir Amyas Leigh; . . . does Europe owe . . . that age of smoke. *Kingsley*, Westward Ho! vii.

misocapnist (mis-ō-kap′nist), *n.* [*misocapn(ic)* + *-ist.*] One who dislikes tobacco-smoke. [Rare.]

misocatholic (mis-ọ-kath′ọ-lik), *a.* [Gr. *μισεῖν*, to hate, + E. *Catholic.*] Hating Roman Catholicism. [Rare.]

misogallic (mis-ọ-gal′ik), *a.* [Gr. *μισεῖν*, to hate, + E. *Gallic.*] Disliking the French; hostile to the French. [Rare.]

misogamic (mis-ọ-gam′ik), *a.* [*misogam(y)* + *-ic.*] Pertaining to or exhibiting misogamy or hatred of marriage. [Rare.]

misogynic (mis-ọ-jin′ik), *a.* [*misogyn(ous)* + *-ic.*] Woman-hating; misogynous.

> In the Works and Days . . . we glean indications of Hesiod's rank and condition in life, that of a stay-at-home farmer . . . and an old-fashioned bachelor whose *misogynic* views and prejudice against matrimony have been conjecturally traced to his brother Perses having a wife as extravagant as himself. *Encyc. Brit.*, XI. 777.

misogynism (mi-soj′i-nizm), *n.* Same as *misogyny.*

misomath (mis′ọ-math), *n.* [Gr. *μισεῖν*, to hate, + E. *math(ematics).*] One who dislikes mathematics. [Rare.]

misoneist (mis-ọ-nē′ist), *n.* [*misone(ism)* + *-ist.*] One who hates or dislikes novelty. [Rare.]

misoneistic (mis″ọ-nẹ-is′tik), *a.* [*misoneist* + *-ic.*] Averse to change or novelty; disliking innovation.

> Women have often stood in the way of progressive movements. Like children, they are notoriously *misoneistic*; they preserve ancient habits and customs and religions. *C. Lombroso* (trans.), Man of Genius, p. 139.

misopedia, misopædia (mis-ọ-pē′di-ạ̈), *n.* [Gr. *μισεῖν*, hate, + *παῖς* (*παιδ-*), child.] Extreme dislike of, or aversion for, children.

misopedism, misopædism (mi-sop′ẹ-dizm), *n.* [*misoped(y)* + *-ism.*] Same as ★*misopedia.*

misopedist, misopædist (mis-ọ-pē′dist), *n.* [Gr. *μισόπαις* (*μισοπαιδ-*), a child-hater, + *-ist.*] One who dislikes children; a child-hater. [Rare.]

misopedy (mi-sop′ẹ-di), *n.* Same as ★*misopedia.*

misopogonistically (mis-ō-pō-gọ-nis′ti-kạl-i), *adv.* [Gr. *μισοπώγων*, beard-hater, < *μισεῖν*, to hate, + *πώγων*, beard, + *-istically.*] Like a beard-hater; with dislike of beards. [Rare.]

> He and Basil read together poems and. philosophies, and holier things, or talked low and *misopogonistically* of their fellow-student Julian's bearded boding smile. *Mrs. Browning*, Greek Christian Poets, p. 236.

misosophist (mi-sos′ọ-fist), *n.* [Gr. *μισόσοφος*, < *μισεῖν*, to hate, + *σοφία*, wisdom, + *-ist.*] A hater of wisdom. [Rare.]

misosophy (mi-sos′ọ-fi), *n.* [Gr. *μισεῖν*, hate, + *σοφία*, wisdom.] Hatred of wisdom. *Coleridge.* [Rare.]

misotheist (mis′ō-thē-ist), *n.* [*misothe(ism)* + *-ist.*] One who hates God. [Rare.]

mispick (mis-pik′), *n.* [*mis-*^{1} + *pick*^{1}, *n.*] The omission of a weft-thread in weaving.

misprizal (mis-prī′zạl), *n.* [*misprize*^{2}, *v.*, + *-al*^{1}.] The act of misprizing or undervaluing; contempt; scorn.

misreflection (mis-rẹ-flek′shọn), *n.* An illusory reflection. See the extract.

> Fallacies of reflection are fallacies of time and cause, and they may be classed as *misreflections* and myths. The *misreflections* are a fourth group of illusions and the myths a fourth group of delusions. *J. W. Powell*, Truth and Error, p. 374.

misrendering (mis-ren′dėr-ing), *n.* A faulty or erroneous rendering.

> Retranslation into Greek is frequently necessary in order to correct the *misrenderings* of the translator. *Encyc. Brit.*, XXV. 492.

Miss. An abbreviation (*a*) of *Mississippi*; (*b*) of *mission, missionary.*

missal, *n.*—**Mozarabic missal**, the missal which contains the order of the Mass according to the Mozarabic rite, the use of which is now confined to a chapel of the Cathedral of Toledo endowed by Cardinal Jiménez for the maintenance of that rite.

miss-and-out (mis′ạnd-out′), *n.* In *trap-shooting*, a competition from which a contestant retires upon missing a target.

> The races were each at 10 birds per man, there being three of these, and finally a *miss-and-out* between the last two men up. *Forest and Stream*, Feb. 21, 1903, p. 159.

missary † (mis′ạ-ri), *n.* [LL. *missarius*, < *missa*, mass.] A Roman Catholic or a Roman Catholic priest. [Rare.]

missatical † (mi-sat′i-kạl), *a.* [LL. *missaticus*, < *missa*, mass.] Of or pertaining to the mass; Roman Catholic.

missensation (mis-sen-sā′shọn), *n.* Lack of perception due to diversion of attention. See the extract. [Rare.]

> I do not hear the speaker because I am attending to a sight, or I do not see a sight because I am listening to what another person is saying. All of such *missensations* are easily corrected by ordinary methods of verification. . . . I shall call all such errors of judgment *missensations*, and group them in a higher class which I shall call illusions. *J. W. Powell*, Truth and Error, p. 309.

missey-moosey (mis′i-mö-zi), *n.* [English corruption of Amerindian *mozemize.*] The American mountain-ash, *Sorbus Americana.* See *Indian* ★*mozemize.*

missible (mis′i-bl), *a.* [L. *miss(us)*, pp. of *mittere*, send, + *-ible.* See *missile.*] That may be sent or transmitted.

> This Custom-and-Duty Age would have made the Preacher on the Mount take out a licence, and St. Paul's Epistles would not have been *missible* without a stamp. O that you may find means to go on! *Lamb*, Letters, CLXIII. 310.

missil, *a.* and *n.* A simplified spelling of *missile.*

mission, *n.*—**Military mission**, an apparently diplomatic and ostensibly friendly mission, accompanied by a large military force, sent by one country, usually a very powerful one, to a less powerful one.

> Persia had no regular army until 1807, when some regiments of regular infantry (*sarbáz*) were embodied and drilled by the first French *military mission* to Persia under General Gardane. Since then seven other *military missions* (two British, two French, two Austrian, and one Russian) have come to Persia at the request of the Persian Government, and many officers and non-commissioned officers, and even civilians, of various nationalities, . . . have been engaged as army instructors. *Encyc. Brit.*, XXXI. 621.

Mission furniture, a trade-name for a kind of dark stained furniture, usually of ashwood, characterized by great plainness and solidity and the prevalence of straight lines. It was originated in 1894 by a furniture-maker of New York and is said to have been patterned closely after the general style of certain chairs from one of the Spanish missions in California.

mission-bells (mish′ọn-belz), *n.* In California, *Fritillaria mutica*, a species bearing a raceme of from 3 to 17 dark purple or greenish, spotted or checkered, bell-shaped flowers. Also called *rice-root lily.* Also, the related *F. lanceolata* or any Californian species. See ★*Fritillaria*, 1.

mission-grass (mish′ọn-grȧs), *n.* See *St. Augustine* ★*grass.*

Mississippian, *n.* **2.** In the scheme of classification and nomenclature of the rocks adopted by the United States Geological Survey, the purely marine sedimentation of the early or Lower Carboniferous rocks of the interior or Mississippi basin.

missiv, *a.* and *n.* A simplified spelling of *missive.*

missourite (mi-zö′rīt), *n.* [*Missouri* (river) + *-ite*^{2}.] In *petrog.*, a phaneric igneous rock composed of leucite, augite, and olivin, with smaller amounts of biotite, iron oxids, and apatite, occurring in the Highwood mountains, Montana. *Weed and Pirsson*, 1896.

mistify (mis′ti-fī), *v. t.*; pret. and pp. *mistified*, ppr. *mistifying.* [*mist*^{1} + *-i-fy.*] To convert into a mist or a very fine spray, as by a fine spray-nozle. [Rare.]

> The nozzles for "*mistifying*" the wash most in use are known as the Vermorel and Riley's, which can be fitted to any length of tubing, so as to reach any height, and can be turned in any direction. *Encyc. Brit.*, XXVII. 635.

mistpouffer (mist′pöf-ėr), *n.* [Also *mistpoeffer*; < D. **mist-poffer*, 'fog pistol,' < *mist*, = E. *mist*^{1}, + *poffer*, pistol, < *poffen*, puff.] A mysterious noise heard over the ocean in quiet, foggy weather off the coast of Belgium and Holland. See *Barisal* ★*gun.*

> In the Monthly Weather Review for September, 1897, page 393, we have given some account of the "barisal guns," the "*mistpouffers*," and similar phenomena whose origin is as yet not certainly understood. . . . It may be that the barisal guns have their origin in the escape of bubbles of gas just as do the "guns" of Seneca Lake. *U. S. Monthly Weather Rev.*, July, 1903, p. 336.

mistress, *n.* 7. In *mining*, a cover for sinkers in a wet shaft; a cover for a sinker's lamp. [Scotch.]

mistura (mis-tū'rä), *n.* [L.: see *mixture.*] In *phar.*, same as *mixture*, 2.

misurato (mē-sö-rä'tō), *a.* [It.] Measured; hence, as a direction in *music*, in a measured manner.

misuze, *v. t.* and *n.* An amended spelling of *misuse.*

mitapsis (mi-tap'sis), *n.* [Gr. *μίτος*, a thread, + *ἅψις*, a joining.] The process of fusion of chromatin, the final stage in the reproductive process of cell-conjugation: essentially the same in meaning as ★*synapsis.* The name *mitapsis* refers to the fact that at the time of fusion the chromatin granules are strung out on long, slender threads. *Cook and Swingle.*

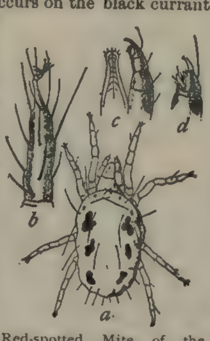
mitchel (mich'el), *n.* [Perhaps from *Mitchel*, a surname.] See the extract. [Eng.]

> *Mitchel*, a name given by workmen to Purbeck stones of twenty-four inches by fifteen when squared for building. *Gwilt*, Encyc. Archit., p. 1318. *N. E. D.*

mitchellite (mich'el-īt), *n.* [Named from Professor Elisha *Mitchell*, an American geologist.] A magnesian variety of chromite from North Carolina. See ★*magnochromite.*

Mitchillina (mich-i-lī'nä), *n.* [NL., named after Samuel Latham *Mitchill*, United States senator from the State of New York, 1804–09, the first to study systematically the fishes of New York harbor.] A genus of deep-sea fishes of the family *Alepocephalidæ.*

mite^1, *n.*—**Black-currant mite**, a European eriophyid mite, *Eriophyes ribis*, which occurs on the black currant and is an especial pest in England.—**Brown mite**, an American acarid, *Bryobia pratensis*, which occurs in enormous numbers in orchards in the Western States. Also called ★*clover-mite* (which see, with cut).—**Red mite**, a small reddish mite of the family *Tetranychidæ*, *Tetranychus telarius*, found commonly in hothouses and also commonly called *red spider.*—**Red-spotted mite**, one of the leaf-mites or 'red spiders' of the family *Tetranychidæ*, *Tetranychus sexmaculatus*, found commonly on the orange in Florida and California.—**Six-spotted mite of orange.** Same as *red-spotted* ★*mite* or *California* ★*spider.*



Red-spotted Mite of the Orange (*Tetranychus sexmaculatus*).

a, adult mite, much enlarged; *b*, greater enlargement of foot; *c*, *d*, mouth parts. (From "Insect Life," U. S. D. A.)

mite^2, *n.* 5. A copper or billon coin of very small value, current in Brabant and Holland.

miter, *v. t.* 6. In *organ-building*, to introduce one or more miter-joints into (a pipe), so as to adapt it to a contracted space: such a pipe is said to be *mitered* or *mitered over.*

miter-arch (mī'tėr-ärch), *n.* The arch or angle formed by mitering, as in groining.

miter-bevel (mī'tėr-bev"el), *n.* Same as *miter-square.*

miter-bracket (mī'tėr-brak"et), *n.* An angle-bracket in the bracketing of a molded cornice. *N. E. D.*

miter-gear (mī'tėr-gēr), *n.* A bevel-gear having an angle of 90° at the apex of its pitch-cone; a bevel-gear whose teeth make an angle of 45° with the axis; one of a pair of equal bevel-gears whose axes form a right angle.

miter-snake (mī'tėr-snāk), *n.* A small serpent of western Texas, *Contia episcopa*, the markings of which are suppposed to suggest a bishop's miter.

miter-wheel, *n.* 1. (*b*) A friction-gearing or -wheel of which the working face is at an angle of 45° to the axis.

Mithratic (mith-rat'ik), *a.* [*Mithra(s)* + *-atic*^{2}.] Pertaining to or concerned with the worship of Mithras; Mithraic.

mithridatism (mith-ri-dāt'izm), *n.* [*Mithridates* (see *mithridate*) + *-ism.*] Immunity against the action of a poison acquired by taking the drug in constantly increasing doses: a method said to have been conceived by Mithridates to protect himself against palace intrigues.

mithridatize (mith'ri-dā-tīz), *v. t.*; pret. and pp. *mithridatized*, ppr. *mithridatizing.* [*mithridat(e)* + *-ize.*] To induce the condition of mithridatism in. See ★*mithridatism.*

mitic (mit'ik), *a.* [*m(agnetite)*, + *i(lmenite)* + *t(itanite)* + *-ic.*] In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*^{1}), a term indicating the presence of one or more of the normative minerals in the second subgroup of femic minerals.

mitis-metal (mī'tis-met"al), *n.* [L. *mitis*, soft, + E. *metal.*] 1. A malleable cast-steel slightly alloyed with aluminium, chiefly used, on account of its high magnetic permeability, for field-magnets in generators and motors.—2. A commercial product consisting of wrought-iron which is fusible enough to cast in molds. The fluidity results from the presence of aluminium in the bath of metal.

mitochondria (mit-ō-kon'dri-ä), *n.* [Gr. *μίτος*, thread, + *χόνδρος*, cartilage.] A body of unknown significance, consisting of coiled filaments, found outside of the nucleus in the cytoplasm of certain cells. *Benda.*

> Follicular Epithelium in Birds.—Marie Loyez finds that in some birds all the cells of the follicular epithelium exhibit, outside the nucleus, an almost spherical body of considerable size, composed apparently of coiled filaments. It stains strongly with iron-hæmatoxylin, and is analogous to the ergastoplasm of Garnier, the *mitochondria* of Benda, and the pseudochromes of Heidenhain.
> *Jour. Roy. Micros. Soc.*, Oct., 1903, p. 594.

mitokinetic (mit"ō-kī-net'ik), *a.* [*mito(sis)* + *kinetic.*] Noting the force which has its seat in the kinoplasm of the cell and is supposed to produce the achromatic spindle during karyokinetic cell-division. *Hartog.*

> Third, there is the force which has its seat in the kinoplasm, and which produces the chains of force which Hartog calls "*mitokinetic*" because of their analogies with magnetism.
> *Jour. Roy. Micros. Soc.*, Dec., 1904, p. 637.

mitom (mī'tom), *n.* [Also *mitome*; < NL. *mitoma.*] A term used by Flemming to designate the reticulum of cell-protoplasm. Also *mitome.*

mitoma (mi-tō'mä), *n.* [NL., < Gr. *μίτος*, a thread, a web, + *-oma.*] The minute mesh composing the more solid part of the protoplasm and inclosing the more fluid portion. Same as ★*mitom.*

mitome (mī'tōm), *n.* See ★*mitom.*

mitoschisis (mi-tos'ki-sis), *n.* [NL., < Gr. *μίτος*, thread, + *σχίσις*, splitting, cleaving.] Mitosis, or karyokinetic cell-division: so-called from the longitudinal splitting of the thread-like chromosomes peculiar to this form of division, as distinguished from amitosis, or akinesis. *Flemming*, 1882.

mitosis, *n.*—**Heterotypical mitosis.** See ★*heterotype division.*—**Homotypical mitosis**, a form of karyokinetic or mitotic cell-division occurring in the secondary spermatocytes of certain animals, such as the salamander. It differs from the common form in the shortness of the chromosomes and their irregular arrangement after division into the daughter-chromosomes. *Flemming*, 1887.—**Somatic mitosis**, the form of mitosis, or indirect cell-division, found in the cells of the soma, or body, as distinguished from that which occurs in the germ-cells, or during spermatogenesis and oögenesis.

mitosome (mī'tō-sōm), *n.* [Gr. *μίτος*, thread, + *σῶμα*, body.] In *cytol.*, a body formed from the spindle-fibers of the secondary spermatocytes, said to give rise to the middle-piece and tail envelop of the spermatozoön: probably equivalent to the '*Nebenkern*' of La Valette St. George. *Platner*, 1889.

Mitra, *n.* 3. [*l. c.*] In *Gr. antiq.*, a long band of stuff, leather, or metal, bound about the head or loins: much used by women. It is mentioned in the Iliad and has been found on archaic statuettes discovered in excavations at Delphi, Olympia, and elsewhere. Although often made of metal not a single example has come down to us complete.

Mitral insufficiency. See *valvular* ★*insufficiency.*

Mitraster (mi-tras'tėr), *n.* [NL., < Gr. *μίτρα*, girdle, head-band, + *ἀστήρ*, star.] A genus of fossil starfishes or a subgenus of *Goniaster* (which see), from the Cretaceous rocks.

mitsumata (mit"sö-mä'tä), *n.* [Jap. *mitsumata*, *mitsz-mata*, < *mitsu*, *mitsz*, three, + *mata*, a fork or crotch.] A low shrub, *Edgeworthia papyrifera*, of the family *Daphnaceæ*, native to China and Japan, and cultivated in the latter country for its bark. The bark is used in the manufacture of the best grades of paper, especially when mixed with the fiber of the kozo and the ganpi. Compare ★*ganpi.*

mitsvah (mitz'vä), *n.*; pl. *mitsvoth* (-vōt). [Heb. *mitsvah* (*mitswah*), < *tsavah*, command, charge, order.] Among the Jews, a precept. According to Rabbi Simlai, there were revealed to Moses no less than 613 precepts, namely 365 prohibitions, corresponding to the number of the days in the year, and 248 mandates, corresponding to the number of 'members' (bones) in the human body. Upon this basis various lists of commandments, great and small, have been compiled from the Hebrew scriptures to make up the mysterious number.

mitsvoth, *n.* Plural of ★*mitsvah.*

mittelhand (mit'el-hänt), *n.* [G. 'middle hand.'] In *skat*, the second player on the first trick; the one who bids first.

mittimus, *n.* 1. (*c*) In *old Eng. law*, a writ by which the sheriff of a county palatine was required to summon a jury from the county for the trial of a cause, the record of which was inclosed or sent (hence the name) with the writ.

mixed^1, *p. a.* 4. In *geol.*, technically applied to those igneous rocks which under the microscope are found to consist of both crystalline and glassy matter, the two being intimately involved. *Geikie*, Text-book of Geol., p. 152, note.—**Mixed curve.** *See* ★*curve.*

mixer, *n.* 3. A receptacle for diluting a drop of blood with a definite quantity of artificial serum preliminary to counting the blood-corpuscles.—4. A person of a social temperament; one who makes acquaintances readily and somewhat indiscriminately: as, he is a good *mixer.* [U. S. slang.]

mixer-valve (mik'sėr-valv), *n.* A valve by which the proportions of the fluids or gases in a mixture are regulated; specifically, a valve used to regulate the amount of external or unheated air supplied to a hot-blast in a blast-furnace, or to regulate the proportions of fuel and air in an internal-combustion motor. *Elect. World and Engin.*, Jan. 2, 1904, p. 22.

mixing-chamber (mik'sing-chām"bėr), *n.* 1. A volume or space within which a mingling of substances may occur; specifically, a vessel, stationary or revolving, in which the stone, cement, and sand which together form concrete for building purposes may be intimately compounded.—2. The chamber, space, or passage in a gas-engine or other internal-combustion motor in which the fuel, in atomized or vaporized form, is intimately mixed with the air which is to support its combustion.

mixing-picker (mik'sing-pik"ėr), *n.* A machine for opening and mixing wool preparatory to carding.

mixing-stack (mik'sing-stak), *n.* A pile, as of cotton, made up of layers of the material from different packages, as bales, so as to insure a uniform blend in length and quality of staple. *Taggart*, Cotton Spinning, I. 50.

mixing-syrup (mik'sing-sir"up), *n.* A trade-name for a thick solution of glucose-sugar, made from starch, sold to be mixed with, and so to cheapen, table syrup made from cane-sugar.

mixing-valve (mik'sing-valv), *n.* Same as ★*mixer-valve.*

mixipterygium (mik"sip-te-rij'i-um), *n.*; pl. *mixipterygia* (-ä). [NL., < Gr. *μίξυς*, mingling, copulation, + *πτέρυξ*, wing, fin.] Gegenbaur's term for the claspers of male elasmobranchs, the long, cartilaginous projections from the base of the ventral fins. The forward shifting of the fin is partially arrested in the male owing to the development of the mixipterygium.

Mixochoanites (mik-sō-kō-a-nī'tēz), *n.* [NL., < Gr. *μῖξις*, a mixing, + *χόανος*, a funnel.] In Hyatt's classification of the cephalopods, a suborder of the *Nautiloidea* comprising straight or slightly curved shells in which the older septa are curved orad or toward the apertures, and the siphuncle is highly modified. In specialized forms like *Ascoceras* the siphuncles have short funnels and collars and the gerontic living-chambers are contracted by the formation of large septa developed on one side only. The group is wholly Silurian.

Mixonus (mik'sō-nus), *n.* [NL.] A genus of brotuloid fishes found in the deep sea, one specimen being taken in the mid-Atlantic at the depth of 2,500 fathoms.

mixoscope (mik'sō-skōp), *n.* [Gr. *μιξο-*, mixed, + *σκοπεῖν*, view. See *scope*^{3}.] An apparatus for mixing colors.

mixoscopia (mik-sō-skō'pi-ä), *n.* [Gr. *μιξο-*, mixed, + *σκοπεῖν*, view.] A form of sexual perversion in which libidinous pleasure is excited by the sight, or mental picture, of the cohabitation of the desired one with another.

mixoscopic (mik-sō-scop'ik), *a.* [*mixoscop(ia)* + *-ic.*] Of the nature of, or affected with, mixoscopia. *Alien. and Neurol.*, May, 1903, p. 167.

mixotrophic (mik-sọ̄-trof′ik), *a.* [Gr. *μιξο-*, mixed, + *τροφή*, nourishment. See *trophic.*] Imperfectly trophic: applied to chlorophyl-bearing plankton which, because of abundant organic matter in the water, has begun to lose chlorophyl and consequently the power of manufacturing food from inorganic substances.

mixtion, *n.* 3. In *law*, confusion of goods, that is, such an admixture of the property of two or more persons that it is impossible to determine the precise property of each.

mixture, *n.* 9. The material for the charge of an internal-combustion engine. It usually consists of fuel, in a vaporized or finely pulverized condition, mixed with air.—**A. c. e. mixture,** a mixture of alcohol, chloroform, and ether, in 1, 2, and 3 parts respectively: used to produce anæsthesia by inhalation.—**Basham's mixture,** a transparent reddish aromatic solution of iron and ammonium acetate.—**Bordeaux mixture,** a material largely used to destroy parasitic fungi, especially on fruit-trees and grape-vines, and applied in the form of spray. It is made in the proportion of 4 pounds of crystallized copper sulphate and 5 pounds of quick-lime to 45 gallons of water.—**Copper mixture of Gironde.** See ★*copper*^{1}.—**Cornell mixture,** a fungicide and insecticide preparation, made from Bordeaux mixture, kerosene emulsion, and an arsenite.—**Johnson's mixture,** a fungicide preparation, consisting of cupric sulphate, ammonium carbonate, and a large proportion of water, intended for application to plants by spraying.—**Neutral mixture,** a greenish-yellow solution obtained by neutralizing fresh lemon-juice with bicarbonate of potassium: it is diaphoretic and sedative.—**Schleich's anesthetic mixture.** See ★*anesthetic.*—**Single-tree mixture,** in *forestry*, a mixture in which trees of different species occur singly.—**Thilorier's mixture,** a mixture of liquid ether with carbon dioxid in the solid state. By the rapid evaporation of this mixture under reduced pressure, as produced by an air-pump, a temperature of −110° C. may be obtained.

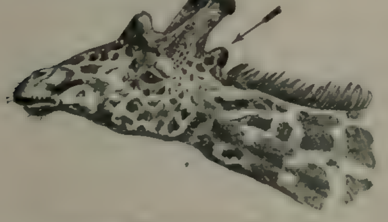
miya (mē′yä), *n.* [Jap.] 1. A Japanese Shinto temple or shrine.—2. [*cap.*] The residence of the Mikado of Japan.—3. [*cap.*] The title of the Mikado's children.

miyakite (mē′yä-kīt), *n.* [*Miyakojima*, an island of Japan, + *-ite*^{2}.] In *petrog.*, pyroxene-andesite occurring on Miyakojima, in which the pyroxene is a manganiferous babingtonite. *Petersen*, 1891.

mizdeh (miz′de), *n.* [Ar. ?] A fish, *Mormyrus oxyrhynchus*, of the family *Mormyridæ*, found in the Nile. It was an object of veneration to the ancient Egyptians and therefore frequently occurs in their emblematic inscriptions.

mizzen, *n.*—**Mizzen clue-lines,** the purchases for hauling up the clues of the mizzen-topsail, topgallantsail, and royal.

II. *a.* Noting the hindmost pair of horns in a five-horned giraffe, a small pair of projections arising from the lambdoid crest, back of the larger frontal horns.



Five-horned Giraffe showing Mizzen Horns.

> These structures, on the analogy of the masts of a ship, it may be convenient to speak of as "*mizzen*" horns.
> *Proc. Zool. Soc. London*, 1901, 477.

mizzen-backstays (miz′n-bak″stāz), *n. pl.* The backstays of the mizzen-topmast and mizzen-topgallantmast; also the backstays of the mizzen-royalmast.

mizzen-braces (miz′n-brā″sez), *n. pl.* The braces on the yards belonging to the mizzenmast; the braces of the cross-jack, topsail-, topgallant-, and royal-yards; also the skysail-yard, if that spar is carried.

mizzen-buntlines (miz′n-bunt″linz), *n. pl.* The buntlines belonging to the squaresails on the mizzen.

mizzen-chains (miz′n-chānz), *n. pl.* Plates of iron bolted to a ship's sides abreast the mizzenmast for securing the shrouds and backstays of that mast.

mizzen-crosstrees (miz′n-krôs″trēz), *n. pl.* The crosstrees on the mizzenmast, situated at the meeting of the head of the topmast and the foot of the topgallantmast.

mizzenmast, *n.* 2. *pl.* The lower-mast, topmast, and topgallantmast of the mast next abaft the mainmast.

mizzenmast-man (miz′n-mast-man), *n.* *Naut.*, one of the crew stationed to attend to the gear of the mizzenmast.

mizzen-parrels (miz′n-par″elz), *n. pl.* *Naut.*, the iron collars which confine the hoisting mizzen-yards to the masts. See *main* ★*parrels.*

mizzen-sail, *n.* 2. *pl.* The squaresails on the mizzenmast, namely, the cross-jack (not always carried) or mizzen-course, the lower and upper topsails, topgallantsail, royal, and sometimes a skysail. See ★*mainsail*, 2.

mizzen-sheets (miz′n-shēts), *n. pl.* *Naut.*, the sheets of the squaresails on the mizzenmast.

mizzen-stays (miz′n-stāz), *n. pl.* *Naut.*, all the stays which give support to the mizzen lower mast, topmast, and topgallantmast.

mizzen-staysails (miz′n-stā″sālz), *n. pl.* *Naut.*, the fore-and-aft sails which set between the mizzenmast and mainmasts.

mizzen-trusses (miz′n-trus″ez), *n. pl.* *Naut.*, the iron shapes which confine the mizzen lower yard and the mizzen lower topsail-yard to the mast, and upon which the yards revolve or pivot.

mizzen-yards (miz′n-yärdz), *n. pl.* *Naut.*, all the yards belonging to the mizzenmast.

M. J. I. An abbreviation of *Member of the Institute of Journalists.*

M. J. S. An abbreviation of *Member of the Japan Society.*

M. K. Q. C. P. An abbreviation of *Member of King and Queen's College of Physicians.*

ml. An abbreviation of *milliliter.*

M. L. An abbreviation (*b*) of *Master of Laws;* (*c*) of *Master of Literature;* (*d*) [*l. c.*] of *muzzle-loading.*

M. L. A. An abbreviation (*a*) of *Master* or *Mistress of Liberal Arts;* (*b*) of *Member of the Legislative Assembly.*

M. L. C. An abbreviation of *Member of the Legislative Council.*

M. L. D. An abbreviation of *minimal lethal dose.* *Nature*, July 14, 1904, p. 260.

M. L. E. An abbreviation of *Master* or *Mistress of English Literature.*

M. L. G. An abbreviation of *Middle Low German.*

M. Lit. An abbreviation of *Master of Literature.*

Mlle. A contraction of *Mademoiselle.*

M. L. S. An abbreviation of *Master of Library Science*, a degree conferred by the University of the State of New York.

M. L. S. B. An abbreviation of *Member of the London School Board.*

M. L. W. An abbreviation of *Mean Low Water.* *Amer. Jour. Sci.*, May, 1904, p. 335.

MM. An abbreviation (*b*) of *their Majesties;* (*c*) of *Martyrs.*

mm^1. An abbreviation (*b*) of the plural of Latin words commonly abbreviated *m.*, as *magistri;* (*c*) of the Latin *matrimonium;* (*d*) of the Latin *meritissimus.*

mm^2. An abbreviation of *square millimeter.*

mm^3. An abbreviation of *cubic millimeter.*

μμ. A symbol used to denote a thousandth of a micron or a millionth of a millimeter.

MM. A. An abbreviation of the Latin *Magistri Artium*, Masters of Arts.

M. M. E. An abbreviation of *Master of Mechanical Engineering.*

m. m. f. An abbreviation of *magnetomotive force.*

M. Mus. An abbreviation of *Master of Music.*

M. N. A. S. An abbreviation of *Member of the National Academy of Sciences.*

Mnemia (nē′mi-ä), *n.* [NL. (Eschscholtz, 1829), appar. < Gr. *Μνήμη*, Memory, one of the Muses.] The typical genus of the family *Mnemiidæ.*

Mnemiidæ (nẹ̄-mī′i-dē), *n. pl.* [NL., < *Mnemia* + *-idæ.*] A family of lobate ctenophorans in which the lobes are very large, the auricles are long and ribbon-shaped, and the origin of the auricles and lobes is placed almost at the same height as the funnel. It contains the genera *Mnemia, Alcinoë,* and *Mnemiopsis.*

mnemism (nē′mizm), *n.* [Gr. *μνήμη*, memory, + *-ism.*] The 'memory' which has been attributed to cells and organic molecules, and has been held to be an explanation of inheritance. *Hyatt*, Biol. Lectures, 1899, p. 153. [Rare.]

mnemogenesis (nē-mọ̄-jen′e-sis), *n.* [Gr. *μνήμη*, memory, + *γένεσις*, generation.] The generation of new organisms by means of the organic 'memory' or mnemism of parents. Those who hold the opinion that inheritance is memory attribute the building of an embryo to mnemogenesis, or the unfolding of a record of a memory which, having been stored up in the central nervous system of the parent, is impressed upon the developing germ in the order in which it was stored. [Rare.]

> The premature development of characteristics and some other rare phenomena . . . can only be explained by assuming an irregularity in the action of *mnemogenesis.*
> *Hyatt*, Biol. Lectures, 1899, p. 156.

mnemogenic (nē-mọ̄-jen′ik), *a.* Of or pertaining to mnemogenesis. [Rare.]

> When special tendencies or structures have arisen, their reappearance in descendants at the same time, or earlier, . . . becomes one of the strongest confirmations of the *mnemogenic* hypothesis.
> *Hyatt*, Biol. Lectures, 1899, p. 155.

mnemonicon (nẹ̄-mon′i-kon), *n.*; pl. *mnemonica* (-kä̤). [See *mnemonics.*] An aid to the memory; a mnemonic device.

mnemonize (nē′mọ̄-nīz), *v. t.*; pret. and pp. *mnemonized*, ppr. *mnemonizing.* [*mnemon*(*ic*) + *-ize.*] To associate (in memory) with a system of mnemonics; remember by means of mnemonics.

> Each lecture is . . . separately dedicated to two persons, twelve fortunate individuals being thus *mnemonized* into immortality.
> *N. A. Rev.*, July, 1845, p. 263.

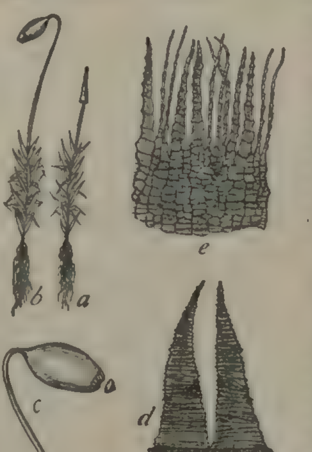
mnemotechnist (nē-mọ̄-tek′nist), *n.* [*mnemotechn*(*y*) + *-ist.*] One who is skilled in mnemotechnics.

Mnestra (nes′trä), *n.* [NL., < Gr. *Μνήστρα*, a daughter of Danaus.] A genus of hydromedusans. *M. parasitica*, found on a pelagic snail, *Phyllirrhoë bucephala*, is one of the very small number of parasitic medusæ.

Mniaceæ (nī-ā′sẹ̄-ē), *n. pl.* [NL. (Brotherus, 1901), < *Mnium* + *-aceæ.*] A family of acrocarpous mosses of the order *Bryales*, typified by the genus *Mnium*, and distinguished from the *Bryaceæ*, to which it was formerly referred, by the club-shaped (instead of filiform) paraphyses of the male organs, and by the hexagonal (not rhombic) parenchymatous cells of the upper surface of the leaves. There are 4 genera and 79 species, of which latter 72 belong to the genus *Mnium*. They grow in moist, shady places, on the ground, on the bark of trees, or on rocks, and are found in nearly all parts of the world, but chiefly in temperate regions.

mniotiltine (nī-ọ̄-til′tin), *a.* Relating to or having the characteristics of the *Mniotiltidæ*, a family containing the small North American warblers.

Mnium (nī′um), *n.* [NL. (Linnæus, 1753, adopted from Dillenius, 1741), < Gr. *μνίον*, also *μνῖον*, a moss.] A large genus of acrocarpous mosses, now made the type of the family *Mniaceæ*. It is characterized by synœcious flowers, erect stems, covered below with scale-like leaves becoming broader and toothed above and on the branches, and bearing at the summit one to several nodding or declined capsules on more or less elongated setæ. There are 72 species of wide distribution, 30 occurring in America, growing in swampy or moist ground, on rocks, or on trees.



Mnium hornum.

a, plant with sporogonium, still bearing a calyptra; *b*, plant with ripe sporogonium; *c*, mature capsule with operculum removed; *d*, two peristome teeth of the outer row; *e*, part of inner peristome. *a* and *b*, two thirds natural size; *c*, twice natural size; *d* and *e*, greatly enlarged. (From Strasburger's "Text-book of Botany.")

M. N. S. An abbreviation (*a*) of *Master of Natural Science;* (*b*) of *Member of the Numismatical Society.*

Mo. An abbreviation (*b*) of *Missouri;* (*c*) of *Monday.*

M. O. An abbreviation of *Master of Oratory.*

Moab (mō′ab), *n.* [See *Moabite.*] See the extract.

> *Moab*, a name applied to the turban-shaped hat which was some few years back fashionable among ladies, and ladylike swells of the other sex. From the Scripture phrase, "*Moab* is my washpot' (Ps. lx. 8), which latter article the hat in question was supposed to resemble.
> *Slang Dict.*

Moabitish (mō′a̤-bī-tish), *a.* [*Moabite* + *-ish*^{1}.] Of or pertaining to the Moabites; Moabite.

moafza (mọ-äf′zä̤), *n.* [Ar. *muḥāfza*, governorship, guardianship, < *ḥafaz*, keep, learn.] An administrative division of modern Egypt.

moa-hunter (mō′a̤-hun″tėr), *n.* A hunter of the moa: a poetical name applied, in the plural, to an extinct people, probably of Papuan relationship, supposed to have inhabited New Zealand before the advent of the Maoris.

moat^1, *v. t.* **2.** In *mining*, to puddle; cover with earth so as to exclude air, as a mine shaft in case of an underground fire. [Scotch.]

moating (mō′ting), *n.* The puddling beaten in behind the stonework of a mining-shaft built up through a bed of quicksand. *N. E. D.*

mobile^1, *n.* **3.** A name proposed as a substitute for *motor-vehicle*, or *automobile*.

Mobilian, *n.* **2.** The trade language formerly spoken in the Gulf States, a jargon originating in the intercourse between whites and Indians. It contained many Choctaw words.

mobiliary (mọ-bil′i-ā-ri), *a.* [F. *mobiliaire*, < L. *mobilis*, movable. See *mobile*^{1}.] **1.** In the Channel Islands, relating to movable property; also the distinctive epithet of a court that deals with 'mobiliary' questions. *N. E. D.* —**2.** Of or pertaining to household furniture. —**3.** In *mil.*, of or pertaining to mobilization.

mobility, *n.* **4.** In *phytogeog.*, the inherent capacity of a plant for migration. *F. E. Clements.*

mobilizable (mō′bi-lī-za̤-bl), *a.* [*mobilize* + *-able*.] Capable of being made or of becoming mobile or movable; that may be mobilized.

> The hæmal and other mobile or *mobilizable* cells of the body. *Buck*, Med. Handbook, I. 44.

mobilization, *n.* **2.** The act or process of rendering mobile or movable: as, the *mobilization* of a stiff joint.

Möbius's surface. See ⋆*surface*.

mob-madness (mob′mad″nes), *n.* The uncontrolled emotionalism or frenzy of an excited crowd: a phenomenon particularly described by Le Bon in his study, "The Psychology of the Crowd." *E. A. Ross*, Social Control, p. 147.

moca (mō′kä̤), *n.* [Porto Rican.] In Porto Rico, the cabbage-tree, *Vouacapoua Americana*. See *cabbage-tree*, 2, and *wacapou*.

moccasined^2 (mok′a̤-sind), *p. a.* [Lit., 'bitten by a moccasin,' that is, 'poisoned.'] Intoxicated. [Slang, southern U. S.]

> In some parts of the Southern States *moccasined* = "intoxicated" was common as a slang term. *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 248.

mocha, *n.* **4.** In *glove-making*: (*a*) A soft leather made from Arabian goatskins, nominally from Mocha. (*b*) Generally, a very soft sheepskin, tanned principally with oil.

Mocha ware. See ⋆*ware*^{2}.

mochila (mọ-chē′lä̤), *n.* [Sp., a caparison, knapsack, etc., prob. from *mocho*, cut short, lopped, cropped, < L. *mutilus*, lopped: see *mutilate*.] The leather flap which covers a saddletree.

mochylic (mọ-kil′ik), *a.* Noting an alcohol, a colorless compound, $C_{26}H_{46}O$, found, probably in combination with palmitic acid, in bird-lime, and obtained by boiling the inner bark of *Ilex integra* with water. It crystallizes in small lustrous prisms melting at 234° C.

Mock bishop's weed, *Ptilimnium capillaceum*, an umbelliferous plant of the United States, ranging from Massachusetts to Florida and west to Texas.

mock-acacia (mok′a̤-kā″shiä̤), *n.* The locust-tree, *Robinia Pseud-acacia*.

mock-bird, *n.* **2.** A bird that imitates; a parrot. [Rare.]

> The king would dress an ape up in his crown
> And robes, and seat him on his glorious seat,
> And on the right hand of the sunlike throne
> Would place a gaudy *mock-bird* to repeat
> The chatterings of the monkey.
> *Shelley*, Witch of Atlas, lxxiv.

mock-chervil (mok′chėr″vil), *n.* **1.** Cow-parsley.—**2.** Shepherd's-needle.

mocking-bird, *n.* **2.** In Demerara, a name applied to orioles of the genus *Cassicus*, and especially to *C. icteronotus*, which is often kept as a cage-bird on account of its pleasant note.—**3.** In Australia, the lyre-bird, *Menura superba*: so called on account of its remarkable power of song.

mocking-thrush (mok′ing-thrush), *n.* Any one of the *Miminæ*, a group of North American birds including the mocking-bird and catbird.

mock-knee (mok′nē), *n.* A large tumor-like swelling appearing on the knee of horses and cattle, due in most cases to repeated bruising and injury to the soft tissues, and sometimes resulting in the formation of hard epidermal scales.

mock-orange, *n.* **3.** Same as *calabazilla*.—**4.** The Victorian laurel, *Pittosporum undulatum*, a small tree yielding a hard, close-grained whitish wood. In the Azores it is used for protecting orange-trees from the wind. Called also *native laurel*. See *Pittosporum*.

mock-strawberry (mok′strâ″ber-i), *n.* Same as *Indian* ⋆*strawberry* (*a*).

moco (mō′kō), *n.* [W. Ind., of obscure origin.] Cut money. [Windward and Leeward Islands.]

mocock (mō-kok′), *n.* Same as ⋆*mocuck*. *Notes and Queries*, Aug. 10, 1907, p. 107. [Canada.]

mocomoco (mō-kō-mō′kō), *n.* [Carib.] A variety of arum, *Montrichardia arborescens*, growing in Guiana, etc. *N. E. D.*

mocuck (mō-kuk′), *n.* [Also *mowkowk*; < Ojibwa *makak*, Menomini *makak*.] A box of birch bark for sugar, rice, etc., used by the Indians of Ontario, Minnesota, Michigan, etc. *Bartlett*, Dict. of Americanisms.

mod^2 (mōd), *n.* [Gael. *mòd*, an assembly, < Icel. *mōt*. See *moot*^{1}.] The yearly meeting of the Highland Association, for literary and musical compositions. *N. E. D.* [Great Britain.]

modal, *a.* **3.** Of or pertaining to or having the numerical value of a statistical mode.

> Any race as we find it is very largely the product of its *modal* members. *K. Pearson*, Grammar of Sci., p. 445.

4. In *petrog.*, in the quantitative system of classification of igneous rocks (see ⋆*rock*^{1}), relating to the mode.—**5.** Of or pertaining to the mode of a curve. See ⋆*mode*, 11.—**6.** In *math.*, most frequently occurring.—**Modal frequency.** See ⋆*frequency*.—**Modal sensitivity.** See ⋆*sensitivity*.—**Modal value.** Same as ⋆*mode*^{1}, 12.

> A numerical value for which such a frequency is greatest is termed a *modal value* or mode. *K. Pearson*, Grammar of Sci., p. 382.

modality, *n.* **6.** In *psychol.*: (*a*) The nature or character of sensation or stimulus as determined by the sense-department to which it belongs or appeals: a term proposed by Helmholtz, to avoid a confusing use of *quality*.

> It was found, for instance, that the simple reaction-time depended not only upon such objective factors as the *modality* of the stimulus, . . . but also quite as much upon certain more subjective conditions. *Amer. Jour. Psychol.*, XV. 489.

Hence—(*b*) the sense-department itself: as, sensations of different *modalities*.

modalize (mō′da̤l-īz), *v. t.*; pret. and pp. *modalized*, ppr. *modalizing*. [*modal* + *-ize*.] To render modal; impart modality to.

mode^1, *n.* **11.** In *math.*: (*a*) The most frequent measure; the class with greatest frequency. (*b*) The point at which a curve, indicating frequencies of occurrence of a variable event, reaches its maximum. In the normal frequency curve (see *Quételet's* ⋆*curve*), the average is at the same time the mode, while in skew curves the average and mode do not coincide. (*c*) In a table of frequencies which gives a list of the different quantities appearing, with a statement of the number of times that each appeared, the one which occurs most often.—**12.** In *biom.*, that statistical value of a character which is most prevalent in a group of organisms.

> Mr. Tower indicates a similar seasonal change in the case of the *mode* of Chrysanthemum leucanthemum. He proposes a new definition for the term '*mode*,' but the word '*mode*' was introduced into statistics with a perfectly definite sense, and it seems undesirable now to alter it. "The average prevailing state of one or more characters of a homogeneous lot of individuals" is not a biometric definition. It might refer to any constant whatever of the frequency,—to the mean, the *mode*, the variability, or indeed to the whole frequency distribution itself. The now established use of the word '*mode*' is for that value of an organ or character, at which the frequency of the population per unit of the character or organ is a maximum,—the frequency 'per unit of the character' being used, if the character be not discrete, in the sense of the infinitesimal calculus. The definition is clear; it belongs to the theory of statistics to show us how to determine whether there is one or more true *modes*, and if there be, to settle the degree of their significance. *Biometrika*, April, 1902, p. 305.

13. In *petrog.*, in the quantitative classification of igneous rocks (see ⋆*rock*^{1}), the actual mineral composition of a rock in distinction from the norm, with which it may or may not coincide.—**Mode color.** See ⋆*color*.—**Normative mode.** See ⋆*normative*.—**Octave mode.** See *mode*^{1}, 7 (*a*).—**Secular mode,** the statistical mode which prevails for a given year or season in a species or any other statistical population.

> A '*secular mode*' is the prevailing state of one or more characters of a homogeneous lot of individuals, of the same pleomorphic condition and stage of development, for a particular place and year. *Biometrika*, April, 1902, p. 314.

mode-imitation (mōd′im-i-tā″sho̤n), *n.* Imitation of the new, in distinction from *custom-imitation* or imitation of the long established: a term introduced by Tarde.

model, *n.* **7.** See the extract.

> An insect thus resembled by another is spoken of as its "*model*," the imitating insect is called a "mimic," and the combination of model and mimic or mimics is known as a "mimetic pair" or "mimetic assemblage," as the case may be. *Nature*, Oct. 31, 1907, p. 673.

Half-model (*naut.*), a block-model which shows one side of a vessel from the midship line.—**Waterline model.** Same as ⋆*block-model*.

model-basin (mod′el-bā″sn), *n.* An establishment for the experimental investigation of the phenomena of the motion of vessels and screw-propellers through the water, the determination of suitable forms of hull for a given speed, and the ascertainment of the power necessary to drive a given form of hull through the water at any given speed. The basin or tank used in the experimental work is an excavation of canal-shaped cross-section, from 300 to 500 feet long, 25 to 50 feet wide, and 8 to 15 feet deep, and filled with water. Above the surface of the water is a traveling carriage moved by power, which can be run over the length of the basin at any desired speed. The model of a vessel to be tested is towed through the water by a lever-arm attached to and hanging below the carriage, and suitable registering instruments record the speed of the model and its resistance to motion through the water. From the data thus obtained a curve of resistance of the model is made and the power required to drive a full-sized vessel is determined by the application of Froude's law.

modeliar (mo-del′yär), *n.* [Tamil *mudalizār*, an honorific plural from *mudali*, a chief. *Yule and Burnell.*] A native head-man, in the Tamil districts of Ceylon; a chief.

moderant (mod′e̤-rant), *n.* [L. *moderant(em)*, acc. sing. of ppr. of *moderari*, to moderate.] That which moderates or mitigates.

moderantist (mod′e̤-ran-tist), *n.* [*moderant(ism)* + *-ist*.] One who professes moderantism: one who belongs to the party of the 'moderates.' See *moderantism*.

moderator, *n.* **7.** In *astrol.*, any one of the four principal points in a nativity upon which the native's fortunes are supposed to depend: the sun, moon, ascendant, or mid-heaven.—**8.** In *mech.*, a device for moderating or reducing the speed of an internal-combustion engine by the operation of a throttle-valve. Its action is the reverse of that of the accelerator.—**Moderator band.** See ⋆*band*^{2}.

modernism, *n.* **3.** Specifically, a tendency among Roman Catholics to modern and progressive views condemned by Pius X. in an encyclical issued in 1907.

modernist, *n.* **3.** One who holds modern views; specifically, a Roman Catholic who holds the views (modernism) condemned by Pius X. in his encyclical issued in 1907.

modesty, *n.* **4.** (*a*) The hare's-ear or thorough-wax, *Bupleurum rotundifolium*. (*b*) The bladder-ketmia or flower-of-an-hour, *Hibiscus Trionum*.

modificand (mod′i-fi-kand″), *n.* [L. *modificand(us)*, ger. of *modificare*, modify.] That which is to be, or ought to be, modified. [Rare.]

modification, *n.* **7.** In *biol.*, a change which is brought about in a living being by its own activity and is not transmitted to descendants, as contrasted with a variation regarded as a congenital change which is not the effect of the activity of the organism and is transmitted to descendants; an acquired character. *Natural Sci.*, Nov., 1896, p. 288.

modify, *v. t.*—**Modified milk.** See ⋆*milk*.—**Modified smallpox.** Same as *varioloid*.

modinature (mō-di-nā′tṳ̄r), *n.* [Also *modenature*; < L. *modus*, mode, + *natura*, nature.] The dispositon of the moldings in a classical cornice, or, by extension, in any part of the entablature.

modinha (mō-dēn′yä), *n.* [Pg., dim. of *moda*, mode.] In *music*, a form of song very popular in Portugal, combining features of the French romance and the Italian aria.

Modiolopsis (mō″di-ọ-lop′sis), *n.* [NL., < *Modiola* + Gr. ὄψις, a form, appearance.] A genus of extinct pelecypod mollusks, having the form of the *Modiola*, with narrow hinge-plate and edeutulous hinge. It is of Silurian age.

Modiomorpha (mō″di-ọ̄-môr′fạ̈), *n.* [NL., < *Modiola* + Gr. *μορφή*, form.] A genus of prionodesmaceous pelecypods, having the form of the *Modiola*, with a single oblique elongate ridge-like tooth. It is found in Devonian rocks.

mod. præscript. An abbreviation of the Latin *modo præscripto*, in the manner prescribed.

Mods. An abbreviation of *Moderations*. See *moderation*, 5, pl.

> I should have thought that four years of Oxford with a little finishing at Wren's . . . would make a lad quite safe who had been in the Sixth at a public school and got a scholarship and first in *Mods.*
> *Nature*, June 16, 1904, p. 145.

modulation, *n.*—**Abrupt modulation,** in *music*, a modulation or transition of key accomplished suddenly, without ordinary harmonic process. See *modulation*, 3 (*b*).

modulative (mod′ụ̄-lā-tiv), *a.* [*modulate* + *-ive.*] Having the function of modulating; serving to modulate.

> Our punctuation-marks seem to have been originally *modulative*, . . . though punctuation is now mainly logical. *H. Sweet*, Eng. Sounds, § 235.

module, *n.* **5.** Equivalent to the phrase *with congruence-modulus*. See *modulus of a congruence*, under *modulus*.

modulus, *n.*—**Bulk modulus,** the modulus of elasticity of volume. It is the quantity c in the formula: $c = \frac{\text{stress}}{\text{strain}}$, where the stress is a hydrostatic pressure and the resulting strain is the diminution suffered by a unit volume of the substance.—**Modulus of a complex number,** $a + bi$ is $+|a^2 + b^2|^{\frac{1}{2}}$.—**Modulus of a complex quantity,** $x + iy$, the absolute value $|x + iy|$, the positive square root $|x^2 + y^2|^{\frac{1}{2}}$.—**Modulus of a curve,** a function of the coefficients of the equation of a curve which is absolutely invariant for every birational transformation.—**Modulus of a real number,** its absolute value.—**Modulus of compression,** the plastic pressure throughout a substance produced by a forced uniform dilatation of it.—**Modulus of decay,** the time in which a velocity, decreasing in geometrical proportion, becomes $\frac{1}{2.783}$ of its initial value.—**Modulus of periodicity,** the constant by which the values of an integral on opposite banks of a cross-cut differ.—**Modulus of resistance.** Same as ★*modulus of rupture.* Also sometimes used as the equivalent of the modulus of elastic resistance.—**Modulus of rupture,** a number which represents the weight necessary per square inch of cross-section to break a beam of any given material of definite length, breadth, and depth, usually one square inch in section and one foot long.—**Principal modulus,** a modulus of elasticity where the stress provokes only a strain of its own type.—**Stretch modulus,** in *phys.*, a numerical constant used to express the elongation of a substance when subjected to longitudinal stress; Young's modulus. See ★*compressional strength.*

Mœbia (mē′bi-ạ̈), *n.* [NL., named after Professor Karl *Möbius* of Berlin.] A genus of brotuloid fishes containing two species found in the deep sea.

moel (mō′el), *n.* [W. *moel*, a hill bare on top, a sugar-loaf hill (common in local names), also a heap, a pile, prop. an adj., bald (compare E. *bald* as applied to mountains, or to the bare top of a mountain), = Ir. *moil*, a heap, a pile.] An isolated hill or small mountain, of convex or dome-like form above, and with concave slopes around the base.

> Mr. J. E. Marr read a short but important paper on the peculiar form of isolated hill known from its popular Welsh name as a *Moel.* *Geog. Jour.* (R. G. S.), XVI. 446.

Moel Ferna slates. See ★*slate*².

moellon, *n.* **2.** In *tanning*, partly oxidized oil recovered by expression from skins in the process of oil-tanning. It is used in currying leather which has already been tanned by other methods, and for this purpose is sometimes prepared specially from skins that have been repeatedly used. Also called *degras.*

Mœræ, Moirai (mē′rē, moi′rī), *n. pl.* [NL. *Mœræ*, Gr. *Μοῖραι*, pl. of *μοῖρα*, part, lot, destiny, fate; connected with *μέρος*, part, share, < *μείρεσθαι*, part, divide.] In *class. antiq.*, the fates: Homer, in the Iliad, speaks of Mœra in general, and of several Mœræ; and, in the Odyssey, of the Clothes ('spinners'). In later mythology three Fates appear, Clotho ('the spinner'), Lachesis ('the disposer of lots'), and Atropos ('the inevitable'), who cuts the thread.

Mœritherium (mē-ri-thē′ri-um), *n.* [NL., < Gr. *Μοῖρις*, Moeris, a lake in Egypt, + *θηρίον*, a wild beast.] A genus of extinct ungulate mammals, described from remains found in the Eocene of the Fayum, Egypt, and believed to represent the ancestors of the proboscideans. The animal was about the size of a large tapir; the molars are cross-ridged; there is one pair of tusk-like lower incisors; and the second incisors of the upper jaw are developed as tusks. The arrangement of the bones of the cranium shows some points peculiar to the *Proboscidea.*

Mœsa-blight (mē′sạ̈-blīt), *n.* An undetermined East Indian plant-bug of the family *Capsidæ*, allied to *Helopeltis*, which blights the plants of the genus *Mœsa.*

moff (mof), *n.* A Caucasian silk fabric.

mofussilite (mọ̄-fus′il-īt), *n.* [*mofussil* + *-ite*².] In India, one who lives in the mofussil, or country, as distinguished from the residencies.

mogigraphia (moj-i-graf′i-ạ̈), *n.* [NL., < Gr. *μογι-*, hardly (*μόγος*, toil, *μογεῖν*, toil, suffer), + *-γραφια* < *γράφειν*, write.] Writers' cramp.

mogigraphic (moj-i-graf′ik), *a.* [*mogigraph(ia)* + *-ic.*] Pertaining to or of the nature of mogigraphia.

mogiphonia (moj-i-fō′ni-ạ̈), *n.* [Gr. *μόγις*, with difficulty, + *φωνή*, sound.] In *pathol.*, a difficulty in producing loud vocal sounds with the larynx, ordinary speech remaining unaffected. *Syd. Soc. Lex.*

mogo (mō′gō), *n.* [Aboriginal Australian.] A stone ax of the natives of New South Wales.

mogra (mō′grạ̈), *n.* [Hindi.] The Arabian jasmine, *Jasminum Sambac.*

M. O. H. An abbreviation of *Medical Officer of Health.*

Moham. An abbreviation of *Mohammedan.*

mohar, *n.* See *mohur.*

mohawkite (mō′hâk-īt), *n.* [*Mohawk* (see def.) + *-ite*².] An arsenide of copper, nickel, and cobalt, $(Cu,Ni,Co)_3As$, closely related to domeykite, found at the Mohawk mine, in the copper region of Keweenaw Point, Michigan.

Mohawk-weed (mō′hâk-wēd), *n.* The perfoliate bellwort, *Uvularia perfoliata.*

mohel (mō′hel), *n.* [Heb. *mul*, to cut off.] A circumciser; the officiating rabbi who is specially qualified to perform the operation of circumcision.

Moho, *n.* **3.** [*l. c.*] A short-winged, short-tailed rail, *Pennula ecaudata*, peculiar to Hawaii.

Mohrodendron (mō-rọ̄-den′dron), *n.* [NL. (Britton, 1893), < *Mohr* (Charles *Mohr* (1824–1901), a German botanist and pharmacist in America) + Gr. *δένδρον*, tree.] A name improperly given to *Halesia*, a genus of dicotyledonous trees or shrubs belonging to the family *Styracaceæ*. See *Halesia.*

Moine schist. See ★*schist.*

Moiragetes (moi-rạ-jē′tēz), *n.* [Gr. *μοιραγέτης*, < *μοῖρα*, fate, + *ἡγεῖσθαι*, lead.] Leader of the Fates: an epithet of Apollo and Zeus.

> There were also statues of two of the Fates, of Zeus *Moiragetes*, and of Apollo *Moiragetes.*
> *J. H. Middleton*, in Jour. Hellenic Studies, IX. 202.

moiré, *v. t.* **2.** In finishing cotton goods, to stamp a fabric so as to produce a watered or moiré effect, for which various methods are employed.

moirette (mwo-ret′), *n.* [*moire* + *-ette.*] A textile fabric made to imitate moire. *N. E. D.*

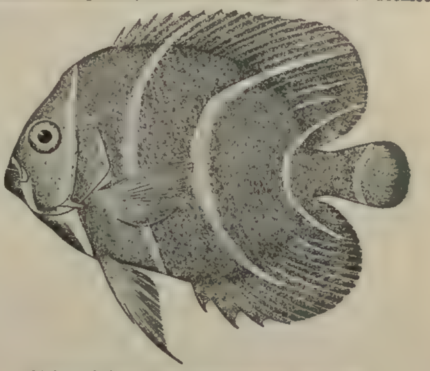
moissanite (mwo′san-īt), *n.* [*Moissan* (see def.) + *-ite*².] Carbon silicide, identified by Dr. Henri Moissan of Paris in the meteoric iron of Cañon Diablo, Arizona. The same substance made artificially in the electric furnace is extensively used in the arts under the name of *carborundum.*

Moist thermometer. See ★*thermometer.*

moisture-proof (mois′tụ̈r-prö̈f), *a.* Proof against moisture or its ill effects; not liable to be affected by moisture; damp-proof: as, transformers mounted in *moisture-proof* iron cases. *Elect. Rev.*, Sept. 10, 1904, p. 420.

moisture-scales (mois′tụ̈r-skālz), *n. pl.* Scales for ascertaining the percentage of weight lost by the evaporation of the moisture held in any sample of ore or other loose material in bulk. The material is first weighed, then dried, and again weighed. The beam has two sets of marks, one for weight and one for percentage gradations, the sliding weight showing at the second weighing both the loss in actual weight and the percentage of loss resulting from the evaporation of the moisture.

Mojarra almejera, a fish, *Hæmulon sexfasciatum*, from the Pacific coast of tropical America.—**Mojarra cantileña,** a fish, *Eucinostomus californiensis*, of the Pacific coast of Mexico and Central America.—**Mojarra cardenal,** a fish, *Holocentrus suborbitalis*, found in abundance from Mazatlan to Panama, inhabiting the pools in the rocky shores left by the tide.—**Mojarra china,** a fish, *Gerres lineatus*, found on the west coast of Mexico.—**Mojarra de las piedras,** a chætodontoid fish, *Pomacanthus zonipectus*, found on the west coast of Mexico and Central America from Mazatlan to Panama.—**Mojarra dorada,** a carangoid fish, *Gnathanodon speciosus*, widely distributed through the tropical parts of the Pacific and Indian oceans.—**Mojarra garabata,** a sparoid fish, *Calamus brachysomus*, found in the Gulf of California and in neighboring waters.—**Mojarra prieta,** a fish, *Hæmulon scudderi*, of the family *Hæmulidæ*, found on the Pacific coast of tropical America.—**Mojarra verde,** a cichloid fish, *Heros beani*, inhabiting the Rio Presidio near Mazatlan, Mexico.



Mojarra de las piedras (*Pomacanthus zonipectus*).
(From Bulletin 47, U. S. Nat. Museum.)

mojarrita (mo-hä-rē′tä), *n.* [Sp., dim. of *mojarra.*] Any fish of the genus *Eucinostomus* and family *Gerridæ*. These fishes are numerous in warm seas.

mojarron (mō-hä-rōn′), *n.* [Sp., aug. of *mojarra*: see *mojarra.*] A fish, *Anisotremus interruptus*, of the family *Hæmulidæ*, found on the west coast of tropical America.

moki¹ (mō′ki), *n.* [Maori.] The native name of two New Zealand fishes, the blue cod, *Percis colias*, and the bastard trumpeter, *Latris ciliaris.* *N. E. D.*

moki² (mō′kē), *n.* [Maori.] Same as ★*mokihi.*

mokihi (mō′kē-hē), *n.* [Maori *mokihi*, also *moki.*] A raft made of bundles of bulrushes, tied firmly together at one end and expanded by being tied to a stick at the other. Also written *moki* and *moguey.*

moko (mō′kō), *n.* [Maori.] Tattooing as practised by the natives of New Zealand, the designs consisting of elaborate figures with predominating spirals and covering a great part of the body.

> The "*moko*" or tattooing of a New Zealander is really a mark of rank, and only slaves are forbidden the more or less complete tattooing of the face. A completely tattooed face is literally covered with spiral scrolls, circles, and curved lines; but though the principal marks are generally similar, they are not exactly alike on any two persons, owing to the almost infinite variety of combinations at the operator's command.
> *Sci. Amer. Sup.*, Sept. 12, 1903, p. 23160.

> It is not a fact—as popularly supposed—that the "*moko*" was distinctive in different families; serving, as is sometimes said, the purpose of a coat-of-arms. The "*moko*" was in fact all made on the same pattern—that of all Maori carvings. Some were more elaborate than others. The sole difference was that some were in outline only, some were half filled in, and others were finished in elaborate detail. *E. E. Morris*, Austral English.

moko (mō′kō), *v. t.* To tattoo in the manner practised by the natives of New Zealand.

moko-moko (mō-kō-mō′kō), *n.* [Maori.] **1.** A New Zealand lizard, *Lygosoma moko.*—**2.** The bell-bird.

mokum (mō′kum), *n.* [Jap. *moku-me.*] A Japanese alloy used chiefly for decorations upon articles of gold or silver.

mol² (mol), *a.* [F. *mol*, *mou*, = G. *moll*, < L. *mollis*, soft: see *moll*².] In *music*, minor: as, E *mol*, or E minor.

mol³, **mole**⁷ (mōl), *n.* [NL. *mol(ecula)*, molecule.] The gram-molecule, or the gram-molecular weight of an element or compound: a brief form introduced by Ostwald.

molad (mō′lad), *n.* [Heb., < *yalad*, bear, bring forth.] The birth-time or beginning of the new moon. The Jewish month is lunar and therefore begins with the molad. See ★*rosh hodesh.*

molal (mō′lal), *a.* [*mol*³ + *-al*¹.] Of, or pertaining to, that amount of an element or compound which is equal to its molecular weight taken in grams. This amount is sometimes called a *mol*, and from the term in the German language an adjective *molar* is derived. The use of this German form of the adjective in English is infelicitous, since the English word 'molar' has already a very different meaning. Accordingly, some have lately used the adjective *molal.*

> From the *molal* fluidity of the components of the mixture the *molal* fluidity was computed by the mixture formula. *Phys. Rev.*, Jan., 1908, p. 55.

molar¹, *a.*—**Molar height.** See ★*height.*

molar², *a.*—**Molar death.** See ★*death.*

molarity (mọ-lar′ i̤-ti), *n.* [*molar*² + *-ity.*] The action of forces upon bodies as a whole, as distinguished from the molecular forces.

> The stellar bodies are interrelated through gravity and various forms of molar force which may be combined under the term *molarity*; and astronomy in its earlier form was the science of these relations.
> *W J McGee*, in Science, May 19, 1905, p. 771.

molasquit (mō-las′kit), *n.* [An arbitrary formation, < *molas*(*ses*) + *-quit* (uncertain).] A food for horses and cattle, prepared from molasses and fine bagasse from the sugar-mills. Sufficient cane-cellulose is mixed with molasses to permit its transportation as a dry material. The fine bagasse readily absorbs a large quantity of molasses and is itself digestible to a considerable extent. The resulting mixture is a valuable fodder which contains about 45 per cent. of saccharine matter.

Molasse, *n.*—**St. Gall Molasse**, a division of the Miocene Tertiary series in Switzerland, being a marine stage lying between the fresh-water or gray Molasse below and the fresh-water Oeningen Molasse above.

molasses, *n.* **2.** The repellent fluid ejected from the mouths of grasshoppers and certain other insects when captured.

molasses-grass (mọ-làs′ez-gràs), *n.* See ★*grass.*

molavee, *n.* Same as ★*maulvi.*

mold², *n.*—**Fruit-mold**, a serious fungous disease which attacks the fruit of the apple, cherry, peach, pear, and plum. It is caused by the fungus *Sclerotinia fructigena*, the conidial condition of which has long been known as *Monilia fructigena.* Also called *fruit-rot* and *brown* ★*rot* (which see).—**Oil-mold.** Same as ★*grease-mold.*—**Sooty mold**, a fungous disease of citrous trees and the olive, which produces a dark sooty growth on leaves, branches, and sometimes the fruit, caused by species of *Meliola* and *Apiosporium.* See ★*Meliola* and ★*Apiosporium.*—**White mold of sweet potato.** Same as *white* ★*rust.*

mold⁴, *n.* **12.** In *paleon.*, the external impression of an organic body, test, or skeleton in the rocks: contrasted with *cast*, which is an internal impression. See *cast*¹, 14.—**Dry-sand mold**, a mold which has been baked to a hard mass to prepare it to receive molten metal: distinguished from a *green-sand mold*, which is not dried or baked before the molten iron or other metal is poured into it.

moldave † (mol-dāv′), *n.* [*Moldavia.*] A long outer garment worn by ladies during the first half of the nineteenth century. *N. E. D.*

moldavite (mol-dā′vīt), *n.* [*Moldavia*, Hungary, + *-ite*².] In *petrog.*, a green glass found in oval grains an inch long. Its origin is in doubt: considered by Suess to be of meteoric character, possibly a variety of obsidian. It is found in sandy deposits in Moldavia, Hungary. Sometimes used as a gem. See ★*bottle-stone.*

mold-block (mōld′blok), *n.* A cast-iron block forming a part of the casting-bed in an iron-refinery.

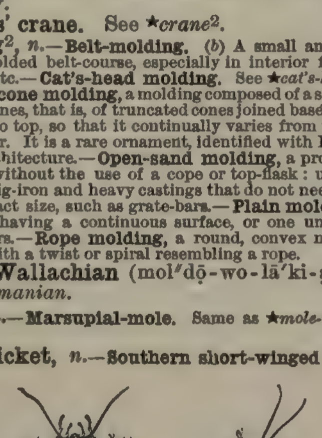
Molders' crane. See ★*crane*².

molding², *n.*—**Belt-molding.** (*b*) A small and delicately molded belt-course, especially in interior fittings, joinery, etc.—**Cat's-head molding.** See ★*cat's-head.*—**Double-cone molding**, a molding composed of a series of double cones, that is, of truncated cones joined base to base and top to top, so that it continually varies from thicker to thinner. It is a rare ornament, identified with Romanesque architecture.—**Open-sand molding**, a process of casting without the use of a cope or top-flask: used for casting pig-iron and heavy castings that do not need to be of an exact size, such as grate-bars.—**Plain molding**, a molding having a continuous surface, or one unbroken by corners.—**Rope molding**, a round, convex molding carved with a twist or spiral resembling a rope.

Moldo-Wallachian (mol″dọ-wo-lā′ki-a̤n), *n.* See *Rumanian.*

mole², *n.*—**Marsupial-mole.** Same as ★*mole-marsupial.*

mole-cricket, *n.*—**Southern short-winged mole-cricket**, an American gryllid, *Scapteriscus abbreviatus*, occurring in the southern United States.



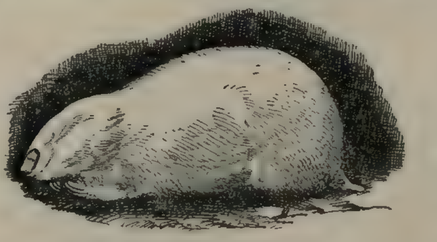
Southern Short-winged Mole-cricket (*Scapteriscus abbreviatus*). *a*, winged adult, dorsal view; *b*, same, lateral view. Natural size. (Chittenden, U. S. D. A.)

Molecular conductivity, death, encounter. See ★*conductivity*, etc.—**Molecular heat of vaporization.** See ★*heat.*—**Molecular magnetic friction.** See *magnetic* ★*hysteresis.*—**Molecular refraction.** See ★*refraction.*—**Molecular refractive power** or **refractivity.** See ★*refractive.*—**Molecular resistance, rigidity, shadow, silver, stability, streams, volume.** See ★*resistance*, etc.—**Molecular theory of vital currents.** See ★*current*¹.

molecule, *n.*—**Active molecules**, in *electrochem.*, those molecules of a dissolved electrolyte which are dissociated into their ions and are therefore active in carrying the electric current.—**Double molecule**, the simplest form of molecular complex in which two molecules combine to form one.—**Inactive molecules**, in *electrochem.*, those molecules of a dissolved electrolyte which are not dissociated into ions and are therefore not active in carrying an electric current.—**Proteid molecule**, a molecule of an albuminous substance in the wider sense of the term, or of a proteid in the narrower sense.

mole-diver (mōl′dī″vėr), *n.* The little grebe.

mole-marsupial (mōl′mär-sū″pi-a̤l), *n.* A small marsupial which has the habits and very much the appearance of a small mole and which inhabits the desert regions of central South Australia. It is of a pale yellow color, with a horny shield on the nose, and a bare, leathery tail. Only about a dozen specimens of the animal, which has been named *Notoryctes typhlops*, have been found. It is the type of the family *Notoryctidæ.*



Mole-marsupial (*Notoryctes typhlops*).

molette, *n.* **2.** A small steel roller upon the surface of which is cut a pattern, in relief, which is pressed into the surface of a copper printing-cylinder of a calico-printing machine.

molewort (mōl′wėrt), *n.* Water-cress.

molinary (mō′li-nā-ri), *a.* [LL. *molinarius*, < *molina*, a mill.] Of or pertaining to milling or the grinding of cereals.

> The 'Lead,' a stream, 'led' from the Tay past Rose Terrace, into the town for *molinary* purposes; and long ago, I suppose, bricked over, or choked with rubbish.
> *Ruskin*, Fors Clavigera, i. 161.

Molka berry. See ★*berry*¹.

mollescence (mo-les′e̤ns), *n.* [L. *mollis*, soft, + *-escence.*] Softening; in *pathol.*, same as *mollities.*

mollescent (mo-les′e̤nt), *a.* [L. *mollescent*(*em*), ppr. of *mollescere*, become soft.] Becoming soft; softening.

mollichthyolin (mol-ik′thi-ọ-lin), *n.* A mixture of molline and ichthyol. It is used externally in diseases of the skin.

Mollienisia (mol″i-e-nis′i-ạ̈), *n.* [NL. (Le Sueur, 1821), named after M. *Mollien*, a French minister of finance.] A genus of fishes of the family *Pœciliidæ*, small mud-loving fishes found from North Carolina to Mexico in the coastwise swamps.

Mollisia (mo-lis′i-ạ̈), *n.* [NL. (Karsten, 1871), irreg. < L. *mollis*, soft.] A large genus of discomycetous fungi having separate or crowded bright-colored sessile waxy ascomata. The spores are elongate, unicellular, and hyaline. About 150 species have been described. They occur on dead stems and decaying branches and are widely distributed.

Mollisiaceæ (mo-lis-i-ā′sẹ̄-ē), *n. pl.* [NL., < *Mollisia* + *-aceæ.*] A family of discomycetous fungi, named from the genus *Mollisia*, containing 19 genera. The ascocarps are mostly small and sessile. See ★*Mollisia.*

Mollities unguium, a trophic disease of the nails in which they become abnormally soft and yielding.

moll-rowing (mol′rou″ing), *n.* Domestic squabbling; the quarreling of man and wife. [Slang.]

> One scene was the work of my brother and myself. It was the outside of a lodging-house by moonlight. . . . The scene wound up with a great concert of "practical" cats on the roof, whose diabolical *moll-rowings* still ring in my ears.
> *G. A. Sala*, Things I have Seen and People I have [Known, II. 121.

molly⁴ (mol′i), *n.* [A senseless application of the familiar name *Molly*: see *Molly*¹.] In the printers' game of jeffing, a throw of quadrats which exposes only the unnicked sides; hence, any useless work with types in a composing-room.

molly-gut (mol′i-gut), *n.* Same as *goose-fish.*

mollyhawk (mol′i-hâk), *n.* An emendation of *mollymawk*, a name given by sailors to the smaller albatrosses. The change has been made on the mistaken supposition that mollymawk was a corruption of mollyhawk.

> On Adam's Island Mr. Cockayne had an opportunity of studying the nests of the albatross placed in exposed situations, where the solitary chicken remains on the nest for a year, and on the desolate Bounty Islands were found the nests of the *mollyhawk*, and numbers of animals, crustaceans, spiders and beetles which make their home in the guano or on the bare rocks.
> *Nature*, Nov. 5, 1903, p. 14.

moloker (mō′lok-ėr), *n.* A renovated silk hat. *N. E. D.* [Slang.]

molombwa (mọ-lom′bwạ̈), *n.* [Native name in West Africa.] Same as *molompi.* The pulverized heartwood of the tree is used by the natives as an ornament by sprinkling it upon their hair and clothing.

molote (mo-lọ̄′tā), *n.* A long-handled heart-shaped hoe used by the Latookas and other natives of the Upper Nile Valley and the lake regions.

> The handles of the *molotes* are extremely long, from seven to ten feet, and the instrument being shaped like a miner's spade (heart-shaped), is used like a Dutch hoe, and is an effective tool in ground that has been cleared, but is unfitted for preparing fresh soil.
> *Sir S. W. Baker*, The Albert Nyanza, p. 164.

Molpadia (mol-pā′di-ạ̈), *n.* [NL., < Gr. Μολπαδία, a feminine name.] The typical genus of the family *Molpadiidæ.* *Cuvier*, 1817.

Molpadiidæ (mol-pā-dī′i-dē), *n. pl.* [NL., < *Molpadia* + *-idæ.*] A family of holothurians, of the order *Actinopoda*, having neither tube-feet nor papillæ, the posterior end gradually tapering into a tail-like piece, mouth and anus terminal, usually fifteen simple or digitate tentacles, calcareous ring of five radial and five interradial pieces, and a single stone-canal with an internal madreporite. Respiratory trees are present but Cuvierian organs are rare. It contains the genera *Molpadia*, *Eupyrgus*, *Caudina*, *Haplodactyla*, *Trochostoma*, and *Ankyroderma.*

molula (mol′ụ̄-lạ̈), *n.* [NL., dim. of L. *mola*, a millstone: see *mola*, *molar*¹.] In *entom.*, the convex and sometimes bent head of the tibia of the hind leg of an insect, armed with a horny process on each side by which it is attached to the thigh. Also called *knee-ball.* *Kirby and Spence.*

mol. wt. An abbreviation of *molecular weight.*

Molybdate of ammonium, a salt of molybdic acid largely used in the determination of phosphorus and phosphoric acid in analysis. It is in constant use in the laboratories of steel-works and fertilizer-factories.

Molybdenum blue. See ★*blue.*—**Molybdenum glance.** See *molybdenite.*

molybdomancy (mọ-lib′dọ-man-si), *n.* [Gr. *μόλυβδος*, lead, + *μαντεία*, divination.] Divination by means of the behavior of molten lead, conclusions being based on the number, form, etc., of the drops.

molybdophyllite (mo-lib-dof′i-līt), *n.* [Gr. *μόλυβδος*, lead, + *φύλλον*, leaf, + *-ite*².] A rare lead silicate occurring in colorless foliated masses somewhat resembling mica, found at Långban, Sweden.

Momable slates. See ★*slate*².

moment, *n.* **9.** In *statistics*, influence in determining the position of the center or of the axis of distribution, as of population or resources.—**Center of moments.** See ★*center*¹.—**Dictyotic moment.** See ★*dictyotic.*—**Lorication moment.** Same as ★*dictyotic moment.*—**Moment of friction.** See ★*friction.*—**Moment of momentum**, a quantity, sometimes employed in the mechanics of rotation, equal to the angular momentum ($m\omega$), or the product of the mass and angular velocity. Since the angular velocity is rv, angular momentum may be written mvr—momentum (mv) multiplied by distance (r); hence the name *moment of momentum.*—**Moment of population**, a compound quantity formed by multiplying the population of a given area by the distance of its population-center from an assumed parallel or meridian. By means of this idea, the United States Census Office, using as element the square degree, determines centers of population.—**Moment of rotation**, the rotational inertia or moment of inertia.—**Moment of torsion**, the torque tending to twist a body, as a rod; the constant T in the equation $T = -\dfrac{\pi n r^4 \theta}{2l}$, where n is the slide modulus, r the radius of the twisted body, θ the angle through which the free end is twisted, and l is the distance from the free end along the axis of torsion to the point of clamping.—**Moment of two straight lines.** See ★*line*².—**Psychological moment**, the nick of time; the opportune moment; the best or the right time: as, he seized the *psychological moment*; it happened at the *psychological moment.*—**Statical moment.** Same as *moment of a force.*—**Unit moment of a couple.** See ★*couple.*

momentum, *n.*—**Angular momentum**, the product of the angular velocity of a rotating body into its moment of inertia.—**Electromagnetic momentum**, momentum due to velocity of an electromagnetic mass: opposed to ordinary mass, the momentum of which is termed *mechanical momentum.*—**Mechanical momentum,** momentum of the sort ordinarily dealt with in dynamics, in which the moving body has no electrostatic charge and consequently no electromagnetic mass.—**Moment of momentum.** See ★*moment.*

momiology (mō-mi-ol'ọ̄-ji), *n.* [F. *momie,* a mummy, + *-ology.*] The scientific study of mummies.

> Even the history of the Egyptian dynasties is a department of *momiology,* for the tablets of Abydos and Sakkarah belonged to temples which are connected with that future life and day of judgment for which the mummy lies patiently waiting.
> *Athenæum,* March 3, 1894, p. 283.

momme (mom'mē), *n.* [Jap.] A Japanese unit of weight, equivalent to 3.756 grams, or nearly 60 grains. *C. Hering,* Conversion Tables, p. 61.

mon^5 (mon), *n.* [Jap.] A Japanese money of account, the ten thousandth part of a silver yen, equal to 50 cents.

mon^6 (mon), *n.* [Corean?] A Corean coin, the hundredth of a Japanese tempo, equivalent to one tenth of a cent.

mon. An abbreviation (*a*) of *monastery;* (*b*) of *monetary;* (*c*) of *Monday.*

Monacanthidæ (mon-a-kan'thi-dē), *n. pl.* [NL., < *Monacanthus* + *-idæ.*] A family of fishes closely allied to the *Balistidæ,* herbivorous shore-forms found in warm seas.

monachate (mon'a̤-kāt), *n.* [L. *monachatus.* See *monk.*] The period of life passed as a monk. *N. E. D.*

monachist (mon'a̤-kist), *a.* [*monach*(*ism*) + *-ist.*] Pertaining or relating to monachism or monasticism.

> I do not find in Giorgione's work any of the early Venetian *monachist* element. He seems to me to have belonged more to an abstract contemplative school.
> *Ruskin,* Modern Painters, V. ix. § 11.

monachize (mon'a̤-kīz), *v. i.;* pret. and pp. *monachized,* ppr. *monachizing.* [*monach*(*ism*) + *-ize.*] To live a monastic life; become a monk.

monaco (mon'a̤-kō), *n.* [It. *Monaco,* a petty principality now under French protection, < L. *Arx* (or *Saxa*) *Monœci,* 'the fort (or rock) of Monœcus,' Gr. Μόνοικος, 'he who dwells alone,' an epithet of Hercules.] A silver coin of the value of 58 sols, bearing the arms of the Prince of Monaco.

monactin (mon-ak'tin), *n.* [Gr. *μόνος,* single, + *ἀκτίς,* (*ἀκτιν-*), ray.] A sponge-spicule of one axis.

monactinellid (mo-nak-ti-nel'id), *n.* and *a.* **I.** *n.* One of the *Monactinellida,* an order of sponges.

II. *a.* Having the characters of or pertaining to the *Monactinellida.*

monad, *n.*—**Collared monad,** in *zoöl.,* a monad which possesses a delicate membranous collar at one pole; one of the *Choanoflagellata.*—**Hooked** or **springing monad.** See ★*Bodo.*

monadary, *n.* Same as *monadiary.*

Monadelphic surface. See ★*surface.*

monadistic (mon-a̤-dis'tik), *a.* Pertaining to or of the nature of monadism.

monadnock (mọ-nad'nok), *n.* [A generic use of the name of Mount *Monadnock* in southwestern New Hampshire. The name *Monadnock* (formerly also *Monadnuck, Monadnic, Menadnock*) is of Algonkin origin, prob. from *manit,* 'that which is exceeding, surpassing, extraordinary, supernatural' (hence *manit, manitto,* a spirit, God: see *manito*), + *-adene* (*-ahdin, -adn*), a hill or mountain, + *-auke* (*-ohke,* etc., in colonial spellings often *-ock, -oc*), land, country, place. The meaning would be 'the place where there is a very high mountain.'] In *phys. geog.,* an isolated hill or mountain rising over a peneplain, and surviving because of the superior resistance of its rocks or of its distance from the larger rivers; a residual hill.

> The rivers Lesse, Ourthe, Süre, and Vierre, which radiate from the Serpont *monadnock,* all suddenly turn, at intervals, at right angles to their normal course, and these bends lie in concentric circles as if the region has been denuded in concentric waves.
> *Geog. Jour.* (R. G. S.), XVIII. 615.

monadological (mon″a̤-dọ̄-loj'i-ka̤l), *a.* [*monadolog*(*y*) + *-ic-* + *-al*^{1}.] Of or pertaining to monadology, or the doctrine of monads.

> In this case matter is thought of as made up of similar [mental] atoms of a lower order (monistic or *monadological* spiritualism), or the mind-atom is regarded as specifically different from matter proper (dualistic spiritualism). *W. Wundt* (trans.), Outlines of Psychol., p. 313.

monæne (mon'ēn), *n.* [Gr. *μόνος,* single, + *-αινα,* as in *τρίαινα,* trident.] In sponge-spicules, a triæne in the cladome of which two of the three rays have atrophied or been arrested in development.

monamide (mon-am'id), *n.* [Gr. *μόνος,* one, + E. *amide.*] A class name applied, in organic chemistry, to compounds, derived from acids and ammonia, containing the univalent radical $-CONH_2$: occasionally used, incorrectly, for amines.

monamido (mon-am'i-dō), *a.* [*mon*(*o*)- + *amido-.*] Containing a single amido (NH_2) group: as, *monamido* acid.

monandric (mọ-nan'drik), *a.* Practising or characterized by monandry; monandrous.

monapsal (mon-ap'sa̤l), *a.* [*mon*(*o*)- + *apse* + *-al*^{1}.] In *arch.,* having only one apse.

Monarch butterfly. See ★*butterfly.*

monarcho† (mon'är-kō), *n.* [For It. *monarcha,* monarch.] A title assumed by a fantastical individual of Shakspere's time; hence, humorously, a monarch.

> This Armado is a Spaniard, that keeps here in court;
> A phantasime, a *Monarcho,* and one that makes sport
> To the prince and his bookmates. *Shak.* L. L. L. iv, i.

monarda, *n.* **2.** [*l. c.*] A plant of the genus *Monarda.*—**Monarda oil.** See ★*oil.*

Monardella (mō-när-del'a̤), *n.* [NL. (Bentham, 1834), a diminutive of *Monarda,* on account of the resemblance of the two genera.] A genus of plants of the family *Menthaceæ.* They are annual or perennial sweet-smelling herbs, with rose-purple, lavender, or white flowers in terminal heads subtended by broad, often colored bracts. There are about 15 species, natives of western North America, chiefly of California, some of which are occasionally cultivated.

monarthritis (mon-är-thrī'tis), *n.* [NL., < Gr. *μόνος,* single, + *ἄρθρον,* joint, + *-itis.*] Inflammation of one joint.—**Monarthritis deformans,** arthritis deformans affecting one joint only.

Monastic architecture, the architecture of the convents and monasteries of the Christian middle ages, and the resulting styles down to the eighteenth century. Romanesque art in western Europe is largely monastic in origin.

monasticize (mọ-nas'ti-sīz), *v. t.;* pret. and pp. *monasticized,* ppr. *monasticizing.* [*monastic* + *-ize.*] To make monastic; convert to monasticism.

monatomism (mon-at'ọm-izm), *n.* [*monatom*(*ic*) + *-ism.*] The character of being monatomic.

monaulic (mọ-nâ'lik), *a.* [Gr. *μόνος,* single, + *αὐλός,* pipe, + *-ic.*] Having an undivided tube, as the hermaphrodite duct leaving the ovotestis in certain mollusks. Compare ★*diaulic,* 2.

monaxile (mon-ak'sil), *a.* and *n.* [Gr. *μόνος,* single, + L. *axis,* axis, + *-ile.*] **I.** *a.* Same as *monaxial.*

II. *n.* A monaxial sponge-spicule.

monaxon, *n.* **2.** In *neurol.,* a nerve-cell with a single neuraxon, or axis-cylinder process.

monaxonal (mon-ak'sọ̄-na̤l), *a.* [*monaxon* + *-al*^{1}.] In sponge-spicules, monactinal.

monaxonidan (mon-ak-son'i-dan), *a.* and *n.* [*Monaxida* + *-an.*] **I.** *a.* Relating or pertaining to the *Monaxonida;* having only monaxon spicules.

II. *n.* Any member of the *Monaxonida.*

monchiquite (mon'chi-kīt), *n.* [Serra de *Monchique,* Portugal, + *-ite*^{2}.] In *petrog.,* a porphyritic rock with aphanitic groundmass, composed of hornblende, augite, biotite, olivin, and magnetite in a ground-mass of the same minerals, with an isotropic base having the composition of analcite. *Hunter and Rosenbusch,* 1890.

monchiquoid (mon'chi-koid), *a.* [*Monchiqu*(*ite*) + *-oid.*] In *petrog.,* resembling monchiquite in mineral composition and texture.

mond (mond), *n.* [D. *mond* = G. *mund* = E. *mouth.*] A mouth; particularly, the mouth of a river: an element in many South African Dutch place-names.

Mond. An abbreviation of *Monday.*

mondaine (mon-dān'), *a.* and *n.* [F., fem. of *mondain,* < L. *mundanus,* of the world: see *mundane.*] **I.** *a.* Worldly; absorbed in the fashionable world.

II. *n.* A woman who loves the pomps and va̤nities of this world; one who is devoted to the world of fashion; a worldling.

monembryonic (mon-em-bri-on'ik), *a.* [Gr. *μόνος,* single, + *ἔμβρυον,* embryo, + *-ic.*] Of or pertaining to a single embryo; bearing a single embryo.

monembryony (mon-em'bri-ọ-ni), *n.* [*monembryon*(*ic*) + *-y*^{3}.] The state or condition of bearing only one embryo.

monergic (mọ-nėr'jik), *a.* [< Gr. *μόνος,* single, + E. (*en*)*ergic:* properly *monenergic.*] In *plant physiol.,* having a single nucleus, or center of vital energy: opposed to ★*polyergic.*

monergist (mon'ėr-jist), *n.* [*monerg*(*ism*) + *-ist.*] One who holds the doctrine of monergism, namely, that the Holy Spirit is the only efficient agent in regeneration.

monergistic (mon-ėr-jis'tik), *a.* [*monergist* + *-ic.*] Of or pertaining to monergism; of the nature of monergism.

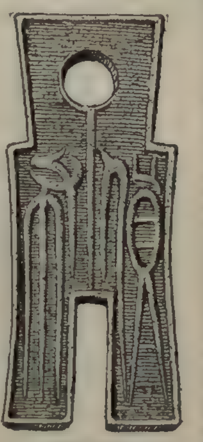
Monesia bark. (*b*) See ★*bark*^{2}.

monetary, *a.*—**Latin Monetary Union.** See ★*Latin Union.*

monetite (mon'ẹ̄-tīt), *n.* [*moneta* (see def.) + *-ite*^{2}.] Acid calcium phosphate ($HCaPO_4$) occurring in minute yellowish-white triclinic crystals, found in a bed of guano on the islands Moneta and Mona, West Indies.

money, *n.*—**Anglo-Gallic money,** coins struck in France by English rulers of a portion of that country, from the time of Henry II.—**Bar money,** an archaic money struck in the Low Countries for Java, in deference to native predilection.—**Black money.** (*a*) Copper coins struck at Tours and made current in England during the reigns of Edward II. and Edward III. (*b*) See the extract.

> When any class of work involves special unpleasantness or injury to clothing, "*black money*" or "dirty money" is sometimes stipulated for. Thus, the boilermakers and engineers receive extra rates for jobs connected with oil-carrying vessels. *Webb,* Industrial Democracy, I. 313.



Cloth Money.

Cloth money, an early Chinese copper coinage.—**Condemnation money,** in *law:* (*a*) The damages which the losing party to an action is adjudged to pay. (*b*) In an appeal bond, the amount that should be awarded against the appellant by the judgment of the court upon affirming the judgment or order appealed from.—**Cut money,** sections of silver or gold coins cut for circulation as subsidiary money, especially in the West Indies and Spanish colonies.—**Danes' money,** a local name for Roman coins found in Northamptonshire. [Eng.]—**Don Patiño's money,** a local name once current in Jamaica for the Spanish pistareen: so named from a colonial and finance minister of Spain at the beginning of the eighteenth century.—**Exurgat money,** an English coinage of Charles I., with the inscription on the reverse, *Exurgat Deus, dissipentur inimici* (Ps. lxvii., Vulg.), "Let God arise, let his enemies be scattered" (Ps. lxviii. 1, Rev. ver.).—**Franco-Italian money,** the coins struck by temporary French rulers of parts of Italy, from Charles VI. to Louis XVI. *W. C. Hazlitt.*—**Franco-Spanish money,** the coins struck in Spain by Louis XIII. and Louis XIV. of France, during their occupation of parts of that country. *W. C. Hazlitt.*—**Hock-Tuesday money,** in *old Eng. law,* money paid to a lord that his tenants and bondmen might celebrate the second Tuesday after Easter week—the day on which the English overcame the Danes. *Cowel.*—**India money,** an English coinage made in the seventeenth century for use by the East India Company. Also called *Indian money,* and *Portcullis money.* See *portcullis,* 4.—**Lanka money,** a bar of silver stamped with Arabic inscriptions, used as money in Ceylon.—**Merovingian money,** a term loosely applied to the whole group of coins struck in the Low Countries and in France in the sixth, seventh, and eighth centuries and actually originating in Holland. *W. C. Hazlitt.*—**New plate money,** a coinage, as opposed to Mexican plate, created by Charles II. of Spain (1686), who ordered that the American piece-of-eight (reals) should pass as a piece of ten new reals.—**Saddle money,** a Chinese copper coinage in use from the first to the fourth century B.C. **Temple money.** See ★*temple*^{1}.—**Tin-dangle money.** Same as ★*bridge-money.*

money-bound (mun'i-bound), *a.* Detained on board awaiting a remittance to pay for a passage that has been made: said of a ship's passenger.

money-grass (mun'i-grȧs), *n.* Same as *penny-grass,* 1.

money-maker, *n.* **3.** Any commodity which sells well and is profitable for those who make or handle it.

money-plant (mun'i-plant), *n.* Same as *money-flower.*

mongo (mon'gō), *n.* See the extract.

> *Mongo* (Phaseolus mungo Bl.), smaller than the lentil, but of the same flavor, cultivated on a large scale, as it is the principal food of many towns.
> *Pron. Gaz. Philippine Is.,* p. 80.

Mongolian, *a.*—**Mongolian idiocy, idiot.** See ★*idiocy,* ★*idiot.*—**Mongolian mark** or **spot,** a dark spot in the lumbar region, occurring in Mongolian new-born children and also observed among the new-born of the American (Indian) race.

Mongolization (mong″gọ-li-zā′shọn), *n.* [*Mongolize* + *-ation*] The process of Mongolizing or rendering Mongolian in character.

Mongolize (mong′gọ-līz), *v. t.*; pret. and pp. *Mongolized*, ppr. *Mongolizing*. [*Mongol* + *-ize.*] To render Mongolian in character; subject to Mongolian influence or control.

> Australia was determined . . . not to *Mongolise* its dominions.
> *Daily News* (London), July 2, 1906. *N. E. D.*

Mongolo-Tatar (mong′gọ-lō-tä′tär), *a.* and *n.* I. *a.* Of or pertaining to peoples that speak languages of the Mongol and Tungus divisions of the Ural-Altaic stock (the Mongol, Kalmuck, Buriat, Tungus, and Manchu), or to the languages themselves. Sometimes also used to include the Turkish languages or the whole group of Ural-Altaic languages. *Keane*, Ethnology, p. 299.

II. *n.* A people of Mongolo-Tatar affinities.

Mongrel disease. See ★*disease.*

monheimite (mon′hīm-īt), *n.* [Named (1853) after a German, Von *Monheim*, who described it.] A variety of the zinc carbonate, smithsonite, containing over 20 per cent. of iron carbonate.

Monicono-stereoscopic glasses. See ★*glass.*

monilethrix (mọ-nil′ẹ-thrix), *n.* [Irreg. < L. *monile*, a necklace, + Gr. *θρίξ*, hair.] Irregular atrophy of the hairs, giving them a beaded appearance.

Monilia (mọ-nil′i-ạ̈), *n.* [NL. (Persoon, 1797), so called in allusion to the chain of spores, < L. *monile*, a necklace.] A genus of *Fungi Imperfecti*, type of the family *Moniliaceæ*, having erect branched conidiophores bearing chains of conidia. *M. fructigena* and *M. cinerea* are known to be conidial conditions of the discomycetous genus *Sclerotinia.* They are the destructive fruit-molds which attack the peach, plum, cherry, etc. See *fruit-★mold*, *peach-blight*, *rot*, and ★*Sclerotinia.*

Moniliaceæ (mọ-nil-i-ā′sẹ-ē), *n. pl.* [NL., < *Monilia* + *-aceæ.*] A family of hyphomycetous fungi named from the genus *Monilia* (see ★*Monilia* and ★*Moniliales*). It is the same as the *Mucedinaceæ*, for which it is to be substituted, that name not being based on the name of a genus.

Moniliales (mọ-nil-i-ā′lēz), *n. pl.* [NL., < *Monilia* + *-ales.*] The largest order of the group *Fungi Imperfecti*, frequently called *Hyphomycetes*, containing the 4 families *Moniliaceæ*, *Dematiaceæ*, *Stilbaceæ*, and *Tuberculaceæ.*

Moniligaster (mọ-nil-i-gas′tėr), *n.* [NL., < L. *monile*, necklace, + *gaster*, belly.] The typical genus of the family *Moniligastridæ.* *Perrier*, 1873.

Moniligastridæ (mọ-nil-i-gas′tri-dē), *n. pl.* [NL., *Moniligaster* (*-gastr-*) + *-idæ.*] A family of terricolous *Oligochæta*, consisting of large or small earthworms with 8 paired setæ in each segment, the inconspicuous clitellum occupying segments 10–13, and one or two pairs of male pores. It contains the genera *Moniligaster* and *Desmogaster*, found in India, Ceylon, Sumatra, Borneo, Burma, and the Bahamas. *M. grandis* attains a length of two feet.

monimiaceous (mọ-nim-i-ā′shius), *a.* Belonging to the plant family *Monimiaceæ.*

monimolite (mọ-nim′ọ-līt), *n.* [G. *monimolit* (1865); < Gr. *μόνιμος*, lasting, stable, + *λίθος*, stone.] An antimoniate of lead, iron, and sometimes calcium, occurring in yellow to brown isometric crystals and also in massive forms: found in Sweden.

Monimostylica (mon″i-mọ-stil′i-kạ̈), *n. pl.* [Gr. *μόνιμος*, lasting, + *στῦλος*, pillar.] A division of reptiles including those which have the quadrate immovable, as turtles, crocodiles, and extinct forms: contrasted with *Streptostylica.*

monism, *n.*—**Cosmonomic monism.** See ★*cosmonomic.*—**Psychophysical monism**, the metaphysical opinion that physical and psychical phenomena are parallel aspects or attributes of one and the same underlying thing of which no experiential knowledge is possible.

> The first [parallelist theory] looks upon mind and body as of equal reality or rather unreality, and interprets them as parallel manifestations or aspects of a single real being: to this we may give the name of *psychophysical monism.* C. A. *Strong*, Why the Mind has a Body, p. 299.

monistically (mọ-nis′ti-kạl-i), *adv.* In the manner of the monists; in accordance with monistic philosophy.

> So far as the present work is concerned, it knows nothing of the value judgments by which the world ground is interpreted in terms of ethical personality; and it ignores all psychological experiences in which the inworkings of a transcendent moral person are known—experiences construed now *monistically* and now pluralistically.
> *Jour. Philos., Psychol. and Sci. Methods*, Aug. 4, 1904, [p. 442.

monistichous (mọ-nis′ti-kus), *a.* [Gr. *μόνος*, single, + *στίχος*, row, file.] Covered with a single layer of cells, like the ommatidium or structure which underlies the lens unit of the eye of a scorpion.

monitor, *n.* 9. In *hydraul.*, a device consisting of a universal-jointed pipe, to which is attached a nozle throwing a powerful stream of water: used in hydraulic mining and on fire-boats. See *hydraulic mining*, under *hydraulic.*—10. A turret or tool-holder in a lathe. See ★*turret*^{1}, 6.—11. Same as ★*catamaran*, 4.—**Gould's monitor**, *Monitor gouldi*, a large Australian lizard, named after the naturalist John Gould.

monitor (mon′i-tọ̈r), *v. t.* To be a monitor or adviser to; admonish.

> So after my own heart! I knew, I knew
> There was a place untenanted in it;
> In that same void white Chastity shall sit,
> And *monitor* me nightly to lone slumber.
> *Keats*, Endymion, iv. 135.

monitor-lathe (mon′i-tọ̈r-lāᴛʜ), *n.* Same as *turret-lathe.*

monitorship (mon′i-tọ̈r-ship), *n.* The position and duties of a monitor.

monium (mō′ni-um), *n.* [NL., < Gr. *μόνος*, single, alone.] The name given by Sir W. Crookes to a supposed new chemical element the presence of which in salts of so-called ‘yttrium’ seemed to be indicated by a peculiar phosphorescent spectrum exhibiting a group of lines almost alone near the extreme ultraviolet (whence the name): it was later proposed to change the name to *victorium*, in honor of Queen Victoria. Monium must be looked upon as one of the large number of inferred but unestablished elements.

> In his presidential address to the British Association in 1898 he [Sir William Crookes] announced the discovery of yet another member of the rarer earths—*monium* or victorium. The spectroscopic examination of this showed the spectrum crossed by an isolated group of lines high up in the ultra-violet end, and the existence of which could be detected only upon the photographic sensitive negative. *Sci. Amer.*, Aug. 8, 1903, p. 99.

monkey, *n.* 10. In *mining*, an appliance for automatically gripping or letting go the rope in rope haulage.—11. *pl.* In the Australian bush, a sheep-shearer's name for sheep. [Slang.]

> No one felt better pleased than he did to see the last lot of ‘*monkeys*,’ as the shearers usually denominated sheep, leave the head-station.
> *A. C. Grant*, Bush Life in Queensland, I. 88, quoted in [E. E. Morris, Austral English.

12. A local name for the cinder-notch of the dam in an iron-making blast-furnace, through which the slag or cinder can be allowed to flow out as it accumulates in the smelting process. It is placed on the side of the furnace, and about 30 or 40 inches below the level of the twyers where the blast is introduced in furnaces of modern size.

> On the side of the furnace, and 30 to 40 inches below the level of the tuyeres, the “cinder notch” or “*monkey*” is situated. *Sci. Amer. Sup.*, Oct. 19, 1907, p. 242.

Green monkey, a name applied to several African monkeys of the genus *Cercopithecus*, but more particularly to *C. sabæus*, the general color of which is a greenish gray.—**Howling monkey.** Same as *howler*, 2.—**King-monkey**, *Colobus polycomus*, one of the colobes, or horse-tailed monkeys of Sierra Leone, having a pure white forehead that suggests a crown.—**Monkey bass.** See ★*bass*^{2}.—**Monkey flush.** See ★*flush*^{9}.—**Patas monkey.** Same as *patas.*—**Road-monkey**, in *lumbering*, one whose duty is to keep a logging-road in proper condition. Also *blue-jay.*—**Satan-monkey**, *Pithecia satanas*, the black saki, a South American monkey, dark brown or black in color, with a bushy tail, heavy whiskers, and a thick crest or wig.—**Stump-tailed monkey**, one of the short-tailed macaques, *Macacus arctoides*, of southeastern Asia.—**Sykes's monkey**, an East African species, *Cercopithecus albogularis*, black above and white beneath.—**Weeper** or **weeping monkey.** Same as *weeper*, 4.

monkey-belt (mung′ki-belt), *n.* *Naut.*, a waist-belt worn by a seaman when working in a dangerous position over the vessel's side, as when ‘cutting in’ a whale.

monkey-drift (mung′ki-drift), *n.* In *mining*, a small drift used by prospectors.

monkey-forecastle (mung′ki-fōr″kȧs-l), *n.* See ★*deck*, 2.

monkeyfy (mung′ki-fī), *v. t.*; pret. and pp. *monkeyfied*, ppr. *monkeyfying.* [*monkey* + *-fy.*] To make like a monkey, literally or figuratively.

> Notwithstanding the very *monkeyfying* process to which some of the illustrations of inferior human types have been subjected in this pictorial chorography, the correspondences are not such as to carry conviction to most minds. *Sir D. Wilson*, Prehistoric Man, I. 172.

monkey-gangway (mung′ki-gang″wā), *n.* A small gangway parallel with the main gangway. *Coal and Metal Miner's Pocket-book.*

monkey-jar (mung′ki-jär), *n.* A water-monkey.

monkey-jug (mung′ki-jug), *n.* A coarse earthenware jug with a globular body and narrow neck, covered with a grayish brown glaze made from wood ashes and sand. The body is modeled in the semblance of a grotesque human head, the eyeballs and teeth being made of a white, porous clay, and usually movable. These jugs were made at Bath, South Carolina, about the year 1863.

monkey-nut (mung′ki-nut), *n.* The peanut.

monkey-orchis (mung′ki-ôr″kis), *n.* A plant, *Orchis tephrosanthos.*

monkey-rolls (mung′ki-rōlz), *n. pl.* The smaller rolls in an anthracite breaker.

monkey-rope (mung′ki-rōp), *n.* *Naut.*, the rope secured to a monkey-belt.

monkey-shaft (mung′ki-shȧft), *n.* In *mining*, a shaft which rises from a lower to a higher level. [Australia.]

> They began to think they might be already too deep for it, and a small ‘*monkey*’-*shaft* was therefore driven upwards from the end of the tunnel.
> *G. Sutherland*, Tales of Goldfields, p. 69, quoted in [E. E. Morris, Austral English.

monkey's-pea (mung′kiz-pē), *n.* See ★*pea*^{1}.

monkey-twyer (mung′ki-twī″ėr), *n.* One of the blank twyer-openings built into a blast-furnace above the ordinary twyers to be used in case of an emergency. *Phillips and Bauerman*, Elements of Metallurgy, p. 225.

monkey-vine (mung′ki-vīn), *n.* A species of the genus *Ipomæa*, *I. Nil.*

monkey-yard (mung′ki-yärd), *n.* *Naut.*, an auxiliary spar; a light yard used in exercising and training cadets and apprentices on board ship or at a naval station.

monk's-head (mungks′hed), *n.* The dandelion. Also *priest's-crown* (which see).

mono-articular (mon″ọ-är-tik′ụ̄-lär), *a.* Same as *monarticular.* *Lancet*, Aug. 22, 1903, p. 513.

monoazo (mon-ọ-az′ō), *a.* [*mono-* + *azo-.*] Pertaining to a chemical compound that contains one azo group.—**Monoazo color.** See ★*color.*—**Monoazo type**, a type of coal-tar coloring matter characterized by the presence of one azo group.

monobacillary (mon-ọ-bas′i-lạ̄-ri), *a.* [Gr. *μόνος*, single, + NL. *bacillus* + *-ary.*] Relating to one species of bacillus.

monobacteria (mon″ọ-bak-tē′ri-ạ̈), *n. pl.* [NL., < Gr. *μόνος*, single, + NL. *bacteria.*] Bacteria the cells of which are separate. *Billroth.*

monobacterial (mon″ọ-bak-tē′ri-ạl), *n.* [Gr. *μόνος*, single, + NL. *bacterium* + *-al*^{1}.] Relating to one form of bacterium.

Monobar chain. See ★*chain.*

monobasic, *a.* 2. Pertaining or relating to monobasis.—**Monobasic phosphate.** See ★*phosphate.*

monobasicity (mon″ọ-bā-sis′ị-ti), *n.* [*monobasic* + *-ity.*] In *chem.*, the character of being monobasic; the character of an acid as containing but one atom of hydrogen replaceable by a metal or electropositive radical; or the special character of a salt as containing a metal or electropositive radical replacing but one atom of hydrogen out of a larger number of such replaceable atoms in the corresponding acid.

monobasis (mọ-nob′ạ-sis), *n.* [Gr. *μόνος*, single, + *βάσις*, step (used in the sense of descent).] Descent on simple or narrow lines, as by inbreeding, or by vegetative propagation: the alternative of symbasis as a method of descent. *Cook and Swingle.*

monobium (mo-nō′bi-um), *n.*; pl. *monobia* (-ạ̈) [NL., < Gr. *μόνος*, single, + *βίος*, life.] A unicellular organism which lives a free or independent life, as contrasted with a cœnobium, one that is a unit in an aggregation of cells. *Haeckel.*

monoblepsia (mon-ọ-blep′si-ạ̈), *n.* [NL.] Same as *monoblepsis.*

monobranchiate (mon-ọ-brang′ki-āt), *a.* [*mono-* + *branchiate.*] Having but one set of branchiæ or gills. *Syd. Soc. Lex.*

monobromacetanilid (mon″ọ-brōm-a-se-tan′-i-lid), *n.* [*mono-* + *brom*(*ine*) + *acetanilid.*] A colorless, crystalline, synthetic compound, $C_6H_4.Br.NH.C_2H_3O$, obtained by the action of bromine on acetanilid and said to combine the sedative effect of bromine and the antipyretic effect of acetanilid. Also *antisepsine.*

monobrom-derivative (mon″ọ-brōm-dẹ-riv′a̤-tiv), *n.* In *organic chem.*, a class-name applied to compounds containing one atom of bromine in the place of one of hydrogen. It is synonymous with *monobrom substitution-product.*

monocarp, *n.*— **Perennial monocarp,** a plant which lives many years but dies after once flowering, as the common century-plant. *Möbius.*

monocarpal (mon-ọ-kär′pa̤l), *a.* Same as *monocarpous.*

monocarpian (mon-ọ-kär′pi-a̤n), *a.* Same as *monocarpous.*

monocelled (mon′ọ-seld), *a.* [Gr. *μόνος*, single, + E. *cell* + *-ed*^{2}.] Consisting of but a single cell; unicellular: said of organisms such as the *Protozoa* and *Protophyta.*

Monocentric eyepiece. See ⋆*eyepiece.*

monochasy (mọ-nok′a̤-si), *n.* Same as *monochasium.*

monochlor-. [*mono-* + *chlor*(*in*)-.] In *chem.*, in compound words, signifying the presence of one atom of chlorin in combination or introduced by substitution, as iodine monochlorid, and monochloracetic acid.

monochloracetic (mon″ọ-klō-ra̤-set′ik), *a.* [*mono-* + *chloracetic.*] Noting an acid, a colorless crystalline compound, $CH_2Cl.COOH$, prepared by the action of chlorin on acetic acid. It crystallizes in needles or rhombic plates, melts at 62.5–63.5° C., boils at 185–187° C., and attacks the skin: used in the synthesis of indigo.

monochlor-derivative (mon″ọ-klōr-dẹ-riv′a̤-tiv), *n.* In *organic chem.*, the class-name applied to compounds containing one atom of chlorin in the place of one of hydrogen. It is synonymous with *monochlor substitution-product.*

monochoanitic (mon″ō-kō-a̤-nit′ik), *a.* [Gr. *μόνος*, simple, + *χόανος*, funnel, + *-ite*^{2} + *-ic.*] Having simple funnels: used of the ammonoid cephalopods, and expressing a primitive condition of shell structure.

monochordist (mon′ọ-kôr-dist), *n.* [*monochord* + *-ist.*] One who plays upon or writes about the monochord.

monochordize (mon′ọ-kôr-dīz), *v. i.*; pret. and pp. *monochordized*, ppr. *monochordizing.* [*monochord* + *-ize.*] To play on, or as on, the monochord. [Rare.]

> He became gay, did leap for joy, would loll and rock himself in the cradle, then nod with his head, *monochordising* with his fingers. *Rabelais* (trans.), i. 48.

monochromasy (mon-ọ-krō′ma̤-si), *n.* [*monochroma*(*tic*) + *-sy.*] In *psychol.*, that form of color-blindness in which all visible objects are seen as shades of the same quality. As opposed to *dichromasy*, by the adherents of the Young-Helmholtz theory of color-vision, the term leaves it open as to whether the single remaining visual quality is a color or a brightness. There is now, however, no doubt that monochromasy is identical with total color-blindness, and that the vision of the monochromate is gray-vision and that only. *Stud. Yale Psychol. Lab.*, 1900, p. 15.

monochromate (mon-ọ-krō′mạt), *n.* [*mono-* + *chromate.*] 1. In *chem.*, a normal chromate, as of potassium, K_2CrO_4, in contradistinction to a dichromate or pyrochromate, as $K_2Cr_2O_7$: the former may be viewed as $K_2O.CrO_3$, and the latter as $K_2O.2CrO_3$.— 2. In *psychol.*, a totally color-blind person; one who is afflicted with monochromasy. *Baldwin*, Dict. Philos. and Psychol., II. 793.

monochromatic, *a.* 2. In *psychol.*, pertaining to or characterized by monochromasy: as, *monochromatic* vision.— 3. Having an affinity for only one dye at a time, in contradistinction to polychromatic.— **Monochromatic illuminator.** See ⋆*illuminator.*

II. *n.* Same as ⋆*monochromate*, 2.

monochromatism (mon-ọ-krō′ma̤-tizm), *n.* [*monochromat-ic* + *-ism.*] Monochromatic light or its production.

> *Monochromatism.*—Fabry and Perot . . . recommend as a source of monochromatic light the arc produced between mercury electrodes in a Torricellian vacuum. *Appleton's Ann. Cyc.*, 1899, p. 707.

monochromatist (mon-ọ-krō′ma̤-tist), *n.* Same as ⋆*monochromist.*

monochrome, *n.* II. *a.* Of one color; painted in one color, monochromic.

monochromic (mon-ọ-krō′mik), *a.* [*monochrome* + *-ic.* See *monochrome.*] Of one color; pertaining to or of the nature of monochromy; monochromical.

monochromist (mon′ọ-krō-mist), *n.* [*monochrom*(*e*) + *-ist.*] One who paints in monochrome.

monocle, *n.* 3. In *photog.*, an uncorrected spectacle-lens, usually periscopic, of about 1¼ inches diameter, and of a focus of 2 inches and upward. It is necessary to make correction in focussing since the lens has both a chemical and a visual focus. For ordinary landscape work this correction may be made by means of the formula $f=f0{\cdot}02$, which is practically one fiftieth of the focus. This is only applicable when the lens is working at its equivalent focus. *Woodbury*, Encyc. Dict. of Photog., p. 290.

monocleid (mon′ọ-klīd), *a.* [Gr. *μόνος*, single, + *κλείς* (*κλειδ-*), key.] Having, or locked by, a single key: said of certain writing-desks and cabinets in which all the compartments are fastened by locking a single lock.

Monoclinal shifting, the tendency of a stream flowing parallel to the strike of tilted strata to shift to one side in eroding its valley. The shifting is in the direction of the dip of the rocks and results in sapping the valley bluff on the down-dip side. *Chamberlin and Salisbury*, Geol., I. 120.

monococcus (mon-ọ-kok′us), *n.*; pl. *monococci* (-sī). [NL., < Gr. *μόνος*, single, + *κόκκος*, berry (coccus).] A coccus form of bacteria in which the cells are separate. *Billroth.*

monocœlic (mon-ọ-sē′lik), *a.* [Gr. *μόνος*, single, + *κοιλία*, a cavity.] Having only one cavity.

Monocondylia (mon-ọ-kon-dil′i-a̤), *n. pl.* [NL.] The more commonly used form of *Monocondyla.*

monocondylic (mon″ọ-kon-dil′ik), *a.* Same as *monocondylian.*

monocondylous (mon-ọ-kon′di-lus), *a.* [As *Monocondyl*(*a*) + *-ous.*] Having a single occipital condyle, as is the case with birds and reptiles, which are collectively termed *monocondylia*: contrasted with ⋆*amphicondylous.*

monocormic (mon-ọ-kôr′mik), *a.* [Gr. *μόνος*, single, + *κορμός*, a tree-trunk.] In *bot.*, having but one trunk, or main axis of growth.

monocot (mon′ọ-kot), *n.* An abbreviated form, among botanists, of *monocotyledon.*

monocotyl (mon-ọ-kot′l), *n.* [Gr. *μόνος*, single, + *κοτύλη*, a cup, a socket.] Same as *monocotyledon.*

Monocotyle (mon-ō-kot′i-lē), *n.* [NL. (Taschenberg, 1878), < Gr. *μόνος*, single, + *κοτύλη*, a cup, a socket.] The typical genus of the family *Monocotylidæ.*

monocotylean (mon-ọ-kot-i-lē′a̤n), *a.* and *n.* I. *a.* Same as *monocotyledonous.* [Rare.]

II. *n.* Same as *monocotyledon.* [Rare.]

Monocotylidæ (mon″ọ-ko-til′i-dē), *n. pl.* [NL., < *Monocotyle* + *-idæ.*] A family of trematodes, of the order *Heterocotylea*, having the posterior sucker usually small, no anterior suckers, and the common genital pore median. It includes the genera *Monocotyle, Calicotyle,* and *Pseudocotyle*, parasites of sharks and rays.

monocotyloid (mon-ọ-kot′i-loid), *a.* and *n.* [*monocotyl* + *-oid.*] I. *a.* Resembling a monocotyledon.

II. *n.* A plant which resembles a monocotyledon.

monocotylous (mon-ọ-kot′i-lus), *a.* [NL. *monocotylus*, < Gr. *μόνος*, single, + *κοτύλη*, cup.] 1. Having but one vent or mouth.— 2. Same as *monocotyledonous.* *N. E. D.*

monocranus (mo-nok′ra̤-nus), *a.*; pl. *monocrani* (-nī). [NL., < Gr. *μόνος*, single, + *κρανίον*, the skull.] A monster having a single skull but more or less duplication of the parts of the face.

monocratic (mon-ọ-krat′ik), *a.* Pertaining to, or of the nature of, monocracy; monarchic.

monocrepid (mon-ọ-krep′id), *n.* [Gr. *μόνος*, single, + *κρηπίς*, foundation.] In the structure of silicious sponge-spicules, such irregular forms or desmata as have only a single fundamental layer.

monocrotic (mon-ọ-krot′ik), *a.* [Gr. *μόνος*, single, + *κρότος*, a stroke, beat.] Striking once: said of a pulse the sphygmographic tracing of which shows but one notch, the down stroke showing an unbroken line.

monocrotism (mọ-nok′rọ-tizm), *n.* [*monocrot*(*ic*) + *-ism.*] A condition in which there is but one pulse-beat for each contraction of the heart: the opposite of *dicrotism.*

monocrotous (mọ-nok′rọ-tus), *a.* Same as ⋆*monocrotic.*

Monocular rivalry. See ⋆*rivalry.*

monoculist (mo-nok′ụ-list), *n.* [LL. *monocul*(*us*), one-eyed, + *-ist.*] A one-eyed person. *N. E. D.*

monocycle, *n.* 2. In *biol.*, the type of individual or racial development which consists of but a single cycle: opposed to ⋆*polycycle.* *Hyatt*, 1893.

monocyclic, *a.* 3. In *bot.*, living only one season; annual: opposed to *dicyclic.* See ⋆*dicyclic*, 3 (*b*). *F. E. Clements.*— 4. In *elect.*, pertaining to a single-phase alternating-current system of electric distribution, which utilizes an auxiliary electromotive force (the teaser electromotive force) out of phase with the main electromotive force, and wattless, that is, supplying no power or practically no power, but only wattless currents. See ⋆*wattless.*— 5. Of or pertaining to a monocycle. See ⋆*monocycle*, 2.— **Monocyclic generator,** a polyphase generator, the armature of which has two windings, a main coil and a lesser coil in quadrature with the former.— **Monocyclic system,** in *phys.*: (*a*) A mechanical system within which only stationary movements in closed curves occur and between the portions of which only conservative forces are active. (*b*) See ⋆*monocyclic*, 4.

monocyclon (mon-ọ-sī′klon), *n.*; pl. *monocycla* (-kla̤). [NL.] In *biol.*, same as ⋆*monocycle.*

monodactylate (mon-ọ-dak′ti-lāt), *a.* [*monodactyl* + *-ate*^{1}.] Having, like a horse, a single digit.

> It is, however, certain that there is a *monodactylate* representative of the family [*Proterotheriidæ*]. *Encyc. Brit.*, XXX. 509.

monodactyly (mon-ọ-dak′ti-li), *n.* [*monodactyl* + *-y*^{3}.] The state of having but one digit in the foot. The horse is a typical example of monodactyly, but the condition is also found in some of the *Litopterna* and, abnormally, in other animals.

monodermic (mon-ọ-dėr′mik), *n.* [Gr. *μόνος*, single, + *δέρμα*, skin.] Consisting of or pertaining to a single layer of cells; epithelial.

monodiametral (mon″ọ-dī-am′e-tra̤l), *a.* [Gr. *μόνος*, single, + *διάμετρος*, diameter.] Having a single diameter: said of quartan curves.

monodic^2 (mọ-nod′ik), *a.* [Gr. *μόνος*, single, + *ὁδός*, way.] In *biol.*, along a single path: used by Giglio Tos in the phrase *monodic development* to express his peculiar conception of biological ontogeny. See ⋆*polyodic*^{2}.

monodiplopia (mon-ọ-di-plō′pi-a̤), *n.* [NL., < Gr. *μόνος*, single, + *διπλόος*, double, + *ὤψ* (*ὠπ-*), eye.] Double vision when an object is looked at with one eye.

monodist, *n.* 2. One who writes or sings a monody. *N. E. D.*

monodomous (mọ-nod′ọ-mus), *a.* [Gr. *μόνος*, single, + *δόμος*, house.] A term applied to a formicary consisting of but a single nest: opposed to ⋆*polydomous.* *Forel.*

monodontal (mon-ọ-don′ta̤l), *a.* [*monodont* + *-al*^{1}.] 1. Having a single tooth; monodont; also, of the nature of a single tooth.

> They [the narwhals] were near me; so near that I could see their checkered backs. . . . The horn, that *monodontal* process which gives them their name of sea-unicorn, was perfectly examinable. *Kane*, in U. S. Grinnell Exped. (First Exped., 1856), [p. 340.

2. In *elect.*, having one armature-tooth per pole for each phase: said of the windings of certain generators and motors.

> Low-voltage machines are usually provided with polyodontal windings, these windings having several separate armature teeth per pole per phase, while the high-voltage machines are generally *monodontal.* *Encyc. Brit.*, XXXI. 889.

monodramatist (mon-ọ-dram′a̤-tist), *n.* [*monodramat*(*ic*) + *-ist.*] A writer of monodramas.

monodrome (mon′ọ-drōm), *a.* [Gr. *μόνος*, single, + *δρόμος*, a running, course, race.] Same as *monodromic.*

> On *monodrome* functions and transcendental numbers. *Nature*, Feb. 11, 1904, p. 359.

monodromy (mọ-nod′rō-mi), *n.* [*monodrome* + *-y*^{3}.] In *math.*: (*a*) The characteristic property that, if the argument returns by any path to its original value, the function also returns to its original value. (*b*) The property that the curves described by a revolution or rotation through four right angles are closed.

> It is pointed out that in the non-Pythagorean geometries devised by Hilbert, Helmholtz's axiom of *monodromy* is not verified, inasmuch as it is possible, by rotation through four right angles, to bring the points of a line into positions which they do not occupy before the rotation. It is pointed out further that, in the same geometries, it is possible to pass from one point to another of a straight line without passing through all intermediate points and without leaving the line. The application of the name "geometry" to systems which admit such possibilities is criticised. *Nature*, Feb. 19, 1903, p. 382.

Monodromy group. See ★*group*^{1}.— **Monodromy of space,** the characteristic property that it coincides with itself (with its trace) after revolution through a perigon about any axis.

monody, *n.* 3. A poem in which grief for the death of the subject of the poem is expressed.

> In this *Monody*, the author bewails a learned friend, unfortunately drowned . . . and by occasion foretells the ruin of our corrupted clergy, then in their height.
> *Milton*, Lycidas, argt.

monodynamism (mon-ọ̄-dī′nạ-mizm), *n.* [Gr. *μόνος*, single, + *δύναμις*, power.] The theory that all natural phenomena are the manifestations of a single principle, power, or force.

> The monotheistic tendency is visible in Greece, as elsewhere. . . . Side by side with this tentative and growing monotheism there is a bold and unhesitating *monodynamism*, the efforts of all the early thinkers being to reduce all the powers of nature to one principle.
> *G. H. Lewes*, History of Philosophy, I. 3.

monodynamous (mon-ọ̄-dī′nạ-mus), *a.* [Gr. *μόνος*, single, + *δύναμις*, power, + *-ous*.] In *bot.*, having one stamen larger than the others.

monoeidic (mon-ọ̄-ī′dik), *a.* [Gr. *μονοειδής*, of one form.] Of one form or nature. *N. E. D.*

> What then shall we imagine to be the aspect of the supreme beauty itself, simple, pure, uncontaminated with the intermixture of human flesh and colours, and all other idle and unreal shapes attendant on mortality; the divine, the original, the supreme, *the monoeidic* beautiful itself?
> *Shelley*, Essays, Letters from Abroad, Trans. and Frag., [I. 124.

mono-electronic (mon″ọ̄-ē-lek-tron′ik), *a.* [Gr. *μόνος*, single, + E. *electron* + *-ic*.] Containing a single electron: said of atoms which when dissociated break up into one negatively charged particle, and one much larger positively charged portion.

monœstrous (mon-es′trus), *a.* [Gr. *μόνος*, single, + *οἰστρος*, vehement impulse, + *-ous*.] Having but one œstrum. See the extract.

> F. H. A. Marshall finds that in Scottish black-faced sheep the length of the sexual season varies with the locality, both in regard to the number of diœstrous cycles in a season and to the duration of each cycle. There is a perfect gradation between the *monœstrous* condition of some wild sheep and the extreme polyœstrum of certain merinos. *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 484.

Monogameliæ (mon″ọ̄-ga-mē′li-ē), *n. pl.* [NL., < Gr. *μόνος*, single, + *γαμήλιος*, of marriage, < *γάμος*, marriage.] In Lankester's classification, a family of *Discomedusæ* in which the four subgenital pits are united into one continuous cavity: contrasted with *Tetragameliæ*.

monogamelian (mon″ọ̄-ga-mē′li-ạn), *a.* [*Monogameliæ* + *-an*.] Relating or pertaining to the *Monogameliæ*; having the four subgenital pits united into one continuous cavity.

monoganglial (mon-ọ̄-gang′gli-ạl), *a.* [Gr. *μόνος*, single, + *γάγγλιον*, a tumor. See *ganglion*.] In *pathol.*, affecting only one gland: said of a bubo.

monogastric, *a.* 2. Said of a muscle having but one part or belly.

> Digastric [muscle]. This, in spite of its name, is really a *monogastric* muscle in the Carnivora.
> *Proc. Zool. Soc. London.*

monogatari (mō-nọ̄-ga-tä′rē), *n.* [Jap., history, story, narration.] In Japanese literature, a story; a narrative.

> If we judge Old Japan by its artistic and literary production, it is precisely in those works which are least Chinese that the greater value is to be found—the ancient poetry, the mediæval *monogatari*, some of the later romances, and the works of the ukiyo school of art. The histories are dreary compilations, of no merit and little authority; the philosophies are platitudinarian logomachies founded on partially understood Chinese arguments; and such science as Old Japan possessed is a mere echo of that of China.
> *Athenæum*, May 6, 1905, p. 552.

monogen (mon′ọ̄-jen), *n.* [See *monogenesis*.] In *chem.*, an element which combines in one proportion only. *N. E. D.*

monogene (mon′ọ̄-jēn), *a.* [Gr. *μονογενής*, produced once: see *monogenous*.] Noting those volcanic outbreaks which consist of a single mass of lava, usually quite infusible and viscous, and which have been formed by one eruptive effort: a term suggested by Strübel. *Geikie*, Text-book of Geol., p. 322.

monogeneity (mon-ọ̄-je-nē′i-ti), *n.* The character of being monogenous.

monogenesis, *n.* (*d*) Origination or derivation from a single species, or, in a restricted sense, from a single pair. Contrasted with ★*polygenesis* (which see).

monogenetic, *a.* 4. Having the whole life-history a single cycle, there being no alternation of generations, or, in parasitic forms, of hosts.—**Monogenetic color.** See ★*color*.

monogenic (mon-ọ̄-jen′ik), *a.* [See *monogenous*.] 1. Same as *monogenous*.—2. In *chem.*, combining with an element in only one form; forming only one compound with a monovalent element. *N. E. D.*—3. Same as *monogenetic*.—4. In *petrog.*, noting a fragmental rock, conglomerate or breccia, whose fragments or parts are all of one kind of rock.—5. Having a univocal derivative: the better and now accepted form for *monogeneous*, 2, and *monogenous*, 3.—**Monogenic function,** $y \equiv fx$, one having the property that $\frac{\Delta y}{\Delta x}$ tends, in general, to a unique finite limit.

Monogenica (mon-ọ̄-jen′ĭ-kạ̈), *n.* See ★*Asporea*.

monogeny, *n.* 3. The 'natal probability,' or statistical expectation of offspring, based on the age of one parent only.

monoglyphic (mon-ọ̄-glif′ik), *a.* [Gr. *μόνος*, single, + *γλυφή*, carving.] Having only one siphonoglyph, the sulcus, as certain polyps: contrasted with ★*diglyphic*.

> A discussion of the variations in Metridium dianthus. In reference to the last topic, it may be noted that the author seeks to show:—(a) that regular hexamerous diglyphic polyps arise non-sexually as well as sexually; (b) that *monoglyphic* forms arise sexually as well as non-sexually. *Jour. Roy. Micros. Soc.*, Feb., 1903, p. 45.

monogonium (mon-ọ̄-gō′ni-um), *n.*; pl. *monogonia* (-ạ̈). [Gr. *μόνος*, single, + *γόνος*, generation.] The non-sexual sporulating stage of the malarial parasite as it occurs in man. *Grassi.*

> In the Atti della Fondazione Scientifica Cagnola (vol. xviii.), Prof. Grassi gives an excellent survey of our present knowledge of malaria. He describes fully its epidemiology and prophylaxis, and the morphology and development of the malaria parasite. In the latter connection he introduces some new terms. The asexual parasites producing the febrile attacks are named "*monogonia*," the developmental forms in the mosquito "amphigonia," while the recurrent attacks of fever which occur at long intervals after infection are regarded as being due to parthenogenetic parasites, which develop from the non-flagellating (female) sexual cells, or gametocytes. *Nature*, Sept. 24, 1903, p. 517.

monogram-machine, *n.* 2. A sewing-machine having a universal feed-motion and presenting the fabric to the needle in any direction, the feed being controlled by a pantograph. In practice, ten or more machines are placed in a line upon a bench, the power being under the control of the operator, who sits at the bench at the right of the battery of machines. Each machine is supplied with the same quality of thread and the fabric clamped in the feed may be the same in each machine, in which case the finished work will be alike in all the machines. A pantograph is placed on the bench before the operator and by means of suitable rods and joints is connected with the feed of each machine. The design to be stitched upon the fabric is placed on the bench under the pointer of the pantograph and the operator, by making the pointer trace the design, causes, through the pantograph, the feed in each machine to present the fabric to its needle in the same order and all the machines to make an exact reproduction of the design in stitching.

Monograptus (mon-ọ̄-grap′tus), *n.* [Gr. *μόνος*, single, + *γραπτός*, written (see *graptolite*).] A genus of monoprionidian graptolites with straight or curved hydrosoma and the thecæ in contact: abundant in the Silurian.

monohydrate (mon-ọ̄-hī′drāt), *n.* [Gr. *μόνος*, single, + *ὕδωρ* (*ὑδρ-*), water, + *-ate*^{1}.] In *chem.*, a substance containing one molecule of water in a combined state: as, the *monohydrate* of sodium carbonate, $Na_2CO_3.H_2O$, now an article of commerce under the trade-name 'concentrated sal-soda.' Sometimes, though improperly, 'monohydrate' is applied to a substance which may be viewed as derived from and as containing the constituent elements of one molecule of water, though no longer united as in water; thus, sulphuric acid, H_2SO_4, is sometimes called a 'monohydrate,' since it may be produced by the interaction of one molecule each of sulphur trioxid and water, $H_2O + SO_3 = H_2SO_4$.

monoic (mo-nō′ik), *a.* Same as *monœcious*.

monoicous (mọ̄-noi′kus), *a.* Same as *monœcious*.

monoidal (mọ̄-noi′dạl), *a.* [*monoid* + *-al*^{1}.] In *math.*, connected with a monoid, a hypersurface of nth order with an $(n-1)$ fold point.

mono-ideistic (mon″ọ̄-ī-dẹ̄-is′tik), *a.* In *psychol.*, pertaining to or characterized by mono-ideism.

> The history of philosophy shows that the *monoideistic* thinkers . . . either stiffened in the mold by precociously formulating and defining their ideas . . . or else were the victims of an environment or an age itself overwrought, one-sided and extreme.
> *G. S. Hall*, Adolescence, II. 50.

mono-infection (mon″ọ̄-in-fek′shọn), *n.* Infection with but one variety of pathogenic organism. *Buck*, Med. Handbook, VIII. 500.

monolater (mọ̄-nol′ạ-tėr), *n.* [See *monolatry*.] One who worships only one god. See *monolatry*.

monolatrous (mọ̄-nol′ạ-trus), *a.* [*monolatr*(*y*) + *-ous*.] Pertaining to or of the nature of monolatry; practising monolatry.

Monolene (mọ̄-nol′ẹ̄-nē), *n.* [NL., < Gr. *μόνος*, single, + *ὠλένη*, arm (see *ulna*).] A genus of flounders found on the Atlantic coast of the United States south to the West Indies.

monolepsis (mon-ọ̄-lep′sis), *n.* [NL., < Gr. *μόνος*, one, only, + *λῆψις*, a taking.] The transmission to a cross-bred organism and to its descendants of the characteristics of only one parent, to the exclusion of those of the other: contrasted with ★*amphilepsis*. *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., 1902, I. 155.

monoleptic (mon-ọ̄-lep′tik), *a.* [*monolepsis*.] Pertaining to, by means of, or exhibiting monolepsis. *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., 1902, I. 155.

monoline (mon′ọ̄-līn), *n.* [Gr. *μόνος*, single, + E. *line*^{2}.] A trade-name of a form of type-setting machine which produces a solid line of type, or type-bar.

> The Scudder *monoline*, a Canadian machine somewhat like the linotype, except that the matrices are located upon a disk. *Census Bulletin* 216, June 28, 1902, p. 51.

monolithic, *a.* 4. Made of one mass of artificial stone, as a concrete of broken stone, cement, and sand, without joints: used in structures such as mills and houses, dams, retaining-walls, and bridge abutments and piers, floors, columns, and other similar constructions.

> The writer believes that a masonry or *monolithic* dam would be highly objectionable, either at Panama or Nicaragua, on account of the great damage that might be done to it in a few moments by an earthquake, and which might require several years to repair, and in the meantime the canal would be closed.
> *Sci. Amer. Sup.*, Jan. 31, 1903, p. 22648.

monolog, *n.* A simplified spelling of *monologue*.

monologic (mon-ọ̄-loj′ik), *a.* [*monolog*(*ue*) + *-ic*.] Pertaining to, or of the nature of, a monologue.

monological (mon-ọ̄-loj′i-kạl), *a.* [*monolog*(*ue*) + *-ic* + *-al*^{1}.] Pertaining to or of the nature of monologue; fond of monologue.

> There have been three famous talkers in Great Britain, either of whom would illustrate what I say about dogmatists. . . . and Thomas, last of the Dynasty. . . . The talking dynasty has always been hard upon us Americans. . . . As for King Thomas, the last of the *monological* succession, he made such a piece of work with his prophecies and his sarcasms about our little trouble with some of the Southern States, that we came rather to pity him for his whims and crotchets than to get angry with him for calling us bores and other unamiable names.
> *O. W. Holmes*, Poet at the Breakfast-table, x.

monologize, *v. i.* Same as *monologuize*.

monologuist (mon′ọ̄-log-ist), *n.* Same as *monologist*.

monoloph (mon′ọ̄-lof), *n.* [Gr. *μόνος*, single, + *λόφος*, tuft.] In the hexactinellid sponges, having one tuft or rope of elongate spicules for the attachment of the sponge; also, in sponge-spicules derived from the caltrop, having one of the arms tufted.

monolophous (mọ̄-nol′ọ̄-fus), *a.* [Gr. *μονος*, single, + *λόφος*, crest, + *-ous*.] In tetractinal sponge-spicules, having one ray forked or branched like a crest. Compare ★*dilophous*, ★*trilophous* and ★*tetralophous*.

monomeniscous (mon″ọ̄-mẹ̄-nis′kus), *a.* [Gr. *μόνος*, single, + *μηνίσκος*, a crescent (a lens).] Having but a single lens in the eye.

> The central eyes [of Limulus] are "simple eyes," that is to say, they have a single lens and are hence called *monomeniscous*. *Encyc. Brit.*, XXV. 526.

monomeric (mon-ọ̄-mer′ik), *a.* [Gr. *μόνος*, single, + *μέρος*, part, + *-ic*.] 1. In *zoöl.*, relating to or derived from a single metamere; consisting of only one piece or segment. *Baldwin*, Dict. of Philos. and Psychol., II. p. 151.—2. In *petrog.*, a term applied by Stache and John (1879) to segregations in igneous rocks that are composed of a single kind of mineral.

monomethylic (mon″ọ̄-me-thil′ik), *a.* [*mono-* + *methyl* + *-ic*.] Containing one univalent methyl group, CH_3, in the molecule: applied to organic compounds.

monomodal (mon-ọ̄-mō′dạl), *a.* [Gr. *μόνος*, single, + L. *modus*, mode, + *-al*^{1}.] Having only one mode. See ★*mode*, *n.*, 11 (*b*).

> The author shows that a *monomodal* curve is not sufficient evidence that a population is homogeneous, but that a process of biological analysis must precede the general mathematical analysis, to attain satisfactory results. *Bot. Gazette*, April, 1904, p. 314.

monomolecular (mon″ọ-mọ-lek′ụ̄-lạ̈r), *a.* [Gr. *μόνος*, single, + NL. *molecula*, molecule, + *-ar*^{3}.] Consisting of or involving a single molecule: in *chem.*, of a substance, having its simplest molecular composition in contradistinction from polymeric derivatives formed by the union of two, three, or more of the simplest molecules. Thus, formic aldehyde (CH_2O) may be spoken of as monomolecular, and metaformaldehyde ($C_3H_6O_3$) as its trimolecular derivative, $3CH_2O$.

In the synthesis of phenyltolylmethane from toluene and benzyl chloride in the presence of aluminium chloride, the reaction is *monomolecular*, and is probably one between toluene and a compound of aluminium and benzyl chlorides, and the same applies to the reaction in the presence of ferric chloride.
Jour. Phys. Chem., Oct., 1904, p. 521.

monomorphism (mon-ọ-môr′fizm), *n.* [*mono-morph*(*ic*) + *-ism.*] The state or condition of the members of a race or species in which they form a single group with respect to the distribution among them of a given characteristic.

Among the soles this uniformity or *monomorphism* no longer obtains. *Amer. Nat.*, July, 1903, p. 501.

mononeural (mon-ọ-nū′ral), *a.* [Gr. *μόνος*, single, + *νεῦρον*, nerve, + *-al*^{1}.] 1. Relating to one nerve, one source of nervous supply, or one neuromere.—2. Mononeurous.

mononeuritis (mon″ọ-nụ̄-rī′tis), *n.* [NL., < Gr. *μόνος*, single, + *νεῦρον*, nerve, + *-itis.*] Inflammation of a single nerve.

mononeurous (mon-ọ-nū′rus), *a.* [Gr. *μόνος*, single, + *νεῦρον*, nerve. See *Mononeura.*] 1. Having only a ganglionic nervous system; belonging to the *Mononeura.*—2. Mononeural.

monont (mon′ont), *n.* [Gr. *μόνος*, single, + *ὤν* (*ὀντ-*), being.] A non-sexual cell which gives rise to others by the process of fission.

mononuclear, *a.* **II.** *n.* A cell with a single nucleus; a uninuclear, as distinguished from a multinuclear, cell.

It is important, then, to note the percentage of large *mononuclears* met with in the series of typhoid fever cases, so that they may be compared with that of the malarial series to be dealt with presently.
Lancet, May 30, 1903, p. 1503.

mononucleated (mon-ọ-nū′klẹ-ā-ted), *a.* [*mono-* + *nucleus* + *-ate*^{1} + *-ed*^{2}.] Having but a single nucleus; uninucleated: said of certain cells.

With predominance of the large *mononucleated* cells filled with melanotic pigment.
Med. Record, Feb. 28, 1903, p. 336.

mononychous (mọ-non′i-kus), *a.* [Gr. *μονώνυχος*, also *μονῶνυξ*, having a single claw or hoof, solidungulate (applied to the horse), < *μόνος*, single, + *ὄνυξ*, claw, nail, hoof.] Having an undivided claw.

mononymy (mọ-non′i-mi), *n.* [*mononym*(*ic*) + *-y*^{3}.] A mononymic system of nomenclature.

monopectinate (mon-ọ-pek′ti-nāt), *a.* [Gr. *μόνος*, single, + L. *pecten* (*pectin-*), comb, + *-ate*^{1}.] In gastropods, having one row of plates in the ctenidium or gill, as in the *Streptoneura.* Compare *bipectinate.*

monoped (mon′ọ-ped), *a.* and *n.* [*mono-* + L. *pes* (*ped-*), foot.] **I.** *a.* Having but one foot (or leg), a condition sometimes found in human monstrosities.

II. *n.* A person, animal, or thing that has only one foot (or leg); specifically, a monster with only one foot (or leg).

monophagous (mọ-nof′ạ-gus), *a.* [Gr. *μονοφάγος*, < *μόνος*, single, alone, + *-φαγος*, < *φαγεῖν*, eat.] 1. Feeding on a single substance, or a single kind of food: opposed to *heterophagous.* —2. Specifically, of sporozoans, passing the entire life-cycle in one host; permanently intracellular: contrasted with ⋆*polyphagous.*

monophagy (mọ-nof′ạ-ji), *n.* [*monophag*(*ous*) + *-y*^{3}.] 1. The character or habit of being monophagous; the eating of only one kind of food.—2. The act or habit of eating alone. [Rare.]

monophase (mon′ọ-fāz), *a.* [Gr. *μόνος*, single, + *φάσις*, phase.] Having or exhibiting only a single phase; single-phase; monophasic. See ⋆*single-phase.*—**Monophase generator,** an alternating-current generator which produces a single-phase current.

monophasia (mon-ọ-fā′ziạ̈), *n.* [NL., < Gr. *μόνος*, single, + *φάσις*, speaking.] A form of aphasia in which the patient can articulate but one word or, at most, one sentence.

monophasic (mon′ọ-fā-zik), *a.* [*monophas*(*e*) + *-ic.*] Monophase; single-phase.

monophone (mon′ọ-fōn), *n.* [Gr. *μόνος*, single, + *φωνή*, voice.] Same as *homophone.* [Rare.]

monophonous, *a.* 2. Same as *homophonous.*

monophotal (mon′ọ-fō-tạl), *a.* Of or pertaining to the monophote.

monophrastic (mon-ọ-fras′tik), *a.* [Gr. *μόνος*, single, + *-φραστος*, < *φράζειν*, speak (*φράσις*, a speaking), + *-ic.*] 1. Consisting of a single word or phrase.—2. Speaking or responding in a single word or phrase, or with great brevity.

Boys especially are often dumb-bound, *monophrastic*, inarticulate, and semi-aphasic save in their own vigorous or inelegant way. *G. S. Hall*, Adolescence, II. 454.

monophthalmic (mon-of-thal′mik), *a.* [See *monophthalmus.*] Having only one eye.

Monophyes (mo-nof′i-ēz), *n.* [NL., < Gr. *μονοφυής*, of single nature, < *μόνος*, single, + *φύεσθαι*, grow.] The typical genus of the family *Monophyidæ.* *Claus*, 1874.

Monophyidæ (mon-ọ-fī′i-dē), *n. pl.* [NL., < *Monophyes* + *-idæ.*] A family of calyconectous siphonophorans, having a single nectophore at the apex of the long tubular stem, the cormidia eudoxiform, separated by equal free internodes, and each siphon with a bract. It includes, among other genera, *Monophyes*, *Cymba*, and *Sphæronectes.*

monophylesis (mon″ọ-fī-lē′sis), *n.* [Gr. *μόνος*, single, + *φυλή*, tribe.] Evolution in a single line of descent. See ⋆*polyphylesis.*

monophyllic (mon-ọ-fil′ik), *a.* [Gr. *μόνος*, single, + *φύλλον*, leaf, + *-ic.*] Consisting of a single leaf or leaf-like division: used of the sutural divisions in the shells of the ammonoid cephalopods.

monoplane (mon′ọ-plān), *n.* [Gr. *μόνος*, single, + E. *plane.*] A flying-machine or a gliding-machine which depends for sustention upon a single aëroplane (surface) or upon a single pair of aëroplanes laterally disposed. In a flying-machine of this type, M. Louis Bleriot crossed the English Channel, July 25, 1909. See ⋆*aëroplane*^{1}, *n.*, 2.

Another aëroplane . . . is the "*monoplane*" of M. Robert Esnault Pelterie. This, unlike most recent types, has only a single transverse supporting surface, which in one machine measured 9·6 metres from tip to tip with a superficial area of 18 square metres; in a more recent machine these dimensions have been reduced to 8·6 metres and 16 square metres respectively. *Nature*, Dec. 5, 1907, p. 106.

monoplastid (mon-ọ-plas′tid), *n.* [*monoplast* + *-id*^{2}.] A one-celled animal organism.

monoplegic (mon-ọ-plē′jik), *a.* [*monopleg*(*ia*) + *-ic.*] Relating to or suffering from monoplegia.

Monopleura (mon-ọ-plö′rạ̈), *n.* [NL., < Gr. *μόνος*, single, + *πλευρόν*, rib.] A genus of very inequivalve teleodesmaceous pelecypods, typical of the family *Monopleuridæ*, with a long, twisted, conical, attached right valve, a shallow left valve, and strongly developed dentition. It is found in the cretaceous rocks.

monopodium, *n.* 2. A form of table having only a central support, used by the ancient Romans.

monoprostyle (mon-ọ-prō′stīl), *a.* [*mono-* + *prostyle.*] In *arch.*, prostyle, with a single row of columns. See *prostyle*, with cut.

monops (mon′ops), *n.* [Gr. *μονώψ*, one-eyed, < *μόνος*, single, + *ὤψ*, eye.] A being with but one eye.

monopsia (mon-op′si-ạ̈), *n.* [NL., < Gr. *μόνος*, single, + *ὄψις*, vision, sight.] Same as *cyclopia.*

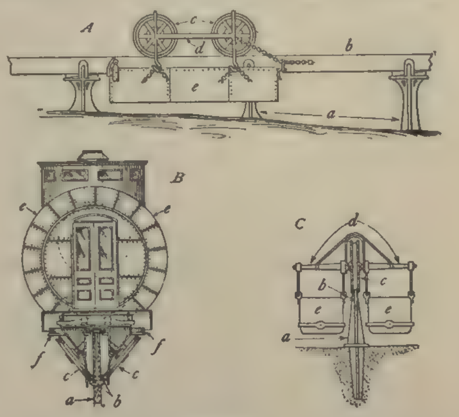
monopsychism (mon-ọ-sī′kizm), *n.* [Gr. *μόνος*, single, + E. *psychism.*] The theory that all souls (or the souls of all mankind) are one; the unity of souls asserted by this theory. *N. E. D.*

monopsychosis (mọ-nop-si-kō′sis), *n.* [NL., < Gr. *μόνος*, single, + *ψύχωσις*, animation (taken as 'mental action').] Same as *monomania.*

monopterous (mọ-nop′tẹ-rus), *a.* [Gr. *μόνος*, single, + *πτερόν*, wing.] Having but one wing, as some seeds.

monopylarian (mon″ọ-pi-lā′ri-ạn), *a.* Same as *monopylean.*

monorail (mon′ọ-rāl), *n.* [*mono-* + *rail*^{1}.] A railway in which the cars run on a single rail.



Monorail.

A, side elevation, suspended type; *B*, front view, supported type; *C*, front view, suspended type.
a, carrying-posts; *b*, single or monorail; *c*, supporting and guiding-wheels; *d*, frame from which cars are suspended; *e*, car bodies; *f*, driving-wheels.

This rail may be fixed to an overhead structure and the cars suspended from it, or it may be laid on ties or chairs and the cars run over it. In the latter case there are usually three rails, one to support the car, and two steadying or side-rails, but all placed on a single stand or chair in the center of the road-bed.

In the Langen *monorail* the car is hung from a single overhead rail; a line on this system is worked between Barmen and Elberfeld, a distance of about 9 miles, the cars for a part of the way being suspended over the river Wupper. *Encyc. Brit.*, XXXII. 143.

monorailroad (mon-ọ-rāl′rōd), *n.* Same as *monorailway.*

monorailway (mon-ọ-rāl′wā), *n.* [*monorail* + *way.*] Same as ⋆*monorail.*

A *monorailway* is employed at Clichy for completing the piling after the bags have been delivered upon the heaps by the inclined conveyors. These *monorailways* are 1,000 feet or more in length, and are constructed as desired on the tops of the great piles of coke.
Amer. Inventor, June 15, 1904, p. 267.

monorchidism (mo-nôr′ki-dizm), *n.* Same as *monorchism.*

monorefringent (mon″ọ-rẹ-frin′jẹnt), *a.* [*mono-* + *refringent.*] Refracting light in the manner of an isotropic, singly refracting medium: opposed to *birefringent.*

monorhinous (mon-ọ-rī′nus), *a.* [*monorhine* + *-ous.*] Having a single nasal passage, as in the lampreys; monorhinal; monorhine.

monosaccharide (mon-ọ-sak′ạ-rid), *n.* [*mono-* + *saccharide.*] A carbohydrate the molecule of which is not divisible into simpler groups without loss of its essential characteristics. According to the number of carbon atoms, monosaccharides are divided into trioses, tetroses, pentoses, hexoses, etc. One of the best-known examples is the hexose dextrose (glucose).

monose (mon′ōs), *n.* [Gr. *μόνος*, single, + *-ose.*] Same as ⋆*monosaccharide.*

monoseme (mon′ọ-sēm), *a.* [Gr. *μόνος*, single, + *σημεῖον*, a sign.] In *anc. pros.*, having a single mora or unit of time. See *monosemic.*

monoserial (mon-ọ-sē′ri-ạl), *a.* [Gr. *μόνος*, single, + L. *series*, series, + *-al*^{1}.] Being in one series: used in zoölogy and comparative anatomy, generally for a series of organs, cells, teeth, or the like, that may be in two or more series in other forms.

A transitional stage from the biserial archipterygium of the latter [Dipnoi] into the *monoserial* of recent sharks.
Encyc. Brit., XXIX. 398.

monosiphonic (mon″ọ-sī-fon′ik), *a.* [Gr. *μόνος*, single, + *σίφων*, siphon.] Monosiphonous; in hydroids, having the tubes of the hydrocaulus distinct from one another: opposed to ⋆*polysiphonic.*

monosodic (mon-ō-sō′dik), *a.* [Gr. *μόνος*, single, + NL. *sod-ium* + *-ic.*] In *chem.*, containing one atom of sodium: said of a salt: as, *monosodic* orthophosphate (NaH_2PO_4), a salt which occurs in normal human urine.

Calcium oxalate, which was ordinarily held in solution by the *monosodic* acid phosphate.
Med. Record, Feb. 14, 1903, p. 277.

monospermic (mon-ọ-spėr′mik), *a.* [Gr. *μόνος*, single, + *σπέρμα*, seed, + *-ic.*] 1. Exhibiting or pertaining to monospermy.—2. Same as *monospermous.*

monospermy (mon′ọ-spėr-mi), *n.* [Gr. *μόνος*, single, + *σπέρμα*, seed, + *-y*^{3}.] The entrance of but a single spermatozoön into the egg: the normal and, in most animals, the only type of fertilization: opposed to ★*dispermy* and *polyspermy*.

monosporangium (mon″ọ-spō-ran′ji-um), *n.*; pl. *monosporangia* (-a̤). [NL., < Gr. *μόνος*, single, + NL. *sporangium*.] A sporangium which contains monospores.

monospore (mon′ọ-spōr), *n.* [Gr. *μόνος*, single, + *σπορά*, seed (spore).] An asexual spore of the red algæ, which remains undivided and is thus distinguished from a tetraspore.

monosporiferous (mon″ō-spọ-rif′e̤-rus), *a.* [*monospore* + L. *ferre*, bear, + *-ous*.] Bearing monospores: said of algæ.

monostele (mon′ọ-stēl), *n.* [Gr. *μόνος*, single, + *στήλη*, pillar.] In *bot.*, a single undivided stele. See ★*stele*^{3}, 2, and compare ★*polystele*.

> Arrangement in strands: the central cylinder or *monostele*. *Encyc. Brit.*, XXV. 412.

monostelic (mon-ọ-stē′lik), *a.* [*monostele* + *-ic*.] In *bot.*, having a monostele. Also *monostelous*.

> Side by side with *monostelic* types which furnish a most interesting sequence. *Encyc. Brit.*, XXV. 415.

monostelous (mon-ọ-stē′lus), *a.* Same as ★*monostelic*.

monostely (mon-ọ-stē′li), *n.* [*monostele* + *-y*^{3}.] In *bot.*, the condition of being monostelic.

monostereoscope (mon-ọ-ster′ẹ-ọ-skōp), *n.* [Gr. *μόνος*, single, + E. *stereoscope*.] An apparatus for projecting two pictures upon a screen so as to appear as one, with stereoscopic or solid effect. The two pictures are projected from separate magic lanterns.

monostich, *n.* **II.** *a.* Consisting of a single line or verse.

monostichodont (mon-ọ-stik′ọ-dont), *a.* [Gr. *μόνος*, single, + *στίχος*, row, + *ὀδούς* (*ὀδοντ-*), tooth.] In leeches, having only one row of teeth in each jaw.

> Among the fresh-water leeches (Natantia), which have an eyeless ring between the third and fourth pairs of eyes, only the *monostichodont* forms (*i.e.*, those with a single row of teeth in each jaw) are important. *Buck*, Med. Handbook, IV. 701.

Monostomatidæ (mon″ọ-stọ-mat′i-dē), *n. pl.* [NL.] Same as *Monostomidæ*.

monostome (mon′ọ-stōm), *n.* [NL. *Monostomum*.] A trematoid of the genus *Monostomum*, or *Monostomulum*.

> The other case was that of an elderly woman from whose eye eight so-called *monostomes* were removed from the lens substance. The descriptions do not enable one to determine the species or to assert the identity of the forms. *Buck*, Med. Handbook, VII. 866.

Eye monostome, *Monostomulum lentis*, a small immature trematoid said to be parasitic in the eye of man.

monostomous (mọ-nos′tọ-mus), *a.* Same as *monostomatous*.

monostratified (mon-ọ-strat′i-fīd), *p. a.* [Gr. *μόνος*, single, + E. *stratified*.] In *biol.*, arranged in a single layer or stratum, like the cells in a simple epithelium. *Buck*, Med. Handbook, IV. 79.

monostromatic (mon″ọ-strọ-mat′ik), *a.* [Gr. *μόνος*, single, + *στρῶμα*(*τ-*), layer, + *-ic*.] Having only one layer of cells: said of the frond or tissue of an alga which is but one layer of cells in thickness.

monosulphonic (mon″ọ-sul-fon′ik), *a.* [*mono-* + *sulphonic*.] In *chem.*, containing one combining unit of the compound radical HSO_3: said of an acid: as, benzene *monosulphonic* acid ($C_6H_5.HSO_3$), in which HSO_3 replaces one atom of hydrogen in benzene (C_6H_6).

Monosyllabic family of languages. See ★*family*.

monosyllabize (mon-ọ-sil′a̤-bīz), *v. t.*; pret. and pp. *monosyllabized*, ppr. *monosyllabizing*. [*monosyllab*(*le*) + *-ize*.] To render monosyllabic. *N. E. D.*

monosymptomatic (mon-ọ-simp-tọ-mat′ik), *a.* [*mono-* + *symptomatic*.] In *med.*, having a single distinct or dominant symptom.

> Neurasthenia is a disease in which headache in some cases may be almost a *monosymptomatic* sign. *F. S. Pearce*, in Therapeutic Gazette, Jan., 1903, p. 9.

monotechnic (mon-ọ-tek′nik), *a.* [Gr. *μόνος*, single, + *τέχνη*, art.] Pertaining to or concerned with a single form of skilled labor: relating to a single branch of technology; opposed to *polytechnic*.

> Thousands of our youth of late have been diverted from secondary schools to the *monotechnic* or trade classes now established for horology, glass-work, brick-laying, carpentry. *G. S. Hall*, Adolescence, I. 170.

> Many of the American schools of engineering are practically *monotechnic* institutes in contradistinction to the polytechnics here, and consequently better equipment and staffing is observed in any one department. *Jour. Inst. Elect. Engin.* (London), Feb. 25, 1903–04, [p. 458.

monothalamous, *a.* **3.** Having but one chamber, as some *Foraminifera* of the family *Lituolidæ*.

Monotidæ (mọ-not′i-dē), *n. pl.* [NL., < *Monot*(*us*) + *-idæ*.] A family of digonoporous marine turbellarians, of the order *Rhabdocellida*, having a single otolith, pharynx plicatus directed backward, and paired germaria and vitellaria. It contains the genera *Monotus* and *Automolos*.

Monotis (mo-nō′tis), *n.* [NL., < Gr. *μόνωτος*, one-eared (one-handled), < *μόνος*, single, + *οὖς* (*ὠτ-*), ear.] A genus of prionodesmaceous *Pelecypoda*, of the family *Pteriidæ*, comprising nearly equivalve, radially striate shells from the Triassic rocks.

Monotocardia (mon″ọ-tọ-kär′di-a̤), *n. pl.* [NL., < Gr. *μόνωτος*, one-eared, + *καρδία*, heart.] A group of gasteropodous mollusks in which the heart has only one auricle, the true breathing organ is single, and there is a single kidney. It includes the great majority of the marine univalves, all of the fresh-water and land operculates, as well as the *Heteropoda*. Contrasted with ★*Diotocardia*.

monotocardiac (mon″ọ-tọ-kär′di-ak), *a.* [*Monotocardia* + *-ac*.] Relating or pertaining to the *Monotocardia*; having a single auricle in the heart: as, the *monotocardiac* condition. *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 630.

monotocardian (mon″ọ-tọ-kär′di-a̤n), *a.* Same as ★*monotocardiac*.

monotomid (mọ-not′ọ-mid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Monotomidæ*.

II. *a.* Having the characters of or belonging to the family *Monotomidæ*.

monotone, *n.* **5.** A single or uniform tint or color. [Rare.]

monotoned (mon′ọ-tōnd), *p. a.* [★*monotone*, 5.] Having a single or uniform tone or tint.

> The *monotoned* wastes of the great Gold Desert. *R. Boldrewood*, Miner's Right, xxxvi.

monotonia (mon-ọ-tō′ni-a̤), *n.* [NL., < Gr. *μονοτονία*: see *monotony*.] Same as *monotony*, 1.

monotonic, *a.* **3.** Homogeneous; in marine zoölogy an aggregation of organisms is said to be monotonic if some one species, genus, or family forms more than one half of the total volume.—**Monotonic plankton.** See ★*plankton*.

monotonize (mọ-not′ọ-nīz), *v. t.*; pret. and pp. *monotonized*, ppr. *monotonizing*. To reduce to one tone or type; render monotonous.

Monotonous throughout an interval, in *math.*, said of a function which never increases or never diminishes throughout the interval.

monotony, *n.* **3.** In *math.*: (*a*) Continual increase, or continual decrease. (*b*) Unchanging character, neither increasing nor decreasing.

monotrichic (mon-ọ-trik′ik), *a.* [Gr. *μόνος*, single, + *θρίξ* (*τριχ-*), hair.] In *bacteriol.*, having a single polar flagellum, as the cells in the genus *Pseudomonas*.

monotrichous (mọ-not′ri-kus), *a.* [*monotrich*(*ic*) + *-ous*.] Same as ★*monotrichic*.

monotriglyphic (mon″ọ-trī-glif′ik), *a.* [*monotriglyph* + *-ic*.] Said of the Doric order when there is but one triglyph over the intercolumniation.

monotrocha, *n.* **3.** [*l. c.*] In chætopodous annelids, a larval stage with a single preoral circle of cilia.

monotropaceous (mon″ọ-trọ-pā′shius), *a.* Belonging to the plant family *Monotropaceæ*.

monotrophic (mon-ọ-trof′ik), *a.* [Gr. *μόνος*, single, + *τροφή*, nourishment, + *-ic*.] Capable of carrying on but one series of fermentations or decompositions.

> The nitrifying, nitrogen-fixing, sulphur- and iron-bacteria he [Fischer] regards as *monotrophic*. *Encyc. Brit.*, XXVI. 55.

monotropism (mọ-not′rọ-pizm), *n.* [*monotrop*(*y*) + *-ism*.] The state or condition of monotropy.

> This development of *monotropism* cannot take place except through the sorting and grouping of specialized molecules. *J. A. Ryder*, Biol. Lectures, 1894, p. 39.

Monotropsis (mon-ọ-trop′sis), *n.* [NL. (Schweinitz, 1817), < *Monotropa* + Gr. *ὄψις*, appearance.] A genus of dicotyledonous plants of the family *Monotropaceæ*. See *Schweinitzia*.

monotropy (mọ-not′rọ-pi), *n.* [Gr. *μόνος*, only, + *τρόπος*, turning.] Homogeneity upon or with reference to a system of parallel lines only. [Rare.]

> [The] completest homogeneity is found to occur in only one direction in parallel lines extending through the mass. This condition we may designate as *monotropy*. *J. A. Ryder*, Biol. Lectures, 1894, p. 38.

Monotus (mọ-nō′tus), *n.* [NL., < Gr. *μόνωτος*, one-eared, < *μόνος*, single, + *οὖς* (*ὠτ-*), ear.] The typical genus of the family *Monotidæ*. *M. hirudo* is parasitic. *Diesing*, 1862.

monotype, *n.* **3.** The trade-name of a machine which casts and sets in order single types.

monotypous (mon-ọ-tī′pus), *a.* Same as *monotypic*, 1.

monoüreid (mon-ọ-ū′rẹ-id), *n.* [*mono-* + *urea* + *-id*.] In *organic chem.*, the class-name applied to compounds containing the bivalent radical –CONHCONHCO–. They are to be regarded as urea (carbamide) in which two hydrogen atoms are replaced by the bivalent radical of a dibasic acid.

monovariance (mon-ọ-vā′ri-a̤ns), *n.* See ★*univariance*. *Physical Rev.*, Dec., 1904, p. 458.

monovariant (mon-ọ-vā′ri-a̤nt), *a.* [Gr. *μόνος*, single, + E. *variant*.] In *phys. chem.*, having but one degree of freedom.—**Monovariant system.** See ★*bivariant system*.

monovular (mon-ō′vụ-lär), *a.* [Gr. *μόνος*, single, + E. *ovular*.] Containing but one ovum or ovule: as, a *monovular* Graafian follicle. *L. O. Howard*, in Science, Dec. 21, 1906, p. 817.

monoxalate (mon-ok′sa̤-lāt), *n.* [*mono-* + *oxal*(*ic*) + *-ate*^{1}.] Oxalic acid in which one hydrogen atom has been replaced by a metal: as, *monoxalate* of potassium, KHC_2O_4.

monoxeny (mọ-nok′se-ni), *n.* [Gr. *μόνος*, single, + *ξενία*, hospitality, < *ξένος*, host.] The habit of frequenting a host of but one species: applied by De Bary to certain fungi. See ★*dixeny* and ★*polyxeny*.

Monozoa, *n. pl.* **2.** A grade of *Cestoidea* in which the animal consists of a single segment containing a single set of reproductive organs: contrasted with ★*Merozoa*. Same as ★*Cestodariidæ*. *Lang*.

monozoic, *a.* **2.** In *Coccidiidea*, producing only one falciform body: as, a *monozoic* spore. Contrasted with ★*dizoic* and so on to ★*polyzoic*, 3.—**3.** In cestodes, having only one set of generative organs, as in the unsegmented *Archigetes*. Contrasted with ★*polyzoic*, or segmented forms like *Tænia*.

Monroe shales. See ★*shale*^{2}.

Monroeism (mo̤n-rō′izm), *n.* Same as *Monroe doctrine* (which see, under *doctrine*).

Monroeist (mo̤n-rō′ist), *n.* [*Monroe*(*ism*) + *-ist*] One who supports the Monroe doctrine (which see, under *doctrine*).

Mons pubis. Same as *mons Veneris*, but designating occasionally the similar region in the male.—**Mons ureteris**, the projection on the wall of the bladder which surrounds the orifice of the ureter.

Monsig. An abbreviation of *Monsignor*.

Monsoon current, forest. See ★*current*^{1}, ★*forest*.

Mont. An abbreviation of *Montana*.

Montalban (mon-tal′ba̤n), *a.* and *n.* [NL. *Mont*(*es*) *alb*(*i*), 'White Mountains,' + *-an*.] **I.** *a.* In *geol.*, noting a division of the Precambrian strata: named from the White Mountains of New Hampshire.

II. *n.* The Montalban division. [Obsolete in both uses.]

Montana formation. See ★*formation*.

montbretia (mont-brē′ti-a̤), *n.* [From *Montbretia*, a former genus name of these plants, dedicated to G. Coquebert de *Montbret* (died in 1836), a French naturalist and traveler.] A small group of cormous gladiolus-like plants of the family *Iridaceæ*, now merged with the genus *Tritonia*. The species best known in gardens (where they are treated after the manner of gladiolus) are *Tritonia Pottsii* and *T. crocosmæflora*, the latter a hybrid of *T. Pottsii* and *Crocosmia aurea*. The plants are South African. They produce a blaze of red or orange flowers in summer.

monte-acide (môn-tä-sēd′), *n.* [F., < *monter*, lift, + *acide*, acid.] An arrangement in use in sulphuric-acid works for raising the acid from a lower to a higher level by means of compressed air, thus avoiding contact of acid with the metal-work or valves of pumps.

Montebello sandstone. See ★*sandstone.*

month, *n.*—**The R months.** See ★*R.*

Montia (mon′ti-ạ̈), *n.* [NL. (Linn.), named after Joseph *Monti*, a professor of botany.] A genus which comprises several species (about 20) of small herbs of the family *Portulacaceæ*, some of which are often referred to *Claytonia.* The species are American. The winter purslane (*M. perfoliata*) is sometimes grown as a pot-herb, and it also runs wild in waste places. It is a tufted herb with edible, radical leaves, and a scape bearing a cluster of small white flowers, and beneath the flowers a leaf-like cup: native to the western side of the continent.

Montian (mon′ti-ạn), *a.* and *n.* In *geol.*, noting a substage of the Cretaceous system in France and Germany which lies at the top of the series above the Maestrichtian and constitutes the upper division of the Danian stage.

monticolous (mon-tik′ọ-lus), *a.* Same as *monticoline.*

monticule, *n.* **2.** In the tabulate corals of the family *Chætetidæ*, a group of autopores which form a slightly elevated cluster on the surface of the corallum.—**3.** Same as *monticulus.*

monticulose (mon-tik′ụ̄-lōs), *a.* [See *monticulous* and *-ose.*] Covered with small eminences; monticulate. *Dana.*

monton, *n.* 2. In *mining*, a heap or pile of ore.

Montrose shales. See ★*shale*^{2}.

montroydite (mon-troid′īt), *n.* [Named from *Montroyd* Sharpe, one of the owners of the Terlingua mercury mines.] Mercuric oxid, HgO, occurring in orange-red orthorhombic crystals: found at Terlingua, Texas.

monument, *n.* **9.** A conspicuous crag of a somewhat pillar-like and symmetrical form. [Western U. S.]

monumentalism (mon-ụ̄-men′tạl-izm), *n.* [*monumental* + *-ism.*] The state or character of being monumental.

> The plain lessons of the Crimean War were unheeded and *monumentalism* became the ideal of the coast defences, although the performance of the little Telegraph Battery at Sebastopol, confirming much previous experience, should have amply sufficed to moderate the ambitions of military engineers. *Encyc. Brit.*, XXVIII. 451.

monumentalize (mon-ụ̄-men′tạl-īz), *v. t.*; pret. and pp. *monumentalized*, ppr. *monumentalizing.* [*monumental* + *-ize.*] To record or commemorate by a monument; record permanently; render monumental in character.

monzonite (mon′zọ̄-nīt), *n.* [F. *monzonite* (De Lapparent, 1864), ＜ *Monzoni*, near Predazzo in Tyrol, + *-ite*^{2}.] In *petrog.*, a phaneric igneous rock intermediate in composition between syenite and diorite, that is, composed of alkali feldspar, usually orthoclase, and lime-soda feldspar, andesin or labradorite, in equal or nearly equal proportions, with subordinate amounts of hornblende, pyroxene, or mica, rarely olivin, and minor constituents. There may be a variable amount of quartz: when it is present in considerable amount the rock is quartz-monzonite or granodiorite.

monzonitic (mon-zọ̄-nit′ik), *a.* [*monzonite* + *-ic.*] In *petrog.*, having the composition of monzonite.

monzonose (mon′zọ̄-nōs), *n.* [*monzonite* + *-ose.*] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*^{1}), the name of sodipotassic rocks belonging to the domalkalic rang of the perfelic order of the dosalanes.

mooch (möch), *v. i.* See *mouch.*

moocher (mö′chėr), *n.* [See *moucher.*] A moucher. See the extracts.

> "Why, I remember jes lots o' things. I 's been a crook, I 's been a *moocher*, an' now I 's shatin' on me uppers. Why, what I 's seen would keep them blokes up there in Cooper Union readin' all winter, I guess." *J. Flynt*, in Cent. Mag., March, 1894, p. 706.

> In police parlance as a '*moocher*,' or a man who hung around saloons and drank and ate only when some one treated. *Kansas City Daily Times*, Feb. 15, 1904.

moodirieh, *n.* See ★*mudirieh.*

moogadee (mö′gạ̈-dē), *n.* [Western Amer. Indian.] A name applied by the Fort Hall Indians of Idaho to *Catostomus pocatello*, a sucker of the Snake River basin. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 53.

moolvi (möl′vẹ̄), *n.* Same as ★*maulvi.*

moon^1, *n.* **1.** Upon the moon's surface the force of gravity is only one sixth of gravity upon the earth, a fact of great importance in relation to the moon's surface-phenomena, and probably connected with the almost complete, if not absolute, absence of a lunar atmosphere. Some recent observers report appearances which they attribute to gases and water vapor rising at various points on the moon's surface through fumaroles and fissures, and condensing during the lunar night into white patches of snow or frost, which disappear after the sun rises. If this is correct it would indicate a possible feeble survival of the moon's former volcanic activity. The recent investigations of Very apparently prove that the temperature of the moon's surface at points where the sun is nearly overhead rises above that of boiling water, as was long ago maintained by Lord Rosse. When the sun's rays are withdrawn it probably falls nearly to the absolute zero (−273°C., −460°F.), so low that most gases would be liquefied or frozen. Photography has of late done much to improve our maps of the moon's surface. In the study of delicate details, however, the best photographs cannot rival visual observations made with powerful telescopes. **4.** (*d*) A kind of knife used in shaving skins; a moon-knife. See ★*mooning.*

7. Moonlight.

> In the *moon* athwart the place of tombs. *Tennyson*, Passing of Arthur, l. 214.

Horizontal moon, the moon as viewed when rising or setting. Its diameter at such times appears much greater than at considerable altitudes, whence the expression, once familiar, now obsolete, "the illusion of the horizontal moon."—**Hunters' moon,** in *astron.*, the full moon next after the *harvest-moon* (which see).—**Local transit of the moon.** See ★*transit.*—**Lower transit of the moon.** See ★*transit.*—**Station of the moon.** See ★*station.*—**Tidal theory of the moon's origin.** See ★*tidal evolution.*—**To shoot the moon,** to remove secretly with one's belongings in the night in order to escape payment of rent, or distraint. [Slang.]—**Wet moon,** a new moon, one horn of whose crescent is much lower than the other, like a bowl tipped up on edge and unable to hold water. The wet moon is a popular (but fallacious) sign of coming wet weather.

moon^1, *v. t.* **3.** In opposum-hunting, to locate (the hiding-place of the animal) by bringing the tree in which it is supposed to lurk into clear view between one's self and the moon. [Australia.]—**4.** To shave (skins) with a moon or moon-knife. See ★*mooning*, 1.

moonack, *n.* **2.** A mythical animal much feared by the negroes of the Southern States.

moon-blindness (mön′blīnd″nes), *n.* **1.** Same as *moon-blink.*

> Hemeralopia is called *moon-blindness* by sailors, and is attributed by them to a morbific influence emanating from that planet, especially affecting such persons as commit the imprudence of sleeping on deck. *Buck*, Med. Handbook, IV. 627.

2. An eye-disease of the horse, scientifically known as periodic ophthalmia, the cause of which is unknown. One attack is followed at regular intervals by others which finally produce total blindness in one or both eyes.

moon-dog (mön′dog), *n.* A luminous spot in the sky due to the refraction and reflection of the moon's rays by minute ice-crystals floating in the air. See *paraselene* and *sun-dog.*

mooneyed, *a.* **4.** Having feathers marked towards the ends with rounded or oval spots, as in the spangled Hamburg breeds of fowls.

> The feather markings of the penciled varieties differ greatly from those of the spangled; the latter being commonly called "*moon-eyed*" from the round or oval appearance of the spangles, while the markings of the penciled varieties are in parallel bars of reddish-bay or black, or clear silvery-white and black, as the case may be. *Yearbook U. S. Dept. Agr.*, 1896, p. 467.

moonfish, *n.* (*f*) The opah, *Lampris guttatus.* (*g*) Same as ★*mariposa*, 2.

moon-guitar (mön′gi-tär″), *n.* Same as ★*yuẹkin.*

mooning (mö′ning), *n.* [*moon*^{1}, *v.*, + *-ing*^{1}.] **1.** In *leather-manuf.*, the shaving of skins with a 'moon' or moon-knife.

> The kid skins are shaved either by "*mooning.*" . . . "*Mooning*" is performed with a round steel, shaped like a plate, and having the center cut out, and a handle placed across the opening. *Sci. Amer. Sup.*, Jan. 24, 1903, p. 22629.

2. The act of going about as if moonstruck.

moonlet (mön′let), *n.* [*moon*^{1} + *-let.*] A little moon: applied to the small bodies of which the rings of Saturn are composed.

> The rings of Saturn appear to be continuous masses separated by circular rifts. This is the phenomenon which is observed through a telescope. By no known means can we ever approach or handle the rings; yet everybody who understands the evidence now believes that they are not what they appear to be, but consist of minute *moonlets*, closely packed, indeed, but separate the one from the other. *A. W. Rucker*, in Smithsonian Rep., 1901, p. 175.

moonsif, *n.* Same as ★*munsif.*

moor^1, *n.*—**Moor rock.** See ★*rock*^{1}.

moor^2, *v. i.*—**To moor across** (*naut.*), to drop the anchors on either side of a stream.—**To moor along** (*naut.*), to come to anchor in a river with a hawser leading to the shore for the purpose of steadying the vessel.

moored (mörd), *a.* In *mining*, obstructed with rubbish or mud; silted up. *Barrowman*, Glossary. [Scotch.]

mooring-buoy (mör′ing-boi), *n.* A can-buoy which has a large swivel on its top, to which vessels make fast their cables instead of riding at anchor.

moor-burn (mör′bėrn), *n.* The burning of the heather on a moor, which is unlawful between April 11 and Nov. 1. *N. E. D.* [Scotch.]

moor-burner (mör′bėr″nėr), *n.* One who sets fire to heather on a moor. See ★*moor-burn.* [Scotch.]

mooring-kit (mör′ing-kit), *n.* In marine hardware, a wooden keg with an air-tight cover, used to support a mooring-chain. It has galvanized iron rings at top and bottom, joined together by an iron rod. The lower ring supports the chain and the upper ring is used as a holdfast for a boat's mooring-rope or -chain. It is usually painted in some distinctive color or pattern.

mooring-mat (mör′ing-mat), *n.* *Naut.*, a flat mat made of thrums like a door-mat. It is bound around a mooring hawser to prevent chafing at a certain part or point.

mooring-staple (mör′ing-stā″pl), *n.* A large staple-shaped forging fastened on the side of a war-ship, to which chain-cable may be shackled to hold the vessel when moored alongside a wharf.

moor-myrtle (mör′mėr″tl), *n.* See ★*myrtle.*

mooruk (mör′uk), *n.* [Native name: from the sound of its cry?] A species of cassowary, *Casuarius bennetti*, peculiar to the island of New Britain.

moose, *n.* The Alaskan moose has been described as a new species, *Alces gigas*, distinguished by its larger teeth and antlers, and by other characteristics.

moose-berry (mös′ber″i), *n.* Same as ★*moose-bush.*

moose-bush (mös′bu̇sh), *n.* The hobble-bush or American wayfaring-tree, *Viburnum alnifolium.*

moose-horn (mös′hôrn), *n.* Same as *moose-call.* *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 249.

moosemise (mös′mīs), *n.* [From an eastern Algonkian form answering to the (western) Ojibwa *monzomish* (applied to the hobble-bush, *Viburnum alnifolium*); ＜ *monz*, moose, + *-mish*, bush.] The false wintergreen, *Pyrola rotundifolia.* See *Indian* ★*mozemize.* [Vermont.] *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 249.

moose-trumpet (mös′trum″pet), *n.* Same as *moose-call.* *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 249.

moot^4 (möt), *n.* In *ship-building:* (*a*) A ring used to gage the diameter of treenails. (*b*) A piece of hard wood bound with iron at both ends, used in making blocks.

mooted (mö′ted), *p. a.* [*moot*^{1}, *v.*, + *-ed*^{2}.] Unsettled; disputed; argued; subject to different opinions; moot.

mope-hawk (mōp′hâk), *n.* Same as *more-pork*, a large Australian night-jar of the genus *Podargus.* The name is probably given under the mistaken impression that it was the original and proper form.

moph (mof), *n.* [A perverted abbreviation of *hermaphrodite*, the instrument being properly named *hermaphrodite calipers.*] An instrument consisting of a pair of compasses, one leg of which is fashioned like the leg of a pair of calipers. *N. E. D.*

mopoke (mō′pōk), *n.* Same as *more-pork.*

Mor. An abbreviation of *Morocco.*

mora^2, *n.*—**Giuoco della mora,** a game played in Italy by two players matching the fingers of the right hands, the left being held behind the back. A similar game was common in ancient Greece in which the left hands were confined by holding a stick.

mora^4 (mō′rạ̈), *n.*; pl. *moræ* (-rē). [NL., ＜ Gr. *μόρα*, a part; connected with *μοῖρα*, a part: see ★*Mœræ.*] In *Gr. antiq.*, one of the six main divisions of the army of Sparta, commanded by a polemarch.

Moraceæ (mọ̄-rā′sẹ̄-ē), *n. pl.* [NL. (Lindley, 1847), ＜ *Morus* + *-aceæ.*] A family of dicotyledonous archichlamydeous (apetalous) plants of the order *Urticales*, the mulberry family, typified by the genus *Morus*, and characterized by unisexual flowers, the staminate usually in panicles or spikes, and the pistillate in heads, a superior ovary, solitary, pendulous, anatropous ovules, one or two styles, and as many seeds. There are 67 genera and about 925 species, mostly trees and shrubs of temperate and tropical regions. Besides the mulberries the family includes the breadfruits, the figs, the Osage orange, the hop, and the hemp.

moraceous (mọ̄-rā′shius), *a.* Belonging to the *Moraceæ* or mulberry family.

moradin (mō-rā′din), *n.* [NL. *morada* (see def.) + *-in*^{2}.] A colorless crystalline compound, $C_{16}H_{14}O_6$, contained in the bark of false cinchona, cascarilla, or china morada, *Pogonopus febrifugus.* It has a blue fluorescence and melts at 201–202° C.

morai (mō-rä'ẹ), *n.* [Also *marae, morae,* in many Polynesian dialects.] A sort of elevated stone platform or terrace, often of considerable size, found on elevated sites in certain of the Polynesian Islands.

> The principal object of ambition among these people ['Otaheite'] is to have a magnificent *Morai*, and this was a striking memorial of the rank and power of Oberea.
> *Hawkesworth*, Voyages into Southern Hemisphere, 1785, [II. 443.

moraine, *n.*—**Bottom moraine,** a ground moraine; subglacial drift and boulder-clay.—**Frontal moraine,** a moraine found at the front of a glacier.—**Interlobate moraine,** a compound moraine formed between adjacent glacial lobes.—**Intermediate moraine,** a special name, suggested by T. C. Chamberlin, for those portions of the terminal moraine of the continental ice-sheet which were deposited where two lobes coalesced. Also *interlobate moraine. Rep. U. S. Geol. Surv.*, 1881–82, p. 301.—**Kame moraine,** a moraine formed of roughly stratified glacial debris and having a knob and basin topography.

> In its relations to other phases of drift, therefore, as well as in the particulars already specified, the kame belt stands in the position of a moraine. For it, and for similar aggregations of kames, the designation *kame moraine* is proposed.
> *R. D. Salisbury*, Geol. Surv. of New Jersey, 1892, p. 93.

Lodge moraine, glacial debris deposited beneath the ice. *Chamberlin and Salisbury*, Geol., I. 286.—**Marginal moraine,** a moraine deposited at the margin of a glacier; a terminal moraine.—**Moraine of advance,** a moraine which is formed during the advance of a glacier. *J. Geikie*, The Great Ice Age, p. 262.—**Moraine of recession.** Same as ★*moraine of retreat.*—**Moraine of retreat,** a moraine which is formed during the retreat of a glacier. *J. Geikie*, The Great Ice Age, pp. 209, 213.—**Moraine profonde.** (*a*) The stony, mixed drift, which constituted the ground moraine of the continental ice-sheet. (*b*) A mixed stony drift gathered from the disintegration of underlying rocks and strewn over lower slopes as by landslides.—**Push moraine,** a moraine formed of the debris pushed forward by the front of a glacier. *Chamberlin and Salisbury*, Geol., I. 286.—**Retreatal moraine.** Same as ★*moraine of retreat.*—**Shoved moraine.** Same as *push* ★*moraine.*—**Submarginal moraine,** the deposit of debris formed under the margin of a glacier. *J. Geikie*, The Great Ice Age, p. 741.—**Superficial moraine,** the debris on the surface of a glacier.—**Terminal moraine.** See *moraine.* The term is used only in North America as applied to the ice-sheet of the Wisconsin epoch.

Morainic apron. Same as ★*apron,* 6.—**Morainic loops,** the forward curves of moraines formed around the lobes of a continental glacier.

moralism, *n.* **3.** A tendency to moralize; a habit of moralizing.

> Is it the laureate? He lies buried under his own historical quartos! There is neither his mannerism nor his *moralism*, nor his methodism.
> *Southey*, Doctor, Interchap. vii.

morassic (mọ-ras'ik), *a.* [*morass* + *-ic.*] Having the character of or pertaining to a morass: as, a *morassic* habitat; a *morassic* soil.

> All of these *morassic* formations characterize quiet shores.
> *C. MacMillan*, in Minn. Bot. Stud., Bulletin IX. 995.

moratorium (mor-a̤-tō'ri-um), *n.* [NL., neut. sing. of LL. *moratorius*, causing delay, dilatory: see ★*moratory.*] In *law*, legal title to delay in making a due payment: as a legislative authorization of suspension of payment by a government bank.

moratory (mor'a̤-tọ-ri), *a.* and *n.* [LL. *moratorius*, delaying, < *morator*, a delayer, < *morare*, delay: see *moration.*] **I.** *a.* Of or pertaining to moratorium; delaying: as, a *moratory* bill.

II. *n.* One who postpones the maturity of notes, bills of exchange, and the like.

morauke (mo-râ'ke), *n.* [G. dial. (Swiss) *morache, moroche, moracher*, dim. *morauchli* (Stalder, 1812).] A whitefish, *Coregonus hiemalis*, native of Lake Constance, Switzerland, now introduced into the United States.

Moravian² (mọ-rā'vi-a̤n), *a.* and *n.* [ML. *Moravia*, Moray, + *-an.*] Of or pertaining to Moray; an inhabitant of Moray.

moray, *n.*—**Black moray,** *Lycodontis funebris*, an eel of the family *Murænidæ*, found on both coasts of tropical America.—**Common spotted moray,** *Lycodontis moringa*, an eel found from Punta Concepcion to Isla de Cedros.

morbify (môr'bi-fī), *v. t.*; pret. and pp. *morbified*, ppr. *morbifying.* [L. *morbus*, disease, + *-i-* + *-fy.*] To render diseased. [Rare.] *Browning*, Aristoph. Apol.

morbigenous (môr-bij'e-nus), *a.* [L. *morbus*, disease, + *-genus*, -producing.] Exciting or producing disease.

morbus, *n.*—**Morbus anglicus,** rachitis.—**Morbus cæruleus,** cyanosis of the new-born, due usually to some malformation of the heart.—**Morbus comitialis,** epilepsy.—**Morbus cordis,** heart-disease.—**Morbus coxæ senilis,** arthritis deformans which affects the hip.—**Morbus regius,** jaundice.—**Morbus sacer,** epilepsy.

morcellate (môr-sel'āt), *v. t.*; pret. and pp. *morcellated*, ppr. *morcellating.* [F. *morceler*, divide, + *-ate²*. The Latin type would be **morsellate.*] To shatter or break into many pieces. Rocks which are finely divided by many joints are said to be morcellated.

morcellation (môr-se-lā'shọn), *n.* [*morcellate* + *-ion.*] **1.** The act of shattering or breaking.—**2.** In *surg.*, removal of a part, as a tumor, a little at a time instead of by excision in mass.

morcellement (môr-sel-moṅ'), *n.* [F., < *morceler*, divide: see ★*morcellate.*] Same as ★*morcellation,* 2.

> Porcelini suggested *morcellement*, the danger of which consists in the subsequent necrosis of the stump of the cervix.
> *Phil. Med. Jour.*, Jan. 31, 1903, p. 199.

mordant. **I.** *a.*—**Acid mordant colors.** Same as *mordant acid* ★*colors.*

II. *n.*—**Dutch mordant,** one of the acid baths used in biting a plate in etching. Its composition is given by Hamerton as chlorate of potash, 20 grams; hydrochloric acid, 100 grams; water, 880 grams.

mordant, *v. t.*—**Mordanting principle,** a term used by textile-colorists to indicate the substance used to produce a mordant, in order to distinguish it from the mordant proper.

> In one of the most important wool mordanting processes, potassium bichromate ($K_2Cr_2O_7$) is used in the mordanting bath, but the actual mordant precipitated upon the fiber is an acid oxide of chromium (CrO_3). The potassium bichromate is, therefore, the *mordanting principle. L. A. Olney*, Textile Chem. and Dyeing, II. 115.

mordellid (môr-del'id), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Mordellidæ.*

II. *a.* Having the characters of or belonging to the family *Mordellidæ.*

Mordey effect. The effect of increasing load in diminishing the hysteresis of the core of armatures of certain generators and motors: first noted by W. M. Mordey.

mordoré (mōr-dō-rā'), *n.* [F., < OF. *more*, Moor, + *doré*, gilded.] A brown color mixed with red. *N. E. D.*

morelle, *n.* **2.** The belladonna.

morena (mō-rā'nä), *n.* [Sp., also *murena*, < L. *muræna*: see *Muræna.*] Any eel of the family *Murænidæ*, commonly called *moray eels.* They inhabit tropical and subtropical seas and are abundant about rocky places and coral reefs. Some of them reach a large size, and all are pugnacious and voracious.—**Morena pinta,** *Muræna lentiginosa*, an eel found from the Gulf of California to the Galapagos Islands.—**Morena pintita,** *Lycodontis dovii*, an eel of the family *Murænidæ*, found from the Gulf of California to the Galapagos Islands.—**Morena prieta,** *Lycodontis castaneus*, an eel reaching a length of six feet, and found in abundance about the rocks of Mazatlan, Mexico.—**Morena verde.** Same as *black* ★*moray.*

morencite (mọ-ren'sīt), *n.* [*Morenci* (see def.) + *-ite².*] A hydrated ferric silicate occurring in brownish-yellow silky fibrous seams in a lime shale at Morenci, Arizona.

morenosite (mọ-rā'nọ-sīt), *n.* [Sp. *morenosita* (1853) (irreg. formed), named after a Señor *Moreno* of Spain.] Hydrous nickel sulphate, $NiSO_4+7H_2O$, usually occurring in fibrous forms or as an efflorescence of a green color. It results from the alteration of nickel ores.

Moresco-Spanish (mọ-res"kō-span'ish), *a.* Of or pertaining to the Moors of Spain, especially to Moorish art in Spain.

Moreton Bay canes. See ★*bangalow.*

Morgagni's crypts, globules or **spheres.** See ★*crypt,* ★*globules.*

Morgan (môr'ga̤n), *n.* A breed of trotting horses which originated with a stallion owned by a Vermont schoolmaster named Justin Morgan.

morganic (môr-gan'ik), *a.* Same as *morganatic.*

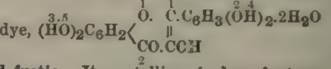
morget (môr-zhā'), *n.* [Swiss F., also *mourdjet*; so named from *Morges*, a village on Lake Geneva.] A land-breeze which blows as a strong north wind during the night on the northern shore of Lake Geneva. This wind is not to be confounded with the descending mountain wind known as the *joran.*

> Large lakes may give rise to off-shore and on-shore breezes. . . . On the northern shore [of Lake Geneva], . . . the land breeze (*morget*) blows as a strong north wind from between 5 and 7 o'clock in the evening to between 7 and 9 in the morning. This breeze always begins on the land and works out toward the lake, as . . . [has been observed] at Morges. . . . In the autumn, when the land cools, while the lake is still warm, the air flows toward the lake from all sides in calm weather, and the *morget* then blows almost continuously. The same thing happens to a more marked degree in winter, when the land is covered with snow. The *morget* is, however, then no longer a true land breeze. . . . The real descending mountain wind, known as joran, is much stronger than the *morget*, but reaches only the base of the mountains, not advancing on to the lake. *J. Hann* (trans.), Handbook of Climatol., p. 161.

moribundity (mor-i-bun'di-ti), *n.* A moribund state or condition.

> If the American Association insists upon meeting in the last week of the dying year the gatherings are likely to reveal *moribundity* as the years die in succession.
> *Science*, March 11, 1904, p. 434.

moric (mō'rik), *a.* [L. *morus*, mulberry, + *-ic.*] Of or pertaining to morin or moric acid.—**Moric acid,** a dye,



$$\overset{3.5}{(HO)}_2C_6H_2\left\langle\begin{matrix}\overset{1}{O}.\ \overset{1}{C}.C_6H_3\overset{2\ 4}{(OH)}_2.2H_2O\\ \|\\ CO.\underset{2}{C}CH\end{matrix}\right.$$

contained in old fustic. It crystallizes in long lustrous needles and produces characteristic colors with certain metallic salts.

morindin (mọ-rin'din), *n.* [*Morinda* + *-in².*] A yellow compound, $C_{26}H_{18}O_{14}.H_2O$, contained in the root-bark of *Morinda citrifolia* and *M. tinctoria* from India. It crystallizes in small needles and closely resembles ruberythric acid. Called by the natives *suranji.*

morindone (mọ-rin'dōn), *n.* [*morind(in)* + *-one.*] An orange-red compound, $CH_3C_{14}H_{14}(OH)_3O_2$, prepared by heating morindin alone or with a dilute acid. It crystallizes in needles, melts at 271–272° C., and may be sublimed.

moringatannic (mō-ring-ga̤-tan'ik), *a.* See ★*morintannic.*

moringic (mọ-rin'jik), *a.* [*Moringa* + *-ic.*] Obtained or derived from plants of the genus *Moringa*; specifically, noting an acid, a compound supposed to occur, in combination with glycerol, in oil of ben, from *Moringa aptera.* It is probably oleic acid.

morintannic (mō-rin-tan'ik), *a.* [*morin* + *tannic.*] Pertaining to morin and tannic acid.—**Morintannic acid,** 2, 4, 6, 3', 4'-pentahydroxybenzophenone, $(OH)_3C_6H_2COC_6H_3(OH)_2$, a compound found in yellow-wood or fustic. Also called *maclurin, moringatannic* and *moritannic acid.*

moriogram (mō'ri-ō-gram), *n.* [Gr. *μόριον*, a piece, part, member, + *γράμμα*, a writing.] A diagram devised for the rapid approximate determination of the angles between a plane of symmetry and any crystal faces with rational indexes which lie in the same zone with it. *G. F. Herbert Smith*, in Mineralogical Mag., 1904, p. 49.

Moriscan (mọ-ris'ka̤n), *a.* [*Morisc(o)* + *-an.*] Moorish. *Lytton*, Leila, I. iii.

Morisco, *n.* **7.** The offspring of a mulatto woman and a Spaniard; also, in general, any one with a considerable amount of negro blood. [Mexico.]

morisqueta (mō-rẹ̄s-kā'tä), *n.* [Philippine Sp., prop. a device of the Moors or Moros, < *morisco*, Moorish.] Rice boiled in water, eaten by the natives in place of bread. Called by the Tagalogs *canin.* [Philippine Is.]

> Rice boiled in water without salt, called by Spaniards "*morisqueta*" and by the Tagalos "canin," is looked upon by the natives the same as Americans and Europeans look upon bread. *Gaz. Philippine Is.*, 1902, p. 70.

moritannic (mō-ri-tan'ik), *a.* See ★*morintannic.*

Mormon¹, *n.* (*c*) [*l. c.*] In *entom.*, an American hesperiid butterfly, *Atrytone hobomok*, which occurs from eastern Canada to the Mississippi valley. Its larvæ feed on grasses. Also called *hobomok skipper.*

Mormon-weed (môr'mọn-wēd), *n.* The velvetleaf, *Abutilon Abutilon.*

mormyrid (môr'mi-rid), *n.* Any fish of the family *Mormyridæ*, a peculiar group confined to the fresh waters of Africa. They are commonly called *beaked fishes*, from the form of the muzzle, which in some of the species is long and bent downward.

morn. An abbreviation of *morning.*

morning, *n.*—**False morning,** the false dawn or *subhi Kázib* of the Persians; the fore-glow or transient light that precedes the auroral dawn of the true sunrise. See *fore-glow, afterglow,* ★*dawn.*

> Before the phantom of *False morning* died,
> Methought a Voice within the Tavern cried,
> "When all the Temple is prepared within,
> "Why nods the drowsy Worshipper outside?"
> *Fitzgerald*, tr. of Omar Khayyam, Rubaiyat, quat. ii.

morning-glory, *n.*—**Bush morning-glory,** the man-root, *Ipomœa leptophylla.*—**Cypress morning-glory.** Same as *cypress-vine.* See also *quamoclit*, 1.—**Dwarf morning-glory,** *Convolvulus spithamæus*, of North America, a nearly upright species with oblong leaves and handsome terminal white flowers on long peduncles.—**Ivy-leaved morning-glory,** *Pharbitis hederacea*, a tropical American plant with trilobate leaves and blue or purple flowers, which has established itself as far north as Long Island, Pennsylvania, and Nebraska.—**Pink morning-glory,** *Ipomœa Carolina*, a pink- or purple-flowered species with deeply three-lobed leaves, the terminal lobe much prolonged and pointed: found from South Carolina to Florida and west to Texas.—**Red**

morning-glory, *Quamoclit coccinea*, a small red-flowered annual twiner with ovate or orbicular deeply cordate leaves, naturalized from tropical America as far north as Pennsylvania.—**White morning-glory**, *Ipomœa lacunosa*, which has very small white flowers and ovate-cordate leaves, the lower ones angled. It ranges from Pennsylvania to South Carolina and west to Kansas and Texas.—**Wild morning-glory**, the hedge-bindweed, *Convolvulus sepium*.

morning-sickness (môr′ning-sik″nes), *n.* Nausea and sometimes vomiting from which a woman often suffers at the beginning of pregnancy, in the early part of the day.

morning-song (môr′ning-sông), *n.* A song, or a musical service, performed in the morning. See *aubade*, 1, *laud*, 4, and *matin*, 3.

moro, *n.* **2.** A small abscess or tumor of mulberry shape.

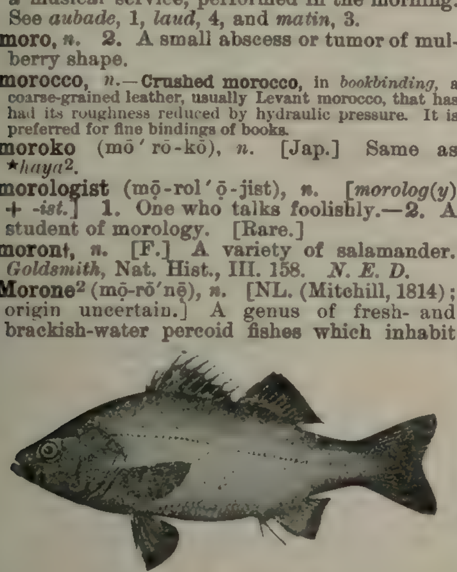
morocco, *n.*—**Crushed morocco**, in *bookbinding*, a coarse-grained leather, usually Levant morocco, that has had its roughness reduced by hydraulic pressure. It is preferred for fine bindings of books.

moroko (mō′rō-kō), *n.* [Jap.] Same as ★*haya*^{2}.

morologist (mọ-rol′ọ-jist), *n.* [*morolog*(*y*) + *-ist.*] **1.** One who talks foolishly.—**2.** A student of morology. [Rare.]

moron†, *n.* [F.] A variety of salamander. *Goldsmith*, Nat. Hist., III. 158. *N. E. D.*

Morone^{2} (mọ-rō′nẹ), *n.* [NL. (Mitchill, 1814); origin uncertain.] A genus of fresh- and brackish-water percoid fishes which inhabit streams and river-mouths of the eastern and southern United States.



White Perch (*Morone americana*).
(From Bulletin 47, U. S. Nat. Museum.)

moronolite (mọ-ron′ọ-līt), *n.* [Irreg. < Gr. *μόρον*, mulberry, + *λίθος*, stone.] A pale-brown concretionary variety of jarosite, found at Monroe, New York.

Morosaurus (mō-rọ-sâ′rus), *n.* [NL., < Gr. *μωρός*, dull, + *σαῖρος*, a lizard.] A genus of dinosaurian reptiles described by Marsh from the Upper Jurassic beds of Colorado and Wyoming. The animal was of great size, but is imperfectly known. It had an extremely long and flexible neck and a short back with but ten dorsal vertebræ, resembling in general aspect the *Diplodocus* and *Brontosaurus* (which see).

morosis (mō-rō′sis), *n.* [NL., < Gr. *μώρωσις*, stupidity, fatuity, < *μωροῦν*, make stupid, < *μωρός*, stupid, silly, foolish.] Imbecility; idiocy.

moroxylic (mō-rok-sil′ik), *a.* [Gr. *μόρον*, mulberry, + *ξύλον*, wood, + *-ic.*] Noting an acid the calcium salt of which is found in the stems of *Morus alba.* It is probably succinic acid.

morph. An abbreviation of *morphology*, *morphological*, etc.

morphallaxis (môr-fa-lak′sis), *n.* [NL., < Gr. *μορφή*, form, + *ἀλλαξις*, exchange.] The development of a new whole from a piece of an organism by a remodeling of the original piece into the typical form. A characteristic feature of the process is that it takes place without proliferation of new material at the cut surfaces of the piece. It is thus distinguished from the more common form of regeneration, or epimorphosis. *T. H. Morgan*, Regeneration, p. 121.

morphiated (môr′fi-ā-ted), *a.* [*morphia* + *-ate*^{2} + *-ed*^{2}.] Containing or impregnated with morphine or with one of its salts.

morphically (môr′fi-kal-i), *adv.* In relation or respect to form. *Proc. Boston Soc. Nat. Hist.*, April 5, 1893, p. 66, note.

morphinated (môr′fi-nā-ted), *a.* [*morphine* + *-ate*^{2} + *-ed*^{2}.] Same as ★*morphiated.*

morphine, *n.*—**Oleate of morphine.** See ★*oleate.*

merphinic (môr-fin′ik), *a.* [*morphin*(*e*) + *-ic.*] Of or pertaining to morphine.

morphinist (môr″fin-ist), *n.* [*morphin*(*ism*) + *-ist.*] One who is addicted to the use of morphine.

morphinization (môr″fi-ni-zā′shọn), *n.* [*morphiniz*(*e*) + *-ation.*] The act or process of subjecting to the physiological effects of morphine.

morphinize (môr′fi-nīz), *v. t.*; pret. and pp. *morphinized*, ppr. *morphinizing.* [*morphine* + *-ize.*] To bring under the influence of morphine. *Amer. Jour. Psychol.*, II. 355.

morphœa, *n.* **2**†. Same as *leprosy*.

morphogenesis, *n.*—**Law of morphogenesis**, as stated by Hyatt, the law that the life of the individual organism, in all its phases (morphological, physiological, normal or pathologic, embryonal, larval, adolescent, adult, or old), is correlated with the morphological and physiological history of the group to which it belongs. See ★*recapitulation doctrine*, ★*auxology*, and *palingenesis*, 2.

morphographic (môr-fọ-graf′ik), *a.* Same as *morphographical.*

In a purely *morphographic* sense the line indicates the limit of a steep wall and a furrow reaching from sea to sea. *Amer. Geol.*, Nov., 1904, p. 283.

morphography, *n.* **2.** The descriptive science of land forms.

morphol. An abbreviation of *morphology*, *morphological*, etc.

morpholite (môr′fọ-līt), *n.* [Gr. *μορφή*, form, + *λίθος*, stone.] A term applied by Ehrenberg to the coccoliths found in deep-sea ooze and in many chalk deposits, and regarded by him as inorganic.

morphology, *n.* **3.** In *phys. geog.*, the study of the form of lands.—**Mental morphology.** (*a*) Comparative psychology.

The former of these aims to carry the investigation of the mind or consciousness into all of its manifestations in the animal world. . . . We thus have the problem of *mental morphology*, as it has been called by a prominent biologist. *Carnegie Inst. Yearbook*, 1902, p. 202.

(*b*) Structural ★psychology (which see).

morphon, *n.* **2.** A structural or organic individual, as contrasted with one that is functionally or physiologically, but not structurally, independent. See ★*bion.*

morphophysics (môr-fọ-fiz′iks), *n.* [Gr. *μορφή*, form, + E. *physics.*] See the extract.

Fifth and last, I should like to gather under the head of *morphophysics* a number of researches, nearly all of which are very recent, and which tackle the doctrine of the chemical and physical causes of development. These researches have been largely experimental in character, and though we are only at the beginning of this sort of work, yet the results already obtained are of the highest value and make us hope for far greater results to come. *C. S. Minot*, in Pop. Sci. Mo., July, 1906, p. 12.

morphoplasm (môr′fọ-plazm), *n.* [Gr. *μορφή*, form, + *πλάσμα*, something formed.] The protoplasm of the body of a cell, or its cytoplasm, contrasted with the protoplasm of the nucleus, and considered as the part which gives its form to the organism.

As the term ‘protoplasm’ is used in a far too indefinite sense, I shall follow Nägeli's example, and call the vital substance of the cell the ‘formative plasm’ or *morphoplasm*, . . . in contrast to the idioplasm. *Weismann* (trans.), Germ-plasm, p. 38.

morphoplasmic (môr-fọ-plaz′mik), *a.* Pertaining to or of the nature of morphoplasm.

The specific morphogenic factors are connected in some way with specific forms of protoplasm, which I think may conveniently be designated as formative (perhaps better, ‘*morphoplasmic*’) stuffs. *Science*, Dec. 2, 1904, p. 749.

morphotic (môr-fot′ik), *a.* [Gr. *μορφωτικός*, < *μόρφωσις*, forming. See *morphosis.*] Organized; organic. *Buck*, Med. Handbook, V. 764.

morphotropic (môr-fọ-trop′ik), *a.* [Gr. *μορφή*, form, + *τρόπος*, turning, + *-ic.*] Pertaining to the relation of crystalline form to chemical composition or morphotropism; exhibiting morphotropism. *Rep. Brit. Ass'n Advancement of Sci.*, 1900, p. 167.

morphotropically (môr-fọ-trop′i-kal-i), *adv.* In a morphotropic manner; with respect to the relation of crystalline form and the composition of chemically similar substances or of substances derived from the same parent compound.

morphotropism (môr-fot′rọ-pizm), *n.* [*morphotrop*(*ic*) + *-ism.*] The relation in form, optical characters, etc., exhibited by crystals of related chemical compounds, specifically those whose molecules differ by the mutual replacement of equivalent atoms or groups of atoms. See ★*humite.*

The chapter on *Morphotropism* deals with the dependence of the crystal structure on the chemical constitution of the body. The author here, after describing the changes produced by substitutions as in the nature of homogeneous deformations of the crystal structure, explains the manner of measuring these modifications and gives the morphotropic influence of elements and radicals. *Amer. Chem. Jour.*, July, 1905, p. 104.

morphotropy (môr-fot′rọ-pi), *n.* [*morphotrop*(*ic*) + *-y*^{3}.] Same as ★*morphotropism.*

morrenine (mọ-rē′nin), *n.* [*Morrenia* + *-ine*^{2}.] A dark-red gelatinous alkaloid found in the root and milky sap of *Morrenia brachystephana* Grieseb, from the Argentine Republic. It melts at 106° C.

morrenol (mọ-rē′nol), *n.* [*Morren*(*ia*) + *-ol.*] A crystalline compound, $C_{14}H_{22}O$ or $C_{15}H_{24}O$, formed in the milky sap of the fruit of *Morrenia brachystephana* Grieseb, from the Argentine Republic. It melts at 168° C.

morrhuic (mor′ọ-ik), *a.* [*Morrhua* + *-ic.*] Of or pertaining to cod-liver oil.—**Morrhuic acid**, an organic substance of the composition $C_9H_{13}NO_3$.

morrhuine (mor′ọ-in), *n.* [*Morrhua* + *-ine*^{2}.] A yellow, thick, oily, strongly basic compound, $C_{19}H_{27}N_3$, the characteristic active alkaloid of cod-liver oil. It has an odor of syringa-flowers, crystallizes in microscopic needles, and is a powerful diuretic and sudorific.

morrhuol (mor′ọ-ol), *n.* [*Morrhua* + *-ol.*] A pungent, bitter, partly crystalline oily substance of disagreeable odor, which is obtained by extracting cod-liver oil with 90 per cent. of alcohol and removing the alcohol by distillation: said to represent the physiologically active portion of the oil.

Morrill Act. See ★*act.*

Morris chair, tube. See ★*chair*, ★*tube.*

morro (mor′ō), *n.* [Sp., something round; a prominence.] A round hill, hillock, or rocky promontory, especially one that is fortified or is crowned with a castle.

morsal (môr′sal), *a.* [Prop. **morsual*, < L. *morsus*, a biting. See *morse*^{2}.] Biting or chewing: said of the edge of a tooth.

Morse^{3} (môrs), *n.* A telegram written in the Morse alphabet.

Morse^{3} (môrs), *v. t.* and *i.*; pret. and pp. *Morsed*, ppr. *Morsing.* To write or transmit in the Morse alphabet, as a telegram.

The first part is private signals. Ah! now she's *Morsing* against the fog. *R. Kipling*, Traffics and Discoveries, p. 133.

Morse finger. Contraction of the finger following a traumatic inflammation of the joints excited by overuse in pressing the keys of the Morse telegraph.

Morse ivory. See ★*ivory*^{1}.

morselization, *n.* **2.** Same as ★*morcellation.*

morselize (môr′sl-īz), *v. i.*; pret. and pp. *morselized*, ppr. *morselizing.* [*morsel* + *-ize.*] To divide up into morsels; communicate piecemeal.

There is nothing in the environment to which the adolescent nature does not keenly respond. With pedagogic tact we can teach about everything we know that is really worth knowing, but if we amplify and *morselize* instead of giving great wholes, . . . and if we wait before each methodic step till the pupil has reproduced all the last, we starve and retard the soul, which is now all insight and receptivity. *G. S. Hall*, Adolescence, II. 454.

mor. sol. An abbreviation of the Latin *more solito*, in the usual manner.

mort^{5} (môrt), *n.* A salmon in the third year.

mortality, *n.*—**Makeham's law of mortality.** See ★*law*^{1}.

mortar^{1}, *n.*—**Mortar-apparatus.** Same as *life-saving mortar* (which see, under *life-saving*).

mortar^{2}, *n.*—**Adobe mortar.** See ★*adobe.*

mortar-bed^{2} (môr′tär-bed), *n.* [*mortar*^{2} + *bed*^{1}.] In *geol.*, a relatively hard bed of silt, sand, or gravel, cemented together by carbonate of lime and standing out in relief after the erosion of the soft beds with which it is associated in the region of the Great Plains. The name was given by Robert Hay, and is current in the discussions regarding water-supply in these regions. *Amer. Geol.*, June, 1904, p. 38.

mortar-circle (môr′tär-sėr″kl), *n.* In *ordnance*, the circular platform on which a mortar is fixed.

mortar-float (môr′tär-flōt), *n.* A vessel of raft-like construction specially designed for carrying and working a mortar.

mortar-ketch (môr′tär-kech), *n.* Same as *bomb-ketch.*

mortar-structure (môr′tär-struk″tūr), *n.* In *petrog.*, a texture, in some metamorphic rocks that have been crushed, in which larger crystals or fragments of crystals are surrounded by finer-grained fragments or crystals, like stones cemented together by mortar.

mortar-ware (môr′tär-wār), *n.* A very hard porcelain biscuit invented by Wedgwood and used by him in the manufacture of mortars. *N. E. D.*

Morte slates. See ★*slate*^{2}.

mortgage-bond (môr-gạj-bond), *n.* A bond secured by a mortgage.

mortgage-note (môr′gạj-nōt), *n.* A note the payment of which is secured by a mortgage given at the same time and recited in the note. Its effect is to hold the borrower liable for the deficiency if the mortgaged property does not satisfy the debt. The term *bond* is also used.

mortific (môr-tif′ik), *a.* [LL. *mortificus.* See *mort*^{1}, *n.*, and *-fic.*] Causing death; deadly.

mortification-root (môr″ti-fi-kā′shọn-röt), *n.* The marsh-mallow, *Althæa officinalis.*

Mortimer's variation. See ★*variation.*

mortiser (môr′ti-sėr), *n.* A mortising-machine (which see).

mortising-machine, *n.*—**Chain mortising-machine,** in *woodworking*, a machine for sinking a mortise in wood by means of a band-saw composed of an endless band or chain each link of which is a cutting-tool. The chain is supported by two wheels in a vertical position and is driven at a high speed. The wooden sill or other piece to be mortised is brought up against the lower end of the chain, and each link chips out a small piece, the effect being quickly to cut a mortise in the wood the exact length of the width of the loop of the chain and as wide as the cutting-face of the links. The depth of the mortise is governed by the upward pressure of the wood against the chain.

Mortuary chapel. See ★*chapel.*

morula, *n.* **2.** In *pathol.*, same as *button-scurvy* (which see, under *scurvy*^{2}).

morulit (mor′ọ̈-lit), *n.* [See *morula.*] In sporozoans, the chromatin mass in the nucleus. *Frenzel.*

moruloid, *a.* **2.** In *bacteriol.*, applied to colonies which are broken up into regular segments, like a morula.

morvin (môr′vin), *n.* [F. *morve*, glanders, + *-in*^{2}.] The specific poison of the bacillus of glanders. See ★*mallein.*

morwong (môr′wong), *n.* [New South Wales aboriginal name.] The fish *Chilodactylus macropterus*, also called *carp* and *jackass-fish*, and in New Zealand by the Maori name of *tarakihi*. The *red morwong* is *Chilodactylus fuscus*, also called *carp*. The *banded morwong* is *Chilodactylus vittatus*. *E. E. Morris*, Austral English.

mos. An abbreviation of *months.*

mosaic^1. **I.** *a.* **2.** In *biol.*, pertaining to or characterized by the presence of antagonistic or mutually exclusive parental characters in different parts of the body or of the germ-cells.

> Unless there is an original sport on the part of the individual, such a phenomenon may be taken as indicating that the germ-cells may also have been *mosaic.*
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., [1902, I. 127.

Mosaic chromatic process, a method of printing from a combination, in proper design, of colored pastes or chalks arranged upon a plate of metal. It was introduced in New York about 1870 by Hitchcock, an engraver on wood. Prints could be had only on paper that had been moistened with turpentine or benzin. The process was most applicable to the tints of maps and of wall-papers.—**Mosaic disease.** See ★*disease.*—**Mosaic inheritance,** particulate inheritance. See ★*inheritance.*—**Mosaic theory of development.** See ★*development.*—**Mosaic tile.** See ★*tile*^{1}.

II. *n.* **4.** In *biol.*, an organism which has antagonistic or mutually exclusive parental characteristics in different parts of its body.

> These *mosaics* occurred as varieties both on prickly individuals and on smooth ones still more rarely.
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., 1902, [I. 23.

> The families of the albino D [dominant] . . . are especially interesting; for, . . . all the 13 coloured offspring by two different broken-coloured males, one brw. [pied-brown], the other blw. [pied-black], were self-coloured, brown, or black. This result resembles one obtained by Castle . . ., but the suggestion that such a pied individual is a *mosaic* which throws self-colour gametes is not readily applicable to this case. For here the peculiarity evidently lies in the gametes of the individual albino, since with other albinos the same males gave pied offspring. As Castle commonly obtained such self-coloured mice from albinos crossed with pied, it is likely that the peculiarity may belong to certain strains of albinos.
> *Proc. Zool. Soc. London*, 1903, II. 84.

mosaic^1 (mọ-zā′ik), *v. t.* To work up into a mosaic; represent in or decorate with mosaic patterns. Also *mosaick.*

> The windward slope was *mosaiced*, if the word be allowed, with the coarse sand [shown] in bottle No. 1.
> *Geog. Jour.* (R. G. S.), XI. 559.

> Literature, philosophy, and history abound in variant editions of the same theme, which, although relative and partial, . . . illustrate certain features of the ephebic metamorphoses . . . and might be *mosaicked* into a new and higher unity about this theme.
> *G. S. Hall*, Adolescence, II. 339.

mosaic-machine (mọ-zā′ik-ma-shēn″), *n.* A power-machine for cutting marble and other ornamental stone into the small cubes used in laying mosaic floors. It is essentially a shearing-machine.

mosasaur (mō′sa-sâr), *n.* [*Mosasaur*(*us*).] A general name for the large, extinct marine reptiles of the family *Mosasauridæ*, including the well-known genera *Mosasaurus*, *Tylosaurus*, *Clidastes*, etc. They had long, pointed heads, rather long bodies, a compressed tail, and limbs modified into short, flattened paddles. They abounded in the Cretaceous period and their remains are particularly abundant in the chalk of Kansas.

Mosasauri (mō-sạ-sâ′rī), *n. pl.* Same as *Mosasauria.*

mosasauroid (mō-sạ-sâ′roid), *a.* [*mosasaur* + *-oid.*] Resembling a mosasaur.

moschatine (mos′kạ-tin), *n.* [NL. *moschata* + *-ine*^{2}.] A bitter pulverulent alkaloid, $C_{21}H_{27}O_7N$, contained in *Achillea moschata* and in *A. millefolium.*

moschophoros (mos-kof′ọ-rus), *n.* [NGr. **μοσχοφόρος*, < Gr. *μόσχος*, calf, + *-φορος*, < *φέρειν*, carry.] In *Gr. antiq.*, a calf-carrier: the name given to certain statues in which a man is represented carrying a sacrificial calf upon his shoulders.

Moscovian (mos-kō′vi-ạn), *a.* and *n.* [*Moscovia*, *Muscovia* (< Moscow), Russia, + *-an.*] **I.** *a.* In *geol.*, noting the middle division of the Carboniferous system when this expresses the marine type of sedimentation, as contrasted with the Westphalian, which represents the lagoon type.

II. *n.* The Moscovian division.

Moseleya (mōs-e-lē′yạ̈), *n.* [Named after Professor Henry N. *Moseley*, F. R. S.] A genus of deep-sea fishes of the family *Macruridæ*, taken off the coast of British Columbia.

mosker (mos′kėr), *n.* [Yiddish.] A pledger; one who makes a living by taking advantage of the business incapacity of persons engaged in the pawnbroking trade. Also *moskeneer*, *moskinner.*

moskinner, *n.* Same as ★*mosker.*

mosky (mos′ki), *a.* [Origin obscure.] Having a yellow tail: applied by sailors to a dolphin. Also used as a noun. [Eng.] *N. and Q.*, 10th ser., I. 266.

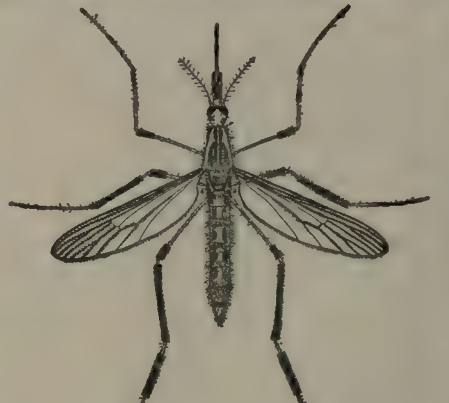
Moslemic (mos-lem′ik), *a.* [*Moslem* + *-ic.*] Moslem.

Moslemite (mos′lem-īt), *n.* [*Moslem* + *-ite.*] A Moslem.

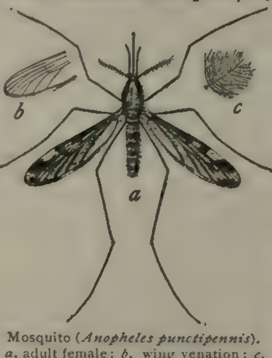
Moslemize (mos′lem-īz), *v. t.*; pret. and pp. *Moslemized*, ppr. *Moslemizing.* To cause to become a Moslem or to believe in the Mohammedan faith; render Moslem.

> Emin Effendi (he had *Moslemized* himself) was appointed governor of the equatorial province.
> *Smithsonian Rep.*, 1890, p. 281.

mosquito, *n.*—**Big woods-mosquito,** *Janthinosoma musica*, a rather large black species with purple reflections, which breeds in woodland swamps.—**Brown-striped woods-mosquito,** *Culex siphonalis*, a rather small dark mosquito with a brown stripe in the center of the thorax. It breeds in swampy woodlands.—**Brown woods-mosquito,** *Culex cantans*, a large brown mosquito with banded abdomen and tarsi. It flies in the spring and breeds in woodland pools, its larvæ hiding among the dead leaves on the bottom.—**Dapple-winged mosquito,** a name used by British investigators to designate the first of the malarial mosquitos which proved to carry malaria, *Anopheles claviger.*—**Elephant mosquito,** a large East Indian mosquito, *Toxorhynchites immisericors*, occurring abundantly from Ceylon through India and down the Malay Peninsula. Its larvæ live in the hollow stumps of the giant bamboo and prey solely upon the larvæ of other mosquitos.—**Fringe-legged mosquito,** *Psorophora ciliata*, a large mosquito with erect scales on its legs. Its larvæ are carnivorous and feed on other mosquito larvæ.—**Irritating mosquito,** *Culex perturbans*, a large brown species with the tarsi broadly banded with white. It is an especially fierce biter.—**Malarial mosquito,** any one of numerous species of the culicid genus *Anopheles.* With certain species of the genus, however, notably *Anopheles punctipennis*, careful experimenters have failed to establish the malarial relation. See ★*Anopheles* (with cut).—**Mottled mosquito,** *Culex discolor*, a small yellow-brown species with banded legs and beak, spotted wings, and the abdomen mottled with brown and yellowish white.—**Pitcher-plant mosquito,** *Wyeomyia smithii*, a small black species which breeds in the leaf-pitchers of *Sarracenia.*—**Rock-pool mosquito,** *Culex atropalpus*, a species not uncommon in the northeastern United States. The thorax is golden yellow with a blackish central stripe, and the abdomen has narrow irregular white bands at the bases of the segments. It breeds in pot-holes and other rocky pools.—**Salt-marsh mosquito,** any one of several species of *Culicidæ* which breed in salt or brackish water; notably, *Culex sollicitans*, *C. tæniorhynchus*, and *C. cantator.*—**Silver-striped mosquito,** *Culex serratus*, a black species with a broad silvery-gray stripe down the middle of the thorax and with unbanded legs and beak. It lives in low swampy woods and is wide-spread, occurring from South America north to New Jersey.—**Snowy-foot mosquito,** *Culex niveitarsis*, a small brown species whose hind tarsi are almost wholly white. It flies in the spring, and its larvæ are found in rocky pools.—**Spotted-legged mosquito,** *Culex jamaicensis*, a large dark-colored species which has the legs spotted with yellow.—**Swamp-mosquito,** *Culex sylvestris*, a medium-sized or small species having white-rimmed tarsal joints and the abdominal segments banded with pure white. It is especially abundant in fresh-water swamps.—**Three-striped mosquito,** *Culex trivittatus*, a species having a pale-yellow thorax with three black longitudinal stripes and unbanded legs and proboscis. It is a woodland form and breeds in small springs and surface pools.—**Tree-hole mosquito,** *Culex triseriatus*, a small species with black proboscis and legs and the sides of the thorax silvery white. It breeds most abundantly in water-filled holes in trees, stumps, and logs.—**White-lined mosquito,** *Culex signifer*, a medium-sized black mosquito, with the thorax marked with narrow white lines and the hind tarsi broadly banded with white at either end of each joint, the last one being wholly white.—**Woods-mosquito, wood-mosquito,** any one of several species of mosquitos which breed by preference in woods, as the brown-striped woods-mosquito, *Culex siphonalis*, or the brown woods-mosquito, *Culex cantans.*



Fringe-legged Mosquito (*Psorophora ciliata*). Female, greatly enlarged. (Howard, U. S. D. A.)



Mosquito (*Anopheles punctipennis*). *a*, adult female; *b*, wing venation; *c*, male antenna: greatly enlarged. (Howard, U. S. D. A.)

mosquito-bee (mus-kē′tō-bē), *n.* Any one of the small stingless tropical bees of the genera *Melipona*, *Trigona*, or *Tetragona.*

mosquito-blight (mus-kē′tō-blīt), *n.* A blight of the tea-plant in East India, caused by the punctures of a capsid bug, *Helopeltis theivora*, and other species of the same genus; also, the insect itself.

mosquitocide (mus-kē′tō-sīd), *n.* [*mosquito* + L. *-cida*, < *cædere*, kill.] One who or that which kills *mosquitos.*

moss^1, *n.*—**Besom-moss,** the haircap-moss.—**Bird's-nest moss.** See *resurrection-plant* (*b*).—**Cord-moss,** any moss of the genus *Funaria.* See *Funaria.*—**Corsican moss.** See ★*Alsidium* and *moss*^{1}.—**Flowering moss.** (*b*) The moss-pink, *Phlox subulata.* (*c*) The widow's-cross, *Sedum pulchellum.*—**Golden moss.** (*b*) The wall-pepper or wall-moss, *Sedum acre.* (*c*) The haircap-moss, *Polytrichum juniperinum.*—**Kentucky moss,** *Portulaca grandiflora*, a plant introduced into the United States from South America and widely cultivated under a variety of forms.—**Moss copper.** See ★*copper*^{1}.—**Mountain-moss.** (*a*) *Selaginella selaginoides*, a low creeping plant found on wet rocks in high northern latitudes of both hemispheres, ranging southward in America to New Hampshire, Michigan, and Colorado. (*b*) Same as *golden* ★*moss* (*b*).—**Pyxie moss,** the flowering moss, *Pyxidanthera barbulata.*—**Rock-moss.** (*a*) See *rock-moss.* (*b*) Same as *flowering* ★*moss* (*c*).—**Rose-moss.** Same as *Kentucky* ★*moss.*—**Running moss.** Same as *snake-moss.* Also *running-pine.*

moss^1, *v. t.* **2.** To fill with moss, as the crevices between the logs in a logging-camp.

mossbacked (môs′bakt), *a.* [*mossback*, *n.*, 2, + *-ed.*] Antiquated; old-fashioned; very conservative. [Slang.]

moss-bush (môs′bůsh), *n.* Same as ★*moss-plant.*

moss-flower (môs′flou″ėr), *n.* The reproductive organs of a moss.

moss-fruit (môs′fröt), *n.* The fruiting portion (sporocarp, sporogonium, capsule) of a moss. See *sporogonium.*

mossite (môs'īt), *n.* [*Moss*, a locality in Norway, + *-ite*².] A tetragonal mineral consisting, like tapiolite, of the niobate and tantalate of iron, but containing a relatively large amount of niobium: found near Moss, Norway.

moss-land (môs'land), *n.* Land that consists chiefly of peat-bog; peat-moss.

moss-peat (môs'pēt), *n.* Peat derived chiefly from moss, as distinguished from that derived from other plants, such as wild rice, etc. See *peat*¹.

moss-plant (môs'plant), *n.* A moss-like plant, *Harrimanella hypnoides*, of the heath family, found on alpine summits in New England and New York, and northward throughout the arctic regions of both hemispheres.

mosswort (môs'wėrt), *n.* A bryophyte, especially a moss, as distinguished from the *liverworts*.

mot⁴, *n.* 3. A small grove or clump of timber on a prairie, sometimes likened to an 'island.' [Local, U. S.]

mot⁵ (mōt), *n.* [Marathi *moṭ*, Telugu *moṭa*, *motu*.] An ancient mechanical device used in India and other countries of the Orient for lifting water by animal power. It consists of a bucket or water-tight bag, raised by means of a rope fastened over a pulley, two bullocks or other animals being attached to the end of the rope. *H. M. Wilson*, Irrigation Engineering, p. 489.

mote¹, *n.* 6. In *cotton-spinning*, a piece of broken cotton-seed, cotton-leaf, etc.

> The fragmental portions of cotton seeds carry a tuft of attached fibres on the outer membrane; this is termed a bearded *mote*, and is regarded as an imperfection or an impurity, as it interferes with the spinning qualities of a good yarn. *Hannan*, Textile Fibres of Commerce, p. 102.

mote⁶ (mō'te), *n.* [Peruvian and Bolivian: Quichua *mutti*, = Aymara *motti*.] Boiled grains of maize, a dish much eaten in Peru and Bolivia.

mote⁷ (mōt), *v. i.*; pret. and pp. *moted*, ppr. *moting*. [Back-formation from *motor*.] To ride in a motor vehicle; engage in the sport of motoring. [Colloq.]

mote-knife (mōt'nīf), *n.* A steel bar with a sharp edge, attached to a cotton-carding machine immediately under the feed-rolls for removing fragments of broken seed and leaf that may be in the cotton. See ★*mote*¹, 6. *Taggart*, Cotton Spinning, I. 132.

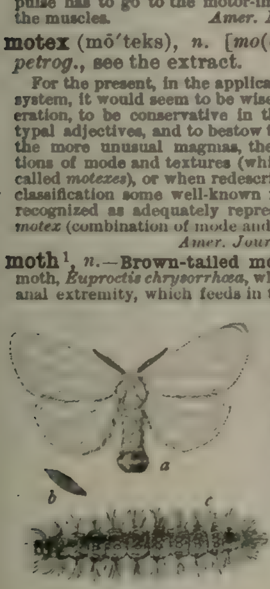
moter (mō'tėr), *n.* [*mote*¹ + *-er*¹.] 1. One who extracts motes or particles of extraneous substances from wool; a wool-moter.—2. A device in a cotton-gin for removing motes or small impurities, as pieces of stalk and dirt.

moteur (mō-tėr'), *n.* [F.] A person who is ★motor-minded (which see).

> The so-called motor reaction is one given by a *moteur*, whose movements are habitually initiated by motor images: to whatever sense the stimulus is given, the impulse has to go to the motor-image-centres, and then to the muscles. *Amer. Nat.*, March, 1903, p. 207.

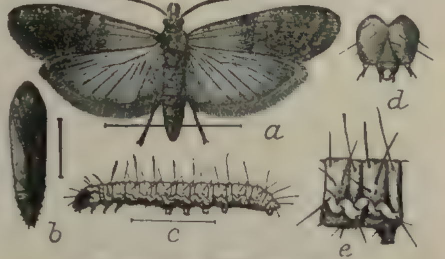
motex (mō'teks), *n.* [*mo*(*de*) + *tex*(*ture*).] In *petrog.*, see the extract.

> For the present, in the application of the quantitative system, it would seem to be wisest, and the part of moderation, to be conservative in the matter of systematic typal adjectives, and to bestow them only in the case of the more unusual magmas, the less common combinations of mode and textures (which may conveniently be called *motexes*), or when redescribing in terms of the new classification some well-known rock which is commonly recognized as adequately representative of some usual *motex* (combination of mode and texture). *Amer. Jour. Sci.*, Sept., 1907, p. 230.



Brown-tailed Moth (*Euproctis chrysorrhœa*).
a, female moth; *b*, antennæ of moth; *c*, larva: all one fourth reduced.

moth¹, *n.*—**Brown-tailed moth**, a European liparid moth, *Euproctis chrysorrhœa*, white in color with a brown anal extremity, which feeds in the larval stage in a great variety of orchard-, shade-, and forest-trees, and which has been established in eastern Massachusetts, where it has become a great pest.—**Chinese-character moth.** Same as *goose-egg* ★*moth*.—**Clothes moth.** See *clothes-moth*.—**Copper hind-wing moth.** Same as *American copper* ★*hindwing*.—**December moth**, a British collectors' name for a lasiocampid moth, *Pœcilocampa populi*, which often issues from its cocoon in December.—**Delta moth**, any one of a group of noctuid moths formerly known as *Deltoides* from the triangular outline of the wings when at rest. The *Hypeninæ* or *Hypenidæ* (which see) are characteristic delta moths. See *deltoid moth*.—**Diamond-back moth**, a cosmopolitan moth, *Plutella maculipennis*, probably originally a European species, but carried by commerce to most parts of the world. Its larvæ feed on cabbage and other cruciferous vegetables.—**Diverse-line moth**, an American geometrid moth, *Eustroma diversilineata*, pale ocher-yellow in color, with the forewings crossed by many diverging brown lines. Its larvæ feed on the foliage of grape, and those of the fall generation hibernate.—**Dried-currant moth**, a cosmopolitan phycitid moth, *Ephestia cautella*, whose larvæ feed on dried raisins and currants, as well as in chocolate-nuts or cocoa-beans, English walnuts, figs, and corn meal.—**Engrailed moth**, a British collectors' name for a geometrid moth, *Tephrosia biundularia*.—**Gipsy moth.** See *gipsy-moth*.—**Goose-egg moth**, an old British collectors' name for a European platypterygid moth, *Drepana glaucata*. Also called the *Chinese-character moth*.—**Harnessed moth**, an American arctiid moth, *Apantesis vittata*, so marked as to appear as if harnessed.—**House-builder moth**, a psychid moth, *Oiketicus saundersii*, occurring in the West Indies, whose larva builds a portable house which it carries about with itself. The name is equally applicable to many psychid larvæ. See *bag-worm*.—**Imperial moth**, a large and handsome American ceratocampid moth, *Basilona imperialis*, yellow in color with brown markings. Its large hairy larva feeds on the leaves of butternut, hickory, and other forest-trees.—**Indian-meal moth**, a phycitid moth, *Plodia interpunctella*, probably of American origin, whose larva feeds on stored grain, flour, or meal.—**Japan moth**, a British collectors' name for a European tineid moth, *Adela degeerella*.—**Many-plumed moth**, any moth of the family *Orneodidæ*, the species of which have the wings each split up into longitudinal sections or plumes.—**Mocha-stone moth**, any one of several moths of the notodontid genus *Melalopha*. The peculiar markings of the wings resemble somewhat those of a moss-agate. The larvæ feed on the willow and the poplar.—**Mottled plum-tree moth**, an American noctuid moth, *Apatela superans*, whose larva feeds on the leaves of plum-trees.—**Neat cucumber-moth.** See ★*cucumber*.—**Pepper-and-salt moth**, an American geometrid moth, *Lycia cognataria*, whose larva feeds on currant-leaves.—**Poplar mocha-stone moth**, *Melalopha inclusa*.—**Potato-tuber moth.** Same as ★*potato-moth*.—**Processionary moth**, the adult of the processionary caterpillar (which see, under *processionary*).—**Regal moth**, an American ceratocampid moth, *Citheronia regalis*. See *walnut-moth*.—**Royal moth**, the regal walnut-moth. See *royal horned caterpillar*.—**Scallop-shell moth**, a British collectors' name for an Old World geometrid moth, *Calocalpe undulata*, whose wings are marked like a scallop-shell.—**Senatorial moth**, an American ceratocampid moth, *Anisota senatoria*, whose larvæ feed on oak-leaves.—**Small engrailed moth**, a British collectors' name for a geometrid moth, *Tephrosia crepuscularia*.—**Smoky moth**, any species of the lepidopterous family *Pyromorphidæ*. They are small moths of a smoky-black color, sometimes marked with brighter colors. *Harrisina Americana* is a familiar example: formerly called the *grape-vine Procris*.—**Two-colored royal moth**, an American ceratocampid moth, *Adelocephala bicolor*, occurring in the Mississippi valley. The fore wings are yellowish brown speckled with black, and the hind wings are pink. The larva feeds on honey-locust and on the Kentucky coffee-tree.—**Underwing moth.** See ★*Catocala*.—**White-tipped moth**, an American notodontid moth, *Symmerista albifrons*, having a conspicuous white patch on the outer half of the costal border of each fore wing. Its larvæ feed on oak-leaves.—**Window-winged moth**, any one of the small moths of the family *Thyridæ* or *Thyrididæ*. The English name is derived from the white or yellowish translucent spots on the wings.



Indian-meal Moth (*Plodia interpunctella*).
a, moth; *b*, pupa; *c*, larva: all nearly twice natural size; *d*, head of larva; *e*, segment of larva: more enlarged.
(Chittenden, U. S. D. A.).

moth³ (mōt), *n.* [Hind. *moṭh*.] In India, a trailing dwarf bean, *Phaseolus aconitifolius*, cultivated for food and fodder. Also called *Turkish gram*. See ★*gram*³.

moth-borer (môth'bōr"ėr), *n.* Same as *sugar-cane* ★*borer* and *larger corn-stalk* ★*borer*. [British West Indies.]

mother-cyst (muᴛʜ'ėr-sist), *n.* The cyst which produces daughter-cysts by budding.

mother-gate (muᴛʜ'ėr-gāt), *n.* In *mining*, a large passage in a coal-mine used as a main roadway.

motherhood, *n.* 2. A clan constituted by kinship through the mother. *N. E. D.*

mother-lobster (muᴛʜ'ėr-lob"stėr), *n.* An edible crustacean, *Scyllarus latus*, found in the Mediterranean and the Atlantic: said sometimes to attain a length of 18 inches and to be superior to the common lobster in flavor.

mother-lode, *n.* 2. The principal vein of any district.

mother-metal (muᴛʜ'ėr-met"al), *n.* A metal or metallic compound from which some other form of the metal can be obtained.

> The composition of the remaining solid-solution or "*mother-metal*" of martensite has reached that of hardenite. *Encyc. Brit.*, XXIX. 573.

mother-of-emerald (muᴛʜ"ėr-ọv-em'ẹ-rald), *n.* Prase: sometimes so called because formerly supposed to be the mother-rock of emerald. *Max Bauer* (trans.), Precious Stones, p. 488.

mother-of-niter (muᴛʜ"ėr-ọv-nī'tėr), *n.* The residual bitter saline liquor from which saltpeter has been crystallized. The term was used by Black in the middle of the eighteenth century.

mother-of-wheat (muᴛʜ"ėr-ọv-hwēt'), *n.* 1. The cow-wheat, *Melampyrum arvense*.—2. The ivy-leaved speedwell, *Veronica hederæfolia*.

mother-right (muᴛʜ'ėr-rīt), *n.* 1. Alleged supremacy of the mother in the primitive family and clan; in reality, the supremacy of the male relatives of the wife or mother as opposed to the supremacy of husband or father. *L. F. Ward*, Pure Sociol., p. 213.—2. That social order in which descent is traced from mother to children, so that the children belong to the mother's family and inherit from their mother's brothers: same as *matriarchy*.

mother-rule (muᴛʜ'ėr-röl), *n.* Same as ★*mother-right*, 1.

mother's-heart (muᴛʜ'ėrz-härt), *n.* The shepherd's-purse, *Bursa Bursa-pastoris*.

motherwort, *n.*—**Golden motherwort**, the chafeweed or wood-cudweed, *Gnaphalium sylvaticum*, a native of Europe and Asia and found also in New Brunswick and Cape Breton, where it has probably been introduced.

moth-fly (môth'flī), *n.* Same as *moth-like* ★*fly*.

moth-miller (môth'mil"ėr), *n.* Same as *miller*, 3.

motion, *n.* 18. In *geom.*, a reversible unique transformation of the aggregate of all points into itself.—**Absolutely total motion**, in *geom. topics*, a motion during which no two instantaneous places of the moving object have any part in common.—**Alternating motion**, reciprocating or oscillatory motion.—**Angle motion** or **canting motion**, a device in the tables of band-saws, or in the carriage or fence of circular saws, by which the work may be presented at an angle with the plane of the saw for cutting bevels.—**Circular motion**, a device or mechanism for guiding a planing- or shaping-tool along the arc of a circle. Such a device is frequently used for finishing curved surfaces which can not be finished in a lathe because the radius of the arc is so long as to be beyond the capacity or convenience of standard machine-tools.—**Compound motion**, the resultant of two or more simple motions or the combination of a motion of translation with one of rotation.—**Euclidean motion**, a reversible unique transformation of the aggregate of all points into itself, in which the Euclidean postulate with regard to parallels is assumed.—**Fore-and-aft motion**, in *mech.*: (*a*) A forward and backward motion, used in connection with something that has a distinct front and rear. (*b*) A motion parallel to the keel of a vessel.—**Gooch's link-motion**, a form of link-motion, derived from Stephenson's, in which the slot-link was not lifted and lowered, as in Stephenson's, but the rod to the valve was raised and lowered to secure the same adjustment in the slot of the vibrating non-adjustable link. The valve-rod had to be long enough to be jointed, but no variation in lead occurred, because the eccentric-straps were not swung around the shaft in adjusting the position of the sliding-block. The radius of the link was that of the length of the first or pivoted section of the valve-rod.—**Homogeneously total motion**, in *geom. topics*, a motion during which no two instantaneous places of the moving object have any homogeneous part in common.—**Impulsive motion**, a motion conceived of as generated instantaneously from rest by the application of impulses.—**Latent motions**, motions of cyclic or gyrostatic nature, imagined as taking place in the ultimate particles of a substance. The assumption of such latent motions is an essential feature of certain speculations concerning the structure of matter.—**Motion curve.** See ★*curve*.—**Motion in altitude.** See ★*altitude motion*.—**Naperian motion**, a superposition of a rotation and a dilatation.—**Negative motion**, in *weaving*, a kind of drag motion for taking up the cloth in the loom as it is being woven: used in contradistinction to *positive motion*.—**Non-Euclidean motion**, a reversible unique transformation of the aggregate of all points into itself, in which the Euclidean postulate with regard to parallels is not assumed.—**Notice of motion**, in *law*, a formal legal notice, given by one party in a cause to the other or others, that an application for an order affecting the cause will be made to the court at a certain time and place.—**Periodic motion**, a motion in which changes of speed or of direction recur at regular intervals of time. Simple harmonic motions, all types of vibratory motions, orbital motions, and the motions of any part of a revolving body not within the axis of revolution are examples of periodic motion.—**Pick-at-will motion**, a motion for throwing the shuttle of a loom, which has a series of shuttle-boxes at each end, so as to allow a single weft, or any kind or color of weft, to be passed through a shed or between the warp-threads.—**Polygon of motion**, a vector diagram, analogous to the polygon of forces, representing the components of a motion and the direction and magnitude of their resultant. It is usual, and more accurate, to speak of a *polygon of velocities*, *acceleration*, or *momenta* rather than of a *polygon of motion.*—**Precessional motion,** in *mech.*, gyroscopic precession.—**Simple motion,** a motion of translation alone or of rotation alone, but not of the two in combination.—**Single preventer motion.** See *single* ★*preventer.*—**Star-wheel motion,** a motion employed for operating-, measuring-, or recording-machines, such as cyclometers and the feed of machine-tools: so called because a small wheel having pointed teeth and resembling the conventional symbol for a star is used. The wheel is turned one tooth or more at each stroke or revolution, as the case may require.—**Thwartwise motion.** Same as ★*cross-motion.*—**Translatory motion.** See *translation*, 6.—**Traverse motion,** a to-and-fro motion, forming part of the mechanism of a number of machines used in textile-manufacturing.—**Uniform motion,** motion with uniform velocity.—**Uniplanar motion,** motion in which the paths described by the particles of the moving body lie in planes parallel to one another.

motion-block (mō′sho̤n-blok), *n.* 1. A moving block, such as a link-block or cross-head, used to connect two moving parts.—2. An engine cross-head. [Eng.]

motion-frame (mō′sho̤n-frām), *n.* Same as ★*motion-plate.*

motion-plate (mō′sho̤n-plāt), *n.* A rolled steel or iron plate which is bolted transversely between the longitudinal frame-plates of a locomotive, to carry the ends of the cross-head guides which are farthest from the cylinder. The connecting-rods and valve-rods sometimes pass through openings in this plate.

motion-process (mō′sho̤n-pros″es), *n.* [Tr. G. *bewegungsvorgang.*] Any physical phenomenon regarded as a mode of motion; especially, a process of stimulation: opposed to *mental process.*

> We generally understand by stimulus the external *motion-process,* which . . . is accompanied by the mental process of sensation.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 16.

motion-rod (mō′sho̤n-rod), *n.* In a steam-engine, a rod which communicates motion from a rock-shaft, driven by the eccentric, to the valve-stem. [Eng.]

motiv. A simplified spelling of *motive.*

motivity, *n.* 2. In *thermodynam.*, a term proposed by Lord Kelvin for the available energy of a system.

motivization (mō″tiv-i-zā′sho̤n), *n.* Motivation. *W. Wundt* (trans.), Human and Animal Psychol., p. 433.

motocycle (mō′tọ-sī-kl), *n.* [L. *motus*, motion, + E. *cycle.*] 1. Same as ★*motor-cycle.*—2. A light motor vehicle, without body, on three or four wheels, carrying one or more persons.

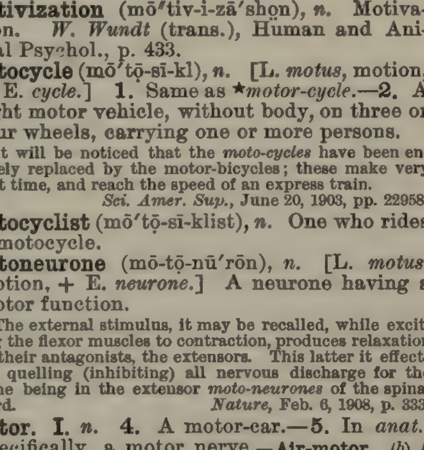
> It will be noticed that the *moto-cycles* have been entirely replaced by the motor-bicycles; these make very fast time, and reach the speed of an express train.
> *Sci. Amer. Sup.*, June 20, 1903, pp. 22958.

motocyclist (mō′tọ-sī-klist), *n.* One who rides a motocycle.

motoneurone (mō-tọ-nū′rōn), *n.* [L. *motus*, motion, + E. *neurone.*] A neurone having a motor function.

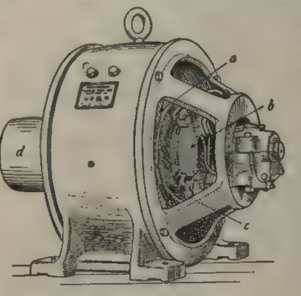
> The external stimulus, it may be recalled, while exciting the flexor muscles to contraction, produces relaxation of their antagonists, the extensors. This latter it effects by quelling (inhibiting) all nervous discharge for the time being in the extensor *moto-neurones* of the spinal cord.
> *Nature*, Feb. 6, 1908, p. 333.

motor. I. *n.* 4. A motor-car.—5. In *anat.*, specifically, a motor nerve.—**Air-motor.** (*b*) A motor-car driven by an air-motor.—**Asynchronous motor,** an alternating-current motor in which the speed is not rigidly determined by the frequency of alternation. Induction-motors (see below) are asynchronous.—**Brayton motor** a form of gas-engine or internal-combustion engine devised about 1873 to operate on a cycle in which the gas and air were ignited and expanded at constant pressure beyond the piston.—**Compensated motor.** (*a*) An electric motor in which the armature reaction is compensated by an auxiliary winding in the field structure: used for alternating-current railway-motors. (*b*) An alternating-current motor in which the wattless current is compensated by a condenser or by auxiliary commutator-brushes; a compensated repulsion-motor.—**Compound motor.** See *electric* ★*motor.*—**Double-opposed motor,** an arrangement of the cylinders of an internal-combustion engine in which two cylinders on opposite sides of the crank-shaft are connected to cranks which are 180 degrees apart: usually applied in horizontal engines in motor-car practice, either parallel to the long axis of the vehicle or at right angles to it. If the two cylinders operate on the four-phase or Otto cycle, the working-strokes may occur together in the two cylinders, so as to balance the thrust against the cylinder-covers; or the working-stroke of one may occur when the other is aspirating its charge. In two-phase cycles the working-strokes will always be together.—**Electric motor,** an apparatus for converting electric into mechanical power. In general, any electric generator, when supplied with a suitable form of electric power, will act as a motor, and an electric motor, when driven by mechanical power, will become an electric generator, that is, produce electric power. By the form of electric power supplied, electric motors are divided into *direct-current motors* and *alternating-current motors.* Direct-current motors usually have a commutator and brushes to receive the current, a revolving armature, and a stationary field, which may be bipolar or multipolar. By the connection of the field-exciting coils, direct-current motors are divided into *shunt-motors, series-motors,* and *compound motors.* In the shunt-motor the field-coils are connected in parallel or multiple to the armature. Such motors give fairly constant speed at all loads, and therefore are commonly used as stationary motors in factories, mills, and in general for driving apparatus at constant speed. In starting, they require a rheostat in the armature circuit. In the series-motor the full supply-current passes the field-coils (which consist of fewer turns of larger wire) in series to the armature. In such motors the speed increases with decrease of load and decreases with increase of load, that is, increase of torque, and the torque is a maximum in starting. They are used where heavy starting-torque and a variation of speed with the load are desired, as for hoist-motors, and especially in electric railroading. Compound motors with cumulative compounding—that is, having a shunt-field and a series-field magnetizing in the same direction—are intermediate in character between shunt-motor and series-motor, and are used for electric elevators, etc. Differential compounding, that is, a small series-field counteracting the shunt-field, has been used to obtain more constant speed than that given by shunt-motors, but its use has been discontinued because the modern shunt-motor gives a sufficiently constant speed. Alternating-current motors are *induction-motors, commutator-motors,* and *synchronous motors.* Induction-motors contain a primary winding, usually stationary, and excited by single-phase or more commonly polyphase alternating currents, and a secondary winding, usually revolving, closed upon itself in short circuit. In the secondary winding a rheostat is frequently used, in starting, which is external and connected to the windings by collector-rings and -brushes, or revolving with the armature or secondary winding. If no starting rheostat is used the secondary winding usually is a 'squirrel-cage,' that is, a number of copper bars passing through the iron of the armature-core near the periphery and connected with each other electrically by two end-rings. In such motors, in starting, especially in large motors, an autotransformer or autostarter is frequently used to lower the voltage and thereby the starting current. The characteristics of the induction-motor are those of the shunt-motor, that is, constant speed at all loads. To the direct-current series-motor corresponds the alternating-current commutator-motor, which is usually single-phase. It may be a *series-motor* (that is, the main current passes in series through the stator or field, and, by brushes and commutator, through the rotor or armature), and then usually contains a stationary compensating winding to neutralize the armature reaction and self-induction, this compensating winding being either excited by the main current or short-circuited upon itself (inductive compensation). Another form of alternating-current commutator-motor is the *repulsion-motor*, in which the main current traverses only the stator winding, while the rotor winding is short-circuited upon itself through the commutator and the brushes which are set under a small angle with the axis of the stator winding. Another form is the *series repulsion-motor*, in which a part of the supply voltage is impressed upon the compensating winding, a part on the armature, and their proportion varied with the speed. The commutator-motors have high starting torque and variable speed, and are used for railroading, etc. The synchronous motor consists of an armature excited by the single-phase or usually polyphase alternating supply-current, and a field excited by direct current. They can operate only at synchronism, that is, by keeping step with the generator, and therefore give absolutely constant speed. They usually have sufficient induction-motor properties to start themselves at light load. They are less severe than any other motor in their reaction on the system, and are therefore preferred for very large sizes. By their speed characteristics, motors are divided into *constant-speed motors* (direct-current shunt-, alternating-current induction-, and synchronous motors), *variable-speed motors* (shunt-motors with field rheostat, induction-motors with variable number of poles), and *heavy starting-torque motors* (direct-current series-, alternating-current commutator-motors). By their construction, motors are divided into *bipolar* and *multipolar*, *ironclad* or *protected*, and *open motors.*—**Fan motor,** a small electric motor driving a fan for creating a current of air for cooling or ventilation. The fan usually consists of a circle of inclined vanes.—**Internal-combustion motor,** a form of heat-engine in which a mixture of air and the fuel is delivered to a cylinder behind a piston and there ignited. The expansion of the air due to the combustion of the fuel, usually a hydrocarbon liquid or vapor or a gas, causes an increase in the pressure by the effort to increase in volume. That pressure forces the piston forward in the cylinder and overcomes the external resistance on the crank-shaft to which the piston is attached. This form is much used in motor-vehicles, since no boiler is required but each stroke develops its own power at its beginning. The usual cycle or succession of events in modern motors is called the *Otto cycle* or the *four-phase cycle* (see ★*cycle*1, 12). On an outgoing stroke of the piston the charge of air and fuel-vapor is drawn into the cylinder; on the return of the piston this mixture is compressed, raised in pressure and temperature, and confined in the clearance volume behind the cylinder. The mixture is ignited while thus compressed, expands (doing work against the moving piston on its second outgoing traverse), and is exhausted by the opening of an exhaust-valve on the second ingoing traverse. Then the cycle is repeated. The *two-phase cycle* compresses the mixture either in front of the piston or in a second cylinder. It flows into the cylinder behind the piston under slight pressure, and, by a stratification, acts to help expel the exhaust gases at the end of the working-stroke. The piston uncovers exhaust-ports by its outward traverse, and the burnt gases are expelled by their own pressure and the displacing action of the fresh charge. The return of the piston compresses the fresh mixture, and it expands after ignition, working the piston outward. Hence a working-stroke occurs every revolution instead of once in two revolutions as in the four-phase cycle. If the incoming charge is ignited by flame from the burnt gases while the inlet-valve is open, annoying back-firing takes place into the mixture-chamber, so that the two-phase cycle is not at its best with varying resistance. The firing of the charge is usually done by an electric spark which passes between separated insulated terminals projecting into the compression volume or clearance (see ★*spark-plug*). Governing is effected by throttling the admission of the mixture of fuel and air, or by varying the period of its admission to the cylinder during the aspirating-stroke. With the four-phase cycle four cylinders are usual, in motor-car practice, in order to distribute the effort and to secure two work-impulses in every revolution. Such engines also balance better. They are light in weight, in proportion to power developed, and hence have come into extensive use for high-speed launches (called *motor-boats*), and have been selected to drive the dirigible air-ships which have been constructed. See *internal-combustion* ★*engine*, with cuts.—**Monocyclic motor,** an alternating-current motor having two superimposed fields in quadrature, one of which is excited by the driving or primary circuit, the other by a magnetizing circuit.—**Multiphase motor,** an alternating-current motor for use on polyphase circuits.



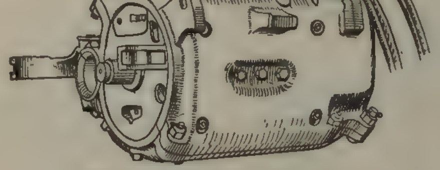
Compensated Railway-motor.

a, frame; *b*, frame-head; *c*, frame-head cover; *d*, bearing; *e*, field laminations; *f*, armature-lead; *g*, commutator-hole cover; *h*, brush-holder; *i*, oil-well cover; *k*, field- and compensator-leads.

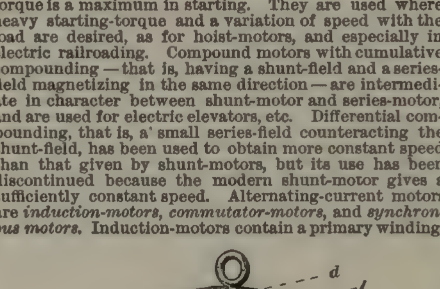


Direct-current Type Stationary Motor.

a, field-coils; *b*, commutator; *c*, armature winding; *d*, pulley.

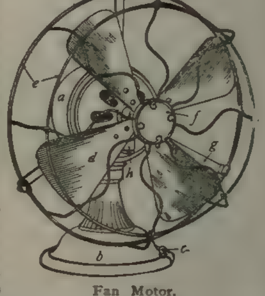


Direct-current Iron-clad Railway-motor.



Induction-motor.

a, bed-plate; *b*, foot; *c*, belt-tightening bolt; *d*, frame; *e*, end-plate; *f*, bearing; *g*, pulley; *h*, shaft; *i*, key; *k*, leads; *l*, primary or stator winding; *m*, secondary or rotor bars; *n*, rotor end-ring; *o*, rotor ventilator.



Fan Motor.

a, motor-frame; *b*, base and pedestal; *c*, starting-switch; *d*, vane; *e*, wire guard; *f*, monogram name-plate; *g*, wire guard-support; *h*, oil-cup.

—**Multipolar motor,** an electric motor which has more than two poles.—**Octopolar motor,** an electric motor with eight poles.—**Open-coil motor,** an electric motor in which only one coil of the armature is in circuit at a time.—**Overtype motor,** a bipolar electric motor which has the armature below the field-magnets.—**Panchronous motor,** in *elect.*, a motor which tends to assume a fixed characteristic speed differing by a certain amount from the speed of synchronism.

> Such a motor being neither a synchronous nor a non-synchronous motor is called a *panchronous motor.*
> *Electrical World*, Nov. 14, 1903, p. 811.

Pilot-motor, in *elect.*, a small motor used to move automatically the controlling devices of any circuit or system of circuits.

> The invention is designed to overcome these objections, and to this end a *pilot-motor* is used for intermittently moving the regulator, its movement being stopped when the starting current exceeds a predetermined limit.
> *Elect. Rev.*, Sept. 24, 1904, p. 495.

Polyphase induction-motor, an electric motor with alternating magnetic field and a short-circuited armature: designed for use on a polyphase circuit.—**Polyphase motor,** an electric motor driven by two or more alternating currents differing in phase; a motor designed to be operated in a polyphase circuit.—**Pyromagnetic motor,** an electric motor the action of which depends upon the influence of temperature on the magnetization of iron.—**Repulsion motor.** See *electric* ★*motor.*—**Rheostatic motor,** in *elect.*, a motor connected with and automatically regulated by a rheostat.—**Series-, shunt-motor.** See *electric* ★*motor.*—**Single-phase motor,** an electric motor operated by means of an alternating, single-phase current.—**Solar motor,** an engine which uses the direct heat from the sun's rays as a motive power. Such motors involve a series of reflecting-surfaces to reflect the radiant heat from the sun, which strikes a large area, and concentrate it on a definite heating surface.—**Split-phase motor,** a single-phase alternating-current motor in which the starting effort is produced by dividing the supply current in two branch currents differing in phase from each other.—**Squirrel-cage, synchronous motor.** See *electric* ★*motor.*—**Transformer motor.** Same as *induction-motor.* See *electric* ★*motor.* [Rare.]

II. *a.*—**Absolute motor field,** a region of the cerebral cortex in which a lesion is always followed by impaired motion, as distinguished from a *relative motor field,* in which a lesion may or may not be followed by motor disturbance.—**Motor aphasia, center, economy,** etc. See ★*aphasia,* etc.—**Motor point,** the point corresponding to that at which a motor nerve enters a muscle, where an electrode must be placed to produce the maximum of contraction.—**Motor reaction, reflex, region, rhythm.** See ★*reaction,* etc.—**Motor root,** the root of a spinal nerve which contains the motor fibers only.

motor-bicycle (mō′to̤r-bī″si-kl), *n.* Same as ★*motor-cycle.*

motor-boat (mō′to̤r-bōt), *n.* A launch driven by an internal-combustion motor using a hydrocarbon such as gasolene, naphtha, kerosene, or alcohol as a source of fuel. See ★*autoboat.*

motor-break (mō′to̤r-brāk), *n.* A rotary interrupter for induction-coils. See ★*interrupter* (*a*).

motor-bus (mō′to̤r-bus), *n.* An automobile omnibus. *Daily Chronicle,* Sept. 11, 1905. [Colloq.]

motor-car, *n.* **2.** A mechanically propelled vehicle or automobile. The term is used to include all classes of automobiles, from the racing-machine, in which speed is the prime requisite, to the commercial vehicle, in which speed is of no moment, but carrying capacity for loads is desired.

motor-carist (mō′to̤r-kär-ist), *n.* One who uses a motor-car, especially for pleasuring.

> Now that the cyclist and *motor-carist* travel over the whole of the roads of the country the neglect of our ancient roadway system is very apparent.
> *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 764.

motor-cell (mō′to̤r-sel), *n.* One of the cells of the spinal cord of vertebrates which has its neuraxon continued into a motor nerve-fiber: distinguished from *sensory* ★*cell.*

motor-coach (mō′to̤r-kōch), *n.* A railway-car carrying within itself a motor to propel it on the rails without an attached locomotive. The motor may be a steam-engine or an internal-combustion motor.

motor-cycle (mō′to̤r-sī′kl), *n.* A bicycle or tricycle operated by some form of motor as well as by pedals.

motor-drive (mō′to̤r-drīv), *n.* An arrangement for driving a machine, or a small group of machines, by an electric motor.

motor-driven (mō′to̤r-driv″n), *a.* Driven or propelled by a motor or engine: applied to vehicles.

motor-fluid (mō′to̤r-flö″id), *n.* Any fluid used as a means of conveying heat, motion, or energy from one point to another.

motor-generator (mō′to̤r-jen′e̤-rā-to̤r), *n.* In *elect.*, an apparatus which changes one form of electrical power into another by means of two separate machines, a motor and a generator, permanently connected together. See ★*converter,* 3, ★*dynamotor,* and *motor-*★*generator.*

motoring (mō′to̤r-ing), *n.* The art of driving or riding in an automobile or motor-car; the sport of driving motor-cars.

> The Bennett Cup race is the *motoring* Derby, the blue ribbon of the automobile world. The approaching contest is the sixth running, it having been won by France three times and by Great Britain and Germany each once.
> *Automobile Topics,* European Sup., May 27, 1905, p. 2.

motorist (mō′to̤r-ist), *n.* One who uses a motor-vehicle in traveling for pleasure or on business.

> In the little manual before us, the same author describes concisely the theory and action of the motor bicycle, and provides in text and illustration just the kind of information which the *motorist* will find of service.
> *Nature,* Feb. 5, 1903, p. 316.

motorization (mō″to̤r-i-zā′sho̤n), *n.* In *psychol.*, apprehension in motor or kinesthetic terms of an auditory or visual stimulus.

> The *motorization* of a word [seen] would seem to have often been present and disregarded.
> *Amer. Jour. Psychol.*, VII. 303.

motorize (mō′to̤r-īz), *v. t.*; pret. and pp. *motorized,* ppr. *motorizing.* [*motor* + *-ize.*] In *psychol.*, to apprehend a visual or auditory stimulus in motor or kinesthetic terms.

> The fourth page was *motorized,* at normal speed, but without lip-movement. *Amer. Jour. Psychol.*, XII. 295.

motorman (mō′to̤r-man), *n.*; pl. *motormen* (-men). **1.** One whose business it is to drive a motor-car or automobile vehicle.—**2.** A man who operates a motor; specifically, one who operates a railway motor.

motormeter (mō′to̤r-mē″tėr), *n.* In *elect.*, an integrating wattmeter (that is, a meter which registers the total electric power passing over the circuit) based on the principle of the electric motor, either the commutator motor (Thomson recording wattmeter) or the induction-motor. See *electric* ★*motor.* All electric meters installed for recording the power consumed by a customer are now motormeters. *Elect. World and Engin.*, June 4, 1904, p. 1095.

motor-minded (mō′to̤r-mīn″ded), *a.* In *psychol.*, endowed with a mental constitution such that one thinks, remembers, imagines, dreams, etc., principally in motor or kinesthetic images; specifically, endowed with a kinesthetic memory; more specifically, endowed with a verbal memory of the kinesthetic type.

> Consonants were not thought to be generally more important than vowels for word perception. The relative importance of these elements might depend upon the reader's tendency to be *motor* or auditory *minded.*
> *Amer. Jour. Psychol.*, XI. 297.

motor-mindedness (mō″to̤r-mīn′ded-nes), *n.* In *psychol.*, a type of mental constitution characterized by the predominance, throughout the intellectual processes, of motor or kinesthetic images; specifically, kinesthetic or motor memory type; more specifically, kinesthetic or motor verbal memory type. *Baldwin,* Dict. Philos. and Psychol., II. 571.

motorneer (mō′to̤r-nēr′), *n.* [*motor* + (*engi*)*neer.*] An objectionable substitute for ★*motorman* (which see).

motorogerminative (mō″to̤r-o̤-jėr′mi-nā̤-tiv), *a.* In *embryol.*, giving rise to or developing into the musculature: said of portions of the middle germ-layer, or mesoderm.

motorphobe (mō′to̤r-fōb), *n.* [*motor* + Gr. -φοβος, < φοβεῖν, fear.] One who dislikes motor-cars or automobiles; one who has a strong prejudice against motor-cars. [Rare.]

> From pillar to post the poor motorist is pushed, and no Pariah was more persecuted than he is in some places. The time will come when . . . the *motorphobes* will wonder what ever possessed them to act so foolishly.
> *Automobile Topics,* May 27, 1905, p. 448.

motor-shaft (mō′to̤r-shȧft), *n.* **1.** The shaft of an electric or other motor.—**2.** The shaft in an automobile or other machine which is directly connected with the crank-shaft of the engine.

motor-vehicle (mō′to̤r-vē″hi-kl), *n.* A vehicle containing an engine or motor which propels it; an automobile.

motor-wagon (mō′to̤r-wag″o̤n), *n.* **1.** A motor-car.—**2.** An automobile vehicle, smaller than the motor-truck, designed for business use.

motor-wheel (mō′to̤r-hwēl), *n.* **1.** A motor-cycle.—**2.** A self-propelling truck, consisting of an axle and wheels carrying the driving-power, which can be fastened to the body of a carriage or wagon in place of the front axle and wheels, and used to propel the vehicle; a fore-carriage.

motse (mōt′se), *n.* [Heb.] See ★*seder.*

mottle, *n.* **2.** One of the spots or blotches which together constitute a mottling.—**3.** *pl.* See *diseased* ★*butter.*

mottled, *p. a.*—**Mottled-top disease.** Same as *mosaic* ★*disease.*

motuca-fly (mo̤-tö′kā̤-flī), *n.* [Braz. Pg. *motuca,* < Tupi *mutucuna.*] A large Brazilian tabanid fly, *Hadrus lepidotus,* which makes such a large and deep puncture that much bleeding may follow the bite.

mouche, *n.* **2.** In the hurdy-gurdy, the open string next to the lowest one, usually tuned to the G next below middle C.

moucheté (mösh-tā′), *n.* [F., 'spotted,' pp. of *moucheter,* spot, mark with fly-specks, < *mouche,* fly: see *mouche.*] The black end of the wheat grain due to a black rich soil and moist climate.

mougat (mö′gat), *n.* Same as ★*mucket.*

mouillé (mö-yā′), *a.* [F., pp. of *mouiller,* make wet, moisten, soften, make liquid, < LL. **molliare,* for L. *mollire,* soften, < *mollis* (> F. *mou*), soft.] Made 'liquid,' as a sound; applied especially to the consonant *l* as pronounced with a following *y* sound as in French -(*i*)*ll*-, Spanish *ll,* Italian *gl*(*i*), and English *ll*(*i*) in *brilliant, million,* etc.

> The 36th [letter of the Cyrillic Alphabet] . . . softens a preceding letter, giving it a *mouillé* sound.
> *Encyc. Brit.*, I. 614.

mouillure (mö-yür′), *n.* [F., < *mouiller,* make liquid; see ★*mouillé.*] The pronunciation of *l* with a following *y* sound. *Scripture,* Exper. Phonetics, p. 316.

mouket (mö′ket), *n.* Same as ★*mucket.*

moulleton (möl-toṅ′), *n.* [Trade F. ?] A fabric for women's wear, having a satin-armure weave.

Moulmein cedar. See ★*cedar.*

Mound-building ant. See ★*ant*¹.

mound¹, *v.* **II.** *intrans.* To form into mounds; become piled up into mounds.

> The enormous masses of ice, thrust under [the brig] . . . by the action of repeated pressures, had glued themselves together so completely, that we remained cradled in a mass of ice exceeding twenty-five feet in solid depth. . . . Our ice-saw with great labor buried its length in the floe, . . . but the submerged material is so thick that it has little or no effect. Wedging, by billets of wood between her sides and the *mounding* ice, was equally ineffectual.
> *Kane,* in U. S. Grinnell Exped. (First Exped., 1850), [p. 405.

mound-lily (mound′lil″i), *n.* See ★*lily.*

mound-planting (mound′plan″ting), *n.* In *forestry,* a method of planting on wet ground in which the seeds or young trees are planted on mounds, ridges, or hills. Also called *ridge-planting* and *hill-planting.*

mound-turkey (mound′tėr″ki), *n.* The Australian megapod or mound-builder.

mount², *v. t.*—**To mount a breach.** See ★*breach.*

mount², *n.* **3.** A trumpet signal for mounting.

mountain, *n.*—**Block mountain,** a mountain produced by block-faulting and tilting in such a manner as to develop escarpments of great relief. See ★*block,* 18, with cut.—**Embayed mountain,** a mountain near the sea that has been depressed so that the ocean enters the valleys, as, for example, on the coast of southwestern Ireland.—**Folded mountain,** a mountain formed by anticlinal folding.—**Mountains of circumdenudation,** the remnants of the continents left by rivers as they eat out deep valleys and gorges: distinguished from mountains due to the folding of strata, to faulting, or to other geological processes.—**Mountain system,** in *geol.*, a group of parallel or consecutive mountain-ranges of the same age.

Embayed Mountains.

> A *mountain system* includes all ranges in a region made in different, more or less independent, geosynclines at the same epoch.
> *Dana,* Manual of Geol. (4th ed.), p. 389.

Residual mountain, a mountain whose origin involves the removal by gradual erosion of a large neighboring volume of former mountains or highlands.—**Subdued mountain,** a mountain which has been so much worn down as to have lost its peaks and cliffs and become covered with its own detritus.—**Subtuberant mountain,** a mountain elevated by an igneous intrusion among or beneath its basement rocks.

mountain-ash, *n.* **3.** See *Texas* ★*ash*¹.

mountain-bay (moun′tạn-bā), *n.* *Franklinia Alatamaha.* See *Gordonia* and ★*Franklinia.*

mountain-clover (moun′tạn-klō″vėr), *n.* A papilionaceous plant, *Trifolium montanum.*

mountain-devil (moun′tạn-dev″l), *n.* The small spiny Australian lizard, *Moloch horridus.* See cut at *thorn-devil.*

mountain-elder (moun′tạn-el″dėr), *n.* See ★*elder*^{2}.

mountain-elm (moun′tạn-elm″), *n.* See ★*elm.*

mountain-flax, *n.*, **1.** (*a*) Same as *purging-flax.* (*b*) Same as *Seneca snakeroot* (which see, under *snakeroot*). (*c*) The lesser centaury, *Centaurion Centaurium.* Also called *bitter-herb* and *earth-gall.*

mountain-flower (moun′tạn-flou″ėr), *n.* A variety of crane's-bill, *Geranium sylvaticum.*

mountain-heather (moun′tạn-heᴛʜ″ėr), *n.* Same as *sand-myrtle* (which see, under *myrtle*).

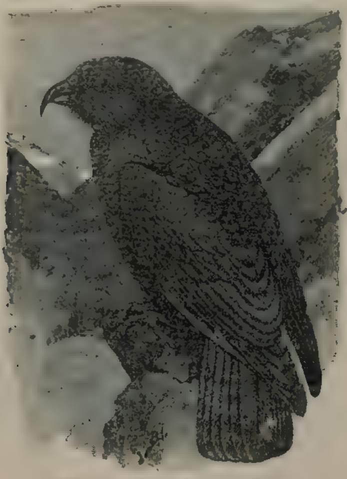
mountain-hummer (moun′tạn-hum″ėr), *n.* A humming-bird of the genus *Oreotrochilus,* found high up on the Andes. Also called *hill-star.*

mountain-larch (moun′tạn-lärch), *n.* A fir, *Larix lyalli,* of the Rocky Mountains.

mountain-moss (moun′tạn-môs), *n.* See ★*moss*^{1}.

mountain-oak (moun′tạn-ōk), *n.* See ★*oak.*

mountain-parrot (moun′tạn-par″ọt), *n.* The kea, *Nestor notabilis,* of New Zealand, which attacks and kills sheep.



Mountain-parrot (*Nestor notabilis*).

mountain-partridge (moun′tạn-pär″trij), *n.* A common name of a large West Indian ground-pigeon, *Geotrygon montana.*

mountain-pheasant (moun′tạn-fez″ạnt), *n.* See *mountain* ★*curassow.*

mountain-plover (moun′tạn-pluv″ėr), *n.* A small plover, *Ægialitis montana,* related to the killdeer and found on the upland plains of the western United States.

mountain-quail (moun′tạn-kwāl″), *n.* One of the North American quails, somewhat larger than the familiar bob-white and readily distinguished by a slender tuft of black plumes on either side of the head. The general color is slaty-blue, marked beneath and on the sides with white and chestnut. It inhabits the mountain regions of Oregon, California, and Nevada.

mountain-range (moun′tạn-rānj), *n.* A range of mountains; specifically, in *geol.*, the series of more or less parallel ridges formed over the area and border of a single anticlinal or synclinal mountain-fold considered as a unit. *Dana,* Manual of Geol. (4th ed.), p. 389.

mountain-rose, *n.* **2.** The rhododendron.

mountain-rush (moun′tạn-rush), *n.* *Ephedra antisyphilitica,* the common joint-fir of the western United States, with somewhat the aspect of a scouring-rush.

mountain-sheep, *n.* No less than six species and two subspecies of *Ovis* have been described from North America, but it is possible that one or two of these may not stand the test of further research. The northernmost species is the white or Dall's sheep, *O. dalli,* widely spread over northern Alaska. The southernmost and smallest is *O. mexicana,* from northern Mexico and the adjoining parts of New Mexico. The black or Stone's sheep, *O. stonei,* from Alaska and British Columbia, is very dark with white belly and marks down the legs. Other species are *O. nelsoni* and *O. fannini.*

mountain-sickness (moun′tạn-sik″nes), *n.* A morbid condition, marked by various distressing symptoms, caused by very high altitudes.

> *Mountain-sickness* results from a diminution in the O[xygen] fixed by the blood, and from the rapid consumption of that O, but also from defect of adaptation of the organism, either from causes due to itself (less rapid mobilization and deficient increase of the red corpuscles, deficient increase in pulmonary ventilation, etc.); or by a less regular intervention of some of the accelerating atmospheric conditions (light, ozonization, etc.).
> *Med. Record,* April 4, 1903, p. 537.

mountain-silverspot (moun′tạn-sil″vėr-spot), *n.* See ★*silverspot.*

mountain-sucker (moun′tạn-suk″ėr), *n.* See ★*sucker.*

mountain-thrush (moun′tạn-thrush), *n.* *Greocincla lunulata,* one of the thrush family, found in Australia and Tasmania.

mountant (moun′tạnt), *n.* [*mount*^{1} + *-ant,* after F. *montant.*] In *photog.*, a paste or other adhesive substance used in mounting prints.

> Starch, although much employed as a *mountant,* should be carefully used. Unless quite pure and fresh it is very dangerous, as it is very likely to become acid and destroy the print upon which it is laid.
> *Woodbury,* Encyc. Dict. of Photog., p. 293.

mounted, *p. a.* **4.** In *organ-building,* said of a pipe or a stop which is set up away from the general wind-chest to which it belongs, usually as a part of the display-pipes: as, a *mounted* diapason.

Mount Vernon series. See ★*series.*

mourner^{1}, *n.* **5.** A penitent, especially one who makes public announcement of a desire for salvation: used in Methodist churches.— **Mourners' bench,** one of the front seats in a Methodist church which the mourners, that is, the penitents, occupy, thus publicly showing their anxiety as inquiring sinners and their desire for salvation.

Mourning horse-fly. Same as *black* ★*gadfly.*

mouse, *n.* **10.** A device used in underground pipe-conduits to get cables into the tubes after the latter have been laid. It consists of a small conical piece of wood to the rear end or butt of which is fastened a washer of leather, which is a little larger than the diameter of the tube. A fine wire is attached to the block, which is then inserted in the tube, with air-pressure from an air-pump applied behind it against the washer. The leather is forced out cup-wise and converts the block into a piston which carries the wire forward to the next manhole-opening, where it drops out, leaving the wire continuous to the previous opening. A cord and rope can then be drawn through the duct and, finally, the insulated cable.

> A fine wire is sometimes drawn through a duct by a conical piece of wood with a thin leather washer filling the duct, and forced ahead by the air pressure at the rear, which is exerted through the application of an air pump at the front end of the duct at the next manhole. This piece of wood is termed the "*mouse,*" and the name is probably responsible for the persistent story that lines are first drawn through the conduits by a fine string tied to the tail of a tame rat who has been taught to do this work. *Jour. Franklin Inst.*, March, 1905, p. 185

Dancing mouse. See *waltzing* ★*mouse.*— **Pouched mouse.** (*a*) See *pouched.* (*b*) Any one of several small marsupials of the genus *Phascogale,* so called from their strong resemblance to a mouse or rat.— **Red-backed mouse,** a small and common field-mouse, *Evotomys rutilus,* of Northern Europe. The name is also applied to various species of the same genus found in North America, especially *E. alascensis.*— **Spiny mouse,** any one of a number of small rodents characterized by having small flattened spines mixed with the fur. The typical species belong to the genera *Echimys* and *Loncheres.* With the exception of one species from Africa all are South American. See *spiny rat,* under *spiny.*— **Waltzing mouse,** a breed of domesticated mice which has the habit of spinning rapidly around. This habit is said to be due to a malformation of the semicircular canals of the ear, the function of these being to preserve the equilibrium. Also called *dancing mouse.*

mouse-hare (mous′hãr), *n.* A small rodent of the genus *Ochotona,* more commonly known as a *pika.* See cut under *Lagomys.*

mousle (mou′zl), *v. t.*; pret. and pp. *mousled,* ppr. *mousling.* [Also *mouzle, mowsle, mowzle,* ‹ *mouse, v.* Compare *tousle.*] To pull about roughly. *N. E. D.*

mousse (mös), *n.* [F., lit. moss. See *moss*^{1}.] In *cookery,* a whipped cream, sweetened and variously flavored, with or without eggs, and frozen without stirring.

mousseline-de-soie (mö-sẹ-lēn′dė-swo′), *n.* [F.: *mousseline,* muslin; *de,* of; *soie,* silk.] A thin and gauzy silk muslin, sometimes embroidered.

Moustierian (mös-ti-ē′ri-ạn), *a.* Of or pertaining to Moustier, in France: a term used in the classification of Paleolithic human relics according to their workmanship and degree of finish, and applied to such as have the character of the flint scrapers found in the sands of Moustier. They are regarded as intermediate in workmanship between the ruder Acheulian and the more deftly made Solutrian implements, and it has hence been inferred that they belong to a correspondingly intermediate period. *Keane,* Ethnology, p. 86.

> III. Glacial period: *Mousterian* culture (cold climate).
> *Smithsonian Rep.*, 1906, p. 374.

moutac (mö-täk′), *n.* [F. spelling of a native name?.] In *entom.*, the name in Mauritius of a large cerambycid larva, possibly of the genus *Prionus,* which is, or was, dressed and eaten by both whites and natives. *Kirby and Spence.*

mouth, *n.* **3.** (*g*) In transverse flutes, the edge of a mouth-hole. See ★*mouth-hole.* (*h*) In *metal.*, the opening through which a furnace is charged with fuel, ore, etc. (*i*) In *mining,* a mine entrance. [Scotch.]— **Glass-blowers' mouth,** a chronic swelling of the parotid gland sometimes seen in glass-blowers.— **To give mouth,** to bay or cry out: said of hounds upon a trail.

mouth-board (mouth′bōrd), *n.* In *exper. psychol.*, a strip of wood, hollowed out in front and smeared with sealing-wax, for the reception of the teeth: used with or without a head-rest to secure a constant position of the head in certain experiments upon visual space perception, etc. *E. B. Titchener,* Exper. Psychol., I. ii. 245.

mouth-cook† (mouth′kůk), *n.* A cook; especially a chef in the household of a king or great noble.

mouth-frame (mouth′frām), *n.* In ophiurans, one of the large calcareous plates of the oral skeleton.

mouth-hole (mouth′hōl), *n.* In transverse flutes, the hole in the side of the tube against the edge of which the player's breath is so directed as to produce the tone.

mouth-mapping (mouth′map″ing), *n.* In *phonetics,* the construction of maps or plans of the mouth-pharynx cavity.

> The methods of *mouth-mapping* are still so crude that at present no reliance can be placed on such calculations.
> *Scripture,* Exper. Phonetics, p. 294.

mouth-papilla (mouth′pạ-pil″ạ̈), *n.*; pl. *mouth-papillæ* (-ē). In starfishes, one of the ambulacral spines which occur in groups, one at each of the five corners of the mouth.

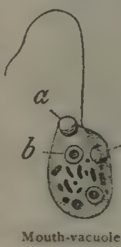
mouth-plate (mouth′plāt), *n.* **1.** Same as ★*buccal shield.*—**2.** In starfishes, one of the plates which border the mouth.—**3.** In *mining,* a cast-iron switch-plate; a plate with a raised ridge to direct car-wheels from the plate to the rails. [Scotch.]

mouth-vacuole (mouth′vak″ụ̄-ōl), *n.* In flagellate protozoans, a vacuole at the base of the main flagellum where the food enters; an oral vacuole.

mouthy, *a.* **2.** Given to grimacing or to distorting the lips or the face in speaking, etc.: as, *mouthy* children are unpleasant. [Colloq.]

moutonnée, *a.* See *roches moutonnées.*

mouz, mouzer. Simplified spellings of *mouse, mouser.*

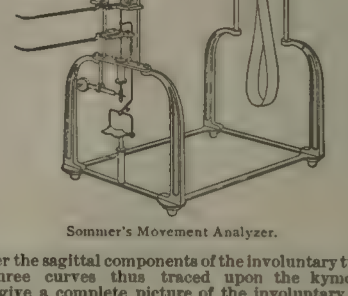


Mouth-vacuole.

a, mouth-vacuole; *b*, nucleus; *c*, contractile vacuole.

move, *n.*— **False move,** at *chess,* a move which is impossible according to the rules of the game.— **Forced move,** in *chess,* a move which one must make, having no other move at one's disposal.— **Rule of fifty moves.** See ★*rule*^{1}.— **To get a move on one,** to begin to act; be active; hasten one's steps. [Slang.] — **To make a move.** (*a*) To take action; begin active operations. (*b*) To move a piece in a game, as in checkers, chess, etc.

movement, *n.*— **Illusions of movement.** See ★*illusion,* 2.— **Movement analyzer,** in *physiol.* and *exper. psychol.*, an instrument for analyzing and recording the involuntary tremor of the hand and forearm. The movement analyzer of R. Sommer consists of a metal frame carrying a sling for the forearm and a rest for the first and second fingers of the hand. This rest is connected by a complex lever system with three writing-levers, one of which records the vertical, another the transverse, and another the sagittal components of the involuntary tremor. The three curves thus traced upon the kymograph drum give a complete picture of the involuntary movements made, with analysis into their three spatial dimen-



Sommer's Movement Analyzer.

sions. Also called *tridimensional analyzer.*—**Periodic movement,** specifically in *bot.*, a manifest change of position in plant-organs responding to diurnal changes; also, a movement taking place in a few plants by very short periods, as in the telegraph-plant. See *sleep*, 5.—**Swedish movements,** in *med.*, a form of kinesitherapy, or treatment of disease by means of active and passive exercises, devised by Peter Henrik Ling of Sweden.

movement-contrast (möv′mẹnt-kon″tråst), *n.* The reciprocal influence of eye-movements of opposed directions, supposed by some psychologists to explain certain phenomena of optical illusion.

movement-illusion (möv′mẹnt-i-lū″zhọn), *n.* In *psychol.*, an illusory perception of motion. The illusion may be visual (apparent movement of an object in space) or kinesthetic (apparent movement of a part of one's own body). See ★*illusion*, 2.

> It has sometimes been thought that the act of will suffices of itself to explain these subjective *movement-illusions.*
> *W. Wundt* (trans.), Human and Animal Psychol., p. 187.

movement-sensation (möv′mẹnt-sen-sā″shọn), *n.* In *psychol.*: (*a*) Any sensation (or, more properly, any sensation-complex) the office of which is to inform us of the movement of objects in space, or of our own body or of some part of it. In this significance, the term must include sensations of sight and hearing, as well as kinesthetic sensations. It is formed on the analogy of 'weight sensation,' 'resistance sensation,' etc.; and its use is to be condemned, since it substitutes end or function for psychological analysis. (*b*) The sensation (or, more properly, the sensation-complex) directly aroused by movement of the body or of some part of it; a kinesthetic sensation.

> The action of the vocal muscles occurs under guidance of the sensations of movement obtained from them. The association of the correct *movement-sensation* ordinarily occurs with the aid of hearing the sounds produced.
> *Scripture*, Exper. Phonetics, p. 387.

(*c*) A specific sensation whose adequate stimulus is movement. Some psychologists posit movement-sensations of sight, of touch, etc., but it is probable that the articular or joint sensation of kinæsthesis is the only true movement-sensation under this heading.

> Joints, on the other hand, constitute a very important factor, so far at least as concerns appreciation of position and change of position. . . . The distinction between position-sensations and *movement-sensations* is important.
> *G. F. Stout*, Manual of Psychol., p. 192.

Moving platform or **sidewalk.** See ★*platform.*—**Moving picture.** See *moving-picture machine*, under ★*picture.*

mowkowk, *n.* Same as ★*mocuck.*

moxie-berry (mok′si-ber″i), *n.* The creeping snowberry, *Chiogenes hispidula.*

Moxostoma (mok-sos′tọ-mä), *n.* [NL., an error for **Myzostoma*, irreg. ‹ μυζᾶν, suck, + στόμα, mouth.] A genus of suckers, numerous in species, found in the United States east of the Rocky Mountains.

mozambique (mō-zam-bēk′), *n.* [Named with reference to *Mozambique* in Africa.] A loosely woven fabric for women's wear, having a cotton warp and a woolen weft.—**Mozambique spindles.** See ★*spindle.*

mozemize (mō′zem-īz), *n.* See ★*moosemise.*—**Indian mozemize,** the American mountain-ash, *Sorbus Americana.*

mozo (mō′thō), *n.* [Sp. *mozo*, Pg. *moço*, a young man or boy.] A man-servant.

M. P. An abbreviation (*b*) of *Master of Painting*; (c) of *man-power*; (*d*) of *Member of Police*; (*e*) of *Methodist Protestant*; (*f*) of *Metropolitan Police*; (*g*) [*l. c.*] of the Latin *millia passuum*, a thousand paces: the Roman mile; (*h*) of *Municipal Police.*

M. P. C. An abbreviation of *Member of Parliament in Canada.*

M.Ph. An abbreviation of *Master of Philosophy.*

m. p. h. An abbreviation of *miles per hour.*

M. P. L. An abbreviation of *Master of Polite Literature.*

M. P. P. An abbreviation of *Member of the Provincial Parliament.*

M. P. S. An abbreviation (*a*) of *Member of the Pharmaceutical Society*; (*b*) of *Member of the Philological Society*; (c) [*l. c.*] of *meter per second.*

mr. An abbreviation of *millier.*

M. R. An abbreviation of *Master of the Rolls.*

M. R. A. S. An abbreviation of *Member of the Royal Asiatic Society.*

M. R. C. C. An abbreviation of *Member of the Royal College of Chemistry.*

M. R. C. S. An abbreviation of *Member of the Royal College of Surgeons.*

M. R. C. V. S. An abbreviation of *Member of the Royal College of Veterinary Surgeons.*

M. R. G. S. An abbreviation of *Member of the Royal Geographical Society.*

M. R. I. An abbreviation of *Member of the Royal Institution.*

M. R. I. A. An abbreviation of *Member of the Royal Irish Academy.*

M. R. S. L. An abbreviation of *Member of the Royal Society of Literature.*

M. R. U. S. I. An abbreviation of *Member of the Royal United Service Institute.*

M. S. An abbreviation (*b*) of *Master of Science*; (*c*) of *Master of Surgery*; (*d*) [*l. c.*] of *month's sight*; (*e*) of Latin *Memoriæ Sacrum*, sacred to the memory (of, etc.).

M. S. A. An abbreviation (*a*) of *Master of Scientific Agriculture*; (*b*) of *Member of the Society of Arts.*

M. Sc. An abbreviation of *Master of Science.*

M. S. C. An abbreviation of *Madras Staff Corps.*

M. S. H. An abbreviation of *Master of Staghounds.*

m. s. l. An abbreviation of *mean sea-level.*

M. S. S. An abbreviation of *Member of the Statistical Society.*

m. t. An abbreviation of *mean time.*

mth. An abbreviation of *month.*

Mts. [*cap.* or *l. c.*] An abbreviation of *Mountains.*

mu (mū), *n.* The Greek letter M. μ (μῦ, earlier μῶ), corresponding to the English *M*, *m*. See *M* and ★*mem.*

muang (mū-äng′), *n.* [Siamese *muang*, *meuang*, kingdom, country, city.] A town; especially, the official residence of the governor of a province. *Geog. Jour.* (R. G. S.), XI. 469. [Siam.]

muawinine (mö-ä′wi-nin), *n.* [E. African *muawi*, a tree of Mozambique, + *-in* + *-ine*^{2}.] An amorphous syrup-like alkaloid contained in a tree of Mozambique.

mucambo (mö-käm′bō), *n.* [Brazilian.] The village of a colony of bush negroes. [Brazil.]

mucamide (mö-kam′id), *n.* [*muc*(*ate*) + *amide.*] A colorless crystalline compound, $C_6H_8OC_4H_8O_4(CONH_2)_2$, prepared by the action of ammonia on ethyl mucate. It is the diamide of mucic acid.

mucedinaceous (mū″se-di-nā′shius), *a.* Of or pertaining to the *Mucedinaceæ.*

mucedineous (mū-se-din′ẹ̄-us), *a.* Same as ★*mucedinaceous.*

mucinic (mụ̄-sin′ik), *a.* [*mucin* + *-ic.*] Noting a dibasic acid obtained from galactose.

mucinogen (mụ̄-sin′ọ̄-jen), *n.* [*mucin* + *-gen*, producing.] Same as *mucigen.*

mucinoid, *a.* **II.** *n.* Same as ★*mucoid.*

mucinuria (mū-si-nū′ri-ạ̈), *n.* [*mucin* + Gr. οὖρον, urine.] The passage of urine containing mucin.

mucitis (mụ̄-sī′tis), *n.* [NL., ‹ *mucus* + *-itis.*] Inflammation of any mucous membrane.

muckerish (muk′ėr-ish), *a.* Of, pertaining to, or resembling a mucker. See *mucker*^{3}, 2. [Slang.]

muckerishly (muk′ėr-ish-li), *adv.* In a muckerish manner; with ill-breeding; coarsely; roughly; noisily. *Outing*, Jan., 1906, p. 494. [Slang.]

muckerism (muk′ėr-izm), *n.* Underbreeding; coarseness; low roughness; the conduct of a 'bounder' or mucker. [Slang.]

> Both battalions were equally guilty, and we hope it does not mean an entrance of *muckerism* into our Army and Navy games.
> *Outing*, Jan., 1906, p. 494.

mucket (muk′et), *n.* [Also *mouket*, *mougat*; origin obscure.] A large dark-brown mussel, *Lampsilis ligamentinus*, found in the Mississippi river and used in the manufacture of pearl buttons.

muck-iron (muk′ī″ėrn), *n.* Iron which has been rolled only once after being squeezed or shingled into a bloom, in the manufacture of wrought-iron by the puddling process. Such iron contains cinder and is imperfectly welded throughout. It must be cut up, piled into fagots, again heated, and rolled into bar before it is salable.

muckite (muk′īt), *n.* [G. *muckit* (1878); named after H. *Muck.*] A yellow resin from the coal-beds of Neudorf, Silesia.

muckluck (muk′luk), *n.* [Also *mukluk*, *maclock*, ‹ Eskimo *magdlag*, ground-seal.] 1. In Alaska, a seal; also sealskin.

> Soles of "*maclock*," or sealskin.
> *Whymper*, Travels in Alaska, p. 136.

> The Innuit name of the same seal is *mukluk*, a word which is also used by the Russians to designate seal-skin.
> *W. H. Dall*, Alaska, p. 533.

2. The high boot of the Alaskan Eskimo and of the Aleutians, made of sealskin, with soles of ground-seal hide. Also spelled, in this sense, *muck-a-luck.*

> The *muck-a-lucks* . . . are water-tight, clumsy, evil-smelling, so large that hay is put inside to make a good bed for the foot, and so loose that leather thongs must be wrapped around instep and ankle.
> *Pall Mall Mag.*, Jan., 1904, p. 56.

muckna (muk′nạ̈), *n.* [Hind. *makhnā*, ‹ Skt. *matkuna*, a bug, a tuskless elephant, etc.] An East Indian name for a tuskless elephant; strictly speaking, a tuskless male elephant, since the female Indian elephants seldom develop tusks.

muckweed (muk′wēd), *n.* 1. The curled-leaved pondweed, *Potamogeton crispus.*—2. The lamb's-quarters or pigweed, *Chenopodium album.*

mucobromic (mū-kō-brō′mik), *a.* [L. *mucus*, mucus, + *bromic.*] Noting an acid, a colorless compound, OCHCBr: CBrCOOH, prepared by the action of bromine on pyromucic acid. The acid crystallizes in lustrous leaflets and melts at 120° C.

mucocartilage (mū-kō-kär′ti-lạ̄j), *n.* [L. *mucus*, mucus, + *cartilago*, cartilage.] In *histol.*, a soft cartilage the cells of which are embedded in a limpid, mucous-like matrix.

mucochloric (mū-kō-klō′rik), *a.* [L. *mucus*, mucus, + *chlor*(*in*) + *-ic.*] Noting an acid, a colorless compound, OCHCCl: CClCOOH, prepared by the action of chlorin on pyromucic acid. The acid crystallizes in rhombic plates and melts at 125° C.

mucocutaneous (mū″kō-kụ̄-tā′nẹ̄-us), *a.* [L. *mucus*, mucus, + *cutis*, skin. See *cutaneous.*] Relating to both mucous membrane and skin.

muco-enteritis (mū-kō-en-tẹ-rī′tis), *n.* [NL., ‹ L. *mucus*, mucus, + Gr. ἔντερον, intestine, + *-itis.*] Intestinal catarrh.

mucofibrous (mū-kō-fī′brus), *a.* [L. *mucus*, mucus, + *fibra*, fiber, + *-ous.*] Both mucous and fibrous: as, the *mucofibrous* tissue of the umbilical cord, which is chiefly mucous, with enough fibrous tissue to give it support.

mucoid, *a.*—**Mucoid tumor.** Same as *myxoma.*

II. *n.* A viscid, glairy substance derived from connective tissue and containing a large amount of mucin.

> It may be mentioned that some holothurians have the remarkable property of converting their tough, brown, leather-like skin into *mucoid* within a few hours, on their being brought into air. The whole skin may undergo this viscous transformation.
> *Encyc. Brit.*, XXXI. 517.

mucomembranous (mū-kō-mem′brạ̄-nus), *a.* [L. *mucus*, mucus, + *membrana*, membrane, + *-ous.*] Relating to mucus and a membrane: noting a form of enteritis or enterocolitis in which there is a discharge of mucus and of membranous patches with the intestinal passages.

muconic (mụ̄-kon′ik), *a.* Noting an acid, a colorless compound, HOCOCH: CH.CH: CH-COOH, prepared by the action of alcoholic potassium hydroxid on 3, 4-dibromadipic acid. It crystallizes in small needles and decomposes at about 320° C.

mucoraceous (mū-kọ̄-rā′shius), *a.* Pertaining or belonging to the family *Mucoraceæ*, or mold family.

mucosal (mụ̄-ko′sạl), *a.* [L. *mucosa* (sc. *membrana*) + *-al*^{1}.] Relating to mucous membrane.

mucosanguineous (mū″kō-sang-gwin′ẹ̄-us), *a.* [L. *mucus*, mucus, + *sanguis* (*sanguin-*), blood, + *-e-ous.*] Both mucous and bloody.

mucosanguinolent (mū″kō-sang-gwin′ọ̄-lẹnt), *a.* Same as ★*mucosanguineous.*

Mucous cancer. Same as *colloid cancer.*—**Mucous edema.** Same as *myxedema.*—**Mucous fermentation.** See *mucic* ★*fermentation.*—**Mucous patch.** See ★*patch.*—**Mucous râles.** Same as *moist râles* (which see, under *râle*).—**Mucous tubercle.** Same as *condyloma.*—**Mucous wart.** See ★*wart*^{1}.

mucronation (mū-krọ̄-nā′shọn), *n.* 1. The condition or quality of being mucronate; a mucronate process.

> The apex is often very slightly retuse, and the midrib produced into a slight spiculation or *mucronation.*
> *Buck*, Med. Handbook, III. 154.

2. In *bot.*, same as *mucro* (*b*).

mucroniform (mụ̄-kron′i-fôrm), *a.* Having the shape of a mucro; spine-like.

mucus-gland (mū'kus-gland″), *n.* See *mucous glands*, under *gland*.—**Pallial mucus-gland**, in some gastropods, a glandular area on the inner surface of the mantle.

mucusin (mū'kus-in), *n.* [Irreg. < L. *mucus* + *-in*^{2}.] Same as *mucin*.

mucus-passage (mū'kus-pas″āj), *n.* A simple or branched tube filled with mucus, often found in the tissue of certain species of *Laminaria*.

mud, *n.*—**Green mud** a name applied to a certain deep-sea mud because of its color. This extremely fine sediment covers great areas of the ocean bottom at depths of from 100 to 700 fathoms. The green mineral glauconite is a constituent. *Geikie*, Text-book of Geol., p. 106.—**Weldon mud**, the trade-name for regenerated manganese oxid obtained by the process invented by Walter Weldon as an important improvement in the production of chlorin for bleaching-powder. Since chlorin gas is prepared by the interaction of aqueous hydrochloric acid and manganese dioxid, there is left in the still a solution of manganese chlorid, which is treated with a proper quantity of slaked lime (calcium hydroxid), and an abundance of air is driven through the turbid liquid in a tall cylindrical vat. A black deposit, the Weldon mud, forms as the result of oxidation. It consists essentially of calcium-acid manganite and manganese manganite, which can be used, instead of new manganese dioxid, to act upon a fresh lot of hydrochloric acid.

mud, *v. t.* **3.** To fill with mud or soft clay, as the crevices between the logs in a log house.

mudarin (mu-dä'rin), *n.* [*mudar*(*i*) (see the def.) + *-in*^{2}.] An odorless, bitter mixture of compounds contained in the bark of madar-root, *Calotropis mudari*. It is used in India as a medicine and is also called *madarin*.

mud-barge (mud'bärj), *n.* A mud-boat; a mud-scow: usually arranged with a hopper or dumping-bottom, so that when filled by means of a dredge, or otherwise, it may be towed to a designated point and there emptied.

mud-binder (mud'bīn″dėr), *n.* See ★*soil-binder*.

mud-blow (mud'blō), *n.* A pipe with a straight-way valve leading away from the lowest point of a boiler and used for blowing out or cleaning out mud and other deposits. Also *blow-off* and *bottom-blow*.

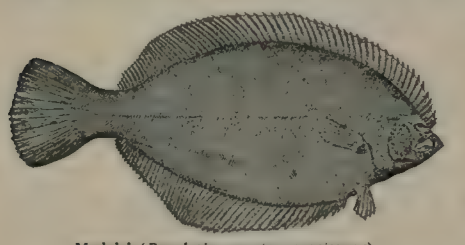
mud-boat, *n.* **2.** A low sled with wide runners, used for hauling logs in swamps.

mud-collector (mud'ko̤-lek″to̤r), *n.* A mud-drum.

mud-crack (mud'krak), *n.* In *geol.*, a shrinkage-crack produced in mud when it dries and sometimes filled with matter later introduced.

mudd (mud), *n.* [Ar.?] A measure of capacity used in Morocco, equal to 1.28 English bushels.

mud-dab (mud'dab), *n.* The winter flounder, *Pseudopleuronectes americanus*, found on the Atlantic coast of North America from Labrador to Chesapeake Bay.



Mud-dab (*Pseudopleuronectes americanus*).
(From Bulletin 47, U. S. Nat. Museum.)

mudder (mud'ėr), *n.* [*mud* + *-er*.] A horse which runs best on a muddy track; a mud-runner. [Racing slang.]

> The second horse was King Pepper, synonymous with mud, and the third horse, Athlone, is by Handsel, a *mudder* himself and a son of a *mudder*.
> *N. Y. Eve. Sun*, Aug. 17, 1905.

mud-digger (mud'dig″ėr), *n.* A broad, flat-bottomed boat fitted with machinery and a large scoop, or steam-shovel, for dredging the bottoms of rivers, deepening channels, etc.

mud-diver (mud'dī″vėr), *n.* Same as ★*parsley-frog*.

muddlement (mud'l-ment), *n.* A muddled or confused state or condition. [Colloq.]

> Thunder-storms, as a rule, are familiar enough and definite enough to escape the general *muddlement*.
> *Pop. Sci. Mo.*, Feb., 1901, p. 385.

mud-duck (mud'duk), *n.* Any domesticated duck.

> They are a cross between the mallard and ordinary *mud duck*, and almost a perfect imitation of the mallard.
> *Forest and Stream*, Feb. 21, 1903, p. 150.

mud-fat (mud'fat), *a.* As fat as mud; very fat: as, "veal, *mud-fat* and tender as a chicken, worth a shilling a pound," *Rolfe Boldrewood*, quoted in E. E. Morris, Austral English.

mud-flow (mud'flō), *n.* In *geol.*: (*a*) A characteristic structure seen in certain shales or hardened mud-rocks, and produced by the stoppage and subsequent hardening of a small flow of soft fluid mud. (*b*) A great flow of mud and water such as often attends volcanic eruptions, when rain, or hot water from the crater, gathers up fine volcanic tuff and flows with it down the sides of the volcano like a sheet of lava.

> The largest ejected block that we saw was one on the surface of the *mud-flow* between the rivers Blanche and Sèche and not more than two hundred yards from the sea coast. *Bulletin Amer. Mus. Nat. Hist.*, XVI. 347.

mud-guard (mud'gärd), *n.* A light shield so placed as to protect riders or passengers from mud thrown by the wheel of a bicycle, carriage, or motor-car.

mud-hen, *n.* **5.** A woman who dabbles in stock-gambling. [Slang.] *Clapin*, Americanisms.

mud-hole, *n.* **4.** A soft spot in granite due to decomposition. [Quarrymen's slang.]

> Knots, streaks, and "*mud holes*" must be carefully avoided in a conscientious selection of stock for monumental work.
> *W. C. Day*, in Rep. U. S. Geol. Surv., 1897-98, p. 230.

mudirieh (mö-dē-rē'e), *n.* [Also *moodirieh*; < Ar. *mudīriya*, < *mudīr*. See *mudir*.] The province administered by a mudir.

mud-land (mud'land), *n.* A marsh left dry by the ebbing tide.

mud-lark, *n.* **4.** The Australian magpie-lark, *Grallina picata*, named from its large and elaborately built mud nest.—**5.** A ★mudder (which see).

mud-lighter (mud'lī″tėr), *n.* An open flat-bottomed boat which receives the contents of the iron scoop or shovel operated by a mud-digger.

mud-lump (mud'lump), *n.* A projecting mass or lump of mud specially characteristic of the delta of the Mississippi, and produced by the local bulging of underlying soft beds because of overloading in the neighborhood, or perhaps also by the generation of confined gases.

> Within the region lie a number of "mud volcanoes," apparently analogous to the "*mud lumps*" of the Lower Mississippi, which have attracted much attention by reason of their novelty, though they are quite subordinate to the general features. *Smithsonian Rep.*, 1901, p. 71.

mud-oyster (mud'ois″tėr), *n.* See ★*oyster*.

mud-pot (mud'pot), *n.* A mud geyser.

mud-ring (mud'ring), *n.* A piece of metal so shaped as to close the bottom of a locomotive boiler or an upright boiler between the shell and the fire-box sheets.

mud-runner (mud'run″ėr), *n.* In *racing*, a horse which runs best in mud or on a muddy track; a mudder.

> This theory [of heredity] was supported yesterday [a wet, muddy day] by the result of all the races on the flat which, without exception, were won by the product of stallions that in their day were famous *mud runners*.
> *N. Y. Eve. Sun*, Aug. 17, 1905.

mud-saucer (mud'så″sėr), *n.* In *trap-shooting*, a clay pigeon or other composition target. See *clay pigeon*. [Slang.]

mud-scoop (mud'sköp), *n.* A bucket or scoop for dredging mud from the bottom of a pond, river, or the like; a machine for dredging or digging in mud or other soft material.

mudsill, *n.* **3.** Specifically, the bed-piece or bottom timber of a dam placed across the stream and usually resting on rocks or in mud.

mud-skipper (mud'skip″ėr), *n.* A name of the gobioid fishes of the genus *Periophthalmus*, from their remarkable ability to hop about on mud-flats, and even to climb trees and bushes growing near the shore. The generic name, *Periophthalmus*, refers to the prominent eyes, set close together, capable of protrusion and retraction, and furnished with a well-developed eyelid. See cut at *Periophthalmus*.

mud-wheel (mud'hwēl), *n.* In *brickmaking*, any form of tempering-machine. See *pug-mill*.

muf, *n.* and *v.* A simplified spelling of *muff*.

muff^1, *n.* **5.** A lap or fleece of fibrous material, such as the lap of waste cotton, which is taken from the comb of a combing-machine.

muff-coupling (muf'kup″ling), *n.* Same as ★*box-coupling*.

muffin^2 (muf'in), *n.* [*muff*^{2}, *v.*] One who is given to muffing or acting clumsily in playing a game, but more particularly one who in cricket or base-ball fails to retain hold on a ball which comes into his hands. See *muff*^{2}, *n.*, 3.

muffled, *p. a.* **3.** Having feathered feet, such as are found in many breeds of domesticated pigeons: thus a black, self-*muffled* tumbler is a tumbler of uniform black color with the feet and lower part of the tarsus feathered.

muffle-kiln (muf'l-kil), *n.* A closed kiln in which the enamel and gold decorations on pottery and porcelain are fired: so constructed that the flame, gases, and smoke do not come into contact with the ware. See *enamel-kiln*.

muffler, *n.* (*e*) A device to deaden or silence the explosive puff of the exhaust of hot gases from an internal-combustion motor such as is used on motor vehicles. The escape of these gases at high temperatures and pressures into the open air is followed by their expansion, with a shock to the displaced air and a noisy report. The muffler compels them to escape slowly and evenly, and by cooling them in the process less change of volume occurs. The simplest type consists of enlargements of the cross-section of the exhaust-pipe, and the discharge through a large number of small orifices. Called *silencer* in England.

mugginess (mug'i-nes), *n.* The state of being muggy.

muggy, *a.* **II.** *n.* A half-intoxicated person. [Sailors' slang.]

mug-house, *n.*—**Mug-house club.** See the extract.

> The *mug-house clubs* in Long Acre, . . . where gentlemen, lawyers, and tradesmen, used to meet in a great room, seldom under a hundred. They had a president . . . to keep the whole room in order. A harp played all the time at the lower end of the room, and, every now and then, one or other of the company rose, and entertained the rest with a song. . . . Here was nothing drank but ale, and every gentleman had his separate mug, which he chalked on the table where he sate, as it was brought in.
> *W. Chappell*, Pop. Music of the Olden Time, quoted in N. [and Q., 5th ser., II. 333.

muguet (mü-gā'), *n.* [F., name of several plants, also a disease, the thrush.] In *pathol.*, same as *thrush*^{2}.

mugwumpian (mug-wump'i-a̤n), *a.* Of or relating to mugwumps or mugwumpery.

muktar (mök'tär), *n.* A minor provincial official of the Turkish empire.

mukti (mük'ti), *n.* [Skt. *mukti*, release, deliverance, emancipation from the bonds of existence, < *mukta*, set free, released, < √*much*, let go, set free, release.] In *Hindu philos.*, release from existence: equivalent of nirvana in the Buddhist scheme.

mulada (mö-lä'dä), *n.* [Amer. Sp., < *mulo*, mule.] A drove of mules.

mulattoism (mū-lat'o̤-izm), *n.* [*mulatto* + *-ism*.] The condition of being a mulatto.

mulazem (mö-lä-zem'), *n.*; pl. *mulazemin* (-ze-mēn'). [Ar.] In the Arabic-speaking regions of northern Africa, an attendant of higher rank than a servant; a superior servant or attendant.

> The next morning, . . . I feigned sickness, and asked the chief of the *mulazemin* for permission to absent myself from morning prayers.
> *R. C. Slatin Pasha* (trans.), Fire and Sword in the [Sudan, p. 589.

mulberry, *n.*—**Bacteriosis of the mulberry.** See ★*bacteriosis*.—**Chytridiose of the mulberry.** See ★*chytridiose*.—**Mulberry-root disease.** See ★*disease*.

mulberry-body (mul'ber-i-bod″i), *n.* A segmenting egg in the morula or mulberry stage.

mulberry-fig (mul'ber-i-fig″), *n.* The sycamore-fig, or Pharaoh's fig, *Ficus Sycomorus*. See *fig*^{2}, 1, and *sycamore*, 1.

mulberry-wing (mul'ber-i-wing), *n.* An American hesperiid butterfly, *Poanes massasoit*, occurring in the eastern and middle United States, Texas, Nebraska, and Colorado.

mule, *n.* **10.** In *mech.*, a locomotive for towing canal-boats, operated by compressed air, electricity, or steam: so called because it replaces the mules usually used for towing.

> The "*mule*" has two large hooks for the towropes and has also a running board and guard hand rail, . . . so that the driver can go around the machine without dismounting.
> *Elect. World and Engin.*, Nov. 14, 1903, p. 795.

mule-gate (mūl'gāt), *n.* The floor-space in a mill occupied by the spinning-mule. *Nasmith*, Cotton Spinning, p. 409.

mule-jenny (mūl'jen″i), *n.* **1.** A spinning-jenny.—**2.** A female mule.

mule-killer, *n.* **2.** Any one of several insects, as the wheel-bug, a mantis, or a walking-stick. [Southern U. S.]

mule-mark (mūl'märk), *n.* A dark stripe on the fore part of the back of a horse or mule, considered an ancestral character.

mule-spinner, *n.* 2. Same as *mule*, 5.

mule-steerer (mūl'stēr″ėr), *n.* A mule-driver. [U. S.]

Muley brick. See ★*brick*^{2}.

mulga (mul'ga̤), *n.* [Aboriginal Australian.] 1. A long, narrow shield used by the natives of Australia, but usually only in single combat, as a protection against the native club. It is usually made from acacia wood.—2. Any one of several species of *Acacia*, especially *A. aneura*, a shrub or small tree found all over Australia, but more commonly in the arid desert region of the interior. Its dark-brown wood is very hard, and is used by the aboriginals for boomerangs, spear-sticks, and shields, while its leaves are eaten by stock and in times of drought often form their only food.

mulga-grass (mul'ga̤-gràs), *n.* Either of two Australian fodder grasses, *Danthonia penicillata*, also called *wallaby-grass*, and *Neurachne Mitchelliana:* so called because they grow in company with the tree called *mulga*.

muliebrile (mū'li-e-bril), *a.* [L. *muliebris*, of woman, + *-ile*.] Feminine; female. [Rare.]

The progeny of successive generations are not the offspring of average parents, but of pairs at the perfection and conjugal culmination of their virile and *muliebrile* excellencies. *Science*, May 17, 1901, p. 782.

mulierine (mū'li-e-rin), *a.* [L. *mulier*, woman, + *-ine*^{1}.] Female; feminine. [Rare.]

The jewel of seven stars is a carven ruby found on a queen mummy, or a mummied queen, in an Egyptian tomb and brought to England along with other lingerie of the lady, including a mummied cat. . . . Mr. Trelawney, an Englishman, rich and learned in Egyptology, had the feline and *mulierine* mummies in a strange cabinet of . . . weird and woozy curios. *The Reader*, May, 1904, p. 658.

mull^1, *v. t.* 4. In *leather-manuf.*, to soften. *C. T. Davis*, Manuf. of Leather, p. 415.

mullen, *n.*—**Turkey mullen**, a low, heavy-scented annual herb, *Piscaria setigera*, belonging to the spurge family. It is very abundant on the Pacific coast from southern California to the Columbia river. The leaves are densely stellate-pubescent and whitish, somewhat resembling those of the mullen, and the oblong smooth, shining seeds are said to be eaten by turkeys. See *California* ★*fish-poison*.

muller^1, *n.* 3. A prehistoric stone implement, so called because supposed to have been used for grinding grain. See the extract.

The objects known as *mullers* are generally flat or smooth on one side and convex on the other, sometimes with a pit on one side or both. They are mostly of granite, quartzite, or sandstone, rarely of other materials. *Fowke*, Archæol. Hist. Ohio, p. 539.

Turkey Mullen (*Piscaria setigera*).
a, portion of a plant, one fourth natural size; *b*, capsule, and *c*, seed, one and a half times natural size.

Müllerian mimicry. See ★*mimicry*.

Müller-Lyer figure. See ★*figure*.

Müller's net. See ★*net*^{1}.

mullet^1, *n.*—**Blue-back mullet.** Same as *white* ★*mullet*.—**Common mullet**, *Mugil cephalus*, found from California to Chile in great abundance.—**Fan-tail mullet**, *Mugil trichodon*, known from the Florida Keys to Brazil.—**Flat-tail mullet**, *Mugil peronii*, a mullet found in Australia.—**French mullet**, *Mugil incilis*, found in brackish waters from Rio Chágres to Pará.—**King of the mullets.** (*a*) See *king*^{1}. (*b*) *Apogon imberbis*, a Mediterranean fish.—**Red-eye mullet**, *Mugil gaimardianus*, known from the Florida Keys to Cuba.—**Red mullet**, specifically, *Upeneus vlamingii* and *Pseudupeneus porosus*.—**Sea mullet**, any mullet found in the sea; in Australia, *Mugil grandis*.—**Snip-nose mullet**, a common name of *Palinurichthys perciformis*, usually called *rudder-fish*. It is found on the Atlantic coast of North America.—**Whirligig mullet**, a very small mullet, *Querimana gyrans*, found on the South Atlantic coast of the United States.—**White mullet**, *Mugil curema*, found on both coasts of North and South America.

mullid (mul'id), *n.* Any fish belonging to the family of the mullets, or more properly the surmullets, *Mullidæ*.

mullock (mul'ọk), *v. t.* [*mullock*, *n.*] To work on in a blundering, untidy, or unsatisfactory way; half do (a thing); spoil; botch. [Prov. Eng.]—**To mullock over**, to half do; slur over.

I affirm as a practical shearer, that no man could shear 321 sheep in eight hours, although I will admit he might do what we shearers call '*mullock over*' that number.
The Age, Sept. 23, 1893, quoted in E. E. Morris, Austral [English.

mullocky (mul'ọ-ki), *a.* [*mullock* + *-y*^{1}.] In *mining*, rubbishy; not metal-bearing; of no value.

mulloid (mul'oid), *n.* [L. *mullus*, mullet, + *-oid*.] Of or related to the family *Mullidæ*.

Mulloides (mu-loi'dēz), *n.* [NL., < *mullus*, mullet, + Gr. εἶδος, form.] A genus of fishes of the family *Mullidæ*, having numerous species: found chiefly in the Pacific Ocean.

mulsh, *n.* A mulsh may also be of use in preventing the evaporation of soil-moisture and the baking or cementing of the soil, and in preventing the washing of the soil as well as too deep freezing. The upper part of the soil itself may be employed as a mulsh to the soil beneath, by being kept loose and dry by means of tillage: this, in fact, is one of the chief objects of tillage. The frequently stirred top soil is often spoken of as the *earth-mulsh* or *soil-mulsh*. Sometimes the crops themselves are utilized as mulshes by being cut and allowed to lie on the land, as, for example, with grass or rye in orchards. The cover crop is sometimes considered as a mulsh even when it is still alive and growing. See *cover* ★*crop*.

mulshing (mul'shing), *n.* The process and operation of applying mulshes in agricultural practice. Also written *mulching*.

multenion (mul-tē'ni-on), *n.* [L. *multus*, many. Cf. *quaternion*.] In *math.*, a multifold quantity, analogous to a quaternion. The system called 'multenions' resembles Grassmann's 'Ausdehnungslehre,' but has only one method of multiplication. *Nature*, April 25, 1907, p. 623.

multiactinate (mul-ti-ak'ti-nāt), *a.* [*multi-* + *actine* + *-ate*^{2}.] In sponge-spicules, having many actines, as an aster.

multibrachiate (mul-ti-brā'ki-āt), *a.* [NL. **multibrachiatus*, < L. *multus*, many, + *brachium*, arm.] Having many arms, as the *Crinoidea*.

multicircuit (mul'ti-sėr-kit), *a.* Having a multiple circuit.—**Multicircuit arc-dynamo**, a generator the armature of which is wound in such a manner as to supply several arc-lighting circuits connected in parallel.—**Multicircuit generator**, an electric generator, as for the supplying of arc-lights, which is connected with and feeds several parallel circuits.

multicycle, *n.* 2. A bicycle designed to carry more than two riders.

multicylinder (mul'ti-sil″in-dėr), *a.* Same as ★*multiple-cylinder*.

Two types of gas engines are on view: the vertical single-acting and the horizontal double-acting. Both are *multi-cylinder* machines, the former having three cylinders with cranks at 120 degrees angularity and the latter two cylinders arranged in tandem with single crank.
Elect. World and Engin., Sept. 24, 1904, p. 516.

multifoliate (mul-ti-fō'li-āt), *a.* [*multi-* + *foliate*.] Having many leaves.

multiganglionic (mul-ti-gang-gli-on'ik), *a.* [L. *multus*, many, + NL. *ganglion* + *-ic*.] Relating to or having many ganglia.

multiglobulus (mul-ti-glob'ụ-lus), *n.*; pl. *multiglobuli* (-lī). [L. *multus*, many, + *globulus*, a little ball.] In polyzoans, a group of zoœcia on an internode.

multigravida (mul-ti-grav'i-da̤), *n.*; pl. *multigravidæ* (-dē). [L. *multus*, many, + *gravida*, gravid.] A woman who has been pregnant two or more times.

multilirate (mul-ti-lī'rāt), *a.* [L. *multus*, many, + *lira*, a ridge, a furrow, + *-ate*^{2}.] Bearing or marked by many grooves or furrows, as a gastropod shell.

The body-whorl bears eleven longitudinal ribs, thick, spirally *multilirate*, these liræ of varying widths alternately disposed. *Proc. Zool. Soc. London*, 1901, p. 450.

multilobulate (mul-ti-lob'ụ-lāt), *a.* [*multi-* + *lobulate*.] Having numerous lobules.

multimammate (mul-ti-mam'āt), *a.* [L. *multus*, many, + *mamma*, breast, + *-ate*^{2}.] Having more than one pair of mammæ, as the pig. *Annals and Mag. Nat. Hist.*, March, 1902, p. 219.

multimillionaire (mul″ti-mil-yọn-ãr'), *n.* [L. *multus*, many, + E. *millionaire*.] One who possesses property worth several million dollars (or pounds, or francs, etc.).

multimodal (mul-ti-mō'da̤l), *a.* [L. *multus*, many, + *modus*, mode, + *-al*^{1}.] 1. Having a number of modes: said of a frequency curve which does not correspond to the probability curve and which has several maxima. See ★*mode*^{1}, 11.

We see therefore quite clearly in a special case . . . that the *multimodal* appearance of short series of crania such as those represented in our diagrams may be wholly due to random sampling and be no sign of racial heterogeneity. *Biometrika*, Aug., 1902, p. 454.

In other cases it has been found that there are two or more classes containing a large number of individuals with intermediate classes containing few. The curve plotted from such a series of observations would present two or more modes, as the case might be, and would be what is called a *multimodal* curve.
Buck, Med. Handbook, IV. 24.

2. Concerning, pertaining to, or illustrative of multimodalism.

Those who have considered the "*multimodal*" character of many botanical distributions as furnishing evidence of the existence of subspecies or local races will find reasons for reconsidering their views in these papers.
Nature, July 3, 1902, p. 234.

multimodalism (mul-ti-mō'da̤l-izm), *n.* [*multimodal* + *-ism*.] The character of being multimodal; that state or condition of a group of organisms in which it exhibits more than one character which occurs more frequently than characters of adjacent statistical value.

The object of the present series of papers is to indicate that much of the *multi-modalism* interpreted in the case of flowers as polymorphism . . . is not true *multi-modalism* at all. *Biometrika*, April, 1902, pp. 305, 306.

multinervate (mul-ti-nėr'vāt), *a.* [L. *multus*, many, + *nervus*, nerve, + *-ate*^{1}.] Having many nerves, in any sense.

multinipple (mul-ti-nip'l), *a.* Having numerous teats: said of animals.

From Dr. Alexander Graham Bell, three of his *multinipple* sheep. *Carnegie Inst. Yearbook*, 1904, p. 32.

multioral (mul-ti-ō'ra̤l), *a.* [L. *multus*, many, + *os* (*or-*), mouth, + *-al*^{1}.] Having several mouth-openings, as a polyp.

During the subsequent growth of the *multioral* polyp the original linear arrangement is soon lost.
Annals and Mag. Nat. Hist., Nov., 1902, p. 389.

multiovulation (mul″ti-ō-vụ-lā'shọn), *n.* [L. *multus*, many, + NL. *ovulum*, ovule, + *-ation*.] In *bot.*, the production of many ovules. *Pound and Clements*.

multiparous, *a.* 3. Of or pertaining to a multipara; having given birth to two or more children.

Multipartite number. See ★*number*.

multiperforate (mul-ti-pėr'fọ-rāt), *a.* [L. *multus*, much, + *perforatus*, bored through.] Having many perforations or minute pores, as, for example, septa in the tissues of plants through which the sap passes in the process of transpiration.

In determining the rates of gaseous diffusion of atmospheric carbon dioxide through *multiperforate* diaphragms extended over chambers containing perfect absorbents, the same relations between partial pressure of the gas and its absorption were found to hold good.
Nature, Oct. 16, 1902, p. 620.

multiperiodic (mul-ti-pē-ri-od'ik), *a.* [L. *multus*, many, + *periodus*, period, + *-ic*.] Characterized by a multiplicity of periods.—**Multiperiodic current**, an alternating electric current having components of various frequency.

multiphase (mul'ti-fāz), *a.* [*multi-* + *phase*.] Having many phases, in any sense of that word; specifically, in *elect.*, same as *polyphase*.

multiphaser (mul'ti-fā-zėr), *n.* [*multiphase* + *-er*.] In *elect.*, a generator which furnishes multiphase alternating currents. *Houston*, Dict. Elect.

multiphone (mul'ti-fōn), *n.* [L. *multus*, many, + Gr. φωνή, sound.] A number of phonographs so arranged as to play the same record simultaneously, thus increasing the loudness in proportion to the number of instruments used.

multiphotography (mul″ti-fọ-tog'ra̤-fi), *n.* [*multi-* + *photography*.] The photographing of an object (person or thing) before two mirrors set at an angle so as to secure a number of images. Also called *mirror-photography*.

multiplanar (mul-ti-plā'na̤r), *a.* [L. *multus*, many, + *planus*, plane, + *-ar*^{3}.] Consisting of several planes.

multiplane (mul'ti-plān), *a.* [L. *multus*, many, + *planum*, a plane.] 1. Having several planes.—2. Having several aëroplanes.

multiple. I. *a.*—**In multiple series.** See ★*series*.—**Multiple algebra**, algebra having units of different qualitative character, which can, however, be multiplied together.—**Multiple circuit.** See ★*circuit*.—**Multiple connection**, the character of a multiply connected surface.—**Multiple individuality, jacks, point, pregnancy, press, resonance, reversal.** See ★*individuality*, etc.—**Multiple root.** See ★*root*^{1}.—**Multiple screws, spectra, unit.** See ★*screw*^{1}, ★*spectrum*, ★*unit*.—**Multiple vision.** Same as *polyopia*.

II. *n.* 2. In *telephony*, a multiple jack. (See ★*jack*^{1}.)—**In multiple**, in *elect.*: (*a*) So connected as to form a divided circuit in each branch of which the current will be inversely proportional to the impedance of that branch. (*b*) Arranged with all positive terminals, on the one hand, and all negative terminals, on the other, in direct metallic connection: said of motors, generators, voltaic cells, and the like.

multiple-color (mul″ti-pl-kul′o̤r), *a.* Consisting of or using more than one color: as, a *multiple-color* calico-printing machine, which has several printing-cylinders for as many colors.

multiple-cylinder (mul″ti-pl-sil′in-dėr), *a.* Having three or more cylinders: as, a *multiple-cylinder* engine; a *multiple-cylinder* pump.

multiplex, *a.*—**Multiplex telegraphy**, a method by which several messages (specifically, more than four) can be sent over the same wire. By Edison's method (see *quadruplex*) four messages can be sent, and the number has been increased by Rowland to twelve or sixteen. See *duplex telegraph*.—**Multiplex telephony.** See ★*telephony*.

multiplexly (mul′ti-pleks-li), *adv.* In a multiplex way; intricately.

> On account of this exaggerated and concentrated sensibility, it becomes very difficult to persuade or dissuade either men of genius or the insane. In them the roots of error, as well as those of truth, fix themselves more deeply and *multiplexly* than in other men, for whom opinion is a habit, an affair of fashion, or of circumstance.
> *C. Lombroso* (trans.), The Man of Genius, p. 32.

multiplicate, *a.* **3.** Bearing many ridges or folds, as a gastropod shell.

> The whorls delicately longitudinally *multiplicate*.
> *Proc. Zool. Soc. London*, 1901, p. 366.

multiplication, *n.* **5.** A dice-game in which the highest of three dice thrown is left on the table. The remaining two are thrown again, and the higher left, and then the third is thrown as a multiplier of the sum of the other two. The player who gets the highest total in this way wins.—**Arithmetic multiplication**, multiplication by a number.—**Combinatorial multiplication**, multiplication in which (1) $(l_m l_n) + (l_n l_m) = 0$; (2) $(l_1 l_1) = (l_2 l_2) = \dots = (l_n l_n) = 0$; (3) $(l_1 l_2 \dots l_n)(l_{n+1}\; l_{n+2} \dots l_r) = (l_1 l_2 \dots l_n l_{n+1} \dots l_r)$, where $l_1 l_2 l_n$ are the reference elements.—**Compound multiplication**, the multiplication of compound numbers.—**Geometric multiplication**, the multiplication of one sect by another. See ★*product of two sects*.—**Multiplication of effects.** See ★*effect*.—**Outer multiplication**, progressive and regressive multiplication.—**Progressive multiplication**, in the extensive calculus with n independent units, if $A_r \equiv \Sigma\alpha E^{(r)}$ and $B_s \equiv \Sigma\beta E^{(s)}$ be two extensive quantities of species r and s; then if $r + s \leqq n$, the product $A_r B_s = \Sigma(\alpha\beta) E^{(r)} E^{(s)}$, where the products $E^{(r)} E^{(s)}$ of derived units of species r and s may be expressed as derived units of species $(r + s)$. *Grassmann.*—**Regressive multiplication**, when $r + s > n$, $A_r B_s = \Sigma\alpha E_r \Sigma\beta E_s = \Sigma\,(ab)\, E_r E_s$, where the regressive products $E_r E_s$ are to be reduced to units of species $(r + s - n)$ by taking them as the supplements of the progressive products $|E_r|E_s$ where $|E$, the supplement of E, is the only unit such that the (progressive) product $E|E = 1$. Compare *progressive* ★*multiplication*. *Grassmann.*—**Scalar multiplication**, in *math.*, commutative multiplication, where $ab = ba$.

multiplication-theorem (mul″ti-pli-kā′sho̤n-thē″o̤-rem), *n.* A theorem by virtue of which a certain function of mx is an algebraic function of the same function of x.

Multiplicative function. Same as *factorial function* (which see, under *function*).

multiplicity, *n.* **3.** In *math.*, the number of times an object ought to be counted for the sake of regularity. Thus, a zero of a function has a multiplicity of two, if it ought to be regarded as a union of two zeros. This will be shown on a conform representation by the whole circuit of longitude being twice traversed in going round such a point once.

multiplier, *n.*—**Dynamic multiplier**, an inductance-coil or choke-coil. [Obsolete.]—**Electromagnetic multiplier**, a galvanometer which consists of a compass-needle surrounded by a coil of many turns to increase the action of the current: a device introduced by Schweigger and also called *Schweigger's multiplier*. [Obsolete.]—**Schweigger's multiplier.** See *electromagnetic* ★*multiplier*.

multiply (mul′ti-pli), *adv.* In a manifold way.

> The tables give the numbers of distinct abstract groups of each order as far as 63; the number of substitution groups of each degree as far as 18, classified as *multiply* transitive, other primitive, imprimitive, and intransitive.
> *Science*, June 5, 1903, p. 904.

Multiply connected surface. See ★*surface*.

multipoint (mul′ti-point), *a.* [L. *multus* (*multi-*), many, + E. *point*¹.] Serving to connect together several points in a divided electric circuit: said of certain forms of switch.

> Mr. Stillwell has enumerated . . . the several advantages in favor of group switches. . . . It seems as though the latter class of advantages might be obtained as readily and more simply and cheaply by the use of *multi-point* control-switches, used in parallel with the ordinary ones; as group operation could be easily obtained in this way.
> *Trans. of Amer. Inst. of Elect. Engineers*, March 23, [1904, p. 483.

Multipolar field. See ★*field*.

multipress (mul′ti-pres), *n.* [L. *multus*, many, + E. *press*¹.] A flat-bed perfecting-press of the same type as the Cox duplex press. *Census Bulletin* 216, June 28, 1902, p. 63.

multiradial (mul-ti-rā′di-al), *a.* [L. *multus*, many, + *radius*, spoke (radius), + *-al*¹.] **1.** Pertaining to or having many radii; multiradiate.

> It is necessary to determine if the modification be a simple change that might have occurred in independent cases, in fact if it be a *multiradial* apocentricity.
> *Encyc. Brit.*, XXVIII. 342.

2. In *biol.*, purely adaptive or homoplastic. *P. C. Mitchell.*—**Multiradial apocentricity.** See ★*apocentricity*.

multirotation (mul″ti-rō-tā′sho̤n), *n.* [L. *multus*, many, + *rotatio*(*n-*), rotation.] In *chem.* and *phys.*, the power possessed by solutions of certain optically active sugars, hydroxy-acids, lactones, and other compounds of changing their rotatory power according to the length of time they have been in solution. A constant value for the rotation is finally obtained, which may be greater or less than the initial one. This phenomenon is probably due to the formation of hydrates of the active compound. Also *mutarotation*. *Jour. Phys. Chem.*, Oct., 1907, p. 559.

multiscaled (mul″ti-skāld), *a.* [L. *multus*, much, + E. *scale*¹ + *-ed*².] Having several scales: said of certain ammeters and voltmeters the constants of which can readily be changed so as to enable more than one scale to be employed on a single instrument.

multiseated (mul′ti-sē-ted), *a.* In *mech.*, having a number of seats or surfaces of contact: said of valves or other parts of a machine which rest on three or more seats.

multisect (mul-ti-sekt′), *v. t.* [L. *multus*, many, + *sectus*, pp. of *secare*, cut.] To divide into more than two parts.

multisection (mul-ti-sek′sho̤n), *n.* [L. *multus*, many, + *sectio*(*n-*), a cutting.] The act of multisecting.

multisegmental (mul″ti-seg-men′ta̤l), *a.* [L. *multus*, many, + *segmentum*, segment, + *-al*¹.] Having many segments: as, a *multisegmental* commutator.

> A closed coil armature, connected with a *multi-segmental* commutator.
> *Steinmetz*, Elect. Engineering, p. 122.

multisegmented (mul-ti-seg′men-ted), *a.* [L. *multus*, many, + E. *segment* + *-ed*².] Having many segments; having been divided into many segments.

> The whole body distinctly *multisegmented*, and elongated; without dorsal plates or articulate limbs.
> *Proc. Zool. Soc. London*, April 18, 1899, p. 477.

multispicular (mul-ti-spik′ụ-lär), *a.* [L. *multus*, many, + *spiculum*, spicule, + *-ar*³.] Composed of or containing many spicules: as, the *multispicular* strands of a sponge-skeleton.

> In one of the two specimens [of sponges] in the collection, . . . there are a few *multispicular* strands in the otherwise very regular unispicular meshwork.
> *Proc. Zool. Soc. London*, 1902, p. 210.

multispiculate (mul-ti-spik′ụ-lạt), *a.* [L. *multus*, many, + *spiculum*, spicule, + *-ate*¹.] Having many spicules.

multispinous (mul-ti-spī′nus), *a.* [L. *multus*, many, + *spina*, spine, + *-ous*.] Bearing many spines: as, a *multispinous* varix of a gastropod shell, for example, *Murex tenuispina*.

> It is clear that the *multispinous* varix is a modification of the unispinous one. *Amer. Nat.*, Dec., 1902, p. 933.

multistation (mul′ti-stā-sho̤n), *n.* Same as ★*polystation*.

multistratified (mul-ti-strat′i-fīd), *a.* [L. *multus*, many, + *strata*, layers, + *-fy* + *-ed*² (see *stratified*).] Composed of many strata or layers.

multisyllabic (mul″ti-si-lab′ik), *a.* [L. *multus*, many, + *syllaba*, syllable, + *-ic*.] Consisting of many syllables; polysyllabic.

Multituberculata (mul″ti-tū-bėr-kụ-lā′tạ̈), *n. pl.* [NL., < L. *multus*, many, + *tuberculum*, tubercle.] An order of small mammals having enlarged incisors and the molar teeth with numerous points or tubercles typically arranged in longitudinal rows. The species range from the Trias to the Eocene. The name is in common use, but is antedated by *Allotheria*, Marsh.

multituberculate, *a.* **II.** *n.* A member of the mammalian order *Multituberculata*.

multituberculy (mul″ti-tū-bėr′kū-li), *n.* [*multitubercul*(*ate*) + *-y*³.] The condition of having molar teeth with many cusps or tubercles. The primitive mammals afford typical examples of multituberculy. *Proc. Zool. Soc. London*, 1897, p. 714.

Multitude of a set. Same as ★*potency of a set*.

multitudinous, *a.* **4.** Thronged; crowded. [Rare.]

> The transport of a fierce and monstrous gladness
> Spread through the *multitudinous* streets, fast flying
> Upon the wings of fear. *Shelley*, Revolt of Islam, xii.

multivane (mul′ti-vān), *a.* [L. *multus*, many, + E. *vane*.] Having many vanes or blades: said of propellers, windmills, aëroplanes, etc.

multivariance (mul-ti-vā′ri-a̤ns), *n.* [*multivariant*.] The character or condition of being multivariant; in *phys. chem.*, the possession by a thermodynamic system of more than one degree of freedom. See ★*degree of freedom* (*b*) and ★*phase rule*. *Physical Rev.*, Dec., 1904, p. 458.

multivariant (mul-ti-vā′ri-a̤nt), *a.* [L. *multus*, many, + E. *variant*.] In *phys. chem.*, having more than one degree of freedom. The variance (V) of a chemical system is expressed by the equation $V = c + 2 - \phi$, where c is the number of independent components and ϕ is the number of phases in which the system may exist.

> The indifferent curve divides the plane into two regions, in one of which the bivariant or *multivariant* system can exist in equilibrium while in the other it cannot.
> *Jour. Phys. Chem.*, Oct., 1904, p. 492.

multivincular (mul-ti-ving′kụ-lạ̈r), *a.* [L. *multus*, many, + *vinculum*, bond, + *-ar*³.] In the *Pelecypoda*, noting a type of ligament which consists of a multiplication of ligamental plugs along the hinge-line, as in *Perna*, *Arca*, etc. It is a reduplication of the alivincular type, in which there is a single median plug between the valves.

multivoltage (mul-ti-vōl′tạj), *n.* [L. *multus*, many, + E. *voltage*.] Having a multiplicity of voltages.

> With the aid of diagrams he discussed at some length the rheostatic control and the *multivoltage* systems.
> *Elect. World and Engin.*, April 11, 1903, p. 621.

Multivoltage system, a system of electrical distribution from a central station by which two or more voltages are available for the operation of motors or for the simultaneous use of motors and lamps.

mulvi (möl′vi), *n.* Same as ★*maulvi*.

mummy¹, *n.*—**Mummy brown.** See ★*brown*.—**Mummy-corn.** See ★*corn*¹.

mummy-pot (mum′i-pot), *n.* In *Egypt. archæol.*, an earthenware jar in which a mummied cat or bird was deposited; also a Canopic vase (which see).

Munchausenism (mun-châ′zen-izm), *n.* [*Munchausen* (G. *Münchhausen*) (see def.) + *-ism*.] **1.** A disposition to indulge in extravagant romance and wild exaggeration, in the manner of Baron Munchausen, the hero of a work of fiction originally composed by Rudolph Erich Raspe (1737–94), a German scholar and adventurer, whose work, written in English, and published in England in 1785, was afterward expanded by booksellers' hacks, and became very popular.—**2.** A grossly exaggerated story or statement such as those of Baron Munchausen; an incredible tale; a 'whopping' lie.

Munchausenize (mun-châ′zen-īz), *v. i.*; pret. and pp. *Munchausenized*, ppr. *Munchausenizing*. To exaggerate grossly; indulge in extravagant romance and wild exaggeration; lie egregiously, after the fashion of Baron Munchausen. See ★*Munchausenism*.

> The bragging, boastful lie is a psychosis by itself which has of late been somewhat treated in the literature of psychology. Here the truth is left behind and the imagination *Munchausenizes* in the field of romance, heroics, and rodomontade. *G. S. Hall*, Adolescence, II. 366.

muñeca (mön-yā′kạ̈), *n.* [Sp., a child's doll.] A little fish, *Chætodon hymeralis*, especially common about rocks, found from Guaymas to Panama.

muney, *n.* and *v. t.* An amended spelling of *money*.

mung, *n.* [Hind.] See *moong*.

muni (mu̇n′i), *n.* [Skt. *muni*, Hind. *munī*.] **1.** A Hindu sage or ascetic, especially one who has taken the vow of silence.—**2.** One of the seven stars (the seven sages or rishis) of Charles's Wain, or the Dipper, in the constellation Ursa Major.

muniama (mö-ni-ä′mä), *n.* [Porto Rican.] A name in Porto Rico of a gerroid fish, *Xystæma cinereum*, found on both coasts of tropical America.

Munich candle. See *standard* ★*candle*.

municipal, *a.* **II.** *n.* A municipal magistrate at Toulouse in the Middle Ages. See the extract.

> They [the Sternes] were now established at Toulouse. . . . It had the air and tone of a little capital, and boasted

its own provincial gentility and local nobles. . . . There was a corporate state kept up—lifted a good deal above common corporate associations; and eight *municipals*, bearing the quaint names of "Capitouls," administered the affairs of the city with suitable magnificence.
Fitzgerald, Life of Sterne (edition of 1864), II. ch. xxii. [p. 206.

municipalization, *n.* 2. Transference from private to municipal ownership. See ★*municipalize*, 2.

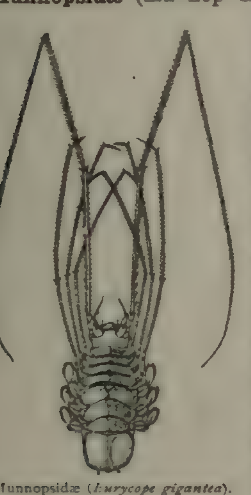
municipalize (mū-nis′i-pal-īz), *v. t.*; pret. and pp. *municipalized*, ppr. *municipalizing*. 1. To make a municipality of; render municipal in character.—2. To transfer from private to municipal ownership and management: applied especially to such transfer of water, gas, and electric-lighting works, street-railways, docks, and ferries, and less frequently to such transfer of bakeries, abattoirs, and markets.

Now it is obvious that if electricity production in London should become *municipalised*, so far as London is concerned the rate of development and the adoption of improved methods will be much hindered. Experience has shown that local authorities are, as in fact they should be, very cautious in adopting scientific improvements.
Nature, Feb. 28, 1907, p. 419.

munjack (mun′jak), *n.* [Appar. a native name.] A pitch common in the Bay of Honduras and there used to paint vessels' bottoms as a protection against marine worms.

munk, munkey, munkish. Amended spellings of *monk, monkey, monkish*.

Munnopsidæ (mu-nop′si-dē), *n. pl.* [NL., < *Munnopsis* + *-idæ*.] A family of isopod crustaceans having the body distinctly separated into two regions, the anterior consisting of the head and the first four segments of the pereion and the posterior composed of the last three segments of the pereion and the consolidated pleon. There are no eyes, and the various limbs are prehensile, ambulatory, and natatory. It contains the genera *Munnopsis*, *Eurycope*, *Ilyarachna*, *Desmosoma*, and *Acanthocope*.


Munnopsidæ (*Eurycope gigantea*).

Munnopsis (mu-nop′sis), *n.* [NL. (*M. Sars*, 1861), < *Munna*, a related genus, + ὄψις, appearance.] The typical genus of the family *Munnopsidæ*.

munshi (mön′shē), *n.* Same as *moonshee*.

The "*Munshi*," a native surveyor attached to the Forsyth Mission. *Geog. Jour.* (R. G. S.), XIII. 443.

munsif (mûn′sif), *n.* [Also *munsiff*, *moonsif*; < Hind. Ar. *munsif*, a judge.] A native petty judge in the civil courts of British India.

Münsterberg's chronoscope, figure. See ★*chronoscope*, ★*figure*.

Munychia (mū-nik′i-ä), *n. pl.* [Gr. Μουνύχια, < Μουνυχία, epithet of Artemis, fem. of Μουνύχιος, of Μουνυχία, a place in Attica.] A festival of Artemis Munychia, the goddess of the full moon, which was especially celebrated at Munychia, the port of Athens, where her shrine stood. It was held in the month Munychion (April–May), in commemoration of the battle of Salamis.

It is evident that they [reliefs] refer to a victory won in the boat-races at Athens; perhaps in one of those races of Ephebi at the festivals of Diisoteria, Aianteia, or *Munychia* which are spoken of in the Ephebic inscriptions. *P. Gardner*, in Jour. Hellenic Studies, XI. 146.

Munychion (mū-nik′i-on), *n.* [Gr. Μουνυχιών.] The tenth month of the Athenian year. It included the latter part of April and the early part of May. The festival of the Munychia was celebrated in this month.

munyeru (mun′yė-rö), *n.* [Aboriginal name in central Australia.] A succulent plant of the family *Portulacaceæ*, *Baitaria Balonensis* (*Calandrinia Balonensis* of Lindley); also, especially, its small black seeds, and a paste made from them, which is a staple article of food among the Arunta and other tribes of Central Australia. The spore-cases of *Marsilea Drummondii* are much used in a similar way in the districts to the south and east. See *nardoo*.

Mural decoration. See ★*decoration*.

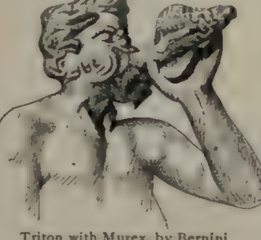
Muranashiji lacquer. See ★*lacquer*.

Murchisonian (mėr-chi-sō′ni-an), *a.* and *n.* I. *a.* Of or relating to Sir R. I. Murchison, a noted British geologist (1792–1871); in *geol.*, applied by d'Orbigny to the Upper Silurian formation.

II. *n.* The Murchisonian formation.

murcielago (mör″thi-e-lä′gō), *n.* Same as *flying-robin*.

murder, *n.*—**Murder in the first degree**, in *law*, the inexcusable or unjustifiable killing of a human being from a deliberate and premeditated design to effect his death: the highest form of homicide. In most jurisdictions it also includes the taking of a human life by an act imminently dangerous to others, as the wrecking of a train, and evincing a depraved mind regardless of human life, although without a premeditated design to cause the death of any particular person; or the killing of a person by another without design when engaged in an attempt to commit a felony, or when perpetrated in committing the crime of arson in the first degree.—**Murder in the second degree**, in *law*, the inexcusable or unjustifiable killing of a human being when committed with a design to effect the death of the person killed, but without premeditation and deliberation.—**Murder in the third degree**, the killing of a human being by one engaged in a felony, if the killing is incidental to the felony and not essential: a degree of murder recognized in some parts of the United States. With like limitation the term *murder in the fourth degree* signifies the killing of a human being by means of a dangerous weapon, the murderer being in a passion but not intending death. *Murder in the fifth degree* is unjustifiable homicide not already classified. Generally speaking, the term *manslaughter* covers all but murder in the first and second degrees.


Triton with Murex, by Bernini.

murex, *n.* 4. A shell used as a trumpet, as in representations of tritons, in art.

murexoin (mū-rek′sō-in), *n.* [*murex* + *-o-* + *-in*².] A red compound, $(CH_3)_4C_8O_6N_5NH_4$, prepared by the action of ammonia gas and air on amalic acid. It crystallizes in quadratic prisms and sublimes at 230° C.

Murgeresque (mėr-zhãr-esk′), *a.* Pertaining to or characteristic of the writings or style of Henri Murger, the author of "Scènes de la vie de Bohême"; hence, Bohemian.

We have become more practical; the customs of Bohemia in *Murgeresque* times exist no more.
J. C. Van Dyke, Modern French Masters, p. 114.

muriate, *n.*—**Muriate of potash**, an old name for potassium chlorid.—**Muriate of soda**, an old name for sodium chlorid or common salt.—**Muriate of tin**, an old name for tin chlorid, still in use as a trade-name for the chlorid with smaller proportion of chlorin (stannous chlorid), used as a dyers' mordant in solution of two degrees of concentration, known as *single* and *double muriate of tin*.

muriated (mū′ri-ā-ted), *p. a.* [*muriate* + *-ed*².] In *chem.*, charged with or containing chlorids (formerly called muriates); as, the *muriated* water of a medicinal spring. An antiquated term.

muriaticum (mū-ri-at′i-kum), *n.* [NL.] Same as ★*murium*.

Muriceidæ (mū-ri-sē′i-dē), *n. pl.* [NL., < *Muricea* + *-idæ*.] A large family of alcyonarians of the order *Axifera*, having the axis horny, the zoöids divided into three regions, and the tentacles infolded at rest and provided at their bases with an armor of stout spicules forming a false operculum. It contains more than twenty genera, among which are *Acanthogorgia*, *Paramuricea*, *Villogorgia*, and *Acis*.

muriform¹, *a.* 2. In *mycol.*, same as ★*dictyoid*.

murium (mū′ri-um), *n.* [NL., < *muri(atic)um*.] A hypothetical radical at one time imagined as existing, combined with oxygen, in hydrochloric (formerly called *muriatic*) acid. Also called *muriaticum*.

murloch (mėr′loċh), *n.* [Prob. of Gaelic origin; cf. Gael. *murlach*, a kingfisher, *murlag*, *murlach*, a fishing-basket.] 1. The young dogfish. [Scotch.] *Eng. Dial. Dict.*—2. A trade-name for pickled dogfish.

murmur, *n.*—**Anemic murmur**, a cardiac murmur heard in cases of anemia.—**Aortic murmur**, a murmur caused by disease of the aortic valve of the heart.—**Arterial murmur**, a sound heard, in certain cases of anemia and in other morbid states, when the ear is applied over one of the larger blood-vessels.—**Endocardial murmur**, an abnormal heart-sound due to disease of the lining membrane of the heart.—**Functional murmur**, an abnormal heart-sound not due to disease of the cardiac valves.—**Hemic murmur**, a functional murmur, heard on auscultation, due to an altered state of the blood and not to disease of the heart.—**Mitral murmur**, an abnormal heart-sound caused by disease of the mitral valve.—**Muscle murmur**, a low murmur heard on applying a stethoscope over a muscle which is in a state of contraction.—**Obstructive murmur**, an abnormal heart-sound produced by the blood passing through a narrowed valve.—**Organic murmur**, an abnormal heart-sound due to some pathological change in one or more of the cardiac valves.—**Pericardial murmur**, an abnormal sound produced in the pericardial sac.—**Pulmonary murmur**, an abnormal heart-sound caused by disease of the pulmonary valve.—**Tricuspid murmur.** See *tricuspid*.—**Venous murmur.** Same as *venous hum* (which see, under *hum*¹).

muromontite (mū-rō-mon′tīt), *n.* [NL. **Muromons* (*-mont-*), translation of G. *Mauersberg*, + *-ite*².] A mineral, related to allanite, of complex composition, containing the yttrium earths in large amount: found at Mauersberg, Saxony.

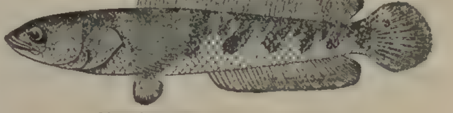
Murphy's button. See ★*button*.

murracyte (mur′a-sīt), *n.* [NL. *Murracyteæ*.] A small transparent single-celled vegetable organism found, in great numbers, floating at the surface in tropical and subtropical oceans.

Murracyteæ (mur-a-sī′tē-ē), *n. pl.* [*murra*, a glass-like mineral (see *murra*), + Gr. κύτος, a hollow (a cell), + *-eæ*.] A group of single-celled transparent vegetable organisms from .5 to 1.5 mm. in diameter, and spherical, oval, or spindle-shaped. Their continuous cell-membrane is thin and transparent like glass. They are present in enormous numbers in tropical and subtropical seas and are one of the chief sources of the phosphorescence of their waters. *Haeckel*, 1890.

murrain-worm (mur′ān-wėrm), *n.* The larva of the elephant hawk-moth, *Chærocampa elpenor*: so named in Ireland, where it is popularly thought that cattle become diseased by eating it.

murral (mur′al), *n.* [Also *murrel*, *murrul*; < Hind. **mural*, < Skt. *murala*, a fresh-water fish.] An East Indian fish, *Ophiocephalus marulius*. This and related species are called by the Chinese *living-fish*, from their tenacity of life. A peculiar thick membranous lining of the gill-chamber enables these fishes to breathe air directly. Many of them are sent alive to San Francisco, where the Chinese keep them in shallow tanks.


Murral (*Ophiocephalus marulius*).

Murray carp. See ★*carp*².

murrayetin (mur′ā-e-tin), *n.* [*Murraya* + *-et* + *-in*².] A colorless compound, $C_{12}H_{12}O_5$, prepared by the action of dilute acids on the glucoside murrayin, from *Murraya exotica*. It crystallizes in needles or rhombic prisms and melts at 110° C.

murre², *n.*—**Pallas murre**, the Pacific thick-billed guillemot, or arre, *Uria lomvia arra*, a common water-bird of the North Pacific. *Yearbook U. S. Dept. Agr.*, 1900, p. 433.

murrnong (mėr′nông), *n.* [Aboriginal name, southern Australia.] A yellow-flowered plant of the chicory family, *Microseris scapigera*, found in the mountainous parts of southern Australia, Tasmania, and New Zealand. Its sweet milky tubers are a favorite food of the aborigines.

mursinskite (mör-sinsk′īt), *n.* [*Mursinsk* (see def.) + *-ite*².] A rare mineral, occurring in wine-yellow, or honey-yellow, tetragonal crystals inclosed in the topaz of Alabashka near Mursinsk in the Ural. Its composition is undetermined.

murvite (mėr′vīt), *n.* A trade-name of an insecticide preparation for application to plants by spraying. It consists of a mixture of kerosene, soap, and fir-balsam, prepared with the aid of heat and used as an emulsion with water.

mus. An abbreviation (*a*) of *music, musical*; (*b*) of *museum*.

Musagetes (mū-sa-jē′tēz), *n.* [Gr. μουσαγέτης, 'leader of the Muses.'] The leader of the Muses: an epithet of Apollo.

musaph (mö′säf), *n.* [Heb., < *yāsaph*, add.] An additional Jewish service after the daily morning prayer, on Sabbaths and festivals.

Mus. Bac. An abbreviation of the Latin *Musicæ Baccalaureus*, Bachelor of Music.

Musca, *n.*—**Musca Borealis**, the Northern Fly, a small constellation lying just north of Aries. It was proposed by Bartschius, and still appears on many celestial globes and maps, but is rejected by the best authorities, who include its stars in Aries.

Muscardinidæ (mus-kär-din′i-dē), *n. pl.* [NL., < *Muscardinus*, the type genus, + *-idæ*.] The dormice, comprising small rodents belonging to the genera *Muscardinus*, *Eliomys*, and *Typhlomys*, and to other allied genera considered as forming a family: same as *Myoxidæ*. *T. S. Palmer*, 1899.

muscarine, *n.* 2. A brownish-violet pulverulent dye, $(\mathrm{CH}_3)_2\overset{4}{\mathrm{N}}\mathrm{C}_6\mathrm{H}_3 <\begin{matrix}\mathrm{N}\\ \underset{2}{\mathrm{O}}\end{matrix}> \mathrm{C}_{10}\mathrm{H}_5\overset{7}{\mathrm{O}}\mathrm{H.HCl}$, prepared by the action of nitroso-dimethylaniline hydrochlorid on 2, 7-dihydroxynaphthalene.

muscid (mus′id), *n.* and *a.* I. *n.* A member of the dipterous family *Muscidæ*.

II. *a.* Having the characters of or belonging to the family *Muscidæ*.

muscidian (mu-sid′i-an), *a.* Having the characters of the dipterous family *Muscidæ*.

muscle¹, *n.*— **Columellar muscle.** See ★*columellar*. — **Inspiratory muscles,** the muscles concerned in inspiration, ordinarily the intercostal muscles and the diaphragm: others, however, such as the pectoral muscles, may become inspiratory when the arms are raised and fixed in that position.— **Muscle formula.** See ★*formula*.— **Muscle process,** the contractile process of an epitheliomuscular cell, in the cœlenterates.— **Perforating muscles.** See *perforans*.— **Skew muscles,** muscles whose fibers run obliquely.— **Smooth muscle.** See *smooth*.

muscle-banner (mus′l-ban″ėr), *n.* In anthozoans, a band of muscular tissue, forming the longitudinal retractor muscles, supported on plaited folds of the mesoglœa.

> The mesenteries are provided with well-developed longitudinal retractor muscles, supported on longitudinal folds or plaits of the mesoglœa, so that in cross-section they have a branched appearance. These *muscle-banners*, as they are called, have a highly characteristic arrangement. *Encyc. Brit.*, XXV. 455.

muscle-bound (mus′l-bound), *a.* Suffering from a loss of elasticity of the muscles, with increase in bulk, a condition which sometimes results from overtraining.

muscle-curve (mus′l-kėrv), *n.* The tracing recorded by a myograph.

muscle-juice (mus′l-jös), *n.* Same as *muscle-plasm*.

muscle-sound (mus′l-sound), *n.* Same as *muscle* ★*murmur*.

muscle-spindle (mus′l-spin″dl), *n.* 1. A striated muscular fiber.— 2. Same as *end-plate*.

muscoid² (mus′koid), *a.* and *n.* I. *a.* Having the characters of or belonging to the dipterous superfamily *Muscoidea*.

II. *n.* A member of the superfamily *Muscoidea*.

Muscoidea (mus-koi′dẹ-ä), *n. pl.* [NL., < *Musca* + *-oidea*.] The *Muscidæ* considered as a group of superfamily rank.

muscovado, *n.* 2. In *petrog.*, a name given by Minnesota geologists to any rusty-brown weathered rock that resembles brown sugar. It has been applied to gabbros and to quartzite.

muscovitization (mus″kọ-vīt-i-zā′shọn), *n.* [*muscovite* + *-ize* + *-ation*.] In *petrog.*, the alteration of a rock or mineral into muscovite.

Muscular insufficiency. Same as ★*imbalance*.— **Progressive muscular dystrophy.** Same as *progressive muscular atrophy*.

muscularis (mus-kụ-lā′ris), *n.* [NL.] The muscular layer in the wall of a hollow organ or tube, such as the stomach or blood-vessels. — **Muscularis mucosæ,** muscular fibers contained in the mucous coat of the intestine.

muscularize, *v. t.* 2. To convert into muscular tissue.

musculomembranous (mus″kụ-lō-mem′brạ-nus), *a.* [L. *musculus*, muscle, + *membrana*, membrane, + *-ous*.] Composed of both muscle and membrane.

musculorachidian (mus″kụ-lō-rạ-kid′i-an), *a.* [L. *musculus*, muscle, + Gr. ῥάχις, spine: see *rachidian*.] Relating to the spinal muscles: noting certain arteries which supply these parts.

musculotegumentary (mus″kụ-lō-teg-ụ-men′tạ-ri), *a.* [L. *musculus*, muscle, + *tegumentum*, cover, + *-ary*.] Relating to or formed of both skin and muscle.

musculotendinous (mus″kụ-lō-ten′di-nus), *a.* [L. *musculus*, muscle, + *tendo* (*tendin-*), tendon, + *-ous*.] Relating to both tendon and muscle.

Mus. D. An abbreviation of the Latin *Musicæ Doctor*, Doctor of Music.

musette, *n.* 4. Same as ★*schalmei*, 4.

museum, *n.*— **Dime museum,** a low-class museum or show in which, for an admission fee of one dime or ten cents, are exhibited freaks of nature, or supposed freaks of nature, or other curiosities.— **Type museum,** a museum in which type-specimens relating to some particular science or department of science are systematically arranged for preservation or study.

> The "Outlook Tower" of Old Edinburgh, which is being arranged as a *type-museum* and observatory, alike of physical and of political geography. *Geog. Jour.* (R. G. S.), XII. 585.

mush¹ (mush), *v.* [*mush*¹, *n.*] I. *trans.* To reduce to a mush or a pulp, or to a pulverized condition; pulverize; crush.

II. *intrans.* 1. To become reduced to a pulverized condition; crumble; waste away. [Prov. Eng.]—2. To trudge or travel through the snow, while driving a dog-sled. See ★*mushing* and ★*musher*. [Alaska.]

mushal, *n.* Same as *mussal*.

musher (mush′ėr), *n.* [*mush*¹, *v.*, + *-er*¹.] The driver of a dog-team in arctic Alaska. The dog-teams are harnessed in the style customary among the Eskimos and the driver walks behind the team urging the dogs while a woman walks ahead of the dogs.

> Traveling by this means [by dog-sled] is known, in the language of the country [Alaska], as "mushing," and the traveler is called a "*musher*." The "*musher*" does not ride on the sled, . . . but follows the sled afoot and urges the dogs forward. *U. S. Geol. Surv.*, Prof. Paper No. 20, p. 14.

Mushet steel. See ★*steel*¹.

mushing (mush′ing), *n.* [*mush*¹, *v.*, + *-ing*¹.] Traveling by dog-sled in arctic Alaska. See ★*musher*.

> Traveling by this means [by dog-sled] is known, in the language of the country [Alaska], as "*mushing*." *U. S. Geol. Surv.*, Prof. Paper No. 20, p. 14.

mush-paddle (mush′pad″l), *n.* A paddle-shaped stirrer for acorn mush, used by the Indians of California.

mushroom. I. *n.*— **Cæsar's mushroom,** the royal agaric, or orange amanita, *Amanita cæsarea*. See ★*agaric* and ★*Amanita*.

II. *a.* 3. Having the form or shape of a mushroom or toadstool; formed like the segment of a sphere; said of valves, anchors, etc.

> Both valves are of the single-beat poppet, or *mushroom* type, and seat vertically along the same axis but in opposite directions, the admission-valve opening downward and the exhaust upward. *Elect. World and Engin.*, Sept. 24, 1904, p. 517.

Mushroom body, loaf. See ★*body*, ★*loaf*¹.

mushroom, *v.* II. *intrans.* To spread out at the top in a form resembling that of a mushroom; curve over at the top; curve down from the top like a mushroom.

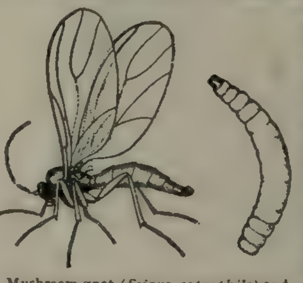
> As the bullet was composed of soft lead, a resistant bone usually caused it to *mushroom* or otherwise lose its shape. *Buck*, Med. Handbook, IV. 431.

mushroom-cloud (mush′röm-kloud), *n.* A cloud, specifically an ascending cloud, which spreads outward and downward at the top in a form resembling that of a mushroom.

Mushroom-cloud.
As seen above Mt. Pelée during its eruption in June, 1902.

mushroom-disease (mush′röm-di-zēz″), *n.* See ★*disease*.

mushroom-gnat (mush′röm-nat), *n.* Any one of several species of small flies whose larvæ damage mushrooms. They belong principally to the families *Mycetophilidæ* and *Phoridæ*. The species principally concerned in the damage in the United States are *Sciara multiseta*, *S. agraria*, and *Phora albidihalteris*. *Sciara coprophila* has also been reported as injurious to mushrooms. It lives chiefly in manure, whence it is also called *manure-fly*.



Mushroom-gnat (*Sciara coprophila*) and larva. Much enlarged.

music, *n.* 11. In *golf*, the degree of suppleness in the shaft of a club.

> The man with a less rapid swing will get equally as long a ball by using a more supple shaft. The more "*music*" there is in the shaft, however, the greater is the liability to slice or pull, especially if the least pressing is indulged in. *W. J. Travis*, Practical Golf, p. 111.

Absolute music, music the effect of which is not due to the intellectual suggestion of a title, motto, text, or program, but which appeals directly to the feelings by its tonal qualities only. Also called *pure music*, in distinction from *program music*, *vocal music*, and every style that utilizes some verbal suggestion of thought.— **Academy of music.** See ★*academy*.— **Act music,** at Oxford, vocal works performed at commemoration exercises (see *act*, *n.*, 5), the words being written by the professor of poetry and the music by the professor of music. — **Chamber music.** See *chamber-music*.— **Dramatic music,** in general, music written to a dramatic text or intended for dramatic performance, including large forms such as the opera, the oratorio (usually), and many shorter works; specifically, operatic music.— **False music.** See *musica ficta*, under *musica*.— **Popular music,** either music of popular origin, such as folk-songs, or music devoid of great difficulty or artistic elaboration: music which is not classical.— **Pure music.** Same as *absolute* ★*music*.— **Salon music,** music intended for use in a drawing-room or salon, not for public performance. Such music is usually in small forms, often mediocre in quality, and designed more for amusement or the display of technical skill than for real artistic effect. Hence the term is not equivalent to the old expression *chamber-music*.

Musica figurata. See *figurate*, 3.— **Musica mensurata.** See *mensurable*, 2.

Musical agraphia. See ★*agraphia*.— **Musical box.** Recent devices include many other forms, especially such as are operated by means of interchangeable perforated metal disks, so that the repertoire of pieces may be extensive. Small musical boxes are also made to be set in motion by placing a coin in a slot, and are attached in various ways to other mechanisms, including toys.

Musicians' cramp. See *occupation* ★*cramp*.

music-pad (mū′zik-pad), *n.* A set of sheets of music-paper fastened together in a pad.

music-printer (mū′zik-prin″tėr), *n.* One whose business or occupation is the printing of music.

music-roll, *n.* 2. In certain mechanical musical instruments, such as piano-players, the removable roll of perforated paper, or stencil, by which the admission of air is regulated and the music is thus produced. See ★*piano-player*, 2.

music-store (mū′zik-stōr), *n.* A store, or place of business, where music or musical instruments are sold. [U. S.]

music-trade (mū′zik-trād), *n.* The lines of business, collectively, that are connected with the manufacture and sale of printed music and of musical instruments and appliances.

music-typography (mū′zik-tī-pog″rạ-fi), *n.* The art or process of printing music by means of movable types.

musily (mū′zi-li), *adv.* Musingly. [Rare.]

> If you beheld the dancers, . . . you would slide down three thousand years in a moment, and, *musily* gazing from the door into the soft morning, your eyes would yearn toward Esne. *G. W. Curtis*, Nile Notes of a Howadji (ed. of 1877), p. 314.

musk, *n.* 1. The artificial or imitation musk of Baur, trinitrobutyltoluene, made from the toluene of coal-tar, is now extensively used in perfumery.

musk-crowfoot (musk′krō″fu̇t), *n.* See ★*crowfoot*.

musk-deer, *n.*— **Pygmy musk-deer.** Same as *musk-deer*, 2.

muskeg (mus-keg′), *n.* [Also *muskeag*; Ojibwa **muskig*? Menomini *moskik*.] A bog; a soft mossy or peaty spot.

> Sphagnum formations with the various attendant plants are commonly designated as *Muskeag* by the woodsmen of Minnesota. *C. MacMillan*, in Bulletin Torrey Bot. Club, XXIII. 501.

musk-kangaroo (musk′kang-gạ-rö″), *n.* A rat-kangaroo of the genus *Hypsiprymnodon*.

musk-ox, *n.*—**Ward's musk-ox**, *Ovibos moschatus wardi*, the variety found in Greenland, having a white forehead and light saddle mark on the back.

musk-polyp (musk′pol″ip), *n.* An edible cephalopodous mollusk, *Eledone moschata*, of the Mediterranean, which exhales a strong odor of musk.

muskrat-weed (musk′rat-wēd), *n.* The tall meadow-rue, *Thalictrum polygamum.* Also *musquash-weed.*

musk-terrapin (musk′ter″a̤-pin), *n.* The musk-turtle, skilpot, or stinkpot. The name includes several small ill-smelling fresh-water turtles of the genera *Aramochelys* and *Cinosternon*, widely distributed in the United States.

muslin, *n.* 3. A general term for a vessel's canvas.—**Madras muslin**, a very fine muslin made in the presidency of Madras, India.

muslin-de-soie. See ★*mousseline-de-soie.*

Mus. M. An abbreviation of the Latin *Musicæ Magister*, Master of Music.

musquash-poison (mus′kwosh-poi″zn), *n.* Same as *beaver-poison.*

musquash-weed (mus′kwosh-wēd), *n.* Same as ★*muskrat-weed.*

mussel-crab (mus′l-krab), *n.* A small crab, *Pinnotheres maculatus*, which lives commensally in the gill-chamber of mussels and scallops.

mussel-mud (mus′l-mud), *n.* Estuarine mud sufficiently rich in the remains of dead shellfish for use as a fertilizer. See *shell-marl.*

mussel-scale (mus′l-skāl), *n.* Any scale-insect of the genus *Mytilaspis* or *Lepidosaphes.* The scale resembles an oyster-shell, whence the name.

mussitation, *n.* 2. In *pathol.*, movement of the lips and tongue as in speaking, but without articulation: a sign of bad omen in disease.

must^{3}, *n.* II. *a.* Frenzied; in the state of madness known as *must:* as, a *must* elephant. *Kipling.*

mustaba, *n.* Same as *mastaba.*

mustahfuz (mös-täh′föz), *n.* [Turk. *mustahfiz*, a soldier in a garrison.] A division of the military forces of the Turkish empire corresponding to the German landsturm or territorial army.

> Conscripts . . . serve 9 years in the Nizam [regular army], . . . 9 years in the Redif [the Landwehr]; and 2 years in the *Mustahfuz* [the Landsturm].
> *Statesman's Year-book*, 1905, p. 1224.

mustard, *n.*—**Ball mustard**, a slender annual crucifer, *Neslia paniculata*, a weed of the Old World introduced into Manitoba, where it gives trouble in grain-fields.—**Brown mustard**, the black mustard, *Brassica nigra.*—**California mustard**, the hedge-mustard, *Sisymbrium officinale.*—**Clown's mustard.** See ★*clown.*—**Dish mustard**, the field penny-cress, *Thlaspi arvense.*—**False mustard**, the clammy-weed, *Polanisia graveolens.*—**Hare's-ear mustard**, an annual cruciferous weed, *Conringia orientalis*, introduced from the Old World and troublesome in grain-crops in the northern United States and Manitoba. See *hare's-ear*, 2.—**Orange mustard**, the western wall-flower, *Erysimum asperum.*—**Poor-man's mustard.** Same as *garlic-mustard* (which see, under *mustard*).—**Tumbling mustard**, *Sisymbrium altissimum*, a plant introduced into the United States from Europe and which has become a noxious weed, a sort of tumbleweed, in the northwestern section.—**Yellow mustard**, the charlock, *Brassica arvensis.*

mustard-yellow (mus′tärd-yel″ō), *n.* In *ceram.*, a yellow glaze of Oriental porcelain, of the color of ground mustard.

muster, *n.*—**Bang-tail muster.** See ★*bang-tail.*

mustizo, *n.* Same as *mestizo.*

musume (mös′mā), *n.* [Jap.] A daughter; a girl.

> The *musumé* (young girl) wears hair-pins decorated with fans in her dark hair.
> *C. M. Salwey*, Fans of Japan, p. 65.

mut. An abbreviation of *mutual.*

muta (mö′tä), *v.* [It., impv. of *mutare*, < L. *mutare*, alter: see *mutate.*] In orchestral or band music, a direction to the player on an instrument such as the horn, the trumpet, the timpani, etc., to alter the pitch of his instrument by changing the crooks or the tension.

mutant, *a.* 2. Of, pertaining to, or by means of mutation.

> The special purpose of the present paper is to consider . . . some of the *mutant* forms.
> *Amer. Nat.*, Nov., 1903, p. 740.

II. *n.* In *biol.*, a race or an individual organism that has arisen through mutation. See ★*mutation*, 8.

> [A] period in which they do form *mutants*, to use the terminology of de Vries, which *mutants* may be true to seed.
> *Rep. Brit. Ass'n*, 1901, p. 848.

mutation, *n.* 8. In *biol.*: (*a*) A sudden and inheritable change of type; a discontinuous variation; a sport.

> Finally, there is the group of discontinuous variations. Of these there may be several kinds. . . . For the present we may include all the different sorts under the term *mutation*, meaning that the new character or group of characters suddenly appears, and is inherited in its new form.
> *Morgan*, Evolution and Adaptation, p. 458.

(*b*) One of a group of individuals which originate directly and immediately from pure-bred stock and have uniform or nearly uniform characteristics different from those of the parents. Mutations differ in form from their parents in much the same manner as closely related species differ from each other. The seeds from a single plant of one of the evening primroses, *Œnothera Lamarckiana*, often produce several mutations in the first generation.—**Mutation of libel.** See ★*libel.*—**Progressive mutation**, in *biol.*, a mutation which is attributed to an increase in the complexity of germ-cells.—**Regressive mutation**, in *biol.*, a mutation which is attributed to a decrease in the complexity of germ-cells.

mutational (mṳ̄-tā′sho̤n-a̤l), *a.* Of or pertaining to mutation in the biological sense. See ★*mutation*, 8.

> Dr. Bastian does not seem to have quite realised how many biologists now accept, as proved up to the hilt, the frequent occurrence of Galton's "transilient," or Bateson's "discontinuous," or De Vries's "*mutational*" variations.
> *Nature*, Feb. 25, 1904, p. 386.

mutationist (mṳ̄-tā′sho̤n-ist), *n.* [*mutation* + *-ist.*] One who believes that new species arise as mutations, sports, or sudden and inheritable changes of type. See ★*mutation*, 8.

> From the hasty presentation here given it might be inferred that Lamarckians and Darwinians are necessarily regarded as believers in adaptiveness as a factor in evolution, and *mutationists* are necessarily supposed to hold the opposite view.
> *Science*, June 10, 1904, p. 881.

mutator (mṳ̄-tā′to̤r), *n.* [NL., < *mutator*, changer, < *mutare*, change.] Same as ★*mutationist.*

> The criterion between the "Biometriker," as Johannsen calls them, and the "*Mutators*," as we may perhaps call their opponents, cannot be made to turn on the breeding true of "pure lines" or on the variability of such lines about their type.
> *Nature*, Dec. 17, 1903, p. 149.

mute^{1}, *a.* 7. In *numis.*, destitute of legend or means of identification beyond those furnished by heraldic or other symbolic devices.

muted (mū′ted), *p. a.* Of musical instruments, played with a mute: as, *muted* strings or *muted* horns. Also applied to the tones thus produced.

muter (mö′ter), *a.* [Heb.] Among the Jews, lawful, permitted: a rabbinical term: applied to matters ritual or secular. The opposite term is ★*osur.*

mutivity (mṳ̄-tiv′i̤-ti), *n.* [*mutive* + *-ity.*] 1. The character of being mutive or mutable.—2. The proportion of energy contained in a substance after it has changed form, or without the addition of energy from some external source. *Nature*, Dec. 18, 1902, p. 161.

mutoscope (mū′tō̤-skōp), *n.* An instrument for the exhibition of a series of photographs in rapid succession to give the optical effect known as a moving picture. The pictures, taken in a moving-picture camera, are placed radially upon a spool in the instrument and are viewed tangentially through the eyepiece, one picture being shown at a time and just long enough to cause them all to merge into one continuous moving picture. It is made in many forms for showing the effect to one or more spectators.

mutoscopic (mū-tō̤-skop′ik), *a.* [*mutoscope* + *-ic.*] Of, pertaining to, or exhibited by a mutoscope or with the rapidity of a mutoscope: as, *mutoscopic* views.

mutton, *n.*—**To return to one's muttons**, to return (after an interruption or digression) to the topic or subject under discussion or consideration: a blundering translation of the French phrase *revenons à nos moutons.*

mutton-bag (mut′n-bag), *n.* A woven seamless cotton bag used in the Australasian frozen-meat trade for enveloping the carcass of a sheep.

mutton-cane (mut′n-kān), *n.* See ★*cane*^{1}.

mutton-fish, *n.* 3. A common name of a fish of the family *Gerridæ*, *Gerres olisthostomus*, found from Florida to Brazil.—4. A marine univalve mollusk, *Haliotis nævosa*, so called from its flavor when cooked. *E. E. Morris*, Austral English.—5. One of the snappers, *Lutianus analis*, found from Florida to Brazil. It is the most important food-fish in the Havana markets.

mutton-grass (mut′n-gràs), *n.* A blue-grass, *Poa Fendleriana*, found on mesas and dry hills from Colorado to Arizona and California. It is valuable for grazing, as is suggested by the name, originally applied to a smooth subspecies, *P. Fendleriana Arizonica.* Also called *California* and *Fendler's blue-grass.*

mutual, *a.* 4. Based on the principle of mutuality in sharing both burdens and benefits: as, a *mutual* insurance company.—**Mutual insurance**, insurance in which the insured become members of a company who reciprocally engage, by payment of certain amounts into a common fund, to indemnify each other against loss.

mutualistic (mū″tṳ̄-a̤-lis′tik), *a.* [*mutual* + *-istic.*] Of or pertaining to mutualism or mutualists.—**Mutualistic symbiosis**, in *biol.*, same as *mutualism.*

mutualization (mū″tṳ̄-a̤l-i-zā′sho̤n), *n.* [*mutualize* + *-ation.*] The act or process of rendering mutual; specifically, the act of making an insurance company a mutual company. See ★*mutual*, 4.

> The Directors of the Equitable Life Assurance Society by a unanimous vote yesterday adopted the plan of *mutualization* proposed by the *Mutualization* Committee appointed to consider the subject at the special meeting of the board on Feb. 13.
> *N. Y. Times*, March 22, 1905.

mutualize (mū′tṳ̄-a̤l-īz), *v. t.*; pret. and pp. *mutualized*, ppr. *mutualizing.* [*mutual* + *-ize.*] To render mutual; specifically, reorganize (a proprietary or stock insurance company) as a mutual company. See ★*mutual*, 4.

> It is entirely within the power of the policy holders to honestly *mutualize* the society by going to the Legislature.
> *N. Y. Times*, March 22, 1905.

muzziness, *n.* 2. Lack of definiteness, as in outline or general treatment; a blurred or indistinct character or appearance.

> It is a magnificent composition; but here, as often in the case of the work of primitive artists, we lament the *muzziness* which seems inseparable from the process employed in this work.
> *Athenæum*, May 7, 1904, p. 599.

muzzle, *n.* 6. A workman's name for a covering of many folds of flannel cloth tied over the nose and mouth of one who is engaged in removing bleaching-powder from the chambers in which it is made, and in packing it, to afford protection from the chlorin gas and the fine dust suspended in the air. A sponge moistened with water is sometimes used in the same way.—7. A chain clevis or shackle. [Scotch.]

muzzle-ring (muz′l-ring), *n.* A ring or projection of metal on the exterior of a solid-cast gun near the muzzle.

M. V. An abbreviation (*a*) of the Latin *Medicus Veterinarius*, veterinary physician; (*b*) in *music*, of the Italian *mezza voce*, with half the force of the voice; (*c*) in *exper. psychol.*, of *mean variation.*

M. V. O. An abbreviation of *Member of the Royal Victorian Order.*

M. W. An abbreviation (*a*) of *Most Worshipful*; (*b*) of *Most Worthy.*

M. W. G. M. An abbreviation (*a*) of *Most Worshipful Grand Master*; (*b*) of *Most Worthy Grand Master.*

M. W. P. An abbreviation of *Most Worthy Patriarch.*

M. W. V. An abbreviation of *Mexican War Veteran.*

myal (mī′a̤l), *a.* [Gr. *μῦς*, muscle, + *-al*^{1}.] Pertaining to myotomes or muscle segments in *Amphioxus* or embryos.

> The ventral roots, on the contrary, are *myal* or segmental in position.
> *Encyc. Brit.*, XXV. 386.

myall^{2} (mī′âl), *n.* [Aboriginal name ('men') in New South Wales.] 1. A wild and independent native Australian.—2. *pl.* By transference, wild cattle.

myamœba (mī-a̤-mē′bä̤), *n.*; pl. *myamœbæ* (-bē). [NL., < Gr. *μῦς*, muscle, + *ἀμοιβή*, exchange. See *amœba.*] A muscle-cell. Compare *neuramœba.*

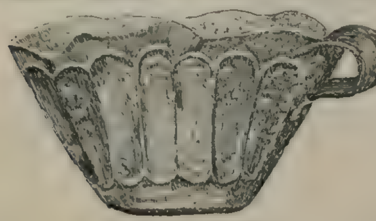
myasis (mī′a̤-sis), *n.* Same as ★*myiasis.*

Myasthenia gastrica, a condition marked by weakness and loss of tone in the muscular wall of the stomach.

> We speak, therefore, less of the size of the stomach and more of its functional activity. The term dilatation threatens to be displaced by motor insufficiency, *myasthenia gastrica*, and ischochymia.
> *Med. Record*, Aug. 3, 1907, p. 171.

Mycena (mī-sē′nä̤), *n.* [NL. (J. E. Gray, 1821), altered from Gr. *μύκης*, a fungus.] A genus of white-spored agaricaceous fungi having a somewhat membranaceous, striate pileus and a smooth cartilaginous hollow stem. The species are numerous, occurring in forests either on the ground or on decaying wood. *M. galericulata* is common on decaying trunks and stumps.

Mycenæan, Mycenean (mī-sẹ̄-nē′a̤n), *a.* [L. *Mycenæus*, < Gr. Μυκηναῖος, < Μυκῆναι, L. *Mycenæ.*] Of or pertaining to ancient Mycenæ, in Greece, or to the civilization represented by its remains. A series of excavations, beginning with those of Schliemann at Hissarlik (ancient Troy) in 1873, and continued by those of Evans in Crete (1893–1905) have revealed numerous remains of the first Hellenic civilization, which may have begun as early as 2000 B.C., and which continued until it was obliterated by the Doric invasion, about 1200 B.C. These remains show so many points of resemblance to descriptions in the Homeric poems that it is usually assumed that they belong to the same civilization as that which is the subject of the Iliad and Odyssey. Until quite recently the most typical and important of these relics were those found at Mycenæ, the seat of the Achean kings in the Peloponnesus, first excavated by Schliemann in 1876; and this entire class of monuments, metal-work, pottery, gems, etc., has hence taken the name *Mycenæan.* Within a few years, however, investigation has made it probable that the chief seat of this early civilization was the island of Crete. See the extract.



Gold Cup from Mycenæ.
(Schlieman, "Mykenā," fig. 342.)

The name '*Mycenean*' is now applied to a whole class of monuments — buildings, sepulchres, ornaments, weapons, pottery, engraved stones — which resemble more or less closely those found at Mycenæ.
Ridgeway, Early Age of Greece, I. 1.

Mycenæologist (mī-sē-nẹ̄-ol′ọ̄-jist), *n.* [*Mycenæ* + *-olog(y)* + *-ist.*] A student of the Mycenæan civilization; one who is skilled in the study of Mycenæan remains. *Nature*, Sept. 15, 1904, p. 483.

mycetogenic (mī-sē-tọ̄-jen′ik), *a.* Same as *mycetogenetic.*

mycetoid (mī-sē′toid), *a.* [Gr. μύκης (μυκητ-), fungus, + εἶδος, form.] Resembling or pertaining to a fungus; mycoid.

mycetologist (mī-sẹ̄-tol′ọ̄-jist), *n.* Same as *mycologist.*

mycetophilid (mī-sẹ̄-tof′i-lid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Mycetophilidæ.*

II. *a.* Having the characters of or belonging to the family *Mycetophilidæ.*

mycetous (mī-sē′tus), *a.* [Gr. μύκης (μυκητ-), fungus, + *-ous.*] Having the appearance of a fungus; fungoid.

mycetozoan (mī-sē-tọ̄-zō′a̤n), *a.* and *n.* **I.** *a.* Of or pertaining to the *Mycetozoa.*

II. *n.* Same as *mycetozoön.*

mychogamy (mī-kog′a̤-mi), *n.* [Gr. μυχός, innermost part, + γάμος, marriage.] In *bot.*, the condition in which self-pollination is rendered possible by the contiguity of anthers and stigma. Mychogamy is *homomorphic* when the stamens and pistils are of similar length in all the plants; *heteromorphic* when they are of different length in different plants.

Mycobacterium (mī″kọ̄-bak-tē′ri-um), *n.* [NL., < Gr. μύκης (μυκητ-), fungus, + NL. *bacterium.*] A genus proposed by Lehmann-Neumann to include certain pathogenic bacteria, as *Bacterium lepræ:* regarded as synonymous with the genus *Bacterium*, in which it is included by Migula.

mycodesmoid (mī-kọ̄-des′moid), *n.* [Gr. μύκης, fungus, + δεσμός, bond, + εἶδος, form.] A new growth of connective tissue in the inguinal region of the horse, due to infection with *Micrococcus Ascoformans* of the severed end of the spermatic cord following castration. More commonly termed *scirrhous cord.*

mycoid (mī′koid), *a.* Same as ★*mycetoid.*

mycolichen (mī′kọ̄-lī-ken), *n.* [Gr. μύκης, fungus, + λειχήν, lichen.] A lichen, such as certain species of *Pyrenula* and *Calicium*, in which the algal element is inconspicuous or sometimes wanting.

mycomelic (mī-kọ̄-mel′ik), *a.* [Gr. μύκης, fungus, + μῆλον, apple (?), + *-ic.*] Noting an acid, a gelatinous compound, $C_4H_4O_2N_4\cdot\frac{1}{2}H_2O$, prepared by the action of aqueous ammonia on alloxan.

mycomycete (mī′kọ̄-mī-sēt), *n.* One of the *Mycomycetes*, or higher fungi.

Mycomycetes (mī″kọ̄-mī-sē′tēz), *n. pl.* [NL., < Gr. μύκης, fungus, + μύκης (μυκητ-), fungus.] A name applied by Brefeld to the so-called higher fungi, including the *Ascomycetes* and *Basidiomycetes.*

mycomycetous (mī″kọ̄-mī-sē′tus), *a.* Of or pertaining to the *Mycomycetes.*

mycophagous (mī-kof′a̤-gus), *a.* [Gr. μύκης, fungus, + -φαγος, < φαγεῖν, eat.] Feeding on fungi, as the larvæ of many mycetophilid flies and other insects.

mycophylaxin (mī″kọ̄-fi-lak′sin), *n.* [Gr. μύκης, fungus, + φύλαξις, guarding, + *-in*².] A defensive proteid.

mycoplasm (mī′kō-plazm), *n.* **1.** See ★*mycoplasma.*—**2.** Frank's term for the strands of zoöglœa in the root-nodules of legumes.

mycoplasma (mī-kọ̄-plaz′mạ̈), *n.* [NL., < Gr. μύκης, fungus, + πλάσμα, anything formed.] A term applied by Eriksson to a latent infective form of *Puccinia* which, concealed within the cytoplasm of the host-cells, later develops into mycelium. Also *mycoplasm.*

mycoplasmic (mī-kọ̄-plaz′mik), *a.* [*mycoplasm(a)* + *-ic.*] Of, pertaining to, or of the nature of mycoplasma.

mycorhiza, *n.*—**Ectotrophic mycorhiza**, a form of mycorhiza in which the hyphæ of the fungus are always on the outside of the root.—**Endotrophic mycorhiza**, the form of mycorhiza in which the hyphæ of the fungus enter the parenchyma cells of the root.

mycorhizal (mī-kọ̄-rī′za̤l), *a.* [*mycorhiza* + *-al*¹.] Of or pertaining to mycorhiza.

The discovery of the widespread occurrence of this *mycorhizal* symbiosis must be held to be one of the most important results of research upon the nutritive processes of plants during the closing decade of the 19th century.
Encyc. Brit., XXXI. 760.

mycorhizome (mī-kọ̄-rī′zōm), *n.* [Gr. μύκης, fungus, + ῥίζωμα, root.] A structure similar to a mycorhiza, which occurs in the roots of *Corallorhiza* and other living plants: also found in certain fossil plants.

Prof. Weiss exhibited some preparations and photographs of a mycorhiza or *mycorhizome* from the Coal-Measures. *Athenæum*, Nov. 14, 1903, p. 654.

mycosin (mī′kō-sin), *n.* [Gr. μύκης, fungus, + *-ose* + *-in.*] A nitrogenous compound said to occur in the cell-wall of fungi. It is regarded as playing the same part in these that cellulose does in the cell-walls of higher plants.

mycosozin (mī-kọ̄-sō′zin), *n.* [Gr. μύκης, fungus, + σώζειν, save, + *-in.*] A defensive proteid.

Mycosphærella (mī″kọ̄-sfẹ̄-rel′ạ̈), *n.* [NL. (Johanson, 1884), < Gr. μύκης, fungus, + σφαῖρα, sphere, + dim. *-ella.*] A genus of pyrenomycetous fungi having minute membranous perithecia buried in the tissue of the host. The spores are hyaline or greenish and uniseptate. About 500 species have been described, mostly under the untenable name *Sphærella.* They occur chiefly on fallen leaves. *M. maculiformis* is common on oak-leaves.

Mycosphærellaceæ (mī-kọ̄-sfē-re-lā′sẹ̄-ē), *n. pl.* [NL., < *Mycosphærella* + *-aceæ.*] A family of pyrenomycetous fungi named from the genus *Mycosphærella.*

mycothrix (mī′kọ̄-thriks), *n.* [Gr. μύκης, fungus, + θρίξ, hair.] In *bacteriol.*, a chain of micrococci: same as *streptococci.* [Rare.]

The new elements of successive divisions may remain connected, and thus form a chain (or *mycothrix*).
E. Klein, Micro-organisms and Disease, p. 37.

Mycteroperca (mik-tẹ-rọ̄-pėr′kạ̈), *n.* [NL., < Gr. μυκτήρ, nose, snout, + πέρκη, perch. The allusion is to the large divided posterior nostril of *M. olfax.*] A genus of large serranoid fishes found in the tropics; most of them are American. See cut under ★*gag*².

Myctophidæ (mik-tof′i-dē), *n. pl.* [NL., < *Myctophum* + *-idæ.*] A family of fishes living away from the shores at a considerable depth, many of them deep-sea fishes. They have luminous spots more or less regularly placed along the sides.

Myctophum (mik′tọ̄-fum), *n.* [NL., < Gr. μυκτήρ, nose, + ὄφις, serpent.] A genus of deep-sea fishes of the family *Myctophidæ.* The species are numerous and widely distributed.

mydan, *n.* See *maidan.*

mydatoxine (mī-da̤-tok′sin), *n.* [Irreg. < Gr. μύδος, damp, decay, + τοξ(ικόν), poison, + *-ine*².] A strongly alkaline toxic ptomaïne, $C_6H_{13}O_2N$, formed by the putrefaction of the human body and of horse-flesh.

mydine (mī′din), *n.* [Gr. μύδος, damp, decay, + *-ine*².] A strongly reducing non-toxic ptomaïne, $C_8H_{11}ON$, formed by the putrefaction of human flesh.

mydriasis, *n.* **2.** Hydrophthalmia.

mydrin (mid′rin), *n.* [*mydr(iatic)* + *-in*².] A 10-per-cent. aqueous solution of a mixture of the hydrochlorids of ephedrine and homatropine: an evanescent mydriatic.

myectomy (mī-ek′tọ̄-mi), *n.* [Gr. μῦς (μυ-), muscle, + ἐκτομή, excision.] A surgical operation for the removal of a portion of a muscle.

myel (mī′el), *n.* [NL. *myelon*, < Gr. μυελός, later μυελόν, marrow.] The spinal cord.

myelæmia, *n.* Same as ★*myelemia.*

myelalgia (mī-el-al′jiạ̈), *n.* [NL., < Gr. μυελός, marrow, + ἄλγος, pain.] Pain in the spinal cord or its membranes.

myelatrophy (mī-el-at′rọ̄-fi), *n.* Same as *myelatrophia.*

myelemia (mī-el-ē′mi-ạ̈), *n.* [NL. *myelæmia*, < Gr. μυελός, marrow, + αἷμα, blood.] The appearance in the blood of large numbers of cells which are normally found only in the bone-marrow, such as neutrophilic and eosinophilic myelocytes and nucleated red blood-corpuscles. This is seen almost exclusively in the myelogenous type of leucemia.

myelencephalospinal (mī″el-en-sef″a̤-lộ-spī′na̤l), *a.* [Gr. μυελός, marrow, + ἐγκέφαλος, brain, + L. *spina*, spine.] Of or pertaining to the medulla oblongata and the spinal cord.

myelic (mī-el′ik), *a.* [*myel* + *-ic.*] Of or pertaining to the myel, or spinal cord.

myelin, *n.* **II.** *a.* Resembling myelin: said of lecithin which has been placed in water and has become swollen and pasty. On microscopical examination it will then be seen to exist in the form of peculiar slimy droplets and threads, which are known as the *myelin forms* of the substance.

myelinated (mī′e-lin-ā-ted), *p. a.* [*myelin* + *-ate*¹ + *-ed*².] Having the axis-cylinder inclosed in a sheath of myelin: said of nerve-fibers. *Philos. Trans. Roy. Soc.* (London), 1898, Ser. B, p. 86.

myelination (mī″e-li-nā′sho̤n), *n.* [*myelin* + *-ation.*] The acquisition by a nerve-fiber of a sheathing of myelin. *M. Foster*, in Smithsonian Rep., 1897, p. 447.—**Flechsig's myelination method**, the determination of nerve-paths from a study of the time in the development of the nerve-fibers at which their myelin-sheath develops.

myelinic (mī-e-lin′ik), *a.* [*myelin* + *-ic.*] Of or pertaining to myelin.

myelinization (mī″e-lin-i-zā′sho̤n), *n.* [*myelin* + *-ize* + *-ation.*] Same as ★*myelination.*

Basing his opinion on the tardy *myelinisation* of the nerve-fibres which terminate in it, subsequent to the birth of the individual and to the *myelinisation* of the fibres of the sensory and motor centres, Flechsig supposes that these convolutions were designed to enable the different cerebral centres to communicate with each other and to render us conscious of this communication; therefore he has named their grey substance "centres of association." *Deniker*, Races of Man, p. 103.

myelitis, *n.*—**Ascending myelitis**, inflammation of the spinal cord extending upward.—**Cavitary myelitis**, syringomyelia.—**Central myelitis**, inflammation which involves mainly the gray substance of the spinal cord.—**Compression myelitis**, inflammation of the spinal cord due to compression by a tumor or in consequence of angular bending of the spine in Pott's disease.—**Descending myelitis**, inflammation of the spinal cord extending downward.—**Disseminated myelitis**, inflammation of the spinal cord occurring at several distinct points.

myeloblast (mī′e-lọ̄-blȧst), *n.* [Gr. μυελός, marrow, + βλαστός, germ.] A cell from which the myelocyte is developed; sometimes also synonymous with ★*myelocyte*, 2.

myelocyst (mī′e-lọ̄-sist), *n.* [Gr. μυελός, marrow, + κύστις, bladder (cyst).] A cyst of the spinal cord.

myelocystocele (mī″e-lọ̄-sis′tọ̄-sēl), *n.* [Gr. μυελός, marrow, + κύστις, bladder (cyst), + κήλη, tumor.] Spina bifida in which the tumor is composed of a sac of spinal-cord tissue inclosing fluid.

myelocystomeningocele (mī″e-lọ̄-sis″tọ̄-mẹ̄-ning′gọ̄-sēl), *n.* [Gr. μυελός, marrow, + κύστις, bladder (cyst), + μῆνιγξ, membrane, + κήλη, tumor.] A myelocystocele covered with the spinal membranes.

myelocytæmia (mī″e-lọ̄-sī-tē′mi-ạ̈), *n.* [NL., strictly **myelocythæmia*; Gr. μυελός, marrow, + κύτος, a hollow (a cell), + αἷμα, blood.] A condition in which the blood contains myelocytes in abnormal number.

myelocyte (mī′e-lọ̄-sīt), *n.* [Gr. μυελός, marrow, + κύτος, a hollow (a cell).] **1.** One of the cells of the gray substance of the brain.—**2.** A bone-marrow cell; one of the varieties of leucocytes formed in the bone-marrow.

myelocytic (mī″e-lọ-sit′ik), *a.* [*myelocyte* + *-ic.*] Of, pertaining to, or of the nature of, myelocytes.

myelocytosis (mī″e-lọ-sī-tō′sis), *n.* [*myelocyte* + *-osis.*] The occurrence of myelocytes in the blood.

myelogenesis (mī″e-lọ-jen′e-sis), *n.* [Gr. *μυελός*, marrow, + *γένεσις*, origination.] The origin and development of the nervous system, more especially of the brain and spinal cord. *Lancet*, July 11, 1903, p. 106.

myelogenic (mī″e-lọ-jen′ik), *a.* [Gr. *μυελός*, marrow, + *-γενης*, -produced, + *-ic.*] Originating from bone-marrow.

myelogenous (mī-e-loj′e-nus), *a.* [*myelogen*(*ic*) + *-ous.*] Same as ⋆*myelogenic.*

myeloid, *a.* **II.** *n.* Same as ⋆*myeloidin.*

myeloidin (mī′e-loi′din), *n.* [*myeloid* + *-in*2.] A mixture of protagon and lecithalbumins occurring in the rods and hexagonal epithelial cells of the retina.

myeloma, *n.* **2.** A tumor of the bone-marrow, often multiple.

> Multiple *myeloma* is a convenient term enough for certain rare cases in which myelogenic new growth has been found, but in which there are such differences that two if not more types may be distinguished.
>
> *Med. Record*, April 11, 1903, p. 584.

myelomatosis (mī″e-lọ-ma̤-tō′sis), *n.* [NL., < *myeloma*(*t-*) + *-osis.*] A pathological condition, characterized by the occurrence of multiple myelomata (tumor-like structures which are histologically suggestive of granulation tissue), affecting especially the thoracic skeleton, but found also elsewhere in the bony structures of the body.

myelomeningocele (mī-e-lọ-mẹ-ning′gọ-sēl), *n.* [Gr. *μυελός*, marrow, + *μῆνιγξ*, membrane, + *κήλη*, tumor.] Hernia of the spinal cord and its membranes; spina bifida.

myelomere (mī′e-lọ-mēr), *n.* [Gr. *μυελός*, marrow, + *μέρος*, part.] One of the segmental portions, corresponding with a pair of mesoblastic somites, in the embryonic brain and spinal cord of vertebrate animals.

myelopathia (mī″e-lọ-path′i-a̤), *n.* [Gr. *μυελός*, marrow, + *πάθος*, disease.] Same as ⋆*myelopathy.*—**Myelopathia tropica.** Same as *beriberi.*

myelopathic (mī″e-lọ-path′ik), *a.* [*myelopath*(*y*) + *-ic.*] Relating to or affected with disease of the spinal cord. *Med. Record*, April 11, 1903, p. 585.—**Myelopathic albuminuria.** See *Bence-Jones* ⋆*albumin.*

myelopathy (mī-e-lop′a̤-thi), *n.* [NL. *myelopathia*, < Gr. *μυελός*, marrow, + *πάθος*, disease.] Any disease of the spinal cord.

myeloplaque (mī′e-lọ-plak), *n.* [Gr. *μυελός*, marrow, + F. *plaque*: see *plaque.*] Same as *myeloplax.*

myelorrhaphy (mī-e-lor′a̤-fi), *n.* [Gr. *μυελός*, marrow, + *ῥαφή*, sewing.] Surgical suture of the spinal cord following an injury.

myelosarcoma (mī″e-lọ-sär-kō′mä), *n.*; pl. *myelosarcomata* (-ma̤-ta̤). [NL., < Gr. *μυελός*, marrow, + *σάρκωμα*, sarcoma.] An osteosarcoma arising from the marrow.

myelospongium (mī″e-lọ-spon′ji-um), *n.*; pl. *myelospongia* (-a̤). [NL., < Gr. *μυελός*, marrow, + *σπογγιά*, sponge.] A network of connecting or sustentacular tissue in the embryonic brain and spinal cord, derived from the spongioblasts; the embryonic neuroglia.

myelosyphilis (mī″e-lọ-sif′i-lis), *n.* [NL., < Gr. *μυελός*, marrow, + NL. *syphilis.*] Syphilis of the spinal cord.

myelotherapy (mī″e-lọ-ther′a̤-pi), *n.* [NL., < Gr. *μυελός*, marrow, + *θεραπεία*, medical treatment.] Employment of bone-marrow in the treatment of disease.

myelotoxic (mī″e-lọ-tok′sik), *a.* [*myelotox*(*in*) + *-ic.*] Pertaining to, or having reference to the action of, myelotoxins.

myelotoxin (mī″e-lọ-tok′sin), *n.* [Gr. *μυελός*, marrow, + *τοξ*(*ικόν*), poison, + *-in*2.] A cytotoxin which causes the destruction of the granular leucocytes of the bone-marrow.

myenteric (mī-en-ter′ik), *n.* [*myenteron* + *-ic.*] Of or pertaining to the muscular coat of the intestine.

myenteron (mī-en′tẹ-ron), *n.*; pl. *myentera* (-ra̤). [NL., < Gr. *μῦς*, muscle, + *ἔντερον*, intestine.] The muscular layer of the intestine.

myg. An abbreviation of *myriagram.*

myiasis (mī-i-ā′sis), *n.* [NL., < Gr. *μυῖα*, a fly, + *-iasis.*] The infestation of human beings by dipterous and other insect larvæ.

> Such are the cutaneous swellings caused by the larvæ of the œstrid *Dermatobia noxialis*; the occurrence of the larvæ of the screw-worm fly, *Lucilia* (or *Compsomyia*) *macellaria*, in the nasal passages or in wounds; and the occurrence of larvæ (as anthomyiid larvæ swallowed with uncooked vegetables) in the alimentary tract. Myiasis is referred to medically as *internal* or *external*, *myiasis interna* or *myiasis externa*. Also called *scholechiasis.*
>
> *Cambridge Nat. Hist.*, VI. 512.

myiferous (mī-if′ẹ-rus), *a.* [Gr. *μῦς*, muscle, + L. *-fer*, < *ferre*, bear, + *-ous.*] Bearing or supporting the muscles: used especially of certain shelly plates on the valves of the *Brachiopoda* and *Pelecypoda* on which the muscle-bands are implanted.

myiosis (mī-i-ō′sis), *n.* [NL., < Gr. *μυῖα*, fly, + *-osis.*] Same as ⋆*myiasis.*

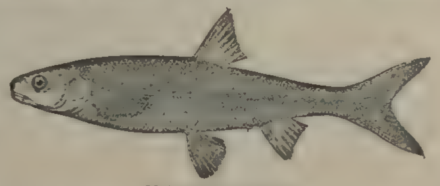
Mykenean (mī-kẹ-nē′a̤n), *a.* Same as ⋆*Mycenæan.*

mykis (mī′kis), *n.* [A vernacular name in Kamchatka.] A common name of a trout, *Salmo mykis.* It inhabits the streams of Alaska and Kamchatka, and is represented southward by several subspecies.

mykomelinic (mī″kọ-me-lin′ik), *a.* Same as ⋆*mycomelic.*

myl. An abbreviation of *myrialiter.*

Mylocheilus (mī-lọ-kī′lus), *n.* [NL., < Gr. *μύλος*, a grinder, + *χεῖλος*, lip.] A genus of large cyprinoid fishes found on the Pacific slope of the United States.



Mylocheilus caurinus.

(From Bulletin 47, U. S. Nat. Museum.)

mylonite (mī′lọ-nīt), *n.* [Gr. *μυλών*, a mill, + *-ite*2.] In *petrog.*, a schist produced by crushing or granulation, that is, by dynamic metamorphism. *Lapworth*, 1885.

mylonitic (mī-lọ-nit′ik), *a.* [*mylonite* + *-ic.*] In *petrog.*, having the characters of mylonite, chiefly the granular texture of a rock metamorphosed by crushing.

mylonize (mī′lọ-nīz), *v. t.*; pret. and pp. *mylonized*, ppr. *mylonizing.* [*mylon*(*ite*) + *-ize.*] To render a mylonite or mylonitic; make schistose by dynamic metamorphism.

> In the field, bands of *mylonised* rock have been traced near the base of the overlying cake of gneiss, and the microscopic examination of the latter by Mr. Teall has revealed cataclastic structures due to dynamic movement.
>
> *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 617.

Mylopharodon (mī-lō-far′ọ-don), *n.* [NL. **Mylopharyngodon*, < *μύλος*, grinder, + *φάρυγξ*, pharynx, + *ὀδούς* (*ὀδοντ-*), tooth.] A genus of large cyprinoid fishes found in the Sacramento and San Joaquin rivers.

mym. An abbreviation of *myriameter.*

mymy (mī′mī), *n.* Same as ⋆*mia-mia.*

myoalbumin (mī″ọ-al-bū′min), *n.* [Gr. *μῦς*, muscle, + E. *albumin.*] Muscle albumin.

myocardiac (mī-ọ-kär′di-ak), *a.* [Gr. *μῦς*, muscle, + *καρδία*, heart, + *-ac.*] Of or pertaining to the muscular tissue of the heart.

myocardiagram, myocardiagraph. Same as ⋆*myocardiogram*, ⋆*myocardiograph.*

myocardiogram (mī-ọ-kär′di-ọ-gram), *n.* [Gr. *μῦς*, muscle, + *καρδία*, heart, + *γράμμα*, anything written.] A tracing made by a myocardiograph.

myocardiograph (mī-ọ-kär′di-ọ-gråf), *n.* [Gr. *μῦς*, muscle, + *καρδία*, heart, + *γράφειν*, write.] An instrument for recording the work performed by the heart muscle. *Buck*, Med. Handbook, II. 688.

myocarditic (mī″ọ-kär-dit′ik), *a.* [*myocarditis* + *-ic.*] Relating to myocarditis.

myochrome (mī′ọ-krōm), *n.* [Gr. *μῦς*, muscle, + *χρῶμα*, color.] A muscle-pigment. The common red muscle-pigment is identical with the hemoglobin of the blood. Other myochromes belong to the order of the lipochromes, and are especially abundant in certain fishes, such as the salmon and trout.

myoclonia (mī-ọ-klō′ni-a̤), *n.* [NL., < Gr. *μῦς*, muscle, + *κλόνος*, spasm.] A disease characterized chiefly by muscular spasm, or myoclonus.

myoclonic (mī-ọ-klon′ik), *a.* [*myoclon*(*us*) + *-ic.*] Pertaining to or exhibiting myoclonus or myoclonia.

myoclonus (mī-ok′lọ-nus), *n.* [NL., < Gr. *μῦς*, muscle, + *κλόνος*, spasm.] Spasmodic contraction of the muscles of the extremities and, less frequently, of the back. *Med. Record*, Feb. 14, 1903, p. 258.

myocœle (mī′ọ-sēl), *n.* [Gr. *μῦς*, muscle, + *κοῖλος*, hollow.] **1.** The cavity in a myocomma.—**2.** In the embryonic vertebrate, the most dorsal portion of the cœlomic or true body-cavity which lies in the protovertebra, or myotomic portion of the mesoderm.

myocœlom (mī′ọ-sē-lom), *n.* Same as ⋆*myocœle.*

myoctonine (mī-ok′tọ-nin), *n.* [Gr. *μυόκτονος*, mouse-killing (< *μῦς*, mouse, + *-κτονος*, < *κτείνειν*, kill), + *-ine*2.] A powerfully poisonous alkaloid, obtained from Aconitum lycoctonum, resembling curare in its effects.

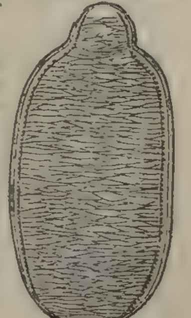
myocyte, *n.* **2.** In *Gregarinida*, the deeper layer of the ectoplasm containing a system of contractile fibrils: contrasted with ⋆*sarcocyte.*

myocyte-fibrillæ (mī″ọ-sīt-fi-bril′ē), *n. pl.* The system of fine contractile fibrils in the deeper part of the ectoplasm of gregarines.

myodiastasis (mī″ọ-dī-as′ta̤-sis), *n.* [Gr. *μῦς*, muscle, + *διάστασις*, separation.] Rupture of a muscle.

myodynamic (mī″ọ-dī-nam′ik), *a.* [Gr. *μῦς*, muscle, + *δύναμις*, power.] Of or pertaining to muscular force.

myo-epithelial (mī″ọ-ep-i-thē′li-a̤l), *a.* [*myo-epitheli*(*um*) + *-al*1.] Pertaining to or having the characters of myo-epithelium. *Nature*, March 3, 1904, p. 431.



Myocyte-Fibrillæ.

Gregarina munieri (A. Schn.), (par. *Timarcha tenebricosa*), showing the network of myocyte fibrils.

(From Lankester's "Zoology.")

myo-epithelium (mī″ō-ep-i-thē′li-um), *n.* [NL., < Gr. *μῦς*, muscle, + NL. *epithelium.*] **1.** A kind of tissue, found in the *Cœlenterata*, which partakes at the same time of the characters of epithelial and muscular tissue.—**2.** The epithelium of the mesoblastic somite of the vertebrate embryo: so named because, though epithelial in form, it nevertheless gives rise to muscle.

myofibril (mī-ọ-fī′bril), *n.* [Gr. *μῦς*, muscle, + E. *fibril.*] A muscle-fibril.

> A. Labbé finds that in Nebalia there is an actual continuity of substance between the epithelial "tonofibril" and the *myofibril.*
>
> *Jour. Roy. Micros. Soc.*, Feb., 1903, p. 38.

myogen (mī′ọ-jen), *n.* [Gr. *μῦς*, muscle, + *-γενης*, -producing.] An albuminous substance which occurs in muscle-plasma. Like the fibrinogen of the blood, it is capable of clotting, during which process it is transformed into myogen-fibrin. Also called *myosinogen.*

myogenous (mī-oj′e-nus), *a.* Same as *myogenic.*

myoglyphis (mī-og′li-fis), *n.*; pl. *myoglyphides* (mī-ọ-glif′i-dēz). [NL., < Gr. *μῦς*, muscle, + *γλυφίς*, the notched end of an arrow, < *γλύφειν*, cut, carve.] In *entom.*, one of the notches in the posterior margin of the neck, usually two in number, to which the levator muscles are attached: found in the *Coleoptera.*

myoid, *a.* **II.** *n.* Same as ⋆*myonema.*

myokymia (mī-ọ-kī′mi-a̤), *n.* [NL., < Gr. *μῦς*, muscle, + *κῦμα*, wave.] A pathological condition in which slow, wave-like contractions pass from one end to the other of a muscle without locomotor effect.

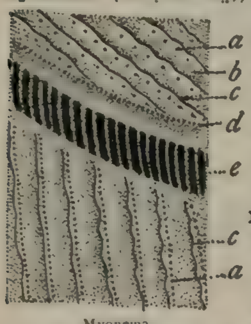
myolipoma (mī″ọ-li-pō′mä), *n.*; pl. *myolipomata* (-ma̤-ta̤). [NL., < Gr. *μῦς*, muscle, + NL. *lipoma.*] A tumor of mixed muscular and fatty tissue.

myolysis (mī-ol′i-sis), *n.* [NL., < Gr. *μῦς*, muscle, + *λύσις*, dissolution.] Softening and degeneration of muscle.

myometritis (mī″ọ-mẹ-trī′tis), *n.* [NL., < Gr. *μῦς*, muscle, + *μήτρα*, uterus, + *-itis.*] Inflammation of the muscular tissue of the uterus.

myometrium (mī-ọ-mē′tri-um), *n.* [NL., < Gr. *μῦς*, muscle, + *μήτρα*, uterus.] The muscular tissue of the uterus.

myonema (mī-ọ̄-nē'mạ̈), *n.*; pl. *myonemata* (-mạ-tạ̈). [NL., < Gr. *μῦς*, muscle, + *νῆμα*, thread.] One of the contractile, muscle-like fibrillæ found in the protoplasm of certain ciliate *Infusoria*, such as the bell-animalcule, *Vorticella*.



Myonema.

Section parallel with the surface and in the region of the adoral zone of *Stentor niger*.

a, basal corpuscle; *b*, cytoplasm; *c*, myonema; *d*, row of marginal cilia; *e*, adoral zone.

(Drawn from Gurwitsch's "Morphologie und Biologie der Zelle.")

myoneme (mī'ọ̄-nēm), *n.* Same as ★*myonema*.

> A. Prenant in attempting a phylogenetic survey of the evolution of muscular elements has begun naturally with the so-called *myonemes* of Protozoa.
>
> *Jour. Roy. Micros. Soc.*, [Oct., 1903, p. 618.

myoneure (mī'ọ̄-nūr), *n.* [Gr. *μῦς*, muscle, + *νεῦρον*, nerve.] A motor nerve-cell.

myonymy (mī-on'i-mi), *n.* [Gr. *μῦς*, muscle, + *ὄνομα*, *ὄνυμα*, name, + *-y*³.] A nomenclature of the muscles.

myopericarditis (mī-ọ̄-per"i-kär-dī'tis), *n.* [NL., < Gr. *μῦς*, muscle, + *περικάρδιον*, pericardium, + *-itis*.] Inflammation of the muscular wall of the heart and of its enveloping membrane.

myophage (mī'ọ̄-fāj), *n.* [Gr. *μῦς*, muscle, + *φαγεῖν*, eat.] A phagocyte which takes part in breaking down and consuming muscle-fibers. *Buck*, Med. Handbook, VI. 32.

myophane (mī'ọ̄-fān), *n.* Same as *myophan*.

myophonia (mī-ọ̄-fō'ni-ạ̈), *n.* [NL., < Gr. *μῦς*, muscle, + *φωνή*, sound.] Sound produced by the contraction of muscular tissue.

myophoric (mī-ọ̄-for'ik), *a.* [Gr. *μῦς*, a muscle, + *-φορος*, < *φέρειν*, bear, + *-ic*.] Same as ★*myiferous*.

myopia, *n.*—**Chromic myopia.** See ★*chromic*.—**Malignant** or **pernicious myopia**, near-sightedness associated with serious disease of the eye, progressing steadily to total blindness.

Myopic crescent. See ★*crescent*.

myoproteid (mī-ọ̄-prō'tẹ̄-id), *n.* [Gr. *μῦς*, muscle, + E. *proteid*.] A peculiar albuminous substance, possibly a globulin, which has been found in the muscle-plasma of fishes and crabs.

myoproteose (mī-ọ̄-prō'tē-ōs), *n.* [Gr. *μῦς*, muscle, + E. *proteose*.] An albumose derived from one of the soluble muscle-albumins.

myorrhexis (mī-ọ̄-rek'sis), *n.* [Gr. *μῦς*, muscle, + *ῥῆξις*, rupture.] The tearing of a muscle.

myosclerosis (mī"ọ̄-sklẹ̄-rō'sis), *n.* [Gr. *μῦς*, muscle, + *σκλήρωσις*, hardening.] Overgrowth of the connective-tissue septa in a muscle.

myosclerotic (mī"ọ̄-sklẹ̄-rot'ik), *a.* Pertaining to or exhibiting myosclerosis.

myoseptum (mī-ọ̄-sep'tum), *n.*; pl. *myosepta* (-tạ̈). [Gr. *μῦς*, muscle, + L. *septum*, partition.] A plate of tendinous connective tissue separating muscle-segments and extending transversely to the long axis of the muscle-cells or fibers.

> In somewhat shrunken transverse sections each bundle of fibrils is seen to be contained in a sheath of protoplasm containing a nucleus at one side, the whole forming a somewhat cylindrical 'cell' stretching from the one *myoseptum* to the other.
>
> *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 655.

myosinogen (mī-ọ̄-sin'ọ̄-jen), *n.* [*myosin* + *-gen*.] Same as ★*myogen*.

myosinose (mī'ọ̄-si-nōs), *n.* [*myosin* + *-ose*.] An albumose derived from myosin.

myosis, *n.*—**Spinal myosis**, myosis occurring in connection with any disease of the spinal cord.

myositis, *n.*—**Interstitial myositis**, inflammation, with overgrowth of the connective-tissue septa, in muscular tissue.—**Ossifying myositis**, inflammation of muscle leading to bone-formation, most marked at the points of origin and insertion.—**Parenchymatous myositis**, inflammation of the true muscular tissue rather than of the connective-tissue septa.

myospasm (mī'ọ̄-spazm), *n.* Same as *myospasmus*.

myostromin (mī-ọ̄-strō'min), *n.* [Gr. *μῦς*, muscle, + NL. *stroma* + *-in*².] A phosphorized proteid found in the muscle stroma.

myotasis (mī-ot'ạ-sis), *n.* [Gr. *μῦς*, muscle, + *τάσις*, tension, < *τείνειν*, stretch.] Tension of muscular tissue.

myotenotomy (mī"ọ̄-tẹ̄-not'ọ̄-mi), *n.* [Gr. *μῦς*, muscle, + *τέν(ων)*, tendon, + *-τομια*, < *ταμεῖν*, cut.] Surgical division of a muscle and its tendon.

myotonia (mī-ọ̄-tō'ni-ạ̈), *n.* [NL., < Gr. *μῦς*, muscle, + *-τονια*, < *τόνος*, tension.] **1.** A state of continuous muscular contraction.—**2.** Same as *myotony*.—**Myotonia congenita.** Same as *Thomsen's disease*.

Myoxocephalus (mī-ok-sọ̄-sef'ạ-lus), *n.* [NL., < Gr. *μυωξός*, the dormouse, + *κεφαλή*, head.] See ★*Acanthocottus*.

myriachit, *n.* See *miryachit*.

myriadyne (mir'i-ạ-dīn), *n.* [Irreg. < Gr. *μυριάς*, ten thousand, + *δύν(αμις)*, power. See *dyne*.] A unit of force equal to 10,000 dynes. [Rare.]

myriagon (mir'i-ạ-gon), *n.* [Irreg. < Gr. *μυριάς*, ten thousand, + *γωνία*, angle.] A polygon of ten thousand sides.

myricaceous (mir-i-kā'shius), *a.* Belonging to the plant family *Myricaceæ*.

Myricales (mir-i-kā'lēz), *n. pl.* [NL. (Engler, 1897), < *Myrica* + *-ales*.] An order of dicotyledonous apetalous plants coextensive with the family *Myricaceæ* and containing only the genus *Myrica* (which see).

myricetin (mi-ris'ē-tin), *n.* [*Myrica* + *-et* + *-in*².] A yellow coloring-matter, $C_{15}H_{10}O_8$, a hydroxyquercitin contained in the bark of *Myrica Nagi* and in the leaves of the Sicilian sumac, *Rhus Coriaria*. It crystallizes in lustrous needles and melts above 300° C.

Myrichthys (mi-rik'this), *n.* [NL., < Gr. *μῦρος*, a kind of sea-eel, + *ἰχθύς*, fish.] A genus of eels, of the family *Ophichthyidæ*, found in most tropical seas.

Myridæ (mir'i-dē), *n. pl.* [NL., < *Myrus* + *-idæ*.] A family of eels which inhabit sandy coasts of most tropical seas.

myringa (mi-ring'gạ̈), *n.* [NL., appar. originally a mistaken form of **meninga*, Gr. *μήνιγγα*, acc. of *μῆνιγξ*, membrane. See *meninx*.] Same as *tympanic membrane*.

myringodectomy (mi-ring-gọ̄-dek'tọ̄-mi), *n.* [NL. *myringa* + Gr. *εκτομή*, excision.] Excision of a portion of the tympanic membrane.

myringomycosis (mi-ring"gọ̄-mī-kō'sis), *n.* [NL., < *myringa* + Gr. *μύκης*, fungus, + *-osis*.] Inflammation of the tympanic membrane due to the presence of a fungous growth.

myringoplasty (mi-ring'gọ̄-plas-ti), *n.* [NL. *myringa* + Gr. *πλαστός*, formed, + *-y*³.] In *surg.*, a plastic operation for the closing of a ruptured tympanic membrane.

myringotomy (mir-ing-got'ọ̄-mi), *n.* [NL. *myringa* + Gr. *-τομια*, < *ταμεῖν*, cut.] Incision into the tympanic membrane.

myriologist (mir-i-ol'ọ̄-jist), *n.* [*myriologue* + *-ist*.] One who sings myriologues.

myriologue (mir'i-ọ̄-log), *n.* [F. *myriologue*, said to be < Gr. *μύριοι*, ten thousand, + *λόγος*, speech.] An extempore lament or funeral song.

myriometer (mir-i-om'e-tėr), *n.* [Gr. *μυριάς*, myriad, + *μέτρον*, measure.] See the extract.

> Mr. G. W. Evans-Cross exhibited his calculating machine, the *myriometer*. The instrument has several different forms, which are all, in principle, modifications of the slide-rule. In the form in which the instrument can be used for multiplication, the rule consists of a number, equal to that of the digits in one factor, of slips placed diagonally in a frame, and the slide carries as many cursors as there are digits in the other factor. The instrument will give exact results for numbers of six or eight digits. In other forms the instrument can be used for various calculations relating to commerce, such as the reduction of the interest on a stated sum from one percentage to another. In another form slides can be set so as to give the calendar of any year, B.C. or A.D., and all the new moons of the year.
>
> *Nature*, March 21, 1907, p. 503.

myrionomous (mir-i-on'ọ̄-mus), *a.* [Gr. *μυριάς*, myriad, + *ὄνομα*, name, + *-ous*.] Having a myriad names; myriad-named.

> Love would be not only blind but aphasic without flowers, the language of which is the signature of its diverse and *myrionomous* phases.
>
> *G. S. Hall*, Adolescence, II. 130.

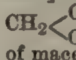
Myriothela (mir"i-ō-thē'lạ̈), *n.* [NL., < Gr. *μυριάς*, myriad, + *θηλή*, a teat.] The typical genus of the family *Myriothelidæ*. *Sars*, 1857.

Myriothelidæ (mir"i-ọ̄-thel'i-dē), *n. pl.* [NL., < *Myriothel(a)* + *-idæ*.] A family of tubularian hydromedusans consisting of colonial forms with a perisarc destitute of investing layer of cœnosarc, and the polyp solitary, with scattered capitate tentacles. It contains the genus *Myriothela*.

Myriozoidæ (mir"i-ọ̄-zō'i-dē), *n. pl.* [NL., < *Myriozo(um)* + *-idæ*.] A family of chilostomatous gymnolæmatous polyzoans having the zoarium incrusting or rising into foliaceous expansions, or dendroid, the zoœcia calcareous with no membranous area or raised margins, and the orifice with a sinus on the lower lip. It includes several genera, among them being *Myriozoum*, *Schizoporella*, and *Hippothoa*.

Myriozoum (mir"i-ọ̄-zō'um), *n.* [NL., < Gr. *μυριάς*, myriad, + *ζῷον*, animal.] The typical genus of the family *Myriozoidæ*. *Donati*.

Myripristis (mir-i-pris'tis), *n.* [NL., < Gr. *μυριας*, myriad, + *πρίστις*, a fish so called (*πρίστης*, sawyer).] A genus of berycoid fishes, of the family *Holocentridæ*, which has numerous species in tropical seas.

myristicin (mī-ris'ti-sin), *n.* [*Myristic(a)* + *-in*².] A colorless crystalline compound,  $CH_2\langle{}^{O}_{O}\rangle C_6H_2(OCH_3)C_4H_7$, contained in oil of mace. It melts at 30.2° C. and boils at 142–149° C. under 10 millimeters pressure.

myristicol (mī-ris'ti-kol), *n.* [*Myristic(a)* + *-ol*.] A colorless compound, $C_{10}H_{16}O$, isomeric with camphor, contained in nutmeg-oil, from *Myristica fragrans*.

myristinic (mī-ris-tin'ik), *a.* [*myrist(ic)* + *-in* + *-ic*.] Noting an organic acid, $C_{14}H_{28}O_{21}$, found in nutmeg-butter, in the spermaceti of whales, and in ox bile.

myristodiolein (mī-ris"tọ̄-dī-ọ̄-lē'in), *n.* [*myrist(ic)* + *di-*² + L. *oleum*, oil, + *-in*².] A glyceride, $C_3H_5(C_{14}H_{27}O_2)(C_{18}H_{33}O_2)_2$, found in the oil from Bir Bahoti, or the 'rains insect.' The oil extracted from this mite is used medicinally by the Mohammedans of Allahabad. *Nature*, April 6, 1905, p. 552.

myristolic (mī-ris-tol'ik), *a.* [*myrist(ic)* + *-ol* + *-ic*.] Noting an acid, a yellow oil, $C_{14}H_{24}O_2$, prepared by the action of chlorin and alcoholic potassium hydroxid on myristic acid. It melts at 12° C.

myristone (mī-ris'tōn), *n.* [*myrist(ic)* + *-one*.] A colorless ketone, $(C_{13}H_{27})_2CO$, prepared by the distillation of calcium myristate. It crystallizes in small plates melting at 76.3° C.

myrmecographer (mėr-mẹ̄-kog'rạ-fėr), *n.* [*myrmecograph(y)* + *-er*².] One who describes ants; a myrmecologist.

myrmecographist (mėr-mẹ̄-kog'rạ-fist), *n.* [*myrmecograph(y)* + *-ist*.] Same as ★*myrmecographer*.

myrmecography (mėr-mẹ̄-kog'rạ-fi), *n.* [Gr. *μύρμηξ*, ant, + *-γραφια*, < *γράφειν*, write.] The descriptive portion of myrmecology; that portion of the study of ants which comprises the description of species, the forms of their nests, etc.

myrmecologist (mėr-mẹ̄-kol'ọ̄-jist), *n.* [*myrmecolog(y)* + *-ist*.] An entomologist who makes a special study of ants, or of myrmecology. *Science*, April 8, 1904, p. 589.

myrmecophile (mėr'mẹ̄-kọ̄-fil), *n.* [Gr. *μύρμηξ*, ant, + *φίλος*, loving.] An animal or plant which lives in symbiotic or intimate relations with ants. The majority of myrmecophiles are arthropods, especially beetles.

myrmecophily (mėr-mẹ̄-kof'i-li), *n.* [*myrmecophile* + *-y*³.] The state or condition of being myrmecophilous, or of living in intimate relations with ants: said of certain beetles, plants, etc.

> Another relation of which the facts are clear enough, but of which the evolution is doubtful, is that known as *Myrmecophily*. Species of ants make their home on tropical plants, living in hollows of stem, petiole, or stipule. . . . These ants act as a bodyguard to their home against the inroad of leaf-cutting ants collecting material for their fungus-gardens.
>
> *Encyc. Brit.*, XXV. 439.

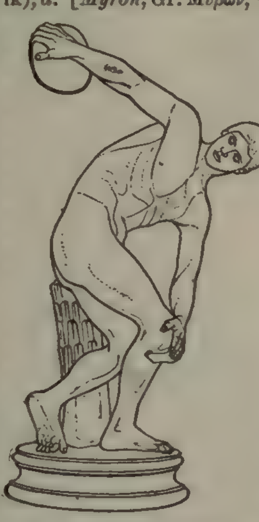
myrmeleontid (mėr-mē-lẹ̄-on'tid), *n.* and *a.* **I.** *n.* A member of the neuropterous family *Myrmeleontidæ*.

II. *a.* Having the characters of or belonging to the family *Myrmeleontidæ* or *Myrmeleonidæ*.

myrmicid (mėr'mi-sid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Myrmicidæ*.

II. *a.* Having the characters of or belonging to the hymenopterous family *Myrmicidæ*.

Myronic² (mī-ron′ik), *a.* [*Myron*, Gr. *Μύρων*, + *-ic.*] In the style of Myron, a Greek sculptor who flourished in the fifth century B.C. and who especially favored athletic subjects. The quality of his work is supposed to appear in the statue of the Discobolus at the Lancellotti palace in Rome.



Myronic Style in Sculpture.
The Discobolus of the Lancellotti Palace, Rome.

myronin (mī′rọ̄-nin), *n.* A hydrous ointment base consisting of a mixture of soap, carnauba-wax, and doegling oil.

Myrophis (mī′rọ̄-fis), *n.* [NL., < Gr. *μῦρος*, a kind of sea-eel, + *ὄφις*, serpent.] A genus of small eels, of the family *Myridæ*, which resemble earthworms. They are found on the sandy shores of tropical America.

myroxylic (mī-rok-sil′ik), *a.* [*Myroxyl(on)* + *-ic.*] Pertaining to or derived from trees of the genus *Myroxylon.*—**Myroxylic acid**, a compound obtained from Peru balsam by the action of concentrated alcoholic potassium hydroxid. It is apparently impure benzoic acid.

myrrh, *n.*—**East Indian myrrh.** See ★*hebbakhade.*—**False myrrh**, a name applied to more than one gum-resin resembling true myrrh, as East Indian myrrh or besabol (of African origin) and Arabian myrrh: the latter differs little from the true drug.

myrrholin (mir′ọ̄-lin), *n.* [L. *myrrha*, myrrh, + *-ol* + *-in*².] A mixture of equal parts of tincture of myrrh and castor-oil: a vehicle for administering creosote.

Myrsiphyllum (mėr-si-fil′um), *n.* [NL., < Gr. *μυρσί(νη)*, myrtle, + *φύλλον*, leaf.] A section of the genus *Asparagus*, of the family *Liliaceæ*, containing the 'smilax' of florists, *Asparagus asparagoides*, a climbing perennial South African herb much prized by the public in floral decorations. The foliage, which is composed of cladodes or leaf-branches, is broad and ovate, in this respect differing from the true asparagus, which has linear or filiform foliage.

Myrtales, *n. pl.* 2. A large order of dicotyledonous chiefly choripetalous plants. It consists of trees, shrubs, and herbs with simple leaves and flowers with the gamosepalous calyx superior or adnate to the compound ovary, which contains numerous ovules. It embraces 13 families, including, besides the myrtle family, the *Lythraceæ*, *Punicaceæ*, *Combretaceæ*, *Melastomaceæ*, *Onagraceæ*, *Trapaceæ*, and *Haloragidaceæ*.

myrtle, *n.*—**Barren myrtle.** (*a*) The bearberry, *Arctostaphylos Uva-ursi.* (*b*) The sweet-gale, *Myrica Gale.*—**Bridal myrtle**, the common myrtle, *Myrtus communis.*—**Brush-myrtle.** Same as ★*brush-cherry*, 2.—**California wax-myrtle.** See *wax-myrtle.*—**Common myrtle**, *Myrtus communis.* See *myrtle*, 1.—**Dwarf myrtle.** Same as *Jew's-myrtle*, 1.—**Moor-myrtle**, the sweet-gale.—**Odorless myrtle**, *Myrica inodora*, a shrub or small tree of the Gulf Coast from Florida to Mississippi. It resembles the wax-myrtle but has entire leaves and is nearly devoid of odor.—**Ridge myrtle**, a large evergreen tree of the myrtle family, *Melaleuca genistifolia*, native to Queensland and New South Wales. It yields a hard grayish wood.—**Sweet myrtle**, the sweet-flag, *Acorus Calamus.*—**Three-veined myrtle.** See ★*brush-turpentine*, and *red scrub tea-tree*, under *tea-tree.*—**Tree myrtle**, *Ceanothus arboreus*, a small, round-headed tree found in the Santa Barbara islands off the coast of California.—**Wild myrtle.** Same as *Jew's-myrtle*, 1.

Myrtle-berry wax. Same as *myrtle-wax.*

myrtle-green, *n.*—**Fast myrtle-green.** Same as *dark* ★*green.*

myrtle-oak (mėr′tl-ōk), *n.* See ★*oak.*

myrtle-pan (mėr′tl-pan), *n.* A tub-like pottery receptacle for evergreens or other plants: made in England near the end of the eighteenth century.

myrtol (mėr′tol), *n.* [L. *myrtus*, myrtle, + *-ol.*] A colorless aromatic volatile liquid consisting of the fraction between 160–180° C. obtained by the distillation of the oil of *Myrtus communis.* It consists principally of d-pinene and cineol, and is antiseptic.

Mysis stage, in the development of some decapodous crustaceans, a larval stage in which the thoracic limbs are long and biramous and serve for swimming, as in *Mysis.* Also called *schizopod stage.*

Myst. An abbreviation of *Mysteries.*

mystacinous (mis-tas′i-nus), *a.* [Gr. *μύσταξ* (*μυστακ-*), upper lip, mustache, + *-ine*¹ + *-ous.*] In *entom.*, having a mystax.

Mystacoceti (mis″tạ-kọ̄-sē′tī), *n. pl.* [NL., < *μύσταξ*, mustache, + *κῆτος*, a whale.] An order of cetaceans containing the whalebone-whales. They are without teeth, having baleen in the upper jaw.

mystæ (mis′tē), *n. pl.* [NL., < Gr. *μύσται*, pl. of *μύστης*, one initiated.] The name assumed by various Dionysiac societies in Asia Minor and Thrace in the second and third centuries A. D.

> The *Mystæ* of Dionysus Trieterikos may be compared with a number of other Dionysiac societies, calling themselves οἱ Μύσται, which flourished especially in Asia Minor and Thrace during the second and third centuries A. D. . . . The discovery of the hall in which the *Mystæ* held their meetings is an important addition to our knowledge of these associations.
> *R. C. Bosanquet*, in Jour. Hellenic Studies, XVIII. [78, 79.

mysterious-plant (mis-tē′ri-us-plant), *n.* The spurge-laurel, *Daphne Mezereum.*

mystery¹, *n.*—**Samothracian mysteries.** See ★*Cabiria.*

Mystriophis (mis-trī′ọ̄-fis), *n.* [NL., < Gr. *μυστρίον*, a spoon, + *ὄφις*, serpent.] A genus of eels, of the family *Ophichthyidæ*, found in warm seas.

Mystrosporium (mis-trọ̄-spō′ri-um), *n.* [NL. (Corda, 1837), < Gr. *μύστρος*, a spoon, + *σπορά*, seed (spore).] A genus of *Fungi Imperfecti*, of the family *Dematiaceæ*, having simple or sparingly branched conidiophores and many-septate muriform dark-brown spores. About 16 species have been described. *M. adustum* causes bulb-scab of *Iris*, and *M. abrodens* is said to cause a blight of wheat. See ★*bulb-scab* and *wheat-*★*blight.*

Mystrothamnus (mis-trọ̄-tham′nus), *n.* [NL. (Coville, 1908), < Gr. *μύστρον*, spoon, + *θάμνος*, bush, in allusion to the use and habit of the plant. Compare the South African name *ladlewood.*] A genus of plants of the family *Celastraceæ.* See *Hartogia.*

myth, *n.* 3. A landmark for directing the course of a vessel through a channel, or along a dangerous shore.—**Ætiological myth.** See ★*ætiological.*—**Creation-myth.** See ★*creation-myth.*—**Origin-myth**, a myth supposed to explain the origin of a tribe or people. *Jour. Amer. Folk-lore*, Jan.–March, 1902, p. 36.—**Power-myth**, a myth in which the powers of nature appear personified as heroes.

> *Power-myth* — In the second stage of myth or romance we discover a radical development in the personages of the story. A new class of deities is found. From the same linguistic cause, which we have set forth, the conspicuous phenomena of nature are personified as gods. The powers of the universe as they are known in that stage of society become the heroes of myth.
> *J. W. Powell*, in An. Rep. Bur. Amer. Ethnol., 1897–98, [I. lxxxiii.

Transformation-myth, a myth which explains the present form of the world by a series of transformations from a previous stage: opposed to ★*creation-myth.*

myth. An abbreviation of *mythological*, *mythology.*

myth-keeper (mith′kē″pėr), *n.* A person whose duty it is to learn, remember, and teach the knowledge of the mythology of a tribe, either to all the members of the tribe, or to a successor. Myth-keepers are found among tribes which have well-developed religious organization but which do not possess the art of writing.

> The *myth-keepers* and priests were accustomed to meet together at night in the ási, or low-built log sleeping house, to recite the traditions and discuss their secret knowledge. *An. Rep. Bur. Amer. Ethnol.*, 1897–98, i. 230.

mythogeny (mi-thoj′e-ni), *n.* Same as ★*mythogony.* *Smithsonian Rep.*, 1891, p. 444.

mythogonic (mith-ọ̄-gon′ik), *a.* [*mythogon(y)* + *-ic.*] Pertaining or relating to mythogony: as, *mythogonic* studies or investigations.

mythogony (mi-thog′ọ̄-ni), *n.* [Gr. *μῦθος*, myth, + *-γονια*, -production.] The origination of myths, or the study of their origins.

mythologema (mith-ọ̄-lō-jē′mạ̈), *n.*; pl. *mythologemata* (-mạ̈-tạ̈). [Gr. *μυθολόγημα*, < *μυθολογεῖν*, tell myths or legends, < *μῦθος*, myth, + *λόγος*, speech, story.] A record or account of a myth in a poem or other writing.

> The apotheosis of Homer and his marriage with Hebe . . . do not properly belong to the Homeric era, but to the *mythologema* of later times.
> *Cecil Smith*, in Jour. Hellenic Studies, V. 236.

mythomania (mith-ō-mā′ni-ạ̈), *n.* [Gr. *μῦθος*, a myth, + ML. *mania.*] An abnormal propensity to untruthfulness, especially to the telling of stories, affecting oneself or others, which have no foundation on fact.

mythomaniac (mith-ō-mā′ni-ak, *n.* [*mythomania* + *-ac.*] One who is subject to mythomania; a chronic liar. *Lit. Digest*, Feb. 1, 1908.

mythopheme (mith′ọ̄-fēm), *n.* [Gr. *μῦθος*, a myth, + *φήμη*, a speaking.] An accepted myth or legend.

> We must have an introduction to science that touches rather lightly on nearly all the great hypotheses, frontier questions, and larger syntheses over the whole field, in a way that a modern specialist wots not of, that is unitary and synthetic and non-analytic, that commands and compares the great ethnic *mythophemes*, that is poetic and historical and orienting. *G. S. Hall*, Adolescence, II. 151.

mythosociologic (mith-ọ̄-sō″shi-ọ̄-loj′ik), *a.* Relating to a system of society the organization of which is founded on myth. *F. N. Cushing*, in An. Rep. Bur. Amer. Ethnol., 1891–92, p. 325.

mytilotoxicon (mit″i-lọ̄-tok′si-kon), *n.* [Gr. *μυτίλος*, mussel, + *τοξικόν*, poison.] A poisonous substance found in decaying mussels; mytilotoxin.

mytilotoxism (mit″i-lọ̄-tok′sizm), *n.* [*mytilotox(in)* + *-ism.*] Poisoning by eating decaying mussels. See ★*mytilotoxicon.*

myxadenitis (mik″sad-e-nī′tis), *n.* [Gr. *μύξα*, mucus, + *ἀδήν*, gland, + *-itis.*] Inflammation of a mucous gland.

myxadenoma (mik″sad-e-nō′mạ̈), *n.*; pl. *myxadenomata* (-mạ-tạ̈). [NL., < Gr. *μύξα*, mucus, + *ἀδήν*, gland, + *-oma.*] Adenoma containing islets of mucoid material.

myxamœba (mik-sạ-mē′bạ̈), *n.*; pl. *mixamœbæ* (-bē). [Gr. *μύξα*, slime, + *ἀμοιβή*, change, spontaneous movement.] In *Mycetozoa*, a swarm-cell with purely amœboid creeping motion.

> Swarm-cells with purely amoeboid motion have been unnecessarily distinguished by the name of *myxamoebae.*
> *DeBary* (trans.), Fungi, p. 423.

myxedema, *n.* It has been found that this affection is usually entirely amenable to treatment by extracts and other preparations made from the thyroid gland (throat-sweetbread) of the sheep. The same treatment is often of great value in cretinism, which is regarded as a congenital form of myxedema. The use of preparations of the thyroid gland to supply a deficiency of the secretion of this gland, which is the underlying defect in myxedema and cretinism, affords one of the most brilliant examples of successful organotherapy.—**Congenital myxedema.** Same as *cretinism.*

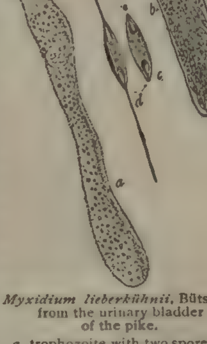
myxedematoid (mik-sē-dem′ạ-toid), *a.* [*myxedema(t-)* + *-oid.*] Resembling myxedema. *Buck*, Med. Handbook, I. 122.

Myxididæ (mik-sid′i-dē), *n. pl.* [NL.] Same as ★*Myxidiidæ.*

Myxidiidæ (mik-si-dī′i-dē), *n. pl.* [NL., < *Myxidi(um)* + *-idæ.*] A family of *Myxosporidia*, forming two or more spores at the same time, the spores being variously shaped and inclosing two polar capsules. It includes several genera, among which are *Myxidium*, *Leptotheca*, and *Sphærospora*. They are found mainly in the gall-bladder and kidney-tubes of fishes and amphibia. Also called *Myxididæ.*

Myxidium (mik-sid′i-um), *n.* [NL. (*Bütschli*, 1882), < Gr. *μύξα*, mucus, slime, + dim. *-ιδιον.*] The typical genus of the family *Myxidiidæ.*

Myxobacteriaceæ (mik′sọ̄-bak-tē″ri-ā′sẹ̄-ē), *n. pl.* [NL. (Thaxter, 1892), < Gr. *μύξα*, slime, + NL. *Bacteriaceæ.*] An order of *Schizomycetes.* In the vegetative condition, they consist of a mass of rod-like bodies produced by repeated fission of individuals possessing power of slow locomotion and secreting a firm gelatinous substance which connects the whole colony. In the fruiting condition, the masses become elevated above the substratum and sometimes irregularly branched, producing cysts in which the rod-like bodies occur in groups or are converted into spore-masses. They occur chiefly on decaying vegetable matter and dung of animals, and partake of the characteristics of both the *Myxomycetes*, or slime-molds, and bacteria, whence the name. See ★*Chondromyces.*



Myxidium lieberkühnii, Bütschli, from the urinary bladder of the pike.

a, trophozoite with two spores and pseudopodia, after Lieberkühn; *b*, trophozoite with numerous spores; *c*, and *d*, spores, the latter with extruded polar filaments; *b*, *c*, and *d*, after Balbiani. (From Wasielewski.) (From Lankester's "Zoology.")

> Thaxter's group of *Myxobacteriaceæ*, if these turn out to be autonomous, points to alliances with the Myxomycetes.
> *Encyc. Brit.*, XXVI. 51.

Myxobolidæ (mik-sọ̄-bol′i-dē), *n. pl.* [NL., < *Myxobolus* + *-idæ.*] A family of *Myxosporidia*, consisting of forms which are usually polysporous, the spores having one or two polar capsules. It contains the genera *Myxobolus* and *Henneguya*, found mostly in the gills, kidney, and spleen of fishes.

Myxobolus (mik-sob′ọ̄-lus), *n.* [NL. (*Bütschli*, 1882), < Gr. *μύξα*, mucus, slime, + *-βολος*, < *βάλλειν*, throw.] The typical genus of the family *Myxobolidæ*.

Myxococcidium (mik″sọ̄-kok-sid′i-um), *n.* [NL., < Gr. *μύξα*, mucus, slime, + *κόκκος*, berry (see *coccus*), + dim. *-ιδιον.*] **1.** A genus of protozoan parasites. *M. stegomyiæ* has been found in the body of the mosquito *Stegomyia fasciata*, which has been contaminated by sucking the blood of a yellow-fever patient. —**2.** [*l. c.*] pl. *myxococcidia* (-ä̤). A protozoan of this genus.

myxocylindroma (mik-sọ̄-sil-in-drō′mä̤), *n.*; pl. *myxocylindromata* (-ma̤-tä̤). [NL., < Gr. *μύξα*, mucus, slime, + E. *cylindroma.*] Same as *myxosarcoma.*

Myxodagnus (mik-sọ̄-dag′nus), *n.* [NL., < *Myxodes* + *Agnus*, 2 (*b*).] A genus of fishes belonging to the family *Dactyloscopidæ*, found only at Cape San Lucas.

myxœdema, *n.* See *myxedema.*

myxogaster (mik-sọ̄-gas′tėr), *n.* Any member of the *Myxogastres* or *Myxomycetes.*

myxoglioma (mik″sọ̄-glī-ō′mä̤), *n.*; pl. *myxogliomata* (-ma̤-tä̤). [Gr. *μύξα*, mucus, + NL. *glioma.*] A glioma which contains more or less mucous tissue.

myxoid (mik′soid), *a.* [Gr. **μυξοειδής*, *μυξώδης*, like mucus, < *μύξα*, mucus, + *εἶδος*, form.] Same as *mucoid.*

myxomycete (mik′sọ̄-mī-sēt), *n.* One of the group of *Myxomycetes* or slime-molds.

myxoneurosis (mik″sọ̄-nụ̄-rō′sis), *n.* [Gr. *μύξα*, slime, + NL. *neurosis.*] A neurosis marked by excessive secretion from the mucous membranes, especially the intestinal mucous membrane; mucous colitis.

> The flushing of the colon in these cases usually brings large masses of mucus in strings, and this mucous colitis, or better, "*myxoneurosis*," is perpetuated by the constant use of cathartics to which these patients are addicted.
> *Med. Record*, July 20, 1907, p. 86.

Myxophyceæ (mik-sọ̄-fī′sẹ̄-ē), *n.* [Gr. *μύξα*, mucus, + *φῦκος*, seaweed, + *-eæ.*] Same as *Schizophyceæ.*

myxopodium (mik-sọ̄-pō′di-um), *n.*; pl. *myxopodia* (-ä̤). [Gr. *μύξα*, mucus, slime, + *πόδιον*, dim. of *πούς* (*ποδ-*), foot.] A flexible protrusible and retractile pseudopodium which may fuse with neighboring pseudopodia into a network, or flow together with them into a mass of protoplasm outside the body.

Myxospongida (mik-sọ̄-spon′ji-dä̤), *n. pl.* [NL., < Gr. *μύξα*, mucus, slime, + *σπόγγος*, sponge, + *-ida.*] A grade of sponges devoid of a skeleton in any form, and containing the families *Oscarellidæ* and *Halisarcidæ.*

myxospongidan (mik-sọ̄-spon′ji-da̤n), *n.* One of the *Myxospongida.*

Myxosporidia (mik″sọ̄-spọ̄-rid′i-ä̤), *n. pl.* [NL., < Gr. *μύξα*, mucus, slime, + *σπορά*, seed (spore), + dim. *-ιδιον.*] An order of *Sporozoa.* The trophozoite is amœboid, spore-formation begins at an early period and proceeds throughout the growth of the trophozoite, the spores being produced within the protoplasm of the latter, and each spore always possesses one or more polar capsules. They are sometimes called *fish-psorosperms* and are parasitic in many common species of teleost and elasmobranch fishes, as well as in some amphibians, reptiles, and invertebrates. The order includes the families *Ceratomyxidæ*, *Myxidiidæ*, *Chloromyxidæ*, *Myxobolidæ*, and *Glugeidæ.*

myxosporidian (mik″sọ̄-spọ̄-rid′i-a̤n), *a.* and *n.* **I.** *a.* Resembling or characteristic of the *Myxosporidia*: as, a *myxosporidian* parasite.

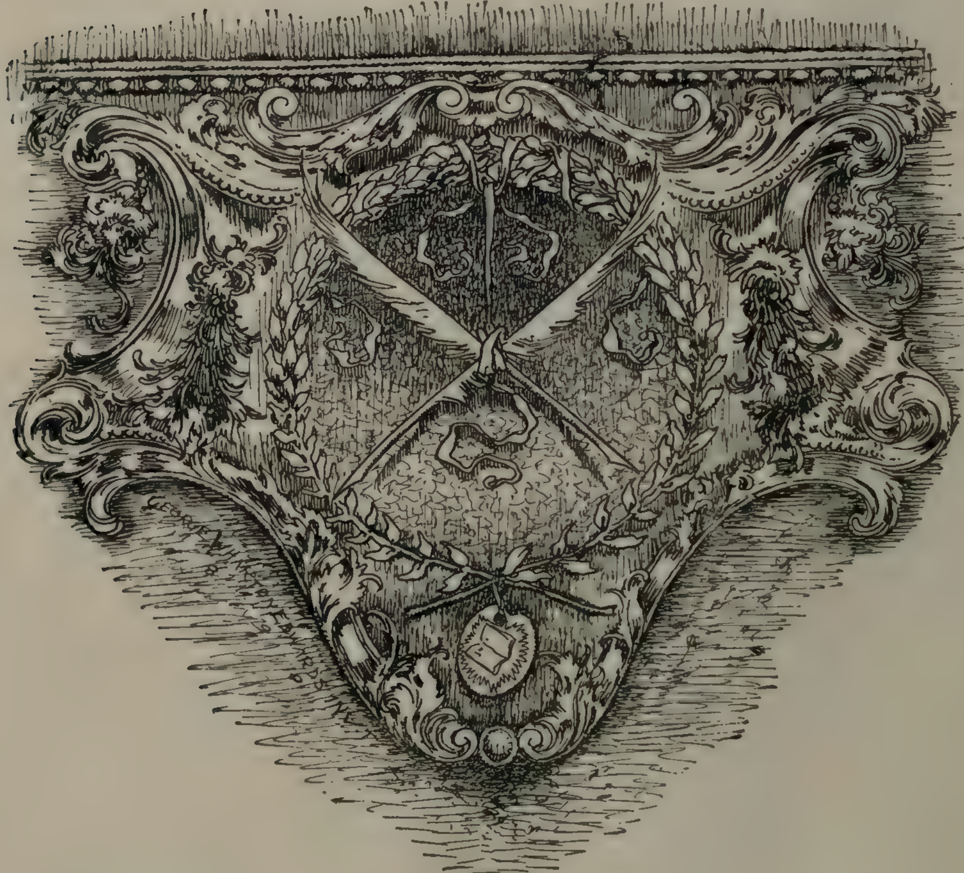
II. *n.* Any sporozoan of the order *Myxosporidia.*

Myxothallophyta (mik″sọ̄-tha-lof′i-tä̤), *n. pl.* [NL., < Gr. *μύξα*, slime, + NL. *Thallophyta.*] Engler's name for the *Myxomycetes.*

myzorhynchus (mī-zọ̄-ring′kus), *n.*; pl. *myzorhynchi* (-kī). [Gr. *μύζειν*, suck in, + *ῥύγχος*, snout.] In certain tapeworms, as *Echeneibothrium*, an apical muscular proboscis or sucker.

Myzostomatidæ (mī″zọ̄-stọ̄-mat′i-dē), *n. pl.* [NL.] Same as *Myzostomidæ.*

myzostomidan (mī-zọ̄-stom′i-da̤n), *a.* [*Myzostomid*(*a*) + *-an.*] Of or pertaining to the *Myzostomida* or *Myzostomidæ.*



N 5. An abbreviation (*e*) [*cap.*] of *Nationalist*; (*f*) [*cap.*] in *meteor.*, of *nimbus*; (*g*) [*l. c.*] in *chem.*, of *normal*, in reference to the strength of a solution; $\frac{1}{10}$ *n.* stands for one tenth normal strength, or a normal solution diluted tenfold: also written $^{N}/_{10}$ or $^{N}/_{10}$. See *normal* ★*solution.* (*h*) [*l. c.*] of *name*; (*i*) [*l. c.*] of the Latin *natus*, born; (*j*) [*l. c.*] of *nephew*; (*k*) [*l. c.*] of *new*; (*l*) [*l. c.*] of *women*; (*m*) [*l. c.*] of *nominative*; (*n*) [*cap.*] of *noon*; (*o*) [*cap.*] of *Norse*; (*p*) [*cap.*] in *electrotechnics*, of *north pole*; (*q*) [*l. c.*] of *note*; (*r*) [*cap.*] of *Northern Postal District, London.*—6. In *electrotechnics*, a symbol (*a*) used by telegraph operators to indicate that a message is completed and that there is nothing more to follow; (*b*) of the total number of lines of magnetic flux in a circuit; (*c*) of the frequency of any harmonic or periodic function of the time.

nabid (nab'id), *n.* and *a.* **I.** *n.* A member of the family *Nabidæ*.

II. *a.* Having the characters of or belonging to the heteropterous family *Nabidæ*.

Nabidæ (nab'i-dē), *n. pl.* [NL., ‹ *Nabis* + *-idæ*.] A family of predatory heteropterous insects having the beak four-jointed and the front legs fitted for grasping prey. They are allied to and sometimes included in the *Reduviidæ*. The commonest American species belong to the genus *Coriscus*.

Nabis (nā'bis), *n.* [NL. (Latreille, 1807), from a proper name.] The typical genus of the family *Nabidæ*. There are few American species. The British species, *N. lativentris*, in its early stages of growth greatly resembles an ant.

nabla (nab'lä), *n.* [NL. *nabla*, L. *nablium*, *naulium*, ‹ Gr. *νάβλα*, also *νάβλας*, *ναῦλας*, later *ναῦλον*, *ναύλη*, prob. from a Phenician form cognate with Heb. *nēbel* (also *nebel*), a harp. Some compare O. Egypt. *nefer*.] An ancient Egyptian lute with two or three strings. Compare ★*nefer*.

nablar (nab'lär), *n.* [*nabla* + *-ar*^{3}.] Clerk-Maxwell's name (1872) for Hamilton's operator, the inverted Greek delta, ∇, or the physical operation indicated by the partial differential equation $\frac{\partial^2\phi}{\partial x^2}+\frac{\partial^2\phi}{\partial y^2}+\frac{\partial^2\phi}{\partial z^2}$.

nablium (nab'li-um), *n.* [L.: see ★*nabla*.] A Roman musical instrument, either a lute (like the Egyptian *nabla*) or a small lyre or harp.

nablock^1†, *n.* Same as *niblick*.

nablock^2 (nab'lok), *n.* [Origin obscure.] In *mining* and *geol.*, a nodule or concretion, such as flint or pyrite, in some other and usually softer rock, as chalk, clay, or coal.

nabo (nä'bō), *n.* [Philippine *nabo*, a corruption of *anabo*.] Same as ★*anabo*. See *devil's-cotton*.

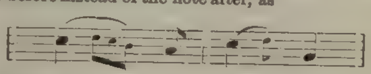
nabobery (nā'bob-e-ri), *n.* [*nabob* + *-ery*.] The conduct and characteristics of nabobs as a class; the wealthy, collectively, or their ways.

nabobess (nā'bob-es), *n.* A female nabob: the wife of a nabob.

> He hopes to live long enough to be introduced as a friend to my fair Indian disciple, and to see her eclipse all other *nabobesses* as much in wealth, as she does already in exterior and . . . interior merit.
>
> *Sterne*, Letters, lxxxiii.

Nabothian cysts, follicles. See ★*cyst*, ★*follicle*.

nachschlag (näċh'shläċh), *n.* [G., ‹ *nach*, after, + *schlag*, stroke.] In *music*: (*a*) A melodic embellishment consisting of one, two, or even more grace-notes appended to a principal note and borrowing from its time-value: opposed to *appoggiatura* or ★*vorschlag*. It is noted in the same way as is an appoggiatura (by a small-sized note, usually connected with the principal note by a slur), but its position and its slur connect it with the note before instead of the note after, as



(*b*) The turn or other figure at the end of a shake or trill. The term is sometimes translated *after-note*.

nachtanz (näċh'tänts), *n.* [G., ‹ *nach*, after, + *tanz*, dance.] An old form of round dance following a country-dance, or the music for such a dance. Also called *proportio*. See *saltarello* (*a*).

nachthorn (näċht'hōrn), *n.* [G., ‹ *nacht*, night, + *horn*, horn.] In *organ-building*, a stop with stopped wooden pipes yielding a soft, horn-like tone. Also called *pastorita*.

nacreous, *a.* 3. In *bacteriol.*, applied to colonies which are of a translucent, grayish-white color with a pearly luster.—**Nacreous cloud.** See ★*cloud*^{1}.

nacrite (nā'krīt), *n.* [*nacre* + *-ite*^{2}.] A variety of the mineral kaolinite; also, a partially altered mica.

nacrous (nā'krus), *a.* Same as *nacreous*.

N. A. D. An abbreviation of *National Academy of Design*.

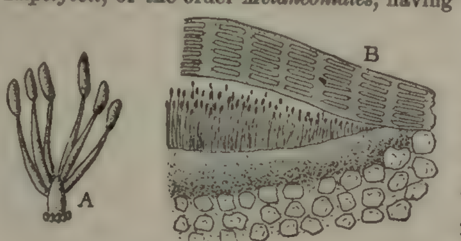
nadiral (nā'dėr-al), *a.* [*nadir* + *-al*^{1}.] Pertaining to or situated at the nadir. [Rare.]

> Its transcendental aspirations still unconsciously based on the geocentric view of things, a zenithal paradise, a *nadiral* hell—were as foreign to his own as if they had been the dreams of people on another planet.
>
> *T. Hardy*, Tess of the D'Urbervilles, xxv.

nadir-point (nā'dėr-point), *n.* The reading of a vertical circle when its telescope points toward the nadir.

naegite (nä-yā'gīt), *n.* [*Naegi* (see def.) + *-ite*^{2}.] A silicate of uranium and thorium found in placer tin-washings at Naegi (Nayegi), near Takayama, Japan. It varies in color from green to gray and brown, and is probably isomorphous with zircon. It exhibits marked radioactivity.

Næmospora (nē-mos'pō-rä), *n.* [NL. (Willdenow, 1787), prob. an error for *Nemaspora* (sometimes so written), ‹ Gr. *νῆμα*, a thread, + *σπορά*, a seed (spore).] A genus of *Fungi Imperfecti*, of the order *Melanconiales*, having the sporogenous hyphæ forming an irregular bright-colored gelatinous layer beneath the epidermis of the host. The spores are mostly hyaline and unicellular, adhering in tendril-like masses. The species occur chiefly on fallen branches of trees, and are regarded as the conidial condition of pyrenomycetous fungi.



Næmospora.

A, *Næmospora croccola* (sporophore); *B*, *N. Tiliæ* (half of a section through a spore-bed).

nævolipoma (nē"vō-li-pō'mä), *n.*; pl. *nævolipomata* (-ma-tä). [NL., ‹ *nævus* + *lipoma*.] A nævus which contains much fatty tissue. Also called *nævus lipomatodes*. *Lancet*, June 6, 1903, p. 1595.

nævus, *n.*—**Capillary nævus**, the ordinary form of nævus, due to dilatation of the superficial capillary blood-vessels of the skin. Also called *port-wine mark* and *claret-cheek*.—**Nævus araneus.** Same as *spider* ★*cancer*.—**Nævus linearis**, elongated, slightly elevated streaks associated with a papillary eruption.—**Nævus lipomatodes.** Same as ★*nævolipoma*.—**Nævus vinosus**, strawberry-mark.

naftalan (naf'ta-lan), *n.* [**nafta* (?), naphtha, + *-al*^{3} + *-an*.] A gelatinous mass consisting of soap impregnated with a peculiar Russian naphtha: it is antiseptic, antiparasitic, deodorant.

naftha, naptha, *n.* Amended spellings of *naphtha*.

nagal (nä'gäl), *n.* [Telugu.] A tree of the verbena family, *Premna tomentosa*, common in southern India, Burma, and Ceylon. It is planted for its wood, which is smooth, light-brown, close, and even-grained, and seasons and polishes well. It is used in Burma for making shuttles.

nagana (na-gä'nä), *n.* [Zulu.] A very fatal, at present incurable infectious (but not contagious) disease of horses in Africa, caused by the presence of flagellate protozoa of the species *Trypanosoma brucei*. The parasites live in the blood-plasma, and are transmitted by the tsetse-fly, *Glossina morsitans*. Also called *tsetse-fly disease*.

> In 1895 and 1897 the well-known reports of Lieut.-Colonel Bruce appeared. He described the tsetse fly disease or *nagana* met with in Zululand, and established the fact that it is due to a protozoan blood parasite, the Trypanosoma Brucei, which is conveyed by the bites of the tsetse fly from affected to healthy animals.
>
> *Nature*, Dec. 10, 1903, p. 123.

nagas (nä'gäs), *n.* [Hindustani *naghas*, the name of the tree.] The East Indian ironwood, *Mesua ferrea*. See *Mesua* and *nagkassar*.

Nageia (nā-gē'ä), *n.* [NL. (Gaertner, 1788), from *nagi*, the Japanese name of *Nageia Nagi*.] A genus of plants of the family *Taxaceæ*. See *Podocarpus* and *native* ★*deal*.

nagual (nä-gwäl'), *n.* [Sp. *nagual*, Nahuatl *naualli*, a sorcerer.] Among the aborigines of Mexico and the adjoining countries of Central America, a personal guardian spirit (sometimes in the form of beast or bird); a magical power. See the extract.

> The guardian spirit was obtained in various ways by different American tribes, but the dream apparition was the most widely spread. Dr. Frazer calls it 'individual totem'; Miss Fletcher speaks of the object dreamed of (the wahube of the Omaha) as the 'personal totem' or simply as the 'totem'; it is termed by the Algonkin manitu, by the Huron okki, by the Salish Indians sulia, and *nagual* in Mexico. Perhaps it would be best to adopt either wahube or manitu to express the guardian spirit.
>
> *Rep. Brit. Ass'n. Advancement of Sci.*, 1902, p. 741.

nagualism (nä-gwäl'izm), *n.* [*nagual* + *-ism*.] The development of the belief in personal guardians as found in Mexico and in the adjoining countries of Central America. In pre-Columbian times the sorcerer whose powers were derived from the nagual seems to have been different from the tonalpouhgue, whose office it was to divine the future from the divinatory calendar. In later times nagualism seems to have developed into a secret rite and to have embodied occult doctrines and the belief in necromantic powers.

nagualist (nä-gwäl'ist), *n.* One who practises nagualism.

nagualistic (nä-gwä-lis'tik), *a.* [*nagualist* + *-ic*.] Pertaining to or of the nature of nagualism.

Nah. An abbreviation of *Nahum*, a book of the Old Testament.

Nahash Hakadmoni (nä'ċhäsh hä-kad-mō'nē). [Heb., the pit, serpent.] In cabalistic doctrine, Satan, in opposition to ★Adam Kadmon.

nahoor, nahur (na-hör'), *n.* [E. Ind.] The bharal, or blue sheep of Tibet, *Ovis nahura*.

nahualism (nä-hwäl'izm), *n.* Same as ★*nagualism*.

Naiad, *n.* 3. [*l. c.*] One of the naiades or pearly fresh-water mussels; a fresh-water mollusk as distinguished from an oceanid or marine mollusk.

Naiadacea (nā-ya-dā'sē-ä), *n. pl.* [NL., ‹ *naiad* + *-acea*.] A superfamily of prionodesmaceous *Pelecypoda*, including shells of varied form, normally equivalve, inequilateral, and dimyarian, with obscure hinge-area and parivincular, opisthodetic ligament. They are of fluviatile or brackish-water habit. Species occur from the Devonian to the present.

Naiadales (nā-ya-dā'lēz), *n. pl.* [NL. (Britton, 1898), < *Naias* (*Naiad-*) + *-ales.*] An order of monocotyledonous plants, consisting of aquatic or marsh herbs with unisexual flowers, the parts of which are usually unequal in number. It embraces 7 families of which the *Naiadaceæ, Potamogetonaceæ, Alismaceæ,* and *Vallisneriaceæ* are the chief.

naiadology (nā-ya-dol'ō-ji), *n.* [*naiad* + Gr. *-λογια*, < *λέγειν*, speak.] The study of the naiads or pearly fresh-water mussels.

> A revolution in *naiadology*, comparable with that produced by Pilsbry in the study of the Helicidæ.
> *Science*, June 21, 1901, p. 984.

naid (nā'id), *n.* [*Naid*(*idæ*).] Any worm of the family *Naididæ*.

naik (nä'ik), *n.* [Hindi *nāik, nāyak*, < Skt. *nayaka*, a leader, < *nāya*, guide.] **1.** An Indian title of nobility; also, a lord, prince, or governor.

> Mysore was gradually growing into a third Hindu state, while everywhere local chieftains, called pálegárs or *naiks*, were in semi-independent possession of citadels or hill-forts.
> *Encyc. Brit.*, XII. 800.

2. A military officer; in later use, a corporal of native infantry. *N. E. D.*

nail, *n.* **10.** A straight stamping-tool.—**Boat-nail**, a nail used by boat-builders. Boat-nails are of different lengths, rose-headed, square at the points, and made of either iron or copper.—**Deck-nail**, a nail used for fastening deck-planking. Such nails range from 4 to 12 inches in length and have a snug head.—**Filling nail**, an obsolete type of cast-iron nail which was driven, in large numbers, in the bottom planks of a vessel to take the place of copper sheathing.—**Flat nail**, a small, sharp-pointed nail having a flat, thin head, used for nailing the scarfs of molds.—**Hippocratic nails**, thick rounded nails curving over the clubbed ends of the fingers in certain diseases marked by profound disturbances of nutrition. See *Hippocratic* ★*fingers*.—**Nail-making machine.** See ★*machine*.—**Port nails**, nails similar to clamp-nails: they are made both double and single and are used for fastening ironwork.—**Reedy nail**, a nail marked by various furrows and grooves.—**Sort nails**, four-, six-, eight-, ten-, twenty-four-, thirty-, and forty-penny nails of different lengths for nailing boards, etc.—**Wall of the nail**, the fold of skin which covers the nail at each side. See cut (*a*) under *nail*, 1.—**Wire nail**, a nail made of round iron wire, sharply pointed and with a head produced by compression of the end, the metal being soft: a variety of wrought nail having the advantage of that form.—**Wrought nail**, a nail of wrought iron, originally worked by hand on the anvil. Such nails are valuable because they are easily clenched.

nail, *v. t.*—**Blind nailing.** Same as *secret* ★*nailing*.—**Secret nailing**, the method of nailing used for floor planks, the nails being driven into the exposed edge of each plank after it is driven firmly into place. The planks for this kind of nailing are always tongued-and-grooved. Also called *blind nailing*, because the heads of the nails are not seen.

nailage (nāl'ạj), *n.* The charge made by the customs for nailing up a package of tobacco opened for inspection. *N. E. D.* [Rare.]

nail-clencher (nāl'klen″chėr), *n.* A tool used by horseshoers to clench, or turn down, the points of the nails driven through the hoof to hold the shoe.

nail-culture (nāl'kul″tụ̈r), *n.* A colony of bacteria which grows downward in the culture medium in the form of an iron nail.

nail-driver (nāl'drī″vėr), *n.* A machine for driving nails, used in box-making. The nails are put in the machine and are driven by a single stroke of a reciprocating plunger.

nail-gun (nāl'gun), *n.* An invention for nailing down floor-planks rapidly and without the necessity of kneeling upon the floor. A piston working in a tube serves as a hammer to drive the nail.

nailing-block (nā'ling-blok), *n.* One of the small pieces of wood built into a brick wall to which the trim, dado, etc., may be nailed.

nailing-machine, *n.*—**Box-nailing machine**, a machine for placing, driving, and clinching nails in making wooden packing-boxes. It consists essentially of a feeding-device for delivering three or more nails at once and placing them in any desired position or angle at the sides, ends, tops, or bottoms of boxes or upon the box-cleats, and a gang nailing-device under the control of the operator. The box to be nailed is placed upon a table and the nails are driven along two sides at once, a single turn of the box serving to nail it together on four edges. Some machines also clinch the nails as fast as they are set. Such machines range from small machines driving three brads, in making a cigar-box, up to machines driving sixteen nails at once in making dry-goods packing-cases. It also drives nails through box-straps or shooks.

nail-puller (nāl'pụl″ėr), *n.* A nail-extractor (which see).

nail-rod, *n.* **2.** In Australia, a coarse dark tobacco smoked by bushmen: named from the shape of the plug, which looks like a thin flat stick of licorice. The name is also applied to any coarse stick of tobacco. *E. E. Morris*, Austral English.

nail-scissors (nāl'siz″ọrz), *n. pl.* Scissors, generally with curved blades, designed to be used in cutting the finger-nails.

nail-set (nāl'set), *n.* A short slender rod of steel used to drive a nail home or flush with the wood. It is held on top of the nail and struck with the hammer.

nail-sick (nāl'sik), *a.* Leaky at the nail-holes. *N. E. D.*

> Much smaller waves soon make a boat "*nail-sick*," as the phrase is. The keeper said that after a long and strong blow there would be three large waves, . . . and then no large ones for some time.
> *Thoreau*, Cape Cod, p. 145.

naio (nī'ọ), *n.* [Hawaiian *naio*, < Maori *ngaio*, a New Zealand tree of the same genus.] The bastard sandalwood of Hawaii, *Myoporum Sandwicense*. See *Myoporum*, and *bastard sandalwood*, under *sandalwood*.

nair (nä'ēr), *n.* [Sp. and Pg. *nayre, naire.*] A member of the noble and military caste in Malabar. *N. E. D.*

Nairoa series. See ★*series*.

naiscus (nạ-is'kus), *n.*; pl. *naisci* (-ī). [NL., < Gr. *ναίσκος*, dim. of *ναός*, a temple.] In *Gr. archæol.*, a small temple; a shrine: by extension, a small medieval building, such as a tomb, in eastern countries.

> Inscriptions often occur, and most frequently on one type of tombstone—a *Naiscus* with round arch, panelled door below, and pointed gable above.
> *Geog. Jour.* (R. G. S.), IX. 269.

Nakanuri lacquer. See ★*lacquer*.

naked, *a.* **2.** (*d*) Said of a vessel's bottom when her copper is stripped off.—**Naked contract.** Same as *nude pact* (which see, under *nude*).—**Naked light**, a candle or any form of lamp with an unprotected flame; a light that is not a safety-lamp.—**Naked possessor, power, title.** See ★*possessor*, etc.—**Naked vertebræ.** See ★*vertebra*.

naked-eared (nā'ked-ērd), *a.* Having hairless ears: as, the *naked-eared* deer of Columbia, *Odocoileus gymnotis*.

nakedize (nā'ked-īz), *v. i.* and *t.*; pret. and pp. *nakedized*, ppr. *nakedizing*. [*naked* + *-ize.*] To go naked; render naked. *N. E. D.*

> Grown persons may derive much benefit from remaining some hours in mild weather, without their clothes. It was most manifest that the children liked to *nakedize*—such was the term of art—exceedingly; . . . it was something new and different from the ordinary routine of jackets, trowsers, and petticoats.
> *T. J. Hogg*, Life of Percy Bysshe Shelley, II. 289.

naked-stopper (nā'ked-stop″ėr), *n.* A shrub or small tree, *Anamonis dichotoma*, of the myrtle family, found in the West Indies, Florida, and the Keys. Compare *nakedwood*.

naked-weed (nā'ked-wēd), *n.* The gum-succory, *Chondrilla juncea*.

nakhod (nạ-ċhōd'), *n.* [Pers. *nukhūd*, a pea.] A Persian unit of weight, the twenty-fourth part of a miskal, equal to 2.96 grains.

nakhoda (nä'kō-dä), *n.* [Pers. *nākhodā*, < *nāw*, boat, + *khudā*, master.] In India, the captain or master of a boat or vessel.

nalita (nä-lē-tä'), *n.* [E. Ind.] A small herbaceous plant, *Hibiscus cannabinus*, largely cultivated throughout India for its fiber. See *Dekhan* ★*hemp* and *Hibiscus*, 1.

N. Am. An abbreviation of *North America*, or *North American*.

Nama (nā'mạ̈), *n.* [NL. (Linnæus, proposed in 1747, established in 1753), in allusion to the habitat of the type species *N. Zeylanica*, < Gr. *νᾶμα*, running water.] A genus of dicotyledonous plants of the family *Hydrophyllaceæ*. See *Hydrolea*.

namamahay (nä-mä-mä-hī'), *n.* [Tagalog (at the time of the Spanish conquest) *aliping* (*alimpig*) *namamahay*.] In the Philippine Islands, formerly, serfs who lived in their own houses under socage tenure, being held to assist their master in agricultural work, as rowing-crews, in building houses, etc.

namaqualite (nä-mä'kwä-līt), *n.* [*Namaqua* + Gr. *λίθος*, stone.] A pale-blue fibrous mineral with silky luster, consisting of the hydrated oxids of aluminium and copper: found in Namaqualand, South Africa.

Namaquan (nä-mä'kwạ̈n), *n.* [S. Afr. *Namaqua*, connected with *Nama*, a native term.] One of the three varieties of the Hottentot language; the Nama. The other dialects are the Kora, the Eastern, and the Cape.

namaycush (nam'ạ-kush), *n.* [Cree *namekus*, Ojibwa *namegos*; prob. connected with Natick *namohs, nâmâs*, Narragansett *nammaùus*, Menomini *nahmaish*, a fish.] The great lake-trout, *Aristivomer namaycush*, called also *Mackinaw trout* and (in Maine) *togue*. *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 251.

namely (nām'li), *a.* Notable. [Obsolete or Scotch.]

name-plate, *n.* (*b*) A metal plate bearing the name of the manufacturer, and often giving the size and capacity of the machine, placed on a machine-tool, engine, dynamo, or other machine.

> The committee recommends that the ratings of generators and motors, except traction motors, be marked plainly on the *name-plate*. Two types of service are recommended, continuous working and intermittent working, and the *name-plate* must state to which service it relates.
> *Elect. Rev.*, Sept. 3, 1904, p. 327.

nami (nä'mē), *n.* Same as ★*calut*.

namma-hole (nam'ạ̈-hōl), *n.* [Aboriginal Australian *namma*, elsewhere *ngumma*, lit. breast, + E. *hole*¹.] In Australia, a native well or water-hole.

> The route all the way from York to Coolgardie is amply watered, either '*namma holes*' (native wells) or Government wells being plentiful on the road.
> *Australasian*, Aug. 5, 1893, p. 252, quoted in E. E. [Morris, Austral English.

Nanaimo beds. See ★*bed*¹.

nancy-story (nan'si-stō″ri), *n.* [Corruption of native African *ananse*, spider.] A folk- or fairy-tale of a type current among the negroes of the Gold Coast and the West Indies. *N. E. D.*

nandinine (nan'di-nin), *n.* [*Nandina*² (see def.) + *-ine*².] An amorphous, poisonous, pulverulent alkaloid, $C_{19}H_{19}O_4N$, contained in the root-bark of *Nandina domestica*, from Japan.

ñandubay (nyän-dö-bī'), *n.* [Native name.] In Argentina, a small tree of the mimosa family, *Prosopis Nandubey*, with strong, hard, durable wood. On account of the short trunk the wood is not much used for cabinet-work, but great numbers of the trees are cut for fence-posts.

nanduly (nan'dụ̄-li), *n.* [S. Amer.?] A fiber-lace of South America, made by the needle into small squares which are afterwards joined together. *Dry Goods Economist*, Aug. 20, 1904, p. 142.

nangka (näng'kä, näng-kä'), *n.* [Also *nangca*; Chamorro *nángka*, Tagalog *nangká*, the jack-fruit, *Artocarpus integrifolia*.] **1.** In Guam, the edible seeds of the fertile breadfruit, *Artocarpus communis*, which, like those of the jack-fruit of the Philippines, are roasted and eaten, and resemble chestnuts in taste. See ★*dugdug*.—**2.** In the Philippine Islands, the jack-fruit, *Artocarpus integrifolia*. See *jack-tree* and *Artocarpus*. Also called *langka*.

nanguer (nang'gwėr), *n.* [Said to be from native, Senegal, name.] A species of antelope formerly accepted by zoölogists on the authority of Buffon. *N. E. D.*

Nankeen crane. Same as ★*Nankeen heron*.—**Nankeen hawk.** Same as *Nankeen* ★*kestrel*.—**Nankeen heron**, a species of night-heron, *Nycticorax caledonica*, found in Australia: named from its general pale yellow color.—**Nankeen yellow.** See ★*yellow*.

Nanking china. See ★*china*.

nannandrium (nan-an'dri-um), *n.*; pl. *nannandria* (-ạ̈). [NL., < Gr. *νάννος, νᾶνος*, dwarf, + *ἀνήρ* (*ἀνδρ-*), male.] The peculiar dwarf male plant of the *Œdogoniaceæ* (which see).

Nannastacidæ (nan-as-tas'i-dē), *n. pl.* [NL., < *Nannastacus* + *-idæ.*] A family of cumacean crustaceans. They have either one or two eyes, the first antennæ alike in the two sexes, the flagella very unequal, the smaller being one- or two-jointed, the mandibles with few spines on the anterior branch, the first two pairs of pereiopods in the female and the first four in the male with well-developed swimming-branches, and the telson wanting. It contains the genera *Nannastacus, Cumella, Diops*, and *Spencebatea*.

Nannastacus (na-nas'tạ-kus), *n.* [Gr. *νάννος, νᾶνος*, dwarf, + *ἀστακός*, lobster.] The typical genus of the family *Nannastacidæ*. *Spence Bate*, 1865.

Nanno (nan'ọ), *n.* [NL., < Gr. *Ναννώ*, a proper name, < *νάννος, νᾶνος*, a dwarf.] A genus of holochoanitic nautiloid *Cephalopoda* having an apically swollen endosiphuncle. It occurs in the Trenton limestone.

Nannobrachium (nan-ọ-brā'ki-um), *n.* [NL., < Gr. *νάννος, νᾶνος*, dwarf, + *βραχίων*, arm.] A genus of deep-water marine fishes of the family *Myctophidæ*.

nannocephalic (nan-ọ-se-fal'ik), *a.* [Also *nanocephalic*; < Gr. *νάννος, νᾶνος*, dwarf, + *κεφαλή*, head, + *-ic.*] Having a disproportionately small head; specifically, in *anthrop.*, having a cranial capacity of less than 1,200 cubic centimeters. *Virchow.*

Therefore, if we seek ethnic relationships for the Negritos of the Philippines, or as they are named, the Aetas (Etas, Itas), such connections obtrude themselves with the stocks named, and the more strongly since they all have brachycephalic, relatively small (*nannocephalic*) heads and through their small size attach themselves to the peculiar dwarf tribes. *Pop. Sci. Mo.*, July, 1901, p. 260.

nannocephalism (nan-ọ̄-sef′ạ-lizm), *n.* [*nannocephal(ous)* + *-ism.*] Same as ★*nannocephaly.*

nannocephalous (nan-ọ̄-sef′ạ-lus), *a.* [Gr. *νάννος*, *νᾶνος*, dwarf, + *κεφαλή*, head, + *-ous.*] Same as ★*nannocephalic.*

nannocephaly (nan-ọ̄-sef′ạ-li), *n.* [Gr. *νάννος*, *νᾶνος*, dwarf, + *κεφαλή*, head, + *-y*³.] Abnormally small size of the head in comparison with the body and limbs.

nannocormia (nan-ọ̄-kôr′mi-ạ̈), *n.* [Gr. *νάννος*, *νᾶνος*, dwarf, + *κορμός*, trunk (of a tree).] A condition in which the body is markedly dwarfed in comparison with the head, and sometimes the extremities as well.

nannocranous (na-nok′rā-nus), *a.* [Gr. *νάννος*, *νᾶνος*, dwarf, + *κρανίον*, skull, + *-ous.*] In *anthrop.*, having a cranium the total volume of which is less than 1,530 cubic centimeters in males, and 1,410 cubic centimeters in females. *E. Schmidt.*

Nannopterum (na-nop′tẹ-rum), *n.* [NL., < Gr. *νάννος*, *νᾶνος*, dwarf, + *πτερόν*, wing.] A genus of cormorants, distinguished by the small size of the wings, the type being the flightless Harris's cormorant, *N. harrisi* Rothschild, of Narborough Island. See *Harris's* ★*cormorant*, with cut.

nannosomus (nan′ọ̄-sō-mus), *n.*; pl. *nannosomi* (-mī). [NL., < Gr. *νάννος*, *νᾶνος*, dwarf, + *σῶμα*, body.] A dwarf.

nanny-bush (nan′i-bu̇sh), *n.* Same as *nannyberry.*

nannygai (nan′i-gī), *n.* [Also *nannygy*, *nannagai*, from the aboriginal name in New South Wales, which is given as *nura ngin a gai.*] In New South Wales, a fish, *Beryx affinis*, common in Australian waters.

nanny-plum (nan′i-plum), *n.* Same as *nannyberry.*

nanocephalic (nā″nō-se-fal′ik), **nanocephalism**, etc. Same as ★*nannocephalic*, etc.

nanocormia (nā-nọ-kôr′mi-ạ̈), *n.* Same as ★*nannocormia.*

nanocranous (nạ-nok′rạ-nus), *a.* Same as ★*nannocranous.*

nanosomus (nā′nọ-sō-mus), *n.* Same as ★*nannosomus.*

Nansenia (nan-sē′ni-ạ̈), *n.* [NL., named after F. *Nansen*, an Arctic explorer.] A genus of fishes of the family *Microstomidæ* found, in deep water, in the Arctic Ocean.

nantusi (nan′tọ̈-sẹ̄), *n.* The trade-name of a mixture of about 30 per cent. sulphur with about 70 per cent. of paraffin-wax with a little beeswax and tallow: used as an addition to some of the lower grades of vulcanized india-rubber, in order to prevent cracking on exposure to the sun.

naological (nā-ọ̄-loj′i-kạl), *a.* [*naolog(y)* + *-ical.*] Of or pertaining to naology or the study of temples.

naology (nạ̄-ol′ọ̄-ji), *n.* [Gr. *ναός*, temple, + *-ology.*] The architectural or archæological study of temples or other sacred buildings.

Naosaurus (nā-ọ̄-sâ′rus), *n.* [Gr. *ναός*, temple, + *σαῦρος*, lizard.] An extinct genus of reptiles of the suborder *Pelycosauria*, family *Clepsydropidæ*, differing from the related genus *Dimetrodon* in having transverse processes on the greatly elongated neural spines. Found in the Permian of Bohemia.

napa (nä′pạ̈ or nap′ä), *n.* The name of a city and a county in California, applied to a product and a process of leather-manufacture.—**Napa finish**, a cheap tannage or curing-process applied to light, thin sheepskins. *C. T. Davis*, Manuf. of Leather, p. 275.—**Napa glove**, a glove made of sheepskin or goatskin with an oily tannage.

napal (nā′pạl), *a.* [*nape*¹ + *-al*¹.] Of or pertaining to the nape of the neck. [Rare.]

naperer (nā′pėr-ėr), *n.* [*napery.*] The person having charge of the royal table-linen. *N. E. D.* [Obs. or historical.]

naphindone (naf′in-dōn), *n.* [*naph(tha)* + *ind(igo)* + *-one.*] A basic coal-tar color of the monoazo type derived from safranine. It dyes tannin-mordanted cotton blue. Same as *indoin* ★*blue.*

naphtha, *n.*—**Bathgate naphtha**, naphtha obtained from Boghead shale of Torbane Hill, at the Bathgate works, Scotland.—**Boghead naphtha.** Same as *Bathgate* ★*naphtha.*—**Caoutchouc naphtha.** See ★*caoutchouc.*—**Coal-tar naphtha.** Same as ★*coal-naphtha.*—**Mineral naphtha**, petroleum or mineral oil, especially the lighter and more volatile varieties.—**Miscible naphtha**, a trade-name for crude wood-naphtha, obtained from brown acetate of lime in working up the products of the destructive distillation of wood.—**Naphtha gas.** See ★*gas.*—**Naphtha vitrioli**, an old name for ordinary ether.—**Shale naphtha**, a mixture of hydrocarbons, obtained in the distillation of Scotch bituminous shales, chiefly of the olefine series, and therefore chemically different from petroleum naphtha and from coal-tar naphtha: used as a solvent in the india-rubber and other industries.—**Solvent naphtha**, a trade-name, chiefly applied to the coal-tar naphtha used as a solvent by manufacturers of india-rubber goods, but also to the wood-naphtha used as a solvent for resins in varnish-making. See ★*coal-naphtha* and *wood-naphtha.*

naphtha-burner (naf′thạ̈-bėr″nėr), *n.* See ★*burner.*

naphthalate (naf′thạ̈-lāt), *n.* [*naphtha* + *-al*³ + *-ate*¹.] The former name for ★*phthalate.*

naphtha-launch (naf′thạ̈-länch), *n.* A launch the motive power of which is derived from the explosion of naphtha in the engine-cylinder.

Naphthalene blue, green, oil. See ★*blue*, etc.—**Naphthalene rose, scarlet.** Same as *magdala red* (which see, under *red*¹).—**Naphthalene yellow.** See *Manchester yellow*, under *yellow.*

naphthalenic (naf-thạ̈-len′ik), *a.* [*naphthalene* + *-ic.*] Of or pertaining to naphthalene, or, specifically, to naphthalenic acid.—**Naphthalenic acid**, a yellow compound, $C_{10}H_5(\overset{\beta}{O}H)\overset{\alpha}{O}_2$, formed by heating aminonaphthoquinonimide or similar compounds with acids or alkalies. It crystallizes in needles, and melts at 190° C. Also called *naphthalic acid*, or, more correctly, *β-hydroxy-α-naphthoquinone.*

naphthalenoid (naf′thạ̈-lẹ̄-noid), *a.* [*naphthalene* + *-oid.*] Pertaining to or derived from naphthalene: applied to chemical compounds the molecules of which contain the same atomic grouping as naphthalene.

naphthalic (naf-thal′ik), *a.* [*naphthal(ene)* + *-ic.*] Pertaining to naphthalene, especially to naphthalic acid.—**Naphthalic acid.** (*a*) Same as ★*naphthalenic acid.* (*b*) A colorless compound, $C_{10}H_6(COOH)_2$, prepared by the oxidation of acenaphthene. It crystallizes in long, silky, hair-like needles and melts at 266° C.

naphthalide (naf′thạ̈-lid), *n.* [*naphthal(ene)* + *-ide*¹.] In *organic chem.*, the class-name of acyl derivatives of napthamine, such as formylnaphthalide, $C_{10}H_7NHCOH$.

naphthalidine (naf-thal′i-din), *n.* [*naphthalide* + *-ine*².] A former name for *naphthylamine.*

naphthalol (naf′thạ-lol), *n.* [*naphtha* + *-al*³ + *-ol.*] Same as ★*betol.*

naphthase (naf′thās), *n.* [*naphtha* + *-ase.*] A substance, $C_{20}H_{12}N_2$, belonging to the class of azins, from which valuable coloring-matters are obtainable: now known as *dinaphthazin.*

naphthazarine (naf-thaz′a-rin), *n.* [*naphtha* + *(ali)zarin.*] A reddish-brown compound prepared by the reduction of 1, 5-dinitronaphthalene with zinc and sulphuric acid at 200° C. It sublimes and forms needles.

naphthazin (naf-thaz′in), *n.* [*naphtha* + *-azin.*] In *organic chem.*, the name given to those azins, such as $C_{10}H_6{<}\begin{matrix}N\\N\end{matrix}{>}C_{10}H_6$, which contain naphthalene instead of benzene radicals. The substitution of certain radicals for the hydrogen gives rise to valuable dyes.—**Naphthazin blue.** See ★*blue.*

naphthazurin (naf-thazh′ụ̈-rin), *n.* [*naphtha* + *azure* + *-in*².] A basic coal-tar color. It dyes tannin-mordanted cotton navy-blue shades.

naphthene (naf′thēn), *n.* [*naphtha* + *-ene.*] In *organic chem.*, a class-name of a series of hydrocarbons derived from hexahydrobenzene (cyclohexane), C_6H_{12}. Many of them may be made synthetically, and a considerable number are found in petroleum, especially in that from the Baku district.

naphthenic (naf-then′ik), *a.* [*naphthene* + *-ic.*] Derived from naphthene; referring to cyclohexane.—**Naphthenic acid**, in *organic chem.*, the general term applied to the carboxylic acids derived from cyclohexane and its homologues. The simplest member is cyclohexane carboxylic acid (hexahydrobenzoic acid), $C_6H_{11}COOH$.

naphthenol (naf′thē-nol), *n.* [*naphthene* + *-ol.*] A former name for naphthol.

naphthide (naf′thid), *n.* [*naphtha* + *-ide*¹.] In *organic chem.*, the general name applied to salts of acids with substituted aminonaphthalenes, such as methylaminonaphthalene, $CH_3NHC_{10}H_7$.

naphthidine (naf′thi-din), *n.* [*naphthide* + *-ine*².] A colorless compound, $H_2NC_{10}H_6C_{10}H_6NH_2$, prepared by the reduction of hydrazonaphthalene. It crystallizes in silvery lustrous plates, melts at 198° C., and corresponds to benzidine. Also called *diaminodinaphthyl.*

Naphthion red. See ★*red*¹.

naphthionic (naf-thi-on′ik), *a.* [*naph(tha)* + *thionic.*] Noting an acid, a colorless compound, $H_2\overset{1}{N}C_{10}H_6\overset{4}{S}O_3H.\frac{1}{2}H_2O$, prepared by the action of alcoholic ammonium sulphite on 1-nitronaphthalene. It crystallizes in small needles, blackens without melting, and is also called 1, 4-*aminonaphthalene-sulphonic acid.*

naphthoform (naf′thọ̄-fôrm), *n.* [*naphtha* + *form(aldehyde).*] A synthetic compound of β-naphthol and formaldehyde. It is a dermal antiseptic.

naphthoformine (naf-thọ̄-fôr′min), *n.* [*naphthoform* + *-ine*².] The trade-name of a condensation compound of α- and β-naphthol with formaldehyde and ammonia. It is an insoluble powder which possesses powerful antiseptic properties owing to the readiness with which it is resolved into its constituents.

naphthoic (naf-thō′ik), *a.* [*naphth(alene)* + *-o-* + *-ic.*] Of or pertaining to naphthalene.—**Naphthoic acid.** Two acids, $C_{10}H_7COOH$, with this name are known, distinguished as α- and β- or 1- and 2-. They are prepared by the hydrolysis of the corresponding cyanides and bear the same relation to naphthalene that benzoic acid does to benzene. They crystallize in needles; the 1-derivative melts at 160° C., the 2-compound at 182° C. Also called *naphthalene-carboxylic acids.*

Naphthol black. See ★*black.*—**Naphthol black 12B.** Same as *naphthol* ★*blue-black.*—**Naphthol blue.** See *naphthol.* The name is applied to several basic coal-tar colors of the oxazine type, similar to the new blues; also to several acid coal-tar colors which produce dark navy-blue shades on wool.—**Naphthol blue-black, orange.** See ★*blue-black*, ★*orange*¹.—**Naphthol red.** Same as ★*amaranth*, 5.—**Naphthol yellow.** See ★*yellow.*

naphthol-aristol (naf″thol-ar′is-tol), *n.* A greenish-yellow powder, $C_{16}H_{8}$[illegible]uble in water; diiodo-β-naphthol: a substitute for iodoform.

naphtholate (naf′thọ̄-lāt), *n.* [*naphthol* + *-ate*¹.] A salt-like compound formed by replacing the hydrogen atom of the hydroxyl group of a naphthol with a metal: thus sodium β-naphtholate ($C_{10}H_7ONa$-β) is formed when β-naphthol is dissolved in caustic soda.

naphtholsulphonic (naf″thol-sul-fon′ik), *a.* Noting an acid, a derivative from naphthol obtained by heating with concentrated sulphuric acid. The two isomeric modifications, made from α-naphthol and β-naphthol respectively, are used in the manufacture of scarlet and other dyes.

naphthopyrin (naf-thọ̄-pī′rin), *n.* [*naphtho(l)* + *(anti)pyrin.*] The trade-name of a combination of β-naphthol and antipyrin, for use as an antiseptic and antipyretic.

naphthorubin (naf-thọ̄-rö′bin), *n.* [*naphtho(l)* + *rubin.*] An acid coal-tar color of the monoazo type, prepared by combining diazotized α-naphthylamine with naphtholdisulphonic acid. It dyes wool a bluish red in an acid bath. Also called *palatine red.*

naphthosalol (naf″thō-sal′ol), *n.* [*naphtho(l)* + *salol.*] Same as ★*betol.*

naphthous (naf′thus), *a.* [*naphtha* + *-ous.*] Having the characters of naphtha; resembling naphtha.

naphthyl (naf′thil), *n.* [*naphth(alene)* + *-yl.*] A univalent organic radical derived from naphthalene by the removal of one hydrogen atom. Its formula is $C_{10}H_7-$.—**Naphthyl blue.** See ★*blue.*—**Naphthyl blue 2B.** See ★*blue.*—**Naphthyl blue-black.** See ★*blue-black.*

Naphthylamine black. See ★*black.*—**Naphthylamine Bordeaux.** Same as *alpha-naphthylamine* ★*red.*—**Naphthylamine brown.** See ★*brown.*—**Naphthylamine red.** Same as *magdala red.*—**Naphthylamine yellow.** Same as *naphthol* ★*yellow.*

naphthylene (naf′thi-lēn), *n.* [*naphthyl* + *-ene.*] 1. Same as *naphthalene.*—2. Tetrahydrobenzene (cyclohexene) C_6H_{10}. It is used as a class name for derivatives of this hydrocarbon.—**Naphthylene blue.** See ★*blue.*—**Naphthylene red.** See ★*red*¹.

Naples beds. See ★*bed*¹.

napoleon, *n.* 3. A small piece of frosted pastry, made by putting several thin layers of puff-paste together with a cream filling.—4. *pl.* The crimson clover, *Trifolium incarnatum.*—**Napoleon porcelain.** See ★*porcelain*¹.

nappe, *n.* 2. In *geom.*, a sheet; a separate portion of a surface.

napped (napt), *p. a.* [*nap*² + *-ed*².] Having a nap: as, a *napped* fabric.

napping-cylinder (nap′ing-sil″in-dėr), *n.* A napping-machine cylinder covered with wire teeth.

napping-hammer, *n.* Same as *knapping-hammer.*

napping-machine² (nap′ing-mạ-shēn″), *n.* See *knapping-machine.*

napu (nä′pö), *n.* [Malay *nāpuh*, a small deer.] A small Asiatic deer, of the genus *Tragulus*: a chevrotain, specifically the Sumatran species, *Tragulus napu*, one of the largest of the group.

narangillo (nä-rän-hēl′yō), *n.* [Sp. *naranjilla*, dim. of *naranja*, orange.] In Central Chile, a shrub, *Villaresia mucronata*, of the family *Icacinaceæ*, the leaves of which are used as tea.

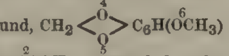
naranj (na-ranj′), *n.* See ★*mancala.*

naras (nä′rạs), *n.* [Native name in southwest Africa.] An erect spiny shrub of the gourd family, *Acanthosicyos horrida*; a native of southwest Africa, bearing edible globose fruits with a very thin, hard rind. The flesh of the fruit and the oily seeds form the principal food of the Hottentots and other native tribes of the region. The fruit is eaten fresh and is also made into a kind of cake, which with the seeds is kept until times of need. For a long time the seeds have been an article of export to Cape Colony under the name of *butter-pits*, where they are used as food by the colored peoples and by the whites as a substitute for almonds. See *narras-plant.*

Narayana (nä-rä′yä-nä), *n.* [Skt. *nārāyaṇá*, 'the son of the primordial man.'] In *Hindū myth.*, a patronymic of the personified Purusha, identified with Vishnu and Krishna.

narceine² (när′sẹ̄-in), *n.* An acid coal-tar color of the monoazo type, prepared by combining diazotized sulphanilic acid with β-naphthol and then treating the product with sodium bisulphite. It dyes wool orange in an acid bath, but is chiefly used in textile-printing.

narceonic (när-sẹ̄-on′ik), *a.* [*narce*(*ine*¹) + *-one* + *-ic.*] Derived from narceine.—**Narceonic acid,** a colorless compound,



$CH_2{<}\begin{matrix}\overset{4}{O}\\ \underset{5}{O}\end{matrix}{>}C_6H(\overset{6}{O}CH_3)(\overset{2}{C}H{:}CH_2)CH_2\overset{1}{C}O.C_6H_2(\overset{3}{O}\overset{4}{C}H_3)_2\overset{2}{C}OOH$, prepared by the action of methyl iodide on narceine. It crystallizes in plates which melt at 208–209° C.

Narcine (när-sī′nē), *n.* [NL., < Gr. *νάρκη*, the torpedo or electric ray.] A genus of electric rays of the family *Narcobatidæ*, found in warm seas.

narciss (när-sis′), *n.* An abbreviation of *narcissus.*

Narcobatidæ (när-kō-bat′i-dē), *n. pl.* [NL., < *Narcobatis* + *-idæ.*] A family of electric rays, found in most warm seas.

Narcobatis (när-kob′ạ-tis), *n.* [NL., < Gr. *νάρκη*, the torpedo or electric ray, + *βατίς*, a ray.] A genus of electric rays, found in European, Asiatic, and African waters.

narcoleptic (när-kọ-lep′tik), *a.* Relating to or affected with narcolepsy. *G. S. Hall*, Adolescence, I. 264.

narcomania (när-kọ-mā′ni-ạ̈), *n.* [Gr. *νάρκη*, torpor, + *μανία*, madness.] A morbid craving for some narcotic drug.

narcosis, *n.*—**Medullary narcosis,** anæsthesia induced by the injection of a solution of cocaine or a drug with similar properties into the sheath of the spinal cord.

> A. W. Morton has found that under the influence of *medullary narcosis*, analgesia about the mouth is as complete as in the lower extremities.
> *Med. Record*, March 28, 1903, p. 508.

narcostimulant (när-kọ-stim′ụ̄-lạnt), *n.* [*narco*(*tic*) + *stimulant.*] An agent having combined narcotic and stimulant properties. *Alien. and Neurol.*, Aug., 1904, p. 326.

narcoticism (när-kot′i-sizm), *n.* Same as *narcotism.*

narcotico-acrid (när-kot″i-kō-ak′rid), *a.* Possessing both acrid and narcotic properties.

narcotico-irritant (när-kot″i-kō-ir′i-tạnt), *a.* Possessing both narcotic and irritant properties.

narcotile (när′kọ-til), *n.* [*narcot-ic* + *-ile.*] The trade-name of 1, 2-dichlorpropane, CH_3-$CHCl.CH_2Cl$. It is a colorless liquid, prepared by the action of chlorin on propylene, boils at 96.8° C., and is used as an anesthetic. *Lancet*, April 18, 1903, p. 1091.

narcotist (när′kọ-tist), *n.* [*narcot*(*ic*) + *-ist.*] One who habitually uses narcotics.

narcotization (när″kọ-ti-zā′shọn), *n.* [*narcotize.*] The act or process of narcotizing; the state of being narcotized; narcotic poisoning.

narcous (när′kus), *a.* [Gr. *νάρκη*, numbness, torpor, + *-ous.*] Same as *narcotic.*

naregamine (na-rej′ạ-min or -mēn), *n.* [*Naregamia* + *-ine*².] An alkaloid contained in *Naregamia alata*, from the East Indies.

nargol (när′gol), *n.* [*n*(*ucleide*) + Gr. *ἀργ*(*υρος*), silver, + *-ol.*] Silver nucleide containing ten per cent. of silver.

Narica (nar′i-kạ̈), *n.* [L. *naris*, nostril?] The typical and only genus of the family *Naricidæ*. *Récluz*, 1841.

Naricidæ (nạ-ris′i-dē), *n. pl.* [*Narica* + *-idæ.*] A family of tænioglossate pectinibranchiate gastropods having a circular foot with an epipodial lobe on each side, the tentacles flattened, and the shell naticoid with a velvety periostracum. The family includes the single genus *Narica*, found in warm seas among corals.

naringin (na-rin′jin), *n.* [Pers. *nārinj*, *nāranj*, an orange: see *orange*¹.] A lemon-colored levorotatory glucoside, $C_{21}H_{26}O_{11}.4H_2O$, contained in the flowers of *Citrus decumena*, from Java. It crystallizes in small monoclinic prisms and when anhydrous melts at 171° C. Also called *aurantiin* and *hesperidin.*

naringinin (nạ-rin′ji-nin), *n.* [*naringin* + *-in*².] A colorless compound, $HOC_6H_4CH{:}CHCOOC_6H_3(OH)_2$, prepared by the action of dilute acids on the glucoside naringin. It crystallizes in pearly lustrous leaflets and melts and decomposes at 248° C.

narra (när′ä), *n.* [Philippine Sp. *narra*, < Bisaya *naga.*] In the Philippine Islands, *Pterocarpus Indicus* and *Pterocarpus echinatus*, valuable hardwood trees from which furniture is made. See ★*asana*, with cut.

Narrabeen beds. See ★*bed*¹.

narra-pula (när-ä-pö′lä), *n.* [Philippine Sp., < Bisaya *naga narra* + *pola* (*pula*), red.] *Pterocarpus echinatus*, sometimes called Philippine mahogany. See ★*mahogany.*

narsarsukite (när-sär′sụ̈-kīt), *n.* [*Narsarsuk* (see def.) + *-ite*².] A titano-silicate of ferric iron and sodium, occurring in honey-yellow to brownish-gray tabular tetragonal crystals: from the neighborhood of Narsarsuk in Southern Greenland.

narshallik, *n.* See ★*badhan.*

narthecal (när′the-kạl), *a.* [*narthex* (*narthec-*) + *-al*¹.] Pertaining to or of the nature of a narthex.

N. A. S. An abbreviaton of *National Academy of Sciences.*

Nasal artery, an artery which supplies the skin of the nose, derived from the ophthalmic and anastomosing with branches of the facial artery.—**Nasal cartilages,** the cartilages which form the anterior portion of the nose. There are two lateral cartilages on each side and a septal cartilage in the center.—**Nasal catarrh.** Same as *coryza* (acute form) and *ozæna* (chronic fetid form).—**Nasal height.** See ★*height* —**Nasal hinge.** Same as *frontonasal* ★*hinge.*—**Nasal plate.** (*b*) Any plate over the snout in the nasal region of fishes.—**Nasal reflex.** See ★*reflex.*—**Nasal retina,** the nasal half of the retina.—**Nasal shield.** See ★*shield.*

nasalia (nạ-sā′li-ạ̈), *n. pl.* [NL., neut. pl. of L. *nasalis*, nasal.] In the skull of fishes, small ossifications above each nasal opening, sometimes fixed to the outer face of the ethmoid.

Nasalis, *n.* 2. [*l. c.*; pl. *nasales* (-lēz).] A muscle on either side of the nose, the action of which is to depress the alæ, narrowing the anterior nares. Also called *compressor naris.*—**Nasalis ossis frontis,** the median bone in the cranium of fishes above the vomer; the ethmoid. *Starks*, Synonymy of the Fish Skeleton, p. 509.

nasalism (nā′zạl-izm), *n.* [*nasal* + *-ism.*] Nasality; the practice or habit of pronouncing words 'through the nose.'

> The Yankee *nasalism* is another familiar instance of the same kind.
> *Trans. Roy. Soc. Edinburgh*, 1887, p. 349.

nascence (nas′ẹns), *n.* [See *nascency*, *nascent.*] Origination; birth; beginning; specifically, in *phytogeog.*, the rise of a new plant formation on an area destitute of floral covering.

> Recent formations may arise either from *nascence* or by modification. If by *nascence* they must originate upon areas previously destitute of any floral covering, while in the second case they are formed by the elaboration or modification of existing formations, often by the intrusion of foreign elements. Abandoned cultivated patches may represent the first, timber claims the second. Formations often disappear through the agency of fires, floods, mankind, etc., in which cases new formations may arise by *nascence.* *Science*, June 21, 1901, p. 983.

N. A. S. E. An abbreviation of *National Association of Stationary Engineers.*

nashiji (nä′shē-jē), *n.* [Jap., < *nashi*, a pear, + *ji*, ground, texture, ground of a picture.] A kind of Japanese lacquer, having a pear-colored ground sprinkled with gold-leaf. *Trans. Jap. Soc.*, III. 8.

Nashville group. See ★*group*¹.

nasial (nā′zi-ạl), *a.* [*nasi*(*on*) + *-al*¹.] Of or pertaining to the nasion.—**Nasial angle,** in *anthrop.*, the angle formed by the lines drawn from the basion to the nasion and to the alveolar point.

naso-antritis (nā″zọ-an-trī′tis), *n.* [L. *nasus*, nose, + NL. *antrum* + *-itis.*] Inflammation of the nasal mucous membrane, involving also the lining-membrane of the antrum of Highmore.

nasobronchial (nā-zọ-brong′ki-ạl), *a.* [L. *nasus*, nose, + NL. *bronchia* + *-al*¹.] Relating to the nasal cavities and to the bronchial tubes. *Buck*, Med. Handbook, III. 147.

nasobuccal (nā-zọ-buk′ạl), *a.* and *n.* [L. *nasus*, nose, + L. *bucca*, mouth, + *-al*¹.] **I.** *a.* Relating to both the nose and the cheeks.

II. *n.* In some sharks, a groove connecting each nostril with the angle of the mouth. *Parker and Haswell*, Zoology, II. 136.

Nasolabial sulcus. See ★*sulcus.*

Nasomalar index. See ★*index.*

nasomental (nā-zọ-men′tạl), *a.* [L. *nasus*, nose, + *mentum*, chin.] In *craniom.*, relating to the nasion and to the chin.

nasonite (nā′sọn-īt), *n.* [Named after F. L. *Nason.*] A silicate of lead and calcium, containing a small amount of chlorin. It occurs sparingly in granular cleavable masses at Franklin Furnace, New Jersey.

nasopharyngitis (nā″zọ-far-in-jī′tis), *n.* [*nasopharynx* (*-ryng-*) + *-itis.*] Inflammation of the nasopharynx.

nasopremaxillary (nā″zọ-prē-mak′si-lā-ri), *a.* [L. *nasus*, nose, + E. *premaxillary.*] Relating to the nasal and premaxillary bones: as, the *nasopremaxillary* suture, which lies between the two bones. *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 681.

nasorostral (nā-zọ-ros′trạl), *a.* [L. *nasus*, nose, + E. *rostral.*] Relating to the nasal and rostral regions. *Proc. Zool. Soc. London*, 1902, p. 16.—**Nasorostral shield.** See ★*shield.*

nasoseptal (nā-zọ-sep′tạl), *a.* [L. *nasus*, nose + *septum*, partition, + *-al*¹.] Relating to the septum of the nose.

nasoturbinal (nā-zọ-tėr′bi-nạl), *a.* [NL. *nasus*, nose, + E. *turbinal.*] Relating to the nasal cavity and the turbinal bodies: noting the first ethmoturbinal. *Proc. Zool. Soc. London*, 1894, p. 9.

nasrol (nas′rol), *n.* [*na*(*tron*) + *s*(*ulphur*) + (*sympho*)*rol.*] The trade-name of sodium sulphocaffeate or symphorol sodium, a bitter crystalline powder. It is used in medicine as a diuretic, being more powerful in this respect than caffeine.

nasse (näs), *n.* [F., < L. *nassa*, a wicker basket for catching fish.] A trap made of wickerwork, used in the Mediterranean for catching fish.

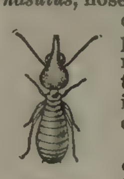
nassellarian (nas-e-lā′ri-ạn), *a.* and *n.* **I.** *a.* Of or belonging to the *Nassellaria.*

II. *n.* An individual of the *Nassellaria.*

nastika (näs′ti-kä), *n.* [Skt. *nāstika*, *adj.* unbelieving, *n.* an unbeliever, < *na-*, not, + *asti*, it is so, √*as*, be, is.] In *Hindu religion* or *philosophy*, an atheist; one who denies the authority of the Vedas.

nasturtian, *n.* Same as *nasturtium*, 2.

nasutus (nạ-sū′tus), *n.*; pl. *nasuti* (-tī). [L. *nasutus*, nosed, < *nasus*, nose.] One of a caste of termites in which the head is prolonged into a point like a long nose. A duct opens at the extremity of the point and from it issues a fluid used as a cement in constructing the nest.



Nasutus.
Two and one half times natural size.
(From "Cambridge Natural History.")

> The largest of the nests collected was exhibited, and also a queen cell and alcoholic specimens of queens, workers, *nasuti* and other forms of the insects. Notes on the life history of "Eutermes ripperti" contributed by E. A. Schwarz were also read.
> *Science*, June 3, 1904, p. 857.

Nat. An abbreviation (*a*) of *Natal*; (*b*) of *national*; (*c*) [*l. c.* or *cap.*] of *natural*; (*d*) [*l. c.*] of *naturalist.*

natal¹, *a.*—**Natal stone.** Same as ★*birth-stone.* **Natal bitter-root.** See ★*bitter-root.*—**Natal boil.** See *Veldt* ★*sore.*—**Natal cotton.** See ★*cotton*¹.

Natalidæ (nạ-tal′i-dē), *n. pl.* [NL. *Natal*(*us*) + *-idæ.*] A family of small bats containing those of the genus *Natalus* and allied genera:

practically the subfamily *Natalinæ* of Harrison Allen raised to family rank. *Miller*, 1899.

nataline (nat′a̤-lin), *a.* [*Natal*(*us*) + *-ine*^{1}.] Belonging to the genus *Natalus*, tropical American bats, or resembling them. See *Natalus*. *Amer. Nat.*, Jan., 1904, p. 91.

natational (nā̤-tā′sho̤n-a̤l), *a.* [*natation* + *-al*^{1}.] Of or pertaining to swimming. [Rare.]

natch^{1}, *n.* **2.** In *mining*, a small hitch or dislocation, as of a coal seam. [Scotch.] *Barrowman*, Glossary.—**3.** The junction of two rails where the rails are out of level or out of line. [Scotch.] *Barrowman*, Glossary.

natch^{3}, *n.* Same as *nautch*.

natchnee (nach′nē), *n.* [Anglo-Ind., ‹ Marathi *nachnī*.] The ragi millet, *Eleusine Coracana*. See ★*millet*^{1} and *Eleusine*. In northwestern India the name is often given to another grass, *Dactyloctenium Ægyptiacum*.

Naticopsis (nat-i-kop′sis), *n.* [*Natica*, a genus of mollusks, + Gr. ὄψις, appearance.] A genus of extinct prosobranchiate gastropods, related to the existing *Natica*, having thick imperforate shells with a short spire, large body-whorls, and a calcareous operculum. It ranges from the Devonian to the Trias.

Natiform eminence. See ★*lobus pyriformis* (*a*).

National economics, forest, forest reserve. See ★*economics*, ★*forest*, ★*reserve*.

nationalism, *n.* **4.** The conduct of all business by the public for the benefit of the public; the substitution of public for private control of all business.

> The recent change in the trend of economic discussion as to the questions involved in the proposition of *Nationalism* has not been less marked than the moral awakening. *E. Bellamy*, in N. A. Rev., June, 1892, p. 748.

nationalty (nash′o̤n-a̤l-ti), *n.* The property or funds belonging to a nation; public property.

> O, that our clergy did but know and see that their tithes and glebes belong to them as officers and functionaries of the *nationalty*,—as clerks, and not exclusively as theologians, and not at all as ministers of the Gospel.
> *Coleridge*, Literary Remains, III. 119.

nativ, *a.* and *n.* A simplified spelling of *native*.

native. I. *a.* **8.** Peopled with natives or aborigines; not civilized: as, a *native* region; *native* country.

> Sir James Brooke's famous utterance, "We aim at the development of *native* countries through *native* agency."
> *Geog. Jour.* (R. G. S.), XVI. 56.

Native citizen, in *U. S. law*, one born of citizen parents, whether born at home or abroad.—**Native deal.** See ★*deal*^{2}. **Native dog,** *Canis dingo*, the dingo, or wild dog of Australia. See cut under *dingo*.

II. *n.* **7.** A name given in Australia to the schnapper, *Pagrus unicolor*, after it has ceased to school. Also called *rock-native*. *E. E. Morris*, Austral English.

Nat. Ord. An abbreviation of *Natural Order*.

natrium (nā′tri-um), *n.* [NL., ‹ *natrum*, *natron* (carbonate of sodium): see *natron*.] In *chem.*, the metal, more generally called sodium, of which the hydroxid and the carbonate constitute caustic soda and washing soda respectively.

natrojarosite (nā″trō̤-ja-rō′sīt), *n.* [*natron* + *jarosite*.] A variety of jarosite which contains several per cent. of soda, found in Soda Springs valley, Nevada.

natronberzeliite (nā″tron-bėr-zē′li-īt), *n.* Same as ★*manganberzeliite*.

natroncatapleiite (nā″tro̤n-kat-a̤-plē′i-īt), *n.* A variety of catapleiite, which contains sodium and no calcium, found in Norway.

natronium (nā̤-trō′ni-um), *n.* [NL., ‹ *natron* + *-ium*.] In *chem.*, same as ★*natrium* or *sodium*.

natronmicrocline (nā″tro̤n-mī′krō̤-klīn), *n.* [*natron* + E. *microcline*.] Same as ★*anorthoclase*.

natrophilite (nā̤-trof′i-līt), *n.* [*natron* + Gr. φιλεῖν, love, + *-ite*^{2}.] A rare sodium-manganese phosphate ($NaMnPO_4$) occurring in cleavable masses of a deep wine-yellow color: found at Branchville, Connecticut.

natrum (nā′trum), *n.* [NL.: see *natron*.] Same as *natron*.

natuary (nat̤′ṳ̄-ā̤-ri), *n.* [NL. **natuarium*, ‹ L. *natus* (*natu-*), birth, ‹ *nasci* (pp. *natus*), be born.] A room or ward in a hospital or other public institution where women are cared for during parturition.

> The *natuary*, it is observed, was clean and ventilated and armed with proper appliances, with a midwife on the spot. *Lancet*, June 25, 1904, p. 1775.

natural. I. *a.*—**Natural day.** (*b*) In *law*, the period from sunrise to sunset; the solar day, as distinguished from the calendar day, which extends from midnight to midnight.—**Natural drainage,** in *mining*, drainage by means of an adit or drift, the water flowing from the mine workings above this level by gravity.—**Natural heir,** in *law*, a child, legitimate or adopted; also, where a testator having no children uses the phrase, it means such next of kindred as one would naturally choose to the exclusion of others, as a mother or sister as against cousins.—**Natural number, scale.** See ★*number*, ★*scale*^{3}.

II. *n.* **9.** In *gaming*, anything which wins the stake immediately, such as a throw of 7 or 11 at craps, showing 21 at vingt-et-un, or holding 8 or 9 at baccara. See *nick*^{3}, *n.*, 3.

naturalisti (nä-tö-rä-lēs′tē̤), *n. pl.* [It.: see *naturalist*.] The 'Naturalists,' a school of realistic painters in Italy centering especially in Naples in the seventeenth century.

> The realism of the *Naturalisti* was founded upon passion. It was the elemental truth of vehement natures, delighting in detail and in strong contrasts.
> *Hartley*, Spanish Painting, p. 185.

naturalistic, *a.* **4.** In *photog.*, said of a photograph in which the chief object is slightly out of focus. *Woodbury*, Encyc. Dict. of Photog., p. 296.

Naturalization papers, a document which testifies that a certain person has been admitted to citizenship and is entitled to all the rights and privileges of a citizen.

nature, *n.*—**To come to nature,** to reach that phase in the puddling of iron when the metal becomes pasty. *Lockwood*, Dict. Mech. Engin. Terms.

naturel (nä-tü-rel′), *n.* [F., a noun use of *naturel*, natural.] One's own individual nature.

> The two points in a boy's training are, to keep his *naturel* and train off all but that: to keep his *naturel*, but stop off his uproar, fooling and horse-play; keep his nature and arm it with knowledge in the very direction in which it points.
> *Emerson*, Education, Lectures and Biog. Sketches, [p. 142.

nature-right (nā′t̤ṳ̄r-rīt), *n.* Same as *natural right* (which see, under *right*).

> And when Savigny, the herald of evolution, was already in the field, the day for a "*Nature-Right*"—and Austin's projected "general jurisprudence" would have been a *Nature-Right*—was past beyond recall.
> *Encyc. Brit.*, XXVIII. 253.

nature-rightly (nā′t̤ṳ̄r-rīt″li), *a.* Pertaining to nature-right or natural right. [Rare.]

> The principal outlines of equity were drawn by men who were steeped in the common law. By way of ornament a Roman maxim might be borrowed from a French or Dutch expositor, or a phrase which smacked of that "*nature-rightly*" school which was dominating Continental Europe. *Encyc. Brit.*, XXVIII. 252.

nature-study (nā′t̤ṳ̄r-stud″i), *n.* In recent pedagogics, the process and means of coming into sympathetic contact with common natural objects and phenomena in their normal relationships and in their native places. Nature-study extends the laboratory out-of-doors, making the conventional indoor laboratory an adjunct to the fields, rather than the fields a proving-place for the laboratory. It first studies the objects in their natural forms and relationships, rather than by means of dissection and technical analysis. It studies the things of out-of-doors primarily for the purpose of putting the pupil into sympathy with nature (and therefore with his own life), rather than of developing the spirit of scientific research. It considers first the objects and phenomena that are nearest at hand, since these are most vital and relevant to the child.

> But the ordinary teacher without any particular training in the subject has wanted more systematic guidance, his previous training has been in the wrong direction, and the many text-books that have been hurried on to the market have only tended to confirm his probable original error that *nature-study* consisted in reading about natural objects or anything bearing on country life.
> *Nature*, Oct. 8, 1903, p. 546.

naturistic, *a.* **2.** Relating to that form of culture in which only simple appliances are used: opposed to ★*manganic*^{2}.

> On every grade of culture women were more *naturistic* than men. Any culture area, therefore, which afforded occasion and stimulus for the employment of mechanical powers, the forces of nature, and continuous organized effort of mind and muscle was virile and most propitious for men. *O. T. Mason*, in Pop. Sci. Mo., Feb., 1902, p. 338.

nat-worship (nat′wėr″ship), *n.* The worship of nats. See *nat*^{4}.

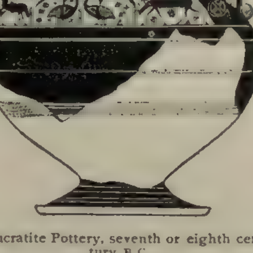
naucorid (nâ′kō̤-rid), *n.* and *a.* **I.** *n.* A member of the heteropterous family *Naucoridæ*.

II. *a.* Having the characters of or belonging to the family *Naucoridæ*.

naucrary (nâ′krā̤-ri), *n.* [Gr. ναυκραρία.] A political subdivision of the Athenians. See the extract.

> Solon appears first distinctly to have perceived the peculiar advantage of the maritime position of Attica. . . . He appears to have laid the foundation of the Attic navy by charging the forty-eight sections, called *naucraries*, into which the tribes had been divided for financial purposes, each with the equipment of a galley, as well as with the mounting of two horsemen.
> *Bp. Thirlwall*, History of Greece, I. 186.

Naucratite (nâ′kra̤-tīt), *a.* Of or pertaining to Naucratis, an ancient Greek colony in Egypt; especially, pertaining to the pottery of Naucratis, which is in a clearly defined style. The product of the great factory there is characterized by a whitish ground with black or polychrome decoration. The vases are black inside. Similar ware was made at Cyrene, in Northern Africa.



Naucratite Pottery, seventh or eighth century B.C.

naucum (nâ′kum), *n.* [L. *naucum*, a trifle.] **1.** The fleshy part of a drupe. *Lindley*.—**2.** A seed with a large hilum. *Gaertner*.

Nauheim treatment. See ★*treatment*.

naukar-chackur, *n.* See ★*chackur*.

Naumannian (nou-mȧn′i-an), *a.* Of or pertaining to K. F. Naumann, a German mineralogist (1797–1873), or to the system of crystallography and crystallographic notation which he introduced. See ★*symbol*^{1}.

Nausea gravidarum, the morning sickness of early pregnancy.—**Nausea marina, nausea navalis,** seasickness.

naut (nât), *n.* An abbreviation of *nautical mile* (6,080 feet), sometimes used, especially in writing of the laying of submarine cables.

> From Vancouver to Fanning Island the copper weighs 600 pounds per *naut*, and the gutta-percha 340 pounds per *naut*. *Sci. Amer. Sup.*, Dec. 13, 1902, p. 22528.

Nautical block, a navigation pad made up of a certain number of sheets of paper on which the form of a problem is printed. Also *navigation block*.—**Nautical forms,** navigation formulæ. Also *navigation forms*.—**Nautical surveying.** Same as *marine surveying* (which see, under *surveying*).

Nautichthys (nâ-tik′this), *n.* [NL., ‹ Gr. ναύτης, sailor, + ἰχθύς, fish.] A genus of small cottoid fishes found on the northern Pacific coast of America.

nautics (nâ′tiks), *n.* [Pl. of *nautic*.] **1.** The art or science of navigation. *N. E. D.*—**2.** Aquatic sports and exercises.

> There was also special training in swimming and *nautics*, as rowing and sailing.
> *G. S. Hall*, Adolescence, II. 259.

nautilicone (nâ′til-i-kōn), *n.* [NL., ‹ *Nautilus*, + Gr. κῶνος, cone.] In the cephalopods, a closely coiled shell having an impressed zone, as in the genus *Nautilus*.

nautiline (nâ′ti-lin), *a.* [NL. *nautilinus*, ‹ *Nautilus*.] Having the characters of the *Nautilinidæ* or *Nautilini*, a primitive group of goniatites with simple septal sutures.

Nautiscus (nâ-tis′kus), *n.* [NL., ‹ Gr. ναύτης, sailor, + dim. -ισκος.] A genus of cottoid fishes which inhabit Bering Sea.

Nav. An abbreviation (*a*) [*l. c.* or *cap.*] of *naval*; (*b*) [*l. c.*] of *navigation*.

navaja (nä-vä′hä), *n.* [Sp. *navaja* = Cat. *navalla* = Pg. *navalha*, ‹ L. *novacula*, a sharp knife, a razor, a dagger, ‹ *novare*, renew, plow again, coin, etc., ‹ *novus*, new: see *new*, *novel*.] **1.** A folding or clasp-knife.—**2.** A razor. [Spanish use.]

naval, *a.*—**Naval apprentice,** a youth enlisted in the navy for a term of years to do duty as a sailor and to advance successively through the grades of seaman and petty officer to possible warrant-officer's rank.—**Naval architect,** one who follows the profession of ship-designing.—**Naval asylum,** a home, supported by the United States government, for retired naval men; specifically, an institution in Philadelphia for men who have served twenty years in the United States navy.—**Naval brass.** See ★*brass*^{1}.—**Naval brigade,** the organization of the officers and crew of two or more war-ships as a landing force for military operations on shore.—**Naval dock,** a dock provided with naval stores, ship-building material, etc.—**Naval lord.** See ★*lord*.

navalism (nā′va̤l-izm), *n.* [*naval* + *-ism*.] The predominance of naval interests; the excessive strengthening of naval power.

> The beginning of this extraordinary policy was the Barrundia affair, in which Mr. Blaine . . . co-operated with Mr. Tracy in . . . handing the foreign policy of the Government over to *navalism*.
> *The Nation*, Jan. 21, 1892, p. 44.

Navassa phosphate. See ★*phosphate*.

Nav. Const. An abbreviation of *Naval Constructor*.

nave-aisle (nāv′īl), *n.* One of the aisles which flank the nave in a church.

navel-hood (nā′vl-hůd), *n.* In *wood shipbuilding*, heavy plank or timber worked outside the framing around the hawse-holes on which the outer flange of the hawse-pipe is secured. Also called *naval hood.*

navel-pipe (nā′vl-pīp), *n.* A chain-pipe; a pipe through which a chain passes from one deck to another.

Navesink group. See ★*group*¹.

navette, *n.* 2. Same as ★*marquise*, 3.

Navicular arthritis, disease. See ★*arthritis*, ★*disease*.

Navig. An abbreviation [*l. c.* or *cap.*] of *navigation*, *navigator*.

navigating-officer (nav′i-gā-ting-of″i-sėr), *n.* One of a ship's officers whose special duty it is to care for the chronometers, compasses, charts, etc., to measure altitudes and take the bearings of the heavenly bodies from which to calculate latitude, longitude, and the deviation of the compass, and to lay out the vessel's course, etc.,—all, however, under authority of the captain. On a man-of-war the navigating-officer is next in rank below the executive officer, or the second in rank after the captain. In addition to his duties as navigator, he has supervision over the ground-tackle, steering-gear, etc., the disposal of the ballast, the stowage of water, provisions, etc.

navigation, *n.*—**Bureau of Navigation.** See ★*bureau*. **Inside navigation.** Same as *inland navigation* (which see, under *navigation*).

navigerous (na-vij′ẹ-rus), *a.* [L. *naviger*, ‹ *navis*, ship, + *gerere*, bear, + *-ous*.] Capable of bearing or floating ships; navigable.

navipendular (nav-i-pen′dū-lär), *a.* [*navipendulum* + *-ar*³.] Of or pertaining to a navipendulum or to its use.

> The *navipendular* method of experiments as applied to some warships of different classes.
> *Nature*, April 9, 1903, p. 541.

navipendulum (nav-i-pen′dū-lum), *n.* [L. *navis*, ship, + NL. *pendulum*, pendulum.] A piece of mechanism by which the rolling movement of a ship, in still water or amongst waves, is reproduced on a small scale. It consists of two parts, a pendulum of special shape representing the ship, called the "*navipendulum*," and a device for giving to the pendulum the motions of a ship. *Sci. Amer.*, Dec. 6, 1902, p. 374.

navy¹, *n.* **3.** The navy may be divided into the central administration, both military and civil; the ships of every kind, including war-vessels properly so called, supply-vessels, transports, repair-ships, hospital-ships, and minor craft, their personnel of officers and crew; and the shore stations or navy-yards (in Great Britain called 'dock-yards') at which these vessels are built and repaired, and receive their supplies of all kinds, and at which is stationed the military and civil personnel required for these purposes. The central administration in the United States navy is called the *Navy Department*, in the British navy, the *Admiralty*. The fighting ships of a modern navy may be divided into a number of types. The first in importance are the battle-ships (see ★*battle-ship*), which take the place of the line-of-battle ship of the days of wooden sailing vessels. Analogous to the battle-ship, but of higher speed and less offensive and defensive power, is the modern armored cruiser. Following these are armored coast-defense vessels of limited speed and sea-going qualities. Next are the protected cruisers. The modern tendency is to diminish the number and importance of ships of the latter type owing to their feeble defensive power against modern shell fire in comparison with their size. The recent tendency is to replace them with a new type of cruiser called the *scout-cruiser*. This is a vessel of sufficient size to have high speed in rough weather and with other qualities sacrificed to extreme speed. Following these are torpedo-boat destroyers and torpedo-boats, together with the recently developed submarine boats. The above comprise all the types of fighting vessels distinctly recognized in a modern navy. Coast- and harbor-defense vessels may be considered as small battle-ships having limited speed and seaworthiness, and tend to disappear as a distinct type. Besides the fighting ships, a modern navy requires a number of auxiliary vessels. Among these may be mentioned supply-ships to bring ammunition, provisions, water, etc., to the fighting fleet; colliers, with special appliances for coaling ships at sea; repair-ships or floating shops, to repair damages to the fighting ships; and hospital-ships, to take care of the sick and wounded. To build these vessels originally, to repair them when they are damaged to an extent beyond the capacity of the repair-ships, and to supply their numerous wants, navy-yards in suitable harbors are required. These yards include in their plant and equipment dry-docks, numerous shops, storehouses, etc., with a floating equipment of tugs, lighters, etc. To these may be added certain detached functions, such as the personnel and material necessary to carry on hydrographic surveys and make charts, observatories for astronomical work in connection with navigation, and the schools necessary to train the various kinds of officers, enlisted men, and civil employees. There is also the important service of the organization of a naval militia or reserve force of naval volunteers for the expansion of the personnel in time of war and the conversion of merchant vessels to naval purposes. The central administration of the United States navy is in the Navy Department at Washington. There are navy-yards located at Kittery, Maine (opposite Portsmouth, New Hampshire), officially designated *Portsmouth Navy-yard*; at Boston; at Brooklyn, officially designated *New York Navy-yard*; at Philadelphia, formerly designated *League Island Navy-yard*; at Portsmouth, Virginia (opposite Norfolk), officially designated *Norfolk Navy-yard*; at Warrington, Florida (near Pensacola), officially designated *Pensacola Navy-yard*; at Mare Island, California, at the head of San Francisco Bay; and at Bremerton, Washington (near Seattle), officially designated *Puget Sound Navy-yard*. There are numerous minor naval stations along the coast not equipped for building or repairing vessels, and also in the island possessions. At Cavite, Philippine Islands, near Manila, there is a naval station at which vessels are repaired. At Washington is located the naval gun-factory, at Annapolis the United States Naval Academy for the education of naval officers, and at Newport, Rhode Island, the principal training-station for enlisted men. A recent type of battle-ship in the United States navy is the *Connecticut* class, including the *Connecticut*, *Louisiana*, *Vermont*, *Minnesota*, *Kansas*, and *New Hampshire* (which differ from each other only in minor changes in the distribution of armor; for description see ★*battle-ship*). The comparative tables below show the sea-strength of the principal naval powers (June 1, 1908). Prior to the war with Japan, Russia ranked as the third naval power of the world.

The following vessels are not included in the tables: Those over 20 years old, unless they have been reconstructed and rearmed; those not actually begun, although authorized; gunboats and other vessels of less than 1,000 tons; transports, colliers, repair-ships, torpedo-depot ships, and converted merchant vessels or yachts; torpedo craft of less than 50 tons.—**Department of the Navy.** See *department*. The Assistant Secretary of the Navy has special charge of the building, survey, and repairs of vessels, the naval militia, and the administration of the island possessions of the United States placed under the Navy Department. The Bureau of Yards and Docks has charge of the construction and maintenance of buildings, of docks, and of civil engineering work in general for the navy; the Bureau of Equipment, of the equipment of ships, of the electric generators and lighting and means of communication on shipboard, of the Naval Observatory, of the Hydrographic Office, and of the furnishing, storing, and transportation of coal for ships' use; the Bureau of Navigation, of the commissioned and enlisted personnel of the navy, their education, training, and employment, and of the assignment and movements of ships; the Bureau of Ordnance, of the manufacture and use of armor, guns, mounts, and ammunition; the Bureau of Construction and Repair, of the designing, building, and repair of the hulls of vessels and their appurtenances; the Bureau of Steam Engineering, of the designing, building, and repair of the propulsive machinery of vessels; the Bureau of Supplies and Accounts, of the purchase, transportation, and care of all stores, of provisions and clothing for enlisted men, of payments of money, and of keeping the accounts of the navy; the Bureau of Medicine and Surgery, of the hospitals and of the care and treatment of the sick and wounded. Besides the eight bureaus, there is the Judge Advocate General, who has charge of all legal matters, claims, proceedings of courts-martial, etc.; the Brigadier General Commanding, who has charge of all that relates to the marine corps; and the General Board, which has charge of devising measures for the effective preparation and maintenance of the fleet for war.—**Navy blanket.** See ★*blanket*.

SEA STRENGTH OF THE PRINCIPAL NAVAL POWERS, JUNE 1, 1908.

WAR-SHIPS, BUILT AND BUILDING, OF 1,000 TONS DISPLACEMENT AND OVER, AND TORPEDO CRAFT OF MORE THAN 50 TONS DISPLACEMENT.

TYPE OF VESSEL	GREAT BRITAIN		UNITED STATES		GERMANY		FRANCE		JAPAN		RUSSIA		ITALY		AUSTRIA	
	Built	Building	Built	Building	Built	Building	Built	Building	Built	Building	Built	Building	Built	Building	Built	Building
Battle-ships, first class [1]	52	6	25	4	22	6	18	6	11	2	[illegible]	4	11	2	3	2
Coast-defense vessels [2]	..	..	11	..	8	..	11	..	3	..	4	..	..	..	6	..
Armored cruisers	34	4	11	1	8	2	20	3	11	2	5	2	6	4	3	..
Cruisers, above 6,000 tons [3]	18	..	5	..	1	..	3	..	2	..	7	..	..	..	..	..
Cruisers, 6,000 to 3,000 tons [3]	44	1	17	1	19	6	13	..	9	[illegible]	1	..	1	..	2	1
Cruisers, 3,000 to 1,000 tons [3]	24	..	16	..	17	..	10	..	6	2	7	..	[illegible]	..	3	..
Torpedo-boat destroyers	144	9	16	[illegible]	62	11	42	23	55	2	93	4	17	..	6	..
Torpedo-boats	48	23	32	..	42	..	256	10	63	..	57	..	61	..	35	..
Submarines	42	18	12	7	1	2	44	50	8	2	25	6	4	2	..	6

Battle-ships, first class, are those of 10,000 tons displacement and over.

[2] Includes smaller battle-ships and monitors.

[3] All unarmored war ships of more than 1,000 tons are in this table classed, according to displacement, as cruisers. Scouts are considered as cruisers in which battery and protection have been sacrificed to secure extreme speed. The word 'protected' has been omitted because all cruisers except the smallest and oldest now have protective decks.

RELATIVE ORDER OF WAR-SHIP TONNAGE.

At present		As it would be if vessels building were now completed	
Nation	Tonnage	Nation	Tonnage
Great Britain	1,655,075	Great Britain	1,859,174
United States	670 596	France	796 288
France	614,453	United States	766,488
Germany	523 053	Germany	685,619
Japan	368,565	Japan	444 903
Russia	240 943	Russia	320 040
Italy	220,308	Italy	284,778
Austria	114,250	Austria	148,350

navy-board (nā′vi-bōrd), *n.* A former title of the admiralty. *N. E. D.*

nawls² (nâlz), *n. pl.* [Orig. *mine alls*: see *alls*, under *all*, n. 2.] Same as *alls*.

> But up I soon start, and was dress'd in a trice,
> And call'd for a draught of ale, sugar, and spice;
> Which having turn'd off, I then call to pay,
> And packing my *nawls*, whipp'd to horse, and away.
> *Cotton*, A Voyage to Ireland in Burlesque, iii.

nay² (nä′ē), *n.* [Also *nei*; ‹ Ar. *nāy*, pl. *nāyāt*.] A native Egyptian transverse flute, usually with six holes. *Grove.*

nay-say (nā′sā), *n.* A saying of 'nay'; a refusal.

> Sir Frederick would say then, nineteen *nay-says* are half a grant.
> *Scott*, Black Dwarf, v.

Nazarene, *n.* **3.** *pl.* The name given to a coterie of painters in Germany in the early nineteenth century who were especially opposed to the classicism of Winckelmann and endeavored to return to the religious intensity of the middle ages and early Renaissance. They formed themselves especially on the Italian primitives, the painters before Raphael, and to a certain extent corresponded to the pre-Raphaelites of England. The leading painters were Overbeck (1789–1869), Schnorr (1794–1872), and Führich (1800–1876).

Nazia (naz′i-ä), *n.* [NL. (Adanson, 1763), of unknown significance.] A genus of grasses. See *Tragus*, 3.

nazir, *n.* **2.** In Mohammedan countries, the warden of a mosque.

N. B. An abbreviation (*b*) of *New Brunswick*; (*c*) of *North Britain*; (*d*) of *North British*.

N. C. An abbreviation (*a*) of *New Church*; (*b*) of *North Carolina*.

Nd. In *chem.*, the symbol for the element neodymium.

N. D. An abbreviation of *no date*.

N. Dak. An abbreviation of *North Dakota*.

n-declension (en′dẹ̄-klen′shọn), *n.* The weak declension of Teutonic nouns and adjectives, in which the stem ends in *n*. *N. E. D.*

Ne. In *chem.*, the symbol for the element *neon*.

N. E. An abbreviation (*a*) of *New England*; (*b*) of *northeast*; (*c*) of *Northeastern Postal District, London*.

nealing (nē′ling), *n.* Same as *annealing*.

nealogic, *a.* **2.** Same as ★*neanic*.

> In several immature individuals it has been observed that in the early *nealogic* [neanic] stage the beaks are strongly elevated, probably erect, and each has a very large open delthyrium, surface smooth at first, but gradually developing eight plications and a mesial sinus in each valve.
> *Amer. Jour. Sci.*, Jan., 1903, p. 9.

Nealotus (nē-ạ-lō′tus), *n.* [NL., ‹ Gr. *νεάλωτος*, newly-caught, ‹ *νέος*, new, + *ἁλωτός*, taken, ‹ *ἁλῶναι*, take, catch.] A genus of deep-sea fishes of the family *Gempylidæ*, found in the Atlantic.

Neanderthal skull. See ★*skull*¹.

neanic (nẹ-an′ik), *a.* [Gr. *νεανικός*, youthful, ‹ *νεανίας*, a youth, ‹ *νέος*, new.] Noting that stage of evolution or auxology which is broadly equivalent to adolescence or approaching maturity: opposed to the ★*nepionic* or infantile, and the ★*ephebic* or adult stage.

> At this stage, the early *neanic*, the lines of growth are well marked and of nearly equal strength with the revolving lines, the two together giving the shell surface a reticulated appearance. *Amer. Nat.*, Aug., 1903, p. 519.

Nearctica (nē̤-ärk′ti-kạ̈), *n.* The Nearctic region. See *Nearctic*.

near-point, *n.*—**Absolute near-point**, the nearest point at which an object can be distinctly seen by one eye alone.—**Relative near-point**, the nearest point of distinct vision for both eyes.

nearthrosis (nē-är-thrō′sis), *n.* [NL., < *νέος*, new, + NL. *arthrosis*.] Same as *pseudarthrosis*.

Neb. An abbreviation of *Nebraska*.

nebenkern (nā′ben-kern), *n.*; pl. *nebenkerne* (-ker-ne). [G., < *neben*, near, + *kern*, nucleus.] In *cytol.*, the paranucleus; an extra-nuclear body in the spermatid, arising from the spindle-fibers of the secondary spermatocyte. This name is also given to many other cytoplasmic structures, such as the mitosome and yolk-nucleus.

nebhelah (neb-hā′lä), *n.* [Heb. *nebhēlah*, carcass, dead body, < *nabhal*, decay, wither.] A dead body; especially, the carcass of an animal which has died from disease and is not fit for food.

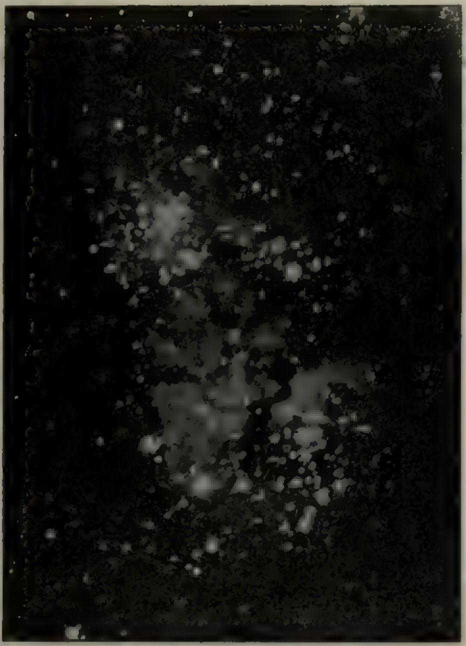
Nebr. An abbreviation of *Nebraska*.

nebris, *n.* 2. [*cap.*] A genus of sciænoid fishes found on both coasts of tropical America.

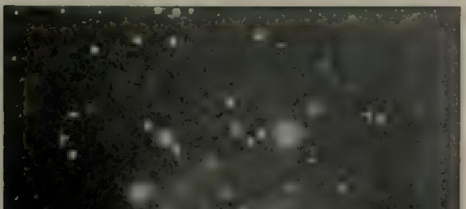
nebula, *n.*—**Cometary nebula**, a nebula which resembles a comet in appearance, usually having a stellar nucleus, and sometimes branching out on one side as if forming a tail.—**Crab nebula**, a nebula in Taurus, Messier 1: called the *crab nebula* by Lord Rosse, and so generally still known, although the appendages which rendered the name appropriate have not been seen since Rosse noted them,—photography does not show them, and it is not impossible that they were temporary and have disappeared.—**Fish-mouth nebula**, a descriptive name of the great nebula of Orion, which has a notable feature of the appearance indicated.—**Green nebula**, one which shows a greenish tint due to the bright lines of nebulium: contrasted with *white* ★*nebula*. The planetary nebula H. iv. 1 in Aquarius is especially vivid in color.—**Hind's nebula**, a nebula near the variable star T Tauri, discovered by Hind in 1852 with a small telescope. After growing brighter for a time it faded away with fluctuating luminosity and is now visible only in the largest telescopes, if at all. Another, discovered near it by O. Struve in 1868, has behaved in a similar manner.—**Horseshoe nebula**, the nebula Messier 17, often called the *Omega nebula*, on account of its form.—**Keyhole nebula**, a nebula in the constellation Argo (Carina) which has a peculiar dark keyhole-shaped hole near its center. The remarkable variable η Argus is close to the eastern edge of the keyhole.—**Omega nebula**, a bright nebula, Messier 17, shaped like the Greek letter omega (Ω) in the constellation of Scutum Sobieskanum.—**Owl nebula**, a peculiar planetary nebula, Messier 97, in Ursa Major: so called from its apparent resemblance to the face of an owl.—**Stellar nebula**, a body of numerous distant stars, appearing like a nebula, or a nebula with a stellar nucleus.—**Variable nebula**, a nebula which varies in brightness, for example, 1,555 in Dreyer's New General Catalogue, which is connected with the variable star T Tauri.—**Whirlpool nebula**, the nebula Messier 51 in the constellation of the Hunting Dogs: so called by Lord Rosse because of its wonderful spiral structure. Similar features have since, however, been brought out in numerous other nebulæ.—**White nebula**, one which is not green, like the nebulæ which give a bright-line spectrum. Its spectrum is continuous. An example is the great nebula in Andromeda (Messier 31).

Fish-mouth Nebula,—the great nebula in Orion.

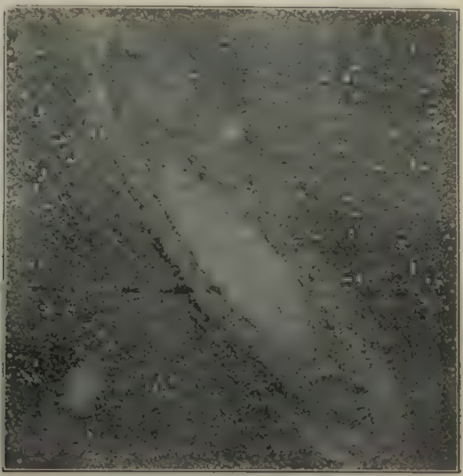
Nebular hypothesis. The hypothesis was suggested in a somewhat crude and unscientific form by Swedenborg and Kant, but was first distinctly formulated by Laplace about the beginning of the nineteenth century. He assumed that the matter of which the sun and planets are now composed was once a nebula—an immense ball of heated gases, somewhat condensed at the center, and with a revolution on an axis. He did not assume, as Kant had done, that the whole material universe was once gaseous, and that the formation of such a rotating nebulous ball was produced simply by the action of gravitation. He did not undertake to explain the genesis of the primordial nebula, but simply assumed its existence. Starting with this, he assumed that the nebula losing heat by radiation would contract under its own gravitation and that, for mechanical reasons, the speed of its rotation would necessarily increase. In consequence of this rotation the nebulous globe would become flattened at the poles and, ultimately, as the contraction went on, the centrifugal force at the equator would become equal to gravity and rings of nebulous matter, like the rings of Saturn, would be detached from the central mass. In fact, Saturn's rings suggested this feature of the theory. A ring thus formed would for a time revolve entire, but would ultimately break, and the material would collect into a globe, revolving around the central nebula as a planet. Laplace seems to have supposed that the ring would revolve as if it were solid, the outer edge moving more swiftly than the inner, and if so the planet would necessarily rotate in the same direction as that of the revolution of the ring. Its revolution around the central mass would of course be in or near the plane of the equator of the whole. The planet thus formed might throw off rings of its own, and so form for itself a system of rings and satellites. Obviously this theory explains most of the peculiar facts of the solar system, especially the fact that the planets all revolve in nearly circular orbits, all in the same direction, and in planes nearly coinciding with the sun's equator; and also the fact that the planets and their satellites revolve in the same direction, with the exception of Uranus and Neptune. These exceptions can be explained in more than one way, by slightly modifying the assumption that the rings revolve as if solid. It is almost certain that the particles at the outer edge of a ring must move more slowly, instead of more rapidly, than those at the inner edge. This has been shown to be actually the case with the rings of Saturn. It is to be remarked, however, that, judging from the prevailing spiral structure of the nebulæ and the number of binary stars, both visual and spectroscopic, it seems likely that the formation of rings would occur only seldom. So far as yet appears the rings of Saturn are unique in the universe. A modified form of the nebular hypothesis proposed by Faye assumes that the inner planets were formed within the nebula, before the outer ones, and are therefore older; but this has gained little acceptance. There are serious, and probably fatal, objections to any theory which assumes as its starting-point a mass of heated gas. In the light of modern investigations it seems far more likely that the original 'cloud' or 'nebula' was cold, and that the present high temperature of the sun and planets has been developed in the process of their formation. Nor does it appear how the matter of a nebulous ring could coalesce into a planet, at least within any such length of time as can be reconciled with the conclusions as to the possible age of the solar system deduced by Lord Kelvin and others from the theory of heat—conclusions which, however, may be greatly modified if it should appear that other sources than mechanical contraction have contributed heat to be radiated into space, thus reducing the rate of contraction and allowing more time for the formation of planets and satellites. At present the general drift of opinion favors a 'meteoritic hypothesis' of some sort, substituting for the primordial gaseous nebula a swarm of small cold meteoric masses, from the slow aggregation of which the sun and planets have gradually been built up. Such a meteoritic cloud would behave, as George Darwin has shown, very much like a mass of gas, but with an immensely magnified time-scale of evolution. The distinctive feature of the *planetesimal hypothesis* lately proposed by Chamberlin consists in assuming that the meteors, instead of moving indiscriminately in all directions, move in paths which are nearly concentric circles and nearly in one plane, like infinitesimal planets, occasionally overtaking each other and coalescing without any violent shock.—**Nebular line.** See ★*line*^{2}.



Keyhole Nebula,—nebula in Carina.



Whirlpool Nebula,—great spiral nebula in Hydra.



White nebula,—great nebula in Andromeda.
(By courtesy of Dr. Isaac Roberts of England.)

nebulated (neb′ụ̄-lā-ted), *p. a.* [L. *nebula*, a cloud.] Obscured as with a cloud; clouded.

> On the head and neck the light rufous decidedly predominates, and seems indistinctly but thickly *nebulated* with dusky; this dusky forming a conspicuous spot just at the anterior canthus of the eye. *Coues*, Birds of the Northwest, p. 608.

nebulation (neb-ụ̄-lā′shọn), *n.* [*nebula* + *-ation*.] Nebulosity; the character or condition of being nebulated.

nebulium (ne-bū′li-um), *n.* [NL., < *nebula*, nebula.] A supposed gaseous element assumed to account for the brilliant green lines in the spectrum of the nebulæ. Thus far it has not been detected on the earth, or in any of the heavenly bodies except the nebulæ.

> The spectrum is purely gaseous, and is dominated visually, with more than the usual emphasis, by the green *nebulium* line, while in the photographic region the ray at λ 3727 was found by Von Gothard to be of quite peculiar strength. Symptoms of helium-emission should be looked for. *A. M. Clerke*, Problems in Astrophysics, p. 517.

nebulization (neb″ụ̄-li-zā′shọn), *n.* [*nebuliz*(*e*) + *-ation*.] The state of being nebulized; reduction to a fine spray or vapor: said of a liquid.—**Nebulization treatment**, treatment of disease, chiefly of disease of the mucous membrane, by the direct application or the inhalation of a medicated spray.

Nebulous star. (*b*) See ★*star*^{1}.

necessario (ne-che-sä′ri-ō), *a.* [It.] In *music*, same as *obbligato*.

necessarious†, *a.* Same as *necessary*.

necessist (nē̤-ses′ist), *n.* [*necess*(*ism*) + *-ist*.] Same as *necessitarian*. *W. G. Ward.*

necessitate (nẹ-ses′i-tāt), *a.* Necessitated.

necessitative (nẹ-ses′i-tạ-tiv), *a.* [*necessitate* + *-ive.*] Rendering necessary; necessitating: as, a *necessitative* conviction.

neck, *n.* 6. (*j*) (3) The prolonged apex of a perithecium or pycnidium. (*l*) The crook of the head of a golf-club where it joins the shaft. (*m*) A reduced section in a rod or bar; specifically, the part of a rod or bar under tensile test in a testing-machine where the material is stretching more than in other parts of its length. As the weight of the piece cannot change, the material must diminish in cross-section as its length increases. Hence, a hollowing of the sides or perimeter and the formation of a neck occur before the piece parts. This local stretch or diminution of area at the fracture is a measure of the toughness or ductility of the material, the reduction of the area at fracture being greatest for ductile materials and least for those which are brittle.

When a wrought iron or steel piece is tested, the elongation is made up of two parts: first, a fairly uniform stretch throughout the whole length of the cylindrical portion; and second, for a length of 1-2 inch to 1 inch on each side of the break, there is superposed on the first a greater local elongation in what is called the "*neck*" of the break. *Jour. Phys. Chem.*, June, 1905, p. 456.

Nithsdale neck, goiter.—**Septal neck,** the calcareous tube in the septum of an ammonite or nautilus through which the siphuncle passes.—**To get it in the neck,** to receive a hard blow in, or as if in, the neck; be hit in a sensitive place. [Slang.]

Showing how Vanity is still on deck
And Humble Virtue *gets it in the neck.*
Wallace Irwin, Love Sonnets of a Hoodlum, Epilogue.

Volcanic neck. See *neck*, 6 (*k*).

neckatee (nek′ạ-tē), *n.* [*neck* + *-atee*, an arbitrary ending, as if F.] A neckerchief; a small shawl-shaped wrap. [Rare.]

Other colonists had speckled neck-cloths, lawn and silesia neck-cloths. Men and women both wore them. They were also called neck-clothes, neckerchiefs, neckingers, and *neckatees.*
A. M. Earle, Costume of Colonial Times, p. 167.

neck-band, *n.* 3. Same as ★*neck-cord.*

neck-bang (nek′bang), *n.* The short hair which grows on the back of the neck of a woman where the line of hair growth begins. See *bang*, *n.*

She wore brown cotton gloves and a brown cotton veil to preserve her complexion. Her *neck-bangs*, recently released from curling-tins, stood out like a bunch of tumbleweed. *The Century*, Aug., 1905, p. 602.

neck-cord (nek′kôrd), *n.* A cord which connects the Jacquard attachment of a loom with the harness or heddle. Also called *neck-band. R. Marsden*, Cotton Weaving, p. 192.

neck-core (nek′kōr), *n.* A mass of resistant lava in the chimney of a volcano.

The fact that most volcanoes 'plug' themselves after varying periods of activity, and that some of these reopen directly in the line of earlier eruptions, would in itself seem to suggest that from time to time extravasated plugs (*neck-cores* or towers) should appear at the surface.
Science, May 20, 1904, p. 801.

Necker's cube or **parallelepiped.** See ★*parallelepiped.*

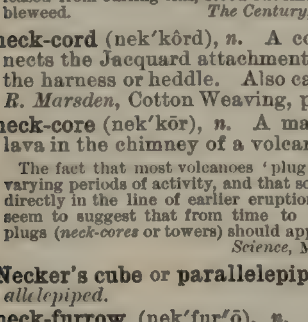
neck-furrow (nek′fur″ō), *n.* The posterior groove on the cephalon of a trilobite, dividing the glabella from the occipital segment. Also called *nuchal furrow.*

neckgear (nek′gēr), *n.* Same as *neckwear.*

necklace (nek′lạ̄s), *v. i.* and *t.*; pret. and pp. *necklaced*, ppr. *necklacing.* To form into a necklace; encircle or surround with, or as with, a necklace. *N. E. D.*

necklace-shell (nek′lạ̄s-shel), *n.* A marine univalve mollusk (the pearly necklace-shell), *Elenchus bellulus.* When deprived of its epidermis by the action of acid or by other means, it has a blue or green pearly luster. [Tasmania.]

necklace-weed (nek′lạ̄s-wēd), *n.* 1. The white baneberry, *Actæa alba.*—2. The false gromwell, *Onosmodium Virginianum.*



A Wooden Neck-rest of the Ba-Mangwato Tribe, South Africa.

neck-leathers (nek′leᴛʜ″-ėrz), *n. pl.* In *mining*, leather washers on top of the lid of a clack to prevent wear.

neck-plate (nek′plāt), *n.* Same as *neck-piece*, 1.

neck-rest (nek′-rest), *n.* A support for the neck, used in resting. It consists generally of a rounded crosspiece with supports, and is four to eight inches high. The sleeper places the neck [illegible] Neck-rests are used in many parts [illegible] in China, Japan, New Gu[illegible] of Africa. In some regions, as in Alaska, [illegible] only by shamans.

neck-ring, *n.* 2. In *mech.*, a bushing fitted in the bottom of the stuffing-box on an engine-cylinder or steam-chest. It is usually of brass and prevents the rod and cylinder from rusting together when the engine is shut down for some time. It is easily renewable in case of wear.

neck-stock (nek′stok), *n.* A made-up, stiffly arranged cravat worn in the eighteenth century, and somewhat resembling the stock of the present day. There was a metal spring within it to keep it in place on the neck. *A. M. Earle*, Costume of Colonial Times, p. 169.

neck-stool (nek′stöl), *n.* Same as ★*neck-rest.*

neck-yoke, *n.*—**Whiffletree neck-yoke,** in *lumbering*, a heavy logging neck-yoke, to the ends of which short whiffletrees are attached by rings. From the ends of the whiffletrees wide straps run to the breeching, thus giving the team added power in holding back loads on steep slopes.

necræmia (nek-rē′mi-ạ̈), *n.* [NL., < Gr. *νεκρός*, a dead body, + *αἷμα*, blood.] Destruction or devitalization of the red blood-corpuscles.

necrobacillosis (nek″rọ-bas-i-lō′sis), *n.* [Gr. *νεκρός*, a dead body, + NL. *bacillus* + *-osis.*] Any disease of animals produced by *Bacillus necrophorus* and characterized by caseonecrotic lesions. *U. S. Dept. Agr., Rep. Bur. Animal Industry*, 1905, p. 18.

necrobiosis, *n.* 2. In *biol.*, the doctrine or opinion that living beings may arise from decomposing organic matter: contrasted with the opinion that they may be spontaneously generated from inorganic matter.

necrogenic (nek-rọ-jen′ik), *a.* [Gr. *νεκρός*, a dead body, + *-γενης*, -produced, + *-ic.*] Originating, actually or supposedly, from dead matter.

necrogenous (nek-roj′e-nus), *a.* [Gr. *νεκρός*, a dead body, + *-genous.*] Growing on dead or dying tissues or organs. *Mayne.*

necrographer (nek-rog′rạ-fėr), *n.* [Gr. *νεκρός*, a dead body, + *γράφειν*, write.] A necrologist.

What Twysden read in the Globe was a mere curt paragraph: but in next morning's Times there was one of those obituary notices to which noblemen of eminence must submit from the mysterious *necrographer* engaged by that paper. *Thackeray*, Philip, II. p. 35.

necromania (nek-rọ-mā′ni-ạ̈), *n.* [NL., < Gr. *νεκρός*, a dead body, + *μανία*, madness.] A morbid attraction toward death or the dead.

necromorphous (nek-rọ-môr′fus), *a.* [Gr. *νεκρός*, a dead body, + *μορφή*, form.] That simulates death; seeming lifeless; lying motionless like a dead body: applied to the pupæ of certain *Coleoptera.*

necrophile (nek′rọ-fil), *n.* [Gr. *νεκρός*, a dead body, + *φίλος*, loving.] One who exhibits necrophilism.

necrophobic (nek-rọ-fō′bik), *a.* [*necrophobi(a)* + *-ic.*] Pertaining to or exhibiting necrophobia.

necropole (nek′rọ-pōl), *n.* Same as *necropolis.*

Necropsittacus (nek-rop-sit′ạ-kus), *n.* [NL., < Gr. *νεκρός*, dead, + *ψίττακος*, a parrot.] The generic name for a large and extinct species of parrot, *Necropsittacus rodericanus*, formerly found on Rodriguez Island.

necrosial (nek-rō′ziạl), *a.* [*necrosis* + *-al*[1].] Relating to necrosis.

necrosis, *n.* 2. (*b*) A disease of the grape, attributed to *Bacillus vitivorus.*—**Phosphorus necrosis,** necrosis of the jaw, due to poisoning by the fumes of phosphorus.

necrotize (nek′rọ-tīz), *v.*; pret. and pp. *necrotized*, ppr. *necrotizing.* [*necrot(ic)* + *-ize.*] I. *intrans.* To become necrotic.

It is assumed generally that the fraying of the velvet has originated through fighting, that the bared portion of the antler-bone became necrotic, and had therefore to be renewed &c., and that the whole process of stripping, *necrotising*, shedding, and renewing has become rhythmical—a feature due to cumulative inheritance.
Proc. Zool. Soc. London, 1902, I. 211.

II. *trans.* To cause necrosis in; render necrotic.

In this same article Dorset and de Schweinitz described the isolation of a *necrotizing* acid which they obtained from tuberculous cultures.
U. S. Dept. Agr., Rep. Bur. Animal Industry, 1902, p. 276.

necrotomist (nek-rot′ọ-mist), *n.* [*necrotom(y)* + *-ist.*] One who dissects dead bodies. *Craig.*

necrotomy, *n.* 2. A surgical operation for the removal of necrosed bone.

Nectalia (nek-tā′li-ạ̈), *n.* [NL. (*Haeckel*, 1888), < Gr. *νηκτός*, swimming, + *ἅλς*, the sea.] The typical genus of the family *Nectalidæ.*

Nectalidæ (nek-tal′i-dē), *n. pl.* [NL., < *Nectalia* + *-idæ.*] A family of physonectous siphonophorans. The forms are polygastric, with a short vesicular stem and branched tentacles, the stem bearing numerous siphons, palpons, and bracts, the nectocalyxes being in two or four rows and the pneumatophore having radial pouches. It includes the genera *Nectalia* and *Sphyrophysa.*

nectariferous (nek-tạ-rif′ẹ-rus), *a.* [L. *nectar* + *-fer*, < *ferre*, bear.] Producing nectar, as a flower.

The fritillary, . . . a large, handsome, bell-shaped flower, with separate petals, . . . and with a *nectariferous* cavity at their base, . . . is purple or red, chequered with lurid marks.
Grant Allen, Colours of Flowers, p. 56.

nectarine, *n.*—**Native nectarine,** in Australia, the emu-apple, *Rancooria acidula.*

nectarivorous (nek-tạ-riv′ọ-rus), *a.* [Gr. *νέκταρ*, nectar, + L. *-vorus*, < *vorare*, eat.] Feeding on nectar, as the true bees.

Nectarivorous insects, having acquired the habit of frequenting leaves covered throughout their entire surface with honey dew, continued to do so, even when the excretion had ceased. *Smithsonian Rep.*, 1896, p. 421.

necteric (nek-ter′ik), *a.* [Gr. *νηκτήρ*, for *νήκτης*, a swimmer, < *νήχειν*, swim.] Capable of swimming: in *marine zoöl.*, said of an animal that is able to direct its own movements through the water: contrasted with ★*ploteric* or drifting.

necton (nek′ton), *n.* [Gr. *νηκτόν*, neut. of *νηκτός*, swimming.] A name introduced by Haeckel in 1890 for the entire assemblage of aquatic animals that lead an actively swimming life. A torpedo-like form, bilateral symmetry, and highly developed swimming-musculature characterize this group, of which the fishes, whales, and squids are examples.

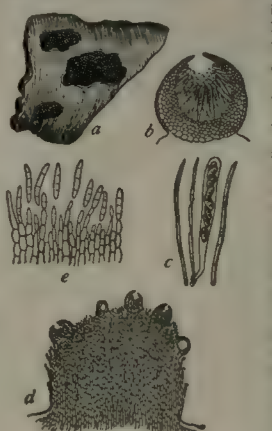
Nectonemertes (nek″tọ-nẹ-mėr′tēz), *n.* [NL. (*Verrill*, 1893), < Gr. *νηκτός*, swimming, + NL. *Nemertes.*] A typical genus of the family *Nectonemertidæ.*

Nectonemertidæ (nek″tọ-nẹ-mėr′ti-dē), *n. pl.* [NL., < *Nectonemertes* + *-idæ.*] A family of nemerteans, of the order *Metanemertini*, consisting of deep-sea forms with short, broad bodies, the hinder end being flattened into a fin, the mouth and proboscis openings separate, and eyes absent. It contains the genera *Nectonemertes* and *Hyalonemertes.*

nectophore (nek′tọ-fōr), *n.* [Gr. *νηκτός*, swimming, + *-φορος*, < *φέρειν*, bear.] A nectocalyx or nectozoöid.

Isolated *nectophores* occur in the hauls from 620, 1275, and 1470 fathoms. In shape they resemble the *nectophores* of Vogtia pentacantha, Köll., but their margin is smooth, instead of being surrounded with spinous processes.
Annals and Mag. Nat. Hist., April, 1903, p. 429.

Nectria (nek′tri-ạ̈), *n.* [NL. (Fries, 1849), < Gr. *νηκτρίς*, fem. of *νηκτήρ*, a swimmer. The allusion is obscure; perhaps the fungus was first found on aquatic plants.] 1. A large genus of pyrenomycetous fungi of the family *Hypocreaceæ*, having the perithecia membranous, single, or variously aggregated on a stroma, and usually bright-colored. The spores are elongate, hyaline, and uniseptate. In many species conidia occur which have been described under the genus *Tubercularia* of the *Fungi Imperfecti.* About 250 species have been described. Most of them are regarded as saprophytes, but *N. Ipomœæ* is said to cause a stem-rot of egg-plant and sweet-potatoes, and *N. ditissima* is considered by some authorities as the cause of the canker of fruit-trees.



Nectria ditissima.

a, three groups of perithecia on a branch; *b*, section of a perithecium showing asci; *c*, an ascus with spores and paraphyses; *d*, the *Tubercularia* stage, a section showing ascigerous perithecia forming; *e*, a portion of the *Tubercularia* stage showing conidia. All except *a*, highly magnified.

2. [*l. c.*] pl. *nectrias.* Any fungus of the genus *Nectria.* See *apple-tree* and *plum* ★*canker*, *cacao* and *coral-spot* ★*disease*, and *Tubercularia.*

nectriaceous (nek-tri-ā′shius), *a.* [*nectria* + *-aceous.*] Pertaining to or resembling the genus *Nectria.*

Nectrioidaceæ, Nectrioideæ (nek″tri-oi-dā′-sẹ̄-ē, nek-tri-oid′ẹ̄-ē), *n. pl.* [NL., < *Nectria* + *-oid* + *-aceæ, -eæ.*] Same as ★*Zythiaceæ.*

needle, *n.* **3.** (*i*) In *mech.*: (1) the needle-shaped or pointed stem in a needle-valve. (2) A curved arm which carries the binding-wire around the bundle in a binder or reaper. (*j*) A slender timber, usually square or rectangular in cross-section, generally used in a contiguous parallel series to close an opening or to cover an area, as in a *needle* ★*weir* (which see), where it is placed in an inclined or vertical position against horizontal bottom and top sills, extending across the channel or waterway to be regulated or closed.

6. *pl.* In *mining:* (*a*) Beams laid across a mine shaft to support a cage. (*b*) Buntons. —**Active needle,** a lively, sensitive compass-needle.—**Crazy needle,** a compass-needle which flies about in an erratic manner owing to some magnetic disturbance in its vicinity.—**Demagnetized needle,** a needle which has lost its magnetism.—**Hang-back needle,** a compass-needle which does not respond immediately to the change of a vessel's head, but sticks for the time being.—**Hypodermic needle,** a hollow needle used for injecting medicated solutions into the tissues.—**Ligature needle,** a slender steel rod with an eye in its curved extremity, used to pass a ligature underneath an artery.—**Needle bath.** See ★*bath*1.—**Needle of oscillation,** a suspended magnet which is free to oscillate about a vertical axis, and is used to determine, by means of its frequency of vibration, the relative horizontal intensity of the magnetic field in which it swings.—**Quick needle,** a compass-needle that responds instantly to the change of course; that neither hangs back nor takes a long time to settle.—**Slow needle,** a magnetic needle that has little life.—**Sluggish needle.** Same as *slow* ★*needle.*—**Submerged needle,** the needle of a liquid compass.—**Vicat's needle,** in *ceram.*, an instrument for testing the softness of clays and for determining the time of setting of Portland cement. It consists of a needle, which, by means of a fixed load, is forced to a certain depth into the prepared clay within a given time. "The softened clay is well 'wedged' to make it perfectly homogeneous, and pressed into a ring four centimeters deep, set on a glass plate under the needle and struck off level with a steel spatula. The needle is then allowed to penetrate the clay, and if within five minutes it sinks to a depth of four centimeters into the same, the clay is of the proper consistence; if not, it is either made stiffer or softened, as the case may be." *Langenbeck*, Chem. of Pottery, p. 19.—**Wire needle,** a light thin steel wire to which magnetic properties have been imparted.

needle-and-thread (nē′dl-a̤nd-thred′), *n.* See ★*needle-grass*, 2.

needle-bolt (nē′dl-bōlt), *n.* The bolt which carries the needle in a needle-gun. *N. E. D.*

needle-bush (nē′dl-bu̇sh), *n.* A name of two Australian trees: (*a*) *Hakea leucoptera*, having smooth, terete leaves, from 1 to 3 inches long, with fine straight rigid points: called also *pin-bush* and *water-tree.* (*b*) The wallaby acacia, *Acacia rigens*, having linear, terete, rigid phyllodia, from 2 to 3 inches long, armed with a short, often recurved point. See ★*water-tree*, 2, and *wallaby acacia*, under *wallaby.*

needle-carrier (nē′dl-kar″i-ėr), *n.* A long-handled needle-holder used in surgery.

needle-cast (nē′dl-kast), *n.* A destructive disease of the young Scotch pine, due to the fungus *Lophodermium Pinastri.* Also called *pine-blight.* See ★*Lophodermium* and ★*casting*, 11.

needle-fish, *n.* **5.** A fish of the family *Tylosuridæ*, widely distributed.

needle-galvanometer (nē′dl-gal-va̤-nom″e-tėr), *n.* A galvanometer the indications of which are noted by means of the movement of a needle or pointer over a graduated circle.

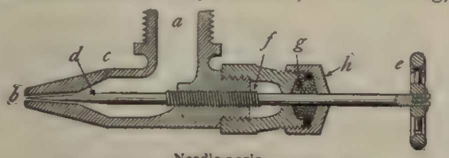
needle-gate (nē′dl-gāt), *n.* A gate or obstruction formed by placing long, slender bars, or 'needles,' side by side vertically in a suitable frame. The needles, since they are relatively small, can be quickly placed in the swiftly flowing water and the current checked without shock, or without the use of an expensive and heavy mechanism. *H. M. Wilson*, Irrigation Engineering, p. 229.

needle-grass (nē′dl-gràs), *n.* **1.** *Aristida fasciculata*, a grass of the dry country from Texas to Montana, constituting on some poor lands in Texas a large element in the forage. The long, straight beards of the spikelets sometimes penetrate the skin or intestines of lambs, but the loss is less than the value of the pasturage. Also called *purple beard-grass* and *dog-town grass.* Associated with this under the same name is *A. coarctata.*—**2.** One of several species of *Stipa*, especially *S. comata*, a common bunch-grass of the dry mesas and foot-hills of the Rocky Mountain region, where it is abundant and affords valuable forage. The awns of this grass also cause some trouble. They are long and flexuous and have suggested the name *needle-and-thread.* Other needle-grasses of this genus are *S. Lettermanni*, *S. Nelsoni*, and *S. Tweedyi.* The porcupine-grass, *S. viridula*, is locally called by the same name.

needle-lace (nē′dl-lās), *n.* Lace made with a needle, in distinction from that made with the bobbin. See *needle-point lace*, under *lace.*

needle-lubricator (nē′dl-lū″bri-kā-to̤r), *n.* A lubricator consisting of a reservoir from which a conical tube leads the oil to the bearing, the flow being regulated by the position of a stem or needle which almost touches the bearing.

needle-nozle (nē′dl-noz″l), *n.* In hydraulic impulse-turbines or jet-wheels, a form of long, slender, conical nozle for directing the jet of water against the buckets of the wheel, in which the velocity of water through the nozle is regulated, without disturbing the form or direction of the jet, by the axial motion of a corresponding long, slender, conical valve, called a *needle-valve.* See ★*needle-valve.*



Needle-nozle.

a, inlet of water; *b*, outlet of water, annular opening between needle-rod and nozle proper; *c*, body of valve; *d*, needle-rod; *e*, controlling wheel for hand; *f*, screw-thread; *g*, packing in stuffing-box; *h*, stuffing-box gland.

needle-palm (nē′dl-päm), *n.* The short-leaved tree-yucca or Spanish bayonet, *Yucca Schottii*, of the southwestern United States and Mexico.

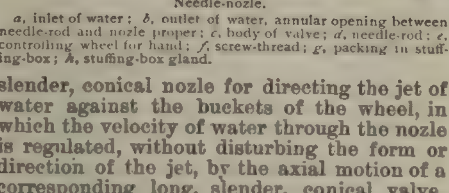
needle-plate (nē′dl-plāt), *n.* A perforated plate for receiving the ends of the horizontal needles of the warp-shedding mechanism of a dobby-loom.

needle-point (nē′dl-point), *n.* A small steel wire having a point at each end, used in the leg of a drawing-compass in place of a fixed point.

needle-segment (nē′dl-seg″ment), *n.* The section of the comb-cylinder which contains the comb-needles in a cotton-combing machine.

needle-sight (nē′dl-sīt), *n.* A slender front sight, used on small arms intended for match-firing and sometimes for sharp-shooting.

needle-valve (nē′dl-valv), *n.* **1.** A valve capable of very fine adjustment.—**2.** A valve having a stem with a sharp conical point which bears on a conical seat. The stem is made to travel by a very fine screw, and a large turn of the handle is required to make a small change in the opening through the valve. —**3.** A similar valve controlling an opening of very small size.



Needle-valve.

a, supply inlet; *b*, discharge outlet; *c*, body of valve; *d*, needle-valve; *e*, lever or handle; *f*, screw on spindle; *g*, packing in stuffing-box; *h*, stuffing-box gland.

> A small quantity of ammonia is injected through a *needle valve*, which allows a very fine stream to pass into the space between two pipes, running in a coil approximately 300 feet long surrounding a pipe containing the brine above mentioned.
>
> *Sci. Amer. Sup.*, Jan. 24, 1903, p. 22628.

needle-wire (nē′dl-wīr), *n.* A high grade of steel wire.

neeskotting (nēs′kot-ing), *n.* [Verbal n. of **neeskot*, *v.*, supposed to be from a noun **neeskot*, an appar. perverted form of an Amerindian word which appears in Canadian F. as *nigogue*, < Micmac *negok* (Rand), the jaw of a salmon-spear, also the salmon-spear itself, used in taking fish at night with the aid of fire or torch.] The spearing, or rather gaffing, of fish in shallow water at night with the aid of a lantern or torch, the 'spear' being a long pole with a hook at the end. Compare ★*weequashing.* *F. Starr*, cited in Jour. Amer. Folk-lore, Oct.–Dec., 1902, p. 251.

Neetroplus (nē-et′rọ̄-plus), *n.* [NL., < Gr. *νέος*, new, + NL. *Etroplus*, a related genus of fishes (< Gr. *ἦτρον*, abdomen, + *ὅπλον*, armor).] A genus of fishes of the family *Cychlidæ*, found in fresh waters of Central America.

nefer (nef′ėr), *n.* [Old Egyptian.] An ancient Egyptian lute or guitar, usually with three strings, a small elliptical body, and a very long neck. See ★*nabla.*

nefew, nevew, *n.* Amended spellings of *nephew.*

nefritic, *a.* and *n.* An amended spelling of *nephritic.*

neftgil (neft′gil), *n.* A kind of earth-wax, allied to ozocerite, found on the island of Cheleken in the Caspian, and said to occur also in Persia. It consists of paraffins and a resinous material. It is reported as existing in large quantity. *Sadtler*, Handbook of Indust. Chem., p. 16.

neg. An abbreviation (*a*) of *negative;* (*b*) of *negatively.*

negative. I. *a.*—**Negative class** or **order,** the class or order of a function which has more infinities than zeroes.—**Negative culture.** See ★*culture.*—**Negative form, pyramid, tetrahedron,** etc. See ★*form*, 2.—**Negative motion, number, remainder, skewness.** See ★*motion*, etc.

II. *n.*—**Grained negative,** in *photog.*, a negative in which the half-tones of the image are given a grained appearance, usually by interposing a fine netting or wire gauze between the lens and the object photographed. Such negatives are used in photomechanical printing.—**Line negative,** in *photog.*, a negative made behind a line-screen and used in photo-engraving. *Woodbury*, Encyc. Dict. of Photog., p. 272.

negative-clasp (neg′a̤-tiv-klàsp), *n.* In *photog.*, a wire clamp for raising negative plates from a bath without injury to the film. Also called *negative-lifter.*

negativistic (neg″a̤-ti-vis′tik), *a.* [*negative* + *-ist* + *-ic.*] Of, pertaining to, or characterized by negativism.

Negaunee formation. See ★*formation.*

Negligée shirt, a shirt not of the conventional white, stiffly starched kind; a shirt of woolen or unstarched linen or cotton, worn for comfort.

Negri bodies, minute round or oval bodies found in the nerve-cells of the hippocampus major, the pons, the Purkinje cells of the cerebellum, and elsewhere in the brain and spinal cord, in animals dead of rabies. They are supposed to be protozoa and the specific cause of the disease. *Med. Record*, Nov. 2, 1907, p. 750.

negrified (nē′gri-fīd), *a.* Having become similar to negroes through intermixture continued through many generations.

Negrillo. I. *n.* **2.** [*l. c.*] A silver ore, black sulphid of silver.

II. *a.* Of or pertaining to the dwarfish negroid tribes of Africa. Also *Negrito.*

Negritic (nẹ̄-grit′ik), *a.* Same as *Nigritian.*

negritize (nē′gri-tīz), *v. t.*; pret. and pp. *negritized*, ppr. *negritizing.* To make similar to negroes, particularly by infusion of negro blood. *Smithsonian Rep.*, 1899, p. 513.

Negrito, *n.* **2.** An individual belonging to one of the dwarfish negroid tribes of southern Asia and Africa. Also *Negrillo.*

II. *a.* Of or pertaining to the Negritos.

negro. I. *n.*—**Pied negro,** a negro whose skin presents numerous spots and patches of a lighter color: a condition sometimes observed after a long and exhausting illness.

II. *a.*—**Negro bat.** (*b*) A fish of the West Indian fauna, *Bodianus fulvus punctatus*, of the family *Serranidæ.*—**Negro bean.** See ★*bean*1.

negro-fish (nē′grō-fish), *n.* Same as *nigger-fish.*

negro-ground (nē′grō-ground), *n.* Formerly, in the West Indies, a portion of an estate on which the negro slaves were allowed to plant vegetables, etc., for their own use. See the extract.

> Whenever it is found convenient for the owner to exchange the *negro-grounds* for other lands, the Negroes must be satisfied, in money or otherwise, before the exchange takes place.
>
> *Bryan Edwards*, A Hist. of the Brit. W. Indies, II. 163.

Negro-head beech, an Australian tree, *Fagus Cunninghamii*, used in furniture-making.

negro-Hottentot (nē′grō-hot″n-tot), *a.* Of or relating to a people of mixed negro and Hottentot descent. *Keane*, Ethnology, p. 153.

negroid, *a.* **II.** *n.* An individual of a negroid race, such as those of Micronesia, the Negritos of the Philippine Islands, and the mixed tribes of northeastern Africa.

> There is even the same succession of types, running from the pygmy Negritoes of Borneo and the Philippines, through the Negroes of Papua and Melanesia, to the *Negroids* of Micronesia.
>
> *Pop. Sci. Mo.*, March, 1902, p. 455.

negroidal (nẹ̄-groi′da̤l), *a.* [*negroid* + *-al*1.] Similar to or pertaining to the negro race; negroid.

negroization (nē″grọ-i-zā′shọn), *n.* [*negro* + *-ize* + *-ation.*] The process of negritizing or the state of being negritized. *Ratzel* (trans.), Hist. of Mankind, III. 258.

negroloid (nē′grọ-loid), *a.* Same as *negroid.*

negrophil (nē′grọ-fil), *n.* [*negro* + Gr. *φιλεῖν*, to love.] One who is a friend of the negro; one who desires to promote the welfare of the negro.

> This is not the language of prejudice, of racial or religious bias, but the sober truth, frankly admitted by the *Negrophiles* themselves "behind the scenes."
> *Keane*, Ethnology, p. 268.

negrophilism (nẹ-grof′i-lizm), *n.* [*negrophil(e)* + *-ism.*] A disposition to favor the negro race; benevolence toward the negro.

negrophilist (nẹ-grof′i-list), *n.* [*negrophil-(ism)* + *-ist.*] One who favors the negro race and exerts himself in its behalf.

negrophilistic (nẹ-grof-i-lis′tik), *a.* Tending to negrophilism; of the nature of negrophilism.

negrophobe (nē′grọ-fōb), *n.* [*negro* + Gr. *φόβος*, fear.] One who fears or has a strong antipathy to the negro; one who exhibits negrophobia.

negrophobia (nē-grọ-fō′bi-ạ̈), *n.* [*negro* + Gr. *φόβος*, fear.] Fear of the negro; strong antipathy to the negro.

negrophobiac (nē-grọ-fō′bi-ak), *n.* [*negrophobia.*] One who exhibits negrophobia.

negro's-ear (nē′grōz-ēr), *n.* The black, curved pods of *Enterolobium contortisiliquum.*

negrotic (nẹ-grot′ik), *a.* Of or pertaining to the negro. *N. E. D.* [Rare.]

> "This is Mponbinda, and you know we're bound for Mbátá!" Nothing *negrotic* now astonishes us, there is nought new to me in Africa.
> *R. F. Burton*, Two Trips to Gorrilla Land, I. 34.

negro-yard (nē′grō-yärd), *n.* On West Indian plantations, a portion of ground, near the mills and the manager's house, where the laborers have their dwellings, and generally some fruit-trees, with places for pigs, goats, and poultry. Originally these grounds were occupied only by negroes, but at present coolies and other laborers are frequently associated with them.

Neh. An abbreviation of *Nehemiah*, a book of the Old Testament.

nei², *n.* See ★*nay*².

n. e. i. An abbreviation of the Latin *non est inventus*, is not found.

neighbor, *n.*—**Help your neighbor**, a dice-game for six players with three dice. Each player has a number, from 1 to 6. Each has one throw, and any player whose number appears on any die scores a point. Game is five points.

neighborhood, *n.* 7. In *math.*, the part of a line, surface, space, or other *locus in quo* so near to a correlative point that from its utmost parts to that point it has everywhere a certain given character with respect to which it is the neighborhood of that point. Thus, to say that the air is condensed in the *neighborhood* of a certain point, is to say that after one has approached it sufficiently near, the nearer one approaches the more condensed is the air up to the point itself.—**Neighborhood house.** See *college* ★*settlement.*—**Neighborhood of a number** or **point**, *a*, for a positive number *h*, is the aggregate of all numbers (or points) *x* for which the absolute value of *x-a* denoted by | *x-a*, | does not exceed *h*.

neighboring, *a.* **2.** In *chem.*, same as ★*vicinal*, 2.

neiloid (nē′loid), *n.* [*Neile* (see def.) + *-oid.*] A solid resembling a cone, but in part concave: named for William Neile (1637–1670).

neinei (nā-ẹ-nā′ẹ), *n.* [Maori *neinei.*] In New Zealand, a name applied to several species of *Dracophyllum*, especially to *D. Traversii*, a tree belonging to the *Epacridaceæ*, having long grassy leaves terminating in a slender point, and slender terminal panicles of small sessile flowers crowded closely together. The wood is white, marked with satin-like specks, and adapted for cabinet-work.

Neisandra (nē-i-san′drạ̈), *n.* [NL. (Rafinesque, 1838), < Gr. *νη-*, a negative prefix, + *ἴσος*, equal to, + *ἀνήρ* (*ἀνδρ-*), man, stamen; the genus not having as many stamens as others formerly confused with it.] A genus of plants belonging to the family *Dipterocarpaceæ.* See *Hopea*, and *vegetable tallow*, under *tallow.*

nek (nek), *n.* [D. *nek*, neck.] In South Africa, a neck or saddle between two hills. *N. E. D.*

nekozame (nā′kō-zä-mē), *n.* [Jap. *neko*, cat, + *zame*, shark.] A shark, *Heterodontus japonicus*, of the family *Heterodontidæ.*

nekton (nek′ton), *n.* [NL., < Gr. *νηκτός*, swimming, < *νήχειν*, swim.] Swimming organisms considered collectively and in contrast with those that float and those that live upon or in the bottom. See ★*plankton*, ★*benthos.*

> The fauna of the sea is divisible into the plankton, the swimming or drifting fauna which never rests on the bottom (generally taken now to include Hæckel's *nekton*, the strong swimmers, such as fish and cephalopods), and the benthos, which is fixed to or crawls upon the bottom.
> *Encyc. Brit.*, XXXIII. 932.

nektonic (nek-ton′ik), *a.* [*nekton* + *-ic.*] Of or pertaining to nekton; swimming. See ★*nekton.*

> It has been asserted on various excellent grounds that life originated in the coastal regions with benthonic forms; that slowly creeping organisms preceded the planktonic and *nektonic* forms in the lower phyla of the animal kingdom. *Amer. Geol.*, April, 1903, p. 211.

nekudoth (ne-kö′dōth), *n. pl.* See *Hebrew* ★*vowel-points.*

nelly (nel′i), *n.* [Perhaps from the personal name *Nelly.*] The giant fulmar, *Ossifraga gigantea.* [Eng.]

nelma (nel′mạ̈), *n.* Same as *inconnu.*

Nelson (nel′sun), *n.* [From the surname *Nelson.*] A hold in wrestling. In a *full Nelson*, one of the contestants, slipping behind the other, puts his arms up under his opponent's armpits and clasps his hands or arms as high up as possible around the latter's neck.

nelsonite (nel′sọn-īt), *n.* See ★*meteorite.*

nelumbian (nẹ-lum′bi-ạn), *a.* Pertaining or relating to the genus *Nelumbo*; lotus-like.

nema (nē′mạ̈), *n.*; pl. *nemata* (-mạ-tạ̈). [NL., < Gr. *νῆμα*, a thread.] The flexuous filiform process by which the sicula and rhabdosome of graptolites are suspended from the primary disk. It attains great length in the young of certain forms, as in *Dictyograptus, Dictyonema flabelliforme*, and in certain *Axonolipa*, as species of *Tetragraptus.*

nemacaulus (nem-ạ-kâ′lus), *n.*; pl. *nemacauli* (-lī). [NL., prop. **nematocaulus*, < Gr. *νῆμα*, a thread, + *καυλός*, a stalk.] A stout, nontheciferous supporting stem of a graptolite colony. By means of it the colony was either suspended from or sessile upon a disk or system of adhesive fibers. *Lapworth.*

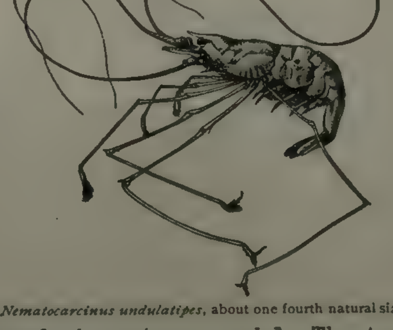
nemaline (nem′ạ-lin), *a.* [Gr. *νῆμα*, a thread, + *-al*¹ + *-ine*¹.] In *mineral.*, exhibiting a fibrous structure.

nemalitic (nem-ạ-lit′ik), *a.* [*nemalite* + *-ic.*] Characteristic of the mineral nemalite.

> *Nemalitic* structure or fibration, commonly occurring in brucite within serpentinoids subjected to dynamic stresses. The major axis of elasticity always lies parallel to the direction of the fibers.
> *Science*, March 31, 1905, p. 511.

Nematocarcinidæ (nem″ạ-tọ-kär-sin′i-dē), *n. pl.* [NL., < *Nematocarcinus* + *-idæ.*] A family of caridean macrurous crustaceans in which the animal is slender and smooth, the first antennæ have two long slender flagella, the second antennæ have a long narrow scale and an elongated slender flagellum, and the telson is slender and tapering. It includes the two genera *Nematocarcinus* and *Stochasmus.*

Nematocarcinus (nem″ạ-tọ-kär′si-nus), *n.* [NL. (A. Milne-Edwards, 1881), < Gr. *νῆμα*, thread, + *καρκίνος*, a crab.] The typical genus of the family *Nematocarcinidæ.*



Nematocarcinus undulatipes, about one fourth natural size.

nematoceratous (nem″ạ-tọ-ser′ạ-tus), *a.* Same as *nematocerous.*

nematocide (nem′ạ-tọ-sīd), *n.* and *a.* [*nemato(de)* + L. *-cida*, a killer, < *cædere*, kill.] **I.** *n.* A substance that kills nematoid worms.

II. *a.* Destructive of threadworms or nematoids.

nematogene (nem′ạ-tọ-jēn), *n.* Same as *nematogen.*

Nematonurus (nem″a-tọ-nū′rus), *n.* [NL.] A genus of gadoid fishes which inhabit deep seas.

Nematonus (nem-a-tō′nus), *n.* [NL.] A genus of deep-sea fishes of the family *Brotulidæ.*

nematopode (nem′ạ-tō-pōd), *n.* One of the *Nematopoda* or cirripeds.

nematopodous (nem-ạ-top′ọ-dus), *a.* Having the characters of or belonging to the *Nematopoda* or cirripeds.

Nematorhyncha (nem″ạ-tọ-ring′kạ̈), *n. pl.* [Gr. *νῆμα* (*νηματ-*), thread, + *ῥύγχος*, snout.] A group of organisms including the *Gastrotricha* and the *Kinorhyncha.* *Bütschli.*

nematospermia (nem″ạ-tọ-spėr′mi-ạ̈), *n.* [Gr. *νῆμα* (*νηματ-*), thread, + *σπέρμα*, seed.] A group of spermatozoa having a head or body and more or less elongated end-piece or tail. The other group in Waldeyer's classification comprises the *spherospermia*, which have only a variously shaped body without any appendage.

nem. diss. An abbreviation of the Latin *nemine dissentiente*, no one dissenting, that is, unanimously.

Nemertini (nē-mėr-tī′nī), *n. pl.* [NL. *Nemertes* + *-ini.*] A class of elongated wormlike marine animals having a ciliated ectoderm, as in the *Turbellaria*, and an eversible proboscis lying in a sheath on the dorsal side of the enteron. They have a mouth and an anus, simple gonads, and a vascular system; and are, as a rule, diœcious. There is no external segmentation as in the more highly organized class of *Chætopoda.*

nemertite (nẹ-mėr′tīt), *n.* [*Nemert(ea)* + *-ite*².] A name given to certain vermiform markings in rock strata, some of which may be trails of annelids.

Nemesia (nẹ-mē′si-ạ̈), *n.* [NL. (Ventenat, 1803), < Gr. *νέμεσις*, Dioscorides' name for a plant of the related genus *Antirrhinum.*] A genus of South African plants of the family *Scrophulariaceæ.* It contains about 30 species, annual or perennial herbs bearing white, yellow, or red short-tubular, solitary, or racemed saccate or spurred flowers. A few of them are in cultivation as garden annuals, one of the most advertised being *N. strumosa.*

nemestrinid (nẹ-mes′tri-nid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Nemestrinidæ.*

II. *a.* Having the characters of or belonging to the family *Nemestrinidæ.*

Nemipterus (nẹ-mip′tẹ-rus), *n.* [Gr. *νῆμα*, thread, + *πτερόν*, fin (wing).] A genus of fishes of the family *Lutianidæ* which inhabit the western Pacific.

nemophilist (nẹ-mof′i-list), *n.* [Gr. *νέμος*, a wooded pasture, + *φίλος*, loving, + *-ist.*] One who is fond of woods and groves.

nemophily (nẹ-mof′i-li), *n.* [See *nemophilous.*] Love of the woods; fondness for a woodland life. [Rare.]

nene (nā′nā), *n.* [Native name.] A species of goose, *Bernicla sandwichensis*, peculiar to the Sandwich Islands.

N. Eng. An abbreviation of *New England.*

neo-American (nē″ọ-ạ-mer′i-kạn), *a.* [Gr. *νέος*, new, + E. *American.*] New American: applied especially to the nomenclature of American botanists.

> A "Flora of Los Angeles and Vicinity," by Abrams (Stanford University Press, April 5, 1904) forms an octavo volume of 474 pages, and contains analytical keys and full descriptions of the Spermatophyta of the coast slope of Los Angeles and Orange Counties, California. The Orders are arranged in the Engler and Prantl sequence, and the *Neo-American* nomenclature is adopted—with synonymic citation where the generic name is unfamiliar to the ordinary reader. *Amer. Nat.*, Sept., 1904, p. 682.

neoarthrosis (nē″ọ-är-thrō′sis), *n.* [Gr. *νεός*, new, + E. *arthrosis.*] Same as *pseudarthrosis.*

neoatavistic (nē-ọ-at-ạ-vis′tik), *a.* [Gr. *νεός*, new, + E. *atavistic.*] In *biol.*, derived from recent ancestors: opposed to ★*paleoatavistic.*

> Infant growth means being loaded with paleoatavistic qualities, . . . while the pubescent increment is relatively *neoatavistic.* *G. S. Hall*, Adolescence, I. 50.

neobiologist, *n.* 2. A student of the biology of recent organisms, as distinguished from one who studies fossils.

This author really does seriously consider some of the neglected theories usually omitted by students of existing biological phenomena, or *neobiologists*.
A. Hyatt, Biol. Lectures, 1899, p. 147.

neoblastic, *a.* 2. Relating to the formation of new tissue.

neobotanist (nē-ọ-bot′a̤-nist), *n.* [Gr. *νέος*, new, + E. *botanist.*] A botanist proper, as distinguished from a paleobotanist.

neobotany (nē-ọ-bot′a̤-ni), *n.* [Gr. *νέος*, new, + E. *botany.*] Botany proper, as distinguished from paleobotany.

neo-Buddhism (nē″ọ-bu′dizm), *n.* [Gr. *νέος*, new, + E. *Buddhism.*] Later Buddhism; specifically: (*a*) Buddhism as altered by the addition or admixture of the Shivaitic, Shamanistic, and other notions introduced some centuries after the death of the Buddha. It is professed largely by the Buddhists of Kashmir, Tibet, China, Mongolia, and Japan (the so-called Northern School). See the *Great Vehicle*, in the *Cyclopedia of Names*. (*b*) The 'Buddhistic' notions and doctrines professed by modern theosophists.

neo-Buddhist (nē-ọ-bu′dist), *n.* One who accepts neo-Buddhism.

neo-Buddhistic (nē″ọ-bu-dis′tik), *a.* Of or pertaining to neo-Buddhism.

The four great gods of the Mayas, the 'props of the heavens,' answered to the four great Mexican gods of the four quarters of the compass. . . . There is something similar in the *Neo-Buddhistic* teachings; but Buddhism, even of the oldest type, is much too recent to explain anything in the religious worlds of Mexico or Yucatan.
Keane, Ethnology, p. 346.

neo-Catholic (nē-ọ-kath′ọ-lik), *a.* and *n.* **I.** *a.* [Gr. *νέος*, new, + E. *Catholic.*] New Catholic: applied (*a*) to a party in the Anglican Church which openly sympathizes with the Roman communion; (*b*) to the party of liberals in the French Church represented by Lamennais.

II. *n.* One who accepts the neo-Catholic doctrines. See ★*neo-Catholic* (*a*).

neo-Catholicism (nē″ọ-ka-thol′i-sizm), *n.* The neo-Catholic doctrines. See ★*neo-Catholic*.

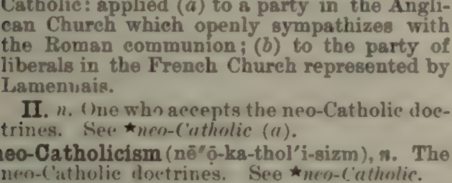
Neocene (nē′ọ-sēn), *a.* and *n.* [Gr. *νέος*, new, + *καινός*, recent.] In *geol.*, the later Tertiary, including the Miocene and Pliocene.

neochrysolite (nē-ọ-kris′ọ-līt), *n.* [Gr. *νέος*, new, + E. *chrysolite.*] A mineral from the ancient lava (1631) of Vesuvius occurring in small, black, tabular crystals near chrysolite in angle. It is probably identical with fayalite.

neoclassic (nē-ọ-klas′ik), *a.* [Gr. *νέος*, new, + E. *classic.*] Noting any phase of modern civilization which is based on principles or practices developed during the period of Greek and Roman antiquity. It is especially applicable to resemblances between modern and ancient art. See ★*neo-Greek*.

neoclassicism (nē-ọ-klas′i-sizm), *n.* [*neoclassic* + *-ism.*] The character of being neoclassic; revival of classic style in art or literature.

Neoclinus (nē-ọ-klī′nus), *n.* [NL., < Gr. *νέος*, new, + NL. *Clinus*, a generic name.] A genus of blennioid fishes found off the California coast.



Neoclinus satiricus. (From Bulletin 47, U. S. Nat. Museum.)

Neoconger (nē-ọ-kong′gėr), *n.* [NL., < Gr. *νέος*, new, + L. *conger*, a conger.] A genus of eels of the family *Murænesocidæ*, found on both coasts of the warmer parts of America.

neocorate (nẹ-ok′ọ-rāt), *n.* [L. *neocor*(*us*), < Gr. *νεωκόρος*, a person having charge of a temple, + *-ate*³.] The office of custodian or guardian of a temple. See the extract and *neokoros*.

A single *neocorate* implied a single temple to an emperor or an imperial family, such as the Julii or Flavii.
W. M. Ramsay, in Classical Rev., April, 1889, p. 175.

neocorus (nẹ-ok′ọ-rus), *n.*; pl. *neocori* (-rī). Same as *neokoros*.

Now I do not know what were the duties or the social position of a *neocorus*, but if he at all corresponded to the verger of a modern cathedral, then he would have plenty of time to ply a trade of his own when he was off duty and to supplement thus his official salary.
F. B. Jevons, in Jour. of Hellenic Studies, XV. 246.

Neocosmospora (nē″ọ-koz-mos′pọ-rä), *n.* [NL. (E. F. Smith, 1899), < Gr. *νέος*, new, + *κόσμος*, order, + *σπορά*, seed.] A genus of pyrenomycetous fungi closely related to *Nectria*, but having brown unicellular ascospores. The conidial form is a *Fusarium*. A single species, *N. vasinfecta*, with two varieties, has been described. The wilt-disease of cotton is caused by this fungus. The variety *tracheiphila* causes the wilt of the cow-pea and the variety *nivea* the wilt of watermelons. See *wilt-disease*, under ★*disease*.

Neocosmospora occurs on cotton (Gossypium herbaceum and G. Barbadense), watermelon (Citrullus vulgaris), and on cowpea (Vigna sinensis). It probably occurs also on okra (Hibiscus esculentus), although the identification is not complete, depending solely on the character of the symptoms, on the presence of similar macro- and microconidia, and on the occurrence of the disease in the same localities, no cultures or cross inoculations of the okra fungus having been made and no perithecial fruits having been discovered.
U. S. Dept. Agr., Div. Veg. Physiol. and Pathol., Bulletin [17, 1899, p. 31.

neocriminalist (nē-ọ-krim′i-nal-ist), *n.* [Gr. *νέος*, new, + E. *criminalist.*] An adherent of the school of criminologists who consider criminality in an individual to be due to physiological conditions which govern his activities.

neo-Darwinian (nē″ọ-där-win′i-an), *a.* and *n.* [Gr. *νέος*, new, + E. *Darwinian.*] **I.** *a.* Darwinian (in reference to Darwin's view of the origin of species) with modifications by later writers. See ★*neo-Darwinism*.

How then does it fare with the case of inherited characters which are not also adaptive? Merely that this case is met by another and sequent assumption, which constitutes an integral part of the *Neo-Darwinian* creed—namely, that in nature there can be no such characters.
G. J. Romanes, Darwin, and after Darwin, II. 55.

II. *n.* One who accepts or advocates neo-Darwinism.

As soon as we begin to cast about for cases which will satisfy the *Neo-Darwinians*, we find that the structure of their theory is such as to preclude, in almost every conceivable instance, the possibility of meeting their demand. *G. J. Romanes*, Darwin, and after Darwin, II. 55.

neo-Darwinism (nē-ọ-där′win-izm), *n.* [Gr. *νέος*, new, + E. *Darwinism.*] New or modified Darwinism; specifically, the doctrine or opinion that the survival of the fittest, in the struggle for existence, is an all-sufficient account of the origin of species, as contrasted with Darwin's opinion that natural selection is an important, but not the exclusive means of modification. Since Weismann is the latest of its prominent advocates it is commonly regarded as identical with Weismannism, although many neo-Darwinians reject the system of metaphysical subtilties that makes up Weismann's doctrine of germ-plasm. See ★*Weismannism*.

Admitting the possible truth of either of the current doctrines of heredity, called *Neo-Darwinism* and Neo-Lamarckism respectively, yet there are certain defects inherent in both of them.
J. M. Baldwin, Development and Evolution, p. 135.

neo-Darwinist (nē-ọ-där′win-ist), *n.* [*neo-Darwin*(*ism*) + *-ist.*] One who accepts or advocates neo-Darwinism; one who advocates some modification of Darwin's view of the origin of species through the survival of the fittest in the struggle for existence, or some substitute for this view; specifically, one who believes that organisms do not, or can not, transmit to their descendants anything which has not itself come to them through the germ-cells from which they were themselves generated.

I am not a *Neo-Darwinist*, and so have no desire to make "natural selection" synonymous with "natural causation" throughout the whole domain of life and mind. *G. J. Romanes*, Darwin, and after Darwin, II. 28.

neodidymium (nē″ọ-dī-dim′i-um), *n.* [*neo-* + *didymium.*] Same as ★*neodymium*.

Neoditrema (nē″ọ-dī-trē′mạ̈), *n.* [Gr. *νέος*, new, + NL. *Ditrema*. See *Ditrema*.] A genus of fishes of the family *Embiotocidæ*, found in Japanese waters.

neodymate (nẹ-od′i-māt), *n.* [*neodym*(*ium*) + *-ate*¹.] In *chem.*, a substance which may be viewed as consisting of neodymium oxid united to the oxid of a monobasic or electropositive metal, or as a salt in which neodymium forms part of the acid radical: as, barium *neodymate* ($BaO.Nd_2O_3$ or $Ba(NdO_2)_2$).

neodyme (nē′ọ-dīm), *n.* Same as ★*neodymium*.

neodymia (nē-ọ-dim′i-ạ̈), *n.* Neodymium oxid (Nd_2O_3), one of the so-called rare earths.

neodymium (nē-ọ-dim′i-um), *n.* [*neo-* + (*di*)*dymium.*] An element which occurs in cerite, albanite, and other comparatively rare minerals. In 1803 Berzelius and Hisinger recognized as containing a new metallic oxid an earth-like substance extracted from cerite and gave to the metal the name *cerium*. In 1839 Mosander showed that this oxid contained a second metal, which he named *lanthanum*, and in 1841 the same chemist proved that there was also present still another metal, which he called *didymium*. In 1885 Auer von Welsbach succeeded, by a most laborious series of fractional crystallizations of certain salts of the didymium of Mosander, in resolving these into salts of two distinct metals, for which he proposed the names *neodymium* and *praseodymium*, respectively. Neodymium has the higher atomic weight of the two: it forms a single oxid of faint bluish-gray tint and its salts are characterized by a bright rose-red color inclining to violet red, affording special absorption and emission spectra. Neodymium is present in larger proportion than praseodymium in the original didymium compounds of Mosander.

neoformation (nē″ọ-fôr-mā′shọn), *n.* [Gr. *νέος*, new, + E. *formation.*] Same as *neoplasm*.

Neogæic (nē-ọ-jē′ik), *a.* [*Neogæa* + *-ic.*] Of or pertaining to *Neogæa*.

In laying down the great zoological subdivisions of the Earth's surface, he [R. Lyddeker] agrees in the main with Mr. Sclater, adopting, like him, the three broad divisions proposed by Dr. Blanford in 1890, and using likewise for them the terms Notogæic, *Neogæic*, and Arctogæic. These he considers as "realms," the minor subdivisions being designated "regions." In the definition of these latter, he rather follows Dr. Heilprin than Mr. Sclater, uniting the Palæarctic and Nearctic regions under the name "Holarctic," and raising the Sonoran transition tract of the former to an equal rank with the other subdivisions of Arctogæa. Madagascar and neighbouring islands form another separate region, while Notogæa constitutes four separate regions, instead of the two of Dr. Heilprin. *Geog. Jour.* (R. G. S.), X. 99.

Neogæic realm South America, Central America, and the hot coastal plains of Mexico, considered as together forming a prime zoögeographical region: correlative with ★*Arctogæic* and ★*Notogæic realms*. The terms and divisions were made by Dr. W. T. Blanford in 1890.

neogamous (nẹ-og′a̤-mus), *a.* [*neogam*(*y*) + *-ous.*] Pertaining to or characterized by neogamy. *Jour. Roy. Micros. Soc.*, Oct., 1904, p. 536.

neogamy (nẹ-og′a̤-mi), *n.* [Gr. *νέος*, new, + *γάμος*, marriage.] In *zoöl.*, the very precocious conjugation of two gregarines, in some instances, as in *Cystobia irregularis*, where it takes place at the beginning of the life-cycle, when the two parasites have hardly advanced beyond the sporozoite stage.

In C. Minchinii occurs one of the most advanced instances of *neogamy* yet known, the fusion taking place almost at the commencement of the life-cycle when the parasites are scarcely more than sporozoites, and comprising an absolute union of the two cytoplasms, the nuclei alone remaining distinct.
Jour. Roy. Micros. Soc., Oct., 1904, p. 535.

neogen (nē′ọ-jen), *n.* [Gr. *νέος*, new, + *-γενης*, -produced. See *-gen*.] An alloy resembling silver, said to have the following composition: copper, 58 per cent.; zinc, 27; nickel, 12; tin, 2; aluminium, 0.5; and bismuth, 0.5.

neogenesis (nē-ọ-jen′e-sis), *n.* [NL., < Gr. *νέος*, new, + *γένεσις*, generation.] A new genesis or begetting; new production. See the extract.

The term *neogenesis* was first used to explain this sudden origin of new forms from old-established species, if I am not mistaken, by my friend and colleague Professor Paolo Mantegazza, many years ago; it has been since used, more or less in the same sense, by the late Professor Cope and by others.
W. E. D. Scott, in Science, Sept. 1, 1905, p. 281.

neogenetic (nē″ọ-jẹ-net′ik), *a.* [Gr. *νέος*, new, + *-genetic.*] Pertaining to or of the nature of neogenesis; newly generated or originated; in *biol.*, making its appearance during individual development or ontogeny.

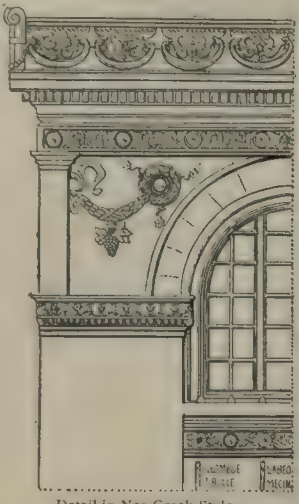
neogenic (nē-ọ-jen′ik), *a.* Same as ★*neogenetic*.

Neognathæ (nẹ-og′na̤-thē), *n. pl.* [Gr. *νέος*, new, + *γνάθος*, jaw.] One of two main divisions of existing birds, comprising all save the ostriches and their allies, and the tinamous. Contrasted with ★*Palæognathæ*. *Pycraft*, 1900.

neographic (nē-ọ-graf′ik), *a.* [See *neography*.] Of or pertaining to neography, or a new method of writing or spelling.

neo-Grecianism (nē-ọ-grē′sha̤n-izm), *n.* A tendency to introduce Greek types and motives in art or literature. See ★*neo-Greek*.

neo-Greek (nē-ọ-grēk′), *a.* and *n.* [Gr. *νέος*, new, + E. *Greek*.] **I.** *a.* Noting a revival of antique Greek style, types, or motives, in art or literature; specifically, noting a style in French architecture introduced in the reign of Louis Philippe (1830–48), by the architects Duc, Duban, Labrouste, and others, characterized by a free and modern rendering of essentially Greek motives. The leading examples are the tomb of Napoleon at the Invalides by Visconti, the Palais de Justice by Duc, the Bibliothèque Ste. Geneviève by Labrouste, and the École des Beaux Arts by Duban. The Opera by Garnier conforms generally to the neo-Greek style.



Detail in Neo-Greek Style.
Bibliothèque Ste. Geneviève, Paris.

II. *n.* The language of modern Greece in its various dialects.

neo-Hebraic (nē-ō-hẹ-brā′ik), *a.* and *n.* [Gr. *νέος*, new, + E. *Hebraic.*] I. *a.* Of or pertaining to the modern Hebrews.

II. *n.* The post-biblical Hebrew language. Neo-Hebraic may be divided into several periods, the most important of which are: (*a*) the period of Hebrew Aramaic, the language in which the Talmud, Middrashim, etc., were written, which begins with the third century of our era; (*b*) the period of medieval Hebrew, the style in which the celebrated commentators, philosophers, and poets of the Sephardi school wrote, which may be subdivided into various categories. Writers of pure biblical Hebrew were few and the Aramaic element seems to have been in supremacy until the middle of the eighteenth century when, with the beginning of the 'Renaissance,' renowned writers of biblical Hebrew arose everywhere. It is now making rapid strides among the Jews even in the United States. Owing, however, to the abnormal influx of Russian immigrants it is being outstripped by Yiddish.

neo-Hellenic (nē″ọ-he-len′ik), *a.* and *n.* [Gr. *νέος*, new, + E. *Hellenic.*] I. *a.* 1. Of or pertaining to modern Greece or Hellas.—2. Relating to neo-Hellenism.—3. Relating to the vernacular language of modern Greece, the Romaic.

II. *n.* Same as *Romaic.* *I. Taylor.*

neo-Hindu (nē-ō-hin′dö), *a.* [Gr. *νέος*, new, + E. *Hindu.*] Modern Hindu.

> The Aryans of India form the greatest portion of the population to the north of the Nerbada and Mahanadi; they speak different dialects of the *neo-Hindu* language (ancient Bracha language, branch of the Prakrit or corrupt vulgar Sanscrit). *Deniker*, Races of Man, p. 412.

Neohipparion (nē″ọ-hi-pā′ri-on), *n.* [Gr. *νέος*, new, + NL. *Hipparion.*] A genus of three-toed horses occurring in the Miocene deposits of North America, and distinguished from the European Pliocene genus *Hipparion* by the structure of the teeth, the more slender construction of the long bones of the limbs and feet, and the relatively greater reduction of the lateral digits.

neokosmium (nē-ọ-koz′mi-um), *n.* [NL., < Gr. *νέος*, new, + *κόσμος*, order.] A supposed substance announced in 1896 as a new chemical element. There is no reason for believing in its existence.

neo-Lamarckian (nē″ō-la-mär′ki-a̤n), *a.* and *n.* [Gr. *νέος*, new, + E. *Lamarckian.*] I. *a.* Of or pertaining to neo-Lamarckism.

> The weakness of the *Neo-Lamarckian* view lies in its interpretation of heredity. *Encyc. Brit.*, XXVIII. 344.

II. *n.* One who advocates or accepts a modification of the opinions of Lamarck on the origin of species; especially, one who, while accepting natural selection, believes that it is aided by the inheritance of acquired characters. *G. J. Romanes*, Darwin, and after Darwin, II. 63.

neo-Lamarckianism (nē″ọ-la-mär′ki-a̤n-izm), *n.* Same as ⋆*neo-Lamarckism.*

neo-Lamarckism (nē″ọ-la-mär′kizm), *n.* [Gr. *νέος*, new, + E. *Lamarckism.*] A modification of the opinions of the French naturalist, the Chevalier de Lamarck (1744–1829), on the origin of species. Lamarck, who was one of the earliest advocates of the mutability of species, regarded the structural changes that are produced in animals by their activities under the stimulus of new habits and new needs and new desires, and those that are produced in plants by the direct modifying influence of external conditions, as the means of transformation and adaptation. The word *neo-Lamarckism* was introduced into biological literature by A. S. Packard, an American entomologist and biologist (1839–1905), who held that species cannot arise through the survival of the fittest in the struggle for existence without the aid of the modifying influence of external conditions. Packard attributed the blindness of cave-animals to the inheritance of the effects of disuse; and as it is clear that use and disuse and the external conditions of life cannot give rise to new species unless their effects are inherited, the defense of the belief in the inheritance of 'acquired characters' occupies so prominent a place in the literature of neo-Lamarckism that this belief is commonly regarded as the meaning of the term, although one who admits that 'acquired characters' may be inherited without admitting that this inheritance is a means for modifying species is not a neo-Lamarckian.

> Inasmuch as Lamarck attempted to frame a theory of evolution in which the principle of natural selection had no part, the interpretation placed on their work by many bionomical investigators recalls the theories of Lamarck, and the name *Neo-Lamarckism* has been used of such a school of biologists, particularly active in America. *Encyc. Brit.*, XXVIII. 344.

neo-Latin, *a.* II. *n.* One who speaks a neo-Latin or Romance language.

Neolepidoptera (nē″ọ-lep-i-dop′tẹ-rä̤), *n. pl.* [Gr. *νέος*, new, + NL. *Lepidoptera.*] A suborder of *Lepidoptera*, erected by Packard to include all the *Lepidoptera* except the *Micropterygidæ* (*Paleolepidoptera*) and the *Eriocephalidæ* (*Protolepidoptera*).

Neolimulus (nē-ọ-lim′ụ-lus), *n.* [Gr. *νέος*, new, + NL. *Limulus.*] A genus of extinct merostomatous crustaceans allied to the *Xiphosura* or horseshoe-crabs. They are found in the Silurian beds of Scotland.

Neoliparis (nē-ọ-lip′ạ-ris), *n.* [NL., < Gr. *νέος*, new, + NL. *Liparis.*] A genus of fishes of the family *Liparididæ*, found in northern seas. *Jordan and Evermann*, Fishes of North and Middle Amer., p. 2106.

neolite, *n.* 2. In *petrog.*, a term used by King (1878) to designate a group of volcanic rocks including both rhyolite and basalt.

neolith (nē′ọ-lith), *n.* [*neolith*(*ic*).] A stone implement, or weapon, of the Neolithic period; also a person living in that period. See *Neolithic.*

> Although the wolf was abundant in Europe during the old stone age, the dog was unknown till it appeared on the scene with the *Neoliths*, a race that came from the home of the jackal. *E. S. Thompson*, in Smithsonian Rep., 1901, p. 715.

> Large numbers of barbed and grooved bone spear and arrow points, as well as stone adzes, axes, fish and skinning knifes, chisels, scrapers, &c., are found. Some of these are of the rough 'palæolithic' type, others are finely wrought and polished '*neoliths.*' The two are commonly found side by side. *Rep. Brit. Ass'n. Advancement* of *Sci.*, 1902, p. 442.

neologianism (nē-ọ-lō′ji-a̤n-izm), *n.* [*neologian* + *-ism.*] Same as *neology.*

neologization (nẹ-ol″ọ-ji-zā′sho̤n), *n.* [*neologize* + *-ation.*] The act of neologizing, in any sense of that word. [Rare.]

neologous (nẹ-ol′ọ-gus), *a.* Same as *neological.*

Neomænis (nē-ọ-mē′nis), *n.* [NL., < Gr. *νέος*, new, + NL. *Mænis.*] An obsolete genus of fishes, now known as *Lutianus*, belonging to the family *Lutianidæ*, found on both coasts of America. See ⋆*raiado*, with cut.

neomon (nē′ọ-mon), *n.* [Gr. *νέος*, new, + *μον*(*άς*), unit.] The square root of minus one; $\sqrt{-1}$; *i.*

neomonic (nē-ō-mon′ik), *a.* and *n.* [*neomon* + *-ic.*] I. *a.* Pertaining to, or based upon the neomon.—**Neomonic number.** See ⋆*number.*

II. *n.* A neomonic number, for instance $\sqrt{-2}$.

> The notion of number has been made more clear and precise; at the same time it has received diverse generalizations. The most precious for the analyst is that which results from the introduction of *neomonics*, which modern mathematicians could not now dispense with. *Science*, Sept. 16, 1904, p. 354.

neomonoscope (nē-ọ-mon′ọ-skōp), *n.* [Gr. *νέος*, new, + *μόνος*, single, + *σκοπεῖν*, view.] In *photog.*, an instrument for magnifying photographs, invented about 1862. *Woodbury*, Encyc. Dict. of Photog., p. 299.

neomorph (nē′ọ-môrf), *n.* [Gr. *νέος*, new, + *μορφή*, form.] In *biol.*, a part or organ, or a modification of a part or organ, which has recently been generated or acquired.

neomorphic (nē-ọ-môr′fik), *a.* [*neomorph* + *-ic.*] Of, pertaining to, or of the nature of, neomorphs.

> Madagascar has yielded a Physa (P. lamellata) with a *neomorphic* gill, a character shared by species of Planorbis (P. corneus and P. marginatus). *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 631.

neomorphosis (nē′ọ-môr′fọ-sis), *n.* [NL., < Gr. *νέος*, new, + *μόρφωσις*, formation.] In *biol.*, the replacement of a lost part by a part that normally belongs in a different region of the body or by one that is unlike any normal part of the body.

> As an illustration of this process [*neomorphosis*] may be cited the development of an antenna, when the eye of a crab or of a prawn is cut off near the base. *T. H. Morgan*, Regeneration, p. 24.

Neomylodon (nē-ō-mī′lọ-don), *n.* [NL., < Gr. *νέος*, new, + NL. *Mylodon.*] A genus of gigantic extinct ground-sloths whose remains have been found in the caverns of Patagonia in a condition and association which indicate that the animal is but recently extinct and has been a contemporary of the existing fauna of the region, including man. The remains found have been not only bones but pieces of epidermis bearing a hairy covering. Hauthal has observed, in association with these, bones of the horse, a human scapula, and bone tools, together with masses of dried excrement and cut hay, and believes that this great sloth was domesticated by an early race of men in that region.

neon (nē′on), *n.* [NL., 'the new (element),' < Gr. *νέον*, neuter of *νέος*, new: see *new.*] An elementary substance occurring in gaseous form in the earth's atmosphere: atomic weight, 20. It was first isolated in 1898, and was obtained by the fractional distillation of liquid air. It is a colorless transparent gas which has been liquefied. Its boiling-point under normal pressure is − 239° C. (− 398.2° F.). In the gaseous state its density is 9.97 (hydrogen = 1). In a tube suitably exhausted, electric discharge gives a characteristic spectrum, most of the lines of which are in the area of the visible red, with a specially noteworthy line at 5016 in the green. Neon is, like argon and the other recently discovered atmospheric gases, chemically inactive. It occurs in the air in larger proportion than any of the other gases of this class except argon—about 1 to 2 parts by volume in 100,000 of air.—**Neon tube**, a vacuum-tube containing neon and showing, when traversed by an electric discharge, the spectrum of that gas.

> The wave-length of the oscillator's vibration can, therefore, be measured by isolating a complete wave on the helix by means of a sliding earthed saddle using a *neon tube* as indicator. *Elect. World and Engin.*, Oct. 1, 1904, p. 583.

neonatal (nē-ọ-nā′ta̤l), *a.* [*neonatus* + *-al*[1].] Relating to the new-born; of recent birth.

neonatus (nē-ọ-nā′tus), *n.*; pl. *neonati* (-tī). [NL., < Gr. *νέος*, new, + L. *natus*, born.] A new-born child.

neontological (nē″on-tọ-loj′i-ka̤l), *a.* [*neontolog*(*y*) + *-ical.*] Of or pertaining to neontology, or the zoölogy of existing animals: opposed to *paleontological.*

neopallial (nē-ọ-pal′i-a̤l), *a.* [*neopalli*(*um*) + *-al*[1].] Relating to the neopallium, or area between the pyriform lobe and hippocampus. *Trans. Linnean Soc. London*, Zool., Feb., 1903, p. 370.

neopallium (nē-ọ-pal′i-um), *n.* [NL., < Gr. *νέος*, new, + NL. *pallium.*] That area of the cortex of the brain which lies between the hippocampus and the pyriform lobe.

> He [Dr. Elliot Smith] applies to the pyriform lobe and the hippocampus the terms "basal" and "marginal" pallium, in order sufficiently to emphasise, for the first time, the fact that the intervening area of "*neopallium*," the most variable, is both morphologically and physiologically the most important pallial constituent. *Nature*, Feb. 12, 1903, p. 340.

neo-Persian (nē-ọ-pėr′sha̤n), *a.* [Gr. *νέος*, new, + E. *Persian.*] Persian of modern times. *Keane*, Ethnology, p. 412.

neophilism (nẹ-of′i-lizm), *n.* [Gr. *νέος*, new, + *φίλος*, loving, + *-ism.*] A love of novelty; a preference, sometimes amounting to an insane desire, for what is new.

neophrastic (nē-ọ-fras′tik), *a.* [Gr. *νέος*, new, + *φράζειν*, declare, express.] Of or pertaining to the coinage or use of new words or phrases. [Rare.]

> I am "awfully" afraid (as my grandchildren will say—no d—g will stay this *neophrastic* flood) that I have lost my Emerson letters. *Lowell*, Letters, II. 327.

neopithecine (nē″ọ-pi-thē′sin), *a.* [*Neopithecini.*] Relating to, or having the characters of, monkeys above the marmosets.

> It is reasonably clear, therefore, that these three species are primitive members of the *Neopithecine* division of the Anthropoidea. *Amer. Jour. Sci.*, Jan., 1904, p. 23.

Neopithecini (nē-ọ-pith-ẹ-sī′nī), *n. pl.* [NL., < Gr. *νέος*, new, + *πίθηκος*, ape, + *-ini.*] A division of the order *Primates* containing those above the marmosets: correlative with *Arc-*

topithecini, the living marmosets, and *Palæopithecini*, *Tarsius*, and its allies, considered as representing primitive monkeys.

neoplasia (nē-ǫ-plā´ziạ̈), *n.* [NL., ‹ Gr. *νέος*, new, + *πλάσις*, formation.] The formation of neoplasms or true tumors.

neoplastic, *a.* **2.** Relating to or consisting in neoplasty.

neoplasty (nē´ǭ-plas-ti), *n.* [Gr. *νέος*, new, + *πλαστός*, formed, + *-y*^{3}.] Surgical measures adapted to the formation of new parts.

neopsychic (nē-ǫ-sī´kik), *a.* [Gr. *νέος*, new, + E. *psychic.*] In *psychol.*, of recent mental development: opposed to ⋆*paleopsychic.* [Rare.]

> The mind . . . is repeating most rapidly the later *neopsychic* stages of phyletic experiences, and laying on this foundation the corner-stones of a new and unique adult personality. *G. S. Hall*, Adolescence, II. 70.

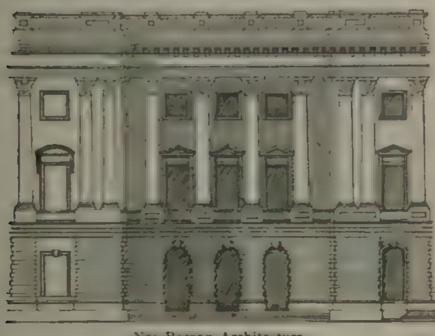
neo-Punic (nē-ǭ-pū´nik), *a.* [Gr. *νέος*, new, + E. *Punic.*] Punic of more recent date (than old Punic): applied to a Punic dialect of North Africa, represented in the neo-Punic inscriptions (100 B.C. to A.D. 400).

Neorhynchidæ (nē-ǭ-ring´ki-dē), *n. pl.* [NL., ‹ *Neorhynchus* + *-idæ.*] A family of *Nemathelminthes* in which sexual maturity is reached in the larval stage, the proboscis-sheath has a single wall, the circular muscle-layer is very simply developed, and the longitudinal muscle-cells are present only in certain places. It includes the genus *Neorhynchus.*

Neorhynchus (nē-ō-ring´kus), *n.* [NL., ‹ Gr. *νέος*, new, + *ῥύγχος*, snout.] The typical and only genus of the family *Neorhynchidæ. N. clavæceps* is parasitic in the carp and *N. agilis* occurs in *Mugil auratus* and *M. cephalus. Hamann*, 1892.

Neornithes (nē-ôr´ni-thēz), *n. pl.* [NL., ‹ Gr. *νέος*, new, + *ὄρνις*, pl. *ὄρνιθες*, bird.] One of two main divisions of birds, comprising all save the extinct *Archæopteryx* and its immediate, but as yet unknown, relatives: contrasted with ⋆*Archæornithes. Gadow*, about 1898.

neo-Roman (nē-ǫ-rō´man), *a.* [Gr. *νέος*, new, + E. *Roman.*] In *mod. arch.*, characterized by a strongly marked classical design with a free use of columns in porticos and the like, and abundance of detail taken from ancient Roman buildings.



Neo-Roman Architecture.
(From the Capitol at Washington.)

neoromantic (nē″ǭ-rō-man´tik), *a.* [Gr. *νέος*, new, + E. *romantic.*] Belonging to or characteristic of the later romantic school.

> In the modern [Hungarian] drama three great and clearly differentiated groups may be distinguished. First the *neo-romantic* group, whose chief representatives are Eugen Rákosi, Louis Dóczi (born 1845). *Encyc. Brit.*, XXIX. 361.

neo-Sanskritic (nē-ǭ-san-skrit´ik), *a.* [Gr. *νέος*, new, + E. *Sanskritic.*] Sanskritic of a more recent date. *Keane*, Ethnology, p. 210.

Neosho formation. See ⋆*formation.*

Neosporidia (nē″ǭ-spǭ-rid´i-ạ̈), *n. pl.* [NL., ‹ Gr. *νέος*, new, + NL. *sporidium*, pl. *sporidia.* See *sporidium.*] A group of *Sporozoa* in which growth and reproduction go on at the same time. It includes the *Myxosporidia* and *Sarcosporidia.* Contrasted with ⋆*Telosporidia. Schaudinn.*

neossidin (nē-os´i-din), *n.* [*neoss*(*ine*) + *-id* + *-in*^{2}.] The hyalin which corresponds to neossine.

neossoptile (nē-os´op-til), *n.* [Gr. *νεοσσός*, a chick, + *πτίλον*, a down feather.] One of the feathers which form the covering of a newly-hatched bird, resembling but distinct from the down of an adult bird. Neossoptiles are distinguished by having a very short calamus; a very short rhachis, or none at all; practical absence of cilia; long slender rami; and no aftershaft, save in the emu. The term is correlative with ⋆*mesoptile* and ⋆*teleoptile.*

> The whole process [evolution of horns and antlers] recalls the relation of the *neossoptile* to the teleoptile or permanent feather, and still more the shedding of our own fœtal finger-nails. *Proc. Zool. Soc. London*, 1902, p. 213.

neostoma (nẹ-os´tǭ-mạ̈), *n.*; pl. *neostomata* (-tō´ma-tạ̈). [NL., ‹ Gr. *νέος*, new, + *στόμα*, mouth.] In *embryol.*, the existing mouth-opening of vertebrates: so named because it is supposed to have been formed more recently than the palæostoma. (See ⋆*palæostoma*, 2.) It lies behind the palæostoma and is supposed to have arisen from a pair of branchial clefts.

neostyle (nē´ǭ-stīl), *n.* [Gr. *νέος*, new, + L. *stilus*, *stylus*, style.] A duplicating-machine constructed on the principle of the press. In the rotary neostyle a stencil is laid on the outer surface of a perforated steel drum, rotated by hand or by a motor, and ink is forced through the stencil at the proper moment upon the paper to be printed, which is then automatically discharged.

neo-Sumerian (nē-ǭ-sụ̄-mē´ri-ạn), *a.* [Gr. *νέος*, new, + E. *Sumerian.*] Sumerian of a more recent date (than the earliest Sumerian).

neo-Syriac (nē-ǭ-sir´i-ak), *a.* and *n.* [Gr. *νέος*, new, + E. *Syriac.*] Syriac of modern times: applied to certain dialects spoken in Mesopotamia, Kurdistan, and Lake Urumiah.

neotenia (nē-ǭ-tē´ni-ạ̈), *n.* Same as ⋆*neoteny.*

> Epistasis is a modified form of the process emphasized by Boas under the name of *neotenia*, a reversion of a phylum to a modified embryonic condition. *Science*, March, 1903, p. 381.

neotenic (nē-ǭ-ten´ik), *a.* [*neoten*(*y*) + *-ic.*] Pertaining to, or characterized by, neoteny.

> Amphiuma is a sort of *neotenic* Cæcilian, a larval form become sexually mature while retaining the branchial respiration. *Encyc. Brit.*, XXV. 383.

neoteny (nẹ-ot´e-ni), *n.* [Gr. *νέος*, new, young, + *τείνειν*, keep.] In *biol.*: (*a*) The reversion of a phylum to a modified embryonic condition. (*b*) The retention by an organism of larval or juvenile characters beyond the time characteristic of other members of the group to which it belongs. This may be partial, as in the case of some toads and frogs, whose young pass the winter in the tadpole condition, or total, as in some salamanders that retain their external gills when adult. Also ⋆*neotenia.*

> These cases of *neoteny* are therefore instances of more or less complete retardation, or of the retention, of partially larval conditions. *H. Gadow*, Amphibia and Reptiles, p. 65.

neoterically (nē-ǭ-ter´i-kạl-i), *adv.* In a neoteric or modern way or fashion.

neotocite (nē-ot´ǭ-sīt), *n.* [Gr. *νεότοκος*, newly born, + *-ite*^{2}.] A hydrated silicate of manganese and iron, derived from the alteration of some other species, as rhodonite.

Neotremata (nē-ǭ-trem´ạ-tạ̈), *n. pl.* [NL., ‹ Gr. *νέος*, new, + *τρῆμα*(*τ-*), hole.] In Beecher's classification of the brachiopods, an order including forms without articular hinge, with the pedicel aperture restricted to the ventral valve and modified by a listrium.

neotrematous (nē-ǭ-trem´ạ-tus), *a.* [*Neotremat*(*a*) + *-ous.*] Of or pertaining to the *Neotremata.*

Neotropic (nē-ǭ-trop´ik), *a.* Same as *Neotropical.*

neottious (nẹ-ot´i-us), *a.* [*Neotti*(*a*) + *-ous.*] Belonging to the genus *Neottia*; characteristic of orchids of the genus *Neottia.*

Neottopteris (nē-ǭ-top´tẹ-ris), *n.* [NL. (John Smith, 1841), ‹ Gr. *νεοττιά*, a nest, + *πτέρις*, a fern, in allusion to the nest-like growth of the fronds (see *bird's-nest* ⋆*fern*).] A genus of large epiphytic ferns, related to *Asplenium*, with simple, entire, broadly linear or lanceolate fronds from 2 to 6 feet long borne in crowns, with forked parallel veins running from the usually raised midrib nearly to the margin where their apices are connected by a continuous transverse vein. There are about 6 species, natives of Asia, Australia, and the islands of the Pacific. Several of these, including *N. Nidus*, are commonly cultivated. See *bird's-nest* ⋆*fern.*

neotype (nē´ǭ-tīp), *n.* [Gr. *νέος*, new, + *τύπος*, type.] A specimen identified with some described and named species, selected as a standard of reference where the original type is lost or damaged beyond recognition, or is not available. *Schuchert and Buckman*, 1905.

neovitalism (nē-ǭ-vī´tạl-izm), *n.* [*neo-* + *vital* + *-ism.*] **1.** In *physiol.*: (*a*) The doctrine or opinion that the distinctive activities of living beings cannot completely be accounted for as the resultants of the physical and chemical constitution of their bodies and of their movements, according to the principles of mechanics.

> It is true that at times in these latter days, sporadic upshoots of a *neo-vitalism* raise their tiny heads, but these are to be ascribed to the innate aversion of the human mind to confess its ignorance of what it really does not know, and they do not receive serious attention from the more hopeful seekers after truth. *Sci. Amer. Sup.*, March 14, 1903, p. 22741.

(*b*) The doctrine or opinion that the distinctive activities of living beings are different in kind from those of inorganic bodies, and that they are due to a different kind of energy from any that is made known by the study of the inorganic universe: because knowledge of the physics and chemistry of their bodies, while it may make it possible to foresee or predict their actions, does not reveal what brings them about and makes them to be what they are. Since the aim of the concrete sciences is to predict the consequences of given antecedents and not to discover who or what makes them to be, there is no difference between physics and physiology in this respect.

> Prof. Verworn regards with disfavour the intrusion of such idealistic conceptions as have been made familiar by the exponents of "*neo-vitalism*," and accordingly he limits the subject-matter of general physiology. *Nature*, Jan. 1, 1903, p. 212.

2. In *biol.*, the doctrine or opinion that the generation of new beings from eggs and parts of eggs, and the regeneration or replacement of parts that have been lost, cannot be explained or understood as the mechanical resultants of the conditions under which they take place, because they bring about or restore that due subordination and interadjustment of parts which is necessary for establishing or restoring the coördination and unity of the whole: although inability to account for these processes by means of the history of the individual does not show that they may not be the intelligible consequences, direct or indirect, of ancestral history.

neovitalist (nē-ǭ-vī´tạl-ist), *n.* [*neovital*(*ism*) + *-ist.*] An advocate of or believer in neovitalism, in any sense of that word.

neovitalistic (nē″ǭ-vī-tạ-lis´tik), *a.* [*neovitalist* + *-ic.*] Of or pertaining to, or of the nature of, neovitalism.

> But all the so-called *neo-vitalistic* efforts . . . have nothing to do with the older vitalism. *Encyc. Brit.*, XXXI. 712.

Neowashingtonia (nē″ǭ-wosh-ing-tō´ni-ạ̈), *n.* [NL. (Sudworth, 1897), ‹ Gr. *νέος*, new, + NL. *Washingtonia*, an untenable name for the genus.] A genus of palms. See *Washingtonia*, 2.

neo-ytterbium (nē″ǭ-i-tėr´bi-um), *n.* [Gr. *νέος*, new, + E. *ytterbium.*] See the extract, and compare ⋆*lutecium.*

> A new element, lutecium, resulting from the splitting of Marignac's ytterbium: G. Urbain. The separation was effected by fractional crystallization of the nitrates from nitric acid of density 1.3. The characteristic lines in the arc spectrum of the new element are given. For the purified ytterbium resulting from the separation the name of *neo-ytterbium* is proposed. *Nature*, Nov. 14, 1907, p. 48.

neoza (nẹ-ō´zạ̈), *n.* [Bhutanese.] A tree, *Rinus Gerardiana*, of the Himalayas. Its seeds are edible.

neozoölogist (nē″ǭ-zǭ-ol´ǭ-jist), *n.* [Gr. *νέος*, new, + E. *zoölogist.*] One who studies recent animals: contrasted with *paleontologist*, one who studies fossil animals. *Encyc. Dict.* [Rare.]

neozoölogy (nē″ǭ-zǭ-ol´ǭ-ji), *n.* [Gr. *νέος*, new, + E. *zoölogy.*] That branch of science which deals with existing or recent animals: contrasted with *paleozoölogy*, which deals with fossil animals, and correlative with ⋆*neobotany. Nicholson* and *Lydekker.* [Rare.]

nepaline (ne-pâl´in), *n.* [*Nepal* (*Nepaul*) + *-ine*^{2}.] A poisonous alkaloid found in *Rumex nepalensis* Wall. It crystallizes in orange-colored needles which melt at 136° C.

nepenthaceous (nē-pen-thā´shius), *a.* Belonging to, or having the characters of, the *Nepenthaceæ*, a family of insectivorous plants.

nepenthic (nẹ-pen´thik), *a.* [*Nepenth*(*es*) + *-ic.*] Pertaining to or derived from the *Nepenthes*, a genus of insectivorous plants.

nephelescope (nef′e-lẹ̄-skōp), *n.* [Gr. *νεφέλη*, a cloud, + *σκοπεῖν*, view.] 1. An instrument for showing the changes in the temperature of the air induced by rarefaction.—2. An instrument for viewing the upper strata of clouds.

nepheliad (ne-fē′li-ad), *n.* [Gr. *νεφέλη*, a cloud, + *-ad*^{1}. Cf. *Naiad.*] A cloud-nymph *N. E. D.* [Rare.]

> Ho! We are the *Nepheliads*, we,
> Who bring the clouds from the great sea,
> And have within our happy care
> All the love 'twixt earth and air.
>
> *L. Hunt*, Foliage, The Nymphs, p. xxxi.

nepheligenous (nef-e-lij′e-nus), *a.* [Gr. *νεφέλη*, cloud, + *-γενης*, -producing, + *-ous.*] Producing clouds (of tobacco-smoke). [Rare.]

> Let us sit awhile with nubiferous, or, if we may coin a word, *nepheligenous* accompaniment such as shall gently narcotize the over-wearied brain.
>
> *O. W. Holmes*, in The Atlantic, Dec., 1862, p. 759.

nephelodometer (nef″e-lọ̄-dom′e-tėr), *n.* [Gr. *νεφέλη*, a cloud, + *ὁδός*, way, + *μέτρον*, measure.] An instrument for determining the distances of clouds.

nephelological (nef″ẹ-lọ̄-loj′i-kạl), *a.* Of or pertaining to nephelology.

nephelology (nef-e-lol′ọ̄-ji), *n.* [Gr. *νεφέλη*, a cloud, + *-ology.*] The study or science of clouds.

nephelometer, *n.* 2. In *chem.*, an instrument for estimating the quantity of a solid substance suspended, in very small proportion and in a very finely divided state, in a liquid, as in the case of one or two milligrams of silver chlorid in a liter of water. It depends on a comparison of the degrees of illumination required to produce the same apparent opalescence in two tubes, one of which contains a known quantity of the finely divided solid under examination, the other containing the unknown quantity of the same which is to be estimated, both similarly suspended in water or some other suitable liquid.

nephelometry (nef-e-lom′e-tri), *n.* [Gr. *νεφέλη*, cloud, + *-μετρια* < *μέτρον*, measure.] 1. The art of measuring, observing, or studying the general cloudiness of the sky.—2. The art of measuring the size, growth, and other changes of a particular cloud.—3. The application of the photogrammeter to cloud-work.

nephelopsychosis (nef″e-lọ̄-sī-kō′sis), *n.* [Gr. *νεφέλη*, cloud, + E. *psychosis.*] In *psychol.*, mental processes and attitudes set up by the sight of clouds: supposed by some psychologists to be specific and atavistic in character.

> *Nephelopsychoses* . . . are distinctly more prominent and numerous among girls than boys, and as the female organism is more conservative this of itself suggests rapport with phylogeny. *G. S. Hall*, Adolescence, II. 181.

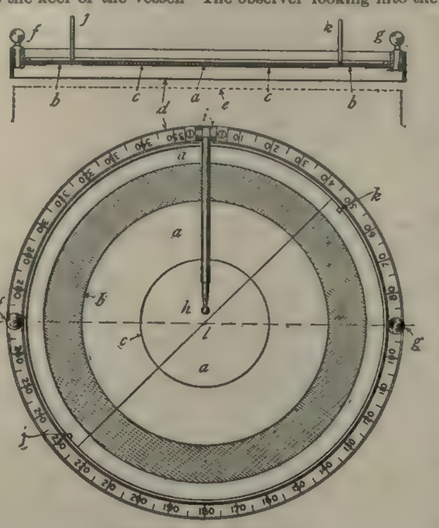
nephite (nef′īt), *n.* [*Nephi* (see def.) + *-ite*^{2}.] According to the Book of Mormon, one of the descendants of Nephi, who, with his brothers and his father Lehi, of the tribe of Joseph, fled from Jerusalem to America. The narrative says that after the ascension Christ appeared to the Nephites, and converted the whole nation; that they were destroyed by the Lamanites; but that their chronicles, kept on gold plates, were preserved by Mormon, whose abridged form of the history was found later by Joseph Smith.

nephodoscope (ne-fod′ọ̄-skōp), *n.* [Gr. *νέφος*, a cloud, + *ὁδός*, way, + *σκοπεῖν*, view.] A form of nephoscope, devised by Fornioni in 1881, consisting essentially of a magnetic compass containing, above the needle, a circular plane mirror on which are drawn radial lines corresponding to the wind-rose. A rod with terminal sighting-eye or knob is pivoted to the edge of the mirror. The observation consists in keeping the reflections of the sight-point and of the cloud coincident as they pass from the center of the mirror off to the edge.

nephogram (nef′ọ̄-gram), *n.* [Gr. *νέφος*, a cloud, + *γράμμα*, a writing.] A photograph of a cloud or clouds.

nephograph (nef′ọ̄-grȧf), *n.* [Gr. *νέφος*, cloud, + *γράφειν*, write.] An instrument for photographing clouds.

nephoscope, *n.*—**Abbe's marine nephoscope,** a form of nephoscope devised for use on vessels at sea, to enable the navigator to observe the motions of the upper or lower clouds as accurately as he observes the winds. The nephoscope rests on the ship's standard compass—the Ritchie liquid compass of the U. S. navy—when used at sea, but can be supported on a fixed pillar when used on land. A horizontal circular glass mirror, *a a a*, having the silvered back removed from the circular band *b*, as well as from the circular line *c*, is fastened in the circular frame *d*, which slips down over the rim of the compass *e*, and is rotated horizontally to any azimuth by the handles *f*, *g*. An adjustable rod, ending in the knob *h*, is pivoted to the frame at *i*, so that it can move vertically. A light wire circle lying flat on the mirror at its outer edge carries a diametral thread which is set at any azimuth by means of the handles *j*, *k*. The compass is fastened to the deck of the vessel so that its fore-and-aft line or zero is parallel to the keel of the vessel. The observer looking into the mirror sees a small cloud or other celestial object reflected therein. He moves his eye until the object is reflected at the center, *l*. He also moves the brass rim by the handles *f* and *g*, and slides the knob *h* until the latter is also reflected at *l*. As the object appears to move away from *l* he moves his eye so that the knob *h* continually covers the reflected object: at the same time he turns the thread by the handles *j* and *k* so that the reflection of the object moves along it. The thread now represents the desired direction of the apparent motion of the cloud. The compass-card is visible through the clear glass band *b*, and the observer records the bearings of the thread and of the lubber-line. The absolute motion and the altitude of the cloud may also be determined if desired by a second observation when the ship has a different speed or course.—**Aimé's nephoscope,** a nephoscope which has two mirrors, one near and the other distant from the observer. The same cloud is observed in both, and when the images overlap the inclinations of the mirrors are recorded, and the distance or altitude of the cloud is computed. Called by Aimé a *reflecting anemometer.*—**Besson's zenithal nephoscope,** a nephoscope designed for observations near the zenith. It consists of a horizontal frame on which are stretched two orthogonal systems of threads, with an inclined plane mirror below. The observer looks horizontally through an eyehole in a fixed position.—**Vanishing-point nephoscope,** an arrangement of horizontal and inclined circles whose horizontal axes can be set parallel to the direction of the movement of the clouds, so that one may quickly determine the radiation-point and vanishing-point for the motion of all clouds that happen to be moving in parallel directions.



Abbe's Marine Nephoscope.

nephoscopic (nef-ọ̄-skop′ik), *a.* [*nephoscope* + *-ic.*] Of or pertaining to the nephoscope; made by the use of the nephoscope: as, *nephoscopic* observations.

nephralgic, *a.*—**Nephralgic crises,** sudden attacks of very severe pain in the kidneys, sometimes experienced in locomotor ataxia.

nephrectasia (nef-rek-tā′ẓiạ̈), *n.* [NL., < Gr. *νεφρός*, kidney, + *ἔκτασις*, extension.] Dilatation of the pelvis of the kidney, leading to the formation of a cystic kidney.

nephrectomize (nef-rek′tọ̄-mīz), *v. t.*; pret. and pp. *nephrectomized*, ppr. *nephrectomizing.* [*nephrectom*(*y*) + *-ize.*] To perform the operation of nephrectomy upon; remove a kidney, or the kidneys, from.

> A patient who has been *nephrectomized* for tuberculosis should never consider that the future is safe.
>
> *Therapeutic Gazette*, Feb. 15, 1903, p. 126.
>
> In studying the properties of the blood of *nephrectomized* rabbits it was found that bullock's serum, which is distinctly hæmolytic, for normal rabbit's blood, was less so for the red cells of *nephrectomized* rabbits.
>
> *Science*, May 27, 1904, p. 831.

nephria (nef′ri-ạ̈), *n.* [NL., < Gr. *νεφρός*, kidney.] Bright's disease of the kidney.

nephric (nef′rik), *a.* [Gr. *νεφρός*, a kidney, + *-ic.*] Same as *nephritic.*—**Nephric duct.** See ★*duct.*

Nephridial gland. See ★*gland.*

nephridiopore (nef-rid′i-ọ̄-pōr), *n.* [NL. *nephridium* + Gr. *πόρος*, pore.] An opening of a nephridium to the exterior.

> The *nephridiopores* are only plainly visible upon the clitellar segments; they lie close to the anterior margin of the segment in a line with the ventralmost of the two lateral setæ. *Proc. Zool. Soc. London*, 1902, p. 191.

nephridiostome (nef-rid′i-ọ̄-stōm), *n.* [NL. *nephridium* + Gr. *στόμα*, mouth.] The internal, ciliated, funnel-like opening of a nephridium into the cœlomatic cavity; a nephrostome.

> The Hesionidæ have compound organs, serving both as excretory and as genital ducts, formed by the grafting of the cœlomostome on to the *nephridiostome.*
>
> *Encyc. Brit.*, XXXIII. 882.

nephridium, *n.*—**Diffuse nephridia.** Same as ★*plectonephric nephridia.*—**Meganephric nephridia,** in many limicolous and terricolous annelids, nephridia consisting of the cœlomatic funnel and long tube opening to the exterior.—**Plectonephric nephridia.** See ★*plectonephric.*

nephrin (nef′rin), *n.* [*Ne*(*o*)*phr*(*onium*) + *-in*^{2}.] A colorless neutral compound, $C_{20}H_{34}O$, contained in the lichen *Neophronium arcticium.* It crystallizes in needles which melt at 168° C.

nephrism (nef′rizm), *n.* [Gr. *νεφρός*, kidney, + *-ism.*] A pathological condition characterized by serious disease of the kidneys.

nephritic, *n.* 2. One who suffers from nephritis. *Buck*, Med. Handbook, I. 563.

nephritis, *n.*—**Glomerular nephritis.** Same as *glomerulonephritis.*

nephritoid (nef′ri-toid), *n.* [*nephrit*(*is*) + *-oid.*] One of several minerals which have the properties and uses of nephrite, as jade (nephrite), jadeite, chloromelanite, and similar varieties of other species, as vesuvianite.

nephro-abdominal (nef″rọ̄-ab-dom′i-nạl), *a.* [Gr. *νεφρός*, kidney, + E. *abdominal.*] Of or relating to the kidney and the abdominal wall.

nephroblast (nef′rọ̄-blȧst), *n.* [Gr. *νεφρός*, kidney, + *βλαστός*, germ.] One of the pole-cells which furnish the material for the development of the nephridia in annelids. See cut under ★*neuroblast.*

nephrocele, *n.* 2. In *embryol.*, the cavity of the pronephric and mesonephric tubule considered as an extension of the cœloma or true body-cavity of the embryo.

nephrocolica (nef-rọ̄-kol′i-kạ̈), *n.* [NL., < Gr. *νεφρός*, kidney, + *κωλική*, colic.] Same as *renal colic* (which see, under *colic*).

nephrocyst (nef′rọ̄-sist), *n.* [Gr. *νεφρός*, kidney, + *κύστις*, bladder.] One of the kidneys of certain larval mollusks, consisting of a few large vacuolated cells which contain excreta in the form of fluid or concretions.

> The larva also possesses additional organs of excretion, two in number, lying bilaterally in the anterior region of the body cavity. These, the "*nephrocysts*," are composed of but a few large vacuolated cells which contain concretions and fluid excreta. The origin of these cells has not been determined definitely, but they are probably derived from the mesoderm.
>
> *Amer. Nat.*, July–Aug., 1904, p. 506.

nephrocystitis (nef″rọ̄-sis-tī′tis), *n.* [NL., < Gr. *νεφρός*, kidney, + *κύστις*, bladder, + *-ιτις.*] Inflammation of both the kidney and the bladder.

nephrocyte (nef′rō-sīt), *n.* [Gr. *νεφρός*, kidney, + *κύτος*, a hollow (a cell).] An excretory cell, with fibrillar or vacuolated cytoplasm, which contains masses of waste products. Such cells occur in the track of the blood-currents in the *Crustacea.*

> More recently Masterman (1894) has asserted that collar cells [of sponges] when full fed become amœboid and pass into the parenchyma as trophocytes, . . . and that further, after having distributed their nutriment to the parenchymal cells, they take up waste products and migrate to the surface of the body, where they act as *nephrocytes.* It seems more than probable that these statements are founded on mistaken observations.
>
> *E. R. Lankester*, Treatise on Zoology, II. 57.

nephrogastric (nef-rọ̄-gas′trik), *a.* [Gr. *νεφρός*, a kidney, + E. *gastric.*] Pertaining to the kidneys and the stomach. *Syd. Soc. Lex.*

nephrogenic (nef-rọ̄-jen′ik), *a.* Same as ★*nephrogenous.*

nephrogenous (ne-froj′e-nus), *a.* [Gr. *νεφρός*, kidney, + *-γενης*, -producing, + *-ous.*] Originating in the kidney.

nephrolith (nef′rọ̄-lith), *n.* [Gr. *νεφρός*, kidney, + *λίθος*, stone.] A kidney-stone or renal calculus.

nephrolysin (nef-rol′i-sin), *n.* [*nephrolys*(*is*) + *-in*^{2}.] Same as ★*nephrotoxin.*

nephrolysis (ne-frol′i-sis), *n.* [NL., < Gr. *νεφρός*, kidney, + *λύσις*, dissolution.] 1. Destruction of the cells of the kidney by a toxin or other morbid agent in the blood.—2. The loosening or destruction of pathological adhesions which bind the kidney to the surrounding tissues.

> Rovsing's "*nephrolysis*," or destruction of adhesions after nephrotomy, was successfully tried in three cases, and it seems to be indicated when the adhesions are particularly extensive and tough.
>
> *Med. Times*, Aug., 1907, p. 230.

nephrolytic (nef-rọ̄-lit′ik), *a.* [*nephrolysis* (*-lyt-*) + *-ic.*] Causing the destruction of renal epithelial cells by the corresponding cytotoxin: as, a *nephrolytic* serum. *Med. Record*, July 18, 1903, p. 84.

nephromalacia (nef″rọ-ma-lā′si-a̤), *n.* [NL., ‹ Gr. νεφρός, kidney, + μαλακία, softness.] Softening of the kidneys.

nephromegaly (nef-rọ-meg′ạ-li), *n.* [NL. **nephromegalia*, ‹ Gr. νεφρός, kidney, + μέγας (μεγαλ-), great.] Enlargement of one or both kidneys.

nephromere (nef′rọ-mēr), *n.* [Gr. νεφρός, kidney, + μέρος, part.] That part of the mesoderm which forms the kidneys.

> Those [muscles] originating in the *nephromere* or region of the segmental organs. *Encyc. Brit.*, XXV. 399.

nephromeric (nef-rọ-mer′ik), *a.* [*nephromere* + *-ic.*] Of or pertaining to the nephromere.

> The muscles which are derived from the *nephromeric* region, sometimes called hypaxial or hyposkeletal muscles, are a few, small aberrant somatopleural slips. *Encyc. Brit.*, XXV. 399.

nephromixium (nef-rọ-mik′si-um), *n.*; pl. *nephromixia* (-a̤). In certain worms, one of the organs which perform both excretory and genital functions.

> In other words, the duct does not issue from the centre of the funnel as in the sperm-ducts of other Oligochæta. It is suggested that here is a composite organ, such as Goodrich has described in several Polychæta, and termed by Lankester "*nephromixium*." It would appear that the sperm-ducts are not absolutely homologous throughout the Oligochæta. *Jour. Roy. Micros. Soc.*, Feb., 1905, p. 56.

nephroncus (nef-rong′kus), *n.*; pl. *nephronci* (-ron′sī). [NL., ‹ Gr. νεφρός, kidney, + ὄγκος, mass.] Tumor of the kidney.

nephropathy (nef-rop′ạ-thi), *n.* [Gr. νεφρός, kidney, + πάθος, disease.] Disease of the kidneys.

nephropexy (nef′rọ-pek-si), *n.* [Gr. νεφρός, kidney, + πῆξις, fastening, fixing.] A surgical operation for fixing a floating kidney in position. *Med. Record*, March 7, 1903, p. 389.

nephrophthisis (ne-frof′thi-sis), *n.* [NL., ‹ Gr. νεφρός, kidney, + φθίσις, consumption.] Tuberculosis of the kidney.

Nephropsidæ (nef-rop′si-dē), *n. pl.* [NL., *Nephrops* + *-idæ.*] A family of macrurous decapod crustaceans. They have a subcylindric carapace bearing a prominent rostrum; the second antennæ with a long multiarticulate flagellum; the segments of the pleon imbricated; the epipodial plates large; and a well developed podobranchial plume attached to all the trunk-legs except the last pair. The family includes six genera, among which are *Nephrops*, *Astacus*, and *Nephropsis.*

nephroptosis (nef-rop-tō′sis), *n.* [NL., ‹ Gr. νεφρός, kidney, + πτῶσις, falling.] Downward displacement of the kidney; floating or wandering kidney. *Med. Record*, March 7, 1903, p. 389.

nephropyosis (nef″rọ-pi-ō′sis), *n.* [NL., ‹ Gr. νεφρός, kidney, + πύον, pus, + *-osis.*] Suppuration of the kidney.

nephroscleria (nef-rọ-sklē′ri-a̤), *n.* [NL., ‹ Gr. νεφρός, kidney, + σκληρός, hard.] A hardening of the kidneys through the formation of much new fibrous tissue.

nephrosclerosis (nef″rọ-sklẹ-rō′sis), *n.* [NL., ‹ Gr. νεφρος, kidney, + σκληρός, hard, + *-osis.*] Same as ★*nephroscleria.*

nephrostomial (nef-rọ-stō′mi-a̤l), *a.* [*nephrostome* + *-i-al*^{1}.] Of or pertaining to the nephrostome of a nephridium.

> In all Pisces, with the exception of certain Elasmobranchii, the mesonephric bodies retain connection with the cœlom by means of the *nephrostomial* tubules. *Proc. Zool. Soc. London*, 1903, p. 338.

nephrotome (nef′rọ-tōm), *n.* [Gr. νεφρός, kidney, + -τομος, ‹ ταμεῖν, cut.] A segmental portion of the mesoblast, which, in the vertebrate, gives rise to the embryonic kidneys, that is, the pronephros and mesonephros. *Philos. Trans. Roy. Soc.* (London), 1895, ser. B, p. 166.

nephrotomization (nef-rot″ọ-mi-zā′shọn), *n.* The operation of nephrotomizing; nephrotomy.

nephrotomize (nef-rot′ọ-mīz), *v. t.*; pret. and pp. *nephrotomized*, ppr. *nephrotomizing.* [*nephrotom*(*y*) + *-ize.*] To subject to the operation of nephrotomy.

nephrotoxic (nef-rọ-tok′sik), *a.* [Gr. νεφρός, kidney, + τοξικόν, poison.] Same as ★*nephrolytic.* *Vaughan and Novy*, Cellular Toxins, p. 144.

nephrotoxin (nef-rọ-tok′sin), *n.* [Gr. νεφρός, kidney, + τοξ(ικόν), poison, + *-in*^{2}.] A cytotoxin, resulting on immunization with renal epithelial cells.

nephrotyphoid (nef-rọ-tī′foid), *n.* [Gr. νεφρός, kidney, + E. *typhoid.*] Acute inflammation of the kidneys associated with the presence of typhoid bacilli.

nephrotyphus (nef-rọ-tī′fus), *n.* [NL., ‹ Gr. νεφρός, kidney, + E. *typhus.*] Severe inflammation of the kidneys complicating typhus fever.

Nephthya (nef′thi-a̤), *n.* [NL.] The typical genus of the family *Nephthyidæ.* *Savigny.*

Nephthydidæ (nef-thid′i-dē), *n. pl.* [NL.] Same as ★*Nephthyidæ*^{2}.

Nephthyidæ^2 (nef-thī′i-dē), *n. pl.* [NL., ‹ *Nephthya* + *-idæ.*] A family of alcyonaceans having a branched cœnenchyma with a sterile base and terminal polyps. It contains a number of genera, among them being *Nephthya*, *Siphonogorgia*, and *Ammothea.*

nepiastic (nep-i-as′tik), *a.* [Gr. νήπιος, an infant, + *-ast-* + *-ic.*] Noting that condition in the development of the compound individual or colony which corresponds to the nepionic stage in the simple individual.

> The *nepiastic* stage is taken to represent the period from the formation of the primary buds [in the Bryozoa], i.e., those buds which are given off by the protœcium, to the establishment of the definite budding habit of the colony. *Cumings*, in Amer. Jour. Sci., Jan., 1904, p. 56.

nepiasty (nep′i-as-ti), *n.* [*nepiast*(*ic*) + *-y*^{3}.] The nepiastic condition. See ★*nepiastic.*

nepionic (nep-i-on′ik), *a.* [Gr. νήπιος, an infant, + *-on* + *-ic.*] In evolution or auxology, a stage in ontogeny immediately succeeding the embryonic and broadly equivalent to infancy; in *entom.*, larval: contrasted with ★*neanic*, ★*ephebic*, 2, and ★*gerontic.*

> For larval Hyatt proposes the term *nepionic.* *A. S. Packard*, Text-book of Entom., p. 594.

> The *nepionic* stage of shell growth begins with the second whorl. *Amer. Nat.*, Aug., 1903, p. 517.

nepticulid (nep-tik′ụ-lid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Nepticulidæ.*

II. *a.* Having the characters of or belonging to the family *Nepticulidæ.*

Neptune's cup. (*a*) Same as *Neptune's spoon-worm.* (*b*) A Sumatran coral, *Alcyonium poculum.*— **Neptune's girdle.** See ★*girdle*^{1}.— **Neptune's sleeve**, a popular name for any lace-coral of the genus *Retepora.*

neptune-bond (nep′tūn-bond″), *n.* The trade-name for a copper bond used to make a good electrical connection between the adjacent ends of two rails.

neptunic (nep-tū′nik), *a.* [*Neptune* + *-ic.*] In *geol.*, deposited in water; sedimentary.

> The descriptive terms are compounded of two elements, the first being descriptive of the materials (I, plutonic, II, *neptunic*, III, metamorphic). *Amer. Geol.*, May, 1904, p. 302.

neptunicentric (nep″tū-ni-sen′trik), *a.* [L. *Neptunus*, Neptune, + Gr. κέντρον, center.] In *astron.*, having Neptune as a center.

Neptunism (nep′tụn-izm), *n.* [L. *Neptunus*, god of the sea, + *-ism.*] A geological doctrine, chiefly developed and supported by A. G. Werner (1750–1817), professor in the Mining Academy of Freiberg, Saxony, according to which the ancient crystalline schists and gneisses and even later basalts when interstratified with obvious sedimentary rocks, were precipitated from solution in the ocean: also *Wernerianism*: the opposite of *Plutonism* or ★*Huttonianism.*

neptunite (nep′tụ-nīt), *n.* [*Neptune* + *-ite*^{2}.] A titano-silicate of iron, manganese, sodium, and potassium, occurring in black prismatic crystals. It is found in southern Greenland.

neptunium (nep-tū′ni-um), *n.* [NL., ‹ L. *Neptunus*, Neptune.] In *chem.*, a supposed new element announced by Hermann in 1877 as present in columbite and ferro-ilmenite. Its existence has not been confirmed.

nereidiform (nē-rẹ-id′i-fôrm), *a.* [*Nereis* (*-d-*) + *-form.*] Belonging to the suborder *Nereidiformia*, or resembling the worms of this group.

Nereis, *n.* 1. (*b*) [*l. c.*] A marine worm of the genus *Nereis.*

nerfling (nėr′fling), *n.* [G. *nerfling*, *nörfling*, a dial. variant of *örfling*, dim. of *orf*, the ide, ‹ L. *orphus*, ‹ Gr. ὄρφος, Attic ὀρφώς, a kind of sea-perch (NGr. ὀρφός, ὀρφάς, blackfish).] The ide or golden ide, *Leuciscus idus*, a fish found in the central and northern parts of Europe.

nerianthin (nē-ri-an′thin), *n.* [*Nerium* + Gr. ἄνθος, flower, + *-in*^{2}.] A glucoside contained in the leaves of *Nerium oleander.* It resembles the glucosides of *Digitalis*, and, when hydrolyzed, yields resinous compounds.

neriin (nē′ri-in), *n.* [*Nerium* + *-in*^{2}.] A glucoside contained in the leaves and bark of *Nerium oleander.* It resembles nerianthin.

Nerinea (nẹ-rin′ẹ-a̤), *n.* [NL., ‹ L. *Nerine*, a feminine name for **Nereine*, ‹ Gr. Νηρηίνη, a Nereid, ‹ Νηρεύς, Nereus.] A genus of platypodous gastropods characterized by turreted shells in which the columella and inner and outer lips bear simple folds or corrugations which greatly contract the interior of the whorls. It occurs in Jurassic and Cretaceous rocks.

neriodorein (nē″ri-ọ-dō′rẹ-in), *n.* [See ★*neriodorin.*] An intensely bitter, amorphous glucoside associated with neriodorin in the bark and seeds of *Nerium odorum.*

neriodorin (nē″ri-ọ-dō′rin), *n.* [From the botanical name of the plant from which it is derived.] A light yellow, bitter, varnish-like glucoside contained in the bark and seeds of *Nerium odorum.*

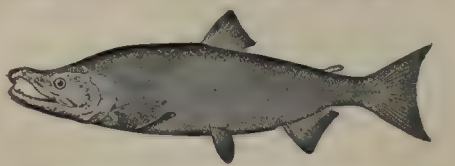
neritic (nẹ-rit′ik), *a.* [Gr. νηρός, ναρός, flowing (see *Nereid*), + *-it-ic.*] Of or pertaining to the water near the coast, as contrasted with the high sea.

> Special conditions of wind and current may of course carry into the *neritic* zone forms which are characteristic of the open sea, and vice versâ. *Encyc. Brit.*, XXXIII. 936.

Neritic plankton. See ★*plankton.*

neritidan (nẹ-rit′i-da̤n), *n.* A gastropod of the family *Neritidæ.*

nerka (när′ka̤), *n.* [Russ. *nyarka.* Prob. a Tunguse name.] The most abundant salmon of Alaska, *Oncorhynchus nerka*, found from the Klamath and Rogue rivers northward to Kamchatka and Japan. Also called *red salmon*, *redfish*, *blueback*, and *sawqui.*



Oncorhynchus nerka; breeding male, large form.
(From Bulletin 47, U. S. Nat. Museum.)

Nernst lamp. See ★*lamp*^{1}.

nerocurrent (nē′rọ-kur-ẹnt), *n.* [Gr. νηρός, flowing, + L. *currens*, current.] An oceanic current near to and influenced by the coast.

> The fishermen, pilots, etc., are very well acquainted with these local coast currents, which we will briefly call *nerocurrents.* *Haeckel* (trans.), Planktonic Studies, in Rep. U. S. Fish [Com., 1889–91, p. 625.

nerol (nē′rol), *n.* [*ner*(*oli*) + *-ol.*] A colorless liquid terpene alcohol, $C_{10}H_{18}O$, contained in French oil of orange-flowers and in other essential oils. It boils at 225–227° C.

neroli (nē′rō-li), *n.* [F. *néroli*, so called from an Italian princess *Neroli*, said to have discovered it.] An oil extracted from the flowers of the bitter orange; a French perfume. Also *neroli-oil* and *oil of neroli.*

nerolin (nē′rō-lin), *n.* [*neroli* + *-in*^{2}.] A colorless compound, $CH_3\overset{2}{O}C_{10}H_7$, prepared by the action of methyl alcohol and zinc chlorid on β-naphthylamine. It crystallizes in small plates, melts at 72° C., boils at 274° C., and has an odor of neroli-oil. Also called *β-naphthyl methyl ether.*

Neronian (nẹ-rō′ni-a̤n), *a.* Pertaining to the Roman emperor Nero (54–68 A.D.), or to his reign; characteristic of or resembling Nero; grossly cruel and tyrannical.

Neronic (nẹ-ron′ik), *a.* Same as ★*Neronian.*

Neronize (nē′rọn-īz), *v. t.* and *i.*; pret. and pp. *Neronized*, ppr. *Neronizing.* [*Neron*(*ic*) + *-ize.*] To render like Nero; to become or act like Nero.

nerv, *n.* and *v. t.* A simplified spelling of *nerve.*

nerval, *a.* **II**†. *n.* A healing ointment for the sinews. *N. E. D.*

nervate (nėr′vāt), *a.* [*nerve* + *-ate*^{1}.] In *bot.*, having nerves or veins; nerved: said of leaves.

nerve, *n.*— **Galen's nerve**, an anastomotic twig which connects the superior with the ascending branch of the inferior laryngeal nerve.— **Intestinal nerve**, in *ornith.*, a term applied by Mitchell to that portion of the sympathetic system which supplies the intestine. It arises usually from two or three main nerves, which leave the ganglia corresponding to the solar plexus and the ganglia over the ovary and suprarenal capsule, and enter the mesenteric expanse. *Trans. Linnean Soc. London*, Zool., Oct., 1901, p. 259.— **Mixed nerve**, a nerve which contains both motor and sensory fibers.— **Musculospiral nerve**, a nerve which passes around the humerus, in the musculospiral groove, down the arm and forearm, supplying in its branches the muscles on the back and radial side of the forearm, and a part of the skin of the fingers.

—**Nerve formula.** See ★*formula.*—**Nerve of arrest.** Same as *inhibitory nerve* (which see, under *inhibitory*).—**Pain nerve,** in *neurol.*, a specific sensory nerve whose function is the conduction of pain stimuli.

> He [Goldscheider] admits pain points (points sensible to pain), but not a specific organ for pain nor special nerves to transmit it. Frey, on the other hand, professes to have proved experimentally both *pain nerves* and appropriate terminal organs.
> *Ribot* (trans.), Psychol. of Emotions, p. 27.

Spino-occipital nerves, nerves from the spinal and occipital regions: a term used in connection with the distribution of nerves in fishes.

nerve-cavity (nėrv′kav″i̤-ti), *n.* The pulp-cavity of a tooth, which contains the nerve-terminations.

nerve-excitation (nėrv′ek-si-tā″sho̤n), *n.* In *neurol.*, the excitatory process conducted by a nerve-fiber, afferent or efferent.

> By irritating the extremities of the sensory nerves, this external stimulation becomes a *nerve-excitation*. This *nerve-excitation* is another physiological process, that may also be properly regarded as physical or chemical.
> *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 22.

nerve-papilla (nėrv′pạ-pil″a̤), *n.* Same as ★*neurothele.*

nerve-plasma (nėrv′plas″ma̤), *n.* Same as ★*neuroplasm.*

nerve-ring, *n.*—**Circumesophageal nerve-ring,** the ganglion or nerve-center encircling the gullet: found in many invertebrates and typically present in the lobster. Also called *nerve-collar.*

nerve-root (nėrv′röt), *n.* Either of two species of *Cypripedium, C. acaule* and *C. hirsutum.*—**Water nerve-root,** the swamp milkweed or white Indian hemp, *Asclepias incarnata.*

nerve-sheath (nėrv′shēth), *n.* Same as *neurilemma.*

nerve-sign (nėrv′sīn), *n.* Any symptom indicative of disease of or injury to the nerves or nervous centers.

nervine, *n.*—**Male nervine,** the yellow lady's-slipper, *Cypripedium hirsutum.* Also called *nerve-root.*

nervism (nėr′vizm), *n.* [*nerve* + *-ism.*] Nerve-force; also, nervous excitement. *N. E. D.* [Rare.]

nervomuscular (nėr″vọ-mus′kụ-la̤r), *a.* Same as *neuromuscular.*

nervosism (nėr′vọ-sizm), *n.* [L. *nervosus*, nervous, + *-ism.*] 1. Neurasthenia.—2. The theory that disease is due to variations in nervous force.

nervous, *a.*—**Central nervous system,** the brain and spinal cord.

nervulation (nėr-vụ-lā′sho̤n), *n.* [*nervule* + *-ation.*] Same as *nervation* (*b*).

nervulose (nėr′vụ-lōs), *a.* [*nervule* + *-ose.*] In *bot.*, having many fine nerves.

nervuration (nėr-vụ-rā′sho̤n), *n.* [*nervure* + *-ation.*] Same as *nervation* (*b*).

nervus, *n.*—**Nervi erigentes,** branches of the sacral nerves which supply the base of the bladder and the sides of the prostate gland; erection nerves. Stimulation of these nerves causes an erection of the penis.

neshannock (ne-shan′ọk), *n.* [So called from *Neshannock*, in Mercer county, Pennsylvania. This local name, which also appears in *Neshannock* Falls, Lawrence county, Pennsylvania, and in *Neshanic*, New Jersey, is of Amerindian origin. According to some, the potato is also called *meshanic*, which indicates a source in Delaware *meshanik* (?), Ojibwa *misanik*, black squirrel.] A white-fleshed variety of potato. [Pennsylvania.]

> *Neshánnock.* A white-fleshed variety of potato, which has obtained its name from the region of Pennsylvania where it first became noteworthy.
> *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 251.

neshness (nesh′nes), *n.* [*nesh* + *-ness.*] The character of being nesh; softness; tenderness; weakness or delicacy of constitution.

> "What did she die from?"
> "I don't know for certain; but I should be inclined to think it was from general *neshness* of constitution. She was such a limber maid that 'a could stand no hardship."
> *T. Hardy*, Madding Crowd, xli.

Nesopithecidæ (nes″ọ-pi-thē′si-dē), *n. pl.* [NL., < *Nesopithecus*, the type genus, + *-idæ.*] A family of lemurs, based on a single species, *Nesopithecus roberti.* They have the orbital cavity open behind; the upper incisors oblique, the middle pair much enlarged; the upper canine with a basal cingulum; and the upper molars quadritubercular. *Forsyth Major*, 1896.

nesquehonite (nes-ke-hō′nīt), *n.* [*Nesquehon*(*ing*) (see def.) + *-ite*^{2}.] Hydrous magnesium carbonate, $MgCO_3 + 3H_2O$, occurring in orthorhombic crystals and white fibrous masses: found in a coal-mine at Nesquehoning, Schuylkill county, Pennsylvania, and similarly elsewhere.

Nessler jar. See ★*jar*^{3}.

nest^1 *n.*—**Cocks' nests,** the nests which the wren builds but never uses, supposed to be intended to cheat and mislead the enemy. *Athenæum*, July 29, 1905, p. 143.

nest-aura (nest′â″ra̤), *n.* The aura or 'atmosphere' of the nest, by the perception of which ants are able to distinguish their own colonies or nests. The organ of this sense is supposed to be in the distal joint of the antenna.

> A single worker may live apparently well in isolation for six months. Familiarity with the *nest-aura* does not reconcile aliens. The kings have the distinctive odour of their blood-relations.
> *Jour. Roy. Micros. Soc.*, Feb., 1903, p. 35.

nest-epiphyte (nest′ep″i-fīt), *n.* See ★*epiphyte*, 1 (*c*).

nester (nes′tėr), *n.* A bird or other animal that makes a nest.

nest-fungus (nest′fung″gus), *n.*; pl. *nest-fungi* (-fun″jī). Any fungus belonging to the family *Nidulariaceæ.* See *bird's-nest fungus.*

nest-gearing (nest′gēr″ing), *n.* A pair or set of gears inclosed in a box or case, as in the head of a capstan.

nestiatria (nes″ti-a̤-trī′a̤), *n.* [NL., < Gr. νήστις, fasting, + ἰατρεία, medical treatment.] The treatment of disease by the withholding of food. Also called *hunger-cure* and *nestitherapy* or *nestotherapy.*

nestitherapy, nestotherapy (nes-ti-ther′a̤-pi, nes-tọ-ther′a-pi), *n.* [Gr. νήστις, fasting, + θεραπεία, medical treatment.] Same as ★*nestiatria.*

Nestorianize (nes-tō′ri-a̤n-īz), *v. i.*; pret. and pp. *Nestorianized*, ppr. *Nestorianizing.* To adopt Nestorian views; become Nestorian.

nest-root (nest′röt), *n.* The Indian-pipe, *Monotropa uniflora*, so called in allusion to its root-parasitic habit.

nesty (nes′ti), *a.* Full of nests or of markings resembling nests. [Nonce-word.]

> His eyes would be pulled down like to the *nesty*, streaky water.
> *R. Kipling*, The Disturber of Traffic, in Many Inventions, p. 10.

net^1, *n.* 9. In *cricket*, an open fabric of twine placed so as to enable batsmen to practise without inconveniencing one another. *Hutchinson*, Cricket, p. 50.—10. In *mining*, a heavy leather harness used for lowering or raising horses in a shaft. [Scotch.]—**Bathypelagic net, bathygraphic net,** a pelagic net, or towing-net, which may be let down, closed, to any desired depth, then opened and towed through the water, and then again closed and brought to the surface. Any organisms it may contain are thus, evidently, inhabitants of the water at the depth to which it was lowered. The existence of a rich and diversified fauna in the water of the ocean, down to a depth of more than a mile, has been proved by the use of this net.—**Gnomonic net,** the imaginary lines of latitude and longitude as represented by the gnomonic projection. *Nature*, Feb. 18, 1904, p. 382.—**Müller's net,** a pelagic net: so named because first used by Johannes Müller in 1845.—**Pelagic net,** a net used by students of marine biology for collecting the delicate organisms, larvæ, and microscopic plants that float or swim in the water. It is a bag of fine silk bolting-cloth, kept open by a hoop or rim, and either dragged gently through the water by a towing-line, or fastened to a short handle and used as a dipping-net. In either case the net is soon lifted carefully from the water and inverted into sea-water contained in a bucket or glass jar, into which its contents are washed off for examination.—**Spherical net,** a system of spherical polygons just covering the surface of a sphere once, twice, or more.—**Wheatstone's net,** in *elect.*, a divided circuit of the type of which the Wheatstone bridge is the simplest form.

net^2, *a.*—**Net ton.** See ★*ton*^{1}.

net., nett. [See *net*^{2}.] Abbreviations of the Italian *netto*, free from all deductions.

net-cutter (net′kut″ėr), *n.* A device attached to the nose of a torpedo for cutting a torpedo-net.

net-fork (net′fôrk), *n.* In *lawn-tennis*, a metal bar standing upright in the middle of a tennis-net, the lower part of it being inserted in the ground, to hold up the middle of the net to the required height and give the net stability.

Neth. An abbreviation of *Netherlands.*

Netherlandic (neᴛʜ′ėr-lan-dik), *a.* Same as *Netherlandish.* *Encyc. Brit.*, XXXI. 294.

Netherlandish, *a.* II. *n.* The language spoken by the Netherlanders; Dutch.

neti (nā′tẹ), *n.* [Chamorro name.] In Guam, *Xiphagrostis floridula*, a tall perennial grass with terminal feathery panicles, growing in damp places and covering vast treeless savannas on the hilltops. The edges of the leaves are armed with minute sharp teeth which are very apt to inflict painful cuts upon those passing through a neti thicket, and which give to the plant the name of *sword-grass.* The leaves form an excellent thatch, much more durable than that of coconut leaves with which the houses of the island are usually covered. See cut under ★*cutting-grass.*

net-knot (net′not), *n.* A kind of nucleolus which stains like chromatin and is probably to be regarded as a mere enlargement of the chromatin network of the cell-nucleus. Same as ★*karyosome*, 1. *Buck*, Med. Handbook, III. 72.

net-lace (net′lās), *n.* Same as *punto a reticello* ★*lace.*

netop (nē′top), *n.* [Also *netup, neetup*; < Narragansett **netop*, Natick *neetomp* = Powhatan *netoppu* (Ojibwa *nita*), 'my brother' or 'my kinsman,' < *ne-*, a prefix, my, + *weetompain*, a friend, prob. < *weetu-, weto-*, dwell with, + *-omp*, an element meaning 'man,' and appearing also in Natick *mugwomp* (whence *mugwump*) and other words.] A friend (used at first in reference to New England Indians); a crony; a chum.

> Mr. Harum and I are great "*neetups*," as he says.
> *E. N. Westcott*, David Harum, XXXIII.

> *Netop.* A word once very commonly used in Massachusetts and some other parts of New England in the sense of "friend," and (later) "crony," "chum."
> *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 251.

net-play (net′plā), *n.* In *lawn-tennis*, the play of the player who stands nearest the net, and who usually volleys.

Netrocera (net-ros′ẹ-ra̤), *n.* [NL., < Gr. νῆτρον, a spindle, + κέρας, horn.] 1. A genus of lepidopterous insects. *Felder*, 1874.—2. A suborder of *Lepidoptera* proposed by Haase to include the family *Hesperiidæ* only. On account of the preoccupation of the name, as given above, Reuter's name *Grypocera* has been substituted.

Nettastoma (ne-tas′tọ-ma̤), *n.* [NL., < Gr. νῆττα, duck, + στόμα, mouth.] A genus of eels found in the Mediterranean Sea.

Nettastomidæ (net-a̤-stom′i-dē), *n. pl.* [NL., < *Nettastoma* + *-idæ.*] A family of deep-sea eels.

nettle^1, *n.*—**Bee-nettle.** (*a*) See *bee-nettle.* (*b*) The white dead-nettle, *Lamium album.*—**Blind nettle.** Same as *bee-*★*nettle* in both senses. **Burning nettle,** the small nettle, *Urtica urens.*—**Canada nettle.** See *wood-*★*nettle.*—**Day-nettle,** either the red dead-nettle, *Lamium purpureum*, or the white dead-nettle, *L. album.*—**Deaf nettle,** the red dead-nettle, *Lamium purpureum.*—**Dog-nettle,** either the hemp-nettle or the red dead-nettle.—**Dumb nettle,** the white dead-nettle.—**Flowering nettle.** Same as *bee-*★*nettle* in both senses.—**French nettle,** the red dead-nettle.—**Sand-nettle,** the spurge-nettle.—**Slender nettle,** *Urtica gracilis.* See *Urtica.*—**Tall wild nettle.** Same as *slender* ★*nettle.*—**Weak nettle,** *Urtica chamædryoides*, a delicate species which grows in thickets in the southern United States.—**Wood-nettle,** *Urticastrum divaricatum*, a North American nettle-like plant. It is an unofficial alterative, etc. See *Laportea.* Also called *Canada nettle* and *Albany hemp.*

nettle-animal (net′l-an″i-ma̤l), *n.* An animal provided with nettle-cells or stinging-cells; one of the *Cœlenterata.*

nettle-grub (net′l-grub), *n.* Either of two stinging caterpillars of the lepidopterous family *Limacodidæ*, which feed on the tea-plant in East India. The larva of *Thosia divergens* is known as the *Assam brown-and-green-striped nettle-grub*, and the larva of *Parasa lepida* is known as the *blue-striped nettle-grub.*

nettle-potato (net′l-pọ-tā″tō), *n.* Same as *queen's-delight.*

Netuma (ne-tū′ma̤), *n.* [NL.] A genus of catfishes of the family *Siluridæ*, found in warm seas.

netup, *n.* Same as ★*netop.*

network, *n.*—**Chiari's network,** a network of fine fibers sometimes found stretching across the interior of the right auricle of the heart. *Lancet*, June 25, 1904, p. 1806.—**Network hypothesis,** the opinion that the network of branching fibers that forms a framework in three dimensions, in some cells, is the fundamental structure of all protoplasm.—**Polygonal network,** in topographical surveying of large areas or ranges, a system of intersecting surveys on the polygonal method forming a network of traverse survey-lines covering an area or range. See *polygonal* ★*method.*

> Nearly 12,000 miles of *polygonal network* have been measured in the Andine Valley.
> *Geog. Jour.* (R. G. S.), XVI. 343.

Neudeckian (noi-dek′i-a̤n), *a.* and *n.* [*Neudeck*, Silesia, + *-ian.*] In *geol.*, noting a division of glacial time and deposits in Europe regarded by James Geikie as the third interglacial epoch, represented by marine and fresh-water deposits between the boulder-clays of the southern Baltic coast. It was preceded by the Polandian or third glacial epoch and followed by the Mecklenburgian or fourth glacial epoch.

Neudorf sands. See ★*sand*^{1}.

Neuhoff's diagram. See ★*diagram.*

Neumann's bacillus. See ★*bacillus.*

Neurachne (nū-rak′nẹ), *n.* [NL. (Robert Brown, 1810), < Gr. νεῦρον, nerve, + ἄχνη, chaff;

in allusion to the marking of the glumes.] A genus of grasses which includes 3 species, all natives of Australia, characterized by the ovoid or cylindrical spike and sessile spikelets, and a single terminal hermaphrodite flower with rarely a male flower below it. *N. Mitchelliana* is a low thickly-growing species which endures drought and produces a good pasture feed. See ★*mulga-grass*.

neural, *a.*—**Neural cavity**, the cavity of the cranium and vertebral canal, containing the brain and spinal cord.—**Neural crest.** See ★*crest*.—**Neural plate.** Same as ★*neural*.—**Neural process.** See ★*process*.

II. *n.* One of the bony plates that lie upon and fuse with the summit of the spinous process and take part in the formation of the carapace of a turtle.

neurale (nụ-rā'lē), *n.*; pl. *neuralia* (-li-ạ̈). [NL. *neurale*, neut. of **neuralis*. See *neural*.] A neural plate or neural.

neuralgia, *n.*—**Cardiac neuralgia.** Same as *angina pectoris*.—**Crural neuralgia.** Same as *sciatica*.—**Facial neuralgia**, severe pain in one or more of the branches of the fifth or trigeminal nerve. Also called *tic-douloureux, face-ache, brow-ague, infra-orbital neuralgia, maxillary neuralgia*, etc.—**Femoropopliteal neuralgia.** Same as *sciatica*.—**Infra-orbital neuralgia, maxillary neuralgia.** Same as *facial* ★*neuralgia*.—**Morton's neuralgia**, a form of neuralgia of the plantar nerves; metatarsalgia. Also called *Morton's foot* and *Morton's toe*.—**Plantar neuralgia.** Same as *erythromelalgia*.—**Red neuralgia.** Same as *erythromelalgia*.

neuramœbimeter (nụ-ram-ẹ̄-bim'e-tėr), *n.* [Gr. *νεῦρον*, nerve, + *ἀμοιβή*, exchange, response, + *μέτρον*, measure.] A device for determining the rapidity of nervous impulses, or the duration of the simple reaction, by recording the time between the application of a stimulus and the movement made in response to it.

neurarthropathy (nū-rär-throp'ạ-thi), *n.* [Gr. *νεῦρον*, nerve, + E. *arthropathy*.] Disease of the joints involving also disease of the nerves.

neurasthenia, *n.*—**Cerebral neurasthenia.** Same as *cerebrasthenia*.—**Gastric neurasthenia**, impaired digestion associated with nervous exhaustion. *Lancet*, June 25, 1904, p. 1797.

neurastheniac (nū-ras-thē'ni-ak), *n.* [*neurasthenia* + *-ac*.] One who suffers from neurasthenia.

Whether the "*neurastheniacs*" that present themselves at the clinic for diseases of the nervous system are in reality cases of psychasthenia or neurasthenia it was difficult to decide. *Lancet*, June 18, 1904, p. 1737.

neurastheny (nụ-ras'the-ni), *n.* [See *neurasthenia*.] **1.** In *path.*, nervous weakness; neurasthenia. Hence—**2.** Moral weakness; lack of moral principles.

It is frequent that among vagabonds, robbers, thieves, and other criminals against property there is a physical and moral *neurastheny*, a term coined by Benedikt, of Vienna. *Smithsonian Rep.*, 1890, p. 660.

neuraxial (nụ-rak'si-ạl), *a.* [*neuraxis*.] Of or pertaining to the neuraxis.

neuraxis (nụ-rak'sis), *n.* [NL., ‹ Gr. *νεῦρον*, nerve, + L. *axis*, axis.] **1.** The central nervous system; the brain and spinal cord.—**2.** Same as ★*neuraxon* or *axis-cylinder*. *Parker and Haswell*, Zoology, I. 28.

neuraxon (nụ-rak'son), *n.* [Gr. *νεῦρον*, nerve, + *ἄξων*, axis.] The axis-cylinder of the nerve- or ganglion-cell, as distinguished from its other processes, the dendrites.

Whatever may in the end be shown to be the exact differences in nature and action between the dendrites and the *neuraxon*, this at least seems sure, that cell plays upon cell only by such a kind of contact as seems to afford an opportunity for change in the figure of the dance—that is to say, in the nature of the impulse—and that in at least the ordinary play it is the terminal of the *neuraxon* (either of the main core or a collateral) of one cell which touches with a vibrating touch the dendrite or the body of some other cell.
M. Foster, in Smithsonian Rep., 1897, p. 450.

neurectasia (nū-rek-tā'ẓiạ̈), *n.* [NL.] Same as ★*neurectasis*.

neurectasis (nụ-rek'tạ-sis), *n.* [NL., ‹ Gr. *νεῦρον*, nerve, + *ἔκτασις*, stretching, extension.] The surgical operation of stretching a nerve.

neurectasy (nụ-rek'tạ-si), *n.* Same as ★*neurectasis*.

neurectopia (nū-rek-tō'pi-ạ̈), *n.* [NL., ‹ Gr. *νεῦρον*, nerve, + *ἔκτοπος*, out of place.] Congenital displacement or accidental dislocation of a nerve.

Neurenteric pore. See ★*pore*².

neurhypnology (nūr-hip-nol'ọ-ji), *n.* [Gr. *νεῦρον*, nerve, + E. *hypnology*.] Same as *neurohypnology*.

neurilemmal (nū-ri-lem'ạl), *a.* [*neurilemma* + *-al*¹.] Of or pertaining to the neurilemma or nerve-sheath.

From the microscopic study of the distal portions of divided nerve-trunks we arrived at the conclusion that the activity of the *neurilemmal* cells has some relation to the development of the new nerve-fibres.
Rep. Brit. Ass'n Advancement of Sci., 1902, p. 782.

neurine, *n.* **3.** The substance of which nerve-tissue is composed, consisting chiefly of fat and albumin containing phosphorus.—**4.** An extract made from nerve-tissue, employed therapeutically.

neurite (nū'rīt), *n.* [Gr. *νεῦρον*, nerve, + *-ite*².] In *neurol.*, the principal process or axis-cylinder process of a nerve-cell; a neuraxon: opposed to ★*dendrite*.

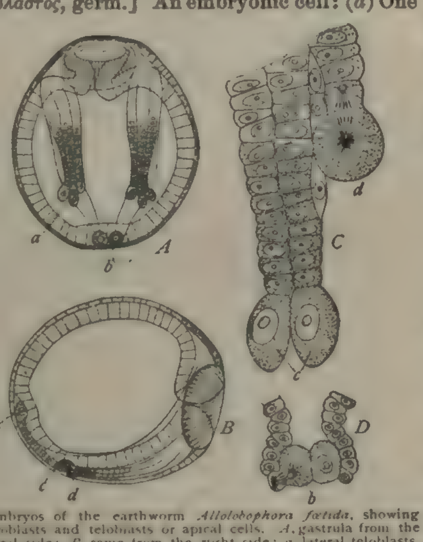
The nerve-cells are characterised by their processes, one of which usually passes over directly into a nerve-fibre, while the others ramify, if not immediately, after running a brief course, into fine fibrils. The former is called the axis-cylinder, nerve-process or *neurite*; the latter are termed protoplasmic processes or dendrites.
W. Wundt (trans.), Physiol. Psychol., I. 41.

neuritis, *n.*—**Alcoholic neuritis**, multiple neuritis due to chronic poisoning by alcohol.—**Ascending neuritis**, inflammation of a nerve extending gradually from the periphery toward its origin.—**Descending neuritis**, inflammation of a nerve which progresses gradually in a direction from the origin of the nerve toward the periphery.—**Peripheral neuritis**, inflammation of the terminal nerves or of the nerve-endings.—**Pressure neuritis**, inflammation of a nerve caused by compression.—**Tabetic neuritis**, degenerative inflammation of the nerves occurring in locomotor ataxia.—**Toxic neuritis**, inflammation of the nerves caused by the action of some poison, such as alcohol, arsenic, or lead, circulating in the blood.

neuro-anatomical (nū"rọ-an-ạ-tom'i-kạl), *a.* [Gr. *νεῦρον*, nerve, + E. *anatomical*.] Relating or pertaining to the anatomy or structure of the nervous system. *Biol. Bulletin*, Jan., 1904, p. 90.

neuro-anatomy (nū"rō-ạ-nat'ọ-mi), *n.* [Gr. *νεῦρον*, nerve, + E. *anatomy*.] The anatomy of the nervous system.

neuroblast (nū'rō-blåst), *n.* [Gr. *νεῦρον*, nerve, + *βλαστός*, germ.] An embryonic cell: (*a*) One of two large cells or teloblasts which are situated at the posterior end of the body in the annelid embryo and larva and give rise to the ventral nerve-cord of the adult animal. *Whitman.* (*b*) One of the cells in the embryonic brain and spinal cord of vertebrates. These cells are said to give rise without division to the ganglion-cells. *His.* (*c*) In arthropod embryos, certain ectodermal cells which proliferate inward from the surface to form rows of elements that become the ganglion-cells. *Wheeler.*



Embryos of the earthworm *Allolobophora fœtida*, showing neuroblasts and teloblasts or apical cells. *A*, gastrula from the ventral side; *B*, same from the right side; *a*, lateral teloblasts, comprising a neuroblast, *d*, from which the ventral nerve-cord arises, and two nephroblasts, *c*, of somewhat doubtful nature, but probably concerned in the formation of the nephridia; *b*, the terminal teloblasts or primary mesoblasts, which bud forth the mesoblast-bands, cell by cell; *C*, lateral group of teloblasts, more enlarged, the neuroblast, *d*, in division; *c* the nephroblasts; *D*, the primary mesoblasts enlarged, one in division.
(From Wilson's "The Cell.")

neuroblastic (nū-rọ-blas'tik), *a.* [*neuroblast* + *-ic*.] Of or pertaining to neuroblasts.

neurocentrum (nū-rọ-sen'trum), *n.*; pl. *neurocentra* (-trạ̈). [Gr. *νεῦρον*, nerve, + *κέντρον*, center.] One of a pair of vertebral elements (arcualia) lying on the dorsal face of the notochord from which the spinous process and its adjoining processes are developed. The neurocentra of Osborn correspond with the basidorsalia of Gadow, and neural arches of others.

The '*neurocentra*' correspond with the neural arches or neuropophyses of authors.
Science, Feb. 12, 1904, p. 257.

neurochitin (nū-rọ-kī'tin), *n.* [Gr. *νεῦρον*, nerve, + E. *chitin*.] A compound, resembling chitin, which constitutes the supporting framework of the nervous tissue.

neurochondrite (nū-rọ-kon'drīt), *n.* [Gr. *νεῦρον*, nerve, + *χονδρίτης*, made of coarse meal, cartilaginous, ‹ *χόνδρος*, coarse meal, cartilage.] One of two cartilaginous elements that by growth and ossification become the neural arch of a completed vertebra. When fully formed in cartilage they are known as the *neuroids*: correlated with *centrochondrite* and ★*pleurochondrite*.

Starting with the terms chondrite and osteite already proposed (p. 43), the cartilages of which any vertebral segment is formed will be called respectively the centrochondrite, *neurochondrites*, and pleurochondrites. By the concrescence of these is formed a cartilaginous vertebra, the regions of which are centrum, neuroids, and pleuroids.
Phil. Trans. Roy. Soc. London, ser. B, 1891, p. 72.

neurochord (nū'rọ-kôrd), *n.* [Gr. *νεῦρον*, sinew (nerve), + *χορδή*, a cord.] A cord of giant fibers which, in the earthworms and their allies and in some of the thoracostracous *Crustacea*, accompanies the ventral nervous system, on its dorsal surface. It is commonly regarded as a degenerated nervous structure which has acquired a supporting function, serving a purpose similar to that of the notochord in vertebrates.

Immediately above the notochord there lies another subcylindrical chord, also surrounded by a sheath of connective tissue. This chord is neither elastic nor solid, but consists of nerve tissue, fibres, and ganglion cells, surrounding a small central canal. For the sake of uniformity in nomenclature this nerve chord may be called the *neurochord*. It is the central nervous system, and contains within itself the elements of the brain and spinal marrow of higher forms. The *neurochord* tapers towards its posterior end, where it is coextensive with the notochord, but ends abruptly in front, some distance behind the tip of the snout. *Encyc. Brit.*, XXV. 386.

neurochordal (nū-rọ-kôr'dạl), *a.* [*neurochord* + *-al*¹.] Of or pertaining to a neurochord.

neuroclonic (nū-rọ-klon'ik), *a.* [Gr. *νεῦρον*, nerve, + *κλόνος*, spasm. See *clonic*.] Marked by or exhibiting nervous spasms.

neurocord, *n.* Same as ★*neurochord*.

neurocyte (nū'rọ-sīt), *n.* [Gr. *νεῦρον*, nerve, + *κύτος*, a hollow (a cell).] In *neurol.*: (*a*) Any adult nerve-cell within the central nervous system, together with its processes of whatever sort.

The conception that underlies his theory is that the *neurocytes* possess a kind of amœboid movement.
Amer. Jour. Psychol., XII. 165.

(*b*) The cell-body of such a nerve-cell.

neurodegenerative (nū"rọ-dẹ̄-jen'ẹ-rạ̄-tiv), *a.* [Gr. *νεῦρον*, nerve, + E. *degenerative*.] Pertaining to, or characterized by, nervous degeneration.

Spitzka, in defining paranoia, states that it is "based on an acquired or transmitted *neurodegenerative* taint."
Med. Record, Aug. 17, 1907, p. 263.

neurodendrite (nū-rọ-den'drīt), *n.* [Gr. *νεῦρον*, nerve, + *δενδρίτης*, of a tree: see *dendrite*.] One of the branching processes given off from a neurone: distinguished from the axis-cylinder process or neuraxon.

neurodendron (nū-rọ-den'drọn), *n.*; pl. *neurodendra* (-drạ̈), *neurodendrons* (-drọnz). [NL., ‹ Gr. *νεῦρον*, nerve, + *δένδρον*, tree.] In *neurol.*: (*a*) The arborization or terminal ramification of the processes of a nerve-cell; a neurodendrite.

He confines the amœboid movement to the extremities of the *neurodendrons*. *Amer. Jour. Psychol.*, XII. 165.

(*b*) Same as ★*neurocyte* (*a*).

neuroderm (nū'rọ-dėrm), *n.* [Gr. *νεῦρον*, nerve, + *δέρμα*, skin.] The ectoderm, or epiblast of the embryo: so called because it gives rise to the nervous system. *Lankester.*

neurodermal (nū-rọ-dėr'mạl), *a.* [*neuroderm* + *-al*¹.] Of or pertaining to the neuroderm.

neurodermatosis (nū"rọ-dėr-mạ-tō'sis), *n.* [NL., ‹ Gr. *νεῦρον*, nerve, + *δέρμα*(*τ*-), skin, + *-osis*.] Same as ★*dermatoneurosis*.

neurodiagnosis (nū"rọ-dī-ag-nō'sis), *n.* [NL., ‹ Gr. *νεῦρον*, nerve, + *διάγνωσις*, diagnosis.] Diagnosis of diseases of the nervous system. *Alien. and Neurol.*, Feb., 1903, p. 21.

neurodin (nū'rọ-din), *n.* [Gr. *νευρώδης*, nervous (sinewy), + *-in*².] The trade-name for acetyl-p-hydroxyphenylurethane, $CH_3COO\overset{4}{C}_6$-$H_4\overset{1}{N}HCOOC_2H_5$, a colorless crystalline compound used in medicine as an antineuralgic and antipyretic.

neurodynamic (nū″rọ-dī-nam′ik), *a.* [Gr. *νεῦρον*, nerve, + *δύναμις*, force.] In *neurol.*, of or pertaining to nervous energy and its discharge.

> This interrelation may be either direct, *neurodynamic*, or indirect, vasomotoric. The first is probably due to the fact that energy which accumulates in one region as the result of inhibition, is discharged through the connecting fibres into other central regions.
> *W. Wundt* (trans.), Outlines of Psychol., p. 274.

neurodynia (nū-rō-din′i-a̤), *n.* [NL., < Gr. *νεῦρον*, nerve, + *ὀδύνη*, pain.] Same as *neuralgia.*

neuro-enteric (nū″rọ-en-ter′ik), *a.* Same as *neurenteric.*

neuro-epidermal (nū″rọ-ep-i-dėr′ma̤l), *a.* Of or pertaining to the nervous system and the epidermis: as, the *neuro-epidermal* layer of the vertebrate embryo.

neuro-epithelioma (nū″rọ-ep-i-thē-li-ō′ma̤), *n.*; pl. *neuro-epitheliomata* (-ma̤-tä). [Gr. *νεῦρον*, nerve, + NL. *epithelioma.*] A tumor arising in neuro-epithelial tissue.

neuro-equilibrium (nū″rọ-ē-kwi-lib′ri-um), *n.* [Gr. *νεῦρον*, nerve, + L. *æquilibrium.*] The condition of even nervous tension in which there is a ready response to stimuli of whatever nature. *Baldwin*, Dict. of Philos. and Psychol., II. 437.

neurofibril (nū-rō-fī′bril), *n.* Same as ⋆*neurofibrilla*. *Jour. Exper. Med.*, Oct. 1, 1900, p. 21, note.

neurofibrilla (nū″rọ-fī-bril′a̤), *n.*; pl. *neurofibrillæ* (-ē). [NL., < Gr. *νεῦρον*, nerve, + NL. *fibrilla*, fibril.] The very delicate fibrils that have been found to lie within the ganglion-cells and their neuraxons and dendrites.

> In the ganglion-cells and their processes there is no known differentiation of *neurofibrillæ*.
> *Encyc. Brit.*, XXXI. 793.

neurofibrillar (nū-rọ-fī′bri-lär), *a.* [*neurofibrilla* + *-ar*³.] Of or pertaining to the neurofibrils or neurofibrillæ.

neurofibroma (nū″rọ-fi-brō′mä), *n.*; pl. *neurofibromata* (-ma̤-tä). [NL., < Gr. *νεῦρον*, nerve, + E. *fibroma.*] A tumor of a nerve, caused by circumscribed overgrowth of the fibrous tissue. *Med. Record*, June 13, 1903, p. 926.

neurofibromatosis (nū″rọ-fi-brō-ma-tō′sis), *n.* [NL., < *neurofibroma(t-)* + *-osis.*] The occurrence of one or more neurofibromata, or a general increase of fibrous tissue in the nerves. *Med. Record*, June 13, 1903, p. 925.

neurogenic, neurogenous (nū-rọ-jen′ik, nụ-roj′e-nus), *a.* [Gr. *νεῦρον*, nerve, + *-γενης*, -producing.] Originating in the nerves or in nervous substance. *Buck*, Med. Handbook, III. 111.

neuroglandular (nū-rọ-glan′dụ-lär), *a.* [Gr. *νεῦρον*, nerve, + E. *glandular.*] Having the characteristics of sensory and glandular organs: as, the *neuroglandular* pit of some *Nemertini*. Compare ⋆*cerebral organ.*

neuroglia-cell (nụ-rog′li-a̤-sel″), *n.* Same as ⋆*glia-cell.*

neuroglioma (nū″rog-li-ō′ma), *n.*; pl. *neurogliomata* (-ma̤-tä). [NL., < Gr. *νεῦρον*, nerve, + NL. *glioma.*] A tumor formed of overgrowth of the neuroglia; a glioma.

neurohematology (nū″rō-hem-a̤-tol′ọ-ji), *n.* [Gr. *νεῦρον*, nerve, + E. *hematology.*] The study of the changes in the composition of the blood occurring in diseases of the nervous system. *Alien. and Neurol.*, Aug., 1907, p. 431.

neurohistologist (nū″rọ-his-tol′ọ-jist), *n.* [*neurohistolog(y)* + *-ist.*] One who makes a special study of the microscopic structure of the nervous system. *Buck*, Med. Handbook, II. 336.

neurohistology (nū″rọ-his-tol′ō-ji), *n.* [Gr. *νεῦρον*, nerve, + E. *histology.*] The department of histology which treats of the minute structure of the nervous tissues and their elements, the neurones. *Buck*, Med. Handbook, V. 40.

neurohypnotic (nū″rọ-hip-not′ik), *a.* [*neurohypnotism.*] Same as *hypnotic.*

neurolemma, *n.* Same as *neurilemma.*

neurolite (nū′rọ-līt), *n.* [Gr. *νεῦρον*, string, sinew, tendon, nerve, + *λίθος*, stone.] A soft yellow hydrated aluminium silicate occurring in fibrous masses, wood-like in aspect: from Stanstead, Province of Quebec.

neurolymph (nū′rọ-limf), *n.* [Gr. *νεῦρον*, nerve, + L. *lympha*, fluid.] The cerebrospinal fluid.

neurolysin (nụ-rol′i-sin), *n.* [Gr. *νεῦρον*, nerve, + E. *lysin.*] A cytotoxin resulting on immunization with nerve-cells.

neurolysis (nụ-rol′i-sis), *n.* [NL., < Gr. *νεορον*, nerve, + *λύσις*, dissolution.] 1. Destruction of nerve-substance; the physiological action of neurolysins.—2. The state of exhaustion in a nerve due to over-stimulation.

neurolytic (nū-rọ-lit′ik), *a.* [*neurolysis.*] Of or pertaining to, or of the nature of, neurolysis: (*a*) having a destructive action upon nerve-substance; (*b*) exhausting a nerve by over-stimulation.

neuroma, *n.*—**Amputation neuroma**, a tumor due to enlargement of the end of a nerve in the stump after an amputation.—**False neuroma**, a tumor situated on a nerve-trunk, but not composed of any nervous elements.

neuromechanism (nū-rō-mek′a̤-nizm), *n.* [Gr. *νεῦρον*, nerve, + E. *mechanism.*] The structure or arrangement of the nerves and nerve-centers in relation to any function. *Buck*, Med. Handbook, I. 647.

neuromerism (nụ-rom′ẹ-rizm), *n.* [Gr. *νεῦρον*, nerve, + *μέρος*, part, + *-ism.*] The state or condition of metamerism, or segmentation in the central nervous system.

neurometer (nụ-rom′e-tėr), *n.* [Gr. *νεῦρον*, a nerve, + *μέτρον*, a measure.] A means of measuring nerve-force. [Rare.]

> The nitrous oxyd approaches nearer to the notion of a *neurometer* than anything which perhaps could be devised; and I was acted upon by a far smaller dose than any person upon whom it had ever been tried.
> *Southey*, Life xxiv.

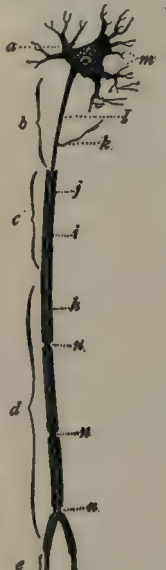
neuromyic (nū-rọ-mī′ik), *a.* [Gr. *νεῦρον*, a nerve, + *μῦς*, muscle.] Same as *neuromuscular.*

neuromyomere (nū-rọ-mī′ọ-mēr), *n.* [Gr. *νεῦρον*, nerve, + *μῦς*, muscle, + *μέρος*, part.] A segment or metamere of the central nervous system, with the myomere or muscle-segment belonging to it. *Philos. Trans. Roy. Soc.* (London), 1895, ser. B, p. 216.

neuromyositis (nū″rọ-mī-ọ-sī′tis), *n.* [Gr. *νεῦρον*, a nerve, + E. *myositis*. See *myositis.*] Inflammation of both nerves and muscles.

neuron, *n.* 3. Same as ⋆*neurone.*

neuronal (nū-rō′na̤l), *a.* [*neurone* + *-al*¹.] Of or pertaining to a neurone. *Alien. and Neurol.*, Nov., 1907, p. 520.



Schema of a Neurone (after Verworn).
a, nerve-cell; *b*, naked axis-cylinder; *c*, axis-cylinder clothed with medullary sheath; *d*, axis-cylinder clothed with medullary sheath and neurilemma; *e*, axis-cylinder clothed with neurilemma; *f*, naked axis-cylinder; *g*, terminal branches; *h*, neurilemma; *i*, axis-cylinder; *j*, medullary sheath; *k*, collateral branch; *l*, axis-cylinder process; *m*, dendrites; *n*, *n*, *n*, nodes of Ranvier. (From Hall's "Physiology.")

neurone (nū′rōn), *n.* [Gr. *νεῦρον*, nerve, + *-one* (Gr. *-ων*).] 1. One of the structural elements of the nervous system; a nerve-cell together with all its processes, the neuraxon and the dendrites.

> The primordial segmentation of the vertebrate nervous centres has become overlaid and masked by the development of groups of *neurones*, which combine, co-ordinate, and otherwise influence the relations of the segmental nerve-cells. This is true of the spinal cord, but much more so of the brain.
> *Encyc. Brit.*, XXV. 399.

2. The axis-cylinder of a nerve-cell.

> The brain here grows by the addition of cells in the indifferent stage, but as soon as these cells are differentiated they conform to the general law and divide no more (*neurones*) or slowly (glia cells).
> *C. S. Minot*, in Science, March 29, [1901, p. 488.

Neurone theory, the theory that the nervous system is composed of independent nerve-cells (neurones) which are not united anatomically with one another.

neuronic (nụ-ron′ik), *a.* [*neurone* + *-ic.*] Of or pertaining to, or of the nature of, neurones.

> The object of the present research has been to indicate the exact region of the cortex to which the visuo-sensory function is limited. For this purpose it has been unnecessary to pay attention to the special *neuronic* structure of this portion of the cerebrum but the general histology of the cortex referred to . . . has been considered minutely.
> *Philos. Trans. Roy. Soc.* (Lon- [don), 1900, ser. B, p. 166.

neuronophage (nụ-ron′ọ-fāj), *n.* [*neurone* + Gr. *φαγος*, < *φαγεῖν*, eat.] One of the neuroglia cells which have been supposed to eat or prey on injured nerve-cells. *Med. Record*, July 18, 1903, p. 86.

neuronophagocytosis (nū″-rọ-nọ-fag″ọ-sī-tō′sis), *n.* [*neurone* + *phagocytosis.*] In *pathol.*, the destruction of the neurones of ganglion cells by phagocytes. *Buck*, Med. Handbook, VI. 261.

neuronym (nū′rọ-nim), *n.* [Gr. *νεῦρον*, a nerve, + *ὄνυμα*, a name. See *onym.*] The anatomical name of a nerve. *B. G. Wilder.* [Rare.]

neuronymy (nụ-ron′i-mi), *n.* [*neuronym* + *-y*³.] Neurological nomenclature. *Baldwin*, Dict. of Philos. and Psychol., II. 174.

neuroparalysis (nū″rọ-pa̤-ral′i-sis), *n.* [NL., < Gr. *νεῦρον*, nerve, + *παράλυσις*, paralysis.] Paralysis due to lesion of a nerve rather than to disease or destruction of the nervous centers.

neuroparalytic (nū″rọ-par-a̤-lit′ik), *a.* [*neuroparalysis* (*-lyt-*) + *-ic.*] Relating to or resulting from loss of conducting power in a nerve.

neuropathia (nū-rọ-path′i-ä), *n.* [NL.] Same as *neuropathy*. *Brinton*, Basis of Social Relations, p. 109.

neuropathist (nụ-rop′a̤-thist), *n.* [*neuropath(y)* + *-ist.*] One who is versed in the study and treatment of nervous diseases.

neuropathogenesis (nū″rọ-path-ọ-jen′e-sis), *n.* [Gr. *νεῦρον*, nerve, + *πάθος*, disease, + *γένεσις*, origination.] The development of disease of the nervous system.

> His lectures on *neuropathogenesis*, gout, leprosy, diseases of the tongue, &c., were full of original observation.
> *Encyc. Brit.*, XXIX. 367.

neuropile (nū′rọ-pīl), *n.* [Gr. *νεῦρον*, nerve, + L. *pilus*, hair.] One of the delicate, ultimate branches of a nerve-cell process.

> It was easy to decide this question by separating the ganglion-cells with their axis-cylinder process from the motor neurons without injuring the *neuropiles*.
> *J. Loeb*, Comp. Physiol. of the Brain, p. 45.

neuropilem (nụ-rop′i-lem), *n.* [Gr. *νεῦρον*, nerve, + L. *pilus*, hair.] An interweaving mass of minute fibrils forming the termination of a nerve. *Baldwin*, Dict. of Philos. and Psychol., II. 175.

neuroplasm (nū′rọ-plazm), *n.* [Gr. *νεῦρον*, nerve, + *πλάσμα*, anything formed.] The protoplasm, or the living substance of the nerve-cells and their fibrillæ. Also called *nerve-plasma.*

neuroplasmic (nū-rọ-plaz′mik), *a.* [*neuroplasm* + *-ic.*] Of or pertaining to the neuroplasm, or protoplasm of the nerve-cells.

neuroplasty (nū′rọ-plas-ti), *n.* [Gr. *νεῦρον*, nerve, + *πλαστός*, formed, + *-y*³.] Surgical reunion of divided nerve-trunks and other forms of plastic surgery of the nerves.

neuropod (nū′rọ-pod), *n.* [Gr. *νεῦρον*, a nerve, + *πούς* (*ποδ-*), foot.] An invertebrate animal, as a worm, in which the neuropodia are well developed; an animal in which the limbs are upon the neural aspect of the body.

neuropodion (nū-rọ-pō′di-on), *n.*; pl. *neuropodia* (-ä). [See *neuropodium.*] One of the terminal branches of the axon of a neurone; a dendraxon.

neuropodous (nụ-rop′ọ-dus), *a.* [*neuropod(ium)* + *-ous.*] Having the neuropodia well developed; also, having the limbs on the neural instead of the hemal side of the body, as many worms and other invertebrates.

neuropsychic (nū-rọ-sī′kik), *a.* [Gr. *νεῦρον*, nerve, + E. *psychic.*] In *neurol.*, pertaining to or characteristic of the nerve-centers that form the substrate of mind.

> Electric energy is synonymous with *neuropsychic* energy. *Amer. Anthropologist*, Oct.-Dec., 1902, p. 767.

neuropsychical (nū-rọ-sī′ki-ka̤l), *a.* Same as ⋆*neuropsychic.*

neuropsychological (nū″rọ-sī-kọ-loj′i-ka̤l), *a.* [*neuropsycholog(y)* + *-ical.*] Pertaining to, or of the nature of, neuropsychology.

neuropsychologist (nū″rọ-sī-kol′ọ-jist), *n.* [*neuropsycholog(y)* + *-ist.*] One who is versed in neuropsychology.

neuropterist (nụ-rop′tẹ-rist), *n.* [*Neuropter(a)* + *-ist.*] One who is versed in the study of the *Neuroptera.*

neuropteroid (nụ-rop′tẹ-roid), *a.* [*Neuroptera* + *-oid.*] Having the characters of, or belonging to, the old Linnean order *Neuroptera.*

> Thus the *Odonata*, *Trichoptera*, and *Mecaptera*, although split off into independent orders, may be referred to as belonging to the neuropteroid series.

Neuropteroidea (nụ-rop-tẹ-roi′dẹ-a̤), *n. pl.* [NL., < *Neuroptera* + *-oidea.*] A suborder of fossil insects including those forms which resemble the *Neuroptera.*

neurorthopteran (nū-rôr-thop'tẹ-rạn), *a.* and *n.* [*Neurorthoptera* + *-an.*] **I.** *a.* Pertaining to or having the characters of the *Neurorthoptera.*

II. *n.* A member of the *Neurorthoptera.*

neurosclerosis (nū'rọ̄-sklẹ̄-rō'sis), *n.* [NL., < Gr. *νεῦρον*, nerve, + *σκλήρωσις*, hardening.] Overgrowth of the fibrous structure in a nerve-trunk, encroaching upon and destroying more or less the nervous substance.

neurosis, *n.* **3.** In *neurol.*, a process of nervous excitation: used thus generally only in opposition to *psychosis*, a mental process.

"No psychosis without *neurosis*": there is no mental state which has not a peculiar nervous state corresponding to it. *E. B. Titchener*, Outline of Psychol., p. 360.

Occupation neurosis, any nervous affection, such as writers' cramp, which is directly referable to the person's occupation as a cause.

neurosome (nū'rọ̄-sōm), *n.* [Gr. *νεῦρον*, nerve, + *σῶμα*, body.] In *neurol.*, one of the minute particles in the ground-substance of the cytoplasm of a neurone. *Buck*, Med. Handbook, II. 326.

neurospasm (nū'rọ̄-spazm), *n.* [Gr. *νεῦρον*, nerve, + *σπασμός*, spasm.] A muscular spasm of nervous origin.

neurospongium (nū-rọ̄-spon'ji-um), *n.* [NL., < Gr. *νεῦρον*, nerve, + *σπογγιά*, sponge.] A fine meshwork of minute fibrillæ traversing the granular matrix of the optic tract in certain insects. *Hickson.*

neurostearic (nū"rọ̄-stē-ar'ik), *a.* [Gr. *νεῦρον*, nerve, + E. *stearic.*] Noting an acid, a colorless compound, $C_{17}H_{35}COOH$, prepared by the action of dilute sulphuric acid on phrenosin, a glucoside found in the brain. It melts at 84° C.

neurosteite (nụ-ros'tẹ̄-īt), *n.* [Gr. *νεῦρον*, nerve, + *ὀστέον*, bone, + *-ite*².] The center of ossification in the cartilaginous segments or neuroids that, by ossifying, become the neural arch: correlated with *chondrosteite* and ★*pleurosteite.*

When ossification takes place one or two centres appear in the body, the centrosteites, one in each neuroid, the *neurosteites*, which extend ventrad into the body, and one in each pleuroid, the pleurosteites. Thus the entire centrum of the bony vertebra, although co-extensive with that of its cartilaginous predecessor, consists not only of the single or paired centrosteites but of the ventral ends of the *neurosteites.*
Phil. Trans. Roy. Soc. (London), ser. B, 1891, p. 73.

neurosthenia (nū-rọ̄-sthē'ni-ạ̈), *n.* [NL., < Gr. *νεῦρον*, nerve, + *σθένος*, strength.] Excessive irritability of the nerves.

neurosurgery (nū-rọ̄-sėr'jėr-i), *n.* [Gr. *νεῦρον*, nerve, + E. *surgery.*] Surgery of the nervous system. *Alien. and Neurol.*, Aug., 1904, p. 404.

neurotabes (nū-rọ̄-tā'bēz), *n.* [Gr. *νεῦρον*, nerve, + L. *tabes*, wasting.] Multiple neuritis with symptoms resembling tabes dorsalis.

neurotendinous (nū-rọ̄-ten'di-nus), *a.* [Gr. *νεῦρον*, nerve, + L. *tendo* (*tendin-*), tendon, + *-ous.*] Relating to both nerve and tendon: noting the nerve-terminations in tendons.

neurothele (nū'rọ̄-thēl), *n.* [NL., < Gr. *νεῦρον*, nerve, + *θηλή*, nipple.] A papilla in the skin which contains tactile corpuscles or other forms of nerve termination. Also called *nerve-papilla.*

neuroticism (nụ-rot'i-sizm), *n.* [*neurotic* + *-ism.*] A condition of exalted or perverted nervous or psychic action.

neurotization (nū-rot-i-zā'shọn), *n.* [*neurotiz(e)* + *-ation.*] Reunion of a nerve after division.

neurotize (nū'rọ̄-tīz), *v. t.*; pret. and pp. *neurotized*, ppr. *neurotizing.* [Gr. **νευρωτός* (< *νευροῦν*, nerve, < *νεῦρον*, a nerve) + *-ize.*] To reunite and restore the axis-cylinder of (a nerve) after it has been divided. *Buck*, Med. Handbook, VIII. 274.

neurotome (nū'rọ̄-tōm), *n.* [Gr. *νεῦρον*, nerve, + *-τομος*, < *ταμεῖν*, cut.] **1.** A long two-edged scalpel used in the dissecting of nerves.—**2.** Same as *neuromere.*

neurotomist (nụ-rot'ọ̄-mist), *n.* [*neurotom(y)* + *-ist.*] One who practises neurotomy or section of the nerves; a dissector of the nerves.

neurotonic, *n.* **II.** *a.* **1.** Tending to improve the general tone of the nervous system.—**2.** Relating to the tonus of a nerve.—**Neurotonic reaction**, contraction of a muscle which persists after the removal of the stimulus which excited it.

neurotoxic (nū-rọ̄-tok'sik), *a.* [Gr. *νεῦρον*, nerve, + E. *toxic.*] Causing the destruction of nerve-cells by means of neurotoxins.

It is possible by replacement experiments in vitro to demonstrate the occupation of the receptors by the neurotoxin of serum and the consequent exclusion of the *neurotoxic* constituent of venom.
Science, July 3, 1903, p. 12.

neurotoxical (nū-rọ̄-tok'si-kạl), *a.* Same as ★*neurotoxic. Sci. Amer.*, Sept. 30, 1905, p. 256.

neurotoxin (nū-rọ̄-tok'sin), *n.* [Gr. *νεῦρον*, nerve, + E. *toxin.*] A cytotoxin which results on immunization with nerve-tissue.

neurotropic (nū-rọ̄-trop'ik), *a.* [Gr. *νεῦρον*, nerve, + *-τροπος*, < *τρέπειν*, turn.] Influenced, by way of attraction or repulsion, by nervous tissue. *Buck*, Med. Handbook, VI. 270.

neurotropism (nụ-rot'rọ̄-pizm), *n.* Same as ★*neurotropy.*

neurotropy (nụ-rot'rọ̄-pi), *n.* [*neurotrop(ic)* + *-y*³.] In *histol.*, the attraction or repulsion of certain substances for nerve-tissue; especially the affinity of nerve-cells for certain stains. *Buck*, Med. Handbook, VI. 270.

neurovaricosis (nū-rọ̄-var-i-kō'sis), *n.* [NL., < Gr. *νεῦρον*, nerve, + NL. *varix* (*varic-*), varix, + *-osis.*] The formation of bead-like swellings along the course of a nerve.

neurovascular (nū-rọ̄-vas'kụ̄-lär), *a.* [Gr. *νεῦρον*, a nerve, + E. *vascular.*] Both nervous and vascular: as, *neurovascular* tension. *Allbutt*, Sys. Med., VIII. 609.

neurula (nū'rö-lạ̈), *n.*; pl. *neurulæ* (-lē). [NL., < Gr. *νεῦρον*, nerve, + dim. *-ula.* See *-ule.*] An early stage in embryonic development, characterized by the first appearance of the central nervous system.

neururgic (nụ-rėr'jik), *a.* [Gr. *νεῦρον*, nerve, + *ἔργον*, work.] Relating to, or of the nature of, nerve action.

On the contrary, we would have assumed that the correspondence between what I have called *neururgic* and noetic changes is thoroughgoing; that not only is there no modification of consciousness without a *neururgic* change; but that no *neururgic* change can occur without a corresponding modification of consciousness.
Jour. Philos., Psychol. and Sci. Methods, June 9, 1904, [p. 310.

Neusser's perinuclear granules. See ★*granule.*

neutral. **I.** *a.* **8.** In *metal.*: (*a*) Neither acid nor basic: said of slag and linings. (*b*) Neither red-short nor cold-short: said of wrought-iron. (*c*) Suitable for production of neutral iron: said of iron-ore.—**Arago's neutral point.** See ★*point*¹.—**Babinet's neutral point.** See ★*point*¹. **Neutral ammeter**, an ammeter connected with the neutral conductor of a three-wire circuit.—**Neutral armature**, in *telegraphy*, the armature of a nonpolarized relay.—**Neutral brick, conductor, oil,** etc. See ★*brick*², etc.—**Neutral zone.** (*a*) See *neutral.* (*b*) See ★*zone.*

II. *n.* **2.** Specifically, in some United States colleges and universities, one who belongs to none of the Greek-letter or other secret societies.

The distinction [at German universities, between the corps-students and others] resembles that which exists at Yale, for instance, between "society-men" and *neutrals.*
J. M. Hart, German Universities, p. 70.

3. In *elect.*, the neutral conductor of a three-wire circuit.

If the ground were in the primary coils of a transformer, it was possible to get a voltage of four or five times the regular pressure of the system. It was always better to ground the *neutral.*
Elect. World and Engin., April 11, 1903, p. 607.

neutralism (nū'trạl-izm), *n.* [*neutral* + *-ism.*] The character or state of being neutral; neutrality.

It is not . . . unreasonable to ask of those "Religions of the Future" . . . that they will equip themselves with a substantial shape, with a worship, a ministry, and a flock. . . . But, when they have done this, their *neutralism* will be at an end, denominationalism will have made them prisoners; the denominationalism of Groningen or Tübingen, instead of that of Utrecht or Geneva.
M. Arnold, Pop. Educ. of France, p. 221.

neutralization, *n.* **3.** [From the French.] In *motor-racing*, the act of neutralizing or rendering neutral. See ★*neutralize*, 4.

France was entitled to select the course, and her choice fell upon the Auvergne Circuit, located in a mountainous and thinly populated section, where there are no cities or large towns to require frequent *neutralizations.*
Automobile Topics, European Sup., May 27, 1905, p. 2.

Heat of neutralization. See ★*heat.*—**Richter's law of neutralization.** See ★*law*¹.

neutralize, *v. t.* **4.** In *motor-racing*, to give a neutral character to (a town or to a specified part of a road), that is, to arrange that the time used in passing through or over it is not to be counted in the race.

Fournier made an average speed of 53 miles an hour to Bordeaux—a distance (after deducting the *neutralized* sections) of 328 miles. *Encyc. Brit.*, XXXI. 13.

The first stage, to Bordeaux, which was the only one allowed by the authorities, passed through Chartres, Poitiers, and Angoulème. A number of different villages were *neutralized*, and the chauffeurs were given from 5 to 25 minutes to make the passage. The total time which was allowed for passing through the towns was 3 hours 32 minutes; and this was not counted in the speed contest.
Sci. Amer. Sup., June 20, 1903, p. 22958.

neutraloid (nū'trạ̈-loid), *n.* [*neutral* + *-oid.*] See the extract.

Neutraloids are non-fermentable oxidized hydrocarbons that are somewhat related to glucosoids. Aloin, elaterin, and glycyrrhizin are varieties of *neutraloids.*
Sci. Amer. Sup., Feb. 29, 1908, p. 138.

neutrophile, *a.* **II.** *n.* A leucocyte, or colorless blood-corpuscle, containing granules that stain in neutral dyes. *Med. Record*, Feb. 28, 1903, p. 347.

neutrophilic (nū-trọ̄-fil'ik), *a.* Same as *neutrophile.*

The invading cells are endothelial cells, *neutrophilic* and eosinophilic polymorphonuclear leucocytes, mononuclear eosinophiles, and cells of the lymphocytic series.
Jour. Med. Research, Dec., 1906, p. 486.

neutrophilous (nụ-trof'i-lus), *a.* Same as *neutrophile.*

neutrosaline (nū-trọ̄-sạ̄-līn'), *a.* In *chem.*, having the character of a neutral salt or a mixture of neutral salts.

Neuvizyan (nė-viz'i-ạ̈n), *a.* and *n.* [Named from *Neuvizy*, a village of France.] In *geol.*, noting a division of the Jurassic system in France and the Jura Mountains equivalent to the Lower Oxfordian of England.

Nev. An abbreviation of *Nevada.*

Nevada blue-grass, clover. See ★*blue-grass*, ★*clover.*

Nevadan (nẹ̄-vä'dạn), *a.* Of or pertaining to the State of Nevada or to the Sierra Nevada: as, the *Nevadan* desert.

nevado (nā-vä'dō), *n.* [Sp. *nevado*, snowy, of snow, < L. *nivatus*, cooled with snow, < *nix* (*niv-*), snow: see *nival.*] A violent dry, cold wind which blows down the slopes of the Andes in the more elevated portions of Colombia, South America, from about 7 A.M. to sunset.

Nevers pottery. See ★*pottery.*

nevjanskite (nev'yän-skīt), *n.* [*Nevjansk*, in Siberia, + *-ite*².] A variety of the iridium-osmium alloy iridosmium, containing a relatively large amount of iridium.

nevus, *n.* See *nævus.*

New Connection, woman. See ★*connection*, ★*woman.*

Newark half-crown, series. See ★*half-crown*, ★*series.*

Newberg circles. See ★*circle.*

Newburg (nū'bėrg), *n.* [Appar. from the city of Newburg, N. Y.] A preparation of delicate meat or shell-fish, stewed usually in cream, thickened with eggs and flavored with wine: frequently made in a chafing-dish. Also *Newberg*, *Newburgh.*

newburn-weed (nū'bėrn-wēd), *n.* In the Bahamas, the blood-leaf or Juba's-bush, *Iresine paniculata.* See *Iresine.*

Newcastle coal-measures. See ★*coal-measures.*

newel¹, *n.*—**Hollow newel**, the open space around which a flight of stairs is disposed, especially spiral stairs: a misnomer.

new-fallen (nū'fâ"ln), *a.* Newly or recently fallen: as, *new-fallen* snow.

Meantime forget this *new-fall'n* dignity.
Shak., As You Like It, v. 4.

New Guinea balls. See ★*ball*¹.

newkirkite (nū'kėrk-īt), *n.* [*Newkirk*, translating G. *Neukirchen*, where found, + *-ite*².] A mineral, a variety of manganite, from Neukirchen in Alsace.

new-laid (nū'lād), *a.* Newly laid.

And *new laid* eggs, which Baucis' busy care
Turn'd by a gentle fire, and roasted rare.
Dryden, tr. of Ovid, Baucis and Philemon, l. 97.

new-lighted (nū'lī"ted), *a.* Newly alighted.

A station like the herald Mercury
New-lighted on a heaven-kissing hill.
Shak., Hamlet, iii. 3.

New M. An abbreviation of *New Mexico.*

new-made (nū'mād), *a.* Newly or freshly made: as, *new-made* bread.

Suffolk, the *new-made* duke that rules the roast.
Shak., 2 Hen. VI., i. 1.

Newmanism (nū'mạn-izm), *n.* The religious views and theories of John Henry Newman (1801-90), during the period just prior to his conversion to the Roman Catholic Church, in which he sought to find a 'middle way' between Anglicanism and Roman Catholicism;

especially, the doctrine laid down in the famous Tract XC., in the interpretation of the Thirty-nine articles.

Newmanite (nū′man-īt), *a.* and *n.* **I.** *a.* Of or pertaining to Newmanism.

II. *n.* An adherent of Newmanism, the view that a middle way may be found between Anglicanism and Romanism.

Newmanize (nū′man-īz), *v. i.*; pret. and pp. *Newmanized*, ppr. *Newmanizing*. [See ⋆*Newmanism*.] To adopt the views or intellectual methods of John Henry Newman.

new-mown (nū′mōn), *a.* Newly or recently cut or mown.

> And the ripe harvest of the *new-mown* hay
> Gives it a sweet and wholesome odour.
> *Cibber*, Richard III., v.

news, *n.*—**Do you hear the news?** (*naut.*), the preface to the ordering out of a watch: as, "*Do you hear the news?* on deck the starboard (or port) watch!"—**News agency**, an agency, such as the Associated Press (which see under ⋆*associated*), engaged in the business of collecting and distributing telegraphic news to those newspapers which subscribe for this service.—**News bureau**, a news agency.—**To carry the news forward**, to transmit orders or information from the officers to the crew.—**Ward-room news**, information in the possession of the ward-room officers concerning the vessel, its destination, etc., carried forward by the mess-boys.

news-editor (nūz′ed″i-tor), *n.* That member of the editorial staff of a newspaper whose business it is to attend to the collecting and editing of news items. *Athenæum.*

newspapery (nūz′pā″pėr-i), *a.* Having the characteristics of a newspaper: implying flimsiness, superficiality, and inaccuracy.

news-stand (nūz′stand), *n.* A stand or place at which newspapers, periodicals, etc., are sold.

newt, *n.*—**Webbed newt**, *Molge palmata*, the smallest species of newt found in Great Britain, distinguished by having the hind toes fully webbed during the breeding-season.

New Test. An abbreviation of *New Testament*.

Newtonian constant. Same as *gravitation constant* (which see, under *constant*).

newtonite (nū′ton-īt), *n.* [*Newton* (county in Arkansas) + *-ite*[2].] A hydrous silicate of aluminium occurring in soft white compact masses resembling kaolin: found in Newton county, Arkansas.

newtonium (nū-tō′ni-um), *n.* [NL., < *Newton* + *-ium*.] A name proposed by Mendeléjeff for the cosmical ether considered as a chemical substance so light but with such molecular velocity as to escape gravitation. For this he assumes a molecular weight of about one millionth that of hydrogen, with a velocity of at least 2,240 kilometers per second.

Newton's scale of colors, parallelogram, principle. See ⋆*color*, etc.

New York series. See ⋆*series*.

New Zealand boxwood, cedar, cotton, etc. See ⋆*boxwood*, ⋆*cedar*, ⋆*cotton*[1], etc.

Nexilarius (nek-si-lā′ri-us), *n.* [NL., < L. *nexilis*, tied or bound together, < *nectere*, bind.] A genus of fishes, of the family *Pomocentridæ*, found on the Pacific coast of Central America.

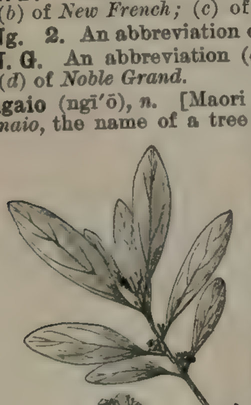
next, *a.*—**To get next**, to get into favorable and close relations with (a person or thing). [Slang.]—**To make it next**, in *euchre*, to name the same color for trumps as the suit just turned down.

N. F. An abbreviation (*a*) of *Newfoundland*; (*b*) of *New French*; (*c*) of *Norman French*.

Ng. **2.** An abbreviation of *Norwegian*.

N. G. An abbreviation (*c*) of *New Granada*; (*d*) of *Noble Grand*.

ngaio (ngī′ō), *n.* [Maori name, = Hawaiian *naio*, the name of a tree of the same genus.] In New Zealand, *Myoporum lætum*, a shrub or small tree closely allied to the bastard sandalwood of Hawaii (*M. Sandwicense*) and the Australian blueberry-tree (*M. serratum*). It bears small edible drupes and its light, tough white wood is used for making gunstocks. In the South Island the name is generally corrupted to *kaio*.



Ngaio (*Myoporum lætum*). Greatly reduced. *a*, single flower.

ngawite (ngä′wīt), *n.* See ⋆*meteorite*.

N. G. C. An abbreviation of (Dreyer's) *New General Catalogue* of nebulæ, a revised and enlarged edition of Sir John Herschel's General Catalogue, usually referred to by the abbreviation G. C.

N. H. An abbreviation of *New Hampshire*.

nhanica (nyä-nē′kä), *n.* [Native name.] A tree of the myrtle family, *Eugenia Nhanica*, native of southern Brazil, bearing edible berries the size of plums, which are there used as a table fruit.

N. H. D. An abbreviation of the Latin *Naturalis Historiæ Doctor*, Doctor of Natural History.

N. Heb. An abbreviation of *New Hebrew*.

N. H. P. An abbreviation of *nominal horse-power*. [No longer in use.]

N. I. An abbreviation of *Native Infantry*.

Niagaran (nī-ag′a̤-ra̤n), *a.* and *n.* [*Niagar*(*a*) + *-an*.] **I.** *a.* In *geol.*, noting a period or group of the Upper Silurian which embraces the Clinton limestone, sandstone, and shales, the Rochester shale, and the Lockport dolomite of New York and elsewhere.

II. *n.* The Niagaran period or group.

niaiserie (nē-ā-ze̤-rē′), *n.* [F., < *niais*, fem. *niaise*, simple, stupid.] Foolishness or stupidity; a foolish or stupid act.

Niam fat. See the extract.

> *Niam fat* was obtained from the seeds of Lophira alata, Banks, a tree indigenous to Senegambia, Sierra Leone, and the Egyptian Soudan. The fat, freed from extraneous matter, forms 41 per cent. of the kernels. It is a soft, buttery mass melting at 24° C., and is used by the natives for culinary purposes and as a hair oil.
> *Nature*, Dec. 26, 1907, p. 189.

niata (ni-ä′tä), *n.* [South Am.] A small variety of South American cattle.

> These cattle can browse as well as others on grass, but . . . they cannot, during the often recurrent droughts, browse on the twigs of trees, reeds, &c. . . . so that at these times the *Niatas* perish, if not fed by their owners.
> *Darwin*, Origin of Species, vii.

niatism (nī′a̤-tizm), *n.* [*niat*(*a*) + *-ism*.] In *zoöl.*, the condition of being a dwarf; a sudden variation or mutation which produces a dwarfed stature in animals.

nib[1], *n.* **8.** The tip or growing point of an oyster-shell. [Local, U. S.]—**9.** The button or nodule of graphitic carbon which is sometimes deposited upon the negative terminal by an electric arc between carbon poles.

nib-block (nib′blok), *n.* *Naut.*, a metal block whose distinctive feature is a fixed or rigid hook to insure the block's standing square (against turning).

nibs (nibz), *n.* [Also *nabs*, *knabs*.] A nonsensical title: used in the phrase 'his royal *nibs*.' [Slang.]

Nicæan (nī-sē′a̤n), *a.* and *n.* [L. *Nicæa*, Gr. Νίκαια, Nice, + *-an*.] **I.** *a.* Of or concerning the Nicene council or Creed.

II. *n.* One who holds to the Nicene Creed.

Nicar. An abbreviation of *Nicaragua*.

Nicaragua scraps and sheets. See ⋆*scrap*[1].

niccolanum (nik-ọ-lā′num), *n.* [NL., < *niccolum*, nickel, + *-anum*.] A supposed new chemical element announced in 1805 as present in certain cobalt ores. It proved to be merely impure nickel mixed with cobalt, arsenic, and iron.

Nicholson's blue. Same as *alkali blue* (which see, under *blue*).

nick[1], *n.* **4.** In *type-founding*, a small groove, made by the mold on the front side and lower part of the body of American type. The first purpose of the nick is to enable the type-setter to place the type properly in the stick without examining the face. When many faces are designed for the same body, it is customary to cast two or more nicks at irregular intervals to prevent accidental mixing of unlike faces. In France the nick is on the hinder side. In some forms of type-setting and type distributing, the nicks are square-cut grooves, with a different arrangement of nicks for each character.

5. In *violin-making*, one of the little notches cut midway in the side of an f-hole or sound-hole, to indicate the proper location for the bridge.—**6.** In *lumbering*, same as ⋆*undercut*, 2.—**A nick on the green**, in *golf*, a slight depression or shallow cup on a green.

nick[3], *n.* **4.** In *craps*, a throw of 7 or 11, which wins all the stakes for the caster immediately.

nickar-tree, *n.* **2.** See ⋆*nicker-tree*, 2.

nickel, *n.*—**Antimonial nickel**, breithauptite.—**Christofle's method of nickel-smelting**, a process in which New Caledonia ore, mixed with appropriate fluxes, is smelted with coke, and the resulting regulus, which contains iron, copper, and nickel as sulphids, is ground and roasted. The nickel is recovered from the roasted product, which consists mainly of sulphid of nickel and oxid of iron, either by precipitation or by repeated fusing in reverberatory furnaces with fluxes added to absorb the iron.—**Grain-nickel**, fragments of reduced metallic nickel, fitted together and resembling grains in shape.—**Nickel carbonyl**, a remarkable substance obtained by passing carbon-monoxid gas over finely divided metallic nickel at a temperature of 30–80° C. and cooling the escaping gas by a freezing-mixture. Nickel carbonyl condenses as a colorless liquid of the density 1.32 which solidifies at –25° C. and boils at 43°. Its composition is represented by the formula $Ni(CO)_4$. The vapor decomposes explosively at 60° and burns in the air with a brilliantly luminous flame. Mixed with an inactive gas, as hydrogen or nitrogen, and passed through a tube heated to 180° C., the vapor deposits pure metallic nickel. On the basis of this reaction, Mond, the discoverer of nickel carbonyl, devised an industrial process for obtaining the metal from its ores.

nickel-aluminium (nik′el-al-ū-min″i-um), *n.* The name of a class of aluminium alloys containing varying proportions of nickel. Some of them have a tensile strength of over 40,000 pounds to the square inch. *U. S. Geol. Surv.*, Mineral Resources of U. S., 1902, p. 233.

nickel-bronze (nik′el-bronz), *n.* An alloy of copper and nickel: not as good as many of the other copper alloys, since it is apt to be brittle.

nickeled, nickelled (nik′eld), *p. a.* Nickel-plated; coated with nickel.

nickelin (nik′el-in), *n.* [*nickel* + *-in*[2].] An alloy of 74.5 per cent. of copper, 25 per cent. of nickel, and 5 per cent. of iron. It is used for electric resistance. *Elect. World and Engin.*, Feb, 27, 1904, p. 409.

nickelite, *n.* Same as *niccolite*.

nickelization (nik″el-i-zā′sho̤n), *n.* [*nickelize* + *-ation*.] The act or process of nickelizing, or coating with nickel.

nickel-plate (nik′el-plāt), *v. t.*; pret. and pp. *nickel-plated*, ppr. *nickel-plating*. To coat with nickel; deposit nickel on the surface of, by means of electroplating or otherwise.

nicker-tree, *n.* **2.** The Kentucky coffee-tree, *Gymnocladus dioica*.

nicking (nik′ing), *n.* The act of cutting nicks or notches; specifically, the operation of cutting the depressor or lateral muscles of the tail of a horse, for the purpose of either elevating or straightening it.

nicking-buddle (nik′ing-bud″l), *n.* A box or buddle used in washing ore.

nicking-trunk (nik′ing-trungk), *n.* A tub in which metalliferous slimes are washed.

nick-pot† (nik′pot), *n.* **1.** An inn-keeper or tapster.—**2.** A fraudulent beer-pot. *N. E. D.*

Niclausse boiler. See ⋆*boiler*.

Nicolaier's bacillus. See ⋆*bacillus*.

nicolo, *n.* **2.** The tenor or basset bombard. See *bombard*, 6.

nicolo[2] (nik′ọ-lō), *n.* [It. *niccolo*, < **onicolo*, < L. *onyx*, onyx.] A variety of onyx consisting of a layer of a bluish tint over black.

> An antique gem representing a bust . . . of Oraphale, cut in a double *nicolo*. *Daily News*, June 29, 1899. *N. E. D.*

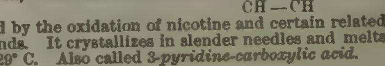
Nicomachean (nī-kom′a̤-kē-an), *a.* [L. *Nicomachus*, < Gr. Νικόμαχος.] Of or pertaining to some ancient Greek named Nicomachus; particularly, either (*a*) Nicomachus, physician to Amyntas II., King of Macedonia, and the father of Aristotle, the philosopher, or (*b*) Nicomachus the Younger, a son of Aristotle, who, like his father and grandfather, was also an author.—**Nicomachean ethics** [Gr. Ἠθικὰ Νικομαχεία], the "Ethics of Aristotle," said to have been published by Nicomachus the Younger after his father's death.

nicotic (ni-kot′ik), *a.* Of or pertaining to nicotine: as, *nicotic acid*. *N. E. D.*

nicotidine (ni-kot′i-din), *n.* [*nico*(*tine*) + *-id* + *-ine*[2].] A pale-yellow poisonous thick oil, $C_{10}H_{14}N_2$, prepared by the action of zinc or concentrated hydrochloric acid on metadipyridyl. It boils at 287–289° C., has a strongly narcotic odor, and is found in bone-oil. Also called 3- or *meta-hexahydrodipyridyl*.

nicotinian (nik-ọ-tin′i-a̤n), *a.* Same as *nicotian*.

nicotinic (nik-ọ-tin′ik), *a.* [*nicotine* + *-ic*.] Pertaining to or derived from nicotine.—**Nicotinic acid**, a colorless compound,



$$\mathrm{N}\left\langle\begin{array}{l}\mathrm{CH}=\mathrm{CH}-\\ \mathrm{CH}-\mathrm{CH}\end{array}\right\rangle\overset{\mathrm{CO_2H}}{\mathrm{CH}},$$

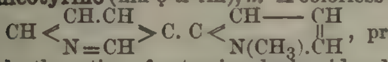
prepared by the oxidation of nicotine and certain related compounds. It crystallizes in slender needles and melts at 228–229° C. Also called *3-pyridine-carboxylic acid*.

nicotism (nik'ọ-tizm), *n.* Same as *nicotinism.*

nicotize (nik'ọ-tīz), *v. t.*; pret. and pp. *nicotized*, ppr. *nicotizing.* Same as *nicotinize.*

nicotunia (nik-ọ-tū'ni-ạ̈), *n.* [*Nicot*(*iana*) + (*Pet*)*unia.*] A hybrid of *Petunia* and *Nicotiana*, offered in 1893 by Luther Burbank, but now lost.

> Hybrids which are infertile in thousands of cases may for once prove a success among hundreds of thousands. Burbank has an example of this in his crossing of Petunia with tobacco. From numberless hybrids he got one germinating from seed. He named this curiosity *Nicotunia* (from Nicotiana and Petunia). It was not very attractive and succumbed after one year, having flowered profusely, but failed to produce any seed.
> *Pop. Sci. Mo.*, Aug., 1905, p. 347.

nicotyrine (nik-ọ-tī'rin), *n.* A colorless liquid,  $\mathrm{CH}<{}^{\mathrm{CH.CH}}_{\mathrm{N{=}CH}}>\mathrm{C.C}<{}^{\mathrm{CH—CH}}_{\mathrm{N(CH_3).\overset{\|}{C}H}}$, prepared by the action of potassium hydroxid and potassium ferricyanide on nicotine. It boils at 280–281° C. under 744 millimeters pressure and has an odor of mushrooms. Also called *dipyridine* or, more correctly, 1-*methyl*-2, 3-*pyridylpyrrol*, or *n-methyl-pyridylpyrrol.*

nicou (ni-kö'), *n.* A poison derived from a plant, *Lonchocarpus rufescens.* It is used by American Indians to poison fish in streams.

nidal (nī'dạl), *a.* [L. *nid*(*us*), a nest, + *-al*¹.] Relating to or of the nature of a nidus, in any of the meanings of that word. *G. S. Hall*, Adolescence, I. 483.

nidana (nẹ-dä'nạ̈), *n.* [Skt. *nidāna*, a band, a rope or halter, a cause; ‹ √*dā*, bind.] Any one of the 12 links which form the Buddhist chain of causality and bind man to earthly existence with its round of transmigration and its attendant suffering and misery. These are: (1) *Avidyā*, or ignorance (in a previous state of existence) of the four verities or noble truths (see ★*verity*). From this comes (2) *conformations* or the character-forming qualities derived from previous existence, which give rise to (3) *consciousness.* This leads to (4) *nāmarupa*, or name and corporeal form (that is, individual being), from which come (5) the six fields or *organs of sense* and the corresponding objects of sense. (6) *Contact* between these senses and their respective objects produces (7) *sensation.* From sensation comes (8) *desire* or thirst; this brings (9) *attachment* or a clinging to life and its pleasures, resulting in (10) *continuity of becoming*, with (11) *birth* and rebirth in one of the six forms of sentient being (gods, men, demons, animals, etc.), and (12) the *suffering* and misery incident to life in any of these forms.

niddui (nid'ö-i), *n.* [Heb., ‹ *nadah*, exclude, put away.] A lesser degree of Jewish herem or excommunication, lasting only seven days or, in Palestine, thirty days. See ★*herem.*

niddy-noddy (nid'i-nod"i), *v. i.* Same as *niddle-noddle, v.* *Carlyle.*

nidge² (nij), *v. i.* and *t.* [Origin obscure.] To shake; quiver. *N. E. D.*

> "Upon my honor, Mr. Lascelles," added he, smiling, and turning towards the coxcomb, who stood *nidging* his head with anger by Miss Beaufort's chair,—"upon my honor, Mr. Lascelles, I did not mean to draw any parallel between your person and talents and those of this Mr.——."
> *J. Porter*, Thaddeus of Warsaw, xxvi.

nidget² (nij'et), *n.* [Origin obscure.] A triangular horse-hoe, used in Kent and Sussex, chiefly in cultivating hops. *N. E. D.*

nidget² (nij'et), *v. t.* [*nidget*², *n.*] To cultivate with a nidget.

> Shimming, *nidgeting*, digging round and hoeing hills.
> *Encyc. Brit.*, XXIX. 324.

Nidicolæ (nī-dik'ọ-lē), *n. pl.* [NL., ‹ L. *nidus*, nest, + *colere*, dwell.] A collective name for those birds which are hatched in a naked and helpless condition, and remain for some time in the nest: same as *Altrices:* contrasted with ★*Nidifugæ.*

nidicolous (nī-dik'ō-lus), *a.* [L. *nidus*, nest, + *colere*, dwell, + *-ous.*] Abiding in the nest; noting those birds which are hatched in a more or less helpless condition and remain for some time in the nest; altricial: contrasted with ★*nidifugous.* *Gadow.*

> But, it is to be noted, these young are all *nidicolous*—born blind and helpless.
> *Knowledge*, Nov., 1907, p. 274.

nidificational (nid"i-fi-kā'shọn-ạl), *a.* [*nidification* + *-al*¹.] Of or pertaining to nidification or nest-building. *J. T. Gulick.*

Nidifugæ (nī-dif'ụ̄-jē), *n. pl.* [NL., ‹ L. *nidus*, nest, + *fugere*, flee.] A collective name for those birds which are able to run about as soon as they are hatched: same as *Præcoces:* contrasted with ★*Nidicolæ.*

nidifugous (nī-dif'ụ̄-gus), *a.* [L. *nidus*, nest, + *fugere*, flee, + *-ous.*] Of birds, able to run about when hatched: same as *precocial:* contrasted with ★*nidicolous.* *Gadow.*

> Plantigrade, *nidifugous*, aquatic.
> *Encyc. Brit.*, XXVI. 257.

nidologist (nī-dol'ọ̄-jist), *n.* [*nidolog*(*y*) + *-ist.*] One who makes a study of the nests of birds: a caliologist.

nidology (nī-dol'ọ̄-ji), *n.* [L. *nidus*, nest, + Gr. -λογια, ‹ λέγειν, speak.] The branch of ornithology that treats of birds' nests: same as *caliology.*

nidulariaceous (nid-ụ̄-lā-ri-ā'shius), *a.* Pertaining or belonging to the fungus family *Nidulariaceæ.*

Nidulariales (nid-ụ̄-lā-ri-ā'lēz), *n. pl.* [NL., ‹ *Nidularia* + *-ales.*] An order of gasteromycetous fungi containing the single family *Nidulariaceæ* (which see). Formerly written *Nidulariineæ.*

Nidulariineæ (nid-ụ̄-lā-ri-ī'nẹ-ē), *n. pl.* See ★*Nidulariales.*

Nidulites (nid-ū-lī'tēz), *n.* [NL., ‹ L. *nidulus*, a little nest. See ★*nidulus.*] A genus of enigmatical fossils which have a sack-like shape, hollow within and open at one end or attached by a pedicel. The outer wall is composed of angular plates or tubes united at the base, the closed ends being perforated by a single hole. These bodies have been regarded as related to the cystids, the sponges, the *Foraminifera*, and the calcareous algæ. Their systematic position is altogether uncertain. They are found in the Silurian rocks.

nidulus (nid'ụ̄-lus), *n.*; pl. *niduli* (-lī). [L., dim. of *nidus*, a nest.] Same as *nidus*, 3.

niellated (ni-el'ā-ted), *a.* [*niello* + *-ate*¹ + *-ed*².] Ornamented with designs in niello (which see).

niello-silver (ni-el'ō-sil"vėr), *n.* An alloy of silver, lead, copper, bismuth, and sulphur which has a dull bluish cast. Also called *Russian tula.*

nievita (nē-ā-vē'tä), *n.* [Amer. Sp., dim. of *nieve*, snow, ‹ L. *nix* (*niv-*), snow.] In California, a plant of the genus *Cryptanthe*, or sometimes of any of the genera included under the name *white* ★*forget-me-not* (which see). The name, meaning 'light snow,' refers to the appearance of fields in which the plant abounds.

nig⁴, *v. i.* A colloquial form for *renege.* See *renege*, 2.

Nigella, *n.* **2.** [*l. c.*] A plant of the genus *Nigella;* also some other plants, especially with a qualifying word.—**Bastard nigella, field nigella**, the corn-cockle, *Agrostemma Githago.*

niggardize (nig'ạ̈rd-īz), *v. i.* and *t.*; pret. and pp. *niggardized*, ppr. *niggardizing.* [*niggard* + *-ize.*] To be niggardly; give in a niggardly way.

> Fame, I accuse thee, thou didst *niggardize*,
> And faintly sound my love's perfections,
> Great lady Fortune and fair Empress.
> *Chapman*, Plays, Alphonsus, II. ii.

nigger², *n.*—**Angola niggers**, a trade-name for a kind of india-rubber ,in small black balls, brought from the west coast of South Africa.—**Massai niggers**, a trade-name for a variety of crude india-rubber of good quality, the product of *Landolphia owariensis* and *L. florida*, brought in reddish-brown balls, pink and white on a cut surface, from Sierra Leone in Africa.—**Sierra Leone niggers.** Same as *Massai* ★*niggers.*

nigger-caterpillar (nig'ėr-kat"ėr-pil-ạ̈r), *n.* Same as *nigger*², 3.

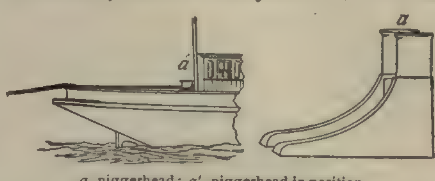
nigger-dick (nig'ėr-dik), *n.* In Pennsylvania, the cut-lip chub, *Exoglossum maxillingua.*

nigger-goose (nig'ėr-gös), *n.* A name given to the cormorant in some parts of the United States.

niggerhead, *n.* **2.** Also, applied to boulders of chromite in the region north of Baltimore, Maryland, and generally, among English-speaking peoples, to any tough black rock in loose boulders.—**3.** In swampy land, tufts or clumps of sedge and grass growing up stiffly, and somewhat resembling a black head. [Local. U. S.]

> The surface is pre-eminently swampy during the warmer periods of the year, and walking over it means either wading through the water or risking continuous jumps to and from the individual clumps of matted grass and moss—the so-called "*nigger-heads.*'
> *Pop. Sci. Mo.*, April, 1900, p. 637.

4. A spool or capstan for lifting or hauling, formed on the end of a shaft which is turned by power: so called because it is usually black. Also known as a *wildcat.*—**5.** In *bot.*: (*a*) The cone-flower or black-eyed-Susan, *Rudbeckia hirta.* (*b*) The common greenbrier or catbrier, *Smilax rotundifolia.*—**6.** A towing bitt; an upright timber to which towing hawsers are secured.—**7.** A fresh-water mussel, *Quadrula ebena*, of the Mississippi River, used in the manufacture of pearl buttons. It is rather small with a thick shell and a black or dark brown outer skin.—**Mud-niggerhead**, a form of the niggerhead (see ★*niggerhead*, 7).—**Warty-back niggerhead**, *Quadrula metanerva* or *Q. pustulosa*, so called from the tubercular excrescences on the shell.



a, niggerhead; *a'*, niggerhead in position.

nigger-toe (nig'ėr-tō), *n.* [Local, U. S.] The Brazil-nut, *Bertholletia excelsa.*

nigger-weed (nig'ėr-wēd), *n.* The joepye-weed, *Eupatorium purpureum.*

niggery² (nig'ėr-i), *n.* [D. *negerij.*] An administrative division of the Dutch West Indies. *N. E. D.*

night-bag (nīt'bag), *n.* A traveling-bag containing necessaries for the night. *N. E. D.*

night-blue (nīt'blö), *n.* A trade-name for a blue which retains its color under artificial light.

night-chant (nīt'chȧnt), *n.* A chant intended to be chanted at night; specifically, a ceremony of the Navajo Indians, performed for curing disease. It occupies nine days. *Jour. Amer. Folk-lore*, Jan.–March, 1903, p. 61.

night-clothes, *n. pl.* **2**†. Negligé or informal dress worn in the evening. *N. E. D.*

> The Queene gone, and ladies; only my Lady Castlemaine, who looked prettily in her *night-clothes.* So took my coach, which waited, and through Covent Garden, to set down two gentlemen and a lady.
> *Pepys*, Diary, Dec. 24, 1667.

night-flowering (nīt'flou"ėr-ing), *a.* Same as *night-blooming.*

nightgear (nīt'gēr), *n.* Night-clothes. [Colloq.]

> Miss Prissy took the *nightgear* between her finger and thumb.
> *J. C. Lincoln*, Partners of the Tide, ii.

night-hawk, *n.* **4.** One who prowls about at night; specifically, a night cabman or his cab or horse. [Colloq.]

night-hunter (nīt'hun"tėr), *n.* Same as *night-walker*, 3. [Rare.]

nightingale¹, *n.*—**Kentish nightingale**, a name given in some parts of England to the blackcap, *Sylvia atricapilla*, on account of the sweetness of its song.—**Swedish nightingale.** (*a*) A European thrush, *Turdus iliacus.* (*b*) A title popularly given to Jènny Lind, the famous Swedish singer.—**Virginia nightingale**, a name sometimes given to the cardinal, *Cardinalis cardinalis.*

night-rider (nīt'rī-dėr), *n.* One who rides by night; specifically, a member of a band of (usually mounted) men who perpetrate deeds of violence or intimidation by night. [Southern U. S.]

night-riding (nīt'rī-ding), *n.* The practices of the night-riders. [Southern U. S.]

nightshade, *n.*—**American nightshade**, the pokeweed, *Phytolacca Americana.*—**Beaked nightshade**, the sand-bur, *Solanum rostratum.*—**Bindweed nightshade**, the enchanter's nightshade, *Circæa Lutetiana.*—**Black-berried nightshade**, the black nightshade.—**Climbing nightshade**, the bittersweet, *Solanum Dulcamara.*—**Fetid nightshade**, the henbane, *Hyoscyamus niger.*—**Garden nightshade**, the black nightshade.—**Silver-leafed nightshade**, the bull-nettle, *Solanum elæagnifolium.* See ★*bull-nettle.*—**Spiny nightshade.** (*a*) The sand-bur, *Solanum rostratum.* (*b*) *Solanum aculeatissimum*, a shrubby and prickly species with yellow berries found from North Carolina to Florida and west to Texas.

night-shift (nīt'shift), *n.* **1.** See *shift, n.*, 6.—**2.** A shift or shirt used to sleep in: so called in the seventeenth and eighteenth centuries. *Sterne*, Tristram Shandy, viii. 9.

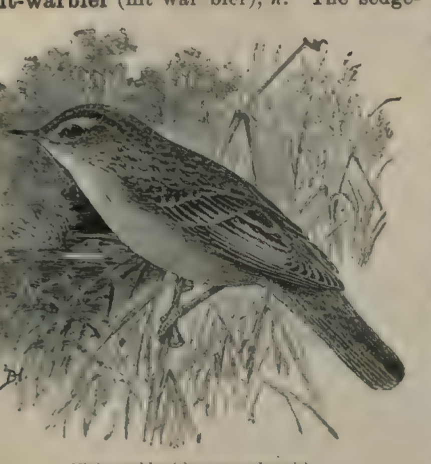
night-stick (nīt'stik), *n.* A strong club carried by a policeman at night.

> San Juan Hill and the Gut were under *nightstick* law until early this morning.
> *N. Y. Times*, July 15, 1905.

night-tide (nīt'tīd), *n.* **1.** Night-time.—**2.** A tide occurring at night. *N. E. D.*

night-vision (nīt'vizh"ọn), *n.* Vision or sight that is strongest and best at night; ability to see clearly only at night or in a dim light.

night-warbler (nīt′wâr″blėr), *n.* The sedge-warbler, *Curruca salicaria*, a European warbler which sings at night.



Night-warbler (*Curruca salicaria*).

night-worm† (nīt′wėrm), *n.* **1.** A treacherous comrade.—**2.** A prostitute.—**3.** A glow-worm. *N. E. D.*

nighty^2 (nī′ti), *n.* [*night*(*-gown*) + *-y*^{2}.] A night-gown or night-dress: originally a child's word. [Colloq.]

nignay (nig′nā), *n.* [Also *nignye.* Origin obscure.] A trifle; a trifling thing or act. [Scotch.]

nigori (nẹ-gō′rẹ or nēng-gō′rẹ), *a.* and *n.* [Jap., impure, impurity.] **I.** *a.* Impure: applied in Japanese to certain sounds (g, z, j, d, b, and p) which are substituted in certain circumstances for the pure sounds k, s, sh (or ch), t, h, or f.

II. *n.* **1.** The substitution of an impure consonantal sound for a pure one when it begins the second part of a compound, or the second part of a plural expression formed by reduplication, as in ★*kami-dana* (which see) for *kami-tana*, 'god-shelf'; *kawa-guchi* for *kawa-kuchi*, 'river-mouth'; ★*ban-zai* (which see) for *ban-sai*, 'ten thousand years'; *kanagawa* for *kana-kawa* (name of the prefecture in which Yokohama is situated); *hito-bito*, 'men,' for *hito-hito*, from *hito*, 'man,' etc.—**2.** In Japanese writing and printing, the mark ʺ (earlier °°), placed at the right of a pure consonant to show that it has become impure.

> The nido is exactly analogous to the Japanese Katakana script, in which modified forms of Chinese ideographs are used phonetically to express 47 syllables (the so-called I-ro-fa syllabary), raised to 73 by the *nigori* and maru diacritical marks. *Keane*, Man, Past and Present, p. 308.

Han nigori, literally 'half nigori,' the mark ° placed after *h* or *f* to show that it is nigori or impure and takes the sound of *p*.

nigramine (nig-ram′in), *n.* [L. *niger* (*nigr-*), black, + E. *amine.*] A basic coal-tar color of unpublished composition, similar to methylene gray. It dyes tannin-mordanted cotton bluish gray.

nigraniline (nig-ran′i-lin), *n.* [L. *niger* (*nigr-*), black, + E. *aniline.*] An intermediate product of the oxidation of aniline to aniline black (which see, under *black*).

nigresceous (nī-gres′ẹ̄-us), *a.* [See *nigresent.*] Somewhat black. [Rare.]

nigrify (nig-ri′fī), *v. t.*; pret. and pp. *nigrified*, ppr. *nigrifying.* [LL. *nigrificare*, make black, blacken. See *nigrification.*] To blacken.

> Where was the harm? 'T would have been but giving a polish to lamp-black, not *nigrifying* a negro primarily. After all, I cannot but regret my involuntary virtue. *Lamb*, Letters, lxxii. 151.

nigrism (nig′rizm), *n.* [L. *niger* (*nigr-*), black, + *-ism.*] Same as *nigrities.*

nigrite, *n.* **2.** A kind of asphaltum allied to albertite and grahamite.

nigritic (ni-grit′ik), *a.* [NL. **nigriticus*, after Sp. *negrito*, 'a little negro.' See *Negrito.*] Of or pertaining to the negro race; specifically, of or pertaining to the Oceanic negroes.

nigritism (nig′ri-tizm), *n.* [L. *nigrities*, blackness, + *-ism.*] Same as *nigrities.*

nigritudinous (nig-ri-tū′di-nus), *a.* [L. *nigritudo* (*-din-*), blackness, + *-ous.*] Having the character of nigritude; negro-like.

nigrium (nig′ri-um), *n.* [NL., < L. *niger* (*nigr-*), black.] The name given by Church to a supposed new chemical element the occurrence of which in zircon he supposed to be indicated by certain black bands in the absorption-spectrum. Its existence has not been confirmed.

nigrosine, *n.* The name is applied to three different coal-tar colors: (*a*) Spirit-soluble nigrosine, which is closely allied to spirit-soluble induline. (*b*) Water-soluble nigrosine, which is the sodium salt of certain sulphonic acids of spirit-soluble nigrosine. (*c*) Methylene gray (which see, under ★*gray*).

nigrous (nī′grus), *a.* [L. *niger* (*nigr-*), black, + *-ous.*] Deep black.

> Blacks:—piceous or piceus, the colour of pitch: atrous or ater, the colour of liquid ink; . . . *nigrous* or niger, the colour of lamp black: fuliginous or fuliginosus, the colour of soot. *E. Newman*, A Familiar Introd. to the Hist. of Insects. [iii. 2.

nigua (nē′gwä), *n.* [Sp. *nigua.*] **1.** Same as *chigoe.*—**2.** In Cuba and Porto Rico, a name applied to several plants belonging to the genus *Tournefortia* of the borage family, especially to *T. hirsutissima*, a trailing shrub with one-sided spikes of flowers resembling those of heliotrope.—**Nigua enredadera**, *Tournefortia volubilis.* See *basket-withe.* **Nigua de playa**, seaside nigua, *Tournefortia gnaphalodes*, a strand shrub with silky-tomentose leaves.

nihilum album (nī′hil-um al′bum), *n.* [L., 'white nothing.'] An old name of white oxid of zinc, in loose light flakes, produced by the combustion of zinc vapor in the air. Also known as *flowers of zinc* and *lana philosophica.*

nika^1 (nē′kä), *n.* [Chamorro *nika.*] On the island of Guam, the name for several varieties of yam with cordate-acuminate leaves having a deep basal sinus, especially *Dioscorea aculeata.*—**Nika cimarron**, the wild yam of Guam, *Dioscorea spinosa*, a species in which the large starchy tuber is protected by a mass of spines surrounding the base of the stem.

Nika^2 (nī′kä), *n.* [NL.] The typical genus of the family *Nikidæ.* *Risso*, 1816.

nikau (nē′kou), *n.* [Maori *nikau*, the New Zealand palm-tree, = Mangarevan *nikau*, cocoanut-palm, = Hawaiian *niau*, or *niao*, the petiole or midrib of a cocoanut-palm leaf.] In New Zealand, *Hedyscepe sapida*, a palm-tree with a slender green ringed stem and pinnate leaves with narrow linear leaflets. The young unexpanded inflorescence is eaten by the natives. This species occurs also on the Chatham islands and is the most southerly representative of the palm family.

Nikâya (nē-kä′yä), *n.* [Skt. *nikāya*, assemblage, class, society, collection, < *ni*, down, in, + *kāya*, body, mass.] A collection of *sutras*, or sayings (of Buddha).

> A number of such efforts, after the *Nikâyas* had been closed, were included in a supplementary *Nikâya* called the Khuddaka *Nikâya.* *Encyc. Brit.*, XXVI. 431.

Nikidæ (nī′ki-dē), *n. pl.* [NL. *Nik*(*a*) + *-idæ.*] A family of caridean crustaceans in which the rostrum is horizontal with the dorsal surface of the carapace, the mandibles are without cutting edge, the first pair of trunk-legs is simple or chelate, and the second is minutely chelate. It includes the genera *Nika*, *Lysmata*, and *Glyphocrangon*, of which the first two contain edible species.

nikie (nik′i-ē), *n.* [Omaha and Ponca Indian.] Something handed down from a mythical ancestor.—**Nikie kinship**, kinship based on descent from the same or a similar mythical ancestor.—**Nikie name**, a name derived from the ancestor myth. These terms are used in reference to customs of the Omaha and Ponca Indians.

nil^2, *n.* **2.** In *musical acoustics*, a minute interval, equal to a fifty-first part of a semitone.

nila (nē′lä), *n.* [Skt. *nīla*, dark blue; as a noun, indigo. See *anil, lilac.*] A dark shade of blue used in the decoration of East Indian pottery.

nil album. Same as ★*nihilum album.*

Nile-bird (nīl′bėrd), *n.* A local English name of the wryneck, from its cry. *N. E. D.*

Nile blue. See ★*blue.*

Nileus (nil′ẹ̄-us), *n.* [NL.] A genus of trilobites of Silurian age.

nilfactum (nil′fak″tum), *n.* [L. *nil*, nothing, + *factum*, pp. neuter of *facere*, make, do.] A quantity equated to zero.

nilgai (nēl′gī), *n.* Same as *nilgau*: the form most commonly used in India to designate the large antelope *Portax pictus.*

nilionid (nil-i-on′id), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Nilionidæ.*

II. *a.* Having the characters of or belonging to the family *Nilionidæ.*

Nilot (nī′lot), *n.* [Gr. Νειλώτ(ης), on the Nile.] One who dwells on the banks of the Nile.

Nilotic, *a.* **2.** In *ethnol.*, denoting the eastern division of the Sudanese negroes.

Nilous (nī′lus), *a.* [*Nile* + *-ous.*] Of or pertaining to or derived from the Nile.

> I executed my commission like a winged Mercury flying to save friends from Pluto's drear domains, when they might live a little longer to enjoy this *Nilous* earth; for certainly it is more like Egypt's alluvium during the inundation than hard-set soil. *Sir R. Wilson*, Diary, II. 448.

nimbated (nim′bā-ted), *p. a.* [L. *nimb*(*us*), cloud, + *-ate-* + *-ed.*] Provided with or having a nimbus; nimbed.

nimble, *a.* **4.** Fresh or strong: applied to tan-liquor.

nimble-fly (nim′bl-flī), *n.* Any dipterous insect of the family *Dexiidæ.*

nimble-Kate (nim′bl-kāt), *n.* The star- or bur-cucumber, *Sicyos angulatus.*

nimbleness, *n.*—**Thermal nimbleness**, the sensitiveness of a thermometer to changes of temperature.

> The time in which the instrument loses half its heat has been called its *thermal nimbleness.* *J. Y. Buchanan*, in Antarctic Manual, p. 130.

nimbo-pallium (nim-bō-pal′i-um), *n.*; pl. *nimbo-pallia* (-ä). [NL., < *nimbus* + *pallium.*] A broad sheet of cloud from which rain is falling. Also called *nimbo-stratus.*

nimbo-stratus (nim-bō-strā′tus), *n.*; pl. *nimbo-strati* (-tī). Same as ★*nimbo-pallium.*

nimfadoro† (nim-fạ-dō′rō), *n.* [It.] An effeminate fellow; a ladies' man. [Rare.]

> Pvnt. Peace, you, ban-dogge, peace: what briske *Nimfadoro* is that in the white virgin boot there?
> Carl. Mary, sir, one, that I must entreat you take a very particular knowledge of.
> *B. Jonson*, Every Man out of his Humour, ii. 3.

nim-oil (nim′oil), *n.* Same as *neem-oil.* See *margosa.* Also written *nimb-oil.*

nine, *n.*—**The two nines**, a fire-alarm signal, used only in an emergency, which calls out all the fire-fighting apparatus, and every available fireman. [New York City.]

> Acting Chief K— arrived a few minutes later and ordered the fourth [alarm], and then *the two nines*, calling out every piece of apparatus on the island. *The two nines* were sounded less than an hour after the fire alarm had been sent in. *N. Y. Tribune*, Dec. 22, 1903.

nineted (nīn′ted), *p. a.* [Corruption of *nointed.*] Wicked; incorrigible. *N. E. D.* [Dial. Eng.]

nineteenth, *n.* **3.** In *organ-building*, a stop whose pitch is two octaves and a fifth above that of the keys used, as, for example, the larigot.

nino (nē′nō), *n.* [Tagalog *nino*, Malay *nona*, Polynesian *nonu*, Hawaiian *noni.*] *Morinda citrifolia*, a shrub or tree which yields a dye. See ★*al*^{1}, and ★*nonu.*

Ninsei ware. See ★*ware*^{2}.

Niobe, *n.* **3.** In *bot.*, a genus of monocotyledonous plants belonging to the family *Liliaceæ.* See *Funkia.*

niobifluoride, niobiofluoride (nī″ọ-bī-, nī-ō″bī-ọ-flö′ọ-rid), *n.* Same as ★*fluoniobate.*

niobous (nī-ō′bus), *a.* [*niob*(*ium*) + *-ous.*] Pertaining to or derived from niobium: implying a lower degree of oxidation than *niobic.*

Niobrara group. See ★*group*^{1}.

niog (nē′ōg), *n.* [Tagalog *niog*, Chamorro *niyog*, Malay *nior* or *nyor*, Polynesian *niu.*] In the Philippine Islands, the cocoanut-palm, *Cocos nucifera.*

nip^1, *v. t.* **10.** In *cricket*: (*a*) To catch neatly: said of a fielder. (*b*) To break sharply: said of a bowled ball. *Hutchinson*, Cricket, p. 322.—**To nip her** (*naut.*), to take a sharp turn in a rope: to stop the cable from running out so that the ship may jerk suddenly to her anchor.

nip^1, *n.* **11.** The place of contact between two cylinders, rollers, or bowls. *G. Duerr*, Bleaching and Calico-Printing, p. 21.—**To freshen the nip.** (*a*) *Naut.*, to shift the chafing from a certain spot. (*b*) To take a new hold; refresh the memory.

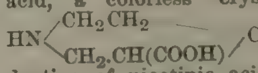
nip^3, *n.* **3.** A low cliff cut in the border of land near the sea. [Eng.]

> Tidal cuspate forelands . . . where the aggradation begins at the shoreline at the foot of the earlier formed "nip." *Geog. Jour.* (R. G. S.), IX. 542.

nip^3 (nip), *v.*; pret. and pp. *nipped*, ppr. *nipping.* [*nip*^{3}, *n.*] To cut a low cliff in (the border of the land) by wave action.

> The coasts of the counties of Kent and Sussex, or, physiographically speaking, the coasts of the dissected Weald dome, form a succession of headlands *nipped* back by the sea. *Geog. Jour.* (R. G. S.), IX. 538.

nipecotic (nip-ẹ̄-kot′ik), *a.* Noting an acid, a colorless crystalline compound,



$$HN\begin{matrix}\diagup CH_2CH_2 \\ \diagdown CH_2.CH(COOH)\end{matrix}\diagup CH_2$$

prepared by a reduction of nicotinic acid by the means of sodium and alcohol. It melts at 249–250° C. Also called *hexahydronicotinic* or *piperidine-3-carboxylic acid.*

Nipigon (nip′i-gon), *n.* [*Nipigon*, name of a Canadian lake, and river.] Among Canadian geologists, a name applied to the vast series of basaltic rocks and sediments which immediately precedes the Cambrian strata in the Lake Superior region and which contains deposits of native copper. These strata are usually called *Keweenawan* in the United States.

nip-out (nip′out), *n.* See *nip*¹, 8.

nipper¹, *n.* **5.** (*l*) A device for holding the fibers of cotton, in the early process of combing.

12. A local name in Australia of species of *Alphæus*, a genus of prawns.

nippering (nip′ėr-ing), *n.* Same as *racking*¹, 2.

nipper-knife (nip′ėr-nīf), *n.* That part of a Heilmann cotton-combing machine which holds or nips the cotton staple as the combs pass through it.

nipper-motion (nip′ėr-mō″shọn), *n.* A combination of devices on a cotton-combing machine for holding the cotton during the process of combing.

nipper-shaft (nip′ėr-shȧft), *n.* The shaft or arbor to which are fastened the nippers in a cotton-combing machine.

nipper-tap (nip′ėr-tap), *n.* In *chem.*, a little wire clamp which, when pressed upon by the finger and thumb or by turning a screw, serves partly or completely to close an india-rubber tube over which it fits and thereby obstructs the flow of a liquid or a gas. Various special forms are known as *Mohr's clamp, Hofmann's clamp*, etc.

nipping-jaw (nip′ing-jâ), *n.* A device on a cotton-combing machine for holding a tuft of cotton while it is combed.

nipping-rollers (nip′ing-rō″lėrz), *n. pl.* See ★*roller*.

nipple, *n.*— **Push-nipple**, a nipple, or piece of pipe having a thread on each end, used in such a way that it receives a thrust.

> In the case of the *push-nipple* type of boiler the rule would be as follows. *Engin. Rev.*, Jan., 1903, p. 14.

nipple-pipette (nip′l-pi-pet″), *n.* A pipette provided with a rubber nipple. By compressing the nipple air is expelled. If the pressure is withdrawn while the point of the pipette is in a liquid, the liquid enters the pipette.

nipple-wrench (nip′l-rench), *n.* A wrench for seating or removing the nipple of a small-arm.

Nirodha (ni-rō′dạ̈), *n.* [Skt. *nirodha*, confinement, obstruction, destruction, ‹ *nis-*, out, + *rodha*, holding back, obstruction, suppression.] Cessation: used as equivalent to *nirvana*.

nirvanic (nir-vä′nik), *a.* Pertaining to or of the nature of nirvana.

> In spite of the *nirvanic* remoteness of its nature, it is not troubled by human emotions.
> *E. F. Benson*, Six Common Things, p. 73. *N. E. D.*

nirvanin (nir-vä′nin), *n.* [*nirvan*(*a*) + *-in*².] The trade-name of a colorless, neutral, crystalline compound, $(C_2H_5)_2NCH_2CONHC_6H_3(OH)COOCH_3.HCl$, used in surgery as a local anesthetic.

Nishikide ware. See ★*ware*².

nishikiye (nẹ-shē′kē-yā′), *n. sing.* and *pl.* [Jap., ‹ *ni*, two, + *shiki*, color, + *ye*, a picture, drawing.] In Japanese art, prints taken in color, and by hand, from wooden blocks, cut (as is usual with the Japanese) in the direction of the grain instead of across it, as has been the custom in Europe since Bewick's time. The method of printing is to lay the color on the block with a brush and to press the paper against it with a pad or dabber called the *baren*. This method of printing is much more sensitive than the usual mechanical one. A printing may be accomplished with few impressions, but usually from twenty to thirty are employed. The number of blocks does not necessarily correspond to the number of impressions. Japanese color-printing is a recent art, not having been known much before the middle of the eighteenth century.

nishu (nē′shö), *n.* [Jap.] A small rectangular Japanese silver coin, worth half a bu: no longer made or used. See *bu*.

Nisi prius roll. Same as *nisi prius record* (which see, under *nisi prius*).

nispero (nis′pe-rō), *n.* [Sp. *níspero*, medlar-tree.] **1.** In Spain, the medlar-tree, *Mespilus Germanica*.—**2.** In the Spanish West Indies, the sapodilla, *Sapota zapotilla*, the name of which has been corrupted in Jamaica to naseberry. **Nispero cimarron** or **Nispero de monte**, wild nispero, a name applied to several wild trees which bear fruit more or less resembling the medlar or sapodilla; in Colombia, to *Pouteria Tovarensis*, which bears a golden-yellow edible fruit and yields wood suitable for use in building; in Porto Rico, to *Symplocos lanata*, a forest-tree belonging to the sweetleaf family.

Nissl or **Nissl's bodies.** See ★*body*.

nisus¹, *n.* **2.** The generative impulse occurring periodically, as with many creatures in the spring.

nit¹, *n.* **3**†. A small insect; a gnat or fly: applied contemptuously to persons.

> How most sweetly a' will swear!
> And his page o' t' other side, that handful of wit!
> Ah, heavens, it is a most pathetical *nit!*
> Sola, sola! *Shak.*, L. L. L. iv. 1.

nit³ (nit), *adv.* [G. *nicht*, not: see *not*¹.] No; not; not at all. [Slang.]

niter, *n.* The word *niter* (in its Hebrew, Greek, and Latin forms) was used in early times to signify any kind of saline efflorescence, and therefore included a number of substances now recognized as distinct. The 'niter' of the Old Testament scriptures was obviously natron in the sense of naturally occurring carbonate of soda (from Egypt). The 'nitrum' mentioned by Pliny, which gave off a strong smell on being sprinkled with lime, must have been a salt of ammonium, probably the chlorid; but potassium nitrate (the niter or saltpeter of the present age), and also calcium nitrate, potassium carbonate, sodium chlorid, magnesium sulphate, and the sulphates of zinc, iron, and copper (later distinguished as metallic vitriols) were probably more or less confounded under the general name.

nit-grass, *n.* **2.** Same as ★*slough-grass*.

nithialine (ni-thī′ạ-lin), *n.* [*ni*(*trogen*) + Gr. *θεῖον*, sulphur, + *-äl*³ + *-ine*³.] A yellow, amorphous, pulverulent compound, $C_{12}H_{16}ON_4S$, prepared by the action of ammonium sulphid on metadinitrobenzene or metanitraniline. It decomposes at 200° C.

nitidity (ni-tid′ị-ti), *n.* [L. *nitiditas*, ‹ *nitidus*, shining: see *nitid*.] **1.** Brightness; brilliancy; lustrousness.—**2.** Spruceness; gayness: applied to persons.

nitidulid (nī-tid′ụ̄-lid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Nitidulidæ*.

II. *a.* Having the characters of or belonging to the family *Nitidulidæ*.

nito (nē′tō), *n.* [Tagalog *nito*.] In the Philippine Islands, a climbing fern, *Lygodium scandens*, the glossy, wiry stems of which are used for weaving hats, receptacles for betel-nuts, etc. The species is of wide distribution and in the Bismarck Archipelago is used by the natives for making baskets.

Nito (*Lygodium scandens*).
a, group of sporanges, enlarged.

nitragin (nī′trạ-jin), *n.* [*nitr*(*ogen*) + Gr. *ἄγειν*, bring, + *-in*².] A trade-name for a culture of the specific bacteria which, when present in the soil and reaching the roots of leguminous plants, produce the tubercles by which such plants become capable of assimilating the free nitrogen of the air and converting it into proteid compounds.

> The growth of plants by . . . [nitrification of the soil . . .] may be encouraged and stimulated by the use of phosphatic manures and also by inoculating the ground and the seed to be sown on it with cultures of these earth bacteria referred to, which are sold commercially under the name of *nitragin*.
> *Lancet*, June 6, 1903, p. 1590.

nitramine (nī-tram′in), *n.* [*nitr*(*ogen*) + *amine*.] In *organic chem.*, the class-name applied to compounds prepared by the action of nitric acid on the amido derivatives of primary amines. They contain the univalent radical R, where R is a hydrogen atom or an alkyl group, such as methyl. In the former case the hydrogen is replaceable by metals. Sometimes called *nitro-amines*.

nitramite (nī′trạ-mīt), *n.* [*nitr*(*ate*) + *am*(*monium*) + *-ite*².] A class-name of explosives in which ammonium nitrate is a principal component, patented in Belgium by Favier. See *Favier* ★*explosives*.

nitranilic (nī-tra-nil′ik), *a.* [*nitranil*(*ine*) + *-ic*.] Pertaining to nitraniline: noting an acid, a golden-yellow compound, $(\overset{6,\ 3}{HO})_2C_6(\overset{2,\ 5}{NO_2})_2\overset{1,\ 4}{O_2}$, prepared by the action of nitrous acid on hydroquinol or hydroquinone. It crystallizes in needles and explodes at 170° C.

nitraniline (nī-tran′i-lin), *n.* [*nitr*(*ic*) + *anilide* + *-ine*².] Any one of three compounds, $H_2NC_6H_4NO_2$. They are distinguished as ortho- or 1, 2, or meta- or 1, 3, and para- or 1, 4. They are formed by the action of nitric acid on acetanilide, are crystalline, and melt at 71° C., 114° C., and 147° C. respectively. Also called *nitro-anilines*.

nitrate, *n.* Important experiments have been made on an industrial scale for the production economically of nitrates from atmospheric air by high-tension electrical discharges through moist air in the presence of basic materials.— **Alkaline nitrate of silver**, a compound obtained by the action of an alkaline base upon silver nitrate.— **Cellulose nitrates.** Same as *nitrocellulose*.— **Nitrate of iron.** See ★*iron*.

nitratoxygen (nī-trạ̈-tok′si-jen), *n.* [*nitrat*(*e*) + *oxygen*.] In *chem.*, a name suggested for the radical NO_3. See *nitran* and ★*oxynitrion*.

nitric, *a.*— **Fuming nitric acid.** See ★*fume*.

nitricum (nī′tri-kum), *n.* [NL.: see *nitric*.] An imaginary substance of early chemistry which, in union with oxygen, was supposed to constitute nitrogen.

nitrifaction (nī-tri-fak′shọ̈n), *n.* [See *nitrification*.] The production of niter or nitrates.

nitrifier (nī′tri-fī-ėr), *n.* Anything which serves to bring about or to facilitate the production of niter or nitrates; specifically, in *bacteriol.*, any micro-organism which is capable of oxidizing ammonia to nitrous acid, or nitrous acid to nitric acid; a micro-organism which serves to fix, and accumulate in the soil, the free nitrogen of the air. See ★*nitrogen-fixing*.

> The bacterial organisms themselves are, however, the real nitrogen bringers or *nitrifiers*, the leguminosæ being dependent upon their presence at the roots for healthy growth. These organisms abound in all good cultivated soils in which there is a sufficiency of phosphates, potash, and lime, the last especially being of vital necessity to them, and they are most active at a temperature of about 99° F., cold and absence of moisture inhibiting them. Good cultivation assists them. It is possible with their aid to grow crops extremely rich in nitrogen on a soil which is otherwise almost devoid of nitrogenous elements. Their presence in a soil is indicated by the growth upon the leguminosæ roots of small nodules sometimes as large as a small pea.
> *Lancet*, June 6, 1903, p. 1590.

nitrify, *v. t.* **2.** To impregnate (the soil) with nitrates in order to stimulate the growth of plants.—**3.** In *bacteriol.*, to oxidize (ammonia compounds) to nitrites or (nitrites) to nitrates, by bacterial action.

nitrile (nī′tril), *n.* [*nitr*(*ogen*) + *-ile*.] In *organic chem.*, the class-name of compounds which contain the univalent radical $-C \vdots N$. They are prepared by the action of alkyl haloids on potassium cyanide and, in some cases, by the dehydration of organic ammonium salts into which they are reconverted by the action of acids or alkalies. They are also called *acid nitriles* or *alkyl cyanides*. Occasionally tertiary amines (R_3N) are called *nitrile bases*.

nitrine, *n.* **2.** In *chem.*, a name proposed for the hypothetical radical of hydrazoic acid or azoimide, N_3, or, if supposed to be isolated, $(N_3)_2$.

nitro (nī′trō), *n.* An abbreviation of ★*nitro-powder*.

nitro-. It is also employed, very commonly but in regard to technical use incorrectly, as a part of the name of a compound which does not contain the radical nitryl (NO_2) with its nitrogen directly united to carbon. Thus *nitro*glycerin and *nitro*cellulose (guncotton) are not nitro-compounds in the technical sense of the term, but nitrates.

nitro-acid (nī′trọ̄-as″id), *n.* In *organic chem.*, the class-name of acids which contain in the molecule one or more univalent nitro-groups ($-NO_2$).

nitro-alizarin (nī″trọ̄-al-i-zä′rin), *n.* Same as *alizarin* ★*orange*.

nitro-amine (nī-trọ̄-am′in), *n.* Same as ★*nitramine*.

nitro-aniline (nī-trọ̄-an′i-lin), *n.* Same as ★*nitraniline*.

nitrobacteria (nī″trọ̄-bak-tē′ri-ạ̈), *n. pl.* Soil bacteria which oxidize nitrous acid to nitric acid. See *nodule-*★*bacteria*, with cut.

> The *Nitro-bacteria* are smaller, finer, and quite different from the nitroso-bacteria, and are incapable of attacking and utilizing ammonium carbonate.
> *Encyc. Brit.*, XXVI. 56.

nitrobarbituric (nī-trọ̄-bär-bi-tū′rik), *a.* Same as ★*dilituric*.

nitrocarbole (nī-trọ̄-kär′bōl), *n.* Same as ★*nitromethane*. [Rare.]

nitro-color (nī′trọ̄-kul″ọr), *n.* A dye-stuff containing the nitro-group (NO_2): one of a subdivision of the acid colors.

nitrocotton (nī-trọ̄-kot′n), *n.* Cotton treated with nitric acid; a high explosive. See *guncotton.*

He [Nobel] next combined nitro-glycerine with another high explosive, *nitro-cotton,* into a form that could be safely employed for blasting. *Encyc. Brit.,* XXXI. 248.

nitro-ester (nī″trọ̄-es′tėr), *n.* In *organic chem.,* a class-name of compounds which contain the univalent group –N:O(OR)OM, where R is an alkyl group such as methyl, and M a metal such as sodium. In general it might also be applied to an ester containing one or more nitro-groups in its molecule.

nitro-explosive (nī′trọ̄-eks-plō′siv), *n.* An explosive in the preparation of which nitric acid is used.

nitroferricyanic (nī-trọ̄-fer″i-sī-an′ik), *a.* Same as ★*nitroprussic.*

nitroform (nī′trọ̄-fôrm), *n.* [*nitro-* + *form-(ic)*?] A colorless crystalline compound, $CH(NO_2)_3$, prepared by the action of water on trinitro-acetonitrile; trinitromethane. It melts at 15° C., explodes when rapidly heated, is a strong monobasic acid, and gives yellow solutions and colored salts.

nitrogelatin, *n.* This important explosive has no relation in chemical composition to gelatin. The name has reference merely to its jelly-like consistence. Its value depends in large measure upon the fact that of its two principal components the one, guncotton, contains an insufficient proportion of oxygen for complete combustion, while the other, nitroglycerin, contains an excess of the same element; by blending proper quantities of the two, complete oxidation of the carbon and hydrogen is effected, with consequent maximum evolution of energy.

nitrogen, *n.* The boiling-point of liquid nitrogen under ordinary atmospheric pressure is –194.4° C. or –317.9° F. For the fixation of atmospheric nitrogen by growing plants, see ★*nitragin.*—**Nitrogen chlorid,** a pale-yellow oily-looking liquid, NCl_3, much heavier than water, produced by the action of chlorin on a warm solution of ammonium chlorid. It has a peculiar irritant odor and upon slight heating, or by contact with phosphorus, turpentine, fatty matter, or other substances tending to abstract the chlorin, it explodes with most dangerous violence.—**Nitrogen-free extract,** in agricultural chemistry, a sum of organic compounds comprising starch, sugar, gums, and the like, but exclusive of cellulose or fiber, together with which they compose the carbohydrates.—**Nitrogen sulphid,** a yellow powder, produced by the interaction of dry ammonia and sulphur chlorid, which crystallizes in reddish-yellow prisms, decomposes rapidly at 160° C. with evolution of heat and light, and explodes violently on percussion.—**Organic nitrogen,** the name given generally in chemistry to nitrogen in carbon compounds: sometimes restricted to nitrogen in its original form of combination in animal or vegetable substances, that is, before these have undergone decay or putrefaction.

nitrogen-bulbs (nī′trọ̄-jen-bulbz), *n. pl.* In *chem.,* a piece of apparatus consisting of a series of three or sometimes five glass bulbs which contain hydrochloric acid, by means of which the nitrogen of an organic substance submitted to analysis, having been evolved as ammonia, is absorbed and collected.

nitrogen-consumer (nī′trọ̄-jen-kọn-sū″mėr), *n.* A plant which depends for its nitrogen upon the soil, as the cereals.

nitrogen-fixing (nī′trọ̄-jen-fik″sing), *a.* Fixing and accumulating the free nitrogen of the air: said of plants whose roots serve as hosts to microbes which perform this function. The microbes operate by means of tubercles formed through their agency on the roots. See ★*nitrifier* and ★*nodule.*

As this peculiar property pertaining to this order of plants belongs more to the domain of agricultural chemistry than medicine it may be well if I explain that they react at their roots with certain earth bacteria, the result being the fixing in the soil of nitrogen from the atmosphere. They are accordingly referred to as *nitrogen-fixing* plants. *Lancet,* June 6, 1903, p. 1589.

Nitrogen-fixing crop. See ★*crop.*

nitrogen-gatherer (nī′trọ̄-jen-gaᴛʜ″ėr-ėr), *n.* A plant capable, through bacterial agency, of acquiring and fixing the nitrogen of the air. See *nitrogen-fixing* ★*crop.*

nitrogen-gathering (nī′trọ̄-jen-gaᴛʜ″ėr-ing), *a.* Same as ★*nitrogen-fixing.*

nitrogenization (nī″trọ̄-jen-i-zā′shọn), *n.* The act or process of nitrogenizing, or impregnating with nitrogen; impregnation or inoculation with nitrogen; nitrification. *Lancet,* June 6, 1903, p. 1590.

nitrogen-trap (nī′trọ̄-jen-trap″), *n.* A popular name for the nodules upon the roots of leguminous plants. The nodules are caused by microbes which fix the free nitrogen of the air. See ★*nitrogen-fixing.*

nitroglauberite (nī-trọ̄-glâ′bėr-īt), *n.* [*nitro-* + *glauberite.*] A white, fibrous, crystalline mineral consisting of the nitrate and sulphate of sodium: found in the desert of Atacama.

nitrohippuric (nī″trọ̄-hi-pū′rik), *a.* Pertaining to or derived from hippuric acid and nitrogen.—**Nitrohippuric acid,** an acid which appears in the urine after the administration of nitro-benzoic acid.

nitrohydrocellulose (nī-trọ̄-hī-drọ̄-sel′ụ̄-lōs), *n.* A product obtained by treating cotton fiber for a short time with dilute sulphuric or hydrochloric acid, washing out the residual acid, drying, and subjecting the resultant hydrocellulose, which is readily reduced to fine powder, to the action of a mixture of concentrated nitric and sulphuric acids, as in the common process for making guncotton. Nitrohydrocellulose resembles ordinary guncotton, but is more sensitive to shock. It has been used in the manufacture of detonating primers.

nitrojute (nī′trọ̄-jöt), *n.* [*nitro-* + *jute*[2].] An explosive made by treating jute fiber with a mixture of concentrated nitric and sulphuric acids; a variety of nitrolignin.

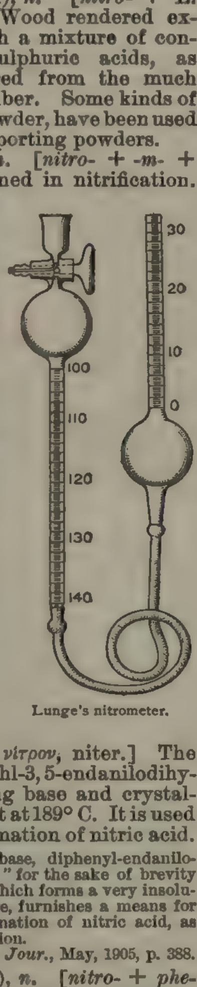
nitrol (nī′trol), *n.* [*nitro-* + *-ol.*] In *organic chem.,* a class-name of compounds containing the group $RCH(NO)NO_2$ or $RC(NO_2):NOH.$, where R is an alkyl group such as methyl. They are strong acids, give dark red, explosive salts with alkalies, and are prepared by the action of nitrous acid on the sodium derivatives of primary nitro-paraffins. Also called *nitrolic acids.*

nitrolic (nī-trol′ik), *a.* [*nitrol* + *-ic.*] Noting compounds containing a nitro- and a hydroxime group or nitrolic acids.—**Nitrolic acid.** Same as ★*nitrol.*

nitrolignin (nī-trọ̄-lig′nin), *n.* [*nitro-* + L. *lignum,* wood, + *-in*[2].] Wood rendered explosive by treatment with a mixture of concentrated nitric and sulphuric acids, as guncotton is manufactured from the much purer cellulose of cotton fiber. Some kinds of nitrolignin, as Schultze powder, have been used as explosives, chiefly as sporting powders.

nitromase (nī′trọ̄-mās), *n.* [*nitro-* + *-m-* + *-ase.*] A ferment concerned in nitrification.

nitrometer, *n.*—**Lunge's nitrometer,** an apparatus used in the analysis of nitrates, as guncotton. It brings together, in a stoppered bulb-tube, the substance to be treated, with mercury and sulphuric acid. Nitrogen dioxid gas is evolved, and its volume is measured under observed conditions of temperature and pressure.



Lunge's nitrometer.

nitromethane (nī-trọ̄-meth′ān), *n.* [*nitro-* + *methane.*] A colorless oily compound, CH_3NO_2, prepared by the action of silver nitrite on methyl iodide. It boils at 101° C. and has acid properties.

Nitromonas (nī-trọ̄-mon′as), *n.* [Gr. *νίτρον,* niter, + *μονάς,* a unit.] The nitrifying organism which brings about the conversion of ammonia into nitric acid in the fermentative decay of nitrogenous organic substances.

nitron (nī′tron), *n.* [Gr. *νίτρον,* niter.] The trade-name of 1,4-diphenyhl-3,5-endanilodihydrotriazole. It is a strong base and crystallizes in leaflets which melt at 189° C. It is used for the detection and estimation of nitric acid.

M. Busch has synthesized a base, diphenyl-endanilodihydro-triazol, named "*Nitron*" for the sake of brevity and for commercial purposes, which forms a very insoluble, stable nitrate, and, therefore, furnishes a means for the direct gravimetric determination of nitric acid, as well as for its qualitative detection.
Amer. Chem. Jour., May, 1905, p. 388.

nitrophenol (nī-trọ̄-fē′nol), *n.* [*nitro-* + *phenol.*] Any one of three compounds, HOC_6H_4-NO_2, distinguished as ortho- or 1, 2, meta- or 1, 3, and para- or 1, 4. The ortho- and para-compounds are prepared by the action of dilute nitric acid on phenol. The former crystallizes in yellow needles or prisms, melts at 44.27° C., boils at 214° C., and is the only one volatile with steam. The para-derivative crystallizes in colorless needles or monoclinic columns and melts at 114° C. The meta-isomer is prepared from metanitraniline and nitrous acid. It forms thick, sulphur-colored crystals, melts at 96° C., and boils at 194° C. under 70 millimeters pressure.

nitrophyte (nī′trọ̄-fīt), *n.* [NL. *nitrum,* niter, + Gr. *φυτόν,* plant.] In *phytogeog.,* a plant which requires a large nitrogen content in the soil.

A general mixture of psammophytes, lithophytes, *nitrophytes,* and hydrophytes that indicate . . . the complexity of the substratum as an ecological area.
C. MacMillan, in Minn. Bot. Stud., Bulletin IX. 1014.

nitrophytic (nī-trọ̄-fit′ik), *a.* [*nitrophyte* + *-ic.*] Having the character of a nitrophyte.

nitropowder (nī′trọ̄-pou-dėr), *n.* A gunpowder into the composition of which nitric acid enters.

nitroprussiate (nī-trọ̄-prus′i-āt), *n.* Same as ★*nitroprussid.*

nitroprussic (nī-trọ̄-prus′ik), *a.* [*nitro-* + *prussic* (acid).] Pertaining to nitric and prussic acids or to nitroferricyanic acid.—**Nitroprussic acid,** a dark red, deliquescent, crystalline compound, $H_2Fe(CN)_5NO$, prepared by the action of hydrochloric acid on the silver salt. Also called *nitroferricyanic acid.*

nitroprusside (nī-trō-prus′id), *n.* [*nitro-* + *pruss(ic)* + *-ide*[2].] A compound of a basic element or radical with the dyad radical $Fe.NO.(CN)_5$. Thus sodium nitroprusside, the compound most frequently prepared, has the composition $Na_2Fe.NO.(CN)_5$ and crystallizes with two molecules of water. Such a compound gives an intense but transient purple color with the solution of an alkaline sulphid, this reaction being often utilized for the detection of sulphur in minute quantity.—**Sodium nitroprusside,** the most important salt of nitroferricyanic acid; a ruby-colored compound, $Na_2Fe(CN)_5NO.2H_2O$, prepared by the action of nitric acid on potassium ferrocyanide and subsequent treatment of the product with sodium hydroxid. It crystallizes in rhombic prisms and decomposes when heated.

nitros-. A prefix denoting derivation from nitrous acid, or indicating the presence of the univalent group –NO in the molecule of a compound. See *nitroso-.*

nitrosamine (nī-trọ̄-sam′in), *n.* [*nitros-* + *amine.*] 1. A class-name of compounds which contain the group $\begin{matrix}R\\R'\end{matrix}\!>N.NO$, where R is an alphyl group such as phenyl, C_6H_5, and R′ is an alkyl such as methyl, CH_3. They are formed by the action of nitrous acid on secondary aromatic, aliphatic amines.—2. Same as *nitrosamine* ★*red.*

nitrosate (nī′trọ̄-sāt), *n.* [*nitros-* + *-ate*[1].] In *organic chem.,* a class-name of compounds which contain the group $RC(ONO_2).C(R)$:-NOH, where R is a hydrocarbon radical such as methyl, CH_3. They are formed by the addition of nitrogen tetroxid to aliphatic or aromatic hydrocarbons of the ethylene series.

nitrosite (nī′trọ̄-sīt), *n.* [*nitros-* + *-ite*[2].] In *organic chem.,* a class-name of compounds which contain the group $>CONO.\overset{\vee}{C}:NOH.$ They are prepared by the action of nitrogen trioxid (nitrous anhydrid) on ethylene hydrocarbons.

Nitroso color. See ★*color.*

nitrosobacteria (nī-trō′sọ̄-bak-tē″ri-ạ̈), *n. pl.* Bacteria of the soil which oxidize ammonia to nitrous acid.

Winogradsky's investigations resulted in the discovery that two kinds of bacteria are concerned in nitrification; one of these, which he terms *Nitrosobacteria,* is only capable of bringing about the oxidation of the ammonia to nitrous acid. *Encyc. Brit.,* XXVI. 56.

nitrosodimethylaniline (nī-trō″sọ̄-dī-meth″il-an′i-lin), *n.* The para-compound, $O\overset{4}{N}C_6H_4\overset{1}{N}$-$(CH_3)_2$, prepared by the action of nitrous acid on dimethylaniline. It crystallizes in large green plates and melts at 85° C. It is used in the manufacture of certain dyes.

nitroso-indol (nī-trō-sọ̄-in′dol), *n.* A red compound obtained by treating a solution of indol with concentrated sulphuric acid in the presence of a nitrite.

nitrostarch (nī′trọ̄-stärch), *n.* An explosive substance obtained by dissolving starch in nitric acid, adding the solution gradually, after cooling, to a mixture of concentrated nitric and sulphuric acids, and washing away all traces of surplus acid. It may be obtained of several different grades of nitration, is liable to undergo spontaneous decomposition, and has no practical value as an explosive. Also called *nitramidin.*

nitrosulphonic (nī″trọ̄-sul-fon′ik), *a.* In *organic chem.,* noting a class of compounds which contain in their molecule the univalent nitro-radical $-NO_2$ and the univalent sulphonic-acid radical $-SO_3H$.—**Nitrosulphonic acid.** (*a*) A colorless crystalline compound, O_2NSO_3H, formed during the manufacture of sulphuric acid by the chamber process, if the quantity of water present is insufficient for the production of sulphuric acid. See *lead-chamber* ★*crystals.* (*b*) In *organic chem.,* the general name given to sulphonic acids containing one or more nitro-groups, NO_2, in their molecules.

Nitrosyl chlorid, a substance, NOCl, formed by the direct union of nitrogen dioxid with chlorin. Below – 8°

C. it is a deep orange-colored liquid which boils at that temperature and appears as an orange-yellow gas. With a solution of caustic soda it produces sodium nitrate, sodium chlorid, and water.

nitrosylic (nī-trō-sil′ik), *a.* [*nitrosyl* + *-ic.*] Pertaining to the univalent nitrosyl radical -NO, which is also called the *nitroso group.*

nitrotartaric (nī″trọ-tär-tar′ik), *a.* Noting an acid, a colorless compound, $HOOC.CH(NO_3)$-$CH(NO_3)COOH$, prepared by the action of nitric acid on tartaric acid. It crystallizes in silky prisms and is decomposed by hot water.

nitroxyl (nī-trok′sil), *n.* A nitro-group; specifically, the group NO_2.

Nitrum fixum, an old name for potassium carbonate made by the deflagration of saltpeter with charcoal.—**Nitrum seri lactis,** a seventeenth-century name for lactose or milk-sugar obtained by evaporating the whey of milk.

niu (nẹ̄-ö′), *n.* [Polynesian name.] In Hawaii and throughout Polynesia, the cocoanut-palm. See ★*niog.*

nivate (nī′vāt), *v. t.*; pret. and pp. *nivated*, ppr. *nivating.* [L. *nivatus*, cooled with snow. See ★*nivation.*] Cover with snow; specifically, in *geol.*, affect (as a surface) by nivation. See ★*nivation.*

> In this manner glaciated forms are seen to shade out into *nivated* forms; and it is possible to establish a complete series of gradations from the deepest glaciated cirque to the most featureless *nivated* flat.
>
> *F. E. Matthes*, Glacial Sculpture of the Bighorn Mountains, in Rep. U. S. Geol. Survey, 1899–1900, ii. 184.

nivation (nī-vā′shọn), *n.* [NL. *nivatio(n-)* (cf. L. *nivatus*, cooled with snow), < *nix* (*niv-*), snow (see *névé*).] In *geol.*, the condition of being snow-covered; also the erosive and transporting action of a cover of snow.

> The effects of the occupation by quiescent névé are thus to convert V-shaped valleys into U-shaped ones and to efface their drainage lines without material change of grade. These névé effects, which are wholly different from those produced by glaciation, I shall for the sake of brevity, speak of as effects of *nivation*, the valleys exhibiting them having been nivated.
>
> *F. E. Matthes*, Glacial Sculpture of the Bighorn Mountains, Rep. U. S. Geol. Survey, 1899–1900, ii. 183.

niveau (ni-vō′), *n.* [Pr. *niveau.* See *level*^{1}, *n.*] A level; a flat surface.

nivellate (niv′e-lāt), *v. t.*; pret. and pp. *nivellated*, ppr. *nivellating.* [F. *niveler*, level, + *-ate*^{2}.] To level; reduce to a level.—**Nivellating table,** a table the top of which can be brought, by a suitable mechanism, to a perfect level.

> The *nivellating table* is designed to take the place of the usual forms of nivellating apparatus, as it is itself perfectly level, is provided with several shelves divided into compartments, the whole being covered with a glass hood, excluding dust but not light.
>
> *Sci. Amer. Sup.*, April 9, 1898, p. 18574.

nivenite, *n.* Like other varieties of uraninite, this mineral exhibits marked radioactivity.

nivosity (nī-vos′i-ti), *n.* [L. *nivosus*, snowy. See *Nivôse.*] Abundance of snow; snowiness.

> That faculty . . . which had brought the forces of nature,—its pluviosity, *nivosity*, germinality, and vendemiarity,—under the yoke for the service of men.
>
> *J. Morley*, Critical Miscellanies, Ser. II. 110. *N. E. D.*

nixie^2, *n.* Same as *nix*^{2}.

niyog (nē′yọ̈g), *n.* [Chamorro and Tagalog name.] The cocoanut-palm. See ★*niog.*

nizamate (ni-zäm′āt), *n.* [*Nizam* + *-ate*^{3}.] The territory or jurisdiction of the *Nizam.*

N. J. An abbreviation of *New Jersey.*

nkungu, *n.* See ★*kungu.*

N. L. An abbreviation (*b*) of *north latitude*; (*c*) [*l. c.*] of the Latin *non licet*, it is not permitted; (*d*) of the Latin *non liquet*, it does not appear, it is doubtful, the case is not clear; (*e*) of the Latin *non longe*, not far.

N. Lat. An abbreviation of *north latitude.*

N. L. F. An abbreviation of *National Liberal Federation.* [English.]

N. M. An abbreviation (*a*) of *New Mexico*; (*b*) of the Latin *nux moschata*, nutmeg.

N. Mex. An abbreviation of *New Mexico.*

no^2, *a.*—**No ball.** See ★*ball*^{1}.

no^3 (nō), *n.* [Jap. *nō.*] In Japan, a sort of dignified operatic performance consisting of music and dancing, with recitation. The carved masks worn by the performers indicate the characters portrayed.

> The stage on which the *No-dance* is performed is made of hard, unpainted wood, with a single pine tree somewhat conventionally portrayed on the background. Thus is suggested a grand monotony. The main parts are three in number, the small chorus and orchestra being seated on the stage at one side. Masks are worn by the chief players—who might almost better be termed tellers—and assist in the general idealisation. The poem deals with historical subjects, always interpreting them through Buddhist ideas. The standard of excellence is an infinite suggestiveness, naturalism the one thing to be condemned.
>
> *Okakura*, Ideals of the East, p. 183.

No. An abbreviation (*b*) of *north.*—**2.** In *chem.*, the symbol for *norium.*

N. O. An abbreviation (*a*) of *natural order*; (*b*) of *New Orleans.*

Noachical (nọ-ā′ki-kạl), *a.* Same as *Noachic.*

nob^3, *n.*—**His nobs.** (*a*) A slang title for an aristocrat or a swell. (*b*) In *cribbage*, the jack of the same suit as the starter held in either hand or crib.

no-ball (nō′bâl), *v. t.* In *cricket*: (*a*) To condemn as a 'no ball.' See *no ball*, under ★*ball*^{1}. (*b*) To declare (a bowler) to have delivered a 'no ball.' *N. E. D.*

> It was discovered that he had lost his residential qualification, so the matter terminated through a side issue, and Crossland was never *no-balled* by any umpire. There are six prominent instances of *no-balling* for throwing in first-class matches.
>
> *Encyc. Brit.*, XXVII. 277.

nobber (nob′ėr), *n.* [*nob*^{1}.] **1.** A blow on the head. [Slang.]—**2.** A pugilist skilful in delivering blows on the head. [Slang.]

nobblerize (nob′lėr-īz), *v. i.*; pret. and pp. *nobblerized*, ppr. *nobblerizing.* [*nobbler* + *-ize.*] To drink nobblers with frequency. See *nobbler*, 3. [Slang, Australia.]

noble. I. *a.*—**Noble elements.** See ★*element.*

II. *n.*—**Harry noble,** a gold coin of Henry V. and Henry VI. of England.

nobs† (nobz), *n.* [Origin obscure.] A dear; a darling: applied to a woman.

> He calleth me his whytyng,
> His mullyng and his mytyng,
> His *nobbes* and his conny,
> His swetyng and his honny,
> With, Bas, my prety bonny,
> Thou art worth good and monny.
>
> *Skelton*, Elynour Rummynge, p. 102.

noca (nō′kạ̈), *n.* [Sp.] An edible prawn, *Bithynis acanthurus*, of Porto Rico and elsewhere.

Nocca (nok′ạ̈), *n.* [NL. (Cavanilles, 1794), named in honor of Domenico *Nocca*, an Italian botanist who published several botanical works between 1793 and 1814.] A genus of dicotyledonous plants belonging to the family *Asteraceæ.* See *Lagascea.*

nocerite (nō′sẹ̄-rīt), *n.* Same as *nocerine.*

nociceptive (nō-si-sep′tiv), *a.* [L. *nocere*, inflict injury, + *capere*, take.] In *neurol.*, receptive of injury.

> In this reaction the reflex arc is (i.) the receptive neurone (*nociceptive*) from the foot to the spinal segment, (ii.) perhaps a short intraspinal neurone, and (iii.) the motor neurone to the flexor muscle.
>
> *Nature*, Sept. 8, 1904, p. 463.

nocking-plug (nok′ing-plug), *n.* A plug inserted at the base of a cane arrow, used for strengthening the nock.

noctambulistic (nok-tam-bụ̄-lis′tik), *a.* [*noctambulist* + *-ic.*] Pertaining to, or subject to, noctambulism or sleep-walking.

noctambulous (nok-tam′bụ̄-lus), *a.* [*noctambul(ism)* + *-ous.*] Subject to noctambulism or sleep-walking.

noctilucal (nok-ti-lū′kạl), *a.* [*Noctiluc(a)* + *-al*^{1}.] **1**†. Phosphorescent. *Boyle.*—**2.** Pertaining to, or consisting of, phosphorescent animalcules of the genus *Noctiluca.*

noctilucan (nok-ti-lū′kạn), *n.* A phosphorescent animalcule of the genus *Noctiluca.*

noctilucence (nok-ti-lū′sẹns), *n.* The character or state of being noctilucent; luminousness at night, or in the dark, as the phosphorescence of the pelagic animalcules of the genus *Noctiluca.* *Science*, July 7, 1893, p. 10.

noctiluminous (nok-ti-lū′mi-nus), *a.* [L. *nox* (*noct-*), night, + *lumen* (*lumin-*), light, + *-ous.*] Luminous or shining at night; as a *noctiluminous* cloud. See *night-shining cloud*, under ★*cloud*^{1}.

noctivagator† (nok-tiv′ạ̄-gā-tọr), *n.* [See *noctivagant.*] One who, or an animal which, walks or wanders at night. [Rare.]

Noct. maneq. An abbreviation of the Latin *nocte maneque*, at night and in the morning.

noctuideous (nok-tụ̄-id′ẹ̄-us), *a.* Same as *noctuidous.*

noctum, *n.* **4.** An organism whose color is different at night from what it is in the daytime. Also *nocturne.*

nocturn (nok′tėrn), *v. i.* [*nocturn*, *n.*] To be different in color at night from what it is in the daytime; be a nocturn. Also *nocturne.* *Nature*, April 5, 1900.

nocuity (no-kū′i-ti), *n.* [NL. **nocuitas*, < L. *nocuus*, harmful.] Harmfulness; noxiousness.

Nodal circle, plane, points (*b*). See ★*circle*, etc.

nodality (nọ-dal′ị-ti), *n.* [*nodal* + *-ity.*] The fact or character of being nodal; the character of being the intersection of several converging lines, paths, or the like.

> A higher degree of "*nodality*," to use Mr. Mackinder's term, is found where several such furrows meet to form a well-marked though by no means deep hollow. . . . Where from any cause a gap exists running through the Chalk, obviously the village which lies at that gap at the base of the Chalk tends to be a point of convergence for roads leading to the gap. The "*nodality*" of the point rises to a high degree. *Geog. Jour.* (R. G. S.), IX. 78, 79.

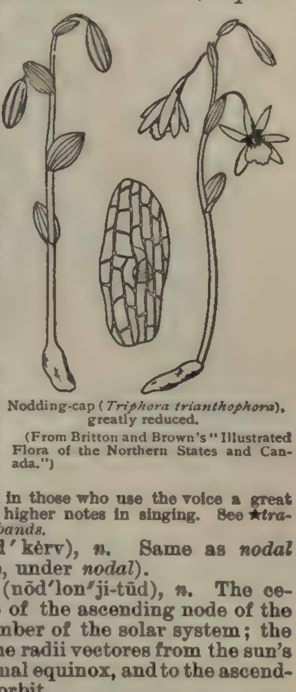
nod-crafty (nod′kraf″ti), *a.* Able to nod with an air of great wisdom. *N. E. D.* [Rare.]

> Solemne goose. stately least wyse *nodd crafty.* They have made him beleeve he is wondrous wy.
>
> *J. Spedding*, Letters and Life of Bacon, IV. 92.

nodding-cap (nod′ing-kap), *n.* An orchidaceous plant of eastern North America, *Triphora trianthophora*, with nodding purple flowers. Sometimes called *three-birds.*

noddy-peak†, *n.* A variant of *hoddy-peak.*

node, *n.*—**Heberden's nodes,** nodular swellings on the knuckles, associated with lateral deflection of the finger-joints, in those of advancing years. *Med. Record*, Feb. 7, 1903, p. 216.—**Petiolar node,** a node on the petiole of the abdomen of an ant.—**Singers' nodes** or **nodules,** a circumscribed swelling between the arytenoid cartilages of the larynx, sometimes observed in those who use the voice a great deal, especially the higher notes in singing. See ★*trachoma of the vocal bands.*



Nodding-cap (*Triphora trianthophora*), greatly reduced.

(From Britton and Brown's "Illustrated Flora of the Northern States and Canada.")

node-curve (nōd′kėrv), *n.* Same as *nodal curve* (which see, under *nodal*).

node-longitude (nōd′lon″ji-tūd), *n.* The celestial longitude of the ascending node of the orbit of any member of the solar system; the angle between the radii vectores from the sun's center to the vernal equinox, and to the ascending node of the orbit.

nodiflorous (nọ-dif′lọ-rus), *a.* [L. *nodus*, knot, + *flos* (*flor-*), flower, + *-ous.*] Bearing flowers at the nodes of the stem.

nodiform, *a.* **2.** Having the form of a node.

nodium (nō′di-um), *n.* [NL., < *Nod(on)* (see def.) + *-ium.*] The trade-name of an alloy offered for industrial use by a French engineer, Albert Nodon: said to have the density 2.4, high electric conductivity, and greater resistance to the chemical action of the atmosphere than aluminium.

nodobicuspidal (nō″dọ-bī-kus′pi-dạl), *a.* [L. *nodus*, node, + E. *bicuspidal.*] Having a node and two cusps: used to designate a class of quartic curves.

> *Nodobicuspidal* quartics admit of three primary subdivisions. *Nature*, Nov. 27, 1902, p. 80.

nodocuspidal (nō-dọ-kus′pi-dạl), *a.* [L. *nodus*, node, + E. *cuspidal.*] Having a node-cusp.

> *Nodocuspidal* quartics admit of only four primary subdivisions, three of which depend on the character of the node, whilst the fourth arises from the fact that the node and cusp may unite into a rhamphoid cusp.
>
> *Nature*, Nov. 27, 1902, p. 80.

nodoid (nō′doid), *n.* [L. *nodus*, node, + *-oid.*] The surface of revolution of the hyperbolic catenary.

nodosity, *n.*—**Haygarth's nodosities,** nodular swellings on the articular surfaces of the bones in arthritis deformans.—**Heberden's nodosities.** Same as *Heberden's* ★*nodes.*

nodule, *n.* (*e*) The peculiar knot upon the roots of leguminous and a few other plants, caused by bacteria. (See *nodule-bacteria*, under ★*bacterium.*) They enable the plant to use atmospheric nitrogen. See ★*root-tubercle.*—**Nodule-bacteria.** See ★*bacterium.*—**Nodule beds.** See ★*bed*^{1}.—**Radial nodule,** a nodule of bone or cartilage found at the base of each dorsal and each anal ray of some fishes.—**Root nodule.** Same as *root-knot.* Also applied to ★*root-tubercles.* See ★*nodule* (*e*).—**Vocal nodules.** Same as *singers'* ★*nodes.*

nodulose, *a.* **2.** Abounding in nodes or tubercles: used in descriptive zoölogy.

nodulus, *n.*—**Noduli laqueati pilorum,** the occurrence of knots in the hair, especially in the long hairs of the beard in man, or of the head in women.

noël (nō-el′), *n.* [F. Christmas, a Christmas song. See *nowel*^{1} and *natal*^{1}.] A Christmas song or carol; specifically, in the South of

France, a popular ballad relating to the Nativity sung at Christmas time; also the air to which it is sung.

> The most consistently popular form of poetry in the South of France was always the *noël*. There has been no limit to the production of these. . . . They have deservedly maintained their popularity to the present day.
> *Encyc. Brit.*, XXXII. 43.

> The Provençal *noëls*—being some real, or some imagined, incident of the Nativity told in verse set to a gay or tender air—are the crèche translated into song. The simplest of them are direct renderings of the Bible narrative. *T. A. Janvier*, Christmas Kalends of Provence, xiv.

noësis (nō-ē'sis), *n.* [Gr. *νόησις*, thought. See *noëtic.*] In *philos.*, pure thought; reason; intellection.

> Identity, the situations in time and place, and causation . . . are thus obviously not the result of grounding or *noesis* merely, are not ideal but empirical, and have, that is to say, existential import. *Encyc. Brit.*, XXXII. 64.

noëtic, *a.* **2.** In *psychol.*, consciously logical: opposed to ⋆*hyponoëtic*, or unconsciously logical.

noëtics (nọ-et'iks), *n.* [Pl. of *noëtic.*] The science of pure thought, reason, or intellection; "the science that deals with the phenomena that arise from efforts to satisfy the craving for truth." *Ross*, in Amer. Jour. Sociol., VIII. 776. [Rare.]

nœud (nė), *n.* [F., a knot, node.] **1.** A nautical mile, taken as 1855 meters, or 2028 yards.—**2.** Same as *node*, 10.

> The case of a differential equation of the first order and a point on the discriminant locus at which the integral curves have not a cusp is a good example, and shows the existence of a *nœud* may be predicted from an inspection of the diagram.
> *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 555.

Nœud vital, a point in the medulla oblongata where the respiratory center is supposed to be: disease or injury of it is fatal.

nogal (nō-gäl'), *n.* [Sp. *nogal*, walnut-tree.] In Spanish America, a name given to various species of *Juglans*: in Porto Rico, to the indigenous *J. Jamaicensis*.

noggle-head (nog'l-hed), *n.* *Cottus gobio*, commonly known as *miller's-thumb*, a cottoid fish widely distributed over Europe. See cut at *miller's-thumb*.

noi, nooi (nō'i), *n.* [Cape D.] Among the South African Dutch, a title of women, especially of young women, equivalent to *Madame*, or *Mistress* (*Mrs.*).

noio (nō-ē'ō), *n.* [Hawaiian.] One of the noddy-terns, *Anous hawaiiensis*, peculiar to the Sandwich Islands.

noir (nwor), *a.* and *n.* [F.] Black; in *roulette*, the space in which are placed bets on the color of the number coming black.

noise, *n.*—**Moodus noises**, dull rumbling sounds, like distant thunder, heard from time to time near Moodus, Connecticut, and attributed to earth-movements.—**Simple noise**, in *psychol.*, a noise-sensation; the elementary noise experience. It is at present unsettled whether simple noises are all reducible to the type of the pop or crack, or whether the hiss must be added as a second class of noise-sensation. *E. B. Titchener*, Exper. Psychol., I. i. 31.

noise-sensation (noiz'sen-sā"shọn), *n.* In *psychol.*, the less differentiated form of auditory sensation; the pop, crack, hiss, etc., as distinguished from the tone.

> If we abstract from these elementary *noise-sensations*, . . . we may say that all kinds of auditory sensation . . . are combinations of simple tone-sensations.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 78.

noise-stimulus (noiz'stim"ụ̄-lus), *n.* In *psychol.*, the adequate stimulus of the sensation of noise, thought by some to consist of a single jar or shock of the surrounding medium, but more probably a mixed medley of broken and interrupted wave-motions (tonal stimuli). *E. B. Titchener*, Exper. Psychol., I. i. 33.

Nolan (nō'lạn), *a.* Of or pertaining to Nola, near Naples, in Italy; especially noting the numerous Greek vases found in excavations at that locality.

> The selection and grouping of figures on *Nolan* Amphorae is seldom very careful or suggestive.
> *P. Gardner*, in Jour. Hellenic Studies, XIII. 138.

nolanaceous (nō-lạ̄-nā'shius), *a.* Belonging to the plant family *Nolanaceæ*.

nolid (nol'id), *n.* and *a.* [*Nolid*(*æ*).] **I.** *n.* A member of the lepidopterous family *Nolidæ*.

II. *a.* Having the characters of or belonging to the family *Nolidæ*.

nomadization (nom"ạ-di-zā'shọn), *n.* [*nomadiz*(*e*) + *-ation.*] The process of rendering nomadic; adoption of a nomadic life.

> The Turks triumphed by breaking up intercourse and trade, destroying industries and manufactures, and flooding the land with a sea of wandering tribes, so that the soil passed out of cultivation, the population decreased, and all sources of wealth shrank—in short, by bringing about the *nomadisation* of Asia Minor.
> *W. M. Ramsay*, in Contemporary Rev., Aug., 1897, p. 235.

nomarch, *n.* **2.** The governor of a nome in ancient Egypt.

> Like the Pharaohs of old, the Macedonian conqueror became the son of Amon-Ra, and in Egypt at least claimed divine honours. Before leaving Egypt Alexander appointed the *nomarchs* who were to govern it, and ordered that justice should be administered according to the ancient law of the land.
> *Sayce*, The Egypt of the Hebrews and Herodotus, p. 137.

Nomeidæ (nọ-mē'i-dē), *n. pl.* [NL., < *Nomeus* + *-idæ.*] A family of small fishes, most of which are found in the open sea, of no value for food.

nomenclate (nō'men-klāt), *v. t.*; pret. and pp. *nomenclated*, ppr. *nomenclating*. [*nomenclature.*] To assign a name to, especially in accordance with a particular system of nomenclature; name. [Rare.]

> The natural history of the doctor has not yet been written, but the classes are easily *nomenclated*.
> *Tuckerman*, Collector, p. 127. *N. E. D.*

nomenclaturist (nō"men-klā'ṭụ̄-rist), *n.* [*nomenclature* + *-ist.*] Same as *nomenclator*, 1 and 2.

Nomeus (nọ-mē'us), *n.* [NL., < Gr. *νομεύς*, a herdsman, < *νέμειν*, manage, feed. Early travelers compared the fish to a mullet (D. *harder*, mullet, *herder*, herder, herdsman).] A genus of fishes of the family *Nomeidæ*, found in warm seas, some of them living commonly among the tentacles of the Portuguese man-of-war.

Nomin. An abbreviation of *nominative*.

Nominal partner. See ⋆*partner*.

nominated (nom'i-nā-ted), *p. a.* **1.** Named; mentioned or designated by name.—**2**†. Noted; famous.

> Such of them as were thought the chief and most *nominated* opposer on the other side.
> *Milton*, An Apology for Smectymnuus, p. 75. *N. E. D.*

nomineeism (nom-i-nē'izm), *n.* [*nominee* + *-ism.*] The principle of nomination to office; the political practice of selecting a nominee, in distinction from the practice of appointment.

nominy (nom'i-ni), *n.* [Perhaps a corruption of L. *nomine*, ab. sing. of *nomen*, name; from its use in the formula *in nomine patris* (in the name of the Father), etc. *N. E. D.*] A riming formula; a set or form of words in popular use; a rigmarole; a long story. *N. E. D.* [Prov. Eng.]

> Should the boy be unable to recite this rhyme, he would be told 'he didn't knaw his *nominy*.'
> *J. Nicholson*, Folk-Sp. Yorksh., p. 8. *N. E. D.*

nomism (nō'mizm), *n.* [Gr. *νόμος*, law, + *-ism.*] Strict adherence to law, especially in the nomistic religions, that is, religions which possess codes for the regulation of the cult and of life.

nomocratic (nom-ọ̄-krat'ik), *a.* [*nomocracy* (*-crat-*) + *-ic.*] Of or pertaining to nomocracy. *Haeckel* (trans.), Riddle of the Universe.

nomogram (nom'ọ̄-gram), *n.* [Gr. *νόμος*, law, + *γράμμα*, a writing.] **1.** A graphic table for computation. *Fr. Schilling.*—**2.** [F. *nomogramme.*] A written rule or law.

nomograph (nom'ọ̄-gråf), *n.* [Gr. *νόμος*, law, + *γράφειν*, write.] The graphic presentation of numerical relations by any one of various processes or systems.

nomography, *n.* **2.** In *math.*, the theory of the construction and use of abaci or graphic tables for computation; the theory of the geometric representation of interdependences of variables. *D'Ocagne*, 1891.

nomophylactic (nọ-mof-i-lak'tik), *a.* [Irregularly from *nomophylax.*] Pertaining to the protection and preservation of law; especially, in *Gr. antiq.*, said of the functions and duties of the nomophylax (which see). [Rare.]

> Above all the *nomophylactic* Areiopagus to observe the officials and to check illegality.
> *R. W. Macan*, in Jour. Hellenic Studies, XII. 33.

nomothetic, *a.* **4.** Noting a science which aims at the discovery of universals or general laws: opposed to ⋆*idiographic*.

> This is the same distinction as that made by Windelband under the names *nomothetic* and idiographic sciences.
> *Jour. Philos., Psychol. Sci. Methods*, Jan. 21, 1904, p. 42.

nonadecane (non-ạ-dek'ān), *n.* Same as ⋆*nondecane*.

non-aërobiotic (non-ā"ẹ-rō-bī-ot'ik), *a.* Same as *anaërobiotic, anaërobious*.

nonane (non'ān), *n.* [L. *nonus*, ninth, + *-ane.*] A colorless liquid compound of the methane series, $CH_3(CH_2)_7CH_3$, prepared by the action of hydriodic acid and phosphorus on pelargonic acid. It melts at −51° C., boils at 149.5° C., and is probably present in petroleum.

non-Archimedean (non-är"ki-mē'dẹ̄-ạn), *a.* Pertaining to or designating any system in which either (*a*) the assumption of Archimedes is contradicted, or (*b*) is not used. See ⋆*assumption*.

non-arcing (non'ärk"ing), *a.* In *elect.*, noting the property of metals of not being able to maintain an alternating arc under certain conditions, but of blowing it out explosively. This property is shown more by some metals (as zinc, mercury, etc.) than by others (as copper and aluminium) and is utilized in making the tẹrminals of lightning-arresters to keep the machine-current from following the lightning-discharge as arc.

non-being (non'bē-ing), *n.* The negation of being; absence of the attribute of being.

non-bituminous (non-bi-tū'mi-nus), *a.* Lacking bitumen, as anthracite coal in contrast with bituminous coal.

non-cellular (non-sel'ụ̄-lạ̈r), *a.* In *bot.*, same as ⋆*apocytial*.

non-commensurable (non-kọ-men'ṣụ̄-rạ-bl), *a.* Incommensurable: said of two quantities whose ratio cannot be expressed as a *rational* number but is irrational.

Non-commissioned staff. See ⋆*staff*¹.

non-commonable (non-kom'on-ạ-bl), *a.* Not subject to or having the privilege of the right of common. See *common*, 4.

> A right may be claimed for other animals, such as donkeys, pigs, and geese; but they are termed *non-commonable*, and the right can only be established on proof of special usage. *Encyc. Brit.*, XXVII. 167.

nonconformism (non-kọn-fôr'mizm), *n.* Same as *nonconformity*.

> Sir Henry Fowler, that stanch pillar of *nonconformism*. *N. Y. Times*, Sat. Rev., Dec. 16, 1905, p. 898.

non-conjugate (non-kon'jọ̈-gāt), *a.* Not conjugate: said of the ambulacral pores of the sea-urchins (*Echinoidea*) when not united by transverse furrows.

non-convergent (non-kọn-vėr'jẹnt), *a.* Not convergent; in *math.*, either divergent or oscillating.

non cul., non culp. Abbreviations of the Latin *non culpabilis*, not guilty.

nondecane (non-dek'ān), *n.* [L. *nonus*, ninth, + E. *decane.*] A colorless compound of the methane series, $CH_3(CH_2)_{17}CH_3$, prepared by the action of hydriodic acid and phosphorus on the corresponding dichlorid and contained in the paraffin from bituminous shale. It melts at 32° C. and boils at 330° C. Also called *nonadecane* and *enndecane*.

nondecatoic (non"dek-ạ-tō'ik), *a.* Noting an acid, a colorless compound, $CH_3(CH_2)_{17}$-COOH, prepared by the hydrolysis of octodecyl cyanide. It melts at 66.5° C. and boils at 297–299° C. under 100 millimeters pressure.

non-degenerate (non-dẹ̄-jen'ẹ-rạ̄t), *a.* Not degenerate; in *geom.*, not consisting of an aggregation of forms of a lower order or class. *Science*, Jan. 18, 1901, p. 103.

non-diathermanous (non-dī-ạ-thėr'mạ-nus), *a.* Not diathermanous; not conducting heat freely; that is a poor-conductor or a non-conductor of heat.

non-dichogamous (non-dī-kog'ạ-mus), *a.* Not dichogamous; having anthers and stigmas simultaneously produced; synanthetic.

non-dichogamy (non-dī-kog'ạ-mi), *n.* Simultaneous maturity of anthers and stigmas; synanthesis.

non-directional (non-di-rek'shọn-ạl), *a.* In *math.*, scalar or undirected: thus velocity has direction, but speed is *non-directional*.

> In Prof. Henrici's algebra the products of two vectors α, β are:—($\alpha\beta$) a *non-directional* or "scalar," in magnitude equal to the product of one vector into the component of the other along the first, and [$\alpha\beta$] a vector perpendicular to the plane drawn through α and β, and in magnitude equal to the area of the parallelogram of which α and β are concurrent sides.
> *Nature*, Oct. 22, 1903, p. 610.

non-electrolyte (non-ẹ̄-lek'trọ̄-līt), *n.* In *phys. chem.*, a substance which does not conduct electrolytically and which is not dissociated into ions on being dissolved.

> The *non-electrolytes* used, distilled water, cane sugar and urea, affect the protoplasm of paramœcia only through the osmotic pressure of the solution. There is no chemical effect. *Biol. Bulletin*, June, 1904, p. 10.

non-emanating (non-em′a̤-nāt-ing), *a.* Incapable of emitting an emanation: said of certain compounds of the radioactive elements.

nonene (non′ēn), *n.* [L. *nonus*, ninth, + *-ene.*] A name given to two hydrocarbons, C_9H_{18}. One is obtained by heating 4-ethyl-4-iodoheptane with alcoholic potash and boils at 139.5° C. The other is $CH_3C(C_6H_{13}):CH_2$, which is obtained by heating the corresponding hydrochlorid of nonylamine. It boils at 141–143° C.

Non-essential singularity, singular point. See ★*singularity*, ★*point*[1].

non-Euclidean (non″ū-kli-dē′a̤n), *a.* Not comprehended within or not in conformity with the system of geometry established by Euclid; pertaining to or designating any system of geometry which, while differing in essential particulars from that of Euclid, is nevertheless in accord with the facts of experience within the limits of the errors of observation.

> Similarly it has been supposed (*e.g.* by Newcomb) that *non-Euclidean* spaces of three dimensions should be regarded as figures in a four-dimensional Euclidean space, being related to it as the sphere to ordinary space.
> *Encyc. Brit.*, XXVIII. 669.

Non-Euclidean geometry, in its primitive meaning, the system which follows from the denial of Euclid's postulate that "through a given point there is not more than one parallel to a given straight line," when all of his other assumptions, explicit and unconscious, are retained. The name has sometimes been applied to what Bolyai called *absolute geometry* and Lobachevski *pangeometry*, namely, the system which simply dispensed with the above Euclidean postulate, using neither it nor any contrary assumption, and was undifferentiated, therefore, as between Euclidean and primitive non-Euclidean geometry. —**Non-Euclidean motion.** See ★*motion.*—**Non-Euclidean space.** See ★*space.*

non-Euclidian (non-ū-klid′i-a̤n), *a.* See ★*non-Euclidean.*

non-exportation (non″eks-pôr-tā′sho̤n), *n.* A refraining from exportation or a failure to export. Compare *non-importation.*

non-homogeneity (non-hō″mọ-jẹ-nē′ị-ti), *n.* The state of being non-homogeneous; lack of uniformity of structure or composition; diverseness as regards some specified quality: thus, a beam of white light has non-homogeneity as to wave-length.

non-homogeneous (non-hō-mọ-jē′nẹ-us), *a.* Not homogeneous.

nonic (nō′nik), *a.* and *n.* [L. *nonus*, ninth, + *-ic.*] **I.** *a.* In *math.*, of the ninth degree or order.

II. *n.* An algebraic function or form of the ninth degree; a quantic of the ninth degree.

> In another case, which primâ facie seemed normal, Professor Pearson found that "all nine roots of the fundamental *nonic* lead to imaginary solutions of the problem."
> *Encyc. Brit.*, XXVIII. 291.

non-identist (non-ī-den′tist), *n.* One who opposes the theory that all venereal diseases are of one and the same origin, that is, caused by the same virus.

nonillionth (nọ-nil′yo̤nth), *a.* and *n.* [*nonillion.*] **I.** *a.* **1.** Last in a series of a nonillion individuals.—**2.** Being one of a nonillion equal portions.

II. *n.* One of a nonillion equal parts.

non-inductive (non-in-duk′tiv), *a.* In *elect.*, containing no, or only very low, inductance. See ★*inductance.* A *non-inductive circuit* is a circuit in which an alternating current flows in phase, or practically in phase, with the electromotive force.

nonine (non′in), *n.* [L. *nonus*, ninth, + *-ine*[2].] A colorless liquid compound of the acetylene series, C_9H_{16}, prepared by the action of phosphoric anhydrid on campholic acid. It boils at 135–137° C.

non-ionized (non-ī′ọ-nīzd), *p. a.* In *phys. chem.*, not dissociated into ions capable of carrying a current in electrolysis. *Encyc. Brit.*, XXVIII. 15.

non-ionizing (non-ī′ọ-nī-zing), *a.* In *phys. chem.*, not separating a dissolved electrolyte into ions: said of a solvent. *Nature*, Dec. 3, 1903, p. 103.

non-irrigable (non-ir′i-ga̤-bl), *a.* Not capable of being irrigated; so situated that irrigation is impossible.

> That the *nonirrigable* grazing lands should be leased in small tracts so as to unite the irrigable and the pasture lands. *Yearbook U. S. Dept. Agr.*, 1901, p. 96.

non-linear (non-lin′ẹ-är), *a.* Not linear; in *math.*, not of the first degree.

> There is an infinite number of linear complexes touching a *non-linear* complex at a given line.
> *Encyc. Brit.*, XXVIII. 661.

non-malignant (non-mạ-lig′na̤nt), *a.* In *pathol.*, benignant; not malignant: as, a *non-malignant* tumor.

non-Mendelian (non-men-dē′li-a̤n), *a.* Exhibiting non-conformity with Mendel's principles, or definite departure from these principles, in the breeding of animals or plants. See ★*Mendelism.*

non-metal (non′met″al), In. n *chem.*, an element which has not the character of a metal. See *metalloid.*

non-metalliferous (non-met-a̤-lif′e̤-rus), *a.* Not metalliferous; that does not contain a metal or metals: as, the *non-metalliferous* minerals.

non-miscible (non-mis′i-bl), *a.* Incapable of mixing: said of certain liquids which, upon contact, maintain a definite dividing surface.

non-motile (non-mō′til), *a.* Not motile; not capable of moving of itself.—**Non-motile serum.** See ★*serum.*

non-nitrogenous (non-nī-troj′e-nus), *a.* Not containing nitrogen as a constituent: as, the *non-nitrogenous* portion of human food.

non-nucleated (non-nū′klẹ-ā-ted), *a.* In *cytol.*, not provided with a nucleus; without a nucleus; enucleate.

non obst. An abbreviation of the Latin *non obstante*, not standing in the way; notwithstanding.

nonoic (nọ-nō′ik), *a.* [L. *nonus*, ninth.] Noting an acid, a colorless compound of the acetic acid series, $C_8H_{17}COOH$, prepared by the hydrolysis of octyl cyanide. It melts at 12.5° C., boils at 253–254° C., and is probably identical with pelargonic acid prepared from oil of rue.

nonose (non′ōs), *n.* [L. *nonus*, ninth, + *-ose.*] In *organic chem.*, the class-name of sugars having the formula $C_9H_{18}O_9$. The designation refers to the number of oxygen atoms in the molecule. The most important members of the class are d-mannononose and glucononose.

non-oxygenous (non-ok-sij′e-nus), *a.* Not containing oxygen as a constituent.

non-periodic (non-pē-ri-od′ik), *a.* Not having a regular period of repetition or orbital motion: as, *non-periodic* variables (stars) and comets.

> The *non-periodic* comets appearing since 1700 are nearly all in the hands of computers. *Encyc. Brit.*, XXVII. 161.

non-phosphorized (non-fos′fọ-rīzd), *a.* Not containing phosphorus as a constituent: as, *non-phosphorized* cast-iron.

non-photobiotic (non-fō″tọ-bī-ot′ik), *a.* Not photobiotic; living in darkness.

non placet (non plā′set). [L. *non*, not, *placet*, it pleases. See *placet.*] It does not please (me, us): a formula, used in certain universities and assemblies, for expressing a negative vote; as a substantive, a negative vote. In the latter sense often written *non-placet.*

> Cambridge.—It was agreed by the senate on January 29, by a large number of placets to one *non-placet*, to appoint two additional demonstrators of human anatomy.
> *Nature*, Feb. 5, 1903, p. 332.

non-placet (non-plā′set), *v. t.* [See ★*non placet.*] To cast a non-placet or negative vote against; vote down (a measure).

> To-day I brought in a Grace with that view: it is *non-placeted.* *Whewell*, Life, p. 287. *N. E. D.*

non-plane (non-plān′), *a.* Not lying all in one plane.

non-plussation (non-plu-sā′sho̤n), *n.* [*non-plus, v.*, + *-ation.*] The act of nonplussing or perplexing.

non plus ultra. [L.] Same as *ne plus ultra.*

non-productive (non-prọ-duk′tiv), *a.* and *n.* **I.** *a.* **1.** Lacking the power of producing; not fertile.—**2.** Unproductive financially; not yielding revenue; unprofitable, as a mine or a farm.—**3.** In *polit. econ.*, not causing or tending to cause an increase in the quantity or quality of things of value; not causing commodities to possess exchangeable value: as, *non-productive* labor.

II. *n.* A person or industry that does not cause an increase in the quantity, quality, or exchangeable value of commodities.

nonproteid (non-prō′tẹ-id), *n.* Any complex organic substance which is not an albumin.

non-radiable (non-rā′di-a̤-bl), *a.* Impervious to cathode rays, X-rays, or similar forms of radiation: as, a *non-radiable* metal.

non-restraint (non-rẹ-strānt′), *n.* Freedom from restraint: noting the treatment of insanity without strapping, the use of the strait-jacket, or the like.

non-saccharine (non-sak′a̤-rin), *a.* Not having the qualities of a sugar.

non-seat (non′sēt), *n.* In *coal-mining*, see the extract.

> *Non-seat.* See D Link. [A flat iron bar attached to chains, and suspended from a hemp rope to a windlass at surface.] *Gresley*, Gloss. Coal Mining. *N. E. D.*

nonsensification (non-sen″si-fi-kā′sho̤n), *n.* The act of making nonsensical; production of nonsense. [Rare.]

> Only a simple suffumigation . . . accompanied by availing ourselves of the suitable planetary hour. Simple suffumigation? simple *nonsensification*— planetary hour? planetary fiddlestick! *Scott*, Antiquary, xxii.

nonsensify (non-sen′si-fī), *v. t.*; pret. and pp. *nonsensified*, ppr. *nonsensifying.* To make nonsense of; render nonsensical. [Rare.]

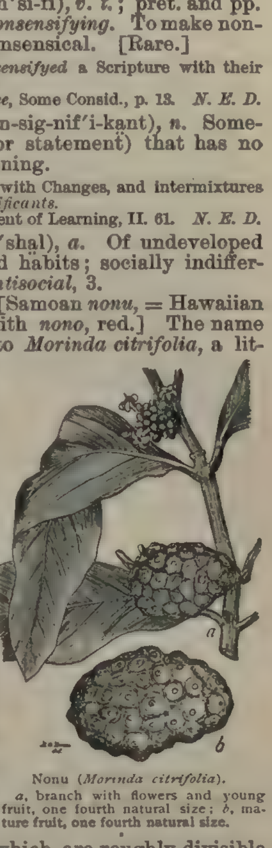
> They have . . . *nonsensifyed* a Scripture with their Figures and Allegories.
> *H. Lawrence*, Some Consid., p. 13. *N. E. D.*

non-significant (non-sig-nif′i-ka̤nt), *n.* Something (as a sign, or statement) that has no significance or meaning.

> The Simple Cyphars with Changes, and intermixtures of Nulles, and *Nonsignificants.*
> *Bacon*, Advancement of Learning, II. 61. *N. E. D.*

non-social (non-sō′sha̤l), *a.* Of undeveloped social instincts and habits; socially indifferent. Compare ★*antisocial*, 3.

nonu (nō′nö), *n.* [Samoan *nonu*, = Hawaiian *noni*; connected with *nono*, red.] The name applied in Samoa to *Morinda citrifolia*, a littoral tree the bark of the roots and stem of which yields a valuable coloring-matter which is the source of the al dye of India. The fleshy composite fruit is sometimes eaten by the natives, but is full of seeds and is not held in great esteem. The seeds are of especial interest in possessing a separate air-chamber or vesicle which renders them buoyant and capable of being transported to distant shores by ocean-currents. See ★*al*[1].



Nonu (*Morinda citrifolia*).
a, branch with flowers and young fruit, one fourth natural size; *b*, mature fruit, one fourth natural size.

non-umbilicate (non-um-bil′i-kāt), *a.* Not umbilicate: said of gasteropod shells which are roughly divisible into the umbilicate or non-umbilicate, according as the umbilicus is open or closed.

non-uniform (non-ū′ni-fôrm), *a.* Not uniform; irregular. In *math.*, if for each ϵ we can select a positive integer m which is independent of x and such that $| r_n(x) | < \epsilon$ when $n \geqq m$, whatever be the value of x in an interval (a, b), the series is said to converge uniformly in that interval; but the convergence is *non-uniform* if the value of the variable x has to be assigned before m can be given.

non-union, *a.* **2.** That does not submit to the rules or the dictation of a trade-union; not employing union men as such, and exclusively: as, a *non-union* shop.

non-unionism (non-ū′nyo̤n-izm), *n.* Disregard of or opposition to the rules of trade-unions; non-union sentiments.

non-unionist (non-ū′nyo̤n-ist), *n.* One who is not a member of a trade-union; one who advocates the principles of non-unionism.

nonuple (non′ụ-pl), *a.* [L. *nonus*, ninth, + *-plus* as in *duplus*, double, etc.] Ninefold; nine times told: as, in *music*, *nonuple* rhythm, a rhythm with nine beats to the measure.

non-use (non-ūs′), *n.* The fact of not using; abandonment or neglect of use; failure to use.

> Many considerations have been established which point to the *non-use* of the candle as a light unit for photometry.
> *W. M. Stine*, Photometrical Measurements, p. 120.

non-valent (non-vā′le̤nt), *a.* Having no chemical valency, and hence not able to enter into chemical combination.

non-variant (non-vā′ri-a̤nt), *a.* Incapable of variation; fixed: applied in thermodynamics to certain relations between the solid, liquid, and gaseous phases of matter.—**Non-variant system,** in *thermodynam.*, a system in which solid, liquid, and gaseous phases coexist for one or more discrete points and in which neither pressure nor temperature can be changed without the disappearance of one of the phases.

> So long as there is present only a single, chemically definite substance, three co-existent phases form a *non-variant system.*
> *E. Buckingham*, Theory of Thermodynamics, p. 183.

non vult (non vult). [L. 'he does not wish.'] A shortening of the Latin phrase, *non vult contendere,* he does not wish to contest (the case). See *nolo contendere.*

nonylene (non′i-lēn), *n.* [L. *nonus,* ninth, + *-yl* + *-ene.*] Same as ★*nonene.*

nonylenic (non-i-len′ik), *a.* [*nonylene* + *-ic.*] Of or pertaining to nonylene; having nine carbon atoms and one double union in the molecule.—**Nonylenic acid,** a colorless liquid, CH_3-$(CH_2)_5CH{:}CHCOOH$, prepared by the action of acetic anhydrid and sodium acetate on œnanthol. It has an odor of tallow, and decomposes when distilled. Also called *ennenoic acid.*

nonylic (no-nil′ik), *a.* Same as ★*nonylenic.*

nook-shaft (nůk′shȧft), *n.* In *arch.*, a shaft placed in the internal angle formed by the meeting of two contiguous faces in a compound archway. *N. E. D.*

noon^1, *n.*—**Local apparent noon,** midday determined by the passage of the real sun across the meridian of the observer.—**Local mean noon,** midday determined by the passage of the mean or imaginary sun across the observer's meridian.—**Local noon,** midday according to either apparent or mean time. See *local apparent* and *local mean* ★*noon.*—**Sidereal noon,** midday determined when the first point of Aries comes to the meridian.

noon-house (nön′hous), *n.* See the extract.

> There might have been seen a hundred years ago, by the side of many an old meeting-house in New England, a long, low, mean, stable-like building, with a rough stone chimney at one end. This was the "*noon-house,*" or "Sabba-dayhouse," or "horse-hows," as it was variously called. It was a place of refuge in the winter time, at the noon interval between the two services, for the half-frozen members of the pious congregation. . . . They built in the rude stone fireplace a great fire of logs, and in front of the blazing wood ate their noon-day meal.
> *A. M. Earle,* Sabbath in Puritan New England, ix.

nop^1 (nop), *n.* Another spelling of *knop,* common in dialect works.

nop^2, *n.* Same as *nap*^{1}, *nep*^{2}.

nop^3 (nop), *n.* 1. The original and still a common dialect form of *nap*^{2}.—2. An accidental spot or speck in a textile fabric.

nop^3 (nop), *v. t.*; pret. and pp. *nopped,* ppr. *nopping.* [A variant of *nap*^{2}, *v.*] To remove specks (as vegetable matter) from (woolen fabrics).

n. o. p. An abbreviation of *not otherwise provided for.*

nope^2 (nōp), *adv.* [*no*^{1} + *-p,* added, as in *yep,* to give an abrupt character to the word.] No: a vulgar corruption.

> I 'll make the thing [a business] over to you. How 's that, Harve?
> *Nope;* never pays to split up a going concern.
> *R. Kipling,* Captains Courageous, x.

Nor. An abbreviation of *Norman.*

Nordic (nôr′dik), *a.* [Sw. Dan. G. *nord,* north, + *-ic.*] In *anthrop.*, of or pertaining to the type of man inhabiting northwestern Europe and characterized by tall stature, blond hair, blue eyes, and elongated head. Also called *Teutonic.*

nordmarkite (nôrd′mär-kīt), *n.* [*Nordmark,* Norway, + *-ite*^{2}.] In *petrog.*, a phaneric igneous rock composed of orthoclase, a little oligoclase, a small amount of quartz and biotite, and sometimes diopside, hornblende, and ægirite; a variety of quartz-syenite rich in soda, related to nephelite-syenite. *Brögger,* 1890.

Norfolkian epoch. See ★*epoch.*

Norfolk Island bloodwood. See ★*bloodwood.*

Nor. Fr. An abbreviation of *Norman French.*

norgare (nôr-gãr′), *n.* [Norw. *Norge,* Norway, + *-are,* suffix applied to names of orders in petrography.] In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*^{1}), the lendofelic order of dosalanes, that is, of all igneous rocks having salic components dominant over femic ones within the limits $<\frac{7}{1}>\frac{5}{3}$, and having normative feldspars dominant over the lenads within the same limits.

Norian (nō′ri-an), *a.* and *n.* [*Nor*(*ic*) + *-ian.*] In *geol.*, noting a subdivision of the Archæan next above the Laurentian, a group characterized by great masses of gabbro and related anorthosite: proposed by T. Sterry Hunt, who adopted the following succession: Laurentian, Norian, Arvonian, Huronian, Montalban, and Taconian.

noric (nor′ik), *a.* and *n.* [L. *Noricus, adj.*, < *Noricum,* a country between the Danube and Alps.] See ★*stage.*

norie^2, **nory** (nō′ri), *n.* [From a personal name. See the def.] A copy of the "Epitome of Navigation" by J. W. Norie, originally published in 1803. *N. E. D.*

norium (nō′ri-um), *n.* [NL., < *Norge,* Norway, + *-ium.*] A supposed new chemical element announced in 1845 by Svanberg as detected by him in the mineral zircon, especially in specimens from Norway. It has been shown to be identical with the already known zirconium.

norm, *n.* 3. In *petrog.*, in the quantitative classification (see ★*rock*^{1}), the standard mineral composition of an igneous rock, that is, the chemical composition expressed in terms of standard minerals.—**Norm of a complex number** $a + bi$, the real number $a^2 + b^2$.

Norm. An abbreviation of *Norman.*

Norma basilaris, the lower aspect of the skull.—**Norma facialis.** Same as ★*norma frontalis.*—**Norma frontalis,** the anterior aspect of the skull.—**Norma lateralis,** the lateral aspect or profile of the skull.—**Norma occipitalis,** the posterior aspect of the skull.—**Norma superior.** Same as ★*norma verticalis* (*b*).—**Norma ventralis,** the outline of the base of the cerebral hemispheres.—**Norma verticalis.** (*b*) The superior aspect of the skull.

normal. I. *a.* 5. In *chem.*: (*a*) Of a salt, having all the readily replaceable or basic hydrogen of the corresponding acid replaced by one or more metals or strongly electropositive radicals: distinguished from an acid salt in which this replacement is only partial. (*b*) Of a solution for use in volumetric analysis, containing of the dissolved chemical substance the reactive equivalent of 1 gram of hydrogen in 1 liter of the solution at 16° C. See *normal* ★*solution.*—**Normal curve,** the curve of lowest order into which a curve of given deficiency can be transformed by a birational transformation.—**Normal linear substitution.** See ★*substitution.*—**Normal paper, phosphate, piling, powder.** See ★*paper,* etc.—**Normal pyrometric cones.** Same as *Seger's* ★*cones.*—**Normal Riemann surface.** See ★*surface.*—**Normal series.** Same as ★*well-ordered set.*—**Normal serum, solution, spectrum,** etc. See ★*serum,* etc.

II. *n.* 2. The rule; the standard.

> It still falls within the *normal* for alloxuric nitrogen however, although at the highest limit of this.
> *Jour. Exper. Med.*, V. 545.

3. In *biol.*, a species or race considered as a fixed standard which individual organisms may approach by heredity and from which they may recede by variation. The conception of a normal is statistical rather than biological, for there is no evidence that an exceptional specimen of a species differs, as such, from an average specimen in any essential or qualitative way. The notion of a species as a fixed standard belongs to the pre-Darwinian period in the history of biology.

> [The] belief that such races are descended from the putative *normal* scarcely ever rests on proof.
> *W. Bateson,* Study of Variation, p. 17.

4. In *meteor.*, the average of a large number of observed values of any given meteorological element, for example, mean temperature, pressure, or rainfall for any hour of the day, or day of the year. The number of observations must be so large that a second group of the same number would give the same average or normal. The normals for the hours of local mean solar time may be corrected or adjusted so as to become normals for the hours of any other standard of time.—5. In *compar. psychol.*, an untrained or uninjured animal whose behavior is made the standard of reference for the interpretation of the conduct of other, trained or operated animals.

> The results with rat Y were even more interesting, as she was certainly totally blind after Exp. 2. She was somewhat longer in learning the way than X and the *normals.* *Amer. Jour. Psychol.*, XII. 235.

Hemispheric normal, the average condition of the whole of any circle of latitude on the earth's surface. See ★*holospheric normal.*

normality, *n.* 3. In *chem. anal.*, the quality of being normal or of normal strength: said of a solution.

> Boric acid was agitated in a thermostat at 26° with an excess of aqueous hydrochloric acids of different *normalities.* After saturation, a given volume of clear solution was taken away with a pipette, the total acidity being ascertained by titration. Deducting the amount of alkali required by the known *normality* of the hydrochloric acid used, the remaining alkali gave the amount of boric acid dissolved. *Science Abstracts,* VI., Sec. A., p. 315.

Normally ordered. Same as ★*well-ordered,* 2.

Normandy soap. See ★*soap.*

Normanesque (nôr-man-esk′), *a.* [*Norman*^{1} + *-esque.*] Resembling the Norman style of architecture.

Norman-French (nôr′man-french′), *a.* Of or pertaining to the form of French spoken by the Normans. See *Norman French,* under *Norman*^{1}.

Normanism (nôr′man-izm), *n.* [*Norman*^{1} + *-ism.*] 1. A custom, manner, or appearance characteristic of the Normans.—2. Partiality for the Normans. [Rare.]

> Thou art English, Edward too is English now,
> He hath clean repented of his *Normanism.*
> *Tennyson,* Harold, iii. 1.

Normanly (nôr′man-li), *adv.* In the Norman way; as the Normans.

> His contemplative eye could crowd itself with various and brilliant pictures, and whence his impartial brain—one lobe of which seems to have been *Normanly* refined and the other Saxonly sagacious—could draw its morals of courtly and worldly wisdom.
> *Lowell,* Among My Books, 1st ser., p. 152.

Normannic (nôr-man′ik), *a.* Same as *Norman*^{1}. *N. E. D.*

Normanskill shale. See ★*shale*^{2}.

normative, *a.* 2. In *petrog.*, relating to the norm; making up the norm, as distinguished from 'normal' in the sense of regular, usual.—**Normative mode,** in *petrog.*, a mode in which the actual mineral composition of a rock is so nearly the same as the norm or standard mineral composition, as calculated from the analysis, that either may be used to classify the rock correctly in the quantitative system. See ★*rock*^{1}.

Norm. Fr. An abbreviation of *Norman French.*

normoblast (nôr′mọ-blȧst), *n.* [NL. *norma,* rule, + Gr. *βλαστός,* germ.] A nucleated red blood-cell developed from an erythroblast, and having a globular, deeply staining nucleus in which a chromatin reticulum cannot be recognized. This nucleus is surrounded by a layer of cytoplasm containing hemoglobin. The normoblast becomes a typical red blood-corpuscle by extruding its nucleus. See cut under ★*lymphocyte,* and under ★*blood,* 1.

> The erythroblasts of the hypertrophied bone-marrow are not of the normal size (*normoblasts*), but are much larger than normal (megaloblasts).
> *Encyc. Brit.*, XXXI. 558.

normoblastic (nôr-mọ-blas′tik), *a.* [*normoblast* + *-ic.*] Having the character of a normoblast.

> In counting five hundred cells forty-three to sixty-four nucleated red cells were seen, all of the *normoblastic* or intermediate type—no typical megaloblasts being seen. *Jour. Med. Research,* Dec., 1907, p. 260.

normocyte (nôr′mọ-sīt), *n.* [L. *norma,* rule, + Gr. *κύτος,* a hollow (a cell).] The ordinary non-nucleated red corpuscle of the circulating blood. See cut under ★*blood,* 1.

> The red cells . . . are spoken of as microcytes, *normocytes,* and megalocytes, according to their size.
> *Buck,* Med. Handbook, I. 273.

normocytic (nôr-mọ-sit′ik), *a.* [*normocyte* + *-ic.*] Having the character of a normocyte.

noropianic (nō-rop-i-an′ik), *a.* Noting an acid, a colorless crystalline compound, $(\overset{3,4}{HO})_2$-$C_6H_2(\overset{1}{CHO})\overset{2}{C}OOH.1\frac{1}{2}H_2O$, prepared by the action of hydriodic acid on opianic acid. It melts, when anhydrous, at 171° C.

Norsk (nôrsk), *a.* [Sw. Dan. Norw. *norsk.*] Norse.

North. An abbreviation of *northern.*

Northampton sands. See ★*sand*^{1}.

Northants. An abbreviation of *Northamptonshire.*

norther (nôr′ᴛʜėr), *v. i.* [*north* + *-er.*] To veer or tend toward the north, as the wind; run toward the north.

> The hills which form the western coast of the Red Sea run inland with a slight *northering* tendency, until they are lost in the sand-waves of the perennial deserts.
> *F. Adams,* The New Egypt, p. 86.

Northern sucker. Same as *long-nosed* ★*sucker.*

Northum., Northumb. Abbreviations of *Northumberland.*

Northumber (nôr-thum′bėr), *n.* [See *Northumbrian.*] A Northumbrian. [Obsolete or rare.]

northupite (nôrth′up-īt), *n.* [Named after C. H. *Northup,* who first obtained the mineral.] A carbonate of magnesium and sodium with sodium chlorid, occurring in colorless to gray or yellowish octahedrons: found in San Bernardino county, California.

northwester, *n.* 2. In Canada, one who is employed by the Northwest Fur Company.

Norw. An abbreviation (*b*) of *Norway.*

Norwegian itch. See *sarcoptic* ★*acariasis.*

Norwich canary, poplin. See ★*canary,* ★*poplin.*

nosconongé (nos′kọ-nonj), *n.* The American Indian name of *Esox masquinongy,* the maskalonge.

nose^1, *n.* 3. (*l*) Same as ★*chase*^{2}, 7. (*m*) In *mining,* a projecting angle of coal or other mineral.

5. In *golf*, the extreme end of a club opposite the neck or heel.—**Dudley nose**, a dog-fancier's name for a flesh-colored nose.

nose[1], *v.* **I.** *trans.* **5.** In *forestry*, to round off the end of (a log) in order to make it drag or slip more easily. Also called *snipe*.

II. *intrans.*—**To nose about**, said of a vessel when it changes its course frequently, remaining on each course for only a short time.

nosebleed, *n.* **3.** The American birthroot or wake-robin, *Trillium erectum*.

nose-key, *n.* **2.** A nose-ring worn by East Indian women as a badge of widowhood.

noselite (nō'zē-līt), *n.* Same as *nosean*.

Nosema (nō'sē-mä), *n.* [NL.] The typical genus of the family *Nosematidæ*. *Nägeli*, 1857.

Nosematidæ (nō-sē-mat'i-dē), *n. pl.* [NL. *Nosema* (*-t-*) + *-idæ*.] A family of *Myxosporidia* having a bivalve spore. It contains the genus *Nosema*.

nose-paint (nōz'pānt), *n.* Liquor; any strong drink that reddens the nose or otherwise stamps the drinker. [Slang.]

> The barkeep . . slams his *nose-paint* where the short-horn [green-horn] can get action.
> *A. H. Lewis*, Wolfville Days, i.

nose-peg (nōz'peg), *n.* A pin or stud attached to the quadrant-arm in a spinning-mule to effect an acceleration of the spindle in forming the cop.

nose-plow (nōz'plou), *n.* See ★*snow-plow*.

nose-pole (nōz'pōl), *n.* A bowsprit. [Rare.]

nose-puller (nōz'pul"ėr), *n.* One of a set of unruly persons who infested public places in London in the last half of the eighteenth century, and emphasized their opinions by pulling their opponents' noses.

> If a quiet man in the pit ventured on making a remark to his neighbour, who happened to be a "*nose-puller*," and who disagreed with the remark, the speaker's nose was sure to be painfully wrung by the "puller."
> *Doran*, Annals of Eng. Stage, III. 30.

nose-shield (nōz'shēld), *n.* In *foot-ball*, a piece of hard rubber or some other substance, used to protect the nose.

nosine (nō'zin), *n.* Same as *nosean*.

nosing-peg (nō'zing-peg), *n.* A peg, or pin, attached to the end of the quadrant-arm in a spinning-mule, and acting upon a chain so as to increase the velocity of the spindle as the cop is built higher upon it. *C. Vickerman*, Woolen Spinning, p. 326.

nosism (nōs'izm), *n.* [L. *nos*, we, + *-ism*.] **1.** Self-esteem in a group corresponding to egotism in an individual. *N. E. D.* [Rare.] —**2.** Excessive use of the pronoun 'we' in writing or speaking.

> On the one hand, it tempts a man to indulge in *Nosism*, where modesty and a sense of propriety would have made him shrink from undisguised egotism.
> *Edinburgh Rev.*, July, 1864, p. 52.

nosode (nos'ōd), *n.* [Gr. *νόσος*, disease, + *εἶδος*, form.] A remedy used for the cure of disease according to the theory of isopathy; a specific disease-producing substance given, greatly diluted, in the treatment of the same disease.

nosogenic (nos-ọ-jen'ik), *a.* [Gr. *νόσος*, disease, + *-γενης*, -producing.] Pathogenic; producing disease.

nosogeography (nos"ọ-jẹ-og'ra̤-fi), *n.* [Gr. *νόσος*, disease, + *γεωγραφία*, geography.] Medical geography.

nosophen (nos'ọ-fen), *n.* [Gr. *νόσος*, disease, + E. *phen*(*yl*).] A pale-yellow odorless and tasteless compound, obtained by the action of iodine on a solution of phenolphtalein: an antiseptic dusting-powder. Also called *tetraiodophenolphtalein* and ★*iodophen*.

nosophyte (nos'ọ-fīt), *n.* [Gr. *νόσος*, disease, + *φυτόν*, plant.] A pathogenic bacterium.

nostic (nos'tik), *a.* [Gr. *νόστος*, a return home.] Same as ★*paragerontic*. *Hyatt.*

nostril, *n.*—**False nostril**, a diverticulum, or pocket, three or four inches in length, opening into the upper outer side of the nasal passage in the horse and other perissodactyls, notably the tapir.—**Pervious nostrils**, in *ornith.*, nostrils that communicate with one another, thus forming an opening through the beak: typically present in such a bird as the turkey-buzzard. Same as *perforate nostrils*. Contrasted with *impervious nostrils*.

nostrility (nos-tril'i-ti), *n.* [Irreg. < *nostril* + *-ity*.] The character of having the alæ of the nose strongly set off by a curve extending upward and forward, as in typical Jewish noses. *W. Z. Ripley*, Races of Europe, p. 395.

Notal[3] (nō'tal), *a.* [L. *Notus*, < Gr. *Νότος*, the south wind, the south, + *-al*[1].] Of or pertaining to Notalia.

> An example known to most zoologists is furnished by the genus Serolis, of which many species are developed in the *notal* surface-water, and a still greater number in the deep sea, yet its range, apparently, does not extend beyond the equator.
> *Annals and Mag. Nat. Hist.*, April, 1901, p. 317.

Notamia (nọ-tā'mi-ä̤), *n.* [NL.] The typical genus of the family *Notamiidæ*. *Fleming.*

Notamiidæ (nō-ta-mī'i-dē), *n. pl.* [NL. *Notamia* + *-idæ*.] A family of chilostomatous gymnolæmatous polyzoans having the zoœcia in pairs, each pair arising by tubular prolongations from the second pair below it, and at each bifurcation a new series of cells intercalated into the branches. It contains the genus *Notamia*.

notandum (nō-tan'dum), *n.*; pl. *notanda* (-dä̤). [L. gerund of *notare*, to note.] Something to be noted; a memorandum.

notarial[2] (nọ-tā'ri-a̤l), *a.* [NL. *notari*(*um*) + *-al*[1].] Of or pertaining to the notarium, or united vertebræ in the anterior part of the thoracic region of some pterodactyls.

> The eighth vertebra . . . was lying close to the first *notarial* vertebra.
> *Williston*, Osteology of Nyctosaurus, p. 133.

notariate (nọ-tā'ri-āt), *n.* [See *notary*[1].] The profession of a notary. *N. E. D.*

> The peculiar importance attached to the *notariate*, and the limitations imposed on its membership are seen in the papal privileges issued for the appointment of notaries. *H. C. Lea*, Hist. of the Inquisition, I. 379.

notarium (nọ-tā'ri-um), *n.*; pl. *notaria* (-ä̤). [NL., < L. *notarius*. See *notary*[1].] A union of several vertebræ (at least three) in the anterior part of the thoracic region in certain large cretaceous pterodactyls. The ends of the scapulæ rest against the neural spines of these vertebræ, thus making an unusually firm support for the wing.

> The structure so formed may be named the *notarium* to distinguish it from the sacrum.
> *Seeley*, Dragons of the Air, p. 87.

notation, *n.*—**Dualistic notation.** See ★*dualistic*.—**Numerical notation.** (*b*) In *music*, a method of indicating tones by numerals, instead of by notes, advocated by Rousseau in the eighteenth century.—**Vigesimal notation**, in *arith.*, the system with radix twenty.

notative (nō'ta-tiv), *a.* [As if L. **notativus*. Cf. *connotative*.] See the extract.

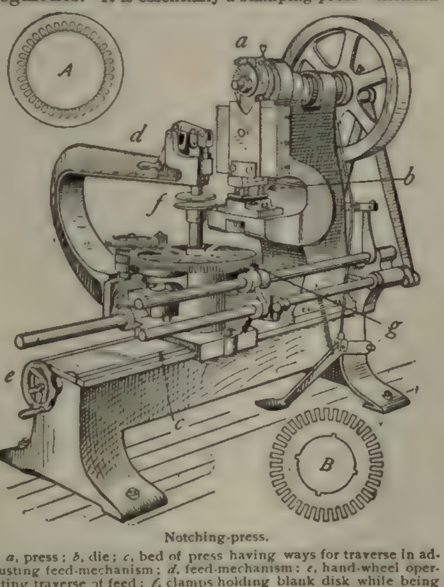
> A *Notative* Conception . . . suggests its own marks (notæ) by its very name. *Atwater*, Logic, p. 67. *N. E. D.*

notch, *n.* **6.** (*b*) The posterior or lower angle, formed by the meeting of the pubic bones. Same as *pubic arch*.—**8.** Same as ★*undercut*, 2.—**Glenoid notch**, the indentation on the cranium of a bird which marks the place wherein lies the glenoid cavity for the outer head of the quadrate.—**Obturator notch**, in *ornith.*, the angle formed by the meeting of the ischium and pubis. When closed posteriorly by bone it becomes the *obturator foramen*.—**Sternal notch.** Same as *suprasternal notch* (which see, under *notch*).

notch, *v. t.* **4.** To make an undercut in (a tree) preparatory to felling (it). Also *undercut*.

notch-gun (noch'gun), *n.* A patented device (1904) for stopping the iron-hole in a blast-furnace or cupola after the charge has been drawn.

notching-press (noch'ing-pres), *n.* In *sheet-metal working*, a machine for cutting the notches or indentations in armature disks and segments. It is essentially a stamping-press which has a feed-mechanism adapted to the work of holding the blank disk or segment in position during the cutting of the notch, moves it the right distance for the next cut, clamps it, moves it again, and repeats the operation continuously until the work is complete. By suitable attachments the number and shape of the notches can be changed to suit the size of the disk or the character of the armature. The illustration shows a machine for notching disks, a separate attachment (not shown) being used for armature segments. The blank disk is placed in the revolving feed between the two circular clamps that are controlled by the handle at the top. On starting the machine the geared feed automatically presents the blank to the press until every cut is made, when it stops the machine. The hand-wheel at the left causes the feed-mechanism to slide on the bed of the press to adapt it to different sizes of disks. The machine cuts several blanks at once and at a high speed. It is sometimes called a *notching-machine*. Armature disks are also stamped in presses.



Notching-press.

a, press; *b*, die; *c*, bed of press having ways for traverse in adjusting feed-mechanism; *d*, feed-mechanism; *e*, hand-wheel operating traverse of feed; *f*, clamps holding blank disk while being stamped; *g*, mechanism for revolving blank after each stroke of die; *A*, *B*, samples of notched work.

notch-wheel (noch'hwēl), *n.* An arrangement for actuating the detaching-roller in a Heilmann cotton-combing machine.

note[1], *n.*—**Binding note.** See *binding note*, under ★*bind*.—**Changing-note**, in *music*, a note foreign to the essential harmony: either a *passing-note*, a *grace-note*, or a *nota cambiata*. (See these terms.)—**Characteristic note**, in *music*, same as *leading note*.—**Collateral note**, a promissory note secured by the deposit of collateral.—**Connecting note.** Same as *binding note* (which see, under ★*bind*).—**Double-stemmed note**, in *musical notation*, a note having two stems, one directed upward, the other downward, indicating that two voice-parts use it together: as 𝅗𝅥.—**Ground note**, in *music*, the fundamental note or root of a chord. Also called *ground tone*.—**Intercalary note** or **tone**, in *music*, same as *accidental note* (which see, under *note*[1]).—**Kossuth note**, a Hungarian bank or government note bearing the name of Louis Kossuth, the Hungarian patriot (1802–94).

> With wonderful energy he [Kossuth] began developing the internal resources of the country . . . and it was characteristic that on the new Hungarian notes which he issued his own name was the most prominent inscription; hence the name of *Kossuth notes*, which was long celebrated. *Encyc. Brit.*, XXX. 69.

Natural note, in musical wind-instruments, a tone produced without the use of keys or valves, that is, either the fundamental tone of the tube or one of its harmonics. Also *natural tone*.—**Note of color**, any especially harmonious combination of colors in representative or decorative painting.—**Risk note**, in *Eng. law*, a contract signed by the consignor of goods exempting the carrier, chiefly on account of lower freight, from liability for injury or loss rising from negligence. The law requires the contract to be just. Much litigation has been caused by these notes.—**Unessential note** or **tone**, in *music*, any note or tone not normal to or constituent of the harmony, including all passing-notes, suspensions, embellishments, etc.

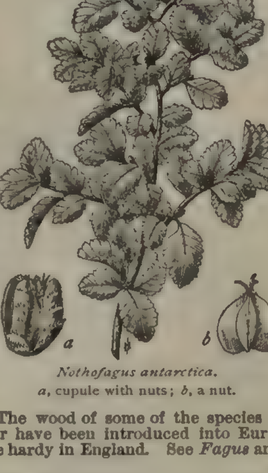
note-book, *n.* **2.** A book in which notes of hand are registered; a bill-book.

note-head (nōt'hed), *n.* **1.** Printed matter, usually the name and address of the writer, at the head of a sheet of note-paper.—**2.** In *musical notation*, the square or oval part of a note by the position of which on a staff the pitch of the intended tone is indicated.

note-value (nōt'val"ū), *n.* In *acoustics*, the pitch or frequency of a musical tone.

Notharctidæ (nọ-thärk'ti-dē), *n. pl.* [NL., < *Notharctus*, generic name, + *-idæ*.] A family of lemurs containing extinct species of moderate size from the Eocene strata of the United States. *Trouessart*, 1879.

Nothofagus (nō-thọ-fā'gus), *n.* [NL. (Blume, 1850), < Gr. *νόθος*, bastard, false, + L. *fagus*, beech, < Gr. *φηγός*, oak.] A genus of evergreen or deciduous trees or shrubs belonging to the family *Fagaceæ*, and closely related to *Fagus*, to which it was formerly referred by many authors. It is distinguished from that genus by the usually much smaller leaves and especially by the fact that the flowers, both staminate and pistillate, are borne in threes or are solitary. About 12 species are recognized, natives of southern South America, Australia, and New Zealand. The wood of some of the species is much valued and four have been introduced into European gardens and are hardy in England. See *Fagus* and ★*birch*, 4.



Nothofagus antarctica.

a, cupule with nuts; *b*, a nut.

nothogamy (nọ-thog'a̤-mi), *n.* [Gr. *νόθος*, spurious, + *γάμος*, marriage.] Cross-fertilization between different species; hybridization. *Pound and Clements.*

nothris (nō′thris), *n.* [NL., ‹ Gr. *νωθρός*, sluggish, torpid.] An American tineid moth, *Ypsolophus citrifoliellus* (formerly placed in the genus *Nothris*), found in Florida. Its larva feeds on young orange-leaves.

Notice of motion. See ★*motion.*—**On short notice,** in a brief space of time; quickly.

notified (nō′ti-fīd), *p. a.* Celebrated; notorious; well-known. *N. E. D.* [Obsolete or dial.]

notifier (nō′ti-fī-ėr), *n.* One who or that which notifies; specifically, an appliance in connection with a coal-miner's safety-lamp which serves to give warning of the presence of a dangerous amount of fire-damp in the atmosphere of the mine-workings.

notionalist (nō′shọn-a̤l-ist), *n.* [*notional* + *-ist.*] An abstract or speculative thinker; a theorist; an idealist.

> No *notionalist*, one should think, can be so practically insane, as to see an abstract right or wrong in any particular combination of political powers.
> *Edinburgh Rev.*, LIII. 529.

notitia, *n.* **2.** [*cap.*] See ★*Regionary Catalogues.*

notocentrous (nō-tọ-sen′trus), *a.* [*notocentr*(*um*) + *-ous.*] Having the centra of the vertebæ formed by the dorsal arcualia or interdorsalia, two of the ossifications that form on the superior face of the notochord.

notocentrum (nō-tọ-sen′trum), *n.*; pl. *notocentra* (-tra̤). [NL., ‹ Gr. *νῶτος*, the back, + *κέντρον*, center.] The centrum of a vertebra when formed by the dorsal arcualia or interdorsalia, as in toads and frogs.

notochord, *n.* **2.** A vestigial structure, representing a very ancient form of alimentary canal not in itself a part of the skeleton.

> This *notochord* is no part of the skeleton; it was originally a canal, but in the absence of any animal which preserves this structure as such it is difficult to understand what was its original function. . . . It probably was an archaic form of alimentary canal, around which were disposed the segmented skeletal and other tissues.
> *Encyc. Brit.*, XXV. 397.

Notochordal sheath. See ★*sheath.*

notodontian (nō-tọ-don′ti-a̤n), *n.* and *a.* Same as ★*notodontid.*

notodontid (nō-tọ-don′tid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Notodontidæ.*

II. *a.* Having the characters of or belonging to the family *Notodontidæ.*

Notogæic (nō-tọ-jē′ik), *a.* [*Notogæa* + *-ic.*] Pertaining to or characteristic of the zoögeographical division known as Notogæa.

> In laying down the great zoological subdivisions of the Earth's surface, he [Lyddeker] agrees in the main with Mr. Sclater, adopting, like him, the three broad divisions proposed by Dr. Blanford in 1890, and using likewise for them the terms *Notogæic*, Neogæic, and Arctogæic. These he considers as "realms," the minor subdivisions being designated "regions." In the definition of these latter, he rather follows Dr. Heilprin than Mr. Sclater, uniting the Palæarctic and Nearctic regions under the name "Holarctic," and raising the Sonoran transition tract of the former to an equal rank with the other subdivisions of Arctogæa. Madagascar and neighbouring islands form another separate region, while Notogæa constitutes four separate regions, instead of the two of Dr. Heilprin. *Geog. Jour.* (R. G. S.), X. 99.

Notogæic realm. Same as *Notogæa.*

Notohippidæ (nō-tọ-hip′i-dē), *n. pl.* [NL., ‹ *Notohippus*, generic name, + *-idæ.*] A family of ungulate mammals, of the suborder *Litopterna*, containing extinct species from the Miocene (?) of Patagonia. *Ameghino*, 1894.

Notommata (nọ-tom′a̤-tä), *n.* [NL.] The typical genus of the family *Notommatidæ*. *N. werneckii* is parasitic in the cells of the fresh-water alga *Vaucheria*. *Ehrenberg.*

Notommatidæ (nō-tọ-mat′i-dē), *n. pl.* [NL., ‹ *Notommata* + *-idæ.*] A family of illoricate rotifers, of the order *Ploima*, having the corona obliquely transverse, the velum of interrupted curves and clusters, usually with a marginal band surrounding the mouth, the trophi forcipate, and the foot furcate. It includes several genera, among which are *Notommata*, *Furcularia*, and *Albertia*, the last parasitic in annelids.

notonectid (nō-tọ-nek′tid), *n.* and *a.* **I.** *n.* A member of the heteropterous family *Notonectidæ.*

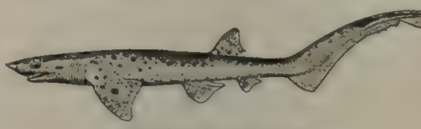
II. *a.* Having the characters of or belonging to the family *Notonectidæ.*

Notopelagia (nō″tọ-pẹ-lā′ji-a̤), *n.* [Gr. *νότος*, the south, + *πέλαγος*, the sea.] The southern sea region, comprising the sea south of 40° south latitude.

> The Southern Sea-region, or *Notopelagia*, containing the whole of the South Polar ocean all round the globe south of the above mentioned limits.
> *Geog. Jour.* (R. G. S.), X. 220.

Notopithecidæ (nō″tọ-pi-thē′si-dē), *n. pl.* [NL., ‹ *Notopithecus*, a generic name, + *-idæ.*] A family of extinct lemur-like mammals, comprising species from the Miocene (?) of Patagonia. *Ameghino*, 1897.

Notorhynchus (nō-tọ-ring′kus), *n.* [NL., ‹ Gr. *νῶτος*, back, + *ῥύγχος*, snout.] A genus of sharks of the family *Hexanchidæ*, found in the Pacific Ocean.



Notorhynchus masculatus.
(From Bulletin 47, U. S. Nat. Museum.)

Notoryctidæ (nō-tọ-rik′ti-dē), *n. pl.* [NL., ‹ *Notoryctes*, a generic name, + *-idæ.*] A family of marsupial mammals whose only known member is the little mole-marsupial, *Notoryctes typhlops*. *J. D. Ogilby*, 1891. See cut at ★*mole-marsupial.*

Notosema (nō-tọ-sē′ma̤), *n.* [NL., ‹ Gr. *νῶτος*, back, + *σῆμα*, mark.] A genus of flounders taken in the deep waters of the Gulf Stream along the Carolina coast.

notostome (nō′tọ-stōm), *n.* [Gr. *νῶτος*, back, + *στόμα*, mouth.] See the extract.

> The valve of the dorsal mouth, or *notostome*, is broken.
> *E. D. Cope*, Origin of the Fittest, p. 323. *N. E. D.*

Notostylopidæ (nō″tọ-sti-lop′i-dē), *n. pl.* [NL., ‹ *Notostylops*, generic name, + *-idæ.*] A family of tillodont mammals, containing extinct species from the Miocene (?) of Patagonia. *Ameghino*, 1897.

nototrocha (nō-tọ-trō′kä), *n.*; pl. *nototrochæ* (-kē). [Gr. *νῶτος*, the back, + *τροχός*, something round.] A larval stage of a chætopodous annelid having several incomplete bands of cilia on the dorsal surface.

not-out (not′out), *n.* In *cricket*, a batsman who at the drawing of stumps has not been got out.

no-trump (nō-trump′), *n.* In *bridge*, the declaration to play without any trump suit, each trick being worth 12 points: the most valuable declaration. See ★*bridge*², *n.*

> In the play of the cards the ace is high and the deuce low. You must follow suit, but if you have no card of the suit led, you may either trump or discard. At *no-trump* the best card, if of the suit led, wins the trick.
> *Elwell*, Bridge, p. 4.

no-trumper (nō-trum′pėr), *n.* A hand at bridge upon which 'no trumps' can be declared. See ★*bridge*², *n.*

> With a strong heart hand and a doubtful "*no-trumper*," or if the hand contain one unguarded suit, hearts should always be given the preference. As the adversaries have the lead and the privilege of doubling, a weak suit exposes the hand to some danger at no-trump.
> *Elwell*, Bridge, p. 13.

Sporty no-trumper, in *bridge*, a no-trump declaration which is not sound, but may be demanded by the state of the score, as a declaration on two suits only, there being no protection in the others.

Nottingham ware. See ★*ware*².

Notts. An abbreviation of *Nottinghamshire.*

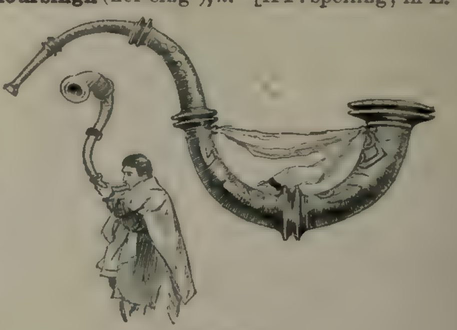
nouille (nö-ēy′), *n.* [F. *nouille*, also *noule*, ‹ G. *nudel*, whence E. *noodle*², q. v.] A ribbon vermicelli.

nounism (noun′izm), *n.* [*noun* + *-ism.*] A marked disposition to multiply nouns, at the expense of other parts of speech, in writing and speaking. [Rare.]

> Adjectivism, adverbism, *nounism*, . . . in the above order, also occur near the early teens.
> *G. S. Hall*, Adolescence, II. 467.

nourishment, *n.* **4.** A fluid applied to glazed leather to make it pliable and prevent it from hardening. *C. T. Davis*, Manuf. of Leather, p. 596.

noursingh (nėr-sing′), *n.* [A F. spelling; in E. prop. **nursing* or **narsing*, ‹ Hind. *narsinga.*] A Hindu trumpet with a curved tube.



Noursingh.

Nouveau style. See ★*art nouveau.*

nova (nō′va̤), *n.*; pl. *novæ* (-vē) or *novas* (-vaz). [NL., 'new,' sc. *stella*, 'star.'] A 'new' or temporary star; a star which makes its appearance suddenly and gradually fades away, the whole decline generally occupying some years and leaving the star still visible in large telescopes. About twenty such stars have thus far been recorded.

> In all these views the chance of passing another star at some small distance such as one or two or three times the sun's radius has been overlooked; and that this chance is not excessively rare seems proved by the multitude of *Novas* (collisions and their sequels) known in astronomical history.
> *Lord Kelvin*, in Smithsonian Rep., 1901, p. 226.

Nova Cassiopeiæ, the temporary star observed by Tycho, which appeared in November, 1572, the most brilliant on record. When first seen it was brighter than Jupiter and became brighter than Venus, so that it was visible in daylight. It disappeared in 16 months.—**Nova Geminorum,** a nova of the eighth magnitude which appeared in 1903 in the constellation of Gemini.—**Nova Persei,** the most remarkable of the temporary stars since Kepler's star of 1604. It appeared suddenly on February 20 or 21, 1901; on the 22d was for some hours brighter than any star except Sirius and Canopus, and then gradually faded, exhibiting a series of extremely interesting phenomena during its decline, especially the swift motion of luminous knots in the nebulosity surrounding it. In 1904 it was still visible as a star of the thirteenth magnitude.

Novaculichthys (nọ-vak″ụ-lik′this), *n.* [NL., ‹ L. *novacula*, a sharp knife, + Gr. *ἰχθύς*, a fish.] A genus of fishes of the family *Labridæ*, which has numerous species in warm seas.

Novanglian (nōv-ang′gli-a̤n), *a.* and *n.* [*Nova Anglia*, New England.] Of or pertaining to New England; an inhabitant of New England. *N. E. D.*

Novanglican (nōv-ang′gli-ka̤n), *a.* and *n.* Same as ★*Novanglian.*

> I must say, I rather admire this stolid self-reliance and *Novanglican* assumption—if for nothing else, at least because it shows a thicker cuticle than we excitable New-Yorkers possess.
> *B. Taylor*, At Home and Abroad, 2d ser., p. 339.

novate (nō′vāt), *v. t.*; pret. and pp. *novated*, ppr. *novating*. [L. *novat*(*us*), pp. of *novare*, make new, ‹ *novus*, new.] To make new; renovate; specifically, in *law*, to substitute a new obligation for an old one. See *novation*, 3.

> Non-statutory actions, or actions founded on the executive authority of the Praetor, are required to terminate within twelve months from their institution, and have no power at civil law of consuming or *novating* a right of action, but bar a subsequent action when pleaded by the exceptio rei judicatae. *Poste*, Gaius, p. xv.

novative (nō′va̤-tiv), *a.* Of the nature of novation. See *novation*, 3.

novel, *n.*—**Problem novel,** a novel with the same characteristics as the problem play (which see, under ★*play*¹).

novelese (nov-e-lēs′ or -lēz′), *a.* and *n.* [*novel* + *-ese.*] **I.** *a.* Exhibiting the language or literary style of the ordinary novel.

II. *n.* A literary style supposed to be observable in the ordinary novel, flimsy in construction and lacking in point and elegance.

> The English is *novelese*, when it does not degenerate into sheer bad grammar.
> *Pall Mall Gazette*, Jan. 13, 1900, p. 3.

novelettist (nov-e-let′ist), *n.* [*novelette* + *-ist.*] A writer of novelettes. *N. E. D.*

novelism, *n.* **2.** Novel-writing. [Rare.]

> Let a novel work of literary merit be brought forward, though it shall find thousands of copiers, how few will be the instances of adequate and commendable imitation! What a host of pens and printers have been pressed into the service of romance and *novelism* by the appearance of the Waverly Novels! *Blackwood's Mag.*, XXIV. 469.

novemole (nō′ve-mōl), *n.* [L. *novem*, nine, + *-ole* (cf. ★*duole, triole*, etc.).] Same as *nonuplet*.

novice, *n.* 3. In bench shows and other similar exhibitions, an animal which has not before been exhibited for a prize.

> *Novice* dogs was a large class, 28 in all. First went to Westlake Chancellor, a good dog.
> *Forest and Stream*, Feb. 21, 1903, p. 151.

4. In *athletics*, one who has not won a prize, when the competition is open to members of two or more clubs.

novocaine (nō-vō′ka-in), *n.* [Trade-name.] A synthetic alkaloid having local anesthetic properties similar to those of cocaine.

> It is possible, according to Donitz . . ., to extend the anesthesia to the upper part of the chest and even to the arms without danger if tropacocaine is used instead of *novocaine* or stovaine, which have more effect on the motor roots and thus are likely to cause paralysis of respiration if pushed too high.
> *Alien. and Neurol.*, Nov., 1907, p. 521.

noxa (nok′sä̤), *n.*; pl. *noxæ* (-sē). [L., harm, injury. See *noxious*.] Anything which causes injury to the body or its organs or tissues.

nozle, *n.*—**Cyclone nozle,** a nozle in which the water under pressure is made to eddy round the interior of a chamber and to issue in the form of a fine spray.

nozler (noz′lėr), *n.* A blow on the nozle or nose. [Slang.]

nozle-tip (noz′l-tip), *n.* A tip or short-coned end screwed on to the end of a nozle or otherwise adjusted to it to make a change in the shape of the stream it throws.

N. P. An abbreviation (*a*) of the Latin *nisi prius*, unless before; (*b*) of *Notary Public*.

N. P. D. An abbreviation of *North Polar Distance*.

nr. An abbreviation of *near*.

N-radiation (en′rā-di-ā″shon), *n.* Radiation consisting of N-rays. See *N-rays*, under ★*ray*¹.

> The phenomenon was discovered while concentrating the rays by a quartz lens upon a phosphorescent screen, when it was found that the *N-radiation* persisted with the lens as a source after the original source was removed. Following up this clue, it turned out that various other substances became temporarily active after exposure to *N-radiation*.
> *Elect. World and Engin.*, Dec. 26, 1903, p. 1034.

N-rays. See ★*ray*¹.

N. S. An abbreviation (*c*) of *National Society*; (*d*) of *New School*; (*e*) of *New Side*; (*f*) of the French *Notre Seigneur*, Our Lord; (*g*) [*l. c.*] of *not specified*; (*h*) of *Nova Scotia*; (*i*) of *Numismatic Society*.

nsambi (nsäm′bi), *n.* [S. African.] A South African guitar which has strings of palm-fiber.

N. S. D. An abbreviation of the Latin *Naturalis Scientiæ Doctor*, Doctor of Natural Science.

N. S. J. C. An abbreviation (*a*) of the Latin *Noster Salvator Jesus Christus*, Our Savior Jesus Christ; (*b*) of the French *Notre Seigneur Jésu Christ*, Our Lord Jesus Christ.

N. S. P. C. C. An abbreviation of *National Society for the Prevention of Cruelty to Children*.

N. S. W. An abbreviation of *New South Wales*.

N. T. An abbreviation (*b*) of *New Translation*; (*c*) of *Northern Territory*, of South Australia.

nu (nū), *n.* The Greek letter *ν*, corresponding to the English *n*.

n. u. An abbreviation of *name unknown*.

nuance (nü-oṅs′), *v. t.*; pret. and pp. *nuanced*, ppr. *nuancing*. [F. *nuancer*, < *nuance*, shading. See *nuance*, *n.*] To shade and give delicate tones of expression to, as a piece of music or a picture.

nubbin, *n.* 2. A small lump of gold which has once been melted.

Nubian sandstone. See ★*sandstone*.

nubiform (nū′bi-fôrm), *a.* [L. *nubes*, cloud, + *-form*.] Having the form or aspect of a cloud; cloud-like.

> This accident of nomenclature . . . may in many points curiously illustrate for you that contest of Frederick the Second with Innocent the Fourth, which . . . represents to all time the war of the solid, rational, and earthly authority of the King, and State, with the more or less spectral, hooded, imaginative, and *nubiform* authority of the Pope, and Church.
> *Ruskin*, Val d'Arno, p. 3.

nubilation (nū-bi-lā′shon), *n.* [*nubilate*.] Cloudiness. [Rare.]

> The under parts white . . . but clouded everywhere with dusky patches. . . Varying degrees of this dusky *nubilation* approach in some specimens nearly to the uniform dusky below characterized; in others fade almost into the pure white of the adult.
> *Coues*, Birds of the Northwest, p. 613.

nucal (nū′kal), *a.* [LL. *nucalis*, pertaining to a nut, < *nux*, nut.] Of or pertaining to a nut.

nucellar (nụ̄-sel′ä̤r), *a.* [*nucell(us)* + *-ar*.] Of or pertaining to the nucellus of flowering plants.

> Two series of vascular bundles run in the ovule, and it is proved that the inner series, frequently described as "*nucellar*," belong to the soft inner layer of the integument. These bundles do not invariably die out at the region where the nucellus becomes free from the integument, as hitherto supposed, but in more than one species are found continuing in the inner layer of the integument almost to the micropyle.
> *Jour. Roy. Micros. Soc.*, Dec., 1904, p. 665.

nuchal, *a.* 3. In the trilobites, relating to the axial segment and groove at the base of the cephalon.—**Nuchal cartilage,** in cephalopods, same as *nuchicartilage*.—**Nuchal cirrus, crest.** See ★*cirrus*, ★*crest*.—**Nuchal furrow.** Same as ★*neck-furrow*. **Nuchal plate.** Same as *nuchicartilage*.—**Nuchal tubercle.** See ★*tubercle*.

II. *n.* One of two or more plates forming part of the covering of the dorsal portion of the neck in reptiles. The term is usually applied to the well-marked bony plates of crocodiles but also, as in lizards, to horny plates or shields.

nuchale (nụ̄-kā′lē̤), *n.*; pl. *nuchalia* (-li-ä̤). Same as ★*nuchal*.

nuciculture (nū′si-kul″tū̆r), *n.* [L. *nux* (*nuc-*), nut, + *cultura*, culture.] Nut-culture: generally considered to be one of the branches of pomology.

nucin (nū′sin), *n.* [L. *nux* (*nuc-*), nut, + *-in*².] Same as ★*juglone*.

nucitannin (nū-si-tan′in), *n.* [L. *nux* (*nuc-*), nut, + E. *tannin*.] A glucoside contained in the husks of walnuts.

nucivorous (nū-siv′ọ-rus), *a.* [L. *nux* (*nuc-*), nut, + *vorare*, devour.] Nut-eating.

> The great majority [of Mammalians] may be said to be granivorous, or *nucivorous*, or even graminivorous; but many live upon dried vegetable substances and wood.
> *Kirby*, the Power, . . . of God, as manifested in Crea- [tion of Animals, etc., II. 377.

nucleal, *a.* 2. Attracting or collecting likes or similars; forming a nucleus for similar persons or things.

> It would be worth while to induce such *nucleal* men to lecture in large cities, if only to discover . . . how the partakers of one level of intellect are scattered through the different levels of politics, religion, and society.
> *N. P. Willis*, Hurry-graphs, p. 178.

Nuclear cap, sap, shadow, spindle, thread. See ★*cap*¹, etc.

nucleary (nū′klē-ā̤-ri), *a.* Same as *nuclear*.

nuclease (nū′klē̤-ā̤s), *n.* [*nucleus* + *-ase*.] 1. A ferment which can cause the cleavage of nucleins. Specifically—2. One of several bacteriolytic ferments so-named on account of their ability to digest the nucleoproteids of the bacterial cells.

> Jones has shown the existence of enzymes in the thymus and adrenal that have the power of decomposing nucleic acids into their constituents, phosphoric acid and the xanthin bases. Sachs found a similar enzyme in the pancreas and called it "*nuclease*."
> *Jour. Med. Research*, July, 1906, p. 163.

nucleated, *a.* 2. In *phys.*, in a state of nucleation: said of a vapor, portions of which have condensed in the form of minute globules about suspended nuclei.

> Also, The Diffusion of Vapor into *Nucleated* Air, by Carl Barus. *Sci. Amer.*, May 9, 1903, p. 351.

nucleation (nū-klē̤-ā′shọn), *n.* [*nucleate* + *-ion*.] 1. The act or process of nucleating or forming nuclei; the state of aggregation of matter about nuclei; the loading of central nuclei with specific kinds of otherwise amorphous material lying adjacent to them.

> Experiments are described showing different temperatures for the maxima of *nucleation* and of ionisation.
> *Nature*, Oct. 8, 1903, p. 548.

2. Specifically, in *phys.*, cloudy condensation, in an atmosphere containing vapor, due to the gathering of minute globules of liquid about floating particles called nuclei.

> After *nucleation* the first dense fogs were vaguely annular. *C. Barus*, in Science, Jan. 31, 1902, p. 177.

nucleator (nū′klē̤-ā-tọr), *n.* In *phys.*, any substance, such as lycopodium powder, or any medium which, like the ionized gases from flames, affords nuclei of condensation in an atmosphere containing vapor; any medium or agent which produces nucleation of a vapor.

> The very interesting result that phosphorus as a *nucleator* suddenly bursts forth into maximum activity at about 13°. *C. Barus*, in Nature, Dec. 3, 1903, p. 103.

nucleic (nụ̄-klē′ik), *a.* Same as ★*nucleinic*.

nucleide (nū′klē̤-id), *n.* [*nucle(ic)* + *-ide*¹.] A compound formed by the action of nucleic acid on a base.

nucleinate (nū′klē̤-in-āt), *a.* [*nuclein* + *-ate*¹.] Containing or consisting of nuclein.

nucleinic (nū-klē̤-in′ik), *a.* [*nuclein* + *-ic*.] Consisting of or pertaining to nuclein.—**Nucleinic acid,** the phosphorus-containing radical of the nucleoproteids, from which the xanthin bases are derived. There are different forms. The formula for that occurring in combination with salmin is supposedly $C_{40}H_{54}N_{14}O_{27}P_4$.

nucleo-albumin (nū-klē̤-ọ-al-bū′min), *n.* A compound albumin in which an albuminous radical is in combination with a special phosphorized radical (possibly a pseudo- or paranuclein). On decomposition the nucleo-albumins, unlike the nucleoproteids, do not give rise to the formation of xanthin bases. The group is closely related to the globulins (hence the term *phosphoglobulins* which has also been applied to them) and comprises some of the most important food-stuffs, such as the casein of milk, the vitellin of egg-yolk, the phytoglobulins of the leguminous plants, etc.

Nucleoblastidæ (nū″klē̤-ọ-blas′ti-dē), *n. pl.* [NL., < L. *nucleus*, a kernel, + Gr. *βλαστός*, germ, + *-idæ*.] A family of *Blastoidea*, typified by the genus *Nucleocrinus*.

nucleochyme (nū′klē̤-ọ-kīm), *n.* Same as ★*karyolymph* or ★*karyenchyma*.

Nucleocrinus (nū-klē̤-ok′ri-nus), *n.* [NL., < L. *nucleus*, a kernel, + Gr. *κρίνον*, a lily (see *crinoid*).] A genus of Devonian blastoids, with globular or ovoid calyx, linear ambulacra, double spiracles, and divided posterior deltoid plate.

nucleohiston (nū″klē-ọ-his′ton), *n.* [L. *nucleus*, kernel, + Gr. *ἱστός*, a web.] A nucleoproteid which has been obtained from the thymus gland, lymph glands, etc. It is characterized by a very high phosphorus content, 3.025 per cent., and on decomposition yields histon and Lilienfeld's leuconuclein.

nucleolocentrosome (nụ̄-klē″ọ-lō-sen′trọ-sōm), *n.* A persisting body within the nucleus of certain *Protozoa*, as *Euglena*, *Amœba*, etc., which divides to form a kind of central spindle.

nucleololus (nū-klē̤-ol′ọ-lus), *n.*; pl. *nucleololi* (-lī). [NL., dim. of *nucleolus*: see *nucleolus*.] In *cytol.*, a small body inclosed in the nucleolus of certain cells. Same as *nucleolinus*.

nucleoplast (nū′klē̤-ọ-plast), *n.* [*nucleoplasm*.] A nucleoplasmic body.

nucleoplastic (nū″klē̤-ọ-plas′tik), *a.* [*nucleoplast* + *-ic*.] Of or pertaining to a nucleoplast.

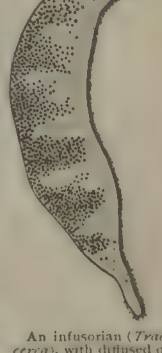
nucleoproteid (nū″klē̤-ọ-prō′tē̤-id), *n.* [L. *nucleus*, nucleus, + E. *proteid*.] One of a group of substances which represent one of the most important classes of compound albumins and are characterized by their phosphorus content and the fact that on decomposition they all give rise to the formation of xanthin bases. Structurally they are probably made up of an albuminous group in combination with a phosphorized radical, which in turn may be simple (a nucleinic-acid group) or itself a compound of an albumin with nucleinic acid (nuclein). The nucleoproteids are essentially nuclear constituents, and all or nearly all contain iron. In contradistinction to the native albumins they turn the plane of polarization to the right.

nucleoprotein (nū″klē̤-ọ-prō′tē̤-in), *n.* [L. *nucleus*, kernel, + E. *protein*.] A nucleo-albumin or a nucleoproteid.

nucleoreticulum (nū-klē̤-ọ-rē̤-tik′ụ̄-lum), *n.* [L. *nucleus*, kernel, + L. *reticulum*, a net.] The network of linin and chromatin within the nucleus of the resting-cell.

nucleosin (nū′klē̤-ọ-sin), *n.* [*nucleose* + *-in*².] Same as ★*thymin*.

nucleus, 1. (*g*) In *phys.*, any particle, suspended in an atmosphere containing vapor, about which the vapor condenses. Finely divided matter floating in the air affords nuclei of condensation, and the free ions of an ionized gas appear to have the same property. (*h*) In *chem.*, a name introduced in the earlier part of the nineteenth century to signify a group of atoms in a particular state of combination, or, as it would now be expressed, presenting a particular structure, one or more of which atoms might be replaced by others without change in the characteristic arrangement or structure. This idea was developed by Laurent in his so-called nucleus theory.



An infusorian (*Trachelocerca*), with diffused or distributed nucleus consisting of scattered chromatin-granules. (*Gruber*.) (From Wilson's "The Cell.") Enlarged.

3. A very small colony of honey-bees started for the purpose of rearing queens to exchange with the queens of full colonies, thus assisting in

the prevention of swarming.—**Abducens nucleus.** See ★*abducens.*—**Benzene nucleus,** that portion of a benzene derivative which retains the structure and chemical properties of the benzene-ring.—**Dentate nucleus.** Same as *dentate body.*—**Distributed nucleus,** a peculiar nucleus occurring in some *Protozoa* and consisting of a number of chromatin granules lying free in the cytoplasm and not inclosed in a nuclear membrane or karyotheca.—**Free nucleus,** in *phys.*, a floating nucleus of condensation about which the surrounding vapor has not yet gathered in liquid form.—**Gracile nucleus,** an area of small nerve-cells in the dorsal pyramid of the oblongata.—**Loaded nucleus,** in *phys.*, a floating nucleus about which some of the surrounding vapor has condensed in the form of a minute globule of liquid.—**Medullary nucleus,** the white nervous substance in the cerebellum.—**Nucleus funiculi gracilis.** Same as *clavate nucleus.*—**Nucleus of a set.** Any closed set of points ϵ can be reduced by a finite, or at most countably infinite, series of the operations of derivation and deduction to one of two forms: (*a*) no points at all; (*b*) a perfect set. This result (set) is the nucleus E_{Ω}.—**Nucleus peduncularis,** a group or nucleus of nerve-cells in the brain of a bird, posterior to the optic tract. Also known as the *ganglion ectomammillare. Philos. Trans. Roy. Soc.* (London), 1899, ser. B, p. 301.—**Nucleus pulposus,** the vestige of the notochord which appears as a pulpy mass in the center of the intervertebral fibrocartilages.—**Nucleus theory,** a theory of the constitution of organic chemical compounds proposed by Laurent and Gmelin. According to this theory such compounds consist of groups of atoms (radicals) containing even numbers of carbon and hydrogen atoms combined in certain typical ways, such as the water type, the ammonia type, etc. As the atomic weight of carbon was then supposed to be 6, C_2 was written where we should now use C.—**Oculomotor nucleus,** the center of origin in the brain of the third or oculomotor nerve.—**Sensory nucleus,** a group of nerve-cells which pertain to the origin of the sensory portion of the trigeminal nerve.—**Vagoglossopharyngeal nucleus,** a group of nerve-cells at the origin of the vagus and glossopharyngeal nerves.

nucleus-parasite (nū'klẹ̄-us-par″ạ-sīt), *n.* A fungus, such as *Puccinia asarina*, which penetrates the cell and directly attacks the nucleus, causing deformation or complete destruction.

nucoline (nū'kọ̄-lin), *n.* [L. *nux* (*nuc-*), nut, + *ole*(*um*), oil, + *-ine.*] A kind of butter made from nuts; nut-butter. *N. E. D.*

nucule, *n.* **2.** In *bot.* Same as *nutlet*, 1.

nuculiform (nū'kụ̄-li-fôrm), *a.* [*Nucula* + L. *forma*, form.] Having the form of the mollusk *Nucula*.

nudel, *n.* See *noodle*².

nudicaulous (nū-di-kâ'lus), *a.* Same as *nudicaul.*

nuez (nwāth), *n.* [Sp. *nuez*, walnut.] In Porto Rico, the nut of the nogal, *Juglans Jamaicensis.*

nug² (nug), *n.* In *mining*, the dull sound caused by the breaking of subsiding strata. [Scotch.]

nugget, *n.* **2.** A thick-set, strong, young horse. [Australia.]—**3.** A lump of tobacco. [Australian slang.]

nugget (nug'et), *v. t.*; pret. and pp. *nuggeted*, ppr. *nuggeting.* [*nugget, n.*] To steal or appropriate the unbranded calves of (one's neighbors). [Australian slang.]

If he does steal a calf now and then, I know several squatters who are given to *nuggeting.*
R. M. Praed, Longleat of Kooralbyn, p. 25, in E. E. [Morris, Austral English.

nuggety, *a.* **2.** Short, thickset, and strong: applied to a horse or a man. *E. E. Morris*, Austral English. [Australian slang.]

nul, *a.*, *n.*, and *v.* A simplified spelling of *null.*

nul disseizin (nul dis-sē'zin). [AF.] No disseizin; in *law*, the general issue in an action concerning real property.

null. **I.** *a.* **4.** Zero in algebraic measure.—**5.** In *math. logic*, noting a propositional function when it is false for all values of *x*.—**Null element.** See ★*element.*

II. *n.* **4.** Specifically, one of the bids in the game of skat. Same as ★*misère.* See ★*skat*².—**Grand null ouvert,** in *skat*, a bid to lose every trick with the hand exposed on the table from the first. See ★*null ouvert*, in which the first trick is played before the hand is exposed.—**Null ouvert,** in *skat*, a bid to lose every trick with the hand exposed on the table, but not until after the first trick.—**Null tourné,** in *skat*, a change from tourné to nullo when the card is a seven.

nulla bona (nul'ạ̈ bō'nạ̈). [L., no goods.] The return made by a sheriff upon an execution where the party has no goods to be distrained. *N. E. D.*

null-circle (nul' sėr″kl), *n.* The imaginary circle about the point (*a*, *b*) with radius null, $(x-a)^2 + (y-b)^2 = 0$.

null-class (nul'klȧs), *n.* A class of no terms.

null-conic (nul'kon″ik), *n.* In the theory of averages, the equation of the *null-conic* of an area is $\iint (lx + my + n)^2\, dx\, dy = 0$, which may, by proper choice of axes and use of the notation of averages, be written in the form $l^2x^2 + m^2y^2 + n^2 = 0$. *Rep. Brit. Ass'n Advancement of Sci.*, 1903, p. 560.

nulliparity (nul-i-par'i-ti), *n.* [*nullipar*(*ous*) + *-ity.*] The state of not having given birth to a child.

nullipore-sand (nul'i-pōr-sand), *n.* In *geol.*, a marine sand consisting of the detritus of calcareous seaweeds or nullipores.

Nullity of a determinant. A determinant of order *n*, all of whose subdeterminants of order $(n-i+1)$ vanish, but not all of order $(n-i)$, is a determinant of nullity *i*.

null-moment (nul'mō″mẹnt), *n.* In *mech.*, a zero moment.

The lines of *nul-moment* for the system form a linear complex of which the given line is the central axis and the quotient G/R is the pitch.
Encyc. Brit., XXVIII. 660.

nullo (nul'ọ̄), *n.* [It. ?: see *null.*] Same as ★*misère.* See also *Cayenne* ★*whist.*

null-plane (nul'plān), *n.* One of the corresponding planes of a null-system.

In the case of a complex of the first degree (or linear complex) the lines through a fixed point lie in a plane called the polar plane or *nul-plane* of that point.
Encyc. Brit., XXVIII. 660.

null-point (nul'point), *n.* **1.** In *phys.*, the zero-point upon the scale of any instrument.—**2.** The dual of a null-plane.—**3.** The origin or beginning point in the representation of a set by the points on a straight line.

null-set (nul'set), *n.* An empty class, corresponding to a condition satisfied by no entity in the universe.

null-sphere (nul'sfēr), *n.* The sphere about the point (*a*, *b*, *c*) which has zero radius, $(x-a)^2 + (y-b)^2 + (z-c)^2 = 0$.

nul tiel record (nůl' tiel re-kôrd'). [AF., 'no such record.'] In *law*, a plea which puts in issue the existence of a record upon which an opposing party relies, or the fact that the record is what it is alleged to be.

nul tort (nůl tôrt). [AF., 'no wrong.'] In *law*, a plea in a real action, by which a general issue is joined, denying any wrong done by the defendant.

nul waste (nůl wāst). [AF., 'no waste'.] In *law*, the plea in an action for waste by which the general issue is joined.

num, *a.* and *v.* A simplified spelling of *numb.*

num. An abbreviation (*a*) of *number*; (*b*) of *numeral.*

number, *n.* **17.** A term used in the textile-industry to designate the size or fineness of yarn; the number of units of length contained in a given weight of the product. The length of yarn required to produce the definite weight on which the numbering is based is called a *hank*, as with cotton, or, in case of flax or jute, a *lay* or *lea*. The fundamental rule, in the various systems of numbering yarn, is that the finer the yarn the higher shall be the number. The number, or titre, of true or reeled silk differs from that of all other yarns in being based on a constant length and variable weight. The higher the number, or titre, the coarser the yarn or thread. The number is expressed in deniers. According to the international (French) titre system, a denier is .05 gram, or .771 grain, for 500 meters. In the new Lyons titre system a denier is 1.2747 grams, or 19.66 grains, for 12,000 meters.—**Abbreviated numbers** numbers obtained by cutting off the expression for each number at a certain number of places after the decimal point.—**Absolute number,** a signless or plus rational or irrational.—**Absolute value of a complex number,** $x = a + bi$, is $+(a^2 + b^2)^{\frac{1}{2}}$: denoted by $|x|$.—**Absolute value of a real number,** *a*, its value taken positively: denoted by $|a|$. Thus $|2| = |-2| = +2$.—**Abstract number,** one in which there is no statement of the points in which the objects numbered agree.—**Absurd number,** negative number. *Stifel*, 1544.—**Affirmative number.** Same as *positive* ★*number. Newton.*—**Aleph number,** a Cantorian cardinal number belonging to a normally ordered set.—**Approximate numbers,** a simpler set of numbers equal to those for which they are substituted, to within a fixed degree of approximation.—**Arithmetical number.** Same as *positive* ★*number.*—**Associate numbers,** the four numbers obtained by multiplying any whole complex number by $+1, -1, +i, -i$.—**Back number,** a number of a magazine or other periodical that has been followed by more recent issues and is no longer read or in demand; hence (in United States slang), a person or a thing that is behind the times or has become superannuated.—**Barlong number.** Same as *heteromecic* ★*number.*—**Cantorian cardinal number.** In Cantor's words: "We call the potency or cardinal number of the set M that general idea which by means of our active faculty of thought we deduce from the set M, by abstracting from the nature of its diverse elements and from the order in which they are given." It is a property of the set independent of the nature of its terms and of their order. It is finite or transfinite according as the set is finite or infinite.—**Cantorian ordinal number.** See ★*Cantorian.*—**Cardinal number of a series,** the cardinal number or potency of the class of elements which occur in the series, without regard to their order.—**Commensurable numbers,** such as have a common measure; two numbers whose ratio is a rational number.—**Concrete number,** one in which there is a statement of points in which the objects numbered agree: as, 3 dogs.—**Condensed numbers,** numbers expressed each in the form of a product of a power of 10 and a decimal, with the decimal point appearing after the first digit from the left.—**Congruent number,** one having the same remainder with regard to a given modulus.—**Conjugate complex numbers,** two numbers with equal moduli and amplitudes of equal magnitude but contrary sense.—**Constant number,** a number the value of which does not change: usually represented by one of the first letters of the alphabet.—**Cyclical number,** a number, such as 5 or 6, the square of which ends with the same number.—**Determinate number,** a number referred to some given unit.—**Diacritical number,** in *elect.*, the number of ampere turns necessary to magnetize the core of a coil to half saturation.—**Dual number,** one written in the system with radix two.—**Ester number.** See ★*ester.*—**Euclidean number.** Same as *perfect number* (which see, under *perfect*).—**Finite number,** a number which can be reached or exceeded by starting from 0 and increasing by 1 at each step.—**Fractional number,** a symbol of the form a/b, defined by its position in an ordinal system which includes the natural numbers.—**Heteromecic number,** a number of the form $n\,(n-1)$.—**Hexagonal number,** any one of the series of polygonal numbers 1, 6, 15, . . . obtained by successively summing the terms of the series 1, 5, 9, . . . in which the difference is 4.—**Imaginary number.** (*a*) Same as *neomonic* ★*number.* (*b*) Same as *complex number* (*a*) (which see, under *complex*).—**Incommensurable numbers,** two numbers whose ratio is an irrational.—**Infinitesimal number.** If P and Q are two numbers, and if, *n* being any finite integer whatever, *n* P is always less than Q, then P is infinitesimal with respect to Q.—**Integral number,** a whole number.—**Irrational number,** the one number between all numbers in B and all in A,—two classes to one and but one of which every rational falls as soon as given, and such that (1) each number in B precedes every number in A and (2) there is no last number in B and no first number in A.—**Koettstorfer's number.** Same as *saponification* ★*value.*—**Law of great numbers.** See ★*law*¹.—**Literal number,** a number represented by a letter.—**Maiden number.** See the extract.

7 was called the *maiden number*, because within the decade it has no factors or product.
New Century Rev., May, 1900, p. 374.

Minus number. Same as *negative* ★*number.*—**Modulus of a complex number.** See ★*modulus.*—**Modulus of a real number.** See ★*modulus.*—**Multipartite number.** Objects not all similar cannot be effectively enumerated by a single integer, a succession of integers being required. If the objects be *p* in number of one kind, *q* of a second kind, *r* of a third, etc., the enumeration is given by the succession *p q r*, which is a *multipartite number*, written $\overline{p\ q\ r}\ .\ .\ .$, where $p + q + r = n$.—**Natural number.** (*a*) An element of an ideal manifold defined solely by the following conditions: (1) that there is one element anterior to all the rest, and (2) that every element *a* is followed by a definite next element *a′*, so that $a < a'$ and no element falls within the interval (a, a'). (*b*) A sign or symbol for a cardinal number; a sign 1, 2, 3, . . . or its name 'one,' 'two,' 'three,' . . .—**Negative number,** a number indicating the remainder, when the subtrahend is greater than the minuend; a number preceding 0 in the complete scale.—**Neomonic number,** a number whose unit is the neomon; for example $\sqrt{-3}$.—**Number eleven,** an umbrella. [Slang.]

Number eleven! Why, it is only by favour and connivance that a person can manage to make it shelter two.
N. and Q, 9th ser., XII. 406.

Number of degree. See ★*degree.*—**Numerical value of a real number.** Same as *absolute value of a real* ★*number.*—**Oblong number,** a product of two unequal factors.—**Odd number,** a number that is not divisible by 2.—**Opposite numbers,** two numbers which have the same absolute value but are of opposite quality: as, $+3$ and -3.—**Pentagonal numbers,** the series of polygonal numbers 1, 5, 12, 22, 35.—**Pitch number.** See ★*pitch*¹.—**Plus number.** Same as *positive* ★*number.*—**Positive number,** a number greater than 0.—**Primary number.** (*a*) See *primary.* (*b*) The cardinal number of a finite set; that property of the set because of which we shall arrive at the same natural number in whatever order we count the set.—**Pronic number,** a number of the form $a^n + a$.—**Pure number.** Same as *abstract* ★*number.*—**Real number,** a number which may be indefinitely approximated to by a fraction whose numerator and denominator are sums of the primitive unit one.—**Reichert number,** the number of cubic centimeters of decinormal alkali solution necessary to neutralize the volatile fatty acids in 5 grams of fat. This is fairly high in genuine butter, while in oleomargarin it is very low.—**Relatively finite numbers,** two such that the product of the lesser by a finite number exceeds the greater.—**Relative number,** a number with a sign (+ or −).—**Saponificaton number.** Same as *saponification* ★*value.*—**Single-valued number,** a number with a definite, particular value: opposed to *general number*, one representing more than one value.—**Spheric number,** a product of three unequal factors.—**Surd number,** an irrational.—**The number e,** $1 + 1 + \frac{1}{2!} + \frac{1}{3!} + . . . = 2.718281829 . . .$, the base of the natural logarithms, a transcendental irrational, connected with π by Euler's equation $e^{i\pi} = -1$. See *logarithm.*—**The number π.** Same as *Ludolphian number* (which see, under *number*).—**To make her number,** to signal her number (on Lloyd's books) to a Lloyd's station on nearing land: said of a ship.

The *Flamingo* picked up the landmarks of the Southern Irish coast, and *made her number* to Lloyds' station on Brow Head, stood across for the Tuskar, and so on up St. George's Channel for Holyhead.
Cutcliffe Hyne, A Master of Fortune, xii.

Transcendental number, a number which cannot be defined by any combination of a finite number of equations with rational integral coefficients; one which cannot occur as root of an algebraic equation: *e* and π are such numbers.—**Transfinite cardinal number,** the number of a class having a proper part similar to the whole.—**Transfinite ordinal number,** a number which, starting from 0 or 1, cannot be reached by mathematical induction; a class or type of serial relations, of well-ordered series; a type of order or of generating relation presented by series of finite and transfinite cardinals which begin with some cardinal.—**Transport numbers of Hittorf,** in *phys. chem.*, numbers which express the fraction of the current between the electrodes which is carried by the motion of the anions and by the motion of the cations. The transport number of the anion is often denoted by *n*, 1 − *n* being given as the transport number of the cation.

> In a preceding paragraph, it was noted that each ion had its own specific constant of electrical conductivity, the sums of which for all anions and all cations was the conductivity of the solution. These constants for ions are intimately connected with the so-called "*transport numbers*" (a rendering into English of the word Ueberführungszahl).
>
> *Electrochemical Industry*, March, 1904, p. 99.

Triangular number, a number of the form $n(n+1)/2$. See *triangular*.—**Unipartite number,** a number, say *n*, regarded as enumerating *n* similar objects.—**Variable number,** a number which takes a set of values: usually represented by one of the final letters of the alphabet.—**Vessel's number,** a numeral made by a hoist of flags which corresponds to the distinguishing number given to the ship in the signal-book.—**Watch number,** the hammock-number, which is changed as the seaman's station is shifted.—**Whole number.** See *whole*.—**Wolf's relative sun-spot numbers.** See ★*sun-spot*.

number-continuum (num′bėr-kon-tin″ụ̄-um), *n.*; pl. *number-continua* (-ạ̈). **1**. The whole system of positive and negative integral, fractional, and irrational numbers.—**2.** The real numbers from 0 to 1, both inclusive.

numbering-machine, *n.* **2.** An automatic mechanism attached to a printing-machine which registers the number of each printed sheet.

number-interval (num′bėr-in′tėr-vạl), *n.* The set of all real numbers between *a* and *b*, both inclusive.

number-man (num′bėr-man), *n.* A man who delivers to subscribers the successive numbers of a subscription-book that is issued in numbers. [Great Britain.]

> Those subscribers, therefore, who choose to be accommodated with the Apocrypha may now be supplied by giving orders to the . . . *Number-men.*
>
> *N. and Q.*, 10th ser., III. 66.

numbly (num′li), *adv.* In a numb or dull manner.

> Her fingers fumbled *numbly* with the string. She might as well have tried to untie the knotted cords with her feet. *Crockett*, Lads' Love, xxiv.

numda (num′dä), *n.* [Also *numna;* Hind. *namdā*, < Pers. *namad*, felt.] Felt; a saddle-cloth originally made of felt.

numerable, *a.* **2.** In *math.*, capable of being put into one-to-one correspondence with the elements of a progression.—**Numerable manifold.** See ★*manifold*¹.

numeral, *n.*—**Hindu numerals, Indian numerals,** the so-called Arabic numerals.—**Numerals in shipbuilding,** the products of certain dimensions used to classify and determine the scantlings of the different structural items of a vessel when being built according to rule.

Numerical quadrature. Same as *arithmetical quadrature.* See *the problem of the quadrature*, under *quadrature.*

numis. An abbreviation (*a*) of *numismatic;* (*b*) of *numismatics;* (*c*) of *numismatology.*

nummulation (num-ụ̄-lā′shọn), *n.* [L. *nummulus*, a coin, + *-ation.*] The peculiar arrangement exhibited by red blood-corpuscles when they unite to form columns like stacked-up coins.

nummuloidal (num-ū-loi′dal), *a.* [L. *nummulus*, a coin, + *-oid* + *-al*¹.] Coin- or button-shaped, as the siphuncular segments in some fossil cephalopods.

numna, numnah (num′nạ̈), *n.* Same as ★*numda*.

> Biting cold winds, from which some protection was afforded by having a large *numnah* held up close to the plane-table. *Geog. Jour.* (R. G. S.), XVI. 519.

numskul, *n.* A simplified spelling of *numskull.*

nun¹, *n.* **5.** Same as ★*nun-moth.*—**Capuchin nun,** a nun of the order founded by Maria Longa in 1534, which adopted the Capuchin rule in 1538, and afterward that of St. Claire.—**Nun's work,** an old name in England for lace.

> Lace was long called '*nun's work*,' and even to the present day the term lingers in remote districts.
>
> *Mrs. F. N. Jackson*, in Burlington Mag., IV. 54.

nun² (nön), *n.* [Native name in Yucatan?] A yellowish-brown, neutral, fatty substance produced by an insect found in Yucatan. It melts at 48.9° C. and readily absorbs oxygen from the air.

nun³ (nön), *n.* [Heb. *nūn*, Aram. Syr. Ar. *nūn.*] The fourteenth letter (נ) of the Hebrew alphabet, corresponding to the Greek *νῦ* and the English *n.* Its numerical value is 50.

nunciative (nun′shi-ạ̄-tiv), *a.* Making an announcement; conveying a message.

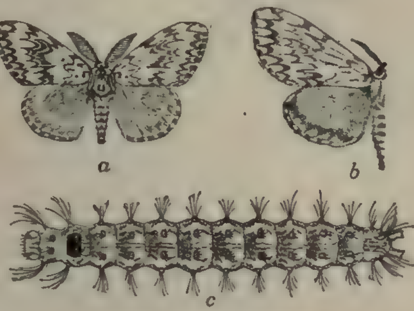
> We have . . . to look for some more positive bond of connection between them . . . which makes them worth our prolonged investigation. This we shall find in the fact that they are all of them message-bearing or *nunciative* automatisms.
>
> *F. W. H. Myers*, Human Personality, II. 88.

nundine (nun′dīn), *n.* [L. *nundinæ*, the ninth day, < *novem*, nine, + *dies*, day.] In *Roman antiq.*, a market-day occurring every ninth day (in Roman reckoning). Also as plural. *N. E. D.*

Nungu butter. Same as *shea-butter.*

nunlet (nun′let), *n.* A book-name for the small South American birds of the genus *Nonnula.*

nun-moth (nun′môth), *n.* A European liparid moth, *Lymantria monacha*, whose larva is a noted enemy to forest-trees in Europe.



Nun-moth (*Lymantria monacha*).

a, male moth; *b*, female; *c*, full-grown caterpillar: all reduced about one third.

nuns (nunz), *n. pl.* Bluets; innocence, *Houstonia cærulea.*

nun's-fiddle (nunz′fid″l), *n.* Same as *sea-trumpet*, 1.

nupharetum (nū-fạ-rē′tum), *n.*; pl. *nuphareta* (-tạ̈). [*Nuphar* + *-etum.*] A zone of vegetation near the shore of a body of fresh water, characterized by the presence of plants which belong to the genus *Nymphæa* (*Nuphar*). See *Nymphæa*¹, 1.

nupharin (nū′fạ-rin), *n.* [*Nuphar* + *-in*².] An amorphous, optically inactive compound, $C_{18}H_{24}O_2N_2$, contained in the rhizome of *Nuphar luteum.*

nuptiality (nup-shi-al′ị-ti), *n.* [*nuptial* + *-ity.*] The tendency of a people toward marriage, expressed statistically by the marriage-rate.

> *Nuptiality* and Fecundity.—In connection with the subject of natural increase may be mentioned the tendency of a people towards marriage, and the average fertility of each union. *Encyc. Brit.*, XXXI. 839.

nuque (nük), *n.* [F.] The nape of the neck.

nurag, nuragh, nuraghe, *n.* Same as *nurhag.*

nurish¹, *v.* **2.** A simplified spelling of *nourish.*

Nuritate lacquer. See ★*lacquer.*

nurse, *n.* **11.** In *entom.*, one of the worker-ants or worker-bees whose function in the colony is to care for the young brood.—**Captain's nurse,** one who instructed the captain in the merchant marine. Before compulsory examinations were in force, an incompetent man might obtain command of a vessel by virtue of ownership and go to sea as her captain; but in such cases it was common to give the experienced chief mate an extra compensation for instructing the captain in the laws of seamanship and navigation as well as in the general duties of a master.—**Gray nurse,** a common name in Tasmania for *Carcharias littoralis*, a carcharioid shark.—**Rub nurse,** in *billiards*, a stroke made by hitting the cushion first, rubbing the first object-ball, and not much more than shaking the second. In this way runs of 50 and over have been made in practice-play. The needful position can occasionally be obtained at regular cushion-caroms, but not once in every hundred thousand trials at the bank-shot game, which is the only one in which the cushion must be hit first. The point not commonly understood is that a run by bank-shot process is not necessarily a bank-shot run.

nurse, *v. t.* **7.** In *billiards*, formerly, to make a number of consecutive caroms, as rapid as dainty, off (balls) held but an inch or two apart. In addition, nursing now comprehends perhaps 65 per cent. of the scientific manœuvering imposed by the balk-line games. Until straight-rail play was developed in 1876–78, adroit players sought to do all their caroming at either end of the table. It was so with all the exceptional runs. Straight-rail play was quickly frowned upon, and end-play came into use again; but the 'anchor' (see ★*anchored*, 4) which was developed was abolished even more quickly than the straight-rail. Three maxims underlie all of modern billiards not played for diversion: never drive the second object-ball; drive the first no oftener than is urgently needful; and make the cue-ball's journeys as short as possible.

nurse-bee (nėrs′bē), *n.* **1.** Same as ★*nurse*, 11.—**2.** A honey-bee not yet sixteen days of age.

nurse-crop (nėrs′krop), *n.* In *agri.*, a crop which is employed to aid another crop in getting established, as in the practice of planting certain rapid-growing short-lived trees or bushes to shade the slow-growing conifers in an intended conifer forest, or in the sowing of a straw crop to shade and shield a lawn seeding.

nursery, *n.* **8.** In *Eng. billiards*, the section, about 2 feet by 6, farthest from balk: it may extend along the cushion almost to the middle pocket: formerly a condition rather than a locality.—**Nursery stock,** in *plant-breeding*, the contents of a centgener and its offspring so long as the plants remain in the nursery and have not been subjected to field tests. See ★*centgener*, *n.*, 2.

nursing-pouch (nėr′sing-pouch), *n.* The pouch, characteristic of the marsupial mammals, in which the young are carried. *Nature*, Aug. 14, 1902, p. 374.

nut, *n.* **2.** Loosely, a similar vegetable product, as a tuberous root (earth-*nut*, ground-*nut*), leguminous pod (pea*nut*), or seed (physic-*nut*). —**3.** (*f*) (3) In general, the lower end or heel of the bow: opposed to *point* or *head.*

8. In Australia: (*a*) See the extract. [Slang.]

> The peculiar type of the Australian native (I do not mean the aboriginal blackfellow, but the Australian white), which has received the significant sobriquet of "The *Nut*," may be met with in all parts of Australia, but more particularly . . . in far-off inland bush townships. . . . What is a *Nut?* . . . Imagine a long, lank, lantern-jawed, whiskerless, colonial youth . . . generally nineteen years of age, with a smooth face, destitute of all semblance of a crop of "grass" as he calls it in his vernacular.
>
> *A. J. Boyd*, Old Colonials, p. 60, quoted in E. E. Morris, [Austral English.

(*b*) A daredevil. [Slang.]

> "Tommy the *Nut*" was the alias of the prisoner who, according to the story, was first described as "a larrikin" by Sergeant Dalton. *E. E. Morris*, Austral English.

African nuts, a commercial name for the Spanish nutmeg, *Virola Surinamensis.*—**Artificial nut,** in playing on the violin and other instruments with a finger-board, the act or effect of shortening the effective length of the strings by stopping them below the nut proper either by the fingers or by a special appliance. See *barré*, 2, and *capo tasto.*—**Boma nut,** the almond-like seed of *Wetriaria macrophylla*, which furnishes an abundance of sweet, bland oil, much used in cooking by the natives of eastern Central Africa. It is cultivated abundantly in the region of the Upper Zambesi. See *bomah-nut.*—**Burrawang nut,** the seed of the *burrawang* (which see). —**Capped nut,** a threaded nut with an ornamental disk covering one side.—**Deaf nut.** See ★*deaf.*—**Elastic nut,** a form of nut which can be kept to a close fit on the screw. The nut may be split along one side and sprung as far as is necessary to compensate for the wear, or it may be cut in halves which are separated by a spring or a screw.—**French nut.** (*b*) The Old World chestnut, *Castanea vesca.*—**Mote-nut.** (*b*) *pl.* The seeds of *Carapa procera*, which yield a bitter, cathartic oil. See *kundah-oil* and *Carapa*, 1.—**Traveling nut,** a nut which travels on a screw when the screw is turned, the nut being prevented from turning.—**Untapped nut,** a mechanical nut-blank which has not been tapped or in which the hole has been formed but the thread has not been cut.

nutation, *n.*—**Chandler's nutation,** Sir G. H. Darwin's designation of the slight movement of the earth's axis within the globe: discovered by Küstner in 1888, but first thoroughly discussed and reduced to law by Dr. S. C. Chandler of Cambridge, United States. It produces among the stars with respect to the zenith of an observer slight displacements which are somewhat analogous to those due to the nutation proper. *G. H. Darwin*, The Tides, p. 227.—**Constant of nutation.** See ★*constant.*

nut-crab (nut′krab), *n.* A crab of the genus *Ebalia;* so called from its resemblance to a nut when the legs are tucked in.

nut-fudge (nut′fuj), *n.* See ★*fudge*, 4.

nutlet, *n.* **1.** (*b*) One of the achene-like segments of a pericarp or schizocarp, as in the borage and mint families.

nutmeg, *n.*—**Queensland nutmeg,** a small tree of the north coast of Australia, a variety of *Myristica cimicifera*, or its seeds, which are not so strongly aromatic as those of the true nutmeg, *M. fragrans.*—**Spanish nutmeg,** in the West Indies, *Virola Surinamensis* or its seeds, which are an article of export for their oil. See *African* ★*nuts*, *dali*, and *dollee-wood.*—**Stinking nutmeg.** Same as *California nutmeg* (which see, under *nutmeg*).

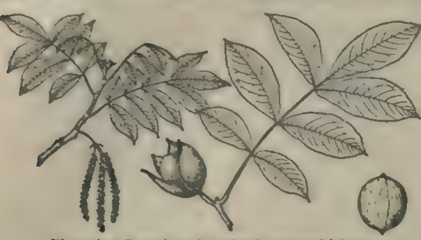
nutmeg-apple (nut′meg-ap″l), *n.* The fruit of the nutmeg-tree.

> Here and there a *nutmeg-apple* has split, and shows within the delicate crimson caul of mace; or the nutmegs, the mace still clinging round them, lie scattered on the grass. *Kingsley*, At Last, v.

nutmeg-butter, *n.* **2.** The fat oil from the seeds of *Myristica moschata*, which contains, as glyceride, myristic acid ($C_{14}H_{28}O_2$). This fat oil is a quite different substance from the essence or volatile oil obtained by distillation with water.

nutmegged, *a.* **2.** Same as *nutmeggy.*

nutmeg-hickory, *n.* This tree, rare in South Carolina, is now known to range through Alabama and Mississippi to southern Arkansas, where it is abundant. It is a forest-tree 80 to 100 feet high, valuable for timber and fuel.



Flowering Branch and Fruit of nutmeg-hickory (*Hicoria myristicæformis*).
(From Sargent's "Manual of the Trees of North America.")

nutmeg-pigeon, *n.*—**Nicobar nutmeg-pigeon,** *Carpophaga insularis*, a species gray beneath, and bronze green above: found on the Nicobar Islands.

nutmeg-tree, *n.*—**California nutmeg-tree.** Same as *California nutmeg* (which see, under *nutmeg*).

nut-Monday (nut′mun″dā̤), *n.* The first Monday in August, locally observed as a holiday. *N. E. D.* [Eng.]

nut-palm (nut′päm), *n.* A cycad of northern Australia, *Cycas media*, the seeds of which are used as food by the aborigines. The kernels are broken, steeped in water for some days to remove a poisonous principle, then reduced to a fine paste between two stones, and baked in hot ashes.

nutricism (nū′tri-sizm), *n.* [L. *nutrix* (*nutric-*), nurse, + *-ism.*] That form of symbiosis in which the fungus becomes the nurse or feeder of the host, usually resulting in the formation of *Mycorrhiza*.

Nutrient canal. Same as *Haversian canal* (which see, under *canal*^{1}).

Nutritive ratio. See ★*ratio.*

nutrium (nū′tri-um), *n.* [NL., < L. *nutrire*, nourish, + *-ium.*] The trade-name of a food-material obtained by evaporating to dryness milk deprived of its fat and pulverizing the solid residue. This contains the proteids of the milk, the milk-sugar, and the mineral salts.

nutrose (nū′tros), *n.* [L. *nutrire*, nourish, + *-ose.*] A water-soluble sodium salt of casein.

nut-sedge, *n.* 2. The nutgrass, *Cyperus rotundus.*

Nuttall's-weed (nut′a̤lz-wēd), *n.* The golden coreopsis, *Coreopsis tinctoria.* The species was named by Thomas Nuttall, an eminent American botanist.

nuttery (nut′ėr-i), *n.* [*nut* + *-ery.*] A plantation where nuts are grown; a copse where nuts grow.

nutting (nut′ing), *n.* The gathering of nuts.

N. V. An abbreviation of *New Version.*

N. V. M. An abbreviation of *Nativity of the Virgin Mary.*

N. W. An abbreviation (*b*) of *northwestern;* (*c*) of *Northwestern Postal District, London.*

N. W. P. An abbreviation of *Northwestern Provinces.*

N. W. T. An abbreviation (*a*) of *Northwest Territory;* (*b*) of *Northwestern Territories.*

Ny. In *chem.*, the symbol for ★*neo-ytterbium.*

N. Y. An abbreviation of *New York*, city or State.

nyala, *n.* See ★*inyala.*

nyanda (ni-an′dä̤), *n.* [African (Livingstone).] A coarse fabric made from the fibers of fig-tree (*Ficus Indica*) bark.

nyanza (ni-an′zä̤), *n.* [Central African.] A lake. *H. M. Stanley.*—**Nyanza black.** See ★*black.*

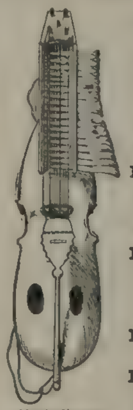
nyarong (nyä′rong), *n.* [Dayak (Dyak), also spelled *njaring* (Hardeland).] The spirit of an ancestor or dead relative, which appears to a youth in a dream and which becomes his protector. The nyarong has often the outer form of an animal. *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 742.

N. Y. C. An abbreviation of *New York City.*

nychthemer (nik′thē̤-mėr), *n.* An anglicized form of *nychthemeron.*

nychthemeral (nik-thē′me̤-ra̤l), *a.* [*nychthemer*(*on*) + *-al*^{1}.] Of or pertaining to, or consisting in, a nychthemeron, or the whole period of day and night (twenty-four hours). *Nature*, Jan. 17, 1907, p. 287.

nyckelharpa (nik′el-här-pä̤), *n.* [Sw., < *nyckel*, key, + *harpa*, harp.] A stringed instrument once used in Sweden, essentially similar to the hurdy-gurdy, but sounded with a bow instead of a wheel. It had 4 principal strings of gut, 2 of which were drones, 8 sympathetic strings of metal, and 19 keys or tangents.



Nyckelharpa. From Engel's "Early History of the Violin Family."

nyctaginaceous (nik-taj-i-nā′shius), *a.* Belonging to the four-o'clock family, *Nyctaginaceæ.*

nyctalgia (nik-tal′ji-ä̤), *n.* [NL., < Gr. *νύξ* (*νυκτ-*), night, + *ἄλγος*, pain.] Pain which occurs only or chiefly at night.

nyctalope (nik′ta̤-lōp), *n.* One who is affected with nyctalopia.

nyctamblyopia (nik″tam-bli-ō′pi-ä̤), *n.* Same as *nyctalopia.*

nyctanthous (nik-tan′thus), *a.* [Gr. *νύξ* (*νυκτ-*), night, + *ἄνθος*, blossom, + *-ous.*] In *bot.*, of flowers, opening only at the approach of twilight or in the night, or, of plants, having flowers which so open. *Pound and Clements.*

nyctemerid (nik-tem′e̤-rid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Nyctemeridæ.*

II. *a.* Having the characters of or belonging to the family *Nyctemeridæ.*

nycteribiid (nik-te̤-rib′i-id), *n.* and *a.* **I.** *n.* A member of the dipterous family *Nycteribiidæ.*

II. *a.* Having the characters of or belonging to the family *Nycteribiidæ.*

Nycthemerus (nik-thē′me̤-rus), *n.* The customary form of *Nychthemerus* (which see).

nyctipelagic (nik″ti-pē̤-laj′ik), *a.* [Gr. *νύξ* (*νυκτ-*), night, + *πέλαγος*, sea.] Living on the surface of the sea only at night, and sinking to the depths of the sea during the day. *Pyrosoma*, most pteropods and heteropods, and many crustaceans, medusæ, and siphonophores, are examples of nyctipelagic organisms.

nykin†, *n.* [Origin obscure.] Dear; darling: a term of endearment.

> Fond. See you have made me weep — made poor *Nykin* weep —
>
> . . . .
>
> Læt. No you shan't neglect your Business for me — No indeed you sant *Nykin* — If you don't go, I'll think you been dealous of me still. *Congreve*, Old Bachelor, iv. 4.

Nymanina (nī-ma̤-nī′nä̤), *n.* [NL. (Kuntze, 1891), named in honor of C. F. *Nyman* (1820–1893), a Swedish botanist.] A genus of bulbous iridaceous plants with fragrant white or pale yellow flowers. Two species are in cultivation and are often forced by florists, especially for cut flowers for Christmas. See *Freesia.*

nymf, *n.* A simplified spelling of *nymph.*

nymph, *n.* 3. (*b*) In insects which undergo an incomplete metamorphosis, the stage in which the wing-pads appear.

nymphæaceous (nim-fē̤-ā′shius), *a.* Belonging to the water-lily family, *Nymphæaceæ.*

nymphid (nim′fid), *n.* A nymph. [Rare.]

nymphine (nim′fin), *a.* Same as *nymphal.*

nymphology (nim-fol′ō̤-ji), *n.* [*nymph* + *-ology.*] Legends about nymphs, collectively.

nymphosis (nim-fō′sis), *n.* [NL., < *nympha*, nymph, + *-osis.*] In *entom.*, the transformation from larva to nymph or pupa.

nyssonid (ni-son′id), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Nyssonidæ.*

II. *a.* Having the characters of or belonging to the family *Nyssonidæ.*

nystagmic (nis-tag′mik), *a.* [*nystagm*(*us*) + *-ic.*] Pertaining to or of the nature of nystagmus.

nystagmiform (nis-tag′mi-fôrm), *a.* [*nystagm*(*us*) + *-i-* + *-form.*] Having the appearance of mystagmus.

nystagmoid (nis-tag′moid), *a.* [*nystagmus* + *-oid.*] Resembling mystagmus.

nyxis (nik′sis), *n.* [NL., < Gr. *νύξις*, a puncture, < *νύσσειν*, puncture, pierce.] A puncture.

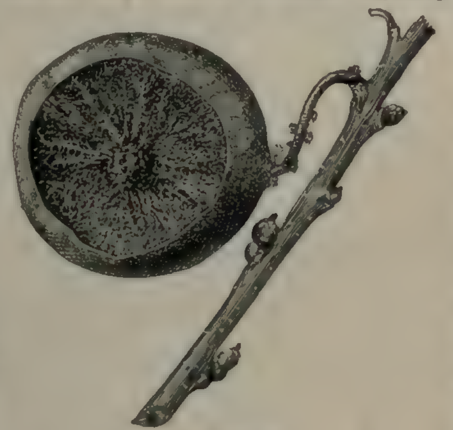
N. Z., N. Zeal. Abbreviations of *New Zealand.*

O 4. An abbreviation (*d*) in *elect.*, of *ohm*; (*e*) of *Ohio*; (*f*) [*l. c.*] of *only*; (*g*) of *opening of the circuit*; (*h*) in *psychol.*, of *observer*.

ω. [Gr. omega.] **1.** A symbol for *angular velocity*.—**2.** In *elect.*, a symbol (*a*) [*cap.* Ω] for *megohm*; (*b*) for *ohm*.

oak, *n.*—**Arizona white oak,** *Quercus Arizonica*, a tree 50 or 60 feet high and from 3 to 4 feet in diameter, found on plateaus and mountain slopes in southern New Mexico and Arizona and northern Mexico.—**Australian oak,** any one of several species of *Casuarina* (which see).—**Blue oak.** (*b*) *Quercus oblongifolia*, a small tree of western Texas, New Mexico, Arizona, and northern Mexico. It rarely exceeds 30 feet in height and has small oblong leaves and small acorns. Very little use is made of it except as fuel. It is commonly called *white oak*, but sometimes *dwarf black oak*.—**Box white oak,** the post-oak, *Quercus minor*.—**Bray oak,** the durmast, *Quercus sessiliflora*.—**California black oak.** Same as *Sonoma oak* (which see, under *Sonoma*).—**California live-oak.** Same as *encino*.—**California white oak,** *Quercus lobata*. See *white oak*, under *oak*.—**Cañon live-oak.** See ★*live-oak*.—**Chapman's oak,** *Quercus Chapmani* of the southern United States, most abundant in Florida on the Gulf Coast. It is closely related to the post-oak, with which it was formerly confounded.—**Cochineal-oak.** Same as *kermes-oak*.—**Durand's oak,** *Quercus breviloba*, a tree of the eastern and southern United States, sometimes 90 feet high and 3 feet in diameter, with obovate undulate leaves and small acorns. The wood is hard and heavy, but brittle. It belongs to the white oak group and is often called *white oak*.—**Dwarf black oak.** See *blue* ★*oak* (*b*).—**Dwarf chestnut-oak,** *Quercus prinoides*, which sometimes bears acorns at the height of two feet. See *chestnut-oak*, under *oak*.—**Emory's oak.** Same as *black oak* (*c*) (which see, under *oak*).—**Engelmann's oak,** *Quercus Engelmanni*, a medium-sized evergreen tree of southwestern California, sometimes called *evergreen white oak*.—**English oak,** *Quercus Robur*. See *oak*, 1.—**European oak,** chiefly *Quercus Robur*, but also *Q. pedunculata* and *Q. sessiliflora*.—**Evergreen oak.** (*b*) Same as *Engelmann's* ★*oak*.—**Female oak,** the quercitron or dyers' oak, *Quercus velutina*.—**Gambel's oak,** *Quercus Gambelii*, a small tree of the Rocky Mountain regions up to 7,000 feet altitude, the only oak in southern Colorado. It frequently covers hillsides of great extent and provides a favorite resort of bears. It shares with *Q. undulata*, with which it has close affinities, the name of *shin-oak*. It is also called *white oak*.—**Georgia oak,** *Quercus Georgiana*, a small tree of the black oak group, restricted to a portion of central Georgia.—**Golden oak.** (*a*) See ★*goldenoak* and ★*Dasistoma*. (*b*) Same as *cañon* ★*live-oak*.—**Ground-oak.** (*a*) See *ground-oak*. (*b*) The wall germander, *Teucrium Chamædrys*.—**Highland oak,** *Quercus Wislizeni*, a live oak of California, found in the highlands of both the Sierras and the Coast Ranges: a very variable tree both in size and in appearance. The wood is heavy and very hard, but is little used except for fuel.—**Kellogg's oak.** Same as *Sonoma oak* (which see, under *Sonoma*).—**Manna-oak,** a variety of the British oak, *Quercus Robur*, found in Kurdistan, the leaves of which yield a sweet exudation. See ★*oak-manna*.—**Marden oak,** the durmast, *Quercus sessiliflora*.—**Mountain-oak.** (*a*) The chestnut-oak, *Quercus Prinus*. (*b*) Gambel's oak, *Q. Gambelii*. (*c*) The Texan oak, *Q. Texana*.—**Myrtle-oak,** *Quercus myrtifolia*, a small tree 20 feet high found on sandy shores and islands from South Carolina to Florida and along the Gulf Coast to Mississippi. It has obovate myrtle-like leaves and small sessile acorns.—**Native oak,** in Australia, same as *Australian* ★*oak*.—**New Zealand oak.** (*b*) Same as ★*titoki*. (*c*) Same as ★*tarata*.—**Oak canker, leaf-miner, root-borer.** See ★*canker*, etc.—**Oakroot-gall,** a cynipid gall which occurs on the roots of various species of European oaks, caused by *Andricus trilineatus*.—**Oak-seedling disease.** See ★*disease*. **Oil of oak,** punishment with an oaken stick. [Colloq.]—**Red rot of oak.** See ★*rot*.—**Rock chestnut-oak,** the chestnut-oak.—**Rock-oak.** (*a*) The chestnut-oak, *Quercus Prinus*. (*b*) The mountain white oak, *Q. Douglasii*.—**Rocky Mountain oak,** *Quercus undulata*, the widely diffused scrub-oak of the Rocky Mountain region, especially the slopes and foot-hills, covering vast areas and often forming thickets. It is a low tree, rarely 30 feet high, of the white oak group and serves chiefly for fuel and shelter. Also called *shin-oak*.—**Running white oak, scrub chestnut-oak,** the yellow or chinkapin oak, *Quercus prinoides*.—**Scrub silky oak,** a large tree of the family *Icacinaceæ*, *Chariessa Moorei*, a native of eastern Australia and yielding a close-grained, prettily figured, durable white wood, suitable for making furniture. Also called *maple*.—**Shin-oak.** (*a*) Same as *Rocky Mountain* ★*oak*. (*b*) Same as *Gambel's* ★*oak*. (*c*) The California white oak, *Quercus lobata*.—**Silky oak.** (*b*) Same as *silvery* ★*oak*. See also *Stenocarpus*.—**Silver oak,** *Fremontodendron Californicum*, better known as *California slippery-elm* (which see, under *slippery-elm*).—**Silvery oak,** *Cybele saligna*, an Australian tree which yields a beautifully figured hard red-brown wood, used for making furniture, veneers, and picture-frames. Called also *silky oak*. See *Stenocarpus*.—**Spotted oak.** (*a*) The dyers oak or quercitron, *Quercus velutina*. (*b*) Same as *Texan* ★*oak*. (*c*) The water-oak, *Q. nigra*.—**Swamp chestnut-oak.** Same as *basket-oak* (which see, under *oak*).—**Texan oak, Texan red oak,** *Quercus Texana*, a large tree of the black oak group found throughout most of the Mississippi valley and southern United States. The wood makes valuable lumber.—**Valley-oak,** the California white oak, *Quercus lobata*.—**Water-oak.** (*a*) See *water-oak*. (*b*) The laurel-oak, *Quercus laurifolia*.—**Water white oak,** the swamp white oak, *Quercus lyrata*.—**Western oak, western white oak,** *Quercus Garrayana*. See *white oak*, under *oak*.—**White-leaved oak,** *Quercus hypoleuca*, which has the under surface of the lanceolate leaves covered with a hoary tomentum. It is a small and somewhat rare tree of the southwestern United States and northeastern Mexico.—**White oak.** (*b*) See *Gambel's* ★*oak*. (*c*) See *Durand's* ★*oak*. (*d*) In Australia, a small malvaceous tree, *Lagunaria Patersoni*. See *whitewood*.—**White rot of oak.** See ★*rot*.—**Wild oak,** in the Bahamas, a tall shrub of the spurge family, *Lasiocroton macrophyllus*, with leaves which resemble certain species of oaks.

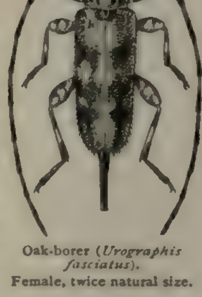
oak-apple, *n.* **2.** In Australia, a cone of any one of several species of *Casuarina*, or she-oak, especially *C. stricta*. The young cones and foliage have an acid taste when chewed, and afford great relief in cases of thirst. See *she-oak* and *Casuarina*.—**Fibrous oak-apple,** an American oak-gall made by the cynipid *Amphibolips coccineæ*. It is a large spherical leaf-gall with a small hollow kernel in the center in which the insect develops. From the central kernel there radiate many fibers.—**Large empty oak-apple,** a large round American cynipid gall, an inch or more in diameter, found commonly on oak-leaves and produced by *Holcaspis inanis*.—**Smaller empty oak-apple,** an American cynipid gall found on the post-oak, measuring three fourths of an inch or less in diameter, and produced by *Holcaspis centricola*.—**Spongy oak-apple,** an American oak-gall made by the cynipid *Amphibolips spongifica*, occurring commonly on both the red and the black oak. It is a round gall in which the space between the kernel and the outer layer is closely filled with a spongy mass.


Fibrous oak-apple.

oak-ball (ōk′bâl), *n.* Same as *nutgall*: used especially of those borne by the California white oak, *Quercus lobata*.

oak-blight (ōk′blīt), *n.* An aphid of the genus *Schizoneura* (*S. querci*), which affects the branches of oak. Also called *woolly aphis of the oak*.

oak-borer (ōk′bōr″ėr), *n.* **1.** The larva of any one of several cossid moths, as *Prionoxystus robiniæ*, *P. macmurtrei*, and *Cossula magnifica*.—**2.** The larva of any one of several buprestid beetles, as *Chrysobothris femorata*.—**3.** The larva of any one of several cerambycid beetles, as *Urographis fasciatus*, *Liopus querci*, and *Xylotrechus colonus*.—**4.** Any one of several species of scolytid beetles, as *Xyleborus celsus* and *Pityophthorus querciperda*.—**5.** The brenthid beetle *Eupsalis minuta*, the curculionid *Magdalis olyra*, and others.


Oak-borer (*Urographis fasciatus*).
Female, twice natural size.

oak-button (ōk′but″n), *n.* An oak-gall. See *gall*^{3}, 1.

oak-caterpillar (ōk′kat″ėr-pil-ạ̈r), *n.* A caterpillar which infests the oak.—**Orange-striped oak-caterpillar,** the larva of an American ceratocampid moth, *Anisota senatoria*.

oak-fly (ōk′flī), *n.* An anglers' name for an undetermined insect and for the artificial fly supposed to resemble it; probably the common European cockchafer, *Melolontha vulgaris*.

oak-gall, *n.*—**Giant oak-gall,** a cynipid gall produced on the twigs and branches of the California white oak by *Andricus californicus*. It is a polythalamous gall and reaches a circumference of 10 or 12 inches.

oaklet (ōk′let), *n.* [*oak* + *-let*.] A small oak-tree. *Tyndall*, Fragments of Sci., II. 24.

oak-manna (ōk′man″ạ̈), *n.* A sweet substance which in warm weather exudes from the upper surface of the leaves of an oak, a variety of *Quercus Robur*, found in Kurdistan.

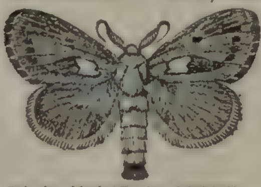
oak-moth (ōk′môth), *n.* The European tortricid moth *Tortrix viridana*, whose larvæ roll the leaves of oak. [Eng.]—**Japanese oak-moth,** a large saturniid moth, *Antheræa yama-mai*, whose larva feeds on oak. See *yama-mai*.—**North China oak-moth,** a large saturniid moth, *Antheræa pernyi*, found in north China. Its larvæ feed on oak-leaves, and their silk is used in the manufacture of fabrics.

oak-pruner (ōk′prö″nėr), *n.* An American cerambycid beetle, *Elaphidion parallelum* or *E. villosum*. Its larvæ bore into twigs of oak and, when approaching full growth, girdle them from within so that they are broken off by the wind. See cut at *Elaphidion*.

oak-scale (ōk′skāl), *n.* Any species of the coccid genus *Kermes*, all of which live on oak. See *kermes*, 2.

oak-silkworm (ōk′silk″wėrm), *n.* Same as *yama-mai* (which see).

oak-slug (ōk′slug), *n.* The larva of an American cochlidiid moth, *Euclea delphinii*. It is spiny, slug-like, and feeds on oak-leaves.


Oak-slug Moth (*Euclea delphinii*).
One and one half times natural size.

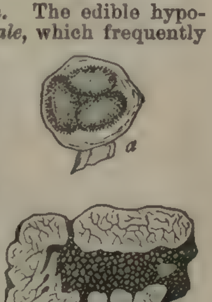
oak-spangle, *n.* **2.** A small cynipid gall, found on the leaves of several species of European oaks, caused by *Neuroterus lenticularis*.

oak-truffle (ōk′truf″l), *n.* The edible hypogean fungus *Tuber brumale*, which frequently is found among the roots of oaks.

oakum, *n.*—**Teased oakum,** oakum that has been picked apart very fine for use in calking.

oakum-boy (ō′kum-boi), *n.* An apprentice to a calker.

oak-weevil (ōk′wē″vl), *n.* A curculionid beetle *Eupsalis minuta*, whose larva bores a cylindrical burrow in the solid wood of white oak.



Oak-truffle (*Tuber brumale*). *a*, cross-section of plant, two thirds natural size; *b*, ascus with three spores, enlarged.

oak-worm (ōk′wėrm), *n.* Any lepidopterous larva which feeds on oak-leaves. More than 100 different species are known to have this habit in the United States, and more than 250 in Europe.—**Orange-striped oak-worm.** Same as *orange-striped* ★*oak-caterpillar*.—**Rosy-striped oak-worm,** the larva of the American ceratocampid moth, *Anisota virginiensis*.—**Spiny oak-worm,** the larva of *Anisota stigma*.

Oamaru (ō-ä-mä-rö′), *n.* [The name of a town on the east coast of South Island, New Zealand.] In *geol.*, a division of the Eocene Tertiary rocks in New Zealand.—**Oamaru stone,** a white granular limestone, extensively quarried as a building-stone at Oamaru, on the east coast of the South Island of New Zealand.

oangium (ō-an′ji-um), *n.*; pl. *oangia* (-ạ̈). In *bot.*, a multicellular organ which produces eggs: same as *archegonium.*

oar^1, *n.*—**Rigged oar,** an oar which ships into a thole-pin, or a becket, or rowlock, at the stern of a boat, and is used both for sculling and for steering.

oarage (ōr′ạj), *n.* [*oar*^{1} + *-age.*] **1.** The use of oars in rowing; rowing.—**2.** Apparatus of the nature of oars, or resembling oars in action. [Rare.]

> He plies along the Empyrean vast
> On th' *oarage* of his wings.
> *R. C. Singleton*, tr. of Virgil, I. 240. *N. E. D.*

oar-feather (ōr′feᴛʜ′ėr), *n.* A rendering of *remex*, the scientific name for a primary or flight-feather.

oar-foot (ōr′fu̇t), *n.* A crustacean of the family *Hippidæ.*

oariopathy (ọ-ā-ri-op′ạ-thi), *n.* [Gr. ᾠάριον, used for NL. *ovarium*, ovary, + πάθος, disease.] Disease of the ovary.

oariotomy (ō-ā-ri-ot′ọ-mi), *n.* [Gr. ᾠάριον, used for NL. *ovarium*, ovary, + -τομια, < ταμεῖν, cut.] Same as *ovariotomy.*

oar-lop (ōr′lop), *n.* A fanciers' name for a breed of rabbits in which the ears stand out at right angles to the head, suggesting a pair of oars.

oar-peg (ōr′peg), *n.* Same as *thole*^{2}, 1.

oarweed, *n.* See *oreweed.*

oary, *a.* **2.** Having oars; equipped with oars. [Rare.]

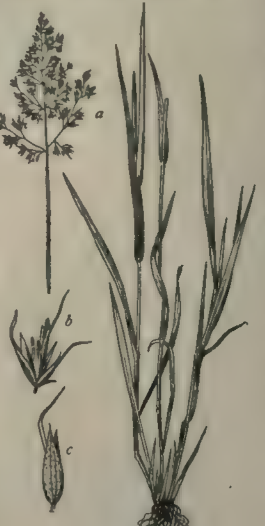
> Haste! Seek the mail-arm'd multitude, by force
> Detain them of thy soothing speech, ere yet
> All launch their *oary* barks into the flood.
> *Cowper*, tr. of Iliad, ii. 193.

oasitic (ō-ạ̈-sit′ik), *a.* [*oasis* + *-it-ic.*] Of or pertaining to, or resembling, an oasis. *N. E. D.*

oat, *n.*—**Animated oat,** in England, the wild oat, *Avena fatua*, so called from the coiling and uncoiling of the awns according as they are dry or wet. The awns are used in making hygrometers and the whole spikelet, with awns and hairy seed, serves as a fly in rustic fishing, whence also the name *fly-oat.* These names are shared by *A. sterilis*, for which see *oat*, 1 (*b*).—**Australian oats.** Same as *rescue-grass.*—**Canadian oats.** Same as *wild rice.*—**Golden oat.** Same as *yellow* ★*oat-grass.*—**Indian oats.** Same as *Indian rice* (*a*) (which see, under *rice*^{1}).—**Oat-field procedure.** See ★*procedure.*—**Rust-proof oats,** a variety of oats particularly resistant to the attack of the fungus *Puccinia coronata*, the oat-rust.—**Sand-oat,** the wild oat, *Avena fatua.*—**Sea-oats.** See *spike-grass* (*c*).—**To feel one's oats,** to be frisky, like a horse that has been well fed; hence, to be exhilarated or expansive. [Slang.]—**Turf-oats,** a variety of the common oat more hardy than usual and stooling very freely: highly esteemed for winter grazing in the southern United States.—**Wild oat.** (*d*) Most properly, *Avena fatua.* In the United States sometimes also the wild rice, *Zizania*; the reed bent-grass, *Calamagrostis cinnoides*; the porcupine-grass, *Stipa spartea*; the feather bunch-grass, *S. viridula*; and the broad-leafed spike-grass, *Uniola latifolia.* In Australia, an indigenous grass, *Bromus arenarius*, growing near the sea-coast, from which good hay can be made.

oat (ōt), *v. t.* [*oat*, *n.*] To feed with oats; feed oats to. *N. E. D.*

oat-grass, *n.*—**American oat-grass,** *Avena Hookeri*, a species resembling the European *A. pratensis*, found on the eastern slopes of the Rocky Mountains. It is useful for grazing where abundant and may deserve cultivation.—**California oat-grass,** *Danthonia Californica*, the largest native *Danthonia* (three feet high), in Wyoming and Montana forming a considerable part of the meadow vegetation at altitudes of from 5,500 to 8,000 feet.—**Downy oat-grass,** *Avena pubescens*, a European species valuable for mowing and pasturage on sandy loams. It is occasionally found in the grain region of the Pacific slope in America.—**Golden oat-grass.** Same as *yellow* ★*oat-grass.*—**Parry's oat-grass,** *Danthonia Parryi.* It resembles the California oat-grass and replaces it farther southward.—**Rocky Mountain oat-grass,** *Danthonia intermedia*, a species occurring with the California oat-grass, but ascending to higher altitudes.—**Tall oat-grass.** (*a*) See *oat-grass*, 2. (*b*) In New South Wales, *Themeda gigantea*, a grass generally growing in tussocks, sending its roots deep and thus able to withstand drought. It yields a large amount of forage in its basal leaves, is suitable for ensiling if cut early, and has the advantage of seeding freely.—**Tennessee oat-grass,** a slender tufted perennial, *Danthonia compressa*, common in hilly country in North Carolina and Tennessee and farther north, forming the bulk of the forage of "balds" or parks.—**Wild oat-grass.** (*a*) See *oat-grass*, 3. The common wild oat-grass, *Danthonia spicata*, ranges from Canada to the Gulf of Mexico. It is a light-colored tufted perennial of thin soils, without marked agricultural value. Also called *white-top* and *old-fog.* (*b*) The wild oat, *Avena fatua.* (*c*) The *Indian grass, Sorghastrum avenaceum.* See *Indian* ★*grass* (*a*). (*d*) Same as *feather* ★*bunch-grass.*—**Yellow oat-grass,** a slender loosely tufted perennial, *Trisetum flavescens*, a native of Europe, northern Africa, and western Asia. In Europe it is highly esteemed as a fodder plant, being valuable for temporary, and still more for permanent, pastures and yielding a good return of hay. It is not well known in the United States.



Yellow Oat-grass
(*Trisetum flavescens*).

a, plant and inflorescence, one fourth natural size; *b*, spikelet, enlarged; *c*, flowering glume, enlarged.

oath, *n.*—**Gospel oath,** an oath, such as that required of witnesses, sworn on the Gospels; a solemn oath.—**Hippocratic oath,** an oath, said to have originated with Hippocrates (460–377 B.C.), to discharge worthily the duties of their calling, taken, in modified form, by medical students upon receiving their medical degree.—**Oath decisory,** or **decision oath,** in *civil law*, an oath taken by one of the parties to an action when the other, conceiving that he had not sufficient proof of the facts upon which his claim was founded, offered to abide by the oath of his adversary as to the matter at issue. The adversary must then either take the oath or refer it back to the party offering it. In case of his refusal to do either, the issue was determined against him.—**Oath ex officio,** in *Eng. law*, an oath by which a member of the clergy accused of crime was formerly allowed to establish his innocence. The term was also applied to the oath of those who were allowed to swear to their belief in his innocence. See *compurgator.*—**Oath in litem,** an oath taken by a plaintiff as to a thing in dispute where other proof is not found.—**Oath of Amnesty,** an oath of loyalty to the Constitution of the United States prescribed by Lincoln's proclamation of amnesty and reconstruction, December 8, 1863. It also pledged support to all acts of Congress passed, and all proclamations made during the Civil War in reference to slaves. Among those exempt from its benefits were civil and diplomatic officers of the Confederacy, the superior officers (above the rank of colonel in the army and above that of lieutenant in the navy) of the Confederate army and navy, and those who left the United States Congress, United States judgeships, or the United States army or navy to support the Confederacy.—**Oath of calumny,** an oath required from a plaintiff to the effect that he had a good and meritorious cause of action and that he was not actuated by unworthy and illegal motives in bringing his suit.—**Oath purgatory,** an oath by which a man purges himself of an offense, and which is sufficient to remove any presumptions of guilt that may exist—for example, for disobedience to a subpœna to serve as a juror.—**Parliamentary oath,** in *Eng. law*, an oath taken by the members of Parliament upon assuming their official duties.—**Suppletory oath.** See *suppletory.*—**Test-oath,** an oath of loyalty to the government; specifically, in the United States, an oath prescribed after the Civil War to candidates for certain offices, in which, in addition to the pledge of loyalty, the affiant declared that he had not participated in or aided or sympathized with the war against the Union. The test oaths of the various States were substantially the same. The Supreme Court pronounced them unconstitutional because *ex post facto.* See also *iron-clad oath* (under *oath*) and ★*Oath of Amnesty.*

oath (ōth or ōᴛʜ), *v.* [ME. *othen, athen*; < *oath*, *n.*] **I.** *trans.* **1**†. To make to take an oath; put to the oath.—**2.** To use as an oath; swear by.—**3.** To call, speak to, or curse with an oath.

II. *intrans.* To swear; use oaths.—**To oath it,** to use oaths.

oat-land (ōt′land), *n.* Land sowed with and bearing a crop of oats.

oat-rust (ōt′rust), *n.* See ★*rust*^{1}.

oat-shell (ōt′shel), *n.* The shell of a small marine mollusk, one of the various species of *Columbella*, used for necklaces. *E. E. Morris*, Austral English.

oat-smut (ōt′smut), *n.* A disease of oats due to the fungus *Ustilago avenæ.*

oat-stone (ōt′stōn), *n.* In *pathol.*, a concretion composed of indigestible fragments of oatmeal; an avenolith.

oaty (ō′ti), *a.* [*oat* + *-y*^{1}.] Of the nature of or full of oats. *N. E. D.* [Rare.]

ob. An abbreviation (*b*) of the Latin *obiter*, incidentally, by the way; (*c*) of *oboe.*

O. B. An abbreviation of NL. *Oratoriæ Baccalaureus*, Bachelor of Oratory.

obambulatory (ob-am′bụ̄-lạ̄-tọ̄-ri), *a.* [*obambulat(e)* + *-ory.*] Ambulatory; continually walking about; itinerant: as, *obambulatory* merchants. [Rare.]

obclude (ob-klöd′), *v. t.*; pret. and pp. *obcluded*, ppr. *obcluding.* [See *occlude.*] To shut off or hide from view. *Proc. Zool. Soc. London*, 1894, p. 434. [Rare.]

obcuneate (ob-kū′nẹ̄-āt), *a.* [*ob-* + *cuneate.*] Inversely cuneate; wedge-shaped, with the thin end at the base.

obe (ōb), *n.* [Gr. ὠβά.] In ancient Laconia, a village; a district; a subdivision of an original phyle or clan.

obedience, *n.*—**Passive obedience.** (*b*) In *theol.*, a term used to comprehend Christ's sufferings of every kind, as distinguished from his active obedience, or perfect performance of the requirements of the moral law. The distinction is considered artificial by most theologians.

obediency (ọ-bē′di-ẹn-si), *n.* Obedience; submission to rule. [Rare.]

> O! what a rent thou makest in my heart!
> The ingrain'd instinct of old reverence,
> The holy habit of *obediency*,
> Must I pluck live asunder from thy name?
> *Coleridge*, tr. of Schiller, Piccolomini, v. 2.

obedientiary (ọ-bē-di-en′shi-ạ̄-ri), *a.* and *n.* [ML. *obedientiarius*, < L. *obedientia*, obedience.] **I.** *a.* Owning allegiance and obedience to one of higher rank.

II. *n.* **1**†. Same as *obedienciary.*—**2.** In a monastery or religious house, the holder of any office under the abbot or superior; also, one charged with any special duty or 'obedience.' *N. E. D.*

obedient-plant (ō-bē′di-ẹnt-plant), *n.* The false dragon's-head, *Physostegia Virginiana.*

Obeliscaria (ob″e-lis-kā′ri-ạ̈), *n.* [NL. (Cassini, 1825), < Gr. ὀβελίσκος, obelisk; doubtless in allusion to the elongated receptacle.] An old generic name, still sometimes used by horticulturists, for one or more of the species of ★*Ratibida* (which see).

obeliskoid (ob-e-lis′koid), *a.* [*obelisk* + *-oid.*] Having the shape of an obelisk; like an obelisk.

> The *obeliskoid* form may itself be regarded as another trace of Egyptian influence on the externals of Mycenean cult. *A. J. Evans*, in Jour. Hellenic Studies, XXI. 173.

obelism (ob′e-lizm), *n.* [*obelus* + *-ism.*] The act of obelizing: the noting of a word as spurious or obsolete by marking it with an obelus.

oberland (G. ō′ber-länt), *n.* [G., < *ober*, upper, + *land*, land.] The high land; highlands: as [*cap.*], the Bernese *Oberland.*

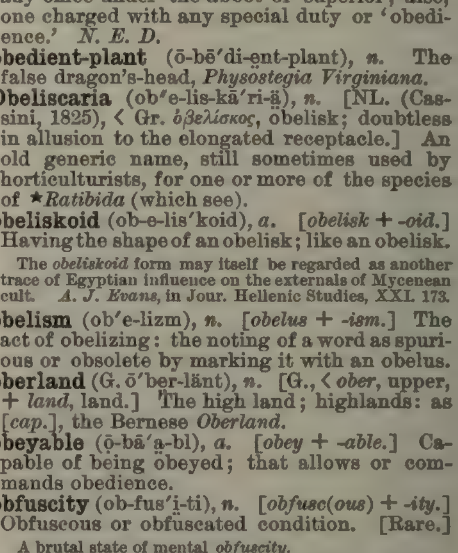
obeyable (ọ-bā′ạ̈-bl), *a.* [*obey* + *-able.*] Capable of being obeyed; that allows or commands obedience.

obfuscity (ob-fus′ị̈-ti), *n.* [*obfusc(ous)* + *-ity.*] Obfuscous or obfuscated condition. [Rare.]

> A brutal state of mental *obfuscity.*
> *J. Wilson*, Noctes Ambrosianæ, IV. 177. *N. E. D.*

obi (ō′bi), *v. t.* [*obi*^{1}, *n.*] To bewitch by the practice of obi; charm for the cure of disease, for revenge, etc.

obispo, *n.* **2.** In Bolivia, Peru, and other parts of Spanish America, the four-horned sheep.



Obispo.

obit, *n.* **4**†. The sinking of a star or planet below the horizon; setting.

obital (ō′bit-ạ̈l), *a.* and *n.* [*obit* + *-al*^{1}.] **I.** *a.* Serving to register or commemorate a death or a memorial service: as, an *obital* book, the *obital* day.

II. *n.* A register of obital days or of deaths; an obituary: as, an English *obital.*

obitual, *a.* **II.** *n.* A register of deaths or of obit days; an obital.

obituarian (ō″bit-ụ̄-ā′ri-ạ̈n), *n.* [ML. *obituarius*, obituary, + *-an.*] An obituarist. [Rare.]

> There is one characteristic story to be told about Robert Louis Stevenson which his *obituarians* have missed, probably because they knew nothing about it. It relates to his first visit to New York. *English Newspaper.*

obituarize (ọ-biṭ'ụ-ā̤-rīz), *v. i.*; pret. and pp. *obituarized*, ppr. *obituarizing*. [*obituar(y)* + *-ize*.] To write an obituary. [Rare.] *N. E. D.*

obj. An abbreviation (*b*) of *objection*; (*c*) of *objectively*.

objectative (ọb-jek'tā-tiv), *a.* [NL. **objectativus*, < L. *objectare*, object.] Given to objecting; fond of making objections. *N. E. D.*

object-ball (ob'jekt-bâl), *n.* In *billiards*, any ball except the striker's: at caroms, distinguished as *first* or *second*.

object-clause (ob'jekt-klâz″), *n.* In *gram.*, a substantive or a substantive clause which stands in the relation of an object of a verb.

objectionable, *a.* **II.** *n.* An objectionable person. [Rare.]

> So be, the whiskified *Objectionable*,
> Unclean, abominable, out-at-heels,
> Became the tutelary Deity
> Of all the Gauri valley villages.
>
> *R. Kipling*, Giffen's Debt, l. 63.

objectional (ọb-jek'shọn-al), *a.* [*objection* + *-al*¹.] **1.** Of the nature of or involving objection. *N. E. D.*—**2.** That can be objected to; objectionable.

objectionist (ọb-jek'shọn-ist), *n.* One who objects; one who raises objections.

objective. **I.** *a.* **5.** In *gram.*: (*b*) Noting the case expressing the subject of the intransitive verb. (*c*) In *Eskimo gram.*, noting the thing possessed. Also ★*intransitive* (which see).—**Objective certainty.** See ★*certainty*.—**Objective spectroscope.** See ★*spectroscope*.

II. *n.*—**Achromatic objective,** a combination of lenses used in optical instruments, as the microscope or telescope, in which chromatic aberration is corrected.—**Protar objectives.** See ★*protar*.

objectivist (ọb-jek'ti-vist), *n.* [*objective* + *-ist*.] One who believes in objectivism.

objectivity, *n.* **2.** In *psychol.*, detachment from oneself; independent existence. See the extract.

> Among the other mental properties of sounds, the *objectivity* and the emotional tinge may be mentioned. The *objectivity* of a tone is a property expressing the degree to which we consider the tone not to belong to ourselves. A tone produced in imagination, as in mentally singing a song, has almost no *objectivity*. . . . Tones actually sung by ourselves are more objective; those sung by others are highly objective, though even here the degree of *objectivity* increases with the strangeness of the singer, the distance, etc.
>
> *Scripture*, Exper. Phonetics, pp. 111, 112.

objectization (ọb-jek-ti-zā'shọn), *n.* [*objectize* + *-ation*.] The action of objectizing, objectifying, or making objective: as, the externalization or *objectization* of one's own feelings.

objectlessly (ob'jekt-les-li), *adv.* In a way that is purposeless.

objectlessness (ob'jekt-les-nes), *n.* The condition of being without object or purpose. *N. E. D.*

object-memory (ob'jekt-mem″ọ̄-ri), *n.* In *psychol.*, the memory of things or objects aroused by the presentation of a verbal stimulus or the occurrence of a verbal idea.

> The learner should make an effort to actively produce the complete idea with its *object-memories* and internal word and not rely on the so-called 'spontaneous' rise of the idea from memory.
>
> *Scripture*, Exper. Phonetics, p. 150.

object-point (ob'jekt-point), *n.* In an apparatus for the drawing of objects on a greatly enlarged scale from microscopic originals, that point in the pantographic system of links at which the microscopic objective is located over the slide or object being observed and reproduced. As the object-point is moved over the original, a tracing-point at the long end of the leverage traces the outline on a scale which gives the desired multiplication of size. *Jour. Roy. Micros. Soc.*, Aug., 1905, p. 509.

object-space (ob'jekt-spās), *n.* In *optics*, a space or region, pertaining to any optical system, every point of which has an image in a corresponding space called the *image-space*.

object-speculum (ob'jekt-spek″ụ̄-lum), *n.* The mirror in a reflecting telescope which receives and reflects the rays proceeding from the object. *N. E. D.*

object-table (ob'jekt-tā″bl), *n.* The stage of a microscope.

> When the record may be cut out, a micrometer *object table* under a microscope may be used.
>
> *Scripture*, Exper. Phonetics, p. 74.

objurgative (ọb-jėr'gạ̄-tiv), *a.* [*objurgate* + *-ive*.] Same as *objurgatory*.

objurgator (ọb-jėr'gạ̄-tọr), *n.* One who objurgates or chides.

objurgatorily (ọb-jėr'gạ̄-tọ̄-ri-li), *adv.* In an objurgatory manner.

objurgatrix (ob-jėr-gā'triks), *n.*; pl. *objurgatrices* (-tri-sēz). [ML., fem. of L. *objurgator*, a chider, scolder. See ★*objurgator*.] In *law*, a common scold.

obl. An abbreviation (*a*) of *oblique*; (*b*) of *oblong*.

oblately (ob-lāt'li), *adv.* In *geom.*, in an oblate manner.

oblational (ob-lā'shọn-ạl), *a.* [*oblation* + *-al*¹.] Relating to or of the nature of an oblation.

oblationary (ob-lā'shọn-ā̤-ri), *a.* and *n.* [*oblation* + *-ary*.] **I.** *a.* Of or pertaining to an oblation; oblational.

II. *n.* In the celebration of the eucharist, the official who accepts the oblations offered by the faithful. He also had a part in the service in the early church, bringing the oblations of bread and wine from the patriarchium to the pontiff celebrating the mass.

oblatory (ob-lā'tọ̄-ri), *a.* [*oblat(ion)* + *-ory*.] Relating to oblations or offerings.

> The Iesuiticall Priests . . . concluded their Masses and *oblatory* Sacrifices, with their prayers for the good successe of their expected hopes.
>
> *Speed*, Hist. Great Britaine, x. 1.

oblatum (ob-lā'tum), *n.*; pl. *oblata* (-tạ̈). [NL. See *oblate*.] An oblate spheroid or ellipsoid.

obligancy (ob'li-gạ̈n-si), *n.* [*obligan(t)* + *-cy*.] The quality of enforcing or obliging, or of being obligatory.

obligate, *a.* **II.** *n.* An obligate parasite. See quotation under *obligate*, *a.*

> It is probable that the intestinal bacteria are not essential to healthy life. The chief value of these *obligates* lies probably in their potential capacity to check the growth and development of harmful bacteria.
>
> *Med. Record*, Aug. 3, 1907, p. 172.

obligation, *n.*—**Imperfect obligations,** obligations which are enjoined by moral law, but which are unenforceable in any legal tribunal.—**Obligation of contract.** See ★*contract*.

obligationary (ob-li-gā'shọn-ạ̄-ri), *a.* [*obligation* + *-ary*.] Pertaining to or containing or expressing an obligation.

obligative, *a.* **2.** In *bot.*, same as *obligate*: applied to parasites and saprophytes. See *obligate* and *obligate parasite*, under *parasite*. *C. MacMillan*, in Minn. Bot. Stud., Bulletin IX. 930.

obligator (ob'li-gạ̄-tọr), *n.* **1.** In *law*, one who binds himself or gives his bond to another. —**2.** One who obliges another.

obligatory, *a.*—**Bill obligatory.** See ★*bill3*.

obliquangular (ob-lēk-ang'gụ̄-lär), *a.* Oblique-angled. *N. E. D.* [Rare.]

oblique. **I.** *a.*—**Oblique strophoid.** See ★*strophoid*.

II. *n.* **2.** In *geom.*, except the perpendicular, any sect from a point to a straight or a plane.

obliquitous (ọb-lik'wị̈-tus), *a.* [*obliquit(y)* + *-ous*.] Exhibiting moral or intellectual obliquity.

obliviscence (ob-li-vis'ẹ̈ns), *n.* [NL. **obliviscentia*, < *obliviscens*, forgetting, ppr. of *oblivisci*, forget: see *oblivion*.] Forgetfulness.

obliviscible (ob-li-vis'i-bl), *a.* [Cf. ★*obliviscence* and *-able*, *-ible*.] Easily forgotten; forgettable. [Rare.]

> That does not exactly strike us as a good reason for including in the anthology the sonnets he wrote about those poets, so *obliviscible*, excepting by himself.
>
> *N. Y. Times*, Sat. Rev., Aug. 12, 1905, p. 526.

Oblong number. See ★*number*.

oblongated (ob'lông-gạ̄-ted), *a.* [*oblong* + *-ate*¹ + *-ed*².] Having greater length than breadth; prolonged.

oblong-elliptical (ob″lông-ẹ̄-lip'ti-kạ̈l), *a.* Having the shape of a long ellipse: used by Ridgway to denote the shape of certain eggs of birds.

oblongish (ob'lông-ish), *a.* [*oblong* + *-ish*¹.] Somewhat longer than wide.

oblongitude (ob-lon'ji-tūd), *n.* [*oblong* + *-itude*, as in *longitude*.] Oblong form. *N. E. D.*

oblongitudinal (ob-lon-ji-tū'di-nạ̈l), *a.* Oblong. *N. E. D.* [Rare.]

oblongum (ob-long'gum), *n.*; pl. *oblonga* (-gạ̈). [See *oblong*.] A prolate ellipsoid.

obloquial (ob-lō'kwi-ạl), *a.* [L. *obloquium*, obloquy, + *-al*¹.] Relating to, or of the nature of, obloquy.

obmutescent (ob-mụ̄-tes'ẹ̈nt), *a.* [L. *obmutescens*, ppr. of *obmutescere*, become mute, < *ob-* + *mutescere*, grow mute, < *mutus*, mute.] Growing mute; wilfully mute; dumb.

obnebulate (ob-neb'ụ̄-lāt), *v. t.*; pret. and pp. *obnebulated*, ppr. *obnebulating*. [*ob-* + L. *nebula*, cloud, + *-ate*².] Same as *obnubilate*.

obnounce (ob-nouns'), *v. i.*; pret. and pp. *obnounced*, ppr. *obnouncing*. [L. *obnuntiare*, < *ob-* + *nuntiare*, tell, announce. See *announce*.] To announce an unfavorable result of the auspices taken with reference to some proposed public action: a sort of veto: said of a Roman magistrate.

> The people . . . offered him, his colleague in vain *obnouncing*, the provinces of the Cisalpine and Illyricum for five years, with an army of three legions.
>
> *Merivale*, Roman Republic, ix.

obnoxiety (ob-nok-sī'e-ti), *n.* [L. *obnoxius*, obnoxious, + *-ety*.] Obnoxiousness. [Rare.]

obnunciate (ob-nun'ṣi-āt), *v. t.*; pret. and pp. *obnunciated*, ppr. *obnunciating*. [L. *obnuntiare* (pp. *-atus*). See ★*obnounce*.] Same as ★*obnounce*.

obnunciation (ob-nun-ṣi-ā'shọ̈n), *n.* [L. *obnuntiatio(n-)*, < *obnuntiare*. See ★*obnounce*.] The announcement of an unfavorable omen by a Roman magistrate; hence the dissolution of the assembly and the rendering void of some public transaction. *Blount*, Glossographia.

obolos (ob'ọ̄-los), *n.* [Gr. ὀβολός. See *obol*.] **1.** Same as *obolus* and *obol*.—**2.** In modern Greek currency, a piece of 5 lepta.

obomegoid (ob-ọ̄-mē'goid), *a.* [*ob-* + *omega* + *-oid*.] Shaped like the Greek capital omega (Ω) reversed (℧). *N. E. D.*

oboz (ọ̄-bōz'), *n.* [Russ. *obózŭ*, *obvozŭ*, a train of loaded wagons or sledges, = OBulg. *obozŭ* (> Rum. *oboz*), baggage, = Pol. *oboz*, an encampment, = OPruss. *abasus*, abbas, wagon; < OBulg. *vezaⁿ*, *vesti*, etc., = L. *vehere*, etc., carry. See *vehicle*, *wagon*, and *weigh*¹.] A wagon-train composed of a considerable number of wagons, each horse being fastened to the wagon in front so as to form a continuous line.

obplacenta (ob-plạ̄-sen'tạ̈), *n.* [*ob-* + *placenta*.] The part of the uterine mucosa which is opposite the mesometrium. It is typically present in the rabbit.

> The contemplation of the described phenomena of the rabbit's *obplacenta*. *Science*, March 29, 1901, p. 494.

obpyramidal (ob-pi-ram'i-dạ̈l), *a.* [*ob-* + *pyramidal*.] Having the form of an inverted pyramid; inversely pyramidal.

obpyriform (ob-pir'i-fôrm), *a.* [*ob-* + L. *pyrus*, prop. *pirus*, pear, + *forma*, form.] Having the form of a pear with its smaller end upward.

obreguin (ob-rā-gēn'), *n.* [Mex. Sp. ?] A substance of fatty and resinous character found in Mexico as an exudation on the twigs of *Alcea rosea*. *Thorpe*, Dict. Applied Chem., III. 1.

obrok (ọ̄-brōk'), *n.* [Russ. *obrókŭ*, a poll-tax, quit-rent, tax, = Pol. *obrok*, provision, pension, etc., = OBulg. *obrokŭ*, a promise, a stipend.] A fine levied on a Russian peasant for absence from his village.

obs. An abbreviation (*b*) of *observation*; (*c*) of *observatory*.

obscurancy (ọb-skū'rạ̈n-si), *n.* [*obscuran(t)* + *-cy*.] The state or character of being obscurant; obscurantism. *N. E. D.* [Rare.]

obscurant, *n.* **II.** *a.* Obscuring or darkening; of the nature of, or characteristic of, an obscurant. [Rare.]

obscurism (ọb-skūr'izm), *n.* [*obscure* + *-ism*.] Same as *obscurantism*.

obsede (ob-sēd'), *v. t.*; pret. and pp. *obseded*, ppr. *obseding*. [F. *obséder*, based on L. *obsidere*, obsess. See *obsess*.] To assail or vex from without, as an evil spirit; obsess. *N. E. D.* [Rare.]

obsequence (ob'sẹ̄-kwẹns), *n.* [L. *obsequentia*, < L. *obsequens*, ppr.: see *obsequent*.] Compliance; obsequiousness. *N. E. D.* [Rare.]

obsequent, *a.* **2.** In *phys. geog.*, the opposite of consequent: said of streams which have grown by headward erosion so as to flow in a direction opposite to the dip of the underlying strata.

> The beheaded stream . . . holds its former course below the divide, but is weakened by the loss of its headwaters; the portion of the stream . . . from the divide on the hard bed to where the subsequent stream . . . intersected it, is reversed. For such reversed streams Davis has proposed the name *obsequent*.
>
> *I. C. Russell*, Rivers of North America, p. 191.

obsequian (ọb-sē'kwi-ạ̈n), *a.* [ML. *obsequium*, > MGr. ὀβσέκουιον, ὀψίκιον, retinue, suite, esp. of the emperor; lit., in L., following, obedience. See *obsequy*, *obsequious*.] Of or pertaining to the retinue (of the Byzantine emperor). See the extract.

> This generous enterprise was defeated by the cowardice or treachery of the troops who, in the new language of the empire, were styled of the *Obsequian* Theme. (Note. In the division of the Themes, or provinces described by Constantine Porphyrogenitus . . . the Obsequium, a Latin appellation of the army and palace, was the fourth in the public order.) *Gibbon*, Decline and Fall, VI. lii.

obsequity (o̤b-sē'kwi-ti), *n.* [*obsequi*(*ous*) + *-ty.*] Obsequiousness. *N. E. D.* [Rare.]

observ, *v.* A simplified spelling of *observe.*

observation, *n.*—**Batten observations.** See ★*batten*². —**Meridian observation.** Same as *meridian altitude of a star* (which see, under *altitude*).—**Pendulum observation.** See ★*pendulum.*—**Zone of observation.** See ★*zone.*

observatorial (ob-zėr-va-tō'ri-a̤l), *a.* [*observatory* + *-al*¹.] Of or characteristic of a scientific observer or of an observatory. *N. E. D.*

observatory, *n.*—**National observatory,** the astronomical observatory of a country, generally situated in the capital city. Washington contains the national observatory of the United States; Paris holds the same for France; Saint Petersburg for Russia; and Greenwich for England.—**Physical observatory,** an observatory designed for the observation of physical, meteorologic, magnetic, or other terrestrial phenomena, and, to some extent, of certain solar phenomena.

observer, *n.* **5.** In *exper. psychol.*, the general term for the subject of a psychological experiment: opposed to *experimenter*, the general term for the person who arranges the conditions of the experiment.

> Some experiments are best performed by oneself on oneself. Most, however, require two persons for their performance: the *observer*, O, who makes the introspection, and the experimenter, E, who handles the instruments and makes the records. *E. B. Titchener*, Exper. Psychol., I. i. xiii.

obsession, *n.* **3.** In *pathol.*, a constant brooding upon any subject, such as the thought of death, until the mind becomes dominated by that one idea.

obsessional (ob-sesh'o̤n-a̤l), *a.* [*obsession* + *-al*¹.] **1.** Of or pertaining to a siege; obsidional.—**2.** Pertaining to or of the nature of obsession.

obsolescently (ob-sọ-les'ẹnt-li), *adv.* In such a way as to be obsolescent, or gradually becoming obsolete.

obsolete, *a.* **3.** In *bot.*, noting an organ which is rudimentary or scarcely apparent.

> The sporophore is *obsolete* when the spore-bearing hyphæ are not sharply distinct from the mycelium. *Encyc. Brit.*, XXVIII. 556.

obstet. An abbreviation (*a*) of *obstetrical;* (*b*) of *obstetrics.*

Obstetric canal. See ★*canal*¹.

Obstetrical chair. See ★*chair.*

obstinacious (ob-sti-nā'shus), *a.* [*obstinate* + *-ious* (after *contumacious*, etc.).] Having an obstinate nature; obstinate. *N. E. D.* [Rare.]

> "Well, I guess, Squire, the old man has been again an *obstinacious* fool. Had I not been as everlasting *obstinacious* as a pine stump, I'd 'a followed your counselling." *Galt*, Lawrie Todd, iv. 6.

obstructant (o̤b-struk'ta̤nt), *n.* [*obstruct* + *-ant.*] That which obstructs.

> The ruptured walls of the interna curling up in the lumen act as an *obstructant* to the current. *Med. Record*, May 30, 1903, p. 884.

obstructivism (o̤b-struk'ti-vizm), *n.* [*obstructive* + *-ism.*] The practice of systematic obstruction.

obt., obdt. [*l. c.* or *cap.*] Abbreviations of *obedient.*

obtainal (o̤b-tā'na̤l), *n.* [*obtain* + *-al*¹.] Obtainment. *N. E. D.* [Rare.]

obtainance (o̤b-tā'na̤ns), *n.* [*obtain* + *-ance.*] Same as ★*obtainal.* [Rare.]

obtrigonal (ob-trig'ọ-na̤l), *a.* [*ob-* + *trigonal.*] Same as *obtriangular.*

obtrigonate (ob-trig'ọ-nāt), *a.* [*ob-* + *trigonate.*] Same as *obtriangular.*

obtunder (ob-tun'dėr), *n.* [*obtund* + *-er*¹.] **1.** Same as *obtundent.*—**2.** Same as *obturator:* an incorrect use.

obturator, *n.* (*d*) In *photog.*, the instantaneous shutter of a camera. (*e*) Anything used to close the orifice of a hollow instrument, such as a speculum or catheter, during its introduction.

> Each instrument has its *obturator*, which is to be used only for the purpose of rounding out the end of the speculum during introduction. *Buck*, Med. Handbook, I. 779.

Obturator fissure. Same as *ilio-ischiadic* ★*fissure.* —**Obturator index.** See ★*index.*—**Obturator notch.** See ★*notch.*

obtusifid (o̤b-tū'si-fid), *a.* [L. *obtusus*, obtuse, + *-fidus*, < *findere*, split.] Divided into obtuse parts.

obtusilinguine (o̤b-tū-si-ling'gwin), *a.* Of or pertaining to the *Obtusilingues.*

obtusipennate (o̤b-tū-si-pen'āt), *a.* [L. *obtusus*, obtuse, + *pennatus*, winged.] Having wings which are obtuse at the apex.

obtusirostrate (o̤b-tū-si-ros'trāt), *a.* [L. *obtusus*, obtuse, + *rostrum*, beak, + *-ate*¹.] **1.** Having an obtuse beak.—**2.** In *entom.*, having a blunt rostrum or proboscis.

O. Bulg. An abbreviation of *Old Bulgarian.*

obumbratory (ob-um'brạ-tọ-ri), *a.* [*obumbrate* + *-ory.*] Overshadowing, darkening, or shading. *N. E. D.*

obvelation (ob-vẹ-lā'sho̤n), *n.* [NL., **obvelatio*(*n-*), < LL. *obvelare*, cover over, < L. *ob-* + *velare*, cover, veil: see *veil, v.*] A concealing; concealment; opposed to *revelation.*

obverse, *n.* **3.** Specifically, in *logic*, the contranominal of the inverse of a proposition.

> If C is D, then A is B, (iii) is the converse of the typical Theorem (i). The contrapositive of the last Theorem, viz.: If A is not B, then C is not D, (iv) is termed the *obverse* of the typical Theorem (i). *Ass'n Improvement of Geom. Teaching*, Plane Geom., [p. 12.

obversion, *n.* **2.** In *logic:* (*b*) The taking of the contranominal of the inverse.

obvert, *v. t.* **2.** In *logic*, to form or take the obverse of (a proposition).

obvertend (ob-vėr'tend), *n.* [L. *obvertendus*, < *obvertere*, turn toward. See *obvert, v.*] In *logic*, the original proposition to be obverted.

obvolution (ob-vọ-lū'sho̤n), *n.* [LL. *obvolutio*(*n-*), < L. *obvolvere*, wrap around. See ★*obvolve.*] A folding around, as of a bandage round a limb; a twist; a fold. *N. E. D.*

obvolutive (ob-vọ-lū'tiv), *a.* [L. *obvolutus*, pp. of *obvolvere*, wrap around, + *-ive.*] Same as *obvolute. Thomas.*

obvolve (ob-volv'), *v. t.*; pret. and pp. *obvolved*, ppr. *obvolving.* [L. *obvolvere*, wrap around, cover all over, < *ob-* + *volvere*, wrap, roll: see *volute.*] **1.** To fold or roll around; cover up by wrapping around; disguise, as an odor.—**2**†. To cause to roll or revolve: as, to *obvolve* the eyeball.

obyism, *n.* Same as *obiism.*

oc. An abbreviation of *ocean.*

Ocapia, *n.* An amended form of *Okapia*, but untenable because antedated. See ★*Okapia.*

Occamistic (ok-a̤-mis'tik), *a.* Pertaining to or of the nature of Occamism.

occasionless (o̤-kā'zho̤n-les), *a.* Without occasion; without ground or reason.

occidentality (ok″si-den-tal'i̤-ti), *n.* [*occidental* + *-ity.*] **1.** The quality of being occidental; the state of being in the west. See *orientality.*—**2.** Westernism; a Western or American trait or characteristic.

> His *occidentalities* had for her the charm of novelty. They affected her taste . . . as something dubiously delightful. *W. S. Mayo*, Never Again, i.

occidentalization (ok-si-den″ta̤l-i-zā'sho̤n), *n.* [*occidentalize* + *-ation.*] The act of imbuing with Occidental or Western thought and peculiarities.

> The *Occidentalization* of Russia proceeded with giant strides in the reign of Catherine. The Imperial dilettante, as our author calls her, wrote comedies and essays. *Athenæum*, Jan. 6, 1906, p. 11.

Occipital eminence, a protuberance in the lateral ventricle of the brain which marks the situation of the occipital fissure.—**Occipital fissure.** Same as *parieto-occipital fissure.*—**Occipital index, operculum, plane.** See ★*index*, etc.—**Occipital segment.** (*b*) The posterior of three principal segments, or sections, into which the skull may be divided, the others being the *frontal* and *parietal segments.* It is composed of the basioccipital, exoccipitals, and infra-occipital.

occipito-anterior (ok-sip″i-tō-an-tē'ri-o̤r), *a.* Having the occiput anterior: noting a position of the fetus in which its occiput is directed toward the anterior abdominal wall of the mother.

occipitobasilar (ok-sip″i-tō-bas'i-lä̤r), *a.* Relating to both the occiput and the base of the skull.

occipitocervical (ok-sip″i-tō-sėr'vi-ka̤l), *a.* Relating to both the back of the head and the neck.

occipito-iliac (ok-sip″i-tō-il'i-ak), *a.* Having the occiput directed to the iliac region: noting a position of the fetus in which its occiput points toward the groin of the mother.

occipitonuchal (ok-sip″i-tọ-nu'ka̤l), *a.* Pertaining to the occiput and the nape; specifically, in *ichth.*, of or pertaining to bony plates on fishes which extend over the back of the head and down over the nape.

> *Occipito-nuchal* shield a little longer than broad, ending in two rounded processes. *Proc. Zool. Soc. London*, 1903, p. 26.

occipitoposterior (ok-sip″i-tō-pos-tē'ri-o̤r), *a.* Having the occiput directed backward: noting a position of the fetus in which its occiput points to the sacrum of the mother.

occipitorostral (ok-sip″i-tō-ros'tra̤l), *a.* Belonging to both occiput and rostrum.

occlusal (o-klö'sa̤l), *a.* [L. *occlusus*, pp. of *occludere*, close up, + *-al*¹.] Same as ★*morsal:* noting the biting or grinding surface of a tooth.

occlusion, *n.* **3.** In *dentistry*, the fitting into each other of the cusps of the opposing teeth in the upper and lower jaws.

> The age, sex, and health of the patient, the character of the *occlusion* or bite, and the force exerted in mastication. *Encyc. Brit.*, XXVII. 418.

Occlusion of gases. See *occlude*, 2.

occult, *v. t.*—**Occulting apparatus,** the apparatus used in lighthouses for rendering the beam of light intermittent, so that it may be possible to distinguish a particular lighthouse from others.

II. *intrans.* To undergo occultation; be hidden or concealed, as a star or the intermittent beam of light from a lighthouse.

> The light *occults* every ten seconds, seven seconds visibility and three seconds' obscuration, the occultations being actuated by a double valve arrangement. *Encyc. Brit.*, XXVI. 464.

occulter (o-kul'tėr), *n.* That which occults: specifically applied to the mechanism or device which, in lighthouses, periodically interrupts or occults the beam of light; also to the device used in heliographic signaling to interrupt or divert the beam of light reflected from the mirror of the heliostat, heliograph, or heliotrope.

> This light shows, instead of one prolonged flash at intervals of one minute, as would be produced by the apparatus in the absence of a gas *occulter*, a group of short flashes varying in number between six and seven. *Encyc. Brit.*, XXX. 256.

occultist, *n.* **II.** *a.* Of or pertaining to occultism; characteristic of, or characterized by, occultism.

> Cabalistic, *occultist*, Indian, and modern spiritualistic ideas and formulas. *Encyc. Brit.*, XXVI. 275.

occultistic (ok-ul-tis'tik), *a.* Pertaining to occultists or to occultism; occultist.

occupancy, *n.*—**Title by occupancy.** See ★*title.*

occupant, *n.*—**General occupant.** In *common law*, when the life tenant, who held an estate, for himself only and not for his heirs, pour auter vie, died, any person was entitled to enter into possession of the estate and to hold it during the life of the cestui que vie. The first person who so entered was called the *general occupant.*

Occupation disease, a disease arising from causes incident to the patient's occupation, as lead-poisoning among painters.

> The many causes of *occupation diseases*, so-called, in which we recognize the introduction into the body chiefly with the inspired air, but also by way of the digestive tract and possibly by way of other mucous surfaces and the skin, of injurious foreign particles, are at present only slightly understood and act not wholly, probably, by increasing susceptibility to bacterial and allied infections, but often through direct chemical and physical malinfluences. *S. Flexner*, in Science, Jan. 24, 1908, p. 128.

occupiable (ok'ụ̄-pī-a̤-bl), *a.* [*occupy* + *-able.*] Capable of being occupied.

ocean-bug (ō'sha̤n-bug), *n.* Any aquatic heteropterous insect of the genus *Halobates* (which see).

ocean-going (ō'sha̤n-gō″ing), *a.* Sea-going; able to meet safely the dangers of ocean navigation.

> The former is an *ocean-going* vessel, and must be prepared to meet all conditions of wind and sea. *Encyc. Brit.*, XXXII. 600.

oceanic, *a.* **4.** [*cap.*] Pertaining to or noting the languages of the Malay-Polynesian group.

oceanid (ō'shẹ̄-a̤-nid), *n.* A marine mollusk, as distinguished from a naiad or fresh-water shell.

ocean-river (ō'sha̤n-riv″ėr), *n.* [Tr. Gr. *'Ωκεανὸς ποταμός* (Homer).] The great river which was formerly supposed to surround the inhabited world. Also called *ocean-stream.*

ocean-stream (ō'sha̤n-strēm), *n.* The great stream formerly supposed to surround the inhabited world. See ★*ocean-river.*

oceanward (ō'sha̤n-wä̤rd), *a.* [*ocean* + *-ward.*] Directed to or toward the ocean: as, an *oceanward* view.

oceanward, oceanwards (ō'sha̤n-wä̤rd, -wä̤rdz), *adv.* [*oceanward, a.*] In the direction of the ocean.

oceanwise (ō'sha̤n-wīz), *adv.* By way of the ocean; appropriately to the ocean.

O. Cel., O. Celt. Abbreviations of *Old Celtic.*

ocellation (os-e-lā'sho̤n), *n.* [*ocellate* + *-ion.*] An eye-shaped marking; an ocellus.

ocelliform (ọ-sel'i-fôrm), *a.* [L. *ocellus*, eye, + *forma*, form.] Resembling an ocellus in shape.

ocelloid (ọ-sel'oid), *a.* [*ocellus* + *-oid.*] Like an ocellus.

och (oċh), *interj.* An Irish form of *O.* See *O*².

ochavo (ọ-chä'vō), *n.* [Sp., < L. *octavus*, eighth: see *octave.*] The half-cuarto of the Spanish monetary system under Ferdinand and Isabella and their successors. Also called *chavo.*

ocher, *n.* 3. A metallic oxid which occurs in the form of an earthy powder or easily crumbled mass: as antimony *ocher*; bismuth *ocher*; tungstic *ocher.*—**Cadmium ocher.** See ★*cadmium.*—**Flowers of ocher**, a local name for barite in certain regions, as the Cartersville district in Georgia, where its presence in the soil is found to indicate the presence of ocher deposits.—**Plumbic ocher**, massicot.—**Spanish ocher**, red ocher (hematite).—**Tantalic ocher**, a brownish oxid of tantalum observed on crystals of tantalite.—**Telluric ocher**, tellurite.—**Uranic ocher**, uraconite.—**Vanadic ocher**, a yellow pulverulent substance observed with the native copper of Lake Superior, inferred to be an oxid of vanadium.—**Vitriol ocher.** Same as ★*glockerite.*—**Yellow ocher**, limonite. See also *yellow ocher*, under *yellow.*

ocher, ochre (ō'kėr), *v. t.*; pret. and pp. *ochered, ochred*, ppr. *ochering, ochring.* [*ocher*, *n.*] To mark or stain with ocher. *N. E. D.*

ocheraceous, ochraceous (ō-kėr-ā'shius, ọ-krā'shius), *a.* [*ocher* + *-aceous.*] Same as *ocherous.*

ocherish (ō'kėr-ish), *a.* Same as *ocherous* or *ochery.*

ochlocrat (ok'lọ-krat), *n.* [*ochlocracy* (*-crat-*).] An upholder of ochlocracy or mob-rule.

ochlophobist (ok-lof'ọ-bist), *n.* [Gr. *ὄχλος*, crowd, + *-φοβος*, -fearing, + *-ist.*] One who fears crowds or mobs; one who dreads the ascendancy of the mob or mob-rule.

ochnaceous (ok-nā'shius), *a.* Belonging to the plant family *Ochnaceæ.*

Ochotona (ok-ọ-tō'nä̤), *n.* [*Ochodona*, the Mongol name for the pika.] The generic name of the small duplicidentate rodents commonly known as pikas or little chief hares: used by Link in 1795. The name *Lagomys*, long used, was originally given to "an unnatural and undefined combination of forms with squat bodies," and is untenable. See cut at *Lagomys.*

Ochotonidæ (ok-ō-ton'i-dē), *n. pl.* [NL., < *Ochotona* + *-idæ.*] A family of small rodents, related to the hares. The name replaces *Lagomyidæ*, and the characters of the group are given under that word. *Oldfield Thomas*, 1897.

ochrodermia (ō-krọ-dėr'mi-ä̤), *n.* [NL., < Gr. *ὠχρός*, pale yellow, + *δέρμα*, skin.] Yellowness of the skin.

ochroite (ok'rọ-īt), *n.* [Gr. *ὠχρός*, pale yellow (see *ocher*), + *-ite*².] A name given by Klaproth in 1803 to the Swedish mineral now called *cerite*, from which he had extracted a new earth (impure oxid of cerium) which he termed *ockroiterde* on account of its ocherous yellow color.

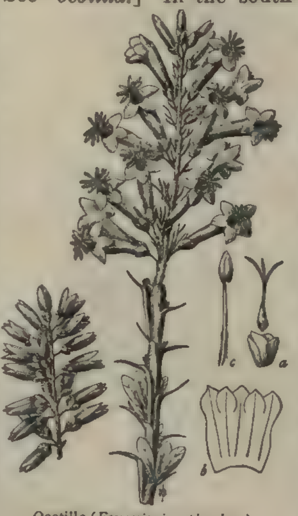
ochronosus (ō-krọ-nō'sus), *n.* [NL., < Gr. *ὠχρός*, pale yellow, + *νόσος*, disease.] A dark yellowish-brown or brownish-black pigmentation of the tissues, especially of the ligaments and other structures which enter into the formation of the joints: in some cases this appearance is associated with alkaptonuria.

o-cm. An abbreviation of *ohm-centimeter.*

ocote (ọ-kō'te), *n.* [Nahuatl *ocotl.*] The common Mexican or candlewood pine (which see, under *pine*). In New Mexico the word is used to designate very resinous pine-wood.

ocotilla (ō-kō-tēl'yä), *n.* [Mex. *ocotilla*, dimin. of *ocote*, < Nahuatl *ocotl*, a pine-tree.] 1. In Mexico, a name applied to resinous splints of pine-wood, especially those of *Pinus Teocote*, used in the market-places and churches as torches and candles.—2. The stems and splints of stems of other plants, especially those of *Fouquieria splendens* and allied species, which contain resin and a peculiar wax, and burn with a fragrant aromatic odor.

ocotillo (ō-kō-tēl'yō), *n.* [Mex. Sp., diminutive of *ocote.* See ★*ocotilla.*] In the southwestern United States, northern Mexico, and Lower California, a name applied to several species of *Fouquieria*, especially to *F. splendens*, a shrub which grows in arid, stony soil, and which has many spiny stems terminating in slender panicles of red flowers. The stems readily take root when cut off and stuck in the ground, and are much used for fences and hedges. The bark contains, in addition to resin, a peculiar wax like that of the Brazilian wax-palm, *Copernicia cerifera.* It is cut into splints, called *ocotillas*, which burn with an aromatic fragrance and are used as candles in illuminating churches and for carrying at funerals.—**Tree-ocotillo**, *Fouquieria Macdougalii*, an arboreus species which grows in the states of Sonora and Sinaloa, Mexico, having pendulous branches and slender panicles of bright red flowers. See *Fouquieria* and ★*Fouquieriaceæ.*



Ocotillo (*Fouquieria splendens*).
a, calice and pistil; *b*, corolla; *c*, stamen.

ocreaceous (ok-rẹ-ā'shius), *a.* In *bot.*, consisting of or resembling ocreæ. See *ocrea*, 1.

octactine (ok-tak'tin), *n.* [Gr. *ὀκτώ*, eight, + *ἀκτίς* (*ἀκτιν-*), ray.] A sponge-spicule having eight regular arms; an octaster.

octad, *n.* II. *a.* Having balance equal to that of eight monad atoms, as platinum in the double chlorid of platinum and potassium (K_2PtCl_6).

octaëteric (ok″ta̤-e-ter'ik), *a.* [*octaëter*(*is*) + *-ic.*] Belonging to or of the nature of the octaëteris.

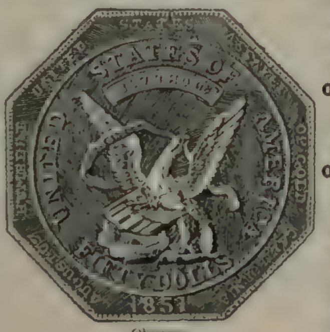
octaëterid (ok″ta̤-e-ter'id), *n.* Same as *octaëteris.*

octagon, *n.* 3. A gold coin of octagonal shape, of the value of 50 dollars, issued in 1851 by the United States assay-office in San Francisco.

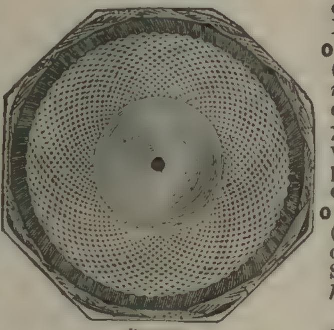
octagram (ok'ta-gram), *n.* [Gr. *ὀκτώ*, eight, + *γράμμα*, a writing.] A polygram of eight sides.

octahedric (ok-ta̤-hē'drik), *a.* Same as *octahedral.*

> In the course of three to four hours *octahedric* crystals of K platinum chloride form a yellow precipitate that presents characteristic microscopic features.
>
> *Buck*, Med. Handbook, VIII. 56.



Obverse.



Reverse.
Octagon. (Size of the original.)

octahedrical (ok-ta̤-hē'dri-ka̤l), *a.* Same as *octahedral.*

octahedrid (ok-ta̤-hē'drid), *n.* and *a.* [Cf. *octahedron.*] I. *n.* The name given by N. Story-Maskelyne ("Crystallography," 1895) to any plane which intersects all the three crystallographic axes.

II. *a.* In *crystal.*, cutting all three axes of coördinates.

octahedrite, *n.* 2. A meteoric iron with octahedral structure, which is usually distinctly marked by the lamellæ of kamacite, tænite, and plessite, seen in the Widmannstättian figures. Most iron meteorites fall in this class. See ★*meteorite.*

octahedroid (ok-ta̤-hē'droid), *n.* [*octahedr*(*on*) + *-oid.*] In *math.*, a four-dimensional body bounded by 8 cubes.

octahedron, *n.*—**Octahedron function.** See ★*function.*—**Three-faced octahedron**, a trisoctahedron.

octahedrous (ok-ta̤-hē'drus), *a.* Same as *octahedral.*

octaid (ok'ta̤-id), *a.* Same as ★*octahedrid.* *W. J. Lewis*, Crystallography, p. 493.

octakishexahedron (ok″ta-kis-hek″sa̤-hē'dro̤n), *n.*; pl. *octakishexahedra* (-drä̤). [Gr. *ὀκτάκις*, eight times, + *ἕξ*, six, + *ἕδρα*, seat, base.] Same as *hexoctahedron.*

octameral (ok-tam'e-ra̤l), *a.* [Gr. *ὀκταμερής*, in eight parts, + *-al*¹.] Same as *octamerous.*

octamerism (ok-tam'ẹ-rizm), *n.* [*octamer*(*ous*) + *-ism.*] The state of having parts or organs in series of eight: used specifically in zoölogy and botany.

octane (ok'tān), *n.* [L. *octo*, eight, + *-ane.*] An oily hydrocarbon, C_8H_{18}, of the paraffin series. It occurs in petroleum, and is one of the chief constituents of ligroin. It boils at 124° C. The name is sometimes given to diisobutyl (C_8H_{18}).

octanol (ok'ta̤-nol), *n.* [*octane* + *-ol.*] Octyl alcohol, $C_8H_{17}.OH$, derived from octane. It is a liquid which boils at 195.5° C. The acetate occurs in the oil of *Heracleum Sphondylium*, and the butyrate in the oils of *H. giganteum* and *Pastinaca sativa.*

octant, *n.* 4. Each of the eight regions into which space is divided by three copunctal noncostraight planes.

octantal (ok-tan'ta̤l), *a.* [*octant* + *-al*¹.] Pertaining to or of the nature of an octant, in any sense.

octarch (ok'tärk), *a.* [Gr. *ὀκτώ*, eight, + *ἀρχή*, origin.] In *bot.*, having eight centripetally developed xylem plates: said of some radial vascular cylinders.

octarticulate (ok-tär-tik'ụ-lạt), *a.* [L. *octo*, eight, + *articulatus*, jointed (see *articulate*).] Having eight joints.

octaseme (ok'ta̤-sēm), *a.* Same as *octasemic.*

octaster (ok-tas'tėr), *n.* A sponge-spicule having eight actines radiating from a center; an octactine.

octastichous (ok-tas'ti-kus), *a.* Same as *octostichous.*

octastyle, *a.* II. *n.* A building having eight columns in front; especially, a Greek or Roman temple having that number of columns in the front row of the portico.

octatomic (ok-ta̤-tom'ik), *a.* [Gr. *ὀκτώ*, eight, + *ἄτομος*, atom, + *-ic.*] Forming molecules which consist of eight similar atoms, as sulphur.

octavalent (ok-tav'a̤-lent), *a.* [Gr. *ὀκτώ*, eight, + E. *valent.*] Having a quantivalence of eight; octad.

octave. I. *n.* 5. In *fencing*, the eighth guard: point low, hand moving to the right.—**Law of octaves.** See ★*law*¹.—**Subcontra octave**, in *acoustics*, the lowest octave of the musical scale, comprising the interval between 16½ and 33 complete vibrations per second.—**Thrust in octave**, in *fencing*, a thrust with the knuckles upward toward the lower part of the opponent's right.

II. *a.* 2. In *music*, noting a tone, note, instrument, organ-stop, etc., whose pitch is an octave above the ordinary pitch or any pitch taken for reference: as, the piccolo is an *octave* flute.

octave-forks (ok'tāv-fôrkz), *n. pl.* In *exper. psychol.*, a pair of tuning-forks tuned to the interval of the octave.

> Try with a pair of *octave-forks* on resonance boxes or held over resonance bottles.
>
> *E. C. Sanford*, Exper. Psychol., p. 67.

octave-stretch (ok'tāv-strech), *n.* The distance the hand stretches in striking an octave on the pianoforte; the distance the ordinary hand is able to stretch.

> Poor gay child, who had not caught
> Yet the *octave-stretch* forlorn
> Of your larger wisdom.
>
> *Mrs. Browning*, Little Mattie, st. 6.

Octavian² (ok-tā'vi-a̤n), *n.* [L. *octavus*, eighth, + *-i-an.*] One of the members of a committee of finance appointed by James VI., in 1595, to control the Royal Exchequer: so called because eight members of the Secret Council composed the committee.

octavic (ok-tā′vik), *a.* [L. *octavus*, eighth, + *-ic.*] Of the eighth order: as, *octavic* curves.

octavina (ok-tạ-vī′nạ̈), *n.* [NL., ‹ L. *octavus*, eighth (octave), + *-ina*^{1}.] A spinet tuned an octave higher than the usual form.

octavo, *n.* **2.** A sheet of paper evenly folded to make eight leaves and sixteen pages.—**3.** A form of type containing eight pages.

octene (ok′tēn), *n.* [L. *octo*, eight, + *-ene.*] An unsaturated oily hydrocarbon, C_8H_{16}, of the ethylene series. It boils at 125° C. Also called *octylene* and *caprylene*.

octibbehite, *n.* See ★*oktibbehite*.

octic (ok′tik), *a.* and *n.* [L. *octo*, eight, + *-ic.*] **I.** *a.* In *math.*, of the eighth degree or order.—**Octic equation, surface.** See ★*equation*, ★*surface*.

II. *n.* An algebraic function or form of the eighth degree; a quantic of the eighth degree.

octile, *n.* **2.** In *statistics*, a group containing one eighth of the total number of observations or of observed objects arranged upon a curve of frequency: usually marked off, as *upper* and *lower octiles*, to right and left of the abscissal points which bound the upper and lower quartiles.

II. *a.* Said of the aspect of two planets distant 45° from one another.

octillionth (ok-til′yọnth), *a.* and *n.* [*octillion* + *-th*^{2}.] **I.** *a.* **1.** The ordinal numeral adjective corresponding to octillion; last in an ordered set of an octillion elements.—**2.** Being one of an octillion all equal: as an *octillionth* part.

II. *n.* The quotient of unity divided by an octillion.

octine (ok′tin), *n.* [L. *octo*, eight, + *-ine*^{2}.] An oily hydrocarbon, C_8H_{14}, of the acetylene series. Two varieties, 1-*octine* and 2-*octine*, are known; they boil at 131–132° C. and 133–134° C. respectively. Also called *caprylidene*.

octingentenary (ok-tin-jen′te-nạ̄-ri), *n.* [L. *octingenti*, eight hundred. Cf. *centenary*.] Same as *octocentenary*.

octoad (ok′tọ̄-ad), *n.* Same as *ogdoad*.

October-flower (ok-tō′bėr-flou″ėr), *n.* One of the jointweeds, *Polygonella polygama*, of the southern United States: so called from its late flowering.

octocarbon (ok-tọ̄-kär′bon), *a.* [L. *octo*, eight, + E. *carbon*.] Containing eight atoms of carbon in the molecule.

octocentennial (ok″tọ̄-sen-ten′i-ạl), *a.* [L. *octo*, eight, + E. *centennial*.] Of or pertaining to eight hundred years, or the eight hundredth anniversary.

octoceratous (ok-tọ̄-ser′a̤-tus), *a.* Same as *octocerous*.

octocosane (ok-tọ̄-kō′sān), *n.* [Gr. ὀκτώ, eight, + (εἰ)κοσ(ι), twenty, + *-ane*.] A solid hydrocarbon, $C_{28}H_{58}$, of the paraffin series. It occurs in paraffin obtained by distillation from petroleum and lignite. It melts at 60° C. and boils at 310–312° C. under 50 millimeters pressure.

octodactylous (ok-tọ̄-dak′ti-lus), *a.* [*octodactyl* + *-ous*.] Same as *octodactyl*.

octodecimal (ok-tọ̄-des′i-ma̤l), *a.* [L. *octo*, eight, + *decem*, ten (*decimus*, tenth), + *-al*^{1}.] **1.** Based on the number eighteen; pertaining to or of the size of an octodecimo.—**2.** In *crystal.*, having eight faces on the middle part and five on each of the two ends.

octodianome (ok-tọ̄-dī′a̤-nōm), *n.* A surface of the fourth degree with eight double points. *Cayley.*

octoduodecimal (ok-tọ̄-dụ̄-ọ̄-des′i-ma̤l), *a.* [L. *octo*, eight, + *duodecim*, twelve, + *-al*^{1}.] Containing the numbers eight and twelve: in *chem.*, applied to a basic or oxysulphate of copper which has its constituents in the proportion $(CuO)_8.SO_3.(H_2O)_{12}$.

octoedral (ok-tọ̄-ē′dra̤l), *a.* Same as *octahedral*.

octogenarianism (ok″tọ̄-je-nā′ri-a̤n-izm), *n.* [*octogenarian* + *-ism*.] The state of being an octogenarian; the characteristics of an octogenarian.

octogenary, *a.* **II.** *n.* An octogenarian. *Webster.*

octoglot (ok′tọ̄-glot), *a.* and *n.* [Gr. ὀκτώ, eight, + γλῶττα, tongue.] **I.** *a.* Written in eight versions, each in a different language, as a book or manuscript; eight-languaged, as a lexicon.

II. *n.* A book or manuscript written in eight tongues.

octogon (ok′tọ̄-gon), *n.* Same as *octagon*.

octogynian (ok-tọ̄-jin′i-a̤n), *a.* Same as *octogynous*.

octohedric (ok-tọ̄-hē′drik), *a.* Same as ★*octahedric*.

octoic (ok-tō′ik), *a.* [L. *octo*, eight, + *-o-* + *-ic.*] Derived from octane. See ★*caprilic*.

octonal, *a.* **2.** Of, consisting of, or pertaining to, eight.

> The mechanical-arithmetical structure of the *octonal* square. *An. Rep. Bur. Am. Ethnol.*, 1897-98, p. 850.

octonaphthene (ok-tọ̄-naf′thēn), *n.* Hexahydrometaxylene, an oily hydrocarbon, C_8H_{16}, found in Caucasian petroleum and in rosin-oil.

octonarian (ok-tọ̄-nā′ri-a̤n), *a.* and *n.* [L. *octonarius*, octonary, + *-an*.] **I.** *a.* In *Lat. pros.*, having eight feet.

II. *n.* Same as *octonarius*.

octonemous (ok-tọ̄-nē′mus), *a.* Same as *octonematous*.

octonion (ok-tō′ni-ọn), *n.* [L. *octoni*, eight each. Cf. *quaternion*.] Same as *biquaternion*, 2. *McAulay.*

Octonum (ok-tō′num), *n.* [NL. (Rafinesque, 1838), ‹ L. *octoni*, eight each. The name alludes to the usually octamerous flowers of the type-species.] A genus of dicotyledonous shrubs of the family *Melastomaceæ*. See *Heterotrichum*, 2.

octopartite (ok-tọ̄-pär′tīt), *a.* [NL. *octopartitus*, ‹ L. *octo*, eight, + *partitus*, divided.] Divided into eight parts; consisting of eight parts, as a contract signed by eight parties in eight copies.

octopartition (ok″tọ̄-pär-tish′ọn), *n.* [L. *octo*, eight, + *partitio(n-)*, division.] The state of being divided into eight parts; the act of so dividing something.

octopean (ok-tọ̄-pē′a̤n), *a.* [Irreg. ‹ *octop(us)* + *-e-an*.] Characteristic of an octopus; like an octopus: in figurative uses.

octopolar (ok-tọ̄-pō′lạ̈r), *a.* [Gr. ὀκτώ, eight, + E. *polar*.] Having eight poles.—**Octopolar dynamo**, an electric generator the field of which has eight poles.—**Octopolar field**, a magnetic field of eight poles: specifically, such a field in certain generators and motors.—**Octopolar generator**, in *elect.*, a generator the field of which has eight poles.

octopolarity (ok″tọ̄-pọ̄-lar′i-ti), *n.* [*octopolar* (‹ Gr. ὀκτώ, eight, + πόλος, pole) + *-ity*.] The condition of having, or involving, eight poles or centers of attraction or repulsion.

Octopus, *n.* Hence—**3.** [*l. c.*; pl. *octopi* (-pī).] Figuratively, any centralized organization which has many branches and secret connections, and thereby maintains an oppressive hold upon the public.

octoreme (ok′tọ̄-rēm), *n.* Same as *octireme*.

octose (ok′tōs), *n.* [L. *octo*, eight, + *-ose*.] A synthetic sugar, $C_8H_{16}O_8$, containing eight carbon atoms in the molecule.

octovalent, *a.* Same as ★*octavalent*.

octozoic (ok-tọ̄-zō′ik), *a.* [Gr. ὀκτώ, eight, + ζῷον, an animal.] Containing eight sporozoites, as the spores of typical gregarines.

octroy (ok-trwo′), *v. t.* [F. *octroyer*, grant; See *octroi, n.*] **1.** To grant as a privilege; authorize; concede, as an exclusive right of trade by a government or company.—**2.** [G. *octroyiren*.] To impose by authority. [Rare.]

octuple, *a.* **2.** Having eight units; specifically, noting a motor-car with eight cylinders which drive a common crank-shaft.—**Octuple press.** See *press*.

octuple (ok′tụ̄-pl), *v. t.*; pret. and pp. *octupled*, ppr. *octupling*. [*octuple, a.*] To multiply by eight; increase eightfold.

octuplex (ok′tụ̄-pleks), *a.* and *n.* [NL., ‹ *octo*, eight, + *plicare*, fold.] **I.** *a.* Eightfold; specifically, of or pertaining to a device or system for sending eight simultaneous telegraphic messages over a single wire.

II. *n.* In *teleg.*, an eightfold system; a system permitting of the simultaneous transmission of eight messages over one wire.

octuplex (ok′tụ̄-pleks), *v. t.* [*octuplex, a.*] In *teleg.*, to adjust or arrange (a telegraphic system) for the simultaneous sending of eight messages.

octuply (ok′tụ̄-pli), *adv.* [Cf. ★*octuplex*.] Eightfold; so as to be eight times multiplied.

ocular. **I.** *a.*—**Ocular quadrangle, spot.** See ★*quadrangle*, ★*spot*.

II. *n.* **2**†. Something which is conveyed to the mind through actual sight.—**3.** The eye. [Humorous.]—**4.** In *Echinoidea*, an ocular plate.—**Achromatic ocular**, in *optics*, an eyepiece corrected for chromatic aberration.—**Micrometer ocular.** Same as *ocular* ★*micrometer*.—**Orthoscopic ocular.** See *Kellner's* ★*eyepiece*.

ocularist (ok′ụ̄-la̤-rist), *n.* [*ocular* + *-ist*.] A manufacturer of artificial eyes. *N. E. D.*

ocularium (ok-ụ̄-lā′ri-um), *n.*; pl. *ocularia* (-ạ̈). [ML., neut. of *ocularius*, of the eye. See *oculary*.] Same as *œillère*.

oculocephalic (ok″ụ̄-lọ̄-se-fal′ik), *a.* Belonging to the eyes and the head.

oculofacial (ok″ụ̄-lọ̄-fā′sha̤l), *a.* [L. *oculus*, eye, + *facies*, face, + *-al*^{1}.] Relating to both the eyes and the face: noting especially a form of paralysis involving these parts.

Oculomotor nucleus. See ★*nucleus*.

oculonasal (ok″ụ̄-lọ̄-nā′za̤l), *a.* [L. *oculus*, eye, + *nasus*, nose, + *-al*^{1}.] Relating to both the eye and the nose.

oculopupilary (ok″ụ̄-lọ̄-pū′pi-lạ̄-ri), *a.* [L. *oculus*, eye, + *pupilla*, pupil, + *-ary*.] Relating to the pupil of the eye.

oculospinal (ok″ụ̄-lọ̄-spī′nal), *a.* [L. *oculus*, eye, + *spina*, spine, + *-al*^{1}.] Same as *ciliospinal*.

oculus, *n.* **3.** In *arch.*, a circular window, usually a small one without tracery or other special subdivision; also an opening at the summit of a dome-shaped vault.

ocupod (ok′ụ̄-pod), *a.* and *n.* Same as ★*ocypode*.

Ocyanthias (ō-sī-an′thi-as), *n.* [NL., ‹ Gr. ὠκύς, swift, + NL. *Anthias*, a generic name.] A genus of serranoid fishes found in the Caribbean Sea.

ocypode (os′i-pōd), *a.* and *n.* [See *Ocypoda*.] **I.** *a.* Of or belonging to the family *Ocypodidæ*.

II. *n.* A crab of the family *Ocypodidæ*.

Ocyurus (ō-sī-ū′rus), *n.* [NL., ‹ Gr. ὠκύς, swift, + οὐρά, tail.] A genus of fishes, of the family *Lutianidæ*, found from Florida to Brazil.

od, *a.* A simplified spelling of *odd*.

O. D. An abbreviation (*a*) of the Latin *oculus dexter*, right eye; (*b*) of *Old Dutch*; (*c*) of *Official Document*.

oda^3 (ō′dạ̈), *n.* [Also *odah*; ‹ Turk. Ar. *ōda*, *ōdah*, a room, chamber, office, bureau.] A room in an Eastern harem; also the occupants of such a room. See *odalisk*.

O. Dan. An abbreviation of *Old Danish*.

odd. **I.** *a.*—**Odd number.** See ★*number*.—**Odd permutation.** See ★*permutation*.

II. *n.* Something that is numerically odd. In *golf*, 'an odd,' 'two odds,' etc., per hole is the handicap given to a weaker opponent by deducting one, two, etc., strokes from his total for every hole. To have played the 'odd' is to have played one stroke more than one's opponent. If one's opponent has played one stroke more, that is, the 'odd,' one's next stroke is the 'like'; if two strokes more, one's next stroke will be 'one off two'; if three more, 'one off three'; and so on.—**Thirteen and the odd.** Same as *humbug* ★*whist*.

odd-horse (od′hôrs), *n.* Same as ★*odd-man-out*.

odd-man-out (od″man-out′), *n.* The person singled out, as by tossing a coin or in some similar way, from among a number to perform some special act or service; also, the mode of selection itself.

odd-man-wins (od″man-winz′), *n.* A gambling game in which the one of three persons tossing coins who has a different result from the other two wins.

odds, *n. pl.*—**Game at odds.** See ★*game*^{1}.—**Long odds.** (*b*) In *golf*, the situation when a player has to play a stroke more than his opponent who is much nearer the hole.

odd-side (od′sīd), *n.* In *founding*, a part of a mold made similar to a false-part, but used in casting instead of being broken up; a part of a mold actually used in making a casting from a pattern which is not parted. It is the drag in which the pattern is bedded.

ode^1, *n.*—**Choral ode.** See ★*choral*.

Odinist (ō′din-ist), *n.* [*Odin* + *-ist*.] One who worshiped Odin. *N. E. D.*

odinite (ō′din-īt), *n.* [G. *odinit* (Chelius, 1892), ‹ *Odin*, for *Odenwald*, Germany, + *-ite*^{2}.] In *petrog.*, an aphanitic porphyry, with few small phenocrysts of labradorite and augite in a ground-mass of feldspar prisms and needles of hornblende.

odmyl (od′mil), *n.* [Gr. ὀδμή, smell, + *-yl*.] The supposed radical, C_4H_{10}, of odmyl sulphid, a volatile oil which is obtained by distilling oleic acid, olive-oil, and other oils with sulphur. It is now believed to be butyl mercaptan ($C_4H_9.SH$).

Odocoileus (ō-dọ-koi'lẹ-us), *n.* [NL., ‹ Gr. *ὀδούς*, a tooth, + *κοῖλος*, hollowed.] The generic name for the American deer of which the Virginia deer is a typical example. The name was given by Rafinesque in 1832 to a premolar, supposed by him to belong to an extinct species, found in a cave near Carlisle, Pennsylvania. The spelling has been amended to *Odocœlus* by Sclater, and *Odontocoileus* by Elliot, but according to commonly accepted rules the original spelling stands.

odograph (ō'dọ-gráf), *n.* 1. Same as *hodograph*.—2. An odometer or pedometer.

odology (ọ-dol'ọ-ji), *n.* [*od*^{3} + *-ology*.] The so-called science of the hypothetical force called *od*. See *od*^{3}.

odont. An abbreviation of *odontology*.

odontagra (ō-don-tag'rä̤), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *ἄγρα*, a catching.] Toothache of supposed rheumatic or gouty origin.

odontinoid (ō-don'ti-noid), *n.* [*odont-ic* + *-ine*^{1} + *-oid*.] An osseous tumor which resembles a tooth in its composition.

odontist (ọ-don'tist), *n.* [Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *-ist*.] A dentist. *N. E. D.* [Rare.]

odontitis (ō-don-tī'tis), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *-itis*.] Inflammation of the tooth-pulp.

odontocetous (ọ-don-tọ-sē'tus), *a.* [*odontocete* + *-ous*.] Same as *odontocete*.

Odontochile (ọ-don-tọ-kī'lē), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *χεῖλος*, lip.] A genus of proparian trilobites having the general structure of ★*Dalmanites* (which see). It occurs in the Upper Silurian and Lower Devonian rocks.

odontochirurgical (ọ-don"tọ-kī-rėr'ji-kạl), *a.* [Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *χειρουργία*, surgery, + *-ical*.] Relating to dental operations.

odontoclast (ọ-don'tọ-klast), *n.* [Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *κλαστός*, ‹ *κλᾶν*, break.] One of the cells which bring about the absorption of the root of a deciduous tooth.

odontodynia (ọ-don-tọ-din'i-ä̤), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *ὀδύνη*, ache.] Toothache.

Odontogenic fibers. See ★*fiber*^{1}.

Odontognathus (ō-don-tog'nạ-thus), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *γνάθος*, jaw.] A genus of clupeoid fishes found in the tropical waters of America.

odontographic (ọ-don-tọ-graf'ik), *a.* and *n.* **I.** *a.* Pertaining to an odontograph or to odontography.

II. *n.* A curve which has been laid out by the use of an odontograph.

odontographically (ọ-don-tọ-graf'i-kạl-i), *adv.* By means of an odontograph.

Odontoid bone, the odontoid process of the axis when free, as in many reptiles. The odontoid process is the centrum of the atlas and when free represents to some extent the primitive or original condition.

odontolith (ọ-don'tọ-lith), *n.* [Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *λίθος*, stone.] 1. A calculus of the tooth-pulp.—2. Same as *tartar*^{1}, 2.

odontonecrosis (ọ-don"tọ-nek-rō'sis), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + NL. *necrosis*.] Extensive caries or loss of vitality of the greater part of a tooth.

odontoperiosteum (ọ-don"tọ-per-i-os'tẹ-um), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *περί*, around, + *ὀστέον*, bone.] Same as ★*periodontium*.

odontoplerosis (ọ-don"tọ-plẹ-rō'sis), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), bone, + *πλήρωσις*, filling.] The process of plugging or filling a tooth-cavity.

Odontopteryx (ō-don-top'tẹ-riks), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *πτέρυξ*, wing.] A genus of fossil birds from the London clay (Lower Eocene) of England, having tooth-like projections on the mandible and believed to be related to the gannets (*Steganopodes*).

Odontopyxis (ọ-don-tọ-pik'sis), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *πυξίς*, box.] A genus of fishes of the family *Agonidæ*, which inhabit the Pacific ocean along the coast of the United States.

odontorrhagia (ō-don-tọ-rā'ji-ä̤), *n.* [NL., ‹ Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *-ραγια*, ‹ *ῥηγνύναι*, burst.] Profuse bleeding from the socket of an extracted tooth.

odontoscope (ọ-don'tọ-skōp), *n.* [Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *σκοπεῖν*, view.] A small mirror, attached at an angle to a long handle, used in the examination of the teeth.

odontotherapy (ō-don-tọ-ther'ạ-pi), *n.* [Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *θεραπεία*, medical treatment.] The medical care of the teeth; dental medicine.

odontothrypsis (ō-don-tọ-thrip'sis), *n.* [Gr. *ὀδούς* (*ὀδοντ-*), tooth, + *θρύψις*, a breaking into small pieces.] Wearing away of the teeth by use.

odoom, *n.* See ★*odum*.

odophone (ō'dọ-fōn), *n.* [L. *od*(*or*), odor, + Gr. *φωνή*, sound.] A scale or gamut of scents.

> These [tinctures] are sometimes made upon a quasi-scientific basis, namely, that of the *odophone* or gamut of odours of the late Dr. Septimus Piesse.
> *Encyc. Brit.*, XVIII. 525.

odorate, *a.* **II.** *n.* A perfume-giving substance; a substance that diffuses odor.

odorimeter (ō-dọ-rim'e-tėr), *n.* [L. *odor*, smell, + Gr. *μέτρον*, measure.] An instrument for measuring and recording the objective intensity of olfactory stimuli: opposed to and correlated with *olfactometer*. *Amer. Jour. Psychol.*, X. 85.

odorimetry (ō-dọ-rim'e-tri), *n.* [*odorimeter* + *-y*^{3}.] The science which is concerned with the objective measurement of olfactory stimuli: correlated with *photometry* and ★*phonometry*. *Amer. Jour. Psychol.*, X. 85.

odorine (ō'dọr-in), *n.* [L. *odor*, smell, + *-ine*^{2}.] In *chem.*, a volatile liquid of oily consistence and basic character obtained by Unverdorben from bone-oil. It appears to have been picoline in an impure state.

odorize (ō'dọr-īz), *v. t.*; pret. and pp. *odorized*, ppr. *odorizing*. [*odor* + *-ize*.] To impart an odor to; scent.

> They have a wide use . . . in *odorizing* and flavoring.
> *Buck*, Med. Handbook, I. 103.

odorosity (ō-dọ-ros'i-ti), *n.* [*odorous* (*-os-*) + *-ity*.] Same as *odorousness*.

odor-tube (ō'dọr-tūb), *n.* In *exper. psychol.*, a glass tube lined with a tube composed of some solid odoriferous substance; the stimulus-tube of the Zwaardemaker dry olfactometer. *E. C. Sanford*, Exper. Psychol., p. 50.

odum (ō-döm'), *n.* [Native name in the Gold Coast.] Same as ★*iroko*. Sometimes written *odoom*.

odylist (ō'di-list), *n.* [*odyl* + *-ist*.] One who believes in odylism.

odylize (ō'di-līz), *v. t.*; pret. and pp. *odylized*, ppr. *odylizing*. [*odyl* + *-ize*.] To affect by means of odyl or od.

odynerid (od-i-nē'rid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Odyneridæ*.

II. *a.* Having the characters of or belonging to the family *Odyneridæ*. See *Odynerus*.

odynometer (od-i-nom'e-tėr), *n.* [Gr. *ὀδύνη*, pain, + *μέτρον*, measure.] A measurer or recorder of pain; an algometer.

> But we have no *odynometer*, and cannot tell whether, when one person bears pain better than another, he is bearing . . . the same amount and quality of pain.
> *Daily News* (London), Dec. 23, 1893.

odynometrical (od"i-nọ-met'ri-kạl), *a.* [*odynometer* + *-ical*.] Algometrical; pertaining to the use of the odynometer, or to the measurement of pain.

> As yet we have no . . . good *odynometrical* resources, to test and measure pain.
> *J. M. Duncan*, Lect. on the Diseases of Women, iii.

odynophobia (od"i-nọ-fō'bi-ä̤), *n.* [Gr. *ὀδύνη*, pain, + *-φοβια*, ‹ *φοβεῖν*, fear.] A morbid dread of pain.

Odyssean (od-i-sē'an), *a.* [L. *Odyssēa*, ‹ Gr. *'Οδύσσεια*, Odyssey.] Relating to or having the characteristics of Homer's 'Odyssey.'

œciomania (ē"si-ọ-mā'ni-ä̤), *n.* [Gr. *οἰκίον*, dim. of *οἶκος*, house, + *μανία*, madness.] Monomania in relation to household affairs.

Œcological distribution, embryology, morphology, physiology. See *plant* ★*œcology*.—**Œcological optimum.** See ★*optimum*.—**Œcological phytogeography**, that branch of botany which studies the distribution of plants in the light of their adaptations to life under specific local conditions, that is, of heat, water, soil-composition and -texture, light, animal agency, etc. It accordingly is interested in vegetation, rather than flora (see ★*vegetation*, 4), and is thus opposed to floristic phytogeography. As the latter requires taxonomy, so this continually uses plant œcology (see *plant* ★*œcology*). Since the œcological characters of plants are not coincident with the morphological, it makes only an ancillary use of taxonomic classification and forms for itself œcological classes, based either upon the relation of the individual to its environment (see ★*hydrophyte*, 2, ★*mesophyte*, 1, *tropophyte*, and ★*xerophyte*) or upon the aggregation of individuals according to law (see ★*association*, 4, *plant* ★*association*, and *plant* ★*formation*). Historically, œcological phytogeography dates from Humboldt (1806, 1807), who organized the study of vegetation, characterizing different landscapes by their dominant species, and (the truly œcological feature) recognized heat as the prime factor governing plant distribution (see *floral* ★*zones*). De Candolle (1820) recognized the œcological point of view, but only projectively. Grisebach (1838) wrote in the spirit of Humboldt and introduced the term *formation*. Thurmann (1849) made an explicit distinction between the flora and the vegetation of a country. Darwin brought in a new era by calling attention to the adaptations of organisms and their struggles together for existence. Grisebach, Drude, and others now made important contributions, and Warming (1895) gave a fresh impulse by organizing the results of previous work and by recognizing water content as the basis of association; while Schimper (1898) distinguished *physical* from *physiological* water and analyzed thoroughly the conditions determining the distribution of plants in the large. In America work in this line has been initiated by C. MacMillan, F. V. Coville, C. H. Merriam, R. Pound, F. E. Clements, C. Mohr, H. C. Cowles, T. H. Kearney, and others.

œcologist, ecologist (ẹ-kol'ọ-jist), *n.* [*œcology, ecology*, + *-ist*.] One who studies or is versed in œcology, ethology, or bionomics.

> Whether with the *œcologist*, we regard the organism in relation to the world, or with the physiologist as a wonderful complex of vital energies, the two branches have this in common, that both studies fix their attention, not on stuffed animals, butterflies in cases, or even microscopical sections of the animal or plant body—all of which relate to the framework of life—but on life itself.
> *Smithsonian Rep.*, 1893, p. 439.

œcology, *n.*—**Economic œcology**, the science of the adaptations of plants and animals to human interests. *C. MacMillan*.—**Geographic œcology**, that division of œcological phytogeography which relates to the *climatic formations* (so termed by Schimper). See ★*formation*, 5. This term was proposed by H. C. Cowles, who would also restrict the term *œcological plant geography* to this application.—**Physiographic œcology**, that part of œcological phytogeography which relates to the more local plant formations, the edaphic formations of Schimper. (See ★*formation*, 5.) *H. C. Cowles*.—**Plant œcology**, the science of the adaptation of plants to life under particular environing conditions, whether physical or biological. Plant œcology presupposes and interacts with plant physiology (physiological botany), the science of the life-process as such, considered in its various phases, including the reproductive function and so the capacity of variation. Similarly, œcology presupposes morphology, the descriptive knowledge of the transformations which are passed through by ideal types in the process of adjustment to conditions. Œcology completes these sciences by pointing out the correlations of organic forms and the life-process operating through them, with the determining environment. Œcology, if it does not presuppose, at least finds indispensable, taxonomy—the classification of plants upon the basis of morphology. Œcology is not in itself geographical, since it studies the effects not of local environment but of particular kinds of environment. But as soon as the plant covering of particular areas is interpreted according to adaptations we have ★*œcological phytogeography* (which see). See also ★*paleoœcology*. See *œcology*.

œcoparasite (ē-kọ-par'ạ-sīt), *n.* [Gr. *οἶκος*, house, + E. *parasite*.] Any specialized parasitic fungus which is able to infect its proper host under normal conditions: applied by Salmon to certain *Erysiphaceæ*. Compare ★*xenoparasite*.

> In a recent paper, E. S. Salmon described methods of culture in which he wounded, or otherwise injured, a host plant hitherto immune to the fungus, and thus rendered it liable to infection. For such a case he proposes the terms xenoparasite and xenoparisitism. In the case of the specialized fungus on its proper host under normal conditions, he uses the terms *œcoparasite* and œcoparasitism.
> *Jour. Roy. Micros. Soc.*, April, 1905, p. 219.

œcoparasitism (ē-kọ-par'ạ-sī-tizm), *n.* [*œcoparasite* + *-ism*.] The particular form of parasitism due to an œcoparasite. See ★*œcoparasite*.

œcophobia (ē-kọ-fō'bi-ä̤), *n.* [Gr. *οἶκος*, home, + *-φοβια* ‹ *φέβεσθαι*, fear.] Morbid aversion to the home. Also written *ecophobia* and *oicophobia*. *G. S. Hall*, Adolescence, I. 291.

œcotone, *n.* See ★*ecotone*.

œcumene, *n.* See ★*ecumene*.

œcus (ē'kus), *n.*; pl. *œci* (-sī). [L., ‹ Gr. *οἶκος*, a house, a hall, a room.] In *Rom. archæol.*, a room in a large dwelling. The word occurs in Vitruvius and Pliny, in ways that have suggested to modern writers the idea that it had a technical meaning; but it was merely the Greek word transferred.

œdagus (ed'ạ-gus), *n.*; pl. *œdagi* (-jī). [NL.] The penis of an insect. Also written *œdeagus* and *ædeagus*.

œdematin (ẹ-dem'ạ-tin), *n.* [Gr. *οἴδημα*(*τ-*), swelling, + *-in*^{2}.] In *cytol.*, the nuclear ground-substance, or substance of which the microsomes or granulæ of the karyoplasm are supposed to consist. *Reinke*, 1893.

œdemerid (ẹ-dem'ẹ-rid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Œdemeridæ*.

II. *a.* Having the characters of or belonging to the coleopterous family *Œdemeridæ*.

œdemic, edemic (ẹ-dem′ik), *a.* [*œdema* + *-ic.* The correct form would be *œdematic.*] Same as *edematous.*

> An atmosphere containing one half part per thousand sulphureted hydrogen produces death with cramps and *œdemic* inflammation of the lungs.
> *Science*, April 15, 1904, p. 633.

Œdipean (ed-i-pē′ạn), *a.* [Irreg. ‹ *Œdipus* + *-ean.*] Of or pertaining to or resembling Œdipus: used in allusion to the story of his solving the riddle proposed by the Sphinx. The right adjective would be *Œdipodean.*

œdogoniaceous (ē″dọ-gọ-ni-ā′shius), *a.* Of or pertaining to the green alga *Œdogonium;* belonging to the family *Œdogoniaceæ.*

œgopsid (ẹ-gop′sid), *n.* and *a.* Same as *oigopsid.*

Œgopsida (ẹ-gop′si-dạ̈), *n. pl.* Same as *Oigopsidæ.* The group includes the families *Ommatostrephidæ, Onycoteuthidæ, Chiroteuthidæ,* and *Cranchiidæ.*

œil-de-bœuf, *n.* **2.** Same as ★*bull's-eye,* 16.

oellacherite (ė′laċh-ẹr-īt), *n.* [*Oellacher* (see def.) + *-ite*².] A variety of muscovite containing several per cent. of baryta. The original, analyzed by Oellacher, was from the Pfitschthal, Tyrol.

œnanthine (ẹ-nan′thin), *n.* [See *œnanthin.*] Same as ★*heptine.*

œnanthylene (ē-nan′thi-lēn), *n.* [*œnanthyl* + *-ene.*] An oily unsaturated hydrocarbon, $CH_3(CH_2)_4.CH{:}CH_2$, of the ethylene series, made by the action of heated lime on chloroheptane. It boils at 98–99° C. Also called *normal* 6-*heptylene.*

œnanthylidene (ē-nan-thil′i-dēn), *n.* [*œnanthyl* + *-id*¹ + *-ene.*] Same as ★*heptine.*

Oeningen stage. See ★*stage.*

Oeningian (ė-ning′gi-an), *a.* [G. *Oening*(*en*) (see def.) + *-ian.*] Of or pertaining to the Oeningen stage, or to its rocks and fossils. See ★*stage.*

œnocarpol (ē-nọ-kär′pol), *n.* [Gr. *οἶνος,* wine, + *καρπός,* fruit, + *-ol.*] A crystalline triacid alcohol, $C_{26}H_{39}(OH)_3$, occurring as the palmitate in grape-skins.

œnocyan (ē-nọ-sī′an), *n.* Same as ★*œnocyanin.*

œnocyanin (ē-nọ-sī′ạ-nin), *n.* [Gr. *οἶνος,* wine, + *κύανος,* blue, + *-in*².] The coloring-matter of black grapes and red wines. It is produced by the oxidation, and probably also hydration, of a substance in the green grapes. Also called *œnolin. Sadtler,* Handbook of Indust. Chem., p. 203.

œnocyte (ē′nọ-sīt), *n.* [Gr. *οἶνος,* wine, + *κύτος,* a hollow (a cell).] One of the large succulent cells of unknown function, which arise in metameric clusters from the ectoderm of the insect embryo and migrate into the body-cavity, where they remain in contact with the fat-body or tracheæ. The œnocytes are often of a wine-yellow color; hence the name. *Wielowiejski,* in Jour. Roy. Micros. Soc., Oct., 1904, p. 527.

œnocytic (ē-nọ-sit′ik), *a.* [*œnocyte* + *-ic.*] Pertaining to or of the nature of œnocytes.

œnogallic (ē-nọ-gal′ik), *a.* [Gr. *οἶνος,* wine, + E. *gallic*².] Noting an acid, a derivative of gallic acid said to occur in wines.

œnoglucose (ē-nọ-glö′kōs), *n.* [Gr. *οἶνος,* wine, + E. *glucose.*] A trade-name of a good grade of starch sugar used, with raisins, in France, in the manufacture of factitious wine.

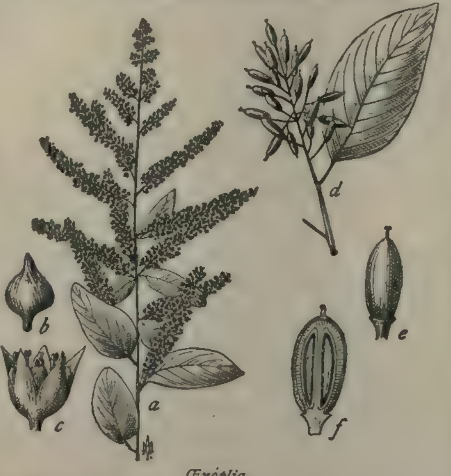
œnolin (ē′nọ-lin), *n.* [Gr. *οἶνος,* wine, + *-ol* + *-in*².] Same as ★*œnocyanin.*

œnologist (ẹ-nol′ọ-jist), *n.* [*œnolog*(*y*) + *-ist.*] One who is interested in the study of wines; a connoisseur of wines.

œnomaniac (ē-nọ-mā′ni-ak), *n.* [Gr. *οἶνος,* wine, + *μανία,* madness, + *-ac.*] One who has a mania for wine; a dipsomaniac.

œnophobist (ē-nof′ọ-bist), *n.* [Gr. *οἶνος,* wine, + *-φοβια,* ‹ *φοβεῖν,* fear, + *-ist.*] One who fears wine, that is, its use.

Œnoplia (ẹ-nō′pli-ạ̈), *n.* [NL. (established in 1819 by Roemer and Schlutes, from a section name proposed by Persoon in 1805), emended *Œnoplea,* given as ‹ Gr. *οἶνος,* wine, + *πλέως* (*πλέα*), full. The allusion is to the drunken (contradictory) descriptions by various authors.] A genus of climbing shrubs, rarely trees, of the family *Rhamnaceæ.* The leaves are deciduous, alternate, slender, petiolate, and entire, or nearly so; the fruit is a small berry-like drupe with a 2-celled stone; and the flowers are inconspicuous, 5-merous, and in terminal, usually leafy, panicles. The common varieties are tender ornamental climbing shrubs and are used for covering trellis-work in sunny positions. There are about 12 species in eastern Asia, North America, and eastern Africa, the most common of which in cultivation are *Œ. scandens* (*Rhamnus scandens* of Hill), known as the supple-jack, and *Œ. racemosa* (*Berchemia racemosa* of Siebold and Zuccarini).



Œnóplia.
a, Œnoplia racemosa; b, bud; *c,* flower; *d, Œnoplia scandens; e,* a fruit; *f,* section of a fruit.

œnopoetic (ē″nọ-pō-et′ik), *a.* [Gr. *οἶνος,* wine, + *ποιητικός,* ‹ *ποιεῖν,* make.] Relating to wine-making.

œnotannin (ē-nọ-tan′in), *n.* [Gr. *οἶνος,* wine, + E. *tannin.*] A mixture of gallotannic acid, quercitin, and a third unidentified body. The mixture is found in red wine, and was formerly supposed to be a definite compound.

Œnotheraceæ (ē″nọ-thẹ̄-rā′sẹ̄-ē), *n. pl.* [NL. (Drude, 1879), ‹ *Œnothera* + *-aceæ.*] A family of dicotyledonous choripetalous plants, of the order *Myrtales,* typified by the genus *Œnothera:* the evening-primrose family. It is the same as the *Onagraceæ* of Dumortier, still used by most authors, although *Onagra,* upon which the name is based, has no systematic standing. See *Onagraceæ* and *Œnothera.*

œnothionic (ē″nọ-thī-on′ik), *a.* [Gr. *οἶνος,* wine, + *θεῖον,* sulphur, + *-ic.*] Same as ★*ethylsulphuric.*

œnoxidase (ē-nok′si-dās), *n.* [Gr. *οἶνος,* wine, + E. *oxid* + *-ase.*] An oxidizing ferment occurring in spoiled wine: supposedly identical with laccase.

oeoe (ō′ạ-ō-ạ), *n.* The stormy petrel of the Sandwich Islands, *Oceanodroma castro.*

oersted (ėr′sted), *n.* [H. C. *Oersted,* a Danish physicist.] In *elect.,* the unit of magnetic reluctance.

> Theoretically the unit of reluctance is that of a cubic centimeter of a . . . vacuum, but to all intents and purposes, for practical work at least, the magnetic reluctance of a cubic centimeter of all non-magnetic materials . . . is the same as that of an air-pump vacuum. This unit of reluctance is called the "*oersted*" and is symbolized by the script letter, $\mathscr{R}$.
> *Elect. World and Engin.,* June 13, 1903, p. 1010.

oerstedite (ėr′sted-īt), *n.* [G. *oerstedit,* named after H. C. *Oersted,* a Danish physicist.] A mineral from Arendal in Norway, which appears to be zircon altered by hydration.

œsar, *n.* See ★*ås.*

oese (ė′zẹ), *n.* [G. *oese, öse,* a loop, link, hoop.] In *bacteriol.,* a platinum wire loop used for making cultures.

Oesel zone. See ★*zone.*

œsophagoblast, *n.* See ★*esophagoblast.*

œsophagomalacia (ẹ-sof″ạ-gọ-ma-lā′si-ạ̈), *n.* [NL., ‹ Gr. *οἰσοφάγος,* gullet, + *μαλακία,* softness.] Pathological softening of the wall of the esophagus.

œsophagoplasty, œsophagoscopic, œsophagoscopy, œsophagospasm, œsophagostomy, œsophagotome. See ★*esophagoplasty,* etc.

œstriasis (es-trī′ạ-sis), *n.* [NL., ‹ Gr. *οἶστρος,* gadfly, + *-iasis.*] Any infection with fly-larvæ of the family *Œstridæ;* in particular, the 'snotty nose' of sheep, due to the presence of *Œstrus ovis* in the nasal passages: a more restricted term than ★*myiasis.*

œstrid (es′trid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Œstridæ.*

II. *a.* Having the characters of or belonging to the family *Œstridæ.*

œstroid (es′troid), *a.* [Gr. *οἶστρος,* gadfly, + *εἶδος,* form.] Resembling or pertaining to bot-flies of the genus *Œstrus.*

œstromania (es-trọ-mā′ni-ạ̈), *n.* [Gr. *οἰστρομανία,* a frenzy, ‹ *οἶστρος,* vehement impulse, + *μανία,* madness.] Same as *nymphomania.*

œstrous (es′trus), *a.* [*œstr*(*us*) + *-ous.*] **1.** Relating to œstruation.—**2.** Relating to an œstrus or gadfly.—**Œstrous cycle,** the complete period of sexual desire in female mammals comprising the commencement or procœstrum, climax or œstrus, and decline or metœstrum.

œstrus, *n.* **4.** The climax or height of the period of sexual desire in female mammals. This is preceded by the procœstrum and followed by the metœstrum.

Oettel's apparatus. See ★*apparatus.*

œuvre (ėv′r), *n.* [F., a work: see *ure, manœuver.*] Work or a work, especially of a writer, musician, or artist.

> The technical execution of these canvases, the treatment of landscape in the former, would lead the writer to place them some years farther on still in the *œuvre* of the master. *C. Phillips,* in Portfolio, July, 1898, p. 66.

Of., Off. [*l. c.* or *cap.*] Abbreviations (*a*) of *official;* (*b*) of *officinal.*

O. F. An abbreviation (*b*) of *Odd Fellow* or *Odd Fellows;* (*c*) in *mineral.,* of *oxidizing flame.*

off, *prep.*—**Off the wind.** A vessel is said to *sail off the wind,* when the latter is abaft the beam: opposed to *on the wind,* which has reference to a breeze forward of the beam. When a vessel sails off the wind, she sails *free;* but when a vessel sails on the wind, she sails *close-hauled.*—**One off two, one off three,** in *golf,* expressions used to indicate the state of the game at different stages as regards one's own play and the play of one's opponent. When one's opponent has played three strokes more, one's next stroke is *one off three.* If it is one's turn to play again, one plays *one off two,* and so on.

off, *a.*—**Off grade of oil,** a trade-name for cotton-seed oil of an inferior quality due to bad seed, mustiness, etc.

Off. An abbreviation. See ★*Of.*

offage (ôf′āj), *n.* [*off* + *-age.*] Waste; rubbish; anything thrown off or away, as of no value.

off-break (ôf′brāk), *n.* In *cricket,* a ball which after it has pitched alters its course, or twists, as viewed by the bowler, from left to right: such a ball is said to 'break from the off.'

off-color (ôf′kul″ọr), *a.* **1.** Not of standard coloration; differing from the shade or pattern of color considered as characteristic. The term is generally applied to domesticated animals.—**2.** Somewhat improper or indecent. [Colloq.]

off-colored (ôf′kul″ọ̈rd), *a.* Same as ★*off-color,* 1.

> We elected to take in their place, if I may be permitted to use a seeming contradiction of terms, that bete noir to breeders of rival breeds—*off-colored,* scurred or horned Aberdeen-Angus grade steers.
> *Rep. Kansas State Board Agr.,* 1901–02, p. 339.

off-come, *n.* **2.** Outcome; the way something 'comes off'; good or ill result.—**3**†. In *arith.,* the product of multiplication.—**4**†. The finish of an argument; the conclusion.

off-drive (ôf′drīv), *v. t.;* pret. *off-drove,* pp. *off-driven,* ppr. *off-driving.* In *cricket,* to strike (a ball), usually a half volley, forcibly, so as to send (it) somewhere on the off-side, in front of point.

off-drive (ôf′drīv), *n.* In *cricket,* a powerful stroke by which an over-pitched ball is hit somewhere on the off-side, in front of point.

offendable (ọ-fen′dạ-bl), *a.* [*offend* + *-able.*] Capable of taking offense; liable to be angry or displeased.

offendedly (ọ-fen′ded-li), *adv.* In a manner showing that one is offended.

offense, *n.*—**Divisible offense,** in *law,* an offense in the commission of which two or more acts are done each of which is, by itself, a crime.—**Major offense,** in *criminal law,* the greater of two crimes which are joined, as murder and assault.—**Summary offense,** a trivial offense against the law, which may be dealt with promptly and without the formality of a jury trial.

offenseful (ọ-fens′fụl), *a.* [*offense* + *-ful.*] Causing offense; offensive; full of offenses.

> So then it seems your most *offenceful* act
> Was mutually committed?
> *Shak.,* M. for M., ii. 3.

offertorial (of-ėr-tō′ri-ạl), *a.* [*offertory* + *-al*¹.] Pertaining to, received or used in, an offertory. *N. E. D.* [Rare.]

off-falling (ôf′fâ″ling), *n.* That which falls off, as blossoms from a tree; also, the state of falling off: as, an *off-falling* in attendance; an *off-falling* in health.

offg. An abbreviation of *officiating.*

off-gas (ôf′gas), *n.* Chimney gas; waste gas; a product of combustion which is given off from a fire or process and is to be removed.

off-go (ôf′gō), *n.* A start; a going off.

off-grade (ôf′grād), *a.* Of inferior quality, or below a commercially recognized standard of quality: as, *off-grade* cotton-seed oil.

office, *n.*— **Front office,** police headquarters. [Thieves' cant.]

> No one knows absolutely how many guns there are in New York; the *Front Office* itself could not tell for a certainty the number of first-class thieves who are on the streets at this moment; but it is a generally accepted fact among the guns themselves that every day in the week there are enough grafters in the city to people a good-sized county-seat.
> *Josiah Flynt*, in McClure's Mag., April, 1901, p. 571.

Offices of the Virgin, that part of the Roman Catholic ritual which relates to the Virgin Mary; also a book containing such service.

officer, *n.*— **Chief officer.** See ⋆*chief.*— **Chief petty officer,** the highest rating for enlisted men in the United States navy, equivalent to sergeant-major in the army. Chief petty officers are designated according to their specialty, as: chief master-at-arms, chief boatswains' mates, chief quartermasters, chief machinists' mates, chief electricians, chief carpenters' mates, chief yeomen, hospital stewards, band-masters, etc.— **First officer,** the officer of a merchant vessel next in rank to the captain; the first mate.— **Gun-room officer.** See *steerage* ⋆*officer.* — **Marriage officer.** See ⋆*marriage.*— **Navigating officer.** Same as *navigator*, 1.— **Steerage officer,** an officer of junior rank in the United States navy, quartered in the steerage. In the British navy, the equivalent term is *gun-room officer.*

> Ensigns, not watch and division officers, second lieutenants in the Marine Corps not in command of the detachment, pay officers having the rank of ensign not heads of departments, midshipmen, and clerks shall occupy the steerage. *U. S. Navy Regulations*, Art. 1111.

officer-bush (of′i-sėr-bu̇sh), *n.* Same as ⋆*officer-plant.* See ⋆*Christmas-bush.*

officer-plant (of′i-sėr-plant), *n.* The Australian Christmas-bush, *Ceratopetalum gummiferum*: so called from its bright red appearance. See ⋆*Christmas-bush.*

officership (of′i-sėr-ship), *n.* [*officer* + *-ship.*] The whole body of officers; also, the status of an officer. *N. E. D.*

official, *a.* 4. In *pharm.*, authorized by the pharmacopœia of some country or countries: as, an *official* drug; an *official* preparation. In this sense recent, displacing the broader term *officinal.* *U. S. Dispensatory.*

officiarian (o̤-fish-i-ā′ri-an), *a.* [L. *officium*, duty, + *-ary* + *-an.*] One who makes duty the principle of ethics. *J. Grote*, Moral Ideals, p. 126. *N. E. D.*

officiary, *a.* II. *n.* 1. An official: as, one of the state *officiaries.*— 2. Officers of an organization collectively; an official body.— 3. A division of a Highland estate in charge of 'a ground officer.' *N. E. D.*

officiation (o̤-fish-i-ā′sho̤n), *n.* [*officiate* + *-ion.*] The performance of any act or ceremony by the proper officers; also, the time or term during which this performance continues.

officinally (o̤-fis′i-nal-i), *adv.* 1. In an officinal manner; according to officinal or prescribed use. Specifically — 2. In *phar.*, in accordance with the directions of the pharmacopœia.

offing, *n.*— **To keep a good offing,** to keep well off from the land.

offishness (ôf′ish-nes), *n.* Disposition to be offish; unapproachableness: implying the inclination to take offense readily.

off-load (ôf′lōd), *v. t.* and *i.* To unload.

> "Ubique" means "Entrain at once for Grootdefeatfontein!"
> "Ubique" means "*Off-load* your guns"— at midnight in the rain!
> *Kipling*, Ubique (motto of Royal Artillery).

> Every march meant dragging the donkeys one by one through several swamps or streams, *off-loading* on one side and carrying the loads through to load up again on the other. *Geog. Jour.* (R. G. S.), XVIII. 69.

off-lying (ôf′lī-ing), *a.* Lying at a distance; lying away from the main, central, or important part; lying off, as a ship off a coast.

offprint (ôf′print), *v. t.* To print off; print separately (an article or paper which is first printed as part of a periodical or other miscellany). Compare ⋆*deprint, v.*

off-put (ôf′pu̇t), *n.* A putting aside; the act of putting off, in any sense.

offretite (of′re-tīt), *n.* [Named after Professor *Offret* of Lyons.] A hydrous silicate of aluminium, potassium, and calcium occurring in minute colorless or white hexagonal prisms, also in hemispherical forms: found in the basalt of Mont Simiouse, France.

offscape (ôf′skāp), *n.* [Also *offskip*; *off* + (*land*)*scape*, (*land*)*skip.*] The background of a landscape; in *landscape-gardening*, that part of the landscape which lies beyond the property that is to be improved: an old term now coming again into use. The landscape-garden proper comprises the domain over which the artist has immediate jurisdiction and control; the offscape is the outlying scenery, with which his own work should articulate.

offscour (ôf′skour), *v. t.* To scour off, literally or figuratively.

offset, *v. t.* 2. In *mech.*, to bend so as to bring the axis out of line, but parallel to its original direction: said of a pipe, bar, rod, or shaft.— 3. To build with an offset: as, to *offset* the second story wall four inches.— 4. To transfer, by negligence (the moist or undried ink of a newly printed sheet upon the face of an overlying or facing sheet).

offset, *n.* 11. In *iron ship-building*, an abrupt deviation to one side of the general line of a bar, as an angle-bar, designed to enable it to fit over a part projecting above the surface against which the bar is fitted.

offsetting, *n.* 2. The stain which is sometimes caused upon the back of a sheet by the colored or printed matter on the sheet which is placed against it.

> If the water colors have been properly applied there is no fear of *offsetting* on the backs of the sheets.
> *S. R. Koehler*, in Smithsonian Rep. (Nat. Mus.), 1892, [p. 225.

offset-vise (ôf′set-vīs″), *n.* A bench-vise having one jaw longer than the other.

offtake, *n.* 3. A suction; an opening or pipe through which a fluid is drawn off.— 4. A taking off; specifically, a taking of goods off the market by purchase; the amount or value of goods thus taken off the market; a deduction.

> *Off-takes*, all deductions retained from men's wages for house-rent, house-coal, doctor's fees, tool-sharpening, etc.
> *Labour Com. Glossary.* N. E. D.

ofidian, *a.* and *n.* An amended spelling of *ophidian.*

O. F. M. An abbreviation of *Order of Friars Minor.*

O. Fris. An abbreviation of *Old Frisian.*

ofthalmic, ofthalmy. Amended spellings of *ophthalmic, ophthalmy.*

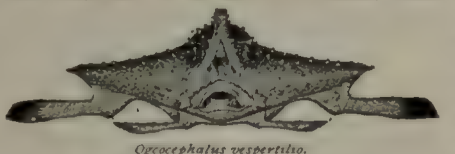
oftly (ôft′li), *adv.* Frequently.

> When you see a face there — that is
> Not the old familiar one,—
> Will you *oftly*
> Murmur softly,
> 'Here, ye watched me morn and e'en,
> Sweetest eyes, were ever seen!'
> *Mrs. Browning*, Catarina to Camoens, st. 12.

O. G. An abbreviation of *Outside Guard* or *Guardian.*

O. Gael. An abbreviation of *Old Gaelic.*

Ogcocephalus (og-ko̤-sef′a̤-lus), *n.* [NL., < Gr. ὄγκος, barb of an arrow, + κεφαλή, head.] A genus of fishes of the family *Ogcocephalidæ*, found in tropical America.



Ogcocephalus vespertilio.
(From Bulletin 47, U. S. Nat. Museum.)

ogdohedral (og-do̤-hē′dra̤l), *a.* [Gr. ὀγδοάς, eight, + ἕδρα, seat, base, + *-al*[1].] Noting a class of crystals of which the hemimorphic trigonal pyramid is the characteristic form. See ⋆*symmetry*, 6.

ogi (ō′gē), *n.* [Jap. *ogi.* The flat screen fan is called *uchiwa.*] In Japan, a folding-fan, in distinction from the flat screen fan, *uchiwa.* See the extract.

> The *ogi* is composed of sticks varying in number. The inside limbs seldom reach to the top of the fan faces, so as to enable the whole to adhere firmly when closed; and the outer frame sticks are purposely made to incurve slightly. This is a marked peculiarity of Japanese folding fans, and it is the means of particularising them among the productions of other nations.
> *C. M. Salwey*, Fans of Japan, p. 26.

Ogilbia (ō-gil′bi-ä̤), *n.* [NL., named after J. D. *Ogilby*, an Australian ichthyologist.] A genus of brotuloid fishes which inhabit tropical shores of America.

ogi otoshi (ō′gē̤ o̤-tō′shē̤). [Jap.; *ogi*, fan, *otoshi*, a dropping, a falling, a trap.] A Japanese game in which a fan with bells is set on a stand and the players sitting around endeavor to hit this target with other fans thrown in a peculiar way.

ogival, *a.* 2. Resembling in shape a pointed arch.— 3. In *ordnance*, noting the form of longitudinal section of the head of modern projectiles. The radius of the ogive is from 2 to 3 calibers.

ogive, *n.* II. *a.* Ogival.

> It is cylindrical in form, with an *ogive* nose and a nearly hemispherical stern.
> *Sci. Amer.*, Jan. 16, 1904, p. 44.

Ogygia (o̤-jij′i-ä̤), *n.* [NL., < Gr. Ὠγύγης, Ogyges, a legendary king of remote antiquity. See *Ogygian.*] A genus of Silurian opisthoparian trilobites with cephalon and pygidium of subequal size, glabella lobed, and thoracic segments with grooved pleuræ.

oha-wai (ō-hä-wī′), *n.* [Hawaiian *oha-wai*, < *oha*, a stick for catching birds, + *wai*, a liquid.] In the Hawaiian Islands, a general name for plants of the genus *Clermontia*, belonging to the family *Campanulaceæ.* They yield a milky latex which is used by the natives as bird-lime. *Clermontia macrocarpa* bears fruit about the size of a crab-apple, which, though insipid, is eaten by the natives.

ohelo (ō-hā′lō), *n.* [Hawaiian name.] The Hawaiian huckleberry, *Vaccinium reticulatum*, a low shrub found in the high mountains of several islands of the group, covering large open tracts in some places. The shining fleshy berry, though astringent, is not unpleasant to the taste, and makes a good preserve. It is the principal food of the mountain wild goose. It was formerly used as a propitiatory offering to the fire-goddess Pele, and is still celebrated in the songs of the natives.

ohelo-kai (ō-hā′lō-kī), *n.* [Hawaiian *ohelo* + *kai*, sea.] Same as ⋆*aeae.*

ohia (ō-hē′ä̤), *n.* [Hawaiian.] One of several trees, but particularly the Malay apple, *Caryophyllus Malaccensis.* (See *Malay apple*, under *Malay.*) It is often called *ohia-ai* (edible ohia), in distinction from *ohia-lehua* (flowering ohia), *Metrosideros polymorpha*, a related tree. See ⋆*lehua.*

Ohi pottery. See ⋆*pottery.*

ohm, *n.*— **Legal ohm,** a practical unit of electrical resistance defined by the Electrical Congress in Paris (1884) as the resistance of a column of mercury 106 centimeters long and one square millimeter in cross-section. The legal ohm was subsequently supplanted by the international ohm, which was more nearly an exact multiple of the absolute unit.— **New ohm,** the practical unit of resistance adopted by the British Board of Trade and defined as equal to 1.01358 British Association units.— **Reichsanstalt ohm,** the practical unit of resistance adopted by the Physikalish-Technische Reichsanstalt in Charlottenburg. It is represented by the resistance at 0°C. of a column of pure mercury 106.3 centimeters long and weighing 14.4521 grams. Same as *international ohm.* — **True ohm.** Same as *theoretical* or *absolute ohm.* See *ohm.*

ohmage (ō′mā̤j), *n.* Electrical resistance expressed in ohms as the unit.

ohm-centimeter (ōm′sen″ti-mē-tėr), *n.* A practical unit of resistivity or specific resistance equal to one ohm of resistance per centimeter of length in a conductor of one square centimeter cross-section.

Ohmic drop, in an electric circuit, fall of potential due to resistance.— **Ohmic heat.** See *irreversible* ⋆*heat* (6).

ohm-inch (ōm′inch), *n.* A unit used in comparing the conductivity of wires having the same length but differing in diameter; the product of the resistance per unit length and the cross-section of a conductor in square inches.

ohm-mile (ōm′mīl), *n.* A standard of electrical conductivity: thus, the conductivity of a metal may be given by the weight of an ohm-mile, that is, the weight of a wire which is one mile long and has a resistance of one ohm.

O. H. M. S. An abbreviation of *On His* (or *Her*) *Majesty's Service.*

oho (ō-hō′), *interj.* [*O*[2] + *ho*[1]; compare *aha*, etc.] Oh! ha! aha!: an exclamation expressing a somewhat scornful surprise, a taunt, a self-congratulatory exultation, or a bantering address.

> "*Oho!*" thought Mr. Hardie, "he comes with a proposal: I'll hear it, anyway." *C. Reade*, Hard Cash, xxv.

O. Ice., O. Icel. Abbreviations of *Old Icelandic.*

oïdioid (ō-id′i-oid), *a.* [*Oïdium* + *-oid.*] Resembling or pertaining to *Oïdium*, a genus of fungi.

oïdiomycosis (ọ-id″i-ō-mī-kō′sis), *n.* [NL. *Oïdium*, + E. *mycosis*.] Infection with some form of *Oïdium*.

> Thus far there have been reported forty-two cases of blastomycosis or blastomycotic dermatitis, of which thirty-two were local and ten disseminated. Of coccidioidal granuloma or *oïdiomycosis* there have been eighteen cases reported. *Jour. Med. Research*, May, 1907, p. 246.

oïdiospore (ọ-id′i-ọ-spōr), *n.* [NL. *Oïdium* + Gr. *σπορά*, seed (spore).] Same as ★*oïdium*, 2.

Oïdium, *n.* 2. [*l. c.*] In *bot.*, one of a considerable chain of conidia.—**Oïdium albicans**, the thrush-fungus.

oikofugic (oi-kọ-fū′jik), *a.* [Gr. *οἶκος*, a house, + L. *fugere*, flee.] Relating to or characterized by the desire to travel, migrate, play truant, etc.: opposed to ★*oikotropic*. [Rare.]

> These two opposite instincts, which we may dub oikotropic and *oikofugic*, between which the soul oscillates especially in youth, suggest again atavistic psychic stratifications, and also a once earlier pubescence. *G. S. Hall*, Adolescence, II. 382.

oikomania (oi′kọ-mā″ni-ạ̈), *n.* Same as ★*œciomania*.

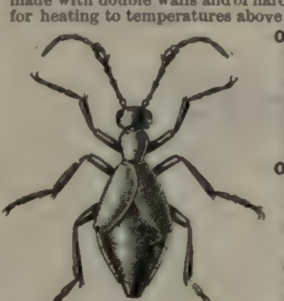
oikotropic (oi-kọ-trop′ik), *a.* [Gr. *οἶκος*, a home, + *τροπή*, a turning, < *τρέπειν*, turn.] Relating to or characterized by love of home, nostalgia, etc.: opposed to ★*oikofugic*. *G. S. Hall*, Adolescence, II. 382. [Rare.]

oil, *n.*—**Acajou oil.** See ★*acajou*^{2}.—**Alizarin-oil.** Same as *Turkey-red* ★*oil*.—**Anda-assu oil.** Same as *oil of anda*. See *Joannesia*.—**Banana-oil**, a commercial name for amyl-acetate, a liquid which possesses a pungent odor resembling that of bananas. It is used as a solvent in the preparation of pyroxylin lacquers and for mixing bronze and aluminium paints.—**Basswood-oil**, a fixed oil contained in basswood (*Tilia Americana*) and extracted by means of volatile solvents.—**Blackfish-oil**, animal oil, obtained probably from more than one species of whale and dolphin, used in tanning and finishing leather.—**Blown-oil**, a fixed oil, usually of vegetable origin, as linseed-, rape-, or corn-oil, which has been partly oxidized by heating it and blowing air through it. This increases the density and viscosity and augments its value as a lubricant when mixed with other oils.—**Blue oil**, the residual oil from the destructive distillation of Scotch bituminous shale after the portion known as paraffin-oil has been cooled and thereby the 'crude scale' (solid paraffin wax) has separated out. It exhibits marked bluish fluorescence.—**Bottlenose-oil.** (*b*) Same as *doegling* ★*oil*.—**Bread-oil**, an orange-red fluorescent oil, probably mineral in origin, said to be used by bakers to smear over oven plates.—**Butter-oil.** See ★*cotton-seed oil*.—**Calamus-oil**, an ethereal oil obtained from the root of *Acorus calamus*. It consists chiefly of two terpenes which boil at 158–159° and 255–258° C., respectively.—**Camelina-oil**, an oil obtained from the seeds of *Myagrum sativum*, used to burn and as a slow-drying vehicle for paints. See *camelina*^{3}, 2.—**Caparrapi-oil**, an oil obtained from *Nectandra caparrapi*, recommended as a substitute for copaiba balsam.—**Cascarilla-oil**, a yellow to greenish volatile oil, of aromatic odor and taste, obtained by distillation from cascarilla, the bark of *Croton Eleuteria*: sometimes used in perfumery.—**Cassia-flower oil**, an essential oil from the flowers of *Acacia Farnesiana*, used in perfumery.—**Certificate oil.** See ★*pipe-line certificate*.—**Chaulmugra-oil.** It has been recently shown that the chaulmugra-oil of commerce is not obtained from the seeds of *Gynocardia odorata*, but from those of *Taraktogenos Kurzii*.—**Chinese cabbage-oil.** Same as *Shanghai* ★*oil*.—**Choice oil**, the trade-name of a very light-colored cotton-seed oil, bland and free from any decided taste.—**Cold-pressed oil.** See *hot-expressed* ★*oil*.—**Compound oil**, oil compounded of two or all of the three kinds of oil, animal, mineral, and vegetable, or of mixtures of each. Animal oils are liable to do injury to a bearing by reason of the fatty acids they contain; mineral oils are liable to be squeezed out from a bearing and to evaporate or volatilize; vegetable oils are liable to oxidize or dry and gum, becoming sticky. Many combinations of these can, however, be made, in which the advantages of each are to some extent combined and the disadvantages lessened.—**Cotton-seed oil.** See ★*cotton-seed*.—**Coundi-oil, crab-wood oil.** Same as *Touloucouna* ★*oil*.—**Creosote-oil**, formerly the same as the 'heavy oil' or 'dead oil' from the distillation of coal-tar. It now includes, beside this, somewhat similar but chemically different products obtained from bituminous shale, from the waste gases of blast-furnaces, and from bone-oil. Creosote-oils are used chiefly in the preservation of timber from decay.—**Cress-seed oil**, a vegetable oil obtained from *Lepidium sativum*.—**Crude oil.** See ★*crude*.—**Cylinder oil**, an oil or mixture of oils, generally mineral, suitable for lubricating the piston moving in the cylinder of an engine. It should have a high flash-point, be sufficiently viscid at the high temperature of the cylinder, and contain as little as possible of any constituent capable of volatilizing at this temperature.—**Cypress-oil**, a yellowish volatile oil obtained by the distillation of the leaves and young branches of *Cupressus sempervirens*. It consists principally of δ-pinene. From the last runnings of the distillate a crystalline body, cypress camphor, sometimes separates out. Cypress-oil is used as an inhalant to relieve whooping-cough.—**Danforth's oil**, the trade-name of a petroleum naphtha of specific gravity 0.69 to .70, boiling at 80–110° C. used as a solvent and for burning in vapor-stoves.—**Detonating oil**, a name applied to nitroglycerin when it was first introduced into practical use for blasting.—**Doegling oil**, or **doegling train-oil**, oil obtained from the blubber of certain cetaceans, chiefly *Hyperoödon rostratus* and *H. bidens*: used as a substitute for and adulterant of sperm-oil. Also called *bottlenose-oil* and *arctic sperm-oil*.—**Drying oil.** See *oil*, 1.—**Elæococca oil.** See ★*Elæococca*.—**Eucalyptus-oil**, a pale yellow oil, usually slightly dextrorotatory. It is obtained by distillation from the leaves of *Eucalyptus globulus*, *E. amygdalina*, and *E. citriodora* from Australia, and is used in perfumery and medicine. The oil is a mixture of cineol with several terpenes.—**Euonymus oil.** See ★*euonymus-oil*.—**Fennel-oil**, a volatile oil, of aromatic anise odor, obtained by distilling the fruits of fennel, *Fœniculum capillaceum*. It contains anethol and several terpenes.—**Fulminating oil**, a former name of nitroglycerin.—**Garden-cress oil.** Same as *cress-seed* ★*oil*.—**Geranium-oil.** (*a*) Pelargonium or rose-geranium oil, a fragrant essential oil distilled from the leaves of several cultivated species of pelargonium, used in perfumery. It comes chiefly from Spain, France, Algiers, and the island of Réunion. (*b*) Indian geranium or palmarosa oil (formerly called *Turkish geranium-oil*), a fragrant essential oil distilled from the leaves of *Andropogon Schœnanthus*, used in perfumery. It comes from the Bombay Presidency in India.—**Gray oil**, a preparation made by rubbing up metallic mercury and lanolin, with perhaps the addition of olive-oil: employed in hypodermic injection.—**Green oil**, the second product obtained in purifying Yorkshire grease from wool or other similar material, by distillation with superheated steam: sometimes used for coarse lubricating purposes, sometimes returned to the still to be worked over along with more of the crude material.—**Guaiac-wood oil**, an essential oil distilled from guaiacum wood. It is now esteemed of considerable value in perfumery.—**Guilandina-moringa oil.** Same as *ben-oil*, a fat oil obtained from the seeds of *Moringa oleifera*, used in the extraction of perfume from flowers by the process of enfleurage, as it shows little tendency to become rancid.—**Guizot-oil.** Same as *ramtil*-★*oil*.—**Gundschit oil.** Same as *lallemantia*-★*oil*.—**Hammer-fish oil**, an oil obtained from the liver of the hammer-fish, *Sphyrna zygæna* or *Zygæna malleus*: one of the varieties of shark-oil.—**Headlight oil**, an illuminating oil distilled from petroleum, colorless and of 150° F. fire-test, fit for use in the headlight lamps of locomotives.—**Hemp-oil**, an oil obtained from the seed of *Cannabis sativa*. It belongs to the class of drying oils and is used to mix with paints, in making varnishes and soft soap, and to adulterate linseed-oil.—**Heracleum-oil**, in *chem.*, an essential oil obtained from cow-parsnip, *Heracleum spondylium* and *H. giganteum*. It consists essentially of octyl acetate, $C_8H_{17}.C_2H_3O_2$.—**Horse-chestnut oil**, a fatty oil obtained in small quantity from the kernels of the horse-chestnut (*Æsculus Hippocastanum*).—**Horsefoot-oil**, a fixed oil extracted from the feet (hocks) of horses.—**Hot-expressed oil**, an oil obtained by pressure aided by heating, in contradistinction to *cold-pressed oil*, obtained at common temperature.—**Incandescent oil-vapor burner.** See ★*burner*.—**Indian-cress oil**, an oil obtained from the seed of Indian cress, *Tropæolum majus*.—**Indian geranium-oil** or **grass-oil.** Same as *geranium*-★*oil* (*b*).—**Indarjau-oil** [Hindustani, *indarjau*, the barley of India, + *-oil*], a fatty oil obtained from the seed of *Wrightia antidysenterica*, the bark of which (conessi bark) is medicinally used in India. The seeds and oil are used on account of their vermifuge effect.—**Japanese sardine-oil**, a fish-oil introduced into European commerce in 1885, obtained by boiling fish with water or by allowing the fish to rot and separating the oil by drainage and pressure. The crude oil, which has a most unpleasant smell, is refined at Yokohama by remelting, producing two layers, the one of liquid oil, the other of solid fish-stearin or fish-wax. It is believed to be available for use in making soap and candles, and in some of the operations of dyeing. It is obtainable in large quantity.—**Jasmine-oil**, the natural oil of jasmine, originally extracted by the process of enfleurage. It appears to consist to a large extent of benzyl acetate, and this ester, artificially produced and having its odor modified by the addition of other substances (one of which is probably the methyl ester of anthranilic acid), is sold as a perfume under the name of synthetic oil of jasmine.—**Jonquil-oil**, a yellowish substance of butter-like consistence, extracted by ether, along with odorless jonquil camphor, from the fresh flowers of *Narcissus jonquilla*. It has a strong odor of the flowers.—**Kulp-liver oil**, an oil obtained from the liver of the kulp.—**Kurung-oil** or **kurunj-oil.** See ★*kurunj-oil*.—**Laintlaintain-seed oil**, a fat oil obtained from the seed of meni or laintlaintain, *Lophira alata*, of Senegambia and Sierra Leone, brought from the west coast of Africa.—**Lallemantia-oil**, a fatty oil, of distinctly drying character, obtained from *Lallemantia iberica* of Persia and Kurdistan.—**Lima oil**, crude petroleum obtained from the district about Lima, Ohio. It contains sulphur compounds which unfit it for refining by the ordinary process, and hence it is either treated by special methods or is used as fuel.—**Lime-oil**, the essential oil or essence obtained from the rind of the fruit of *Citrus limetta* in Italy, a distinct essence being also obtainable from the leaves of the same tree. West Indian lime-oil or limette-oil is obtained from the rind of the fruit of *Citrus medica*, and differs in composition and character from the Italian. It is produced by expression; a very inferior grade is produced by distillation as a by-product in evaporating the juice of the fruit.—**Linaloa-oil**, an essential oil or essence of importance in perfumery, obtained chiefly by distillation from the wood of a Mexican tree, *Bursera delphechiana* or *B. aloexylon*, locally known as *lignaloë* or *linalué*. (See *linaloa*.) The annual consumption is estimated at about 20,000 kilograms. A similar oil is obtained in French Guiana from a wood called *likari*, probably *Ocotea caudata*, and this product is known as *essence de likari*. In both oils the principal constituent is an alcohol, $C_{10}H_{18}O$, which has been named ★*linalool*.—**Ling-liver oil**, a fatty oil extracted from the liver of the ling, *Molva vulgaris*, similar in general character to cod-liver oil.—**Louar-oil**, a fish-oil obtained from the Indian and Malayan louar, *Clupea lemuru* and *C. palasah*.—**Manatee-oil**, a fatty oil obtained from the carcass of the sea-cow or manatee, *Manatus americanus* or *australis*.—**Mangosteen-oil.** Same as *cocum-butter*.—**Massoy-oil.** See *oil of Massoy*.—**Meni-seed oil.** Same as *laintlaintain-seed* ★*oil*.—**Middle-oil**, the trade-name of the second principal portion of the products of the distillation of coal-tar. It represents the part of the distillate which comes over between 170° and 230° C., and by further separation yields phenol or carbolic acid and naphthalene.—**Mignonette-oil**, a fragrant oil, obtained from *Reseda odorata*, which has been found to contain the diolefine alcohol geraniol.—**Monarda-oil**, an essential oil of varying composition and character obtained from several species of *Monarda*, as from *M. punctata*, *citriodora*, *didyma*, and *fistulosa*.—**Mururé-oil**, an oil obtained in Brazil from *Bichetea officinalis*, used locally in medicine as an emmenagogue and antisyphilitic remedy.—**Mustard-seed oil**, the essential oil or essence of black mustard-seed, essentially allyl isothiocyanate: now artificially reproduced in large quantity as an article of commerce.—**Myagrum-oil.** Same as *German* ★*sesame-oil* or *camelina*-★*oil*.—**Naphthalene-oil**, that portion of coal-tar which distils over between 200° and 300° C. It contains chiefly phenols, naphthalene, and naphthalene derivatives.—**Neroli-oil.** See *oil of neroli*, under *oil*.—**Neutral oil**, the lightest portion of the lubricating oil from petroleum, of density 32° to 38° Bé., used to mix with animal or vegetable oil.—**Nigella-oil**, the essence or volatile oil distilled from the seed of *Nigella sativa*. It has a disagreeable odor, but the oil from the seed of *N. damascena* is said to have the pleasant odor and taste of the wild strawberry.—**Niger oil.** Same as *ramtil*-★*oil*.—**Nikkei oil**, a volatile oil obtained in Japan by distillation with water of the leaves and young twigs of *Cinnamomum loureirii*, the Japanese cinnamon or cassia-bark tree.—**Niko-nut oil**, a vegetable fat oil from the west coast of Africa, likely to prove valuable if obtainable in large quantity.—**Non-drying oils**, oils which, like olive-oil, do not absorb oxygen freely from the air with production of a solid resinous or india-rubber-like substance.—**Off-grade of oil.** See ★*off*.—**Oil of Anacardium**, a blistering oil, which turns black on exposure to the air, obtained from the pericarp of *Anacardium orientale*.—**Oil of ants**, a fat oil of yellow color obtained from the residue left after distilling the bodies of ants with water in order to procure dilute formic acid.—**Oil of apple**, the isoamyl ester of isovaleric acid, $C_4H_9COO.C_5H_{11}$, made by the action of isovaleric acid on a mixture of fusel-oil and sulphuric acid. It boils at 190.3° C.—**Oil of behen.** Same as *ben-oil*.—**Oil of Canada snakeroot**, an essential oil derived by distillation from the rhizome of *Asarum Canadense*, the wild ginger or Canada snakeroot, and probably also of some related species. It has an agreeable aromatic odor and is considerably used in perfumery in this country, chiefly for strengthening other odors.—**Oil of cognac.** See ★*cognac*.—**Oil of culilawan**, an essence or essential oil obtained, by distillation with water, from the bark of *Cinnamomum culilawan*. Its principal constituent is eugenol.—**Oil of geranium.** For East Indian and Turkish oil of geranium, see *palmarosa* ★*oil*. For *rose-geranium oil*, see ★*oil of rose-geranium*.—**Oil of ginger**, a volatile oil consisting of camphene, phellandrene, and sesquiterpene, which exists to the extent of 1–3 per cent. in the rhizome of *Zingiber officinale*. It gives to ginger its odor and flavor.—**Oil of ginger-grass**, an oil imported from India, generally assumed to be an inferior and usually adulterated variety of Indian geranium or palmarosa oil; but there seems to be some reason for believing that it is occasionally a genuine product of the distillation of other grasses than *Andropogon Schœnanthus*. See *Andropogon*.—**Oil of grapes**, the trade-name of diluted fusel-oil.—**Oil of hartshorn.** See ★*hartshorn*.—**Oil of mastic**, a colorless, balsamic volatile oil obtained by the distillation of mastic.—**Oil of Osmitopsis**, an essence or volatile oil from the South African plant *Osmitopsis asteriscoides*.—**Oil of pear**, the isoamyl ester of acetic acid, $CH_3COO.C_5H_{11}$, made by heating fusel-oil with sulphuric and acetic acids. It boils at 138.6° C.—**Oil of petitgrain**, a volatile oil, similar in odor to oil of neroli, obtained by the distillation of the leaves, twigs, and immature fruit of the bitter orange, *Citrus bigaradia*. It is now manufactured chiefly in Paraguay.—**Oil of pineapple**, the ethyl ester of normal butyric acid, $C_4H_9O_2.C_2H_5$, made by the action of butyric acid, or rancid butter, on a mixture of sulphuric acid and alcohol. It boils at 119.9° C.—**Oil of rose.** Artificial rose-oil is now extensively sold as a substitute for the product of rose-flower distillation. It consists mainly of geraniol and citronellol obtained from other and cheaper vegetable sources, but in actual composition and properties it is essentially identical with the natural rose-oil aside from its odorless stearoptene.—**Oil of rose-geranium**, an oil distilled from the leaves of *Pelargonium*, chiefly *P. capitatum*, the common rose-geranium, a variety of *P. radula*, the skeleton-leafed geranium, and *P. odoratissimum*, the nutmeg geranium. It is produced commercially in France, Algiers, Réunion Island, and Spain. Its chief constituent is geraniol. It serves as a substitute for the oil of roses.—**Oil of rosemary.** Recent examination of English, French, Spanish, and Dalmatian rosemary-oil seems to show the presence of more than one substance, with difference of optical character as respects polarization.—**Oil of sweet birch**, an oil distilled from the bark of the cherry-birch or sweet birch, *Betula lenta*. It is almost pure methyl salicylate. It has mainly taken the place of the similar oil of wintergreen, being more cheaply procured, and commercially goes under its name.—**Oil of tartar**, deliquesced carbonate of potash.—**Oleander-seed oil**, a fatty oil extracted from the seed of *Nerium thevetia* in India.—**Olive-kernel oil**, an oil extracted from the kernels of the stones or seeds of the olive as distinguished from that yielded by the pulp of the fruit. It is generally produced, not by expression, but by extraction with carbon disulphid or some other volatile solvent, is darker in color than the oil from the pulp, and has a disagreeable smell which unfits it for table use.—**Oolachan oil.** Same as *eulachon-oil* (which see, under *eulachon*).—**Opachala** or **owala oil**, a fatty oil extracted from the kernels of *Pentechlethra macrophylla*, an African leguminous tree. The term *opachala* belongs to the Eboe country, *owala* to the Gaboon.—**Orange-seed oil**, a fat oil extracted from the seed of the orange, *Citrus aurantium*.—**Owala oil.** Same as *opachala* ★*oil*.—**Oxidized oil.** Same as *blown* ★*oil*. Cotton-seed oil and rape-oil are those most frequently treated in this way.—**Palmarosa oil.** See *geranium*-★*oil* (*b*).—**Palm-kernel oil**, the white concrete oil obtained by expression from palm-kernels. It is used in the manufacture of fine soaps and artificial butter. Though obtained from the same plant which is the principal source of palm-oil, this substance has quite different properties. The former is an African product of native manufacture, prepared from the pulp of the fresh fruit, while the latter is the product of modern machinery and its production is almost entirely confined to Europe. See *palm-oil*.—**Palm-nut oil.** Same as *palm-kernel ★oil*.—**Peach-kernel oil,** a bland fixed oil obtained by expression from the seed of the peach, very similar to and used instead of sweet-almond oil and olive-oil. Also called *peach-oil*.—**Peanut-oil,** oil obtained by expression from the nuts of *Arachis hypogæa*. It is produced on a large scale, particularly in France, and is used as a substitute for and an adulterant of olive-oil for table use, as also in soap-making. It is chemically peculiar in containing the glycerides of two special fatty acids, arachidic acid ($C_{20}H_{40}O_2$) and hypogæic acid ($C_{16}H_{30}O_2$). Also known as *groundnut-oil, earthnut-oil*, or *arachis-oil*.—**Pea-oil,** a fatty material extracted by solvents from the seeds of the common pea, *Pisum sativum*. It contains phosphorized constituents of the nature of lecithin.—**Pear-oil.** See *★oil of pear*.—**Pepper-oil,** a fragrant essence or volatile oil obtained by distilling with water crushed black pepper, the unripe fruit of *Piper nigrum*. Similar but somewhat different products are obtained from several other species of *Piper*, and an entirely different oil, known as *Japanese oil of pepper*, is prepared from the fruit of *Anthoxylum piperitum*. This smells like the lemon, its principal constituent being citrol.—**Petit-grain oil.** See *★oil of petit-grain*.—**Phinotas-oil,** the trade-name of an insecticide preparation which contains coal-tar phenols and light petroleum hydrocarbons: used for the extermination of mosquitos in stagnant water, marshes, etc. *U. S. Dept. Agr.*, Div. Entom., Bulletin 46, p. 108.—**Pilchard-oil,** a fat oil obtained from the body of the pilchard, *Clupea pilchardus*, of the coast of Cornwall.—**Pine-needle oil,** an essence or volatile oil obtained by distillation, with water, of the needles, young twigs, and cones of sundry species of pines, firs, spruces, and larches—among others *Pinus sylvestris* and *montana*, *Picea excelsa*, *Abies alba*, and *Canadensis*, and *Larix decidua*. It is used in the production of sprays in the sick-room, in baths, and in perfuming soaps.—**Pistachio-oil,** a volatile oil or essence obtained by distilling mastic, the resinous exudation from *Pistacia lentiscus*, a tree growing in Chios and elsewhere in the basin of the Mediterranean. It is used in Turkey in flavoring a spirituous liquor.—**Plum-kernel oil,** a bland fat oil obtained by expression from the seed of the plum, *Prunus domestica*, not produced as extensively as the similar product from the almond, apricot, and peach.—**Polei-oil,** the essence or volatile oil distilled with water from European pennyroyal, *Mentha Pulegium*.—**Poola oil.** Same as *★kurunj-oil*.—**Porgy-oil,** a fish-oil from the menhaden, *Brevoortia tyrannus*.—**Portugallo oil,** the essential oil obtained by expression from the rind of the fruit of the sweet orange, *Citrus aurantium*.—**Prima oil,** the trade-name of the grade of 'solar oil' from bituminous shale with lower density and boiling-point.—**Prime oil** the trade-name of a particular grade of cotton-seed oil, without disagreeable taste, though a little dark in color, available for direct use as food.—**Purgir-nut oil** or **purqueira-oil.** Same as *★jatropha-oil*. **Radish-seed oil,** a fat oil obtained from the seed of the radish, *Raphanus sativus oleiferus*, of China.—**Ramtil-oil,** a semi-drying fat oil from the seeds of *Guizotia abyssinica* (see *Guizotia*), produced in India and Abyssinia. It is used as food in India, and in the manufacture of soap in England. Also known as *Niger oil* and *guizot-oil*.—**Rangoon oil,** the trade-name of a semisolid or butter-like petroleum from Upper Burma. It was refined for a time in England, chiefly for the sake of the solid paraffin it yielded, which was employed in making candles.—**Raphigaster-oil,** a brown oil, with fetid smell, obtained from the body of the gray leaf-bug, *Raphigaster punctipennis*. It yields cimicic acid, of the oleic-acid series.—**Raps-oil.** Same as *rape-oil* (which see, under *oil*).—**Ray-liver oil.** Same as *ray-oil*.—**Rectified oil of vitriol,** the trade-name of sulphuric acid concentrated by boiling off the water of the originally dilute acid until the product contains about 95 per cent. of real acid, though often not more than 93 or 94 per cent. is met with.—**Red oil.** (*b*) A manufacturers' name for crude oleic acid obtained as a by-product in making the hard fatty acids for candles. It is largely employed in soap-making, and has been utilized to some extent for candles by conversion into artificial palmitic acid. See *★sulpholeic acid*.—**Reduced oil,** crude petroleum from which the more volatile hydrocarbons have been driven off by partial evaporation. It is valuable as material for the manufacture of lubricating-oils.—**Resin-oil.** Same as *rosin-oil*.—**Secunda oil,** the trade-name of the grade of 'solar oil' from bituminous shale with higher density and boiling-point.—**Shanghai oil,** the trade-name of a kind of colza- or rape-oil obtained from the seed of *Brassica* or *Sinapis chinensis*, imported from China. Also known as *Chinese cabbage-oil*.—**Sherwood oil,** the trade-name of petroleum ether which boils at 40° to 70° C., used as a solvent for india-rubber and in the extraction of fat oils, and burned as vapor in so-called portable gas-machines.—**Soap-oil,** the trade-name of the lowest of four grades of summer yellow cotton-seed oil. It is darkest in color and least agreeable in taste: used for soap-making.—**Solar oil,** the trade-name of illuminating oil from bituminous shales, marketed in two grades, *prima*, of specific gravity .825 to .830 and boiling at 175 to 180° C., and *secunda*, of specific gravity .830 to .835 and boiling at 195 to 200° C.—**Spindle-oil,** the lighter portion of the petroleum distillates used for lubrication, especially Russian lubricating-oil of specific gravity .885 to .895, suitable for light-running machinery such as that used in cotton-spinning.—**Spirit-oil,** the first product obtained in the distillation of Yorkshire grease from wool-scouring, or of similar recovered greases from other sources.—**Sulphocarbon-oil,** the trade-name of olive-oil of inferior quality, obtained from the marc, or pressed cake, by the solvent action of carbon disulphid.—**Summer white oil,** the trade-name of a grade of cotton-seed oil made from summer yellow oil by treating it with fullers earth and filtering, or otherwise removing the greater part of the yellow color.—**Summer yellow oil,** the trade-name for cotton-seed oil which is liquid at summer temperature and possesses the natural yellow, but has not yet been deprived of color or caused by artificial cooling to deposit the stearin which would lead to its partially solidifying in winter.—**Sunned oil,** the trade-name of crude petroleum which, in an early stage of its industrial development, was sometimes increased in density and fitted for use as a lubricating-oil by exposing it to the sun as a thin layer on the surface of a tank of warm water, the more volatile portions being thus in part removed by evaporation.—**Tea-seed oil.** Same as *tea-oil*.—**Tobacco-seed oil,** a greenish-yellow fatty oil obtained from the seed of tobacco by expression. It dries on exposure to air.—**Touloucouna-oil,** a fat oil obtained from the seeds of *Carapa Guianensis* by expression. Also known as *carapa fat, andiroba fat, kundah-oil* (which see), *crabwood oil*, and *tulucana-oil*. It is said to be used by the natives of Brazil and Guiana as an unguent for the head to get rid of insects. See *Carapa*.—**Toulouron-oil,** a fat oil obtained from *Pagarus latro*, said to be used medicinally in Senegal in cases of rheumatism.—**Tulucana-oil.** Same as *Touloucouna-★oil*.—**Turkey-red oil,** an oil-mordanting assistant used in the production of alizarin or Turkey red. It is a sulphonated castor-oil, prepared by allowing sulphuric acid to run slowly into castor-oil with continual agitation during a period of from 16 to 20 hours. It readily mixes with water that has been made slightly ammoniacal. Also known as *alizarin-oil, soluble oil*, and *sulphonated oil*. See *★sulpholeic acid*.—**Vaseline-oil,** the trade-name of a paraffin-oil obtained from bituminous shale, used in Germany to dissolve ceresin or solid paraffin, thereby producing the German vaseline or *unguentum paraffini*.—**White oil,** the trade-name of cotton-seed oil of which the yellow color has been removed or nearly removed, generally by agitation with a little fullers' earth, followed by filtration. See *★cotton-seed oil*.—**Winter white oil,** the trade-name of a grade of cotton-seed oil which has been exposed to a low temperature and separated by expression from the solid stearin deposited, so that it remains liquid at ordinary winter temperature, and has also been deprived of yellow color by agitation with fullers' earth and filtration.—**Winter yellow oil,** the trade-name of a grade of cotton-seed oil which has been cooled and the separated stearin removed by pressing, so that the oil remains liquid in winter, but has not had the natural yellow color removed.—**Yomugi oil,** a volatile oil or essence from Japan, of uncertain botanical origin, by some reported as distilled from the 'kiku' or chrysanthemum, but more probably from *Artemisia vulgaris*.

oil-bath (oil′bȧth), *n.* 1. In *mech.*: (*a*) A quantity of oil in a cup or receptacle, such as a gear-case or engine-case, into which a running part of a mechanism dips, carrying or throwing oil to other parts.

> A motor mounted on four wheels, two running on top and two underneath the rail, all four wheels being driven by the motor through worm gearing running in an *oil-bath*.
> *Elect. Rev.*, Sept. 24, 1904, p. 536.

(*b*) The vat or vessel filled with oil in which pieces of steel are dipped in oil-tempering. (*c*) A stream of oil directed upon a tool that is cutting steel.—2. In *phys.*, a vessel containing oil, in which an object, as a resistance-coil or the bulb of a thermometer, the temperature of which is to be held constant, is submerged.—**Fresenius's oil-bath,** a convenient form of oil-bath, made with double walls and of hard soldered copper, used for heating to temperatures above that of boiling water.



Buttercup Oil-beetle (*Meloë angusticollis*).
Twice natural size.

oil-beetle, *n.*—**Buttercup oil-beetle,** an American meloid beetle, *Meloë angusticollis*, found commonly in meadows and pastures, feeding on the leaves of buttercup.

oil-belt (oil′belt), *n.* A region in which petroleum is found.

> From the general direction in which developments were made, the term "*Oil belt*" . . . came into use early in the history of the oil region.
> *Mag. of Western* [*Hist.*, III. 225.

oil-coat (oil′kōt), *n.* An oilskin coat; a slicker. See *sleeker*, 3.

oil-collector (oil′kọ-lek″tọr), *n.* A shallow pan or vessel for catching the oil that drips from a machine or bearing, so that it may be used again.

oil-compass (oil′kum″pas), *n.* See *★compass.*

Oil-creek group. See *★group*¹.

oil-cushioned (oil′ku̇sh″und), *a.* Carried on a thin film of oil: said of journals. This is easily done for light pressures, but for heavy pressures the oil must be forced into the bearing.

oil-engine (oil′en″jin), *n.* An internal-combustion engine in which the fuel is derived from oil, usually a derivative from petroleum, injected as a mist or spray mixed with air.

oiler, *n.* 6†. An oil-merchant; an oilman.—7. An oil-well. [Colloq.]—**Pressure-feed oiler,** a device for supplying oil to one or more bearings regularly, by keeping the supply of oil in a reservoir under a constant pressure.

oilery, *n.* 2. An establishment where oil is manufactured for the market and sold.

oil-extractor (oil′eks-trak″tọr), *n.* 1. An apparatus for dissolving out residual oil from vegetable marc, or pressed cake, by means of carbon disulphid, petroleum ether, or some other volatile solvent, which is distilled off, condensed, and used over again.—2. An oil-filter; a device for separating oil from water or other substances.—3. A centrifugal wringer used to extract the oil used in cutting metals from the metal chips.

oil-feed (oil′fēd), *n.* An oil-cup; a device for feeding oil to a bearing; a device for feeding oil to a tool that is cutting steel.

oil-field (oil′fēld), *n.* An area in which petroleum may be found.

oil-firing (oil′fīr″ing), *n.* The act or process of burning oil as a fuel.

oil-fish (oil′fish), *n.* A name of the escolar, *Ruvettus pretiosus*.

oil-fuse (oil′fūz), *n.* A fuse for electric circuits, in which the fuse-wire is submerged in a heavy oil. When rupture occurs through the melting of the fuse-wire, the oil fills the gap and chokes the arc formed between the terminals.

oil-globe (oil′glōb), *n.* In *mech.*, a spherical oil-cup.

oil-globule (oil′glob″ūl), *n.* One of the minute spherules of oil or fat often found as inclusions in the living protoplasm of cells or eggs.

oil-harden (oil′här″dn), *v. t.* To harden (as steel) by quenching in oil. The general effect of quenching from any temperature in oil heated to 80° C. is to increase the ultimate stress without reducing the elastic limit. The latter result, however, depends in some cases on the proportion of carbon present in the steel. *Electrochemical Industry*, Feb., 1904, p. 51.

oil-hardened (oil′här″dnd), *p. a.* Hardened by being heated and then quenched in an oil-bath.

oil-hardening (oil′härd″ning), *n.* The process of hardening steel by quenching it, when hot, in oil instead of in water. The oil cools the steel less rapidly than water, thus producing greater elasticity and tensile strength and the absence of extreme brittleness.

oil-kiln (oil′kil), *n.* In *ceram.*, a kiln in which kerosene-oil is burned as fuel.

oil-lease (oil′lēs), *n.* 1. A grant to a lessee of the right to bore within certain limits for "oil, salt, or other minerals," the work to be commenced within a certain time and "to be prosecuted with all reasonable diligence." *J. H. A. Bone*, Petroleum and Petroleum Wells, p. 33.—2. The land covered by such a lease.

oil-mist (oil′mist), *n.* Oil spray; vapor from a quantity of oil which is being constantly agitated.

oil-mold (oil′mold), *n.* Same as *★grease-mold.* See also *mold*², *n.*, and *Phycomyces*.

oilometer (oi-lom′e-tėr), *n.* [*oil* + Gr. *μέτρον*, measure.] A reservoir for the storage of oil. *N. E. D.*

oil-pipe (oil′pīp), *n.* A pipe used to convey oil.

oil-pulp (oil′pulp), *n.* A soft pasty mass obtained by mixing a solution of alum with one of soap, the precipitate consisting of aluminium salts of the fatty acids, chiefly oleic, palmitic, and stearic acids. It is dissolved in mineral oil to form an oil-thickener, used to increase the viscidity of mineral lubricating-oil. The real value of the factitious viscidity thus given to lubricants is doubtful.

oil-pump, *n.* 2. A pump for pumping oil under pressure through a pipe-line to a burner or to an oil-engine.—3. A sinking-pump for raising oil from a non-flowing well.

oil-purifier (oil′pū″ri-fī-ėr), *n.* An oil-filter; a device for cleaning oil which has been used on a machine, either on the bearings or on a tool that is cutting steel.

oil-ring, *n.* 2. In *mach.*, a loose ring which surrounds a horizontal journal and the lower part of the bearing, and dips into an oil-cellar from which, by its rotation, it brings oil to the top of the journal.

> Bearings of the usual self-oiling type, with two revolving brass *oil rings* in each.
> *Elect. World and Engin.*, April 23, 1904, p. 777.

oil-river (oil′riv″ėr), *n.* **1.** A river whose banks produce rock-oil or petroleum.—**2.** A river down which large quantities of oil (generally palm-oil) are carried to the sea for export.

oil-rock (oil′rok), *n.* The stratum which is productive of oil in a petroleum-field. It may be limestone, shale, or sandstone. Compare *oil-sand.*

> With regard to the Spindletop *oil-rock*, the report states that its exceptional character explains in a measure the remarkable features of the Spindletop pool.
> *Sci. Amer. Sup.*, Nov. 15, 1902, p. 22469.

oil-sardine (oil′sär-dēn″), *n.* A common name of *Clupea scombrina*, a clupeoid fish of the East Indian fauna.

Oil-seed cake. Same as *oil-cake.*

oil-separator (oil′sep″ạ-rā-tọr), *n.* A device for extracting oil from steam or water with which it has become mixed. See ★*steam-separator.*

oil-shell (oil′shel), *n.* A projectile of metal, wood, or heavy water-proof card-board, containing oil, and designed to be shot from a gun in heavy storms at sea to a position some distance ahead of the vessel, as a means of spreading the oil over the surface of the water that the ship is approaching. Upon striking the water the head of the projectile opens, the contents escape, and the sea is calmed for the passage of the ship. *Sci. Amer. Sup.*, April 9, 1904, p. 23641.

oil-sign (oil′sīn), *n.* An indication, in the form of oil-seepage or oil-springs, of subterranean pools of petroleum; a guide for the driller in selecting a point for a boring.

oilskinned (oil′skind), *a.* Protected with an oilskin coat.

oil-still (oil′stil), *n.* The still in which the first stage of the distillation of crude petroleum is carried out, furnishing the gasolene, naphtha, and illuminating oil, the material remaining being then transferred to the tar-still.

oil-sugar (oil′shůg″ặr), *n.* In *phar.*, a trituration of 1 part of a volatile oil with 30 parts of sugar. Also called *elæosaccharum* and *oleosaccharum.*

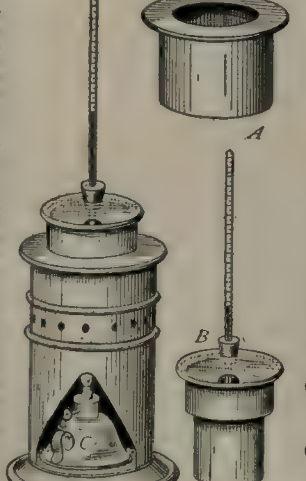
oil-switch (oil′swich), *n.* In *elect.*, an electric switch or circuit-breaker in which the break occurs under oil: used for opening circuits of very great power and of very high voltage. *Trans. Amer. Inst. Elect. Engin.*, 1904, p. 13.

oil-tank, *n.*—**Oil-tank steamer, vessel.** See ★*tank-vessel.*

oil-tanned (oil′tand), *p. a.* Tanned principally by oil and heat: a process applied to sheepskins and lambskins. *Flemming*, Practical Tanning, p. 46.

oil-temper (oil′tem″pėr), *n.* A temper obtained in steel by heating it to a temperature corresponding to the degree of hardness desired and then cooling it by quenching it in oil.

oil-tester, *n.* **2.** It consists of a copper vessel, *A*, serving as a water-bath in which a second copper vessel, *B*, containing about 10 ounces of the oil, is placed. The water is heated at the rate of 20° F. per minute by a small alcohol or oil flame, *C*. The temperature of the oil is noted by the aid of a thermometer supported by a glass plate which covers the oil except at one point where an opening is left for the insertion of a small flame such as a lighted broom-splint or match-stick would give. When the oil has reached 85° F., testing is begun by applying a flame at the opening. When a flash of blue flame is seen over the surface of the oil, the reading of the thermometer is taken. Generally a flash-test of 100° F. is required by law.



Oil-tester.

oil-thickener (oil′thik″nėr), *n.* A substance used to increase the viscidity of oil, especially mineral oil, and so improve it as a lubricating material.

oil-thrower (oil′thrō″ėr), *n.* A device to throw or scatter oil; specifically, a raised ring on a shaft at the end of a journal or on the body of a revolving shaft. Oil creeping along the shaft from the journal is thrown off at this ring by centrifugal force.

> The lubrication is automatic, by the use of continuous oil ring lubricators; special *oil throwers* are provided to prevent the creepage of oil along the shaft.
> *Elect. World and Engin.*, Nov. 7, 1903, p. 777.

oil-torch (oil′tôrch), *n.* See *gasolene* ★*torch.*

oil-transformer (oil′trȧns-fôr″mėr), *n.* In *elect.*, an alternating-current transformer immersed in oil for cooling and insulation. See *transformer.*

oil-well, *n.* **2.** An oil-cellar; a dish or receptacle, under a bearing, filled with oil to furnish a supply for the bearing.

oil-yellow (oil′yel″ō), *n.* Same as ★*butter-yellow.*

oinochoös (oi-nok′ọ-os), *n.* [Gr. οἰνοχόος, wine-pourer, < οἶνος, wine, + χεῖν, pour.] In *Gr. antiq.*, the bearer of the oinochoë; a cup-bearer; a wine-pourer.

> Terra-cotta fragment of sepulchral slab . . . representing a deceased person naked and recumbent on the funeral couch, at the foot of which stands a boy *œnochoos*, also nude, holding œnochoê and wine-cup.
> *A. J. Evans*, in Jour. Hellenic Studies, VII. 34.

oinomania (oi-nọ-mā′ni-ạ̈), *n.* Same as *œnomania.*

ointment, *n.*—**Casein ointment**, a thick white emulsion, miscible with water, composed of casein 14 parts, potassium and sodium hydrates (1 to 4) .43 part, glycerin 7 parts, vaseline 21 parts, salicylic acid or borax 1 part, and water 56 parts: a water-soluble varnish used in applying drugs to the skin.—**Credé's ointment**, an ointment containing colloidal or soluble silver (collargolum), employed as an antiseptic, by external or subcutaneous use, in the treatment of erysipelas and septicemia. Also called *Credé's silver ointment.*—**Gray ointment of mercury.** Same as *mercurial ointment* (which see, under *ointment*).—**Kentish ointment**, turpentine liniment.

O. Ir. An abbreviation of *Old Irish.*

Oiron ware. See ★*ware*².

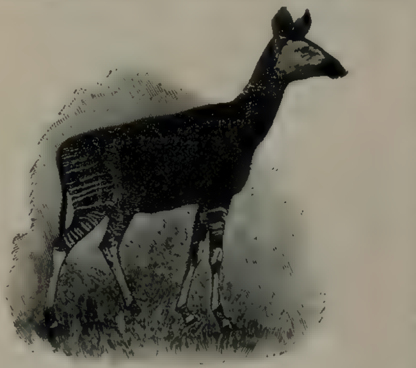
O. It. An abbreviation of *Old Italian.*

oitavo (ō-i-tä′vō), *n.* [Pg., < L. *octavus*, eighth.] A unit of weight in Brazil, equal to 55.34 grains.

ojanco (ọ-hän′kō), *n.* [Cuban Sp.] A fish of the family *Lutianidæ*, *Lutianus mahogoni*, found in the West Indies.

ojo (ō′hō), *n.* [Sp., an eye, < L. *oculus*, eye. See *oculus.*] In Spanish America, a spring; especially, a small spring on rather level ground.

okapi (ō-kä′pi), *n.* [W. African.] A member of the giraffe family, discovered by Sir Harry Johnston, in 1902, in the forest region near Lake Albert, Africa. The general form of the okapi, which has been named *Okapia johnstoni*, is much like that of the giraffe, but the animal is decidedly smaller, and the neck and legs are shorter. The upper parts are dark purplish brown; forehead and ears reddish; sides of face nearly white; legs buff, the flanks and upper parts marked with horizontal blackish stripes resembling those of a zebra. It was described by Sclater in 1901 as *Equus johnstoni*, from two fragments of skin, and later by Lankester as *Okapia johnstoni*, from a skin and two skulls. All these specimens were secured by Sir Harry Johnston.



Okapi (*Okapia johnstoni*).

Okapia (ō-kä′pi-ạ̈), *n.* [NL., < *Okapi.*] A genus of ungulate mammals, containing the okapi and placed in the family *Giraffidæ.*

oki (ō′ki), *n.* [Also *okki*; < Huron (Indian) *oki.*] Mysterious power.

> The guardian spirit was obtained in various ways by different American tribes, but the dream apparition was the most widely spread. Dr. Frazer calls it 'individual totem'; Miss Fletcher speaks of the object dreamed of (the wahube of the Omaha) as the 'personal totem' or simply as the 'totem'; it is termed by the Algonkin manitu, by the Huron *okki*, by the Salish Indians sulia, and nagual in Mexico. Perhaps it would be best to adopt either wahube or manitu to express the guardian spirit.
> *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 741.

okianago (ō-kẹ-än′ä-gō), *n.* [Jap., < *oki*, the wide sea, + *anago*, a species of conger-eel.] The off-shore conger-eel, *Congrellus megastomus.*

okieh (ō′kē), *n.* [Also *oke*; < Ar. *oqqa*, also *wiqqa*, also *ūnqīya*, < L, *uncia*, ounce: see *ounce*¹.] **1.** An Egyptian measure of weight, equal to 1.32 ounces.—**2.** A silver coin of Morocco, equal to 4 mazunehs or about 5 cents.

okigisu (ō-ki-gē′sọ̈), *n.* [Jap., < *oki*, the wide sea (as opposed to *oka*, the land), + *kisu* (*gisu*), a kind of fish.] A Japanese name of *Pterothissus gissu*, a fish of the family *Pterothissidæ*, found in the deep waters of Japan.

okimono (ō-ki-mō′nō), *n.* [Jap., < *oki*, place, set, + *mono*, a thing.] An ornament or figure placed in the alcove or slightly raised portion of a Japanese room. The name is also applied to small table ornaments, such as paper-weights, etc.

> The new artisan makers of the *okimono* struck out a line for themselves, one influenced more by the naturalistic and popular schools than by the classical art, and the quails of Kaméjo, the tortoises of Seimin, the dragons of Tôün and Tôriū, and in recent years the falcons and the peacocks of Susuki Chôkichi, are the joy of the European collector. These are usually modelled in wax and cast in bronze and various other alloys, and sometimes in pure silver, and finished, if necessary, with the chisel and graver; they are sometimes fashioned in repoussé with the hammer.
> *Encyc. Brit.*, XXIX. 719.

okki, *n.* See ★*oki.*

Okla. An abbreviation of *Oklahoma.*

oktibbehite (ok-tib′ẹ-hīt), *n.* A name given by Meunier to the type of nickel-iron meteorite represented by the mass found in Oktibbeha, Mississippi, in 1854, and generally regarded as of meteoric origin. It contains about 60 per cent. of nickel. See ★*meteorite.*

Ol. An abbreviation (*b*) [*l. c.* or *cap.*] of the Latin *oleum*, oil; (*c*) [*l. c.*] of *overlimen.*

O. L. An abbreviation (*a*) of *Officer of the Order of Leopold*; (*b*) of *Old Latin.*

ola (ō′lạ̈), *n.* [Also *olla*; < Malayalam *ōla* = Tamil *ōlai*, a palm-leaf.] A smoothed palm-leaf used in Ceylon and southern India for writing upon, or a letter or other document written on such a leaf. The writing is scratched on the leaf with a steel-pointed stylus, and is sometimes rubbed over with some material to make it more legible.

olacaceous (ol-ạ-kā′shius), *a.* Belonging to the *Olacaceæ*, a family of plants.

olay (ō′lī), *n.* [Tamil *olai* = Malayalam *ōla*, a palm-leaf: see ★*ola.*] Same as ★*ola.*

olcott-root (ol′kot-röt), *n.* The bloody dock, *Rumex sanguineus.*

old, *a.* **15.** In *phys. geog.*, far advanced in the geographical cycle: noting a stage in which land-forms have been reduced to small relief and in which all processes of erosion and transportation have become relatively inactive.—**Old horse**, a sailors' name for tough salted meat.—**Old lady.** (*b*) A name given by Australian colonists to a large noctuid moth, *Erebus pluto.*—**Old man.** (*d*) A rocking center to guide a pump-rod at an angle. (*e*) A pivoted attachment of a pump-rod to a bell-crank.

Oldbury shales. See ★*shale*².

oldermost (ōl′dėr-mōst), *a.* [*older* + *-most.*] Oldest. [Provincial, U. S.]

oldfangled (ōld-fang′gld), *a.* Old-fashioned; clinging to what is old: opposed to *newfangled.*

oldfangledness (ōld-fang′gld-nes), *n.* Oldfangled or old-fashioned character; a lack of novelty.

oldfangleness (ōld-fang′gl-nes), *n.* Same as ★*oldfangledness.*

old-field (ōld′fēld), *n.* Land formerly cultivated; a field which has become exhausted by continuous cropping without renovation and left to run wild; specifically, in the United States, land cultivated by the Indians before the beginning of colonization by the whites.

old-fog (ōld-fog′), *n.* See *wild* ★*oat-grass* (*a*).

old-goose (ōld-gös′), *n.* The stemless lady's-slipper, *Cypripedium acaule.*

oldish (ōl′dish), *a.* [*old* + *-ish*¹.] Rather old; elderly.

old-land (ōld′land), *n.* In *phys. geog.*, the hilly country or upland on the interior side of a coastal plain: so called because it was a land-surface before the coastal plain was raised from the sea.

> The line where the waves lapped for the first time against the land at the beginning of this cycle [of coastal

abrasion] may be called the initial shoreline. For convenience all the land back of this initial shoreline will be called the "*oldland.*" *Geog. Jour.* (R. G. S.), IX. 538.

old-maidenish (ōld-mā′dn-ish), *a.* Having the habits of an old maid.

old-maid's-bonnets (ōld-mādz″bon′ets), *n.* The wild lupine, *Lupinus perennis.*

old-maid's-nightcap (ōld-mādz″nīt′kap), *n.* The spotted crane's-bill, *Geranium maculatum.*

old-man, *n.* **2.** In *mech.*, a drill-clamp; an iron strap or frame which can be clamped to or caught on a piece it is desired to drill, to furnish an abutment or brace to resist the driving or feeding pressure which forces the drill-point to its work.

old-man cactus (ōld′man kak′tus), *n.* See *Cereus.*

old-man's-root (ōld-manz″röt′), *n.* The American spikenard, *Aralia racemosa.*

old-standing (ōld′stan″ding), *a.* Of long continuance; long-standing.

> In a case of *old-standing* softening of this area secondary atrophy was observed.
> *Philos. Trans. Roy. Soc.* (London), 1898, ser. B, p. 32.

old-style (ōld′stīl), *a.* Old-fashioned; of the old style.

> And gentry-fashioned *old-style* haunts of sleep.
> *Browning*, Red Cotton Night-Cap Country, ii. l. 964.

Old Test. An abbreviation of *Old Testament.*

oldwife, *n.* **2.** (*g*) A carangoid fish, *Trachinotus glaucus*, found in West Indian waters.
3. A cowl for a chimney, to prevent its smoking.—**Black oldwife,** a fish, *Melichthys piceus*, of the family *Balistidæ*, of the West Indies and southward: possibly identical with a species found in the East Indies.

oleamide (ō-lẹ̄-am′id), *n.* [L. *oleum*, oil, + E. *amide.*] The amide of oleic acid, $C_{17}H_{33}$-$CONH_2$: made by allowing alcoholic ammonia to act on almond or hazelnut oil. It is crystalline and melts at 75° C.

Oleandreæ (ō-lẹ̄-an′drẹ̄-ē), *n. pl.* [NL., < *Oleandra* + *-eæ.*] A tribe of polypodiaceous ferns, containing the single genus *Oleandra*, distinguished by having the simple lanceolate fronds distinctly articulated to the wide-creeping rhizome and the reniform or roundish indusiate sori borne more or less obliquely toward the base of the close parallel veins.

olease (ō′lẹ̄-ās), *n.* [L. *oleum*, oil, + *-ase.*] An oxidizing ferment.

> Tolomei showed that the oxidase extracted with water and purified by a repeated precipitation with alcohol produces guaiac blue from guaiac tincture, forms purpurogallol from pyrogallol without the aid of peroxide of hydrogen, quinhydrone from hydroquinone, and a brown substance from gallic acid. He calls this oxidizing enzym *olease.* *U. S. Dept. Agr.*, Rep. No. 59, p. 33.

oleate, *n.* **2.** In *med.*, a salve prepared by triturating a metal oxid or an alkaloid with oleic acid, which is generally used in excess. It is a solution of the salt in the excess of acid.—**Oleate of morphine,** a salt rubbed into the skin to relieve pain in cases in which the stomach rejects morphine internally administered. It is liable to alteration when kept for a considerable time, losing its medicinal efficacy.

olecranian (ō-lẹ̄-krā′ni-a̤n), *a.* Same as *olecranal.*

olefinic (ō-lẹ̄-fin′ik), *a.* [*olefin(e)* + *-ic.*] Related to the olefines; designating, in organic chemistry, open-chain compounds containing an ethylene or double union between the carbon atoms.

olein, *n.* (*b*) The trade-name of the oil, fluid at common temperature, obtained by means of hydraulic pressure from the butter-like tropical fats, such as cocoanut-oil and palm-oil, especially the former. It is not chemically pure olein, but contains beside this some palmitin and some of the glycerides of the lower fatty acids, such as myristin, laurin, and caprin. In the so-called olein from cocoanut there is a large proportion of laurin and but little real olein.—**Cocoanut olein.** See ★*cocoanut.*

olena (ō-lā′nä̤), *n.* [Hawaiian, connected with *lena*, yellow.] The Hawaiian name for the turmeric, *Curcuma longa.* The natives extracted the dye for coloring their kapa yellow. See *turmeric*, 1, *curcuma*, 2, and *huldee.*

Olenellus (ō-le-nel′us), *n.* [NL., dim. of *Olenus.*] A genus of opisthoparian trilobites, often of notable size, having a well-defined and lobed glabella, fourteen thoracic segments, and small round pygidium with a telson-like spine: characteristic of the Lower Cambrian or *Olenellus* stage.—**Olenellus group.** See ★*group*¹.—**Olenellus stage,** the lower Cambrian stage. Called in North American geology, the *Georgian.* See *Georgian* ★*stage.*

Olenidian group. See ★*group*¹.

Olenus (ō′le-nus), *n.* [NL., < (?) Gr. ὠλένη, elbow.] A genus of opisthoparian trilobites having a well-defined glabella, twelve to fifteen thoracic segments, and a small pygidium: characteristic of the Upper Cambrian rocks, the Olenus horizon, or Olenidian stage.—**Olenus series.** Same as *Olenidian* ★*group.*

oleobutyrometer (ō″lẹ̄-ọ̄-bū″ti-rom′e-tėr), *n.* Same as *Abbe's refractometer.* See ★*refractometer.* *Nature*, May 26, 1904, p. 96.

oleocalcareous (ō″lẹ̄-ọ̄-kal-kā′rẹ̄-us), *a.* Noting a liniment or dressing consisting of a mixture or emulsion of an oil with lime-water, as lime-liniment. *Sci. Amer. Sup.*, Feb. 28, 1903, p. 22710.

oleocyst (ō′lẹ̄-ọ̄-sist), *n.* [L. *oleum*, oil, + E. *cyst.*] In some siphonophorans, as *Diphyes*, the upper end of the somatocyst in which a large oil-globule is secreted, presumably to perform a hydrostatic function.

oleoduct (ō′lẹ̄-ọ̄-dukt), *n.* [L. *oleum*, oil, + *ductus*, duct.] A duct or channel for oil; specifically, a method of conveying petroleum or rock-oil from the oil-field to its point of export; in the United States, a pipe-line. *N. E. D.*

oleographer (ō-lẹ̄-og′ra̤-fėr), *n.* [*oleograph* + *-er*¹.] One who produces oleographs.

oleoid (ō′lẹ̄-oid), *n.* [L. *oleum*, oil, + *-oid.*] An oily substance derived from vegetable matter.—**Ether oleoid,** a volatile, odoriferous oil, extracted from vegetable matter, such as oil of mustard.—**Fixed oleoids,** non-volatile oleoids, such as olive-oil, croton-oil, etc.—**Resinous oleoids.** Same as *oleoresins.*

oleojector (ō″lẹ̄-ọ̄-jek′to̤r), *n.* [L. *oleum*, oil, + *-jector*, < *-jicere*, *jacere*, throw.] The trade-name of a form of lubricator which injects oil under pressure into a chamber or vessel, such as the working cylinder of a gas or steam-engine.

oleomargaric (ō″lẹ̄-ọ̄-mär-gar′ik), *a.* [*oleomargar(in)* + *-ic.*] Related to or resembling oleomargarin.

oleometer, *n.* **2.** An apparatus for determining the proportion of oil contained in seeds, nuts, pressed seed-cakes, and other materials. It is so contrived as to allow of a small quantity of a volatile solvent being used to extract the oil, being distilled back upon the material under treatment, and filtered through it a number of times in succession. See *Soxhlet's extraction* ★*apparatus.*

oleo-oil, *n.* **2.** The trade-name of the liquid portion of tallow which can be pressed out at 70–80° F.

oleopalmitate (ō″lẹ̄-ọ̄-pal′mi-tāt), *n.* [*ole(ic)* + *palmit(ic)* + *-ate*¹.] A salt of oleic and palmitic acids.—**Lead oleopalmitate,** a lead salt of oleic and palmitic acids.

oleopalmitin (ō″lẹ̄-ọ̄-pal′mi-tin), *n.* [*ole(ic)* + *palmit(ic)* + *-in*².] A mixed glyceride of oleic and palmitic acids.

oleopalmitobutyrin (ō″lẹ̄-ọ̄-pal″mi-tọ̄-bū′ti-rin), *n.* [*ole(ic)* + *palmit(ic)* + *butyr(ic)* + *-in*¹.] A mixed glyceride of oleic, palmitic, and butyric acids.

Oleophosphoric acid, a viscous yellow liquid, C_{78}-$H_{143}PO_{12}$, found in the brain, probably as a decomposition product of lecithin. By long boiling with water it yields olein and phosphoric acid.

oleorefractometer (ō″lẹ̄-ọ̄-rē″frak-tom′e-tėr), *n.* A piece of optical apparatus for determining the refractive indices of oils, as the means of identifying and distinguishing them.

Oleoresin of male-fern, a greenish or brownish-green liquid obtained by exhausting powdered male-fern with acetone and removing the solvent by distillation, and finally by spontaneous evaporation. It is used as an anthelmintic. See *oleoresin*, 2.—**Sumbul oleoresin,** a resin extracted from the root of *Ferula Sumbul*, or musk-root, a perennial plant inhabiting the mountains of Bokhara.

oleosaccharum, *n.* **2.** Specifically, in *pharm.*, same as ★*oil-sugar.*

oleostearin (ō″lẹ̄-ọ̄-stē′a̤-rin), *n.* The trade-name of the solid portion of tallow which remains when the liquid portions, called *oleo-oil*, are pressed out at a temperature of 70–80° F.

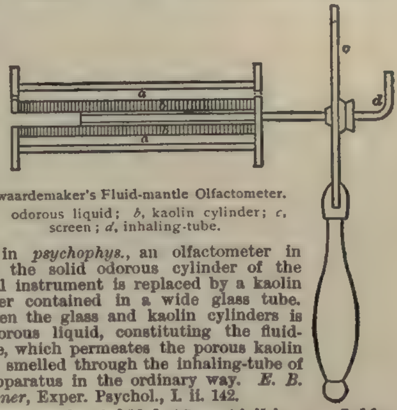
Oléron code. A set of maritime laws compiled about the time of Richard I. of England, and promulgàted at the Island of Oléron, for governing the sea-trade of western Europe. See *Judgments of Oléron*, in the Century Cyclopedia of Names.

olfacient (ol-fā′shie̤nt), *n.* [L. *olfaciens* (*-ent-*), ppr. of *olfacere*, smell: see *olfactory.*] Something which stimulates or affects the olfactory organs.

olfactible (ol-fak′ti-bl), *a.* [L. *olfactus*, pp. of *olfacere*, smell, + *-ible.* See *-able.*] **1.** Having or connected with the power of smelling: as, *olfactible* perceptions. *Berkeley.*—**2.** Capable of being perceived by the sense of smell. *N. E. D.*

olfactology (ol-fak-tol′ọ̄-ji), *n.* [*olfact(ion)* + *-ology.*] The science of smell, including both olfactometry and odorimetry: a study correlated with optics, acoustics, and haptics. *Amer. Jour. Psychol.*, X. 86. [Rare.]

olfactometer, *n.*—**Double olfactometer,** in *exper. psychol.*, an olfactometer arranged with two inhaling tubes for insertion in the two nostrils. *E. B. Titchener*, Exper. Psychol., I. ii. 142.—**Fluid-mantle olfactometer,** in *psychophys.*, an olfactometer in which the solid odorous cylinder of the clinical instrument is replaced by a kaolin cylinder contained in a wide glass tube. Between the glass and kaolin cylinders is an odorous liquid, constituting the fluid-mantle, which permeates the porous kaolin and is smelled through the inhaling-tube of the apparatus in the ordinary way. *E. B. Titchener*, Exper. Psychol., I. ii. 142.



Zwaardemaker's Fluid-mantle Olfactometer.
a, odorous liquid; *b*, kaolin cylinder; *c*, screen; *d*, inhaling-tube.

olfactometric (ol″fak-tọ̄-met′rik), *a.* [*olfactometer.*] In *exper. psychol.*, relating to or implying the use of the olfactometer: as, the *olfactometric* method, *olfactometric* experiments. *E. B. Titchener*, Exper. Psychol., I. ii. 119.

olfactometry (ol-fak-tom′e-tri), *n.* [*olfactometer.*] **1.** In *psychophys.*, the study of the quantitative relations of olfactory sensation.

> *Olfactometry* is that branch of psychophysics which is concerned with the measurement of the keenness of smell. *Amer. Jour. Psychol.*, X. 85.

2. In *exper. psychol.*, the general term for investigations of the sense of smell, qualitative or quantitative, made with the help of the olfactometer.

olfactorily (ol-fak′tọ̄-ri-li), *adv.* By the sense of smell. *N. E. D.*

Olfactory capsule, fossa, image. See ★*capsule*, ★*fossa*¹, ★*image.*—**Olfactory organs,** in *entom.*, the antennæ, generally accepted as the main organs of smell, and certain palpal structures, also supposed to have this function.—**Olfactory peduncle.** See ★*peduncle.*—**Olfactory peg,** a minute structure in the palpi of certain insects supposed to have olfactory functions.—**Olfactory pits.** (*b*) Pits, filled with a serous fluid, occurring in the antennæ of insects and supposed to be olfactory.—**Olfactory sac.** See ★*sac*².—**Olfactory teeth,** certain pale rods, perforated at the end, occurring on the antennæ of many insects: supposed to be olfactory.

olfactus (ol-fak′tus), *n.*; pl. *olfactus.* [L., smell, sense of smell.] In *exper. psychol.*, the unit of keenness or acuity of smell. See extract under ★*olfacty.*

olfacty (ol-fak′ti), *n.*; pl. *olfacties* (-tiz). [L. *olfact(are)*, to smell, + *-y*³.] In *exper. psychol.*, the normal stimulus limen for a given odorous substance.

> If, for example, a subject's stimulus-limen on the olfactometer is 10 mm. when the normal stimulus-limen used is 5 mm., then his stimulus-limen is two *olfacties*, and his olfactus ½. *Amer. Jour. Psychol.*, X. 86.

OLG., O. L. G. Abbreviations of *Old Low German.*

olibano-resin (ọ̄-lib″a̤-nọ̄-rez′in), *n.* [*olibanum* + *resin.*] Same as *olibanum.*

olibene (ol′i-bēn), *n.* [*olib(anum)* + *-ene.*] A mixture of levopentene and dipentene, obtained by distilling olibanum with water.

olic (ol′ik), *a.* [*ol(ivin)* + *-ic.*] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*¹), having the properties of or containing normative olivin and akermanite.

oligacanthous (ol″i-ga̤-kan′thus), *a.* [Gr. ὀλίγος, few, + ἄκανθα, thorn, spine.] In *bot.*, having few spines.

oligarch² (ol′i-gärk), *a.* [Gr. ὀλίγος, few, + ἀρχή, a beginning.] In *bot.*, having a few centripetally developed xylem plates: said of some radial vascular cylinders.

oligarchically (ol-i-gär′ki-ka̤l-i), *adv.* By an oligarchy; after the methods of an oligarchy.

oligarchism (ol′i-gär-kizm), *n.* [*oligarch* + *-ism.*] The system of oligarchy; attachment or devotion to the principles of oligarchy.

oligarchize (ol′i-gär-kīz), *v. t.*; pret. and pp. *oligarchized*, ppr. *oligarchizing*. To make to conform to oligarchical principles; render oligarchic.

oligoblennia (ol″i-gọ-blen′i-a̤), *n.* [Gr. *ὀλίγος*, little, + *βλέννος*, slime.] A condition in which the secretion of mucus is deficient.

oligocardia (ol″i-gọ-kär′di-a̤), *n.* [NL., < Gr. *ὀλίγος*, few, little, + *καρδία*, heart.] Slow beating of the heart. *Lancet*, Aug. 22, 1903, p. 529.

oligocephalic (ol″i-gō-se-fal′ik), *a.* [Gr. *ὀλίγος*, small, + *κεφαλή*, head, + *-ic.*] Having a small head. *Sergi.*

oligochæte (ol′i-gọ-kēt), *a.* and *n.* [*Oligochæta.*] **I.** *a.* Belonging to or having the characteristics of the *Oligochæta.*

Studies in the *oligochæte* worms by Mr. A. Ditlevsen, and investigations into the development of the eye of the bee by Mr. O. Dickel, complete the contents of this number. *Nature*, Oct. 13, 1904, p. 582.

II. *n.* A worm of the order *Oligochæta.* *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 628.

oligochrone (ol′i-gọ-krōn), *a.* [Gr. *ὀλίγος*, little, + *χρόνος*, time.] Brief. [Rare.]

oligochronometer (ol″i-gọ-krọ-nom′e-tėr), *n.* [Gr. *ὀλίγος*, little, + *χρόνος*, time, + *μέτρον*, measure.] An instrument for recording very brief periods of time.

Oligocottus (ol″i-gọ-kot′us), *n.* [NL., < Gr. *ὀλίγος*, small, + NL. *Cottus*.] A genus of cottoid fishes inhabiting the North Pacific.

oligocythemic (ol″i-gọ-sī-them′ik), *a.* Pertaining to or affected with oligocythemia.

oligodacrya (ol″i-gọ-dak′ri-a̤), *n.* [NL., prop. **oligodacryia*, < Gr. *ὀλίγος*, few, little, + *δάκρυον*, tear.] Deficient lacrymal secretion.

oligodont (ol′i-gọ-dont), *a.* [See ★*oligodontous.*] Same as ★*oligodontous:* contrasted with *polyodont.*

oligodontous (ol″i-gọ-don′tus), *a.* [Gr. *ὀλίγος*, few, + *ὀδούς* (*ὀδοντ-*), tooth, + *-ous.*] Having few teeth.

oligodynamic (ol″i-gọ-dī-nam′ik), *a.* [Gr. *ὀλίγος*, small, + *δύναμις*, power, + *-ic.*] **1.** In *phys.*, produced by extremely small forces, or by small quantities of an active substance.—**2.** Chemically active in extremely small quantity, as an oligodynamic solution of a salt of copper, capable of destroying the lower forms of vegetable or animal life, though containing, it is asserted, not more than one part of copper in many million or even many hundred million parts of water.

oligohydramnion (ol″i-gọ-hī-dram′ni-on), *n.* [NL., irreg. < Gr. *ὀλίγος*, few, little, + *ὕδωρ* (*ὑδρ-*), water, + NL. *amnion.*] A deficiency of the amniotic fluid.

oligohydramnios (ol″i-gọ-hī-dram′ni-os), *n.* Same as ★*oligohydramnion.*

oligomenorrhea (ol″i-gō-men-ọ-rē′a̤), *n.* [Gr. *ὀλίγος*, few, little, + NL. *menorrhœa.*] Insufficient menstruation.

oligomesomyodous (ol″i-gọ-mes-ọ-mī-ō′dus), *a.* [Gr. *ὀλίγος*, little, + E. *mesomyodous.*] In *ornith.*, noting a condition of the muscles of the syrinx which resembles both the oligomyodous and mesomyodous states. It is found in the broadbills, *Eurylæmidæ*, of tropical Asia. *Proc. Zool. Soc. London*, 1892, p. 253.

oligomyodan (ol″i-gọ-mī-ō′da̤n), *a.* Same as *oligomyoid.*

Oligonephria (ol″i-gọ-nef′ri-a̤), *n. pl.* [NL., < Gr. *ὀλίγος*, few, + *νεφρός*, kidney.] Those insects which possess but few urinary or Malpighian tubules. This grouping of insects shows no relation to classification or phylogeny. Distinguished from ★*Polynephria.*

oligonephrous (ol″i-gọ-nef′rus), *a.* [Gr. *ὀλίγος*, few, + *νεφρός*, kidney, + *-ous.*] Having few Malpighian tubules.

Oligoneura (ol″i-gọ-nū′ra̤), *n. pl.* [NL., < Gr. *ὀλίγος*, few, + *νεῦρον*, nerve.] A group or suborder of dipterous insects including only the family *Cecidomyiidæ.*

oligonitrophile (ol″i-gō-nī′trọ-fil), *n.* [Gr. *ὀλίγος*, few, little, + NL. *nitrum* + Gr. *φιλεῖν*, love.] In *bacteriol.*, an organism capable of fixing free nitrogen and able to grow upon media very poor in nitrogen.

The *oligonitrophiles* belong to the Clostridium group or to Beijerinck's Granulobacter group. *Science*, March 6, 1903, p. 371.

oligonitrophilic (ol″i-gō-nī″trọ-fil′ik), *a.* [*oligonitrophile* + *-ic.*] In *bacteriol.*, requiring little nitrogen: said of those organisms which grow in media containing little or no nitrogen and which have the power of fixing atmospheric nitrogen.

Oligonitrophilic bacteria are those that grow in nitrogen-free or nitrogen-poor media, and that possess the power of utilizing the free nitrogen of the air. *Science*, March 6, 1903, p. 371.

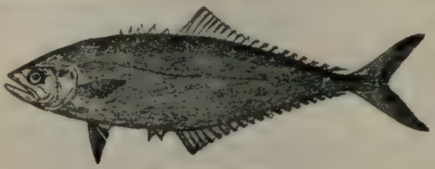
oligopelic (ol″i-gọ-pel′ik), *a.* [Gr. *ὀλίγος*, little, + *πηλός*, clay, + *-ic.*] Of a coarsely clayey consistency. See ★*pelogenous.*

oligopepsia (ol″i-gọ-pep′si-a̤), *n.* [Gr *ὀλίγος*, little, + *πέψις*, digestion.] Imperfect digestion.

oligopetalous (ol″i-gọ-pet′a̤-lus), *a.* [Gr. *ὀλίγος*, few, + E. *petal* + *-ous.*] In *bot.*, having few petals.

Oligoplastina (ol″i-gọ-plas-tī′na̤), *n. pl.* [NL.] A group of *Coccidiidea* in which the schizont divides into few (from two to four) archispores: contrasted with ★*Polyplastina.*

Oligoplites (ol″i-gọ-plī′tēz), *n.* [NL., < Gr. *ὀλίγος*, few, little, + *ὁπλίτης*, armed: see *hoplite.*] A genus of carangoid fishes found in the tropical seas of America.



Oligoplites saurus.
(From Bulletin 47, U. S. Nat. Museum.)

oligoprothesy (ol″i-gọ-proth′e-si), *n.* [Gr. *ὀλίγος*, few, + *πρόθεσις*, a preposition. See *prothesis.*] In *philol.*, the habit of using few prepositions. *N. E. D.*

oligoprothetic (ol″i-gọ-prō-thet′ik), *a.* [Gr. *ὀλίγος*, few, + *προθετικός*, prepositional.] Characterized by oligoprothesy.

oligopsammic (ol″i-gop-sam′ik), *a.* [Gr. *ὀλίγος*, little, + *ψάμμος*, sand, + *-ic.*] Of a finely sandy texture. See ★*psammogenous.*

oligopyrene (ol″i-gọ-pī′rēn), *a.* [Gr. *ὀλίγος*, few, + *πυρήν*, stone of a fruit (nucleus).] Having a small amount of chromatin in the nucleus: said of certain spermatozoa: opposed to ★*eupyrene* and ★*apyrene.*

Fr. Meves has continued his investigation of this interesting subject. He gives an account of the spermatogenesis in *Paludina*, which has normal "hair-like" and peculiar "worm-like" spermatozoa. The former may be called "eupyrene" [*εὐ* and *πυρήν* = nucleus], and the latter "*oligopyrene*," for they have little nuclear material. In the case of the Lepidopteron *Pygæra*, the term "apyrene" is more appropriate for the peculiar type of spermatozoa, corresponding to the *oligopyrene* type in *Paludina.* Meves gives an account of the spermatogenesis in both cases. *Jour. Roy. Micros. Soc.*, Feb., 1903, p. 23.

oligosepalous (ol″i-gọ-sep′a̤-lus), *a.* [Gr. *ὀλίγος*, few, + E. *sepal*, + *-ous.*] In *bot.*, having few sepals.

oligosideric (ol″i-gọ-si-der′ik), *a.* [Gr. *ὀλίγος*, little, + *σίδηρος*, iron, + *-ic.*] Containing iron in small amount: said of certain meteorites. See ★*meteorite.*

oligosiderite (ol″i-gọ-sid′e̤-rīt), *n.* [Gr. *ὀλίγος*, small, + *σίδηρος*, iron, + *-ite*²] A name given by Daubrée to a class of meteoric stones, or aërolites, in which the grains of metallic iron are in relatively small quantity. See ★*meteorite.*

oligospermism (ol″i-gọ-spėr′mizm), *n.* [*oligosperm(ia)* + *-ism.*] Same as *oligospermia.*

oligotrichia (ol″i-gọ-trik′i-a̤), *n.* [Gr. *ὀλίγος*, few, little, + *θρίξ* (*τριχ-*), hair.] A condition in which the growth of hair is scanty. *Buck*, Med. Handbook, I. 195.

oligotrophia (ol″i-gọ-trō′fi-a̤), *n.* [NL.] Same as *oligotrophy.*

oligotropic (ol″i-gọ-trop′ik), *a.* [Gr. *ὀλίγος*, few, + *-τροπος*, < *τρέπειν*, turn.] In *entom.*, visiting but few flowers: applied to bees or other insects.

oligozoöspermia (ol″i-gọ-zō-ọ-spėr′mi-a̤), *n.* [Gr. *ὀλίγος*, few, + *ζῷον*, animal, + *σπέρμα*, seed.] The presence of but few spermatozoa, resulting in practical sterility.

oliguresis (ol″i-gụ-rē′sis), *n.* [NL., < Gr. *ὀλίγος*, few, + *οὔρησις*, urination.] Same as *oliguria.*

Olinia (ọ-lin′i-a̤), *n.* [NL. (Thunberg, 1799), named after Johan Henrik *Olin*, a Swedish botanist.] A genus of plants constituting the family *Oliniaceæ.* They are closely branched shrubs or small trees with opposite, entire, feather-veined evergreen leaves, small white or red flowers in terminal cymes, and fruit consisting of thin-fleshed drupes containing from 1 to 5 nutlets. The ovary is inferior, surmounted by a tube bearing at its summit the 5 petal-like calyx-lobes, 5 scale-like petals, and 5 stamens. There are 6 species, all natives of Africa.

Oliniaceæ (ọ-lin-i-ā′sẹ-ē), *n. pl.* [NL. (Presl, 1845), < *Olinia* + *-aceæ.*] A small family of dicotyledonous choripetalous shrubs or small trees of the order *Daphnales*, the hard-pear family, containing only the genus ★*Olinia* (which see for characters).

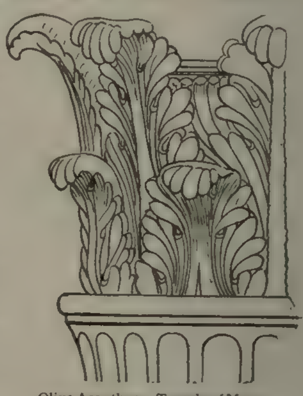
oliv, *n.* and *a.* A simplified spelling of *olive.*

olivaceous, *a.* **2.** Applied to complexion, of a dull tawny color, with a greenish tinge in the shadows.

olive, *n.*—**Black olive.** See *black* ★*olive-tree* (*a*).—**Nasal olive**, in *phonetics*, a hard-rubber bulb with a tubule which fits into the nostril, and is connected by rubber tubing, as to a Marey tambour for the recording of expiration curves. *E. W. Scripture*, Exper. Phonetics, p. 219.—**Native olive**, in Australia, one of the many names given to any one of four trees: (*a*) *Bursaria spinosa.* See *native* ★*box* and ★*box-thorn*, 2. (*b*) *Elæocarpus cyaneus.* Compare *olive-nut.* (*c*) *Notelæa ovata.* See ★*dunga-runga* and *Notelæa.* (*d*) The Queensland olive, *Olea paniculata.* See ★*marblewood*, 2.—**Olive acanthus**, in classic decoration, a form of acanthus in which the terminal points of the leaves are oval like olive-leaves, and not spiked as in the typical acanthus. A standard example is the capital of the temple of Mars Ultor in Rome.

olive-berry (ol′iv-ber″i), *n.* The berry of the wild olive or oleaster, *Olea Europæa.* See cut under *olive*, 1.

olive-clad (ol′-iv-klad), *a.* Covered with olive orchards.



Olive Acanthus. Temple of Mars Ultor, Rome.

olive-fly (ol′-iv-flī), *n.* A trypetid fly, *Dacus oleæ*, whose larvæ injure the fruit of the olive.

Olivella (ol-i-vel′a̤), *n.* [NL.] A genus of gastropods of the family *Olividæ.* *O. biplicata* was used as money by Indians in California.

olive-press (ol′iv-pres), *n.* A press for squeezing the oil from olives. See *oil-press.*

olive-scab (ol′iv-skab), *n.* See ★*scab.*

olive-scale (ol′iv-skāl), *n.* A scale which infests the olive-trees: (*a*) The black scale, *Saissetia oleæ.* (*b*) The greedy scale, *Aspidiotus rapax.*

olivescent (ol-i-ves′e̤nt), *a.* [*olive* + *-escent.*] Having an olive tinge; growing olive-colored.

olivetoric (ol″i-ve-tor′ik), *a.* Noting a crystalline acid, $C_{27}H_{36}O_8$, found in *Evernia furfuracea*, a lichen. It melts at 141–142° C.

olive-tree, *n.*—**Black olive-tree.** (*a*) *Bucida Buceras*, a small tree of the family *Combretaceæ*, common in tropical America and also found in Florida and the Keys. Also called *olivebark-tree, black olive*, and *wild olive.* See *ox-horn*, *n.*, 2, and *bois-chène.* (*b*) *Ximenia Americana* of tropical America. See *tallow-nut.*

olivette (ol-i-vet′), *n.* [F., < *olive*, olive.] A South European dance at the ingathering of the olive harvest.

oliviferous (ol-i-vif′e̤-rus), *a.* [L. *oliva*, olive, + *ferre*, bear.] Bearing olives. *Blount.*

olivil, *n.* **2.** A bitter crystalline substance, $C_{14}H_{18}O_5+H_2O$, which occurs in the gum and other parts of the olive-tree. It is easily oxidized to vanillin. Also called *olivite.*

olivinite (ol′i-vi-nīt), *n.* [*olivine* + *-ite*².] In *petrog.*, a name given by Eichstädt (1887) to a variety of peridotite or hornblende-picrite containing olivin and its decomposition-products, with hornblende and augite and occasionally a little anorthite.

olivite (ol′i-vīt), *n.* [*olive* + *-ite*².] Same as ★*olivil*, 2.

olla² (ol′a̤), *n.* Same as ★*ola*, ★*olay.*

ollapod (ol′a̤-pod), *n.* A contraction of *olla podrida.*

ollapodism (ol′a̤-pod-izm), *n.* [*ollapod* + *-ism.*] A phrase or sentence made up of a number of languages. [Nonce-word.]

olm (ōlm), *n.* [G.] The local name of the blind cave-salamander, *Proteus anguinus*, of Carniola, adopted as a common name. See cut at *Proteus.*

ological (ō-loj′i-kal), *a.* [Detached from *geological, zoölogical*, and similar words. See *ology.*] Relating to or versed in the ‘ologies.’ [Colloq.]

> However, I give you joy, my dear—and I hope you may now turn all your *ological* studies to good account, I am sure I do! *Dickens*, Hard Times, I. i. 15.
>
> “Don't tell me that's the reason,” . . . said Mrs. Gradgrind. “Go and be something*ological* directly.” *Dickens*, Hard Times, I. i. 4.

ologist (ol′ọ̄-jist), *n.* [Detached from *geölogist*, *zoölogist*, and similar words.] One who is versed in or professor of an ‘ology’; a scientist. [Colloq.]

ologistic (ol-ō-jis′tik), *a.* [*ologist* + *-ic.*] Relating to or derived from an ‘ology.’ *Clough.*

oloná (ō-lō-nä′), *n.* [Hawaiian name.] A Hawaiian fiber-plant. See *oloná* ★*fiber.*

Olym. An abbreviation of *Olympiad.*

Olympian, *n.*—**The Olympian,** Zeus or Jove.

Olympianism (ọ̄-lim′pi-ạn-izm), *n.* [*Olympian* + *-ism.*] In the religious system of the ancient Greeks, the worship of the twelve greater gods, dwellers in Olympus: distinguished from the older Pelasgic traditions and from the later mythology.

Olympianize (ọ̄-lim′pi-ạ-nīz), *v.*; pret. and pp. *Olympianized*, ppr. *Olympianizing.* [*Olympian* + *-ize.*] **I.** *trans.* To invest with the attributes of an Olympian: usually alluding to the majesty of Zeus.

II. *intrans.* To assume or affect a high Olympian style.

Olympianly (ọ̄-lim′pi-ạn-li), *adv.* In a high Olympian style; with an assumption of condescending greatness.

Olympia orange-tip. See ★*orange-tip.*

Olynthus, *n.* **3.** [*l. c.*] A transitory stage in the development of all calcareous sponges, illustrating in form and structure the simplest known type of sponge. It consists of a hollow vase-like body with a large exhalant opening, the osculum, at the upper end, and the wall perforated by numerous pores except at the upper and lower ends. The wall consists of two layers of cells, the dermal without and the gastral within, the former containing the skeletal elements. The name was given by Haeckel under the impression that this stage of development represented an adult ancestral type. See cut at ★*Clathrina.*

O. M. An abbreviation (*a*) of *old measurement;* (*b*) [*l. c.*] of the Latin *omni mane,* every morning: (*c*) of *Order of Merit.*

omagra (ọ̄-mag′rä̤), *n.* [NL., < Gr. ὦμος, shoulder, + ἄγρα, a catching (cf. *podagra*, *chiragra*, etc.).] Gouty inflammation of the shoulder-joint.

omal (ō′mạl), *a.* [Gr. ὁμός, the same, + *-al*¹.] In *math.*: (*a*) Having the differential coefficient always of one sign. *Legendre.* (*b*) Homaloidal or linear. *Cayley.*

omalgia (ọ̄-mal′ji-ä̤), *n.* [NL., < Gr. ὦμος, shoulder, + ἄλγος, pain.] Pain in the shoulder.

omam (ō′mam), *n.* In India, a name of the plant also called *ajwan* or *ajwain*, *Carum ajowan*, or *Ptychotis ajowan.* It yields ajowan-oil, the distillation-water of which, and the crystalline thymol separating from which, are medicinally used in India, especially as remedies in cholera.

omau (ō-mä′ö), *n.* [Hawaiian.] *Phæornis obscura*, one of the Sandwich Island thrushes.

ombi (om′bi), *n.* [African.] An African harp made from a crooked branch or root and strung with plant-fibers.

ombrifuge (om′bri-fūj), *n.* [As if F. **ombrifuge*, < Gr. ὄμβρος, a rain-storm, + L. *fugere*, flee.] A protection or refuge from rain. [Rare.]

> The belfry proves a fortress of a sort,
> Has other uses than to teach the hour,
> Turns sunscreen, paravent and *ombrifuge*
> To whoso seeks a shelter in its pale.
> *Browning*, Ring and Book, x. 466.

ombrograph (om′brọ̄-gråf), *n.* [Gr. ὄμβρος, a rain-storm, + γράφειν, write.] A self-recording ombrometer.

ombrological (om-brọ̄-loj′i-kạl), *a.* [*ombrolog*(*y*) + *-ic-al*¹.] Relating to rain, rainfall, or rainy weather.

ombrology (om-brol′ọ̄-ji), *n.* [Gr. ὄμβρος, a rain-storm, + -λογια, < λέγειν, speak.] The scientific knowledge of rain; also, a treatise or discourse about rain.

ombrophil (om′brọ̄-fil), *a.* and *n.* **I.** *a.* Same as ★*ombrophilous.*

II. *n.* A name proposed by Wiesner for a plant which requires much rain.

ombrophilic (om-brọ̄-fil′ik), *a.* [*ombrophil* + *-ic.*] Same as ★*ombrophilous.* *C. MacMillan.*

ombrophilous (om-brof′i-lus), *a.* [*ombrophil* + *-ous.*] Loving rain; inviting the contact of rain: in *phytogeog.*, said of plants or their parts, chiefly their foliage, or of the abstract character. Ombrophilous character is manifested by the fact that the leaves or other parts are wettable: opposed to ★*ombrophobous.* *Wiesner*, 1893.

ombrophily (om-brof′i-li), *n.* [*ombrophil* + *-y*³.] The character of being ombrophilous. *A. F. W. Schimper.*

ombrophobe (om′brọ̄-fōb), *n.* [See ★*ombrophobous.*] An ombrophobous plant.

ombrophobic (om-brọ̄-fō′bik), *a.* Same as ★*ombrophobous.* *T. H. Kearney.*

ombrophobous (om-brof′ọ̄-bus), *a.* [Gr. ὄμβρος, a rain-storm, + -φοβος, < φοβεῖν, fear, + *-ous.*] Shunning rain: in *phytogeog.*, said of plants or their parts, chiefly the foliage. Ombrophobous character is usually shown by a water-shedding or unwettable surface (due to hairs or a waxy covering), as in the common *Caladium*, in *Impatiens*, etc. Other adaptations, as the form or position of the leaf, assist in shedding or escaping water. *Wiesner*, 1893.

> Xerophytes perish after two or three days of continuous rain; they are rain-avoiding, *ombrophobous*, whereas hygrophytes are, as a rule, ombrophilous.
> *A. W. F. Schimper* (trans.), Plant-geog., p. 2.

ombrophoby (om-brof′ọ̄-bi), *n.* [*ombrophob*(*ous*) + *-y*³.] In *phytogeog.*, the condition of being ombrophobous. *A. F. W. Schimper.*

ombrophytic (om-brọ̄-fit′ik), *a.* [Gr. ὄμβρος, a rain-storm, + φυτόν, plant, + *-ic.*] Of or pertaining to plants to which rain is peculiarly favorable (ombrophiles).

> On the tali which seem younger, or which do not present quite so purely *ombrophytic* conditions, the lichens occupy nearly the whole of the surface. . . . Such an *ombrophytic* habitat is well adapted to the development of lichens. *Bot. Gazette*, March, 1903, pp. 199, 200.

ombroscope (om′brọ̄-skōp), *n.* [Gr. ὄμβρος, a rain-storm, + σκοπεῖν, view.] A rain-gage arranged to make the rate of rainfall immediately observable; specifically—(*a*) Symon's ombroscope, in which the rain over a large area is led into a narrow vertical tube which fills up rapidly so that the rate per minute is easily perceived; (*b*) Fassig's attachment to the ordinary self-registering rain-gage, by which the first few drops of a shower make a blotch or other mark, so that the exact time of beginning and the occurrence of very slight showers may be recorded.

Omega nebula. See ★*nebula.*

omegoid (ọ̄-mē′goid), *a.* [*omega* + *-oid.*] Shaped like the Greek letter omega (Ω).

omeire (ọ̄-mī′re), *n.* [Native name?] A drink, similar to kumiss, prepared in southwest Africa by allowing milk to ferment. It is a thick liquid with a slightly acid taste and a pleasant odor like that of wine. *Jour. Soc. Chem. Industry*, VI. 831.

omentitis (ō-men-tī′tis), *n.* [NL., < *omentum* + *-itis.*] Inflammation of the omentum.

omer (ō′mėr), *n.* [Heb.] **1.** A handful of grain; a sheaf.—**2.** A Hebrew dry measure equal to the tenth part of an ephah.

omiak, *n.* See *oomiak.*

Omish, *n.* Same as ★*Amish.*

omlah (om′lä̤), *n. pl.* [Ar. *'amala*, *'amalāt*, pl. of *'āmil.* See *aumil.*] In India, native civil officers. Also used as a singular noun.

ommateal (om-ạ-tē′ạl), *a.* [*ommate*(*um*) + *-al*¹.] Pertaining to an ommateum or compound eye.

ommateum (om-ạ-tē′um), *n.*; pl. *ommatea* (-ä̤). [NL., < Gr. ὄμμα (ὀμματ-), eye.] A compound eye, as in crustaceans and insects.

Omn. bid. An abbreviation of the Latin *omni biduo*, every two days.

Omn. bih. An abbreviation of the Latin *omni bihora*, every two hours.

Omn. hor. An abbreviation of the Latin *omni hora*, every hour.

omniana (om-ni-ā′nä̤), *n.* [L. *omnia*, all things, + *-ana.*] Notes, anecdotes, and information upon all subjects.

omniarch (om′ni-ärk), *n.* [L. *omnis*, all, + Gr. ἀρχός, ruler.] The ruler or head of the universe.

omnibenevolence (om″ni-bē-nev′ọ̄-lens), *n.* [L. *omnis*, all, + *benevolentia*, good-will.] Benevolence toward all.

omnibenevolent (om″ni-bẹ̄-nev′ọ̄-lent), *a.* [L. *omnis*, all, + *benevolens*, well-wishing.] Benevolent toward all.

omnibus-bar (om′ni-bus-bär), *n.* Same as *bus-bar.*

omnicausality (om″ni-kâ-zal′ị-ti), *n.* [L. *omnis*, all, + NL. *causalitas*, causality.] Universal causality; being the cause of everything.

omnicompetence (om-ni-kom′pē-tẹns), *n.* [L. *omnis*, all, + E. *competence.*] Competence in every case; capacity to answer all requirements.

omnicompetent (om-ni-kom′pẹ̄-tẹnt), *a.* [L. *omnis*, all, + E. *competent.*] Competent in all cases; competent for everything.

omnicredulity (om″ni-krẹ̄-dū′li-ti), *n.* [L. *omnis*, all, + *credulitas*, credulity.] Capacity for believing everything; unlimited credulity.

omnicredulous (om-ni-kred′ụ̄-lus), *a.* [L. *omnis*, all, + *credulus*, credulous.] Believing everything; credulous to an unlimited extent.

omniessence (om-ni-es′ẹns), *n.* [L. *omnis*, all, + ML. *essentia*, essence.] Universal being.

omnificent (om-nif′i-sẹnt), *a.* [*omnific* + *-ent.*] Same as *omnific.* [Rare.]

omniformal (om-ni-fôr′mạl), *a.* Same as *omniform.*

omnigener (om-nij′e-nėr), *a.* Omnigenous. *N. E. D.* [Rare.]

omnigerent (om-nij′e-rẹnt), *a.* [L. *omnis*, all, + *gerens*, pp. of *gerere*, bear, carry on, manage.] Able to perform every kind of work; universally operative.

omnigraph, *n.* **2.** The trade-name of a device for teaching telegraphy by means of automatically produced dots and dashes of the Morse code.

omnilingual (om-ni-ling′gwạl), *a.* [L. *omnis*, all, + *lingua*, tongue, + *-al*¹.] Able to speak or to understand all languages. *N. E. D.*

omniloquent (om-nil′ọ̄-kwẹnt), *a.* [L. *omnis*, all, + *loquens*, ppr. of *loqui*, speak.] Speaking on all subjects.

omnilucent (om-ni-lū′sẹnt), *a.* [L. *omnis*, all, + *lucens*, ppr. of *lucere*, shine.] Giving light or shining everywhere.

omnimeter (om-nim′e-tėr), *n.* [L. *omnis*, all, + Gr. μέτρον, measure.] A form of sliding rule of extended scope, the scales of which are on concentric cards or disks rotated on a common axis.

omninescience (om-ni-nesh′ẹns), *n.* [L. *omnis*, all, + LL. *nescientia*, lack of knowledge.] Lack of knowledge of all things; total ignorance.

omninescient (om-ni-nesh′ẹnt), *a.* [L. *omnis*, all, + *nesciens*, not knowing, ignorant.] Absolutely ignorant; knowing nothing.

omniperfect (om-ni-pėr′fekt), *a.* [L. *omnis*, all, + *perfectus*, perfect.] Perfect in all ways.

omnipregnant (om-ni-preg′nạnt), *a.* [L. *omnis*, all, + *prægnans*, pregnant.] Ready to produce anything. *N. E. D.*

omnipresently (om-ni-prez′ẹnt-li), *adv.* In an omnipresent manner; in such a way or with such powers as to be present everywhere.

omniprevalence (om-ni-prev′ạ-lens), *n.* [L. *omnis*, all, + LL. *prævalentia*, prevalence.] The character or power of prevailing everywhere or over all things.

omniprudent† (om-ni-prö′dẹnt), *a.* [L. *omnis*, all, + *prudens*, foreseeing.] Foreseeing everything; having a universal providence.

omnisciturient† (om″ni-si-tū′ri-ẹnt), *a.* [L. *omnis*, all, + NL. **scituriens*, ppr. of **sciturire*, desiderative of *scire*, know.] Desiring or wishing to know everything.

omniscope (om′ni-skōp), *n.* [L. *omnis*, all, + Gr. σκοπεῖν, view.] An improved periscope designed to be used in the conning-tower of a submarine boat. It consists of a brass tube projecting 8 inches above the sighting-hood, carrying five prisms with lenses. Four of these, used as finders, cover each a field of 21½ degrees of the horizon, giving images of diminished size. The fifth looks only ahead, and covers a field of 2° 40′, and presents the image in its true size without distortion. Eyepieces and a direct-vision prism are provided within the conning-tower. Two horizontal hair-lines on the lens of the direct-vision prism act as a range-finder, the space between representing the height of a man at 300 yards.

omniscribent (om-ni-skrī′bẹnt), *a.* [L. *omnis*, all, + *scribens*, ppr. of *scribere*, write.] Writing about everything.

omniscriptive (om-ni-skrip'tiv), *a.* [L. *omnis*, all, + *scriptus*, pp. of *scribere*, write, + *-ive.*] Having a tendency to write about everything; omniscribent.

omnisentience (om-ni-sen'shi-ens), *n.* [*omnisentien(t)* + *-ce.*] Sentience of all things.

omnisentient (om-ni-sen'shi-e̤nt), *a.* [L. *omnis*, all, + *sentiens*, feeling: see *sentient.*] All-feeling; having knowledge, by sensation, of all things.

omnisignificance (om″ni-sig-nif'i-ka̤ns), *n.* [L. *omnis*, all, + *significantia*, significance.] Universal meaning; having the property of meaning everything.

omnitemporal (om-ni-tem'pọ-ra̤l), *a.* [L. *omnis*, all, + *tempus* (*tempor-*), time, + *-al*¹.] 1. Having reference to all time.—2. In *gram.*, including in its significance all the tenses.

> The infinitive as an abstract is always future and the same idea grows out of its datival origin, unless limited by the terms of development to distinct time: in this sense it may be called timeless = *omnitemporal*.
> *Classical Rev.*, Oct., 1890, p. 381.

omnitolerant (om-ni-tol'ẹ-ra̤nt), *a.* [L. *omnis*, all, + *tolerans*, tolerant.] Tolerant of all things.

omnitonic (om-ni-ton'ik), *a.* [L. *omnis*, all, + Gr. *τόνος*, tone, + *-ic.*] In *music.* See the extract.

> The '*omnitonic*' system [of Fétis], whose main principle is that harmonic combinations exist by which any given sound may be resolved into any key and any mode.
> *Grove*, Dict. Music, II. 30.

omnitude (om'ni-tūd), *n.* [NL. **omnitudo*, < *omnis*, all.] The character of being all; wholeness; omneity.

omnivalous† (om-niv'a̤-lus), *a.* Same as *omnivalent.*

omnivarious (om-ni-vā'ri-us), *a.* [L. *omnis*, all, + *various*, various.] Of all varieties.

omnivision (om-ni-vizh'ọn), *n.* [L. *omnis*, all, + *visio*(*n-*), vision.] Same as *omnividence.*

omnivolent† (om-niv'ọ-le̤nt), *a.* [L. *omnis*, all, + *volens*, willing.] Willing all things.

omnivoracity (om″ni-vọ-ras'i̤-ti), *n.* [L. *omnis*, all, + *voracitas*, voracity.] The capacity of devouring everything; unlimited voracity.

omnivorant (om-niv'ọ-ra̤nt), *a.* [L. *omnis*, all, + *vorans*, ppr. of *vorare*, devour.] Devouring everything and anything; omnivorous.

omnivore (om'ni-vōr), *n.* [L. *omnivorus*, adj.: see *omnivorous.*] An omnivorous animal, or one whose food is extremely varied in its character. Good examples of omnivores are to be found in some of the small monkeys that feed on fruit, eggs, insects, and birds. Correlative with *herbivore, carnivore*, etc.

omnivorously (om-niv'ọ-rus-li), *adv.* In an omnivorous or all-devouring way.

Omn. man. An abbreviation of the Latin *omni mane*, every morning.

Omn. quad. hor. An abbreviation of the Latin *omni quadrante horæ*, every quarter hour.

omocotyle (ō-mọ-kot'i-lē), *n.* [NL., < Gr. *ὦμος*, shoulder, + *κοτύλη*, cup, socket.] The glenoid fossa of the scapula which receives the head of the humerus.

omodynia (ō-mọ-din'i-ä̤), *n.* [NL., < Gr. *ὦμος*, shoulder, + *ὀδύνη*, pain.] Pain in the shoulder.

omolite (ō'mọ-līt), *n.* [Gr. *ὦμος*, shoulder, + *λίθος*, stone.] In *ichth.*, the post-temporal bone; the bone which usually connects the shoulder-girdle with the cranium. *Starks*, Synonymy of the Fish Skeleton, p. 520.

omophagist (ọ-mof'a̤-jist), *n.* Same as *omophagus.*

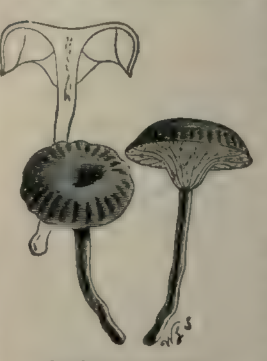
omophore (ō'mọ-fōr), *n.* [Gr. *ὠμοφόρος*, < *ὦμος*, shoulder, + *-φορος*, < *φέρειν*, bear.] One who bears the world on his shoulders: alluding to ancient Hindu and Greek cosmologic myths (Atlas, etc.).

> The world-bearing elephants of the Hindus, . . . the gigantic *Omophore* of the Manichæan cosmology, are all creatures who carry the earth on their backs or heads.
> *E. B. Tylor*, Primitive Culture, I. 329. *N. E. D.*

omoplata (ọ-mop'la̤-tä̤), *n.* [NL. See *omoplate.*] In *ichth.*, the post-temporal; the upper bone of the shoulder-girdle, usually joined to the cranium.

omphalectomy (om-pha̤-lek'tọ-mi), *n.* [Gr. *ὀμφαλός*, navel, + *ἐκτομή*, excision.] Excision of the navel.

Omphalia (om-fā'li-ä̤), *n.* [NL. (J. E. Gray, 1821), from the navel-like depression in the pileus; < Gr. *ὀμφαλός*, navel.] A genus of white-spored agarics having a cartilaginous stem broadened at the apex and gills decurrent. The pileus is somewhat membranaceous. The species are numerous, widely distributed, inodorous, and none are known to be edible. *O. campanella* is a common species on decaying trunks of coniferous trees and *O. umbilicata* in woods among moss.



Omphalia campanella.
(From Stevenson's "British Fungi.")

omphalism (om'fa̤-lizm), *n.* [Gr. *ὀμφαλός*, navel, center, + *-ism.*] Centralization of government both by placing the capital in the geographical center and by consolidation of governmental powers. *N. E. D.*

omphalochorion (om″fa̤-lọ-kō'ri-on), *n.*; pl. *omphalochoria* (-ä̤). [NL., < Gr. *ὀμφαλός*, navel, + NL. *chorion.*] In *embryol.*, the structure which results from a fusion of the yolk-sac with the chorion.

omphaloncus (om-fa̤-long'kus), *n.*; pl. *omphalonci* (-lon'sī). [NL., < Gr. *ὀμφαλός*, navel, + *ὄγκος*, mass.] A tumor at the umbilicus.

omphalophyma (om″fa̤-lọ-fī'mä̤), *n.*; pl. *omphalophymata* (-ma̤-tä̤). [NL., < Gr. *ὀμφαλός*, navel, + *φῦμα*, a growth.] Same as ★*omphaloncus.*

omphalopsychic (om″fa̤-lop-sī'kik), *a.* [Gr. *ὀμφαλός*, navel, + *ψυχή*, soul, + *-ic.*] Of or pertaining to the Omphalopsychites or their theories.

omphalosoter (om″fa̤-lọ-sō'tėr), *n.* [NL., < Gr. *ὀμφαλός*, navel, + *σωτήρ*, saver.] A device for replacing a prolapsed umbilical cord during childbirth.

omphalotomy (om-fa̤-lot'ọ-mi), *n.* [Gr. *ὀμφαλός*, navel, + *-τομια*, < *τέμνειν*, cut.] In *surg.*, the cutting of the umbilical cord.

Omphyma (om-fī'mä̤), *n.* [NL., < *ὀμ*(*φαλός*), navel, + *φῦμα*, growth.] A genus of Silurian tetracorals with simple conical corallum bearing radiciform extensions from about the apex.

omrah (om'rä̤), *n.* [Ar. *umarā*, pl. of *amir*, ameer.] A high official or grandee at a Mohammedan court, especially at that of the Great Mogul. *Encyc. Brit.*, XII. 795.

on¹, *prep.*—**On air.** In *mining*, a pump is said to be on air when drawing air with the water at each stroke.—**On end.** (*a*) and (*b*). See *end.* (*c*) In *coal-mining*, in a direction parallel to the main cleavage-planes or -joints of a coal-seam, and at right angles to the end-joints.—**On side**, in *foot-ball* and *hockey*, between the ball or puck and one's own goal: its opposite is *off side.* A player off side must be put on side before he can touch the ball or an opponent.—**On the spot** (*c*), **on the town.** See ★*spot*, ★*town.*

ON., O. N. An abbreviation of *Old Norse.*

onagon (o-nä'gon), *n.* [Chippewa?] A form of drum used by the Chippewa Indians.

onagra² (on'a̤-grä̤), *n.* [See *onager.*] The female of the wild ass or onager.

onagraceous (on-a̤-grā'shius), *a.* Belonging to the *Onagraceæ*, a family of plants.

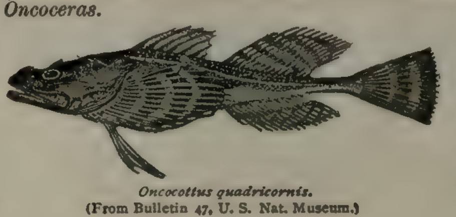
oncha (ōn'chä), *n.* [Amer. Sp.] A Spanish-American unit of weight, equal to twenty-five times the libra, or local pound.

onchosphere, *n.* See ★*oncosphere.*

onchus, *n.* See ★*oncus.*

Oncoceras (ong-kos'ẹ-ra̤s), *n.* [NL., < Gr. *ὄγκος*, barb, hook, + *κέρας*, horn.] A genus of Silurian nautiloid cephalopods having slightly curved, short, and exogastric shells with expanded living-chamber.

oncoceratite (ong-kọ-ser'a̤-tīt), *n.* [*Oncoceras* (*-at-*) + *-ite*².] A cephalopod of the genus *Oncoceras.*



Oncocottus quadricornis.
(From Bulletin 47, U. S. Nat. Museum.)

Oncocottus (ong-kọ-kot'us), *n.* [NL., < Gr. *ὄγκος*, hook, barb, + NL. *Cottus.*] A genus of cottoid fishes inhabiting circumpolar waters and extending south to England, Labrador, and Alaska.

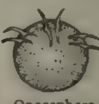
oncological (ong-kọ-loj'i-ka̤l), *a.* [*oncolog*(*y*) + *-ic-al*¹.] Relating to oncology.

oncometric (ong-kọ-met'rik), *a.* 1. Measured with or relating to the oncometer.—2. Relating to oncometry.

> The *oncometric* curves are nearly normal.
> *Buck*, Med. Handbook, I. 298.

oncometry (ong-kom'e-tri), *n.* [Gr. *ὄγκος*, a mass (tumor), + *-μετρια*, < *μέτρον*, measure.] Measurement of the variations in volume of the spleen, kidneys, etc., or of internal tumors.

oncosphere (ong'kọ-sfēr), *n.* [Gr. *ὄγκος*, barb, hook, + *σφαῖρα*, sphere.] The embryo of the tapeworm while it is in the spherical or subspherical stage, inclosed in a thick membrane, the embryophore, and armed with six hooks: same as *hexacanth* ★*embryo.*



Oncosphere (*Bothriocephalus latus*). Highly magnified.

> The embryo [of the tapeworm] itself is small, usually spherical, and regularly armed with six hooks arranged in three pairs near one pole. This six-hooked *oncosphere*, as it is called, is borne in an inner membrane of considerable thickness, and often prominent in appearance by virtue of its structure, and to this the name of embryophore has been given.
> *Trans. Amer. Micros. Soc.*, Nov., 1903, p. 159.

oncospore (ong'kọ-spōr), *n.* [Gr. *ὄγκος*, hook, + *σπορά*, seed.] In *phytogeog.*, a plant whose fruit or seed is provided with hooks to assist distribution. *F. E. Clements.*

oncost (on'kôst), *n.* and *a.* [*on* + *cost*².] **I.** *n.* 1. Additional costs; extra expenses.

> The goods thus sent (damaged) are disposed of at the fairs of Bruges, Ghent, and Antwerp, or to itinerant traders, the commission being included in the item for *oncosts.* *J. Colville*, Social England, III. 392.

2. In *coal-mining*, the cost of upkeep, making and maintaining shafts and roads, pumping, etc. The engineers and others employed on this work are paid by time. [Scotch.]—3. The indirect expenditure incurred for the purpose of increasing the productive power of organized labor. *Trans. Inst. Engin. and Shipbuilders*, Scotland, March, 1900, p. 236.

II. *a.* Noting work done on time wages; also, noting men who work on such terms: as, *oncost*-men.

oncost-man (on'kôst-ma̤n), *n.* In *mining*, a workman other than a miner, who is paid by days' wages. *Barrowman*, Glossary.

oncotylid (ong-kot'i-lid), *n.* and *a.* **I.** A member of the family *Oncotylidæ.*

II. *a.* Having the characters of or belonging to the heteropterous family *Oncotylidæ.*

oncus (ong'kus), *n.*; pl. *onci* (on'sī). [NL. *oncus*, < Gr. *ὄγκος*, a hook.] A name given to certain fossil selachian fin-spines from the Paleozoic rocks, characterized by their bilateral symmetry, smooth base, and grooved surface.

ondograph (on'dọ-gråf), *n.* [Irreg. < F. *onde*, < L. *unda*, wave, + Gr. *γράφειν*, write.] In *phys.*, an instrument for recording wave-forms in alternating-current circuits and for the investigation of other oscillatory phenomena in electricity.

ondometer (on-dom'e-tėr), *n.* [Irreg. < F. *onde*, < L. *unda*, wave, + Gr. *μέτρον*, measure.] An instrument consisting of a system of adjustable condensers and inductance-coils for determining the wave-length of the electric waves, used in wireless telegraphy.

ondraw (on'drâ), *v. i.*; pret. *ondrew*, pp. *ondrawn*, ppr. *ondrawing.* [*on*¹ + *draw.*] To approach; draw on; draw near.

> By Joidoigne, near the east, as we *ondrew*,
> Dawn pierced the humid air;
> And eastward faced I with him, though I knew
> Never marched Grouchy there.
> *T. Hardy*, Peasant's Confession, Wessex Poems, p. 78.

ondrive (ôn'drīv), *v. t.*; pret. *ondrove*, pp. *ondriven*, ppr. *ondriving.* In *cricket*, to drive (a ball) to the on, that is, to that part of the field which is in front of the batsman's wicket and to the left of the wicket-keeper.

One old cat. See ★*cat*¹.

one-foot (wun'fůt), *a.* In *organ-building*, at a pitch three octaves above that of the keys used: said of stops or tones. See *stop*¹, 6, and *foot*, 12 (*c*) (2).

onegite (ọ-nē'gīt), *n.* [*Onega* (see def.) + *-ite*².] Acicular goethite-penetrating quartz:

used as an ornamental stone. The original came from Lake Onega, Russia. It is also found in Colorado.

Oneida conglomerate, sandstone. See ★*conglomerate*, ★*sandstone*.

Oneirodes (on-ī-rō′dēz), *n.* [NL., so called in allusion to the small, almost covered eyes; < Gr. *ὀνειρώδης*, dream-like, < *ὄνειρος*, dream, + *εἶδος*, form.] A genus of fishes, of the family *Ceratiidæ*, found in Greenland waters.

oneiromancer (ọ-nī′rọ-man-sėr), *n.* [*oneiromanc(y)* + *-er*^{2}.] One who divines by means of dreams; an interpreter of dreams.

oneiromantist (ọ-nī′rọ-man-tist), *n.* [*oneiromancy* (*-mant-*) + *-ist*.] Same as ★*oneiromancer*.

one-one (wun′wun), *a.* In *math.*, of two constructs, having every element of each paired with one and only one element of the other.

A relation is *one-one* when, if x has the relation to y, and x′ differs from x, y′ from y, then it follows that x′ does not have the relation to y, nor x to y′.
B. A. W. Russell, Princ. of Math., p. 305.

Oneonta sandstone. See ★*sandstone*.

onerative (on′ẹ-rā-tiv), *a.* [*onerate* + *-ive*.] Imposing a burden or obligation on; conveying an accusation: opposed to *exonerative*.

onerosity (on-ẹ-ros′i̤-ti), *n.* [*onerous* + *-ity*.] The fact of being onerous; specifically in *Scots law*, the fact that a deed, contract, note, or the like, has valid consideration. See *onerous*, 2.

Onerous contract, gift. See ★*contract*, etc.

one-time (wun′tīm), *a.* Sometime; former; whilom: as, with their *one-time* king.

It no longer needs to fear that its boom will collapse, for the *one-time* boom has passed off to be succeeded by slower but fully as substantial progress.
Outing, Feb., 1906, p. 584.

one-time (wun′tīm), *adv.* At once; without delay. [Colloq.]

'Oh, yes,' I said, 'I came on board her sixteen minutes ago; saw the Purser, and found I knew him; made him give me the best room in the ship instead of the one I'd got; carted my things in there *one-time*, and locked the door; and then cleared out here, and didn't worry any more.'
Cutcliffe Hyne, in Athenæum, Jan. 14, 1905, p. 46.

one-to-one (wun′tö-wun′), *a.* Same as ★*one-one*.

The meanings to be attached to addition, subtraction, multiplication, and division, the commutative, associative, and distributive laws of operation, can all be based on the notion of order and the possibility of *one-to-one* correspondences. *Encyc. Brit.*, XXVIII. 545.

one-valued (wun′val″ūd), *a.* Having but one value; in *math.*, noting a function, $y = fx$, as regards x, when for each x there is only one value of y. For example, $y = x^n$ is one-valued; whereas the function $y = x^{\frac{1}{n}}$ is, in general, an n-valued function of x.

The fundamental assumption concerning a homogeneous phase in equilibrium is that its energy ϵ is a continuous *one-valued* function of its entropy η, its volume v, and the masses $m_1, m_2, \ldots, m_n$ of its independent components. *Jour. Phys. Chem.*, May, 1904, p. 325.

O. N. F. An abbreviation of *Old Northern French*.

onflow (on′flō), *n.* [*on*^{1} + *flow*.] A continuous flowing, as of liquid; a flowing onward.

onflowing (on′flō-ing), *n.* Same as ★*onflow*.

onglaze (on′glāz), *a.* In *ceram.*, noting the decoration or tinting of ware after it has been glazed. See *overglaze*, *a*.

onion, *n.*—**Native onion.** In Australia, same as *native* ★*leek*.

onion (un′yun), *v. t.* [*onion*, *n.*] To affect by or with onions: (*a*) To flavor with onions. (*b*) To rub with onion; produce by the presence of onion, as tears. *N. E. D.*

onionized (un′yun-īzd), *a.* [*onion* + *-ize* + *-ed*^{2}.] Flavored with or smelling of onions. *N. E. D.*

onion-rust (un′yun-rust), *n.* A fungus, *Peronospora Schleideniana*, which produces a grayish coating upon onion-tops.

onion-scab (un′yun-skab), *n.* See ★*scab*.

onion-thrips (un′yun-thrips), *n.* Same as ★*tobacco-thrips*.

onion-twitch (un′yun-twich), *n.* Same as *onion-couch*.

onion-weevil (un′yun-wē″vl), *n.* An American otiorhynchid beetle, *Epicærus imbricatus*, which feeds on onion-leaves and other garden vegetables and plants. See cut at *Epicærus*.

oniscoidean (ō-nis-koi′dẹ-a̤n), *a.* and *n.* **I.** *a.* Same as *oniscoid*.

II. *n.* A wood-louse or sow-bug.

-onium. [NL. *-onium*, as in *ammonium*, etc.] In *chem.*, a termination given to the names of compound radicals which are analogous in structure and chemical function to ammonium, NH_4, as phosphonium, PH_4, or tetramethylphosphonium, $P^3 (CH_3)_4$.

onkos (ong′kos), *n.*; pl. *onkoi* (-koi). [Gr. *ὄγκος*, a bulk, a mass, a bushy topknot imitated in tragic masks: see ★*oncus*.] In *Gr. antiq.*, a cone-shaped projection of the upper part of the tragic mask which was supposed to give it size and impressiveness.

It seems to me possible that in this *onkos* we have a relic of the elongated animal-head, or even of the crest which we noticed on the Island stones in the case of the ass, lion, and horse.
A. B. Cook, in Jour. Hellenic Studies, XIV. 166.

onlik (on′lik), *n.* [Turk. *onliq*, < *on*, ten, + *-liq*, adj. ending.] A silver coin of Turkey, equal to 10 piasters.

onlook (on′lu̇k), *n.* The act of looking on (something); a thing or situation looked at.

onocerine (ọ-nos′ẹ-rin), *n.* [*Ono*(*nis*) + L. *cera*, wax, + *-ine*^{2}.] A crystalline substance, $C_{12}H_{20}O$, obtained from the root of *Ononis spinosa*, or rest-harrow.

onolatry (ọ-nol′a̤-tri), *n.* [Gr. *ὄνος*, ass, + *λατρεία*, worship.] The worship of an ass or asses: ascribed to various ancient sects. *Jour. Amer. Folk-lore*, July–Sept., 1903, p. 203.

onomatomania (on-ọ-mat-ọ-mā′ni-ä̤), *n.* [Gr. *ὄνομα*(*τ-*), name, + *μανία*, madness.] Obsession by a word or name; constant involuntary dwelling of the mind upon some one word.

onomatoplasm (on-ọ-mat′ọ-plazm), *n.* [Gr. *ὄνομα*(*τ-*), name, + *πγάσμα*, anything formed.] A word which imitates the sound of the thing it signifies.

onomatopœia, *n.* **3.** A word formed in imitation of the sound of the thing it signifies; an imitative word. See the extract.

Many interjections are what are called "imitative," or *onomatopœias*:—Sounds produced (a) by inanimate objects—ding-dong, . . . splash, clank, puff. (b) By animate objects—bow-wow, mew, . . . tu-whit, tu-whoo.
R. Morris, Hist. Outlines Eng. Accidence, xvii. § 318.

onomatopœial (on-ọ-mat-ọ-pē′ya̤l), *a.* [*onomatopœia* + *-al*^{1}.] Relating to or of the nature of onomatopœia; formed by onomatopœia; onomatopœic.

onomatopœian (on-ọ-mat-ọ-pē′ya̤n), *a.* and *n.* [*onomatopœia* + *-an*.] **I.** *a.* Same as *onomatopœic*.

II. *n.* Same as *onomatope*.

ononial (ọ-nō′ni-al), *n.* [*Ononi*(*s*) + *-al*^{3}.] An amorphous compound, $C_{19}H_{26}O_8$, found in the root of *Ononis spinosa*, or rest-harrow.

ononin (ọ-nō′nin), *n.* [*Onon*(*is*) + *-in*^{2}.] A glucoside, $C_{30}H_{34}O_{13}$, obtained from the root of *Ononis spinosa*, or rest-harrow.

onotillo (ō-nō-tēl′yō), *n.* [Amer. Sp., dim. of *onoto*, a Venezuelan form of *annotto*, *annatto*.] In Venezuela, a tree of the gamboge family, *Vismia ferruginea*. It yields a reddish-yellow gum-resin which can be used like gamboge.

onoto (ō-nō′tō), *n.* [A Venezuelan form of Galibi *annoto*, E. *annotto*, *annatto*, *arnotto*, etc.] Same as *arnotto*.

onsetter (on′set-ėr), *n.* **1.** One who urges, incites, or sets on (another).—**2.** One who assails or makes an onset.

onsetting (on′set-ing), *a.* Assailing; attacking.

on-side (on′sīd), *n.* In *cricket*, that part of the field of play to the left of the wicket-keeper and to the left of an imaginary line drawn between the wickets and extended in either direction to the boundary.

Leg hitting has so entirely departed—the last great exponent having been William Oscroft—that for some bowlers not a single man is placed on the *on-side*.
Encyc. Brit., XXVII. 276.

onstand (on′stand), *n.* Whatever the outgoing tenant of a farm leaves on the land (as manure, straw, etc.) for the incoming tenant, who pays for it at a price to be determined. [Prov. Eng.]

Ont. An abbreviation of *Ontario*.

ontal (on′ta̤l), *a.* [Gr. *ὤν*, neut. *ὄν* (*ὀντ-*), being (see *ontology*), + *-al*^{1}.] Real; actually existent: opposed to *phenomenal*. See the extract.

Difference of aspect [the Double Aspect Theory] may result solely from difference of standpoint, or it may be due to difference in the reality itself. The circle, seen as concave from within and as convex from without, is an ancient instance of the first still in great favour; the pillar, that was cloud and darkness to the Egyptians but light to the children of Israel, may serve to exemplify the second. The former we may call the phenomenal, and the latter the *ontal*, meaning of "aspect." With these two very different meanings our theory plays fast and loose as suits its own convenience.
Encyc. Brit., XXXII. 67.

Ontarian, *n.* **2.** In the classification of the New York series of geological formations, a term including all formations and stages of Upper Silurian age: equivalent to *Upper Silurian*.

ontocycle (on′tọ-sī-kl), *n.* [Gr. *ὤν* (*ὀντ-*), being, + *κύκλος*, cycle.] The cycle of individual development or ontogeny. [Rare.]

This enables us to speak confidently of the whole cycle of the ontogeny or *ontocycle* as more or less exactly parallel with the cycle of the phylogeny or phylocycle.
Hyatt, Biol. Lectures, 1899, p. 134.

ontocyclic (on-tọ-sik′lik), *a.* [*ontocycl*(*e*) + *-ic*.] Of or pertaining to an ontocycle.

ontocyclon (on-tọ-sī′klon), *n.* Same as ★*ontocycle*.

Ontogenetic adaptation. See ★*adaptation*.—**Ontogenetic forces**, the influences that work for the maintenance and stability of any organism or organization; the forces of social as well as individual preservation. *L. F. Ward*, Pure Sociol., p. 260.—**Ontogenetic migration.** See ★*migration*.—**Ontogenetic psychology.** See ★*psychology*.

Ontogenic variation. See ★*variation*.

ontogony (on-tog′ọ-ni), *n.* [Gr. *ὤν* (*ὀντ-*), being, + *γόνος*, generation, + *-y*^{3}.] Same as *ontogeny*.

ontography, *n.* **2.** That division of geography which is concerned with the responses of organic beings to their physiographic surroundings or environment.

ontoidic (on-tọ-id′ik), *a.* [Gr. *ὤν* (*ὀντ-*), being, + *ἴδιος*, own.] Of or pertaining to the ontogenetic stages of the idioplasm of Weismann.

We must . . . form an idea of the constitution and nature of the germ-plasm, and of the ontogenetic stages of the idioplasm, or *onto-idic* stages.
Weismann (trans.), Germ-plasm, p. 35.

ontonomy (on-ton′ọ-mi), *n.* [Gr. *ὤν* (*ὀντ-*), being, + *νόμος*, law, + *-y*^{3}.] Same as *ontology*.

ontophyletic (on″tọ-fī-let′ik), *a.* [Gr. *ὤν* (*ὀντ-*), being, + *φῦλον*, tribe, + *-et-ic*.] Intergenetic. [Rare.]

Recurring to an earlier suggestion (p. 3, above) we may note that all three of these conceptions are 'intergenetic,' or '*ontophyletic*.'
J. M. Baldwin, Development and Evolution, p. 11, note.

ontotrophy (on-tot′rọ-fi), *n.* [Gr. *ὤν* (*ὀντ-*), low, + *-τροφια*, < *τρέφειν*, nourish.] Individual nutrition. *L. F. Ward*, Pure Sociology, p. 291.

onuphin (on′ū-fin), *n.* [*Onuphis* (see def.) + *-in*^{2}.] An albuminous substance belonging to the hyalins, found in the tubes of *Onuphis tubicola*.

Onychaster (on′i-kas-tėr), *n.* [NL., < Gr. *ὄνυξ* (*ὀνυχ-*), claw, + *ἀστήρ*, star.] A genus of fossil ophiurans or brittle-stars with small round central disk and five long simple arms, occurring in the Subcarboniferous rocks, frequently associated with or adhering to the calyx of a crinoid.

onychatrophia (on″i-ka̤-trō′fi-ä̤), *n.* [NL., < Gr. *ὄνυξ* (*ὀνυχ-*), nail, + *ἀτροφία*, atrophy.] In *pathol.*, atrophy of the nails.

onychoclasis (on-i-kok′la̤-sis), *n.* [NL., < Gr. *ὄνυξ* (*ὀνυχ-*), nail, + *κλάσις*, breaking.] Breaking of a finger-nail or toe-nail.

Onychodus (ọ-nik′ọ-dus), *n.* [NL., < Gr. *ὄνυξ* (*ὀνυχ-*), claw, + *ὀδούς*, tooth.] A genus of Paleozoic fishes of uncertain relationship, best known from its remarkable arrangement of curved spur-like presymphyseal teeth. It occurs in the Devonian rocks.

onychograph (on′i-kọ-gråf), *n.* [Gr. *ὄνυξ* (*ὀνυχ-*), nail, + *γράφειν*, write.] A device for recording the capillary pulse, if present, under the nails.

onychoid (on′i-koid), *a.* [Gr. *ὀνυχοειδής*, < *ὄνυξ* (*ὀνυχ-*), nail, + *εἶδος*, form.] Resembling a finger-nail or toe-nail.

onychophage (on′i-kọ-fāj), *n.* [Gr. *ὄνυξ* (*ὀνυχ-*), nail, + *-φαγος*, < *φαγεῖν*, eat.] One who has the habit of biting the finger-nails.

onychophagia (on″i-kọ-fā′ji-ä̤), *n.* [NL.] Same as ★*onychophagy*.

onychophagist (on-i-kof′a̤-jist), *n.* Same as ★*onychophage*.

onychophagy (on-i-kof′a̤-ji), *n.* [NL. *onycophagia*, < Gr. *ὄνυξ* (*ὀνυχ-*), nail, + *-φαγια*, < *φαγεῖν*, eat.] The habit of biting the finger-nails.

Habits of various kinds, such as *onycophagie* or finger-nail biting, excessive smoking, dypsomania, nervous twitchings, etc. *Pop. Sci. Mo.*, Nov., 1905, p. 607.

onychophyma (on″i-kọ̄-fī′mä̤), *n.* [Gr. *ὄνυξ* (*ὀνυχ-*), nail, + *φῦμα*, a growth.] Thickening of the nails.

onychoptosis (on″i-kop-tō′sis), *n.* [NL., < Gr. *ὄνυξ* (*ὀνυχ-*), nail, + *πτῶσις*, falling.] In *pathol.*, falling off of the nails.

onychorrhexis (on″i-kọ̄-rek′sis), *n.* [Gr. *ὄνυξ* (*ὀνυχ-*), nail, + *ῥῆξις*, breaking, rupture.] A disease of the nail resulting in a longitudinal splitting.

Onycoteuthidæ (on″i-kọ̄-tū′thi-dē), *n. pl.* [NL. *Onycoteuth*(*is*) + *-idæ.*] A family of decapodous cephalopods of world-wide distribution. They have a cylindrical body with terminal or lateral fins, very long tentacular arms, the sessile or tentacular arms furnished with retractile hooks, and the gladius lanceolate with a terminal cone. The family contains *Onycoteuthis, Gonatus, Ancistrochirus*, and several other genera.

Onycoteuthis (on″i-kọ̄-tū′this), *n.* [NL., < Gr. *ὄνυξ* (*ὀνυχ-*), nail, + *τευθίς*, cuttle-fish.] The typical genus of the family *Onycoteuthidæ. Lichtenstein.*

Onygena (o-nij′ẹ̄-nä̤), *n.* [NL. (Persoon, 1798), irreg. < Gr. *ὄνυξ*, nail, hoof, + *-γενης*, -produced.] A genus of ascomycetous fungi having small, more or less globose, stipitate or sessile ascocarps surrounded by a peridium which becomes variously ruptured at maturity. The spores are unicellular, brown, becoming free in the peridium and intermingled with capillitium threads. Six species have been described. They occur on decaying hoofs and horns of various animals.

Onygenaceæ (on″i-jẹ̄-nā′sẹ̄-ē), *n. pl.* [NL., < *Onygena* + *-aceæ.*] A family of ascomycetous fungi containing the single genus *Onygena*. See ⋆*Onygena.*

onygophagist (on-i-gof′a̤-jist), *n.* An incorrect form of ⋆*onychophagist.*

> I was sitting at my desk, pen in hand and in mouth at the same time; (a substitute for biting the nails which I recommend to all *onygophagists*).
>
> *Southey*, Doctor, iii, A. i.

onymity (on-im′i̤-ti), *n.* [*onym* + *-ity.*] The possession of a name: opposed to *anonymity.* [Rare.]

onymizer (on′i-mī-zėr), *n.* [*onymize* + *-er*¹.] One who applies onyms or technical names, as to species or groups in zoölogy. *Coues*, in The Auk, Oct., 1884, p. 321. [Rare.]

onymous (on′i-mus), *a.* [*onym* + *-ous* or detached from (*an*)*onymous.*] Having a name: opposed to *anonymous:* said of persons or things, as letters, books, etc. *N. E. D.* [Rare.]

onyx, *n.*—**Oriental onyx.** Same as *onyx marble* or *Mexican onyx.*

onza (ōn′thä, ōn′sä), *n.* [Sp. *onza*, ounce. See *ounce*¹.] **1.** The ounce of Spain and Spanish America, the sixteenth part of the libra, or a little more than the avoirdupois ounce.—**2.** A Mexican gold coin, equal to 8 scudos or 16 pesos.

oo² (ō′ō), *n.* [Hawaiian.] One of the Sandwich Island honeysuckers, *Moho* or *Acrulocercus nobilis*, the bright yellow axillary feathers of which were used with those of the mamo in making cloaks and leis for the chiefs. See *Moho*, with cut.

oöangium (ō-ọ̄-an′ji-um), *n.*; pl. *oöangia* (-ä̤). [NL., < Gr. *ᾠόν*, egg, + *ἀγγεῖον*, vessel.] In *bot.*, a multicellular organ which develops the egg-cells. Same as *archegonium.* See ⋆*oöcyst*, 3.

oöblastema (ō″ọ̄-blas-tē′mä̤), *n.*; pl. *oöblastemata* (-ma̤-tä̤). [NL., < Gr. *ᾠόν*, egg, + *βλάστημα*, a sprout.] A simple or branched filament arising from the carpogonium of certain of the red algæ. It conjugates with an auxiliary cell, and as a result, carpospores are formed.

oöcapt (ō′ọ̄-kapt), *n.* [Gr. *ᾠόν*, egg, + *κάπτειν*, gulp down.] A muscular organ in *Cestoda* by which the eggs are taken from the ovary and forced onward to the vagina. *Buck*, Med. Handbook, II. 780.

oöchlorin (ō-ọ̄-klō′rin), *n.* [Gr. *ᾠόν*, egg, + *χλωρός*, greenish-yellow, + *-in*².] A green pigment found in certain egg-shells of birds.

Oöcorys (ō-ọ̄-kō′ris), *n.* [NL., < Gr. *ᾠόν*, egg, + *κόρυς*, a helmet.] The typical genus of the family *Oöcorythidæ. Fischer*, 1883.

Oöcorythidæ (ō″ọ̄-kō-rith′i-dē), *n. pl.* [NL. *Oöcorys* (*-ryth-*), + *-idæ.*] A family of gastropodous mollusks of the order *Prosobranchiata.* They have a short siphon, broad foot, no eyes, the radula tænioglossate, the shell buccinoid or cassidiform, and the corneous operculum spiral. It contains the single genus *Oöcorys.*

oöcyan (ō-ọ̄-sī′a̤n), *n.* [Gr. *ᾠόν*, egg, + *κύανος*, blue.] Same as ⋆*oöcyanin.*

oöcyanin (ō-ọ̄-sī′a̤-nin), *n.* [Gr. *ᾠόν*, egg, + *κύανος*, blue, + *-in*².] A blue pigment which has been found in certain egg-shells.

oöcyesis (ō″ọ̄-sī-ē′sis), *n.* [Gr. *ᾠόν*, egg, + *κύησις*, gestation.] Ovarian gestation.

oöcyst, *n.* **3.** A unicellular structure of the algæ, producing egg-cells: same as *carpogonium.* See ⋆*oöangium.*—**4.** In sporozoans, the tough, resistent wall surrounding a zygote. *Proc. Roy. Soc.* (London), 1902, I. 77.

oöcyte (ō′ọ̄-sīt), *n.* [Gr. *ᾠόν*, egg, + *κύτος*, a hollow (a cell).] The ovarian egg before maturation, that is, before the formation of the polar bodies. The primary oöcyte divides to form the secondary oöcyte and the first polar body; the secondary oöcyte divides to form the mature egg (oötid) and the second polar body. The primary and secondary oöcytes in oögenesis, with their corresponding polar bodies, are the homologues of the primary and secondary spermatocytes in spermatogenesis. *Boveri*, 1891.

oœciostome (ō-ē′si-ọ̄-stōm), *n.* [NL. *oœcium* + Gr. *στόμα*, mouth.] The orifice of a zoœcium among the moss-animals or *Polyzoa.*

> A zoœcium in which the egg develops becomes an ovicell; it differs to a conspicuous extent from the other individuals of the colony, and often acquires a complicated form. Its orifice ("*oœciostome*") is valuable for the discrimination of the species.
>
> *Encyc. Brit.*, XXXI. 828.

oof (öf), *n.* [Short for *ooftish.*] Money; cash. [Slang.]

> I believe his family 's all right, and of course he has plenty of *oof*, but then, you know, as I 've often said to Weginald, 'Whatever happens, we must keep select.'
>
> *N. Y. Times*, Sept. 7, 1902.

oof-bird (öf′bėrd), *n.* [*oof* + *bird*¹, used humorously.] An imaginary 'bird' or fairy godmother who can be coaxed into generosity; hence, the one who furnishes the money; the source of supplies. [Slang.]

> In these days, when the *oof-bird* is so wild and wary, it won't do . . . to kick up your heels at a good thing just because it may n't be all that your fancy painted.
>
> *Jane Barlow*, Founding of Fortunes, iii. 8.

oofless (öf′les), *a.* [*oof* + *-less.*] Without money; penniless. [Slang.]

ooftish (öf′tish), *n.* [Said to be Yiddish *oof tish*, for G. *auf tische*, that is, *auf dem tische*, 'on the table,' meaning money laid down on the counter, 'cash down.'] Money; money down. See the extract. [Slang.]

> 'Oof' as a current pseudonym for money has been in use for about seven years, but '*ooftish*,' which also is Whitechapel slang for coin of the realm, has been in use in England over thirty years.
>
> *J. W. Pearce*, in Mod. Soc., Jan. 16, 1892. *N. E. D.*

oofy (öf′i), *a.* [*oof* + *-y*¹.] Rich; very wealthy. [Slang.]

> Awfully good family, the Walders, not particularly *oofy*, are they? *Albert Kinross*, Philbrick Howell, xxix.

oögonial (ō-ọ̄-gō′ni-a̤l), *a.* [*oögoni*(*um*) + *-al*¹.] Of or pertaining to oögonia or an oögonium.

> The fertilizing tube is entirely of *oogonial* origin.
>
> *Science*, March 21, 1902, p. 457.

oögonium, *n.* 2. In *zoöl.*: (*a*) The primordial mother-cell which gives rise to the ovum and its follicle. *Pflüger.* (*b*) One of the youngest ovarian cells, characterized by having in its nucleus the same number of chromosomes as in the nuclei of the somatic or body-cells. The oögonia, which eventually give rise to the primary oöcytes, are homologous in the oögenesis with the spermatogonia in the spermatogenesis of the male animal of the same species. *Boveri*, 1891.

oöid (ō′oid), *a.* [Gr. *ᾠοειδής*, < *ᾠόν*, egg, + *εἶδος*, form.] Same as *oöidal.*

oöidocephalic (ọ̄-ō″i-dọ̄-se-fal′ik), *a.* [Gr. *ᾠοειδής*, oval, + *κεφαλή*, head, + *-ic.*] In *craniom.*, having a head of an oval form: noting one of the divisions of cranial forms given by Aitken Meigs.

oökaryon (ō-ọ̄-kar′i-on), *n.*; pl. *oökarya* (-ä̤). [NL., < Gr. *ᾠόν*, egg, + *κάρυον*, nut.] The nucleus of the unfertilized egg or ovum; the egg-nucleus.

oökinesis (ō″ọ̄-ki-nē′sis), *n.* [NL., < Gr. *ᾠόν*, egg, + *κίνησις*, movement.] The karyokinetic or mitotic phenomena exhibited by the egg during its maturation and fertilization. *Whitman*, 1887.

oökinete (ō-ọ̄-kī′nēt), *n.* [Cf. ⋆*oökinesis.*] In sporozoans, a zygote which is at first a freely moving gregarine-like organism which penetrates the cells or tissues, comes to rest, and becomes encysted as an oöcyst. *Proc. Roy. Soc.* (London), 1902, I. 74.

oökinetic (ō″ọ̄-ki-net′ik), *a.* [*oökinesis* (*-et-*) + *-ic.*] Of or pertaining to, or exhibiting, oökinesis.

oölem (ō′ọ̄-lem), *n.* [Also *oölemm;* < Gr. *ᾠόν*, egg, + *λέμμα*, peel, skin, scale.] The innermost of the three external coats of an insect's egg. See *oölemma. Cambridge Nat. Hist.*, V. 144.

oölite, *n.*—**Hambleton Oölite** [*Hambleton* Hills in Yorkshire], in *geol.*, a division of the Corallian Oolite in Yorkshire which lies between the Lower and Middle Calcareous grits and is recognized as the zone of the ammonite *Aspidoceras perarmatum.*

oölith (ō′ọ̄-lith), *n.* [Gr. *ᾠόν*, egg, + *λίθος*, stone.] A fossil egg of a bird or reptile.

oölogize (ọ̄-ol′ọ̄-jīz), *v. i.*; pret. and pp. *oölogized*, ppr. *oölogizing.* [*oölog*(*y*) + *-ize.*] To study birds' eggs; collect birds' eggs.

ooloo, *n.* See ⋆*ulu.*

oom (ōm), *n.* [D., AS. *eám*, uncle. See *eam.*] In Dutch, uncle: used like Eng. *uncle*, as a title of mention and address: as, *Oom* Paul, the popular name of Paul (Stephanus Johannes Paulus) Kruger, president (1883–1900) of the late Transvaal Republic.

oömancy (ō′ọ̄-man-si), *n.* [NL. *oömantia*, < Gr. *ᾠόν*, egg, + *μαντεία*, divination.] Same as ⋆*oöscopy.*

oont (önt), *n.* [Hind. *ūṅt*, a camel, a reduced form (prob. taken as imitative of a grunt) of Skt. *ushtra*, a camel, a buffalo.] The camel. [Anglo-Ind.]

> O the *oont*, O the *oont*, O the commissariat *oont!*
> With 'is silly neck a-bobbin' like a basket full o' snakes;
> We packs 'im like an idol, an' you ought to 'ear 'im grunt,
> An' when we gets 'im loaded up 'is blessed girth-rope breaks.
>
> *R. Kipling*, Barrack-room Ballads, Oonts, st. 1.

oöphagous (ọ̄-of′a̤-gus), *a.* [Gr. *ᾠόν*, egg, + *-φαγος*, < *φαγεῖν*, eat.] Subsisting on eggs; egg-eating.

oöphagy (ọ̄-of′a̤-gi), *n.* [Gr. *ᾠόν*, egg, + *-φαγια*, < *φαγεῖν*, eat.] The habit of eating eggs.

oöphoric (ō-ọ̄-for′ik), *a.* [*oöphor*(*e*) + *-ic.*] Of or pertaining to an oöphore.

oöphorid (ọ̄-of′ọ̄-rid), *n.* Same as *oöphoridium.*

oöphytic (ō-ọ̄-fit′ik), *a.* [*oöphyte* + *-ic.*] Of or pertaining to an oöphyte.

oöplasm (ō′ọ̄-plazm), *n.* [NL. *oöplasma*, < Gr. *ᾠόν*, egg, + *πλάσμα*, anything formed.] The protoplasm or living substance of the egg or ovum.

oöplasma (ō-ọ̄-plas′mä̤), *n.*; pl. *oöplasmata* (-ma̤-tä̤). Same as ⋆*oöplasm.*

oöpod (ō′ọ̄-pod), *n.* [Gr. *ᾠόν*, egg, + *πούς* (*ποδ-*), foot.] Any one of the sclerites of an insect's ovipositor.

oörhodein (ō-ọ̄-rō′dẹ̄-in), *n.* [Gr. *ᾠόν*, egg, + *ῥόδον*, rose, + *-e-in.*] A reddish or brownish-reddish pigment occurring in egg-shells: supposedly identical with hematoporphyrin.

oöscope (ō′ọ̄-skōp), *n.* [Gr. *ᾠόν*, egg, + *σκοπεῖν*, view.] An instrument for observing the interior of an egg and noting its condition; an egg-tester.

oöscopy (ọ̄-os′kọ̄-pi), *n.* [Gr. *ᾠόν*, egg, + *-σκοπια*, < *σκοπεῖν*, view.] **1.** The act of observing the process of development within an egg by means of an instrument made for that purpose.—**2.** Divination by the examination of eggs.

oösite (ō′ọ̄-sīt), *n.* [G. *oösit* (Marx, 1834), named from *Oos*, a stream in Baden.] A kind of pinite from the Oos valley, Baden.

Oöspora² (ọ̄-os′pọ̄-rä̤), *n.* [NL. (Wallroth, 1833), < Gr. *ᾠόν*, egg, + *σπορά*, seed (spore).] A genus of hyphomycetous fungi having a scanty mycelium. The fertile hyphæ are short, sometimes branched, and bear a great abundance of catenulate hyaline or bright-colored unicellular conidia. *O. lactis* is a common species occurring on the surface of cheese, milk, and other substances, and forming a white mold-like layer.

oöstegopod (ō-ọ̄-steg′ọ̄-pod), *n.* [Gr. *ᾠόν*, egg, + *στέγος*, cover, + *πούς* (*ποδ-*), foot.] An oöstegite; a brood-foot; a thoracic appendage on the females of certain crustaceans, as *Apus*, the distal portion of which is cup-like and covered by a lid, the whole forming a cavity for the reception of the eggs. See cut at *oöstegite.*

> A capsule or brood-pouch is produced, which serves for the reception of the eggs, and the appendage is distinguished as the *oostegopod* or brood-foot.
>
> *Parker and Haswell*, Zoology, I. 489.

oöthecotomy (ō″ọ-thẹ̄-kot′ọ-mi), *n.* [NL., < *oötheca* + Gr. *-τομια*, < *ταμεῖν*, cut.] Same as *ovariotomy*.

oötid (ō′ọ-tid), *n.* [Gr. *ᾠόν*, egg, + *-t-* + *-id*²(as in *spermatid*).] One of the four cells which result from the two consecutive divisions of the primary oöcyte during oögenesis. These four cells are the mature ovum and three polar bodies. Often there are only two polar bodies, owing to a failure of the first polar body to divide. The four oötids formed during oögenesis correspond to the four spermatids derived by two consecutive divisions of the primary spermatocyte during spermatogenesis. See ★*polar body*.

oötype (ō′ọ-tīp), *n.* [Gr. *ᾠόν*, egg, + *τύπος*, impression.] In some *Trematoda*, a dilated portion of the uterus into which the oviduct opens and in which the egg is fertilized, acquires its investment of yolk, and is provided with a shell. *Parker and Haswell*, Zoology, I. 254.

oöxanthin (ō-ok-zan′thin), *n.* [Gr. *ᾠόν*, egg, + *ξανθός*, yellow, + *-in*².] A yellow pigment found in egg-shells.

ooz, *n.* and *v.* A simplified spelling of *ooze*.

ooze, *n.* **5.** The short fibers on the surface of cotton thread, usually burned off in manufacture. *Nasmith*, Cotton Spinning, p. 373.—**Ooze calf.** See ★*calf*¹.—**Pteropod-ooze**, an ooze formed of the shells of organisms which live at the surface in tropical seas, and containing a large proportion of pteropod shells. It is found on submarine ridges rising to within 1000 fathoms of the surface. The reason for its absence at greater depths is that the delicate shells are dissolved by the action of the sea-water before they have sunk to the abysses of the ocean.

ooze-eel (öz′ēl), *n.* An eel of the family *Ilyophidæ*: a translation of the generic name *Ilyophis*.

ooze-leather (öz′leᴛʜ″ėr), *n.* Soft leather made by finishing skins on the flesh side.

oozily (ö′zi-li), *adv.* With an oozy, damp, or muddy look or feeling: as, ropes dripping *oozily*.

op. An abbreviation (*b*) [*cap.*] of *Opera*; (*c*) of *opposite*.

O.P. An abbreviation of *overproof* in the English excise system of stating the strength of alcoholic liquors. See *overproof*.

o. p. An abbreviation of *opposite prompt* [*side*] or *prompter*.

opacification (ọ-pas″i̤-fi-kā′shọn), *n.* [L. *opacus*, opaque, + *-ficare*, < *facere*, make.] The formation of an opacity; the process of rendering opaque. [Rare.]

> Hyperplasia, degeneration—these are results of malnutrition and the essentials of *opacification*.
>
> *Med. Record*, Feb. 28, 1903, p. 333.

opacity, *n.*—**Acoustic opacity**, the property of being impervious to sound-waves.

opal, *n.*—**Ceylonese opal**, one of the names applied to the Ceylonese moonstone.—**Harlequin opal.** See *harlequin*, 4, and *opal* (*a*).

opal-agate (ō′pa̤l-ag″āt), *n.* A natural mixture of opal and agate. The agate contains a part of opal silica, that is, chalcedony silica and opal silica, the latter having five, or more, per cent. of combined water. Opal-agate occasionally replaces wood in fossilization.

opalesque (ō-pa̤-lesk′), *a.* [*opal* + *-esque*.] Having the color and iridescence of an opal; milky-white like an opal.

opalish (ō′pa̤l-ish), *a.* [*opal* + *-ish*.] Something like an opal.

opalite (ō′pa̤-līt), *n.* [*opal* + *-ite*².] A milky-white variety of glass or fusible porcelain. Also used adjectively: as, *opalite* tile.

> The feature of this building is the treatment of the interior of the cages with light-green *opalite* tile, and a frieze of faïence tile representing desert and jungle scenes for the lions and tigers, respectively.
>
> *Science*, Feb. 13, 1903, p. 266.

opalotype (ō′pa̤-lọ-tīp), *n.* [*opal* + *-type*.] A photograph made on opal glass. *Woodbury*, Encyc. Dict. of Photog., p. 307.

opaque. I. *a.*—**Opaque twist.** See ★*twist*.

II. *n.* **2.** Something opaque; specifically, a shade which can be worn over the forehead to protect the eyes from brilliant light.

op. cit. An abbreviation of the Latin *opus citatum* (abl. *opere citato*), pl. *opera citata*, etc., the work cited.

Opegrapha (ọ-peg′ra̤-fä̤), *n.* [NL. (Persoon, 1794), < Gr. *ὀπή*, an opening, + *γραφή*, writing. The name alludes to certain markings seen through openings.] A large genus of lichens of the family *Graphidaceæ*, having the thallus crustaceous and the apothecia more or less elongate and carbonaceous. The spores are elongate hyaline, and many-celled. The species are widely distributed, occurring on bark, wood, and rocks. *O. varia* is a species common on bark.

opelet (ō′pẹ̄-let), *n.* [*ope*, open, + *-let*.] A European sea-anemone, *Anthea cereus*, having long tentacles which cannot be retracted, whence the name.

> The olive-green tangle-blades and other seaweeds are studded with the *opelet* (Anthea cereus), whose long trailing tentacles, with their hues of green and red, wave with every surge of the tide.
>
> *Annals and Mag. Nat. Hist.*, March, 1901, p. 224.

Opelousas cat. See ★*cat*¹.

open. I. *a.* **14.** In *printing*, said of a composition in type that is wide-leaded or with excess of quadrats or other blanking-out material, known to compositors as 'fat matter.'—**Open bet.** See ★*bet*².—**Open champion**, one who has won in an open-championship competition.—**Open championship**, a championship which may be competed for with no restriction.—**Open class**, in bench-shows, horse-shows, etc., a class open to all.—**Open-coil armature**, an armature of a direct-current generator or motor, such that at any moment only those coils the terminals of which are under the brushes are traversed by current, the others being in open circuit.—**Open-coil dynamo**, an electric generator the armature of which is of the open-coil type.—**Open door, file, game, method, pig.** See ★*door*, etc.—**Open-plate wheel, open port, race, ranks.** See ★*wheel*¹, etc.—**Open rate**, the announced public rate (of freight, etc.), as distinguished from secret rates given to favored parties.

> Had from the Central a rebate of from ten cents to forty-five cents a barrel—usually it was twenty-five cents on the *open rate* for refined oil to the seaboard.
>
> *I. M. Tarbell*, in McClure's Mag., Feb., 1903, p. 403.

Open-running fan, in *mining*, a form of centrifugal ventilating fan in which the casing revolves with the fan and the air is discharged from the whole circumference. Closed fans are those in which the casing is stationary and the air is discharged at one point only.—**Open score, sea.** See ★*score*¹, ★*sea*¹.—**Open-shelf system**, a method of library management in which the reader is permitted free access to the books upon the shelves.—**Open shop.** See ★*shop*¹.—**Open-side planer.** See ★*planer*.—**Open test.** See ★*test*¹.—**Open timber**, said of roofs whose beams are exposed from beneath, the under side of the beams being carved and forming an ornamental ceiling.—**Open town**, a town or city in which the laws relating to the closing of drinking-places on Sunday or between certain hours are ignored by the authorities; hence, a town or city in which gambling and other vices are winked at by the authorities. [Slang, U. S.]—**Open trade, woods.** See ★*trade*¹, ★*wood*¹.

II. *n.* **2.** An opening; a hole; the widening of a river at its mouth: as, the *open* of Humber; a gap in sand-dunes through which a road can pass. [Local, Eng.] *N. E. D.*—**3.** An opportunity; an opening; a chance.

open, *v.* I. *trans.*—**To open her up**, to open the throttle in the steam-pipe of a ship's engine and throw an increased volume of steam into the cylinders.—**To open out**, in *mining*, to enlarge (a heading) to form a working face: as, *to open out* a room; *to open out* a long wall-face.

II. *intrans.* **10.** *Naut.*, to appear to separate and become distinct, as lights in a harbor when the vessel nears.

> The lights . . . will appear to separate, or, in the nautical phrase, they will *open*.
>
> *Moseley*, Astron., I. 2. *N. E. D.*

Open-air cure, the treatment of disease, especially of pulmonary tuberculosis, by a more or less continuous existence, by day and by night, in the open air.—**Open-air school of painting.** See ★*painting*, 1.

open-casting (ō′pn-kås″ting), *n.* In *mining*, holing above the seam, that is, working as in a quarry or open-cast. *Barrowman*, Glossary.

open-cut (ō′pn-kut), *a.* In *engin.*, dug down from the surface; not tunneled; not covered during construction, as an underground railroad.

opener, *n.* **3.** *pl.* In *poker*, the necessary qualification for opening a jack-pot, namely, jacks or better.—**Porcupine-opener**, a form of machine for opening up cotton as taken from the bale: so named because the beater consists of a number of spikes or blades. See *opener*, 2 (*b*).

open-hearth (ō′pn-härth), *a.* **1.** Having a hearth which is shallow or open to inspection and to access of the workmen: said of steel-furnaces for the Siemens-Martin process.—**2.** Made in an open-hearth furnace: said of steel. See ★*steel*¹.

opening, *n.*—**Close opening**, in *chess*, any commencement of the game wherein the king's pawn is not early advanced to its fourth square by both players.—**Damiano defense opening**, in *chess*, 1 P—K 4, P—K 4: 2 Kt—KB 3, P—KB 3: an obviously incorrect defense.—**Defense to King's Knight's opening**, in *chess*. The regular defenses are 2 . . . Kt—QB 3, 2 . . . Kt—KB 3, and 2 . . . P—Q 3.; all others are considered irregular.—**English opening**, in *chess*, same as *Staunton's opening*.—**Fianchetto di donna opening**, in *chess*, the moving of the Queen's Knight's Pawn on the first move: a flank movement, mostly available by the second player.—**Hampe opening.** Same as *Vienna opening*. See *opening*, 9.—**Hazard opening.** See ★*hazard chase*.—**Irregular opening**, in *chess*, an opening not found among any of the regular or 'book' openings.—**King's Bishop's opening.** See *opening*, 9.—**King's Knight's opening**, in *chess*, 1 P—K 4, P—K 4; 2 Kt—KB 3.—**Pawn-and-move opening**, in *chess*, an opening in which black concedes to white the odds of the King's Bishop's Pawn and the move.—**Ponziani opening**, in *chess*, same as *Staunton's opening* (which see, under *opening*, 9).—**Queen's Bishop's Pawn's opening.** Same as *Staunton's opening*.—**Sicilian opening**, in *chess*, 1 P—K 4, P—QB 4. More commonly called the *Sicilian defense*.—**Spherical opening**, the size of a solid angle, now measured in steradians.—**Staunton's opening.** See *opening*, 9.—**Two Bishops' opening**, in *chess*, 1 P—K 4, P—K 4; 2 B—B 4, B—B 4. [Obsolete.]—**Vienna opening.** See *opening*, 9.

opening-knife (ōp′ning-nīf), *n.* A short, strong knife for opening oysters, tin cans, etc.

open-sand (ō′pn-sand), *a.* In *founding*, made in sand without a cope or cover. See *open-sand* ★*molding*.

open-timbered (ō′pn-tim″bėrd), *a.* Built so that the timber framing shows and forms the design as seen from within, as the roofs in many English churches and halls of the fourteenth and fifteenth centuries.

opera¹, *n.*—**Opera buffa.** Same as *opera bouffe*: opposed to ★*opera seria*.—**Opera da camera**, an opera or operetta designed for performance in a private house.—**Opera seria**, the tragic or serious opera, as distinguished from the ★*opera buffa* or comic opera.

operamania (op″ẹ-rä̤-mā′ni-ä̤), *n.* [Also *operamanie*, *op'ramany*; E. *opera* + Gr. *μανία*, madness.] A craze for the opera.

> Adieu my hopes, if *op'ramany*
> Has seiz'd on Peter's pericranie.
> Drunk with Italian syren's cup!
> Nay then, in troth, I give him up:
> The man 's a quack whoe'er pretends he
> Can cure him of that fiddling phrenzy.
>
> *Byron*, Letter to R. L., Esq., st. 6.

operand (op′ẹ-rand), *n.* [L. *operandum*, neut. gerundive of *operari*, work.] That which is to be operated upon; in *math.*, that which is subjected to an operator. In $\frac{d}{dx} f(x)$, $\frac{(d)}{dx}$ is the operator, $f(x)$ the operand.

operatic² (op-ẹ-rat′ik), *a.* [Irreg. < *operate* + *-ic*.] Working; productive; operative. [Rare.]

> The place of our labourers and *operatic* manufacturers being almost entirely supplied by slaves.
>
> *T. Arnold*, Later Rom. Comm., II. 446.

operation, *n.*—**Algebraic operations**, addition, multiplication, involution, and their inverses.—**Arithmetic operation**, addition, subtraction, multiplication, or division.—**Bassini's operation**, an operation for the radical cure of hernia, consisting essentially in obliteration of the inguinal canal by twisting the hernial sac and suturing the abdominal muscles to Poupart's ligament.—**Beatson's operation**, ovariotomy in cases of inoperable cancer of the breast, the loss of the internal secretion of the ovaries being thought to cause a shrinking of the mammary tumor.—**Bier's operation**, an operation for obtaining a stump (following amputation of the leg) which will bear the weight of the body. After the amputation a wedge is cut out of tibia and fibula a few inches above the end of the stump, and the lower piece is raised so that, when union of the bones takes place, there is a foot-shaped extremity to the leg.—**Bottini's operation**, the formation of a channel, by use of the galvanocautery, through the prostate, in hypertrophy of that gland.—**Celsian operation.** (*a*) Lithotomy by incision through the perineum. (*b*) Embryotomy by decapitation. (*c*) Amputation by a circular incision down to the bone. (*d*) Removal of epithelioma of the lip by a V-shaped incision.—**Chopart's operation.** (*b*) A plastic operation for the restoration of a lost lip.—**Emmet's buttonhole operation**, a vesicovaginal fissure artificially produced in order to insure drainage of the bladder in certain cases of cystitis.—**Estlander's operation**, an operation for the relief of empyema by resection of the rib and drainage of the pleural cavity.—**Flap operation**, amputation in which flaps are utilized to round over the end of the stump. See *flap*, 6.—**Guyon's operation**, amputation of the foot by means of an elliptical incision made just above the malleoli.—**Infinitesimal operation**, in *math.*, one causing an infinitesimal change in each of the variables of the operand.—**Inverse operation.** See *inverse*, 2.—**Kocher's operation.** (*b*) A method of resection of the elbow.—**Kraske's operation**, exsection of the rectum after removal of part of the sacrum and coccyx.—**Langenbeck's operation.** (*b*) A plastic operation for the restoration of a lost lip.—**Lisfranc's operation.** (*c*) A plastic operation for the restoration of a lost lip.—**Lorenz's operation**, the forcible reduction of a congenital dislocation of the hip, and retention of the head of the femur in its normal position until a new socket forms: this is done entirely by manipulation, no cutting operation being resorted to.—**Macewen's operation.** (*a*) Chiseling through the femur just above the knee in order to permit of straightening of the leg in cases of knock-knee. (*b*) An operation for the radical cure of hernia by closing the internal ring by a pad formed of the hernial sac.—**Malgaigne's operation.** (*c*) A plastic operation for the reconstruction of a lost lip.—**Mastoid operation.** Same as ★*mastoidotomy*.—**Mules's operation**, insertion of a hollow ball of non-irritating material after evisceration of the contents of the eyeball in order to preserve its shape and give support for an artificial eye.—**Ogston's operation.** (*a*) Removal of the inner condyle of the femur for knock-knee. (*b*) Excision of a wedge-shaped piece from the tarsus in order to restore the arch in flat-foot.—**Operation of complaisance.** See ★*complaisance*.—**Permutable operations**, such operations as are commutative.—**Phelps's operation.** (*a*) The operation of cutting through all the contracted tissues to the bone and then forcibly straightening the foot, in the treatment of talipes equinovarus. (*b*) An operation for the closure of harelip.—**Rational operations**, additions, subtractions, multiplications, and divisions (the divisor not being zero).—**Reverse operation**, in *math.*, inverse operation.—**Rydygier's operation for osteoplastic resection**, an operation for exsection of the rectum, in which access to the bowel is facilitated by dividing the sacrum and turning it back, replacing it (with the attached soft parts) upon the conclusion of the operation.—**Saenger's operation**, a modified Cæsarean section.—**Schede's operation.** (*a*) Resection of a portion of the thoracic wall together with some of the thickened pleura, in the treatment of empyema. (*b*) Removal of the necrosed portion of a bone, allowing the cavity to fill with blood which clots and later becomes organized.—**Stacke's operation**, the hollowing out of the mastoid process and of the drum of the ear, converting them into one cavity.—**Stephen Smith's operation**, a method of amputation at the knee-joint in which the flaps are so formed that the cicatrix lies between the condyles of the femur posteriorly.—**Syme's operation.** (*b*) A plastic operation for the reconstruction of a lost lip.—**Talma's operation**, the attachment of the omentum to the inner wall of the abdomen in order to establish an anastomosis between the veins of the portal and of the systemic systems.—**Trendelenburg's operation**, a method of bloodless amputation at the hip-joint, in which bleeding is prevented by passing an iron rod through the tissues and a rubber tube by figure-of-8 turns over the projecting ends of the rod.—**Univocal operation**, in *math.*, an operation which has only one result.—**Wölfler's operation**, the establishment of a permanent opening between the stomach and the lower portion of the duodenum or the jejunum, in cases of obstruction at the pylorus.—**Wood's operation.** (*b*) A plastic operation for exstrophy of the bladder in which the defect is closed by a flap of skin cut from the abdominal wall and turned over so that the cutaneous surface forms the inner wall of the bladder.—**Wyeth's operation**, a method of bloodless amputation at the hip-joint, similar to Trendelenburg's operation.

operative. I. *a.*—**Operative surgery.** See ★*surgery.*

II. *n.* 2. One who operates in any line of business; an operator: used in certain circumstances as a convenient substitute for *detective.*

> The word "detective" became so offensive . . . that it was dropped by some successful [detective] agencies. The word chosen by the Pinkertons to take its place was "*operative.*" Don't telegraph to Bob to send you a detective; say "send me an *operative.*"
> *N. Y. Press*, Oct. 23, 1905.

operatize (op'ẹ-ra-tīz), *v. t.*; pret. and pp. *operatized*, ppr. *operatizing*. [*opera*^{1} + *-t-* + *-ize* (as in *dramatize*).] To change into an opera; cause to resemble an opera by the addition of songs and music, as a play.

operator, *n.* 3. One who conducts a business, as mining; a capitalist who carries on a business: opposed to *operative.*

> The *operators* have intimated to sales agents and wholesalers that if the conference set for Thursday terminates in an agreement to continue work, the mines will have to be shut down for a time at any rate.
> *N. Y. Eve. Mail*, Feb. 10, 1906.

operatress (op'ẹ-rā-tres), *n.* [*operator* + *-ess.*] A female operator.

operatrix (op-ẹ-rā'triks), *n.* [LL. *operatrix*, fem. of L. *operator.* See *operable.*] Same as ★*operatress.*

opercular, *a.* II. *n.* The upper posterior bone of the series of bones forming the gill-cover in fishes. *Starks*, Synonymy of the Fish Skeleton, p. 515.

operculare (ọ-pėr-kụ-lā'rē), *n.* [NL., neut. of *opercularis.* See *opercular.*] In the osteology of the fishes, same as *splenial.*

operculate, *a.* II. *n.* An operculated gastropod.

operculomandibular (ọ-pėr″kụ-lō-man-dib'ụ-lạ̈r), *a.* Pertaining to the opercle and the mandible, as a sensory canal in fishes running across the preopercle and mandible.

operculum, *n.*—**Genital operculum**, an organ on the ventral side of the body in the extinct crustacean *Eurypterus* and its allies, consisting of amalgamated plates longitudinally crossing the first two abdominal segments, the form of the median lobe varying with the sex.—**Occipital operculum**, a portion of the occipital lobe of the brain which is separated from the main part by the ape-fissure: found in certain apes and occasionally in the brain of man.

> The presence of such an *occipital operculum* implies the existence, in the cerebral hemisphere possessing it, of a sulcus, called by Prof. Elliott Smith the sulcus lunatus, which is strictly comparable to, if not absolutely identical with, the "Affenspalte" so typical of the brains of Simiidæ and Cercopithecidæ.
> *Nature*, Dec. 3, 1903, p. 104.

opesia (ọ-pē'zi-ạ̈), *n.*; pl. *opesiæ* (-ē). [NL., ⟨ Gr. *ὀπή*, a hole.] An aperture in the front wall of the zoœcium of a bryozoan.

opesial (ọ-pē'zi-ạl), *a.* [*opesia* + *-al*^{1}.] Of or pertaining to an opesia; of the nature of an opesia.

opesiula (ọ-pē'zi-ụ-lạ̈), *n.*; pl. *opesiulæ* (-lē). [NL., ⟨ *opesia* + dim. *-ula.*] A secondary or small opesia.

opesiule (ọ-pē'si-ūl), *n.* An opesiula.

> The parietal muscles [in Microporidæ, etc.] are here reduced to a single distal pair, which may pass through foramina ("*opesiules*," Jullien) to reach their insertion into the aperture.
> *Encyc. Brit.*, XXXI. 830.

Ophelia (ọ-fē'li-ạ̈), *n.* The typical genus of the family *Opheliidæ.* *Savigny*, 1817.

ophelic (ọ-fel'ik), *a.* [*Ophelia* + *-ic.*] Derived from the plant *Ophelia Chirata.*—**Ophelic acid**, a yellowish-brown syrup, $C_{13}H_{20}O_{10}$ (?), formed by the decomposition of the glucoside chiratin, which occurs in *Ophelia Chirata.*

Opheliidæ (ō-fẹ-lī'i-dē), *n. pl.* [NL. *Ophelia* + *-idæ.*] A family of polychætous annelids, having a short body, conical præstomium without appendages but with two ciliated pits, parapodia reduced with two groups of simple setæ and usually with dorsal cirri present and acting as gills. They inhabit the sand, and among the several genera are *Ophelia*, *Ammotrypane*, and *Polyophthalmus.*

ophelimity (ō-fe-lim'ị-ti), *n.* [Gr. *ὠφέλιμος*, useful, ⟨ *ὠφελεῖν*, help, be useful.] In *polit. econ.*, a term suggested by Professor V. Pareto as a substitute for 'utility,' as used in political economy.

Ophichthus (of-ik'thus), *n.* [NL., prop. *Ophichthys*, ⟨ Gr. *ὄφις*, serpent, + *ἰχθύς*, fish.] A genus of eels of the family *Ophichthyidæ*, very numerous in tropical seas.

ophicleide, *n.* 2. In *organ-building*, a powerful reed stop with a trumpet-like tone.

ophicleidean (of-i-klī'dẹ-ạn), *a.* [*ophicleide* + *-e-an.*] Produced by or resembling an ophicleide; resembling the sound produced by the ophicleide.

> He recognized the intermittent honk of the Owl, . . . the stalwart snort of the Terrapin, and the mighty *ophicleidean* roll of the able organ of the Bone. "And yet," he thought, "if one were to wake one of them up and say to him that he was snoring, he would not believe a word of it!"
> *W. M. Laffan*, in The Century, Feb., 1882, p. 489.

ophiderid (ọ-fid'ẹ-rid), *n.* and *a.* I. *n.* A member of the lepidopterous family *Ophideridæ.*

II. *a.* Having the characters of or belonging to the family *Ophideridæ.*

Ophidioceras (ọ-fid-i-os'ẹ-ras), *n.* [NL., ⟨ Gr. *ὀφίδιον*, a little snake, + *κέρας*, horn.] A genus of Silurian nautiloid cephalopods. They were closely coiled until a late stage of growth, when the shell became straight and free with a much-constricted aperture.

Ophidioidei (ọ-fid-i-oi'dē-ī), *n. pl.* [NL.: see *ophidioid.*] A group of fishes of the order *Acanthopteri*, having no ventral spines, or no spines in the anterior part of the dorsal.

Ophidion (ọ-fid'i-on), *n.* [NL., ⟨ Gr. *ὀφίδιον*, dim. of *ὄφις*, a serpent.] A genus of fishes, of the family *Hexagrammidæ*, found on the Pacific coast of North America from Sitka to Santa Barbara.

Ophidion elongatus.
(From Bulletin 47, U. S. Nat. Museum.)

Ophileta (of-i-lē'tạ̈), *n.* [NL.] A genus of rhipidoglossal gastropods very characteristic of the late Cambrian and early Silurian rocks.

Ophiobolus (of-i-ob'ọ-lus), *n.* [NL. (Riess, 1854), ⟨ Gr. *ὄφις*, a snake, + *βόλος*, a throw. The name alludes to the elongate, sinuous, spotted spores.] A large genus of pyrenomycetous fungi of the family *Pleosporaceæ*, having small perithecia embedded in the tissue of the host. The spores are yellowish, many-septate, and long filiform. About 125 species have been described. They are common and widely distributed, occurring chiefly on dead herbaceous stems.

Ophioderma (of″i-ō-dėr'mạ̈), *n.* [NL., ⟨ Gr. *ὄφις*, a serpent, + *δέρμα*, skin.] The typical genus of the family *Ophiodermatidæ.* *Müller* and *Troschel*, 1840.

Ophiodermatidæ (of″i-ọ-dėr-mat'i-dē), *n. pl.* [NL., ⟨ *Ophioderma* (*-mat-*) + *-idæ.*] A family of ophiuroids, of the order *Zygophiuræ*, having numerous oral papillæ, none being infradental, arm incisures on the disk, and dental papillæ absent. It includes several genera, among them being *Ophioderma*, *Ophioconeta*, and *Ophioplax.*

Ophiogenes (of-i-oj'ẹ-nēz), *n. pl.* [Gr. *'Οφιογενεῖς*, pl. of *ὀφιογενής*, serpent-born, ⟨ *ὄφις*, serpent, + *-γενης*, -born.] A people of the Troad who, according to fable, were of serpent kin and could cure by touch the bite of a serpent.

> These Naga tribes of South Asia are . . . analogues . . . of the *Ophiogenes*, or Serpent-race of the Troad, kindred of the vipers whose bite they could cure by touch, and descendants of an ancient hero transformed into a snake.
> *E. B. Tylor*, Primitive Culture, II. 218.

ophioglossaceous (of″i-ọ-glo-sā'shius), *a.* Belonging to the *Ophioglossaceæ*, a family of ferns.

ophioid (of'i-oid), *a.* [Gr. *ὄφις*, snake, + *-oid.*] Resembling or having the characters of a snake.

Ophiolepididæ (of″i-ọ-le-pid'i-dē), *n. pl.* [NL., ⟨ *Ophiolepis* + *-idæ.*] A family of ophiuroids, of the order *Zygophiuræ*, having from 3 to 6 oral papillæ, of which the last may be infradental, arm incisures on the disk, and no dental papillæ. Among the several genera are *Ophiolepis*, *Ophiura*, and *Ophioglypha.*

Ophiolepis (of-i-ol'e-pis), *n.* [NL., ⟨ Gr. *ὄφις*, snake, + *λεπίς*, scale.] The typical genus of the family *Ophiolepididæ.* *Müller* and *Troschel*, 1840.

Ophion, *n.* 2. [*l. c.*] An insect of this genus.—**Long-tailed ophion**, a large yellowish-brown American ichneumon-fly, *Ophion macrurum*, a common parasite of the cecropia caterpillar and other allied insects. See cut under *Ophion.*

ophiophilism (of-i-of'i-lizm), *n.* [Gr. *ὄφις*, serpent, + *φιλεῖν*, love, + *-ism.*] A love for and care of snakes.

> *Ophiophilism* is by no means an ugly word.
> *Daily News* (London), Feb. 19, 1883. *N. E. D.*

ophiophilist (of-i-of'i-list), *n.* [*ophiophil*(*ism*) + *-ist.*] One who loves snakes. *Daily News* (London), Feb. 19, 1883. *N. E. D.*

ophiopluteus (of″i-ō-plö'tẹ-us), *n.*; pl. *ophioplutei* (-ī). The larva of *Ophiuroidea*; contrasted with ★*echinopluteus.* *Mortensen.*

> Mortensen . . . in his recent review of the echinoderm larvæ, has suggested the names echinopluteus and *ophiopluteus* for the larvæ of Echinoidea and Ophiuroidea respectively.
> *Phil. Trans. Roy. Soc. London*, B, 1903, p. 286.

ophiosaurian (of-i-ọ-sâ'ri-ạn), *a.* and *n.* Of or pertaining to the *Ophiosauria*; one of the *Ophiosauria.*

Ophioscion (of-i-os'i-on), *n.* [NL., ⟨ Gr. *ὄφις*, serpent, + *σκιά*, shadow (alluding to *Sciæna*).] A genus of small fishes, nearly all American, belonging to the family *Sciænidæ.*

Ophiothricidæ (of″i-ọ-thris'i-dē), *n. pl.* [NL., ⟨ *Ophiothrix* (*-thric-*) + *-idæ.*] A family of ophiuroids, of the order *Zygophiuræ*, having dental papillæ but no oral papillæ. It includes among other genera *Ophiothrix*, *Ophionema*, and *Ophiocnemis.*

Ophiothrix (of'i-ọ-thriks), *n.* [NL., ⟨ Gr. *ὄφις*, snake, + *θρίξ*, hair.] The typical genus of the family *Ophiothricidæ.* *Müller* and *Troschel*, 1840.

ophiotoxin (of'i-ọ-tok″sin), *n.* [Gr. *ὄφις*, a serpent, + E. *toxin.*] Snake venom. *Science*, Feb. 7, 1908, p. 223.

ophiouride (of-i-ö'rid), *n.* [Gr. *ὄφις*, snake, + *οὐρά*, tail, + *-ide*^{2}. See ★*ophiurid.*] A cubic curve, the snake's-tail.

ophioxylin (of-i-ok'si-lin), *n.* [*Ophioxylon* + *-in*^{2}.] A crystalline compound, $C_{16}H_{12}O_6$(?), occurring in the root of *Ophioxylon serpentinum.* It melts at 71.8° C. See ★*plumbagin.*

Ophioxylon (of-i-ok'si-lon), *n.* [NL. (Linnæus 1747–1753), ⟨ Gr. *ὄφις*, snake, + *ξύλον*, wood; in allusion to the use of the root in India as an antidote for snake-bites.] A former genus name for plants now referred to the genus *Rauvolfia*, of the family *Apocynaceæ.* See *Rauvolfia* and *serpentwood.*

ophism (of'izm), *n.* [Gr. *ὄφις*, serpent, + *-ism.*] Serpent-worship; ophiolatry.

ophisuroid (o-fis'ụ-roid), *a.* [NL. *Ophisurus* + *-oid.*] Pertaining to or connected with the lapsed genus *Ophisurus.*

> This genus contains all the *ophisuroid* eels which have sharp teeth, no marked canines, well-developed pectoral fins, and the dorsal inserted behind the head.
> *Jordan and Evermann*, Fishes of North and Middle [Amer., p. 381.

Ophitic^2 (o-fit'ik), *a.* [*Ophite*^{2} + *-ic.*] Relating to the Ophites. See *Ophite*^{2}.

Ophitism (of'i-tizm), *n.* [*Ophite*^{2} + *-ism.*] The doctrines of the Ophites. See *Ophite*^{2}.

Ophiuchid (of-i-ū'kid), *n.* [*Ophiuchus* + *-id*^{2}.] A meteor belonging to the flock which appears to radiate from the constellation Ophiuchus.

> In April many fine meteors diverge from Virgo and Libra, while in May there are Serpentids, Scorpiids, and *Ophiuchids.*
> *Nature*, April 14, 1904, p. 571

ophiurid (of-i-ū'rid), *n.* An ophiuran; a member of the family *Ophiuridæ*.

Finally, in the *ophiurid Ophioglypha*, the rate of regeneration of the arms is greater the greater the number of removed arms, with the exception of the case where all are removed. *Science*, Feb. 5, 1904, p. 215.

ophiurin (of-i-ū'rin), *n.* [*Ophiur*(*is*) + *-in*^{2}.] A yellowish-brown pigment found in the ophiuris or brittle-star.

ophiuris (of-i-ū'ris), *n.* [NL., < Gr. *ὀφίουρος*, serpent-tailed, < *ὄφις*, serpent, + *οὐρά*, tail.] A brittle-star; an animal belonging to the echinoderms.

ophritis (of-rī'tis), *n.* [NL., < Gr. *ὀφρύς*, eyebrow, + *-itis.*] Inflammation of the eyebrows.

Ophth. An abbreviation of *ophthalmology*.

ophthalmagra (of-thal-mag'rạ̈), *n.* [Gr. *ὀφθαλμός*, eye, + *ἄγρα*, a catching.] Gouty conjunctivitis or ophthalmia.

ophthalmalgic (of-thal-mal'jik), *a.* [*ophthalmalg*(*ia*) + *-ic.*] Pertaining to, or suffering from, ophthalmalgia or pain in the eyeball.

ophthalmatrophy (of-thal-mat'rọ̄-fi), *n.* Same as *ophthalmatrophia*.

ophthalmia, *n.*—**Egyptian ophthalmia.** Same as *trachoma. Jour. Trop. Med.*, June 1, 1903, p. 183.—**Migratory ophthalmia,** inflammation in one eye following upon inflammation in the uveal tract of the other eye. Also called *sympathetic ophthalmia.*—**Ophthalmia tarsi,** inflammation of the edges of the eyelids.—**Periodic ophthalmia.** Same as ★*moon-blindness*, 2.

ophthalmiac (of-thal'mi-ak), *n.* [*ophthalmi*(*a*) + *-ac.*] A sufferer from inflammation of the eye or of the conjunctiva.

ophthalmiater (of-thal'mi-ā-tėr), *n.* [Gr. *ὀφθαλμός*, eye, + *ἰατήρ*, physician.] An oculist. [Rare.]

ophthalmiatric (of-thal-mi-at'rik), *a.* [Gr. *ὀφθαλμός*, eye, + *ἰατρός*, physician, + *-ic.*] Of or pertaining to ocular therapeutics.

Ophthalmic migraine, vertigo. See ★*migraine*, ★*vertigo*.

ophthalmious (of-thal'mi-us), *a.* Suffering from inflammation of the eyes, or ophthalmia.

ophthalmocace (of-thal-mok'ạ-sē), *n.* [Gr. *ὀφθαλμός*, eye, + *κάκη*, bad condition.] Severe, often gangrenous, general inflammation of the eye.

ophthalmolith (of-thal'mọ̄-lith), *n.* [Gr. *ὀφθαλμός*, eye, + *λίθος*, a stone.] A lacrymal calculus.

ophthalmometric (of-thal-mọ̄-met'rik), *a.* Of or pertaining to ophthalmometry.

ophthalmomyositis (of-thal'mọ̄-mī-ọ̄-sī'tis), *n.* [NL., < Gr. *ὀφθαλμός*, eye, + *μῦς* (*μυ-*), muscle, + *-itis.*] Inflammation of the ocular muscles.

ophthalmomyotomy (of-thal''mọ̄-mī-ot'ọ̄-mi), *n.* [Gr. *ὀφθαλμός*, eye, + *μῦς* (*μυ-*), muscle, + *-τομια*, < *ταμεῖν*, cut.] Operative division of the ocular muscles.

ophthalmoneuritis (of-thal''mọ̄-nụ̄-rī'tis), *n.* [Gr. *ὀφθαλμός*, eye, + *νεῦρον*, nerve, + *-itis.*] Inflammation of the ophthalmic nerve.

ophthalmophacometer (of-thal''mọ̄-fạ̄-kom'e-tėr), *n.* [Gr. *ὀφθαλμός*, eye, + *φακός*, lentil (used to represent 'lens'), + *μέτρον*, measure.] An instrument for determining the lines of curvature of the crystalline lens of the eye.

ophthalmophantom (of-thal-mọ̄-fan'tom), *n.* [Gr. *ὀφθαλμός*, eye, + E. *phantom.*] **1.** A model of the human eye used in the instruction of students in ophthalmoscopy.—**2.** A frame in which sheep's eyes can be inserted for use in practising various ophthalmic operations.

ophthalmoplasty (of-thal'mō-plas-ti), *n.* [Gr. *ὀφθαλμός*, eye, + *πλάσσειν*, mold.] Plastic surgery of the eyeball or of its adnexa.

ophthalmoplegic (of-thal-mọ̄-plej'ik), *a.* [*ophthalmopleg*(*ia*) + *-ic.*] Pertaining to or affected with ophthalmoplegia.

ophthalmoplegy (of-thal'mọ̄-plē-ji), *n.* Same as *ophthalmoplegia*.

ophthalmopod (of-thal'mọ̄-pod), *n.* [Gr. *ὀφθαλμός*, eye, + *πούς* (*ποδ-*), foot.] In crustaceans, the eye-stalk or ophthalmite.

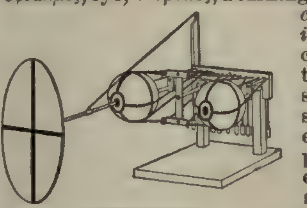
It [rostrum of Sergestes profundus] is described by Bate: "It consists of a short fine point projecting horizontally for about one-fourth the length of the *ophthalmopod*, and is dorsally furnished on the crest with a small tooth." *Proc. Zool. Soc. London*, 1903, p. 55.

ophthalmoscope, *n.*—**Ghost ophthalmoscope,** an ophthalmoscope containing a sheet of glass in the course of the efferent rays by which they are partially deflected, giving another image.

ophthalmostatometer (of-thal''mō-stạ̄-tom'e-tėr), *n.* [Gr. *ὀφθαλμός*, eye, + *στατός*, < *ἵστασθαι*, stand, + *μέτρον*, measure.] An instrument for determining accurately the position of the eyes.

ophthalmostatometry (of-thal''mọ̄-stạ̄-tom'e-tri), *n.* Measurement by means of the ophthalmostatometer.

ophthalmotrope (of-thal'mọ̄-trōp), *n.* [Gr. *ὀφθαλμός*, eye, + *τρόπος*, a turning.] In *exper. psychol.* and *physiol.*, a mechanical model of the two eyes, constructed as two spheres upon each of which pull six weighted strings representing the six eye-muscles.



Ophthalmotrope.

The instrument is used especially to demonstrate the action upon the eyeball of the various eye-muscles, acting singly or in combination. In the more elaborate models, the weights attached to the strings are accurately graded to reproduce the effect due to the separate muscles. For purposes of class-demonstration, a disk of white cardboard, with the vertical and horizontal diameters drawn in black, is attached to the one eyeball, in the manner shown in the figure. *E. B. Titchener*, Exper. Psychol., I. i. 135.

ophthalmotropometer (of-thal''mọ̄-trọ̄-pom'e-tėr), *n.* [Gr. *ὀφθαλμός*, eye, + *τρόπος*, a turning, + *μέτρον*, measure.] An apparatus for measuring the extent and direction of the movements of the eyeballs.

ophthalmotropometry (of-thal-mō-trọ̄-pom'e-tri), *n.* [Gr. *ὀφθαλμός*, eye, + *τρόπος*, turning, + *-μετρια*, < *μέτρον*, measure.] Measurement of the movements of the eyeballs.

ophyte, *n.* Same as *ophite*^{1}.

opiammone (ō-pi-am'ōn), *n.* [*opi*(*anate*) + *ammon*(*ium*).] A yellow crystalline powder, $C_{20}H_{19}O_8N$, made by evaporating a solution of ammonium opianate. It is insoluble in water and when heated with it to 150° C. yields opianic acid and ammonia.

opiane† (ō'pi-ān), *n.* [*opi*(*um*) + *-ane.*] Same as *narcotine*.

opianine (ō'pi-ạn-in), *n.* [*opiane* + *-ine*^{2}.] Same as *narcotine*.

opianyl (ō'pi-ạ-nil), *n.* [*opiane* + *-yl.*] **1.** Same as *meconin.*—**2.** The radical, $C_{10}H_9O_4$, of meconin. *Gerhardt.*—**3.** The radical, $(CH_3O)_2C_6H_2(CHO)CO$, of opianic acid.

Opimian (ọ̄-pim'i-ạn), *a.* [L. *Opimianus*, of Opimius, < *Opimius*, Opimius.] Of Opimius: applied to a celebrated Roman wine of the year A. U. C. 633, when Opimius was consul.

Italie knew her owne good, and what it was to maintain vineyards. . . . And therefore it is that all the wines of that time bear the onely name of that one Consull, and be called *Opimian*. *Holland*, tr. of Pliny, I. 419.

The cry for light will not be silenced, though we crown ourselves with roses, and pour the hundred-yeared *Opimian* before the shrine of Apollo. *Shirley*, in Fraser's Mag., Feb., 1863, p. 241. *N. E. D.*

opinability (ọ̄-pin-ạ-bil'i-ti), *adv.* [*opinable* + *-ity.*] The quality of being opinable.

opinably (ọ̄-pin'ạ-bli), *adv.* Conjecturally; as a matter of opinion.

opinic (ọ̄-pin'ik), *a.* Noting a crystalline acid, $C_9H_6O_5 + 2H_2O$, formed by the action of hydriodic acid on hemipinic acid. It melts at 148° C.

opinional (ọ̄-pin'yọn-al), *a.* [*opinion* + *-al*^{1}.] Being a matter of opinion not of certainty; of the nature of opinion.

No mere body of *opinional* truths or doctrines meets our case — nothing meets it but to give us back . . . the personal inhabitation we have lost. *Bushnell*, Sermons on Living Subjects, p. 84.

opiology (ō-pi-ol'ọ̄-ji), *n.* [Gr. *ὄπιον*, opium, + *-λογια*, < *λέγειν*, speak.] The investigation of the properties of opium. *N. E. D.*

opiomania (ō''pi-ọ̄-mā'ni-ạ̈), *n.* [Gr. *ὄπιον*, opium, + *μανία*, madness.] Morphiomania in which use is made of opium rather than of its alkaloid morphine.

opiomaniac (ō''pi-ọ̄-mā'ni-ak), *n.* [*opiomania* + *-ac.*] One who has a morbid craving for opium.

opiophagy (ō-pi-of'ạ-ji), *n.* [Gr. *ὄπιον*, opium, + *-φαγια*, < *φαγεῖν*, eat.] The eating of opium; a chronic craving for opium. *N. E. D.*

Opis (ō'pis), *n.* [NL., < L. *Opis*, < Gr. *Ὦπις*, a nymph in the train of Artemis.] A genus of teleodesmaceous pelecypod mollusks related to *Astarte*, having trigonal valves, prominent beaks, and very deep lunule. It occurs in rocks from the Trias to the Cretaceous.

opisthenar (ọ̄-pis'the-när), *n.* [Gr. *ὀπισθέναρ*, < *ὀπισ*(*θεν*), at the back, + *θέναρ*, the palm of the hand.] The back of the hand.

opisthenogenesis (ọ̄-pis''the-nọ̄-jen'e-sis), *n.* [NL., < Gr. *ὄπισθεν*, at the back, + *γένεσις*, generation.] The development of segments, tubercles, and markings in animals *a tergo*, or successively from the posterior toward the anterior end of the body. *A. S. Packard*, 1904.

opisthenogenetic (ọ̄-pis''the-nọ̄-jẹ̄-net'ik), *a.* Pertaining to or characterized by opisthenogenesis.

opisthiobasilar (ọ̄-pis''thi-ọ̄-bas'i-lär), *a.* [Gr. *ὀπίσθιος*, hinder (see *opisthion*), + E. *basilar.*] In *craniom.*, relating to the opisthion and to the basion.—**Opisthiobasilar plane.** See ★*plane*^{1}.

Opisthocentrus (ọ̄-pis-thọ̄-sen'trus), *n.* [NL., < Gr. *ὀπισθόκεντρος*, with a sting in the tail, < *ὄπισθεν*, behind, + *κέντρον*, sting.] A genus of blennioid fishes of the North Pacific.

opisthodetic (ọ̄-pis-thọ̄-det'ik), *n.* [Gr. *ὄπισθεν*, behind, + *δετός*, bound, + *-ic.*] Extending behind the beaks, as the ligament in certain pelecypod mollusks: contrasted with ★*amphidetic* (which see).

opisthoglyph (ọ̄-pis'thọ̄-glif), *n.* [*Opisthoglyph*(*a*).] A member of a group of poisonous snakes having some of the posterior upper teeth grooved.

Opisthoglypha (ọ̄-pis-thog'li-fạ̈), *n. pl.* [NL. See *Opisthoglyphia.*] The commonly accepted spelling of *Opisthoglyphia*, a division (usually considered as a superfamily) of snakes.

opisthoglyphous (ọ̄-pis-thog'li-fus), *a.* [NL. *Opisthoglyph*(*a*) + *-ous.*] Having some of the posterior teeth in the upper jaw grooved, as in certain poisonous snakes; opisthoglyphic.

Opisthognathus (op-is-thog'nạ-thus), *n.* [NL., < Gr. *ὄπισθεν*, behind, + *γνάθος*, jaw.] A genus of fishes of the family *Opisthognathidæ*, found in warm seas. See cut at *Opisthognathidæ*.

opisthogoneate (ō-pis-thọ̄-gō'nẹ̄-āt), *a.* [Gr. *ὄπισθεν*, behind, + *γονή*, genitalia, + *-ate*^{1}.] Having the genitalia behind.

The genital openings *opisthogoneate*, usually single, but paired in Thysanura (Lepisma), Dermaptera, and Plectoptera (Ephemeridæ). *A. S. Packard*, Text-book of Entom., p. 27.

opisthogyrate (ō-pis-thọ̄-jī'rāt), *a.* [*opisthogyre* + *-ate*^{1}.] Same as ★*opisthogyrous*.

opisthogyre (ọ̄-pis'thọ̄-jīr), *a.* [Gr. *ὄπισθεν*, back, backward, + *γυρός*, turning.] Same as ★*opisthogyrous*.

opisthogyrous (ō-pis-thō-jī'rus), *a.* [*opisthogyr*(*e*) + *-ous.*] Having the beaks of the valves twisted backward, as some species of pelecypod mollusks. Also *opisthogyre* and *opisthogyrate*.

opisthome (op'is-thōm), *n.* [See *Opisthomi.*] A fish belonging to the order *Opisthomi*.

Opisthonema (ọ̄-pis-thọ̄-nē'mạ̈), *n.* [NL., < Gr. *ὄπισθεν*, back, + *νῆμα*, thread.] A genus of clupeoid fishes the species of which are all found in American waters.

Opisthoparia (ọ̄-pis-thọ̄-pa-rī'ä), *n. pl.* [Gr. *ὄπισθεν*, behind, + *παρειά*, the cheek.] In Beecher's classification of the trilobites, an order including forms in which the facial sutures begin on the posterior margin of the cephalon within the genal angles and cut the anterior margin separately or unite in front of the glabella. Contrasted with *Hypoparia* and *Proparia*.

opisthopneumonic (ọ̄-pis''thọ̄-nụ̄-mon'ik), *a.* [Gr. *ὄπισθεν*, behind, + *πνεύμων*, the lungs, + *-ic.*] Having the vascularized pulmonary tissue situated behind the pericardium, as in some mollusks, for example *Daudebardia rufa*.

opisthopodial (ọ̄-pis-thọ̄-pō'di-ạl), *a.* [*opisthopodi*(*um*) + *-al*^{1}.] Of or pertaining to the opisthopodium.

opisthopodium (ọ̄-pis-thọ̄-pō'di-um), *n.*; pl. *opisthopodia* (-ạ̈). [NL., < Gr. *ὄπισθεν*, behind, + *πούς* (*ποδ-*), foot.] An accessory foot-like organ which is developed at the posterior end of the visceral mass in some *Pelecypoda*, such as *Pholadomya* and *Halicardia*.

Behind the byssal groove [of Halicardia flexuosa], on the median line of the visceral mass, is produced a thin, compressed, fin-like body, which I propose to name the *opisthopodium*, and which in life may be nearly flat vertically. Something analogous was described by Owen in *Pholadomya. Smithsonian Rep.* (*Nat. Mus.*), 1896, p. 700.

opisthorchiasis (ọ̄-pis-thôr-kī'ạ-sis), *n.* [NL., < *Opisthorchis* + *-iasis.*] A disease of the liver in man, dogs, cats, and some other animals, caused by the presence (in the bile-ducts) of flukes (trematodes) belonging to the genus *Opisthorchis*.

Opisthorchis (op-is-thôr'kis), *n.* [NL., < Gr.

ὀπισθεν, behind, + *ὀρχις*, testicle.] A genus of trematodes of the family *Fasciolidæ*, of which the type is *felineus*. They are parasitic, particularly in the liver of mammals, and are characterized by the posterior position of the testicles.

opisthosomal (ọ̄-pis-thọ̄-sō′mạl), *a.* [Gr. *ὀπισθεν*, behind, + *σῶμα*, body, + *-al*^{1}.] Postabdominal.

In both Limulus and the Scorpion the first six of the eighteen segments are well known to be fused into a prosoma bearing the limbs, but while in the Scorpion the remaining twelve are free, in Limulus they are united into a compact *opisthosomal* mass.
Smithsonian Rep., 1902, p. 604.

opisthotome (ọ̄-pis′thọ̄-tōm), *a.* [Gr. *ὀπισθεν*, behind, + *τέμνειν*, cut.] Cutting by a backward movement of the jaw, as does the elephant in masticating food. [Rare.]

opium, *n.*—**Boston opium**, a term formerly used to designate opium so diluted with inert matter that it barely met official requirements.—**Camphorated tincture of opium**, an aromatic tincture of opium, being one twenty-fifth as strong as laudanum; paregoric; the tinctura opii camphorata of the United States Pharmacopœia.—**Opium war.** See ★*war*^{1}.—**Pudding-opium.** See *Boston* ★*opium*.—**Wild opium**, the wild lettuce, *Lactuca Canadensis*.

opiumate (ō′pi-um-āt), *n.* [*opium* + *-ate*^{1}.] One who has the opium habit. *N. E. D.* [Rare.]

opiumism (ō′pi-um-izm), *n.* [*opium* + *-ism.*] The morbid state which results from the habitual use of opium.

opium-pipe (ō′pi-um-pīp), *n.* A pipe adapted to the smoking of opium.

O-plate (ō′plāt), *n.* A cast-iron plate with a circular ridge in the center, on which mine-cars are turned at the crossing of two mine-roads. *Barrowman*, Glossary.

opochala (ō-pō-chä′lä), *n.* [Native name in Fernando Po.] Same as ★*owala*.

opomyzid (op-ọ̄-mī′zid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Opomyzidæ*.

II. *a.* Having the characters of or belonging to the family *Opomyzidæ*.

opopanax, *n.* **3.** In the southern United States, the huisache, *Acacia Farnesiana*. In this sense sometimes with the French spelling *opoponax*. See ★*huisache*.

opossum-tree (ọ̄-pos′um-trē), *n.* **1.** The sweet-gum, *Liquidambar Styraciflua*. See cut at *Liquidambar*.—**2.** An Australian timber-tree of the saxifrage family, *Quintinia Sieberi*, which yields a heavy, close-grained yellowish wood.

opossum-wood (ọ̄-pos′um-wu̇d), *n.* The silver-bell-tree, *Mohrodendron Carolinum*.

opotherapy (op-ọ̄-ther′ạ-pi), *n.* [Gr. *ὀπός*, juice, + *θεραπεία*, medical treatment.] Treatment of disease by means of extracts made from the various glands and organs of animals. The most commonly used extracts of this kind are from the thyroid gland, the suprarenal capsule, the testicle, and the ovary. Also called *organotherapy*.

Opotherapy, or treatment by organic extracts. Extracts from the pancreas, the liver, the suprarenal capsules, the spinal cord, the ovary, the prostate, the testicle, the thyroid gland, have thus been successively used in therapeutics with varying degrees of success. The study of the thyroid extract especially has led scientists to the most unmistakable results.
Smithsonian Rep., 1898, p. 696.

opp. An abbreviation (*a*) of *opposed*; (*b*) of *opposite*.

Oppel's lines. See ★*line*^{2}.

oppidum (op′i-dum), *n.*; pl. *oppida* (-dạ̈). [L.] In *Rom. antiq.*, a provincial town, as distinguished from *urbs*, the city of Rome itself.

oppilant (op′i-lạnt), *a.* [L. *oppilans* (*-ant-*), ppr. of *oppilare*, stop up.] Stopping up; obstructing; hindering. *N. E. D.*

opposit, *a.* and *n.* A simplified spelling of *opposite*.

opposite. **I.** *a.* **6.** In *geom.*, in any complete set of connectors or fans, said of the first and the $(n/2+1)$th, when n is even.—**On opposite sides** of a point, a straight, or a plane: said of two points whose sect intersects the point, straight, or plane.—**Opposite numbers.** See ★*number*.—**Opposite points.** See ★*point*^{1}.

II. *n.* **3.** In *geom.*, an opposite point.—**The opposite to a point**, of P on a sect AB, a point P′ such that P and P′ are equidistant from the bisection point of AB, but on opposite sides of it.

oppositiflorous (o-poz-i-ti-flō′rus), *a.* [L. *oppositus*, opposite, + *flos* (*flor-*), flower, + *-ous*.] Having the flowers or flower-clusters opposite.

opposition, *n.* **10.** In *astrol.*, the aspect formed between two heavenly bodies 180 degrees (or about that distance) from each other: regarded as inimical and pernicious.

oppositipinnate (o-poz″i-ti-pin′āt), *a.* [L. *oppositus*, opposite, + E. *pinnate*.] Having the leaflets of a pinnate leaf opposite: the usual case.

oppositipolar (o-poz″i-ti-pō′lar), *a.* [L. *oppositus*, opposite, + *polus*, pole, + *-ar*^{3}.] In *neurol.*, having two poles or structures on opposite sides of a cell, as in the case of two neuraxones coming off from opposite sides of a nerve-cell.

The dendrites which often run far out into the white substance tend to be arranged in *oppositipolar* groups corresponding to the spindle shape of many of these cells.
Buck, Med. Handbook, VII. 311.

oppositively (o-poz′i-tiv-li), *adv.* In an antithetic manner; in an opposed or contrasted manner.

oppositiveness (o-poz′i-tiv-nes), *n.* The character of being contentious; tendency to opposition.

oppressionist (ọ-presh′ọn-ist), *n.* [*oppression* + *-ist.*] One who practises or approves of oppression. *Bentham. N. E. D.*

oppugnance (o-pug′nạns), *n.* Same as *oppugnancy*.

Opsanus (op′sạ-nus), *n.* [NL. (Rafinesque, 1817), erroneously formed, < Gr. *ὤψ*, eye, + *ἄνω*, up.] A genus of fishes of the family *Batrachoididæ*, found on the coasts of temperate regions.

opsigamy (op-sig′ạ-mi), *n.* [Gr. *ὀψίγαμος*, late-married (< *ὀψέ*, late, + *γάμος*, marriage), + *-y*^{3}.] Late marriage.

opsilus (op′si-lus), *n.* A form of anemometer in which a wind-vane carries a short tube opening freely to receive the wind. The pressure of the wind is communicated through a tube to a distant indicator or manometer where it is observed or recorded. Specifically, the device invented by Lander.

opsimath (op′si-math), *n.* [Gr. *ὀψιμαθής*, late in learning.] One who is late in learning or in beginning to learn.

opsonic (op-son′ik), *a.* [*opson*(*in*) + *-ic.*] Of or pertaining to opsonin.—**Opsonic immunity.** See ★*immunity*.—**Opsonic index**, the ratio of a normal to a pathological phagocytic index, the former being taken as the unit.

Bacterial vaccines are now coming to play an important rôle in the newer therapeutics. It is obvious that such means of treatment must be carefully controlled, or, instead of being of material aid to the body, they become a damaging factor. Therefore, in order to follow opsonic treatment, a means must be found by which a fairly accurate measurement can be made of the opsonius in normal bloods and in the bloods of patients suffering from any bacterial infection. Wright and Douglas have practically overcome this difficulty by a technical method by which they derive the so-called "*opsonic index*." This "index" simply shows the relation existing between the opsonic content of a patient's blood as compared with the opsonic content of the blood of a normal person.
Buck, Med. Handbook, Appendix, p. 445.

Opsonic power, the power of a serum determined by calculating the phagocytic ★index (which see).—**Opsonic therapy**, the treatment of an infectious disease by the injection of dead bacteria of the same species as those causing the disease.

opsoniferous (op-sọ̄-nif′ẹ-rus), *a.* [*opsonin* + L. *ferre*, bear.] Bearing opsonin.

It appears that opsonins, like toxins and complements, possess two groups of molecules, one haptophore, whereby it attaches itself to the bacterial receptors, and one which may be called the *opsoniferous* group, whereby is effected in the bacteria some change, physical or chemical, that is necessary for phagocytosis.
Jour. Med. Research, Oct., 1907, p. 58.

opsonin (op′sō-nin), *n.* [Gr. *ὀψώνιον*, provisions, + *-in*^{2}.] A hypothetical substance, present in blood-serum, upon which the phagocytic action of the leucocytes is dependent. Wright and Douglas have demonstrated the presence of substances in the blood which act upon bacteria, rendering them subject to phagocytosis. These bodies they have termed *opsonins*. It is thought that their presence has to do with the production or existence of immunity. Such immunity is spoken of as *opsonic immunity*.

The best known cause of phagocytosis at present, and the one occupying the attention of medical men almost exclusively, is the *opsonin* of the blood serum, first clearly demonstrated by Wright and Douglas. Of the several protective bodies known to exist in normal and immune sera, only the *opsonins* can be quantitatively determined with any considerable degree of accuracy by any methods so far discovered. It should be remembered, however, that all the immune protective bodies arise from the action of the bacteria and their chemical products; so that, while the *opsonins* are distinct from the others, the probable quantity of the others may at least be inferred from the amount of *opsonin* found to be present. . . . *Jour. Med. Research*, July, 1907, p. 521.

opsonization (op″sọ̄-ni-zā′shọn), *n.* The act or process of opsonizing.

The author found that opsonins were most active in neutral liquids. An alkalinity exceeding $n/20$ KOH prevented *opsonization*. An acidity of $n/30$ HCl was sufficient to stop the opsonic function of serum.
Science, Sept. 13, 1907, p. 346.

opsonize (op″sọ̄-nīz), *v. t.*; pret. and pp. *opsonized*, ppr. *opsonizing*. [*opson*(*in*) + *-ize.*] To produce opsonins in; affect by means of opsonins.

opsonoid (op′sọ̄-noid), *n.* [*opson*(*in*) + *-oid.*] An opsonin the opsonophoric group of which has been destroyed.

We may say that when sensitized cocci are heated the opsoniferous group is largely inactivated, but as the bacterial receptors remain occupied by the haptophore group, bacteria are prevented from taking up new opsonin. In accordance with Ehrlich's nomenclature opsonin, the opsoniferous group of which is destroyed or inactivated, may be termed *opsonoid*.
Jour. Med. Research, Oct., 1907, p. 58.

opsonophoric (op″sọ̄-nọ̄-for′ik), *a.* [*opson*(*in*) + Gr. *-φορος*, -bearing, + *-ic.*] Referring to that group of an opsonin which produces changes in a bacterium of such a character that it will become subject to phagocytosis. Also *opsoniferous*.

opsony (op′sọ̄-ni), *n.* Same as *opsonium*.

opsophagist (op-sof′ạ̈-jist), *n.* [Gr. *ὄψον*, cooked meat, dainties, + *φαγεῖν*, eat, + *-ist.*] One who habitually eats dainties; a gourmet.

opsophagize (op-sof′ạ̈-gīz), *v. i.*; pret. and pp. *opsophagized*, ppr. *opsophagizing*. [*opsophag*(*y*) + *-ize.*] To feed luxuriously on dainties.

opsophagy (op-sof′ạ̈-ji), *n.* [Gr. *ὄψον*, dainties, + *-φαγια*, < *φαγεῖν*, eat.] The act or fact of eating dainties; luxuriousness in eating.

opt (opt), *v. i.* [L. *optare*, choose.] To choose one of two alternatives; choose.

The present Heligolanders *opting* to be British subjects.
Gladstone, in Leeds Mercury, July 25, 1890. *N. E. D.*

opt. An abbreviation (*b*) of *optical*; (*c*) of *optician*; (*d*) [*l. c.* or *cap.*] of *optics*.

Optic aphasia, capsule, radiations, tract. See ★*aphasia*, etc.

Optical agraphia, bench, constant, contact, correction, density. See ★*agraphia*, etc.—**Optical doubles.** See ★*double*, 18.—**Optical efficiency.** See ★*efficiency of a source of light*.—**Optical illusions.** See ★*illusion*, 2.—**Optical length of a ray, lever, resonance, strain, train, wedge.** See ★*length*, etc.—**Optical properties of metals**, those properties which affect reflection, refraction, polarization, and absorption of light at the surface of or within the body of a metal. One of the most obvious of these is opacity. It follows from the electromagnetic theory of light that dielectrics will, in general, be transparent, and bodies which conduct electricity opaque. The opacity of metals, however, is by no means absolute. Taken in sufficiently thin layers all metals transmit light; usually, with strong color. Thus the light transmitted by gold-leaf is green; that by silver, blue, etc. The transmitting power of metals, which is highly selective, is expressed by means of an extinction coefficient, or sometimes an absorption coefficient. *Metallic reflection.* The reflection of metallic surfaces differs from that of transparent media in that the reflected light is in general elliptically polarized. The intensity of the reflected ray, in the case of polarized light, depends upon the plane of incidence. When two rays, one polarized parallel to the plane of incidence, the other at right angles to the same, are reflected from a metallic surface the reflected rays differ in phase, and at the angle of maximum polarization this difference is always a quarter wave-length. *Indexes of refraction.* Table I gives the index of refraction of various metals for the D line. It will be noted that certain metals, such as gold, copper, and silver, have an index of refraction smaller than unity, while in other cases the index is much larger than for transparent media.

Table I.

Metal.	Index of refraction.
Silver	0.18
Gold	0.37
Platinum	[illegible]
Copper	0.64
Steel	2.41
Sodium	[illegible]
Mercury	1.73
Antimony	3.04
Lead	2.01
Magnesium	0.37

Anomalous dispersion of metals. In common with other media showing marked selective absorption, metals in general exhibit anomalous dispersion, as will be seen by comparing the index of refraction for red with the index for blue light in Table II.

Table II.

Metal.	Index of refraction.	
	Red.	Blue.
Silver	0.35	0.20
Platinum	1.99	1.63
Bismuth.	2.61	2.13
Iron	1.81	1.52
Nickel	2.17	1.85
Cobalt.	3.10	2.39

The only exceptions are gold, copper, and lead. *Surface color.* Another result of selective absorption in metals is the greater reflection of certain wave-lengths of light than of others. The reflected beam consequently differs in composition from the incident beam and the metal shows surface color.—**Optical vertigo.** Same as *ophthalmic ★vertigo.*

opticity (op-tis′i̤-ti), *n.* [*optic* + *-ity.*] The power of rotating the plane of polarization of light possessed by the so-called optically active substances and by the magnetic field.

opticochemical (op″ti-kọ̄-kem′i-kạl), *a.* Pertaining both to optics and to chemistry.

opticon (op′ti-kon), *n.*; pl. *optica* (-kạ̈). [NL., ‹ Gr. *ὀπτικόν*, neut. of *ὀπτικός*, optic.] The first of the three ganglionic swellings in the optic tract of an insect's brain.

opticonasion (op″ti-kọ̄-nā′si-on), *n.* [Gr. *ὀπτικός*, optic, + NL. *nasion.*] In *craniom.*, the distance from the posterior border of the optic foramen to the nasion. *Harrison Allen*, in Jour. Acad. Nat. Sci., Phila., 2d ser., X. 410.

opticopapillary (op″ti-kọ̄-pap′i-lạ̄-ri), *a.* Relating to the optic papilla.

optimal (op′ti-mạl), *a.* [L. *optimus*, best, + *-al*^{1}.] **1.** Best; most favorable: specifically, in *exper. psychol.*, referring to the frequency or duration of stimuli, to the length of intervals between experiments, etc., so timed as to allow of most accurate reproduction or apprehension, or of most adequate attentive preparation: as, the *optimal* interval for reproduction, the *optimal* preparation-time, the *optimal* rate of recurrence, the *optimal* rhythm, etc.

> These results do not enable us therefore to locate an *optimal* interval with any high degree of probability, nor even to establish the existence of such an interval with certainty. *Psychol. Rev. Mon. Sup.*, III. xiii. 44.

> The greatest happiness in life can be obtained only if all the instincts—that of workmanship included—can be maintained at a certain *optimal* intensity.
> *J. Loeb*, Compar. Physiol. of the Brain, p. 233.

2. Of or pertaining to the optimum, as of temperature, moisture, etc. See *★optimum.*

optimistical (op-ti-mis′ti-kạl), *a.* Same as *optimistic.*

optimization (op″ti-mi-zā′shọn), *n.* [L. *optimize* + *-ation.*] The act of optimizing or taking an optimistic view of; the act of turning to the best account or making the best of.

optimum, *n.* The term is applicable not only to the factor of heat, but also to those of light, moisture, etc. The optimum for each several function must be distinguished from the total optimum for the plant, the most intense activity of a function often being injurious. According to Schimper, that condition which secures the highest intensity of a function is its *absolute optimum*; that which secures its most favorable activity is its *harmonic optimum*; and the harmonic optima together compose the *œcological optimum* for the plant. *A. F. W. Schimper* (trans.), Plant-Geog., p. 44.

II. *a.* Best; most desirable.—**Optimum capacity,** "in an induction-coil, that capacity of the condenser, which, when placed around the break, will give the longest spark in the secondary. This has also been found by experiment to be the least capacity that causes the sparking at the break to disappear, or if not entirely to disappear, to become very small." *Ives*, in Elect. World and Engin., Oct. 31, 1903, p. 731.

optive (op′tiv), *a.* [L. *optivus*, chosen, ‹ *optare*, choose: see *★opt, option.*] **1.** Relating to the power of option; elective.—**2.** In *Rom. law*, selected by option or through a power of option.

> Tutors appointed in a testament by express nomination are called tutors dative; those selected in virtue of a power of option, tutors *optive*.
> *Muirhead*, Gaius, I. § 154. *N. E. D.*

optoblast (op′tọ̄-blȧst), *n.* [Gr. *ὀπτ(ικός)*, optic, + *βλαστός*, germ.] In *neurol.*, a cell of the layer of large ganglion-cells (eighth or ninth layer) of the human retina.

> These different currents are discharged upon the *optoblasts*, which are differentiated by the influence of habit and heredity, and hence result the differences in color sensations. *Smithsonian Rep.*, 1898, p. 193.

optocœle (op′tō-sēl), *n.* [Gr. *ὀπτ(ικός)*, optic, + *κοῖλος*, hollow.] An optic ventricle or cavity of one of the optic lobes of the midbrain in lower vertebrates. *Parker and Haswell*, Textbook of Zoology, II. 94.

optogenic (op-tọ̄-jen′ik), *a.* [Gr. *ὀπτ(ικός)*, optic, + *-γενης*, -producing, + *-ic.*] Of or pertaining to the cells of the integumental disk, in certain stages of the development of the compound eye of an insect.

optography (op-tog′rạ-fi), *n.* [Gr. *ὀπτ(ικός)*, optic, + *-γραφια*, ‹ *γράφειν*, write.] The fixation of an image on the retina. See *optogram.*

optoid (op′toid), *n.* [Gr. *ὀπτ(ικός)*, optic, + *-oid.*] The oval of Descartes.

optologist (op-tol′ọ̄-jist), *n.* [Gr. *ὀπτ(ικός)*, optic, + *-λογια*, ‹ *λέγειν*, speak, + *-ist.*] Same as *ophthalmologist. Lancet*, June 6, 1903, p. 1601. [Rare.]

optometrical (op-tọ̄-met′ri-kạl), *a.* Of or relating to optometry. *Optical Jour.*, Dec., 1903, p. 810

optometrist (op-tom′e-trist), *n.* [*optometr(y)* + *-ist.*] One who measures the visual power; specifically, an optician without medical training, who fits eyeglasses.

> One of the points to be thoroughly discussed will be the best name to give those who professionally test eyes for refractive errors. It is well to thoroughly discuss this question, but it seems to us that it is already settled. In those States which have laws governing this line of work the term used is "*Optometrist*"; also in those States where these laws are being agitated the same truth holds. *Optical Jour.*, June 23, 1904, p. 69.

optotechnics (op″tō-tek′niks), *n.* [Gr. *ὀπτ(ικός)*, optic, + E. *technics.*] The technology of microscopic, telescopic, photographic, stereoscopic, and other optical instruments.

> The task of *opto-technics* consists in extending the field of vision beyond the ordinary limitations.
> *Paul and Cheshire*, The Zeiss Works, p. 4.

opulus (op′ụ̄-lus), *n.* [L., a variety of maple.] The guelder-rose, *Viburnum Opulus.*

Opuntiales (ọ̄-pun-shi-ā′lēz), *n. pl.* [NL. (Engler, 1892), ‹ *Opuntia* + *-ales.*] Same as *★Cactales*: a name introduced without good reason, but now much used.

opuntioid (ọ̄-pun′shi-oid), *a.* [*Opunti(a)* + *-oid.*] Resembling *Opuntia*, the prickly-pear.

Opus Anglicanum, English work: a style of old embroidery. The human face was done in a manner suggesting low relief, by means of circular lines of chain-stitch beginning in the center of the cheek. After the whole figure had been done in circles and straight lines, a thin iron rod ending in a smooth knob was slightly heated and pressed in the middle spots of the circular lines of chain-stitch wherever they had been worked. The hollows thus made were lasting, and brought out a play of light and shadow which gave its distinctive character to the English work. This embroidery was highly prized for ecclesiastical use, it brought large prices, and much of it was sent to foreign churches. By the time of the Wars of the Roses, however, it had lost its high reputation. *D. Rock*, S. K. Handbook, Textile Fabrics, p. 80.—**Opus pectineum,** a kind of woven work which imitated embroidery. It was probably made by women with small looms and a comb-like instrument or pecten. Also called *comb-work.*—**Opus tectorium,** a hard plaster, somewhat like stucco, used for covering walls in Roman buildings. Three or four coats are necessary.—**Opus vermiculatum,** a species of mosaic which is made with little rods of stone instead of square pieces, the usual form.

opuscular (ọ̄-pus′kụ̄-lạ̈r), *a.* [*opuscule* + *-ar*^{3}.] Pertaining to or resembling an opuscule or small work.

Or. An abbreviation (*a*) of *oriental*; (*b*) of *Oregon.*

ora^{3} (ō′rạ̈), *n.* [L. *ora*, margin, edge, shore, coast.] A margin, or border, in technical uses; specifically, in *entom.*, the inflexed or inferior lateral margin of the prothorax, often separated from the antepectus by a suture. *Kirby and Spence.*—**Ora serrata,** in *anat.*, the serrate border of the retina posterior to the outer edge of the ciliary processes.

ora^{4} (ô′rạ̈), *n.* [It. *ora*, breeze, ‹ L. *aura*, breeze: see *aura*^{1}.] The day wind which blows from the south up the valley of lake Garda, in northern Italy.

oral. **I.** *a.*—**Oral gland, hood, method** or **system.** See *★gland, ★hood, ★oralism.*

II. *n.* In crinoids, same as *oral valve* (which see, under *oral*).

orale, *n.* **2.** In *craniom.*, the anterior terminal point of the sutura incisiva, on the inner face of the alveolar process. *Von Török.*

oralism (ō′rạl-izm), *n.* [*oral* + *-ism.*] The system of teaching deaf-mutes by means of ordinary speech or lip-language, without the use of the hand-manual.

oralist (ō′rạl-ist), *n.* [*oral* + *-ist.*] **1.** One who speaks correctly and with precision.—**2.** One who advocates or uses the oral system in teaching deaf-mutes.

orality (ọ̄-ral′i-ti), *n.* [*oral* + *-ity.*] **1.** Capability of being orally conveyed to another.—**2.** Oral communication.

oralization (ō-rạl-i-zā′shọn), *n.* [*oralize* + *-ation.*] The process of making (the muscular movements in eating, etc.?) more distinctly oral or concerned with the mouth muscles (and thereby more manageable for 'oral' or vocal utterance). [Rare.]

> Articulation is traced from the strenuous movements in the mastication and ingestion of foods, through increasing *oralization*, relaxation, and adjustments.
> *Amer. Anthropologist*, Jan.–March, 1900, p. 171.

oralize (ō′rạl-īz), *v. t.*; pret. and pp. *oralized*, ppr. *oralizing.* [*oral* + *-ize.*] To render oral.

orally, *adv.* **3.** Toward or in the mouth or oral region.

oralward (ō′rạl-wạ̈rd), *adv.* Toward the mouth or oral region of an animal. [Rare.]

orange^{1}, *n.*—**Acridine orange,** a basic coal-tar color related to acridine. It is of no value for dyeing wool, but dyes silk and tannin-mordanted cotton a bright orange.—**Alizarin orange,** a mordant coal-tar color derived from anthracene. It is a nitro-derivative of alizarin, formed by the action of nitric acid upon alizarin in the presence of sulphuric acid: used in calico-printing and wool-dyeing. It gives an orange color with an aluminium mordant.—**Alpha-naphthol orange.** Same as *orange I.*—**Aniline orange.** Same as *Victoria ★yellow.*—**Atlas orange.** Same as *orange II.*—**Beta-naphthol orange.** Same as *orange II.*—**Bitter orange, Seville orange.** See *bigarade.*—**Brilliant orange.** Same as *crocein ★orange.*—**Brilliant orange G,** a direct cotton coal-tar color of unpublished composition. It dyes unmordanted cotton a bright orange from a salt bath.—**Brilliant orange R,** an acid coal-tar color of the monoazotype, prepared by combining diazotized xylidine with β-naphthol-monosulphonic acid. It dyes wool and silk yellowish red from an acid bath. Also called *scarlet GR, scarlet R*, and *orange L.*—**Cerasin orange.** Same as *★Sudan G.*—**Cerotin orange.** Same as *chrysoidine.*—**Chicago orange,** a direct cotton coal-tar color related to stilbene. It dyes unmordanted cotton orange in a neutral salt bath.—**Chloramine orange,** a direct coal-tar color of unpublished composition. It dyes unmordanted cotton orange in a salt bath.—**Chlorophenin orange,** a direct cotton coal-tar color related to stilbene. It dyes unmordanted cotton bright orange in a salt bath.—**Cloth orange,** a mordant acid coal-tar color of the diazo type, derived from benzidine and salicylic acid. In an acid bath it dyes wool an orange color which is rendered faster by an after-chroming. It may also be dyed upon chromium-mordanted wool.—**Columbia orange,** a direct coal-tar color. It dyes unmordanted cotton orange in a salt bath.—**Crocein orange,** an acid coal-tar color of the monoazotype, prepared by combining diazotized aniline with β-naphthol-sulphonic acid. It dyes wool and silk an orange yellow from an acid bath. Also called *ponceau 4 GB, orange GR, pyrotine orange, orange ENL, GRX*, and *orange ENZ.*—**Diamine orange B** and **G,** two direct cotton coal-tar colors of unpublished composition. They dye unmordanted cotton orange in an alkaline salt bath.—**Diamond orange.** Similar to *diamond ★yellow.*—**Dimethylaniline orange.** Same as *helianthin.*—**Diphenyl orange,** a direct cotton coal-tar color of the stilbene type, derived from nitrotoluene-sulphonic acid. It dyes unmordanted cotton orange from a salt bath.—**Direct orange,** a direct cotton coal-tar color similar to direct yellow, made by the reduction of direct yellow with alkaline reducing-agents. It dyes unmordanted cotton various hues of orange in a salt bath and possesses good fastness.—**Janus orange,** a mixture of Janus red and Janus yellow.—**Kid-glove orange,** the mandarin orange, *Citrus nobilis*: so called because its rind is thin and may easily be removed in one piece, like a kid glove.—**Kongo orange G** and **R,** direct cotton coal-tar colors of the diazo type. They dye unmordanted cotton orange in a salt bath.—**Metanil orange I** and **II,** acid coal-tar colors of the monoazo type derived from meta-aniline-sulphonic acid. They dye wool orange in an acid bath.—**Methyl orange.** Same as *helianthin*: largely used as an indicator in volumetric chemical analysis. It gives a pale yellow coloration with alkaline solutions and a pink coloration with acid solutions.—**Mikado orange,** a direct cotton coal-tar color of the stilbene type, prepared by the action of alkaline reducing-agents upon mikado yellow. It dyes unmordanted cotton orange in a salt bath.—**Milling orange,** a mordant acid coal-tar color of the diazo type, prepared by combining diazotized amidoazobenzin-sulphonic acid with salicylic acid. It may be dyed upon unmordanted wool in an acid bath and then after-chromed, or may be dyed upon chromium-mordanted wool.—**Naphthol orange.** Same as *orange I.*—**Native orange.** (*b*) In Australia, *Capparis Mitchellii*, a congener of the caper-tree, bearing fruits 1–2 inches in diameter, with a fragrant pulp which is eaten by the natives. It is often called *small native pomegranate.* (*c*) Same as *native ★lime* (*b*).—**Neutral orange,** a mixed pigment used by artists which consists of cadmium yellow and Venetian red.—**Orange A, extra,** and **OP.** Same as *orange II.*—**Orange B.** Same as *orange I.*—**Orange basket-worm.** See *★basket-worm.*—**Orange Chionaspis.** See *★Chionaspis.*—**Orange ENL** and **GRX.** Same as *crocein ★orange.*—**Orange ENZ.** Same as *crocein ★orange.*—**Orange GR.** Same as *crocein ★orange.*—**Orange GS, M,** and **N.** Same as *diphenylamine-orange* (which see, under *orange*^{1}).—**Orange L.** Same as *brilliant ★orange R.*—**Orange leaf-beetle.** See *★leaf-beetle.*—**Orange leaf-roller.** See *★leaf-roller.*—**Orange leaf-rust.** See *★leaf-rust.*—**Orange MN.** Same as *metanil ★yellow.*—**Orange plant-louse.** See *★plant-louse.*—**Orange R.** (*a*) An acid coal-tar color of the monoazo type prepared by combining diazotized xylidine-sulphonic acid with β-naphthol. It dyes wool and silk reddish orange in an acid bath. (*b*) A mordant acid coal-tar color of the monoazo type prepared by combining diazotized para-nitraniline with salicylic acid. Also called *alizarin yellow R.* (c) Same as ★*orange T.*—**Orange T**, an acid coal-tar color of the monoazo type prepared by combining diazotized ortho-toluidine-monosulphonic acid with β-naphthol. It dyes wool orange in an acid bath.—**Pyrotine orange.** Same as *crocein* ★*orange.*—**Six-spotted mite of orange.** Same as *California* ★*spider.*—**Spring orange**, the American storax, *Styrax Americana.* See *Styrax.*—**Vegetable orange.** See ★*vine-peach.*—**Victoria orange.** Same as *Victoria* ★*yellow.*—**Wild orange.** (*d*) In Australia, same as *wild* ★*lemon.*

orangeado† (or″an-jä′dō), *n.* Same as *orangeat.*

orange-aphis (or′ạnj-ā″fis), *n.* An aphis, *Aphis gossypii*, common in Florida, which infests the leaves and young twigs of the orange and lemon, as well as cotton and cucurbits. See cut under ★*cotton-aphis.*

orange-berry (or′ạnj-ber″i), *n.* **1.** Same as ★*lime-berry.*—**2.** An immature orange. The small, immature fruits which drop from the trees, when collected and dried, are used in medicine.

orange-butterfly (or′ạnj-but″ėr-flī), *n.* Same as *cresphontes* ★*butterfly.*

orange-cups (or′ạnj-kups), *n. pl.* In *bot.*, same as *cluster-cups.*

orange-dog, *n.* **2.** See *giant* ★*swallowtail.*

orange-fin (or′ạnj-fin), *n.* The salmon-trout, *Salmo brutia*, found in the north of Europe and the British Isles. When young it often has orange or red spots on the sides. The bull trout parr of the Tweed is also sometimes called *orange-fin.* *Seeley*, Fresh-Water Fishes of Europe, p. 311.

Orange-flower tree, the syringa or mock-orange, *Philadelphus coronarius.*

orange-fly (or′ạnj-flī), *n.* Any one of several trypetid flies whose larvæ feed on orange-fruit, as the Morelos orange-fly, *Trypeta ludens.*

orange-gum (or′ạnj-gum), *n.* See ★*gum*².

orange-melon (or′ạnj-mel″ọn), *n.* Same as ★*vine-peach.*

orange-mite (or′ạnj-mīt), *n.* Any one of several mites found on orange-trees, as *Tetranychus sexmaculatus*, or *Tetranychus mytilaspidis.*

orange-peel, *n.* **2.** In *ceram.*, an oriental glaze with rough pitted surface, resembling the skin of an orange. See *peau d'orange.*—**Orange-peel bucket.** See ★*bucket.*

orange-quit (or′ạnj-kwit), *n.* A Jamaican bird, *Glossoptila ruficollis.* *Newton*, Dict. of Birds, p. 761.

orangeroot, *n.*—**Climbing orangeroot**, the climbing bittersweet, *Celastrus scandens.*

orange-rust (or′ạnj-rust), *n.* A fungus, *Cæoma luminatum*, which produces copious orange-colored spores on the stems of blackberries and raspberries.

orange-scab (or′ạnj-skab), *n.* See ★*scab.*

orange-tip, *n.*—**Falcate orange-tip**, an American pierid butterfly, *Synchloe genutia*, having white wings with orange tip, and the apex of the fore-wings hooked. It is found from Georgia to Connecticut, and its larvæ feed on slender cruciferous plants such as shepherd's-purse.—**Olympia orange-tip**, an American pierid butterfly, *Synchloe olympia*, occurring in the southwestern United States. Its larvæ feed on hedge-mustard and other cruciferous plants.

orange-tree (or′ạnj-trē), *n.* **1.** Any one of several species of trees belonging to the genus *Citrus* which bear oranges. See *orange*¹, 2, and *citrus*, 2.—**2.** In New Zealand, the tarata, *Pittosporum eugenioides*, so called from the odor of its leaves when crushed. Also called *New Zealand orange-tree.* See *hedge-laurel* and ★*tarata.*

orangist¹ (or′ạnj-ist), *n.* [*orange* + *-ist.*] One who raises oranges; a planter of orange-groves. *N. E. D.*

Orangist² (or′ạnj-ist), *n.* [*Orange* (see def.) + *-ist.*] **1.** An adherent of the House of Orange, in the Netherlands.—**2.** An Orangeman.

orarian (ō-rā′ri-ạn), *a.* and *n.* [L. *orarius*, of the coast, < *ora*, shore, coast.] **I.** *a.* Belonging to or living on the sea-coast.

II. *n.* One who lives on the sea-coast. *N. E. D.* [Rare.]

orat. An abbreviation of *orator.*

orational (ō-rā′shọn-ạl), *a.* [NL. *orationalis*, < L. *oratio(n-)*, speech, prayer.] Of or pertaining to prayer in church service. *N. E. D.* [Rare.]

oratorian, *a.* **2.** [*cap.*] Of or pertaining to one of a religious society known as The Oratory, especially to the English branch of The Oratory of St. Philip Neri, a congregation of the Fathers of the Oratory, at Brompton.

> In Rome . . . he [Manning] saw Newman "wearing the *Oratorian* habit and dead to the world."
> *Encyc. Brit.*, XXX. 523.

oratorio-singer (or-ạ-tō′ri-ọ-sing″ėr), *n.* One who sings oratorios or oratorio music.

oratorship (or′ạ-tọr-ship), *n.* The position or office of orator, as the public oratorship in an English university. See *orator*, 6.

oratrice (or′ạ-tris), *n.* [F. *oratrice* < L. *oratrix*, fem. of *orator*: see *oratrix.*] Same as *oratrix.*

orbicular, *a.* **5.** In *petrog.*, in phanerocrystalline igneous rocks, having large spheroidal aggregations of minerals, in radial or concentric groups of megascopic crystals: as, *orbicular* granite, *orbicular* diorite.

Orbiculoidea (ôr-bik-ụ-loi′dẹ-ạ̈), *n.* [NL., < *Orbicula*, a genus of brachiopods, + Gr. εἶδος, form.] A genus of neotrematous brachiopods of the family *Discinidæ*, having circular chitinous shells, the pedicle passage being in the form of a slit which extends from the beak of the pedicle-valve forward, and closed behind, as growth advances, by a listrium. It is common in all rocks from the Lower Silurian to the Cretaceous.

orbific (ôr-bif′ik), *a.* [L. *orbis*, orb, + *-ficus*, < *facere*, make.] Orb-making; world-making.

> An instant impulse urging to begin
> The work *orbific;* glorying in their plans
> Of future suzerainty and wide-spread sway
> Among new worlds of creatures yet to be.
> *P. J. Bailey*, A Spiritual Legend, 1. 99.

orbilla (ôr-bil′ạ̈), *n.*; pl. *orbillæ* (-ē). [NL., dim. of L. *orbis*, orb.] A lichen-shield, apothecium, or pelta in the genus *Usnea.* *Cooke's Manual.* See cut at *apothecium.*

orbit, *n.*—**Ferrel's orbit theory**, in *meteor.*, Ferrel's explanation of the growth of hailstones by the addition of successive layers of ice as the hailstone is carried by wind along a path or orbit consisting of a series of loops passing successively into and out of the strata where rain or ice is forming.

Orbital crest, ring. See ★*crest, ring*¹.

orbitale (ôr-bi-tā′lē), *n.*; pl. *orbitalia* (-li-ạ̈). **1.** In *ichth.*, same as *prefrontal.*—**2.** In *craniom.*, the lowest point of the inferior border of the orbit. *Von Török.*

orbite (or′bīt), *n.* [*Orb(eshöhe)*, a place in Hesse, + *-ite*².] In *petrog.*, a fine-grained diorite-porphyry with phenocrysts of hornblende and lime-soda feldspar. *Chelius*, 1892.

orbitofrontal (ôr″bi-tō-fron′tạl), *a.* [L. *orbita*, orbit, + *frons* (*front-*), forehead, + *-al*¹.] Relating to the orbits and to the frontal bone or the forehead.

Orbitoides (ôr-bi-toi′dēz), *n.* [NL., < L. *orbita*, orbit, + Gr. εἶδος, form.] A genus of *Foraminifera* similar to *Nummulites* (which see). It abounds in the Cretaceous and Eocene Tertiary and in places gives name to the rock: as, the *Orbitoides* limestone of the Gulf States or Orbitolitic group. See *Vicksburg group.*

Orbitolina (ôr″bi-tō-lī′nạ̈), *n.* [NL., < L. *orbita*, orbit, + *-ol-* + *-ina*¹.] A genus of *Foraminifera* having a silicious test composed of concentric rings divided into numerous chambers. It is very abundant in the Cretaceous rocks.

orbitomaxillary (ôr″bi-tō-mak′si-lạ-ri), *a.* [L. *orbita*, orbit, + E. *maxillary.*] Relating to the orbits and to the superior maxillary bones.

Orbitonasal foramen. See ★*foramen.*

orbitopalpebral (ôr″bi-tō-pal′pe-brạl), *a.* [L. *orbita*, orbit, + *palpebra*, eyelid, + *-al*¹.] Relating to the orbits and to the eyelid; noting one of the insertions of the levator palpebræ muscle.

orbitosphenoid, *n.* **2.** In *ichth.*, a bone anterior to the alisphenoid and usually forming part of the orbital septum. It is common only among the soft-rayed fishes. The orbitosphenoid of Owen is the alisphenoid of Huxley and Parker.

orbitostat (ôr′bi-tọ-stat), *n.* [L. *orbita*, orbit, + Gr. στατός, < ἵστασθαι, stand.] In *craniom.*, an instrument used for determining the central point of the orbit and the direction of the orbital axis which passes through this point and the optic foramen.

orbitotympanic (ôr″bi-tō-tim-pan′ik), *a.* [L. *orbita*, orbit, + E. *tympanic.*] Pertaining to the region of the orbit and the tympanum, as the bony ridge, present in many toads, which runs from the eye to the ear.

> A thick *orbito-tympanic* bony ridge.
> *Proc. Zool. Soc. London*, 1897, p. 203.

orb-web (ôrb′web), *n.* The kind of web spun by the spiders of the family *Epeiridæ.*

O. R. C. An abbreviation of *Order of the Red Cross.*

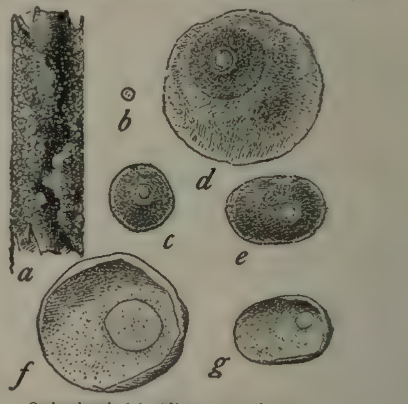
orchard, *n.*—**Indian orchard**, in certain parts of New England and New York, "an old orchard of ungrafted trees, the time of whose planting is not known." (*Bartlett.*) The name is sometimes given to the neighboring village. *Jour. Amer. Folk-lore*, April–June, 1902, p. 109.

orcharded (ôr′chạ̈r-ded), *p. a.* Set out or planted with fruit-trees.

orcharding, *n.* **2.** Land planted with orchards; orchards collectively: as, acres of *orcharding.*—**Turpentine orcharding.** See ★*turpentining.*

orchardman (ôr′chạ̈rd-mạn), *n.* Same as *orchardist.*

orchard-scale (ôr′chạ̈rd-skāl), *n.* Any one of many scale-insects found on orchard trees; specifically, the European orchard-scale, *Aspidiotus ostreæformis*, which occurs on the apple, pear, plum, peach, cherry, and other trees in Europe (its native home), the United States, and Canada.



Orchard-scale (*Aspidiotus ostreæformis*).

a, infested twig, natural size; *b*, life size female scale; *c*, half-grown female scale; *d*, full-grown female scale; *e*, full-grown male scale; *f*, female scale from below; *g*, male scale from below; *c–f*, greatly enlarged.

orchestrally (ôr-kes′trạl-i), *adv.* In the manner of, or for the use of, an orchestra: as, music arranged *orchestrally;* with an orchestra: as, *orchestrally* accompanied.

orchestration, *n.* **2.** Figuratively, a harmonious arrangement as of colors in painting. [Rare.]

> In their lack of any graspable theme and in their delicately elaborated *orchestration* of tone they can be appreciated, priced, that is to say, at their proper worth, only by those whose sense of color is very cultivated.
> *C. H. Caffin*, Amer. Masters of Painting, p. 41.

orchestric, *a.* **2.** Of or pertaining to dancing.

orchestrina di camera (ôr-kes-trē′nä dē kä′me-rä), *n.* [It. 'little orchestra of the chamber.'] One of a group of small reed-organs, invented by Evans of London, which are intended for solo use in the place of certain orchestral instruments, such as the flute, the clarinet, the oboe, the bassoon, and the French horn, the tone of each instrument being skilfully imitated by varying the form of the reeds or of their wind-channels. They are serviceable as substitutes for a real orchestra and for the study of orchestral music.

orchid, *n.*—**Queen of orchids.** See ★*Grammatophyllum.*

orchidacean (ôr-ki-dā′sẹ-ạn), *n.* Same as ★*orchidist.* [Rare.]

Orchidales (ôr-ki-dā′lēz), *n. pl.* [NL. (Lindley, 1847), < *Orchis* (*Orchid-*) + *-ales.*] An order of monocotyledonous plants including the families *Burmanniaceæ* and *Orchidaceæ*, which agree in their mostly complete 3–6-merous flowers, inferior compound ovary, and very numerous minute seeds (whence called also *Microspermæ*).

orchidalgia (ôr-ki-dal′ji-ạ̈), *n.* Pain in the testicles.

orchidist (ôr′kid-ist), *n.* [*orchid* + *-ist.*] One who cultivates orchids; one who is fond of orchids. Also called *orchidacean.*

orchidomania (ôr″ki-dọ-mā′ni-ạ̈), *n.* [*orchid* + Gr. μανία, madness.] An exaggerated passion for orchids.

orchidopexy (ôr′kid-ō-pek″si), *n.* [Gr. ὄρχις (assumed stem ὀρχιδ-), testis, + πῆξις, fastening.] Fixation of an undescended testis to prevent it from engaging in the inguinal canal and causing pain.

orchidotomy (ôr-ki-dot′ọ-mi), *n.* Same as *orchotomy.*

Orchil red. See ★*red*^{1}.—**Orchil substitute.** Same as ★*archil substitute.*

orchiocele (ôr′ki-ọ-sēl), *n.* [Gr. *ορχις*, testicle, + *κήλη*, tumor.] 1. Tumor of a testicle.—2. Hernia of a testicle.

orchis^2, *n.*—**Female orchis,** *Orchis Morio,* a common European plant.—**Flaming orchis,** *Blephariglottis psycodes,* of eastern North America. Also called *smaller purple fringed orchis.*—**Fringeless orchis,** *Blephariglottis paramœna,* a handsome purple-flowered species of the eastern United States, the petals of which are simply erose.—**Gay orchis,** the showy orchis.—**Male orchis,** *Orchis mascula,* a very common Old World plant which has received a variety of names.—**Marsh-orchis,** *Orchis latifolia.* See *Cain-and-Abel.*—**Purple orchis,** the showy orchis.—**Ragged orchis,** *Blephariglottis lacera,* of the eastern United States, with greenish-yellow flowers, the lip deeply fringed or lacerate.—**Smaller purple fringed orchis.** See *flaming* ★*orchis.*—**Spring orchis,** the showy orchis, which blooms in early spring.—**Tubercled orchis, yellow orchis,** *Perularia flava,* a terrestrial orchid of the eastern United States with tubercled roots and greenish-yellow flowers.—**Yellow fringed orchis,** *Blephariglottis ciliaris,* of the eastern United States, with large and showy bright orange or yellow flowers, the lip copiously fringed more than half way to the middle.

orcinol (ôr′si-nol), *n.* [*orcin* + *-ol.*] Same as *orcin.*—**Gamma-orcinol.** Same as ★*isorcinol.*

ord. An abbreviation (*b*) of *ordained;* (*c*) of *ordnance.*

order, *n.* **17.** Specifically, in the tobacco-trade, same as ★*case*^{1}, 9.

> When thoroughly dried the laths of tobacco are taken down during a warm, damp spell, and piled in heaps with sacks or cloths spread over them to keep the pile in "*order*" for several days. "*Order*" or "case" in tobacco curing means a moist condition in which the tissue will not break.
> *U. S. Dept. Agri.,* Farmers' Bulletin No. 60, p. 4.

22. In *petrog.,* in the quantitative system of classification (see ★*rock*^{1}), a taxonomic division of igneous rocks which follows the class and is based on the proportions of the standard mineral subgroups within the preponderant salic or femic group on which the class is based.—**23.** In *milit. tactics,* the position of a rifle in a military drill after the command to order arms has been obeyed: as, to load from the *order.*—**Adelphic order.** See ★*adelphic.*—**A large order,** an excessive or large demand or request; a tax upon one's resources. [Slang.]

> "Tell him . . . what I think of Miss Theale?" Densher stared. It was, as they said, *a large order.*
> *H. James,* Wings of a Dove, II. 232.

Albert order, an order in the kingdom of Saxony, founded in 1850.—**Ancient Order of Foresters, Independent Order of Foresters.** See ★*forester,* 7.—**Close order.** (*b*) *Naval,* the distance of from one to two cable's-lengths from mainmast to mainmast of a number of war-ships in line or column.—**Distinguished Service Order,** a British order for military merit, founded by Queen Victoria in 1886.—**Ernestine Order,** an order in the Saxon duchies of Germany.—**Fraud order.** See ★*fraud.*—**Greek orders,** those orders of classical architecture which are of strictly Greek origin. They are the Grecian Doric (as of the Parthenon), the Ionic (as of the Erechtheum), and the Corinthian, in its original type (as at Epidauros). The so-called *Persian order* is not generally recognized.—**Imperial Service Order,** a British order founded in 1902 and awarded for merit in the imperial civil service.—**Military Order of the Loyal Legion,** an organization which consists primarily of commissioned officers who served in the Union Army during the civil war. Civilians who performed eminent service for the government during the same period are also eligible. The right to membership descends to the eldest male heir.—**Open order.** (*b*) *Naval,* the distance of from three to four cable's-lengths from mainmast to mainmast of a number of war-ships in line or column.—**Order of African Redemption,** an order of merit in the republic of Liberia, founded in 1879.—**Order of connection.** See ★*connectivity.*—**Order of Danilo,** a Montenegrin order for civil merit, founded in 1855.—**Order of Elizabeth Theresa,** an Austrian order originally founded in 1750.—**Order of Francis Joseph,** an Austrian civil and military order, founded by the emperor of that name in 1849.—**Order of Henry the Lion,** an order for civil and military merit in Brunswick, originally founded in 1834.—**Order of Imtiaz,** a Turkish order for military merit, founded in 1879.—**Order of Kalakaua,** a Hawaiian order founded in 1874, awarded for military merit.—**Order of Kamehameha I.,** a Hawaiian order for civil and military merit, founded in 1865.—**Order of Kapiolani,** a Hawaiian order for civil and military merit, founded in 1880.—**Order of Leopold.** (*b*) A Belgian order of merit, founded by Leopold I. in 1832.—**Order of Fidelity,** a military order in Baden, founded in 1715.—**Order of Maximilian Joseph,** a Bavarian military order founded in 1806.—**Order of Merit,** a British order founded by King Edward VII. on the occasion of his coronation in 1902. It includes those who merit distinction in the army and navy, and in science, art, and literature. Such foreign members as the King shall appoint are added to the original twenty-four British members to which the order is limited.—**Order of Natives of British East Indies,** a British order for military merit, founded in 1842.—**Order of Osmanieh,** a Turkish order for civil and military merit, founded in 1861.—**Order of Rue Crown.** See ★*Crown.*—**Order of Saint Anne,** a Russian order founded in 1735.—**Order of Santa Rosa,** an order in Honduras for civil and military merit, founded in 1868.—**Order of Saint Gregory the Great,** a papal order of merit, founded in 1831.—**Order of Saint Hubert,** a Bavarian order for military merit, founded in 1444.—**Order of Saint Maurice and Saint Lazarus,** an Italian military order, originally founded in 1434.—**Order of Saint Olaf,** an order in Norway for civil and military merit, founded in 1847.—**Order of Saint Stephen of Hungary,** a military order in Austria-Hungary, founded in 1764.—**Order of Saint Vladimir,** a Russian order, founded in 1782.—**Order of the African Star,** an order of merit in the Kongo Free State, founded in 1888.—**Order of the Bust of Bolivar,** a civil and military order in Venezuela, founded in 1854 by President Monagas.—**Order of the Danebrog.** See *Danebrog.*—**Order of the Double Dragon,** a Chinese order for merit, founded in 1882.—**Order of the Golden Lion.** See ★*lion.*—**Order of the House of Hohenzollern,** a Prussian military order, founded in 1842.—**Order of the Iron Crown of Italy.** See *iron.*—**Order of the Oak Crown.** See ★*Crown.*—**Order of the Oceanic Star,** a Hawaiian order for civil and military merit, founded in 1886.—**Order of the Pole Star,** an order in Sweden for civil merit, founded in 1748.—**Order of the Star of Rumania,** a Rumanian order for civil and military merit, founded in 1877.—**Order of the Tower and Sword,** a Portuguese order for civil and military merit, originally founded in 1459.—**Order of the White Elephant.** (*b*) A Siamese order for civil and military merit, founded in 1861.—**Order of Vasa,** an order for civil merit, founded by Gustavus III. of Sweden, in 1772.—**Order of William,** a Dutch order for military merit, founded in 1815.—**Order of zeros.** In $fx = a(x-x_1)^n(x-x_2)^m$, the zeros at x_1 and x_2 are of orders n and m respectively.—**Persian order,** in *arch.,* an order in which human figures take the place of the columns on the shafts of the columns. The term is taken from Vitruvius.—**Protection order,** a term used, chiefly in England, to denote an order or decree of court issued for the protection of a wife in the enjoyment of property obtained by her after being deserted by her husband.—**Restraining order,** a temporary injunction granted by the court pending the hearing on an application for an injunction.—**Royal Order of Victoria and Albert,** a British order of court distinction for women, founded in 1862.—**Royal Victorian Order,** a British order for personal services, founded in 1896.—**Sealed orders,** official orders, especially naval or military, delivered with the instruction that they are not to be opened before a certain date.—**Vesting order,** an order in equity passing a legal title in lieu of a conveyance. Formerly it was granted only by the chancery division of the High Court of Justice, but it is granted now by commissioners also. *Wharton.*

order-book, *n.*—**Night order-book** (*Naut.*), a memorandum-book in which the captain sets down his orders for the guidance of the officers of the watch during the night.

order-paper (ôr′dėr-pā″pėr), *n.* A paper on which questions, etc., coming in the order of the day, in a legislative assembly, are entered. *N. E. D.*

order-word (ôr′dėr-wėrd), *n.* *Milit.,* the password of the day.

ordinable, *a.* **3.** In *math.,* capable of being arranged in order.

> An *ordinable* manifold may, in general, by the application of different criteria, be arranged in order in a variety of ways.
> *Encyc. Brit.,* XXXI. 281.

ordinal. I. *a.*—**Cantorian ordinal number.** See ★*Cantorian.*—**Ordinal fraction, integer, system.** See ★*fraction,* etc.—**Transfinite ordinal number.** See ★*number.*

II. *n.*—**Cantorian ordinal.** See ★*Cantorian ordinal number.*

ordinally (ôr′di-nal-i), *adv.* In an ordinal way; in regard to order.—**Ordinally similar.** See ★*similar.*

ordinar (ôr′di-när), *a.* and *n.* [OF. *ordinaire,* < L. *ordinarius.* See *ordinary.*] Same as *ordinary.* [Scotch.]—**By ordinar,** more than ordinarily; extraordinarily.

ordinary. I. *a.*—**Topically ordinary point, line,** or **surface of a place P,** a point, line, or surface within P, such that an object which fills it at any instant could begin, by an absolutely total motion, to generate any one of the same number of homogeneously exclusive homogeneous parts of P, as an object which fills some other point, line, or surface respectively, in its vicinity within P.

II. *n.* **11.** The bicycle with a large front and a small rear wheel, which preceded the 'safety' bicycle: so called because it was the common form of bicycle before 1890. See *bicycle.*—**12.** In the stock-market, a share of ordinary or common (that is, not preferred) stock.

ordinate, *n.* **2.** Any one of a set of parallel chords of a conic in relation to the diameter bisecting them. What in this sense was called *semiordinate* is now usually called *ordinate.*

ordinately, *adv.* **2.** In *math.,* as or so as to form an ordinate.

ordinative, *a.* II. *n.* In *gram.,* a particle which ordinates clauses. *N. E. D.*

ordn. An abbreviation of *ordnance.*

Ordnance datum, the standard level surface above which altitudes are measured, in the official surveys of the British Isles.

> To provide the necessary head of water (770 feet above *ordnance datum*) for the Birmingham supply.
> *Geog. Jour.* (R. G. S.), XV. 58.

Ordnance drift-piece. See ★*drift-piece.*—**Ordnance map,** a map issued by the ordnance survey of Great Britain and Ireland. See *ordnance survey.*

ordnance-hoy (ôrd′nans-hoi), *n.* A specially fitted hulk for the transportation of ordnance stores.

ordu (ôr′dū), *n.* [Turk. *ordu, urdu,* an army: see *horde.*] A Turkish army-corps.

> The whole empire is divided into 7 army districts, with which are associated 7 corps d'armée called *Ordus.*
> *The Statesman's Year-Book,* 1901, p. 1133.

ore^1, *n.* **3.** One of the walls which surround the hearth of a Catalan forge. *Phillips and Bauerman,* Elements of Metallurgy, p. 184.—**Bessemer ore,** iron ore sufficiently low in phosphorus and sulphur to be suitable for the acid Bessemer process.—**Cat-tooth ore,** a local English name of the lead carbonate cerusite. *Nature,* April 11, 1907, p. 574.—**Cleveland ore,** a clay-ironstone bed in the Cleveland district of England.—**Fossil ore.** Same as *lenticular* ★*ore.*—**Lake-ore,** limonite or brown hematite iron, much of it of very recent deposition, found at the bottom of lakes, especially in Sweden, where it is collected by dredging or 'fishing.'—**Lenticular ore,** a variety of hematite occurring in minute flattened concretions. Also called *fossil ore.*—**Looking-glass ore,** specular iron ore or hematite.—**Magnetic ore,** an iron ore consisting wholly or in large part of magnetite.—**Ore currents.** See ★*current*^{1}.—**Ore in sight,** in *mining,* ore developed by mining operations so fully that its existence may be taken as fully proved. In general, mining engineers demand that the block of ore shall be exposed on at least three sides.—**Ore reserve,** in *mining,* ore bodies in a mine that are fully developed and ready for mining. Compare ★*ore in sight.*—**Peacock ore.** (*b*) Same as *chalcopyrite.*—**Pencil-ore,** a massive hematite which separates easily in slender pencil-like forms.—**Pottern ore,** in *early metal.,* an ore which, when heated, becomes vitrified like the glazing on pottery.—**Purple ore.** (*a*) Bornite. (*b*) In the metallurgical treatment of the residue from burning off the sulphur of pyrites in the manufacture of sulphuric acid this material is mixed with common salt, roasted in a suitable furnace with free access of air, and, after cooling, leached with water to extract salts of copper. The dark-red oxid of iron which is left from the leaching is known as *purple ore* or *blue billy.* It is reduced to pulverulent metallic iron and used to precipitate copper from the solution obtained in the leaching.—**Rank ore,** tin ore which contains much arsenic and sulphur. *Phillips and Bauerman,* Elements of Metallurgy, p. 513.—**Specular ore, specular slate ore.** Same as *specular iron ore* (which see, under *specular*).

Ore., Oreg. Abbreviations of *Oregon.*

Oreamnos (ō-rẹ-am′nos), *n.* [Gr. *ὄρος,* a mountain, + *ἀμνός,* a lamb.] A genus of hoofed mammals including the mountain goats of North America, two species of which are now recognized. The name was used by Rafinesque in 1817 as a subgenus of the genus *Mazama,* this latter, so long used for the mountain goat, being originally given to a deer. See *Haplocerus,* with cut.

ore-body (ōr′bod″i), *n.* Ore as existing in the ground in veins, lodes, etc.; a body of ore that has not been mined. *Science,* May 31, 1901, p. 871.

ore-car (ōr′kär), *n.* In *car-building,* a special type of gondola car or hopper-car, used for carrying iron or other ores. See *hopper-car.*

ore-crusher (ōr′krush″ėr), *n.* A machine similar to a stone-crusher for breaking ore.

orective (ọ-rek′tiv), *a.* [*orectic* + *-ive.*] Same as *orectic.*

ore-dressing (ōr′dres″ing), *n.* In *mining,* the mechanical treatment of ores by processes depending on physical laws and physical properties of minerals, such as specific gravity, magnetic or electric properties, etc. The principal objects of ore-dressing are the concentration of low-grade ore, the purification of ores by the removal of objectionable material, and the separation of two or more useful minerals occurring in the same ore in order to render each more valuable.

ore-furnace (ōr′fėr″nās), *n.* A furnace for melting ore; specifically, a furnace of the reverberatory type, having a comparatively large grate and small hearth, used for melting coarse metal.

oregano (ō-rā′gä-nō), *n.* [Sp. *orégano,* < L. *origanum,* marjoram.] In Spanish-American countries, a common name of a number of aromatic plants belonging chiefly to the *Verbenaceæ* and to the mint family. In Mexico the principal ones are *Lippia Palmeri,* of the west coast; *L. Berlandieri,* of the warmer regions of the interior; and *Poliomintha longiflora,* of the vicinity of Saltillo: all of which are used in the same manner as sage and thyme in seasoning sausages and other articles of food.

Oregon char. Same as *Dolly Varden trout.*—**Oregon sturgeon.** Same as *white sturgeon.* See *sturgeon.*

orejon (ō-rā-hōn′), *n.*; pl. *orejones* (ō-rā-hō′nes). [Sp., a dried slice of apple, peach, etc., lit. a little ear, dim. of *oreja,* < L. *auricula,* ear. See *auricle.*] In Spanish-American countries, a dried slice of apple, peach, or other fruit; usually in the plural, dried fruit.

ore-leave (ōr'lēv), *n.* In *mining law*, the right to mine and take ore.

ore-loader (ōr'lō'dėr), *n.* A machine for loading loose material, such as coal, sand, ore, etc., upon carts, cars, or vessels.

oreman (ōr'mạn), *n.*; pl. *oremen* (-men). A dealer in ores, especially in iron ore.

> The position of the United States Steel Corporation is understood to have been a neutral one and the merchant *oremen* made the decision, which is generally regarded as conservative. *N. Y. Com. Advertiser*, April 11, 1901.

orenda (ō-ren'dạ̈), *n.* [Iroquois.] Magic power believed to be present in all bodies: proposed as a technical term for magic power by J. N. B. Hewitt. It has, however, not come into common use. See ★*wakanda* and *manito*. *Amer. Anthropologist*, Jan.–March, 1902, p. 33.

orendite (ọ-ren'dīt), *n.* [*Orenda* Butte, Leucite Hills, Wyoming, + *-ite*^{2}.] In *petrog.*, a name given by Cross (1897) to an aphanitic lava, with micaphenocrysts composed of leucite and orthoclase in nearly equal amounts, with phlogopite and diopside. It is related to wyomingite and madupite.

Oreocarya (ō"rẹ-ọ-kar'i-ạ̈), *n.* [NL. (Greene, 1887), < Gr. ὄρος, mountain, + *carya*, a word which occurs in the names of related genera, as *Allocarya*, *Eremocarya*, *Pectocarya*; in allusion to the prevailingly mountain habitat of the species.] A genus of coarse biennial or perennial herbaceous plants of the family *Boraginaceæ*, having mostly basal leaves and a leafy-bracted, thyrsoid, or sometimes racemose-paniculate inflorescence. It is distinguished from related genera by the persistent fruiting calyx and smooth, rugose, or tuberculate nutlets, with their margins acute or winged. There are about 20 species, natives of the mountain region of western North America from Montana and eastern Washington to Chihuahua, Mexico. See *white* ★*forget-me-not*.

oreoselin (ō-rẹ-os'e-lin), *n.* [Gr. ὀρεοσέλινον, mountain-parsley, < ὄρος, mountain, + σέλινον, parsley: see *celery*.] A crystalline substance, $C_{14}H_{12}O_4$, formed by warming peucedanin with acids or with alcoholic potash. It yields resorcinol and acetic acid when fused with caustic potash. It melts at 170° C.

oreoselone (ō-rẹ-os'e-lōn), *n.* [*oreosel(in)* + *-one*.] A crystalline substance, $C_{14}H_{12}O_4$, which is formed when peucedanin is treated with hydrochloric acid. It melts at 177° C.

Oreosoma (ō"rẹ-ọ-sō'mạ̈), *n.* [NL., < Gr. ὄρος, mountain, + σῶμα, body.] A genus of fishes of the family *Zeidæ*, known from a single small specimen taken in the open Atlantic.

ore-shoot (ōr'shöt), *n.* In *mining*, a body of ore, commonly of elongated shape, within a vein: usually applied to the workable portions of a vein only.

ore-sorting (ōr'sôr"ting), *n.* The separation of the lumps of mixed ore and veinstone into different piles according to the visible richness in real ore of the various fragments. Several piles may be made, of which the two extremes will represent apparently pure ore and worthless veinstone.

ore-stamp (ōr'stamp), *n.* A stamp-mill for breaking up the ore-rock and making it ready for the separation process. This is done by stamping the ore with heavy weights which are lifted and allowed to fall like a pestle upon the rock in the mortar of the mill.

ore tenus (ō'rē tē'nus). [L.: *ore*, abl. of *os*, mouth; *tenus*, up to, unto.] In *law*, at the mouth; by word of mouth; orally: used especially of pleadings not required to be written.

ore-washer (ōr'wosh"ėr), *n.* A machine for washing clay and earths out of earthy brown hematite ores.

orexigenic (ọ-rek-si-jen'ik), *a.* [Gr. ὄρεξις, appetite, + -γενης, -producing.] Stimulating the appetite.

> An *orexigenic* and stomachic action which is not to be lightly esteemed.
> *Amer. Jour. Clin. Med.*, Oct., 1907, p. 1252.

orexine (ọ-rek'sin), *n.* [Gr. ὄρεξις, appetite, + *-ine*^{2}.] Phenyldihydroquinazoline, a colorless, odorless, crystalline compound derived from quinoline. It melts at 95° C. It is used in medicine to increase the appetite.

orfan, *a.*, *n.*, and *v. t.* An amended spelling of *orphan*.

org. An abbreviation (*a*) of *organic*; (*b*) of *organized*.

organ^1, *n.*—**Acoustic organ.** Same as *organ of Corti*.—**Anteocular organ.** Same as *prostemmatic* ★*organ*.—**Biddler's organ,** an organ found only in the amphibian genus *Bufo*, lying between the fat-body and the testis or ovary: apparently a portion of the ovary that undergoes degeneration. *Nature*, Sept. 26, 1907, p. 553.—**Cerebral organ.** See ★*cerebral*.—**Chambered organ.** Same as *five-chambered* ★*organ*.—**Collateral organ,** in *Echinoderma*, same as *heart* or *plastidogen* ★*organ*. *Perrier*.—**Conservative organs,** in *biol.*, the organs that secure the preservation of the individual organism, as distinguished from those of reproduction; nutritive organs. In plants these are principally the root, stem, and leaves.—**Coxal organ.** See ★*coxal*.—**Cribriform organ.** See ★*cribriform*.—**Dorsal organ,** in echinoderms. Same as ★*axial organ*.—**Five-chambered organ,** in crinoids, a cavity at the apex of the calyx containing the apical parts of the axial organ, and divided into five chambers by five radially arranged partitions of connective tissue. In *Antedon* the organ is inclosed in the centrodorsal. In stalked crinoids the organ extends as a canal into the stalk and sends offshoots into the cirri when the latter are present. Also called *chambered organ* and *chambered sinus*.—**Johnston's organ,** a complex nervous structure in the basal joint of the antennæ of certain dipterous insects, supposed to be connected with the perception of vibration. It is very well developed in *Culex* and *Chironomus*, and is larger in the male than in the female.—**Keber's organ,** in lamellibranchs, same as *pericardial* ★*gland*.—**Lateral organ,** in nemerteans, one of a pair of ciliated tubes or cavities opening externally at the sides of the head, generally in a groove or slit, and terminating internally in the interior of a pair of posterior brain-lobes which may or may not be united with the rest of the brain.—**Luminous organ.** See ★*luminous*.—**Mayer's organ,** a patch of circumvallate papillæ on either side of the supero-posterior part of the tongue.—**Organ of Semper,** in pulmonate gastropods, an organ situated on each side of the mouth and now regarded as having a gustatory function.—**Organ of Siebold,** an elongate flat ganglion on a branch of the acoustic nerve in the tibia of a locustid insect.—**Organ of Syrski,** the milt-organ of the male eel, discovered by Dr. Syrski in 1873.—**Organ style,** in *music*, a style of composition or of performance characterized by full connected harmony or dignified counterpoint, such as are common in organ music.—**Photogenic organ,** the luminous organ in any one of the so-called phosphorescent insects.—**Plastidogen organ.** Same as ★*axial organ*.—**Postantennal organ.** Same as *prostemmatic* ★*organ*.—**Prostemmatic organ,** a curious circular organ whose function is unknown, situated in front of the ocelli in certain collembolous insects. Also called *anteocular organ* and *postantennal organ*.—**Sensory organ,** in *anat.* and *zoöl.* Same as *sense-organ*.—**Stewart's organ,** in some echinoids, one of the arborescent bodies projecting inward from the peristome and supposed to have a respiratory function.—**Water-testing organ,** in mollusks, an osphradium.

organacidia (ôr"gạn-a-sid'i-ạ̈), *n.* [NL., < Gr. ὄργανον, organ, + NL. *acidum*, acid.] In *pathol.*, secretion, usually in excess, of an organic acid.

> Hemorrhage from erosion—ulcer—of the œsophagus is not a rare occurrence in *organacidia* gastrica.
> *Med. Record*, April 4, 1903, p. 549.

organ-beater (ôr'gạn-bē"tėr), *n.* [Trans. of ML. *pulsator organorum*.] A name given to an organ-player when the keyboard consisted of large levers that were struck with the fist. *N. E. D.*

organ-bird (ôr'gạn-bėrd), *n.* **1.** One of the crow-shrikes, *Gymnorhina organicum*, found in Tasmania: a near relative of the Australian piping-crow.—**2.** In South America, a wren, *Cyphorhinus cantans*.

organ-building (ôr'gạn-bil"ding), *n.* The art, trade, or occupation of making organs, usually pipe-organs, but sometimes reed-organs as well. It properly includes every division of a complex industry, involving not only the manufacture of all sorts of pipes, wooden and metal, with their precise voicing, regulation, and tuning, the manufacture of the key- and stop-action in all its parts, and the making of the organ-case, often with much carved or painted ornamentation, but also the drafting of the specifications and plans for particular instruments, the actual assembling of all the parts required, and the setting of them up in the place for use. In early organ-building the chief workman was skilled in every branch of the art and moved from place to place, making and setting up instruments on the spot as required, but now the business is far more complicated and is carried on chiefly from fixed factories employing many workmen in distinct departments.

organ-cactus (ôr'gạn-kak"tus), *n.* **1.** A giant cactus with simple columnar stems, *Cereus marginatus*, much used for hedges in Mexico, especially in the states of San Luis Potosí, Hidalgo, and Guanajuato. It takes its common name from the resemblance of its rows of parallel stems to the pipes of an organ. Its flowers are inconspicuous and its fruit, unlike the pitahayas of many other species of *Cereus*, are not edible.—**2.** A name given to other columnar cacti, including *Cereus eburneus* of southern Mexico, which bears edible fruit and is also planted in hedges, and the giant saguaro of the south-western United States, *Cereus giganteus*. See *saguaro* and *pitahaya*.

organ-case (ôr'gạn-kās), *n.* In *organ-building*, the external framework or structure in which an organ is contained. In churches and halls it is often highly elaborate and forms a prominent feature in the interior architecture of the building.

organ-desk (ôr'gạn-desk), *n.* Same as ★*console*^{2}, 4.

organella (ôr-gạ-nel'ạ̈), *n.*; pl. *organellæ* (-ē.) [NL., < Gr. ὄργανον, organ, + L. dim. *-ella*.] One of the organ-like structures in the cell-body of an infusorian, such as the eye-spot, a myonema, the cytostome, cytoproct, contractile vacuole, etc. *Haeckel*.

organ-gallery (ôr'gạn-gal"ẹ-ri), *n.* Same as *organ-loft*.

organic, *a.* **4.** Applied to the substances which form the chemical material of the bodies of plants and animals, as also to numerous other substances of more or less analogous chemical character. But such material may or may not possess the special mechanical structure to which the term *organized* is applied, adapting it to the performance of the vital functions of plants or animals. The distinction between the two words is important. Organic substances may be produced from inanimate materials by laboratory processes, but organized structure is thus far only known as a result of change in a living plant or animal.—**Organic aggregation.** Same as *biological* ★*aggregation*.—**Organic geography, rhythm, selection.** See ★*geography*, etc.

organically, *adv.* **2.** In *pathol.*, with reference to the structure of an organ: opposed to *functionally*.—**3.** With derivation from organic or organized matter: as, *organically* derived detrital rocks.

organicist (ôr-gan'i-sist), *n.* [*organic* + *-ist*.] A sociologist who explains social phenomena by biological analogies, or who conceives and interprets society as an organism. *L. F. Ward*, Pure Sociol., p. 79.

organite (ôr'gạ-nīt), *n.* [Gr. ὄργανον, organ, + *-ite*^{2}.] A small or feebly developed organ or part. [Rare.]

> From this it follows that the so-called "cellulæ ethmoidales" are not *organites* proper only to the ethmoid of Man, and hence are not without phylogenetical importance. *Proc. Zool. Soc. London*, 1901, p. 261.

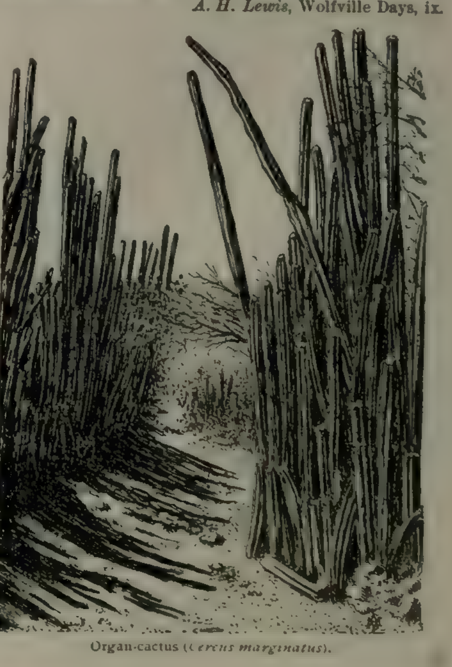
organization, *n.* **4.** In *biol.*: (*a*) The structural composition of an organism. (*b*) Metaphorically, the cause or explanation of the structure of organisms; that which organizes; an organizing influence. Most of the attempts to imagine an architecture in the egg as an explanation of the structure of the being that is developed from the egg are based upon the metaphorical conception of organization. See ★*germ-plasm* and *physiological* ★*unit*.—**5.** In *pathol.*, conversion of an amorphous substance, such as a blood-clot, into organized tissue.

organizational (ôr"gạn-i-zā'shọn-al), *a.* [*organization* + *-al*^{1}.] Pertaining to or of the nature of organization.

organizationist (ôr"gạn-i-zā'shọn-ist), *n.* [*organization* + *-ist*.] One who believes in organization or organized work; one who organizes.

organize, *v. i.* **2.** To arrange; plan; prepare. [Slang.]

> "Willyum," he 'd say . . . when he 'd notice me *organizin'* to go down to the village, . . . "if anybody asks you what you be, . . . you tell 'em that you 're Union, but you remember you 're secesh."
> *A. H. Lewis*, Wolfville Days, ix.



Organ-cactus (*Cereus marginatus*).

organofaction (ôr″ga̤n-ọ̄-fak′sho̤n), *n.* [L. *organum* + *facere*, make. See *organum.*] Construction or development of organs in the course of evolution. [Rare.]

> The Darwinian exclusion of the unfit has been largely the exclusion of the visually unfit, and the survival of the fittest has been the survival of those possessing the best ocular mechanism. No task in *organofaction* has been so difficult of achievement and of healthy preservation as that of making the most perfect ocular mechanism.
> *G. M. Gould*, in Med. Record, Nov. 2, 1907, p. 723.

organogen (ôr-gan′ọ̄-jen), *n.* [*organ*(*ic*) + *-gen.*] A chemical element, usually carbon, and, in a less degree, hydrogen, oxygen, nitrogen, sulphur, and phosphorus, which is regarded as the characteristic constituent of an organic compound.

organogenetic, *a.* **2.** Of or pertaining to the presence in a fertilized egg of germinal areas definitely set apart or specialized for the production of specific organs or regions of the body.

> Some authorities . . . have suggested that the predetermination is expressed in the organization of the egg-cytoplasm—the essential idea of "*organogenetic* germinal areas." *Encyc. Brit.*, XXXII. 212.

organoid (ôr′ga̤-noid), *a.* and *n.* [Gr. ὄργανον, organ, + εἶδος, form.] **I.** *a.* Resembling an organ: applied to a tumor which contains several different tissues.

II. *n.* Same as ⋆*organella.*

organolith (ôr-gan′ọ̄-lith), *n.* [Gr. ὄργανον, organ, + λίθος, stone.] Same as ⋆*biolith.*

organology, *n.* **5.** The science, history, and mechanics of the pipe-organ.

organolyricon (ôr″ga̤n-ọ̄-lir′i-ko̤n), *n.* [Gr. ὄργανον, organ, + λυρικός, of a lyre. See *lyric.*] A form of orchestrion.

organomagnesium (ôr″ga̤n-ọ̄-mag-nē′ṡium), *n.* [NL., < Gr. ὄργανον, organ, + NL. *magnesium.*] **1.** A body composed of one atom of magnesium united with two organic radicals, as magnesium ethyl, $Mg(C_2.H_5)_2$, magnesium diphenyl, $Mg(C_6H_5)_2$.—**2.** A substance composed of one atom of magnesium united with a molecule of an organic halide, as ethyl-magnesium bromide, $C_2H_5.MgBr$, magnesium-phenyl iodide, $C_6H_5.MgI$.

organomotor (ôr-ga̤n″ọ̄-mō′to̤r), *a.* In *comp. psychol.*, noting a movement prompted by excitation from an internal bodily organ: opposed to *sensorimotor* and *ideomotor.* [Rare.]

> The animal keeps constantly moving; but his activity at this stage is evidently sensori-motor (or *organo-motor*).
> *Amer. Jour. Psychol.*, XII. 229.

organonomia (ôr″ga̤n-ọ̄-nō′mi-ä̤), *n.* [NL.] Same as *organonomy.*

organophone (ôr′ga̤n-ọ̄-fōn), *n.* [Gr. ὄργανον, organ, + φωνή, sound.] A variety of reed-organ.

organotherapeutics (ôr-ga̤n″ō-ther-a̤-pū′tiks), *n.* [Gr. ὄργανον, organ, + E. *therapeutics.*] Same as ⋆*organotherapy.*

organotherapy (ôr″ga̤n-ọ̄-ther′a̤-pi), *n.* [Gr. ὄργανον, organ, + θεραπεία, medical treatment.] Treatment of disease by extracts or other preparations made from various organs or glands of the sheep or other animals.

> *Organotherapy* is beginning to be useful in treating diseases of the liver, and diseases caused by the products of the liver. *Med. Record*, July 11, 1903, p. 56.

organ-pedal (ôr′ga̤n-ped″a̤l), *n.* One of the keys or foot-levers that make up the pedal keyboard of an organ; a pedal-key, as distinguished from a pedal of any other sort.

organ-player (ôr′ga̤n-plā″ėr), *n.* One who plays the organ; also, a mechanical device for playing an organ. Compare ⋆*piano-player.*

organ-register (ôr′ga̤n-rej″is-tėr), *n.* Same as *organ-stop.*

organry (ôr′ga̤n-ri), *n.* [*organ*^{1} + *-ry.*] Organ music. [Rare.]

> If she must poetize, let her lay her mind to such manly verse as Pope's, or to such sound and ringing *organry* as Comus.
> *D. G. Mitchell*, Sea Coal, Reveries of a Bachelor, p. 42.

organule (ôr′ga̤-nūl), *n.* [*organ*^{1} + dim. *-ule.*] An animal- or plant-cell considered as a small organ.

Org. Chem. An abbreviation of *organic chemistry.*

orgia (ôr′ji-ä̤), *n. pl.* [L. *orgia*, < Gr. ὄργια. See *orgies.*] Orgies: as, the *orgia* of Bacchus. *N. E. D.*

orgiac (ôr′ji-ak), *a.* and *n.* [*orgia* + *-ac.*] **I.** *a.* Relating to or of the value of an orgy.

II. *n. pl.* Orgies; secret rites connected with the worship of some of the deities of classical mythology.

orgiasm (ôr′ji-azm), *n.* [Gr. ὀργιασμός, < ὀργιάζειν, celebrate orgies, < ὄργια, orgies.] The celebration of orgies; the mystical, sometimes extravagantly licentious, revelry which marked orgiastic worship.

orgiast (ôr′ji-ast), *n.* [Gr. ὀργιαστής, < ὀργιάζειν, celebrate orgies.] One who celebrates orgies.

orgiastical (ôr-ji-as′ti-ka̤l), *a.* Same as *orgiastic.*

orgueillite, *n.* See ⋆*meteorite.*

Oribe ware. See ⋆*ware*^{2}.

oriconic (ō′ri-kon-ik), *n.* [L. *ora*, margin, edge, + E. *conic.*] In *Bolyaian geom.*, a curve of the second degree with the center at infinity.

> The curves with center situated at infinity are the *oriconics* (oriellipse, with the variety oricycle of Lobachevski, orihyperbola). *Science*, Sept. 16, 1904, p. 365.

oricycle (ō′ri-sī-kl), *n.* [L. *ora*, margin, edge, + Gr. κύκλος, circle.] In *Bolyaian geom.*, a boundary line; that plane curve for which all perpendiculars erected at the mid-points of chords are parallel to each other. See ⋆*limit-line. Lobachevski.*

> In the Euclidean geometry the limit approached by a circumference as the radius increases is a straight line. In the non-Euclidean geometry this is a curve called the *oricycle.* Thus the method of Kempe's book 'How to draw a straight line,' would here draw not a straight line, but a curve. *Science*, March 11, 1904, p. 404.

oriellipse (ō″ri-e-lips′), *n.* [L. *ora*, margin, edge, + E. *ellipse.*] A species of the genus oriconic. See the extract under ⋆*oriconic.*

oriellipsoid (ō″ri-e-lip′soid), *n.* [L. *ora*, margin, edge, + E. *ellipsoid.*] A species of the oriquadric. *P. Barbarin.*

> At the limit, when they become tangent to this sphere, they are transformed into oriquadrics (*oriellipsoid*, orihyperboloid) and into their varieties.
> *Science*, Sept. 16, 1904, p. 365.

orient, *v. t.* **4.** In *biol.*, to place (an organism) in a favorable position for study or description, or to treat it in reference to this position. *Science*, July 3, 1896, p. 11.—**5.** To place (a map or chart) in such a horizontal position that a line joining any two given points on the map shall be parallel to the line joining the corresponding points on the earth's surface; literally, to make the east direction on the map point toward the east.

orient. An abbreviation of *orientalist.*

Oriental cloth. See ⋆*cloth.*

orientalization (ō-ri-en″ta̤l-i-zā′sho̤n), *n.* [*orientalize* + *-ation.*] The act of rendering or becoming oriental in character.

orientation, *n.* **7.** Arrangement; distribution. [Rare.]

> Now the question arises, is development a function only of the mass or is it also a function of the *orientation* of the protoplasm of the egg?
> *J. Loeb*, Biol. Lectures, 1895, p. 62.

8. In *chem.*, the relative position of the atoms or radicals in a molecule.

orienting (ō′ri-en-ting), *a.* Causing orientation; in *chem.*, designating the influence of an atom or group of atoms in a compound upon the position of other atoms or groups that are subsequently introduced by substitution.

> It is, in all probability, an ortho substitution-product produced as a result of the well-known *orienting* influence of the hydroxyl group.
> *Amer. Chem. Jour.*, Feb., 1903, p. 125.

orientize (ō′ri-en-tīz), *v. t.*; pret. and pp. *orientized*, ppr. *orientizing.* [*orient* + *-ize.*] Same as *orient.*

orifice, *n.*—**Acoustic orifice.** See ⋆*acoustic.*—**Vasiform orifice**, in *entom.*, an opening on the dorsum of the last abdominal segment of the larvæ and pupæ of the *Aleyrodidæ.*

orificial (or′i-fish-a̤l), *a.* [L. *orifici*(*um*), orifice, + *-al*^{1}.] Of or pertaining to an orifice, especially one of the orifices of the body.—**Orificial surgery**, surgery applied to any orifice, as the anus, vulva, etc., with a view to the suppression of reflex disturbances supposed to originate there. *Dunglison.*

oriform (ō′ri-fôrm), *a.* [L. *os* (*ori-*), mouth, + *forma*, form.] Mouth-shaped; formed like a mouth.

origanize (or′i-ga̤n-īz), *v. t.*; pret. and pp. *origanized*, ppr. *origanizing.* [*origan* + *-ize.*] To flavor with origan or marjoram. *N. E. D.*

origelle (ō-ri-zhel′), *n.* [F.] In polyzoans, a bud-like formation. *Jullien.*

> Shell-substance very massive and surrounding the oral opening like a collar; no oral spines; frontal surface punctate all over; *origelles* of slightly larger size are round the base.
> *Annals and Mag. Nat. Hist.*, July, 1903, p. 114.

Origenian (or-i-jē′ni-a̤n), *a.* and *n.* [*Origen* (see def.) + *-ian.*] **I.** *a.* Relating or attributed to Origen, one of the Greek fathers of the church (185?–253?).

II. *n.* A disciple or follower of Origen.

Origenic (or-i-jen′ik), *a.* [*Origen* + *-ic.*] Same as ⋆*Origenian.*

Origenical (or-i-jen′i-ka̤l), *a.* Same as ⋆*Origenic.*

Origenize (or′i-jen-īz), *v. i.*; pret. and pp. *Origenized*, ppr. *Origenizing.* [*Origen* (see def.) + *-ize.*] To follow or adopt the opinions of Origen.

original, *a.* **6.** In *geol.*, noting those constituent minerals of an igneous rock which have crystallized from fusion during the period of consolidation: contrasted with *secondary*, which describes a mineral produced by alteration or decay. *Geikie*, Text-book of Geol., p. 89.—**Original hand.** See ⋆*hand.*

originist (or′i-jin-ist), *n.* [*origin* + *-ist.*] One who writes on the origin of things. *N. E. D.*

origin-myth (or′i-jin-mith), *n.* See ⋆*myth.*

origoto (ō-ri-gō′tō), *n.* [Jap.] A folding or flexible harp.

orihyperbola (ō″ri-hī-pėr′bọ̄-lä̤), *n.* [L. *ora*, margin, edge, + E. *hyperbola.*] One of the two species of the oriconic.

> The curves with center situated at infinity are the oriconics (oriellipse, with the variety oricycle of Lobachevski, *orihyperbola*). *Science*, Sept. 16, 1904, p. 365.

orihyperboloid (ō″ri-hī-pėr′bọ̄-loid), *n.* [L. *ora*, margin, edge, + E. *hyperboloid.*] A species of the oriquadric. See the extract under ⋆*oriellipsoid.*

Orindan (ọ̄-rin′da̤n), *n.* [*Orinda*, California.] One of the sedimentary formations of the Lower Berkleyan, a division of the Pleistocene of the Coast Range of California. *Bulletin Geol. Soc. Amer.*, XIII. p. 545.

oriocrystal (ō″ri-ọ̄-kris′ta̤l), *n.* [Prop. *horiocrystal*; < Gr. ὅριον, boundary, + κρύσταλλος, crystal.] A phenocryst of relatively large size, in the border of an intrusive mass of igneous rock, and developed because its temperature of formation lies midway between the original high temperature of the intrusive and the low one of the wall-rock, and coincides with conditions of long duration. *A. C. Lane*, in Bulletin Geol. Soc. Amer., XIV. 388.

Orionid (ọ̄-rī′ọ̄-nid), *n.* [*Orion* + *-id*^{2}.] One of the meteors of the flock which annually, in October, appear to radiate from the constellation of Orion.

> Unlike the August Perseids, the Lyrid meteor-stream, like those of the Quadrantids, *Orionids* and Geminids in January, October and December, seldom exhibits an abundant shooting-star display, more nearly resembling in that respect the Leonid and Bielid meteor-systems than the stream of August Perseids, its materials appearing to be still collected in one or more dense clusters in its orbit. *Nature*, April 23, 1903, p. 585.

Orion's hound. See ⋆*hound.*

oripore (ō′ri-pōr), *n.* [L. *os* (*ori-*), mouth, + E. *pore.*] A mouth-like pore or opening. [Rare.]

oriquadric (ō-ri-kwod′rik), *n.* [L. *ora*, margin, edge, + E. *quadric.*] In Bolyaian space, a paraboloid at the limit, when it is tangent to the sphere of infinite radius (orisphere). *P. Mansion.*

> At the limit, when they become tangent to this sphere, they are transformed into *oriquadrics* (oriellipsoid, orihyperboloid) and into their varieties.
> *Science*, Sept. 16, 1904, p. 365.

oririme (ō′ri-rīm), *n.* [L. *os* (*ori-*), mouth, + *rima*, cleft.] A mouth-like cleft. *Dana.* [Rare.]

Oriskanian (or-is-kā′ni-a̤n), *a.* and *n.* **I.** *a.* In the geology of New York, pertaining to the period or group represented by the Oriskany sandstone and limestone. See ⋆*Oriskany* and *Oriskany sandstone*, under *sandstone.*

II. *n.* The Oriskanian period or group.

Oriskany (ọ̄-ris′ka̤-ni), *n.* [*Oriskany*, a creek and a village in Oneida county, New York.] In the geology of New York, an arenaceous or calcareo-arenaceous member of the rock series, in the eastern part of the State lying above the Helderberg limestones and below the Esopus and Schoharie grits, in the western part lying above the Waterlime series, with which it is unconformable, and beneath the Onondaga limestone. It extends southward along the Appalachians in New Jersey, Pennsylvania, and Maryland, and westward into the Ohio valley. It is profuse in fossils and those of the more arenaceous littoral deposits are usually of large size. The formation belongs to the early Devonian.

orisphere (ō′ri-sfēr), *n.* [L. *ora*, edge, margin, + E. *sphere.*] In *Bolyaian geom.*, a boundary surface; that surface which arises from the revolution of the boundary line about one of its axes. See ★*limit-surface.*

It has been known, since Lobachevski and Bolyai, that the characteristic geometry of *orispheres* is Euclidean. *Science*, Sept. 16, 1904, p. 366.

oristic (ọ-ris'tik), *a.* [Prop. **horistic*, ‹ Gr. *ὁριστικός*, of or for defining, ‹ *ὁρίζειν*, divide, determine, define. See *horizon.*] Determinately expressed. *Bentham. N. E. D.* [Rare.]

Oriya (ō-rē'yạ̈), *n.* [Also *Ooriya*, *Uriya*; ‹ Hind. *Oṛiya*, *Uṛiya*, adj. from *Oṛ-deśa*, *Oḍra-deśa*, whence European *Orissa*, *Orisa*, 'land of the Oḍras': Skt. *Oḍra*, name of the people and of their country (*Oḍrāshtra*).] The language of Orissa, former kingdom and modern province lying between Bengal and the Coromandel coast. It belongs to the Indic branch of the Indo-European family. *Keane*, Ethnology, p. 412.

Orkneyan (ôrk'ni-a̤n), *a.* Of or pertaining to the Orkney Islands.

orlean (ôr'lẹ̄-a̤n), *n.* [*Or(e)l(la)* + *-e-* + *-an.*] Same as *arnotto*, 2.

Orleans (ôr'lẹ̄-a̤nz), *n.* [Named from *Orléans* in France.] A wool-and-cotton fabric for women's wear.

orl-fly (ôrl'flī), *n.* [*orl*, dial. form of *alder*, + *fly.*] A British anglers' name for a sialid insect, *Sialis lutaria.* Also called *alder-fly* and, in Wales, the *humpback.*

orlong (ôr'long), *n.* [Prop. **arlong*, ‹ Malay *ārlong*; also *harelung* and *relong.*] A measure of area, equal in Singapore to 80 yards square or 1⅓ acre.

orlop-deck (ôr'lop-dek), *n.* See ★*deck*, 2, and *orlop.*

orlop-stringer (ôr'lop-string″ėr), *n.* In *shipbuilding*, a broad, continuous plate fitted on the ends of the orlop-deck beams.

ornability (ôr-nạ-bil'ị-ti), *n.* [NL. **ornabilitas*, ‹ **ornabilis*, ‹ L. *ornare*, ornament.] Capability of being ornamented or of ornamenting. *Bentham*, Frag. Unit. Grammar, Introd. *N. E. D.*

ornamental, *n.* **2.** Specifically, a plant or vine which is grown only for the beauty of its flowers or foliage.

It could be done more easily with strawberries, or with some of the common *ornamentals* that do not reproduce true to seed. *Pop. Sci. Mo.*, Jan., 1903, p. 277.

ornamentalism (ôr-nạ-men'ta̤l-izm), *n.* [*ornamental* + *-ism.*] The character of being ornamental; also, a tendency to attach too much importance to ornament.

ornamentality (ôr″nạ-men-tal'ị-ti), *n.* [*ornamental* + *-ity.*] The character of being ornamental; capacity of ornamenting; also, an ornament.

ornamentalize (ôr-nạ-men'ta̤l-īz), *v. t.*; pret. and pp. *ornamentalized*, ppr. *ornamentalizing.* [*ornamental* + *-ize.*] To render ornamental.

ornansite (ôr'nan-sīt), *n.* See ★*meteorite.*

ornation (ôr-nā'shọn), *n.* [L. *ornati(o-)*, ‹ *ornare*, ornament. See *ornate.*] The act of ornamenting; the fact of being ornamented or adorned; ornamentation.

ornatrix (ôr-nā'triks), *n.* [L. *ornatrix*, fem. of *ornator*, ‹ *ornare*, ornament.] A woman who ornaments or embellishes; a dressing-maid. *N. E. D.*

orné (ôr-nā'), *a.* [F., pp. of *orner*, ‹ L. *ornare*, ornament.] Ornamented; adorned; usually in the phrase "a cottage *orné.*"

ornery (ôr'nẹ-ri), *a.* [Also *ornary*, a reduction of *ord'nary.*] Ordinary; common; mean; coarse; ugly: a term of depreciation, ranging from mild disapproval to great contempt. [Prov. U. S.]

ornithin (ôr'ni-thin), *n.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *-in*^{2}.] A basic substance, $C_5H_{12}N_2O_2$, which, in combination with a guanidin radical, constitutes arginin, one of the most constant decomposition-products of the albumins. In the form of ornithuric acid it is obtained from the urine of chickens after feeding them with benzoic acid. Structurally it is *α-δ*-diaminovalerianic acid.

Ornithischia (ôr-ni-this'ki-ạ̈), *n. pl.* [NL., ‹ Gr. *ὄρνις* (*ὀρνιθ-*), a bird, + *ἰσχίον*, hip-joint.] An order of *Dinosauria* containing the *Iguanodon* and other species which have the bones of the pelvis arranged much like those of a bird. It is practically equivalent to the *Ornithopoda* of other writers. Contrasted with *Saurischia.*

ornithischian (ôr-ni-this'ki-a̤n), *a.* [NL. *Ornithischia* + *-an.*] Pertaining to or having the characters of the group of dinosaurs named *Ornithischia* by Seeley; having the bones of the pelvis like those of a bird.

ornithite (ôr'ni-thīt), *n.* [Gr. *ὄρνις* (*ὀρνιθ-*) + *-ite*^{2}.] A hydrated calcium phosphate observed in small monoclinic crystals in the Sombrero Island bird-guano. It may be an altered metabrushite.

ornithivorous (ôr-ni-thiv'ọ-rus), *a.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + L. *-vorus*, ‹ *vorare*, devour.] Feeding upon or eating birds. [Rare.] *N. E. D.*

ornithocephalic (ôr″ni-thọ-se-fal'ik), *a.* Same as *ornithocephalous.*

Ornithocheiroidea (ôr″ni-thọ-kī-roi'dẹ̄-ạ̈), *n. pl.* [NL., ‹ Gr. *ὄρνις* (*ὀρνιθ-*), a bird, + *χείρ*, hand, + *εἶδος*, form.] A suborder of the pterosaurian reptiles, including the pterodactyls. It is characterized by a short tail; metacarpal of the wing as long as the bones of the antebrachium; vestigial fifth digit of the pes; and absence of cervical ribs. The members of this suborder vary in size from that of a sparrow to a wing expanse of 20–25 feet. The group appeared in late Jurassic times, and culminated and became extinct in the Cretaceous.

ornithodelph (ôr'ni-thọ-delf), *n.* [NL. *Ornithodelph(ia).*] Any member of the group *Ornithodelphia*, or egg-laying mammals: contrasted with *didelph* and *monodelph.*

ornithogeographic (ôr″ni-thọ-jē-ọ-graf'ik), *a.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + E. *geographic.*] Relating to the geographical distribution of birds.

ornithogeographical (ôr″ni-thō-jē-ọ-graf'i-ka̤l), *a.* Same as ★*ornithogeographic.*

ornithographic (ôr″ni-thọ-graf'ik), *a.* [*ornithograph(y)* + *-ic.*] Relating to, or having to do with, the scientific description of birds; ornithological.

ornithography (ôr-ni-thog'rạ-fi), *n.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *-γραφια*, ‹ *γράφειν*, write.] Descriptive ornithology.

ornithoidic (ôr-ni-thoi'dik), *a.* [*ornithoid* + *-ic.*] Having resemblance to birds: said especially of decoration based on bird forms.

Ornithol. [*l. c.* or *cap.*] An abbreviation (*a*) of *ornithological*; (*b*) of *ornithology.*

ornitholeucism (ôr″ni-thọ-lū'sizm), *n.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *λευκός*, white, + *-ism.*] In *ornith.*, albinism, or abnormal white plumage.

ornithologize (ôr-ni-thol'ọ-jīz), *v. i.*; pret. and pp. *ornithologized*, ppr. *ornithologizing.* [*ornitholog(y)* + *-ize.*] To study ornithology.

ornithomantist (ôr″ni-thọ-man'tist), *n.* [*ornithomancy* (*-mant-*) + *-ist.*] One who divines by means of birds.

ornithomelanism (ôr″ni-thọ-mel'ạ-nizm), *n.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *μέλας* (*μελαν-*), black, + *-ism.*] In *ornith.*, melanism; abnormally dark coloration.

ornithomorphic (ôr″ni-thọ-môr'fik), *a.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *μορφή*, form, + *-ic.*] Resembling or having the form of a bird.

"There was continual war between the crow and the eagle"; between these two *ornithomorphic* creators the strife was as fierce as between wolf and raven. *Lang*, Myth, Ritual, and Religion, II. 4.

ornithomyzous (ôr″ni-thọ-mī'zus), *a.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *μύζειν*, suck.] Living as parasites upon birds and, in a strict sense, upon the blood of the host.

ornithopaleontologist (ôr″ni-thọ-pā″lẹ̄-on-tol'ọ-jist), *n.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + E. *paleontologist.*] A student of fossil birds.

ornithophilist (ôr-ni-thof'i-list), *n.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *φιλεῖν*, love, + *-ist.*] A lover of birds. *N. E. D.*

ornithophilite (ôr-ni-thof'i-līt), *n.* [*ornithophil(ist)* + *-ite*^{2}.] Same as ★*ornithophilist.*

ornithophily (ôr-ni-thof'i-li), *n.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *-φιλια*, ‹ *φιλεῖν*, love.] The love of birds.

ornithopter (ôr-ni-thop'tėr), *n.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *πτερόν*, wing.] A flying-machine in which an attempt is made to imitate the oscillatory movement of the wings of a bird.

ornithotomically (ôr'ni-thọ-tom'i-ka̤l-i), *adv.* According to the methods of bird anatomy.

ornithuric (ôr-ni-thū'rik), *a.* [Gr. *ὄρνις* (*ὀρνιθ-*), bird, + *οὖρον*, urine, + *-ic.*] Derived from the urine of a bird that has been fed with benzoic acid.—**Ornithuric acid**, dibenzoyl-diaminovaleric acid, $(NH.C_7H_5O)_2.C_4H_7.CO_2H$, a crystalline compound which melts at 184° C.

orobanchaceous (or″ọ-bang-kā'shius), *a.* Belonging to or having the characters of the *Orobanchaceæ*, or broom-rape family of plants.

orocentral (ō-rọ-sen'tra̤l), *n.* [L. *os* (*or-*), mouth, + E. *central.*] In crinoids, a name given by P. H. Carpenter to a plate supposed to be the correlative of the dorsocentral.

The *oro-central* is a discredited myth. *E. R. Lankester*, Treatise on Zoology, III. 14.

orodiagnosis (or″ọ-dī-ag-nō'sis), *n.* [NL., ‹ Gr. *ὀρός*, whey (serum), + *διάγνωσις*, diagnosis.] Diagnosis based upon the effect of the administration of a specific therapeutic serum, or upon the agglutination of specific pathogenic bacteria caused by the addition of blood-serum drawn from a patient suspected of the disease caused by such bacteria. See *serum* ★*diagnosis.*

Orodus (or'ọ-dus), *n.* [NL., ‹ Gr. *ὄρος*, mountain, + *ὀδούς*, tooth.] A genus of extinct cestraciont selachian fishes or sharks, known only from its obtuse elongate teeth with crested crown. It occurs abundantly in the Carboniferous limestone.

orogenesis (or-ọ-jen'e-sis), *n.* [Gr. *ὄρος*, mountain, + *γένεσις*, production.] The process of mountain-making or upheaval: opposed to ★*epirogeny.*

orogenetic (or″ọ-jẹ̄-net'ik), *a.* [*orogenesis* (*-et-*) + *-ic.*] Relating to the origin of mountains.

The slope is gentle, indicating an absence of *orogenetic* activities. *Geog. Jour.* (R. G. S.), X. 268.

Orogenetic physiography, the physiography of those land-forms which are produced by orogenetic or mouning-making processes.

orogenic (or-ọ-jen'ik), *a.* [Gr. *ὄρος*, mountain, + *-γενης*, -producing, + *-ic.*] Same as ★*orogenetic.* *Geikie*, Text-book of Geol., p. 392.

orogeny (ọ-roj'e-ni), *n.* [Gr. *ὄρος*, mountain, + *-γενεια*, ‹ *-γενης*, -producing.] Same as ★*orogenesis.* *Geikie*, Text-book of Geology, p. 392.

orograph (or'ọ-gräf), *n.* [Gr. *ὄρος*, mountain, + *γράφειν*, write.] A surveyors' instrument designed for military use, to replace the engineers' chain and level. It records on paper an accurate profile of the country over which it is rolled.

oroheliograph (or-ọ-hē'li-ọ-gräf), *n.* [Gr. *ὄρος*, mountain, + E. *heliograph.*] In *photog.*, a camera, devised by Noë, by which a panoramic view of the horizon may be taken. A vertical lens to which is attached a silvered mirror of peculiar shape is employed to focus the panoramic view from the entire horizon on a horizontal sensitive plate. *Woodbury*, Encyc. Dict. of Photog., p. 317.

orohydrographic (or-ọ-hī-drọ-graf'ik), *a.* [Gr. *ὄρος*, mountain, + E. *hydrographic.*] In *phys. geog.*, of or pertaining to relief (mountains, etc.) and drainage.

The *oro-hydrographic* conformation of the Andine region extending southwards of Mount Tronador is extremely complex. *Geog. Jour.* (R. G. S.), XVI. 35.

orohydrographical (or-ọ-hī-drọ-graf'i-ka̤l), *a.* Same as ★*orohydrographic.* *Geog. Jour.* (R. G. S.), VI. 548.

orometer (ọ-rom'e-tėr), *n.* [Gr. *ὄρος*, mountain, + *μέτρον*, measure.] A form of aneroid barometer provided with two scales, one giving barometric pressures, the other the approximate elevation above the sea-level where the observation is made; a mountain-barometer.

orometric (or-ọ-met'rik), *a.* [*orometr(y)* + *-ic.*] Of or pertaining to orometry or the measurement of mountains, especially to averages of altitudes: as, "an *orometric*-anthropogeographical study." *Geog. Jour.* (R. G. S.), X. 311.

orometry (ọ-rom'e-tri), *n.* [Gr. *ὄρος*, mountain, + *-μετρια*, ‹ *μέτρον*, measure.] In *phys. geog.*, the measurement of mountains, especially with regard to averages of altitudes.

As the geoid is treated in geodesy, he treats the oroid in *orometry.* *Geog. Jour.* (R. G. S.), XI. 205.

Oronoco, Oronoko (ō-rọ-nō'kō), *n.* [Origin uncertain: said not to be connected with the river-name Orinoco.] An old variety of tobacco.

The different species of the genus [Nicotiana] have been in former days distinguished in Virginia by the names of *Oronoko*, sweet-scented, and little Frederick. *W. Tatham*, Cult. and Com. of Tobacco, p. 4, note.

Orophodontidæ (ō″rọ-fọ-don'ti-dē), *n. pl.* [NL., ‹ *Orophodon* (*-t-*), the type genus, + *-idæ.*] A family of extinct edentate mammals, based on scattered teeth from the *Pyrotherium* beds of Patagonia. *Ameghino*, 1895.

ororotundity (ō″rọ-rọ-tun'di-ti), *n.* Same as ★*orotundity.*

Orosian (ọ-rō'si-ạn), *a.* [NL. **Orosianus*, < *Orosius*.] Relating to Paulus Orosius, a Spanish priest (born in the latter part of the fourth century, died in the fifth century), or to his works: alluding, usually, to his history ("Historiarum contra paganos libri VII"), known as Hormesta, Ormesta, or Ormista, explained by some as Or[osii] M[undi] Hist[oria] (Orosian History of the World).

> Prof. Miller argues ingeniously, from various details, that this *Orosian* material appears to be derived more directly from the lost *Orosian* map.
> *Geog. Jour.* (R. G. S.), XV. 134.

orotherapy (or-ọ-ther'ạ-pi), *n.* [Gr. *ὀρός*, whey (serum), + *θεραπεία*, medical treatment.] 1. Same as ★*serum-therapy*.—2. Same as *whey cure*.

orotund, *a.* 2. Pompous; self-satisfied; inflated: applied to a style of utterance.

II. *n.* A deep, full voice.

> The *orotund* is fuller in volume, and purer in quality than the common voice.
> *J. Rush*, Philos. of the Human Voice, p. 130.

orotundity (ō-rọ-tun'di-ti), *n.* [*orotund* + *-ity*.] The character of being orotund.

orp (ôrp), *v. i.* [Origin obscure.] To fret; murmur; weep fretfully. [Prov.]

Orphéon (ôr-fā-ôṅ'), *n.* [F. *Orphéon* (Wilhelm, 1833), < *Orphée*, Orpheus, + *-on*, as *odéon*, odeum.] A school of vocal music in Paris, organized in 1835 under governmental supervision and connected with the public-school system; hence, any similar singing-society. Such societies are now numerous throughout France, and are a notable feature in popular education.

Orpheonist (ôr'fē-ọn-ist), *n.* [F. *orphéoniste*, < *Orphéon*. See ★*Orphéon*.] A member of an Orphéon; a choral singer.

Orphical (ôr'fi-kạl), *a.* Same as *Orphic*.

Orphically (ôr'fi-kạl-i), *adv.* In an Orphic or Orphical manner; after the fashion of the Orphic mysteries.

Orphicism (ôr'fi-sizm), *n.* [*Orphic* + *-ism*.] Same as *Orphism*.

orphol (ôr'fol), *n.* The trade-name of naphthol bismuth or basic *β*-naphthol bismuth, $(Bi(C_{10}H_7O)_3)_2.Bi_2O_3$ or $Bi(C_{10}H_7O)_3.3HO$, a neutral non-irritating light-brown powder. It is used in medicine as a sedative and antiseptic, because in the intestine it is resolved into its constituents.

Orpington (ôr'ping-tọn), *n.* A modern breed of domesticated fowls originated by William Cook and Sons at Orpington, Kent, England, in 1886. The breed resembles a clean-legged langshan and is the result of crosses between that bird, the Plymouth Rock, and the Black Minorca. There are ten varieties of the breed, single- and rose-combed of five colors. They are hardy, grow rapidly, and are good layers.

orqueta (ôr-kā'tä), *n.* [Sp. name at Panama.] A common name of *Chloroscombrus orqueta*, a carangoid fish found on the Pacific coast of tropical America.

orrhodiagnosis, *n.* Same as ★*orodiagnosis*.

orrhoid (or'oid), *a.* [Gr. *ὀρρός*, whey (serum), + *εἶδος*, form.] Resembling, or of the nature of, serum.

orrhotherapy, *n.* Same as ★*orotherapy*.

Orsat's apparatus. See ★*apparatus*.

Orseille carmine. See ★*carmine*.

orsellesic (ôr-se-les'ik), *a.* [*orsell*(*ic*) + *-es-* + *-ic*.] Same as ★*orsellinic*.

orsellinic (ôr-se-lin'ik), *a.* [*orsell*(*ic*) + *-in* + *-ic*.] Noting an acid related to orsellic acid.—**Orsellinic acid,** dihydroxyparatoluic acid, $C_6H_2(CH_3)(OH)_2CO_2H$, made by boiling orsellic acid with lime-water, or by heating erythrin with caustic soda or baryta-water. It is a crystalline mass which melts at 176° C. and yields carbon dioxid and orcinol.

ort[2] (ôrt), *n.* [G. *ort*, MHG. (> Dan. Norw.) *ort*, a fourth part, a weight, a coin, = D. *oord*, a fourth part; the same as G. MHG. *ort*, a point, corner, place, region, = OFries. OS. AS. ME. *ord*, a point: see *ord* and *odd*. The application to money and weight arose from the division of a coin into four quadrants by a cross.] 1. A money of account in Germany, Norway, Denmark, Riga, etc.—2. A Danish unit of weight, the thousandth part of the pund or pound.

ort[3] (ôrt), *n.* [An abbreviation of *orientation*.] A vector of unit length.

> There is another term also adopted by Prof. Henrici the justification of which is at least difficult, viz. the term "*ort*." A vector of unit length is called an "*ort*," which is explained to be "short for orientation," and "orientation" makes a dangerous suggestion of rotation. The "*ort*" is, of course, Hamilton's *unit vector*. The "rotor" and the "*ort*" should be regarded by anti-Hamiltonians as the trail of the serpent. *Nature*, Oct. 29, 1903, p. 617.

ortalid (ôr'tạ-lid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Ortalidæ*.

II. *a.* Having the characters of or belonging to the family *Ortalidæ*.

ortegon (ōr-tạ-gōn'), *n.* [Augmentative of Sp. *ortiga*, < L. *urtica*, nettle.] In Porto Rico, *Coccolobis rugosa*, a tree with very large wrinkled leaves and purple flowers which form spikes a yard long. It is one of the most important trees of the island, and its heart-wood, which is purplish, hard, and heavy, is used for cabinet work.

orthal (ôr'thạl), *a.* [Gr. *ὀρθός*, straight, + *-al*[1].] Noting the movement of the jaws in a vertical plane, as in the carnivorous mammals. *Cope*, in Amer. Nat., Nov., 1887, p. 991.

orthangle† (ôr'thang-gl), *n.* [Gr. *ὀρθός*, right, straight, + E. *angle*.] A rectangle.

orthic (ôr'thik), *a.* [Gr. *ὀρθός*, straight, + *-ic*.] 1. In *min.*, having directions at right angles to each other; orthoclastic: said of cleavage-planes, as of those of certain feldspars.—2. In *geom.*: (*a*) Orthocentric. (*b*) Designating algebraic curves which satisfy Laplace's equation in two dimensions. *Science*, Aug. 19, 1904, p. 227.—**Orthic axis.** The homologous sides of ABC and its orthocentric triangle cross in 3 costraight points on t_o, the *orthic axis* of the two triangles.

Orthidæ (ôr'thi-dē), *n. pl.* [NL., < *Orthis* + *-idæ*.] A family of brachiopods typified by the genus *Orthis*.

orthine (ôr'thin), *n.* [Gr. *ὀρθός*, straight, + *-ine*[2].] A trade-name for orthohydrazine-paraoxybenzoic acid: used as an antiseptic and antipyretic remedy, but unstable and hence not much employed.

Orthis (ôr'this), *n.* [NL., < Gr. *ὀρθός*, straight.] A genus of protrematous brachiopods having a straight hinge, subquadrate valves with ribbed exterior, well-developed teeth and sockets, and no calcified brachidium. The genus has been greatly subdivided, and is now restricted to a comparatively few species which occur in the early Silurian rocks.

ortho-acid (ôr'thō-as"id), *n.* [Gr. *ὀρθός*, straight, + E. *acid*.] An acid in which the theoretically greatest possible number of hydroxyl-groups is combined with the central atom or radical, as orthocarbonic acid, $C(OH)_4$, ortho-acetic acid, $CH_3C(OH)_3$. The name is less correctly applied to certain other acids, as orthophosphoric acid, $PO(OH)_3$.

orthoboulia (ôr-thọ-bö'li-ạ), *n.* [Gr. *ὀρθοβουλία*, < *ὀρθόβουλος*, willing the right, < *ὀρθός*, right, + *βουλή*, will, counsel.] The willing of what is right or good; the giving of good counsel.

orthobrachycephalic (ôr"thọ-brak"i-se-fal'ik or -sef'ạ-lik), *a.* [Gr. *ὀρθός*, straight, + *βραχύς*, short, + *κεφαλή*, head.] In *craniom.*, combining the characteristics of orthocephaly and brachycephaly.

orthocarbonic (ôr"thọ-kär-bon'ik), *a.* [Gr. *ὀρθός*, right, + E. *carbonic*.] Designating a variety of carbonic acid, $C(OH)_4$, which contains the maximum number of hydroxyl-groups. It does not exist in the free state.—**Orthocarbonic ester.** See ★*ester*.

orthocenter (ôr'thō-sen-tėr), *n.* [Gr. *ὀρθός*, straight, right, + E. *center*.] The cointersection point of the straight lines through the three vertexes of a triangle perpendicular to the opposite sides.

orthocentric (ôr-thọ-sen'trik), *a.* [*orthocenter* + *-ic*.] Pertaining to the orthocenter.

orthocentroidal (ôr"thọ-sen-troi'dạl), *a.* Pertaining at once to the orthocenter and the centroid. *Tucker*.—**Orthocentroidal circle.** See ★*circle*.

orthocephalous (ôr-thọ-sef'ạ-lus), *a.* Same as *orthocephalic*.

orthoceracone (ôr-thọ-ser'ạ-kōn), *n.* [NL. *Orthoceras*, a genus of cephalopods, + Gr. *κῶνος*, a cone.] In the cephalopods, the straight cone when formed by the shell in youth and maintained through all growth stages, as in the genus *Orthoceras*.

orthochlorite (ôr-thọ-klō'rīt), *n.* [Gr. *ὀρθός*, straight, + E. *chlorite*.] A name given by Tschermak to those species of the chlorite group which commonly occur in distinct crystals or plates: opposed to ★*leptochlorite*.

Orthochoanites (ôr-thō-kọ-ạ-nī'tēz), *n. pl.* [NL., < Gr. *ὀρθός*, straight, + *χοάνη*, funnel, + *-ites* (improperly used for the plural).] In Hyatt's classification of the fossil cephalopods, a suborder in which the septal funnels are long and straight and an endosiphuncle is absent.

orthochromatic, *a.* 2. Staining in the exact shade of color of the dye used.

II. *n.* An orthochromatic plate; a photographic plate the sensitiveness of which is so distributed throughout the spectrum as to give in the image a normal gradation of light and shade.

orthochromatism (ôr-thọ-krō'mạ-tizm), *n.* [*orthochromat-ic* + *-ism*.] The quality of being orthochromatic.

orthochromatization (ôr-thọ-krō"mạ-ti-zā'-shọn), *n.* [*orthochromatize* + *-ation*.] The act of orthochromatizing or rendering orthochromatic; the state of being orthochromatized.

orthochrome (ôr'thọ-krōm), *n.* [Gr. *ὀρθός*, straight, right, + *χρῶμα*, color.] The trade-name of a mercury-vapor lamp in which an attempt is made to supply the lack of red light in the ordinary mercury arc by means of glow-lamps placed in the same circuit. *Elect. Rev.*, Aug. 27, 1904, p. 312.

orthocœlous (ôr-thọ-sē'lus), *a.* Same as *orthocœlic*.

> Again, if the intestine forms a number of (mostly closed) loops, which run parallel with each other in the long axis of the body, we term this arrangement *orthocœlous*, or straight-gutted. *Newton*, Dict. of Birds, p. 142.

orthocœly (ôr'thọ-sē-li), *n.* [*orthocœl*(*ic*) + *-y*[3].] The fact or condition of being orthocœlic. *Trans. Linnean Soc. London*, Zool., Oct., 1901, p. 197.

orthocone (ôr'thọ-kōn), *n.* [Gr. *ὀρθός*, straight, + *κῶνος*, cone.] The straight cone of the young shell in the nautiloid cephalopods, the mature form of which may be either straight (orthoceracone) or curved.

orthocycle (ôr'thọ-sī-kl), *n.* [Gr. *ὀρθός*, straight, right, + *κύκλος*, circle.] The locus of intersections of tangents to a conic perpendicular to each other; the director circle.

orthodiactin (ôr"thọ-dī-ak'tin), *n.* [Gr. *ὀρθός*, straight, + *δι-*, two, + *ἀκτίς* (*ἀκτιν-*), a ray.] In the sponge-spicules, a form in which two of the arms of the caltrop have been suppressed and the remaining two stand at right angles to each other.

orthodiæne (ôr-thọ-dī'ēn), *n.* [Gr. *ὀρθός*, straight, + (as if *δίαινα*, a fork) *δι-*, two, + *-αινα*, as in *τρίαινα*, trident.] In the sponge-spicules, a triod which has two arms of equal length and recurvature, the first being straight and longer or shorter than the rest.

orthodiagraph (ôr-thọ-dī'ạ-gráf), *n.* [Gr. *ὀρθός*, right, + *διά*, through, + *γράφειν*, write.] An apparatus for determining the shape and size of internal organs of the body and of foreign bodies. Their outlines are made visible on a phosphorescent screen by a Rontgen-ray apparatus placed on the other side, and can thus be traced on a drawing-board or the body. A movable frame with adjustable sections carries both the X-ray bulb and the recording stylus, which move in unison, thus obviating the distortion which would be due to the divergent X-rays, the perpendicular rays only being followed in tracing.

> A so-called *orthodiagraph*, an apparatus which serves in connection with Roentgen tubes for determining the exact size of the heart and for locating foreign bodies.
> *Elect. World and Engin.*, Sept. 24, 1904, p. 514.

orthodiazin (ôr"thọ-dī-az'in), *n.* Same as ★*pyridazin*.

orthodichotriæne (ôr-thọ-dī-kọ-trī'ēn), *n.* [Gr. *ὀρθός*, straight, + *δίχα*, in two, + *τρίαινα*, trident.] In the sponge-spicules, a dichotriæne with straight branches. See *dichotriæne*.

orthodichoxytriæne (ôr-thọ-dī"kok-si-trī'ēn), *n.* [Gr. *ὀρθός*, straight, + *δίχα*, in two, + *ὀξύς*, sharp, + *τρίαινα*, trident.] In the nomenclature of the spicular elements of the sponges, a dichotriæne in which the forked arms of the spicule are straight and sharp. See *dichotriæne*.

orthodolichocephalic (ôr-thọ-dol"i-kọ-se-fal'-ik or -sef'ạ-lik), *a.* [Gr. *ὀρθός*, straight, + *δολιχός*, long, + *κεφαλή*, head, + *-ic*.] In *craniom.*, combining the characteristics of orthocephaly and dolichocephaly.

> Of a Hottentot skull from a cave on the Orange-Transvaal frontier, Dr. Mies states that "its form is *orthodolichocephalic*, as with the Wasandawi."
> *Virchow* (1895), quoted in Encyc. Brit., XXIX. 341 [(note).

Orthodon (ôr'thọ-don), *n.* [NL., < Gr. *ὀρθός*, straight, + *ὀδούς* (*ὀδοντ-*), tooth.] A genus of cyprinoid fishes found in fresh waters in the western United States.

orthodontia (ôr-thō-don′ti-ä), *n.* [NL., < Gr. *ὀρθός*, straight, + *ὀδούς* (*ὀδοντ-*), tooth.] That branch of dentistry which is concerned with the straightening of irregular teeth.

orthodoxian (ôr-thō-dok′si-an), *a.* [*orthodoxy* + *-an.*] One who professes orthodoxy. *N. E. D.* [Rare.]

orthodoxism (ôr′thō-dok-sizm), *n.* [*orthodox* + *-ism.*] 1. Orthodoxy.—2. The regarding of orthodoxy as the most important feature of religion.

ortho-ester (ôr′thō-es″tėr), *n.* The ester of an ortho-acid.

orthoform (ôr′thō-fôrm), *n.* [Gr. *ὀρθός*, straight, + (*chloro*)*form.*] The methyl ester of p-amino-m-hydroxybenzoic acid, $C_6H_3(NH_2)(OH)CO_2H$. It is a white crystalline powder which forms soluble salts with acids: used as a local anesthetic in the treatment of ulcers and other painful skin-diseases.

orthogamic (ôr-thō-gam′ik), *a.* [*orthogam*(*y*) + *-ic.*] In *bot.*, pertaining to direct fertilization or orthogamy.

orthogenesis (ôr-thō-jen′e-sis), *n.* [NL., < Gr. *ὀρθός*, straight, + *γένεσις*, generation.] The direct or immediate origin of species, according to the opinion that it takes place by the 'organic growth' of one species into another in a definite line which is predetermined by the constitution which outward circumstances have given to each organism.

> The Neo-Lamarckians say 'use-inheritance' (as Eimer, who calls the determination secured by this means '*orthogenesis*'); Weismann says 'germinal selection'; those who accept 'organic selection' say that it is a determining factor (the resulting determination of evolution being called 'orthoplasy'); others say 'determinate variation' (continued in the same direction for successive generations); Professor Osborn says, 'determinate variation' with 'organic selection.'
> *J. M. Baldwin*, Development and Evolution, p. 161.

orthogenetic (ôr-thō-jē-net′ik), *a.* Pertaining to or of the nature of orthogenesis.

> The *orthogenetic* formation of the chambers exerts an increasing pull upon the chamber of attachment, and as a completed structure, by the law of acceleration, appears in successively earlier stages of the ontogeny, it is obvious that cameration finally led to detachment among a part of the forms. *Amer. Geol.*, April, 1903, p. 205.

orthogenid (ôr-thoj′e-nid), *n.* [Gr. *ὀρθός*, right, straight, + *γέν*(*εσις*), generation, + *-id*¹.] The sinusoid spiral. *Allégret.*

orthogneiss (ôr′thō-nīs), *n.* [Gr. *ὀρθός*, right, straight, + E. *gneiss.*] In *petrog.*, a name given by Rosenbusch (1898) to gneiss derived from igneous rocks: opposed to ⋆*paragneiss.*

orthogon, *n.* 2†. A right-angled triangle.

Orthogonal circle, the circle orthogonal to all circles of a circle-complex with positive power.—**Orthogonal coördinates.** Same as *rectangular coördinates* (which see, under *coördinate*).—**Orthogonal sphere, spheres.** See ⋆*sphere.*—**Orthogonal system of lines, orthogonal system of surfaces.** See ⋆*system.*—**Triply orthogonal**, said of a combination of three systems of surfaces such that every surface of either system is at right angles to all those of the other two systems.

orthogonial† (ôr-thō-gō′ni-al), *a.* Same as *orthogonal.*

orthograde (ôr′thō-grād), *a.* [Gr. *ὀρθός*, straight, right, + L. *gradi*, go, walk.] Carrying the body upright in walking, or in a vertical position: opposed to ⋆*pronograde.*

> Dr. A. Keith (Journal of Anatomy and Physiology, vol. xxx. p. 18) calls attention to the fact that naturalists are wrong in describing the larger apes as quadrupedal. They are so only when on the ground, which is not their proper habitat. When at home among the trees they carry the body upright, and may thus be called *orthograde*, in contradistinction to the lower Primates, which are pronograde. *Nature*, Oct. 30, 1902, p. 661.

orthografer, orthografic, orthografy. Amended spellings of *orthographer*, etc.

orthohexactin (ôr″thō-hek-sak′tin), *n.* [Gr. *ὀρθός*, straight, + *ἕξ*, six, + *ἀκτίς* (*ἀκτιν-*), ray.] In the sponge-spicules, a six-rayed or triaxial spicule with arms at right angles.

orthoid (ôr′thoid), *n.* [Gr. *ὀρθός*, straight, right, + *-oid.*] The path of a point in a fixed position with respect to a straight line which rolls upon any curve.

orthoketonic (ôr″thō-kē-ton′ik), *a.* [Gr. *ὀρθός*, right, + E. *ketone* + *-ic.*] Designating a ketone containing the grouping $-CO-CH_3$.

orthologer (ôr-thol′ō-jėr), *n.* [*ortholog*(*y*) + *-er.*] One who speaks correctly, or who treats of the correct use of words. *N. E. D.*

orthologian (ôr-thō-lō′ji-an), *n.* Same as ⋆*orthologer.*

orthological (ôr-thō-loj′i-kal), *a.* [*ortholog*(*y*) + *-ic-al*¹.] Of or pertaining to orthology or the correct use of words.

orthology, *n.* 2. The correct use of words.

orthometopic (ôr″thō-me-top′ik), *d.* [Gr. *ὀρθός*, straight, + *μέτωπον*, forehead, + *-ic.*] Having a vertical forehead, like many children and women. *Ecker.*

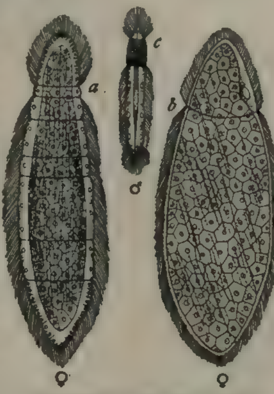
orthomonæne (ôr-thō-mon′ēn), *n.* [Gr. *ὀρθός*, straight, + *μόνος*, single, + *-αινα*, as in *τρίαινα*, trident.] In the sponge-spicules, a triæne which by atrophy has lost two of its branches, the remaining one being straight.

Orthomorphic transformation. See ⋆*transformation.*

orthomorphosis (ôr″thō-môr′fō-sis), *n.* [Gr. *ὀρθός*, straight, + *μόρφωσις*, forming.] 1. Orthopædic treatment.—2. Expansion or contraction without disturbing the conformal relation between corresponding lines or areas.—3. Orthomorphic ⋆ transformation (which see).

> It is easy to deduce the *orthomorphosis* of the rectangle into a circle. *Cayley*, Works, XIII. 191. *N. E. D.*

Orthonectidæ (ôr-thō-nek′ti-dē), *n. pl.* [NL.] A group of organisms of uncertain position but evidently related to the *Dicyemida.* They consist of an outer layer of ciliated cells surrounding a mass of compact cells, and have a layer of fibers, possibly muscular, between the outer layer and inner mass of cells. The males are smaller than the females, and the latter occur in two forms, cylindrical and flattened, both of which produce eggs. Those of the cylindrical form are probably fertilized, while those of the flattened form are thought to develop parthenogenetically. The family contains the genus *Rhopalura*, found parasitic in turbellarians, nemertines, and ophiurids. Also *Orthonectida.*



Orthonectidæ (*Rhopalura giardii*). Metschnikoff. (From the brittle-star, *Amphiura squamata.*)

a, cylindrical female; *b*, flattened form of female; *c*, full grown male: all highly magnified. (After Julin.)

(From "Cambridge Natural History.")

Orthonychia (ôr-thō-nik′i-ä), *n.* [NL., < Gr. *ὀρθός*, straight, + *ὄνυξ* (*ὀνυχ-*), claw.] A genus of platypodous Paleozoic gastropods allied to the *Capulidæ* and having conical furrowed shells slightly twisted and curved at the tip.

orthophoric (ôr-thō-for′ik), *a.* [*orthophor*(*ia*) + *-ic.*] Relating to or marked by orthophoria.

orthophosphate (ôr-thō-fos′fāt), *n.* [Gr. *ὀρθός*, straight, + E. *phosphate.*] A salt of orthophosphoric acid. All phosphates of natural occurrence are orthophosphates.

orthophosphoric (ôr″thō-fos-for′ik), *a.* [Gr. *ὀρθός*, straight, + E. *phosphoric.*] Noting an acid, H_3PO_4, produced by the interaction of phosphorus pentoxid or pentachlorid and water by boiling dilute nitric acid with phosphorus, or by treating the calcium phosphate of bone-earth with sulphuric acid. It may be obtained in the form of colorless crystals, but is generally seen as a syrupy liquid which contains some water. It has no smell, but a strongly sour taste. It is used in medicine. By progressive heating it is converted into pyrophosphoric and metaphosphoric acid. It is often referred to as *common phosphoric acid.*

orthophyllotriæne (ôr-thō-fil-ō-trī′ēn), *n.* [Gr. *ὀρθός*, straight, + *φύλλον*, leaf, + *τρίαινα*, trident.] In the sponge-spicules, a triæne with flattened, undivided leaf-like branches.

orthophyric (ôr-thō-fir′ik), *a.* [*orthophyre* + *-ic.*] In *petrog.*, belonging to or having the characters of orthophyre.

orthoplaced (ôr′thō-plāsd), *a.* [Gr. *ὀρθός*, straight, + E. *placed.*] In *chem.*, being in the ortho-position.

> The hydroxyl group and one of the halogen atoms (an *ortho-placed* halogen atom) having exchanged positions.
> *Nature*, Feb. 5, 1903, p. 332.

orthoplastic (ôr-thō-plas′tik), *a.* [Gr. *ὀρθός*, straight, + *πλαστός*, formed, + *-ic.*] Directive of or determining the changes in living beings to which the origin of species is due.

> All the influences which work to assist the animal to make adjustments or accommodations will unite to give directive determination to the course of evolution. These influences we may call '*orthoplastic*' or directive influences.
> *J. M. Baldwin*, Development and Evolution, p. 142.

orthoplasy (ôr′thō-plā-si), *n.* [Gr. *ὀρθός*, straight, + *πλάσις*, forming, + *-y*³.] 1. The definite and determinate changes in the history of the origin of species which have been attributed to organic selection.

> And the general fact that evolution has a directive determination through organic selection we may call '*Orthoplasy.*'
> *J. M. Baldwin*, Development and Evolution, p. 142.

2. The doctrine or opinion that the origin of species has been guided or directed by organic selection.

> The theory of evolution which makes general use of organic selection is called *Orthoplasy.*
> *J. M. Baldwin*, Development and Evolution, p. 173.

orthopnœic (ôr-thop-nē′ik), *a.* [*orthopnœ*(*a*) + *-ic.*] Relating to or affected with orthopnœa.

Orthopoda (ôr-thop′ō-dä), *n. pl.* [NL., < Gr. *ὀρθός*, straight, + *πούς* (*ποδ-*), foot.] An ordinal term introduced by Cope for a division of the dinosaurian reptiles otherwise known as the ⋆*Predentata* (which see).

orthopodous (ôr-thop′ō-dus), *a.* Pertaining to or having the characters of the *Orthopoda.*

ortho-position (ôr″thō-pō-zish′on), *n.* In *chem.*, the 'position' indicated by the prefix *ortho-.* See *ortho-.*

Orthopristis (ôr-thō-pris′tis), *n.* [Gr. *ὀρθός*, straight, + *πρίστις*, a kind of whale?] A genus of fishes belonging to the family *Hæmulidæ.* Nearly all of the species are American.

orthoprosopic (ôr″thō-pros-ō′pik), *a.* [Gr. *ὀρθός*, straight, + *πρόσωπον*, face.] In *anthrop.*, having a medial facial index; having a face in which the greatest breadth expressed in per cents. of the total length has a middle value. *Deniker*, Races of Man, p. 71.

orthoprosopous (ôr″thō-pros′ō-pus), *a.* Same as ⋆*orthoprosopic.*

orthopter, *n.* 2. A form of dirigible flying-machine or aërodrome, heavier than the air it displaces and using no gas-bag, in which the motor supplying the energy to lift and move the machine acts directly to produce motion in the desired direction. Distinguished from the *helicopter*, in which helical surfaces revolving like propellers are used to lift the weight by their rotary motion in some direction other than that of the flight. Orthopters are sometimes built with movable wings, beating the air like those of a bird, but more usually the fixed aëroplane with adjustable inclination to the horizon is depended on to give the straight flight, and support the weight. Gliders are in this general class. *Sci. Amer.*, Oct. 12, 1907.

Orthopteroidea (ôr-thop-te-roi′dē-ä), *n. pl.* [NL., < *Orthoptera* + Gr. *εἶδος*, form.] In Scudder's classification of the fossil insects, an order which corresponds to the recent order *Orthoptera* and occurs in the Paleozoic rocks.

orthoptic, *a.* 2. Relating to normal binocular vision.

orthorachic (ôr-thō-rā′kik), *a.* [Gr. *ὀρθός*, straight, + *ῥάχις*, spine.] Having a spinal column with a straight lumbar curve, or with a lumbovertebral index of between 98 and 102. *Turner.*

Orthoscopic eyepiece. See ⋆*eyepiece.*

orthosiid (ôr-thō-sī′id), *n.* and *a.* I. *n.* A member of the lepidopterous family *Orthosiidæ.*

II. *a.* Having the characters of or belonging to the family *Orthosiidæ.*

orthosis (ôr-thō′sis), *n.* [NL., < Gr. *ὄρθωσις*, straightening, < *ὀρθοῦν*, straighten, < *ὀρθός*, straight.] The straightening, or the becoming straight, of a part.

orthoskiagraphic (ôr-thō-skī-a-graf′ik), *a.* [Gr. *ὀρθός*, straight, + *σκιά*, shadow, + *γράφειν*, write, + *-ic.*] Pertaining to photography which attempts to render truthful gradations in light and shade. *Wall*, Dict. of Photog., p. 415.

orthostates (ôr-thos′ta-tēz), *n.*; pl. *orthostatai* (-tī). [Gr. *ὀρθοστάτης*, one who stands upright, an upright pillar, prob. adj., standing upright, < *ὀρθός*, upright, + *-στάτης*, < *ἱστάναι*, stand.] In *Gr. arch.*, any upright support. The word usually denotes a rectangular masonry pier in distinction from a circular column.

orthostatic (ôr-thō-stat′ik), *a.* [Gr. *ὀρθόστατος*, standing upright, + *-ic.*] Of or pertaining to an upright position.—**Orthostatic albuminuria**, the temporary occurrence of albumin in the urine when the patient stands for a considerable time.

orthostereoscope (ôr-thọ-ster′ẹ-ọ-skōp), *n.* [Gr. ὀρθος, right, + E. *stereoscope.*] A binocular microscope in which the objects viewed appear as in reality, not being inverted or transposed.

orthostereoscopic (ôr-thọ-ster″ẹ-ọ-skop′ik), *a.* [*orthostereoscop*(*e*) + *-ic.*] Pertaining to or connected with an orthostereoscope; giving a normal view without inversion or transposition.

orthostigmat (ôr-thọ-stig′mat), *n.* [Gr. ὀρθός, straight, right, + E. *stigmat*(*ic*).] The trade-name of a lens system consisting of two similar groups of three lenses each; each group taken by itself is completely corrected and may be used as a separate system. *Encyc. Brit.*, XXXI. 696.

Orthostœchus (ôr-thọ-stē′kus), *n.* [NL., < Gr. ὀρθός, straight, + στοῖχος, row.] A genus of fishes, of the family *Hæmulidæ*, found on the Pacific coast of tropical America.

orthosubstituted (ôr-thọ-sub′sti-tū-ted), *a.* Containing a substituting atom or group in the ortho-position.

> The question of space interference, a phenomenon first observed by V. Meyer in the case of *ortho-substituted* aromatic acids which can only be esterified with great difficulty, and in some cases not at all.
> *Nature*, Nov. 19, 1903, p. 64.

orthosymmetric, *a.* **2.** In *crystal.*, same as *orthorhombic.*

orthosymmetrically (ôr″thō-si-met′ri-kạl-i), *adv.* In accordance with right symmetry.

orthosymmetry (ôr-thọ-sim′e-tri), *n.* [Gr. ὀρθός, straight, right, + συμμετρία, symmetry.] In *crystal.*, right symmetry. See ★*symmetry*, 6.

Orthothetes (ôr-thoth′ẹ-tēz), *n.* [NL., < Gr. ὀρθός, straight, + -θετης, < τιθέναι, put, place.] A genus of fossil protrematous brachiopods, of the family *Strophomenidæ*, having reversed convexo-concave shells. It occurs from the Silurian to the Carboniferous.

orthotoluidine (ôr″thọ-tọ-lū′i-din), *n.* [Gr. ὀρθός, straight, right, + E. *toluidine.*] An amine base produced by the action of nascent hydrogen on orthonitrotoluene. Mixed with paratoluidine it occurs in commercial toluidine, which is a valuable material in the production of some of the coal-tar dyes.

orthotomy (ôr-thot′ọ-mi), *n.* [*orthotom*(*ous*) + *-y*³.] The property of cutting or intersecting at right angles.

orthotriæne, *n.* **2.** A caltrop in which one of the arms is very long and straight. See ★*caltrop*, 4.

orthotrichoxytriæne (ôr″thọ-trī″kok-si-trị′-ēn), *n.* [Gr. ὀρθός, straight, + τρίχα, threefold, + ὀξύς, sharp, + τρίαινα, trident.] In the sponge-spicules, a trichotriæne or thrice-branched triæne which has the branches straight or sharp.

orthotriod (ôr-thọ-trī′od), *n.* [Gr. ὀρθός, straight, + E. *triod.*] In the sponge-spicules, a triod in which the arms are equal and one at right angles to the other two.

orthotropy (ôr-thot′rọ-pi), *n.* [*orthotrop*(*ous*) + *-y*³.] In *bot.*, the condition of being orthotropous: said of an ovule.

orthoxytriæne (ôr″thok-si-trī′ēn), *n.* [Gr. ὀρθός, straight, + ὀξύς, sharp, + τρίαινα, trident.] In the sponge-spicules, a triæne with the arms straight and sharp. See *triæne*, ★*oxytriæne.*

orthozygous (ôr-thoz′i-gus), *a.* [Gr. ὀρθός, straight, + ζυγόν, yoke, + *-ous.*] In *craniom.*, having a stephanozygomatic index of 100.

Orthrocene (ôr′thrọ-sēn), *n.* [NL., < Gr. ὄρθρος, dawn, + καινός, recent.] In *geol.*, a term adopted by W. Dawson for the Eocene Tertiary.

ortica (ôr′ti-kä), *n.* [A corruption of L. *urtica*, nettle (?).] A kind of cloth made in Europe from the fiber of the American plant *Urticastrum divaricatum. Dodge*, Fiber Plants, p. 213.

ortiga (ōr-tē′gä), *n.* [Sp. *ortiga*, nettle, < Lat. *urtica.*] In Spanish America, a name given to a number of stinging plants of various families, and also to those which resemble nettles in appearance. In Mexico the name is applied to the introduced ramie-fiber plant, *Bœhmeria nivea*; in Porto Rico to species of *Urera*, including *U. Caracasana* and *U. baccifera*, which bear edible fruit; in the warm regions of Mexico to species of *Cohiba*, belonging to the *Hydrophyllaceæ*, especially to *C. urens*; and in the State of Jalisco to *Tournefortia hirsutissima*, belonging to the *Boraginaceæ*. See cut at *Bœhmeria*.

ortol (ôr′tol), *n.* A trade-name for a compound of o-aminophenol with hydroquinone. It is used as a developer in photography.

Ortonia (ôr-tō′ni-ạ̈), *n.* [NL., after a personal name.] A genus of extinct tubicolous worms forming small conical irregular tubes and often growing in clusters from a single surface of attachment. It occurs in Silurian rocks.

orvinite (ôr′vi-nīt), *n.* See ★*meteorite.*

oryctogeology (ọ-rik″tọ-jẹ-ol′ọ-ji), *n.* [Gr. ὀρυκτός, dug out (fossil), + E. *geology.*] The classification of rocks by their fossils.

oryctographically (ọ-rik-tọ-graf′i-kạl-i), *adv.* With respect to oryctography; on the basis of fossils; paleontologically.

orylic (ọ-ril′ik), *a.* [Gr. ὀρός, whey (serum), + *-yl* + *-ic.*] Noting an acid, $C_{18}H_{28}O_8N_4$, which is obtained, together with succinic and lactic acids, by boiling carniferrin with baryta-water. It is a powder easily soluble in water.

os¹, *n.*—**Os angulare,** the small bone on the posterior end of the articulare of fishes. To it a ligament from the interopercular is attached.—**Os articulare,** the posterior of the two large bones forming the lower jaw in fishes.—**Os basilare,** the basioccipital, or posterior inferior median bone of the cranium in fishes.—**Os coracoideum,** variously identified in fishes as the hypocoracoid, the clavicle, the postclavicle, or the supraclavicle.—**Os cricoideum,** in fishes, the inferior pharyngeal, a paired bone behind the fourth gill-arch, usually bearing teeth.—**Os dentale,** the dentary bone, the anterior and the tooth-bearing one of the two large bones of the lower jaw in fishes.—**Os extrascapulare,** the pterotic, the outermost of the posterior bones of the cranium in fishes.—**Os frontale,** the frontal, the largest bone on top of the cranium in fishes. It is over the orbital cavity, and is usually paired, but sometimes it is a single bone.—**Os hamuli,** a small bone developed on the fifth metacarpal of some primates.—**Os intermaxillare,** the premaxillary, the anterior of the two large bones which form the upper border of the mouth in teleost fishes.—**Os interparietale,** the epiotic, one of the superior bones of the posterior part of the cranium in fishes.—**Os japonicum,** in *anthrop.*, the lower portion of the malar bone when divided by a transversal suture.—**Os lenticulare.** Same as *os orbiculare.*—**Os mastoideum.** (*b*) The epiotic, one of the superior posterior bones of the cranium in fishes: not the 'os mastoideum' of Stannius. (*c*) Same as ★*os extrascapulare.*—**Os maxillare,** the maxillary, the posterior one of the two large bones which border the mouth above in fishes. It articulates with the premaxillary.—**Os nasi,** the nasal, a bone in fishes in relationship with the olfactory cavity.—**Os naviculare,** the scaphoid bone.—**Os occipitale externum,** the epiotic, one of the superior posterior bones of the cranium in fishes.—**Os occipitale laterale,** the exoccipital, one of the paired occipital bones in fishes. There is one on each side of the foramen magnum.—**Os occipitale superius,** the supra-occipital, the superior median bone in the posterior part of the cranium in fishes.—**Os palatinum,** the palatine, the anterior bone of the palatoquadrate arch in fishes. It often bears teeth.—**Os parietale,** the parietal, one of a pair of bones just posterior to the frontals in fishes.—**Os pharyngeum superius,** the superior pharyngeal, a superior bone of the gill-arches of fishes, usually bearing teeth.—**Os pterygoideum,** usually the pterygoid; sometimes the meso-pterygoid, a bone in fishes just behind the eyeball.—**Os quadratum.** (*b*) The quadrate, the bone in teleost fishes to which the lower jaw is hinged.—**Ossa carpi,** the coracoid elements (hypocoracoid and hypercoracoid), the bones in fishes to which the actinosts are attached.—**Ossa infraorbitalia,** the suborbitals, a chain of small dermal bones extending around the lower part of the eye in fishes.—**Ossa interspinalia,** the interneural spines, the spines which support the dorsal fin of fishes and extend between the neural spines.—**Ossa jugalia,** the suborbitals, the chain of small dermal bones extending below the eye in fishes.—**Ossa metacarpi,** the actinosts, the small bones which support the pectoral fin in fishes.—**Ossa orbitalia,** the suborbitals, the ring of small bones which borders the eye below, in fishes.—**Os sphenoideum anterius,** the basisphenoid, a small bone anterior to the inner wings of the proötic which roof the myodome.—**Os sphenoideum basilare,** the parasphenoid, a long median bone in the roof of the mouth in fishes. It lies between the vomer and the basioccipital.—**Os styloideum,** the interhyal, the uppermost of the hyoid bones in fishes. It attaches the hyoid arch to the hyomandibular.—**Os Sylvii.** Same as *os orbiculare.*—**Os symplecticum,** the symplectic, a bone situated between the hyomandibular and the quadrate in fishes.—**Os temporale,** the hyomandibular, an important bone in the skull of fishes. It suspends most of the lateral bones of the head from the cranium.—**Os terminale,** the nasal, one of a pair of anterior bones in the cranium of fishes. It is usually attached to the frontal and extends over the olfactory organ.—**Os thyreoideum,** in fishes, the hypobranchials of the first and second arches, lower bones of the gill-arches, above and at each side of the basibranchials.—**Os transversum,** the mesopterygoid, a bone behind the eyeball of fishes, attached to the pterygoid and palatine.—**Os trigonum,** a small bone at the posterior part of the astragalus, sometimes separate and sometimes attached to that bone.—**Os tympani,** the metapterygoid, a bone in fishes behind the mesopterygoid.—**Os uncinatum,** in *ornith.*, a small bone attached to the free or ventral end of the lachrymal, and in its typical form somewhat hook-shaped. It is found in gulls and some other birds.—**Os xiphoides,** the sternum.—**Os zygomaticum,** the suborbitals, the chain of small bones below the eye in fishes. It usually bears a sensory tube.

O. S. An abbreviation (*d*) of the Latin *oculus sinister*, left eye; (*e*) of *old school*; (*f*) of *old side*; (*g*) of *Outside Sentinel.*

O. S. A. An abbreviation of the Latin *Ordo Sancti Augustini*, Order of St. Augustine.

Osage group. See ★*group*¹.

osamine (ōs-am′in), *n.* [*-ose* + *amine.*] An amino compound formed by the action of alcoholic ammonia on the hexoses.

osar (ō′sär), *n. pl.* [Sw. *åsar*, pl. of *ås*: see ★*ås* and *os*³.] **1.** Same as *asar*, pl. of *ås*, *os*³. —**2.** [*sing.*] Same as *os*³. A ridge of glacial debris of considerable longitudinal extent, showing rough water-stratification: same as *eskar*. Also called *serpent-kame.*

> Eskers or *osars* is the name applied to certain well-defined ridges of more or less completely-stratified drift.
> *R. D. Salisbury*, Geol. Surv. of New Jersey, 1892, p. 41.

osar-plain (ō′sär-plān), *n.* In *geol.*, the expanded distal end of an eskar; a glacial sand-plain.

osazone (ōs-az′ōn), *n.* [*-ose* + *azo-* + *-one.*] A yellow crystalline compound formed by the action of phenyl-hydrazine on a sugar in the presence of acetic acid. Glucose yields phenylglucosazone, $C_{18}H_{22}N_4O_4$, usually called *glucosazone.* The other hexoses, except inosite, which is not a true sugar, yield osazone of the same composition but differing in molecular structure. Some of the saccharobioses, as maltose and lactose, yield osazones of the composition $C_{24}H_{32}N_4O_9$; others, such as cane-sugar, are first broken down into hexoses, which then form the osazones, $C_{18}H_{24}N_4O_4$. Osazones of the same composition but unlike in molecular structure differ in their melting-points, solubility, etc., and are thus of importance in identifying the sugars.

O. S. B. An abbreviation of the Latin *Ordo Sancti Benedicti*, Order of St. Benedict.

Oscarella (os-kạ-rel′ạ̈), *n.* [NL.] The typical genus of the family *Oscarellidæ. Vosmaer*, 1881.

Oscarella lobularis. (After Schulze.)
Two thirds natural size.
(From Lankester's "Zoology.")

Oscarellidæ (os-kạ-rel′i-dē), *n. pl.* [NL. *Oscarella* + *-idæ.*] A family of myxospongidans having spherical ciliated chambers. It contains the single genus *Oscarella*, found in the Mediterranean near the surface.

oscheoplasty (os′kẹ-ọ-plas-ti), *n.* [Gr. ὄσχεον, scrotum, + πλαστός, formed, + *-y*³.] Restoration of defects in the scrotum by a surgical operation.

oschophoria (os-kọ-fō′ri-ạ̈), *n. pl.* [NL., < Gr. ὀσχοφόρια, < ὀσχοφόρος, bearing vine-branches, < ὄσχος, a branch, esp. of the vine, + -φορος, < φέρειν, bear.] A festival of Dionysus at Athens in which a procession of boys dressed as women marched from the temple of Dionysus to that of Athene Skiras.

oscillant (os′i-lạnt), *a.* [L. *oscillans*, ppr. of *oscillare*, swing. See *oscillate.*] Swinging backward and forward; oscillating.

Oscillating current, separator, series. See ★*current*¹, ★*separator*, ★*series.*

oscillation, *n.* **5.** In *math.*, the difference, for values of x in the interval $(x-h, x+h)$, between the lowest value that a real function fx of a real variable x cannot exceed and the highest value below which fx cannot fall.—**Hertzian oscillation,** an electromagnetic wave of the kind discovered by Hertz; a Hertzian wave (see ★*wave*¹).—**Needle of oscillation.** See ★*needle.*—**Oscillation galvanometer, transformer.** See ★*galvanometer*, ★*transformer.*—**Oscillation of a function** in the number interval (a, b), the difference between the superior and inferior limits of the values of $f(x)$ in (a, b).—**Retinal oscillation,** in *exper. psychol.*, a term introduced by Charpentier in 1891 for the following and similar phenomena.

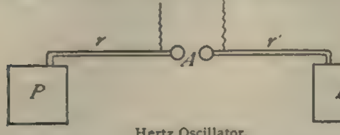
> A white sector of 90° is pasted on a black disk of 25-30 centimeters diameter, and the disk is rotated once per second. If the middle of the disk is fixated, the retreating edge of the black is always followed by a narrow shadowy sector in the white. The retina on first being stimulated with white apparently reacts in the direction of black, then swings again toward white, and so on. *E. C. Sanford*, Exper. Psychol., p. 168.

oscillator, *n.* **4.** A motor in which the piston oscillates in the cylinder over a minute range at high speed. In combination with a dynamo it is used to obtain currents of high frequency. —**5.** In *wireless teleg.*, that part of the transmitting apparatus which produces the electric waves or oscillations. See *wireless* ★*telegraphy.*

> The function of the receiving aerial is to bring about a union between these two operations above and below ground. When the electric waves fall upon it, they give rise to electromotive force in the receiving aerial, and therefore produce oscillations in it which, in fact, are electric currents flowing into and out of the receiving

aerial. We may say that the transmitting aerial, the receiving aerial and the earth form one gigantic Hertz *oscillator*. *Pop. Sci. Mo.*, Sept., 1903, p. 442.

Hertz oscillator, a device used by Heinrich Hertz in his study of electric waves for producing electric oscillations of uniform and definite frequency. One of the numerous forms consists of two metal plates, P and P′, two metallic rods, r and r′, terminating in polished balls also of metal, and a spark-gap, A, of one centimeter or less between the balls. The rods are connected to the terminals of an induction-coil.—**Linear oscillator**, in *elect.*, a Hertz oscillator in which linear conductors, as rods or wires, are substituted for the plates usually employed.

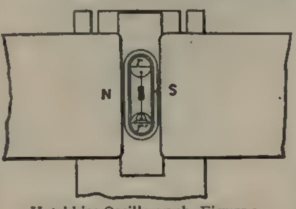


Hertz Oscillator.

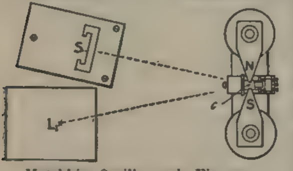
Oscillatory discharge, electric discharge, as of a condenser, in which, owing to the character of the circuit, a number of periodic and rapidly diminishing reversals of change occur before equilibrium is established. Lightning frequently takes the form of an oscillatory discharge, and the discharge of an induction-coil or static machine may readily be rendered oscillatory by adjusting the capacity, inductance, and resistance of the circuit.

oscillogram (os′i-lọ̄-gram), *n.* [Irreg. < L. *oscillare*, swing, + Gr. *γράμμα*, a writing.] The graphic trace or record made by an oscillograph.

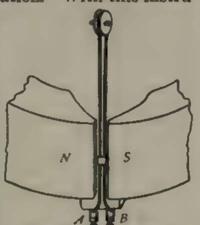
oscillograph (os′i-lō-gräf), *n.* [Irreg. < L. *oscillare*, swing, + Gr. *γράφειν*, write.] 1. An instrument for recording alternating-current wave-forms and for the study of electrical oscillations. The oscillograph in its usual form is a development of the D'Arsonval galvanometer in which the moment of inertia of the moving parts is reduced to a minimum and the period of the instrument is sufficiently shortened to enable the moving parts to follow the rapid oscillations that are to be recorded. In 1892 Moler constructed a curve-writing voltmeter for recording the changes in potential in the coils of dynamo-machines which, although lacking in sensitiveness and incapable of giving very rapid fluctuations, must be regarded as the forerunner of the oscillograph. It consisted of a needle of soft iron mounted between the poles of a permanent magnet and carrying a very light pointer of aluminium by means of which the movement of the needle was recorded upon a revolving metallic drum with smoked surface. The frequency was something over 100 complete vibrations per second. In the following year Blondel, to whom the name *oscillograph* is due, described various forms of the instrument, of which the most successful consisted of a soft iron needle and mirror pivoted between the poles of an electromagnet and vibrating with a frequency of 1,000 oscillations per second. In 1894–95, by greatly reducing the size of the needle and mirror and mounting the same by means of a quartz fiber between the poles of an electromagnet, Hotchkiss succeeded in producing a galvanometer having a frequency of nearly 10,000 single vibrations per second. The essential features of this instrument are shown in Fig. 1 and Fig. 2. The needle is mounted between the pole-pieces N and S, Fig. 1, by means of a fiber stretched between the supports r and r′, about which is also wound a coil of wire within which the oscillations to be studied are set up. Rays from an arc-light L_1, Fig. 2, are reflected to the sensitive plate of a camera, S, so constructed that the plate can be shot through the field at right angles to the plane of vibration. With this instrument not only alternating-current curves but likewise curves showing the phenomena of the oscillatory discharge of condensers may be recorded with great fidelity. The form of oscillograph now generally employed is that devised by Duddell in 1897. It consists essentially of a flat strip of phosphor-bronze carried vertically up through the field of an electromagnet, over a roller, and down through the field parallel to itself; to these strips in the middle of the field the mirror and needle are attached. The frequency of oscillation reaches .0003 of a second. When a current is sent through the strip from A to B (Fig. 3) the portion in which the current is flowing upward moves in the opposite direction from that in which the flow is downward, and the mirror is deflected. The spot of light reflected from the mirror is thrown upon the screen for observation, or upon a moving photographic plate for permanent record.



Hotchkiss Oscillograph, Figure 1.



Hotchkiss Oscillograph, Figure 2.



Duddell Oscillograph. Figure 3.

2. An apparatus for recording graphically the motions of oscillation of any structure or element as to frequency and magnitude. The element may carry a pen or tracing-point, while a paper, borne on a fixed support, is moved before the tracer as the latter oscillates; or the principle may be reversed: used to record the effect of trains on bridges, or of moving machinery in buildings, or the effect of earth-movements on structures.

oscillometer (os-i-lom′e-tėr), *n.* [Irreg. < L. *oscillare*, swing, + Gr. *μέτρον*, measure.] A device for indicating and measuring the rolling of a ship. It consists of a motor-driven gyroscope mounted in gimbals, which maintains its absolute plane of rotation in space and, by the movement of pointers along scales attached to the frame, shows the angular departure of the vessel from the vertical. *Sci. Amer.*, July 29, 1890.

oscillophone (os′i-lọ̄-fōn), *n.* The trade-name of a microphonic receiver with resistances, used in testing telephone circuits.

oscillum (os′i-lum), *n.*; pl. *oscilla* (-lạ̈). The trade-name for a special form of spark-plug for explosion-engines.

oscine² (os′in), *n.* A crystalline alkaloid, $C_8H_{13}O_2N$, found in crude belladonine and also made from other alkaloids. It melts at 110° C. Also called *pseudatropine*, *scopoline*, and *oxytropine*.

oscinid (os′i-nid), *n.* and *a.* **I.** *n.* One of the *Oscinidæ*.

II. *a.* Having the characters of or belonging to the dipterous family *Oscinidæ*.

oscitance (os′i-tạns), *n.* Same as *oscitancy*.

osculable (os′kụ̈-lạ-bl), *a.* [L. *osculare*, kiss, + *-ble*.] That may be kissed. [Rare.]

Oscular muscle. Same as *oscularis*.—**Oscular sphincter.** See ★*sphincter*.

osculate, *v. i.*—**Osculating surface.** See ★*surface*.

Osculatory parabola. See ★*parabola*².

-ose. [1. L. *-ōsus*, fem. *-ōsa*, neut. *-osum*, earlier *-on-sus*, a suffix used to form, from nouns, adjectives noting fullness or supply, and usually equivalent to Eng. adjectives in *-ful* or *-y*¹, as *copiosus*, plentiful; *odiosus*, hateful; *nebulosus*, cloudy; *nivosus*, snowy; *pluviosus*, rainy; *vitiosus*, faulty; etc. In most cases this Latin suffix is represented by the form *-ous*, derived through Old French and Middle English, as in *copious*, *odious*, *nebulous*, *pluvious*, *religious*, *vicious*, etc. See *-ous*. 2. In its application to chemical terms *-ose* first appeared in the original form of *glucose*, namely, F. *glucose*. This word is on its face composed of Gr. *γλυκ(ύς)*, sweet, + *-ose*; but in the original report of the committee of the French 'Académie des Sciences' (1838), in which the word was proposed, it is explained by a vague and inexact reference to Gr. *γλεῦκος*, must, sweet wine, apparently implying that the committee meant that *-ose* should represent the Greek neuter noun ending in *-ος*. But this is rather substitution than representation. The form *-ose* in modern French, as in modern English, in effect represents the Latin *-osus* (see def. 1), and in *glucose* and the numerous chemical terms formed on the same model, it is commonly so taken.] 1. A suffix occurring in many English adjectives, formed, most of them in recent scientific use, from Latin or Middle Latin adjectives in *-osus*, as *bellicose*, *globose*, *jocose*, *morose*, *otiose*, *pilose*, *verbose*, etc. In the seventeenth century many adjectives before that date and since spelled with *-ous* were often spelled with *-ose*, probably not always with a different pronunciation, as *ambitiose*, *gloriose*, *pompose*, etc. Abstract nouns in *-ity* from adjectives in *-ose* or *-ous* take the form *-osity*, as *globosity*, *jocosity*, *pomposity*, etc.—2. In *chem.*: (*a*) A suffix designating members of the group of sugars, as *glucose*, *lactose*, *maltose*, etc. (*b*) A suffix showing that the substance is a primary decomposition-product of a proteid, as *albumose*, etc.

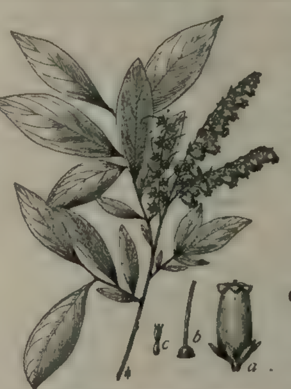
O. S. F. An abbreviation of the Latin *Ordo Sancti Francisci*, Order of St. Francis.

oshac (ō′shak), *n.* [Persian *ushak*.] A plant of the parsley family, *Dorema Ammoniacum*, which yields gum ammoniac. See *ammoniac* and *Dorema*.

Osiandrian, *n.* **II.** *a.* Of or pertaining to the doctrine of Andreas Osiander, a German theologian of the Reformation and a disciple of Luther. He agreed fundamentally with his master, but propounded a mystical doctrine of justification by faith, claiming that it is not an imputation but an infusion of the divine righteousness.

Osiandrist (ō-si-an′drist), *n.* and *a.* Same as ★*Osiandrian*.

osier, *n.*—**Green osier.** (*a*) See *osier*. (*b*) Either the round-leaved dogwood, *Cornus circinata*, or the alternate-leaved dogwood, *C. alternifolia*, the twigs of which are green.—**Purple osier**, the purple willow, *Salix purpurea*.—**White osier.** (*a*) See *osier*. (*b*) *Leucothoë racemosa*, an ornamental shrub of the eastern United States with racemes of waxy white flowers borne on the under side of recurved racemes.



White Osier (*Leucothoë racemosa*).
a, flower; *b*, pistil; *c*, stamen.

osiery, *n.* 2. Basketwork. *Haddon*, Evolution in Art, p. 104.

-osis. [NL. L. *-ōsis*, < Gr. *-ωσις* (**-ωτ-γι-ς*), abstract termination (from secondary verbs in *-ό-ω*, inf. *-οῦν*), as in *μόρφωσις*, forming; *μεταμόρφωσις*, transforming, metamorphosis; *βίωσις*, way of life, etc.; *ὄρθωσις*, straightening; *στένωσις*, narrowing.] A suffix of Greek origin in words signifying the act of making something so-and-so (equivalent to *-ing*, *-ation*, etc.), process, state, etc., as in *anastomosis*, *orthosis*, *sphrigosis*. In medical terms it often implies an abnormal or diseased condition, as in *chlorosis*, *melanosis*, *necrosis*, *neurosis*, *stenosis*, *trichinosis*, *tuberculosis*, etc.

O. Sl. An abbreviation of *Old Slavonic*.

osmatic (os-mat′ik), *a.* [Irreg. < Gr. *ὀσμή*, smell, + *-atic*².] Relating to or possessing the sense of smell.

> The related doctrines that the olfactory organs are large in *osmatic*, small or absent in anosmatic animals.
> *Amer. Anthropologist*, Oct.-Dec., 1903, p. 638.

osmatism (os′mạ-tizm), *n.* [*osmat*(*ic*) + *-ism*.] A well-developed sense of smell. *Trans. Linnean Soc. London*, Zool., Feb., 1903, p. 369.

Osmerus (os-mē′rus), *n.* [NL. (Artedi), < Gr. *ὀσμηρός*, odorous, said to be in allusion to the meaning 'smell' imagined to exist in the E. *smelt*, Dan. *smelt*, etc. See *smelt*².] A genus of fishes (smelts) of the family *Argentinidæ*, found on the northern coasts of America and Europe.

osmesis (os-mē′sis), *n.* [NL., < Gr. *ὄσμησις*, a smelling, < *ὀσμᾶσθαι*, smell, *ὀσμή*, a smell.] Same as *olfaction*.

osmiamate (os′mi-ạ-māt), *n.* [*osmiam*(*ic*) + *-ate*¹.] A salt of osmiamic acid. Potassium osmiamate is produced by acting with ammonia on osmium tetroxid in the presence of potash. It forms orange-yellow crystals.

osmiamic (os-mi-am′ik), *a.* [*osmium* + *amine* + *-ic*.] Noting an acid obtained by decomposing its barium salt with dilute sulphuric acid. It forms a yellow solution in water, which if concentrated soon undergoes decomposition. Its formula is $HNOsO_3$, and it probably contains the nitroso-group.

osmiate (os′mi-āt), *n.* [*osmium* + *-ate*¹.] A salt of osmic acid: same as *osmate*.

osmite (os′mīt), *n.* [*osm*(*ium*) + *-ite*².] In *chem.*, a name formerly given to what is now known as an *osmate* or *osmiate*; a salt of osmic acid.

osmium, *n.* This, the most refractory of the metals, has, though with difficulty, been completely fused into globules by means of the electric furnace.—**Osmium tetroxid**, a substance produced by heating finely divided osmium in the air, or by oxidizing it with nitric acid or aqua regia. It forms nearly colorless, transparent crystals, more fusible than wax, readily subliming at the temperature of the hand, and, when melted, boiling at 100° C. The odor of the vapor is penetrating and violently irritant, the eyes, nostrils, and lungs being more dangerously attacked than by chlorin. A painful eruption is also produced upon the skin by this substance. It dissolves in water, but does not give rise to an acid, behaving as one of the neutral peroxids. It is used in staining histological preparations for examination with the microscope.

osmogram¹ (os′mọ̄-gram), *n.* [Gr. *ὀσμή*, smell, + *γράμμα*, a writing.] Literally, a smell-writing; hence a message conveyed by smell. [Rare.]

> If we ever fully know the higher *osmograms* of aphrodisiacs and the aura seminalis, love itself may be raised to a higher level. *G. S. Hall*, Adolescence, II. 16.

osmogram² (os′mō̤-gram), *n.* [*osmo*(*tic*) + Gr. *γραμμα*, a writing.] A graphic record of osmotic force.

osmograph (os′mō̤-gråf), *n.* [*osmo*(*tic*) + Gr. *γράφειν*, write.] An instrument which registers osmotic force or records the height of the liquid in an osmometer.

osmology¹ (os-mol′ō̤-ji), *n.* [Gr. *ὀσμή*, odor, + *-λογια*, < *λέγειν*, speak.] The study of odors and of their appreciation by the senses.

osmology² (os-mol′ō̤-ji), *n.* [Gr. *ὠσμός*, impulsion (see *osmosis*), + *-λογια*, < *λέγειν*, speak.] The study of the phenomenon of osmosis.

osmon (os′mo̤n), *n.* The trade-name of peat dried by a special process and offered for sale in the form of briquets to be used as fuel.

osmose, *n.*—**Electric osmose.** See *electrical endosmosis*, under *endosmosis*.—**Osmose process.** See ★*process*.

osmose (os′mōs), *v. i.*; pret. and pp. *osmosed*, ppr. *osmosing*. [*osmose*, *n.*] To diffuse through a septum, as in osmosis; exhibit osmosis.

osmotactic (os-mō̤-tak′tik), *a.* [*osmotaxis* (*-tact-*) + *-ic*.] Of or pertaining to the motion of organisms in relation to density or osmotic value of a liquid; exhibiting osmotaxis.

osmotaxis (os-mō̤-tak′sis), *n.* [NL., < Gr. *ὠσμός*, impulsion (see *osmosis*), + *τάξις*, disposition, arrangement.] The movement of cells or of organisms in relation to the density or osmotic value of the liquid they are in, and not in relation to its chemical nature.

Osmotic equivalent. See ★*equivalent*.—**Osmotic pressure**, the pressure which causes diffusion between the solution of a substance and its solute or between solutions differing in concentration. The existence of osmotic pressure may be demonstrated and its magnitude measured by the use of a semipermeable membrane. Such membranes have the property of permitting the solute to pass through more freely than the particles of the dissolved substance are able to do. Animal membranes, such as parchment or the skin of a bladder, were first used for experiments in osmosis, but it is also possible to prepare semipermeable membranes artificially by precipitating certain substances, such as gelatinous copper ferrocyanide, within interstices of a porous substance such as porcelain. If a glass tube, the bottom of which is closed by a semipermeable membrane, is partly submerged in a vessel containing water, and if a concentrated solution of copper sulphate is poured into the tube until the heights of the liquid within and without are the same, osmosis will take place. The semipermeable membrane permits the free passage of water, but impedes the passage of the dissolved particles of the salt. The osmotic pressure of the solution will cause water to enter the tube, gradually raising the level of the liquid. This process will continue until the hydrostatic pressure due to the difference of level in the tube and in the surrounding vessel balances the osmotic pressure (see Fig. 1). Osmotic pressures in certain cases reach very large values. If the solution within the tube, for example, consists of cane-sugar dissolved in water, the liquid may rise in the tube to a height of 30 feet or more. Osmotic pressures of several atmospheres have been repeatedly measured. To determine these large pressures, Pfeffer made use of the apparatus shown in Fig. 2. It consists of a porcelain cell, *c*, rendered semipermeable, into the mouth of which a glass tube, *g*, is inserted. This tube is closed above and connects through a side opening with a mercury manometer as shown. The cell and the glass tube are filled with the solution to be tested, and the cell is then submerged in a vessel of water. The compression of the air column in the top of the closed tube of the manometer affords a measure of the osmotic pressure of the solution. Osmotic pressure is proportional to the concentration of the solution and is independent of the nature of the membrane. The pressure exerted by many solutions is so great that it is impossible to observe it directly, except in the case of comparatively dilute solutions, on account of the breaking of the membrane. It is, however, possible to compute the osmotic pressure of solutions which are too great for measurement. The laws of osmotic pressure have been found to be strictly analogous to those governing gas pressures. In the case of gases the pressure, according to Boyle's law, is inversely proportional to the volume, or, what is the same thing, the pressure of a gas varies directly as the concentration of the gas, just as the osmotic pressure varies directly with the concentration of the solution. According to Charles's law for gases, the pressure of a gas increases with the temperature, the increase being $\frac{1}{273}$ per degree centigrade. Osmotic pressure likewise increases with temperature and in very nearly the same proportion. *Principle of Soret.* It has been shown by Soret that if a portion of a homogeneous solution be maintained at a temperature different from the remainder the solution increases in concentration in the cold portions, a phenomenon analogous to that which is observed in the case of gases. *Application of Avogadro's law to osmotic pressure.* According to the law of Avogadro, equal volumes of gases at a given temperature and pressure contain the same number of particles. It has been found that, in equal volumes of solutions which at the same temperature have the same osmotic pressure, the number of dissolved particles is equal, and that the osmotic pressure of a solution is exactly equal to the pressure exerted by a gas containing a number of particles per unit volume equal to the number of dissolved particles per unit volume in the solution. *Exceptions to the laws of osmotic pressure.* Just as there are exceptions to the laws of gases, which are strictly applicable only to an ideal gas, so in the case of osmotic pressure numerous and significant exceptions are found. Many solutions exhibit osmotic pressure in excess of that which can be accounted for by the number of molecules held in solution. This discrepancy is, however, explained upon the theory of electrolytic dissociation, according to which, when acids, salts, or bases are dissolved in water, their molecules are broken up into smaller particles, called ions, so that there is an increase in the number of dissolved particles and therefore a corresponding increase in the osmotic pressure.—**Osmotic theory.** See ★*osmotic pressure*.

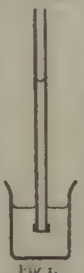


Fig 1. Osmotic Pressure.

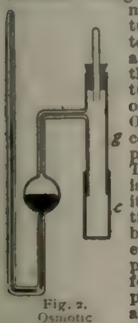


Fig. 2. Osmotic Pressure.

osmund¹, *n.*—**Royal osmund**, the royal fern, *Osmunda regalis*. See *osmund*¹ and *Osmunda*.

osphranter (os-fran′tėr), *n.* [Gr. *ὀσφραντήριος*, smelling, able to smell, < *ὀσφραίνεσθαι*, smell.] Same as *antilopine* ★*kangaroo*.

osphretic (os-fret′ik), *a.* [Gr. *ὀσφρητικός*, < *ὄσφρησις*, smelling.] Same as *olfactory*.

Osphyolax (os-fi-ō′laks), *n.* [NL., < Gr. *ὀσφύς*, the small of the back, + *ὦλαξ*, *αὖλαξ*, a furrow, a groove.] A genus of fishes of the family *Syngnathidæ*. The only known example was taken in the open Atlantic.

osseid (os′ē̤-id), *n.* [L. *osseus*, bony, + *-id*².] A term formerly used to designate albuminoids.

ossements (os′me̤nts), *n. pl.* [F. *ossements*, < ML. *ossamenta*, dead bones, < L. *os* (*oss-*), bone.] Human bones from which the flesh has been taken; bones of the dead.

> It [blood] had been poured upon these *ossements*, which were afterwards covered with earth.
> *Is. Taylor*, Anc. Chr., II. 263. *N. E. D.*

osseocartilaginous (os″ē̤-ō̤-kär″ti-laj′i-nus), *a.* [L. *osseus*, of bone, + *cartilago* (*-agin-*), cartilage, + *-ous*.] Relating to both bone and cartilage.

osseofibrous (os″ē̤-ō̤-fī′brus), *a.* [L. *osseus*, bony, + E. *fibrous*.] In *histol.*, combining the characters of fibrous connective tissue and bone, or representing a transition between these two kinds of tissue.

osseomucoid (os″ē-ō̤-mū′koid), *n.* [L. *osseus*, bony, + E. *mucoid*.] A mucoid which is peculiar to osseous tissue.

ossia (os-sē′ä), *conj.* [It. *ossia*, orig. *o sia*, 'or be it': *o* (< L. *aut*), or; *sia* (L. *sit*), 3d pers. sing. subj. of *essere*, be.] In *music*, a direction indicating an alternative form of a passage, either one that is easier or one suited to a different variety of instrument. Also *oppure* and *ovvero*.

Ossianism (osh′ia̤n-izm), *n.* [*Ossian* + *-ism*.] The literary characteristics of Ossianic poetry; partiality for the Ossianic style.

Ossianize (osh′ia̤n-īz), *v. t.*; pret. and pp. *Ossianized*, ppr. *Ossianizing*. [*Ossian* + *-ize*.] To change or translate (a poem) into the style of Macpherson's "Ossian."

ossicle, *n.*—**Dermal ossicle**, a small bone, of irregular shape, embedded in the skin. Such dermal ossicles are found in many reptiles and in the extinct ground-sloths of the genus *Grypotherium*.—**Radial ossicle**, a sesamoid on the radial side of the wrist, found in its extreme form in the large curved bone of the mole.

ossiculectomy (os″i-kṳ̄-lek′tō̤-mi), *n.* [L. *ossiculum*, ossicle, + Gr. *ἐκτομή*, excision.] Excision of the ossicles of the ear.

> The operation known as *ossiculectomy* (that is, removal of drum membrane and small bones).
> *Med. Record*, Aug. 3, 1907, p. 198.

ossiculotomy (os″i-kṳ̄-lot′ō̤-mi), *n.* [L. *ossiculum*, ossicle, + Gr. *-τομια*, < *ταμεῖν*, cut.] Section through one or more of the ossicles of the middle ear.

ossiculum, *n.*—**Ossiculum Bertini.** See *bones of Bertin*, under *bone*¹.—**Ossiculum Camperi**, a sesamoid found in the wrist of some apes, the supposed homologue of that center of ossification in man known as the *intermedium antebrachii*.—**Ossiculum Daubentoni**, a sesamoid, which occurs in the wrist of the gibbons, *Hylobates*, considered as homologous with the proximal or carpal portion of the pisiform of man.—**Ossiculum palatinum.** See the extract.

> In other forms, e.g. Guira, Crotophaga, the antorbital plate, though large, has the external lateral and inferior borders deeply excised. In such cases the orbito-nasal foramen described above is represented by a notch. Attached to the inferior border of this plate is a vestigial *ossiculum palatinum*, which, however, is generally wanting in dried skulls. *Proc. Zool. Soc., London*, 1903, p. 263.

ossicusp (os′i-kusp), *n.* [L. *os* (*oss-*), bone, + *cuspis*, a point.] A conical bony horn, such as those found in the okapi.

> It [the okapia] is closely related to *Samotherium*, especially in the presence of these suprafrontal *ossicusps* (conical bony horns). *Science*, Nov. 7, 1902, p. 752.

ossifiant (os′i-fī-a̤nt), *a.* [F. *ossifiant*, ppr. of *ossifier*, ossify, + *-ant*.] Becoming rigid as if ossifying; ossifying. [Rare.]

> Assuming, not that the human being has no skeleton, but that it is all skeleton, it rounds an *ossifiant* theory of progress on this negation of a soul; and having shown the utmost that may be made of bones, and constructed a number of interesting geometrical figures with death's-heads and humeri, successfully proves the inconvenience of the reappearance of a soul among these corpuscular structures. *Ruskin*, Unto this Last, p. 19.

ossificatory (os′i-fi-kā̤-tō-ri), *a.* [*ossific* + *-atory*.] Having a tendency to ossification; ossifying. [Rare.]

ossifier (os′i-fī-ėr), *n.* That which ossifies. *N. E. D.*

ossifluent (o-sif′lö̤-e̤nt), *a.* [L. *os* (*oss-*), bone, + *fluens* (*fluent-*), flowing.] Relating to or proceeding from disintegration of bone: said of an abscess associated with caries of bone.

ossifrage, *n.* **2.** The lammergeier, *Gypaëtus barbatus*.

> Hence its name *Ossifrage*, by which the Hebrew Peres is rightly translated in the Authorized Version of the Bible. *Newton*, Dict. of Birds, p. 503.

ossipite (os′ip-īt), *n.* [*Ossipee*, a local name connected with *Ossipees*, a tribe of Indians living at one time in New Hampshire, + *-ite*².] In *petrog.*, a variety of gabbro containing olivin, diallage, and labradorite. *Hitchcock*, 1871.

ossuary, *n.* **3.** A bone-cave, or deposit formed largely of bones, belonging to late geological times. *N. E. D.*

ostalgia (os-tal′jiä̤), *n.* [NL., < Gr. *ὀστέον*, bone, + *ἄλγος*, pain.] Pain in a bone.

ostarthritis (ost-är-thrī′tis), *n.* Same as ★*osteoarthritis*.

osteal, *a.* **2.** Relating to bony tissue.

osteamœba (os″tē̤-a̤-mē′bä̤), *n.*; pl. *osteamœbæ* (-bē). [NL., < Gr. *ὀστέον*, bone, + *ἀμοιβή*, exchange (see *amœba*).] A name applied to a bone-cell or bone-corpuscle. Compare ★*myamœba*, *neuramœba*, etc. *Coues*.

osteite (os′tē̤-īt), *n.* [Gr. *ὀστέον*, bone, + *-ite*².] See the extract.

> I have found it convenient to add two new terms to the general terminology of the skeleton. An independent cartilaginous element or centre of chondrification, is called a chondrite, an independent bony element or centre of ossification an *osteite*, both words being formed on the model of the well-known entomological term "sclerite." *Phil. Trans. Roy. Soc. London*, ser. B., 1891, p. 43.

osteitis, *n.*—**Condensing osteitis**, chronic inflammation of bone resulting in a deposit of new substance encroaching upon the Haversian spaces and the medullary cavity.—**Rarefying osteitis.** See *rarefy*.—**Vascular osteitis**, a form of chronic inflammation of bone, resembling rarefying osteitis, in which new blood-vessels are formed and occupy the spaces resulting from the loss of osseous substance.

osteoaneurism (os″tē̤-ō̤-a̤n′ṳ̄-rizm), *n.* [Gr. *ὀστέον*, bone, + E. *aneurism*.] Enlargement of a bone due to the growth of an aneurism in its medullary cavity.

osteoarthritic (os″tē̤-ō̤-är-thrit′ik), *a.* Relating to inflammation of a joint and of the bones entering into its formation.

> Prince discusses the *osteo-arthritic* changes which he believes are identical with those found in certain types of rheumatoid arthritis or osteo-arthritis.
> *Phil. Med. Jour.*, Jan. 31, 1903, p. 205.

osteoarthritis (os″tē̤-ō̤-är-thrī′tis), *n.* [Gr. *ὀστέον*, bone, + *ἀρθρῖτις*, inflammation of the joints.] Inflammation of a joint in which the bones are involved as well as the soft tissues: sometimes employed as synonymous with *arthritis deformans*. *Buck*, Med. Handbook, I. 544.

osteoarthropathic (os″tē̤-ō̤-är″thrō̤-path′ik), *a.* Of or pertaining to osteoarthropathy. *Med. Record*, June 27, 1903, p. 1054.

osteoarthropathy (os″tē̤-ō̤-är-throp′a̤-thi), *n.* [Gr. *ὀστέον*, bone, + *ἄρθρον*, joint, + *πάθος*, disease.] A disease of a joint in which the bones as well as the soft parts are affected. *Buck*, Med. Handbook, I. 96.—**Hypertrophic pulmonary osteoarthropathy**, an enlargement of various joints, swelling of the tips of the fingers, curvature of the nails, etc., associated with chronic pulmonary disease.

osteoarthrotomy (os″tē̤-ō̤-är-throt′ō̤-mi), *n.* [Gr. *ὀστέον*, bone, + *ἄρθρον*, joint, + *-τομια*, < *ταμεῖν*, cut.] Division through the articular end of a bone within the capsule of the joint.

osteocachectic (os″tē̤-ō̤-ka-kek′tik), *a.* Pertaining to or affected with osteocachexia.

osteocachexia (os″tē̤-ō̤-ka-kek′si-ä̤), *n.* [Gr. *ὀστέον*, bone, + NL. *cachexia*.] **1.** Cachexia resulting from long continued disease of the bones or joints.—**2.** Chronic disease affecting the structure of the bony tissues.

osteocartilaginous (osʺtẹ̄-ọ̄-kär-ti-laj′i-nus), *a.* [Gr. *ὀστέον*, bone, + E. *cartilaginous.*] Relating to both bone and cartilage.

osteochondrophyte (osʺtẹ̄-ọ̄-kon′drọ̄-fīt), *n.* [Gr. *ὀστέον*, bone, + *χόνδρος*, cartilage, + *φυτόν*, a growth.] Same as *osteochondroma.*

osteochondrosarcoma (osʺtẹ̄-ọ̄-konʺdrọ̄-sär-kō′mä̤), *n.*; pl. *osteochondrosarcomata* (-ma̤-tä̤). [NL., < Gr. *ὀστέον*, bone, + *χόνδρος*, cartilage, + *σάρκωμα*, sarcoma.] A tumor formed of sarcomatous masses inclosed in a framework of bone and cartilage. *Buck*, Med. Handbook, II. 123.

osteoderm (os′tẹ̄-ọ̄-dėrm), *n.* [Gr. *ὀστέον*, bone, + *δέρμα*, skin.] A bone or ossicle developed in the skin of an animal. Typical examples are the bony plates of crocodiles and the ossicles of the great extinct sloth, the *Grypotherium.*

> Exquisite examples of true dermal bones are those ossifications "within the skin" which in Amphibia and Reptiles are now generally called *osteoderms.* They occur also, among Mammalia, in the Armadillos, but in no other group of this class, unless it were in the Cetacea, where Kuckenthal has found traces of a dermal armour.
> *Proc. Zool. Soc. London*, 1902, p. 208.

osteodermal (osʺtẹ̄-ọ̄-dėr′ma̤l), *a.* [*osteoderm* + *-al*¹.] Relating to or having the character of an osteoderm, or bone developed in the skin.

osteofibroma (osʺtẹ̄-ọ̄-fī-brō′mä̤), *n.*; pl. *osteofibromata* (-ma̤-tä̤). [NL., < Gr. *ὀστέον*, bone, + NL. *fibroma.*] A tumor composed of osseous and fibrous elements. *Buck*, Med. Handbook, I. 269.

osteofibrous (osʺtẹ̄-ọ̄-fī′brus), *a.* [Gr. *ὀστέον*, bone, + E. *fibrous.*] Pertaining both to bone and to fibrous tissue.

osteogenous (os-tẹ̄-oj′e-nus), *a.* [Gr. *ὀστέον*, bone, + *-γενης*, -producing.] Same as *osteogenic.*

osteohalisteresis (osʺtẹ̄-ọ̄-ha-lisʺtẹ-rē′sis), *n.* [NL., < Gr. *ὀστέον*, bone, + *ἅλς*, salt, + *στέρησις*, deprivation.] Loss of the mineral portion of bone.

osteolysis (os-tẹ̄-ol′i-sis), *n.* [NL., < Gr. *ὀστέον*, bone, + *λύσις*, dissolution.] Softening and disintegration of bone.

osteolytic (osʺtẹ̄-ọ̄-lit′ik), *a.* Pertaining to or affected with osteolysis.

osteomalacosis (osʺtẹ̄-ọ̄-malʺa̤-kō′sis), *n.* [NL., < Gr. *ὀστέον*, bone, + *μαλακός*, soft, + *-osis.*] Same as *osteomalacia.*

osteomatoid (os-tẹ̄-om′a̤-toid), *a.* [*osteoma*(*t*-) + *-oid.*] Resembling a bone tumor.

osteoncus (os-tẹ̄-ong′kus), *n.*; pl. *osteonci* (-on′sī). [Gr. *ὀστέον*, bone, + *ὄγκος*, mass (tumor).] A bone tumor.

osteonecrotic (osʺtẹ̄-ọ̄-ne-krot′ik), *a.* [*osteonecrosis* (*-ot-*) + *-ic.*] Pertaining to or affected with necrosis of bone tissue.

osteopath (os′tẹ̄-ọ̄-path), *n.* [A back-formation from *osteopathy.*] A believer in the treatment of disease by osteopathy; specifically, one who professes to cure disease by that method.

> The exclusion of *osteopaths* from the ranks of medical practitioners is eminently just, until they meet in their schools the four-year educational requirements for other practitioners. *Detroit Med. Jour.*, Feb., 1903, p. 725.

osteopathic (osʺtẹ̄-ọ̄-path′ik), *a.* [*osteopath-y* + *-ic.*] Of or pertaining to osteopathy; practising osteopathy.

osteopathically (osʺtẹ̄-ọ̄-path′i-ka̤l-i), *adv.* According to the system of osteopathy; by means of osteopathy.

osteopathist (os-tẹ̄-op′a̤-thist), *n.* [*osteopath*(*y*) + *-ist.*] Same as ★*osteopath.*

osteopathy (os-tẹ̄-op′a̤-thi), *n.* [Gr. *ὀστέον*, bone, + *πάθος*, disease.] 1. A theory of disease and a method of cure, advocated by Dr. A. T. Still, resting upon the supposition that most diseases are traceable to deformation of some part of the skeleton (often due to accident) which, by mechanical pressure on the adjacent nerves and vessels, interferes with their action and the circulation of the blood. As a remedy a form of manipulation is used. —2. Any disease of the bones.

osteoperiosteal (osʺtẹ̄-ọ̄-per-i-os′tẹ̄-a̤l), *a.* [Gr. *ὀστέον*, bone, + NL. *periosteum* + *-al*¹.] Relating to bone and its periosteal covering.

osteophage (os′tẹ̄-ọ̄-fāj), *n.* [G. *ὀστέον*, bone, + *-φαγος*, < *φαγεῖν*, eat.] Same as *myeloplax.*

osteophagus (os-tẹ̄-of′a̤-gus), *n.*; pl. *osteophagi* (-jī). [NL., 'bone-eating,' < Gr. *ὀστέον*, bone, + *-φαγος*, < *φαγεῖν*, eat. Compare *sarcophagus*, 'flesh-eating.'] A box or coffin in which to bury bones. [Rare.]

> Among the boxes of bones found in the caves of the Mount of Olives . . . brought from elsewhere, for interment near the expected site of the Last Judgment . . . one *osteophagus* bears the name of 'Judah' in Hebrew, with a square cross marked below.
> *Edinburgh Rev.*, Jan., 1895, p. 210.

osteophone (os′tẹ̄-ọ̄-fōn), *n.* [Gr. *ὀστέον*, bone, + *φωνή*, sound.] Same as *audiphone.*

osteophyma (osʺtẹ̄-ọ̄-fī′mä̤), *n.*; pl. *osteophymata* (-ma̤-tä̤). [NL., < Gr. *ὀστέον*, bone, + *φῦμα*, growth.] A bone tumor.

osteoporotic (osʺtẹ̄-ọ̄-pọ̄-rot′ik), *a.* Of or pertaining to osteoporosis. *Buck*, Med. Handbook, I. 610.

osteoporous (os-tẹ̄-op′ọ̄-rus), *a.* [Gr. *ὀστέον*, bone, + *πόρος*, pore, + *-ic.*] Same as ★*osteoporotic.* *Buck*, Med. Handbook, II. 121.

Osteopulmonary arthropathy. See ★*arthropathy.*

osteoscopy (os-tẹ̄-os′kọ̄-pi), *n.* [Gr. *ὀστέον*, bone, + *-σκοπια*, < *σκοπεῖν*, view.] The examination and scientific comparison of bones, particularly of the bones of the extremities. *Rep. Brit. Ass'n Advancement of Sci.*, 1900, p. 904.

osteotome, *n.* 2. A form of chisel used to divide the bone in the operation of osteotomy for the correction of deformity.

osteotomoclasis (osʺtẹ̄-ọ̄-tọ̄-mok′la̤-sis), *n.* [NL., < Gr. *ὀστέον*, bone, + *τόμος*, section, + *κλάσις*, breaking.] An operation for the correction of abnormal curvatures in a long bone. It consists in division of part of the bone with an osteotome and forcible fracture of the remainder.

osteotomy, *n.*—**Cuneiform osteotomy**, the excision of a wedge-shaped piece of bone.—**Linear osteotomy**, longitudinal division of a bone.

osthexia (os-thek′si-ä̤), *n.* [NL., irreg. < Gr. *ὀστέον*, bone, + *ἕξις*, condition.] A tendency to abnormal ossification.

osthexy (os′thek-si), *n.* Same as ★*osthexia.*

ostial (os′ti-a̤l), *a.* [L. *ostium* + *-al*¹.] Of or pertaining to an ostium.

ostiate (os′ti-āt), *a.* [NL. **ostiatus*, < L. *ostium*, a door.] Provided with ostia. The heart of an arthropod or annelid, which communicates with the surrounding blood-spaces through lateral apertures or ostia, is ostiate.

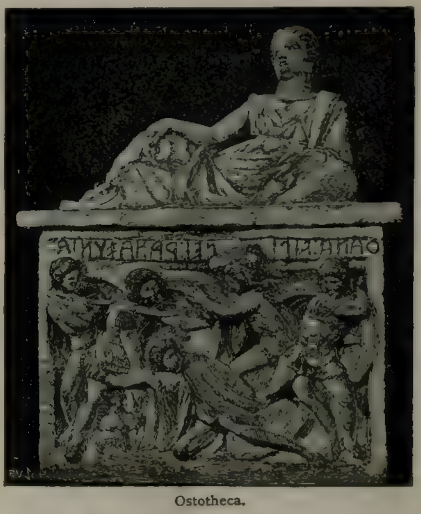
> The parapodial jaws and the *ostiate* heart cannot be supposed to have been both developed independently in each group of arthropods, or in any two of them.
> *E. R. Lankester*, in Nat. Sci., April, 1897, p. 266.

ostiole, *n.* (*b*) In *zoöl.*: (2) One of the small inhalant pores or orifices of sponges.

ostium, *n.* (*b*) In *zoöl.*: (2) In sponges, the opening of an incurrent canal.—**Ostium tubæ**, the abdominal opening of the oviduct or Fallopian tube.

Ostmannic (ōst-man′ik), *a.* Of or pertaining to the Ostmen.

ostotheca (os-tọ̄-thē′kä̤), *n.*; pl. *ostothecæ* (-sē). [Gr. *ὀστοθήκη*, < *ὀστέον*, bone, + *θήκη*, receptacle.] In *Gr. antiq.*, a vase or other receptacle for bones; an ossuary.



Ostotheca.

> A good many of these *ostothecæ* remain intact.
> *W. R. Paton*, in Jour. Hellenic Studies, VIII. 69.

ostotic (os-tot′ik), *a.* [*ostosis.*] Pertaining to bone produced under a greatly increased circulation of the blood, such as is formed during the growth of antlers.

> Subperiosteal *ostotic* outgrowths of the cranial bones, covered presumably with thickened skin-pads.
> *Proc. Zool. Soc. London*, 1902, p. 215.

Ostraciidæ (os-trạ̄-sī′i-dē), *n. pl.* [NL., < *Ostraci*(*on*) + *-idæ.*] A family of fishes living in tropical waters: commonly known as the *trunk-fishes.*

ostracioid (os-trā′si-oid), *a.* [*Ostraci*(*on*) + *-oid.*] Resembling or belonging to the *Ostraciidæ.*

ostracitis (os-tra̤-sī′tis), *n.* [Gr. *ὀστρακῖτις*, cadmia, fem. of *ὀστρακίτης*, earthen, < *ὄστρακον*, shell.] An old name for zinc oxid occasionally met with as an incrustation in the cooler parts of smelting-furnaces.

ostracizable (os′trạ̄-sīz-a̤-bl), *a.* [*ostraciz*(*e*) + *-able.*] That can be ostracized.

ostracizer (os′trạ̄-sī-zėr), *n.* One who ostracizes, exiles, banishes, or excludes from favor.

ostracod (os′tra̤-kod), *n.* Same as *ostracode.*

ostracodal (os-tra̤-kō′da̤l), *a.* [NL. *Ostracod*(*a*) + *-al*¹.] Pertaining to or having the characteristics of the *Ostracoda.*

Ostracodermi, *n. pl.* 2. Same as ★*Ostracophori*, but in that sense preoccupied.

ostracoid (os′tra̤-koid), *a.* and *n.* [Gr. **ὀστρακοειδής*, otherwise *ὀστρακώδης*, like an earthen pot or shard, < *ὄστρακον*, an earthen pot, a shard, + *εἶδος*, form.] I. *a.* Having the characters of or pertaining to the *Ostracoda.*

II. *n.* One of the *Entomostraca* allied to the *Ostracoda.*

ostracological (osʺtra̤-kọ̄-loj′i-ka̤l), *a.* Of or pertaining to ostracology or conchology.

ostracology (os-tra̤-kol′ọ̄-ji), *n.* [Gr. *ὄστρακον*, a shell, + *-λογια*, < *λέγειν*, speak.] Conchology.

ostracon (os′tra̤-kon), *n.*; pl. *ostraca* (-kä̤). [Gr. *ὄστρακον*, an earthen vessel, a potsherd, etc. See *ostracize.*] In *Gr. antiq.*, a potsherd or tile; a square plaque of terra-cotta on which an inscription is written.

Ostracophori (os-tra̤-kof′ọ̄-rī), *n. pl.* [NL., < Gr. *ὄστρακον*, a shell, + *φέρειν*, bear.] A division of fishes, commonly regarded as a subclass, containing extinct species whose remains are found from the Silurian to the Lower Carboniferous. Jaws, a segmented backbone, and limb-arches are wanting, and the head and front part of the body are protected by bony plates. The term is in common use, though antedated by *Aspidoganoidei.* *Gill*, 1876.

ostracothere (os′tra̤-kọ̄-thēr), *n.* [NL. *Ostracotherea*, < Gr. *ὄστρακον*, shell, + *θηρίον*, beast.] An ostrocode crustacean of the genus *Ostracotheres.*

ostreal (os′trẹ̄-a̤l), *a.* [L. *ostre*(*a*), oyster, + *-al*¹.] Of or pertaining to oysters. [Rare.]

ostrean (os′trẹ̄-a̤n), *a.* Ostreal; ostracean.

ostreger † (os′tre-jėr), *n.* [Also *ostringer*, etc.] Same as *austringer.*

> Eustace Saxby, the falconer (or *ostreger*, as he preferred to be styled), was as gallant-looking as the hardy birds on his fist. *W. H. Ainsworth*, Ovingdean Grange, p. 63.

ostreicultural (osʺtrẹ̄-i-kul′t̬ṳ̄r-a̤l), *a.* Of or pertaining to ostreiculture.

ostreoid (os′trẹ̄-oid), *a.* [L. *ostrea*, oyster, + *-oid.*] Like an oyster.

ostreophage (os′trẹ̄-ọ̄-fāj), *n.* [Gr. *ὄστρεον*, oyster, + *-φαγος*, < *φαγεῖν*, eat.] Same as *ostreophagist.*

ostreophagous (os-trẹ̄-of′a̤-gus), *a.* [*ostreophag*(*e*) + *-ous.*] Feeding on or eating oysters.

ostrich, *n.* Four species of ostriches are now recognized, the name *Struthis camelus* being restricted to the northern species that ranges into Arabia. *S. molybdophanes* is from Somaliland, and *S. meridionalis* or *masaicus* from Central Africa. The southern species, *S. australis*, is the one that has been partially domesticated and is kept in ostrich-farms for the sake of its feathers. The eggs of these species differ quite as much as do the birds themselves, that of *S. camelus* being quite smooth while the others are more or less deeply pitted.

Ostrich-feather grass, the common reed, *Trichoon Phragmites.*

ostrichism (os′trich-izm), *n.* [*ostrich* + *-ism.*] Conduct like that of the ostrich: alluding to its habit of considering itself wholly concealed when only its head is hidden. [Rare.]

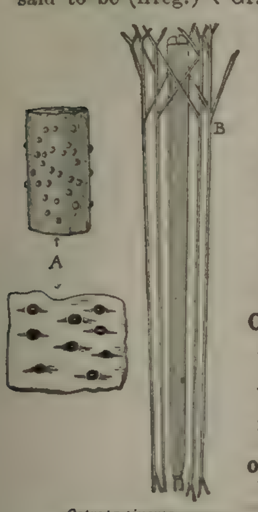
ostriculture (os′tri-kul-t̬ṳ̄r), *n.* Same as *ostreiculture.*

ostringer †, *n.* Same as *austringer.*

ostrog (os-trōg′), *n.* [Russ. *ostrogŭ.*] In Siberia, a stockaded house or village.

Ostrogothian (os-trọ̄-goth′i-a̤n), *a.* Same as *Ostrogothic.*

Ostropa (os′trọ-pä̤), *n.* [NL. (Fries, 1825), said to be (irreg.) < Gr. *ὄστρακον*, a shell, + *ὄψις*, appearance.] A genus of ascomycetous fungi having the ascocarps globose, corky, at first sunken in the host, finally erumpent and opening by a narrow longitudinal slit. The spores are filiform, hyaline, and many-celled. Only a few species are known. They occur on dead branches.



Ostropa cinerea.

A, about one-half natural size, and several fruit bodies; B, ascus, or spore-sack, with paraphyses highly magnified.

Ostropaceæ (os-trọ-pā′sẹ̄-ē), *n. pl.* [NL., < *Ostropa* + *-aceæ.*] A family of ascomycetous fungi named from the genus *Ostropa.* See ⋆*Ostropa.*

ostruthin (os-trö′thin), *n.* [NL. *Ostruth-(ium)* + *-in*^{2}.] A nearly tasteless crystalline compound, $C_{18}H_{20}O_3$, obtained by extracting the root of *Imperatoria Ostruthium* with alcohol. Its solutions in alcohol and in alkali have a strong blue fluorescence.

Ostwald's dilution law. See ⋆*dilution.*

osur (ō′sör), *a.* [Heb., < *āsar*, bind.] Among the Jews, forbidden: a rabbinical term applied to things ritual or secular. Opposed to ⋆*muter* (which see).

O. T. An abbreviation (*b*) of *on track* (railroad).

Otakia (ọ-täk′i-ä̤), *n.* [NL., named in honor of its discoverer, Professor K. *Otaki* of the Imperial College of Agriculture at Sapporo.] A genus of Japanese fishes of the family *Cyprinidæ,* found in Lake Biwa. The species is *Otakia rasbornia.*

otalli (ō-tal′yē), *n.* Same as ⋆*otate.*

Clavigero describes the Mexican tlacochtli or dart, a small lance of *otalli* or some other strong wood.
Smithsonian Rep. (*Nat. Mus.*), 1900, p. 220.

Otapiri (ō-tạ-pē′ri), *n.* In *geol.*, a subdivision of the Triassic system in New Zealand, lying at the top, above the Wairoa beds, and bearing fossils which indicate its equivalence with the Rhætic stage.

otarian (ọ-tā′ri-ạn), *a.* [NL. *Otaria* + *-an.*] Relating to, resembling, or having the characters of, the eared seals, *Otariidæ;* otarine.

Otarioidea (ọ-tā-ri-oi′dẹ̄-ä̤), *n. pl.* [NL., < *Otari(a)* + *-oidea.*] The eared seals, *Otariidæ,* raised to the rank of a superfamily: correlative with *Phocoidea* and *Rosmaroidea.* See cut at *otary.*

otate (ō-tä′tạ̈), *n.* [Mex. *otate,* < Nahuatl *otatli,* bamboo.] In Mexico, *Chusquea Nelsoni* (= *Guadua amplexifolia*), and several other giant grasses used by the ancient Mexicans for making darts and lances, and now used for making baskets and for other domestic purposes.

otatli (ō-tät′lē), *n.* Same as ⋆*otate.*

otedama (ō-tā-dä′mä), *n.* [Jap., < *o* (Chin. *o*), an exclamation or introductory syllable, + *te,* hand, + *tama,* ball, bead.] In Japan, among children, little stones or marbles (or sometimes very small bags filled with rice) used in playing a game like jackstones.

otherest (uᴛʜ′ėr-est), *a.* [*other*^{1} + *-est.*] Most different. [Rare.]

Other men are lenses through which we read our own minds. Each man seeks those of different quality from his own, and such as are good of their kind; that is, he seeks other men, and the *otherest.* The stronger the nature, the more it is reactive.
Emerson, Uses of Great Men, in Representative Men, [p. 12.

otherism (uᴛʜ′ėr-izm), *n.* [*other*^{1} + *-ism.*] Regard for the rights, welfare, and point of view of others; altruism; in evolutionary philosophy, "the struggle for the life of others," especially for the life of offspring. [Rare.]

The significant note is ethical, the development of *Other-ism* as Altruism—its immediate and inevitable outcome. *H. Drummond,* Ascent of Man, p. 17.

othertime (uᴛʜ′ėr-tīm), *adv.* At another time.

As Mr. Dorsey observes, there were no sacred rites connected with lodge-building or tent-making at the time of examination; yet the symbolism elsewhere or *othertime* connected with such ceremonials persisted.
Smithsonian Rep. (*Bur. of Ethnol.*), 1891–92, p. lv.

othertimes (uᴛʜ′ėr-tīmz), *adv.* At other times. [Obsolete or rare.]

otherwhence (uᴛʜ′ėr-hwens), *adv.* From otherwhere.

otherwiseness (uᴛʜ′ėr-wīz-nes), *n.* The state of being otherwise.

othniid (oth′ni-id), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Othniidæ.*

II. *a.* Having the characters of or belonging to the family *Othniidæ.*

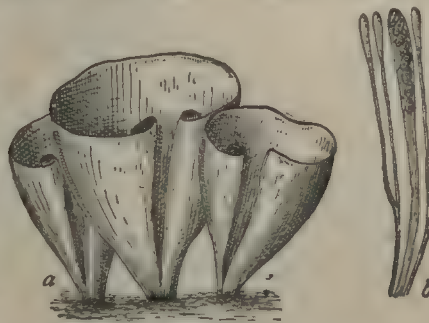
otiant (ō′shi-ạnt), *a.* [L. *otians,* ppr. of *otiari,* take one's ease. See *otiation.*] Taking one's ease; idling; indolent.

otiatria (ō-ti-at′ri-ä̤), *n.* [NL., < Gr. *οὖς* (*ὠτ-*), ear, + *ἰατρεία,* medical treatment.] Same as *otiatrics.*

otiatric (ō-ti-at′rik), *a.* [NL. *otiatr(ia)* + *-ic.*] Of or pertaining to the medical treatment of the ear.

oticodinia (ō″ti-kọ̄-din′i-ä̤), *n.* [NL., < Gr. *ὠτικός,* of the ears, + *δῖνος,* a whirling.] Dizziness associated with disease of the ear; Ménière's disease.

Otidea (ọ-tid′ẹ̄-ä̤), *n.* [NL. (Persoon, 1851), < Gr. *οὖς* (*ὠτ-*), ear.] A genus of fleshy discomycetous fungi of the family *Pezizaceæ,* having smooth, more or less irregular ascocarps, usually split on one side, and the margins convolute. The species are mostly large and brownish, and grow on the ground. *O. Onotica* is a common species in Europe and America.



Otidea Onotica.

a, ascocarps.; *b*, antheridium with paraphyses. (From Engler and Prantl's "Pflanzenfamilien.")

otiorhynchid (ō″ti-ọ-ring′kid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Otiorhynchidæ.*

II. *a.* Having the characters of or belonging to the family *Otiorhynchidæ.*

otiosely (ō′shi-ōs-li), *adv.* In an otiose or perfunctory manner; futilely.

otioseness (ō′shi-ōs-nes), *n.* Otiosity; perfunctoriness; futility.

otitic (ọ-tit′ik), *a.* [*otit(is)* + *-ic.*] Relating to or affected with otitis.—**Otitic meningitis.** See ⋆*meningitis.*

otoba-fat (ō-tō′bä̤-fat″), *n.* Same as *otoba-butter.*

otobite (ō′tọ-bīt), *n.* [NL. *Otoba* (see def.) + *-ite*^{2}.] A tasteless crystalline substance, $C_{24}H_{26}O_5$, insoluble in water, which is found in the fat of the fruits of *Myristica Otoba.*

Otocystic canal, in cephalopods and other mollusks, a narrow passage which leads from the organ of hearing to the exterior. It is closed externally in the nautilus and other species.

otodynic (ō-tọ-din′ik), *a.* [Gr. *οὖς* (*ὠτ-*), ear, + *ὀδύνη,* pain, + *-ic.*] Pertaining to or affected with otodynia or earache.

otogenic (ō-tọ-jen′ik), *a.* [Gr. *οὖς* (*ὠτ-*), ear, + *-γενης,* -producing, + *-ic.*] Of aural origin; originating in the ear.

otogenous (ọ-toj′e-nus), *a.* Same as ⋆*otogenic.*

Otol. An abbreviation of *otology, otological.*

otolaryngologic (ō″tọ-lạ̄-ring″gọ-loj′ik), *a.* Of or pertaining to otolaryngology. Also *otolaryngological.*

The Western Ophthalmologic and *Oto-Laryngologic* Association. *Detroit Med. Jour.*, Feb., 1903, p. 732.

otolaryngology (ō″tọ-lar-ing-gol′ọ-ji), *n.* [Gr. *οὖς* (*ὠτ-*), ear, + *λάρυγξ,* larynx, + *-λογια,* < *λέγειν,* speak.] Otology and laryngology regarded as a single specialty in medical practice.

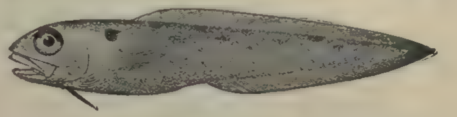
otolith, *n.* 1. (*b*) One of the calcareous concretions found in various sensory organs of lower animals, as hydromedusans, ctenophorans, holothuroideans, worms, and crustaceans, and considered to be functional in the auditory or equilibrium sense.

Otomian (ō-tō-mē′ạn), *a.* and *n.* **I.** *a.* Pertaining or belonging to the Otomis, or to the Otomi stock. See *Century Cyclopedia of Names.*

II. *n.* A member or the language of the Otomi stock.

otopathic (ō-tọ-path′ik), *a.* [*otopath-y* + *-ic.*] Relating to or suffering from otopathy or disease of the ear.

Otophidium (ō-tō-fid′i-um), *n.* [NL., < Gr. *οὖς* (*ὠτ-*), ear, + NL. *Ophidium.*] A genus of fishes of the family *Ophidiidæ,* found on the coasts of tropical America.



Otophidium omostigmum.
(From Bulletin 47, U. S. Nat. Museum.)

otopiesis (ō-tọ-pī′e-sis), *n.* [NL., < Gr. *οὖς* (*ὠτ-*), ear, + *πίεσις,* a pressing.] A sinking in of the drum membrane consequent upon a partial vacuum in the middle ear; also, pressure from any cause on the labyrinth, or internal ear, and the consequent deafness.

otorhinolaryngology (ō″tọ-rī″nọ-lar-ing-gol′ọ-ji), *n.* [Gr. *οὖς* (*ὠτ-*), ear, + *ῥίς* (*ῥιν-*), nose, + *λάρυγξ,* larynx, + *-λογια,* < *λέγειν,* speak.] The medical specialty which deals with diseases of the ear, nose, and larynx. *Nature,* Oct. 2, 1902, p. 554.

otosclerosis (ō″tọ-sklẹ̄-rō′sis), *n.* [NL., < Gr. *οὖς* (*ὠτ-*), ear, + *σκλήρωσις,* hardening.] **1.** A hardening of the tissues and ankylosis of the ossicles of the middle ear.—**2.** A growth of spongy bone substance in the capsule of the internal ear.

otoscope, *n.*—**Siegle's otoscope,** an ear-speculum in which, by varying the air-pressure, the drum membrane may be made to move while under inspection.—**Toynbee's otoscope,** an instrument resembling a stethoscope, which consists of a flexible rubber tube with an ear-piece at each end. One of these is inserted into the auditory meatus of the patient, the other into that of the examiner.

otosphenal (ō-tọ-sfē′nạl), *n.* [Gr. *οὖς* (*ὠτ-*), ear, + *σφήν,* wedge, + *-al*^{1}.] The basioccipital, a bone at the posterior base of the cranium, in fishes, to which the vertebral column is attached. *Starks,* Synonymy of the Fish Skeleton, p. 533.

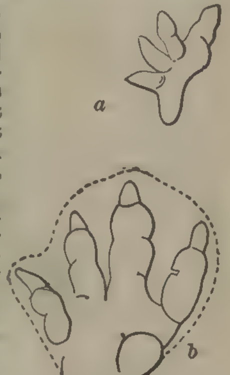
otosphenoidal (ō″tọ-sfẹ̄-noi′dạl), *a.* [Gr. *οὖς* (*ὠτ-*) ear, + E. *sphenoidal.*] Relating to the sphenoid and bony parts of the ear collectively.

Ototyphlonemertes (ō″tọ-tif″lọ-nẹ̄-mėr′tēz), *n.* [NL.] The typical and only genus of the family *Ototyphlonemertidæ.* *Diesing.*

Ototyphlonemertidæ (ō″tọ-tif-lọ-nẹ̄-mer′ti-dē), *n. pl.* [NL.] A family of nemerteans of the order *Metanemertini,* consisting of small forms, with bodies nearly cylindrical, eyes absent, and one pair (rarely two) of otocysts ventral to the brain. It contains the single genus *Ototyphlonemertes.*

Otozoum (ō-tọ-zō′um), *n.* [NL., < Gr. *οὖς* (*ὠτ-*), ear, + *ζῷον,* animal.] The generic name applied to the footprints of a gigantic extinct dinosaurian reptile that usually walked erect on its hind legs with a stride a yard long. These tracks are found in the red Newark sandstones of the Connecticut valley, twenty-four such consecutive imprints having been exposed in one of the quarries at Portland, Connecticut.

Otrantine (ọ-tran′tin), *a.* Of or pertaining to Otranto in Italy: as, the *Otrantine* dialect.



Otozoum moodii.

a, fore foot; *b*, hind foot. (× 1/18). Hitchcock.

Otrynter (ō-trin′tėr), *n.* [NL., < Gr. *ὀτρυντήρ,* one who stirs up, < *ὀτρύνειν,* stir up.] A genus of deep-water sparoid fishes found off the west coast of Florida.

otter^1 (ot′ėr), *v. i.* [*otter*^{1}, *n.*] **1.** To hunt otters with dogs.—**2.** (*a*) To fish with a float and hooks. See ⋆*otter-board.* (*b*) To fish with line and flies. See *otter*^{1}, *n.*, 4. [U. S.]

otter-board (ot′ėr-bōrd), *n.* In *fishing*, a floating board from which fishing-lines are suspended. It is sometimes rigged with tow-lines so attached to it that it is driven far out from shore at an angle against the current, as a kite rises in the air.

otterer (ot′ėr-ėr), *n.* One who fishes with an otter. See *otter*¹, *n.*, 4. *N. E. D.*

otterman (ot′ėr-man), *n.* Same as ★*otterer*. *N. E. D.*

otter-moth (ot′ėr-môth), *n.* An English hop-growers' name for the ghost-moth, *Epialus humuli*, whose larvæ feed on the roots of the hop-plant.

otter-raft (ot′ėr-ráft), *n.* In Alaska, a bed of seaweed or kelp which sea-otters frequent.

otter-sheep (ot′ėr-shēp), *n.* See *otter*¹, 5.

Otto cycle. See ★*cycle*¹, 12.

Ottomanean (ot-ọ-man′ẹ-an), *a.* [*Ottoman* + *-e-an.*] Of or pertaining to the Ottoman Turks. [Rare.]

Ottomanic (ot-ō-man′ik), *a.* and *n.* [*Ottoman* + *-ic.*] **I.** *a.* Of or pertaining to the Ottoman Turks; Ottoman.

II. *n.* One of the family or tribe of Osman or Othman; one of the Turkish subjects of the Sultan; an Osmanli.

Ottomanize (ot′ọ-man-īz), *v. t.*; pret. and pp. *Ottomanized*, ppr. *Ottomanizing*. [*Ottoman* + *-ize.*] To render Turkish or Ottoman.

> Midhat Pasha was seeking by law and method to *Ottomanize* European Turkey.
> *Eclectic Mag.*, Oct., 1895, p. 564.

Ottweiler (ot′vī-lėr), *n.* [From a G. local name.] In *geol.*, a division of the Coal-measures of North Germany, comprising the upper portion of the series, in beds from 7,000 to 10,000 feet thick, consisting of sandstone and shale with several coal-seams.

O-tube (ō′tūb), *n.* A capillary tube in the shape of an elongated letter O sealed to a capillary compression-tube. The lower portion contains mercury, above which on one side is a liquefied gas, on the other its saturated vapor and a drop of liquid. The volume of the liquid is determined from the differences in the heights of the mercury and the liquid columns. *M. W. Travers*, Exper. Study of Gases, p. 250.

O. U. An abbreviation of *Oxford University*.

O. U. A. An abbreviation of *Order of United Americans*.

ouabaic (wä-bā′ik), *a.* [*ouaba*(*in*) + *-ic.*] Noting an amorphous, gum-like acid, $C_{30}H_{48}O_{13}$, obtained by the action of caustic alkalies upon ouabain.

ouabain (wä-bä′in), *n.* [*ouabaio* (*wabaio*) + *-in*².] A glucoside which exists in the root and wood of ouabaio (wabaio), *Acokanthera ouabaio*, from which is prepared the arrow-poison of the Somalis of the east coast of Africa. The pure glucoside crystallizes in colorless transparent needles, which are extremely poisonous (twice as much so as strophanthin) when introduced directly into the circulation, though harmless when swallowed. It has been proposed for medicinal use instead of digitalin. Also *wabain*.

ouabaio (wä-bī′ō), *n.* [Somali name.] 1. Either of two shrubs or small trees of the dogbane family, *Acokanthera Ouabaio* and *A. Schimperi*, the juice of which is used, by certain African tribes, to poison arrows.—2. An arrow-poison used by the Somalis and prepared from the root and wood of various species of *Acokanthera*. It contains ouabain. Also *wabaio*.

ouachitite (wä′shi-tīt), *n.* [*Ouachita* river, Arkansas, + *-ite*².] In *petrog.*, a dark-colored aphanitic porphyry composed of a glassy ground-mass with large phenocrysts of biotite and very subordinate augite and magnetite; a fourchite rich in biotite. *Kemp*, 1890.

ouananiche (wä-nä-nish′), *n.* [Prop. **wananish*, recorded also as *winninish*: < Canadian F. *ouananiche*, from a Montagnais Indian name, said to be from *wanan*, salmon.] A common name of a subspecies of the Atlantic salmon, *Salmo salar ouananiche*, found in the Saguenay river, Canada, and neighboring waters. Being more active and vigorous, though smaller, than the salmon, it has attracted much attention from fishermen. *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 264.

> My premonition proved to be correct. When that Kri-karee, invisibly attached to my leader, went floating down the stream, the *ouananiche* was surprised. It was the fourteenth of September, and he had supposed the grasshopper season was over. The unexpected temptation was too strong for him. He rose with a rush, and in an instant I was fast to the best land-locked salmon of the year.
> *H. van Dyke*, Fisherman's Luck, p. 43.

oubliette (ö-bli-et′), *v. t.*; pret. and pp. *oublietted*, ppr. *oublietting*. [*oubliette*, *n.*] To imprison in an oubliette.

> Could you keep her
> Indungeon'd from one whisper of the wind,
> Dark even from a side glance of the moon,
> And *oublietted* in the centre.
> *Tennyson*, Becket, iv. 2.

oud, *n.* See ★*'ud*.

ouf (ouf), *interj.* [Also *ouff*; = F. *ouf*; imitative of an impatient utterance.] 1. An exclamation of discomfort or impatience.—2. An imitation of a dog's bark.

ouija (wē′yä′, in American use wē′jä), *n.* [Formed as a trade-mark name, from F. *oui*, yes, + G. *ja*, yes. The name thus implies 'a thing that will answer *yes* in any language' — a good description of a well-managed planchette.] A form of planchette, consisting of a board marked with the letters of the alphabet and the ten numerals, and of the planchette proper, which (under the hand of the operator) moves over the board and touches certain letters and numerals and thus 'answers' questions.

> The next higher grade of motor automatism, involving considerable subconscious action of intelligence, is found in the various alphabet-using forms of amateur mediumship, such as table tipping, the '*Ouija*-board,' and certain other devices for making our muscles leaky and liable to escape from control.
> *Pop. Sci. Mo.*, Jan., 1904, p. 195.

oulap (ö′lap), *n.* [South African Dutch.] A copper coin; specifically, an English penny.

oulitis (ö-lī′tis), *n.* [NL., < Gr. *οὖλον*, gum, + *-itis.*] Inflammation of the gums; gingivitis.

ounce¹, *n.* 4. A gold coin of Australia struck in 1853.

ounce-stuff (ouns′stuf), *n.* In *mining*, quartz which yields about an ounce of gold per ton. [Australia.]

ouralium (ö-rā′li-um), *n.* [NL. in French style, < F. *Oural*, *Ural* (mountains in Russia).] The name of a supposed new metal announced by Guyard as occurring in native platinum from Russia. Its existence has not been confirmed.

Ouralo-Altaic (ö″ra-lō-al-tā′ik), *a.* Same as *Ural-Altaic*. See *Altaic family of languages*, under *Altaic*.

Ourouparia (ör-ọ-pā′ri-ạ̈), *n.* [NL. (Aublet, 1775), from *y-ourou-pari*, a Carib name of the type species.] A genus of dicotyledonous plants belonging to the family *Rubiaceæ*. See *Uncaria*.

-ous. 2. In *chem.*, a suffix used to denote the presence in a compound of a relatively electronegative constituent in smaller proportion than in the corresponding compound of which the name bears the suffix *-ic*. In each case the suffix is attached to the name of the relatively electropositive constituent, as *ferrous* oxid (FeO) and *ferric* oxid (Fe_2O_3), *stannous* chlorid ($SnCl_2$) and *stannic* chlorid ($SnCl_4$).

oustee (ous-tē′), *n.* One who is ousted. [Rare.]

> To turn from general to particular retrospect, we may mention the omission of "*oustee*," which we have just found in Perkins's 'Profitable Book' (1642).
> *Athenæum*, May 28, 1904, p. 284.

out, *n.* 4. In *printing*, the omission by the type-setter of a word or of lines in the copy.

outage (ou′tāj), *n.* [*out* + *-age.*] 1. In *elect.*, the failure of an arc-lamp, in a series arc-circuit, to start when current is sent into the circuit.

> The lamp hours were 54,187; percentage of lamp *outage*, 6–10; globes broken, 23.
> *Elect. World and Engin.*, April 18, 1903, p. 653.

2. A charge made by the State of Maryland for the labor of handling tobacco inspected for export.

outblaze (out-blāz′), *v.*; pret. and pp. *outblazed*, ppr. *outblazing*. **I.** *trans.* To blaze more brightly than; outshine.

II. *intrans.* To blaze out; to burst from within.

outblaze (out′blāz), *n.* A blazing out, literally or figuratively.

outblowing (out′blō″ing), *a.* Blowing out (from).

> Blowing towards and in upon the polar regions to make good the drain caused by the surface *outblowing* south-easterly winds.
> *Geog. Jour.*, XVI. 406.

outboard, *a.* 2. In *mech.*, situated on the outer side or the side farther from the main center. Thus, the outboard bearing of a fly-wheel on an engine is the bearing which is farther from the crank than the fly-wheel itself, the inboard bearing being between the fly-wheel and the crank.

out-book (out′bůk), *n.* Short for ★*out-clearing book*.

outbred (out′bred), *p. a.* Produced by out-breeding; bred outside the stock or pair of animals under consideration: contrasted with *inbred*. See ★*outbreed*.

> Before the cause of the great preponderance of the number of wild-coloured mice in the litters of pure-bred over the number of those in the litters of cross-bred albinos can be ascertained waltzing mice must be crossed with in-bred and *out-bred* pure-bred albinos and in-bred and *out-bred* cross-bred albinos.
> *Biometrika*, Feb., 1903, p. 171.

> *Out-bred* cross-bred mice were obtained by crossing black or yellow mice with albinos.
> *Biometrika*, Jan., 1904, p. 6.

outbreed (out′brēd), *v. t.* and *i.* To breed outside the limits of the family, variety, race, or tribe.

outbreeding (out′brē″ding), *n.* 1. In *biol.*, the crossing of a pure strain of organisms with members of another strain or of the same strain from another locality.

> "In-and-in breeding," "*outbreeding*," and other expressions relating to the close or distant relationship of parents have been prominent subjects among animal breeders.
> *U. S. Dept. Agri.* (Div. Veg. Physiol. and Pathol.), Bulletin 29, 1901, p. 38.

2. In *ethnol.*, the custom of intermarrying or interbreeding outside the tribe.

> Since the tribes practiced far more in-breeding than *out-breeding*, the tendency was toward forming not only verbal linguistic groups, but biological varieties.
> *Encyc. Brit.*, XXV. 372.

outburst, *n.* 2. In *mining*: (*a*) A sudden outbreak of gas or water in a mine. (*b*) The outcrop.

outcast, *n.* 5. Material ejected; specifically, in *astron.*, ejected matter which lies outside of the nucleus of the sun.

> I fear, therefore, that Miss Clerke's division of the solar *outcasts* into "several distinct envelopes" overlying the photosphere (p. 16)—reversing layer, chromosphere, corona, etc.—is somewhat too definite.
> *Astrophysical Jour.*, Sept., 1903, p. 158.

outcaste (out-kást′), *v. t.*; pret. and pp. *outcasted*, ppr. *outcasting*. To put (a person) out of his caste; cause to lose caste.

outclass (out-klás′), *v. t.* To surpass (another, especially a competitor or rival), so as to belong to a higher class.

> Lady Dainty *outclassed* her field in the steeplechase, and Mara . . . waited with her to the last jump, then went to the front and won cleverly.
> *N. Y. Com. Advertiser*, April 11, 1901.

out-clearer (out′klēr″ėr), *n.* In the bank clearing-house system of London, the bank-clerk who arranges in alphabetical order, enters in his books, and sends out to the clearing-house for settlement, the checks, etc., payable to his bank by the other banks; the out-clerk. See ★*in-clearer*.

out-clearing (out′klēr″ing), *n.* 1. The sending out to the clearing-house by a bank, for settlement, of the checks and bills of exchange payable to it by the other banks.—2. The total amount represented by these checks and bills of exchange. See ★*in-clearing*.—**Out-clearing books**, the books in which a bank's out-clearings are entered, under the names of the different banks, before being sent to the clearing-house.

out-clerk (out′klėrk), *n.* Same as ★*out-clearer*.

out-college (out′kol″ej), *a.* Not living within a college; not taking place within the bounds of a college.

> In cooperation with five county councils, a complete scheme of "*out-college*" work in agriculture has been organised. *Nature*, Oct. 23, 1902, p. 647.

outcoming (out′kum″ing), *n.* 1†. The place of issuance.—2. The act of coming out or forth.—3. A result; that which comes out as a product; emanation.

> '. . . This extended view of our Lord's preaching is no mere *outcoming* of modern thought, but was held in the early Church.' *E. White*, Life in Christ, p. 323.

outcross (out′krôs), *n.* An organism born to parents who belong to different families, varieties, races, or tribes.

> Recent results from increases and *outcrosses* lead to the belief that hybridizing is of paramount importance to supply the best stocks for the more laborious work of selection.
> *U. S. Dept. Agri.* (Div. Veg. Physiol. and Pathol.), Bulletin 29, 1901, p. 55.

out-curve (out'kėrv), *n.* In *base-ball, lawn-bowls, basket-ball,* and similar games, a curve toward the left hand made by a ball delivered by the right; the reverse of *in-curve.*

outdate (out-dāt'), *v. t.*; pret. and pp. *outdated,* ppr. *outdating.* To make out of date or obsolete: put behind the time or out of fashion.

outdraft (out'drȧft), *n.* Outward draft as of a current of air; the undertow of a wave. [Rare.]

outdweller (out'dwel″ėr), *n.* One who lives outside of a place, or in another place. *N. E. D.*

outer¹, *a.* and *n.* I. *a.*—**Outer product.** See ★*product.*

II. *n.* 2. In *elect.*, one of the outside wires of a three-wire circuit. *Jour. Brit. Inst. of Elect. Engin.*, 1899–1900, p. 538.

outfall, *n.* 4. That which is discharged from an outfall. See *outfall,* 1.

> It should be noted that the oysters used at the banquet . . . were taken, . . . from beds located in the south of England, and it is charged that over some of these beds "an *outfall* of sewage has been permitted to flow."
> *Forest and Stream*, Jan. 31, 1903, p. 92.

outfit, *n.* 4. An allowance, not exceeding a year's salary, made by the United States to an ambassador, minister plenipotentiary, or *chargé d'affaires* leaving the country to go to his foreign post.

outflame (out-flām'), *v.*; pret. and pp. *outflamed,* ppr. *outflaming.* I. *trans.* To exceed in brilliancy of flame.

II. *intrans.* To flame out; appear as flame.

outflash (out-flash'), *v.* I. *trans.* To outshine; excel in brilliancy.

II. *intrans.* To flash out.

outfling (out-fling'), *v.*; pret. and pp. *outflung,* ppr. *outflinging.* I. *trans.* To fling or wave in the air, as a banner; fling or throw out, as wine from a glass. [Rare.]

II. *intrans.* To rush away abruptly or angrily. [Rare.]

outfoot (out-fut'), *v. t.* 1. To outrun; go faster than. [Colloq.]—2. *Naut.*, to outsail: as, 'the schooner *outfooted* her rival.'

outfront (out-frunt'), *v. t.* To brave down; to outstare. *N. E. D.*

outgang (out'gang), *n.* [ME. *outgang,* AS. *ūtgang* (D. *uitgang* = G. *ausgang*), < *ūt,* out, + *gang,* going. See *gang, n.*] 1. An outgoing; the act of giving up occupancy of property.—2. An outgate; a cattle-gate. [Scotch.]

outgate, *n.* 2. The act or fact of going out; exit.

outgive (out-giv'), *v.*; pret. *outgave,* pp. *outgiven,* ppr. *outgiving.* I. *trans.* To surpass in generosity; give more than (another).

II. *intrans.* To give out; come to the last of.

outgiving (out'giv″ing), *n.* 1. The giving out of a statement; the fact of making a statement.—2. That which is given out; in the plural, disbursements; expenses as opposed to receipts.

outgush (out-gush'), *v. i.* To gush forth, as water.

outgush (out'gush), *n.* A gushing or rushing out; a gushing forth: as, a sudden *outgush* as of molten metal.

outhaul, *n.*—**Foretrysail outhaul,** the rope by which the head of the foretrysail is hauled out to the gaff-end.

outhector (out-hek'tọr), *v. t.* To intimidate by bullying; to be more hectoring than Hector himself.

outheel (out-hēl'), *v. t.* To outfoot; sail faster than; defeat in a race.

outhousing (out'hou″zing), *n.* [*outhouse* + *-ing*¹.] A number of outhouses; the outbuildings of an estate.

outing, *n.* 6. The condition of being out in the sense of being before the public, exposed to comment, etc. [Rare.]

> But the eternal healer, Time, soothed matters down wonderfully. Captain Owen Kettle's week's *outing* in the daily papers ran its course with due thrills and headlines, and then the Press forgot him, and rushed on to the next sensation.
> *Cutcliffe Hyne*, A Master of Fortune, xii.

7. The most distant part of the open visible sea; the offing.—**Outing flannel,** a soft thin cotton material, made in imitation of flannel, with a short nap.

outjockey (out-jok'i), *v. t.*; pret. and pp. *outjockied,* ppr. *outjockeying.* To outwit; circumvent by cheating; overreach.

outlaw, *n.* 3. A vicious, untamed animal: sometimes used attributively.

> The whole Western country was scoured over for the wildest and most vicious "*outlaw*" bronchos that could be found. The more sinister their reputation the more they were desired. *Wide World Mag.*, March, 1903, p. 546.

outlimb (out'lim), *n.* The terminal portion of any of the extremities of the body.

outliv, *v.* A simplified spelling of *outlive.*

outly (out'li), *adv.* [*out* + *-ly*².] 1. Thoroughly; out and out.—2. On the outward side; outwardly. *N. E. D.*

outman (out'mạn), *n.* [*out* + *man.*] One who lives or works outside of the bounds, as of a town.

> A council of thirty-two . . . who . . . took part . . . in choosing the *out-men* who were to be made burgesses.
> *Mrs. J. R. Green*, Town Life in 15th Cent., II. 185.

outmarch (out'märch), *n.* The outward march; the starting forth of a military expedition.

out-pension (out'pen″shọn), *n.* A pension granted without the obligation of living in a particular house or institution.

out-pension (out-pen'shọn), *v. t.* To grant an out-pension to. *N. E. D.*

outplace (out-plās'), *v. t.*; pret. and pp. *outplaced,* ppr. *outplacing.* In *lawn-tennis,* effectually to place (the ball) in the courts and beyond the reach of an opponent.

out-play (out'plā), *n.* In *cricket,* the play by the out side.

out-player (out'plā″ėr), *n.* In *rackets,* the one who receives the service.

outpocketing (out'pok″et-ing), *n.* In *embryol.*, eversion or pushing out of a hollow sack-like or pocket-like structure; evagination.

outpoint, *v. t.* 2. To excel in number of points, as a horse or a dog in a prize exhibition.

> In the tandem class . . . [the] black geldings Sampson and Sigsbee *outpointed* their rivals.
> *Spirit of the Times*, CXXXVI. 416.

outpublish (out-pub'lish), *v. t.* To publish (the banns of marriage) or ask in a church for the third and last time; outask. [Prov. Eng.]

outpush (out'pu̇sh), *n.* Pressure from within outward.

output, *n.* 2. In *physiol.*, the waste eliminated from the body by the lungs, skin, and kidneys, not including that from the bowels: opposed to *income,* material taken into the system.—**Output coefficient.** See ★*coefficient.*

outputter² (out'pu̇t″ėr), *n.* One who manufactures and turns out industrial products; one who produces and puts on the market.

outrange, *v. t.* 2. To have a longer range than: said of guns.—3. To pass or range beyond the borders of, literally or figuratively.

outraught (out-rât'). Archaic pp. of *outreach.*

> Beyond the matron-temple of Latona . . .
> Lies a deep hollow, from whose ragged brows
> Bushes and trees do lean all around athwart,
> And meet so nearly, that with wings *outraught,*
> And spreaded tail, a vulture could not glide
> Past them, but he must brush on every side.
> *Keats*, Endymion, i.

outray², *v. i.* 2. To throw out rays.

> *Outray* (distinct from "outray" = surpass in radiance, revived by Lord de Tabley).
> *Athenæum*, May 28, 1904, p. 684.

outreach (out'rēch), *n.* Length of reach: as, an *outreach* of four feet; the act of reaching out.

out-relief (out'rē-lēf″), *n.* Assistance given by a charitable institution to beneficiaries who live in their own homes; outdoor relief.

> Sir Walter Foster asked the President of the Local Government Board . . . whether he would take steps to improve the methods of granting medical *out-relief.*
> *Lancet*, June 25, 1904, p. 1829.

outride, *n.* 2. The district of an outrider. See ★*outrider* (*f*). [Prov. Eng.]

outrider, *n.* (*f*) A commercial traveler. [Prov. Eng.]

outrig (out-rig'), *v. t.*; pret. and pp. *outrigged,* ppr. *outrigging.* To fit or equip with outriggers.

> So soon as the outrigger came in, oarsmen realised the advantage to be gained by applying it to the gig, in a modified form. Half-*outrigged* gigs became common; they had a reduced beam, and commanded more speed; they were used for cruising purposes as well as for racing.
> *N. B. Woodgate*, Boating, p. 143.

outrigger, *n.* 7. A frame used on a farm wagon, to enable it to carry larger loads, as of hay. [Local Eng. and New Eng.]

outright (out'rīt), *a.* 1. Downright; unqualified: as, *outright* wickedness.—2. Straight out; straight on.—3. Total; entire: as, the *outright* sum was $3,000.

outring (out'ring), *n.* [*out* + *ring*¹.] In *curling,* same as ★*outwick,* 2.

outroar, *v.* II. *intrans.* To roar; roar out.

> *Out-roaring* Dick was a strolling singer of such repute that he got twenty shillings a day by singing.
> *Southey*, Doctor, cxxv.

outrooper, *n.* See ★*outroper.*

outroot (out-röt'), *v. t.* 1. To excel in rooting.—2. To uproot; root out.

outroper (out'rō-pėr), *n.* [*outrope, outroop,* + *-er*¹.] One who sells by outrope or outcry; an auctioneer. The Common Crier of London at one time exercised this office and was called by this name. Also *outrooper.*

outrun (out'run), *n.* 1. An outlying pasture or run for cattle or sheep. [Australia.]—2. The result of a calculation; amount or outcome of an estimate.—3. That which runs out; outpour.

outrunner, *n.* 2. One who or that which runs out or outside; an attendant who runs before or beside a carriage; a horse that runs in traces beside one that draws within shafts; the leader of a team of sledge dogs; etc. *N. E. D.*

outscour (out'skour), *n.* The scouring out of a channel by water.

outscout (out'skout), *n.* 1. An advance scout; a scout.—2. In *cricket,* an out-fielder.

outsee (out-sē'), *v. t.*; pret. *outsaw,* pp. *outseen,* ppr. *outseeing.* 1. To see more or farther than (another), literally or figuratively.—2. To see farther than (a certain point or object).

outset, *n.* 2. A tidal current running from the land; the ebb. *Geog. Jour.* (R. G. S.), XI. 641.—3. In Scotland, an inclosure from surrounding moorland or common.—4. The act of setting off, or ornamenting; that which sets off.—5. Outlay; primary outlay; also, in the plural, outgoings; expenses.

outset (out-set'), *v. t.* 1. To set off; ornament; display properly.—2. To put out; set outside.

outside-fired (out'sīd-fīrd), *a.* Externally fired; having the grate and fire-box on the outside of that which is to be heated, as in a horizontal return-tubular boiler where the fire is outside the shell of the boiler.

outskirt (out-skėrt'), *v. t.* [*outskirt, n.*] To form an outskirt; skirt or run along the border of.

outslang (out-slang'), *v. t.* To exceed in the use of slang.

> Put him at Iffley Lock and he could *out-slang* the boldest bargeman. *Thackeray*, Vanity Fair, xxxiv.

out-soul (out'sōl), *n.* An exterior intelligence; some being outside of man.

> How dared I let expand the force
> Within me, till some *out-soul,* whose resource
> It grew for, should direct it?
> *Browning*, Sordello, iii.

outspan¹ (out'span), *n.* [*outspan*¹, *v.*] 1. The act of unyoking or unharnessing oxen or horses. [South Africa.]—2. The time and place of the outspan; hence, an encampment; a camp. [South Africa.]

outspan² (out-span'), *v.* [*out* + *span, v.*] I. *trans.* To stretch beyond the span or reach of. [Rare.]

> The very exhaustiveness of the Gospel of Christ constitutes its chief peril. Its reach and scope are so large, that the lines of connection, which hold it fast into consistent unity, lose themselves, vanish, *outspan* our sight.
> *Henry Holland*, Logic and Life, Sermon xvii., p. 254.

II. *intrans.* To spread out or extend, as an arch.

> When the storm-rack drives leeward, the rainbow *outspanneth.* *Skrine*, Under Two Queens, I. 18. *N. E. D.*

outspan² (out'span), *n.* [*outspan*², *v.*] The entire span or stretch, especially the span of an arch.

> Make demonstrable, how, by night as day,
> Earth's centre and sky's *outspan,* all 's informed
> Equally by Sun's efflux!
> *Browning*, Parleyings, Bernard de Mandeville, x.

outspokenly (out'spō″kn-li), *adv.* In an outspoken, frank, straightforward manner.

outspread (out'spred), *n.* [*outspread, v.*] 1. Expansion; the act of spreading abroad; extension.—2. An extension; an expanse; a spreading out or beyond.

outspred, *v. t.* A simplified spelling of *outspread.*

outstander (out'stan″dėr), *n.* One who dissents; an effectual resister; one who stands out against persuasion.

out-station (out'stā″shọn), *n.* 1. A stock-farm or station at a distance from the head or main station. [Australia.]—2. A regimental station far from headquarters or from a center of population. [India.]

out-still (out′stil), *n.* [*out* + *still*2.] In India, a private still, with a government license, situated outside of the central distillery districts.

outstroke (out′strōk), *n.* 1. In a single-acting engine, the stroke on which the piston or plunger moves outward; the stroke during which the space inclosed by the cylinder and the end of the piston increases; the stroke during which the piston travels away from the cylinder-head.—2. In *mining*, the privilege of working and conveying underground the coal from an adjoining royalty. [Great Britain.]—**Outstroke rent**, the rent paid to the owner of one royalty for coal brought from an adjoining royalty. [Great Britain.]

outsweep (out-swēp′), *v.* I. *intrans.* To move outward with a sweeping motion: as, 'with wings *outsweeping*.' [Rare.]

II. *trans.* To sweep or rush beyond. [Rare.]

outthrow (out′thrō), *n.* 1. Something thrown out; the act of throwing out; ejection.—2. The act of throwing out of line; the state of being thrown out of line.

out-thrust (out′thrust), *n.* 1. The act of thrusting outward; in stone or steel construction, a thrust outward, as in a bridge which is not perfectly equilibrated.—2. A projection from a building.

out-thrust (out-thrust′), *v. t.* To thrust out or outward.

out-trump (out-trump′), *v. t.* To play more or higher trumps than another, as at cards; hence, figuratively, to get the better of.

out-turn, *n.* 2. In the tea industry, specifically, tea-leaf after infusion, its color being a test of quality. In a black tea the prevailing color should be that of a new penny. *Money*, Tea-Culture, p. 110.

outvoter (out′vō″tėr), *n.* One who, in parliamentary elections in the United Kingdom, is qualified as a holder of real property of a specified value to vote for a parliamentary representative of the county in which the property is situated, though not himself a resident of it; or one who, being an enrolled graduate of Dublin University or of one of certain English universities, or who is a member of the university court and general council of a Scotch university, etc., is entitled to vote for a parliamentary representative of his university though not resident there; a non-resident voter.

out-ward, *n.* 2. A ward of a town or city outside of the original limits of the borough.

outwash (out′wash), *n.* and *a.* I. *n.* The act of washing out; that which is washed out.

II. *a.* Of or pertaining to outwash; specifically, noting the side of a glacial moraine that is away from the ice.

> These moraines are usually bordered by sand plains on the *outwash* side and by till plains on the side which was toward the ice-sheet. *Bot. Gazette*, Jan., 1903, p. 38.

> They were more widespread than the river terraces of *outwash* gravel, and consisted of rock benches well covered with mantle rock. The latter "contained little clay and no transported material but was mostly sand." Although always above all the *outwash* terraces, they descend nearly to the upper ones, but never merge with them. *Amer. Jour. Sci.*, Feb., 1908, p. 108.

outwick (out′wik), *n.* 1. In *lawn-bowls*, a ball that curves in the opposite direction from ★inwick.—2. In *curling*, a shot that cannons off the outside of another stone so as to impel it nearer the tee: practised when a well-guarded adversary's stone is *in*, and an 'inwick' cannot be taken. *N. E. D.*

outwick (out-wik′), *v. i.* In *curling*, to make or take an outwick.

ouzel, *n.*—**Rose-colored ouzel**, the rose-colored pastor or starling, *Pastor* (*Turdus Linn.*) *roseus*. *N. E. D.*

Ov. An abbreviation of the Latin *ovum*, egg.

O. V. An abbreviation of *oil of vitriol*.

oval1. I. *a.*—**Oval quadric, sphere.** See ★*quadric*, ★*sphere*.

II. *n.* 2. (*b*) Specifically, in *athletics*, an elliptical field, or one on which an elliptical track is laid out.—**Oval of Venturi**, an oval halo around the sun ascribed to hexagonal ice crystals floating in the atmosphere. Venturi's oval is 22 degrees across in its minor vertical axis, and is tangent to the ordinary 22-degree halo at the highest and lowest limb of the latter.

ovalbumin (ōv-al-bū′min), *n.* Same as ★*ovo-albumin*.

ovalize (ō′vạl-īz), *v. t.*; pret. and pp. *ovalized*, ppr. *ovalizing*. To make oval: as, an *ovalizing* machine for forming chain-links.

> The work is performed by means of three special machines — a winder, a finishing roller, and an *ovalizing* press. As a matter of fact, the chain is not, properly speaking, weldless, but one in which the welding is done mechanically. *Sci. Amer. Sup.*, March 11, 1905, p. 24404.

ovaloid, *a.* II. *n.* A surface, such as Fresnel's wave-surface in crystals, the cross sections of which are ovals. The equation of such a surface has the form $r^2 = a^2d_1^2 + b^2d_2^2 + c^2d_3^2$ in which r is the radius vector, d_1, d_2, and d_3 its direction cosines, and a, b, and c are the principal axes of the ovaloid.

Ovarian aperture. Same as *genital* ★*pore* (*b*).—**Ovarian sac.** See ★*sac*2.

ovarin (ō′vạ-rin), *n.* [*ovar*(*y*) + *-in*2.] The dried and powdered ovarian substance. The same term is applied to a preparation made from the expressed juice of the fresh ovaries.

ovarist (ō′vạ-rist), *n.* Same as *ovulist*.

ovary1, *n.*—**Chambered ovary**, in *bot.*, an ovary in which the margins of the carpels project into the interior, forming incomplete longitudinal dissepiments.

ovaserum (ō″vạ-sē′rum), *n.*; pl. *ovasera* (-rạ̈). [L. *ovum*, egg, + NL. *serum*.] An antiserum produced by immunization with egg-albumin.

ovatolanceolate (ọ-vā″tō-lan′sẹ̄-ọ-lāt), *a.* Having the shape of a long oval, pointed at the end. *Dana.*

oven, *n.* 5. In *bacteriol.*, a compartment which can be heated and maintained at a temperature sufficient to sterilize glassware and various bacteriological apparatus. Also *hot-air sterilizer*.—**Appolt oven**, a coke-oven consisting of 18 rectangular retorts arranged in two rows within four brick walls. Each retort is provided with a cast-iron door at the bottom and is surrounded by an air-space, all air-spaces communicating with each other, as well as with the inside of the retorts, and forming one large divided chamber in which the combustion of the products resulting from the decomposition of the coal takes place. The oven is charged at the top, and the time of operation is about 24 hours.—**Carvé oven**, a coke-oven consisting of one long, narrow, and high chamber, containing the coal to be coked, with horizontal flues in the side walls and under the floor. The products of combustion pass from the fireplace through the flues under the floor and from there into the side flues, finally passing into the chimney. The products of carbonization of the coal are drawn off into condensers, where they are freed from the ammoniacal liquors and tarry oils, while the gases return to the fireplace and ignite. In some modified Carvé ovens the fireplace is altogether done away with, the oven being heated entirely by the return gases, and the air for combustion being forced in through a special pipe.—**Continuous oven**, any mechanical oven which is fired continuously and into which the material to be dried or baked is fed continuously, or partially so, as in a reel oven. See *reel oven* and *rotary oven*, under *oven*.—**Dutch oven.** (*b*) An oven constructed of brick and used by heating with a wood fire, then withdrawing the fire, placing the article to be cooked inside, and closing the oven up. The heat of the walls does the cooking.—**Pernolet oven**, a form of coke-oven with provision for collecting and saving the tar and ammonia liquor given off.—**Portable oven**, a baking chamber built mostly of iron, resembling a furnace oven. It is used in small bakeries and is built so that it can be taken apart and easily moved.—**Rotary oven.** (*b*) An oven built of brick, in which the baking surface consists of soapstone attached to a perpendicular shaft which causes it to rotate.

oven (uv′n), *v. t.* [*oven*, *n.*] 1. To bake in an oven.—2. To inclose; muffle up in an oven.

ovenchyma (ọ-veng′ki-mạ̈), *n.* In *bot.*, loose tissue consisting of ovoid cells.

oven-furnace (uv′n-fėr″nās), *n.* A gas-furnace having an oven-shaped casing: used in heating dies and tools preparatory to hardening them.

ovenman (uv′n-man), *n.* See ★*kilnman*.

overaction (ō-vėr-ak′shọn), *n.* Too much action; unnecessary and exaggerated action: applied specifically to a trained horse (a high stepper) in which the knee-action is too noticeable.

overactive (ō-vėr-ak′tiv), *a.* Too active; unnecessarily active.

overactivity (ō″vėr-ak-tiv′ị-ti), *n.* Excessive activity.

over-aged (ō″vėr-ājd), *a.* In any aging process, noting a result (usually of a detrimental character) brought about by carrying the process too far: a term frequently used in the logwood industry and by textile colorists.

overall, *n.* II. *a.* In measurements, extending from one extreme limit to the other; including the whole extent.

> The total length of the bridge proper is 502 feet, the approaches on the Middlesex and Surrey sides bringing the *overall* length to 1182 feet. *Nature*, Oct. 29, 1903, p. 633.

Over-all dimensions, dimensions taken between boundaries so placed as to include all parts of an object or space.

> The *overall dimensions* of the floor space taken up by this generating set are approximately 35 by 45 ft. *Elect. World. and Engin.*, May 7, 1904, p. 867.

Over-all efficiency, the ratio of the electrical output of a generator to the indicated power of the engine by which it is driven.

overarm (ō′vėr-ärm), *a.* In *cricket*, delivered with the arm above the shoulder; overhand.

> *Overarm* action in bowling is now universal. *Encyc. Brit.*, XXVII. 276.

overbank (ō-vėr-bangk′), *v. i.* In *watch-making*, a term used to describe slip or lost motion in an escapement, whereby the balance-wheel loses a beat. It may be caused by a swaying motion of the watch or by unskilful winding.

overberg (ō′vėr-bėrg), *a.* [*over* + D. *berg*, mountain.] Over a mountain: as, the *overberg* track: specifically, in South Africa, over the mountain from or toward Natal.

over-bridge (ō′vėr-brij), *n.* A bridge which carries a highway or foot-walk over another artificial line of travel, as a railway: in distinction from a crossing of the two ways at grade.

overburden, *n.* 2. An excessive load; a burden or load greater than should be carried.

overcast (ō′vėr-kȧst), *n.* In *mining*, an air-duct or passage which crosses above another passage.

overcast (ō′vėr-kȧst), *a.* In *geol.*, cast or thrust beyond a normal position, as in a thrust-fault or overturned fold.

> The longitudinal folds [the rock-deposits in the Alpine district] had been steeply tilted, or "*overcast*," *i.e.* laid over into more horizontal positions, or fractured, and the parts carried into different oblique directions. *Geog. Jour.* (R. G. S.), XVI. 462.

overcheck (ō′vėr-chek), *n.* In harness, a check-rein passing over a horse's head between the ears; an overdraw-check.

overcoat, *n.*—**Inverness overcoat.** See *Inverness* ★*coat*.

overcome, *v. t.* 6. Overpowered by liquor; intoxicated: in the past participle.

over-compounded (ō″vėr-kọm-poun′ded), *p. a.* In *elect.*, provided with series-windings sufficient in number to give constant difference of potential, not at the terminals of the machine, but at some other point in the circuit: said of certain generators which have both shunt and series field-coils.

over-compounding (ō″vėr-kọm-poun′ding), *n.* The process of so winding the field-coils of a direct current generator as to obtain a constant difference of potential at a given point in the circuit supplied by the generator.

> For then by *over-compounding*, one can obtain a constant pressure, not at the terminals of the dynamo, but on the mains at some point in the midst of the lamp-network. *S. P. Thompson*, Dynamo-electric Machinery, p. 293.

overcool (ō″vėr-köl′), *v. t.* To cool below the temperature of fusion without bringing about solidification. It is possible, under certain conditions, thus to cool water to a temperature several degrees below its freezing-point, without converting it into ice. Same as ★*undercool* and ★*supercool*.

overcorrect (ō″vėr-kọ-rekt′), *v. t.* In *optics*: (*a*) To correct (a lens) so that the red rays come to a focus beyond the violet rays. See *correct*, 5. (*b*) To change one defect of vision into its opposite by means of too powerful lenses.

over-correction (ō″vėr-kọ-rek′shọn), *n.* In *ophthalmol.*, the conversion of one defect of vision into its opposite by means of too powerful lenses.

overday (ō′vėr-dā), *a.* Lasting more than a day; noting a period of more than twenty-four hours. *Encyc. Dict.*

over-decoration (ō″vėr-dek-ō-rā′shọn), *n.* In *ceram.*, decoration designed to hide a blemish in the glaze, or to add to the effect, or change the appearance of pieces of ware which have previously been decorated. Also *sur-decoration*.

overdevelop (ō″vėr-dẹ̄-vel′up), *v. t.* To develop to excess; in *photog.*, to develop too long or with too strong developer. See *over-development*.

overdoor (ō′vėr-dōr), *a.* and *n.* I. *a.* Set above a doorway, or prepared to be so placed: said of a panel or any decorative appliance. The overdoor paintings are an important feature in eighteenth-century interior decorations.

II. *n.* The space above a door.

> A noticeable feature of this room is the treatment of the *over-doors*. *R. S. Clouston*, in Burlington Mag., V. 243.

overdraft, *n.* 3. The act of overdrawing one's account, especially one's bank-account.

overdriven (ō′vėr-driv″n), *a.* In *mech.*: (*a*) Applied to an arrangement of driving mechanism such that the power is applied above the place where the work is done. (*b*) Said of a machine or plant which is driven at a speed or power beyond that which is normal or suitable to the design.

overedge (ō′vėr-ej), *a.* Noting a kind of stitching. See the following phrase.—**Overedge stitching,** a method of joining two selvage edges by means of a machine that causes the needle to pass alternately through the fabric and over the edges. The alternate stitches can be made to pass from the edge of one piece to the edge of the other.

overer (ō′vėr-ėr), *n.* and *a.* **I.** *n.* **1.** The upper or over part of anything; of two things, the one that is over the other.—**2.** A superior in office or station; one who is over another.

II. *a.* Upper; over; higher.

overexert (ō″vėr-eg-zėrt′), *v. t.* To exert or exercise too much; exert (oneself) to excess: usually reflexive.

> "Don't you *over-exert* yourself, Loo," said Mr. Chick, "or you 'll be laid up with spasms, I see."
> *Dickens*, Dombey and Son, ii.

overexpose (ō″vėr-eks-pōz′), *v. t.*; pret. and pp. *overexposed*, ppr. *overexposing*. In *photog.* and *radiography*, to expose too long to light or other radiation. See *over-exposure*. *Therapeutic Gazette*, Feb. 15, 1903, p. 80.

overfall, *n.* **2.** *Naut.*: (*c*) A sudden drop in the sea-bottom, as at the edge of a submarine terrace or ledge. *N. E. D.*

> The shingly shore shelves rapidly, without steps or *overfalls*, into blue water.
> *Geog. Jour.* (R. G. S.), old ser., XXIX. 236.

3. That portion of a dam or weir over which the water falls or flows, including the crest and the down-stream face of the dam.

overfall (ō-vėr-fâl′), *v.* **I.** *trans.* **1.** To fall over: as, a fog *overfell* them.—**2.** To fall upon; to attack.

II. *intrans.* To fall; fall over. [Rare.]

> Horse and riders *overfell*.
> *Mrs. Browning*, Rhyme of the Duchess May, st. xcv.

overfatigue (ō″vėr-fa̤-tēg′), *n.* Excessive fatigue carried beyond the normal recuperative power of the individual.

overfault (ō′vėr-fâlt), *n.* A reversed or thrust fault; one whose upper wall is thrust up on its under one.

overflow-pipe (ō′vėr-flō-pīp″), *n.* In *plumbing*, a pipe connecting the over-flow of a wash-bowl, sink, or bath-tub with a waste-, soil-, or sewer-pipe.

overflow-valve (ō′vėr-flō-valv″), *n.* A valve in an injector designed to allow the first water lifted by the injector to overflow or run off.

overfolding (ō′vėr-fōl″ding), *n.* In *geol.*, the process which results in an overturned fold.

overforged (ō′vėr-fōrjd), *a.* Forged until the quality of the metal has been injured: said of steel, wrought-iron not being subject to this action.

overfraught (ō-vėr-frât′), *p. a.* Overloaded. See *overfreight*, *v.*

overgrowth, *n.* **3.** The deposition of the crystals of one mineral species over those of another species, particularly when the individuals or subindividuals of the former have their orientation fixed by the latter; also one of the individuals or subindividuals so deposited.

overhead, *adv.* **3.** So that something is over one's head: as, to be ducked *overhead* in the river.

overhead, *a.* **2.** Average; applicable to all.

overhung (ō-vėr-hung′), *a.* **1.** Hung from above: said of a sliding door when it moves, by means of door-hangers or other appliances, upon a rail at the top. An *underhung* door is one in which the weight of the door is carried by a rail resting on the floor or by the wall near the base of the door.—**2.** In *mech.*, having no outboard bearing; hanging on the end of a shaft; hung on or supported by a shaft having a bearing only on one side of the piece which is supported.

overindividual (ō″vėr-in-di-vid′ū-al), *a.* Pertaining to or valid for all subjects of experience. See the extract. [Rare.]

> The further subdivision must be the same for both groups—that which is merely individual and that which is '*overindividual*'; we prefer the latter term to the word 'general,' to indicate at once that not a numerical but a teleological difference is in question. . . . The *overindividual* phenomena are, of course, the physical objects, the individual phenomena the psychical objects, the *overindividual* purposes are the norms, the individual purposes are the acts which constitute the historical world. We have thus four fundamental groups: the physical, the psychological, the normative and the historical sciences. Whoever denies *overindividual* reality finds himself in the world of phenomena a solipsist and in the world of purposes a sceptic.
> *Harvard Psychol. Stud.*, I. 649.

overindulgence (ō″vėr-in-dul′jens), *n.* The gratification of one's appetite or desires to an intemperate degree.

overland (ō-vėr-land′), *v. i.* In Australia, to cross the country with herds of cattle, sheep, etc.

> Herds used to be taken from New South Wales to South America across what were once considered the deserts of Riverina. That used to be called '*overlanding*.' But for many years the travelling of stock has been tending to become anything but an adventurous enterprise. *W. H. L. Ranken*, Dominion of Australia, xiii.

overlander (ō′vėr-lan″dėr), *n.* In Australia: (*a*) Originally, one who crossed the country before railways were introduced. (*b*) A difficult journey. (*c*) A man who drives sheep and cattle across country, from one colony to another. (*d*) A tramp; a sundowner.

> The present mining population of Hall's Creek is about twenty. This is augmented occasionally by the influx of "*overlanders*" from the Northern Territory and Queensland. *Geog. Jour.* (R. G. S.), XI. 274.

overlap, *n.*—**To establish an overlap.** In *yacht-racing*, an overlap is said to be established when an overtaking yacht has sailed up on the yacht ahead so that the latter's quarter is covered by the overtaking vessel's bow; and the overlap continues as long as the leeward vessel by luffing, or the weather vessel, by bearing away, insures fouling.—**Uncomformability of overlap.** In *geol.*, during the subsidence of a coast-line the sea will invade the land and deposit later sediments far beyond earlier ones, which latter are often buried from observation. While there is no difference in the dips of the two, there has obviously occurred a great change in conditions and the resulting relations are described by the above phrase. *Uncomformability of transgression* is synonymous.

overlap-fault (ō′vėr-lap-fâlt″), *n.* A fault in which the strata have been forced upward on the upper or hanging-wall side of the fault; a reverse fault.

overlapping (ō-vėr-lap′ing), *n.* **1.** The action or effect which occurs when one thing overlaps another; the production or the essential character of an overlap. Specifically—**2.** In *psychol.*, the supplanting of one mental disposition or of one combination of mental processes by another and more powerful disposition or combination, without appreciable conflict.

> Suppose the components of the one combination are a b c, and of the other a b x; c may be so favoured from the outset that it simply displaces x without any feeling of discrepancy arising, and without any attention to the difference. This process I call *overlapping*, or coalescence. . . . The most striking examples of coalescence . . . are those in which the *overlapping* is one-sided. One image is absorbed by another which prevails over it by sheer superiority of strength. . . . Everyone knows how our memory of what has happened becomes modified in accordance with our desires, our dramatic bias, our views of what ought to have taken place, and so forth.
> *G. F. Stout*, Anal. Psychol., I. 286.

overlay, *n.* **6.** In *quarrying*, the overburden or detrital material which covers the rock in a quarry. *Barrowman*, Glossary.

overlay-days (ō′vėr-lā-dāz), *n. pl.* *Naut.*, a specified number of days that are agreed upon between the shippers and the master of the vessel (or her agent) for the loading and discharging of the cargo, beyond which number of days a stipulated per diem demurrage (forfeit) is agreed to be paid to the vessel. Sundays and holidays are not included unless the words "running days" are used in the charter-party (i. e., the written agreement), in which case all days are counted. Also known as *lay-days*.

overlimen (ō′vėr-lī″men), *n.* In *psychophys.*, a stimulus-difference which must be transcended if the larger (smaller) of the two stimuli compared is to be adjudged much larger (much smaller) than the smaller (larger) stimulus. *E. B. Titchener*, Exper. Psychol., II. ii. 255.

overline (ō-vėr-līn′), *v. t.* **1.** To draw a line over (writing): the opposite of underline.—**2.** In manuscript or printed matter, to place a translation over each line.

overload (ō′vėr-lōd), *n.* An excessive load; a too heavy load.

> The automatic devices for the machines are so arranged that a fault or *overload* on either phase opens both oil switches on the two phases, differing in this respect from the independent automatic devices for the incoming line.
> *Elect. World and Engin.*, Feb. 18, 1905, p. 340.

overlock (ō′vėr-lok), *a.* A coined word used in the textile and other similar trades to describe a stitch made by a sewing-machine which, on the cut edge of a single thickness of material, or in joining the edges of two pieces of material, makes covering stitches which conceal the otherwise projecting thread-ends, and at the same time locks the stitches so as to give strength to the artificial selvage or seam thus made; also applied to the machine which makes this artificial selvage or overseam.

overman, *n.* **2.** In general, an overseer, or foreman.—**3.** An arbitrator, or umpire.—**4.** [Trans. G. *uebermensch.*] In the writings of F. W. Nietzsche, a type with more or less superhuman qualities toward which he supposed mankind to be developing.

overmantel, *n.* **II.** *a.* Placed over the shelf of a mantel, or prepared to be so placed: said of a painting, a carved panel, or the like.

over-maturation (ō″vėr-mat-ū-rā′shon), *n.* The condition of being too old properly to perform a normal function.

> Stunting of the growth, and *overmaturation* of the sap of plants induce early changes in the maturing and structure of aphides; the insects multiply without the interference of the ordinary destructive influences of bad weather, and delicate maggots, etc., which are generally drowned in very large numbers by storms of rain, emerge unharmed. *Smithsonian Rep.*, 1895, p. 306.

overnight (ō′vėr-nīt), *a.* and *n.* **I.** *a.* Done or occurring overnight; specifically, in *racing*, noting an entry made just before the day of the race, or a race arranged 'overnight.'

> There is little doubt to-day that Kingston was the greater horse, doomed to handicaps and *over night* gambling races, while the "mighty" Hanover was conserved for the more prominent stake events.
> *Outing*, Feb., 1906, p. 652.

II. *n.* **2.** In *racing*, a race (or entry) arranged the night before it is run.

> This threw him into *overnights*, handicaps, etc., only the Flatbush, the grand two-year-old test race, being open to him. *Outing*, Feb., 1906, p. 652.

overpainted (ō-vėr-pān′ted), *a.* **1.** Retouched; restored.—**2.** Painted with too much elaboration.

overpitch (ō-vėr-pich′), *v. t.* In *cricket*, to pitch (a ball) too far, so that it can be hit by the batsman before it touches ground.

overplacement (ō-vėr-plās′ment), *n.* **1.** Same as *superimposition*. Specifically—**2.** In *geol.*, applied to surficial deposits that are accumulated as a loose mantle upon the regular geologic strata.

> In addition to these well characterized formations there is a limited variety of residua left on decomposition of rock in place, of torrential or *overplacement* deposits formed by wash adown slopes.
> *W. J. McGee*, in Smithsonian Rep., 1890, p. 72.

overplay (ō′vėr-plā), *n.* In any duplicate card-game, especially bridge and whist, the play of a hand which has already been played at another table and by other players; in memory duplicate, the play of a hand by north and south which was originally held and played by east and west.

overpole (ō-vėr-pōl′), *v. t.* In *copper-refining*, to continue poling or reducing the oxids too long; to pole or deoxidize until the metal has passed the right point for toughness. In the last stage of copper-smelting the metal, when brittle from the presence of a little combined oxygen, is in the fused state stirred with poles of wood, the carbon of which unites with the oxygen and removes it as carbon monoxid. If the stirring is continued too long the metal, freed from oxygen, begins to take up carbon and again becomes brittle, assuming a coarse fibrous structure. It is then said to be *overpoled*.

overpoling (ō-vėr-pō′ling), *n.* The operation of almost entirely removing the oxygen from copper by excessive poling. By allowing the overpoled copper to absorb some oxygen from the air, the copper may be restored to the 'tough' pitch. Then all the impurities are oxidized, but no oxid of copper is present. See ★*overpole*.

overpot (ō-vėr-pot′), *v. t.* In *gardening*, to set out (a plant) in too large a pot.

overpowering (ō-vėr-pou′ėr-ing), *a.* That is too powerful to resist; overwhelming; crushing; too intense to bear.

overprint (ō′vėr-print), *n.* An offprint.

overprint (ō-vėr-print′), *v. t.* **1.** In *photog.*, to print (a positive) much darker than it will be when finished.—**2.** In *calico-printing*, to print one color over another, as the printing of indigo patterns on cloth previously dyed turkey red.

overproduce (ō″vėr-prọ-dūs′), *v. t.*; pret. and pp. *overproduced*, ppr. *overproducing*. To produce in excess of demand.

overreach, *v. i.*—**Overreaching clause.** See ★*clause.*

overright (ō′vėr-rīt), *adv.* Right over from; oppositely.

over-risen (ō″vėr-riz′n), *a.* Said of a vessel which shows too high a side out of water in comparison with her length and beam.

over-run, *v. t.*—**To over-run her reckoning,** said of a vessel when it is found that she is ahead either in latitude or in longitude of the place worked out by dead-reckoning. When the vessel is found to be behind her calculated point, she is said to have *under-run her reckoning.*

overrun (ō′vėr-run), *n.* In *printing,* composed type run over into the next line or page, to make space for something else, etc. See *overrun, v. t.,* 7.

> Every paragraph containing an alteration that compels one or more *overruns* should be re-read by a copy-holder in the same manner that has to be observed for the first proof.
> *De Vinne,* Practice of Typography, Correct Composition, [p. 309.

overseaming-machine (ō-vėr-sē′ming-ma-shēn″), *n.* A sewing-machine adapted to making the long stitches used in overseaming, eyeletting, serging, and in many kinds of fancy stitching. It employs a vibrating needle controlled by an adjustable cam that limits the traverse of the needle and hence the length of the stitch. Also called, from the motion of the needle, a *zigzag machine.* See ★*eyelet-machine.*

oversepticize (ō-vėr-sep′ti-sīz), *v. t.*; pret. and pp. *oversepticized,* ppr. *oversepticizing.* In certain methods of disposing of sewage, to subject the refuse material to the action of certain bacteria. The term has reference to the possibility of carrying the anaërobic destruction of the material too far for purposes of subsequent ready filtration.

overset, *v. i.* 2. To compose or set more type than is needed for a prescribed space.

overset (ō-vėr-set′), *p. a.* 1. Said of composed type that exceeds in amount the space prescribed.—2. Offset; not set in line: said of rivet-holes, partially blind.

overshot, *p. a.* 3. Having the upper teeth projecting beyond the lower: said of some dogs. Contrasted with *undershot.*

oversighted (ō-vėr-sī′ted), *p. a.* Hypermetropic.

oversize¹ (ō′vėr-sīz), *a.* and *n.* **I.** *a.* Of excessive size; specifically, noting material which is too large to pass through the meshes of a given screen or sieve. That which passes through the meshes receives one sort of treatment; the oversize, or oversized material, passes off from the screen on its upper surface to a subsequent process.

II. *n.* Material that is oversize.

> The *oversize,* which contains no slime whatever, is delivered directly to four Wilfley concentrating tables. The undersize, 50-mesh and finer, is delivered to unwatering and settling tanks from which all of the settled product, including such slimes as may be associated with same, is delivered to an entirely separate set of tables. The overflow from these tanks is delivered to the general slime tanks. *Electrochem. Industry,* March, 1905, p. 124.

overslaugh, *v. t.* 4. In *milit.,* to remit the ordinary duty of (an officer, or company), because he is detailed for some other work.

overslaugh (ō′vėr-slâ), *n.* [*overslaugh, v.*] 1. In *milit.,* remission of the ordinary daily duty of an officer or company on account of a detail to another duty which takes precedence.—2. A sand-bank or -bar which impedes navigation in a river; specifically, one near Albany, New York, in the Hudson.

oversman, *n.* 2. In *lawn-bowls,* one who decides as to the value of a shot in case of a dispute.

oversound (ō-vėr-sound′), *v. i.* Of organ-pipes, to produce the higher octave of the proper tone: occurring sometimes when the wind is too strong. See *overblow*¹, *v. t.,* 3. *Seidel,* Organ, p. 43. *N. E. D.*

overspin (ō-vėr-spin′), *v. t.* In the making of metal strings for musical instruments, to wind or wrap a covering-wire about a string so as to add to its weight and to lower its pitch. Overspun strings are used especially for the lower strings of the pianoforte, the guitar, and several instruments of the zither class.

overstain, *v.* **I.** *trans.* 2. Specifically, in *histol.,* to stain (a tissue) excessively in order to insure thorough coloring of particular elements when the excess of the stain has been washed out.

II. *intrans.* To perform the operation of overstaining tissue.

oversteepen (ō-vėr-stē′pn), *v. t.* To make excessively steep: as, a peak *oversteepened* by glacial erosion beneath it.

oversupination (ō″vėr-sū-pi-nā′sho̤n), *n.* Supination carried beyond the normal limit of movement.

overtake (ō′vėr-tāk), *n.* The act or fact of overtaking.

> Aggregation came about by *overtakes* in contradistinction to opposed collisions. *Science,* Feb. 20, 1903, p. 300.

overthrow, *v. t.* 3. In *cricket,* to throw (the ball) inaccurately at the wicket, and so give unearned runs to the opposing batsman.

overthrust, *n.* **II.** *a.* In *geol.,* thrust beyond: applied to the rocks on the upper side of a reversed fault, which are thrust upon those of later age, thus reversing the normal succession.

> Associated with the cross-compression [of Rock Deposits] new folds had formed, and *overthrust* masses had travelled in transverse and various oblique directions.
> *Geog. Jour.* (R. G. S.), XVI. 462.

overthrusting (ō-vėr-thrus′ting), *n.* In *geol.,* the process of producing an overthrust.

> The Sella mountain has subsided in several "fault-blocks" since the epoch of *overthrusting.*
> *Geog. Jour.* (R. G. S.), XVI. 463.

overtime (ō-vėr-tīm′), *v. t.*; pret. and pp. *overtimed,* ppr. *overtiming.* In *photog.,* to allow too much time in exposure or other treatment.

overtone, *n.*—**Electric overtone,** an electric oscillation of higher frequency than that of the fundamental oscillation with which it is associated, and usually harmonically related to the latter.—**Overtone current,** in *elect.,* an alternating current having a frequency higher than and usually harmonically related to the frequency of a fundamental current with which it is associated.

overtopped (ō-vėr-topt′), *a.* In *forestry,* having the crown shaded from above, although a side or sides may be free to light. See *crown* ★*class.*

overtrain (ō-vėr-trān′), *v.* **I.** *intrans.* To carry the process of training (athletic or mental) beyond the limits of safety, resulting in a physical breakdown.

II. *trans.* To subject to excessive training.

overtravel (ō-vėr-trav′el), *v. i.*; pret. and pp. *overtraveled, overtravelled,* ppr. *overtraveling, overtravelling.* In *mech.,* to travel farther than is necessary to do a certain act or perform a definite function.

overtread (ō′vėr-tred), *n.* The act or fact of treading over; a trampling upon.—**Overtread** or **overtreading plow,** a primitive foot-plow.

overtread (ō-vėr-tred′), *v. t.*; pret. *overtrod,* pp. *overtrod, overtrodden,* ppr. *overtreading.* To step over; step beyond; trample on; crush.

overtrump (ō-vėr-trump′), *v. t.* To trump (a plain suit) with a higher trump than that already played by another person.

overtype (ō′vėr-tīp), *a.* Noting a dynamo or motor which is a bipolar machine, with field of the horse-shoe form, and with the armature above the field-coils: opposed to *undertype* machines, in which the armature is below.

> The "*over-type*" form [of horse-shoe magnet] is best suited to small belt-driven dynamos, while the "under-type" is admirably adapted to be directly driven by the steam engine. *Encyc. Brit.,* XXVII. 584.

Overtype dynamo, a bipolar generator having the armature above the field-magnets.—**Overtype generator,** a bipolar electric generator having the armature above the field-magnets.

overwash (ō′vėr-wosh), *a.* In *geol.,* consisting of drift carried by streams from a glacier and deposited on the outer side of its moraine.—**Overwash plain, subaqueous overwash plains.** See ★*plain*¹.

overweightage (ō-vėr-wāt′a̤j), *n.* [*overweight* + *-age.*] Amount of extra weight; also, a charge for extra weight, in transportation.

overwelt (ō-vėr-welt′), *v. t.* and *i.* [*over* + dial. *welt,* variant of *walt,* turn.] To overturn; especially, of a sheep, to fall on its back and be unable to get up. [Prov. Eng.]

overwelt (ō′vėr-welt), *n.* [*overwelt, v.*] An overturn: said of a sheep. [Dialectal.]

overwood (ō′vėr-wůd), *n.* See ★*two-storied,* 2.

overworkings (ō′vėr-wėr″kingz), *n. pl.* In *mining,* coal mined in excess of the minimum fixed by the lease. [Great Britain.]

overworld (ō′vėr-wėrld), *n.* A world above or higher than this: sometimes used for heaven.

ovic (ō′vik), *a.* [NL. *ovicus,* < L. *ovum,* egg.] Of or pertaining to an ovum.

ovicelligerous (ō″vi-se-lij′e̤-rus), *a.* [*ovicell* + L. *gerere,* carry.] In polyzoans, bearing ovicells.

ovicidal (ō′vi-sī-da̤l), *a.* [*ovicid(e)* + *-al*¹.] That kills sheep; sheep-killing.

ovicular (ọ-vik′ụ-la̤r), *a.* [NL. **oviculum,* dim. of L. *ovum,* egg, + *-ar*³.] Resembling or pertaining to an egg.

oviculated (ọ-vik′ụ-lā-ted), *a.* [*ovicul-um* + *-ate*¹ + *-ed*².] In *arch.,* having egg-shaped ornaments.

oviculum (ọ-vik′ụ-lum), *n.*; pl. *ovicula* (-la̤). [NL., dim. of L. *ovum,* egg.] In *arch.,* one of the oval balls of an egg-and-dart ornament. See cut under *egg*¹.

oviductal (ō-vi-duk′ta̤l), *a.* [*oviduct* + *-al*¹.] Pertaining to, or having the characters of, an oviduct; oviducal.

ovigenesis (ō-vi-jen′e-sis), *n.* Same as *oögenesis.*

ovigenetic (ō-vi-jẹ-net′ik), *a.* Same as *oögenetic.*

> It is now known that the spermatogenic and *ovigenetic* cells of the sexual glands in higher animals pass through forms of division which differ from those which occur in the embryological development of these glands.
> *Lancet,* May 23, 1908, p. 1495.

ovination (ō-vi-nā′sho̤n), *n.* [L. *ovis,* sheep, + *-ine* + *-ation.*] Vaccination of sheep with sheep-pox virus. [Rare.]

ovine² (ō′vin), *n.* [L. *ovum,* egg, + *-ine*².] A form of cerebrin found in the yolk of eggs. *Sci. Amer.,* Sept. 7, 1907, p. 167.

oviparously (ọ-vip′a̤-rus-li), *adv.* In an oviparous manner; by means of eggs or germ-cells.

> All animals reproduce *oviparously.*
> *Geog. Jour.* (R. G. S.), IX. 563.

oviparousness (ọ-vip′a̤-rus-nes), *n.* The character of being egg-bearing or oviparous.

ovispermiduct (ō-vi-spėr′mi-dukt), *n.* In some mollusks, a duct which conveys both ova and spermatozoa.

ovistic (ọ-vis′tik), *a.* [*ovist* + *-ic.*] Of or pertaining to an ovist or to ovism.

ovivorous¹ (ọ-viv′ọ-rus), *a.* [L. *ovum,* egg, + *vorare,* eat.] Egg-eating; living in or on eggs, as the hymenopterous parasites of the proctotrypid subfamily *Scelioninæ* or the chalcidid subfamily *Trichogramminæ.*

ovivorous² (ọ-viv′ọ-rus), *a.* [L. *ovis,* sheep, + *vorare,* eat.] Sheep-eating. *N. E. D.* [Rare.]

ovoalbumin (ō″vọ-al-bū′min), *n.* An albumin, resembling serum-albumin, found in the white of birds' eggs. Also *oralbumin.*

ovocenter (ō′vọ-sen-tėr), *n.* [NL. *ovocentrum,* < L. *ovum,* egg, + *centrum,* center.] The centrosome of the egg or ovum during fertilization: opposed to ★*sperm-center.*

ovocentrum (ō-vọ-sen′trum), *n.*; pl. *ovocentra* (-tra̤). Same as ★*ovocenter.*

ovocylindrical (ō″vọ-si-lin′dri-ka̤l), *a.* Having the form of an elongated ovoid.

ovocyte (ō′vọ-sīt), *n.* [L. *ovum,* egg, + Gr. *κύτος,* a hollow (a cell).] Same as ★*oöcyte.*

ovofibrin (ō-vọ-fī′brin), *n.* [L. *ovum,* egg, + E. *fibrin.*] A derivative of ovofibrinogen.

ovofibrinogen (ō″vọ-fī-brin′ọ-jen), *n.* [*ovofibrin* + *-gen.*] A substance found in the albumin of birds' eggs which is similar to fibrinogen and gives rise to ovofibrin.

ovogone (ō′vọ-gōn), *n.* [NL. *ovogonium.*] Same as ★*oögonium.*

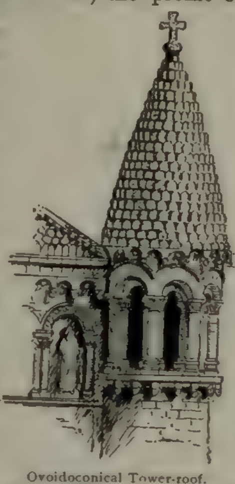
ovogonic (ō-vọ-gon′ik), *a.* [*ovogone* + *-ic.*] Same as ★*oögonial.*

ovogonium (ō-vọ-gō′ni-um), *n.*; pl. *ovogonia* (-a̤). [NL., < L. *ovum,* egg, + Gr. *γόνος,* generation.] Same as ★*oögonium.*

ovoid, *n.* 2. In *anthrop.,* a cranium the norma verticalis of which has an ovoid form. *G. Sergi* (trans.), Var. of the Human Species, p. 31.

Ovoides (ō-voi′dēz), *n.* [NL., < L. *ovum,* egg, + Gr. *εἶδος,* form.] A genus of fishes of the family *Tetraodontidæ,* with numerous species, chiefly of the tropical Pacific.

ovoidoconical (ō″voi-dǭ-kon′i-kạl), *a.* In *arch.*, noting a conical form, the profile of which is curved, as in the roofs of the towers of the Cathedral of Angoulême in France.



Ovoidoconical Tower-roof.
Cathedral of Angoulême, France.

ovokaryon (ō-vǭ-kar′i-on), *n.* [L. *ovum*, egg, + Gr. *κάρυον*, nut, nucleus.] Same as ⋆*oökaryon.*

ovolecithin (ō-vǭ-les′i-thin), *n.* [L. *ovum*, egg, + E. *lecithin.*] Lecithin derived from the yolk of eggs.

ovolemma (ō-vǭ-lem′ạ̈), *n.* [L. *ovum*, egg, + Gr. *λέμμα*, peel, skin, scale.] Same as *oölemma.*

ovological (ō-vǭ-loj′i-kạl), *a.* [*ovolog*(*y*) + *-ical.*] Same as *oölogical.*

ovologist (ǭ-vol′ǭ-jist), *n.* [*ovolog*(*y*) + *-ist.*] An oölogist.

ovolysin (ǭ-vol′i-sin), *n.* [L. *ovum*, egg, + E. *lysin.*] A cytotoxin which causes the destruction of egg-cells.

ovomucoid (ō-vǭ-mū′koid), *n.* [L. *ovum*, egg, + E. *mucoid.*] The mucoid substance which occurs in the white of hens' eggs.

ovoplasma (ō-vǭ-plaz′mạ̈), *n.* [L. *ovum*, egg, + Gr. *πλάσμα*, anything formed.] Same as *ovoplasm* or ⋆*oöplasm.*

ovotid (ō′vǭ-tid), *n.* Same as ⋆*oötid.*

ovovitellin (ō″vǭ-vi-tel′in), *n.* [L. *ovum*, egg, + E. *vitellin.*] A nucleo-albumin found in the yolk of eggs. The paranucleinic radical which enters into its composition is the avivitellinic acid described by Levene and Alsberg.

ovoviviparism (ō″vǭ-vī-vip′ạ-rizm), *n.* [*ovovivipar*(*ous*) + *-ism.*] Ovoviviparity.

Ovular decidua. See ⋆*decidua.*

ovulase (ō′vụ-lās), *n.* [*ovule* + *-ase.*] An enzym supposed to exist in the living egg and to act as a stimulus to its mitotic divisions.

ovum, *n.*—**Ruptor ovi**, a hatching spine or egg-burster; a temporary organ, appearing late in the embryonic life of certain insects and other animals, by the use of which they are able to break open or cut open the egg-shell.

ovum-nucleus (ō′vum-nū″klę̄-us), *n.*; pl. *ovum-nuclei* (-ī). The egg-nucleus or germinal vesicle of the unfertilized egg.

owala (ǭ-wä′lạ̈), *n.* [Native name in Gaboon.] A leguminous tree of western Africa, *Pentaclethra macrophylla*, which bears pods about 2 feet long containing large flat seeds. These yield an oil and are used as food by the natives. They also form one of the ingredients of ⋆*udika-bread* (which see).

owdell (oud′l), *n.* [W. *awdl*, a rime or assonance (pl. *odlau*); also as in def. (pl. *awdlau*).] A poem consisting of compositions in all the 24 strict meters. *N. E. D.*

Owenism (ō′en-izm), *n.* [*Owen* + *-ism.*] The communistic system of Robert Owen.

Owenist (ō′en-ist), *a.* and *n.* [*Owen* + *-ist.*] I. *a.* Of or pertaining to Owenism.

II. *n.* Same as *Owenite.*

owl[1], *n.*—**Acadian owl**, the saw-whet owl, *Nyctala acadica.* See *Nyctala.*—**Cuckoo owl.** Same as ⋆*boobook* (which see).—**Owl-face vases.** See ⋆*vase.*—**Owl nebula.** See ⋆*nebula.*—**Pygmy owl**, *Glaucidium gnoma*, a common diminutive species of California and the Southwest, having a length of about seven inches. It is brown above, spotted with white, and white below, with reddish-brown streaks. Also called *gnome-owl.* See *Glaucidium*, with cut.—**Richardson's owl**, the arctic saw-whet, *Nyctala tengmalmi richardsoni*, seen in the northern United States only in winter.—**White owl.** (*a*) The snow-owl. (*b*) Sometimes applied to the barn-owl, *Strix pratincola*, which is white below and when in flight seems almost entirely white. See cut at *barn-owl.*

owlet, *n.*—**Black owlet**, a noctuid moth, *Noctua c-nigrum*, common to Europe and the eastern United States. Its larva is known as the *spotted* ⋆*cutworm*, which see, with cut.—**Clover-looping owlet**, either of two American noctuid moths, *Drasteria erechtea* or *D. crassiuscula*, whose larvæ, having only three pairs of prolegs, walk like geometrid larvæ and feed on clover.—**Hooded owlet**, any noctuid moth of the genus *Cucullia.* These moths have a prominent tuft of scales on the thorax, which often projects over the head like a hood.—**Scalloped owlet**, a noctuid moth, *Scoliopteryx libatrix*, common to Europe and North America, brownish gray in color, with scalloped fore wings. Its larvæ feed on the willow.—**Similar-winged owlet**, an American noctuid moth, *Homoptera lunata*, brownish in color, with marbled wings. Its larvæ feed on the willow, plum, rose, and maple, and on other plants.

owl-gazel (oul′gạ-zel″), *n.* A misspelling and consequent misuse of *aoul*, the native African name for Sömmering's gazel.

owl's-clover (oulz′klō″vėr), *n.* In California, a plant of the scrophulariaceous genus *Orthocarpus*, particularly *O. erianthus.* The genus is related to *Castilleja*, the painted-cup. The white owl's-clover is *O. versicolor*, by some considered a variety of the former. See ⋆*escobita* and ⋆*cream-sacs.*

owl's-crown (oulz′kroun), *n.* Either the cotton-rose, *Gifola Germanica*, or the chafeweed, *Gnaphalium sylvaticum*, old-world cudweeds introduced into the United States.

ownership, *n.*—**Absolute ownership**, in *law*, the right, title, or interest in property which one party has to the total exclusion of all other parties, and subject only to the general laws.

ox, *n.* 3. Same as ⋆*ox-coin.*—**Kafir ox**, the Cape buffalo, *Bubalus caffer.*

oxadoddy (ok′sạ-dod-i), *n.* The Culver's-physic or Culver's-root, *Leptandra Virginica.*

oxalan (ok′sạ-lan), *n.* [A metathesis of *alloxan.*] Oxaluramide, $NH_2CONH.C_2O_2NH_2$, a crystalline compound made by treating oxaluric ester with alcoholic ammonia, and also by treating a dilute solution of alloxan with hydrocyanic acid and then with ammonia.

oxalantine (ok-sạ-lan′tin), *n.* [*oxalan* + *-t-* + *-ine*[2].] A crystalline substance, $C_6H_6O_6N_4$, obtained by boiling alloxanic acid a long time with water, and also by the reduction of parabanic acid with zinc and hydrochloric acid.

oxaldehyde (ok-sal′dę̄-hīd), *n.* [*ox*(*ygen*) + *aldehyde.*] Same as *glyoxal.*

oxalethyline (ok-sal-eth′i-lēn), *n.* [*oxal*(*ic*) + *ethyl* + *-ine*[2].] Meta-methyl-n-ethylglyoxaline, $C_4H_5N.N.C_2H_5$, a liquid with a strong, narcotic odor. It has the same physiological action as atropin, and is a strong base.

oxalhydrate (ok-sal-hī′drāt), *n.* [*oxal*(*ic*) + *hydrate.*] An obsolete name for a salt of saccharic acid.

oxalhydric (ok-sal-hī′drik), *a.* [*oxal*(*ic*) + *hydric.*] An obsolete name for *saccharic.*

oxalidaceous (ok-sal-i-dā′shius), *a.* Belonging to the *Oxalidaceæ*, or sorrel family of plants.

oxaline (ok′sạ-lin), *n.* [*oxal*(*ic*) + *-ine*[2].] Same as ⋆*glyoxaline.*

oxaluramide (ok-sạ-lūr′am-id), *n.* [*oxalur*(*ic*) + *amide.*] The amide of oxaluric acid, $NH_2CONH.COCONH_2$, prepared by heating the ester of the acid with alcoholic ammonia. It is crystalline and nearly insoluble in water.

oxalyl (ok′sạ-lil), *n.* [*oxal*(*ic*) + *-yl.*] The radical, C_2O_2, of oxalic acid.

oxalylurea (ok-sạ-li-lū′rę̄-ạ̈), *n.* [*oxalyl* + *urea.*] Same as ⋆*parabanic acid.*

oxamethane (ok-sa-meth′ān), *n.* [*oxa*(*late*) + *methane.*] Ethyl oxamate, $NH_2.OC.CO_2C_2H_5$, a white crystalline compound prepared by the action of dry ammonia gas on ethyl oxalate. It melts at 114–115° C.

oxamethylane (ok-sạ-meth′il-ān), *n.* [*oxa*(*late*) + *methyl* + *-ane.*] Methyl oxamate, $NH_2.OC.CO_2CH_3$, a crystalline compound made by passing dry ammonia gas into fused methyl oxalate.

oxamidin (ok-sam′i-din), *n.* [*ox*(*alic*) + *amidin.*] 1. The amidin of oxalic acid, $(C.NH.NH_2)_2$. The hydrochlorid, $C_2H_6N_4.HCl$, is formed when the hydrochlorid of oximido ester is boiled a long time with ammonia dissolved in absolute alcohol.—2. Same as ⋆*amidoxime.*

oxamine (ok-sam′in), *n.* [*oxam*(*ic*) + *-ine*[2].] A name of a number of coal-tar colors which are related to oxamic acid. See *oxamine* ⋆*black*, ⋆*blue*, ⋆*red*, etc.

oxammite (ok-sam′īt), *n.* [*ox*(*alate*) + *amm*(*onium*) + *-ite*[2].] Ammonium oxalate, occurring in yellowish-white crystals, also granular and pulverulent: found in the guano of the Guañape Islands of Peru.

oxanilamide (ok-sa-nil′am-id), *n.* A crystalline compound, $NH_2.OC.CO.NHC_6H_5$, which melts at 224° C., formed when cyaniline is decomposed by hydrochloric acid. Also called *phenyloxamide.*

oxanilic (ok-sạ-nil′ik), *n.* [*ox*(*alic*) + *anil*(*ine*) + *-ic.*] Derived from oxalic acid and aniline.—**Oxanilic acid**, phenyloxamic acid, a white crystalline compound, $C_6H_5NH.OC.CO_2H$, formed by heating aniline with an excess of oxalic acid, and also by boiling oxanilide for a short time with alcoholic potash. It melts at 149–150° C.

oxanilide (ok-san′i-lid), *n.* [*ox*(*alic*) + *anilide.*] The anilide of oxalic acid, $(CONHC_6H_5)_2$, a crystalline compound which melts at 245° C.

oxaniline (ok-san′i-lin), *n.* [*ox*(*ygen*) + *aniline.*] Hydroxyaniline or aminophenol, $C_6H_4(OH)NH_2$.

oxaphor (ok′sạ-fōr), *n.* [Trade-name.] A 50 per cent. alcoholic solution of oxycamphor, used in cardiac dyspnœa.

oxazin (ok-saz′in), *n.* [*ox*(*ygen*) + *az*(*ote*) + *-in*[2].] The unknown mother-substance, C_4H_5ON, of compounds containing a ring composed of four carbon atoms, a nitrogen, and an oxygen atom.—**Oxazin color.** See ⋆*color.*

oxazole (ok-saz′ōl), *n.* [*ox*(*ygen*) + *az*(*ote*) + *-ole.*] The unknown mother-substance, C_3H_4ON, of compounds containing a ring composed of three carbon atoms, one nitrogen, and one oxygen atom.

ox-ball (oks′bâl), *n.* 1. An ornamental brass tip designed to be placed on the horns of cattle.—2. A round hairy concretion often found in the stomachs of oxen.

oxbane (oks′bān), *n.* [*ox* + *bane*[1], 2.] A South African plant, *Buphone toxicaria*, injurious to cattle. See *poison-bulb.*

ox-bile (oks′bīl), *n.* Same as *ox-gall.* In a purified and dried condition it is occasionally used in medicine.

ox-blood (oks′blud), *n.* See *sang-de-bœuf.*

ox-bot (oks′bot), *n.* The larva of the bot-fly of the ox. See *bot*[1] and *bot-fly.* Also called *ox-warble* or *wormil.*

ox-coin (oks′koin), *n.* An ancient silver coin bearing the image of the head of an ox or a bull. Also called *ox.*

> These *ox coins* to which Pollux refers have been identified with certain silver coins with a bull's head struck in Euboea. . . . We must therefore take [their value] in Delos at two silver drachmas.
>
> *Isaac Taylor*, in The Academy, Sept. 10, 1892, p. 220.

oxeote (ok′sē-ōt), *a.* Same as *oxeate.*

Oxf. An abbreviation of *Oxford.*

Oxford gray, tracts. See ⋆*gray*, *tract*[3].

Oxfordism (oks′fǭr-dizm), *n.* 1. A characteristic of Oxford or of Oxford scholarship.—2. The characteristics of the Oxford movement, or that movement itself.

Oxfordist (oks′fǭr-dist), *n.* One who adheres to the principles of the Oxford movement.

Oxford-weed (oks′fǭrd-wēd), *n.* The Kenilworth ivy, *Cymbalaria Cymbalaria.*

ox-harrow (oks′har-ō), *n.* A large and very heavy harrow, originally drawn by oxen.

oxharrow (oks′har-ō), *v. t.* To harrow with an ox-harrow.

oxid, *n.*—**Acidic**, or **acid, oxid**, an oxid of an electronegative element or radical, which is capable of combining with the elements of water to produce an acid, or of combining with a basic oxid to produce a salt. Also known as the anhydrids of the corresponding acids.—**Blue oxid**, the finely divided metallic zinc which is condensed in the sheet-iron drums fixed upon the clay adapters of zinc retorts. It consists mainly of zinc and zinc oxid, and, on account of its extreme state of division, is employed as a reducing agent in various chemical operations, or it is sometimes converted into metallic zinc or zinc white.—**Stannic oxid**, tin dioxid, SnO_2, which occurs in nature as cassiterite or tinstone, and may be artificially prepared by strongly heating tin in the air or by igniting the metastannic acid formed by the interaction of tin and nitric acid. As thus prepared it appears as a white or slightly yellowish powder, of specific gravity 6.7, unattacked by acids except concentrated sulphuric acid. Industrially the oxid is used in making milk-glass or white enamel, and under the name putty-powder as a polishing material.—**Titanic oxid**, titanium dioxid, TiO_2. It occurs in nature in three different crystalline forms as the minerals rutile, anatase, and brookite. As artificially produced it is a white insoluble powder, closely resembling silica in its chemical relations. It has been used to give color to artificial teeth.—**Uranium oxid.** Of the oxids of uranium the one most commonly seen is the trioxid, UO_3; but the oxid of uranium, or uranium yellow of commerce, is sodium uranate, $Na_2U_2O_7$. It is prepared from the mineral pitchblende, found in the Bohemian Erzgebirge, and forms a bright-yellow powder, used to color glass, giving it a peculiar fluorescence, and to paint on porcelain.—**Zinc oxid**, zinc monoxid, ZnO, the only known compound of zinc and oxygen, occurring in nature and utilized as one of the ores of the metal. Artificially prepared by allowing zinc vapor to escape into and burn in the air, it forms a white powder, which becomes temporarily yellow when heated, and is used as a pigment, having the advantage of not blackening by exposure to air containing sulphurated hydrogen.

oxidase (ok′si-dās), *n.* [*oxid* + *-ase.*] An oxidizing ferment occurring widely distributed in animal and plant life. Many if not all intracellular oxidations are referable to the presence of oxidases. They are divided into three classes: (*a*) the *oxygenases*, which take up molecular oxygen with the formation of peroxids; (*b*) the *peroxidases*, which in themselves do not cause oxidations, but increase the power of oxidation on the part of the peroxids; (*c*) the *catalases*, which are only feeble oxidizing agents. Also *oxydase.*

oxidasic (ok-si-dā′sik), *a.* [*oxidase* + *-ic.*] Of or pertaining to the oxidases.—**Oxidasic oxidation,** combination with oxygen brought about by an organic enzym of the class known as oxidases.

Oxidation black, colors. See ★*black*, ★*color*.

oxidative (ok′si-dā-tiv), *a.* [*oxidate* + *-ive.*] Producing or tending to produce oxidation.

oxidimetric (ok″si-di-met′rik), *a.* [*oxidimetr*(*y*) + *-ic.*] Involving or concerned with oxidimetry.

oxidimetry (ok-si-dim′ẹ-tri), *n.* [*oxid* + Gr. *-μετρια*, < *μέτρον*, measure.] In *chem.*, a process of analysis, usually volumetric, in which the quantity of a substance is determined by ascertaining the quantity of oxygen which it combines with or gives up in a particular chemical reaction.

oxidizability (ok″si-dī-zạ-bil′ị-ti), *n.* [*oxidizable* + *-ity.*] The capability of being oxidized.

oxidulated, *a.* In *chem.*: (*b*) Containing a smaller proportion of oxygen than that in another compound of the same element or radical: as, *oxidulated* iron ore (magnetite) in contradistinction to red iron ore or ferric oxid.

oxidule (ok′si-dūl), *n.* [F. *oxidule*; < *oxid* + *-ule.*] A French name, not generally adopted into English, for an oxid containing a smaller proportion of oxygen than that in another compound of the same element or radical.

oxidulous (ok-sid′ụ̄-lus), *a.* Same as ★*oxidulated.*

oxime (ok′sim), *n.* [*ox*(*ygen*) + *im*(*in*)*e.*] A compound formed by the action of hydroxylamine on an aldehyde (aldoxime) or a ketone (ketoxime). The oximes contain the atomic grouping =C:N.OH. They have played an important part in the study of the stereochemistry of nitrogen. Their formation indicates the presence of carbonyl oxygen in the substances from which they are derived.

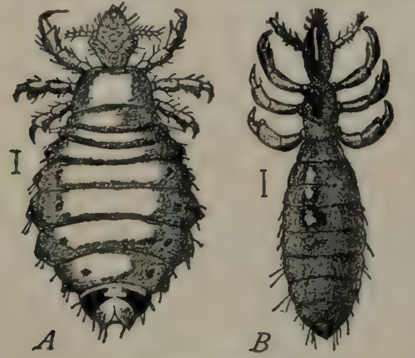
oximide (ok-sī′mid), *n.* [*ox*(*alic*) + *imide.*] The imide of oxalic acid, C_2O_2NH, a colorless crystalline compound which is easily changed into oxamide and oxalic acid.

oximido (ok-si-mī′dō). In *chem.*, the first element in some compound names, indicating that the substance named contains the isonitroso group, =N.OH.

oxindol (ok-sin′dol), *n.* [*ox*(*ygen*) + *indol.*] A colorless crystalline substance, C_8H_7ON, formed by reducing isatin or the anilide of orthonitrophenylacetic acid. Also called *indolinone.*

oxiodic (ok-sī-od′ik), *a.* [*ox*(*ygen*) + *iod*(*ine*) + *-ic.*] Containing oxygen and iodine united to the same element or radical.

ox-louse (oks′lous), *n.* Either of two species of true lice (family *Pediculidæ*) which affect cattle: *Hæmatopinus eurysternus*, known as the short-nosed ox-louse, and *H. vituli*, the long-nosed ox-louse. See ★*cattle-louse.*



Ox-louse. Female.
A, *Hæmatopinus eurysternus*; *B*, *H. vituli.*

ox-money (oks′mun-i), *n.* A tax levied on oxen. *N. E. D.*

oxolin (ok′sọ̄-lin), *n.* [*ox*(*ygen*) + *-ol* + *-in*2.] The trade-name of a low-grade substitute for india-rubber, made by impregnating such fibrous materials as hemp or jute with linseed-oil, repeatedly exposing it, spread out on trays, to the oxidizing action of air at about 45° C., and working the product between rollers into a uniform mass, capable of undergoing an imperfect vulcanization.

oxone (ok′sōn), *n.* [*ox*(*ygen*) + *-one.*]. The trade-name of sodium dioxid in compact form produced by fusion, to be used for the generation of oxygen by contact with water.

oxonic (ok-son′ik), *a.* [*ox*(*ygen*) + *-on-* + *-ic.*] Formed by the oxidation of uric acid.—**Oxonic acid**, an unstable acid, $C_4H_5O_4N_3$, which is not known in the free state. The potassium salt is formed when a solution of uric acid in caustic potash is oxidized in the air.

Oxonien. An abbreviation of the Latin *Oxoniensis*, of Oxford.

oxonite (ok′sọ̄-nīt), *n.* The trade-name of an explosive made by dissolving 54 parts of picric acid in 46 parts of nitric acid of specific gravity 1.50.

oxonium (ok-sō′ni-um), *n.* [NL., < *ox*(*ygen*) + *-on-ium.*] A radical, $^{R}_{R'}\!\!>\!O\!<\!^{R''}_{R'''}$, containing a quadrivalent oxygen atom and possessing salt-forming properties.

oxpecker, *n.* It is somewhat smaller than a robin, of a grayish-brown color, with dark wings and a yellow bill. This bird is found in northern and eastern Africa. A second species, the red-billed oxpecker, *B. erythrorhyncha*, inhabits central Africa. See *Buphaga*, with cut.

oxter, *n.* **2.** In *coal-mining*, a reëntrant corner in a working face.

oxter-plate (oks′tėr-plāt), *n.* Same as ★*tuck-plate.*

ox-warble (oks′wâr-bl), *n.* Same as ★*ox-bot.* Compare also *warble*3, 3.

ox-wort (oks′wėrt), *n.* The butter-bur or butterfly-dock, *Petasites Petasites.*

oxy-. [*oxy*(*gen*).] In *chem.*, a prefix indicating that the substance named contains oxygen. In almost all cases it is chemically synonymous with ★*hydroxy-*, which is to be preferred.

oxyacanthine (ok″si-a-kan′thin), *n.* [*oxy*(*gen*) + (?) Gr. *ἀκανθα*, thorn, spine, + *-ine*2.] A crystalline compound, $C_{19}H_{21}NO_3$, obtained from the bark of the root of the barberry, *Berberis vulgaris.* Also called *vinetine.*

oxyacetic (ok″si-a-set′ik), *a.* [*oxy*(*gen*) + *acetic.*] Same as *glycolic.*

oxyacetylene (ok-si-a-set′i-lēn), *a.* [*oxy*(*gen*) + *acetylene.*] Noting the mixture of oxygen and acetylene.—**Oxyacetylene blowpipe.** See ★*blowpipe.*

oxyacid, *n.* This term was formerly used to distinguish an acid containing oxygen from one in which this element is not present, as sulphuric acid, H_2SO_4, from hydrochloric acid, HCl. In modern organic chemistry the same term is often applied to an acid which contains both a carboxyl and a hydroxyl group, as oxyacetic or glycolic acid, $CH_2.HO.COOH$. Substances of this kind are perhaps better called *hydroxyacids* or *alcohol acids.*

oxyammonia (ok″si-a-mō′ni-ạ̈), *n.* [*oxy*(*gen*) + *ammonia.*] Same as ★*hydroxylamine.*

oxyamygdalic (ok″si-am-ig-dal′ik), *a.* [*oxy*(*gen*) + *amygdalic.*] Noting p-oxyphenylglycolic acid, $C_8H_8O_4$, which has been found in the urine in cases of acute yellow atrophy.

oxyazin (ok-si-az′in), *n.* [*oxy*(*gen*) + *az*(*ote*) + *-in*2.] One of a class of artificially produced coal-tar dyes, which includes among others gallocyanine, Meldola's blue, and the beautifully fluorescent resorcinal blue.

oxyazo-. In *chem.*, a prefix showing that the compound named is an azo compound containing hydroxyl in one of the radicals, as in *oxyazobenzene*, $C_6H_5N_2C_6H_4.OH$: same as ★*hydroxyazo-*, which is to be preferred.—**Oxyazo dyes.** See ★*dye*1.

oxybaphon, *n.* **2.** In *Gr. antiq.*, a vinegar-cruet; a small shallow vase for holding condiments.

oxybenzoic (ok″si-ben-zō′ik), *a.* [*oxy*(*gen*) + *benzoic.*] Noting benzoic acid in which hydroxyl takes the place of a hydrogen atom.—**Oxybenzoic acid**, $C_6H_4(OH)CO_2H$; hydroxy-benzoic acid. Of the three isomeric varieties the ortho compound, or salicylic acid, is the best known.

oxybromide (ok-si-brō′mid), *n.* [*oxy*(*gen*) + *brom*(*ine*) + *-ide*2.] A substance containing oxygen and bromine united to the same element or radical: as, carbon *oxybromide* or carbonyl bromide, $COBr_2$.

oxybromochlorid (ok″si-brō-mọ̄-klō′rid), *n.* [*oxy*(*gen*) + *brom*(*ine*) + *chlor*(*in*) + *-id.*] A substance containing oxygen, bromine, and chlorin united to the same element or radical: as, phosphorus *oxybromochlorid* or phosphoryl bromochlorid, $POBrCl_2$.

oxybutyric (ok″si-bū-tir′ik), *a.* [*oxy*(*gen*) + *butyric.*] Noting butyric acid in which one hydrogen atom is replaced by hydroxyl.—**Oxybutyric acid**, an acid, $C_4H_8O_3$, which occurs in three isomeric forms. Alpha-oxybutyric acid is found in the urine of diabetic patients. Also called *butanolic acid* and *hydroxybutyric acid.*

oxycaltrop (ok-si-kal′trop), *n.* [Gr. *ὀξύς*, sharp, + E. *caltrop.*] In the sponge-spicules, a caltrop with sharply pointed equal arms.

oxycamphor (ok-si-kam′fọ̈r), *n.* [*oxy*(*gen*) + *camphor.*] A name of two compounds: (*a*) *Alpha-oxycamphor*, $C_{10}H_{16}O_2$, formed by reducing camphoquinone. It melts at 203–205° C. (*b*) *Beta-oxycamphor*, $C_{10}H_{16}O_2$, made by the action of nitrous acid on β-amino-camphor. It is a crystalline substance which melts at 154–155° C. Other varieties are made by oxidizing camphene and borneol.

oxycannabin (ok-si-kan′ạ-bin), *n.* [*oxy*(*gen*) + *cannabin.*] A name formerly given, incorrectly, to *nitrocannabinolactone*, $NO_2.C_6H_3(CH_3)\underset{\llcorner O \lrcorner}{C_3H_5}CO$.

oxycaproic (ok″si-ka-prō′ik), *a.* [*oxy*(*gen*) + *caproic.*] Noting an acid derived from caproic acid by replacing one atom of hydrogen by hydroxyl.—**Oxycaproic acid**, an acid, $C_6H_{12}O_3$, four varieties of which are known. Also called *hydroxycaproic* or *hexanolic acid.* Alpha-oxycaproic acid is also called *leucic acid.* See ★*leucic.*

oxycarbanil (ok-si-kär′bạ-nil), *n.* [*oxy*(*gen*) + *carb*(*on*) + (*an*)*il.*] A colorless compound, $C_6H_4\!\!<\!\!{}^{NH}_{O}\!\!>\!\!CO$ or $C_6H_4\!\!<\!\!{}^{N}_{O}\!\!\gg\!\!COH$, prepared by fusing orthophenylenediamine hydrochlorid with urea.

oxycellulose (ok-si-sel′ụ̄-lōs), *n.* [*oxy*(*gen*) + *cellulose.*] A white amorphous compound, $C_{18}H_{26}O_{16}$ or $C_{36}H_{60}O_{31}$, made by boiling cellulose with nitric acid. Other varieties have been made by the action of potassium chlorate ($C_{24}H_{38}O_{21}$)(?), bromine water ($C_{12}H_{20}O_{11}$), and hydrogen peroxid ($C_{36}H_{62}O_{31}$). The composition of these compounds is uncertain. See ★*celloxin.*

oxycephalic (ok″si-se-fal′ik), *a.* [*oxycephal*(*y*) + *-ic.*] In *anthrop.*, characterized by oxycephaly.

> There is a generally recognised tendency to the pointed (*oxycephalic*) or sugar-loaf form of head.
> *H. H. Ellis*, The Criminal, p. 50.

oxycephaloid (ok-si-sef′ạ̈-loid), *a.* [*oxycephal*(*ic*) + *-oid.*] Similar to oxycephalic forms.

oxycephaly, *n.* **2.** In *anthrop.*, the head-form resulting from artificial deformation applied all around the head and preventing lateral and occipital growth, thus making the head very high in the region of the bregma. Similar forms result from premature synostosis of the parietals with the occipital or temporal bones. *Virchow.*

oxychlor-, oxychloro-. In *chem.*, prefixes showing that the compound named is oxychloric. See ★*oxychloric.*

oxychlorate (ok-si-klō′rāt), *n.* [*oxychlor*(*ic*) + *-ate*1.] An early name for what is now called *perchlorate*, a salt of perchloric acid.

oxychloric (ok-si-klō′rik), *a.* [*oxy*(*gen*) + *chlor*(*in*) + *-ic.*] Containing oxygen and chlorin united to the same element or radical.—**Oxychloric acid**, an early name for the substance now called *perchloric acid*, $HClO_4$.

oxychlorid, *n.*—**Phosphorus oxychlorid**, a colorless liquid, $POCl_3$, of peculiar acid smell, fuming strongly in the air, obtainable by heating together phosphorus pentoxid and sodium chlorid, and also by other processes. In organic chemistry it serves as a valuable reagent.

oxychloruret (ok-si-klō′rö-ret), *n.* An early and little-used name for an oxychlorid.

oxychromatin (ok-si-krō′mạ̈-tin), *n.* [*oxy*(*gen*) + Gr. *χρῶμα*(*τ-*), color, + *-in*2.] That portion of the nuclear substance of the cell which is stained by acid aniline dyes: equivalent to *linin.* *Heidenhain*, 1894.

oxyclad (ok′si-klad), *n.* [Gr. *ὀξύς*, sharp, + *κλάδος*, a shoot or branch.] In sponge-spicules, a form having branches.

Oxyclænidæ (ok-si-klē′ni-dē), *n. pl.* [NL., < *Oxyclænus*, the type genus, + *-idæ.*] A family of small mammals, based on remains from the Puerco Eocene: of somewhat doubtful affinities, but generally placed in the *Creodonta.* *Scott*, 1892.

oxyconine (ok-si-kō′nin), *n.* [*oxy*(*gen*) + *Con*(*ium*) + *-ine*2.] Same as *conhydrine.*

oxycopaivic (ok″si-kọ̄-pā′vik), *n.* [*oxy*(*gen*) + *copaiva* + *-ic.*] Of or pertaining to copaiba.—**Oxycopaivic acid**, a crystalline constituent, $C_{20}H_{28}O_3$, contained in paracopaiba balsam.

oxycraspedote (ok-si-kras′pe-dōt), *a.* [Gr. *ὀξύς*, sharp, + *κράσπεδον*, edge.] In *anthrop.*, having a sharp margin: said of the nasal skeleton. *Jour. Anthrop. Inst.*, 1900, p. 147.

oxycyanide (ok-si-sī′ạ̈-nid), *n.* [*oxy*(*gen*) + *cyan*(*ogen*) + *-ide*1.] A substance containing oxygen and the radical cyanogen united to the same element or radical: as, mercuric *oxycyanide*, or *oxycyanide* of mercury, $Hg_2(Cn)_2O$.

oxycymene (ok-si-sī′mēn), *n.* Hydroxycymene, the scientific name for both carvacrol and thymol.

oxycynurine (ok-si-sin′ū-rin), *n.* [*oxy(gen)* + *cynurine.*] An oxidation-product of cynurine.

oxydase, *n.* See ★*oxidase.*

oxydation, *n.* See *oxidation.*

oxydiamine (ok-si-dī′am-in), *n.* [*oxy(gen)* + *di-*² + *amine.*] A name by which several direct cotton coal-tar colors are designated.—**Oxydiamine black.** See ★*black.*

oxydimorphine (ok″si-dī-môr′fin), *n.* [*oxy-(gen)* + *di-*² + *morphine.*] A colorless non-poisonous alkaloid, $C_{34}H_{36}O_6N$, contained in opium and prepared by the gentle oxidation of morphine. Also called *oxymorphine, dehydromorphine,* and *pseudomorphine.*

oxyethyl (ok-si-eth′il), *n.* [*oxy(gen)* + *ethyl.*] Ethyl in which one hydrogen atom is replaced by hydroxyl, as $CH_2(OH).CH_2$ or $CH_3.CH(OH)$. It occurs only as a substituting group in compounds.

oxyfatty (ok-si-fat′i), *a.* [*oxy(gen)* + *fatty.*] Noting fatty acids in which part of the hydrogen is replaced by hydroxyl, as lactic acid, $C_2H_4(OH)CO_2H$, glyceric acid, $C_2H_3(OH)_2CO_2H$, and saccharic acid, $C_5H_7(OH)_4CO_2H$. *Buck,* Med. Handbook, I. 683.

oxygen, *n.* **1.** Oxygen was first liquefied on a small scale by Cailletet and Pictet near the end of the year 1877, and has since then been obtained in the liquid state in large quantity. It forms a liquid of light-blue color, with a specific gravity of 1.124 at its boiling-point (− 182°.6 C. or − 296°.7 F.), and strongly paramagnetic.—**Available oxygen,** the proportion of oxygen in a manganese or in excess of one atom for each atom of manganese, such excess alone being effective in producing free chlorin from hydrochloric acid in the manufacture of bleaching-powder.—**Oxygen star.** See ★*star*¹.

oxygenant (ok-sij′ẹ-nant), *n.* [*oxygen* + *-ant.*] A substance that produces or is capable of producing oxidation.

oxygen-carrier (ok′si-jen-kar″i-ėr), *n.* A substance used to bring about the transfer of oxygen so as to produce a compound of this element which would not be formed in the absence of the carrier. Thus, nitrogen dioxid serves as a carrier of oxygen derived from the air to sulphur dioxid and water in the lead-chamber process for making sulphuric acid.

oxygeneity (ok′si-je-nē′ị-ti), *n.* Same as ★*oxygenity.*

Oxygeneum (ok′si-jẹ̄-nē′um), *n.* [NL., < Gr. ὀξύς, sharp, + γένειον, chin, jaw.] A genus of cyprinoid fishes found in the Illinois river.

oxygeniferous (ok″si-je-nif′ẹ-rus), *a.* [*oxygen* + L. *-fer,* < *ferre,* bear.] Containing or serving to transfer oxygen.

oxygenity (ok-si-jen′ị-ti), *n.* [*oxygen* + *-ity.*] The essential character of oxygen. Also *oxygeneity.* [Rare.]

oxygenoid (ok-sij′e-noid), *a.* [*oxygen* + *-oid.*] More or less like oxygen (in some respects): formerly applied to oxygen and to the other elements which resemble it in being strongly electronegative, as chlorin, fluorin, etc.

oxygenophore (ok-si-jen′ō-fōr), *n.* [*oxygen* + Gr. -φορος, < φέρειν, bear.] An apparatus for liberating oxygen. It contains sodium peroxid, which with water yields oxygen and sodium hydrate. The latter may serve to absorb carbon dioxid. The air of an inclosed space may therefore be maintained fit for respiration by the use of this instrument. It was devised by Sabatier. *Sci. Amer. Sup.,* June 4, 1904, p. 23,769.

oxygenotaxis (ok″si-jen-ọ-tak′sis), *n.* [NL., < *oxygen* + Gr. τάξις, disposition.] Same as ★*aërotaxis.*

oxygenotropism (ok″si-jen-ot′rọ-pizm), *n.* [*oxygen* + Gr. τρόπος, a turning, + *-ism.*] Same as ★*aërotropism.*

oxyhaloid (ok-si-hā′loid), *a.* [*oxy(gen)* + *hal(ogen)* + *-oid.*] Containing oxygen and one or more of the halogen elements, fluorin, chlorin, bromine, and iodine, united to the same element or radical, as sulphuryl chlorid, SO_2Cl_2.

oxyhemacyanin, oxyhæmacyanin (ok-si-hem-ạ-sī′ạ-nin), *n.* Same as ★*oxyhemocyanin.*

oxyhemocyanin, oxyhæmocyanin (ok″si-hem-ọ-sī′ạ-nin), *n.* [*oxy(gen)* + *hemocyanin.*] The oxy compound of hemocyanin: analogous to oxyhemoglobin. See *hemocyanin.*

oxyhexactine (ok″si-hek-sak′tin), *n.* [Gr. ὀξύς, sharp, + ἕξ, six, + ἀκτίς (ἀκτιν-), ray.] In sponge-spicules, a hexactine whose rays end in sharp points: contrasted with ★*discohexactine.* See *oxyhexact.*

oxyhydrate (ok-si-hī′drāt), *n.* [*oxy(gen)* + *hydrate.*] Same as *hydroxid:* sometimes applied to an oxyhydroxid or compound of the same metal with both oxygen and hydroxyl, as the mineral limonite, $Fe_4O_3(HO)_6$.

oxyhydric (ok-si-hī′drik), *a.* [*oxy(gen)* + *hydr(ogen)* + *-ic.*] Containing oxygen and hydrogen, or depending upon the use of both these elements: as, the *oxyhydric* blowpipe (oxyhydrogen blowpipe).

oxyiode (ok-si-ī′ōd), *n.* [*oxy(gen)* + *iod(in)e.*] A name formerly used for an iodate or salt of iodic acid.

oxyiodic (ok″si-ī-od′ik), *a.* [*oxy(gen)* + *iodic.*] Iodic: as, *oxyiodic* acid, a name formerly used for iodic acid.

oxyiodide (ok-si-ī′ọ-did), *n.* [*oxy(gen)* + *iodide.*] A substance which contains oxygen and iodine united to the same element or radical: as, mercuric *oxyiodide,* $Hg_4O_3I_2$.

oxyiodine (ok-si-ī′ọ-din), *n.* [*oxy(gen)* + *iodine.*] A name originally proposed by Davy for iodine pentoxid, the anhydrid of iodic acid.

oxyisocamphor (ok-si-ī-sọ-kam′fọr), *n.* [*oxy-(gen)* + *iso-* + *camphor.*] A variety of oxycamphor made by oxidizing borneol acetate. It is a yellow crystalline substance which has the odor of vanilla and melts at 248–249° C.

Oxyjulis (ok-si-jū′lis), *n.* [NL., < Gr. ὀξύς, sharp, + NL. *Julis* for *Iulis.*] A genus of labroid fishes found on the coast of southern California.

oxyketone (ok-si-kē′tōn), *n.* [*oxy(gen)* + *ketone.*] A ketone in which part of the hydrogen is replaced by hydroxyl, as acetol, $CH_3.CO.CH_2(OH)$. More correctly called *hydroxyketone.*—**Oxyketone colors.** See ★*color.*

oxykrinin (ok-si-krin′in), *n.* [*oxy(gen)* + Gr. κρίνειν, separate, + *-in*².] Same as ★*secretin.*

oxylic (ok-sil′ik), *a.* In *chem.,* containing a hydroxyl group. *Nature,* April 11, 1907, p. 575.

oxymandel (ok-si-man′del), *a.* [*oxy(gen)* + G. *mandel,* almond (see *amygdalic*).] Same as ★*oxyamygdalic.*

oxymethylene (ok-si-meth′i-lēn), *n.* [*oxy(gen)* + *methyl* + *-ene.*] A polymerization-product $(CH_2O)_n$ of formic aldehyde, made by heating paraformaldehyde. It is a white crystalline substance which melts at 171-172° C. When heated with water it yields formaldehyde; with sulphuric acid it gives α-trioxymethylene; when allowed to stand with milk of lime it yields formic acid and the sugar formose, $C_6H_{12}O_6$. Also called *metaformaldehyde* and, less correctly, *trioxymethylene.*

oxymetric (ok-si-met′rik), *a.* Same as ★*oxidimetric.*

oxymorphine (ok-si-môr′fin), *n.* [*oxy(gen)* + *morphine.*] Same as ★*oxydimorphine.*

oxyneurine (ok-si-nū′rin), *n.* [*oxy(gen)* + Gr. νεῦρον, nerve, + *-ine*².] Trimethylglycocoll.

oxynitrate (ok-si-nī′trāt), *n.* [*oxy(gen)* + *nitrate.*] A substance which contains oxygen and the radical of nitric acid united to the same metal or electropositive radical: as, mercuric *oxynitrate,* $Hg_3O_2(NO_3)_2$.

oxynitrion (ok-si-nī′tri-on), *n.* [NL., < *oxy-(gen)* + *nitr-ic* + *-ion.*] A name proposed by Daniell for the radical NO_3, which in combination with hydrogen forms nitric acid, HNO_3, and with the metals nitrates, as potassium nitrate, KNO_3.

Oxynoë (ok-sin′ọ-ẹ̄), *n.* [NL.] The typical genus of the family *Oxynoëidæ. Rafinesque,* 1819.

Oxynoeidæ (ok-sin-ọ-ē′i-dē), *n. pl.* [NL., < *Oxynoë* + *-idæ.*] A family of opisthobranchiate gastropods with a long body, auriform tentacles, large simple or wing-like epipodia, long narrow foot, and small thin and slightly spiral shells incompletely covering the body. It contains the genera *Oxynoë* and *Lobiger,* found in the Mediterranean, the Antilles, and Polynesia.

Oxynoticeras (ok′si-nọ-tis′ẹ-ras), *n.* [NL., < Gr. ὀξύς, sharp, + νῶτος, back, + κέρας, horn.] A genus of sharply keeled ammonites with highly complicated septal sutures, occurring in the Lias.

oxypetalous (ok-si-pet′ạ-lus), *a.* [Gr. ὀξύς, sharp, + E. *petal* + *-ous.*] Having sharp-pointed petals.

oxyphenic (ok-si-fē′nik), *a.* [*oxy(gen)* + *phen(ol)* + *-ic.*] Noting a compound derived from phenol by the substitution of hydroxyl for part of its hydrogen.—**Oxyphenic acid.** Same as ★*pyrocatechol.*

oxyphenine (ok-si-fē′nin), *n.* [*oxy(gen)* + *phen(yl)* + *-ine*².] Same as *chloramine* ★*yellow.*

oxyphenol (ok-si-fē′nol), *n.* [*oxy(gen)* + *phenol.*] Same as ★*pyrocatechol.*

oxyphil (ok′si-fil), *a.* [Also *oxyphile;* < *oxy-(gen)* + Gr. φιλεῖν, love.] Having an affinity for acid dyes. Certain leucocytes of the blood are called *oxyphil leucocytes,* because of the presence in their protoplasm of granules which have such affinity for acid dyes. As eosin is one of the most common of these, the term 'eosinophil' is often used synonymously with *oxyphil,* and is in fact more common.

Ehrlich distinguished (a) eosinophil or *oxyphil* granulations staining with acid stains, (b) basophil or metachromic granulations which take on basic stains, and (c) neutrophil granulations which will stain only in neutral mixtures. *Jour. Roy. Micros. Soc.,* Aug , 1903, p. 486.

oxyphilic (ok-si-fil′ik), *a.* Same as ★*oxyphil. Simon,* Physiological Chem., p. 303.

oxyphilous (ok-sif′i-lus), *a.* [*oxyphil* + *-ous.*] Same as ★*oxyphil.*

oxyphyre (ok′si-fīr), *n.* [*oxy(gen)* + *por-(phyry).*] In *petrog.,* a name suggested by Pirsson (1895) for porphyries in which quartz, the feldspars, and feldspathic minerals preponderate: opposed to *lamprophyre.*

oxypropionic (ok″si-prō-pi-on′ik), *a.* [*oxy-(gen)* + *propionic.*] Noting an acid known in two modifications or isomers, α-oxypropionic acid, $CH_3.CH(OH).CO_2H$, and β-oxypropionic acid, $CH_2(OH).CH_2.CO_2H$. The former is ordinary lactic acid, also known as ethidene lactic acid. The latter is known as hydracylic acid or ethylene lactic acid, and may be obtained by boiling β-iodopropionic acid with water, or on heating it with moist silver oxid. Both are syrupy, non-crystallizable liquids.

oxyprotonic (ok″si-prọ-ton′ik), *a.* [*oxy(gen)* + Gr. πρῶτος, first, + *-on-ic.*] Noting an organic substance, of the character of a polybasic acid, which Maly obtained on careful oxidation of albumin.

oxyprotosulphonic (ok″si-prō″tọ-sul-fon′ik), *a.* [*oxy(gen)* + Gr. πρῶτος, first, + *sulph(ur)* + *-on-ic.*] Same as ★*oxyprotonic.*

oxypurine (ok-si-pū′rin), *n.* [*oxy(gen)* + *purine.*] A substance derived from purine by replacing hydrogen by hydroxyl, as 6-oxypurine or hypoxanthine ($C_5H_4ON_4$), 2,6-dioxypurine or xanthine ($C_5H_4O_2N_4$), and 2,6,8-trioxypurine or caffeine ($C_5H_4O_3N_4$).

oxypyrone (ok-si-pī′rōn), *n.* [*oxy(gen)* + *pyr(omeconic)* + *-one.*] Same as ★*pyromeconic acid.*

oxyquinaseptol (ok′si-kwin-ạ-sep′tol), *n.* [*oxy(gen)* + *quin(ine)* + *asept(ic)* + *-ol.*] A trade-name for quinoline orthophenol-sulphonate, $C_6H_4{\begin{matrix}{}^{/}OH\\{}_{\backslash}SO_3H\end{matrix}}(C_9H_7N)_2$, a powerful but little used antiseptic. It forms amber-colored transparent hexagonal crystals and melts at 185° F. Also called *diaphtherin.*

oxyquinoline (ok-si-kwin′ọ-lin), *n.* [*oxy(gen)* + *quinoline.*] A substance derived from quinoline by replacing hydrogen by hydroxyl, as α-oxyquinoline or carbostyril, $C_9H_6N(OH)$.

oxyrhynch, *n.* **II.** *a.* Pertaining to or having the characters of the *Oxyrhyncha;* having a sharp or pointed rostrum, as a spider-crab.

oxystomous (ok-si-stō′mus), *a.* Same as *oxystomatous.*

oxysulphate (ok-si-sul′fāt), *n.* [*oxy(gen)* + *sulphate.*] A substance which contains oxygen and the radical of sulphuric acid united to the same metal or electropositive radical, as ferric oxysulphate (Monsell's salt), $Fe_2O(SO_4)_2$.

oxysulphion (ok-si-sul′fi-on), *n.* A name proposed by Daniell for the radical SO_4, which in combination with hydrogen forms sulphuric acid (H_2SO_4), and with the metals sulphates, as sodium sulphate (Na_2SO_4).

oxytocia (ok-si-tō′si-ạ̈), *n.* [NL., < Gr. ὀξύς, sharp, quick, + τόκος, parturition.] Abnormally rapid parturition.

oxytocous (ok-sit′ọ-kus), *a.* Same as *oxytocic.*

oxytoluene (ok-si-tol′ụ-ēn), *n.* [*oxy(gen)* + *toluene.*] The same as *cresol.*

oxytoluic (ok″si-tọ-lū′ik), *a.* [*oxy(gen)* + *toluic.*] Denoting an acid derived from toluic acid by replacing part of the hydrogen by hydroxyl.—**Oxytoluic acid.** Same as *cresotic acid.*

oxytriæne (ok-si-trī′ēn), *n.* [Gr. ὀξύς, sharp, + τρίαινα, a trident.] In the sponge-spicules, a triæne with sharp arms. See *triæne.*

oxytrichinous (ok-si-trik′i-nus), *a.* Same as *oxytrichine.*

oxytriod (ok-si-trī′od), *n.* [Gr. ὀξύς, sharp, + E. *triod.*] In the nomenclature of the sponge-spicules, a triod with straight, sharp-pointed arms. See *triod.*

oxytropine (ok-si-trō′pin), *n.* Same as ★*oscine*^{2}.

Oxyura, *n.* **2.** A group of hymenopterous insects corresponding to the family *Proctotrypidæ.* [Obsolete.]

oxyuriasis (ok′si-ụ̄-rī′ạ-sis), *n.* [NL., < *Oxyuris* + *-iasis.*] Infection with nematode worms of the genus *Oxyuris;* pinworm infection.

oxyurifuge (ok-si-ū′ri-fūj), *n.* [*Oxyuris* + L. *fugere,* flee.] A vermifuge of special service in the destruction and removal of *Oxyuris vermicularis* from the intestines.

Oxyuris curvula, a large pinworm which infests the rectum of horses.—**Oxyuris equi.** Same as ★*Oxyuris curvula* Schrank. 1788.

oyster, *n.*—**Drift oyster,** *Ostrea subtrigona,* of Australia, so named because its buds are thought to be shifted by tides and storms.—**Fresh-water oyster,** an ostreiform bivalve found adhering to rocks in African and South American rivers.—**Green oyster,** an oyster whose branchiæ and labial tentacles are colored green by the presence of the coloring-pigment of the diatom *Navicula ostrearia* in the blood: esteemed a delicacy.—**Long oyster,** an English sailors' name for the crawfish.—**Mud-oyster,** *Ostrea angasi,* regarded by some conchologists as a variety of the European species, *O. edulis.* [Australia.]—**Saddle oyster.** Same as *saddle-shell.*—**Spanish oyster,** a species of *Pinna.* [Bermuda.]

oysterage (ois′tėr-ạ̄j), *n.* [*oyster* + *-age.*] An oyster-bed.

oyster-bay, *n.* **2.** An eating-house where oysters form the principal dish served.

oyster-cellar (ois′tėr-sel″ạ̈r), *n.* An oyster-shop in a cellar or basement.

oyster-colored (ois′tėr-kul″ọ̈rd), *a.* Of the somewhat iridescent color of light gray mother-of-pearl. See ★*oyster-white.*

oyster-crusher (ois′tėr-krush″ėr), *n.* A common name of *Heterodontus galeatus,* a shark found in Australian waters. It is interesting from the fact that it is a representative of many related forms belonging to the Devonian and Carboniferous ages. More commonly known as the *Port Jackson shark.*

oyster-drag (ois′tėr-drag), *n.* Same as *oyster-dredge.*

oyster-float (ois′tėr-flōt), *n.* A raft or float for immersing oysters in fresh water to remove the salt-water flavor.

oyster-fungus (ois′tėr-fung″gus), *n.* Same as *oyster-mushroom.*

oyster-gray (ois′tėr-grā″), *n.* A slightly dark silver-gray color.

oysterize (ois′tėr-īz), *v. t.*; pret. and pp. *oysterized,* ppr. *oysterizing.* [*oyster* + *-ize.*] To make or treat like an oyster; swallow whole, like an oyster. *N. E. D.* [Rare.]

oyster-meter (ois′tėr-mē″tėr), *n.* In England, an officer appointed by the Court of the Fishmongers' Company to supervise the oyster industry. *N. E. D.*

oysterous (ois′tėr-us), *a.* [*oyster* + *-ous.*] Resembling oysters. [Rare.]

oyster-parlor (ois′tėr-pär″lọ̈r), *n.* A restaurant where oysters are the principal food served. [Colloq., U. S.]

oyster-planter (ois′tėr-plan″tėr), *n.* One who prepares oyster-beds, and plants and raises oysters.

oyster-seed (ois′tėr-sēd), *n.* Oyster spat; also young oysters at any stage of development suitable for transplantation to artificial culture-beds.

oyster-whelk (ois′tėr-hwelk), *n.* An herbivorous Australian gastropod, *Potamides ebeninus,* found associated with oysters. Also called *toondah.*

oyster-white (ois′tėr-hwīt″), *a.* A white color with greenish-gray shadows, usually seen in satin for women's gowns.

oystery (ois′tėr-i), *a.* [*oyster* + *-y*^{3}.] Abounding in oysters; smelling or tasting like oysters.

Ozark series. See ★*series.*

ozocerine, ozokerine (ō-zọ̄-sē′rin, -kē′rin), *n.* [*ozocer(ite)* + *-ine*^{2}.] A soft, semisolid yellow material resembling vaseline, made from the mineral ozocerite, used in ointments, etc. When bleached by treatment with fuming sulphuric acid, it has been used instead of fat oil in the extraction of the perfume of flowers by the process of enfleurage.

ozonator (ō′zọ̄-nā-tọ̈r), *n.* [*ozone* + *-ator.*] The trade-name of an apparatus for the production of ozone by means of an electrical brush-discharge in air.

ozone, *n.* In the gaseous state, ozone, if seen through a column of sufficient depth or under considerable pressure, has a blue color like that of ordinary oxygen, but more marked, and when liquefied appears dark blue. The liquid boils under atmospheric pressure at —106° C. (—159° F.). It is magnetic, and more soluble in water than ordinary oxygen. Animals breathing air which contains ozone in appreciable quantity present the phenomena of slow respiration, enfeebled circulation, lowering of bodily temperature, venous condition of the blood, and ultimately death. Air charged with ozone has been applied to the treatment of distilled spirits with a view to the removal of fusel-oil, but with only partial success.—**Ozone hydrogen.** See ★*hydrogen.*

ozone-cage (ō′zōn-kāj), *n.* Same as *ozone-box.*

ozone-test (ō′zōn-test), *n.* See ★*test*^{1}.

ozone-water (ō′zōn-wâ″tėr), *n.* Water which contains ozone in solution. In popular language this term has been applied to hydrogen dioxid.

ozonide (ō′zọ̄-nid), *n.* A substance formerly supposed to contain as a constituent ozone or the specially active form of oxygen. The term is sometimes rather vaguely applied to a substance capable of producing ozone.

ozonine (ō′zọ̄-nin), *n.* [*ozone* + *-ine.*] A trade-name for turpentine which has been treated with ozone: used as a bleaching agent.

Ozonium (ọ̄-zō′ni-um), *n.* [NL. (Link, 1809), so called from the branching stems, < Gr. ὄζος, a branch, + *-on-ium.*] A name applied to certain forms of sterile fungous mycelia whose connection with fruiting forms is either doubtful or unknown. The root-rot of cotton and various other cultivated and wild plants in the southwestern United States has been attributed to *O. auricomum.* See ★*root-rot.*

> *Ozonium* . . . applied, as is well known, since the time of Palisot de Beauvois to sterile mycelial strands which sometimes attained a great size in damp woods, cellars, and mines, but their connection with distinct forms of sporophore, owing to the slight attention which was formerly paid to the study of mycelia, was never actually decided. *De Bary* (trans.), Fungi, p. 29.

ozonize, *v. t.*—**Ozonized oxygen,** oxygen which has been in part converted into the allotropic form ozone.

ozonizer, *n.*—**Andreoli ozonizer,** an apparatus for the production of ozone. It consists of a number of flat pewter rings, toothed on the inside and connected longitudinally by strips of metal to form a cage. The cage fits over an exhausted glass cylinder into which an electrode is sealed so closely that the points touch the glass everywhere. The leads from an induction-coil are connected with the cage and with the electrode in the vacuum-tube. The exhausted tube may be replaced by one through which water circulates. The ozonizer is placed inside the vessel in which the ozone is to be produced, and is highly efficient.—**Berthelot ozonizer,** an apparatus for the production of ozone from air. Two concentric vessels of thin glass are arranged to permit a flow of air in the space between them. The whole apparatus is placed in a tall jar which contains a weak solution of sulphuric acid, while some of the same liquid is placed in the inner tube. Two coils of bare copper wire are placed, one about the ozonizer, the other within the central tube. The coils are connected with the terminals of the secondary of an induction-coil, and when this is put in action the silent discharge passes across the air-space and can be seen in a darkened room as a violet light. The oxygen of the air is transformed to ozone under the electric influence.—**Brodie ozonizer,** a form of apparatus for producing ozone. It consists of two concentric glass vessels sealed together, the intervening space being occupied by the gas (oxygen) which is to be submitted to a silent discharge. Flowing water is used to cool the inner vessel.

ozonous (ō′zọ̄-nus), *a.* [*ozone* + *-ous.*] Having some of the characteristic properties of ozone; resembling ozone: as, an *ozonous* odor.

Ozorthus (ō-zôr′thus), *n.* [NL., < Gr. ὄζος, branch, + ὀρθός, straight.] A genus of blennioid fishes found in Japan.

ozostomia (ō-zọ̄-stō′mi-ạ̈), *n.* [NL., < Gr. ὀζόστομος, having a bad breath, < ὄζη, bad smell, + στόμα, mouth.] A condition in which the breath has an offensive odor.

ozotype (ō′zọ̄-tīp), *n.* [Gr. ὄζη, bad smell (?), + τύπος, type.] In *photog.,* a method of carbon- or pigment-printing invented by T. Manly.

> The principle involved is the old, old one discovered by Ponton in 1839, the splitting up, by light, of chromium trioxide into chromium sesquioxide, and the rendering insoluble of soluble organic matter by the action of the nascent oxygen. In the practical application of this to *ozotype,* paper is coated with a solution containing a chromate and a manganous salt, and exposed under a negative in the ordinary way, till a distinct image of a brown color is formed. The image is positive and is then washed in water till the unaltered salts are removed, and nothing but the positive image is left. The next step is to immerse the print and a piece of unsensitized carbon tissue in a solution containing acetic acid and hydroquinone or other suitable phenol derivative. They are then withdrawn and squeegeed together, and hung up to dry. When dry, they are placed for half an hour in cold water and then transferred to warm water, and developed as an ordinary carbon print. *Sci. Amer.,* May 6, 1899, p. 277.

P 3. (*c*) The initial of *pressure*, used in formulæ for fluid pressure, as of liquids or gases upon an area. In British and American writings it is usually expressed in pounds per square inch or pounds per square foot, the zero of pressures being the vacuum line as given by the barometer, or about 14.7 pounds below the pressure of the atmosphere. In metric units it is usually expressed in kilograms per square centimeter. (*d*) In *mechan.*, a symbol for power. (*e*) In *psychophys.*, the symbol for the Fechnerian time-error.—**4.** An abbreviation: (*g*) Of *population.* (*i*) Of the Latin *pars*, a part. (*j*) [*l. c.* or *cap.*] Of *participle.* (*k*) [*l. c.* or *cap.*] Of *past.* (*l*) Of the Latin *pater*, father. (*m*) [*l. c.* or *cap.*] Of *penny.* (*n*) [*l. c.* or *cap.*] Of *pint.* (*o*) [*l. c.* or *cap.*] Of *pipe.* (*p*) [*l. c.* or *cap.*] Of *pole.* (*q*) Of the Latin *pondere*, by weight. (*r*) In *electro-technics*, of *power.* (*s*) Of *president.* (*t*) Of *prince.* (*u*) Of *professor.*

Pa. An abbreviation of *Pennsylvania.*

P. A. An abbreviation of *Post Adjutant.*

p. a.. An abbreviation (*b*) of *particular average*, a term used in marine-insurance policies. See *average*^{2}, *n.*, 1. (*d*).

paar (pär), *n.* A local name in northern Ceylon and southeastern India for sands upon the present sea-bottom which are cemented into solid rock by calcareous deposits formed through the agency of *Polyzoa* and nullipores.

> The sand forming the floor of the Gulf [of Manaar] has, in many places, been cemented in situ into calcareous sandstones or "calcretes," locally known as "*paars.*" In the north part the *paars* arrange themselves roughly into three groups, running parallel with Adam's Bridge, north-north-west to south-south-east.
>
> *J. Lomas*, in Rep. Government of Ceylon on the Pearl [Fisheries of the Gulf of Manaar, 1903, p. 151.

paauw (pä'ō), *n.* [D. *paauw*, peacock.] The South African bustard (*Eupodotis*): extensively adopted as a popular name.

pabulary (pab'ū-lā-ri), *a.* [LL. *pabularius*, < L. *pabulum*, food. See *pabulum.*] Relating to or affording pabulum or food; of the nature of pabulum.

pac, *n.* See ★*pack*^{4}.

pacai (pä-kī'), *n.* [Also *pacay*; Quichua.] In Peru, *Inga Feuillei*, an indigenous tree of the mimosa family, bearing large woody pods which contain a sweet, cottony, white, edible pulp surrounding the seeds. Representations of the pods in terra-cotta and the pods themselves are found in ancient graves, together with other food-staples and ceremonial articles. See *pacay.*

pacara (pä-kä-rä'), *n.* [Native name.] In western Argentina, either of two large trees belonging to the mimosa family, *Anneslia Pacara* (*Calliandra Pacara* of Grisebach) and *Enterolobium contortisiliquum.* They yield excellent woods used for carpentry and house-construction. In eastern Argentina the last-named species is called ★*timbo* (which see).

paca-rana (pä'kä-rä'nä), *n.* The Tupi Indian name for the excessively rare Peruvian rodent *Dinomys branichi.* The name signifies 'false paca,' and alludes to the resemblances between the two animals, although *Dinomys* has no cheek-pouches and possesses a tail. See cut in next column.

pace^1, *n.*—**Pace of the wicket**, in *cricket*, the degree of speed with which the ball comes from the pitch when bowled. *Hutchinson*, Cricket, p. 252.

pace^1, *v. t.* **4.** To set the pace for (a contestant) in training for a race, or in racing, as for a boat's crew, for a bicycle rider, etc.

> All sorts and conditions of riders volunteered their services . . . to *pace* anyone to whom they might be assigned. *Field*, Jan. 26, 1901, p. 105.

To pace the warp, to regulate the delivery of the warp in the loom for even weaving.

pace-follower (pās'fol"ō-ėr), *n.* In *cycling*, one who follows a pace-making or wind-breaking machine to attain greater speed. The machine followed may be anything from an ordinary bicycle to a motor or even a locomotive.

pace-maker, *n.* **1.** Specifically, one who rides between a bicycle racer and the wind, acting as a shield. The original idea of making the pace has become merged into that of acting as a wind-shield.
2. One who or that which makes a record for speed.

pacer, *n.* **4.** Same as ★*pace-maker*, 1.

pachak (pä-chäk'), *n.* [Hindi.] The costus, *Heterotrichum Lappa.* See *costus-root* and *Saussurea.*

Pachastrella (pak-a-strel'ä), *n.* [NL.] The typical genus of the family *Pachastrellidæ.* *O. Schmidt*, 1838.

Pachastrellidæ (pak-a-strel'i-dē), *n. pl.* [NL., < *Pachastrella* + *-idæ.*] A family of *Demospongiæ* in which the chief megascleres are caltrops, there are no triænes, and the microscleres are spirasters, spherasters, or microrhabds. It includes the genera *Pachastrella*, *Calthropella*, and *Dercitus.*

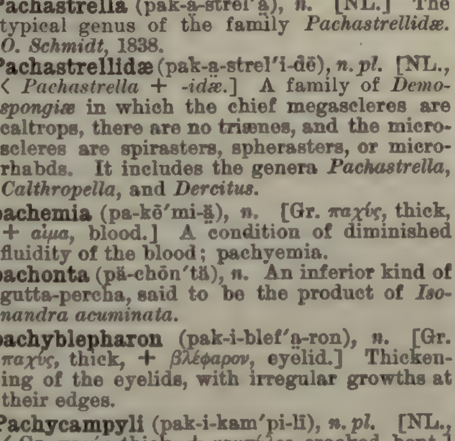
pachemia (pa-kē'mi-ä), *n.* [Gr. παχύς, thick, + αἷμα, blood.] A condition of diminished fluidity of the blood; pachyemia.

pachonta (pä-chōn'tä), *n.* An inferior kind of gutta-percha, said to be the product of *Isonandra acuminata.*

pachyblepharon (pak-i-blef'a-ron), *n.* [Gr. παχύς, thick, + βλέφαρον, eyelid.] Thickening of the eyelids, with irregular growths at their edges.

Pachycampyli (pak-i-kam'pi-lī), *n. pl.* [NL., < Gr. παχύς, thick, + καμπύλος, crooked, bent.] In Hyatt's classification of the *Cephalopoda*, a suborder of the *Ammonoidea* in which the ornamentation of the shell attains extreme complexity in the evolution of the ribs, nodes, and spines, and the sutural lobes and saddles have broad bases and are deeply divided only at their edges.

pachycampylous (pak-i-kam'pi-lus), *a.* [NL. *Pachycampyli* + *-ous.*] Pertaining to or having the characters of the *Pachycampili.*



Paca-rana (*Dinomys branichi*).

Pachycardia^2 (pak-i-kär'di-ä), *n.* [NL., < Gr. παχύς, thick, + καρδία, heart (*Cardium*, genus of mollusks).] A genus of prionodesmaceous pelecypods with oblong trigonal shells having terminal beaks, two strong divergent cardinal teeth, and a long posterior lateral tooth in each valve. It occurs in the Alpine Trias.

pachycholia (pak-i-kō'li-ä), *n.* [NL., < Gr. παχύς, thick, + χολή, bile.] Diminished fluidity of the bile.

Pachycormus (pak-i-kôr'mus), *n.* [NL. (Coville, 1905), < Gr. παχύς, thick, + κορμός, trunk.] A genus of dicotyledonous trees of the family *Anacardiaceæ.* See *Veatchia.*

pachydermatocele (pak"i-dėr'ma-tō-sēl), *n.* [Gr. παχύς, thick, + δέρμα(τ-), skin, + κήλη, tumor.] **1.** The presence of several fibrous tumors on a nerve, associated with a pendulous condition of the skin in the region.

> Still another and important manifestation is the so-called plexiform neuroma or *pachydermatocele* of Valentine Mott. This in a more diffuse form produces the elephantiasis neuromatodes.
>
> *Med. Record*, June 13, 1903, p. 925.

2. Same as *dermatolysis.*

Pachydermia laryngis, thickening of the mucous membrane of the larynx, a result of chronic inflammation.—**Pachydermia vesicæ**, a condition in which the mucous membrane of the bladder is thickened and assumes the appearance of skin.

pachydermial (pak-i-dėr'mi-al), *a.* [*pachydermi(a)* + *-al*^{1}.] Relating to or marked by pachydermia, or thickening of the skin.

pachydermic (pak-i-dėr'mik), *a.* [*pachyderm* + *-ic.*] Thick-skinned; pachydermatous.

pachyglossous (pak-i-glos'us), [illegible] Gr. παχύς, thick, + γλῶσσα, tongue, + *-ous.* [illegible]ing a thick tongue.

Pachygnathus (pa-kig'nā-thus), *n.* [NL., also orig. in the erroneous form *Pachynathus* (Swainson, 1831), < Gr. παχύς, thick, + γνάθος, jaw.] A genus of fishes, belonging to the family *Balistidæ*, found on both sides of the Pacific.

pachymose (pak'i-mōs), *n.* [*Pachyma* + *-ose.*] An amorphous substance, $C_{10}H_{24}O_{14}$, obtained from *Pachyma pinctorum*, a Chinese fungus, and also from *P. Cocas.* It is probably a glucoside.

Pachyornis (pak-i-ôr'nis), *n.* [NL., < Gr. παχύς, thick, + ὄρνις, bird.] A genus of *Dinornithidæ*, or moas, characterized by extremely massive leg-bones and short tarsi.

pachyostosis (pak"i-os-tō'sis), *n.* [Gr. παχύς, thick, + ὀστ(έον), bone, + *-osis.*] Literally, a thickening of the bone: specifically applied to an increase in the amount of the bony network or reticulum that more or less completely fills the long bones of some animals, notably the elephant among mammals and *Dinornis* among birds.

pachyotous (pak-i-ō'tus), *a.* [Gr. παχύς, thick, + οὖς (ὠτ-), ear.] Marked by abnormal thickness of the ears.

pachyperitonitis (pak"i-per"i-tō-nī'tis), *n.* [NL., < Gr. παχύς, thick, + περιτόναιον, peritoneum, + *-itis.*] Inflammation of the peritoneum, resulting in notable thickening of this membrane.

pachyphyllous (pak-i-fil'us), *a.* [Gr. παχύς, thick, + φύλλον, leaf.] In *bot.*, thick-leafed.

Pachypops (pak'i-pops), *n.* [NL., < Gr. παχύς, thick, + ὑπό, below, + ὤψ (ὠπ-), eye.] A genus of fresh-water sciænoid fishes of Guiana and Brazil.

pachyrhizid (pak-i-rī'zid), *n.* [NL. *Pachyrhiz(us)* + *-id*^{2}.] A bitter non-nitrogenous substance obtained from the seed of *Pachyrhizus angulatus*, which acts as an energetic poison, especially to fish.

pachysaurian (pak-i-sâ'ri-an), *n.* [Gr. παχύς, thick, + E. *saurian.*] A thick-skinned reptile.

Pachytheca (pak-i-thē'kä), *n.* [NL., < Gr. παχύς, thick, + θήκη, a box.] Minute hollow spheroidal bodies of brown color described by Hooker, 1853, from the Ludlow bone-bed of the English Upper Silurian. They resemble *Sporangites* from the Devonian of North America, and they appear to be spores of lycopods or algæ, though their vegetable nature has been doubted by Solms-Laubach.

pachytrichous (pa-kit'ri-kus), *a.* [Gr. παχύς, thick, + θρίξ (τριχ-), hair, + *-ous.*] Having thick hair. *Mayne.*

Pacific blockade, in *international law*, a blockade exercised by one government or several governments for the purpose of forcing another to some demanded action without actual war. The first pacific blockade was that by Russia, France, and England against Greece in 1827.

pacificity (pas-i-fis′i-ti), *n.* [*pacific* + *-ity.*] The quality of being peaceful or pacific.

pacifico (pä-thē′fi-kō), *n.* [Sp. = E. *pacific.*] 1. A person of pacific or peaceful character; a non-belligerent; specifically, a native of Cuba or the Philippines who submitted without opposition to the Spaniards when the latter took possession of those islands.—2. During the Spanish-American war of 1898, a non-combatant.

> The *pacificos* who are in the fields supply the food for the army [insurgents in Cuba, February, 1898], and are under military supervision.
> *Harper's Weekly*, Feb. 19, 1898, p. 174.

pacify, *v. t.* 3. To make peaceful by force; render inactive by depriving of the means of opposition.

> Since I last wrote to you we have been having a quiet time down South "*pacifying* the country." This consists in collecting arms—which we keep—and inviting the burghers to take oaths—which they don't keep—at least some don't.
> *C. Lowther*, in War's Brighter Side, xxvii.

Pacinotti ring. See ★*ring*^{1}.

pack^1, *n.* 12. In *tanning*, a workmen's name for a lot of hides placed in the same pit to undergo the liming process.—**Still pack,** in card-games in which two packs are used alternately, the one which is not in play.

pack^1, *v.* I. *trans.* 12. To have in one's baggage, that is, in one's possession; possess. [Slang, western U. S.]

> Gents, I don't *pack* the nerve! . . . No, sir; I sees enough of woman an' her ways to teach me that now ain't no time to be standin'about irresoloote an' ondecided, an' I'm goin' to dig out. *A. H. Lewis*, Wolfville Nights, xi.

II. *intrans.* 7. To transport goods as a business: as, to *pack* over the trail. [U. S.]—**To pack in** or **out,** to march into or out of (the woods), carrying necessary provisions, etc., by packs, either on the backs of men or of animals.

pack^4 (pak), *n.* [Also *pac*, detached from *shoe-pack*, taken as a compound of *shoe*^{1} + *pack*^{1}.] 1. A moccasin made of hide prepared with tallow and wax, used by various North American Indian tribes.—2. A heavy felt or waterproof half-boot worn by loggers in the lumber-camps in winter.

package, *n.* 5. A box, basket, or other receptacle in which perishable articles of food are packed for transportation. See the extract.

> The kind of *packages* used in handling the different truck crops varies greatly in the different trucking regions, and they are now in many cases very different from those that were used in the early days of the business.
> *Yearbook, U. S. Dept. Agr.*, 1900, p. 451.

pack-drill (pak′dril), *n.* A military punishment in which the offender is compelled to walk up and down for a certain number of hours in full marching order, with arms, ammunition, knapsack, and overcoat.

> To meet an esteemed friend doing *pack-drill* outside the guard-room is embarrassing.
> *R. Kipling*, Daughter of the Regiment, in Plain Tales [from the Hills, p. 184.

packer, *n.* 8. Same as *pack-animal.* [Australia.]—9. One who packs juries, cards, facts, etc., to serve purposes of his own; one who is a confederate in fraudulent enterprises. Compare *pack*^{1}, *v. t.*, 8.—10. In a type-setting machine, an assembler.

> The types [in a simplex machine] are now guided, one by one, to the *packer*, where they run on a cam, are lifted, and are then carried forward to proper position. Types succeed each other in the packer with 3-em space between the words, until a continuous line is formed extending across the back of the keyboard, with the face in view.
> *Census Bulletin* 216, June 28, 1902, p. 61.

Subsurface packer, a machine so constructed as to create a compact bottom under a layer of loose soil.

packery (pak′e-ri), *n.*; pl. *packeries* (-riz). [*pack*^{1} + *-ery.*] 1. Same as ★*packing-house.*—2. A pack made up of various small packages.

packing^1, *n.* 1. Specifically: (*a*) A fibrous or spongy material which will hold oil or grease, used as a lubricating-pad on journals and bearings. (*b*) A device for making a fluid- or gas-tight stationary joint, as a joint in flanged piping made by a soft annular ring placed in V-grooves. (*c*) The material used where a sliding element is to move steam-, water-, or gas-tight under pressure, to allow sliding but prevent the leakage of fluid.
5. In *halma*, the stage of the game in which the player gets his men in order on the side of the board farthest from him.—6. In *shipbuilding*, the pieces of wood used to fill up the space between the bilgeways and the bottom of the ship. A large number of long wooden wedges are placed transversely between the packing and bilgeways, and the weight of the vessel is transferred from the building-blocks to the packing before launching the vessel by driving in the wedges.—7. In *telephony*, the crowding together or caking of the particles of carbon in a microphonic transmitter, whereby the sensitiveness of the instrument is impaired.—**Flax packing,** packing made by braiding flax into a square cord into which a quantity of grease has been worked: used for pump-pistons and in stuffing-boxes.—**Gum-packing,** soft packing of rubber or other elastic solid material, usually made in sheets which can easily be cut to any desired shape and size.—**Hydraulic packing,** packing for the piston or plunger of a pump or of a hydraulic press: usually of leather.

packing-board (pak′ing-bōrd), *n.* A device used to hold crackers in position when packing them into barrels.

packing-house (pak′ing-hous), *n.* An establishment in which provisions, especially beef and pork, are packed.

packing-machine (pak′ing-ma̤-shēn″), *n.* A machine for putting articles into packages or bundles; specifically, in *baking*, a machine for sorting and arranging crackers for packing in cartons or barrels. It consists essentially of a hopper in which the freshly baked crackers are placed, and suitable delivery-mechanism for selecting the crackers and setting them on edge upon conveyers which deliver them to the packers.

packing-piece (pak′ing-pēs), *n.* A separator; a short piece placed between two pieces that are to be fastened together, to keep them separated by a certain space.

packing-plate (pak′ing-plāt), *n.* A plate used to prevent the flow of a fluid across a certain area or space covered by the plate; a relief- or pressure-plate on the back of a slide-valve.

packing-ring, *n.* 2. A piston-ring; a ring of packing, either fibrous or metallic, placed in a stuffing-box or around a joint.

packing-strip (pak′ing-strip), *n.* 1. A strip of packing used to make a tight joint.—2. A liner; a metal strip used to build up a part of a machine, to take up the play in a joint or bearing.

pack-rope (pak′rōp), *n.* A rope used to secure a load to a pack-saddle.

packsand (pak′sand), *n.* A very fine-grained sandstone with calcareous cement so loosely consolidated that it may be cut with a spade. [Local, U. S.]

pack-trail (pak′trāl), *n.* A narrow single-file trail for pack-animals. [Western U. S.]

Pac. Oc. An abbreviation of *Pacific Ocean.*

Pacouria (pa-kö′ri-ä̤), *n.* [NL. (Aublet, 1775), < Carib. *pacouri* (*pacouri-rana*, the type species), Galipi *pacoury.*] A genus of dicotyledonous plants of the family *Apocynaceæ.* The type species, *P. Guianensis*, was originally described from South America, but has not since been found there. See *Landolphia*, *Vahea*, and *india-rubber*, 1.

pacova (pä-kō′vä), *n.* [Aboriginal name in Brazil.] 1. *Renealmia escaltata*, a plant belonging to the ginger family, with handsome scarlet flowers.—2. The banana.

pacovicugna (pak″ọ̄-vi-kö′nyä̤), *n.* [(*al*)*paca* + *vicugna.*] A cross between the alpaca and vicugna. Compare ★*catalo.*

paction, *n.* Specifically—2. In *international law*, a contract between nations which is to be performed by a single act, and of which execution is at an end at once. *Bouvier*, Law Dict.

pactorial † (pak-tō′ri-a̤l), *a.* [*pactory* + *-al*^{1}.] In *Scottish law*, same as ★*pactory.*

pactory † (pak′tọ-ri), *a.* [NL. **pactorius*, < L. *pactor*, one who makes a pact, < *pacisci*, agree: see *pact.*] Relating to a pact, agreement, or compact; of the nature of a compact.

pacu-grass (pak′ö-gràs), *n.* A small aquatic plant, *Ichthyobroma monadelphum* (*Lacis monadelpha* of Bongard), with delicate star-shaped pink flowers, belonging to the family *Podostemonaceæ.* It is a native of Guiana and Brazil and is a favorite food of the pacu.

pad^1, *n.* 2. [*pad*^{1}, *v.*] A dull sound, as of footsteps.

> Then there came from the compound the soft '*pad-pad*' of camels—'thieves' camels,' the Bikaneer breed that don't bubble and howl when they sit down and get up.
> *R. Kipling*, Kidnapped, in Plain Tales from the Hills, [p. 123.

pad^1, *v. i.* 2. To move with the soft thud of a bare foot striking the ground. [Rare.]

> The tune carried among the lanes and dwellings of the village, and naked feet *pad-padded* quickly up over dust and the grass. *Cutcliffe Hyne*, A Master of Fortune, v.

pad^3, *n.* 1. (*g*) A large floating disk-like leaf-blade, chiefly that of the water-lilies: used mostly in the combination *lily-pad;* so called from its suggesting a cushion. Also *pad-leaf.*

> If the petiole of a *lily pad* be traced down under the water, it will be found to arise from an intricate mass of thick knotted stems. *Coulter*, Plant Relations, p. 181.

4. Specifically, the pile of tobacco-leaf segments formed by booking, that is, laying smoothly one above another for use in cigar-making.—**Archesporial pad.** See ★*archesporial.*—**Nautical pads,** type forms of certain formulæ for the convenience of the navigator, and for the acceleration of his work. Also *navigation-pads.*—**To bowl off one's pads.** See ★*bowl2.*

pad^3, *v. t.* 6. In *leather-making*, to apply a heavy coating of solution to. *Davis*, Manuf. of Leather, p. 324.—7. In India, to pack on an elephant's pad.

pad-chuck (pad′chuk), *n.* A chuck having a square hole to receive the ordinary brace-bits, the hole or socket being of the same size as that in a brace.

pad-color (pad′kul″ọ̈r), *n.* A color that is applied to the cloth in a padding-machine.

paddies^2 (pad′iz), *n. pl.* A child's name for hands. Compare *pad*^{3}, 1 (*c*).

padding-liquor (pad′ing-lik″ọ̈r), *n.* In *calico-printing*, a liquor or solution of olein-oil and perhaps other constituents, with which the cloth is prepared, or padded, after bleaching and before printing. In the madder style of printing, an oil solution is used after dyeing and before steaming.

padding-mangle (pad′ing-mang″gl), *n.* A machine, consisting essentially of a vessel or tub and a pair of squeezing-rollers, for the treatment of cotton piece-goods chiefly, either for dyeing them with some coloring matter or preparing them with a mordant.—**Slop padding-mangle,** in *calico-printing*, a machine with pressure-rollers or -bowls for the continuous and thorough saturation of the cloth with a mordant or color, the cloth being kept full width and free from creases.

paddle^1, *v.* I. *intrans.* 6. To throw the feet outward with a circular sweep when trotting: said of horses. Also *dish.*

II. *trans.* 4. In *leather manuf.*, to wash or color by means of a paddle. See ★*paddle*^{1}, *n.*, 8. *Modern Amer. Tanning*, p. 93.—5. To pat, as the ore in a roasting-furnace, with the flat side of a paddle. *Phillips and Bauerman*, Elements of Metallurgy, p. 647.

paddle^1, *n.* 6. (*e*) A broad, thin piece of wood, or a ruler, in which holes have been bored, used in flogging. It inflicts a painful blow. (*f*) A tool used in working the charge of material in the hearth of the black-ash furnace in the Leblanc process for making carbonate of soda. Also called *slice.*
8. A tank containing a revolving wheel or paddle for washing, tanning, or coloring skins. *Modern Amer. Tanning*, p. 96.—**Duck-foot paddle,** a propelling device of an early design, used in steamboats before the adoption of the paddle-wheel. Vertical oars or sculls were mounted on each side of the hull, receiving a vertical motion from cranks above them, by which they were immersed for the working-stroke and lifted out of the water for the return. A second set of cranks and rods gave them the backward push which caused propulsion. *Hiscox*, Horseless Vehicles, p. 37.

Paddle-box boat. See ★*boat.*

paddle-engine (pad′l-en″jin), *n.* An engine for driving paddle-wheels on a vessel.

paddle-float (pad′l-flōt), *n.* One of the transverse planks fastened to the rim of a paddle-wheel of a vessel. See cuts under *paddle-wheel*, 1.

paddle-race (pad′l-rās), *n.* The sternward-flowing water which is driven back by a paddle-wheel of a steamer in motion.

paddle-staff, *n.* 3. A wooden paddle used in the mashing process in brewing: something like a spade in shape.

paddle-vat (pad′l-vat), *n.* Same as ★*paddle*^{1}, *n.*, 8. *Modern Amer. Tanning*, p. 100.

paddle-wheel, *n.*—**Radial paddle-wheel,** a paddle-wheel in which the floats or blades are flat boards or metal plates bolted directly to the radial arms. Such blades have the disadvantage of not entering and leaving the water at the best angle.

paddle-wing (pad′l-wing), *n.* See ★*wing-deck.*

paddle-worm (pad′l-wėrm), *n.* A bluish-green or yellowish-green polychætous worm, *Phyllodoce lamelligera*, from 8 to 12 inches long, found under stones and shells in the Laminarian zone.

paddling (pad′ling), *n.* 1. The act of one who paddles, in any sense.—2. The act of throwing the feet outward with a circular movement when trotting: said of horses.

paddock¹, *n.* **3.** Applied depreciatively to a person: in the play of "Macbeth," an evil spirit or a familar.

> *First Witch.* I come, Graymalkin!
> *Sec. Witch.* *Paddock* calls.
> *Third Witch.* Anon.
> *All.* Fair is foul, and foul is fair:
> Hover through the fog and filthy air.
> *Shak.*, Macbeth, i. 1.

paddock², *n.* **2.** A piece of land of any size, inclosed or not, used for cultivation. [Australia.] *E. E. Morris*, Austral English.—**3.** In *mining:* (*a*) A store-yard near a mine-shaft for ore or wash-dirt. (*b*) An open excavation in a superficial deposit. *N. E. D.*

paddock², *v. t.* **2.** To make into a paddock, as a run for sheep. [Australia.]

> When a run is not fenced, each flock of sheep requires a shepherd. . . . When a run is "*paddocked*," shepherds are not required;—but boundary-riders are employed, and these men are responsible not only for the sheep but for the fences.
> *Trollope*, Australia and New Zealand, I. xx.

3. In *mining*, to place or store (ore) in a paddock; dig or form a paddock in. [Australia.]

Paddy's hurricane. See ★*hurricane*.

paddy-barrow (pad′i-bar″ō), *n.* [*Paddy*¹ + *barrow*².] A wheel-barrow having a curved bottom and no removable sides. [Colloq., U. S.]

paddy-bird, *n.* **2.** In India, one of the small egrets which frequent the rice- or paddy-fields.—**3.** A name said to be applied by sailors to the sheath-bill, *Chionis*.

paddy-drill (pad′i-dril), *n.* See ★*drill*¹.

paddy-insect (pad′i-in″sekt), *n.* A Chinese silkworm.

Paddyism (pad′i-izm), *n.* [*Paddy*¹ + *-ism.*] An Irish characteristic; an Irishism.

paddy-lucerne (pad′i-lų̄-sėrn″), *n.* Same as *native* ★*lucerne*.

paddywhack, *n.* **4.** A fury; a rage. [Slang.]

> "Hold on, till King loses his temper. . . . He 'll be in a ravin' *paddy-wack.*" *R. Kipling*, Stalky and Co., p. 30.

pad-eye (pad′ī), *n.* In *ship-building*, a flat rectangular piece of metal with an eye or ring projecting edgewise from its surface, the whole forming one solid piece. It is attached to the surface on which it is placed by screws or rivets through the flat part.

pad-foot (pad′fu̇t), *n.* **1.** In certain parts of England, as Yorkshire, a name for a goblin or a spectral creature, traditionally appearing as a dog, a sheep, or simply as a 'ghost.' The name is said to be due to the fact that the goblin was imagined to run with a soft sound of footsteps, by the side of persons walking at night. [Eng. dial.]—**2.** A footpad. [Prov. Eng.]

pad-groom (pad′gröm), *n.* A mounted groom who follows his master when on horseback.

padkost (päd′kost), *n.* [D., < *pad*, path, + *kost*, provision.] In South Africa, provisions taken for use on a journey.

pad-leaf (pad′lēf), *n.* See ★*pad*³, 1 (*g*).

padouk (pä-douk′ or pä-dök′), *n.* [Burmese *pa-touk.*] Either of two large leguminous trees, *Pterocarpus Indicus* and *P. macrocarpus*, and also their woods. The former species is found from India and Burma to the Malayan islands, the Philippine Islands, and China; while the latter species, to which the name more properly belongs, is confined to Burma and yields the finest timber. The wood of this latter species is a deep, rich red streaked with black, and is used for the finest cabinet work, especially the interior finishing of sleeping-cars. Compare *redwood*, 2, *kiabooca-wood*, *Pterocarpus* and ★*asana*.

padrao (pä-drän′), *n.* [Pg. *padrão*, a model, standard, pattern, monument, = E. *patron* and *pattern*.] A monument. [Portuguese use.]

> The *padraos* were intended to be eternal monuments of Portuguese achievement. They were stone pillars with an inscription, and the arms of Portugal carved upon them—the well-known "cinco chagas," with the orle of the seven castles of Algarve. Each explorer was to plant one on a conspicuous point at his furthest point. The *padraos* were named after saints.
> *Geog. Jour.* (R. G. S.), XII. 10.

padre, *n.* **2.** A minister of any Christian denomination or a native priest. [India.]

padroadist (pä-drō-ä′dist), *n.* [Pg. *padroado* (beside *patronado*), patronage, < LL. *patronatus*, patronage: see *patronate*.] In India, one belonging to the Roman Catholic Church who upholds the custom of the padroado (patronage) claimed in that country by the king of Portugal. *N. E. D.*

pad-roller (pad′rō″lėr), *n.* In *calico-printing*, a roller in a cylinder printing-machine which applies color to the cloth, as in the production of aniline blacks.

padronage† (pa-drōn′ạj), *n.* [*padrone* + *-age.*] Same as ★*padronship*.

padrone, *n.* **2.** In Italy: (*a*)† The prime minister of the papal curia. *N. E. D.* (*b*) The landlord of an inn. (*c*) The captain or master of a Mediterranean trader.

padronism (pa-drōn′izm), *n.* [*padrone* + *-ism.*] The custom, now a felony in the United States, of bringing Italian children into a foreign country, in what was practically a state of slavery, to sing in the streets, beg, etc., for their 'padrone' or master.

padronship† (pa-drōn′ship), *n.* [*padrone* + *ship.*] The function or office of the prime minister of the papal curia: he is the cardinal patron or padrone. Also called *padronage*.

pad-saw (pad′sâ), *n.* A keyhole-saw; a thin, narrow saw, fastened in a split handle by two thumb-screws, used for cutting holes in the interior part of work and for sawing curves.

Paduanism (pad′ų̄-ạn-izm), *n.* [*Paduan* + *-ism.*] The characteristics of the Latin dialect of Padua (Patavium) or their use: used with reference to Livy, who was born in that place, and was criticized for his *Patavinitas* or Paduanism. See *patavinity*.

pæanize (pē′a̤-nīz), *v. i.*; pret. and pp. *pæanized*, ppr. *pæanizing*. [Gr. παιανίζειν, usually παιωνίζειν, < παιάν, a pæan.] To chant or sing triumphantly or joyfully.

pædology, pædomesoblast, pædomorphism, pædoparthenogenesis, etc. See ★*pedology*, etc.

pænol (pē′nol), *n.* [*Pæ(o)n(ia)* + *-ol.*] An aromatic crystalline compound, $CH_3CO.C_6H_3(OH)(OCH_3)$, found in the bark of the root of *Pæonia Moutan*. It is the monomethyl ether of dihydroxyacetophenone.

P. æq., Part. æq. [*l. c.* or *cap.*] Abbreviations of the Latin *partes æquales*, equal parts.

paganalian (pā-ga̤-nā′li-a̤n), *a.* [*paganali(a)* + *-an.*] Relating to the paganalia, or festival of the pagus, in ancient Italy. See *paganalia*.

paganization (pā″ga̤n-i-zā′shọn), *n.* [*paganize* + *-ation.*] The act of paganizing or the process of becoming paganized.

paganry (pā′ga̤n-ri), *n.* [*pagan* + *-ry.*] Pagan practices; paganism. [Rare.]

page², *n.* **4.** Any one of several South American uraniid butterflies marked with black and green in such a manner as to suggest a page's uniform.

Page effect. The tone or sound emitted by iron when it is subjected to sudden magnetization or demagnetization or to the rapid reversals of magnetization produced by an alternating current.

page-gage (pāj′gāj), *n.* A measuring-rod of wood or brass, notched to define the proper length of a page of type.

page-proof (pāj′pröf), *n.* A proof in page form, as distinguished from a *galley-proof* in a long strip.

paginary (paj′i-nā̤-ri), *a.* [L. *pagina*, page, + *-ary.*] Same as *paginal*.

paging-figure (pā′jing-fig″ų̄r), *n.* In *printing*, the number of a page of a book, etc.

> One of the novelties of reformed typography is the omission of all *paging figures*, both at the head and at the foot of the page.
> *De Vinne*, Mod. Book Composition, p. 145, note.

pagiopod (paj′i-ọ-pod), *a.* and *n.* **I.** *a.* Having the characters of or belonging to the *Pagiopoda*.

II. *n.* A member of the *Pagiopoda*.

Pagiopoda (paj-i-op′ọ-dä̤), *n. pl.* [NL., < Gr. πάγιος, solid, + πούς (ποδ-), foot.] In Schiödte's system, a division of the *Heteroptera* which includes the six purely aquatic families and corresponds rather closely to the *Cryptocerata*.

pago (pä′gō), *n.* [= Chamorro *pago*, Tagalog *balibago*, Malayan *baru*, Java *waru*, Tahitian *parau* or *barau*, Fijian *vau*, Samoan *fau*, Hawaiian *hau.*] In Guam, *Pariti tiliaceum*, a tree with tough inner bark, which is the principal source of cordage on the island. Ropes made from it are used for halters of buffalo and cattle, and for cables for ferrying bamboo balsas across the mouths of streams. See ★*balibago*, *corkwood*, and *mahoe*¹.

pagoda, *n.* **5.** A small ornamental structure made in imitation of an Eastern pagoda: especially, such a building in the streets of a city in which various small articles, such as tea, etc., are sold.—**Swami pagoda**, an Indian gold coin with a crescent and three figures, one representing Swami or Krishna.

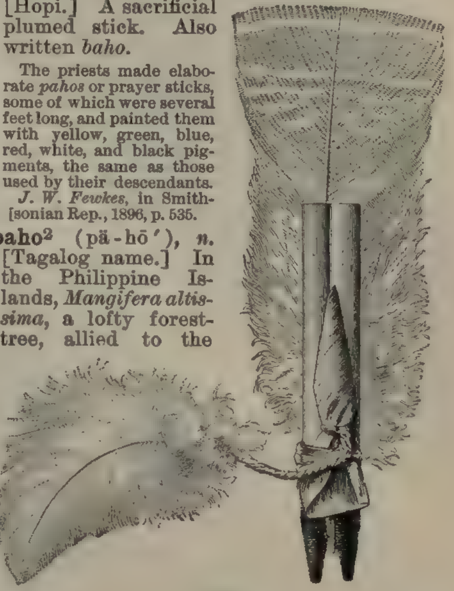
pagolo (pä′gō-lō), *n.* Same as ★*pangolo*.

pagoscope (pag′ọ-skōp), *n.* [Gr. πάγος, frost, + σκοπεῖν, view.] An apparatus for predicting frosts, a form of hygrodeik which shows the current temperature of the dew-point. It consists of a framework carrying a wet-bulb and a dry-bulb thermometer, a diagram of numbered curve-lines, and a pointer; for dew-points below freezing the diagram is colored, and the observer perceives graphically the possibility of frost during the approaching night.

pagurid (pag′ų̄-rid), *a.* Same as *paguroid*.

paha (pä-hä′), *n.* [Amer. Ind. (Minnesota and Iowa).] A North American Indian name for low knolls, inconspicuous elliptical hills, or elongated ridges of glacial drift capped with loess. The name was introduced by *W. J. McGee*, Pleistocene History of Northeastern Iowa, in Rep. U. S. Geol. Surv., 1898–90, I. 220.

pahi (pä′hẹ), *n.* [Tahiti.] A canoe or ship.



Paho.

paho¹ (pä′họ), *n.* [Hopi.] A sacrificial plumed stick. Also written *baho*.

> The priests made elaborate *pahos* or prayer sticks, some of which were several feet long, and painted them with yellow, green, blue, red, white, and black pigments, the same as those used by their descendants.
> *J. W. Fewkes*, in Smithsonian Rep., 1896, p. 535.

paho² (pä-hō′), *n.* [Tagalog name.] In the Philippine Islands, *Mangifera altissima*, a lofty forest-tree, allied to the mango, but bearing much smaller fruit. The latter is preserved by the natives, who gather it before it is ripe and pickle it in vinegar.

pahong (pä′hōng), *n.* [Chamorro name.] In Guam, the knob-fruited screw-pine, *Pandanus dubius*, a species with broad coarse leaves and a head of fruit composed of drupes each of which terminates in a projecting point. The seed kernels are edible and have a pleasant flavor, but are not a food staple of the natives. The leaves are too stiff for textile uses, though on other islands they are sometimes woven into mats of inferior quality after having been made pliable by heat.

pai (pī), *n.* Same as *pie*⁵.

paidological, paidologically, paidology, etc. See ★*pedological*, etc.

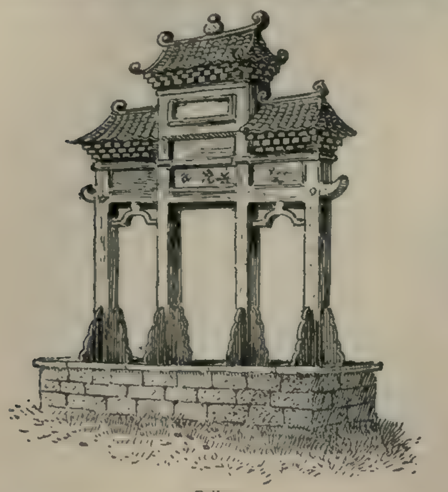
paidonosology (pī″dọ-nọ-sol′ọ-ji), *n.* Same as *pedonosology*.

paillard (pä-yär′), *n.* [F. See *palliard.*] A vagabond who sleeps in straw; hence, one who lives a low, knavish life; a dissolute fellow.

> The male part of the upper class are in youth a set of heartless profligates; in old age, a parcel of poor, shaking, nervous *paillards*. *Borrow*, Lavengro, xciv.

paillasse, *n.* **4.** A solid bed of masonry, as for the floor of an oven or furnace; by extension, any pedestal or base-block built of masonry if of considerable dimensions. *C. H. Haswell*, Mech. and Engin. Pocket-book, p. 1048. [Rare.]

pailoo, pailou (pī′lö), *n.* [Also *pai-low*; < Chin. *pai*, tablet, + *lou*, an upper story or room; a tower.] An elaborate gateway-like erection usually of massive hewn stone set up in China on the roadside near a city or in some public place in a city or town, by the local inhabitants (with imperial sanction) in honor of some one distinguished for filial piety or for some meritorious act, as when a widow commits suicide rather than remarry. A pailoo consists of four massive squared pillars (buttressed with conventional Chinese lions, the two in the center being taller than those at the side and supporting two horizontal cross-beams instead of one (as at the side), and covered with incised inscriptions eulogistic of the honored one and his or her virtues. The table is placed against the upper beam of the main division.



Pailoo.

pai marire (pī mä′rē̤-rā̤). [Maori, lit. good and peaceful.] A new faith, or religious superstition, that arose in New Zealand about 1864, and was supposed to be based on revelations from the angel Gabriel. The followers of this religion were called *hau-haus*, and were distinguished for their cruelty in the war against the colonial government.

pain¹, *n.*—**Bearing-down pains,** involuntary straining efforts which occur during childbirth.—**False pains,** colicky pains occurring toward the end of pregnancy, but not due to uterine contractions.—**Referred pain,** pain felt in some other part than that in which the exciting cause exists, as the pain in the knee common in cases of hip-disease. *Phil. Med. Jour.*, Jan. 31, 1903, p. 187.—**Vagabond pains,** wandering pains.

painiu (pī-nū′), *n.* [Hawaiian name.] In the Hawaiian Islands, a liliaceous plant, *Funckia Menziesiana*, with the habit of a *Tillandsia*, growing on old tree-trunks or on stony ridges at elevations of from 2,000 to 6,000 feet above the sea.

pain-point (pān′point), *n.* In *psychophys.*, same as ★*pain-spot.*

> He [Goldscheider] admits *pain-points* (points sensible to pain), but not a specific organ for pain nor special nerves to transmit it.
> *Ribot* (trans.), Psychol. of Emotions, p. 27.

pain-sensation (pān′sen-sā″shọn), *n.* In *psychol.*, the specific quality of sensation derived from the pain-spots of the skin and from the terminal organs of pain within the body. Psychologists are now agreed that pain is to be recognized as a distinct sensation, but have not yet reached agreement on the point of the number of primary pains. It may be that there is but one pain quality, the introspective differences being referable to differences of intensity, duration, recurrence, volume, etc.; or it may be that the bodily organs which are the seat of the various organic pains furnish each their own special pain quality.

> The sensations of pain are very different from either the temperature or the pressure sensations. . . . I could almost posit an area for the pressure sensations, but the *pain sensations* seemed to have no bigness at all.
> *E. B. Titchener*, Exper. Psychol., I. ii. 95.

pain-spot (pān′spot), *n.* In *psychophys.*, a spot upon the skin sensitive and sensitive only to pain, and representing a terminal organ of the pain-sense.

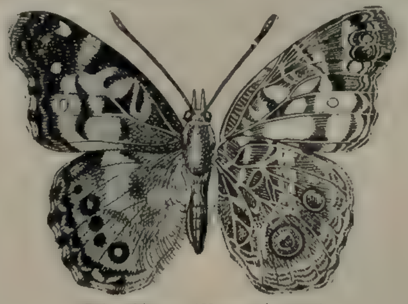
> The *pain spots* are more numerous than any of the others. There is no outward indication of their existence.
> *E. B. Titchener*, Exper. Psychol., I. ii. 95.

Asphalt paint. See *asphalt* ★*brown.*—**Balmain's paint,** calcium sulphid, used as a paint. After exposure to bright light it exhibits beautiful bluish phosphorescence in a dark room.—**Bartlett's fume paint,** paint produced by smelting lead ore in such a manner 'as to produce a maximum of fume, which is collected in iron pipes and, when cooled, filtered through woolen bags. The filtered fume, known as *blue powder*, is converted, by burning, into white crusts which are smelted, together with gray slags, in a low blast-furnace, yielding slag lead and a purified fume. This is collected in condensing-tubes and sold as white paint. It consists of about 26 per cent. of oxid of lead, 65 per cent. of sulphate of lead, and 6 per cent. of oxid of zinc.—**Indian paint.** (*c*) The strawberry-blite, *Blitum capitatum.* (*d*) The hoary puccoon, *Lithospermum canescens.* (*e*) Species of *Tradescantia.*—**Metallic paint,** a coating or paint used for painting ironwork to prevent its rusting. It is composed, usually, of some oxid of iron mixed with oil.—**Waterproof paint,** the trade-name under which sundry compositions are sold, for the most part involving the use of cheap materials as substitutes for or diluents of ordinary oil paint. Petroleum and stearic acid residues, rosin, sawdust, marble dust, etc., have been so applied.

Paint. [*l. c.* or *cap.*] An abbreviation of *painting.*

paint-brush, *n.* **2.** In *bot.*, the shrubby St. John's-wort, *Hypericum prolificum*, so called from its brush of yellow stamens; also the king-devil, *Hieracium præaltum*, named with reference to the yellow flower-head.—**Devil's paint-brush.** See ★*devil's-paint-brush.*—**Flora's paint-brush,** the orange hawkweed, *Hieracium aurantiacum.*—**Indian paint-brush,** the (Eastern) painted cup, *Castilleja coccinea*; also the Californian *C. parviflora Douglasii*: the name alluding to the highly colored brush-like inflorescence. The latter is also called *scarlet paint-brush.*—**Pink paint-brush.** See ★*escobita.*—**Scarlet paint-brush.** See *Indian* ★*paint-brush.*

painted-beauty (pān″ted-bū′ti), *n.* A handsome American nymphalid butterfly, *Vanessa huntera*, occurring in lower Canada and over most of the United States. Its larvæ feed on the everlasting plant.



Painted-beauty (*Vanessa huntera*).
Slightly reduced.

painter², *n.*—**To cut the painter,** to take oneself off; make off: said by convicts, etc., when 'making themselves scarce' as early as 1700. It has more recently been used in a political connection referring to the separation of a colony from the mother country. [Colloq.]

painterish (pān′tėr-ish), *a.* [*painter*¹ + *-ish.*] Like a painter or that of a painter: said of a style of art criticism which is too technical for the general reader. [Rare.]

> The study on Manet is a trifle too *painterish* for general interest.
> *Burlington Mag.*, III. 108.

painterite (pān′tėr-īt), *n.* [*Painter*, a personal name, + *-ite*².] A green to yellow micaceous mineral from Pennsylvania, allied to the vermiculites.

painting, *n.* **1.** The earliest use of color is decorative: representation comes later. Primitive people are content with simple ornamentation of objects of utility, especially pottery: as advance is made in civilization and permanent buildings are created, drawing and color, both of which may be included under the term 'painting,' become dependent upon architecture and, with its improvement, become more and more monumental. (*a*) *Egyptian and Assyrian.* In the historical sequence, the first appearance of painting as a developed and stable art was in Egypt, where its use during the entire known history of that country was common and developed according to clearly defined conventions. In Egyptian painting, the drawing, color, and detail are subordinated to the flat surface of the wall. There is no perspective or relief, no sense of light and shade, and little realization of natural color. The general scheme is quiet and harmonious; pure color is employed, but in light tones; the human figure is well drawn in outline; and sympathy for animal life is keen. The technical process employed appears to have been distemper. In excavations in Assyria traces of color have been found but have soon disappeared. (*b*) *Greek and Roman.* In Hellenic civilization painting was as highly regarded as sculpture, but much less information about it has come down to us. Mural decoration is to be found in the earliest Mycenæan remains. Painted pottery of every period appears. Of monumental painting and independent pictorial composition during the historical period there are no remains. For information we depend upon descriptive texts in classic authors, and the large body of paintings on vases which are supposed to represent the style of famous painters and which are sometimes their actual works. From an examination of these it appears that during the earlier and more important period of Greek painting the general scheme of Egyptian art was followed. A composition was arranged to tell its story intelligibly, with little aid from perspective or light and shade. It is probable that the color was pure, well arranged, and agreeable. The great beauty of Greek painting, in the strong period, rested undoubtedly upon the fine drawing and dignified composition of the figures. The pictures of Polygnotus in the fifth century B.C. were probably very like the contemporary frieze of the Parthenon. During and after the time of Alexander the Great (fourth century B.C.) painters came to a much fuller realization of nature. Perspective, foreshortening, landscape, and still-life received attention. This later period is undoubtedly well represented in the large number of works found at Pompeii. The processes employed by the classic painters were distemper and encaustic. See *Greek art*, under *Greek.* (*c*) *Byzantine.* With the decline of civilization in the later Roman and Byzantine periods, the higher pictorial qualities disappeared, but the decorative qualities remained, strengthened perhaps by the rigidity of the favorite material, mosaic. The human figure was again treated as a pattern and the composition as a decorative arrangement. The color-schemes are harmonious and powerful. The finest examples are in Rome, Ravenna, and Venice. The traditions of Byzantine painting passed over into Russia and Greece, where they are still followed. Medieval and Gothic painting of the Byzantine empire entered northern Europe chiefly in the form of illumination of manuscripts or miniature-painting, of which innumerable fine specimens were produced between the eighth and sixteenth centuries. The monasteries of Ireland were especially prolific in the production of miniatures during the early medieval period. The structural conditions of Gothic architecture did not admit the extensive areas of mural decoration which were possible in Byzantine and Romanesque buildings. There was occasional painting of walls, some of which still remains, as notably in the Abbey of St. Albans in England; but for the most part stained glass took the place of mural painting. The vast churches of the thirteenth century were decorated with glass which has never been equaled. The Cathedral of Chartres in France contains nearly its complete outfit of medieval glass in good condition. (*d*) *Renaissance in Italy.* The development of Byzantine painting into the Renaissance and modern schools was practically continuous in Italy. The modern historic sequence and the emergence of personalities begin with the record of Vasari, which mentions first Cimabue of Florence, Duccio di Buoninsegna of Siena, and Margaritone of Arezzo. In the next generation a painter of great independent power appeared in Giotto di Bondone (1276–1337), who has left the important decorations of the Church of San Francesco at Assisi, of the Arena Chapel at Padua, and of the Church of Santa Croce in Florence. Giotto was loyal to the fine decorative principles of the Byzantine painters, but in the realization of dramatic qualities belongs definitely to modern art. During the fourteenth century (the trecento) painting followed the lines laid down by Giotto, but in the fifteenth century (the quattrocento) the influence of antique culture and art begin to be felt. The drawing of the nude was first attempted in the decoration of the Brancacci chapel in the Church of Santa Maria del Carmine in Florence by Masaccio (1401– about 1429). Toward the end of the century the freely developed type of the early Renaissance picture is shown in the work of a large number of painters, among whom may be mentioned Fra Filippo Lippi (about 1402–69), Filippino Lippi (about 1460–1505), Sandro Botticelli (1447– about 1510) in Florence, Giovanni Bellini (about 1427–1516) in Venice, and Andrea Mantegna (1431–1506) in Mantua. At the beginning of the sixteenth century (the cinque-cento) a larger scale and a stronger tone were given to painting by the school formed on the cartoons of Michelangelo (1475–1564) and Leonardo da Vinci (1452–1519), exhibited in Florence in 1505. There was at the same time a more perfect appreciation of antique art and of the sciences of perspective and anatomy. The most extraordinary creation of the period was the decoration of the ceiling of the Sistine Chapel in the Vatican by Michelangelo. The work, however, which had the healthiest and most lasting influence upon modern art was the decoration of the Stanze and Loggie of the Vatican by Raphael (1483–1520). The orderly architectonic arrangement of the 'School of Athens' and 'Disputa' in the Stanza della Segnatura dominated pictorial composition until the nineteenth century. In Venice the greater freedom and power of the epoch were felt in the color and technical perfection of such masters as Titian (about 1477–1576), Tintoretto (1518–1594), and Veronese (1528–1588). After these masters painting became part of the general baroque movement and reached its highest expression outside of Italy in the work of Rubens, Rembrandt, and Velasquez. During the Italian Renaissance the favorite process for monumental work was fresco. For smaller pictures tempera was used at first. Oil-painting came gradually into use in the last half of the fifteenth century. (*e*) *Flemish, German, and Dutch Renaissance.* North of the Alps the development of painting proceeded mainly through illumination, the miniatures taking on more and more pictorial quality. The painting of the Primitives defines itself clearly in the work of Hubert and Jan van Eyck in Flanders, late in the fourteenth and early in the fifteenth centuries. The van Eycks did not invent oil-painting, as is commonly supposed, but they improved the method of its application and made its use for easel pictures popular. The production of pictures of great refinement was abundant in Flanders and the Netherlands in the fifteenth century. The art of painting entered France through Burgundy, then in close alliance with Flanders. Contemporaneous with the Flemish Primitives, and developed in much the same manner, a powerful school formed itself in the various towns of Germany, notably Cologne, Augsburg, and Nuremberg. The German school culminated in Albrecht Dürer (1471–1528) and Hans Holbein the Younger (about 1497–1543). In the seventeenth century the strong technical qualities, bold composition, and realism of the later Italian or baroque period found their way to Flanders and reached their complete development there. Peter Paul Rubens (1577–1640), a Fleming, trained in Italy, is the chief and typical master of the period. He was followed by Jakob Jordaens (about 1593–1678), Sir Anthony Vandyke (1599–1641), Frans Hals (about 1580–1666), and others. In Holland the naturalistic and technical tendencies of the time culminated in Rembrandt (1607–69), and the famous Dutch painters of interiors, landscape, and still-life, Teniers the Younger (about 1610–90), Brouwer (about 1606–38), Pieter de Hooch (about 1632– about 1681), Wouverman (about 1619–68), Hondekoeter (1636–95), Ruysdael (about 1625–82), Hobbema (1638–1709), etc. (*f*) *Spanish.* Spanish painting did not assume importance before the seventeenth century: it then fell into line with the schools of Italy and Flanders and produced several masters of splendid attainment as colorists and technicians. The chief of these is Velasquez (born about 1599, died Aug. 7, 1660). With him may be associated Theotocopuli, called El Greco (about 1545–1625), Ribera, called Spagnoletto (1588–1656), Zurbaran (1598–1662), and Murillo (about 1618–82). In the eighteenth century the strong qualities of Spanish painting reappear in the work of Francisco Goya (1746–1828). Since Goya Spanish painting has been dominated by French art. The strongest master of the nineteenth century is Fortuny (1838–74). (*g*) *French.* A definite school of French Primitives may be said to appear first in the later part of the fourteenth century about the court of the early Valois, under the leadership of the four sons of John II. (died 1364), Charles V., and the Dukes of Anjou, Berry, and Burgundy. Philip the Bold (1342–1404), Duke of Burgundy, who was then in close alliance with Flanders, became especially the patron of the fine arts. In the main the French Primitives preceded those of Flanders in style and method. In the Renaissance period the influence of Italian art was clearly defined. The chief representatives are Jean Foucquet (1415–90), François Clouet (about 1500– about 1571), Jean Perréal (1455–1527), and Jean Cousin (1501–90). During the reign of Francis I. (1515–1547) an effort was made to Italianize French art by the importation of Italian masters, especially for the decoration of the palace of Fontainebleau. A school of decorative painters was formed at this time which had a lasting influence upon the art of France. The leaders were Il Rosso (1494–1541), and Primaticcio (1504–1570). The movement begun at Fontainebleau found further expression in the seventeenth century, not in the importation of Italian masters, but in the adoption of the principles of later Italian art, in which advanced classicism was blended with the decorative freedom of the baroque style. The most notable landscape-painter was Claude Lorrain (1600–82). Art in France was much affected by the general centralization which characterized the reign of Louis XIV. (1643–1715). The artistic center of the movement was the Academy of Painting and Sculpture, established in 1648 on the model of those already installed in Italy. The chief organizer of the Academy, Charles Lebrun (1619–1690), established himself firmly in the favor of the king, and with his fellow academicians controlled the vast artistic production of the period. The painting of the reign of Louis XIV. is blended with architecture, sculpture, and other arts in the decoration of the royal palaces, especially Versailles. In the eighteenth century the Academy still controlled art in France, but the poverty of the court and the less serious character of the times did not permit its development in large and dignified schemes of decoration. Painters drifted into the representation of the brilliant, loose, and artificial life of the day; the *féte champétre* and *conversation galante* were the types preferred. The chief masters of the eighteenth century are Watteau (1684–1721), Le Moyne (1688–1737), Pater (1699–1736), Boucher (1703–70), and Fragonard (1732-1806); Chardin (1699–1779) and Greuze (1725–1805) belong to a more serious class. The first excavations at Pompeii in 1748, following those at Herculaneum in 1709 and 1738, recalled the attention of the artistic world from the current types of conventional classicism to the pure forms of the ancient monuments themselves. This interest was strengthened by the criticism of Winckelmann, which laid the foundation of the modern science of archæology. Painting in France responded to the classical tendencies of the period, which coincided with the Revolution and Empire. The leader of the classicists was Jacques Louis David (1748–1825), whose most prominent pupils were Girodet (1767–1824), Gérard (1770–1837), Gros (1771–1835), and Ingres (1780–1867). A reaction against the Academy of the seventeenth century, the artificiality of the eighteenth century, and the rigidity of the classicists of the imperial period appeared in the romantic movement which occurred in France in the early part of the nineteenth century. The exhibition in 1819 of "The Raft of the Medusa" by Géricault (1791–1824), followed by that of the "Dante and Virgile" by Delacroix (1799–1863), gave expression to this tendency. The principle of direct appeal to nature was definitely introduced into the practice of French painting by the exposition in Paris in 1824 of the works of the English painters Constable (1776–1837) and Bonington (1801–1828). Modern French realism comes from the Dutch, through the English landscape-painters. This interest in nature superimposed upon the foundation laid by the Academy has given to French painting its breadth and completeness. In the direct study of nature the French painters visited frequently the forest of Fontainebleau, the most picturesque region within easy reach of Paris, and made their headquarters at the little village of Barbison near the point where the Paris road enters the forest. An important school of landscape-painters grew up in connection with this colony, with which were associated Jean François Millet (1814–75), Diaz de la Peña (1807–76), Théodore Rousseau (1812–67), Corot (1796–1875), Charles François Daubigny (1817–78), Troyon (1810–65), and Jules Dupré (1811–89). Modern painting tends to divert the painter from the effects of the studio and to fix his attention on those of open daylight or *plein air*. As the effects of *plein air* are momentary, the tendency has been to study the momentary impression of nature. A school of painters loyal to this principle grew up about the painter Manet (1832–83) and called themselves impressionists. (*h*) *English.* The history of English painting during the middle ages and the Renaissance is hardly more than a shadow of the stronger development which was proceeding on the continent of Europe. The younger Holbein passed a considerable part of his life in England, and afterward Rubens and Vandyke followed his example. Vandyke left many pupils in England, and the style and method established by him persisted until about the beginning of the nineteenth century. A definite national character appears in the works of William Hogarth (1697–1764). The true successor of Vandyke and the leading personality in English painting was Sir Joshua Reynolds (1723–1792), who in 1768 organized the Royal Academy and became its first president. Reynolds, however, was successful only as a portrait-painter, and in this field was closely pressed by several others, notably Thomas Gainsborough (1727–88), George Romney (1734–1802), and Sir Thomas Lawrence (1769–1830). An interesting phase of English artistic development in the eighteenth century is a keen appreciation of nature, which appears to have come in largely from Holland through the county of Norfolk, which lies nearest to that country. In the town of Norwich a definite school developed of which the leaders were John Crome ('Old Crome,' 1768–1821) and John Sell Cotman (1782–1842). In landscape-painting, Richard Wilson (1714–82) was affiliated with the Italian school of Claude Lorrain (1600–82). The chief masters of the early English landscape school are Thomas Gainsborough, John Constable, and Richard Parkes Bonington, already mentioned. Constable was probably the first painter to practise consistently in the open air. An exhibition of his work, with that of Bonington and other Englishmen in Paris, in 1824 gave the initiatory impulse from which modern French landscape-painting has grown. Joseph Mallord William Turner (1775–1851) followed both the Dutch and Italian influences, which he combined with extraordinary power and fertility, and a fine decorative feeling for color. In the nineteenth century England produced many painters of note, but there appeared no large movement which deserves to be called a school except that of the Preraphaelite Brotherhood, a coterie of painters which crystallized about Dante Gabriel Rossetti (1828–82) soon after he entered the studio of Ford Madox Brown (1821–93) in 1847. It consisted first of Rossetti, Holman Hunt (1827–), and Millais (1829–96); and later others were enlisted. It was in general a protest against the conventionality and conservatism of English art and an appreciation of the sincerity, intensity, and naturalism of the quattrocento, the period before Raphael in Italian art. (*i*) *Germany.* After the fine efflorescence marked by Albrecht Dürer and Holbein, painting in Germany fell into decay. Whatever of importance was done during the seventeenth and eighteenth centuries was the creation of French and Italian masters. During the early part of the nineteenth century various centers of artistic activity developed in Germany, which, however, never created more than a local interest. The chief of these surrounded the court of Louis I., King of Bavaria (1825–48), of which the most important masters were Cornelius (1783–1867) and Kaulbach (1805–74). Although the results of their endeavor were not monumental, their interest in art was genuine and resulted in making Munich an art center second only to Paris in importance. About the Academy in Munich and kindred institutions in Vienna and Berlin has been formed an influential body of painters who, while they have been loyal, in the main, to the central activity of Paris, have felt more keenly than the French the influence of the German and Flemish masters of the sixteenth and seventeenth centuries. Among the most notable may be mentioned Hans Makart (1840–84), Munkácsy (1844–1900), Leibl (1844–1900), Böcklin, a Swiss (1827–1901), Klinger (1857–), Stuck (1863–), and Menzel (1815–1905). (*j*) *United States.* During the eighteenth century whatever art there was in the American colonies centered on the Royal Academy. Several good painters were trained in London and practised in England to some extent, notably Copley (1737–1815), Stuart (1755–1828), and Trumbull (1756–1843). During the early part of the nineteenth century there was little work in the United States which had more than a provincial interest. The first to enter the larger European movement was W. M. Hunt (1824–79), who formed himself on the work of Couture, Millet, and the Barbison School. Since the Civil War it has been the custom of American painters to complete their education in Paris, Munich, or some other European center. A large body of excellent painters follow, in the main, the practice thus learned. Among these may be mentioned Sargent (1856–), Blashfield (1848–), Dielman (1847–), Bridgman (1847–), Dannat (1853–), and Shirlaw (1838–). Beside these, several able artists have formed a more independent style, notably Whistler (1834–1903), La Farge (1835–), Fuller (1822–84), Inness (1825–94), and Abbey (1852–). (*k*) *Oriental.* The painting of India is mainly decorative, and illustrative of Buddhist doctrines. It is best represented by the extensive series in the rock-cut caves of Ajanta, which date from 200 B.C. to 600 A.D. In China the art reached a high point of development, best known from its reflection in the painting of Japan. In Japanese painting the art of the Orient has reached its most perfect definition and is fairly well understood. According to tradition, painting was introduced into Japan from China and Korea in the fifth and sixth centuries A.D. In its development certain definite periods or schools are recognized: (1) The Chinese or Buddhist school, which lasted for two or three centuries and did not differ essentially from the painting of China. (2) The Yamato-Tosa school, which flourished in the tenth and eleventh centuries and was established by a court painter, Kasuga Motomitsu: its technique was largely Chinese, its motives and feeling Japanese. (3) The Kano riu school, which owed its origin to the painter Kano Masanobu (1424–1520): it is characterized by bold calligraphic strokes, brilliant color, and careful drawing. (4) The Shijo riu school, the great naturalistic school of Japan, which was founded by the painter Okio about 1775: its principles are still practised and embody the higher artistic feeling of Japan. The name is derived from the Shijo or Fourth Street in Kioto in which Okio lived. Okio inaugurated the practice of drawing directly from nature. In its technique Shijo substitutes delicate tones and washes for the solid body-color of the earlier masters. (5) The Ukioye (drifting world) school, which is an advance upon Shijo in the direction of realism and democracy. Its matter is all nature, the shifting world of impressions. Ukioye is especially familiar to foreigners, and its chief master, Hokusai (1760–1849), has, through his brilliancy and fertility, acquired greater vogue than any other Japanese master. Second to him is Hiroshige.—**Norwich school of painting.** See ★*painting*, 1 (*h*).—**Poonah painting,** decoration, produced at Poonah, in the Bombay Presidency, consisting of pictures of birds, flowers, etc., on thin (rice) paper, done with little shading and no background.

painting-machine (pān′ting-ma̤-shēn″), *n.* A machine for spreading liquid paint or calcimine upon surfaces to be painted. The most common form employs an air-compressor, air- and paint-reservoirs, hose, and an atomizer-nozle. The compressed air serves to force the paint through the hose and deliver it at the nozle in the form of fine spray. The action is identical with that of the air-brush. The compressor may be operated by hand or by a small motor. With a motor several men can spread the paint from one reservoir evenly over a much greater surface and at a far greater speed than with paint-brushes. Such machines are also used with clear water to wash the sides of cars and walls of buildings.

> The *painting-machine* for painting large surfaces simply atomizes the paint by a jet of air; it was first used on the buildings at the Chicago World's Fair of 1893. *Encyc. Brit.*, XXXI. 803.

paint-room, *n.* 2. A compartment on a ship for the storage of paints, oils, and varnishes.

paint-stone (pānt′stōn), *n.* A stone used among primitive tribes as a material for paint. Hematite, mineral coal, etc., are so used, the stone being rubbed or crushed to a powder which is mixed with water, oil, or sticky liquids.

> The articles known as *paint-stones* scarcely come under the head of implements. Some of the hematite pieces are incipient celts, hemispheres, or cones; but most of them were used merely to furnish paint, at any rate until rubbed down quite small.
> *Smithsonian Rep.* (Bur. of Ethnol.), 1891–92, p. 115.

paipai-amo (pī″pī-ä′mō), *n.* [Tagalog *paipai*, fan, + *amo*, monkey.] An epiphytal fern, *Drynaria quercifolia*, which grows in the Philippine Islands: used as a remedy for fevers and as a vermifuge. Also called *cabcaban.*

pair^1, *n.* **10.** In *roulette*, an even number.—**11.** In *mech.*, two parts or pieces, each of which acts against the other to hold it in position or to restrain its motion, as a bearing and journal, or a screw and nut.—**A pair of colors.** (*b*) The position or rank of ensign: as, he was promised *a pair of colors*, that is, his commission as ensign.—**One pair,** in *poker*, a hand which contains two cards of the same denomination and three useless cards; in any card game, two cards of the same denomination.—**Pair of breeches.** See ★*breeches.*—**Pair of values** (*math.*), two mated or coupled values.—**Two pairs,** in *poker*, two cards of one denomination and two of another denomination, with one useless card, in the hand.

pair^1, *v. t.* **3.** In *cribbage*, to match (the card last played by the adversary).

pairedness (pãrd′nes), *n.* The state of being paired or double: as, the *pairedness* of the lungs, limbs, etc.

pair-horse (pãr′hôrs), *a.* Made for or used with a pair of horses: as, *pair-horse* harness, a double harness. *Knight.* [Eng.]

pairling (pãr′ling), *n.* [*pair*^{1} + *-ling*^{1}.] In *chem.*, a component radical. *Simon*, Physiological Chem., p. 178.

pais^2, *n.*—**Matter in pais,** in *law*, matter in the country, meaning for the jury, not matter of record.—**Trial per pais** or **trial by pais.** See *per pais.*

paisanite (pä-ē-sä′nīt), *n.* [*Paisano* Pass, western Texas, + *-ite*^{2}.] In *petrog.*, a variety of quartz-porphyry composed of soda-orthoclase and quartz, with phenocrysts of the same minerals, and a little riebeckite-arfvedsonite. *Osann*, 1893.

paiwari (pī-wä′rẹ̄), *n.* [S. Amer. (Guiana).] A native drink made by soaking pieces of cassava-bread in water, boiling, and allowing the liquid to ferment for several days. Originally the bread was chewed before boiling. [Guiana.]

pajarito (pä-hä-rē′tō), *n.* [Sp., dim. of *pajaro*, a bird.] The common halfbeak, *Hyporhamphus roberti.*

pajuil (pä-hŏ-ēl′), *n.* [Native name.] In Porto Rico, a name for the cashew or marañon, *Anacardium occidentale.*

pake^2 (pä′kạ̄), *n.* [Maori.] In New Zealand, a mat worn as a protection from the rain by the Maoris. *E. E. Morris*, Austral English.

pakeha (pä′kā-hä), *n.* [Maori.] Among the Maoris, a white man; a foreigner. *E. E. Morris*, Austral English.—**Pakeha Maori,** a white man who lives as a Maori.

pakiri kiri (pä-kē′rẹ̄ kē′rẹ̄), *n.* [Maori.] A fish, *Percis colias*, the blue cod, rock-cod, or coalfish, abundant about New Zealand.

pakkasi (pa-kä′sẹ̄), *n.* [Cape D. pronunciation of D. *pakkage*, baggage, luggage, = E. *package.*] In South African Dutch use: (*a*) Baggage; luggage; traps. (*b*) A heterogeneous mass of things; trash: also applied to persons.

pakpak-lauin (päk-päk′lou″in), *n.* [Tagalog *pacpac*, *pakpak*, wing, + *lauin*, hawk.] Same as ★*paipai-amo.*

pakwo (pä-kwō′), *n.* [Chinese.] The seeds of the gingko or maidenhair-tree, *Ginkgo biloba.* See ★*gingko-nut* and ★*icho.*

Pal. An abbreviation (*a*) of *Palestine;* (*b*) of *paleontology.*

pala^1, *n.* **4.** A thin layer of brain tissue, fancifully compared to the shape of a spade, at the extremity of the rima, which connects the cerebrum and the fimbriæ.—**5.** A Hawaiian name for syphilis.

pala^3, *n.* An abbreviated form of ★*impala.*

palaa (pä-lä-ä′), *n.* [Hawaiian name.] One of the commonest ferns of the Hawaiian Islands, *Odontosoria Chinensis*, from which the natives formerly extracted a red dye.

palace^2, **pallace** (pal′is), *n.* [Early mod. E. *paleys;* identical with *palise*, a paling, an inclosure.] **1**†. An inclosed place: a yard;

a landing-place inclosed by pales (see *palise*) or walls.—**2.** A cellar for the storing of fish. [Prov. Eng.]

palacheite (pal′a-kīt), *n.* [Named after Professor Charles *Palache*, of Cambridge, Massachusetts.] Botryogen, a name given to this mineral from the Boston (formerly the Redington) mercury mine at Knoxville, California. Palacheite occurs in loosely coherent aggregates of a deep brick-red color.

Palæacrididæ (pā″lẹ̄-a-krid′i-dē), *n. pl.* [NL.] A family established by Brongniart to include certain fossil insects in the carboniferous strata at Commentry, France.

palæ-American, *a.* See ★*paleo-American.*

palæanthropography, *n.* See ★*paleoanthropography. Nature*, May 14, 1903, p. 47.

palæ-Asiatic, *a.* See ★*paleo-Asiatic.*

Palæaspis (pā-lẹ̄-as′pis), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *ἀσπίς*, shield.] A genus of ostracoderm fishes of the order *Heterostraci*, with the head covered by a simple, triangular, dorsal shield from 3–5 inches long, notched at the orbits and without posterior spine, and by a quadrate ventral shield. One species is from the Salina group of the Silurian in Perry county, Pennsylvania, the other from the Old Red Sandstone of the Scottish Devonian.

Palæaspis americana.
Restoration giving probable form. (Claypole.)

Palæaster (pā-lẹ̄-as′tėr), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *ἀστήρ*, star.] A genus of primitive fossil starfishes, of the subclass *Encrinasteriæ*, found in rocks of Silurian to Carboniferous age in North America and Europe. These fossils have five stout pointed arms, the convex dorsal surfaces of which are covered with several rows of small, pointed, calcareous plates. The ventral surfaces of the arms show deep ambulacral grooves, with two rows of small, alternating, ambulacral plates, and on each side a single row of small adambulacrals and a row of large marginal plates.

palæethnologist, *n.* Same as *paleo-ethnologist. Jour. Hellenic Studies*, VIII. 450.

palæethnology, *n.* Same as *paleo-ethnology. Pop. Sci. Mo.*, Feb., 1899, p. 551.

palæic, *a.* Same as ★*paleic.*

palæichthyologist, *n.* Same as *paleoichthyologist. Proc. Zool. Soc. London*, 1897, p. 317.

palæo-. For words so beginning, not found below, see ★*paleo-.*

palæo-American, *a.* Same as ★*paleo-American.*

palæo-Asiatic, *a.* Same as ★*paleo-Asiatic.*

Palæoblattariæ (pā″lẹ̄-ọ̄-bla-tā′ri-ē), *n. pl.* [NL., ‹ Gr. *παλαιός*, ancient, + L. *blatta*, beetle, + *-ariæ.*] An order of insects established by Scudder to include the fossil cockroaches of the carboniferous deposits.

Palæoblattina (pā″lẹ̄-ọ̄-bla-tī′nạ̈), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + NL. *Blattina*, a genus of cockroaches.] One of the oldest known fossil insects, represented by an imperfect orthopteroid wing found in the Middle Silurian of Calvados, France.

Palæocampa (pā″lẹ̄-ọ̄-kam′pạ̈), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *κάμπη*, caterpillar.] A fossil chilopodous myriopod, sole representative of the order *Protosyngnatha* of Scudder's classification, found in the Carboniferous shales of Mazon creek, Illinois. The body consisted of ten annular segments and, unlike modern myriopods, each segment was armed with bundles of fine needle-like spines, which caused it to be originally described as a fossil caterpillar.

palæoconch (pā′lẹ̄-ọ̄-konk), *n.* [NL. *Palæoconch(a).*] Any pelecypod the shell of which has the primitive characters of the *Palæoconchæ.*

Palæoconchæ (pā″lẹ̄-ọ̄-kong′kē), *n. pl.* [NL., ‹ Gr. *παλαιός*, ancient, + *κόγχη*, shell.] A provisional group of primitive pelecypods. It was erected by Neumayr to receive those with thin shells, indistinct pallial line and adductor-muscle scars, cardinal area amphidetic when present, and ligament external; hinge margin without hinge-plate and without true teeth, but often with polymorphous teeth formed by folds of the shell margin. It is a polyphyletic group of Paleozoic shells representing convergent expressions of different genera adapted to a pelagic life.

Palæocreusia (pā″lẹ̄-ọ̄-krū′siạ̈), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + NL. *Creusia*, a genus of barnacles.] A genus of fossil balanoid barnacles, found as a commensal organism occupying cavities in the coralla of Devonian corals. The type species was imbedded in a *Favosites* of the Onondaga limestone of New York.

palæocrinoidean (pā″lẹ̄-ọ̄-kri-noi′dẹ̄-an), *a.* Of or pertaining to the *Palæocrinoidea*, or Paleozoic crinoids.

Palæocyclidæ (pā″lẹ̄-ọ̄-sik′li-dē), *n. pl.* [NL., ‹ Gr. *παλαιός*, ancient, + *κύκλος*, circle.] An extinct family of small discoid tetracorallian *Anthozoa*, of which *Palæocyclus* is the typical genus.

Palæocyclus (pā″lẹ̄-ọ̄-sī′klus), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *κύκλος*, circle.] A genus of small fossil corals typical of the family *Palæocyclidæ*, with flattened, discoid, simple coralla and many stout radial septa: found in the Silurian beds of Northern Europe and North America. Allied genera are *Hadrophyllum*, *Microcyclus*, etc., from Devonian beds.

palæoglyph, *n.* See ★*paleoglyph.*

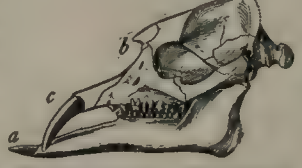
Palæognathæ (pā-lẹ̄-og′nạ̄-thē), *n. pl.* [Gr. *παλαιός*, ancient, + *γνάθος*, jaw.] Pycraft's name for a division of birds including the ostriches and their allies, and the tinamous; the equivalent of Stejneger's *Dromæognathæ.* Contrasted with *Neognathæ.*

Palæohatteria (pā″lẹ̄-ọ̄-ha-tē′ri-ạ̈), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + NL. *Hatteria*, a genus of reptiles.] A long-tailed, lizard-like, rhynchocephalian reptile, about 18 inches in length, found in the lower Permian beds of Germany: one of oldest known reptiles. Its skull has large orbits, large upper and lower temporal arcades, and a full series of sharp conical teeth. The digits were clawed and the animal's habits were probably aquatic.

Palæolepidoptera (pā″lẹ̄-ọ̄-lep-i-dop′tẹ-rạ̈), *n. pl.* [NL., ‹ Gr. *παλαιός*, ancient, + NL. *Lepidoptera.*] One of the three suborders of *Lepidoptera* proposed by Packard. It includes only the family *Micropterygidæ*, the other suborders being the *Protolepidoptera* and the *Neolepidoptera.*

Palæomantidæ (pā″lẹ̄-ọ̄-man′ti-dē), *n. pl.* [NL., ‹ Gr. *παλαιός*, ancient, + NL. *Mantidæ.*] A family name proposed by Scudder to include certain fossil forms supposed to be related to recent *Mantidæ.* They have since been shown to be neuropterous.

Palæomastodon (pā″lẹ̄-ọ̄-mas′tọ̄-don), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + NL. *Mastodon*, a genus of elephants.] An extinct genus of *Proboscidea* belonging to the family *Elephantidæ*, characterized by molar crowns with three transverse ridges and all the cheek-teeth functional at once. In the recent elephants the front cheek-teeth fall out before the hinder ones are cut. Taken from the Lower Oligocene of the Province of Fayum, Egypt.



Skull and lower jaw of *Palæomastodon beadnelli*, showing elongated chin with pair of terminal cutting teeth *a*, from the Upper Eocene of the Fayum, Egypt, greatly reduced; *b*, position of nostrils; *c*, upper incisor or tusk. (After C. W. Andrews.)
(From "Guide to Fossil Mammals and Birds," British Museum.)

Palæophonus (pā-lẹ̄-of′ọ̄-nus), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *φόνος*, death (scorpion)?] One of the oldest known fossil scorpions found in the Upper Silurian beds of Wisby, Gotland, and remarkably similar in its superficial appearance to those of modern time.

Palæopinna (pā″lẹ̄-ọ̄-pin′ạ̈), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + NL. *Pinna*, a genus of mollusks.] A pinna-like pelecypod from the Lower Devonian of Europe and North America. See *Pinna*^{2}.

Palæoscylium (pā″lẹ̄-ọ̄-sil′i-um), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *σκύλιον*, a dogfish.] A fossil dogfish, closely related to the modern genus *Scylium*, found with nearly complete skeletons in the Jurassic lithographic limestones of Solenhofen, Bavaria.

Palæospinax (pā″lẹ̄-ọ̄-spī′naks), *n.* [NL., ‹ *παλαιός*, ancient, + NL. *Spinax*, a genus of sharks.] A small fossil cestraciont shark, with hooked teeth, smooth dorsal spines, and enameled shagreen: known from a nearly complete skeleton from the Lias of England and Germany.

Palæospondylidæ (pā″lẹ̄-ọ̄-spon-dil′i-dē), *n. pl.* [NL., ‹ *Palæospondylus* + *-idæ.*] A family of extinct fish-like vertebrates, typified by the genus *Palæospondylus.*

Palæospondylus (pā″lẹ̄-ọ̄-spon′di-lus), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *σπόνδυλος*, vertebra.] A genus of primitive fish-like vertebrates considered to be related to the lampreys, but having the cartilages calcified and the vertebral centra represented by rings in the sheath of the notochord. There is no evidence of true jaws. The largest examples were a little under two inches in length. Their remains occur in the Lower Old Red Sandstone (Devonian) of Scotland. The only known species is *P. gunnii.*

Palæostoma, *n.* **2.** [*l. c.*]; pl. *palæostomata* (pā-lẹ̄-ọ̄-stō′mạ-tạ̈). In *embryol.*, the primitive mouth-opening of the vertebrates; an ancient structure lying in front of the present mouth opening, or neostoma, which some embryologists suppose to have arisen secondarily from a pair of branchial clefts.

Palæoteuthis (pā″lẹ̄-ọ̄-tū′this), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *τευθίς*, a squid.] Fossil beak-like jaws of unknown nautiloid cephalopods found in the Jurassic and Cretaceous rocks.

palæotherioid (pā″lẹ̄-ọ̄-thē′ri-oid), *a.* Same as *palæotheroid.*

palæotypic, paleotypic (pā″lẹ̄-ọ̄-tip′ik), *a.* [*palæotyp(e)* + *-ic.*] Of or pertaining to palæotype; having the characteristics of palæotype.

palæotypical, paleotypical, *a.* Same as ★*palæotypic.*

Palæozoicum (pā″lẹ̄-ọ̄-zō′i-kum), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *ζωικός*, pertaining to living things, ‹ *ζῷον*, a living thing, an animal.] In *geol.*, the entire congeries of Paleozoic formations of all parts of the world, comprising all the varied rocks deposited between the beginning of Cambrian and the end of Permian time.

Palafoxia (pal-a-fok′si-ạ̈), *n.* [NL. (Lagasca, 1816), named in honor of Jose de *Palafox* y Melzi (1780–1847), a Spanish general.] **1.** A genus of plants of the family *Asteraceæ.* There are three species, all North American.—**2.** [*l. c.*] A horticultural name of *Polypteris Hookeriana*, a handsome garden annual with rose-colored heads which are usually treated as 'everlastings.' It is native to the mid-continental region of North America. *Polypteris* is distinguished from *Palafoxia* by involucral bracts with colored tips, and by a deeply divided corolla limb.

palammer (pa-lam′ėr), *n.* [Perhaps from *palmer*^{1}, a card-sharper.] A playing-card. [Slang.]

> 'Thry the kyards!' Wid that he opined his jackut an' tuk out the greasy *palammers.*
> *R. Kipling*, Black Jack, in Soldiers Three, p. 160.

palandok (pal′an-dok), *n.* The small, striped chevrotain, *Tragulus memimna* or *Memimna indica*, of India and Ceylon.

palanquin, palankeen (pal-ạn-kēn′), *v. i.* To be carried in a palanquin: sometimes with *it.*

Palanthropic (pal-an-throp′ik), *n.* [NL., ‹ Gr. *παλαιός*, ancient, + *ἄνθρωπος*, man.] In *geol.*, in Dawson's classification, that portion of the Pleistocene epoch beginning with the retreat of the continental ice-cap and marked by the earliest appearance of man. [Rare, and not admitting of precise usage.]

palapalai (pä-lä-pä-lī′), *n.* [Hawaiian name.] A fern, *Microlepia hirta*, with an agreeable odor, used by the Hawaiians at their ceremonial feasts, and braided by them into wreaths and garlands.

palar (pā′lạ̈r), *a.* [L. *palaris*, relating to a stake.] In *bot.*, perfectly continuous with the stem: said of a root. *Jackson*, Glossary.

palatal, *a.* **3.** Situated on the outer lip, as the teeth at the aperture of a shell. [Rare.] —**Palatal length.** See ★*length.*

palatalism (pal′ạ̈-tạl-izm), *n.* [*palatal* + *-ism.*] In *phonol.*, the character of being palatal. See *palatal*, *n.*, 2.

palatality (pal-ạ-tal′i̤-ti), *n.* [*palatal* + *-ity.*] Palatalism.

palatiality (pạ-lā-shi-al′i-ti), *n.* [*palatial* + *-ity.*] The character of being palatial. [Rare.]

palatially (pạ-lā′shạl-i), *adv.* In the style of a palace; sumptuously; splendidly.

palatilar (pạ̄-lat′i-lạ̈r), *a.* Of or pertaining to the space between the posterior face of the incisors and the anterior edge of the bony palate.—**Palatilar length,** the distance in a straight line from the posterior margin of the sockets of the median incisors (henselion) to the anterior edge of the bony palate (palation), used in measuring the skulls of mammals.

palatinal (pa-lat′i-nạl), *a.* [*palatine*1 + *-al*1.] Pertaining to, or characteristic of, a palatinate.

palatine1, *n.* 3. [*cap.*] A native of the Palatinate. [Rare.]

> The first white settlement in the upper stretches of the valley was made by the *Palatines* in 1723. Following the devastating wars of Louis XIV., thousands of these stricken people left their homes on the Rhine and took refuge in England. *Geog. Jour.* (R. G. S.), XIII. 519.

4. A trade-name applied to several coal-tar coloring matters.

palatine2. I. *a.* 2. In *phonol.*, same as *palatal*, *a.*, 2.—**Palatine spur,** a pointed process from the antero-internal face of the palatine in such a bird as a woodpecker. *Proc. Zool. Soc. London*, 1891, p. 126. [Rare.]

II. *n.* 1. Specifically, in the teleost fishes, the anterior of the chain of bones which forms the palatoquadrate arch. It is in the roof of the mouth and often bears teeth which appear just inside and parallel to the premaxillary teeth. In the sharks, the palatoquadrate arch is a simple cartilaginous rod which forms the superior margin of the mouth and bears the upper teeth.

2. In *phonol.*, same as *palatal*, *n.*, 2.

palation (pa-lā′ti-ọn), *n.* [NL. Cf. *palate.*] The most anterior point of the hinder edge of the bony palate, whether in the middle line or on either side of a median spine: used as a fixed point in measuring the skulls of mammals.

palatization, palatize. Same as *palatalization*, *palatalize.*

palatodental (pạ̄-lā″tō-den′tạl), *a.* In *phonol.*, pertaining to the palate and the teeth: applied to consonants produced by placing the tongue against the palate immediately behind the teeth. *N. E. D.*

II. *n.* A consonant so produced.

palatogram (pạ̄-lā′tọ-gram), *n.* [L. *palatum*, palate, + Gr. *γράμμα*, a writing.] A graphic record of the movements of the soft palate during phonation.

palatograph (pạ̄-lā′tọ-gråf), *n.* [L. *palatum*, palate, + Gr. *γράφειν*, write.] A device for recording the movements of the soft palate in breathing or speaking.

palatography (pal-ạ̄-tog′rạ-fi), *n.* [*palatograph* + *-y*3.] The recording by means of special apparatus (palatograph) of the movements of the soft palate during breathing or speaking.

palatomaxillary, *a.*—**Palatomaxillary index.** See ★*index.*

II. *n.* In *craniom.*, the value of the palatomaxillary index. *Turner.*

palatometer (pal-ạ̄-tom′e-tėr), *n.* [L. *palatum*, palate, + Gr. *μέτρον*, measure.] In *phonet.*, an instrument for measuring the movements of the palate during speech.

palatoplasty (pạ̄-lā′tō-plas-ti), *n.* [L. *palatum*, palate, + Gr. *πλαστός*, formed, + *-y*3.] A surgical operation for the cure of cleft palate.

palatopterygoquadrate (pạ̄-lā″tō-ter″i-gō-kwod′rāt), *a.* and *n.* Same as *palatoquadrate.*

palatovelar (pạ̄-lā″tō-vē′lạ̈r), *a.* [L. *palatum*, palate, + *velum*, veil, + *-ar*3 (see *velar*).] Of or pertaining to the velum palati. *Scripture*, Exper. Phonetics, p. 443.

palaver, *n.* 4. Business; an affair to be settled; affairs. [Slang.]

> Guess it 's the Captain's *palaver*. If the old man likes his ship turned into a bear garden, 't is n't our grub they 're wasting. It's not your *palaver*, . . . or mine. If you want to stir up trouble, tell the State authorities.
> *Cutcliffe Hyne*, A Master of Fortune, I.

5. A dodge; a contrivance; a plot. [Slang.]

> There 's only one cure, and that 's to be got at the place where the poisoning *palaver* was worked from.
> *Cutcliffe Hyne*, A Master of Fortune, I.

Palaver set, in Gold Coast English, a phrase meaning the affair is settled; no more talk about it; the conference is over.

> You shall have your dash [bribe, gift] when doctor-*palaver set.* *Cutcliffe Hyne*, A Master of Fortune, i.

palaverment (pa-lav′ėr-mẹnt), *n.* [*palaver* + *-ment.*] Aggravated palaver; profuse talk. [Slang.]

palavitalism (pal-ạ-vī′tạl-izm), *n.* [For **paleovitalism*; < Gr. *παλαιός*, ancient, + E. *vitalism.*] The doctrine or opinion that life is due to a form of energy that is different in kind from those to which the changes in inorganic matter are attributed; a name introduced by Haeckel for the theories of vital force propounded from the time of Haller to that of J. Müller, that is, from the middle of the eighteenth to the middle of the nineteenth century: opposed to ★*neovitalism. Haeckel* (trans.), Wonders of Life, p. 48.

palay2 (pä-lī′), *n.* [Tagalog *palay*, rice; cf. Jav. *pāri*, Malay *pādi*, etc. See *paddy*3.] In the Philippine Islands, rice in the husk.

palazzo (pä-lät′sō), *n.* [It., < L. *palatium.* See *palace*1.] In Italian cities, a palace or large dwelling-house; a building arranged for a single wealthy family. Many buildings of this class are of great size and cost, and therefore come to be rented in apartments.

palberry (päl′ber-i), *n.* [Native Australian *palbri.*] In South Australia, a shrub or small tree, *Myoporum serratum*, which yields a hard white wood and bears edible berries having a salty and somewhat bitter taste. Called also *blueberry-tree*, *cockatoo-bush*, *native currant*, and *native juniper.*

pale2, *a.*—**Pale Peruvian bark,** loxa or crown bark.

pale4 (pāl), *v. t.* [*pale*4, *n.*] To beat or thrash (barley), so as to detach it from the awns or chaff. See *pale*4, *n.*, 1. [Obs. or dial.]

palea, *n.* 3. In annelids, a flattened seta, as in *Sabellaria.*

Palearctic, *a.* 2. [*l. c.*] Of or pertaining to the fauna and flora of the Palearctic region.

> Consequently, while the Neotropical element is the stronger in the south, this last, the *Palæarctic* element, is far more prevalent in the extreme north.
> *Geog. Jour.* (R. G. S.), IX. 76.

paleate (pā′lẹ̄-āt), *a.* [L. *palea*, a palea or chaff, + *-ate*1.] In *bot.*, bearing paleæ or chaff; paleaceous: said chiefly or wholly of the receptacle in a capitulum or head.

paleic, palæic (pạ̄-lē′ik), *a.* [Gr. *παλαιός*, ancient, + *-ic.*] In *geol.*, noting the old land surface as it existed at the opening of the ice age and before the formation of the present topography.

> If I am right in thinking that the gravel of Chobham Ridges, in Surrey, is a river gravel of the earliest Glacial or even of Pliocene date . . . then the surface upon which it lies is a bit of the *Palæic* surface of England, the bottom of a *Palæic* valley in fact.
> *H. W. Monckton*, in Geol. Mag., IX. 410.

paleman, palesman (pāl′mạn, pālz′mạn), *n.*; pl. *palemen*, *palesmen* (-men). [*pale*1, *n.*, 4, + *man.*] In Ireland, a man who lived in the English pale.

Palembolus (pạ̄-lem′bō-lus), *n.* [NL., < Gr. *παλαιός*, ancient, + NL. *Embolus*, a genus of *Insecta* (< Gr. *ἔμβολος*, a peg).] A genus of fossil flies found in the Oligocene shales of Florissant, Colorado. The species, *P. florigerus*, was about ¾ of an inch long, with large eyes, strong piercing and sucking mouth-parts, and bristly abdomen.

palenque (pä-län′ke), *n.* [Sp. *palenque*, a paling, a palisade, a stockade connected with *palanca*, a paling, a pole, lever, F. *palanque*, It. *palanca*, a palisade.] A fortified inclosure or village; especially a fortified retreat of fugitive slaves and negroes. [Spanish America.]

> They [the Guatusos] live in *palenques* (stockades), and their houses are similar to the maloccas of the Amazon tribes. [Each *palenque* shelters several families, who cook their food at separate fires built on the ground.
> *Geog. Jour.* (R. G. S.), X. 65.

paleo-American, palæo-American (pā″lẹ̄-ọ̄-ạ-mer′i-kạn), *a.* [Gr. *πάλαι*, in ancient times (*παλαιός*, ancient), + E. *American.*] Ancient American: applied to that type of South American man which is characterized by a long head with wavy hair. *Deniker*, Races of Man, p. 512.

paleo-anthropography, palæo-anthropography (pā″lẹ̄-ọ̄-an″thrọ-pog′rạ-fi), *n.* [Gr. *πάλαι*, in ancient times (*παλαιός*, ancient), + E. *anthropography.*] The science of the origin and descent of man, from his earliest appearance to the end of the prehistoric period: not in general use.

paleo-Asiatic, palæo-Asiatic (pā″lẹ̄-ọ̄-ā″shi-at′ik), *a.* [Gr. *πάλαι*, in ancient times (*παλαιός*, ancient), + E. *Asiatic.*] Pertaining or belonging to the isolated tribes of northeastern Asia, including the Ainu, Gilyak, Koryak, Kamtchadal, Chukchee, Yukaghir, Chewantzy, and Yenisei-Ostyak.

paleoatavism, palæoatavism (pā″lẹ̄-ọ̄-at′ạ-vizm), *n.* [Gr. *παλαιός*, ancient, + E. *atavism.*] The resemblance of higher animals to lower or more ancient ones, considered as reversion to remote ancestral characters. [Rare.]

paleoatavistic, palæoatavistic (pā″lẹ̄-ọ̄-at-ạ-vis′tik), *a.* [*paleoatavism.*] Concerning or pertaining to resemblances in higher animals to lower or more ancient ones, considered as inheritance from ancestors in the remote past, or as reversion to remote ancestral characters. [Rare.]

paleob. An abbreviation of *paleobotany.*

paleobiologist, palæobiologist (pā″lẹ̄-ọ̄-bī-ol′ọ̄-jist), *n.* [*paleobiolog(y)* + *-ist.*] One who is versed in or engaged in the study of fossil organisms.

> The method thus elaborated has been and is now in constant use by a number of *paleobiologists.*
> *Hyatt*, Biol. Lectures, 1899, p. 132.

paleobiology, palæobiology (pā″lẹ̄-ọ̄-bī-ol′ọ̄-ji), *n.* [Gr. *παλαιός*, ancient, + E. *biology.*] That branch of biology which treats of fossil organisms.

paleobotanic, palæobotanic (pā″lẹ̄-ọ̄-bọ̄-tan′ik), *a.* Same as *paleobotanical.*

paleoceanography, palæoceanography (pā″-lē-ō″shẹ̄-ạ-nog′rạ-fi), *n.* [Gr. *παλαιός*, ancient, + E. *oceanography.*] The oceanography of past geological periods. See ★*paleogeography.*

Paleocene, Palæocene (pā′lẹ̄-ọ̄-sēn), *n.* [For **paleo-Eocene*, < Gr. *παλαιός*, ancient, + E. *Eocene.*] In *geol.*, a term proposed by Schimper and Von Koenen, and adopted by many geologists, to designate those lowermost beds of Tertiary age whose fauna differs from that of the typical Eocene as widely as does the latter from that of the Oligocene. As thus constituted it includes the Montian, Thanetian, Sparnacian, and Cernaysian of France; those Tertiaries of England below the London clay, namely the Thanet, Woolwich, and Oldhaven beds; and the Midway, Shark River, and Puerco beds of North America, together with other correlated formations. The deposits are of marine and brackish water origin with the exception of the lacustrine Cernaysian and Puerco, of which the latter contains abundant remains of primitive types of mammals, chiefly multituberculates, *Condylarthra*, and *Insectivora.*

paleo-Christian, palæo-Christian (pā″lẹ̄-ọ̄-kris′ṭiạn), *a.* Having to do with the early ages of Christianity: specifically applied to methods of architectural design, etc., usually of the Western or Latin church.

paleoclimatic, palæoclimatic (pā″lẹ̄-ọ̄-klī-mat′ik), *a.* [Gr. *παλαιός*, ancient, + E. *climatic.*] Of or pertaining to climatic conditions of former geologic periods: a term introduced by C. A. White to describe "formerly existing conditions which, in certain parts of the earth, were more or less materially different from those which now exist in the same parts." *Smithsonian Rep.* (Nat. Mus.), 1892, p. 301.

paleoclimatology, palæoclimatology (pā″lẹ̄-ọ̄-klī-mạ-tol′ọ̄-ji), *n.* [Gr. *παλαιός*, ancient, + E. *climatology.*] The study of climatic conditions of the past periods of geologic time. It is based upon the examination of a large body of paleontologic and stratigraphic evidence; geographical distribution, migration, and evolution of fossil faunas and floras; upon the kind and degree of rock-disintegration during various geologic epochs; and also upon chemical and physical researches upon the interrelations of the constituents of the atmosphere and the oceanic waters with the deposition of carbonate rocks.

paleocrystal, palæocrystal (pā″lẹ̄-ọ̄-kris′-tạl), *a.* Same as *paleocrystic.*

paleocrystallic, palæocrystallic (pā″lẹ̄-ọ̄-kris-tal′ik), *a.* Same as *paleocrystic.*

paleodolerite, palæodolerite (pā″lẹ̄-ō-dol′-e-rīt), *n.* [Gr. *παλαιός*, ancient, + E. *dolerite.*] In *petrog.*, a name given by Sandberger (1873) to diabases of Silurian age.

paleo-ecology, *n.* See ★*paleo-œcology.*

paleo-ethnic, palæo-ethnic (pā″lẹ̄-ọ̄-eth′-nik), *a.* [Gr. *παλαιός*, ancient, + E. *ethnic.*] Same as *paleo-ethnological.*

paleo-ethnographer, palæo-ethnographer (pā″lẹ̄-ọ̄-eth-nog′rạ-fėr), *n.* Same as *paleo-ethnologist.*

paleo-ethnographic, palæo-ethnographic (pā″lẹ̄-ọ̄-eth-nō-graf′ik), *a.* Same as ★*paleo-ethnographical.*

paleo-ethnographical, palæo-ethnographical (pā″lẹ̄-ọ̄-eth-nō-graf′i-kạl), *a.* Of or pertaining to paleo-ethnography.

paleo-ethnography, palæo-ethnography (pā″lẹ̄-ọ̄-eth-nog′rạ-fi), *n.* Same as *paleo-ethnology.*

paleofauna, palæofauna (pā″lẹ̄-ō-fâ′nạ̈), *n.* [NL., < Gr., *παλαιός*, ancient, + NL. *fauna*, fauna.] In *geol.*, the fossil fauna of a geological formation, group, or system; the fauna of any period of geological history.

paleoflora, palæoflora (pā″lẹ-ọ-flō′rä), *n.* [NL. *palæoflora*, ‹ Gr. *παλαιός*, ancient, + NL. *flora*, flora.] In *geol.*, the fossil flora of any formation, or group of related formations, or of any period of geological history.

paleog. An abbreviation of *paleography*.

paleogenetic, palæogenetic (pā″lẹ-ọ-jẹ-net′ik), *a.* [Gr. *παλαιός*, ancient, + E. *genetic.*] Generated or originated in the past; inherited from ancestors; not newly acquired, as contrasted with *neogenetic* or newly generated. *Proc. Zool. Soc. London*, 1886, p. 551.

paleogeography, palæogeography (pā″lẹ-ọ-jẹ-og′rạ-fi), *n.* [Gr. *παλαιός*, ancient, + E. *geography.*] The study of the physical geography of past periods of the earth's history, founded as a distinct branch of geology by Canu in 1895, although the name had been employed before that date. It derives its data from paleontology, stratigraphy, and the geographic distribution of animals and plants, and attempts to restore the physiographic conditions and describe the evolution of those conditions through the successive epochs of geologic time.

> The occurrence of a Silurian fauna in northern Alaska has a direct bearing on one of the interesting problems of Silurian *paleogeography*, the route of intermigration between the Silurian faunas of Europe and America.
> *Amer. Jour. Sci.*, Feb., 1908, p. 128.

paleoglyph, palæoglyph (pā′lẹ-ọ-glif), *n.* [Gr. *παλαιός*, ancient, + *γλυφή*, a carving, engraved character.] An ancient character or inscription.

paleolatry, palæolatry (pā-lẹ-ol′ạ-tri), *n.* [Gr. *παλαιός*, ancient, + *λατρεία*, worship.] Excessive reverence for what is old, especially in art and letters.

> In every way . . . Mr. Steven's volume is a rare example of conscientious and loving typography, and what for want of a better word we must call *palæolatry*.
> *Athenæum*, Oct. 15, 1887, p. 498.

paleologian, palæologian (pā″lẹ-ọ-lō′ji-ạn), *n.* [*paleolog*(*y*) + *-an.*] Same as *paleologist*.

paleological, palæological (pā″lẹ-ọ-loj′i-kạl), *a.* Of or pertaining to paleology; of the nature of paleology. Also *paleologic*.

paleomachic, palæomachic (pā″lẹ-ọ-mak′ik), *a.* [Gr. *παλαιός*, ancient, + *μάχη*, fight, battle, + *-ic.*] Relating to early warfare. *N. E. D.*

paleometeorological, palæometeorological (pā″lẹ-ọ-mē″tẹ-ọ-rọ-loj′i-kạl), *a.* [Gr. *παλαιός*, ancient, + E. *meteorological.*] Of or pertaining to paleometeorology: as, a *paleometeorological* explanation of a geological problem.

paleometeorology, palæometeorology (pā″lẹ-ọ-mē″tẹ-ọ-rol′ọ-ji), *n.* [Gr. *παλαιός*, ancient, + E. *meteorology.*] The meteorology of the earth's atmosphere during ancient times; specifically, during geological epochs.

paleon., paleont. Abbreviations of *paleontology*.

paleontographic, palæontographic (pā-lẹ-on-tọ-graf′ik), *a.* Same as *paleontographical*.

paleo-œcology, palæo-œcology (pā″lẹ-ō-ẹ-kol′ọ-ji), *n.* [Gr. *παλαιός*, ancient, + E. *œcology.*] The œcology of plants known through fossil remains. Also *paleo-ecology*.

> Thus *paleoecology* might be defined as the science of adaptations of fossil organisms.
> *C. MacMillan*, in Minn. Bot. Stud., Bulletin IX., p. 950.

paleopathology, palæopathology (pā″lẹ-ọ-pạ-thol′ọ-ji), *n.* [Gr. *παλαιός*, ancient, + E. *pathology.*] The science of pathologic or abnormal conditions among extinct or fossil organisms.

paleophilist, palæophilist (pā-lẹ-of′i-list), *n.* [Gr. *παλαιός*, ancient, + *φίλος*, loving, + *-ist.*] An antiquary; a lover of antiquities.

paleophysiography, palæophysiography (pā″lẹ-ọ-fiz″i-og′rạ-fi), *n.* See the extract.

> But paleontology is not the whole of historical geology. Stratigraphy, or the physical characters and physical history of the rocks of the earth's crust — *paleophysiography* (if I may use a pet term, in spite of objections raised against it) — is fully one half of historical geology.
> *Science*, Oct. 27, 1905, p. 528.

paleophysiology, palæophysiology (pā″lẹ-ọ-fiz″i-ol′ọ-ji), *n.* [Gr. *παλαιός*, ancient, + E. *physiology.*] The physiological study of the early races of mankind. *N. E. D.*

paleopicrite, palæopicrite (pā″lẹ-ọ-pik′rīt), *n.* See *picrite*.

paleopithecine (pā″lẹ-ọ-pi-thē′sin), *a.* [Gr. *παλαιός*, ancient, + *πίθηκος*, ape, + *-ine.*] Pertaining to or characteristic of the group of *Primates* called by Wortman *Paleopithecini*.

Paleopithecini (pā″lẹ-ọ-pith-ẹ-sī′nī), *n. pl.* [NL., ‹ Gr. *παλαιός*, ancient, + *πίθηκος*, ape, + *-ini.*] A group of *Primates* including the living *Tarsius* and a number of extinct forms, such as *Anaptomorphus* and *Hemiacodon* from the Eocene.

paleoplain, palæoplain (pā′lẹ-ọ-plān), *n.* [Gr. *παλαιός*, ancient, + E. *plain*¹.] A term suggested by Hill for a destructional plain (erosion plain) buried beneath later deposits. [Rare.]

> *Paleoplains* is suggested as a name for buried destructional plains, but the word is objectionable etymologically; ancient plain may serve instead, as all the other classes of plains are indicated by adjectives.
> *Science*, May 17, 1901, p. 792.

paleopsychic, palæopsychic (pā″lẹ-ọ-sī′kik), *a.* [Gr. *παλαιός*, ancient, + E. *psychic.*] In *genetic psychol.*, pertaining to or derived from the oldest psychical strata of the human mind: opposed to ★*cenopsychic*. [Rare.]

> The problem, whether there is any *paleopsychic* race element, is as inevitable as it is unanswerable.
> *G. S. Hall*, Adolescence, II. 194.

paleopsychism, palæopsychism (pā″lẹ-ọ-sī′kizm), *n.* [Gr. *παλαιός*, ancient, + E. *psychism.*] The manifestation, by the higher animals or by man, of mental traits which are regarded as evidence of inheritance from lower and simpler animals in the remote past. [Rare.]

paleosophy, palæosophy (pā-lẹ-os′ọ-fi), *n.* [Gr. *παλαιός*, ancient, + *σοφία*, wisdom.] The wisdom of the ancients; ancient wisdom or knowledge.

paleosphere, palæosphere (pā′lẹ-ọ-sfēr), *n.* [Gr. *παλαιός*, ancient, + *σφαῖρα*, sphere.] In *petrog.*, a name given to nearly spherical grains of sand to indicate long erosion and high antiquity.

paleostylic, palæostylic (pā″lẹ-ọ-stil′ik), *a.* [*paleostyl*(*y*) + *-ic.*] Pertaining to or possessing that primitive condition of the second visceral arch termed *paleostyly*.

paleostyly, palæostyly (pā-lẹ-os′ti-li), *n.* [Gr. *παλαιός*, ancient, + *στῦλος*, pillar, support.] The condition of the mandibular and hyoid arches as retaining in large part their primitive function as gill-bearers: a hypothetical condition not shown by any known fish, but supposed to have been present in early forms of fish-like vertebrates.

paleothermal, palæothermal (pā″lẹ-ọ-thėr′mạl), *a.* [Gr. *παλαιός*, ancient, + *θέρμη*, heat, + *-al*¹.] Relating to the heat of past geological time: especially employed in the discussion of former climates, as, for instance, those which admitted of a tropical flora or fauna in the arctic circle. *Geikie*, Text-book of Geol., p. 834.

paleothermic, palæothermic (pā″lẹ-ọ-thėr′mik), *a.* [Gr. *παλαιός*, ancient, + *θέρμη*, heat, + *-ic.*] Relating to the thermal conditions prevailing in older geologic time; paleothermal.

> When we take into consideration the effect of the earth's atmosphere, a sun with a diameter even half that here indicated would account for the *paleothermic* phenomena made known by the records of the past life on the globe. *J. Murray*, in Smithsonian Rep., 1896, p. 409.

paleotragine (pā″lẹ-ot′rạ-jin), *a.* [Gr. *παλαιός*, ancient, + *τράγος*, a goat, + *-ine*¹.] Of the ancient goats: applied, in the phrase *paleotragine section*, to a subdivision of the family *Bovidæ* including certain fossil forms distinguished from existing sections of the family by laterally compressed horn-cores, like those of the modern goats, and upper molars resembling those of the brachyodont antelopes.

paleotypic, paleotypical, *a.* See ★*palæotypic*, ★*palæotypical*.

paleotypographist, palæotypographist (pā″lẹ-ọ-tī-pog′rạ-fist), *n.* One who is versed in paleotypography.

paleotypography, palæotypography (pā″lẹ-ọ-tī-pog′rạ-fi), *n.* [*palæo-* + *typography.*] Ancient typography; early printing.

Palestinian, *a.* **II.** *n.* A native of Palestine.

palethnographical (pal-eth-nọ-graf′i-kạl), *a.* Same as ★*paleo-ethnographical*. *Amer. Anthropologist*, April–June, 1902, p. 310.

palethnologist (pal-eth-nol′ọ-jist), *n.* Same as *paleo-ethnologist*. *Keane*, Man Past and Present, p. vi.

palethnology (pal-eth-nol′ọ-ji), *n.* Same as *paleo-ethnology*. *Deniker*, Races of Man, p. 10.

Palhoplotherium, *n.* See ★*Paloplotherium*.

Palici (pa-lī′sī), *n. pl.* [L., pl. of *Palicus*, ‹ *Palica*, a town in Sicily.] In *Rom. antiq.*, two Sicilian deities worshiped as protectors of agriculture.

Palicourea (pal-i-kö′rẹ-ä), *n.* [NL. (Aublet, 1775), probably from the native name in Guiana.] A genus of plants belonging to the madder family and including about 100 species, all natives of tropical America. They are shrubs with terete or angled branchlets, opposite or whorled leaves, and variously colored flowers disposed in terminal, or rarely axillary, corymbs, racemes, or panicles. A few species are grown for ornament in hot-houses, the leaves of several are sometimes used medicinally, and *P. tinctoria* yields a red coloring matter. See ★*goldshrub*.

palila (pä-lē′lä), *n.* A Hawaiian honey-sucker of the genus *Chloridops* or *Loxioides*.

palillo (pä-lēl′yō), *n.* [Peruvian name.] In Peru, a myrtaceous tree, *Campomanesia lineatifolia*, allied to the guava, which grows to a height of 20 or 30 feet. The leaves smell like myrtle and have an acid astringent taste. The bright yellow fruit, which is about the size of an apple, is very fragrant, and is used as an ingredient of an agreeable perfume called mistura.

palimphrasia (pal-im-frā′ziạ), *n.* [NL., ‹ Gr. *πάλιν*, again, + *φράσις*, speaking.] Same as ★*palinphrasia*.

palimpsestic (pal-imp-ses′tik), *a.* [*palimpsest* + *-ic.*] Pertaining to or of the nature of a palimpsest; made into a palimpsest.

palincosmic (pal-in-koz′mik), *a.* [Gr. *πάλιν*, again, + *κόσμος*, world, + *-ic.*] Distributed over the whole globe during paleontological time: said of certain organisms which at the present time are much more restricted in their geographical distribution.

palindromically (pal-in-drom′i-kạl-i), *adv.* After the fashion of a palindrome; in such a manner as to read the same either forward or backward.

palingenesian (pal″in-je-nē′si-ạn), *a.* [*palingenesis* + *-ian.*] Same as *palingenetic*.

palingenesist (pal-in-jen′e-sist), *n.* [*palingenes*(*is*) + *-ist.*] One who believes in palingenesis in some form.

Palingenetic regeneration. See ★*regeneration*.

palingenic (pal-in-jen′ik), *a.* [*palingen*(*esis*) + *-ic.*] Of or pertaining to the past or ancestral history of organisms; palingenetic. [Rare.]—**Palingenic variation.** See ★*variation*.

paling-irons (pā′ling-ī″ėrnz), *n. pl.* An iron tool with which barley is paled.

palingraphia (pal-in-graf′i-ä), *n.* [NL., ‹ Gr. *πάλιν*, again, + *γράφειν*, write.] In *mental pathol.*, the repetition in writing of letters, parts of words, or words: a chronic and exaggerated form of the repetitions which occur normally in careless writing. *Psychol. Rev. Mon. Sup.*, III. xiv. 85.

palinode (pal′i-nōd), *v.*; pret. and pp. *palinoded*, ppr. *palinoding*. [*palinode*, *n.*] **I.** *trans.* To retract or take back (something previously said or written).

II. *intrans.* To recant. *N. E. D.*

palinphrasia (pal-in-frā′ziạ), *n.* [NL., ‹ Gr. *πάλιν*, again, + *φράσις*, speech.] In *mental pathol.*, the repetition, in speaking, of words, parts of words, or phrases; a chronic and exaggerated form of the reiterations and reduplications which occur normally in careless speech. Also *palimphrasia*. *Psychol. Rev. Mon. Sup.*, III. xiv. 85.

Palinurichthys (pal″i-nụ-rik′this), *n.* [NL., ‹ Gr. *παλίνουρος*, L. *Palinurics*, name of a pilot in the Æneid, + *ἰχθύς*, a fish.] A genus of fishes of the family *Centrolophidæ*, found on the Atlantic coast of North America.

Palissy faïence. See ★*faïence*.

Palladianize (pa-lā′di-ạn-īz), *v. t.*; pret. and pp. *Palladianized*, ppr. *Palladianizing*. [*Palladian* + *-ize.*] To erect or remodel in the style of the Palladian school of architecture. See *Palladian*.

palladic (pa-lā′dik), *a.* [*pallad*(*ium*) + *-ic.*] In *chem.*, containing palladium as a constituent with apparently tetrad valence: as, *palladic* chlorid ($PdCl_4$).

palladiferous (pal-ạ-dif′ẹ-rus), *a.* [*palladi*(*um*) + L. *-fer*, -bearing, ‹ *ferre*, bear.] Containing palladium: as, *palladiferous* gold.

palladiotype (pa-lā′di-ọ-tīp), *n.* [*palladium* + *type.*] In *photog.*, a print toned with palladium solution.

palladious (pa-lā′di-us), *a.* [*palladi(um)* + *-ous.*] In *chem.*, containing palladium as a constituent, with apparently dyad valence: as, *palladious* chlorid ($PdCl_2$).

palladium, *n.* **3.** This rare metal occurs in minute quantity, along with like small amounts of platinum, iridium, and rhodium, in the nickel ores of Sudbury, Ontario, Canada. It is stated that palladium is now produced from this source to the extent of more than 3,000 ounces a year.—**Palladium hydrid.** See ★*hydrid*1.—**Palladium paper.** See ★*paper.*

palladous (pa-lā′dus), *a.* [*pallad(ium)* + *-ous.*] Same as ★*palladious.*

pallall (pa-läl′), *n.* [Also *palall, pallaly,* etc.; origin unknown.] The game of hop-scotch; also the stone with which the game is played. *Jamieson.* [Scotch.]

pallar (päl-yär′), *n.* [Chilian name.] On the west coast of South America, a cultivated bean, *Phaseolus Pallar*, one of the principal food plants of the natives. It resembles closely the Lima bean.

pallekarism (pal-e-kär′izm), *n.* [*pallekar* + *-ism.*] The military methods of the pallekars; the ways of pallekars.

pallet2, *n.* **11.** One of the small spatulate or lance-shape calcareous plates which form part of the boring apparatus of the shells of shipworms of the family *Teredinidæ.*—**12.** In *bell-founding*, same as ★*crown*, 7 (*p*).—**13.** In *ceram.*, a potters' wheel.

pallet-wire (pal′et-wīr), *n.* Wire used to connect a pallet or valve in an organ to an operating key; a pull-down.

pallial, *a.* **3.** Relating to the pallium or cerebral cortex.—**Pallial bay.** Same as *pallial sinus* (which see, under *pallial*).—**Pallial cavity,** in mollusks, the cavity containing the gills, anus, and renal openings; the mantle-cavity.—**Pallial complex, eye.** See ★*complex*, ★*eye*1.—**Pallial system,** the cerebrum or that portion of it which develops from the anterior portion of the brain-stem, not including the olfactory portion.

palliatively (pal′i-ạ̄-tiv-li), *adv.* In a palliative manner; so as to palliate.

pallie (pal′i), *a.* and *n.* See ★*paulie.*

palliostratus (pal″i-ō-strā′tus), *n.*; pl. *palliostrati* (-tī). [L. *pallium*, a cloth, + NL. *stratus.*] A continuous sheet of stratus cloud.

pallium, *n.* **6.** The cerebral cortex, or that portion of it which forms the roof and sides of the lateral ventricles: this is termed the *pallium*, or brain mantle, as distinguished from the stem of the brain on which it rests.—**Basal pallium,** the pyriform lobe in those mammals in which this part of the brain is regarded as arising independently.—**Marginal pallium,** the hippocampus in those mammals in which this part of the brain is regarded as arising independently of the other portions of the cortex.

pallograph (pal′ọ̄-gråf), *n.* [Gr. *πάλλειν*, sway, shake, + *γράφειν*, write.] A machine designed to record the vibrations of a ship or other structure exposed to the action of forces. The best devices record displacements in the three planes or directions, longitudinal, vertical, and lateral. A strip of paper driven by a clockwork receives traces from pen-recorders, actuated by masses free to move only in the determined direction, and whose motion is resisted by delicately adjusted springs or magnetic action. A standard clock in circuit records time intervals on the same strip, so that the curves traced give both the intensity and the period of the yielding of the structure to the forces which tend to shake it. Used in high-speed, high-powered boats and on bridges under moving train-load, or high buildings exposed to wind, the jar of machinery, or traffic stresses. *Sci. Amer.*, Feb. 9, 1907, p. 129.

pallone (pä-lō′ne), *n.* [It., a large ball, aug. of *palla*, a ball.] A game somewhat like tennis, played with a larger ball, which the player strikes with his arm, on which there is a guard from the wrist to the elbow.

> He [Francis I.] was a bold rider and an excellent archer, but he especially excelled in the game of *pallone*, introduced from Italy, which was played with a large football and a tin gauntlet lined with felt, and which required considerable skill and strength.
>
> *A. Tilley*, Lit. French Renaissance, I. 4.

palm1, *n.* **9.** A flat end formed on a tie-rod or strut, through which the rivets or bolts are passed to secure the piece to the rest of the structure.—**To anoint the palm,** to bribe. [Colloq.]

palm2, *n.*—**Arrow-root palm,** the coontie.—**Black palm,** a Queensland palm, *Ptychosperma Normanbyi*, the very hard black wood of which is beautifully marked and is used for making canes.—**Carnauba palm,** *Copernicia cerifera.* See *Copernicia* and *carnauba.*—**Coquilla palm,** *Attalea funifera.* See *bast-palm* and *coquilla-nut.* **Curua palm,** a Brazilian palm, *Attalea spectabilis.*—**Molucca palm,** a stemless palm, *Nipa fruticans*, growing in brackish water near the mouths of streams emptying into the ocean. It is widely spread in the East Indies and the Philippine Islands, and has been introduced into the island of Guam, where the pinnæ of its large leaves are used by the natives for thatching their houses. See *Nipa.*—**Needle-palm.** Same as *blue palmetto* (which see, under *palmetto*).—**Sugar-palm,** *Saguerus pinnatus.* See *gomuti*, 1, *ejoo*, and ★*cabo-negro.*—**Turu palm,** in British Guiana, the bacaba-palm, *Œnocarpus Bacaba.*—**Washington palm,** the desert palm, *Neowashingtonia filamentosa.*

palma2 (päl′mä), *n.* [Sp., < L. *palma*, a palm-tree. See *palm*2.] The general name, in tropical countries colonized by Spaniards, of palms and palm-like plants and trees. In the island of Guam the name is applied to all species of screw-pines (*Pandanus*) growing on the island. In Mexico the name is especially applied to arboreous yuccas, chiefly to *Yucca australis*, with narrow pendant panicles of flowers, and *Yucca valida*, with the panicles broader and erect or recurved. Other allied plants growing in Mexico are the palma barrigona or palma culona, *Dasylirion inerme*, having a swollen trunk; palma istle or palma samandoca, *Samuela Carnerosana* (first described from the pass of Carneros, in northern Mexico), which yields a valuable commercial fiber; and palma loca or palma pita, *Yucca Treculeana*, also the source of an excellent fiber. Among the true palms of Mexico are the palma Apache or palma dulce, *Brahea dulcis* (also called *palma de sombrero* from the fact that hats are made of its leaves), and the palma real, the royal palm, *Roystonea regia.* The palma de la Virgen is a cycad, *Dion edule*, which is also called *chamal.* In Porto Rico the palma real is *Roystonea borinquena*, and the palmas de sombrero are *Inodes causiarum* and *I. glauca.*

palmad (pal′mad), *adv.* [L. *palma*, palm, + *ad*, toward.] Toward the palm or ventral side of the fore limb.

palmar. I. *a.*—**Palmar aponeurosis.** Same as *palmar fascia.*

II. *n.* **3.** In the crinoids, according to both Carpenter's and Wachmuth and Springer's terminology, one of the plates of the arms or brachia which are of the third order of branching, situated beyond the distichal and within the postpalmars. They are the same as the third brachials in Bather's terminology.

palmarian (pal-mā′ri-ạn), *a.* [*palmary* + *-an.*] Same as *palmary.*

palmarosa-oil (pal-mạ-rō′sạ̄-oil), *n.* See *geranium-*★*oil* (*b*).

palm-bast (päm′bast), *n.* Twine or rope made from vegetable bast (nominally of palms), used for binding cigars and for hat-braids.

palm-beetle (päm′bē″tl), *n.* Any one of several species of beetles which infest palm-trees, especially the calandrid *Rhyncophorus palmarum*, a species whose larva bores into the cabbage-palm in tropical America. See *palm-weevil*, under *weevil.*

palm-borer (päm′bōr″ėr), *n.* See *palm-weevil*, under *weevil*, and *palm-worm*, under *worm.*

palm-civet (päm′siv″et), *n.* Same as *palm-cat.*

palmellin, *n.* **2.** A coloring-matter, somewhat resembling hematin, found in the spores of *Aspergillus niger.* Also called *aspergillin.*

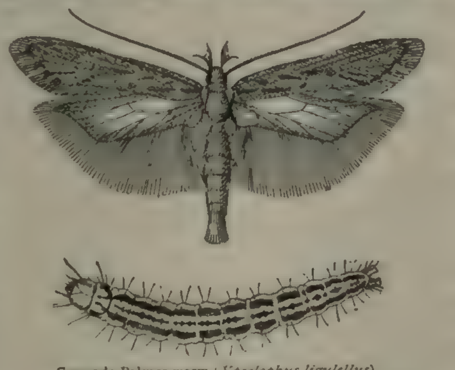
palmerite (päl′me-rīt), *n.* [Named after Sr. *Palmeri.*] A hydrated phosphate of aluminium which occurs in a white powdery form resembling kaolin. It is found in a cavern at Monte Alburas, Salerno, Italy.

palmer-nut (pä′mėr-nut), *n.* An old name for the cocoanut.

palmer-shell (pä′mėr-shel), *n.* Same as ★*pilgrim-scallop.*

palmer-trout (pä′mėr-trout), *n.* The young of *Salmo salar*, the salmon of Europe.

palmer-worm, *n.*—**Comrade palmer-worm,** the larva of an American moth, *Ypsolophus ligulellus*, which ties together and skeletonizes the leaves of the apple.—**Tawny-striped palmer-worm,** the larva of an American tineid moth, *Ypsolophus malifoliellus.* It feeds on apple-leaves, as does the common palmer-worm.



Comrade Palmer-worm (*Ypsolophus ligulellus*).
Moth above, "worm" or larva below. Much enlarged.

Palmesque (päl-mesk′), *a.* Noting the style of one of the Palmas, Venetian painters of the sixteenth century, especially that of Palma Vecchio (1480–1528).

palmette, *n.* **2.** In certain gastropods, an appendage of the head.

Palmetto leaf-miner. See ★*leaf-miner.*

palmetto-weevil (pal-met′ō-wē″vl), *n.* An American curculionid beetle, *Rhyncophorus cruentatus*, which damages palmettos.

palm-grease (päm′grēs), *n.* Money used to oil or grease the palm, that is, for a bribe. [Colloq.]

palm-grub (päm′grub), *n.* Same as *palm-worm* (which see, under *worm*).

palmiacol (pal′mi-ạ-kol), *n.* The trade-name for an antiseptic compound used as a substitute for creosote in cases of tuberculosis.

palmito2 (päl-mē′tō), *n.* [Sp. *palmito*, < *palma*, palm.] In Spanish America and the West Indies, the tender crown or terminal bud of unexpanded leaves of various species of palms, used as a vegetable, and sometimes called *palm-cabbage.* In the Bermudas this name was applied to the bud of the indigenous palmetto, *Inodes Palmetto*, a plant held in very high esteem by the first settlers.

palmitolic (pal-mi-tol′ik), *a.* [*palmit(ic)* + *-ol* + *-ic.*] Derived from palmitic acid by loss of hydrogen.—**Palmitolic acid,** a crystalline, waxy acid, $C_{16}H_{28}O_2$, which is made by the action of alcoholic potash on dibrompalmitic acid or bromhypogeic acid. It melts at 42° C.

palmitone (pal′mi-tōn), *n.* [*palmit(ic)* + *-one.*] A ketone, $(C_{15}H_{31})_2CO$, made by distilling palmitic acid with lime. It is a crystalline substance which melts at 82.8° C. Also called *dipentadecyl ketone.*

palmitoxylic (pal″mi-tok-sil′ik), *a.* [*palmit(ic)* + *ox(ygen)* + *-yl* + *-ic.*] Noting a crystalline acid, $C_{16}H_{28}O_4$, made by the action of fuming nitric acid on palmitolic acid. It melts at 67° C.

palm-kernels (päm′kėr″nelz), *n. pl.* A commercial name for the kernels obtained from the seeds of the West African oil-palm, *Elæis Guineensis*, which form an important article of export from West Africa to Europe. Each seed contains from one to four kernels.

palm-leaf, *n.* **3.** In *decorative art*, a common motive in Indian and Oriental design: sometimes called *pear* or *river-loop pattern.*

palm-lizard (päm′liz″ärd), *n.* The dabb, *Uromastix acanthurus*, of north Africa.

palm-nuts (päm′nuts), *n. pl.* The commercial name for the seeds of the West African oil-palm, *Elæis Guineensis*, after the pulpy matter which contains the palm-oil has been removed.

palmo (päl′mō), *n.* [It., < *palma*, palm. See *palm*1, *n.*] The Roman palm of 8.5 inches, which has been variously lengthened in Italy—in Genoa to 9.8 inches, in Naples to 10.4 inches, and in Lucca to 11.5 inches. In the Spanish peninsula and the affiliated American countries the length has not much changed. It varies from 8.3 to 8.9 inches in Spain, while in Argentina, Portugal, and Brazil it is nearly 8.6 inches.

palm-oil, *n.* **2.** See *oil of palms.*

palmoscopy (pal-mos′kọ̄-pi), *n.* [Gr. *παλμός*, pulsation, pulse, + *-σκοπια*, < *σκοπεῖν*, view.] In *pathol.*, observation of the pulse; formerly, divination or prognostication from examination of the pulse in any part of the body.

palmospasmus (pal-mọ̄-spaz′mus), *n.*; pl. *palmospasmi* (-mī). [NL., < Gr. *παλμός*, pulsation, + *σπασμός*, spasm.] Clonic, intermittent spasm.

palm-stay (päm′stā), *n.* A boiler-brace or tie-rod having at its end a palm or flat pad through which the rivets are passed to secure it to the shell.

palm-swift (päm′swift), *n.* One of the small swifts of the genera *Tachornis* and *Claudia*, found in tropical America: distinguished by having the toes arranged in pairs. One of the most common species is *Tachornis phœnicobius* of Jamaica. See *swift*1, 4.

palmula, *n.* **2.** In *entom.*, same as *empodium.* *A. S. Packard*, Text-book of Entom., p. 97.

palmus (pal′mus), *n.*; pl. *palmi* (-mī). [NL., < Gr. *παλμός*, vibration, pulsation, < *πάλλειν*, sway, quiver, leap, bound.] Pulsation; twitching; a form of spasmodic tic.

palm-willow (päm′wil″ō), *n.* The great sallow, *Salix Caprea.* See *palm*2, 3.

palmwise (päm′wīz), *adv.* With the palm uppermost.

palm-withy (päm'with″i), *n.* Same as ★*palm-willow.*

palo² (pä'lō), *n.* [Sp. *palo*, stick, wood.] Wood. —**Palo de Campeche.** Same as *logwood.*—**Palo de corcho,** the cork-wood, *Pisonia longifolia.*—**Palo de hierro,** or **palo de fierro** (iron-wood), the name of several hard-wood trees. In Mexico it is applied to several trees of the mimosa family, especially to *Siderocarpos flexicaulis, Prosopis Palmeri,* and *Albizzia occidentalis;* in Porto Rico to *Rhamnidium ferreum* and *Sarcomphalus reticulatus,* belonging to the *Rhamnaceæ,* and to *Ixora ferrea,* belonging to the *Rubiaceæ.*—**Palo de hueso** (bone-wood), in Porto Rico, a shrub, *Ilex nitida.*—**Palo del Brazil,** in Mexico, the logwood, *Hæmatoxylum Campechianum,* and the closely allied *H. boreale.*—**Palo de Maria,** same as ★*palo-Maria.*—**Palo de matos,** in Porto Rico, *Ormosia Krugii,* a leguminous tree bearing red-and-black hard seeds called *matos.*—**Palo de vaca,** the cow-tree, *Piratinera utilis.* See *cow-tree.*

palo-amarillo (pä″lō-ä-mä-rēl'yọ̄), *n.* [Sp. *palo amarillo,* yellow-wood.] In Mexico, a name applied to several shrubs and trees yielding a yellow dye, especially to *Bocconia frutescens* and *B. arborea,* belonging to the poppy family, and *Berberis pinnata,* an indigenous barberry.

palo-blanco, *n.* **2.** A name applied in Spanish America to many trees and shrubs with white wood or whitish bark or foliage; in Cuba, to *Simarouba glauca;* in Porto Rico to *Drypetes glauca* (*Euphorbiaceæ*) and *Chione glabra* (*Rubiaceæ*); in Mexico to a mimosa-like shrub or small tree, *Lysiloma candida,* the bark of which is used for tanning.

palo-dulce (pä-lō-dụl'thā), *n.* [Sp. *palo,* wood, + *dulce,* sweet.] A small tree of the bean family, *Viborquia polystachya,* from which the Mexicans make a sweet refreshing drink.

Palo Duro beds. See ★*bed*¹.

palo-jiote (pä″lō-hē-ō'tā), *n.* [Mexican name, < Sp. *palo,* wood, + Nahuatl *xiotl,* skin eruption.] A name of *Terebinthus Simaruba,* a tree yielding a medicinal gum-resin, called *gum-archipin.* Also called *cuajiote de Chiapas.* See *cachibou.*

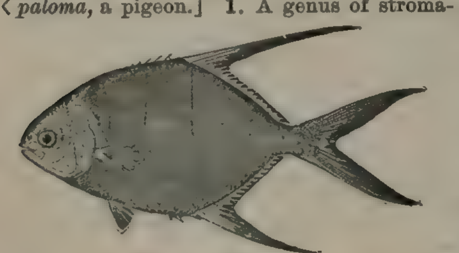
palola (pa-lō'lä̤), *n.* The palolo.

palo-mabi (pä″lō-mä-bē'), *n.* [Sp. *palo,* wood, + *mabí,* the name of a beverage.] In Cuba and Porto Rico, *Colubrina reclinata* and *C. Colubrina,* two shrubs or trees yielding bark from which a refreshing effervescent drink is made. See ★*mabi.*

palo-Maria (pä″lō-mä-rē'ä), *n.* [Sp. *palo Maria,* Saint Mary's wood.] In countries settled by the Spanish, a name applied to several trees which yield hard wood of good quality; in the Philippine Islands and on the Island of Guam, *Calophyllum Inophyllum* (see ★*bitanhol*); in the Philippine Islands, also *Kayea lepidota,* of the *Clusiaceæ;* in Cuba and Porto Rico, *Calophyllum Galba;* in Yucatan, *Sapota zapotilla;* and at Acapulco and Vera Cruz, Mexico, *Cordia Gerascanthus,* of the borage family.

Palombino marble. See ★*marble.*

Palometa (pal-ọ-mē'tä̤), *n.* [NL., Cuban Sp., < *paloma,* a pigeon.] **1.** A genus of stromateoid fishes of the tropical Pacific coast of America.—**2.** [*l. c.*] A common name for various members of the genus *Palometa* and of the genus *Trachynotus,* as *T. glaucus,* a carangoid fish common in the West Indies and northward to North Carolina.



Palometa (*Trachynotus glaucus*).
(From Bulletin 47, U. S. Nat. Museum.)

palo-piojo (pä″lō-pē-ō'hō), *n.* [Sp. *palo piojo,* louse-wood, < *palo,* wood, + *piojo,* louse.] A Mexican tree, *Willardia Mexicana,* belonging to the bean family. It yields very hard wood and from its bark a wash is made which is used as an insecticide.

Paloplotherium (pal″ọ-plọ-thē'ri-um), *n.* [For *Palhoplotherium:* < Gr. παλαιός, ancient, + ὅπλα, arms + θηρίον, a wild beast.] An extinct genus of *Equidæ,* not in the main line of descent to the modern horse. It is characterized by low-crowned, bunolophodont teeth, sometimes covered by a thin layer of cement, and tridactyl digitigrade feet. It occurs in the Middle and Upper Eocene of Europe.

palo-santo (pä-lō-sän'tō), *n.* [Sp. *palo santo,* holy-wood.] In countries settled by the Spaniards, a name given to several trees which either have medicinal qualities, or are esteemed by the natives for other reasons; in Mexico to *Guaiacum sanctum* and *G. officinale,* also called *guayacan,* belonging to the family *Zygophyllaceæ;* to *Fouquieria splendens,* which yields torches for burning at religious ceremonies (see ★*ocotilla*); to *Ipomœa murucoides,* yielding medicinal bark; and in the state of Jalisco, to a leguminous tree, *Diphysa suberosa.* In the Philippine Islands, the name is applied to *Koordersiodendron pinnatum,* a valuable timber-tree belonging to the *Anacardiaceæ* (see ★*amuguis*), and to *Rourea volubilis,* a climbing plant of the family *Connaraceæ,* highly esteemed by the natives for its medicinal properties. In Guiana, same as *panococo,* 2. In Argentina, *Bulnesia Sarmienti,* a fine tree belonging to the *Zygophyllaceæ,* yielding hard wood.

palo-verde (pä-lō-vãr'dạ̄), *n.* [Sp. *palo,* wood, + *verde,* green.] In the south-western United States and in Mexico, several closely allied trees belonging to the senna family, especially *Cercidium Texanum, C. Torreyanum, C. floridum, Parkinsonia aculeata,* and *P. microphylla.* The leaves of these plants, at most few and scattered, are often absent most of the year. The pale olive-green bark suggests the name, as also that of *green-barked acacia,* applied especially to the species of *Cercidium.*

palpacle (pal'pa̤-kl), *n.* [L. *palpus,* feeler: on the analogy of *tentacle.*] In some siphonophorans, a tentacle-like organ belonging to a palpon.

palparium (pal-pā'ri-um), *n.*; pl. *palparia* (-ä̤). [NL., < *palpus,* palp, + *-arium.*] The membrane at the base of the labial palpi of carabid beetles.

palpator (pal-pā'to̤r), *n.* [L. *palpator,* < *palpare,* touch, stroke.] In *med.,* one who ascertains the condition of organs by touch.

palpatorial (pal-pạ-tō'ri-a̤l), *a.* [*palpatory* + *-al*¹.] Of or pertaining to palpatory examination.

Palpebral lobe. See ★*lobe.*

palpebritis (pal-pe-brī'tis), *n.* [NL., < L. *palpebra,* eyelid, + *-itis.*] Inflammation of the eyelids.

palped (palpt), *a.* [*palp* + *-ed*².] Possessing palpi.

palpimanid (pal-pim'a̤-nid), *n.* and *a.* **I.** *n.* A member of the araneidan family *Palpimanidæ.*

II. *a.* Having the characters of or belonging to the family *Palpimanidæ.*

palpon (pal'pon), *n.*; pl. *palpa* (-pä̤). [NL., irreg. < *palpare,* touch (?).] In siphonophorans, a hollow tentacle-like organ closed at the outer end but communicating with the cavity of the stem; a dactylozoöid.

palsied (pâl'zid), *a.* [*palsy* + *-ed*².] Paralyzed; paretic.

palsy, *n.*—**Birth palsy,** spastic paralysis in the new-born child.—**Creeping palsy,** progressive muscular atrophy.—**Crossed palsy.** Same as *crossed paralysis* (which see, under *paralysis*).—**Diver's palsy.** Same as *caisson-disease.*—**Hammer-palsy,** a neurosis, analogous to writers' cramp, affecting the muscles of the shoulder and arm, occurring in blacksmiths and others who wield the hammer continuously.—**Landry's palsy.** Same as *Landry's paralysis.*—**Pen-palsy,** writers' cramp.—**Shoemakers' palsy.** See *occupation* ★*cramp.*—**Transverse palsy.** Same as *crossed paralysis* (which see, under *paralysis*).

palta (päl'tä), *n.* [Quichua name.] On the west coast of South America, the name applied to the avocado, *Persea Persea.* See *alligator-pear* and *avocado.*

Paltonium (pal-tō'ni-um), *n.* [NL. (Presl, 1852), < Gr. παλτόν, a dart, spear, from the shape of the fronds.] A genus of polypodiaceous ferns related to *Tænitis,* having simple, linear-lanceolate, coriaceous fronds a foot or less long, tapering both ways, with anastomosing veins and sori normally borne in a conspicuous submarginal line toward the apex. There are two species, the best known, *P. lanceolatum* (*Tænitis lanceolata*), being an epiphyte of tropical America and southern Florida; the second, a recently described Chinese plant.

palude† (pa-lūd'), *n.* [L. *palus* (*palud-*), a swamp, marsh.] A marsh.

paludial (pạ-lū'di-a̤l), *a.* [L. *palus* (*palud-*), a swamp, marsh, + *-ial.*] An erroneous form for *paludal.*

paludian (pạ-lū'di-a̤n), *a.* Same as *paludal.*

paludic (pal'ụ-dik, pạ-lū'dik), *a.* [L. *palus* (*palud-*), marsh, + *-ic.*] Same as *paludal.*

paludiferous (pal-ụ-dif'ẹ-rus), *a.* [L. *paludifer,* < *palus* (*palud-*), marsh, + *ferre,* bear.] That causes a fen or marsh. *Blount.*

Paludina limestone. See ★*limestone.*

paludinal (pạ-lū'di-na̤l), *a.* [*paludine* + *-al*¹.] Same as *paludinous.*

paludous (pal'ụ-dus), *a.* Same as *paludose.*

palusami (pä-lö-sä'mẹ̄), *n.* [Polynesian *palu,* paste, soft substance, + *sami,* sea-water.] In Samoa, a favorite native dish, indispensable at feasts, consisting of the custard-like juice expressed from grated coconuts, to which a little salt water is added, inclosed together with tender young taro leaves (*Caladium Colocasia*) in an older leaf, and baked in a native oven.

Paluxy sands. See ★*sand*¹.

pam., pamph. Abbreviations of *pamphlet.*

pam-. A form of *pan-* before a labial.

pamflet, *n.* and *v. i.* An amended spelling of *pamphlet.*

pampanito (päm-pä-nē'tō), *n.* [Sp., dim. of *pámpano.* See ★*pampano.*] A fish, *Trachynotus rhodopus,* belonging to the family *Carangidæ,* found on the Pacific coast of tropical America south to Panama.

pampano (päm'pä-nō), *n.* [Sp. *pámpano,* a tendril, also in Cuban Sp. several fishes so called with fins prolonged into threads; < L. *pampinus,* a tendril. See *pampine, v.*] A common name of various fishes of the genus *Trachynotus,* and also, though less correctly, of species of similar genera. In an adapted spelling the name appears as *pompano,* applied to *Trachynotus* and other genera. See *pompano.*—**Common pampano,** *Trachynotus carolinus,* of the tropical Atlantic coast of America. See *pompano,* 1.—**Gaff-topsail pampano,** *Trachynotus glaucus,* found from Virginia to the Caribbean Sea. See *pompano,* 1.—**Great pampano.** Same as *permit*².—**Round pampano,** *Trachynotus falcatus,* found from Cape Cod to Brazil.

pampa, *n.*—**Pampas clay,** a local name of a bluish clay, beds of which occur in many parts of the pampas.—**Pampas formation.** See ★*formation.*

pampero² (pam-pā'rọ̄), *n.*; pl. *pamperos* (-rōs). [Sp., < *pampa.* See *pampa.*] An Indian living on the pampas of South America.

pamphletage (pam'fle-tạ̄j), *n.* [*pamphlet* + *-age.*] A collection of pamphlets; all the pamphlets on a certain subject. [Nonce-word.]

> The *pamphletage* . . . on the subject must be vast, and the labour in front of Byron's editor is enormous.
> *A. Lang,* in Longman's Mag., May, 1896, p. 110.

pamphletize (pam'fle-tīz), *v. i.* and *t.*; pret. and pp. *pamphletized,* ppr. *pamphletizing.* [*pamphlet* + *-ize.*] To write pamphlets: as, to take to *pamphletizing;* to write a pamphlet on. [Nonce-word.]

pamphysical (pam-fiz'i-ka̤l), *a.* [Gr. πᾶν, all, + E. *physical.*] Regarding the physical universe as the all: opposed to *pantheistic.*

> In modern, as in ancient times, the extreme points between which philosophy has oscillated are the same: positively described, they are the pantheistic and (if I may invent a phrase) the *pamphysical* poles of doctrine.
> *J. Martineau,* Types of Ethical Theory, I. Introd. 19.

pamplegia (pam-plē'ji-ä̤), *n.* [NL., < Gr. πᾶν, all, + πληγή, stroke.] General paralysis of nearly all the muscles of the body, or of the four extremities.

Pamunkey formation. See ★*formation.*

pan¹, *n.* **13.** In *mining,* a hollow in the ground where the neck of a volcano formerly existed. [South Africa.]

> The mines are located in "*pans,*" in which is found the "blue ground" now recognized as the disintegrated matrix of the diamond. These "*pans*" are known to be the "pipes," or "necks," of former volcanoes, now deeply dissected by the forces of the atmosphere—in fact, worn down if not to their roots, at least to their stumps.
> *W. H. Hobbs,* in Smithsonian Rep., 1901, p. 359.

Berdan pan, a pan in which the ore is ground by means of heavy balls of cast-iron, working in an annular trough of U-shaped section which revolves about an inclined axis: used largely in Australia.—**Clean-up pan.** See ★*clean-up.*—**Hepburn and Peterson's pan,** an amalgamation-pan with a bottom inclined toward the center or shaped like an inverted cone. It has a capacity of 1400 pounds.—**Short pan,** a balance-pan with short hangers: used in determining specific gravities.—**Slip-pan,** a pan for the evaporation of water from the slip produced when the ingredients of a cement are mixed with water.—**To cut the pan.** See ★*cut.*—**To poison the pan,** a workmen's term meaning to add glue or some other colloid substance to the brine in a salt-boilers' pan in order to secure the formation of salt in very small crystals.—**Wetzel pan,** an arrangement for rapidly evaporating the juice of the sugar-cane, consisting of a semi-cylindrical pan to contain the juice, with a cylindrical cage formed of steam-pipes revolving in it and partially submerged. These pipes, as they emerge covered with juice, present a large heated surface to the air, from which vapor of water is rapidly given off.

pan^1, *v.* **I.** *trans.* **3.** To broil or bake in a pan.

Panned Oysters. . . . Clean one pint of oysters and add [to butter, etc., in pan]. Cook until edges curl, etc.
F. M. Farmer, Chafing Dish Possibilities.

4. To pour with a pan. *Modern Amer. Tanning*, p. 42.

II. *intrans.* **2.** To look for gold, using the method of washing the earth or crushed rock in the pan.

At the end of two months we had never struck a pocket. We had *panned* up and down the hillsides till they looked plowed like a field.
Mark Twain, Roughing It, lxi.

3. In *agri.*, to harden and cake from the effect of hot sunshine following rain: said of the soil. *Forby*, Vocab. East Anglia. [Dialect.]—**To pan off,** in *gold-digging*, to wash gold-bearing gravel in a pan to separate the gold.

These returned gnomes having been brought to light, at once commenced *to 'pan off,'* according to the recognized rule and practice.
Rolf Boldrewood, Miner's Right, vii.

panada, *n.*—**Chicken panada,** a dish made of chopped chicken rubbed to a paste, bread-crumbs, milk, egg, etc.

panæsthetic (pan-es-thet'ik), *a.* [*panæsthesia* (*thet-*) + *-ic.*] Of or pertaining to panæsthesia.

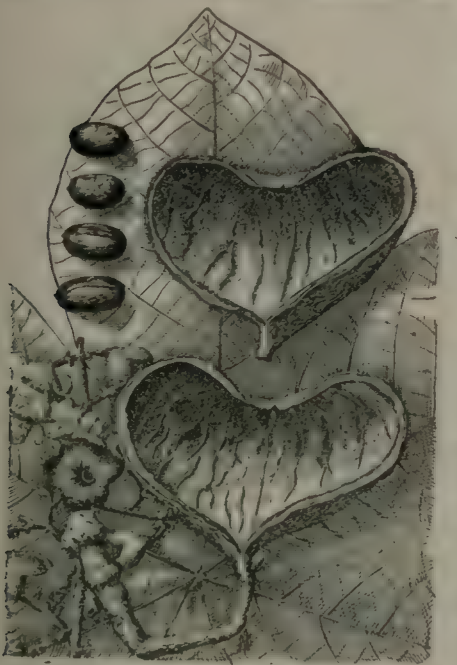
Pan-African (pan-af'ri-ka̤n), *a.* Relating to all persons of African parentage; entirely African: as, *Pan-African* government.

Pan-Africander (pan-af'ri-kan-dėr), *a.* Relating to all Africanders, that is, South Africans of Dutch descent, or to a government consisting of such persons: as, a *Pan-Africander* conference; a *Pan-Africander* republic.

panage, *n.* Same as *pannage.*

panalgebraic (pan-al-je-brā'ik), *a.* Designating a curve for which x, y, and dy/dx are connected by an algebraic equation. *Loria.*

panama (pä-nä-mä'), *n.* [Native name.] On the Isthmus of Panama, a handsome tree, *Sterculia Carthaginensis*, with large 5-lobed leaves, bearing 3-celled capsules covered with fine brittle hairs and containing a number of oblong oily edible seeds.



Panama (*Sterculia Carthaginensis*).

Panaman (pan'a̤-ma̤n), *a.* and *n.* [*Panama* + *-an.* The Sp. adj. is *Panameño.*] **I.** *a.* Of or relating to Panama.

II. *n.* An inhabitant of Panama.

Panamaniam (pan-a̤-mā'ni-a̤n), *a.* and *n.* Same as ⋆*Panaman.*

Panamic (pan'a̤-mik), *a.* [*Panam*(*a*) + *-ic.*] Relating to or characteristic of the region in the vicinity of the Isthmus of Panama, including the ocean.

As will be seen by the chart of our route, . . . the continental slope of the *Panamic* district is steep.
A. Agassiz, in Mem. of Mus. Compar. Zool., Harvard, [XXXI. 222.

Panamic fauna, the animal life of the Isthmus of Panama and its vicinity, including the ocean.

Dall affirms that Point Conception is the northern limit of the *Panamic fauna.* *Science*, Jan. 10, 1902, p. 63.

Panamist (pan'a̤-mist), *n.* [F. *Panamiste.*] A person who took part in the transactions by which the French Panama Canal Company secured political and financial help.

pananthropism (pan-an'thrọ-pizm), *n.* [Gr. πᾶν, all, + ἄνθρωπος, man, + *-ism.*] See the extract.

If Mr. Swinburne's creed is describable in one word, that word must be made for the occasion—*pananthropism*: . . . he sees the spirit of man (which be it borne in mind he calls 'God') everywhere animating and informing the universe.
H. B. Forman, Living Poets, p. 369. *N. E. D.*

panao (pä-nä'ō), *n.* [Philippine name.] A forest tree, *Dipterocarpus vernicifluus*, belonging to the family *Dipterocarpaceæ*, with alternate broadly lanceolate leaves, which are downy beneath, and flowers in spicate clusters, the corolla deeply 5-cleft and the calyx with two of its lobes greatly elongated in fruit. The wood is used in the construction of houses and in boat-building. The tree, when wounded, yields a copious supply of an oleoresin, called *balao* or *malapaho* in commerce, which is used as a varnish for pictures and as a protection for wood against termites. It is also used, where the trees are abundant, for torches. These are made of bamboo joints filled with the resin, and are consumed with it as it burns away. See ⋆*balao*^{2}. [Philippine Is.]

panapospory (pan-ap'ọ-spō-ri), *n.* [*pan-* + *apospory.*] In *bot.*, apospory over the whole surface of the frond.

panaquilone (pa̤-nak'wi-lōn), *n.* [*Pana*(*x*) *qui*(*nquefo*)*l*(*ium*) + *-one.*] An amorphous, yellow, bitter-sweet powder, $C_{20}H_{42}O_{15}$, found in the root of American ginseng, *Panax quinquefolium.* It is soluble in water and alcohol, and insoluble in ether.

panarchy (pan'är-ki), *n.* [Gr. πᾶν, all, + ἀρχή, rule. Compare ⋆*pantarchy.*] A realm or dominion which includes the universe. [Rare.]

The starry *panarchy* of space.
P. J. Bailey, Festus, xix. 208. *N. E. D.*

panarithmology (pan-ar-ith-mol'ọ-ji), *n.* [*pan-* + *arithmology.*] Arithmetic and algebra.

panarteritis (pan"är-te̤-rī'tis), *n.* [NL., < Gr. πᾶν, all, + ἀρτηρία, artery, + *-itis.*] **1.** Inflammation of all the coats of an artery.—**2.** Inflammation of all or most of the arteries in the body.

panathletic (pan-ath-let'ik), *a.* [*pan-* + *athletic.*] Relating to athletics of all kinds.

panatom (pan-at'ọm), *n.* [*pan*(*togen*) + *atom.*] A term employed by G. Hinrichs to signify the ultimate particles of a hypothetical primitive substance, called by him *pantogen*, from which he imagined all the known forms of matter to be built up.

panaulon (pan-â'lon), *n.*; pl. *panaula* (-lä̤). [Gr. πᾶν, all, + αὐλός, a flute.] An improved and extended form of flute invented by G. Bayr of Vienna early in the nineteenth century. It had fifteen keys, and was capable of double tones.

panautomorphic (pan"â-tọ-môr'fik), *a.* [Gr. πᾶν, all, + E. *automorphic.*] In *petrog.*, same as *panidiomorphic.*

panblastic (pan-blas'tik), *a.* [Gr. πᾶν, all, + βλαστός, germ, + *-ic.*] In *embryol.*, containing or consisting of derivations from all the germinal layers.

Panchatantra (pan-cha̤-tan'trä̤), *n.* [Skt. *pañchatantra* (*pañca-*), lit. 'five books' (cf. *Pentateuch*), < *pancha*, five, + *tantra*, books, manual, lit. loom, warp.] A collection of popular tales and fables in Sanskrit, compiled in five books by a Brahman about 500 A.D. This work was translated into Persian, Arabic, Syriac, and most European languages, and became familiar in England as the fables of Pilpay (Bidpai).

panchayat (pan-chī'a̤t), *n.* Same as *punchayet.*

Panchet or **Pantschet group.** See ⋆*group*^{1}.

panchreston (pan-kres'ton), *n.* [Also *panchrestum*, *pancreston*, etc.; L. *panchrestum* (sc. *medicamentum*), < Gr. πάγχρηστον, neut. of πάγχρηστος, good for all work, < πᾶς (παν-), all, + χρηστός, useful. Cf. *panacea.*] A (supposed) universal medicine; a panacea.

pan-Christic (pan-kris'tik), *a.* [*pan-* + *Christ* + *-ic.*] Identifying Christ with the universe. *N. E. D.*

Grotesque Egyptian Gnostic Gospels which . . . exhibit partly a *pan-Christic* conception.
Expositor, Dec., 1897, p. 416.

panchromatic (pan-krọ-mat'ik), *a.* [Gr. πᾶς (παν-), all, + χρῶμα(τ-), color, + *-ic.*] In *photog.*, sensitive to all the spectrum colors from the red to the violet. Such plates are obtained by the use of methyl and ethyl dyes, as methyl isocyanins.

The methyl and ethyl dyes are therefore well adapted to the preparation of *panchromatic* dry plates, and make it possible to produce plates possessing uniform sensitivity for the entire visible spectrum, the sensitivity extending into red as far as wave length 670 μ μ, and an appreciable increasing of the sensitivity being noticeable still further into the infra-red.
Sci. Amer., Sept. 12, 1903, p. 185.

panclarite (pan'kla-rīt), *n.* [A trade-name (?), appar. < Gr. πᾶς (παν-), all, + L. *clarus*, clear, + *-ite*^{2}.] A solution of rosin, glove-skin, and glycerin. *C. T. Davis*, Manuf. of Leather, p. 505.

panclastic (pan-klas'tik), *n.* [Gr. πᾶς (παν-), all, + κλαστός, broken, + *-ite*^{2}.] An explosive that will break any substance. [Rare.]

The prisoner . . . has a special knowledge of chemistry and has even invented a *panclastic* more terrible in its effects than any hitherto known.
Times (London), April 2, 1892.

pancosmic (pan-koz'mik), *a.* [Gr. πᾶς (παν-), all, + κόσμος, world, + *-ic.*] Relating to pancosmism; implying oneness with all things; relating to all things.

pancosmism (pan-koz'mizm), *n.* [Gr. πᾶς (παν-), all, + κόσμος, world, + *-ism.*] The theory that the cosmos is all—that the physical world comprises all that exists.

pancosmist (pan-koz'mist), *n.* [*pancosm-ism* + *-ist.*] One who believes in pancosmism.

pancreas, *n.*—**Accessory pancreas,** one or more lobules of pancreatic tissue separated from the main portion of the gland and found in the wall of the stomach or of the upper portion of the small intestine.—**Ventral pancreas,** in *embryol.*, a solid more or less bilobed or conical outgrowth on the ventral side of the intestine.

pancreatectomy (pan"krẹ-a̤-tek'tọ-mi), *n.* [Gr. πάγκρεας, sweetbread (pancreas), + ἐκτομή, excision.] Excision, in whole or in part, of the pancreas.

Pancreatic colic. See ⋆*colic.*

pancreaticoduodenal (pan"krẹ-at"i-kō-dū-ọ-dē'na̤l), *a.* Relating to both the pancreas and the duodenum.

pancreaticosplenic (pan"krẹ-at"i-kō-splen'-ik), *a.* Relating to both the pancreas and the spleen.

pancreatinize (pan'krẹ-a̤-ti-nīz), *v. t.*; pret. and pp. *pancreatinized*, ppr. *pancreatinizing.* [*pancreatin* + *-ize.*] Same as *pancreatize.*

pancreatization (pan"krē-a̤-ti-zā'shọn), *n.* [*pancreatize* + *-ation.*] The act of pancreatizing, or the state of being pancreatized.

pancreatogenic (pan"krẹ-a̤-tọ-jen'ik), *a.* [*pancreas* (*at-*), + *-o-* + Gr. -γενής, -producing.] Having origin in the pancreas: said of certain diseases dependent upon impaired function of the pancreas.

The intestinal disorders of digestion may be classified according to their etiology as gastrogenic, hepatogenic, *pancreatogenic*, or essential intestinal.
Med. Record, Aug. 3, 1907, p. 172.

pancreolytic (pan"krẹ-ọ-lit'ik), *a.* [*pancreas* + Gr. λυτικός, < λύσις, dissolution.] Exerting a destructive action upon the pancreas.

pancyclopedic (pan"sī-klọ-pē'dik), *a.* [*pan-* + *cyclopedic.*] Relating to or comprising the entire circle of the sciences.

panda, *n.*—**Great panda,** *Æluropus melanoleucus*, a rare mammal from eastern Tibet, sometimes placed with the bears. See cut under *Æluropus.*

pandal (pan'da̤l), *n.* [Tamil *pendal*, a shed.] In the East Indies, a shed or arbor, especially one for temporary use.

Pandalidæ (pan-dal'i-dē), *n. pl.* [NL., < *Pandal*(*us*) + *-idæ.*] A family of macrurous decapod crustaceans, having a long slender rostrum armed with teeth or spines, prominent eyes, the first pair of trunk-legs without and the second with chelæ, the pleopods biramous and the tail-fan well developed. It includes several genera, among them being *Pandalus*, *Pandalopsis*, and *Nothocaris.*

Pandalus (pan-dā'lus), *n.* [NL.] The typical genus of the family *Pandalidæ.* *P. montagui* is found off the coast of the United States. *Leach*, 1841.

pandan^2 (pän-dăn'), *n.* [Tagalog name.] In the Philippine Islands, the textile screw-pine, *Pandanus tectorius*, a species with glaucous sword-shaped leaves armed with spines on the keel and margin. and possessing great tensile strength and flexibility. The leaves are divested of their spiny margins and keel and after having been properly cured are split into ribbons of greater or less fineness and woven into hats, bags, and mats.

pandanaceous (pan-dạ-nā′shius), *a.* Belonging to or having the characters of the plant family *Pandanaceæ*.

Pandanales (pan-dā-nā′lēz), *n. pl.* [NL. (Lindley, 1833), < *Pandanus* + *-ales*.] An order of monocotyledonous plants occupying the lowest position among angiosperms. It is technically characterized by monœcious, spicate, or capitate flowers, the perianth consisting of bristles or chaffy scales, and by the mealy or fleshy endosperm. It embraces the three families *Pandanaceæ*, *Typhaceæ*, and *Sparganiaceæ*.

Pandanus-disease (pan-dā′nus-di-zēz″), *n.* See ★*disease*.

Pandaram (pạn-dä′rạm), *n.* [Tamil *paṇḍāram*.] A Hindu beggar of the Sudra or a lower caste; in southern India and Ceylon, a low-caste Hindu priest.

pandaric (pan-dar′ik), *a.* [L. *Pandarus* (see *pander*) + *-ic*.] Of the nature of, or characteristic of, a pander.

pandectist (pan′dek-tist), *n.* [*pandect* + *-ist*.] One who is learned in the pandects.

pandemic, *a.* **2.** In *phytogeog.*, growing throughout the world; cosmopolitan. *Fenzl*, 1833.— **3.** Pertaining to all; human; hence, sensual; not spiritual.

pandemoniacal (pan″dē-mọ-nī′ạ-kạl), *a.* [*pandemoniac* + *-al*^{1}.] Resembling pandemonium, particularly with respect to its noise.

pandemonial (pan-dẹ-mō′ni-ạl), *a.* [*pandemonium* + *-al*^{1}.] Of or pertaining to pandemonium.

pandemonian (pan-dẹ-mō′ni-ạn), *a.* and *n.* [*pandemonium* + *-an*.] **I.** *a.* Same as *pandemoniac*.

II. *n.* One who lives in pandemonium or (figuratively) in some other lawless, disorderly place.

pandemonic (pan-dẹ-mon′ik), *a.* [*pandemon-ium* + *-ic* (after *demonic*).] Relating to all demons, or to pandemonium.

pandemonistic (pan-dē-mọ-nis′tik), *a.* [Gr. πᾶς (παν-), all, + δαίμων, demon, + *-ist* + *-ic*.] Characterized by the belief that supernatural powers or spirits are present in every object and in every natural phenomenon. *Ratzel* (trans.), Hist. of Mankind, II. 154.

pandemy (pan′dẹ-mi), *n.* [NL. *pandemia*.] Same as *pandemia*.

pandenominational (pan-dẹ-nom-i-nā′shọn-al), *a.* [*pan-* + *denomination* + *-al*^{1}.] Pertaining to or comprehending all (religious) denominations.

panderer (pan′dėr-ėr), *n.* One who panders; a pander.

pandiabolism (pan-dī-ab′ọ-lizm), *n.* [Gr. πᾶς (παν-), all, + διάβολος, devil, + *-ism*.] The (supposed) belief that the devil is the informing spirit of the universe; the belief that the devil and the universe are identical. Also *pan-Satanism*.

> [Some pessimists] would contend that . . . her [Nature's] cult is in reality, not Pantheism but *Pandiabolism*.
> *Literature*, Sept. 16, 1899, p. 281.

pandita (pạn-dē′tạ̈), *n.* [Sulu *pandīta*, < Malay *pandīta*, a learned man, an ecclesiastic, a dominie, < Sanskrit *paṇḍitá*, a learned man, a pandit. See *pandit*, *pundit*.] A Moro priest.

P. and O. An abbreviation of *Peninsular and Oriental Steamship Company*.

Pandolian cattle. See ★*cattle*.

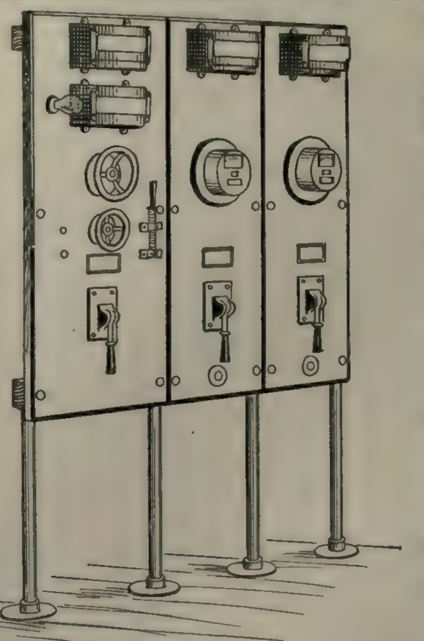
pandolichocephalism (pan-dol″i-kọ-sef′ạ-lizm), *n.* [Gr. πᾶς (παν-), all, + E. *dolichocephalism*.] The tendency to group together as one race all the dolichocephalic types of northwestern Europe. [Rare.]

> Still, far too much has been made of the Aryans as a separate type, and Dr. Houzé is right to laugh at what has been called "Anglo-Saxon *pandolichocephalism*," a term invented to describe "the skull which has the honour of sheltering the brain that has guided the world."
> *Nature*, Jan. 3, 1907, p. 237.

pane^1, *n.* **5.** (*i*) In *milling*: (1) The space between two leader-furrows in a millstone; the space from one leader-furrow to the next. (2) One of the burstones which form the face of a millstone.—**Magic pane,** in *elect.*, a condenser consisting of a pane of glass coated with detached particles of metal between which, during charge and discharge, minute sparks pass. The particles are sometimes arranged in patterns which are thus outlined in light by means of the sparks.

panel, *n.* **1.** (*d*) A large-sized portrait photograph (4 x 8½ inches), usually full-length.

2. (*g*) In *elect.*, a vertical board, usually of insulating material, such as marble or soapstone, on which switches, meters, and other controlling devices of electric circuits are mounted.



Panel.

7. A heap of dressed ore.—**On the panel, in the panel,** in *Scots law*, on one's trial.—**Panel carver and friezer.** See ★*carver*.—**Panel stamp,** in *bookbinding*, a single design which covers the central portion of the cover, made by one stamp and not by a series of tools as is usual. The panel stamp, which was invented about the middle of the fourteenth century, was found to be so useful in the decoration of the smaller books that its use for this purpose quickly became universal. *U. Y. Fletcher*, English Bookbindings, in Portfolio, XXIV. 55.

panela (pä-nā′lä), *n.* [Sp., a cake of corn, brown sugar.] See the extract.

> The name given to the resulting crude brown sugar is usually determined by its form, size, and weight . . . ; *panela* when it has the shape of a plate, each cake weighing about 1 kilo.
> *Daily Cons. and Trade Rep.*, Aug. 2, 1907, p. 7.

panel-back (pan′el-bak), *n.* A back of a window when paneled: generally so called to distinguish it from the same surface when plastered below the sill. Also *paneled back*.

panel-board (pan′el-bōrd), *n.* In *elect.*, a switch-board in the form of a panel and usually mounted upon a wall. See ★*panel*, 2 (*g*).

paneless (pān′les), *a.* [*pane*^{1} + *-less*.] Having no panes, as a window.

panel-feeder (pan′el-fē″dėr), *n.* A wire serving to convey an electric current to a panel-board or to one of the panels of a switch-board.

panel-gage (pan′el-gāj), *n.* An extra long marking-gage for wood: so called from its use in marking out panels.

panel-machine (pan′el-mạ-shēn″), *n.* A panel-planing machine; a panel-planer; a machine for planing thin boards.

panentheism (pan-en′thẹ-izm), *n.* [Gr. πᾶς (παν-), all, + ἐν, in, + θεός, God, + *-ism*.] The principle or belief that all things are contained in God.

> Krause (1781–1832), who himself limited the circulation of his philosophical writings among Germans by his strange terminology, . . . sought to improve upon the pantheism of the System of Identity by developing a doctrine of *Panentheism*, or a philosophy founded on the notion that all things are in God.
> *Überweg* (trans.), Hist. Philos., II. 280.

panfired (pan′fīrd), *a.* Treated by the process of ★pan-firing (which see).

pan-firing (pan′fīr″ing), *n.* In *tea manuf.*, the operation of firing (drying) green tea in thin iron bowls over a furnace, practised in Japan. Also ★*panning* (which see). Hot panning, continued half an hour with a temperature of 250° F., is followed by cold panning for 20 minutes. See *basket-fired* ★*tea*.

pangamia (pan-gā′mi-ạ̈), *n.* [NL.] Same as ★*pangamy*.

pangamic (pan-gam′ik), *a.* Same as ★*pangamous*.—**Pangamic mating.** See ★*mating*.

pangamous (pan′gạ-mus), *a.* [*pangam*(*y*) + *-ous*.] Of or pertaining to pangamy.

pangamously (pan′gạ-mus-li), *adv.* Promiscuously, or without selection, in mating.

> Whenever the sexes are equipotent, blend their characters and mate *pangamously*, all characters will be inherited at the same rate. *K. Pearson*, Grammar of Sci., p. 480.

pangamy (pan′gạ-mi), *n.* [Gr. πᾶς (παν-), all, + γάμος, marriage, + *-y*^{3}.] Pairing or mating at random, without conscious or unconscious selection or preference.

pan-gas (pan′gas), *n.* See ★*gas*.

pangen (pan′jen), *n.* [Also *pangene*; < Gr. πᾶς (παν-), all, + -γενης, -producing.] One of the hypothetical biological units postulated by Darwin and De Vries to account for the hereditary transmission of characters. See *pangenesis*.

> We may suppose that from the youngest ovarian ovum onwards the nucleus exerts a "control" upon the surrounding cytoplasm, whether by the migration of "*pangens*" (De Vries, Hertwig), or of specific "formative substances" (Sachs, Loeb). *Encyc. Brit.*, XXXII. 213.

> Apart from detail, Darwin, de Vries, and Weismann agree in ascribing as many different *pangens* to the organism (biophores, physiologic-units, gemmules, determinants) as it has of special organs and properties.
> *Pfeffer* (trans.), Physiol. of Plants, II. 187.

pangenesis, *n.*—**Intracellular pangenesis,** a hypothesis proposed by De Vries to account for inheritance. According to this hypothesis, pangens, which are the bearers of the hereditary qualities of cells, and not, like the gemmules of Darwin, the germs of entire cells, are transmitted from germ-cell to germ-cell in inheritance, and not, as in the pangenesis of Darwin, from the cells of the body to the germ-cells.

pangenic (pan-jen′ik), *a.* [*pangen* + *-ic*.] Of or pertaining to pangens.

pangeometer (pan-jẹ-om′e-tėr), *n.* [Gr. πᾶς (παν-), all, + E. *geometer*.] One skilled in pangeometry or the geometry of more than three dimensions.

pangeometrical (pan-jē-ọ-met′ri-kạl), *a.* [*pangeometr*(*y*) + *-ical*.] Of or pertaining to pangeometry.

pangeometry, *n.* **2.** The system of geometry which simply dispenses with Euclid's parallel postulate, using neither it nor any contrary assumption. It is therefore undifferentiated as between Euclidean and Bolyaian geometry. *Lobachevski*.

Pan-German (pan-jėr′mạn), *n.* and *a.* **I.** *n.* One who advocates Pan-Germanism.

II. *a.* Of or pertaining to all Germans, or to Pan-Germanism.

Pan-Germanic (pan-jėr-man′ik), *a.* Same as ★*Pan-German*.

Pan-Germanism (pan-jėr′mạn-izm), *n.* The plan or desire to unite all the German peoples in one political organization or state; organized effort directed to this end.

> They were jealous of Austrian interference south of their own territory, partly out of the fear of the encroachments of *Pan-Germanism*. *Encyc. Brit.*, XXIX. 457.

Pan-Germany (pan-jėr′mạ-ni), *n.* The German peoples collectively, considered as constituting one political community.

pangermic (pan-jėr′mik), *a.* [Gr. πᾶς (παν-), all, + E. *germ* + *-ic*.] Of or pertaining to pangermism: as, *pangermic* theories.

pangermism (pan-jėr′mizm), *n.* [Gr. πᾶς (παν-), all, + E. *germ* + *-ism*.] The doctrine that all diseases are due to germs.

> *Pangermism* has been exhausting its energies in sensational demonstrations of bacterial surprises and bacillar blunderings. *A. M. Brown*, Anim. Alkal., p. 126. *N. E. D.*

pangnosticism (pan-nos′ti-sizm), *n.* [Gr. πᾶς (παν-), all, + γνωστός, < γιγνώσκειν, know. See *Gnosticism*.] The doctrine that knowledge is possible concerning everything about which there can be any doubt or real question.

pangolo (pang-gō′lō), *n.* [Also *pagolo*; Polynesian.] A musical instrument used in the South Seas which consists of a strung bow, one end of which is held in the mouth, while the string is plucked with a plectrum.

Pangothic (pan-goth′ik), *a.* Of, pertaining to, or including all the Gothic peoples.

pangraphic (pan-graf′ik), *a.* [Gr. πᾶς (παν-), all, + γράφειν, write, + *-ic*.] Writing on any or every thing. [Rare.]

> The author of "Waverley" . . . is described by his admirers as great in many species of authorship . . . in short, he may be reckoned omni-scriptive or *pangraphic*.
> *Blackwood's Mag.*, VIII. 356.

panguipan (pän-gwē-pän′), *n.* A crude apparatus used in the Philippine Islands for extracting the fibers of manila hemp. It consists of a large knife which is fastened upon a block of wood and operated by means of a bamboo spring and foot lever.

pangymnastikon (pan-jim-nas′ti-kon), *n.*; pl. *pangymnastica* (-kạ̈). [Gr. πᾶς (παν-), all, + γυμναστικός, gymnastic.] A gymnasium apparatus which combines several appliances.

panhandler (pan′han-dlėr), *n.* A street beggar. [Slang.]

panharmonic (pan-här-mon′ik), *a.* [Gr. πᾶς (παν-), all, + E. *harmonic.*] 1. Adapted to all the harmonies or musical modes. *N. E. D.* —2. Harmonizing with all; agreeing with all. *N. E. D.*

panhas (păn′häs), *n.* [Also *paanhaas, ponhos,* < Pennsylvania G. **panhas*, G. **pfannenhase*, D. **panhaas*, ‘pan-hare,’ i.e., *pan-rabbit.*] In cooking, meal boiled in water in which hog’s liver and pork have been boiled and, when cold, sliced and fried for the table: a Pennsylvania German dish. Also *pan-rabbit.*

> But Rosa could cook. Himmel! Her *panhas* was like angel’s food, her liverwurst was the talk of the town, and the scraps she threw away would not keep a snowbird alive. *C. C. Lockhart*, in The Century, Aug., 1905, p. 602.

Pan-head rivet. See ★*rivet*^{1}.

panhidrosis (pan-hī-drō′sis), *n.* [NL., < Gr. πᾶς (παν-), all, + NL. *hidrosis.*] General perspiration over the entire body.

panhygrous (pan-hī′grus), *a.* [Gr. πάνυγρος, all wet, < πᾶς (παν-), all, + ὑγρός, wet.] Having a wet or damp surface. *Syd. Soc. Lex.*

panhysterectomy (pan″his-tẹ-rek′tọ̄-mi), *n.* [*pan-* + *hysterectomy.*] Total extirpation of the uterus. *Buck*, Med. Handbook, II. 714.

panic^1, *n.*—**Bitter panic** or **panic-grass**, a stout, hard grass, *Panicum amarum*, with strong, creeping rootstocks, which grows on seacoast sands from Connecticut to Mississippi, in the latter State especially rendering good service as a sand-binder. The stem and leaves have a bitter taste.—**Bulbous panic** or **panic-grass.** See *alkali* ★*zacaton.*—**Creeping panic** or **panic-grass**, *Panicum repens*, an extensively creeping maritime grass of the warmer parts of both hemispheres, which makes a good sand-binder. It occurs on beaches from Alabama to Louisiana.—**Low panic** or **panic-grass.** Same as *elm-*★*grass.*

Bitter Panic-grass (*Panicum amarum*).

a, small clump of the grass showing habit, reduced; *b*, empty glume, enlarged; *c*, flowering glume with palea, enlarged.

panically (pan′i-kal-i), *adv.* In a manner exhibiting panic or great alarm. [Rare.]

> Had the sea been a lake of living flames, he could not have shrunk more *panically* from its touch. *R. L. Stevenson*, The Merry Men, v.

panic-bent (pan′ik-bent), *n.* Same as *Munro* ★*grass.*

panichthyophagous (pan″ik-thi-of′ạ-gus), *a.* [Gr. πᾶς (παν-), all, + ἰχθύς, fish, + -φαγος, < φαγεῖν, eat.] Devouring all kinds of fish: as a *panichthyophagous* cat.

panicol (pan′i-kol), *n.* [L. *panicum*, panic-grass, + *-ol.*] A crystalline methyl phenol ether, $C_{12}H_{17}.OCH_3$, found in the oil of millet. It melts at 285° C.

panicular (pạ-nik′ụ̄-lär), *a.* [L. *paniculus* + *-ar.*] Pertaining to or resembling the paniculus muscle.

Panicularia (pạ-nik-ụ̄-lā′ri-ạ̈), *n.* [NL. (Heister, 1763), < L. *panicula*, a panicle. The allusion is to the conspicuously paniculate inflorescence of the type-species, *P. aquatica.*] A genus of grasses. See *Glyceria.*

panification (pan″i-fi-kā′shọn), *n.* [F. *panification*, < *panifier*, make bread (cf. L. *panifex*, bread-maker, *panificium*, bread-making), < L. *panis*, bread, + *facere*, make.] The making of bread; the chemical changes which convert flour into bread.

> Among other things, they recommended great attention to bees, to *panification*, and to the obstetrick art. *Arthur Young*, Travels in France, p. 292, line 14.

> The purposes which should be kept in view in the growth of wheat include those relating to the possibilities of *panification*. *Science*, Feb. 17, 1905, p. 272.

Panionian (pan-ī-ō′ni-ạn), *a.* [Gr. πανιώνιος, adj., < πανίωνες, the whole body of Ionians (πανιώνιον, their place of meeting), < πᾶς (παν-), all, + Ἴωνες, the Ionians.] Pertaining to all the Ionians, or to their place of meeting, Panionium, at Mycale.

> The Ionians had their common Sacrifices and Ceremonies at the Promontorie of Mycale, . . . The place was called Panionium, and the feast in which those sacrifices were offered Panionia. To those twelve cities, Strabo . . . addeth also Smyrna, and saith, that they were called to the *Panionian* solemnities by the Ephesians. *Purchas*, Pilgrimage, p. 376.

Paniselian series. See ★*series.*

Pan-Islam (pan-is′lạm), *n.* [*pan-* + *Islam.*] The union of all Mohammedan peoples; Mohammedan peoples considered as forming one body.

Panjabi (pun-jä′bẹ̄), *n.* [Hind. *Panjābī.*] An Indo-European language prevailing in the Panjab (Punjaub, ‘Five Rivers’), in northwestern India, related to Hindi, etc.

pankin (pan′kin), *n.* [ME. *pankyn*, < MD. **panneken*, < *pan*, pan, + dim. *-ken*, E. *-kin.* Compare *pannikin.*] A small pan or jar of earthenware; sometimes a jar of any size; a pancheon.

panlogism, *n.* 2. The metaphysical opinion of Schelling and Hegel that the universe is the embodiment of the Absolute.

> We have seen German Idealism plunging, in Schelling, now toward atheistic *panlogism* and now toward the extremest sort of theistic spiritualism. *H. Nichols*, Cosmology, I. § 113.

panlogistic (pan-lọ̄-jis′tik), *a.* [*panlog*(*ism*) + *-ist-ic.*] Pertaining to or of the nature of panlogism.

> The *panlogistic* confusion of the essences of things with the notions of reason. *Encyc. Brit.*, XXX. 656.

pan-mill (pan′mil), *n.* A miners’ contrivance for separating gold from gravel by panning. See *pan*^{1}, *v. t.*, 1.

panmixia, *n.* 2. Indiscriminate crossing of breeds; mongrelism.

pannarol (pan′ạ̈-rol), *n.* [*Pannar*(*ia*) (see def.) + *-ol.*] A white crystalline substance, $C_8H_8O_2$, extracted from the lichen *Pannaria lanuginosa.*

panne (pan), *n.* [F. *panne*, woolen velvet, etc., OF. *penne*, < L. *penna*, feather, wing. See *pen*^{2}, *n.*] A soft, shining fabric, plain or printed, used for trimmings and dresses.—**Panne velvet**, a light-weight velvet having the nap laid flat.

panniform (pan′i-fôrm), *a.* [L. *pannus*, a cloth, + *form*(*a*), shape.] Same as *pannose. Jackson*, Glossary.

panning (pan′ing), *n.* 1. In *mining*, especially gold-mining, metal (gold) obtained in the process of panning. See *pan*^{1}, *v. t.*, 1.—2. In *tea manuf.*, treatment of the material in an iron vessel: (*a*) in old Chinese practice, a light roasting of the leaf before and between rollings, now dispensed with in India; (*b*) in making green tea, a steaming of the fresh leaf in its own juices to wither it for rolling; (*c*) in Japan, same as ★*pan-firing.*

panning-machine, *n.* It is used for cutting dough into cookies, snaps, and fancy crackers ready for baking. The sheet of dough after being formed on a reversible brake is placed on the hopper of the panning-machine, where it is passed through a set of rolls so constructed as to regulate the thickness of the goods. The sheet of dough is then carried by an endless apron under a brush, where all the flour is removed, under a crimper, to give an impression if necessary, and then under a die or cutter, where the dough is stamped into the desired shape or form. The scrap or waste dough is here separated, the scraps being returned to the brake for a second sheet, and the goods continue on and are deposited on iron or wire trays, when they are ready for the oven. There is a semi-soft dough and brake attachment for running fig-newtons, bars, cookies, and snaps.

Pannonic (pa-non′ik), *a.* [L. *Pannonicus*, < *Pannonia*, Pannonia.] Of or pertaining to ancient Pannonia.

panocha, *n.* 2. A candy made of sugar, butter, and milk, into which, generally, nuts are stirred as it cools.

panoptic (pan-op′tik), *a.* [Gr. πανόπτης, all-seeing, + *-ic.*] 1. Seeing everything or seeing all things at once.

> He stops — looks at us ruefully — begins to tremble — would go back, if he could, or forward, if he durst — now and then vainly conceits that the great forest of books will hide him from our *panoptic* view. *Blackwood’s Mag.*, XX. 844.

2. Showing or exhibiting everything; allowing everything to be seen.

> Freedom is sacrificed on the elaborate altar. Teacher and pupil cannot know it. The school is the ward of one great, *panoptic*, prison-house, with the keepers before the door. The work of Professor Lorain gives a deplorable account of the state of things. *R. W. Hamilton*, The Institutions of Popular Educa- [tion, ix.

panopticon, *n.* 3. In *astron.*, a kind of telescope and microscope combined.

> Mr. Martin, when I called to see his *panopticon*, had not one ready; but was to let me know when he should have one to show me. *Franklin*, Letters, Works, IV. 176.

panoram (pan-ọ̄-ram′), *a.* and *n.* [*panoram*(*ic*).] I. *a.* Same as *panoramic.*

II. *n.* A panoramic camera. *N. E. D.*

panoramal (pan-ọ̄-rä′mạl), *a.* Same as *panoramic.*

Panoramic telescope. See ★*telescope.*

panorpate (pa-nôr′pāt), *a.* Having the characters of the order *Panorpatæ.*

panorpid (pa-nôr′pid), *n.* and *a.* I. *n.* A member of the mecopterous family *Panorpidæ.*

II. *a.* Having the characters of or belonging to the family *Panorpidæ.*

panorthodox (pan-ôr′thọ̄-doks), *a.* [*pan-* + *orthodox.*] Relating to, or common to, all the Orthodox Eastern churches.

panorthodoxy (pan-ôr′thọ̄-dok-si), *n.* [*pan-orthodox* + *-y*^{3}.] Orthodox churches regarded as forming a single body; specifically, the tendency to consider Russia as the head of all Orthodox nations.

> The Russian Church is numerically by far the greatest, and the tendency to regard Russia as the head, not only of the Slav races, but of all orthodox nations, inevitably reacts upon the Church, in the form of what has been called *pan-orthodoxy.* *Encyc. Brit.*, XXXI. 384.

panorthoscopic (pan″ôr-thọ̄-skop′ik), *a.* [*pan-* + *orthoscopic.*] Wholly orthoscopic.—**Panorthoscopic screen**, in *photog.*, a color-screen for orthochromatic photography. It consists of two plane glasses sealed together with a liquid dye between them. The screen is placed within the combinations of the lens.

panotype (pan′ọ̄-tīp), *n.* [Irreg. < Gr. πᾶς (παν-), all, + τύπος, type.] In *photog.*, a picture produced by the collodion process.

panpathy (pan′pa-thi), *n.* [Irreg. < Gr. πᾶς (παν-), all, + πάθος, suffering.] A universal feeling; a feeling shared by all. *P. Carus*, Hist. of the Devil, p. 462.

panphotometric (pan-fō-tọ̄-met′rik), *a.* [*pan-* + *photometric.*] Self-adjusting with respect to position, to both direct and diffused light: said of leaves. *Wiesner.*

pan-pie (pan′pī), *n.* Same as *pandowdy.* [Local, U. S.]

panplasm (pan′plazm), *n.* [Gr. πᾶς (παν-), all, + πλάσμα, anything formed.] The conception that all portions of the protoplasm of plants and animals are concerned in determining the forms and functions of the cells, as opposed to the conceptions which attribute the formative agency to particular cell-elements such as the idioplasm, nucleus, etc. *C. S. Minot.*

panpneumatism (pan-nū′mạ-tizm), *n.* [Gr. πᾶς (παν-), all, + πνεῦμα(τ-), spirit, + *-ism.*] A term used by Von Hartmann (only) to designate a “higher synthesis of panlogism and panthelism according to which the absolute is both will and thought.” *Baldwin*, Dict. of Philos. and Psychol., II. 256.

> The *panpneumatism* of Hartmann, combining Hegel with Schopenhauer. *Encyc. Brit.*, XXX. 663.

panpsychism (pan-sī′kizm), *n.* [Gr. πᾶς (παν-), all, + ψυχή, mind, + *-ism.*] The doctrine that the entire universe, or any least subdivision of it, has a mental as well as a physical side or aspect, and that the mental side stands to the physical (for instance, in the atom), precisely as human consciousness stands to the human body. Panpsychism may be monistic, reducing all reality to ultimate mental terms, or dualistic; and, if the latter, may receive an interactionist or a parallelistic interpretation. It is represented in ancient philosophy by hylozoism, has persisted in various forms throughout the history of philosophy, and finds acceptance among the moderns, for example, with G. T. Fechner.

> The explanation of the connection of mind and body is not in substance new. It is that which is implied in the *panpsychism* of Fechner and Clifford. *C. A. Strong*, Why the Mind has a Body, p. v.

> The *panpsychism* of Paulsen, continuing Fechner, but with the addition of an epistomology combining Kant with Schopenhauer. *Encyc. Brit.*, XXX. 663.

panpsychist (pan-sī′kist), *n.* and *a.* I. *n.* [*panpsych*(*ism*) + *-ist.*] One who accepts the theory of panpsychism.

> I think *panpsychists* are justified in maintaining that with their principles they are able to explain the connection of mind and body. *C. A. Strong*, Why the Mind has a Body, p. vi.

> Empedocles and the *panpsychists* spoke in same sense of sensation and effort in all things. *Haeckel* (trans.), Wonders of Life, p. 449.

II. *a.* Relating to panpsychism or to its adherents.

> I have chosen my title with the object of putting this *panpsychist* pretension distinctly on record. *C. A. Strong*, Why the Mind has a Body, p. vi.

panpsychistic (pan-sī-kis′tik), *a.* [*panpsychist* + *-ic.*] Relating to panpsychism or to its adherents; of the nature of panpsychism; panpsychist.

> His [Fechner's] system is, therefore, *panpsychistic*, and at the same time pantheistic.
> *Haeckel* (trans.), Wonders of Life, p. 340.

pan-rabbit (pan′rab″it), *n.* Same as ★*panhas.*

pan-salt (pan′sâlt), *n.* Common salt made from brine by evaporation in pans, generally of wrought-iron. Contrasted with *rock-salt.*

pan-Satanism (pan-sā′tạn-izm), *n.* Same as ★*pandiabolism.*

pan-scale (pan′skāl), *n.* In certain manufacturing processes, as in salt-boiling, the incrustation which forms on the inner surface of an evaporating-pan by deposition of less soluble substances, such as calcium carbonate or sulphate. If the incrustation becomes thick and compact it is sometimes called *pan-stone.*

pansciolism (pan-sī′ọ-lizm), *n.* [*pan-* + *sciolism.*] Universal sciolism.

pansclerosis (pan-sklẹ-rō′sis), *n.* [Gr. πᾶς (παν-), all, + σκλήρωσις, hardening.] A condition of complete fibrous induration of a tissue or organ.

pan-scratch (pan′skrach), *n.* Same as ★*pan-scale.*

Panslav (pan-slav′), *a.* Same as *Panslavic.*

Panslavonian (pan-slạ-vō′ni-ạn), *a.* [*pan-* + *Slavonian.*] Same as *Panslavic.*

Panslavonism (pan-slav′ọ-nizm), *n.* Same as *Panslavism.*

pansophic (pan-sof′ik), *a.* [*pansoph*(*y*) + *-ic.*] Pertaining to or of the nature of pansophy; universally wise.

pansophism (pan′sọ-fizm), *n.* Same as *pansophy.*

pansophist (pan′sọ-fist), *n.* [*pansoph*(*y*) + *-ist.*] One who possesses all human knowledge; one who is universally wise.

pansporoblast (pan-spō′rọ-blȧst), *n.* [*pan-* + *sporoblast.*] In some sporozoans, as the *Myxosporidia*, that portion of the body of the organism which gives rise to spores. It is separated from the surrounding endoplasm by a pellicle of thicker protoplasm, within which division of nuclei and subsequent formation of spores take place.

pan-stone (pan′stōn), *n.* See ★*pan-scale.*

pansymphonicon (pan-sim-fon′i-kon), *n.* [Gr. πᾶς (παν-), all, + συμφωνία, symphony, + *-ic-on.*] A form of orchestrion invented by P. Singer of Salzburg in 1839.

pansy-rust (pan′zi-rust), *n.* The disease of pansy-leaves due to *Peronospora Violæ.*

pantarchic (pan-tär′kik), *a.* [*pantarch*(*y*) + *-ic.*] Noting the cosmopolitan or universal stage of social aggregation. *L. F. Ward*, Dynamic Sociol., I. 466.

pantarchy (pan′tär-ki), *n.* [Gr. πανταρχία, < πάνταρχος, all-ruling, < πᾶς (παν-), all, + ἀρχειν, rule.] The rule of all; government invested in a community or people as a whole.

pantata (pän-tä′tä̤), *n.* [Bohem. *pán táta*, < *pán* (= Pol., Upper Sorbian *pan* = Russ. dial. *pan-* = Lith. *ponas* = Lett. *pōnis*), master, lord, + *táta* (= Pol., Sorbian, Russ. *tata* = Lith. *téta*, = L. *tata* = Gr. τάτα, τέττα = Skt. *tata*), father, = E. *dada*, *dad*, etc.: see *dad*¹.] **1.** Originally, in Bohemian use in New York (?), a master; a boss; one who is at the head of a society or a gang.—**2.** The boss or head man of a corrupt gang to whom money is improperly paid for any purpose, especially for immunity from interference by the police.

pantatrophia (pan-tạ-trō′fi-ä̤), *n.* [Gr. πᾶς (παντ-), all, + ἀτροφία, atrophy.] General wasting of the entire body.

pantatrophy (pan-tat′rọ-fi), *n.* Same as ★*pantatrophia.*

pantelegraphy (pan-tel′ẹ-graf-i), *n.* [*pan-* + *telegraphy.*] **1.** Telegraphy by means of a sort of shorthand code which makes possible the reduction of the number of signals constituting a message.—**2.** Facsimile telegraphy.

panteleologism (pan″tel-ẹ-ol′ọ-jizm), *n.* [*pan-* + *teleog*(*y*) + *-ism.*] Universal teleology; the adoption of teleology as the fundamental principle of metaphysics.

> The *panteleologism* of Lotze, reviving Leibnitz.
> *Encyc. Brit.*, XXX. 663.

pantelephone (pan-tel′ẹ-fōn), *n.* [*pan-* + *telephone.*] A form of microtelephone for the reproduction at a distance of sounds of feeble intensity.

Panteutonic (pan-tū-ton′ik), *a.* [*pan-* + *Teutonic.*] Of, pertaining to, or including all the Teutonic peoples.

Panteutonism (pan-tū′tọn-izm), *n.* [*Panteuton*(*ic*) + *-ism.*] The theory that all Teutonic peoples should be united in one political organization.

> Germany has long since outgrown the swaddling-clout of *Panteutonism*, and no ranting of anti-Semitic agitators . . . can permanently affect the public mind.
> *Pop. Sci. Mo.*, Jan., 1894, p. 306.

pantheic (pan-thē′ik), *a.* [*panthe*(*um*) + *-ic.*] Relating to or characteristic of a pantheum; uniting in one statue symbols of a number of different gods.

panthelematism (pan-thẹ-lem′ạ-tizm), *n.* [Gr. πᾶς (παν-), all, + θέλημα(τ-), will, + *-ism.*] Same as ★*panthelism.*

panthelism (pan′the-lizm), *n.* [Gr. πᾶς (παν-), all, + θέλειν, will, wish, + *-ism.*] The doctrine that will is the ultimate metaphysical principle; the doctrine that the absolute is will.

> The pure idealism of Fichte is at the bottom of it all [noumenal idealism]. The panlogism of Schelling and Hegel survives in its influence. So still more does the *panthelism* of Schopenhauer. *Encyc. Brit.*, XXX. 663.

pantheonic (pan-thẹ-on′ik), *a.* [*pantheon* + *-ic.*] Of the nature of a pantheon; having the characteristics of a pantheon: as, a *pantheonic* playhouse. *N. E. D.*

pantheonize (pan′thẹ-ọ-nīz), *v. t.*; pret. and pp. *pantheonized*, ppr. *pantheonizing.* [*pantheon* + *-ize.*] To bury in the pantheon; erect a memorial to (one) in the pantheon. *N. E. D.*

panther-cat (pan′thėr-kat), *n.* A name sometimes applied to the ocelot, *Felis pardus.*

panther-cowry (pan′thėr-kou″ri), *n.* An East Indian cowry, *Cypræa pantherina;* a spotted cowry.

pantheum (pan-thē′um), *n.*; pl. *panthea* (-ä̤). [LL., < Gr. πάνθειον. See *pantheon.*] A statue combining the figures, symbols, or attributes of several deities. *N. E. D.*

panthodic (pan-thod′ik), *a.* [Gr. πᾶς (παντ-), all, + ὁδός, way.] Radiating in every direction; said of a nerve impulse. [Rare.]

pantile, *n.* **3.** A ship's biscuit.

> *Pantiles*, on occasion the only item of food, are what the self-satisfied landlubber would call biscuits. They are served with a liberal hand, but the stock is protected by their almost irrefragable character. Out of *pantiles* a delectable dish is to be made by vigorous pounding in a bag, followed by the admixture of some handy liquid, preferably old pea soup, with the addition of a little fat pork. When this creation is browned in the oven it becomes "dog's body." Should there be molasses to add, the result is "dandy funk." *Daily newspaper.*

panting (pȧn′ting), *n.* **1.** The action of one who pants; hard and hurried breathing, with heaving of the breast or sides.—**2.** In *iron ship-building*, a distortion with an inward and outward motion: said of flat areas of plating of a vessel, particularly at the bows, when insufficiently supported by the framing against the pressure of waves and water when the vessel is pitching.

> Many instances have been noted where "*panting*," as it is termed, has taken place in those parts of badly constructed ships, the sides moving in and out under varying conditions. *White*, Manual of Naval Arch., p. 286.

panting-bellows (pȧn′ting-bel″ōz), *n.* Same as *winker*, 6.

panting-stringer (pȧn′ting-string″ėr), *n.* See ★*stringer*, 10.

pantod² (pan′tod), *n.* [Appar. a perversion of *fantod*, associated with *pant.*] **1.** A violent pain.—**2.** A mild discomfort corresponding to a 'conniption fit.' *Dialect Notes.* [Local, U. S.]

pantogelastic, pantogelastical (pan-tō-je-las′tik, -ti-kạl), *a.* [Gr. πᾶς (παντ-), all, + γελαστός, laughable, + *-ic* + *-al.*] Laughable throughout. [Rare.]

> Fashionable Biography . . . with a Preface and Notes, Pantological and *Pantogelastical.* *Title*, 1808. *N. E. D.*

pantogen (pan′tọ-jen), *n.* [Gr. πᾶς (παντ-), all, + -γενης, -producing.] A hypothetical primal substance from which all the chemical elements are supposed to be formed. *Science*, Jan. 15, 1904, p. 92.

pantogenous (pan-toj′e-nus), *a.* [Gr. πᾶς (παντ-), all, + -γενης, -produced, + *-ous.*] In *phytogeog.*, growing on all kinds of substrates: said of fungi.

pantoglot (pan′tọ-glot), *n.* and *a.* [Gr. πᾶς (παντ-), all, + γλῶττα, tongue.] **I.** *n.* One who understands or uses all languages.

II. *a.* Understanding or using all languages: as, a *pantoglot* interpreter.

pantoglottism (pan-tọ-glot′izm), *n.* [*pantoglot* + *-ism.*] The fact of understanding and speaking all languages. [Rare.]

> Angels of heaven, who cried to the King and his Knights,—*Seigneurs, tuez! tuez!* providentially using the French tongue, as being the only one understood by their auditors. This would argue for the *pantoglottism* of these celestial intelligences.
> *Lowell*, Biglow Papers, 1st ser, ii.

pantograph, *n.* **2.** A device made of pairs of perforated arms joined together and used for reducing the cross-head motion of an engine for the purpose of indicating; a reducing motion used in taking indicator-cards of engines and working on the reducing principle of the ordinary pantograph.—**Inversor pantograph**, one made of two Peaucellier cells.—**Precision-pantograph**, a form of pantograph used for scientific purposes (for instance, for the examination of speech curves), which reproduces a given figure (curve, etc.) with extreme accuracy upon an enlarged scale. *E. W. Scripture*, Exper. Phonetics, p. 73.—**Skew pantograph**, a plagiograph.

pantographer (pan-tog′rạ-fėr), *n.* **1.** Same as *pantograph*, 1.—**2.** One who uses the pantograph.

Pantolambda beds. See ★*bed*¹.

Pantolestidæ (pan-tọ-les′ti-dē), *n. pl.* [NL., < *Pantolestes* (the type genus) + *-idæ.*] A family of small artiodactyl mammals, whose fossil remains occur in the Bridger group of the Eocene. *Cope.* 1884.

pantologic (pan-tọ-loj′ik), *a.* Same as *pantological.*

pantomimetic (pan″tọ-mī-met′ik), *a.* [Gr. πᾶς (παντ-), all, + E. *mimetic.*] In *psychol.*, pantomimic; indicative or expressive of emotion, as distinguished from *mimetic.* See the extract.

> Movements of the oral muscles appear at first (mimetic movements), then movements of the arms and of the whole body (*pantomimetic* movements).
> *W. Wundt* (trans.), Outlines of Psychol., p. 171.

pantophagic (pan-tọ-faj′ik), *a.* Same as *pantophagous.*

pantophobia, *n.* **2.** Same as *hydrophobia.* *Syd. Soc. Lex.*

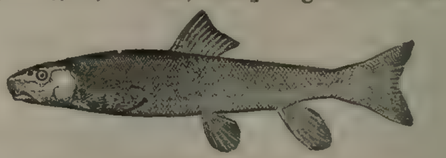
pantophobic (pan-tọ-fō′bik), *a.* [*pantophobia* + *-ic.*] Relating to or affected with pantophobia.

pantophobous (pan-tof′ọ-bus), *a.* Same as ★*pantophobic.*

pantopragmatic (pan″tọ-prag-mat′ik), *a.* and *n.* [Gr. πᾶς (παντ-), all, + πρᾶγμα(τ-), work, + *-ic* (see *pragmatic*).] **I.** *a.* Meddling with everything. [Humorous.]

II. *n.* A meddling person; *pl.*, a satirical name for the alleged 'science' of universal meddling. *N. E. D.*

Pantosteus (pan-tos′tẹ-us), *n.* [Gr. πᾶς (παντ-), all, + ὀστέον, bone.] A genus of fishes of the family *Catostomidæ*, found in streams in the Rocky Mountain region.



Pantosteus jordani.

pantostomate (pan-tos′tọ-māt), *a.* Of or pertaining to the *Pantostomata;* having no special oral orifice; pantostomatous.

pantostome (pan′tọ-stōm), *n.* One of the *Pantostomata.*

Pantostylopidæ (pan″tọ-stī-lop′i-dē), *n. pl.* [NL., < *Pantostylops* (type genus) + *-idæ.*] A family of tillodont mammals based on specimens from the Cretaceous (?) of Patagonia. *Ameghino*, 1901.

pantry-fly (pan′tri-flī), *n.* Any small fly found in the pantry, especially any one of several species of *Phoridæ* and *Drosophilidæ.*

pantryman (pan′tri-man), *n.*; pl. *pantrymen* (-mẹn). A man who does the domestic work which is carried on in pantries.

> Prisoner had been in the employ of the Savoy Hotel Company as *pantryman*, and after he had left . . . a quantity of plate was missed.
> *Daily News* (London), Nov. 9, 1891. *N. E. D.*

panurgic (pan-ėr′jik), *a.* [Gr. *πανοῦργος*, doing everything, < *πᾶς* (*παν-*), all, + *ἐργον*, work.] Skilful in any or every kind of work.

> No less *panurgic* and less encyclopædic a critic than Diderot himself could undertake to sweep with ever so light a wing over this vast area.
> *J. Morley*, Diderot and the Encyclopædiata, xvii.

panuroid (pa-nū′roid), *a.* [*Panurus* + *-oid.*] Having the characters of or allied to *Panurus*.

pan-wash (pan′wosh), *v.* **I.** *trans.* In *gold-digging*, to wash gold-bearing 'dirt' or crushed rock in the pan, with intent to separate the gold. *E. E. Morris*, Austral English.

II. *intrans.* In *gold-digging*, to subject gold-bearing 'dirt' or crushed rock to the process of washing in the pan, with intent to separate the gold.

panyar (pan-yär′), *v. t.* [Pg. *penhorar*, seize as a pledge, < L. *pignorare*, put in pledge, ML. take in pledge, plunder, < *pignus*, a pledge. See *pignorate.*] To seize as a pledge or guaranty; hence, kidnap; seize forcibly, as a person or property, as a means of obtaining redress.

panzoötia (pan-zọ̄-ō′shiạ̈), *n.* [NL. See *panzoöty.*] Any infectious disease which affects all the species of domestic animals in a certain district; panzoöty.

panzoötic (pan-zọ̄-ot′ik), *a.* and *n.* [*panzoöt*(*y*) + *-ic.*] **I.** *a.* Affecting all or a great many animals.

II. *n.* An epidemic disease which affects animals of many different species.

pap[1], *n.* **3.** A short cylindrical projection used to furnish a hold for the lathe-center on a casting which is to be turned; a socket; a tit.

papa[4] (pä′pä), *n.* [Sp. Amer.] In Mexico and Central and South America, the common potato, *Solanum tuberosum*.

Papagayo (pä-pä-gī′yō), *n.* [Sp. *papagayo*, parrot (see def.).] A local, violent, northeast wind, with tornadic whirls, which descends during October to May from the mountains into the Gulf of Papagayo at the northwest corner of Costa Rica and the southwest corner of Nicaragua. Similar storm winds, but less violent, extend along the Pacific coasts of Mexico, Guatemala, and Nicaragua. Also called *Papagallo*, *Papagalla*, *Papagello*.

papaia (pä-pī′ä), *n.* Same as *papaya*, 2. See *Carica*, 1, and *papaw*, 1.

papalistic (pā-pạ-lis′tik), *a.* [*papalist* + *-ic.*] Same as *papistic*.

papalization (pā″pạl-i-zā′shọn), *n.* [*papalize* + *-ation.*] The act of rendering papal or the process of becoming papal.

papaloi (pä-pä-lō′i), *n.* [*papa* + Bantu *loi*. See ★*mamaloi.*] In Haiti, the priest in voodoo ceremonies.

paparchical (pạ̄-pär′ki-kạl), *a.* [*paparch*(*y*) + *-al*[1].] Of or pertaining to paparchy or the rule of the Pope.

Papaverales (pā-pav-ẹ-rā′lēz), *n. pl.* [NL. (Britton, 1898), < *Papaver* + *-ales.*] An order of dicotyledonous, chiefly choripetalous plants, characterized by having two or more carpels united into a compound ovary, hypogynous stamens, and mostly distinct sepals. It embraces six families of which the most important are the *Papaveraceæ*, or poppy family, the *Brassicaceæ*, or mustard family, and the *Capparidaceæ*, or caper family.

papaveric (pap-a-ver′ik), *a.* [L. *papaver*, poppy, + *-ic.*] Derived from papaverine.—**Papaveric acid**, a finely crystalline acid, $C_{16}H_{13}O_7N + H_2O$, formed when papaverine is oxidized by potassium permanganate. It yields salts with bases and acids.

papaveroline (pap-ạ-ver′ọ̄-lin), *n.* [*papaver*(*ine*) + *-ol* + *-ine*[2].] A crystalline base, $C_{16}H_{13}O_4N + 2H_2O$, made by boiling papaverine with hydriodic acid and phosphorus.

papaverosine (pap-ạ-ver′ọ̄-sin), *n.* [*papaver* + *-ose* + *-ine*[2].] A crystalline alkaloid found in the dry seed capsules of the poppy, *Papaver somniferum*. It has a slightly sweet astringent taste.

papaw[2]† (pâ-pâ′), *n.* [Prob. from the name of the district *Popo.*] A slave from Dahome. [West Indies.]

> The Whidah Negroes are called generally, by the British traders, *Papaws*.
> *Bryan Edwards*, a Hist. of the Brit. W. Indies, II. 60.

papayaceous (pap-ā-yā′shius), *a.* [NL. *Papayace*(*æ*) + *-ous.*] Belonging to or having the characters of the plant family *Papayaceæ*.

pap-bowl (pap′bōl), *n.* A bowl in which pap, or boiled thickened milk, is served for infants. See *pap-boat*, 1.

papeeta (pa-pē′tạ̈), *n.* [Anglo-Ind., corruption of Sp. *pepita*, seed of some fruits, as melons or apples.] In India, St. Ignatius' beans. See under *bean*[1] and *Strychnos*.

paper, *n.* **10.** A sheet or piece of paper used to wrap up and carry small articles: as, a *paper* of nuts, a *paper* of soap.—**11.** A folded paper with needles or pins stuck through it in rows: as, a *paper* of pins, a *paper* of needles.—**12.** Sometimes applied to *papier-mâché* and other manufactured articles which are made with paper-pulp.—**13.** *pl.* Credentials.

> 'E 'as n't got no *papers* of 'is own,
> 'E 'as n't got no medals nor rewards,
> So we must certify the skill 'e 's shown
> In usin' of 'is long two-'anded swords.
> *R. Kipling*, Fuzzy Wuzzy, l. 25.

Alcoholized paper. See ★*alcoholize.*—**Alpha paper**, in *photog.*, a printing-paper coated with a gelatin film, in which is contained a combination of silver with a chlorid and a bromide. It is used for obtaining positives by artificial light, and is developed with ferrous oxalate, cleared with alum and acid, and toned in a gold or platinum bath. The fixing is effected, as usual, with hyposulphite of soda. *Woodbury*, Encyc. Dict. of Photog., p. 24.—**Anvil-paper**, an extra strong and tough paper used for the working-plans of buildings, etc.—**Autographic paper**, a paper prepared for receiving a specially made ink that can be transferred therefrom to a lithographic stone or to a metal plate for use on the type-printing press.—**Baryta paper**, paper coated with baryta chalk and gelatin, with a little tinting-matter added: used, in photography, for coating with gelatinochlorid emulsion and for making high-class prints by the collotype process.—**Basic photographic paper**, any paper used as a foundation for any actinic or photographic film or coating.—**Black-process paper**, actinic paper used in the black-print process. See ★*black-print.*—**Bromide paper**, in *photog.*, a paper sensitized by being coated with gelatin impregnated with silver bromide: used in printing and in making enlargements from the negative.—**Brown-print paper**, actinic paper used in a printing process which gives white lines on a brown surface.—**Chlorid paper**, photographic paper covered with a gelatinochlorid emulsion.—**Clay-faced paper**, a trade-name for a plated paper. See *plate-paper.*—**Commercial post paper**, an English writing-paper in sheets 11 × 17 inches.—**Contact paper.** See ★*contact.*—**Coördinate paper** or **squared paper.** Same as *cross-rule paper*. As used in mathematical work, it means paper ruled with great precision, with two sets of equidistant parallel straight lines, the lines of one set being perpendicular to those of the other. In most squared papers every tenth line, sometimes every fifth, is rather heavier than the rest, or is colored differently.—**Crêpe paper**, a tissue-paper crêped or bent into slight corrugations, and resembling crape: made in many colors and used for lamp-shades and decorative purposes.—**Cross-section paper.** Same as *coördinate* ★*paper.*—**Cyanotype paper.** Same as *blue-paper.*—**Detail paper**, a special kind of drawing-paper suitable for the details of plans.—**Developing-out paper**, a photographic paper which requires the use of reducing chemicals to produce the image.—**Duplex paper**, a tough, hard-surface drawing-paper of a cream or neutral color.—**Enfaced paper.** See ★*enface.*—**Gelatin paper**, in *photog.*, paper coated with sensitized gelatin.—**Heliographic paper**, any paper used as a base for blue-prints or allied solar prints.—**Hering papers**, series of gray and colored papers, much used for experiments upon vision in physiological and psychological laboratories.—**Kongo paper**, paper which has been soaked in a solution of Kongo red. It becomes blue-black with acids but is not affected by alkalies and is, therefore, used as a test for the presence of the former.—**Letter-size paper**, any writing-paper in single sheets 8 × 10 or 8½ × 11 inches.—**Logarithmic paper**, a paper having cross lines arranged in order for convenience in computing logarithms.—**Maduro paper**, an actinic brown-print paper.—**Meteoric paper**, a fibrous vegetable material resembling paper carried by the winds through the air.—**Millimeter paper**, paper cross-ruled at intervals of one millimeter for the platting of curves. The paper is ordinarily marked off by heavier lines into squares of 10 millimeters to the side. *E. B. Titchener*, Exper. Psychol., I. i. 61.—**Negative paper**, in *photog.*, paper prepared for the reception of negative proofs. The paper may be sensitized by the use of silver salts or be coated with gelatin emulsion. The paper is rendered transparent for printing by oil, fat, etc.—**Normal paper**, a fine quality of drawing-paper.—**Palladium paper**, in *chem.*, white paper which has been dipped in a solution of palladious chlorid and dried. It is used in testing for carbon monoxid, methane, etc., in the atmosphere, also in searching for leaks of illuminating-gas.—**Paper-cutting machine.** See ★*machine.*—**Paper yarn.** See ★*yarn*[1].—**Paraffin paper**, a soft, semitransparent and partly waterproof wrapping-paper, used in packing cakes, butter, cream cheese, crackers, etc. See *paraffin.*—**Peremptory paper**, in *Eng. law*, the official list of all motions, etc., to be disposed of before other business.—**Pinched post paper**, a small size of post, 18½ × 14½ inches.—**Plotting paper.** Same as *squared* ★*paper.*—**Porcelain paper**, in *photog.*, a paper which has a prepared surface resembling finely ground porcelain, and upon which silver-prints may be made, as the preparation, although without gloss, serves to keep the image on the surface. *Woodbury*, Encyc. Dict. of Photog., p. 391.—**Post-office paper**, a trade-name for a smooth yellow wrapping-paper.—**Post paper**, an English term for a printing- and writing-paper in sheets 15½ × 19 inches.—**Printing-out paper**, in *photog.*, a paper which gives a positive on exposure behind a negative without the use of a developer.—**Rive paper**, in *photog.*, a photographic paper manufactured at Rive-de-Gier, a town in France.—**Simplex-paper**, a variety of drawing-paper.—**Soft paper**, a trade-name for any unsized paper, as news- or book-paper.—**Solio paper**, in *photog.*, a silver chlorid gelatin printing-out paper.—**Squared paper.** Same as *coördinate* ★*paper.*—**Testamentary paper**, strictly, a last will and testament; the term is often used, however, to denote an instrument apparently intended as a will but which, from want of proper execution, is not a valid or legal will.—**Tetra paper**, paper saturated with a solution of tetramethylparaphenylene-diamine. It is used to detect ozone and ozonizers, as turpentine, pine wood, and also hydrogen peroxid, which cause it to turn violet.—**Topographical paper**, a paper ruled in horizontal and vertical lines, for convenience in topographic drawing; coördinate paper.—**Township-paper**, a drawing-paper ruled in lines which correspond to the system of township divisions used in Western States.—**Tribble paper**, a trade-name for any loft-dried paper, dried on a tribble (which see). See ★*loft-dried.*—**Umbria paper**, a trade-name for an actinic black-process paper.—**Universal paper**, a trade-name for a variety of drawing-paper.—**Unlaid paper**, a trade-term for any felted or wove paper which shows no wire marks; cylinder machine-paper. See ★*paper-machine.*—**Wasp paper**, the paper-like substance of which the nests of the social wasps are made.—**White paper**, a trade-term for any unprinted paper.—**Willesden paper**, the trade-name for paper which has been dipped in a solution of cupric hydroxid in aqueous ammonia and dried by passing over a heated cylinder. The solution acts superficially on the cellulose of the paper, and leaves on evaporation a pale bluish-green, varnish-like film on the surface, cementing the fibers together, adding materially to the strength and toughness of the paper, and enabling it to resist the action of water.

paper-backed (pā′pėr-bakt), *a.* Having the back made or as if made of paper; hence, weak; flimsy. [Rare.]

> 'Push, men!' sez Crook. 'Push, ye *paper-backed* beggars!' he sez. 'Am I to pull ye through?' So we pushed, . . . an' God help the front-rank man that wint down that day!
> *R. Kipling*, With the Main Guard, in Soldier Stories, p. 9.

paper-beam (pā′pėr-bēm), *n.* A small weighing-beam used to determine the number of pounds of paper to a ream by weighing one sheet of paper.

paper-book (pā′pėr-bůk), *n.* In *Eng. law*, a transcript of the record of a case prepared, formerly by the clerk of the papers, but now by the plaintiff's attorney, or, in the case of an appeal, by the appellant's attorney, for the use of the court.

paper-faced, *a.* **2.** Faced with paper.

paper-fish (pā′pėr-fish), *n.* The young of *Latris forsteri*, a fish found in New Zealand and Tasmania, belonging to the family *Cirrhitidæ*.

paper-hunt (pā′pėr-hunt), *n.* Same as *paper-chase*.

papering (pā′pėr-ing), *n.* In *mech.*, the operation of sticking pins in the papers in which they are sold.

paper-machine, *n.* Specifically, the machine used in the final process of paper-making and following the various machines used in the rag-mill and pulp-mill in cleaning, shredding, grinding, bleaching, refining, and mixing the rags, wood-pulp, or other material, in water to form the stock fed to the paper-machine. Paper-mills are known as *one-machine*, *two-machine mills*, etc., independently of their pulp-making capacity. Two types of paper-machines are in general use. In the *cylinder machine* the stock, composed of about 96 parts of water and 4 parts of pulp of some kind mechanically suspended in the water, is fed in a continuous stream to a series of narrow vats placed side by side and forming the first part of the machine, where the process of paper-making begins. In each vat is suspended a cylindrical frame covered with fine brass wire cloth. Each cylinder, supported horizontally in the vat by an arbor which passes through the ends of the vat, revolves while partially submerged in the liquid stock, none of the liquid being able to escape through the bearings of the shaft or to enter the ends of the cylinder. The water of the stock passes freely through the wire cloth and enters the interior of the cylinder and is led out of the machine. The pulp floating in the water cannot pass the wire cloth and is drawn against it, rapidly covering the cylinder with a film. On reaching the highest point in the revolution of the cylinder the film of pulp meets a continuous web of felt traveling horizontally in the same direction as the surface of the cylinder at this point. Immediately above the felt is a roll, called the *couch-roll*, which presses upon the felt, causing the film of pulp to leave the cylinder and cling firmly to the felt. Each cylinder in the series of vats contributes its film of pulp to the traveling felt, all being pressed together and moving on the felt as a continuous band of wet pulp until it passes out of this first part of the machine and is delivered to the next or second part. The second, third, and fourth parts are essentially the same as the corresponding parts of the Fourdrinier machine described below. In the *Fourdrinier machine*, the production of a continuous film of pulp on wire cloth is effected in a different way. The first, or Fourdrinier, part of the machine consists essentially of a traveling-apron of wire cloth, called the *wire*, supported by table-rolls in a horizontal position. On each side of the wire a thick endless rubber band, called a *deckle*, rests upon the moving wire and travels with it. The wire and the two deckles form a shallow moving trough and into this trough is fed a thin stream of stock which fills it and moves onward with it. The rubber deckles act as dams on each side to prevent the escape of the liquid and also serve to define the edges (deckle edges) of the rapidly forming film of pulp. The water in the stock sinks downward through the wire into the save-all boxes and is led out of the machine. The pulp, unable to pass through the wire, is caught on it and moves onward as a continually formed and continuous film. As more water escapes through the wire the film becomes more coherent and passes under a dandy roll which compacts it more firmly together. Finally, the water being almost completely extracted and the film changing from a sheet of pulp into a band of soft paper, the endless deckles, moving over suitable rolls, leave the wire, while the latter passes between large couch-rolls which cause the paper to leave it and to pass out to the second part of the machine. The second part of a paper-machine, called the *press part*, consists essentially of three pairs of rolls called *press-rolls*. The soft wet paper, from the first part of the cylinder or of the Fourdrinier machine, is transferred to a woolen felt and passes with it between each pair of press-rolls, each in turn serving to press more and more water out of the paper, compacting it together and making it comparatively strong and dry. The third part consists of a long series of hollow iron cylinders filled with steam and called the *driers*. This part is usually covered with a hood having suitable pipes for withdrawing the clouds of steam that rise from the drying paper. The web of paper passes in turn round all the steam-heated driers and is completely freed from its moisture, reaching the end of the third part as finished plain or uncalendered paper. In the fourth part, the web of paper is passed over and around *calender rolls*, is given its final surfacing, and is wound on the reel. When full, the reel is unwound and the paper passed through the slitting-machine and cut to commercial sizes and rewound in rolls ready for shipment.— **Cylinder paper-machine,** a machine that takes up fluid paper-pulp upon a hollow cylinder covered with close-woven wire cloth and perfects the web at the end of its rotation.

paper-miller (pā'pėr-mil″ėr), *n.* One who works in or operates a paper-mill.

paper-minister (pā'pėr-min″is-tėr), *n.* In Scotland, a depreciatory name for a minister who openly reads his sermons to the congregation, instead of giving them the appearance of being extempore.

paper-model (pā'pėr-mod″el), *n.* A scientific design of a vessel laid down mathematically on a drawing-table.

paper-mouth (pā'pėr-mouth), *n.* One of the numerous common names of *Pomoxis annularis*, one of the sunfishes of the eastern United States.

paper-scales (pā'pėr-skālz), *n. pl.* A multiplying-balance which shows the weight of a ream of paper when a single sheet is placed on it. See ★*paper-beam.*

paper-shale (pā'pėr-shāl), *n.* A very thinly stratified shale in which the individual laminæ are comparable with sheets of cardboard. When such shales are saturated with petroleum or its residues they assume a toughness which gives the name special significance.

paper-skin (pā'pėr-skin), *n.* In general, any pale dry condition of the skin in cattle and sheep; especially verminous bronchitis in calves: also used in referring to verminous gastritis. Properly speaking, it is a symptom rather than a disease.

paper-varnish (pā'pėr-vär″nish), *n.* Mastic-gum dissolved in alcohol. *Thorpe*, Dict. Applied Chem., I. 623.

paper-wasp (pā'pėr-wosp), *n.* Any one of the social wasps which makes its nest of a paper-like substance.

paper-works (pā'pėr-wėrks), *n.* A paper-mill.

papetto (pä-pet'tō), *n.* [It., dim. of *papa*, pope. See *pope*^{1}.] A silver papal coin, struck by Pius VII., Gregory XVI., and Pius IX.

papia (pä'pi-ä), *n.* A West Indian creeping warbler, *Dendroica plumbea.*

papile (pa-pēl'), *n.* [F. *papile*, formed from *papier*, paper, or *papillon*, butterfly?] In France, a technical name for a certain kind of cheap thin paper.

> It is brought on a wagon constructed for that purpose, and the gas is passed into balloons made of "*papile*," sent from the Trappes Observatory and which hold about thirty cubic meters.
> *U. S. Monthly Weather Rev.*, April, 1903, p. 178.

Papilio, *n.*—**Short-tailed papilio,** an American papilionid butterfly, *Papilio brevicauda*, which occurs in Newfoundland and about the Gulf of St. Lawrence. Its larvæ feed on parsley and other umbelliferous plants.

papilionian (pạ̄-pil-i-ō'ni-ạn), *a.* and *n.* Same as ★*papilionid.*

papilionid (pā-pil-i-on'id), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Papilionidæ.*

II. *a.* Having the characters of or belonging to the family *Papilionidæ.*

papilla, *n.*—**Adhesive papilla,** one of the three papillæ developed on the head of the ascidian larva and enabling it to attach itself to surfaces.—**Dental papilla,** the conical mass of cells about which a tooth is developed.—**Genital papilla,** in earthworms, one of the papillæ on the ventral side of the clitellum.—**Papilla duodenalis.** Same as *Vater's* ★*papilla.*—**Urinary papilla,** in *ichth.*, a small papilla which marks the opening of the urinary sinuses into the cloaca.—**Urinogenital papilla,** in *ichth.*, a papilla which marks the opening of the urinogenital sinus into the cloaca.—**Vater's papilla,** a slight projection from the mucous membrane of the duodenum where the ductus communis choledochus enters. Also called *papilla duodenalis.*

papilla-formation (pạ̄-pil'ä̤-fôr-mā″shọn), *n.* The production or formation of papillæ or cylindrical or conical elevations on the surface of the integument, a gland, or other layer of tissue.

Papillary cancer. See ★*cancer.*

papillectomy (pap-i-lek'tọ̄-mi), *n.* [L. *papilla*, nipple, + Gr. *ἐκτομή*, excision.] Excision of papillæ.

papillomatosis (pap″i-lō-mạ-tō'sis), *n.* [NL. *papilloma* (*-t-*) + *-osis.*] A morbid condition in which there is a tendency to the formation of papillomata.

papillosarcoma (pạ̄-pil″ọ̄-sär-kō'mä̤), *n.*; pl. *papillosarcomata* (-mạ-tä̤). [NL., < *papilla* + *sarcoma.*] A papilloma of malignant type.

papillosity (pap-i-los'i̤-ti), *n.* [*papillose* + *-ity.*] The state or condition of being papillose.

papillote, *n.* **2.** Folded oiled paper on which chops, etc., are prepared and sometimes served.

papiomorphous (pap″i-ọ̄-môr'fus), *a.* [NL. *papio*, baboon, + Gr. *μορφή*, form, + *-ous.*] Resembling, or having the characters of, the large dog-faced baboons of the genus *Papio* and related genera. [Rare.]

> The morphological differences . . . which separate these anthropoids from the *papiomorphous* baboons, the lowest of the catarrhines. *Smithsonian Rep.*, 1895, p. 465.

papoid (pā'poid), *n.* [*pap*(*aya*) + *-oid.*] Same as *papain.*

papolatry (pạ̄-pol'ạ-tri), *n.* [ML. *papa*, pope, + Gr. *λατρεία*, worship.] Excessive devotion to the Pope. *N. E. D.*

papoose-board (pa-pös'bōrd), *n.* The board on which an Indian baby is carried; an Indian cradle. See cut under *papoose.* Also called *papoose-frame.*

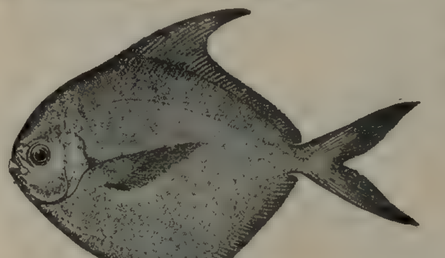
papoose-frame (pa-pös'frām), *n.* Same as ★*papoose-board.*

paposite (pä'pọ̄-sīt), *n.* [*Paposa* (see def.) + *-ite*^{2}.] A hydrous ferric sulphate which occurs in dark red crystalline masses: found near Paposa, Atacama. It may be identical with amarantite.

pappescent, *a.* A better form of *papescent.*

pappiform (pap'i-fôrm), *a.* [NL. *pappus*, + L. *forma.*] Having the form of a pappus. *Treas. Bot.*, p. 844.

pappy-fish (pap'i-fish), *n.* A stromateoid fish, *Peprilus paru*, found on the Atlantic coast of the United States and southward.



Pappy-fish (*Peprilus paru*).
(From Bulletin 47, U. S. Nat. Museum.)

paprika (pap'ri-kä̤), *n.* [Hungarian, red pepper.] A condiment prepared from a cultivated form of *Capsicum annuum* by grinding the dried peppers after removal of the seeds. It is much less pungent than the ordinary red pepper.—**Paprika huhn,** chicken stewed and highly seasoned with Hungarian pepper or paprika; Hungarian chicken.

pap-shell (pap'shel), *n.* A limpet, so named from being used to apply fullers' earth or similar remedies to the sore nipples of nurses.

papula, *n.* **3.** *pl.* In *Stelleroidea*, same as *dermal* ★*branchiæ.*

papuloid (pap'ụ̄-loid), *a.* [*papule* + *-oid.*] Resembling a papule or pimple.

papulopustular (pap″ụ̄-lọ̄-pus'tụ̄-lä̤r), *a.* Characterized by the presence of both papules and pustules. *Buck*, Med. Handbook, I. 78.

papulosity (pap-ụ̄-los'i̤-ti), *n.* [*papulose* + *-ity.*] The state of being covered with papules; also a papule.

papulosquamous (pap″ụ̄-lọ̄-skwā'mus), *a.* Characterized by the presence of both papules and epidermic scales. *Buck*, Med. Handbook, III. 725.

papulovesicular (pap″ụ̄-lọ̄-vẹ̄-sik'ụ̄-lä̤r), *a.* Characterized by the presence of both papules and vesicles. *Buck*, Med. Handbook, I. 456.

papyrine (pạ̄-pī'rin), *a.* [Gr. *παπύρινος*, < *πάπυρος*, papyrus. See *papyrus* and *paper.*] **1.** Consisting of papyrus: as, a *papyrine* roll.—**2.** Made of something which resembles paper. *Mayne.*

papyristite (pạ̄-pir'is-tīt), *n.* [Gr. *πάπυρος*, paper, + *-ist* + *-ite*^{2}.] The trade-name for a composite material made from paper-pulp, designed to be used as a covering for floors and walls.

Papyrius (pạ̄-pir'i-us), *n.* [NL. (Lamarck, 1804), < L. *papyrius*, an adjective derived from L. *papyrus* (Gr. *πάπυρος*), the papyrus plant, paper; in allusion to the use of the bark in paper-making.] A genus of plants belonging to the family *Moraceæ.* See *Broussonetia*, ★*malo*, and ★*wauke.*

papyrograph, *n.* **3.** In *photog.*, a photographic positive printed on paper resembling parchment. *E. L. Wilson*, Cyclopædic Photog., p. 270.

papyrography, *n.* **2.** In *photog.*, the production of papyrographs.

papyrolite (pạ̄-pī'rọ̄-līt), *n.* [Gr. *πάπυρος*, paper, + L. *oleum*, oil, + *-ite*^{2}.] The trade-name for a composite material made from finely ground wood sawdust, designed to be used for covering floors.

papyrological (pạ̄-pī-rọ̄-loj'i-kạl), *a.* [*papyrolog*(*y*) + *-ical.*] Of or pertaining to papyrology.

papyrology (pā-pī-rol'ọ̄-ji), *n.* [Gr. *πάπυρος*, papyrus, + *-λογια*, < *λέγειν*, speak.] The study of papyri. See *papyrus*, 2.

papyrotype, *n.* **2.** A print made by the papyrotype process.

papyrotypy (pạ̄-pī'rọ̄-tī-pi), *n.* See *papyrotype.*

papyroxylin (pā-pī-rok'si-lin), *n.* [Gr. *πάπυρος*, paper, + E. (*pyr*)*oxylin.*] Pyroxylin made from paper, instead of from loose cotton fiber.

par^2, *n.* **5.** In *golf*: (*a*) Perfect play. (*b*) At each hole, the number of perfectly played strokes from tee to green (two putts being added). The par of a 320-yard hole, for instance, is usually fixed at 4 strokes.

par. An abbreviation (*b*) of *parallel*; (*c*) of *parish.*

para, *n.* **3.** A copper coin of Servia (one centime).

Para. An abbreviation of *Paraguay.*

para red. A shortened name for *para-nitraniline* ★*red.*

para-appendicitis (par″ạ-ạ-pen″di-sī'tis), *n.* Localized peritonitis in the neighborhood of the appendix vermiformis.

parabanic (par-ạ-ban'ik), *a.* Derived from uric acid by transformation.—**Parabanic acid,** a crystalline acid, $C_3H_2O_3N_2$, made by boiling uric acid with nitric acid, or with manganese peroxid and sulphuric acid, or other oxidizing agents. Also called *oxalylurea.*

parabates (par-ạ-bat'ēz), *n.*; pl. *parabatæ* (-ē). [Gr. *παραβάτης.*] In *Gr. antiq.*, the warrior who stood in the chariot beside the charioteer.

parabellum (par-ạ-bel'um), *n.*; pl. *parabella* (-ä̤). [Appar. L. *para bellum*, 'prepare for war'; *para*, impv. of *parare*, prepare; *bellum*, war.] A commercial name for a form of automatic pistol used by the Swiss government (1904) as a service weapon. See ★*automatic firearm.*

parabiosis (par″ạ-bī-ō'sis), *n.* [Gr. *παρά*, beside (alluding to *paralysis*), + *βίωσις*, living.] The temporary abolition of conductivity and excitability in a nerve.

> The author [N. E. Wedensky] designates by "*parabiosis*" the various conditions which produce this uniform change in the nerve. *Parabiosis* consists essentially in the complete temporary suppression of excitability and conductivity. The parabiotic current shows the negative variation under the influence of tetanization.
> *Sci. Amer. Sup.*, May 9, 1903, p. 22866.

parabiotic (par″ạ-bī-ot'ik), *a.* Relating to, caused by, or coincident with parabiosis. See the extract under ★*parabiosis.*

parabola², *n.*—**Apollonian parabola.** Same as *quadratic* ★*parabola.*—**Asymptotic parabola.** Same as ★*parabolic asymptote* (*b*).—**Osculatory parabola,** that parabola which osculates and measures the variation of the curvature of any curve at a given point.—**Quadratic parabola,** the common parabola.

parabolar† (pa-rab′ọ-lạr), *a.* Same as *parabolic.*

parabolaster† (pa-rab′ọ-las-tėr), *n.* [*parabol*(*a*) + *-aster.*] Any parabola other than the Apollonian. See *parabola²*, 2.

parabolic², *a.*—**Parabolic asymptote.** (*a*) See ★*asymptote.* (*b*) A parabola so approaching a curve that their distance apart becomes and remains less than any given distance, though never zero.—**Parabolic branch,** a branch of a curve which extends to infinity without approaching an asymptote: opposed to *hyperbolic branch.*—**Parabolic catenary,** the ordinary catenary, called *parabolic* as being the roulette of the focus of a parabola, and to distinguish it from the elliptic catenary, the roulette of the focus of an ellipse, and the hyperbolic catenary, the roulette of the focus of a hyperbola.—**Parabolic involution.** See ★*involution.*—**Parabolic reflector.** See *reflector.*—**Parabolic substitution.** See ★*substitution.*

II. *n.*† A parabola or paraboloid.

parabolimber (pa-rab-ọ-lim′bėr), *n.* The skew curve which is the intersection of one parabolic cylinder with another.

parabolist² (pa-rab′ọ-list), *n.* [*parabol*(*a*) + *-ist.*] One who studies, or a partizan of, the parabola. [Rare.]

parabolization (pa-rab″ọ-li-zā′shọn), *n.* [*parabol*(*a*) + *-ize¹* + *-ation.*] The operation of making the surface of a mirror a true paraboloid: essential to its perfect performance in a telescope. *Sci. Amer. Sup.*, Oct. 17, 1903, p. 23232.

parabolize¹ (pa-rab′ọ-līz), *v.* [Gr. *παραβολή*, a parable, + *-ize.*] I. *trans.* To express, as in a parable; treat as a parable; make into a parable.

> He [Christ] *parabolizes* the truth, and gets it thus into human conditions or analogies.
> *Bushnell*, Christian Nurture, ii., sermon 7.

II. *intrans.* To speak parabolically.

> As our Saviour Christ rightly *parabolized* of such.
> *Watson*, Decacordon, p. 34 (1602). *N. E. D.*

parabolize² (pa-rab′ọ-līz), *v. t.* [Gr. *παραβολή*, a parabola, + *-ize.*] To make a parabola of; give a parabolic form to.

parabolograph (pa-rab′ọ-lọ-gråf), *n.* [Gr. *παραβολή*, parabola, + *γράφειν*, write.] An instrument for the mechanical tracing of parabolic curves. *K. Pearson*, in Philos. Mag., Feb., 1904, p. 200.

paraboloid, *n.* 3. A solid or surface of the second degree some of whose plane-sections are parabolas.—**Elliptic paraboloid,** a surface of the second order whose plane sections perpendicular to the axis are ellipses, while sections containing the axis are parabolas.—**Hyperbolic paraboloid,** a ruled surface the point at infinity of one of whose generating projective ranges is correlated to the point at infinity of the other.—**Paraboloid of revolution,** a surface of the second order generated by the revolution of a parabola about its axis. See *solid of revolution*, under *revolution.*

II. *a.* Paraboloidal. [Rare.]

paraboulia (par-ạ-bö′li-ạ̈), *n.* Same as ★*parabulia.*

Parabrahma (par-a-brä′mạ̈), *n.* [Skt. *parabrahman*, nom. *-mā.*] The Supreme Being.

parabulia (par-ạ-bū′li-ạ̈), *n.* [Also *paraboulia*; < Gr. *παρά*, beside, + *βουλή*, will.] Any disorder affecting the will.

parabuxine (par-ạ-buk′sin), *n.* [*para-* + L. *buxus*, box, + *-ine²*.] An amorphous, poorly characterized alkaloid found in the green leaves of the box, *Buxus sempervirens.*

parabuxinidine (par″ạ-buk-sin′i-din), *n.* [*parabuxine* + *-id* + *-ine²*.] A crystalline alkaloid found in the green leaves of the box, *Buxus sempervirens.*

paracalcarine (par-ạ-kal′kạ-rin), *a.* [*para-* + *calcarine.*] Near or beside the calcarine: as, a *paracalcarine* sulcus: noting an unstable fissure observed by G. Elliot Smith in the cerebrum of lemurs, which has more or less intimate relations with the calcarine as a dorsal branch of the intercalary or parieto-occipital fissures. *Trans. Linn. Soc.*, Zool., Feb., 1903, p. 332.

paracamphoric (par″ạ-kam-for′ik), *a.* Noting inactive camphoric acid.

paracanthoma (par″a-kan-thō′mạ̈), *n.*; pl. *paracanthomata* (-mạ-tä). [NL., < Gr. *παρά*, beside, + *ἄκανθα*, thorn, spine, + *-oma.*] A tumor originating in the prickle-cell layer of the skin.

paracanthosis (par″a-kan-thō′sis), *n.* [Gr. *παρά*, near, + NL. *acanthosis.*] Disease affecting the prickle-cell layer of the skin.

paracarpous (par-ạ-kär′pus), *a.* [Gr. *παρά*, beside, + *καρπός*, fruit.] Joined together by the margins only: said of the carpels of some compound ovaries. *K. E. Goebel*, Organography, II. 558.

paracarthamin (par-ạ-kär′thạ-min), *n.* [*para-* + *carthamin.*] A compound of uncertain composition, formed by the action of sodium amalgam on rutin, and said to be related to carthamin.

paracasein (par-ạ-kā′sẹ-in), *n.* [*para-* + *casein.*] A substance which results from the action of chymosin upon casein, whereby a small amount of albumose-like substance is split off, the remainder constituting paracaseinogen or lime paracasein, from which paracasein is obtained by removal of the lime.—**Lime paracasein,** the neutral lime salt of casein, after the hydrolytic severance of Hammarsten's albumose-like substance, as a result of the action of chymosin. *Simon.*

paracaseinogen (par-ạ-kā-sẹ-in′ọ-jen), *n.* Same as *lime* ★*paracasein.*

paracathodic (par″ạ-ka-thod′ik), *a.* [*para-* + *cathode* + *-ic.*] Of or pertaining to rays formed, especially at low vacuum, by the impact of cathode rays upon a body, the anticathode, placed in their path. Paracathodic rays have properties differing from those of either cathode rays or X-rays.

paracele (par′ạ-sēl), *n.* [Also *paracœle*; < Gr. *παρά*, beside, + *κοῖλος*, hollow.] A lateral ventricle of the brain. *Buck*, Med. Handbook, II. 139.

paracelian (par-ạ-sē′li-ạn), *a.* [*paracele* + *-ian.*] Of or pertaining to the lateral ventricle of the brain. *Buck*, Med. Handbook, II. 139.

paracellulose (par-ạ-sel′ụ-lōs), *n.* [*para-* + *cellulose.*] A poorly characterized modification of cellulose supposed to occur in the cellular tissue and pith of plants.

Paracelsianism (par-ạ-sel′si-ạn-izm), *n.* [*Paracelsian* + *-ism.*] The medical practice of Paracelsus.

Paracelsic (par-ạ-sel′sik), *a.* Same as *Paracelsian.*

paracerebellar (par-ạ-ser-ẹ-bel′är), *a.* [Gr. *παρά*, beside, + NL. *cerebellum* + *-ar³*.] Relating to the lateral portion of the cerebellum. *Buck*, Med. Handbook, II. 249.

paracholia (par-ạ-kō′li-ạ̈), *n.* [NL., < Gr. *παρά*, beside, + *χολή*, bile.] The presence of bile in the blood-vessels or tissues outside of its regular channels.

parachrœa (par-ạ-krē′ạ̈), *n.* [NL., < Gr. *παρά*, beside, + *χροιά*, color.] Same as ★*parachroma.*

parachroma (par-ạ-krō′mạ̈), *n.* [NL., < Gr. *παρά*, beside, + *χρῶμα*, color.] An abnormal change of color in the skin.

parachromatophorous (par″ạ-krọ-mạ-tof′ọ-rus), *a.* [Gr. *παρά*, beside, + *χρῶμα*(*τ-*), color, + *-φορος*, < *φέρειν*, bear.] A term applied to pigment-bacteria when the color is contained mainly in the cell-wall. See ★*chromophorous*, 2, and ★*chromoparous.*

parachronistic (pa-rak-rọ-nis′tik), *a.* [Gr. *παρά*, beside, + *χρόνος*, time, + *-ist* + *-ic.*] Misdated; especially, dated too late.

parachronize (pa-rak′rọ-nīz), *v. t.*; pret. and pp. *parachronized*, ppr. *parachronizing.* [Gr. *παρά*, beside, + *χρόνος*, time, + *-ize.*] To date wrongly, especially date too late; mistime. *Blount.*

parachute, *n.* 5. A large funnel of tinned copper set in the skimming-vat of a brewery, the mouth on a level with the surface of the beer, used to receive and carry off the yeast which is skimmed into it by means of a plank paddle.—6. In *bot.*, a down or tuft of hairs attached to a seed enabling it to float in the air as if supported by a parachute: most properly, a tuft supported by a long beak as in the dandelion (see *pappus*, cut *a*), but also applied more broadly. Often adjectival, as in the phrases *parachute mechanisms*, *parachute seeds*, etc.

paracine (par′ạ-sin), *n.* Same as ★*paricine.*

paracinesis, *n.* See *parakinesis.*

paracinetic, *n.* See ★*parakinetic.*

paracitric (par-ạ-sit′rik), *a.* [*para-* + *citric.*] Noting an acid, the same as *aconitic acid.*

paraclase (par′ạ-klāz), *n.* [Gr. *παρά*, beside, + *κλάσις*, breaking.] In *geol.*, a fault: a name suggested by Daubrée. Compare ★*diaclase* and ★*lithoclase.*

> The occurrence in many areas of similarly regular networks of streams in which the elements are essentially straight lines in parallel series over considerable distances has now long been known, and has been given an adequate explanation by Daubrée as conditioned by the system of fractures (lithoclases) of the region, in part by the faults (*paraclases*) and in part by the joints (diaclases).
> *W. H. Hobbs*, in Jour. of Geol., Nov.–Dec., 1902, p. 886.

Paraclinus (par-ạ-klī′nus), *n.* [NL., < Gr. *παρά*, beside, near, + NL. *Clinus.*] A genus of blennioid fishes inhabiting the coast of Venezuela.

paracmastic (par-ak-mas′tik), *a.* [Gr. *παρακμαστικός*, past the culmination, < *παρά*, beyond, + *ἀκμή*, culmination.] Having passed the culmination or crisis; gradually declining: said of a disease which is progressing to recovery, or of the vital processes in old age.

paracœle, *n.* Same as ★*paracele.*

Paracolon bacillus. See ★*bacillus.*

paracolpium (par-ạ-kol′pi-um), *n.* [Gr. *παρά*, beside, + *κόλπος*, womb.] Connective tissue surrounding the vagina.

paracondylar (par-ạ-kon′di-lạr), *a.* Same as *paracondyloid.*

paracone (par′a-kōn), *n.* [Gr. *παρά*, near, + *κῶνος*, cone.] The antero-external cusp in the upper molar teeth of mammals. See cut under ★*tooth*, 1.

paraconic (par-ạ-kon′ik), *a.* [*para-* + *acon*(*it*)*ic.*] Related to aconitic acid.—**Paraconic acid,** a deliquescent crystalline acid, $C_5H_6O_4$, which is the anhydrid of itamalic acid.

paraconid (par-ạ-kō′nid), *n.* [Gr. *παρά*, near, + *κῶνος*, cone, + *-id²*.] That cusp in the lower molars and premolars of mammals which is homologous with the paracone in the upper molars. In the lower teeth the paraconid is situated on the lingual side of the tooth-crown, while in the upper jaw its homologue is on the labial side. See cut under ★*tooth*, 1.

> The second molar has the same composition as the first, except that the *paraconid* is small and connate with the protoconid.
> *W. D. Matthew*, in Bulletin Amer. Mus. Nat. Hist., [XVI. 282.

paraconine, paraconiine (par-ạ-kō′nin, par-ạ-kō′ni-in), *n.* [*para-* + *conine, coniine.*] A yellow liquid, $C_8H_{15}N$, made by heating butyric aldehyde with ammonia. It is also made from butylidene chlorid or bromide and alcoholic ammonia. It is as poisonous as conine and has a similar odor.

paracope (pa-rak′ọ-pẹ), *n.* [NL., < Gr. *παρακοπή*, infatuation, delirium.] Slight mental disturbance occurring in febrile conditions; the border-land between delirium and insanity.

paracopic (par-ạ-kop′ik), *a.* [*paracop*(*e*) + *-ic.*] Relating to, or exhibiting, paracope.

paracopulation (par″ạ-kop-ụ-lā′shọn), *n.* [*para-* + *copulation.*] A term applied to the supposed copulation of a nucleus-like body ('copulation-cell') with one of the pronuclei in the eggs of cladoceran *Crustacea.* *Weismann* and *Ischikawa.*

Paracoto bark. See ★*bark²*.

paracotoin (par-ạ-kō′tō-in), *n.* [*paracoto* + *-in²*.] A crystalline substance obtained from paracoto bark, used medicinally, in diarrhea, etc., like cotoin, but having only one half or one third the strength of the latter.

paracotol (par-ạ-kō′tol), *n.* [*paracoto* + *-ol.*] A phenol-like liquid, $C_{15}H_{24}O$ or $C_{15}H_{26}O$(?), contained in the volatile oil of paracoto bark. It boils at 220–222° C.

paracoumaric (par″ạ-kö-mar′ik), *a.* [*para-* + *coumaric.*] Designating an acid isomeric with coumaric acid.—**Paracoumaric acid,** a crystalline acid, $C_9H_8O_3 + H_2O$, found in aloes and the resins of the black fir (*Pinus laricio*) and of *Xanthorrhœa hastilis.* It is also made synthetically. Also called *parahydroxycinnamic acid.* It melts at 206° C.

para-cresalol (par-ạ-kres′ạ-lol), *n.* [*para-* + *cres*(*ol*) + *-al³* + *-ol.*] The trade-name of the product of the condensation of salicylic acid with paracresol, used medicinally in cholera, dysentery, etc.

paracresol (par-a-krē′sol), *n.* [*para-* + *cresol.*] A crystalline compound, $C_6H_4(CH_3)$-(OH), which occurs in human urine in cases of erysipelas and scarlatina, in creosote from wood-tar, and as cresyl-sulphuric acid in the urine of cows and horses. It is also formed synthetically and by the decay of animal matter, tyrosin, etc. It melts at 36° C.

paracribrum (par-ạ-krib′rum), *n.*; pl. *paracribra* (-rạ̈). [*para-* + L. *cribrum*, a sieve.] A sac secondarily developed from the embryonic cribrum. *Jour. Roy. Micros. Soc.*, Feb., 1905, p. 42.

Paractidæ (pa-rak'ti-dē), *n. pl.* [NL., < *Paractis* + *-idæ*.] A family of zoantharians, having digitate tentacles, pedal disk, no acontia, strong mesodermal sphincter, and numerous perfect mesenteries. It includes about a dozen genera, among them being *Paractis*, *Paractinia*, and *Pycnanthus*.

Paractis (pa-rak'tis), *n.* [NL.] The typical genus of the family *Paractidæ*. *Milne-Edwards*, 1857.

Paracusis loci, inability to locate a sound.

paracyanate (par-a̤-sī'a̤-nāt), *n.* [*para-* + *cyanate*.] An old name for a fulminate. *Berzelius*.

paracyanide (par-a̤-sī'a̤-nid), *n.* [*para-* + *cyanide*.] Same as *fulminate*.

Paracyclas (par-a̤-sī'klas), *n.* [NL., < Gr. *παρά*, near, + *κυκλάς*, round.] A genus of Devonian teleodesmacean pelecypods thought to be affiliated with the *Lucinidæ*, having thin rounded concentrically striate shells without lunules and with obsolete hinge characters.

paracyclone (par-a̤-sī'klōn), *n.* [Gr. *παρά*, beside, + E. *cyclone*.] Either one of a pair of cyclones pursuing analogous paths on opposite sides of the equator.

paracyst (par'a̤-sist), *n.* [Gr. *παρά*, beside, + E. *cyst*.] Tulasne's name for one of a pair of sexual organs which occur in certain discomycetous fungi, as *Peziza*.

> The *paracyst* is a club-shaped branchlet, close to the macrocyst; the apex of the *paracyst* and the hook-like prolongation [of the macrocyst] become united.
> *H. M. Ward*, in Quart. Jour. Micros. Sci., April, 1884, [p. 280.

paracystic (par-a-sis'tik), *a.* [Gr. *παρά*, beside, + *κύστις*, bladder (cyst), + *-ic*.] Lying in the neighborhood of a bladder or of a cystic tumor.

paradactyl (par-a̤-dak'til), *n.* [Gr. *παρά*, beside, + E. *dactyl*.] In *ornith.*, the side of the toe, as distinguished in any way from the lower surface.

paradatiscetin (par″a̤-dā̤-tis'ẹ̄-tin), *n.* [*para-* + *datiscetin* (?).] A yellow crystalline compound, $C_{15}H_{10}O_6$, made by melting quercitin with caustic potash.

paradental (par-a̤-den'ta̤l), *a.* [Gr. *παρά*, beside, + E. *dental*.] Being in close proximity to a tooth.

paraderm (par'a̤-dėrm), *n.* [Gr. *παρά*, beside, + *δέρμα*, skin.] **1.** In *embryol.*, the portion of the egg-yolk which contributes cells to the formation of the embryonic body.—**2.** In *entom.*, the delicate limiting membrane surrounding the pronymph of the blow-fly. *Cambridge Nat. Hist.*, V. 164.

paradero (pä-rä-dā'rō), *n.* [Sp. *paradero*, a halting-place, < *parar*, stop.] The site of an old village, especially of one formerly occupied by the aborigines. *Keane*, Ethnology, p. 97. [Spanish America.]

paradiazin (par″a̤-dī-az'in), *n.* [*para-* + *diazin* (?).] Same as ★*pyrazin*.

paradigitaletin (par″a̤-dij-i-tā'lẹ̄-tin), *n.* [*para-* + *digital*(*in*) + *-et* + *-in*^{2}.] A compound, $C_{22}H_{34}O_7$, obtained from digitalis.

paradigmatization (par″a̤-dig″ma̤-ti-zā'-sho̤n), *n.* [*paradigmatize* + *-ation*.] The act of making into a paradigm or example.

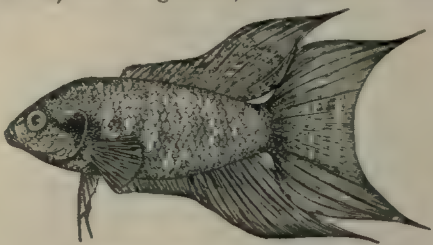
paradiplomatic (par″a̤-dip-lọ̄-mat'ik), *a.* [*para-* + *diplomatic*.] Having a meaning apart from or outside of the diplomatic or manuscript text.

paradise, *n.* **7.** In *hort.*, a dwarf apple-tree, used as a stock on which to graft other varieties for the purpose of keeping the tree small in size. There are several forms or varieties of paradise apple, most of them of unknown and early origin. They are small-stature forms of the common apple, *Pyrus Malus*.—**Fruits of paradise**, fruits always in season.

paradise (par'a̤-dīs), *v. t.*; pret. and pp. *paradised*, ppr. *paradising*. [*paradise*, *n.*] **1.** To make a paradise of.—**2.** To put into paradise; fill with supreme felicity. *N. E. D.*

paradise-duck (par'a̤-dīs-duk), *n.* *Casarca variegata*, a large, bright-colored duck of New Zealand.

paradise-fish (par'a̤-dīs-fish), *n.* A Chinese fish, *Macropodus viridi-auratus*, remarkable for its beauty and the extension of its fins. It has, like the goldfish, been made the subject of culture with reference to its beauty rather than to its food value.



Paradise-fish (*Macropodus viridi-auratus*). (From "Riverside Natural History.")

paradise-flower (par'a̤-dīs-flou″ėr), *n.* One of the cat's-claws of the southwestern United States, *Acacia Greggii*, a low tree with small bipinnate leaves, recurved spines, and fragrant creamy yellow flowers in oblong spikes.

paradise-flycatcher (par'a̤-dīs-flī″kach-ėr), *n.* See ★*flycatcher*.

paradise-grackle (par'a̤-dīs-grak″l), *n.* See *grackle*, 1.

paradise-grosbeak (par'a̤-dīs-grōs″bēk), *n.* A name loosely applied to various weaver-birds kept as cage-birds, but more particularly to one of the cutthroat finches, *Amadina erythrocephala*, of South Africa.

paradise-nut (par'a̤-dīs-nut), *n.* Same as *sapucaia-nut*.

paradise-tree, *n.* [Sp. *paraiso*, paradise.] **2.** On the isthmus of Panama and in other parts of Spanish America and the Philippine Islands, the pride-of-India, or china-tree, *Melia Azedarach*.

paradium (pa-rā'di-um), *n.* [Gr. *πα(ρά)*, near, + NL. *radium*.] A name suggested by Rutherford as a substitute for *actinium* and *ionium*. See ★*actinium*, 2. *Nature*, Oct. 31, 1907, p. 661.

paradox, *n.* **2.** The platypus or water-mole, *Ornithorhynchus paradoxus*. [Rare.]—**Thermal paradox**, an experiment in physics illustrating the lowering of the boiling-point of water by decrease of pressure. A flask of boiling water is corked, removed from the flame, inverted, and deluged with cold water. The sudden condensation of the vapor above the water within reduces the pressure, and the water boils violently, seemingly as the result of cooling; hence the name.

Paradoxical pulse. See ★*pulse*^{1}.

paradoxicality (par″a̤-dok-si-kal'ị-ti), *n.* [*paradoxical* + *-ity*.] The state or character of being paradoxical.

Paradoxides beds. See ★*bed*^{1}.—**Paradoxides horizon.** See ★*Acadian*, *n.*, 2.

Paradoxidian group. See ★*group*^{1}.—**Paradoxidian series.** Same as *Paradoxidian* ★*group*.

paradoxism (par'a̤-dok-sizm), *n.* [*paradox-* + *-ism*.] The habit of using paradox. [Rare.]

paradoxurine, *a.* **2.** Relating to or resembling the tree cats, or *Paradoxurinæ*.—**Paradoxurine section**, a division of *Viverridæ*, which comprises the genus *Paradoxurus* and other closely related forms.

paradromic (par-a̤-drom'ik), *a.* [Gr. *παράδρομος*, running alongside, + *-ic*.] Running parallel: as, a *paradromic* winding.

Paraffin paper, prosthesis. See ★*paper*, ★*prosthesis*.—**Scale paraffin**, in *petroleum-refining*, the crude mixture of solid hydrocarbons which crystallizes out from the distillates of high boiling-point, to be afterward purified, furnishing the colorless paraffin or paraffin wax of commerce.

paraffinic (par-a̤-fin'ik), *a.* [*paraffin* + *-ic*.] Derived from or related to one of the paraffins.

paraffinoid (par'a̤-fi-noid), *a.* [*paraffin* + *-oid*.] Belonging or related to the paraffin series.

paraffin-oil, *n.* In petroleum-refining, this term is specifically applied to the heavy oils of high boiling-point, used for lubrication, or from which paraffin scale may be made.

paraffin-xylol (par'a̤-fin-zī″lol), *n.* A solution of paraffin in xylol used by surgeons as a disinfectant varnish for the hands.

parafloccular (par-a̤-flok'ụ̄-lär), *a.* [NL. *paraflocculus* + *-ar*.] Of or pertaining to the paraflocculus. *Trans. Linn. Soc.*, Zool., Feb., 1903, p. 430.

paraflocculus (par-a̤-flok'ụ̄-lus), *n.*; pl. *paraflocculi* (-lī). [*para-* + *flocculus*.] A portion of the lobus flocculi, forming the greater part of the lateral pole of the cerebellum.—**Paraflocculus dorsalis**, the cerebellar folia forming the dorsal portion of the paraflocculus.—**Paraflocculus ventralis**, the cerebellar folia comprising the ventral portion of the paraflocculus.

paraform (par'a̤-fôrm), *n.* [*paraform*(*aldehyde*).] Same as ★*paraformaldehyde*.

paraformaldehyde (par″a̤-fôrm-al'dẹ̄-hīd), *n.* [*para-* + *formaldehyde*.] A polymerized formaldehyde, $(CH_2O)_n + H_2O$, formed by evaporation of an aqueous solution of formaldehyde. It is an amorphous solid that dissolves gradually in water. By heating with water at 130° C. it is reconverted to formaldehyde. It is used as an antiseptic.

parafrase, parafrast. Amended spellings of *paraphrase*, *paraphrast*.

parafumaric (par″a̤-fụ̄-mar'ik), *a.* [*para-* + *fumaric*.] Same as *maleic*.

paragalactan (par″a̤-ga-lak'ta̤n), *n.* [*para-* + *galact*(*ose*) + *-an*.] A gummy substance, $C_6H_{10}O_5$, found in the cell-membranes of the seeds of lupines: insoluble in water, but soluble in a hot solution of potassium hydroxid. It is hydrolyzed by dilute sulphuric acid, giving galactose and furfural.

paragalactin (par″a̤-ga-lak'tin), *n.* [*para-* + *galactin*.] Same as ★*paragalactan*.

paragamic (par-a̤-gam'ik), *a.* [*paragam*(*y*) + *-ic*.] Pertaining to or of the nature of paragamy.

paragamy (pa-rag'a̤-mi), *n.* [Gr. *παρά*, alongside of, + *γάμος*, marriage.] A method of cell-conjugation in which nuclear changes are suspended for vegetative growth between nuclear fusion (karyapsis) and chromatin fusion (mitapsis). The cellular structures of the higher plants and animals are built of paragamic cells, the nuclei having double sets of chromosomes. *Cook and Swingle*.

paraganglion (par-a̤-gang'gli-o̤n), *n.*; pl. *paraganglions*, *paraganglia* (-o̤nz, -ä̤). [NL., < Gr. *παρά*, beside, + *γάγγλιον*, ganglion.] One of the crescentic or oval groups of cells in the medullary portion of the adrenal bodies.

> These occur in the medullary substance of the adrenal bodies, in the so-called *paraganglia* of the same organs.
> *Med. Record*, Aug. 3, 1907, p. 188.

paragastral (par-a̤-gas'tra̤l), *a.* Same as *paragastric*.

paragenesis, *n.* **1.** In *biol.*: (*b*) Catagenesis. [Rare.]

> The term 'catagenesis' is to me objectionable, and *paragenesis* would be better.
> *Hyatt*, Biol. Lectures, 1899, p. 146.

paragerm-plasm (par-a̤-jėrm'plazm), *n.* [Gr. *παρά*, beside, + E. *germ-plasm*.] Accessory germ-plasm. See ★*germ-plasm*.

paragerontic (par″a̤-jẹ̄-ron'tik), *a.* [*para-* + *gerontic*.] Of or pertaining to the latest substage of the gerontic stage of ontogenetic development, when the individual presents the appearance of extreme senility during a short period before death. See ★*gerontic*.

> The smooth round shell of the whorl of the *paragerontic* ammonoid . . . cannot be considered as a reversion. *Hyatt*, in Proc. Boston Soc. Nat. Hist., 1893, p. 99.

paraglossitis (par″a̤-glo-sī'tis), *n.* [NL., < Gr. *παρά*, beside, + *γλῶσσα*, tongue, + *-itis*.] Inflammation at the base of the tongue.

paragluconic (par″a̤-glö-kon'ik), *a.* [*para-* + *gluconic*.] Derived from gluconic acid. (See ★*gluconic*.)—**Paragluconic acid**, a compound obtained by the action of nitric acid on gluconic acid. It was in reality impure gluconic acid.

paragnath (par'ag-nath), *n.* [Gr. *παρά*, beside, + *γνάθος*, jaw.] **1.** In crustaceans, one of the delicate unjointed processes between the mandibles and maxillæ, forming a sort of lower lip.—**2.** In some annelids, one of the horny tooth-like processes or denticles on the wall of the buccal cavity. Also *paragnathon*, *paragnathum*, and *paragnathus*.

paragnathon (pa-rag'nā̤-thon), *n.*; pl. *paragnatha* (-thä̤). [NL.] Same as ★*paragnath*.

paragnathum (pa-rag'nā̤-thum), *n.*; pl. *paragnatha* (-thä̤). [NL.] Same as ★*paragnath*.

paragneiss (par'a̤-nīs), *n.* [Gr. *παρά*, beside, + G. and E. *gneiss*.] In *petrog.*, a gneiss formed by the metamorphism of sedimentary deposits: opposed to ★*orthogneiss*. *Rosenbusch*, 1901.

paragogize (par'a̤-gọ̄-jīz), *v. t.*; pret. and pp. *paragogized*, ppr. *paragogizing*. [*paragoge* + *-ize*.] To add, as a final letter or syllable; render paragogic. See *paragoge*.

paragonimiasis (par″a̤-gon-i-mī'a̤-sis), *n.* [NL., < *Paragonimus* + *-iasis*.] A general term including all infections (cerebral as well as pulmonary) with lung-flukes (genus *Paragonimus*), such as pulmonary distomatosis or parasitic hemoptysis in man. *Stiles and Hassall*, 1900.

Paragonimus (par-a̤-gon′i-mus), *n.* [NL. (Braun, 1899), < Gr. *παρά*, beside, + *γόνιμος*, productive.] A genus of trematode worms of the family *Fasciolidæ*. These worms are from 8 to 16 millimeters long and live as parasites in the lungs of man, cats, and various other mammals. In man, especially in Asia, they cause a parasitic hemoptysis, long mistaken for tuberculosis. The type is *P. westermanii*.

paragonitic (par″a̤-gọ-nit′ik), *a.* [*paragonite* + *-ic*.] Containing paragonite; resembling paragonite.

paragraf, *n.* and *v.* An amended spelling of *paragraph*.

paragraphic, *a.* **3.** Relating to or affected with paragraphia. *Buck*, Med. Handbook, I. 410.

paragraphy (par′a̤-grȧf-i), *n.* [*paragraph* + *-y*³.] Newspaper paragraphs collectively.—**2.** The writing of brief articles or paragraphs for newspapers.

paragrene (par′a̤-grēn), *n.* [Appar. a manipulation, into a chemical-looking form, of *Paris green*.] The trade-name of an insecticide preparation consisting essentially of copper arsenite and arsenious oxid.

paraguatan (pä-rä-gwä-tän′), *n.* [Native name.] A tall rubiaceous tree of Venezuela, *Sickingia tinctoria*. It yields a rose-colored wood, easily worked and taking a fine polish, but losing its bright color on exposure to light and air. Shavings of the wood are used in Venezuela for dyeing a pale red. Also called *cucharo*.

Paraguay bur. See ★*bur*¹.

paraheliode (par-a̤-hē′li-ōd), *n.* [Gr. *παρά*, against, + *ἥλιος*, sun.] In *bot.*, an organ serving to screen underlying tissues from the sun: applied to the spines on the tubercles of *Coryphantha*. *O. V. Darbishire*, in Jour. Roy. Micros. Soc., Dec., 1904, p. 664.

parahemoglobin (par″a̤-hem-ọ-glō′bin), *n.* [*para-* + *hemoglobin*.] An altered form of hemoglobin found in the tissues in granular or crystalline form. It is of a dark brown or reddish color, and is met with in diseases which are associated with extensive blood-destruction. Also *parahæmoglobin*.

parahyal (par-a̤-hī′a̤l), *a.* [Gr. *παρά*, beside, + E. *hyal*.] Noting a slender process directed forward and slightly upward from the superior face of the posterior portion of the basihyal of some parrots, notably the lories. *Proc. Zool. Soc.* London, Jan., 1899, p. 20.

parakinetic (par″a̤-ki-net′ik), *a.* [*parakinesis* (*-et-*) + *-ic*.] Relating to or affected by parakinesis. Also *paracinetic*.

parakite (par′a̤-kīt), *n.* [Gr. *παρά*, beside, + E. *kite*¹.] A number of kites connected in series and flying tandem, used for attaining great heights and sending up instruments for meteorological observations, aërial photography, signaling, etc.

Paralabrax (par-a̤-lā′braks), *n.* [NL., < Gr. *παρά*, near, + NL. *Labrax*.] A genus of serranoid fishes, confined to the coasts of tropical America.

paralactate (par-a̤-lak′tāt), *n.* [*paralact*(*ic*) + *-ate*¹.] A salt of paralactic acid.

paralambdacism (par-a̤-lam′da̤-sizm), *n.* [Gr. *παρά*, beside, + E. *lambdacism*.] Defective pronunciation of the letter *l*, or the substitution for it of some other sound.

paralaurionite (par-a̤-lâ′ri-ọn-īt), *n.* [Gr. *παρά*, near, + NL. *Λαύριον*, Laurion, + *-ite*².] An oxychlorid of lead, PbClOH, like laurionite in composition, but monoclinic in crystallization: taken from Laurion, Greece.

paralbumin (par-al-bū′min), *n.* [*para-* + *albumin*.] A mixture of serum-albumin and pseudomucin (metalbumin) which occurs in ovarian cysts: originally thought to be a single substance.

paraldimine (par-al′di-min), *n.* [*paralde*(*hyde*) + *imine*.] Imidoparaldehyde, a mobile liquid, $C_6H_{13}NO_2$, made very indirectly from aldehyde ammonia. It boils at 140° C. Water and dilute alcohol change it into paraldehyde and ammonia.

paralexic (par-a̤-lek′sik), *a.* Relating to or affected with paralexia.

paralgesic (par-al-jē′sik), *a.* Relating to or affected with paralgesia.

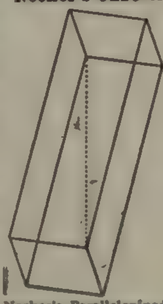
Paraliparis (par-a̤-lip′a̤-ris), *n.* [NL., < Gr. *παρά*, near, + NL. *Liparis*.] A genus of deep-sea fishes found in arctic regions and belonging to the family *Liparididæ*.

parallax, *n.*—**Binocular parallax,** the parallax of simultaneous vision with both eyes; the angle between the rays entering the right and left eye respectively when both are focused upon the same point.—**Equatorial horizontal parallax,** the diurnal or geocentric parallax of a body seen on the horizon by an observer at the earth's equator. Its measurement determines the body's distance.—**Heliocentric parallax,** the angular semidiameter of the earth's orbit as seen from a star. In no case yet found does it reach 1″. By its measurement the distance of the star is determined.—**Instrumental parallax,** the error in an angle measured on a sextant due to the fact that the horizon-glass is not on the same plane with the index-glass. It is of consequence only when the body observed is near by, and it is practically eliminated when a far-away line, such as the horizon, is employed.—**Optical parallax.** Same as *binocular* ★*parallax*.—**Parallax stereogram.** See ★*stereogram*.—**Solar parallax,** the equatorial horizontal parallax of the sun, that is, the angular semidiameter of the earth's equator as seen from the center of the sun. It is 8.80″ ± 0.02″, and determines the distance of the sun, or the *astronomical unit*, in terms of the equatorial semidiameter of the earth.—**Stellar parallax,** the heliocentric or annual parallax of a star.

parallel. I. *a.* **6.** In *archery*, having the same diameter throughout its length; cylindrical: said of an arrow.—**Parallel columns.** See ★*column*.—**Parallel iron.** See ★*iron*.—**Parallel law,** in *psychophys.*, the law, laid down by Fechner, that "if two stimuli of different intensity are applied to a sensitive organ for a certain length of time, the absolute sensations, and therefore the excitations, aroused by the stimuli are diminished by fatigue; the sensed difference, however, remains unchanged, precisely as it would, according to Weber's law, had the objective stimuli been changed in the same ratio." *E. B. Titchener*, Exper. Psychol., II. ii. xxxii.—**Parallel pencil, postulate, variation.** See ★*pencil*¹, etc.

II. *n.* **8.** In *elect.*, the connection of two or more electric circuits or pieces of apparatus such that the current divides between them, that is, that they receive or produce the same voltage but different currents. Also called *multiple*.—**Asymptotic parallels,** parallel straight lines which continually approach each other yet never meet at any finite or proper point: such are Bolyai parallels.—**Clifford parallels,** straights remaining fixed during a translation of simple elliptic space.—**Ethnographic parallels.** See ★*ethnographic*.—**Lemoine parallels** of a triangle, the parallels to its sides, through the Lemoine point.—**Limiting parallels,** in *astron.*, parallels of latitude on the earth's surface inclosing a zone outside of which a given star occultation or solar eclipse is nowhere visible.—**Ludlam's parallel postulate.** See ★*postulate*.

parallelepiped, *n.*—**Magic parallelepiped,** a generalization to three dimensions of the magic square.—**Necker's cube** or **parallelepiped,** in *exper. psychol.*, an outline drawing of a parallelepiped, with one diagonal drawn in, embodying an illusion of reversible perspective. The figure was published by Necker in 1832: the name 'cube' properly belongs to a similar figure published by Wheatstone in 1838. See ★*illusion*, 2.—**Rectangular parallelepiped,** a cuboid.



Necker's Parallelepiped.

parallelepipedoid (par-a̤-lel-e-pip′e-doid), *n.* [*parallelepiped* + *-oid*.] In *anthrop.*, a cranium the norma verticalis of which has a somewhat rectangular form. *S. Sergi* (trans.), Var. of the Human Species, p. 38.

parallelepipedous (par-a̤-lel-e-pip′e-dus), *a.* [*parallelepiped* + *-ous*.] Having the shape of a parallelepiped: a descriptive term sometimes used in entomology.

Parallelia (par-a̤-lē′li-ạ̈), *n.* [NL. (Huebner, 1816), < Gr. *παράλληλος*, parallel.] **1.** An unimportant genus of noctuid moths containing but a single American species, *P. bistriaria*, inhabiting the Atlantic States.—**2.** [*l. c.*] A moth of this genus.—**Two-lined parallelia,** an American noctuid moth, *Parallelia bistriaria*, brown in color, with each fore wing crossed by two parallel lines. Its larvæ live on maple.

parallelinervate (par-a̤-lel-i-nėr′vāt), *a.* Same as *parallelinerved*. *N. E. D.*

parallelinervous (par-a̤-lel-i-nėr′vus), *a.* Same as *parallelinerved*.

parallelism, *n.* **6.** The opinion that the relation between the brain and the mind, although it is one of concomitant variation, is not the relation of cause and effect; the opinion that mental process and brain process are parallel events, and that they do not interact. Metaphysically, parallelism may be either dualistic or monistic; in the latter case, the relation of mind and brain may be figuratively described as that of the concave and convex aspects of a circle. Psychologically, parallelism may be held to imply a special law of mental causation, or it may be content to appeal to the body for the explanation of mind without relating mental processes among themselves. Specifically called *psychophysical* ★*parallelism*, which see below.

> Acceptance of this principle of *parallelism*, as a working hypothesis in psychology, enables us to avoid all the conflicts and difficulties into which the principle of interaction plunges us. *E. B. Titchener*, Outline of Psychol., p. 364.

> The idea meant to be conveyed by the spatial figure of *parallelism* is that of the absence of causal relations, of mere concomitance.
>
> *C. A. Strong*, Why the Mind has a Body, p. 2.

7. In *evolution*, the independent development of similar species or types of animals in different regions.

> The case of the horses is often cited as suggesting that such a *parallelism* in evolution may have occurred; because the series of ancestral horses traced through the Tertiary strata of Europe is closely similar to, but not quite identical with the ancestral series found in the same order in the corresponding rocks of North America.
>
> *A. S. Woodward*, Outlines of Vertebrate Palæontology, [XXII.

Angle of parallelism. See ★*angle*³.—**Epistemological parallelism,** the opinion of some philosophers of the general following of Kant that general relations which are native forms of the understanding are at the same time dominant in the absolutely objective world, a position held by Schleiermacher, Überweg, and others. The term cannot properly be applied to a similar doctrine held by pre-Kantian writers; otherwise it must be attributed to all those before Kant who believed in innate ideas.—**Law of parallelism.** See ★*law*¹.—**Methodological parallelism.** See ★*methodological*.—**Psychophysical parallelism,** the doctrine that mental and bodily processes run their course side by side, each varying with variation of the other, but that there is no causal relation or relation of interaction between the two series of changes. Psychophysical parallelism appears in modern times both as a working hypothesis or heuristic principle within psychology and also as an ultimate metaphysical principle. It appears in both cases in a large variety of forms, but its essential features are those given above.

> The principle of *psychophysical parallelism*, then, refers always to a parallelism of elementary physical and psychical processes, and not to any parallelism of complex activities on either side or of mental function and bodily structure.
>
> *W. Wundt* (trans.), Human and Animal Psychol., p. 448.

> There must be an elementary process on the physical side, corresponding to every such process on the psychical side. This general principle is known as the principle of *psychophysical parallelism*. It has an empirico-psychological significance and is thus totally different from certain metaphysical principles that have sometimes been designated by the same name.
>
> *W. Wundt* (trans.), Outlines of Psychol., p. 318.

> The last of these [the monism of Spinoza, which reduced matter and mind to parallel attributes of the One Substance]—severed, however, from Spinoza's metaphysics—is now the prevailing theory, and to it the term *psychophysical parallelism* most properly applies.
>
> *Encyc. Brit.*, XXXII. 66.

parallelist (par′a̤-lel-ist), *n.* and *a.* **I.** *n.* An adherent of the metaphysical theory of psychophysical parallelism. See ★*parallelism*, 6. *C. A. Strong*, Why the Mind has a Body, p. 23.

II. *a.* Consonant to the doctrine of psychophysical parallelism. *C. A. Strong*, Why the Mind has a Body, p. 21.

parallelization (par-a̤-lel-i-zā′shọn), *n.* [*parallelize* + *-ation*.] The act of parallelizing or making parallel.

> It was briefly intimated . . . that combing was a method of dealing in detail with the fibres, and that its result is to effect a much greater *parallelisation* of the fibres in the carded sliver.
>
> *Nasmith*, Cotton Spinning, p. 150.

Parallelodon (par-a̤-lel′ọ-don), *n.* [NL., < Gr. *παράλληλος*, parallel, + *ὀδούς* (*ὀδοντ-*), tooth.] A genus of prionodesmacean pelecypods of the superfamily *Arcacea*. It is characterized by elongate, subquadrate, smooth or ribbed shells having an amphidetic ligament; large beaks placed well forward; 4–6 oblique anterior teeth; and 3 long posterior ridge-like teeth placed parallel to the hinge-line. The genus occurs in formations from Devonian to recent age, but is specially abundant, under its subgeneric modification *Macrodon*, in the Carboniferous. Properly *Parallelodus*.

Parallelodontidæ (par″a̤-lel-ọ-don′ti-dē), *n. pl.* [NL., < *Parallelodon*(*t-*) + *-idæ*.] A family of arciform prionodesmacean pelecypods, the shells of which have a multivincular ligament and elongated posterior teeth parallel to the hinge-line.

parallelogram, *n.*—**Heronic parallelogram,** one having rational sides, diagonals, and area.—**Newton's parallelogram,** a process for the development of a root of an algebraic equation in series.—**Parallelogram of accelerations.** See ★*acceleration*.—**Parallelogram of velocities.** See ★*velocity*.

parallelosteric (par-a̤-lel-ọ-ster′ik), *a.* [Gr. *παράλληλος*, parallel, + *στερεός*, solid.] In *phys. chem.*, exhibiting equal differences of atomic volume: said of analogous pairs of compounds. *Watts*, Dict. Chem., III. 432.

parallelosterism (par″a̤-le-los′tẹ-rizm), *n.* [Gr. *παράλληλος*, parallel, + *στερεός*, solid, + *-ism*.] In *chem.*, a term introduced by Schroeder to represent the relation assumed by him to exist between the volumes of solid compounds and their atomic composition.

paralogic, *a.* Same as *paralogical*.

paralogist (pa-ral′ọ-jist), *n.* [*paralog-ism* + *-ist*.] One who uses paralogisms; one who reasons fallaciously.

paralogistic (par″a̤-lọ̄-jis′tik), *a.* [*paralogist* + *-ic.*] Of the nature of a paralogism; fallacious; falsely reasoned.

Paralonchurus (par″a̤-long-kū′rus), *n.* [NL., < Gr. *παρά*, beside, + NL. *Lonchurus.*] A genus of fishes of the family *Sciænidæ*, found on the Pacific coast of Central and South America.

paraluminite (par-a-lū′mi-nīt), *n.* [*para-* + *aluminite.*] A hydrous aluminium sulphate, resembling aluminite and near it in composition.

paralysis, *n.*—**Ascending paralysis,** paralysis which begins in the peripheral parts and advances toward the center.—**Birth paralysis.** Same as *obstetrical paralysis.*—**Crutch paralysis,** paralysis resulting from pressure of the fork of a crutch upon the nerves in the axilla.—**Decubitus paralysis.** See ★*decubitus.*—**Diphtheritic paralysis,** paralysis which involves primarily the muscles of the throat, occurring during convalescence from diphtheria.—**Functional paralysis,** temporary paralysis seemingly not dependent upon a nerve-lesion.—**Glosso-labio-laryngeal paralysis.** Same as *chronic bulbar paralysis* (which see, under *bulbar*).—**Histrionic paralysis,** paralysis of certain of the facial muscles giving to the face a cast expressive of some emotion.—**Organic paralysis,** paralysis dependent upon actual lesion of nerve-substance.—**Pott's paralysis,** paralysis which accompanies Pott's disease, due to pressure upon the spinal cord.—**Pressure paralysis,** paralysis, usually temporary, resulting from pressure on one of the large nerve-trunks.—**Psychic paralysis.** Same as *hysterical paralysis.*—**Spinal paralysis,** paraplegia; paralysis due to a lesion of the spinal cord.

Paralytic gait. See ★*gait*[1].

paralyzant, *n.* **II.** *a.* Causing paralysis. *Buck*, Med. Handbook, I. 420.

paralyzer, *n.* **2.** In *phys. chem.*, a substance whose presence prevents or retards a chemical reaction. *Amer. Chem. Jour.*, June, 1903, p. 548.

param (par′am), *n.* [*para-* + *am*(*ide*).] Dicyandiamide, a crystalline compound, $C_2H_4N_4$, formed variously, as by evaporating an aqueous solution of cyanamide. It melts at 205° C., and is easily altered by reagents.

paramagnet (par-a̤-mag′net), *n.* [Gr. *παρά*, beside, + E. *magnet.*] A substance having paramagnetic as opposed to diamagnetic properties. [Rare.]

paramagnetic, *a.* **2.** Of higher permeability than air.

paramaleic (par″a̤-mā′lẹ̄-ik), *a.* [*para-* + *maleic.*] Related to maleic acid.—**Paramaleic acid.** Same as *fumaric acid.*

paramalic (par-a̤-mā′lik), *a.* [*para-* + *malic.*] Related to malic acid.—**Paramalic acid,** a crystalline dibasic acid, $O<\begin{matrix}CH_2-CO_2H\\CH_2-CO_2H+H_2O\end{matrix}$, made by oxidizing diethylene, or triethylene, alcohol and by boiling chloracetic acid with lime or certain other bases. It melts at 148° C.

paramandelic (par″a̤-man-del′ik), *a.* [*para-* + *mandelic.*] Same as ★*mandelic.*

paramastitis (par″a̤-mas-tī′tis), *n.* [NL., < Gr. *παρά*, beside, + *μαστός*, breast, + *-itis.*] Inflammation in the neighborhood of the breast.

Paramecina (par″a̤-mẹ̄-sī′nä̤), *n. pl.* [NL., < *Paramecium* + *-inä.*] A family of ciliate infusorians which contains the single genus *Paramecium* (which see).

parameconic (par″a̤-mẹ̄-kon′ik), *a.* [*para-* + *meconic.*] Same as ★*comenic.*

paramedian (par-a̤-mē′di-a̤n), *a.* [*para-* + *median.*] Situated on one side of, but near, the median line.—**Paramedian dorsal sulcus.** See *sulcus.*

paramelaconite (par′a̤-me-lak′ọ̄-nīt), *n.* [*para-* + *melaconite.*] An oxid of copper which occurs in black tetragonal crystals. Its exact composition is uncertain. It is found in Arizona.

paramenispermine (par″a̤-men-i-spėr′min), *n.* [*para-* + *menispermine.*] A volatile crystalline alkaloid, $C_{18}H_{24}O_2N_2$ (?), obtained from Indian berries, *Cocculus Indicus.* It dissolves in acids, but does not appear to form salts with them.

Paramera (pa-ram′ẹ-rä̤), *n. pl.* [NL.] A grade of zoantharian *Anthozoa* in which the primitive bilateral symmetry of the zoöid is retained, or at most is only partially obscured by the secondary development of mesenteries in some of the primary intermesenterial chambers. It includes the orders *Antipathidea*, *Cerianthidea*, *Zoanthidea*, *Edwardsiidea*, and *Proactiniæ*: contrasted with ★*Cryptoparamera.*

paramesial (par-a̤-mes′i-a̤l), *a.* [Gr. *παρά*, beside, + E. *mesial.*] Lying at one side of and near the median line.

parametaphysical (par″a̤-met-a̤-fiz′i-ka̤l), *a.* [*para-* + *metaphysical.*] Of the nature of false metaphysics; erroneous from the metaphysical point of view.

> Physical or paraphysical; logical or paralogical; nay even metaphysical or *parametaphysical*; nothing comes amiss to a German romancer.
>
> *Blackwood's Mag.*, XX. 853.

Parameter of a conic, the line drawn through the focus perpendicular to the major axis and terminated at both extremities by the curve. See *parameter*, 1 (*a*).

parametrium (par-a̤-mē′tri-um), *n.* [NL., < Gr. *παρά*, beside, + *μήτρα*, uterus.] Connective tissue beneath the peritoneum at the side of the uterus.

paramic (pa-ram′ik), *a.* [*param*(*ide*) + *-ic.*] Derived from paramide.—**Paramic acid,** a crystalline acid, $CO_2HC_6<\begin{matrix}(C_2O_2NH)_2\\CONH_2\end{matrix}$ (?), whose ammonium salt is formed by the action of a cold solution of ammonia on paramide.

paramide (pa-ram′id), *n.* [*para-* + *amide.*] A compound, $C_6\left(\begin{matrix}CO\\CO\end{matrix}>NH\right)_3$, made by heating ammonium mellitate. It is a powder, insoluble in water and alcohol.

paramidophenol (pa-ram″i-dọ̄-fē′nol), *n.* A crystalline, sublimable compound, C_6H_4-$(NH_2).OH$, obtained by the reduction of paranitrophenol, $C_6H_4(NO_2).OH$, with tin and hydrochloric acid, whereby the nitro group is changed to the amido group: a strong reducing agent.

paramimia (par-a̤-mim′i-ä̤), *n.* [Gr. *παρά*, beside, + *μιμία*, imitation.] In *pathol.*, want of agreement in signification between a gesture and the spoken word which it accompanies.

paramo, *n.* According to Schimper ("Plant-Geog." (trans.), p. 743), the paramos, lying in the alpine region of the equatorial Cordilleras in Colombia, Ecuador, and Venezuela, are essentially steppes, and are distinguished in character from the punas by their moisture. They begin at the limit of dwarf forest and shrub wood, are either treeless or bear isolated gnarled individuals, and are covered with a vegetation of grass and low herbs, with a peculiar taller growth of composite plants, called ★*frailejon* (which see). Compare *puna.*

paramucin (par-a̤-mū′sin), *n.* [Gr. *παρά*, beside, + L. *mucus*, mucus, + *-in*[2].] A special kind of ovarian colloid.

paramusia (par-a̤-mū′si-ä̤), *n.* [NL., < Gr. *παρά*, beside, + *μοῦσα*, muse.] Disorder of the musical sense, the power of distinguishing musical notes, or of singing correctly, being lost.

paramylum (pa-ram′i-lum), *n.* [NL., < Gr. *παρά*, beside, + *ἄμυλον*, starch.] A colorless granular carbohydrate, $(C_6H_{10}O_5)_n$, which is found in certain infusoria, as *Euglena viridis.* It is related to starch (whence the name), but is not acted on by diastase or turned blue by iodine.

paramyosinogen (par″a̤-mī-ọ̄-sin′ọ̄-jen), *n.* [*para-* + *myosin* + *-gen.*] Same as *myosin.*

paramyotone (par-a̤-mī′ọ̄-tōn), *n.* [*paramyotonus.*] A condition marked by paramyotonus.

paramyotonia (par″a̤-mī-ọ̄-tō′ni-ä̤), *n.* [NL., < Gr. *παρά*, beside, + *μῦς* (*μυ-*), muscle, + *τόνος*, tension.] A condition marked by tonic muscular spasm.—**Paramyotonia congenita,** a disease resembling in its general features Thomsen's disease.

paramyotonus (par-a̤-mī-ot′ọ̄-nus), *n.* [See ★*paramyotonia.*] A tendency to tonic muscular spasm.

paranal (par-ā′na̤l), *a.* [Gr. *παρά*, beside, + L. *anus*, anus.] About or beside the anus: as, the *paranal* pores of certain scale-insects.—**Paranal lobes.** See ★*lobe.*

paranaphthalene, paranaphthalin (par-a̤-naf′tha̤-lēn, -lin), *n.* [*para-* + *naphthalene.*] Same as *anthracene.*

paranasty (par′a̤-nas-ti), *n.* [Gr. *παρά*, beside, + *ναστός*, close-pressed, solid, + *-y*[3].] In *bot.*, accelerated growth, due to a diffused stimulus, on the side of a dorsiventral organ, inducing lateral curvature. *Pfeffer* (trans.), Physiol. of Plants, II. 73.

paranatellon (pa̤-ran-a̤-tel′on), *n.* [NL., < Gr. *παρανατέλλων*, ppr. of *παρανατέλλειν*, rise beside, < *παρά*, beside, + *ἀνάτελλειν*, rise.] A star which rises at the same time as another star or object.

paranephric (par-a-nef′rik), *a.* [Gr. *παρά*, beside, + *νεφρός*, kidney, + *-ic.*] **1.** Situated near or surrounding the kidney.—**2.** Relating to the suprarenal capsule.

paranephritic (par-a̤-nef-rit′ik), *a.* [*paranephritis* (*t-*) + *-ic.*] Pertaining to or affected with paranephritis.

paranepionic (par-a̤-nep-i-on′ik), *a.* [*para-* + *nepionic.*] Of or pertaining to the close of the larval or young stage of an organism, immediately preceding the neanic, or adolescent, stage. *Hyatt.*

paranesthesia (par″an-es-thē̆′si-ạ̈), *n.* Same as *para-anæsthesia.*

parangi (pa-räng′gē), *n.* [Cingalese?] A skin-disease of Ceylon, supposed to be the same as frambœsia or yaws.

> Jonathan Hutchinson, during his visit to the East, describes cases of *parangi* which he observed in Ceylon. He is of opinion that these cases of *parangi* are yaws, or frambœsia tropica, and he maintains that the signs and symptoms of the patients he examined confirm him in the opinion that they are merely manifestations of syphilis. *Jour. Trop. Med.*, March 16, 1903, p. 100.

paraniline (pa-ran′i-lin), *n.* [*para-* + *aniline.*] A crystalline base, $C_{12}H_{14}N_2$, found in the high-boiling residues in the preparation of aniline. It melts at 192° C. and boils at above 330° C.

paranite (pa-rä′nīt), *n.* [*Pará*, a city in Brazil, whence rubber is exported, + *-n-* + *-ite*[2].] The trade-name of a rubber-covered insulated wire.

paranitraniline (par″a̤-nī-tran′i-lin), *n.* [*para-* + *nitro-* + *aniline.*] Nitroaminobenzene in which the nitro and amino groups hold the para position in the benzene ring. It is extensively used in textile coloring, particularly in the production of para red.—**Paranitraniline red.** See ★*red*[1].

paranitrosophenol (par″a̤-nī-trō″sọ̄-fē′nol), *n.* Same as ★*quinone monoxime.*

parankerite (pa-rang′kėr-īt), *n.* [*para-* + *ankerite.*] A name given by Boricky to a variety of ankerite having a composition expressed by the formula $CaFeC_2O_6$ + *n*-$(CaMgC_2O_6)$, where *n* is equal to 2 (in normal parankerite) or some greater number.

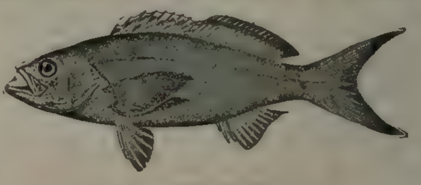
paranœac, *n.* **II.** *a.* Pertaining to or affected with paranœa.

paranœal, paranoial (par-a̤-nē′a̤l, -noi′a̤l), *a.* Same as ★*paranœac.*

paranoid[1] (par′a̤-noid), *a.* [*paran*(*œa*) + *-oid.*] Resembling paranœa.

paranoid[2] (par′a̤-noid), *n.* [*paran*(*ite*) + *-oid.*] The trade-name for a plastic material which resembles celluloid, used for dominoes, poker chips, etc.

Paranthias (pa-ran′thi-as), *n.* [NL., < Gr. *παρά*, beside, + NL. *Anthias.*] A genus of serranoid fishes, found in deep waters on both coasts of tropical America.


Paranthias furcifer.
(From Bulletin 47, U. S. Nat. Museum.

paranthracene (pa-ran′thra̤-sēn), *n.* [*para-* + *anthracene.*] A white, crystalline, polymeric anthracene, $(C_{14}H_{10})_2$, which crystallizes from a saturated solution of anthracene in xylene when exposed to sunlight. Other solvents, as benzene or alcohol, can be used. It melts at 244° C., and is much more stable than anthracene.

paranucleic (par-a̤-nụ̄-klē′ik), *a.* [*paranucle*(*in*) + *-ic.*] Of or pertaining to paranuclein; specifically, noting an acid of unknown composition which combines with proteid to form paranuclein.

paranuclein (par-a̤-nū′klẹ̄-in), *n.* [*para-* + *nucleus* + *-in*[2].] **1.** A phosphorized complex which is split off and thrown down at a certain stage in the process of digesting nucleoalbumins with pepsin and hydrochloric acid. It subsequently becomes dissolved. Chittenden's dyspeptone, obtained from casein, is probably a paranuclein. Unlike the true nucleins the paranucleins do not yield xanthin bases on decomposition. Also called *pseudonuclein.*—**2.** In *cytol.*, the pyrenin of Schwarz; the substance of plasmosomes, or true nucleoli: said to consist of compounds of albumin and paranucleic acid. *O. Hertwig*, 1878.

paranucleinic (par-a̤-nū-klẹ̄-in′ik), *a.* Noting an acid radical which is apparently contained in the paranucleins: analogous to the presence of a nucleinic acid complex in the nucleoproteids. Such acids have been obtained from casein and from the yolk of eggs.

paranucleo-albumin (par-a̤-nū″klẹ̄-ọ̄-al-bū′min), *n.* A compound of paranuclein with proteid. The most common are the caseins and vitellins.

parao[1] (pä-rä′ọ̄), *n.* [Sp., ‹ Malay *prāhu*: see *proa.*] A native boat of about 40 tons or less. [Philippine Is.]

parao[2] (pä-rä′ō), *n.* [Tahitian name. See ★*pago.*] In Tahiti, *Pariti tiliaceum*, a tree belonging to the mallow family, which supplies the natives with timber for their boats, outriggers for their canoes, sidings for their dwellings, and a very strong and valuable rope, twisted from the inner bark of its branches. The latter are divested of their leaves, cut into suitable lengths, and soaked in water for a week or ten days. The outer bark is then easily stripped off, leaving the layer of fibrous bast beneath it, which is dried and twisted into cordage. Also called *parau.* See ★*pago*, ★*balibago*, *corkwood*, and *mahoe*, 1.

Parapaguridæ (par″a̤-pā̤-gū′ri-dē), *n. pl.* [NL., ‹ *Parapagurus* + *-idæ.*] A family of deep-sea crustaceans having the characteristics of the *Paguridæ*, except that the branchial plumes are filamentous. It includes about six genera, among them being *Parapagurus*, *Paguropsis*, and *Pylocheles.*

Parapagurus (par″a̤-pā̤-gū′rus), *n.* [NL.] The typical genus of the family *Parapaguridæ. P. pilosimanus* occurs at various depths in the Atlantic. *S. I. Smith*, 1879.

parapathia (par-a̤-path′i-ä̤), *n.* [Gr. παρά, beside, + πάθος, disease.] Moral insanity.

parapathy (par-ap′a̤-thi), *n.* Same as ★*parapathia.*

parapectic (par-a̤-pek′tik), *a.* [*para-* + *pectic.*] Noting an amorphous acid, $C_{24}H_{34}O_{23}$, made by boiling pectic acid or its salts for a long time with water.

parapectin (par-a̤-pek′tin), *n.* [*para-* + *pectin.*] An amorphous compound, $C_{32}H_{48}O_{32}$, formed by boiling pectin a long time with water. It acts in all respects like pectin, except that it is precipitated by lead acetate.

parapedesis (par″a̤-pe-dē′sis), *n.* [NL., ‹ Gr. παρά, beside, + πέδησις, a bending.] The giving off of a secretion into the wrong channel, as when the liver cells (hypothetically) secrete bile into the blood-vessels, instead of into the bile-ducts.

paraperiodate (par-a̤-pē′ri-ọ̄-dāt), *n.* [*para-* + *periodate.*] A salt of periodic acid having the composition M_5IO_6, a monad metal being represented by M.

paraperitoneal (par″a̤-per″i-tọ̄-nē′al), *a.* [*para-* + *peritone(um)* + *-al*[1].] Situated near the peritoneum.

Parapetalifera (par-a̤-pet-a̤-lif′ẹ-rä̤), *n.* [NL. (Wendland, 1808), ‹ Gr. παρά, beside, + πέταλον, petal, + L. *ferre* (*fer-*) (Gr. φέρειν), bear. The allusion is to the presence of staminodia.] A genus of heath-like heavy-scented shrubs of the family *Rutaceæ.* See *Barosma* and *buchu.*

parapetalum (par-a̤-pet′a̤-lum), *n.*; pl. *parapetala* (-lä̤). [Gr. παρά, beside, + πέταλον, leaf, petal.] Any appendage to a corolla, consisting of several pieces. *Moench.*

paraphase (par′a̤-fāz), *n.* [Gr. παρά, alongside, + φάσις, phase.] One of similar correlated phases of development in the growth stages of allied species of a single genus or race.

paraphasic (par-a̤-fā′zik), *a.* [*paraphas(ia)* + *-ic.*] Relating to or affected by paraphasia. *Buck*, Med. Handbook, I. 410.

paraphenetidin (par″a̤-fẹ̄-net′i-din), *n.* [*para-* + *phenetidin.*] A para-amidophenol derivative, for example para-acetophenetidin, which is popularly known as *phenacetin*, C_6H_4-$(O.C_2H_5).(NH.C_2H_3O)$.

paraphenylene (par-a̤-fē′ni-lēn), *n.* [*para-* + *phenylene.*] An organic radical derived from benzene by the removal of two hydrogen atoms that are located in the para position. It has a valence of two and the composition $(C_6H_4 =)$.—**Paraphenylene blue.** See ★*blue.*

paraphonic (par-a̤-fon′ik), *a.* [*paraphon(y)* + *-ic.*] In *anc. Gr. music*, of or pertaining to the intervals of the fourth and fifth: opposed to ★*antiphonic*, 2.

paraphony (pa-raf′ọ̄-ni), *n.* Same as *paraphonia.*

paraphosphate (par-a̤-fos′fāt), *n.* [*para-* + *phosphate.*] Same as *pyrophosphate.*

paraphosphoric (par″a̤-fos-for′ik), *a.* Same as *pyrophosphoric.*

paraphrasable (par′a̤-frā″za̤-bl), *a.* [*paraphrase, v.*, + *-able.*] That can be paraphrased: as, the *paraphrasable* psalms.

paraphrasia (par-a̤-frā′ziä̤), *n.* [NL., ‹ Gr. παρά, beside, + φράσις, phrase.] In *pathol.*, incoherence in speech.

paraphrenia (par-a̤-frē′ni-ä̤), *n.* [NL., ‹ Gr. παρά, beside, + φρήν, mind.] In *pathol.*, disorder of the mind.

paraphrenitis (par″a̤-frẹ̄-nī′tis), *n.* [NL., ‹ Gr. παρά, beside, + φρήν, diaphragm, + *-itis.*] **1.** Inflammation of the diaphragm and contiguous structures.—**2.** [Gr. φρήν, mind.] Delirium.

paraphronesis (par″a̤-frọ̄-nē′sis), *n.* [NL., ‹ Gr. παραφρόνησις, wandering of mind, ‹ παραφρονεῖν, be beside oneself.] Same as ★*paracope.*

paraphrosyne (par-a-froz′i-nē), *n.* [NL., ‹ Gr. παραφροσύνη, wandering of mind.] Same as ★*paracope.*

Paraphthalic acid. Same as ★*terephthalic acid.*

paraphysical (par-a̤-fiz′i-ka̤l), *a.* [Gr. παρά, beside, + E. *physical.*] Aside from or subsidiary to what is physical. [Rare.]

paraphysis, *n.* **2.** An outgrowth of the roof of the fore-brain, developed in front of the epiphysis, in the hinder region of the prosencephalon.

parapicoline (par-a̤-pik′ọ̄-lin), *n.* [*para-* + *picoline.*] A polymeric form of *a*-picoline, $(C_5H_4N.CH_3)_x$, made by allowing it to stand a long time in contact with sodium.

parapineal (par″a-pin′ẹ̄-a̤l), *a.* [Gr. παρά, beside, + E. *pineal.*] Beside or near the pineal.—**Parapineal eye.** See ★*eye*[1].

paraplasis (pa-rap′lā̤-sis), *n.* [NL. formally ‹ Gr. παράπλασις, transformation, ‹ παραπλάσσειν, transform, ‹ παρά, beside, + πλάσσειν, form.] Catagenesis. [Rare.]

paraplasm, *n.* **2.** The non-vital contents of living protoplasm, such as yolk-granules, oil-drops, etc. [Rare.] See ★*metaplasm*[2], 2.

paraplasmic (par-a̤-plaz′mik), *a.* [*paraplasm* + *-ic.*] Of or pertaining to paraplasm. *C. S. Minot*, in Science, March 29, 1901, p. 491.

Paraplectic weevil. See ★*weevil.*

paraplegia, *n.*—**Pott's paraplegia,** a form of pressure paralysis occurring in Pott's disease.—**Reflex paraplegia,** paralysis of the lower extremities, caused by some peripheral irritation acting upon the nerve-centers, the latter, as well as the affected muscles, being themselves healthy, in the beginning of the trouble, at least.

parapleuritis (par″a̤-plọ̄-rī′tis), *n.* [NL., ‹ Gr. παρά, beside, + πλευρά, side, + *-itis.*] **1.** Pleurisy of slight extent.—**2.** Same as *pleurodynia.*

paraplexia (par-a̤-plek′si-ä̤), *n.* [NL., ‹ Gr. παραπληξία, ‹ παρά, beside, + πλῆξις, stroke.] Same as *paraplegia.*

paraplexus (par-a̤-plek′sus), *n.* [NL., ‹ *para-* + *plexus.*] Same as *choroid plexus. Buck*, Med. Handbook, II. 139.

parapodal (par-a̤-pō′da̤l), *a.* Same as *parapodial.*

Parapodial groove. See ★*groove.*

parapodiate (par-a̤-pō′di-āt), *a.* [NL. *parapodi(um)* + *-ate*[2].] Bearing parapodia; relating to or characteristic of the *Parapodiata.*

parapodium, *n.* **3.** In gastropods, a fin-like expansion of the foot; an epipodium.

parapophysis, *n.* **2.** In fishes, a transverse process of the abdominal vertebræ. These processes usually bear ribs.

parapraxia (par-a̤-prak′si-ä̤), *n.* [Gr. παρά, beside, + πρᾶξις, doing.] In *pathol.*, irrational conduct.

paraproctitis (par″a-prok-tī′tis), *n.* [NL., ‹ Gr. παρά, beside, + πρωκτός, anus, + *-itis.*] Inflammation of the loose connective tissue around the rectum, usually resulting in the formation of an abscess.

paraprotaspis (par″a̤-prọ̄-tas′pis), *n.* [NL., ‹ *para-* + *protaspis.*] The latest substage of the protaspis stage in the ontogeny of the trilobite. See ★*protaspis.*

Parapsettus (par-ap-set′us), *n.* [NL., ‹ Gr. παρά, beside, near, + NL. *Psettus* (‹ Gr. ψῆττα, flounder).] A genus of fishes of the family *Ephippiidæ*, found about Panama.

parapycnomorphous (par-a̤-pik-nọ̄-môr′fus), *a.* [Gr. παρα, beside, + πυκνός, thick, + μορφή, form, + *-ous.*] Staining moderately well, but not intensely: noting certain cells in histological preparations.

parapyramidal (par-a̤-pi-ram′i-dal), *a.* [Gr. παρα, beside, + E. *pyramidal.*] To one side of, or near, a pyramid.—**Parapyramidal sulcus.** See *sulcus.*

pararabin (pa-rar′a̤-bin), *n.* [*para-* + *arabin.*] An amorphous powder, $C_{12}H_{22}O_{11}$ (?), found in sugar-beets and carrots, and apparently also in agar-agar. It forms a gelatinous mass with water.

pararachidial (par″a̤-rā̤-kid′i-a̤l), *a.* [*pararachis* (*-id-*) + *i-* + *-al*[1].] Relating or pertaining to the pararachides: as, the *pararachidial* zoöids of a sea-pen.

pararachis (par-a̤-rā′kis), *n.*; pl. *pararachides* (-ki-dēz). [Gr. παρά, near, beside, + ῥάχις, the spine.] In some anthozoans, as the sea-pens, the lateral surface of the rachis of bilaterally symmetrical forms. Compare ★*metarachis* and ★*prorachis.*

parareducin (par″a̤-rẹ̄-dū′sin), *n.* [*para-* + *reducin* (?).] A ptomaïne which has been found in the urine.

pararhotacism (par-a̤-rō′ta̤-sizm), *n.* [*para-* + *rhotacism.*] Defective pronunciation of the letter *r* or the substitution for it of some other sound.

parasacral (par-a̤-sā′kra̤l), *a.* [Gr. παρά, near, + NL. *sacrum* + *-al*[1].] Situated near the sacrum.

parasagittal (par-a̤-saj′i-ta̤l), *a.* [Gr. παρά, near, + E. *sagittal.*] Parallel with and to one side of the median plane: as, a *parasagittal* section of an embryo.

parasalicyl (par-a̤-sal′i-sil), *n.* [*para-* + *salicyl(ic).*] A crystalline condensation-product of salicylic aldehyde, $C_{14}H_{10}O_3$, made by the dry distillation of cuprous salicylate, or by the action of certain acid chlorids, etc., on salicylic aldehyde. It melts at 128–130° C.

Parascorpis (par-a̤-skôr′pis), *n.* [NL., ‹ *para-* + NL. *Scorpis.*] A genus of serranoid fishes living off the South African coast.

paraseptal (par-a̤-sep′ta̤l), *a.* [Gr. παρά, beside, + E. *septal.*] Near by or parallel with the nasal septum: as, the *paraseptal* cartilages of monotremes and lizards.

parasha (pa-rä′shä̤), *n.*; pl. *parashioth* (-shi-ōt). [Heb., ‹ *parash*, separate.] A section; specially applied to the subdivisions or weekly portions of the Pentateuch which are read in the synagogue on the Sabbath. See ★*sedra.*

parasigmatism (par-a̤-sig′ma̤-tizm), *n.* [*para-* + *sigmatism.*] Defective pronunciation of the letter *s*, or the substitution for it of some other sound.

parasitaster (par″a̤-si-tas′tėr), *n.* [L. *parasitaster*, ‹ *parasitus*, parasite, + dim. *-aster.*] An insignificant parasite.

> *Parasitaster*, Or The Fawne, As It Hath Bene Divers times presented at the blacke Friars by the Children of the Queenes Maiesties Revels. Written by Iohn Marston. (Title of play, 1606.) *Marston.*

parasite, *n.*—**Accidental parasite,** an organism which is usually free-living, and only occasionally parasitic on or in another organism.—**Beaver parasite.** See ★*beaver* 1.—**Estivo-autumnal parasite,** a variety of the malarial organism characterized by the formation of crescentic bodies during the sexual type of its reproduction, the cause of the common type of malarial fever which prevails during the late summer and fall months, especially in subtropical and tropical regions.—**Obligatory parasite,** a parasite that is compelled to live in or upon a living body. As most parasitic bacteria, as well as some parasites belonging to other groups of organisms, for example protozoans, have been grown artificially outside the bodies of their natural hosts, the distinction between obligatory and facultative parasites and saprophytes is difficult, if not impossible to maintain. Also called *obligate* and *obligative parasite.*—**Tertian malarial parasite,** a variety of the malarial parasite which is recognized as the cause of the common form of tertian malarial fever. Double infection with the same organism will produce the quotidian form of ague. See ★*malaria.*—**Tropical malarial parasite.** Same as *estivo-autumnal* ★*parasite.*—**Wound parasite,** an organism which can only act as a parasite when gaining entrance to the host through a wound, as in the case of many fungi that produce decay in trees.

parasitic, *a.* **4.** In *ornith.*, applied to birds which place their eggs in the nests of other birds.

> A group of *parasitic* birds which place their eggs in the nests of other species and leave their young to be brought up by the foster-parents.
> *Guide to the Gall. of Birds*, Brit. Mus., p. 199.

5. Having the characters of the *Parasitica.*—**Parasitic cone.** See ★*cone.*—**Parasitic theory of disease.** Same as *germ theory.*

parasitism, *n.*—**Social parasitism,** parasitism between societies of organisms considered as units or individuals of a higher order, as, for example, the parasitism of the criminal class on human society in general, or of one colony of ants on a colony of a different species.

Parasol acacia, skirt. See ★*acacia*, ★*skirt*[1].

parasol-fern (par′a̤-sol-fėrn″), *n.* Same as *coral-★fern.*

parasoma (par-a̤-sō′mä̤), *n.*; pl. *parasomata* (-ma̤-tä̤). [NL., < Gr. *παρα*, beside, + *σῶμα*, body.] In *cytol.*, a paranucleus.

parasorbic (par-a̤-sôr′bik), *a.* [*para-* + *sorbic.*] Isomeric with sorbic acid.—**Parasorbic acid**, an unsaturated lactone acid, $C_6H_8O_2$, found in unripe mountain-ash berries, *Sorbus aucuparia.* It boils at 221° C. and is a strong emetic.

paraspermatozoid (par″a̤-spėr″ma̤-tọ-zō′id), *n.* [*para-* + *spermatozoid.*] A (hypothetical) somatic cell of a female organism, that is, one that produces ova as germ-cells. *Nature*, Sept. 4, 1902, p. 437.

parastata (pa-ras′ta̤-tä̤), *n.* [Gr. *παραστάτης*, in pl. *παραστάται*, the testicles.] Same as *prostate.*—**Parastata adenoides** or **glandula.** Same as *epididymis* or as *Fallopian tube.*

parastatic (par-a̤-stat′ik), *a.* [Gr. *παραστατικός*, presentative, commemorative, manifesting, arousing, < *παριστάναι*, place before the mind, set up, present.] Relating to the mimicry of one species by another in the same general locality or faunal region, as in many insects of different orders.

parasternum (par-a̤-stėr′num), *n.*; pl. *parasterna* (-nä̤). [Gr. *παρά*, beside, + L. *sternum.*] The abdominal ribs considered collectively; the arrangement of slender bones, running along the ventral side of many reptiles from the sternum to the pelvis: found in crocodiles and *Hatteria*, and in many extinct forms.

parastremma (par-a̤-strem′ä̤), *n.* [Gr. *παρά*, beside, + *στρέμμα*, a wrench, strain.] A convulsive contraction of the muscles of the face.

parastyle (par′a̤-stīl), *n.* [Gr. *παρά*, near, + *στῦλος*, style.] **1.** The antero-external rib present on the upper molar teeth of many ungulate mammals.—**2.** The enamel-covered fold, buttress, or pillar at the anterior external angle of an upper molar tooth: typically present in the tooth of a horse. See cut under ★*tooth*, 1.—**3.** In *bot.*, a rudimentary or abortive style: used chiefly in connection with trimorphic plants. Compare ★*mesostyle* and ★*metastyle.*

parasynetic (par″a̤-si-net′ik), *a.* [*parasynesis* (*-et-*) + *-ic.*] Arising from, or of the nature of, parasynesis.

Such *parasynetic* forms as sparrer-grass for asparagus, due to misunderstanding or misconception of a word, are common enough in Negro; but the African, from the absence of books and teaching, had no principle of analepsy in his intellectual furnishing by which a word, once become obscure from a real or supposed loss of parts or meaning, can be repaired, amended, or restored to its original form.
Proc. Amer. Philol. Ass'n, July, 1885, p. xxxii.

parasyphilis (par-a̤-sif′i-lis), *n.* [NL., < *para-* + *syphilis.*] A morbid condition supposed to result from syphilis, but not marked by the ordinary symptoms of this disease. *Buck*, Med. Handbook, II. 428.

parasyphilitic, *a.* **2.** Of the nature of parasyphilis.

That they are *parasyphilitic* or quaternary manifestations and are seldom amenable to treatment as usually exhibited. *Med. Record*, Dec. 21, 1907, p. 1037.

parasyphilosis (par-a̤-sif-i-lō′sis), *n.* [*parasyphil*(*is*) + *-osis.*] A parasyphilitic disease, such as general paralysis is said to be.

parasystole (par-a̤-sis′tọ-lẹ̄), *n.* [Gr. *παρά*, beside, + *συστολή*, systole.] The period of time intervening between the systole and diastole of the heart.

paratacamite (par-a̤-tak′a̤-mīt), *n.* [*para-* + *atacamite.*] An oxychlorid of copper having the same percentage composition as atacamite, but losing its water at a higher temperature. It occurs in pseudorhombohedral crystals, and is found at Sierra Gorda, Chile.

paratactic, *a.* **2.** Arranged without any logical connection, as in disconnected literary or artistic composition. A frieze made up of independent and separate subjects may be said to be *paratactic.*

The pursuit of Troilos again, as analysed by Schneider, suggests by its '*paratactic*' composition a Peloponnesian origin. *H. S. Jones*, in Jour. Hellenic Studies, XIV. 50.

parataloid (pa-rat′a̤-loid), *n.* [Origin uncertain.] Same as *Koch's* ★*lymph* or *tuberculin*, 1. Also *paratoloid.*

paratangential (par-a̤-tan-jen′sha̤l), *a.* Near to being tangent.

Outer surface provided with small conical papillæ, from which bundles of pentact pleuralia project radially, the *paratangential* rays of the spicules forming a veil about 1·5 centim. from the surface.
Annals and Mag. Nat. Hist., May, 1901, p. 458.

paratartaric, *a.* **2.** Same as ★*racemic*, 2.

paratartramide (par-a̤-tär-tram′id), *n.* [*para-* + *tartramide.*] Same as ★*racemamide.*

paraterminal (par-a̤-tėr′mi-na̤l), *a.* [Gr. *παρά*, beside, + E. *terminal.*] Noting those bodies which form the inner or mesal walls of the anterior portion of the lateral ventricles. They are well-developed in the reptilian and amphibian brains, and are connected across the median line by the lamina terminalis.

Paratheliaceæ (par-a̤-thē-li-ā′sẹ-ē), *n. pl.* [NL., < *Parathelium* + *-aceæ.*] A family of pyrenocarpous, crustaceous lichens, so named from the genus *Parathelium.*

Parathelium (par-a̤-thē′li-um), *n.* [NL. (Nylander), < Gr. *παρά*, beside, + *θηλή*, nipple, in allusion to the lateral ostiole.] A genus of pyrenocarpous, crustaceous lichens having perithecia with lateral ostioles. The spores are 4- to 10-celled and brown. The species are tropical, and occur on the bark of trees.

Paratheria (par-a̤-thē′ri-ä̤), *n. pl.* [NL., < Gr. *παρά*, beside, + *θηρίον*, beast.] A name proposed by Oldfield Thomas for the edentate mammals, on the ground that they constitute a group of equal value to the *Prototheria*, *Metatheria*, and *Eutheria.* [Rare.]

paratherian (par-a̤-thē′ri-a̤n), *a.* [NL. *Paratheri*(*a*) + *-an.*] Relating to or characteristic of the *Paratheria*, or edentates considered as a subclass of mammals. *Philos. Trans. Roy. Soc.* (London), 1887, ser. B, p. 462.

parathermic (par-a̤-thėr′mik), *a.* [Gr. *παρά*, beside, + E. *thermic.*] Noting invisible rays supposed by Herschel to exist in the red and orange regions of the spectrum, to which he ascribed certain chemical effects now recognized as due to the visible rays of the wave-lengths in question.

parathyroid (par-a̤-thī′roid), *a.* and *n.* [Gr. *παρά*, beside, + E. *thyroid.*] **I.** *a.* Lying in the vicinity of the thyroid; specifically, noting several small masses of glandular tissue similar in appearance, but not in function, to the thyroid gland and situated in close proximity to it.

It has been suggested that paralysis agitans is due to insufficiency of the *parathyroid* glandules.
Jour. Med. Research, Dec., 1906, p. 399.

II. *n.* One of the parathyroid glands. *Lancet*, April 4, 1903, p. 939.—**Parathyroid body,** a ductless gland which arises in the vertebrate embryo on each side of the thyroid gland.

parathyroidal (par-a̤-thī′roi-da̤l), *a.* [*parathyroid* + *-al*¹.] Relating to a parathyroid gland. *Lancet*, April 4, 1903, p. 939.

parathyroidectomize (par″a̤-thī-roi-dek′tọ-mīz), *v. t.*; pret. and pp. *parathyroidectomized*, ppr. *parathyroidectomizing.* [*parathyroidectomy* + *-ize.*] To remove the parathyroid glands from.

The action of this proteid on dying *parathyroidectomized* dogs was marvelous.
Med. Record, Nov. 9, 1907, p. 795.

parathyroidectomy (par-a̤-thī-roi-dek′tọ-mi), *n.* [*parathyroid* + Gr. *ἐκτομή*, excision.] Excision of the parathyroid glands.

He emphasizes the tetanic symptoms that arise in animals after *parathyroidectomy.*
Jour. Med. Research, Dec., 1906, p. 412.

paratoluidine (par″a̤-tọ-lū′i-din), *n.* [*para-* + *toluidine.*] Para-aminotoluene, $C_6H_4(NH_2)$-CH_3, a crystalline compound made by reducing paranitrotoluene. It melts at 45° C. See ★*toluidine.*

paratolyl (par-a̤-tol′il), *n.* See ★*tolyl.*

paratonic, *a.* **2.** Due to the influence of an external stimulus, such as light, gravity, or humidity: thus used by Strassburger in the phrase *paratonic movements*, opposed by him to *autonomic movements.*

paratransversan (par″a̤-trȧns-vėr′sa̤n), *a.* [Gr. *παρά*, beside, + E. *transversan.*] Lying parallel to the transversan plane of a diatom frustule. *O. Müller.*

paratreme (par′a̤-trēm), *n.* [Gr. *παρά*, beside, + *τρῆμα*, hole.] An irregular sclerite in the prothorax of dipterous insects bound above and internally by the præscutum and the prophragma, below by the extremity of the prodorsal arch, and externally by the spiracle.

paratripsis (par-a̤-trip′sis), *n.* [Gr. *παρά*, beside, against, + *τρῖψις*, rubbing.] **1.** Rubbing; friction; chafing.—**2.** The prevention of waste of the tissues of the body.

paratriptic (par-a̤-trip′tik), *a.* and *n.* [*paratripsis* (*-tript-*) + *-ic.*] **I.** *a.* **1.** Relating to or producing chafing.—**2.** Retarding waste of the tissues of the body.

II. *n.* Any substance which tends to prevent or retard waste of the tissues of the body.

Tea, coffee, and tobacco come under the heading to which scientific men have given the name of *Paratriptics.* The demand for them is based upon their power to prevent waste in the body, so that by their help and stimulus men can do more work and endure more privation with a smaller amount of actual food. Tea, coffee, and tobacco are not food, although temporarily and continuously they supplement it. The physiologist Moleschott calls them the "savings-banks" of the tissues.
T. Child, Delicate Feasting, xii.

paratrium (pa-rā′tri-um), *n.*; pl. *paratria* (-ä̤). [Gr. *παρά*, beside, + L. *atrium.*] In certain annelids, a diverticulum of the atrium.

paratroch (par′a̤-trok), *n.* [Gr. *παρά*, beside, + E. *troch*(*ophore*).] A band of locomotor cilia surrounding certain annelid trochophores behind and in addition to the prototroch.—**Perianal paratroch.** Same as ★*perianal circlet.*

paratrophia (par-a̤-trō′fi-ä̤), *n.* Same as ★*paratrophy.*

paratrophic (par-a̤-trof′ik), *a.* [Gr. *παρά*, beside, + *τροφή*, nourishment, + *-ic.*] **1.** Of or pertaining to, or exhibiting, paratrophy.—**2.** Existing only as a parasite within the living tissues of other organisms: a term used by A. Fischer to designate a group of bacteria which he believed to possess such requirements. Compare ★*prototrophic* and ★*metatrophic.*

paratrophy (pa-rat′rọ-fi), *n.* [Gr. *παρά*, beside, + *τροφή*, nourishment, + *-y*³.] Abnormal or misdirected nutrition.

paratuberculosis (par″a̤-tṳ̄-bėr″kṳ̄-lō′sis), *n.* [NL., < *para-* + *tuberculosis.*] An affection due seemingly to the toxins of tuberculosis but in which the living bacillus cannot be found.

paratuberculous (par″a̤-tṳ̄-bėr′kṳ̄-lus), *a.* [*paratubercul*(*osis*) + *-ous.*] Relating to or affected with paratuberculosis.

paratungstate (par-a̤-tung′stāt), *n.* [*para-* + *tungstate.*] A salt of paratungstic acid. Sodium paratungstate, known in commerce as *tungstate of soda*, is used in mordanting cloth by dyers and calico-printers, and in rendering cotton and linen goods uninflammable.

paratungstic (par-a̤-tung′stik), *a.* [*para-* + *tungstic.*] In *chem.*, noting a hypothetical acid having the composition $H_{10}W_{12}O_{41}$, which is not itself known, but of which the corresponding sodium salt (when crystallized, $Na_{10}W_{12}O_{41}.(H_2O)_{28}$) is the tungstate of soda of commerce.

paratype (par′a-tīp), *n.* [Gr. *παρά*, beside, + *τύπος*, type.] In *zoöl.*, a specimen of the original series from which a single specimen, or *holotype*, has been selected as the type of a species. In forming part of the original series of specimens it may differ from a topotype, which is a specimen from the same locality, or same locality and horizon, and may be collected at any time subsequent to the description of the species.

paratyphoid (par-a̤-tī′foid), *a.* and *n.* [Gr. *παρά*, near, + E. *typhoid.*] **I.** *a.* Noting a fever resembling typhoid fever in its general features, but usually following a mild course, and distinguished from typhoid fever by absence of the Widal reaction.

Bacteriologic study of the blood in thirty cases of clinical typhoid fever, two of which proved to be *paratyphoid* and one doubtful. *Med. Record*, May 9, 1903, p. 739.

Paratyphoid bacillus, a micro-organism believed to be the cause of paratyphoid fever.—**Paratyphoid fever,** a disease resembling, in its course and general symptoms, typhoid fever, but caused by the presence of the paratyphoid bacillus which is distinct from the micro-organism of typhoid.

II. *n.* Paratyphoid fever.

It is desirable in the investigation of suspected colonies by means of agglutination to employ the so-called 'end-dilution' (*Wassermann*). If there is suspicion of *paratyphoid* (or dysentery) the agglutination of the colonies in question must be investigated with the specific serum of this disease.
Jour. Roy. Micros. Soc., June, 1904, p. 369.

paratypic (par-a̤-tip′ik), *a.* [Gr. *παρά*, beside, + *τύπος*, type, + *-ic.*] Not conforming strictly to the type.

paratypical (par-a̤-tip′i-ka̤l), *a.* Same as ★*paratypic.* *Buck*, Med. Handbook, V. 508.

para-uterine (par-a̤-ū′tẹ-rin), *a.* [*para-* + *uterine.*] Situated in the immediate neighborhood of the uterus.

A large number of the *parauterine* cysts, as well as papillomatous cysts of the hilum, parovarian cysts of the broad ligaments, have their origin in these unobliterated ducts and the remains of the Wolffian bodies.
Med. Record, Oct. 19, 1907, p. 647.

paravaginal (par-a̤-vaj′i-na̤l), *a.* [*para-* + *vaginal.*] Situated in the immediate neighborhood of the vagina.

paravaginitis (par-a̤-vag-i-nī′tis), *n.* [Gr. *παρά*, beside, + E. *vaginitis.*] Same as *paracolpitis.*

paravent (par-a̤-voṅ′), *n.* [F. *paravent*, < It. *paravento*, < *parare*, prevent, ward off, + *vento*, wind.] A wind-screen; a shelter from wind.

> The belfry proves a fortress of a sort, . . .
> Turns sunscreen, *paravent* and ombrifuge
> To whoso seeks a shelter in its pale.
>
> *Browning*, Ring and Book, x. 466.

paravertebral (par-a̤-vėr′tē̤-bra̤l), *a.* and *n.* [Gr. *παρά*, beside, + L. *vertebra*, vertebra, + -*al*^{1}.] **I.** *a.* Relating to the parapophysis or transverse process given off from the centrum of a vertebra. The term was used by Geoffroy St. Hilaire and R. Grant.—**Paravertebral elements**, the parapophyses or processes developed from the body of the vertebra; more rarely, the chevron bones.

II. *n.* Same as ⋆*parapophysis*, 2. *Starks*, Synonymy of the Fish Skeleton, p. 525.

paravesical (par-a̤-ves′i-ka̤l), *a.* [Gr. *παρά*, beside, + E. *vesical.*] Situated in the immediate neighborhood of the bladder.

paraxanthin (par-a̤-zan′thin), *n.* [*para-* + *xanthin.*] A poisonous crystalline base, 1, 7-dimethylxanthin, $C_7H_8O_2N_4$, which occurs in human urine. It can be made from theobromine and changed into caffein. It melts at 284° C.

paraxially (pa-rak′si-a̤l-i), *adv.* [Gr. *παρά*, beside, + L. *axis*, axis, + -*al*^{1} + -*ly.*] In *zoöl.*, in such a way as to lie on each side of the long axis (of the body). *Proc. Roy. Soc.* (London), Feb., 1905, p. 318.

paraxon (pa-rak′son), *n.* [Gr. *παρά*, beside, + E. *axon.*] A collateral branch of the axon.

paraxonic (par-ak-son′ik), *a.* [Gr. *παρά*, near, + *ἄξων*, axis, + -*ic.*] Having the third and fourth digits of the foot equally, or almost equally, developed, so that the center or axis of the foot passes between them, as in the artiodactyl ungulates: contrasted with ⋆*mesaxonic.*

paraxylene (pa-rak′si-lēn), *n.* [*para-* + *xylene.*] An oily hydrocarbon of the benzene series, $C_6H_4(CH_3)_2$; paradimethylbenzene. It is found in tar-oil and Galician petroleum, and is also made synthetically. It boils at 138° C. It can be solidified in a freezing mixture, and then melts at 15° C.

parcel-carrier (pär′sel-kar″i-ėr), *n.* **1.** One who carries parcels.—**2.** A device for carrying parcels, as on a bicycle.

parcel-gilder (pär′sel-gil″dėr), *n.* One whose trade is ⋆parcel-gilding (which see).

parcel-gilding (pär′sel-gil″ding), *n.* The gilding of silver or other ware in part, as the interior of a cup, or an external design; now, specifically, the production of decorative effects by gilding, with the aid of an electric current, a metallic object, as of silver, parts of the surface having in advance been coated with a non-conducting varnish, which is removed when the work is finished, so that the design is presented in gold deposited only on the unvarnished parts of the surface.

parcel-gilt (pär′sel-gilt), *a.* and *n.* **I.** *a.* Gilded in part. See ⋆*parcel-gilding.*

> A standing cup *parcell guilt*, of thirty-two ounces, eleven pound seven shillings, the first of July. Good plate—good man—good day—good all.
>
> *Marston*, Dutch Courtezan, iii. 1.

II. *n.* Silver or other ware partly gilded.

parcelment (pär′sel-me̤nt), *n.* [*parcel* + -*ment.*] The act of dividing into parcels.

parcels-delivery (pär′se̤lz-dē̤-liv″ėr-i), *n.* The business of delivering parcels; express: as, to receive a package by *parcels-delivery.* [Great Britain.]

parcelwise (pär′sel-wīz), *adv.* Piecemeal; piece by piece.

> Looking at life *parcel-wise.*
>
> *George Eliot*, Daniel Deronda, xxi.

parching-bowl (pär′ching-bōl), *n.* A bowl used for parching grain, especially maize: used by a number of Indian tribes. *Haddon*, Evolution in Art, p. 105.

parchment, *v. t.* **2.** To cause to become hard, tough, and wrinkled, as the skin in certain diseases. *Syd. Soc. Lex.*

parchment-coffee (pärch′me̤nt-kof″ē̤), *n.* Same as *parchment*, 2.

parchment-size (pärch′me̤nt-sīz), *n.* A size or glue used in manufactures, made from the scrapings and cuttings of parchment. Also *parchment-glue.* See *size*^{2}.

parded (pär′ded), *a.* [*pard*^{1} + -*ed*^{2}.] Spotted like a pard.

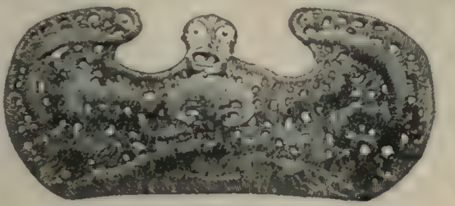
> Even the meadow flood is *parded*, of various patches of color. Ever and anon the wind seems to drop down from over the hills in strong puffs.
>
> *Thoreau*, Early Spring in Massachusetts, p. 44.

pardessus (pär-de-sü′), *n.* [F., < *par-dessus*, in subst. use, an overcoat, < *par*, on, upon, + *dessus*, over, above.] **1.** A woman's cloak, formerly worn in full dress, for receptions, etc. The word is confined to fashion papers. —**2.** The old French name of the violin or treble viol. See *dessus.*

pardner (pärd′nėr), *n.* A dialectal pronunciation of *partner.* [U. S.]

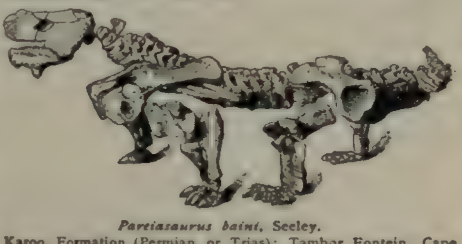
> "Thet 's it," said Tennessee's Partner, in a tone of relief. "I come yar as Tennessee's *pardner*, knowing him nigh on four year, off and on."
>
> *Bret Harte*, Tennessee's Partner, p. 140.

pare^3 (pä′rā), *n.* [Maori.] Among the Maoris of New Zealand, the carved ornament or ornamentation about a door. *Nature*, May 14, 1903, p. 36.



Pare.

Pareiasauria (pa-rē-a̤-sâ′ri-ä), *n. pl.* [NL., < Gr. *παρειά*, cheek, + *σαῦρος*, lizard.] An order of extinct reptiles comprising heavily built animals of Permian and Triassic age. The type-genus *Pareiasaurus* is represented by animals about 8 or 10 feet long, standing 4 feet high. Four or five species of this genus are known from the Karoo formation of South Africa. In northern Russia a species of even larger dimensions than the South African forms has been found, and in central Europe a small allied species with horns. Another small, horned species is found in Scotland, and in North America there are numerous genera possibly belonging to this order but not very nearly related to *Pareiasaurus.* Also *Pariasauria.*



Pareiasaurus baini, Seeley.

Karoo Formation (Permian or Trias); Tambor Fontein, Cape Colony. Skeleton; $\frac{1}{40}$ natural size. (After Seeley.)

(From Zittel's "Palaeontology.")

pareiasaurian (pa-rē-a̤-sâ′ri-an), *a.* and *n.* **I.** *a.* Relating to or having the characters of the *Pareiasauria.*

II. *n.* One of the *Pareiasauria.*

Pareiasaurus (pa-rē a̤-sâ′rus), *n.* [NL., < Gr. *παρειά*, cheek, + *σαῦρος*, lizard.] A genus of extinct reptiles. See ⋆*Pareiasauria.* Also *Pariasaurus.*

parelectronomic (par-ē̤-lek-trō̤-nom′ik), *a.* [*parelectronom(y)* + -*ic.*] Of or pertaining to, or exhibiting, parelectronomy.

parelectronomy (par-ē-lek-tron′ō-mi), *n.* [Gr. *παρά*, against, + E. *electro-* + Gr. *νόμος*, law, + -*y*^{3}.] A condition in which there is a weakening of an electric current passed through a muscle.

parellic (pa-rel′ik), *a.* [*par(a-)* + (*Rocc*)*ella* + -*ic.*] Noting an acid, $C_{21}H_{16}O_9$, found in *Roccella intricata* and other lichens. The same acid was obtained from certain species of *Stereocaulon*, and called *psoromic acid.* It crystallizes in needles which melt at 262–265° C., with decomposition.

paremango (pä-rā-mäng′gō), *n.* [Maori, < *pare* (see ⋆*pare*^{3}) + *mango*, shark.] A scroll pattern in wood-carving of the natives of New Zealand.

par éminence (pär ā-mē̤-noṅs′), *adv. phr.* [F.] By eminence; by reason of eminence; pre-eminently.

parenchymale (pa-reng-ki-mā′lē), *n.*; pl. *parenchymalia* (-li-ä̤). [NL. See *parenchyma.*] In sponge-spicules, a parenchymalium.

parenchymalium (pa-reng-ki-mā′li-um), *n.*; pl. *parenchymalia* (-ä̤). [NL. See *parenchyma.*] In sponges, one of the spicules supporting the general parenchyma and the chambers between the dermal and gastral membranes. Also *parenchymale.*

parenchymella (pa-reng-ki-mel′ä̤), *n.* [NL. dim. of *parenchyma.*] An embryonic stage between the blastula and gastrula stages, especially in the *Cœlenterata.* It may be defined as a blastula of which the blastocœle is filled with entoderm cells. *Metchnikoff*, 1887.

parentalism (pā̤-ren′ta̤l-izm), *n.* [*parental* + -*ism.*] Same as *paternalism.*

parenthesist (pā̤-ren′the-sist), *n.* [*parenthes(is)* + -*ist.*] One who parenthesizes. [Rare.]

parenticide^2 (pā̤-ren′ti-sīd), *n.* [L. *parens* (*parent-*) + -*cidium*, < *cædere*, kill.] The killing of one's parent. *Phillips.*

parent-rock (pãr′e̤nt-rok), *n.* In *geol.*, the rock in which a mineral or ore is or was originally contained and from which it may be freed in processes of weathering or erosion.

Pareora series. See ⋆*series.*

parepicele (pa-rėp′i-sēl), *n.* [Also *parepicœle*; *para-* + *epicele* (?).] A recess in one side of the fourth ventricle of the brain. Also written *parepicœle.* *Buck*, Med. Handbook, II. 158.

parepicœle, *n.* See ⋆*parepicele.*

parepigastric (pa-rep-i-gas′trik), *a.* [Gr. *παρά*, beside, + E. *epigastric.*] Near the epigastrium.

parergal (pa-rėr′ga̤l), *a.* [*parergon* + -*al*^{1}.] Pertaining to or of the nature of a parergon; incidental.

parergetic, parergetical (par-ėr-jet′ik, -i-ka̤l), *a.* Same as ⋆*parergal.*

parergic (pa-rėr′jik), *a.* [*parerg(on)* + -*ic.*] Same as ⋆*parergal.*

parethmoid (pa-reth′moid), *n.* [*para-* + *ethmoid.*] In *ichth.*, the prefrontal; a bone in front of the frontal and beside the ethmoid in fishes. *Starks*, Synonymy of the Fish Skeleton, p. 509.

par exemple (pär eg-zoṅ′pl), *adv. phr.* [F.] By way of example; for instance.

Parexocœtus (pa-rek-sō̤-sē′tus), *n.* [NL., < Gr. *παρά*, near, + NL. *Exocœtus.*] A genus of flying-fishes of tropical coasts, widely distributed.

parfait (pär-fā′), *a.* [F.] Perfect: used in names of preparations of frozen cream: as *café parfait, vanilla parfait*, which are frozen without being stirred.

parfocal (pär-fō′ka̤l), *a.* [L. *par*, equal, + NL. *focus* + -*al*^{1}.] With the lower focal points all in the same plane: said of interchangeable eyepieces, for microscopes or telescopes, so mounted that whichever one is used the focus remains the same. See ⋆*eyepiece.*

parge (pärj), *v. t.* Same as *parget*, *v. t.*, 1.

pargo (pär′gō), *n.* [Sp. *pargo*, also *pagro* = Pg. *pargo* = It. *pagro*, *parago*, < L. *pagur*, *pager*, *pagrus*, name of a fish: see *Pagrus.*] A common name given by Spanish-speaking Americans to the snappers and related fishes.

parhedral (pär-hē′dra̤l), *a.* [Gr. *πάρεδρος*, sitting beside, associate.] Associate; adjunct; subsidiary. [Rare.]

> Besides the principal gods, inferior or *parhedral* gods. *Guide to Exhib. Gall. Brit. Mus.*, 1884, p. 94. *N. E. D.*

parhelium, *n.* **2.** A name given by Runge and Paschen to a supposed distinct gas which, on the ground of certain spectroscopic observations, they believed to be present in helium. It has since been shown that the helium examined is but a single substance, the spectroscopic differences being due to change of pressure.

> Clevite gas was accordingly regarded as a mixture of two solar elements, distinguished as "helium" and "*parhelium*," the rays of the former, like D_3, being all double, those of the latter single. Each set of three series was, in fact, "analogous to the complete spectrum of a distinct element." Yet *parhelium* has failed to make good its footing in either cosmical or terrestrial chemistry.
>
> *A. M. Clerke*, Problems in Astrophysics, p. 58.

Paria (pā′ri-ä̤), *n.* [NL., < geographic̣ name (Leconte, 1858).] **1.** A small genus of leaf-beetles of the family *Chrysomelidæ* of North American and eastern Asiatic distribution. The larva of *P. aterrima* is the strawberry root-borer of the United States.—**2.** [*l. c.*] A beetle of this genus.—**3.** A genus of mollusks. *Gray*, 1867.—**Spotted paria**, an American chrysomelid beetle, *Paria sex-notata*, which feeds on strawberry leaves. It is now known as *Typophorus canellus*, and bears also the popular name of *spotted strawberry leaf-beetle.*

Pariah kite. See ⋆*kite*^{1}.

Parian. I. *a.*—**Parian cement.** See ★*cement.*
II. *n.* 2. A native of Paros.

pariasaurian (pa-rī-ạ-sâ′ri-ạn), *a.* See ★*Pareiasaurian.*

Paricelinus (par″i-se-lī′nus), *n.* [NL., ‹ Gr. *παρά*, near, + NL. *Icelinus.*] A genus of cottoid fishes found off the coast of California.

parichnos (pa-rik′nos), *n.*; pl. *parichnoi* (-noi). [Gr. *παρά*, beside, + *ἴχνος*, track, trace.] Either of the two small circular prints or traces representing parenchymatous strands in the scars of *Lepidodendron*, standing one on each side of the print or trace of the vascular bundle.

paricine (pär′i-sin, -sēn), *n.* [Also *paracine;* ‹ *Pará*, a city of Brazil, + *cin*(*chona*).] An alkaloid, $C_{16}H_{18}ON_2 + \frac{1}{2}H_2O$, found in the bark of *Cinchona succirubra.* It is a yellow powder which melts at 130° C. Its alcoholic solution tastes bitter and is slightly alkaline.

paridin (par′i-din), *n.* [*Paris* (see def.) (*parid-*) + *-ine*^{2}.] A glucoside, $C_{16}H_{28}O_7 + 2H_2O$, found in the leaves of *Paris quadrifolia.* It is a crystalline compound which yields paridol and sugar when boiled with alcoholic hydrochloric acid.

paridol (par′i-dol), *n.* [*parid*(*in*) + *-ol.*] A resinous substance, $C_{26}H_{46}O_9$, formed by boiling paridin with alcoholic hydrochloric acid.

paries, *n.* 3. The central thickened portion of a valve of the acorn-barnacle (*Balanus*). The anterior overlapping edge of the valve is the 'radius,' the posterior underthrust edge the 'ala.'

parietal. I. *a.*—**Parietal cell,** in *histol.*, one of the cells in the gastric glands of vertebrates, as distinguished from the *peptic cells* in the same organs.—**Parietal fissure.** Same as *intraparietal* ★*fissure.*—**Parietal index.** See ★*index.*—**Parietal shield.** See ★*shield.*
II. *n.* 2. Specifically, in fishes, a superior lateral bone of the cranium. In some forms it articulates with its fellow of the opposite side in front of the supraoccipital; in others it lies on one side of the latter bone remote from its fellow. Posteriorly it overlies the epiotic; at its outer edge it articulates with the pterotic.—3. Same as *parietal* ★*shield.*

parietic (pā-ri-et′ik), *a.* [L. *paries* (*pariet-*), wall, + *-ic.*] Obtained from the wall-lichen: noting an acid, the same as *chrysophanic acid.*

parietin (pā-rī′e-tin), *n.* [*pariet*(*ic*) + *-in*^{2}.] Same as *chrysophanic acid.*

parietosphenoidal (pạ-rī″e-tō-sfẹ-noi′dạl), *a.* [*parietal* + *sphenoid* + *-al*^{1}.] Relating to the parietal and sphenoid bones.

parigenin (pa-rij′e-nin), *n.* [*pari*(*llin*) + *-gen* + *-in*^{2}.] A flocculent insoluble compound, $C_{28}H_{42}O_4$, formed when parillin is hydrolyzed by dilute acids. See ★*parillin.*

parillic (pa-ril′ik), *a.* [(*sarsa*)*parilla* + *-ic.*] Related to sarsaparilla.—**Parillic acid.** Same as ★*parillin.*

parillin (pa-ril′in), *n.* [(*sarsa*)*parilla* + *-in*^{2}.] A crystalline glucoside, $C_{40}H_{70}O_{18}$, found in sarsaparilla root, of which it is the active principle. It melts, with decomposition, at 210° C., and yields sugar and parigenin when hydrolyzed with dilute acids. It slows the action of the heart. Also called *parillic* or *parillinic acid, saliseparin, salseparisin.*

parillinic (par-i-lin′ik), *a.* Derived from sarsaparilla.—**Parillinic acid.** Same as ★*parillin.*

pari mutuel (pä-rē′ mü-tü-el′). [F., 'mutual bet': *pari*, a bet, ‹ *parier*, bet, pair, ‹ L. *pariare*, make equal, ‹ *par*, equal: see *par* and *pair*^{1}.] A mutual bet; in France, a system of betting in which each bettor places a sum specified (on the horse or contestant he chooses) in a pool. Those who bet on the winners divide the stakes, less a small percentage for expenses. Usually in the plural, *paris mutuels.*

> The *pari-mutuel*, by which most of the betting is carried on in France, though bookmakers pursue their business there as in England, except that they are relegated to the backs of the stands.
> *Encyc. Brit.*, XXIX. 337.

> An owner only lays £20 or so at the *pari-mutuel*, when he would have staked £100 with the bookmakers.
> *Daily Telegraph* (London), Oct. 5, 1905.

paring-bee (pãr′ing-bē), *n.* In New England, a social gathering for the purpose of paring apples, which are then dried and preserved for winter use. See *bee*^{1}, *n.*, 3.

paring-machine, *n.* 2. A parer; a machine for paring fruit.

Paris foot, a unit of length, formerly used in France, equal to 1·065 British feet.—**Paris granite, inch, line, measure.** See ★*granite*, etc.

parish. I. *n.* 5. In the game of curling, the ring in the center of which the tee is placed.

> He has plenty of running to win into the *parish.*
> *An. of Roy. Caledonian Curling Club*, 1893–4, p. 104.

II. *a.*—**Parish council.** See ★*council.*

parish-rigged (par′ish-rigd), *a.* Rigged cheaply. [Sailors' use.]

Parisian, *n.* 2. In *geol.*, in D'Orbigny's classification of the Tertiary of France, the upper stage of the Eocene lying above the basal or Suessonian, and comprising the Lutetian and Bartonian stages of De Lapparent's classification. It consists of sands, marls, clays, and limestones containing marine Eocene fossils below, with intercalated limestones and shales in its upper portion containing fresh-water shells and plants. Above these latter lie the Paris gypsum beds of Oligocene age.

parison, *n.* (*b*) In *glass-manuf.*, the mass of molten glass gathered on the end of the pontil before it is blown.

paristhmic (pa-rist′mik), *a.* [Gr. *παρίσθμιον*, tonsil, + *-ic.*] In *anat.*, of or pertaining to the tonsils.

paristhmiotome (pa-rist′mi-ọ-tōm), *n.* [Gr. *παρίσθμιον*, tonsil, + *-τόμος*, cutting.] An old instrument for cutting the tonsils.

paristhmitic (par-ist-mit′ik), *a.* [*paristhmit*(*is*) + *-ic.*] Relating to or affected by paristhmitis.

paristhmitis (par-ist-mī′tis), *n.* [Gr. *παρίσθμιον*, tonsil, + *-itis.*] Tonsillitis; inflammation of the tonsils. *Mayne.*

paristyphnin (par-is-tif′nin), *n.* An amorphous glucoside, $C_{38}H_{64}O_{18}$, which occurs in the leaves of *Paris quadrifolia.* It yields sugar and paridin when boiled with dilute sulphuric acid.

parity^1, *n.* 4. In *banking* and *com.*: (*a*) An equivalence in the currency of another country. See *mint par*, under *par*^{2}. (*b*) Equivalence in or between money of different metals as legal tender, in the proportions of weight and quality fixed by law. (*c*) Same as *par*^{2}, 3.

parivincular (par-i-ving′kū-lä̤r), *a.* [L. *par*, equal, + *vinculum*, a bond, + *-ar*^{3}.] In *conch.*, noting that type of ligament of the pelecypod shell the axis of which coincides with or is parallel to the axis of motion between the valves: contrasted with *alivincular*, in which the axis of ligament is normal to the axis of motion.

park, *n.*—**National park,** a tract of government land withdrawn by special act of Congress from settlement, occupancy, or sale, under the laws of the United States, for the benefit and enjoyment of the people.

> While the *national parks*, speaking strictly, do not at present form a part of the forest system of the United States, still, since one of their prime objects is the protection of the forests within their boundaries, they fall naturally within the sphere of the present paper. They differ from forest reserves chiefly in the fact that no lumbering can be carried on within them, that the mining laws, except in the case of the Mount Rainier National Park, do not apply to them, that their game animals are fully protected, and that they are under the care of the troops of the Regular Army, assigned to that duty by the Secretary of War, but under the orders, for that purpose, of the Secretary of the Interior, and reporting to him. The best known and the largest of the *national parks* is the Yellowstone, with an area of 2,142,720 acres, located in Wyoming, with small portions in Montana and Idaho. The others are the Yosemite National Park (967,680 acres), the Sequoia National Park (161,280 acres), and the General Grant National Park (2,560 acres), all in California, and the Mount Rainier National Park (207,360 acres) in Washington.
> *Yearbook, U. S. Dept. Agr.*, 1899, p. 298.

> The *national parks* are not only withdrawn from sale and entry like the forest reservations, but are efficiently managed and guarded by small troops of United States cavalry, directed by the Secretary of the Interior.
> *Muir*, Our National Parks, ii.

parkee (pär-kē′), *n.* Same as *parka*^{1}.

parkesine (pärk′sin), *n.* [*Parkes* (see def.) + *-ine*^{2}.] The name given by the inventor, Alex. Parkes, to a plastic material, with properties like those of horn or ivory, obtained by evaporating a solution of pyroxylin to which other substances had been added. Its manufacture was not commercially successful, but it was a precursor of the better-known celluloid.

Parkinsonia^2 (pär-kin-sō′ni-ä̤), *n.* [NL., named after James *Parkinson.*] A genus of pachycampylous Jurassic ammonites of the family *Reineckidæ*, section *Morphoceratida* of Hyatt's classification. The shells are discoidal, widely umbilicate, ornamented with strong radial ribs which are simple on the flattened sides and which bifurcate on the outer margins of the whorls, and with a deep, narrow, smooth furrow on the medial line of the venter. The genus is specially characteristic of the lower Jurassic beds of Europe and North Africa.

park-wagon (pärk′wag″ọn), *n.* A four-wheeled carriage with two seats for passengers, and a higher seat at the back for the driver.

parky (pär′ki), *a.* [*park*, *n.*, + *-y*^{3}.] Cold; penetrating; chilly. [Slang.]

> 'Morning, William; cold s' morning?' . . . 'It is a bit *parky*,' assented William.
> *Pink 'un & Pelican*, 1898, p. 273. *N. E. D.*

Parl. Agt. An abbreviation of *Parliamentary agent.*

parlay (pär′lā), *v. t.* See ★*parley*^{3}.

parley^3 (pär′li), *v. t.* and *i.* [Also *parlay:* appar. a perversion of *paroli.*] In the United States, in faro and similar games, and in horse-racing, to stake (one's money, together with that won by it on another bet): as, to *parley* one's bet. See ★*paroli.* [Slang.] *N. E. D.*

parley^3 (pär′li), *n.* [*parley*^{3}, *v.*] The act of leaving as a stake the money staked on a previous bet, together with that won by it. See ★*paroli.* [Slang.]

parliament, *n.*—**Long Parliament.** (*b*) The Parliament in the reign of Charles II., which assembled in 1661 and lasted until 1679. Also called *Pensionary Parliament.*—**Parliament hinge.** See ★*hinge.*—**Pensionary Parliament.** See *Long* ★*Parliament* (*b*).

parliamentarianism (pär″li̤-men-tā′ri-an-izm), *n.* The system of legislation by parliament; adherence to parliamentary system.

parliamentary, *a.* II. *n.* 1. A member of Parliament.—2†. A Cromwell man; a parliamentarian.—3. A parliamentary train.—4. [F. *parliamentaire.*] One sent to treat or parley with the enemy.

parliamenteer (pär″li̤-men-tēr′), *v. i.* [*parliamenteer, n.*] To engage in parliamentary affairs; run for parliament.

par-line (pär′līn), *n.* The line of averages or normal values; the zero or base-line from which departures are calculated or charted.

parlor-jump (pär′lọr-jump), *v. i.* To commit the crime of parlor-jumping. [Slang.]

parlor-jumping (pär′lọr-jum″ping), *n.* The robbery of rooms, where entrance is effected by means of a window. [Slang.]

parlor-maid (pär′lọr-mād), *n.* A maid-servant whose duties are usually confined to the dining- and reception-rooms of a house, sometimes taking the place of a butler in simple establishments.

parlor-maiding (pär′lọr-mā″ding), *n.* The duties of a parlor-maid; the act of performing those duties. [Colloq.]

parlor-match (pär′lọr-mach″), *n.* See ★*match*^{2}.

parma (pär′mä̤), *n.* [It. *Parma:* compare ★*piedmont.*] 1. One of the low east and west ranges which project from the western side of the north and south Urals, and die out in the plains. They are due to gently folded strata. *E. Suess*, Das Antlitz der Erde, I. 645.—2. In general, following the above usage, any low anticlinal fold, forming a ridge. Such ridges often, in the past, constituted barriers to the migrations of faunas.

> This may mean that no true axis or "*parma*" was in existence during Richmond time, but it does seem to show that the Wabash *parma* at least indicates the strike for the then highest land.
> *Amer. Jour. Sci.*, Dec., 1904, p. 469.

Parma sandstone. See ★*sandstone.*

parmeliine (pär-mē′li-in), *a.* Pertaining to or resembling the lichen family *Parmeliaceæ.*

parmelin (pär′mẹ-lin), *n.* [*Parmel*(*ia*) + *-in*^{2}.] A crystalline compound, $C_{16}H_{16}O_7$, occurring in the lichen *Parmelia perlata*, from which it is extracted by chloroform. It melts at 187° C.

parnas, *n.* Same as ★*parnes.*

Parnassian. I. *a.*—**Parnassian school.** (*a*) In France, a school of poets founded about the middle of the nineteenth century by L. Xavier de Ricard and Catulle Mendes who chose as their tetrarchs and judges Théophile Gautier, Leconte de Lisle, Baudelaire, and Banville. They were joined by Coppée, Sully-Prudhomme, Verlaine, and Heredia, with others less distinguished. They emphasized form or the technical side of the art, and repressed emotion, in reaction against the influence of de Musset. They took their name from that of their first volume of poems, collected in 1866, *Parnasse Contemporain.* (*b*) In England, see the extract.

> The name of the "*Parnassian School*" has been given to a group of poets who belonged to the generation succeeding that of the Rossettis and William Morris, and who were more in sympathy, perhaps, with Arnold. In this title, which has no other recommendation, there seems to be a reference to the French poets who were the contemporaries of these particular writers, and who made their first appearance together in Parnasse Contemporain. The poets of this group had not the ample flight of their predecessors, and attempted smaller effects. . . . Whether in the lighter or the graver mood, they aimed at exactitude of verbal expression, the careful record of shades of emotion, delicate phenomena, avoidance of hackneyed or rhetorical phrases. *Encyc. Brit.*, XXVIII. 256.

II. *n.* **2.** A member of the Parnassian school.

In other words, the excessive attention to form, to technical perfection, which had been carried so far by the *Parnassians*, failed to please, and broader modes of expression were aimed at. *Encyc. Brit.*, XXVIII. 256.

Parnassianism (pär-nas′i-an-izm), *n.* [*Parnassian* + *-ism.*] In *literature*, the style and theories of the school of poets known as the Parnassians. See ★*Parnassian school.*

When he [de Heredia] came back to Paris at 18 it was in order to enter the École des Chartes. He began to write the sonnets which attracted the attention of the most expert connoisseurs in *Parnassianism*. One after another at long intervals these perfectly minted masterpieces of literary art were put into circulation in Paris. *Times* (London), Oct. 4, 1905.

parnes (pär′nes), *n.* [Aram., < Syr. *parnoso*, a leader, a nourisher.] Among the Jews, an officer of a synagogue whose duties are to attend to the temporal welfare of the indigent members of the synagogue, as well as to the general affairs of the congregation. It is an honorary office, generally given to the most respected and well-to-do member of the community.

parnid (pär′nid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Parnidæ*.

II. *a.* Having the characters of or belonging to the family *Parnidæ*.

Parochial chapel. See ★*chapel.*

parode² (par′ōd), *n.* [Gr. πάροδος. See *parodos.*] **1.** Same as parodos.—**2.** In *anc. Gr. drama*, the first song sung by the chorus after its entrance.

parodiable (par′ọ-di-ạ-bl), *a.* Capable of being parodied.

parodial (pa-rō′di-ạl), *a.* [*parody*¹ + *-al*¹.] Of the nature of parody.

parodyn (par′ọ-din), *n.* [Gr. παρά, against, + ὀδύνη, pain.] Same as *antipyrin.*

parœmia (pa-rē′mi-ạ̈), *n.* [Gr. παροιμία, a byword.] In *rhet.*, a proverb; a byword.

parœmiac (pa-rē′mi-ak), *a.* and *n.* [Gr. παροιμιακός, proverbial.] **I.** *a.* Proverbial.

II. *n.* In *Gr. prosody*, an anapæstic dimeter catalectic, occurring commonly at the end of an anapæstic system. *Liddell* and *Scott.*

paroli (pä-rō-lē′), *n.* [F., < It. *paroli*; origin unknown.] In faro and similar games, and in the United States in horse-racing also, the act of applying the money staked and the money won on a bet in continuing to bet or as a further stake; also, the staking of double the sum just staked. In the United States usually called *parley.* See ★*parley*³.

paroli (pä-rō-lē′), *v. t.* and *i.* [*paroli*, *n.*] To stake (one's money, together with that won by it, on another bet); also, double one's stake. See ★*parley*³.

parolist, *n.* **2.** A paroled man.

Parolists . . . admit . . . that further resistance signifies daily increasing misery for all. *Scotsman*, April 16, 1901, p. 8. *N. E. D.*

paromœon (par-ọ-mē′ọn), *n.* [Gr. παρόμοιον, resembling.] Alliteration.

paronomasial (par″ọ-nọ-mā′si-ạl), *a.* [*paronomasi(a)* + *-al*¹.] Pertaining to or of the nature of paronomasia.

parophite (par′ọ-fīt), *n.* [Gr. παρά, near, + E. *ophite.*] A hydrous silicate allied to pinite. It forms a schistose rock in Canada and in northern New England.

parophthalmia (par-of-thal′mi-ạ̈), *n.* [NL., < Gr. παρά, beside, + ὀφθαλμός, the eye.] Inflammation of the connective tissue around the eye.

parore (pä′rō-rā), *n.* [Maori *parore*, the black perch.] A popular name of *Incisidens simplex*, a fish of the family *Pimelepteridæ*, found in New Zealand.

parorexia (par-ọ-rek′si-ạ̈), *n.* [NL., < Gr. παρά, beside, + ὄρεξις, appetite.] A perversion of the appetite.

Parosela (par-ō-sē′lạ̈), *n.* [NL. (Cavanilles, 1802), an anagram of *Psoralea.*] A genus of plants of the family *Fabaceæ*. There are about 110 species, extending from the central and southwestern United States to Central America, and in the Andes to Chile. Two species are also known from the Galapagos Islands. See *Dalea.*

parosteal (pa-ros′tẹ-ạl), *a.* [Gr. παρά, beside, + ὀστέον, bone, + *-al*¹.] **1.** Relating to the outer surface of the periosteum.—**2.** Relating to bone formed in abnormal parts, as the muscles.

parosteotic (par-os-tẹ-ot′ik), *a.* [*parosteosis.*] Pertaining to or characterized by parosteosis.

parostic (pa-ros′tik), *a.* [NL. *parostia* + *-ic.*] Pertaining to or marked by parostia or defective ossification.

parostitis (par-os-tī′tis), *n.* [NL., < Gr. παρά, beside, + ὀστέον, bone, + *-itis.*] Inflammation of the outer surface of the periosteum.

parostotic (par-os-tot′ik), *a.* [*parostosis* (*-tot-*) + *-ic.*] Same as ★*parosteotic.*

parotideal (par-ọ-tid′ẹ-ạl), *a.* Same as ★*parotidean.*

parotidean (par-ọ-tid′ẹ-ạn), *a.* [*parotid* + *-e-an.*] Relating to the parotid gland.

parotidectomy (pa-rot-i-dek′tọ-mi), *n.* [Gr. παρωτίς (-τιδ-), parotid, + ἐκτομή, excision.] Excision of the parotid gland.

parous (par′us), *a.* [L. *parere*, in comp. *-para*, bring forth, + *-ous.*] Having brought forth offspring; specifically, noting a woman during the child-bearing period who has already had one or more labors. *Buck*, Med. Handbook, I. 785.

parousia, *n.* See *parusia.*

parovoid (pa-rō′void), *n.* [Gr. παρά, near, + L. *ovum*, egg, + *-oid.*] A (purely hypothetical) somatic cell of a male organism, that produces spermatozoa as germ-cells.

paroxysmal, *a.* Specifically—**2.** In *geol.*: (*a*) Relating to or produced by a violent convulsion of nature. (*b*) Catastrophic or relating to the catastrophic theory.

These examples [the upheavals and subsidences resulting in the formation of the mountain ranges west of the Rocky Mountains] show that the elevation of mountains has been occasional and, so to speak, *paroxysmal.* *Encyc. Brit.*, X. 372.

paroxysmalist (par-ọk-siz′mạl-ist), *n.* Same as ★*paroxysmist.*

paroxysmist (par-ọk-siz′mist), *n.* [*paroxysm* + *-ist.*] In *geol.*, one who believes that violent or catastrophic changes occurred in past geologic time.

Parra, *n.* **2.** [*l. c.*] A member of the genus *Parra.*—**Australian parra, comb-crested parra,** *Hydralector gallinacea*, the wattled species found in Australia.

parrakeet, *n.*—**Racquet-tailed parrakeet,** a parrot of the genus *Prioniturus*, found in the Philippine Islands, having the median tail feathers expanded at the ends.—**Rose Hill parrakeet,** an Australian lory, *Platycercus eximius*, gorgeously marked with red, blue, green, and yellow; common in southeastern Australia: named from being numerous about Rose Hill, Paramatta district. The name has been corrupted to *rosella.*

parrel, *n.*—**Main parrels,** the leather-covered iron collars which belong to and confine respectively the main upper topsail, topgallant, and royal yards to the main topmast and topgallant mast, and by means of which these yards are kept steady while being hoisted and lowered. The main yard and the main lower topsail yard are not hoisting yards, but are kept permanently confined to the mast by trusses.

parricide¹, *n.* **3.** Figuratively, one who commits treason against his country. *N. E. D.*

parricide², *n.* **2.** Figuratively, the crime of treason against one's country. *N. E. D.*

parrot, *n.* **1.** About 500 species have now been described, but no new forms of special interest have been discovered. The tendency is to consider them as having their nearest relatives among the hawks and owls.—**Parrot's disease.** See ★*disease.*—**Parrots' plague** or **rinder-pest.** See ★*plague.*—**Pygmy parrot,** *Nasiterna pusio*, a diminutive species found in New Guinea.—**Quaker-parrot,** *Myiopsittacus monachus*, so named from its gray throat and breast. It is a native of Brazil, remarkable as being the only parrot that builds nests in tree-tops. *Nature*, Jan. 29, 1903, p. 304.—**Vasa parrot,** one of several species of the genus *Coracopsis*, particularly *C. vasa*, found in Madagascar, characterized by a black or somber plumage.

parrot-fish, *n.* (*f*) A name given in Australia and elsewhere to *Scarus pseudolabrus*: called in the Australian tropics *parrot-perch.* In Victoria and Tasmania the name is also given to several species of *Labrichthys.* In New Zealand, the parrot-fish is *Pseudolabrus miles psittacula.* (*g*) Same as *blue* ★*groper.*—**Rainbow parrot-fish,** a common name of *Sparisoma viride*, a scaroid fish of the West Indies. **Red parrot-fish,** *Scarus abildgaardi* of the family *Scaridæ.*

parrotism (par′ọt-izm), *n.* [*parrot* + *-ism.*] Imitation without understanding or reason, after the fashion of parrots. [Rare.] *N. E. D.*

parrotlet (par′ọt-let), *n.* [Dim. of *parrot.*] A book-name of the South American parrots of the genus *Brotogerys*, the smallest of American parrots.

parrot-mouth (par′ọt-mouth), *n.* A condition of a horse's mouth in which the upper incisor teeth become long and overlap the lower incisors: seen usually in old horses.

parrot-perch (par′ọt-pėrch), *n.* See ★*parrot-fish* (*f*).

parrot's-bill, *n.* **2.** Same as *parrotbeak.* See ★*kowhai.*

parrot's-corn (par′ọts-kôrn″), *n.* The seeds of the *Carthamus tinctorius*, or bastard saffron.

parrot's-food (par′ọts-föd), *n.* In Tasmania, *Goodenia ovata*, a small yellow-flowered Australian shrub.

parrot-toed (par′ọt-tōd), *a.* Pigeon-toed; having the toes turned in.

parrot-tulip (par′ọt-tū″lip), *n.* See *tulip.*

Pars cystica, in *embryol.*, the rudiment of the gall-bladder and ventral pancreas, as distinguished from the ★*pars hepatica.*—**Pars hepatica,** in *embryol.*, the liver-forming portion of the diverticula developed from the ventral wall of the intestine in vertebrates.—**Pars olfactoria.** See *precommissural* ★*fibers.*—**Pars temporalis.** See *precommissural* ★*fibers.*

parsemé (pär-se-mā′), *a.* [F., pp. of *parsemer*, sow over, < *par-* + *semer*, < L. *seminare*, sow: see *seminate.*] In *embroidery*, sprinkled, strewn, or sowed over the surface of: said of small figures, as bees, flowers, etc.

The rise of a new conception of design, with figures and ornaments *parsemé* on a velvet ground, . . . in the fifteenth century. *Athenæum*, June 17, 1905, p. 760.

Parsic (pär′sik), *a.* Same as *Parsee.*

But the number seven neither presupposes the dogma of the seven archangels, nor is copied from the seven *Parsic* amschaspands.
C. F. Keil (trans.), Biblical Commentary on the Prophecies of Ezekiel, I. 126.

parsimony, *n.*—**Law of parsimony.** (*b*) See ★*law*1.

parsley, *n.*—**Spotted parsley,** either the poison-hemlock, *Conium maculatum*, or the water-hemlock, *Cicuta maculata.*

parsley-elder (pärs′li-el″dėr), *n.* See ★*elder*².

parsley-frog (pärs′li-frog), *n.* A small toad, *Pelodytes punctatus*, of southwestern Europe: of variable color, sometimes a brownish green. Known also as *mud-diver.* *Proc. Zool. Soc. London*, 1887, p. 577.

parsley-worm (pärs′li-wėrm), *n.* Same as ★*celery-caterpillar.*

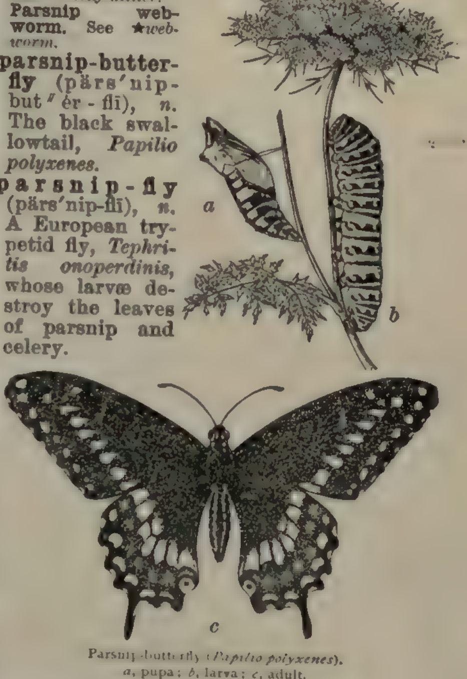
parsleywort (pärs′li-wėrt), *n.* Any plant of the *Apiaceæ* or parsley family; an umbellifer.

It has consisted in cultivating one of our *parsleyworts* (*Anthriscus sylvestris*). *Yearbook U. S. Dept. Agr.*, 1898, p. 369.

Parsnip leaf-miner. See ★*leaf-miner.*—**Parsnip web-worm.** See ★*web-worm.*

parsnip-butterfly (pärs′nip-but″ėr-flī), *n.* The black swallowtail, *Papilio polyxenes.*

parsnip-fly (pärs′nip-flī), *n.* A European trypetid fly, *Tephritis onoperdinis*, whose larvæ destroy the leaves of parsnip and celery.



Parsnip-butterfly (*Papilio polyxenes*).
a, pupa; *b*, larva; *c*, adult.

parsondom (pär′sn-dum), *n.* **1.** The state of being a parson.—**2.** The clergy. [Rare.]

parsoness (pär′sn-es), *n.* A female parson. [Rare.]

part, *n.*—**Accessory parts.** See ★*accessory.*—**Added part** or **voice.** See ★*add.*—**Dead's part.** In *Eng. law*, the part of the personal estate of a decedent which, by the custom of London, York, and some other jurisdictions, became the property of the administrator or executor. Originally the Church filled these offices, and the portion was used in charities. The amount varied according as the deceased left a widow and next of kin. It was abolished in the reign of James II., when the property was made subject to the statute of distributions.—**Homogeneous parts.** (*b*) Sing. In *geom.*, a part of the same dimensionality as its whole.—**Outer parts** or **voices,** in *music*, the extreme parts or voices in the harmony, usually the treble and bass.—**Part of fortune,** in *astrol.*, the lunar horoscope; the point which by oblique ascension is as far distant from the ascendant as the moon is from the sun. It was supposed to influence the pecuniary affairs of the native.— **Reasonable part**, in *old Eng. law*, that part of a man's estate that fell to either the widow or children of the deceased. Under Henry II. the widow had one third and the issue had one third. The remainder could be disposed of by will. If only the wife or only the issue survived him, the legator could dispose of one half the estate by will. See *reasonable dower*, under *dower*^{2}, 2.—**Speaking part**, on the stage, the part of an actor who has words to utter, no matter how few.

part, *v.* I. *trans.* 9. Technically, in assaying, to separate (silver from its alloy with gold) by dissolving out (the silver) with nitric acid.

II. *intrans.* 6. To give up; part with; pay (money); shell out: as, he *parted* well. [Slang.]

part. [*l. c.* or *cap.*] An abbreviation of *participle.*

part. adj. An abbreviation of *participial adjective.*

partan, *n.* 2. A crabbed, sour, cross-looking person. *N. E. D.*

partan-full (pär'tạn-fůl), *a.* Entirely full; full as a crab is of meat. *N. E. D.*

partan-handed (pär'tạn-han″ded), *a.* Stingy; mean. *N. E. D.*

part-book (pärt'bůk), *n.* In *music*, a book in which the notes for any one voice in part-music are given. In early times all part-music was thus separately written or printed.

parted, *p. a.* 5. Having a part or character in a play allotted to (one): as, the leading man was badly *parted.*

> I have seen Sir Henry better '*parted*' a score of times, and Miss Ellen Terry a hundred times.
> *Mod. Newspaper. N. E. D.*

parter, *n.* 2. A finer; a purifier of gold and silver: so called because, by fire and water, the gold or silver was 'parted' from baser metals.

Parterre d'eau, a body of water with or without fountains, arranged as a part of a scheme for a park or garden: as, the two *parterres d'eau* of the upper terrace at Versailles.

partes infidelium (pär'tēz in-fi-dē'li-um). [L. *partes*, pl. of *pars*, part, region; *infidelium*, gen. pl. of *infidelis*, unbelieving, infidel.] Regions where the Christian faith is not known; heathen or pagan countries; figuratively, uncivilized or uncultured countries.

> Men yet living can remember when in the eyes of the universal church of learning all cisatlantic countries, our own included, were *partes infidelium.*
> *S. Newcomb*, in Smithsonian Rep., 1897, p. 89.

parthenian (pär-thē'ni-ạn), *a.* [Gr. *παρθένιος*, maidenly, virgin, + *-an.*] Of or pertaining to a virgin or to virginity.

parthenic (pär-then'ik), *a.* [Gr. *παρθενικός*, virgin.] Pertaining to, or being, a virgin; virgin; pure.

parthenicine (pär-then'i-sin), *n.* [*Parthen(ium)* + *-ic* + *-ine*^{2}.] A bitter crystalline alkaloid found in *Parthenium Hysterophorus.*

parthenion (pär-then'i-on), *n.*; pl. *parthenia* (-ạ̈). [Gr. *παρθένιον*, neut. of *παρθένιος*, < *παρθένος*, a maiden.] In *Gr. antiq.*, a song sung by girls accompanied by the flute.

parthenism (pär'the-nizm), *n.* Same as *parthenogenesis.*

Parthenocissus (pär″the-nọ-sis'us), *n.* [NL. (Planchon, 1887), < Gr. *παρθένος*, virgin, + *κισσός*, ivy: the equivalent of the French name of *Parthenocissus quinquefolia*, *vigne vierge*, and its English name, *Virginia creeper.*] A genus of about 10 species of woody climbing vines, closely related to *Ampelopsis* and belonging to the grape family. The species are natives of central and eastern North America and Asia. They have digitately compound or rarely simple leaves, mostly disk-bearing tendrils, and a compound cymose or paniculate inflorescence. The Virginia creeper, *P. quinquefolia*, and the Japanese ivy, *P. tricuspidata*, are well known in cultivation. See cut under *creeper*, 3.

parthenogenesis, *n.* 3. Alternation of generations; metagenesis.

> The word *Parthenogenesis* . . . was first used by Owen in the sense of Alternation of Generations.
> *E. F. Phillips*, in Proc. Amer. Philos. Soc., Oct. 16, 1903, [p. 276.

Artificial parthenogenesis, the artificial initiation of the process of development in an egg by something else than a male cell. See *artificial* ★*fertilization.*

> These results, at first contested and even scouted, have been obtained by other workers in many lands. There is no longer a shadow of doubt that *artificial parthenogenesis*, as the process is technically termed, is an established fact. *C. Snyder*, New Conceptions in Sci., p. 212.

Complete parthenogenesis. (*a*) The complete development of an unfertilized egg into an adult animal. Complete parthenogenesis may be *tychoparthenogenesis* or exceptional parthenogenesis, or *isoparthenogenesis* or normal parthenogenesis. (*b*) The type of parthenogenesis in which the fertilized eggs produce only one sex. [Rare.] —**Gynogenetic parthenogenesis.** See ★*gynogenetic.* —**Normal parthenogenesis**, isoparthenogenesis; the occurrence of parthenogenesis as part of a normal life-history. Two types of normal parthenogenesis are to be distinguished: (*a*) The parthenogenetic, and usually viviparous, development of all the eggs of certain females, as in the *Aphidæ* and *Cladocera*. Parthenogenesis of this sort accompanies an alternation of generations between a generation or generations of parthenogenetic females and a generation consisting of males and of females that lay fertilized eggs. In the *Aphidæ*, no males are found during the summer and all the individuals are females incapable of fertilization. They give birth viviparously to females like themselves, and this process of viviparous parthenogenetic reproduction goes on, generation after generation, as long as the conditions of life are favorable. In a hothouse where there is a uniformly high temperature and plants grow throughout the year, it may continue for several years, with fifty or more generations which consist of females exclusively. The eggs that undergo parthenogenetic development into embryos within the bodies of these females are known as *summer eggs.* As the autumn approaches, a generation of *sexupara*, or viviparous females which give birth parthenogenetically to a generation which consists of males and of females that are not parthenogenetic or viviparous, the so-called *sexuales*, is produced. The females to which the sexupara give birth unite sexually with the males and lay the fertilized *winter eggs*, which usually have a long dormant period, lasting through the winter; and they hatch, in the spring, into the first generation of viviparous parthenogenetic females. The life-histories of the different species of plant-lice, and of the *Cladocera*, differ somewhat, in details, from this description, but they all present an alternation between viviparous females that produce parthenogenetic summer eggs and a generation of males and of females that lay fertilized winter eggs. The terms *heteroparthenogenesis*, *heterogeny*, and *pseudoparthenogenesis* have been proposed by different writers to designate this sort of normal parthenogenesis. (*b*) The normal development of some of the eggs laid by a female animal without fertilization, as in the honey-bee. After the nuptial flight the queen bee returns to the hive with the spermatic receptacle filled with spermatozoa, which retain their vitality for the rest of her life, and fertilize some of the eggs, but not all, as they pass through the oviduct past the duct of the spermatic receptacle. The eggs that are not fertilized develop into male bees or drones, while the fertilized eggs produce females, which may become queens or perfect females, or workers or arrested females, according to the treatment which they receive from the workers after they have been laid. The workers, which make no nuptial flight and are incapable of sexual union, sometimes lay eggs which give rise to males.—**Occasional parthenogenesis**, the development without fertilization of a few of the eggs produced by an organism the eggs of which do not usually develop without fertilization; tychoparthenogenesis.—**Partial parthenogenesis**, the incomplete or partial development of unfertilized eggs.

> The question whether there is parthenogenetic development among any of the Vertebrates is one which has been much discussed. If there are any cases at all they are cases of *partial parthenogenesis*, since in no case is it claimed that development goes farther than the first few cleavage stages.
> *E. F. Phillips*, in Proc. Amer. Philos. Soc., Oct. 16, [1903, p. 304.

parthenogenitive (pär″then-ọ̄-jen'i-tiv), *a.* Same as *parthenogenetic.* [Rare.]

parthenogonidium, *n.* 2. In protozoans, as *Volvox*, an asexual cell capable of reproducing another cell or a colony.

parthenolatry (pär-the-nol'ạ̈-tri), *n.* [Gr. *παρθένος*, virgin, + *λατρεία*, worship.] Worship of a virgin or of the Virgin.

Partho-Greek (pär″thọ-grēk'), *a.* Parthian and Greek; pertaining to Greek civilization in Parthia: as, a *Partho-Greek* city; a *Partho-Greek* coin.

Partho-Greek Coin.

> The *Partho-Greek* city of Seleucia is represented on coins as seated in the same way on a rock with a river at her feet. *P. Gardner*, in Jour. Hellenic Studies, IX. 77.

parti (pär-tē'), *n.* [F., side, means, match, marriage: see *party*^{1}.] A person considered with reference to his means or position as related to marriage: as, a good *parti* (F. *un bon parti*), a good match in regard to pecuniary and social status.

partial. I. *a.*—**Partial bulkhead.** See ★*bulkhead.* —**Partial indulgence**, in the *Rom. Cath. Ch.*, an indulgence which takes away a part only of the temporal punishment due to sin. *Cath. Dict.*

II. *n.*—**Upper partial**, in *acoustics*, an overtone of high pitch, not necessarily in harmonic relation to the fundamental tone.

partialist, *n.* 3. One whose views are partial; one who knows or sees only a part of anything.

partialistic (pär-shạ̈-lis'tik), *a.* Pertaining to or characteristic of a partialist or of partialism.

participatory (pär-tis'i-pạ̄-tọ̄-ri), *a.* Participating.

particle, *n.* 4. In a document of any kind, a very small part of any statement or proposition; a clause. *N. E. D.*—5. In the *Rom. Cath. Ch.*, the host given to each lay communicant.—6. In *mech.*, a body or portion of matter so minute that, while it possesses mass, it may be treated as a geometrical point.—**Alpha particles**, inactive particles projected from the radio-elements, such as radium, during the changes which these spontaneously undergo. They are held to be positively charged particles having a mass approximately equal to that of an atom of helium and projected with one tenth the velocity of light.—**Beta particles**, particles, projected from the radio-elements, which have a negative electric charge and an apparent mass approximately $\frac{1}{1000}$ as great as that of the atom of hydrogen. They are supposed to be identical with the particles which constitute cathode-rays.—**Central particle**, in *cytol.*, same as ★*centrosome.*

particular. I. *a.*—**Particular synod.** See ★*synod.*

II. *n.*—**London particular.** (*a*) A special quality of Madeira wine as imported for the London market. (*b*) A humorous name for a London fog. *N. E. D.*

particularist, *n.* II. *a.* Pertaining to or characterized by particularism.

> Busch, unlike most caricaturists, devotes no attention to the princes, prelates or potentates engaged in the Kulturkampf or the *particularist* movement.
> *Bookman*, Sept., 1905, p. 13.

Particulate inheritance. See ★*inheritance.*

partie^2 (pär-tē'), *n.* [F., a part, a party. See *party*^{1}.] 1. A part; a party.—2. In *music*, same as *partita.*—3. A game which requires more than one deal to decide it, such as piquet, in which there are six deals.—**Partie carré**, a party of four persons.—**Partie honteuse**, something to be ashamed of; a shameful side; a disgrace.

> The gravest of all possible complications of appendicitis still remains a "*partie honteuse*" of modern practice. *Med. Record*, June 27, 1903, p. 1005.

parting, *n.* 1. (*g*) In *geol.*, a thin stratum of foreign material separating similar superimposed beds of coal, limestone, sandstone, or slate, and serving to split the quarried seam into two parts. Partings are parallel to the bedding-planes of the rock, and they indicate temporary changes in the sedimentation, with the formation of thin bands of coarser or finer materials.

parting-acid (pär'ting-as″id), *n.* The technical name for nitric acid which is free from hydrochloric acid or chlorin, and therefore fit for use in parting gold from silver in alloys of these two metals.

parting-bead (pär'ting-bēd), *n.* Same as *parting-strip.*

parting-flask (pär'ting-flȧsk), *n.* Same as *parting-glass.*

partinium (pär-tin'i-um), *n.* [See the def.] An alloy consisting of 96 parts of aluminium, 2.4 of antimony, .8 of tungsten, .64 of copper, and .16 of tin: invented by G. H. Partin. It can be either cast or rolled. *Nature*, Oct. 2, 1902, p. 545.

parti pris (pär-tē' prē'). [F., 'a side taken': see *party*^{1} and *prize*^{1}.] The side taken; previous bias; firm prejudice; a mind made up as to a course of action.

> The requirements of his *parti-pris* sometimes carried him a long way from truth.
> *J. C. Van Dyke*, Modern French Masters, p. 120.

partitino (pär-ti-tē'nō), *n.* [It., dim. of *partita*, a part: see *party*^{1}.] In *musical notation*, a small part or score for some special instrument or voice, attached or auxiliary to a general score.

partition, *n.*—**Maxwell's law of partition.** See ★*law*^{1}.

partition, *v. t.* 3. (*a*) To separate into parts. (*b*) To make a selection of elements possessing a common characteristic: as, to *partition* a manifold.

partitionary (pär-tish'ọn-ạ̄-ri), *a.* [*partition* + *-ary.*] Relating to or of the nature of partition specifically of lands. *N. E. D.*

partitioner (pär-tish'ọn-ėr), *n.* One who partitions or partitions off; specifically, one who partitions lands.

partition-plate (pär-tish'ọn-plāt), *n.* A metal plate for dividing a chamber or compartment into two parts.

partiversal (pär-ti-vėr'sạl), *a.* [L. *pars* (*part-*), part, + *versus*, pp. of *vertere*, turn, + *-al*^{1}.] In *geol.*, varying in direction through a semicircle: specially applied to the radiating dips of a pitching anticline or syncline, and specially contrasted with *quaquaversal*, which implies dips radiating through an entire circle, as in the case of a dome.

partivity (pär-tiv′i̤-ti), *n.* The quality of being divided into a number of parts.

> A quartic having three acnodes is the limiting form of an anautotomic quartic in which the acnodes are replaced by three perigraphic curves; and if a line cutting the fourth portion in four real points be projected to infinity, the projection will be septipartite. From this it appears that the *partivity* of a curve of the *n*th degree cannot be less than $n + \frac{1}{2}(n-1)(n-2)$.
> *Nature*, Nov. 27, 1902, p. 80.

Partnach beds. See ★*bed*^{1}.

partner, *n.* 4. In an involution, the element coupled with a given element.—**Liquidating partner**, in *law*, the member of a dissolved partnership who concludes its business.—**Nominal partner**, one having no interest in the partnership, but who allows himself to be represented as a partner, and may therefore be held liable for the partnership debts.—**Secret partner.** Same as *dormant partner* and *silent partner* (which see).

partnering (pärt′nėr-ing), *n.* In the cotton-spinning trade, the practice of allowing only one piecer to every two spinners (thus, in effect, making them partners), favored by the employers but condemned and resisted by the trade-unions, which insist on two piecers to each spinner. Also called *joining*. [Trade-union cant.]

> Occasionally the employer has tried to have only one boy-piecer to two spinners. This system, called "joining" or "*partnering*," is always resisted by the union, which insists on each spinner having two piecers under him, on the ground that any other arrangement must necessarily involve a diminution of spinners' earnings.
> *Webb*, Industrial Democracy, II. 475, note.

partnership, *n.*—**Articles of partnership.** See ★*article*.

partridge, *n.* 6†. A cannon charge which consists of a number of missiles fired together; a sort of case-shot; a grenade.—**Plumed partridge**, *Oreortyx pictus*, the mountain quail of California, distinguished by a long, slender plume on each side of the head. See cut under *Oreortyx*.—**Snow partridge**, a game bird, *Lerwa lerwa*, found at high altitudes in the Himalayas. It is about the size of a ruffed grouse, black above, barred with white, and chestnut below.—**Thick-billed partridge** a common name for the gallinaceous birds of the genus *Odontophorus*, found in Central and South America.

partridge-dove (pär′trij-duv), *n.* In the West Indies, a ground-pigeon of the genus *Geotrygon*. Known also as *quail-dove*.

partridge-pigeon (pär′trij-pij″o̤n), *n.* See ★*pigeon*.

partridge-shell (pär′trij-shel), *n.* A large speckled tun-shell, *Dolium perdrix*.

partridge-vine (pär′trij-vīn), *n.* Same as *partridge-berry*.

partridge-wood, *n.* 2. In Australia, a palm, *Livistona inermis*, or its wood, which is beautifully marked and is of a light gray color.—3. In *mycol.*, the fungus *Stereum frustulosum*, which forms a crust-like growth upon the bark of various forest-trees.

partridging (pär′trij-ing), *n.* The sport of shooting partridges. *N. E. D.*

partschinite (pär′chi-nīt), *n.* [Named after Professor P. *Partsch* of Vienna.] A mineral believed to have the composition of the manganese garnet spessartite, but monoclinic in crystallization.

part-singer (pärt′sing″ėr), *n.* One who sings or is skilled in part-music or part-song.

parturience (pär-tū′ri-e̤ns), *n.* [*parturien(t)* + *-ce*.] Same as *parturition*.

Parturient canal. See *obstetric* ★*canal*.

party^1, *n.* 11. Same as ★*parti*.—**Party and party**, pertaining to or between two parties in an action at law: used adjectivally.

party-colored, *a.* 2. Figuratively, checkered; diversified; of many lights and shades: as, a *party-colored* past.

paru (pä′rö), *n.* [Braz. (Marcgraf).] A common name of *Pomacanthus paru*, a chætodontoid fish of the West Indies.

Parula, *n.* 2. [*l. c.*] The parula warbler, *Compsothlypis americana*. See *Parula*.

paruric (pa-rö′rik), *a.* [NL. *parur(ia)* + *-ic*.] Pertaining to, or affected with, paruria.

parusia, *n.* 2. (*a*) The nativity. (*b*) The second advent.

parusiamania (pa-rö″si-ạ̈-mā′ni-ạ̈), *n.* [*parusia* + *mania*.] Intense excitement with regard to the parusia or second advent.

> Men chanted, raved, spoke in unknown tongues, prophesied, gazed up into heaven all day, longed for vision, with a real *parusiamania*, straining to grasp the momentous fact that death was swallowed up in victory, that its incubus and awful inhibition was removed, so that every human faculty let itself go with abandon to excesses often riotous.
> *Amer. Jour. Relig. Psychol. and Education*, May, 1904, [p. 40.

parvenant (pär-ve-naṅ′), *a.* [F., pr. ppl. of *parvenir*. See *parvenu*.] Rising to or attaining position; "arriving." See *parvenu*.

parvenuism (pär′ve-nū-izm), *n.* [*parvenu* + *-ism*.] The character of being a parvenu.

parvifolious (pär-vi-fō′li-us), *a.* [L. *parvus*, small, + *folium*, leaf, + *-ous*.] Having small leaves.

parvipotent (pär-vip′ọ̄-tent), *a.* [L. *parvus*, small, + *potens(-t)*. See *potent*.] Having little power: opposed to *omnipotent*.

parvoline (pär′vọ̄-lin), *n.* Tetramethylpyridine, $C_5HN(CH_3)_4$. Of the several isomeric varieties, the principal one is 2,3,4,5-tetramethylpyridine, an oil which occurs in coal-tar. Other varieties are made by distilling bituminous shales, heating cinchonine with potash, or by the decay of horse-flesh or mackerel. They are basic oils which form salts with acids.

pas^2, *n.*—**Pas d'âne**, in arms and armor, a small additional guard on the hilt of a sword just above the blade.

pasa^1 (pä′sạ̈), *n.* [Sp., ‹ L. (*uva*) *passa*, dried grapes; *passa*, fem. of *passus*, ppr. of *pandere*, spread out.] A raisin, or grape dried in the sun: hence applied to other sun-dried fruits or berries.

> The "*pasas*," or half-dried grape, in whose praise too much could not be said.
> *J. G. Bourke*, On the Border with Crook, p. 60.

pasa^2 (pä′sä), *n.* [Bolivian.] A kind of kaolin or white clay eaten by the Indians of Bolivia. *Deniker*, Races of Man, p. 145.

Pascal's law of fluid pressures. See ★*law*^{1}.

pasch-day (pask′dā), *n.* Good Friday.

Paschen's law. Same as *law of* ★*displacement*. See also *laws of* ★*radiation*.

pasear (pä-sạ̄-är′), *n.* [Sp. *pasear*, take a walk, ‹ *paso*, a step. See *pass*, *n.*] A walk for pleasure; a promenade. [Southwestern U. S.]

> He is ever with me when I go on the *pasear*.
> *Bret Harte.* *Int. Dic.*

paseng (pä-seng′), *n.* The wild goat, or bezoar-goat.

paseo (pä-sā′ō), *n.* [Sp., ‹ *pasear*, *v.* See ★*pasear*, *n.*] Same as ★*pasear*. [Southwestern U. S. and Spanish America.]

pasigraph (pas′i-gråf), *v. t.* [*pasigraph(y)*.] To write in pasigraphic characters.

pasotes (pä-sō′tās), *n.* [W. Ind.] Same as ★*apasotes*.

pasquilic (pas-kwil′ik), *a.* [*pasquil* + *-ic*.] Resembling or having the character of a pasquil. [Rare.]

pass, *v.* I. *intrans.*—**To pass over.** (*b*) In *old Eng. law*, to lose a case.—**To pass over the range.** See ★*range*.

II. *trans.*—**Passed ball.** See ★*ball*^{1}.—**Passed pawn.** See ★*pawn*^{2}.

pass, *n.* 14. The act of a player in throwing a ball to another: as, that was a bad *pass*. See *pass, v. i.*, 18.—15. A shaggy, coarse, Russian hemp, the third quality. Known also as *pass-hemp*.—16. In *geom.*, the point common to a plane and a straight not on it.—**Mediterranean pass.** See *Mediterranean* ★*passport*.—**To make the pass**, in *card-playing*, to shift the two parts of the pack to their original positions after they have been cut.

passage, *n.* 15. In the *manège*, the movement of a horse when passaging; an advance sideways in obedience to the pressure of the rider's leg: a very showy movement, often executed in a march past.—**False passage**, in *surg.*, rupture of the wall of a membranous tube, such as the urethra, occurring during the passage of a sound or other instrument.—**Inferior passage.** Same as *inferior* ★*transit*.—**Method of passage.** See ★*method*.—**Tint of passage**, the grayish color observed in the field of a polariscope when the transition from red to blue occurs.—**Urinary passages**, the tubules and pelvis of the kidneys, the ureters, bladder, and urethra taken collectively.

passage-bed (pas′ạ̄j-bed), *n.* In *geol.*, a transitional bed between others which are of contrasted physical characters or contain different faunas or floras. The passage-bed in the former case exhibits intermediate characters, in the latter intermediate fossils.

> The leading characteristic of this Middle Potomac flora is the proportion of Dicotyledons. Notwithstanding this apparent *passage-bed*, there is a marked difference between the Older and the Newer Potomac floras, very few species passing from the one to the other.
> *Encyc. Brit.*, XXXI. 433.

passage-cell (pas′ạ̄j-sel), *n.* Same as ★*transfusion-cell*.

passage-form (pas′ạ̄j-fôrm), *n.* In *biol.*, a form which is transitional or intermediate between two species, genera, or other groups of organisms; a connecting-link.

passaggio (pa-säj′ọ̄), *n.* [It.] In *music*, a modulation or a bravura ornament or flourish.

passalid (pas′a̤-lid), *n.* and *a.* I. *n.* A member of the coleopterous family *Passalidæ*.

II. *a.* Of or pertaining to the family *Passalidæ*.

Passalora (pas-a̤-lō′rạ̈), *n.* [NL. (Fries, 1849), ‹ Gr. πάσσαλος, a nail, from the general appearance. The second part (*-ora*) is quite obscure; perhaps a mere fancy or for euphony.] A genus of hyphomycetous fungi having erect, simple, pluriseptate conidiophores which bear elongate, uniseptate, colored conidia. *P. bacilligera* is a common species parasitic on the leaves of alder (*Alnus*) in Europe.

passant, *n.* 3. In *numis.*, a figure on a coin in a walking position from right to left or from left to right. *W. C. Hazlitt.*

pass-boat (pås′bōt), *n.* A small boat of the style of a punt.

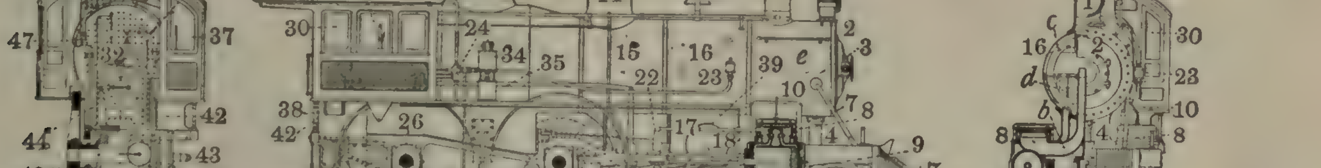
pass-door (pås′dōr), *n.* In a theater, the door of communication between the stage and the house.

passe^2 (päs), *n.* [F., ‹ *passer*, pass: see *pass*, *v.*] In *roulette*, a bet that the number will be one of those from 19 to 36. *Amer. Hoyle*, p. 376.

passecaille (päs-käy′), *n.* [F., ‹ It. *passacaglia*.] Same as *passacaglia*.

passenger, *n.* 5. In a boat-race, one of the crew who adds to the weight of the boat without doing his share of the work; hence, an ineffective member of a football-team, etc. *N. E. D.* [Colloq.]

passenger-engine (pas′en-jėr-en″jin), *n.* A locomotive engine constructed specially for passenger traffic. While capable of higher speed, its tractive power is less than that of a freight-engine. See *locomotive*.



Passenger-Engine.

1, headlight; 2, front end; 3, signal-lamp; 4, spark-pipe; 5, smoke-stack; 6, pilot; 7, pilot draw-bar; 8, steam-chest; 9, cylinder; 10, oil-pipe; 11, cylinder-cock; 12, engine-truck; 13, bell; 14, sand box; 15, sand-pipe; 16, jacket; 17, valve-stem; 18, guide-cup; 19, cross-head; 20, guides; 21, link; 22, rocker-arm; 23, injector-check; 24, injector; 25, driver-spring; 26, back driving-axle; 27, driving-wheel brake; 28, steam-dome; 29, whistle; 30, cab; 31, throttle-lever; 32, boiler-head; 33, gage-cocks; 34, donkey-pump; 35, reach-rod; 36, equalizer; 37, reverse-lever; 38, auxiliary reservoir; 39, main air-reservoir; 40, back driving-wheel; 41, front driving-wheel; 42, cab bracket; 43, crank-pins; 44, fire-door; 45, steam-gage; 46, sight feed-lubricator; 47, steam heat-reducing valve; 48, driving-wheel tire; 49, auxiliary air-reservoir. *a*, cylinder (same as No. 9); *b*, exhaust-passage; *c*, steam-pipe; *d*, exhaust-pipe; *e*, smoke-arch.

passenger-kilometer (pas′ẹn-jėr-kil″ọ-mē-tėr), *n.* A unit of railroad accounts which represents the transportation for one kilometer of one passenger: used instead of the passenger-mile wherever distances are measured in kilometers.

> The number of passengers carried in 1898 was 126 millions, the number of *passenger-kilometres* amounting to 4439 millions. *Geog. Jour.* (R. G. S.), XVI. 221.

passenger-mile (pas′ẹn-jėr-mīl″), *n.* A unit of railroad accounts which represents the transportation of one passenger for the distance of one mile.

passepartout (pas-pär-tö′), *v. t.* [*passe-partout, n.*] To place in a passe-partout frame.

passglas (pȧs′glȧs), *n.* [Also *paszglas*; G., < *pass* (*pasz*), measure, peg (= E. *pass*^{1}, *pace*), + *glas* = E. *glass*.] A tall, cylindrical drinking-glass, decorated in enamel colors and divided by horizontal lines into equal sections: formerly used in Germany. See the extract.

> These glasses belong to the eighteenth century, and were used at drinking parties; whoever failed to drink down to the mark when a toast was proposed was compelled to drink to the next mark.
> *C. H. Wilde*, in The Connoisseur, Sept., 1904, p. 29.

pass-hemp (pȧs′hemp), *n.* See ★*pass*, *n.*, 14.

passifloraceous (pas″i-flọ-rā′shius), *a.* Having the characters of the *Passifloraceæ*.

passing-penny (pȧs′ing-pen″i), *n.* See ★*pass-penny*.

passing-stroke (pȧs′ing-strōk), *n.* In *lawn-tennis*, a stroke by which the ball is driven past and out of reach of the opponent as he is coming toward the net.

passion, *n.* **9.** In *religious art*, a representation of the passion of Christ: as, the greater and lesser *passions* of Albrecht Dürer.

passionate, *a.* **II.** *n.* One who is strongly moved by passion, especially the passion of love. *N. E. D.*

passion-fruit (pash′ọn-fröt), *n.* The edible fruit of some species of passion-flower. *N. E. D.*

passionful (pash′ọn-fůl), *a.* Full of passion; having capacity for intense feeling.

> The savage man conceived the diverse bodies collectively constituting his environment to possess inherently mystic potence, and to be living, thinking, willing, *passionful* beings who lived, thought, willed, became angry or pleased, like himself under like conditions.
> *Amer. Anthropologist*, Jan.–March, 1902, p. 33.

passion-lettuce (pash′ọn-let″is), *n.* An early kind of spring lettuce. *N. E. D.*

passion-tree (pash′ọn-trē), *n.* A species of passion-flower cultivated for its fruit. *N. E. D.*

passival (pas′i-vạl), *a.* [*passive* + *-al*^{1}.] In *gram.*, of or pertaining to the passive voice. [Rare.]

> Our ears are still familiar in Bible English with this *passival* "of." *J. Earle*, Philol. Eng. Tongue, p. 482.

Passive state, in *chem.*, a condition brought about in metallic iron by immersion in concentrated nitric acid, the metal ceasing to be attackable by nitric acid or by solutions of copper or silver nitrate. It is probably due to the formation of a thin film of oxid of iron which acts as a protective coating. This phenomenon has been observed with other metals and other reagents, a similar explanation probably being applicable.

> The iron electrode in the fused sodium hydrate is gradually covered with a protecting layer or skin of oxid. As soon as this has been produced, the iron is no longer attacked, while previously it went into solution in the fused salt as iron oxid, with the development of hydrogen gas. This protecting skin can be produced rapidly if the iron is dipped for a short time into fused saltpeter, and subsequently, carefully freed from the saltpeter by means of water. The iron thus coated with this protecting skin, is called "*passive*" because the fused sodium hydrate produces no further changes on it.
> *Electrochem. Industry*, Oct., 1904, p. 401.

passometer (pa-som′e-tėr), *n.* [L. *passus*, step, + Gr. *μέτρον*, measure.] A pedometer.

pass-out (pȧs′out), *a.* Used in, or permitting, passing out.—**Pass-out check**, a check which enables the holder to leave or pass out of a place of entertainment and return. *N. E. D.* [Eng.]

pass-penny (pȧs′pen″i), *n.* In *ancient Greece*, an obolus, intended to pay the soul's ferriage over the Styx. The coin was placed on the tongue of the dead. Also *passing-penny*.

passport, *n.*—**Mediterranean passports**, passports issued by the British admiralty, and by the United States during their early history, which, according to treaties with the Barbary States, secured to the ships to which they were granted free passage in the Mediterranean, unmolested by the Barbary pirates.—**Passport Bureau.** See ★*bureau*.

passulate (pȧs′ụ-lāt), *v. t.*; pret. and pp. *passulated*, ppr. *passulating*. [LL. *passulatus*, < It. *passolato*, dried in the sun.] To dry (grapes) into raisins. *N. E. D*

passulation (pȧs-ụ-lā′shọn), *n.* [*passulate* + *-ion*.] The process of passulating or drying in the sun, as grapes into raisins.

pass-woman (pȧs′wům″ạn), *n.* In the Universities of Great Britain, a woman who passes for her degree without honors. *N. E. D.*

paste^{1}, *n.*—**Arsenical paste of Frère Côme.** See ★*arsenical*.—**Bougard's paste**, a caustic paste composed of 60 parts of wheat flour, 1 of arsenic, 5 of cinnabar, 5 of sal ammoniac, ½ part of corrosive sublimate, and 245 parts of solution of zinc chlorid. It is used in the treatment of cancer.—**Carbosulphuric paste**, a paste made with sulphuric acid and carbon, such as charcoal.—**Caustic paste**, chlorid of zinc made into a paste with flour and water.—**Esmarch's paste**, a caustic paste composed of 1 part of arsenic, 1 of morphine sulphate, 8 of calomel, and 48 of acacia: used in the treatment of cancerous and other growths.—**Paste dye.** See ★*dye*^{1}.—**Propiolic paste**, the trade-name of a pasty mass which contains about 25 per cent. of ortho-nitrophenyl-propiolic acid. In the presence of an alkali and a reducing agent it yields artificial indigo identical with the purified product from the indigo-plant. This process represents the first commercially successful synthesis of the important dye in question, and was for a time in use by calico-printers.—**Scar paste**, paste for covering scars or cuts in making harness leathers. *Modern Amer. Tanning*, p. 226.—**Tin paste**, a mass of pasty or pulp-like consistence, chiefly stannic hydroxid obtained by adding caustic soda to a solution of stannic chlorid, used in some processes of calico-printing.

paste-fitter (pāst′fit″ėr), *n.* In *shoemaking*, the man who fits together with paste the parts of the boot-uppers for the machine. *N. E. D.*

pastel, *n.* **3.** Figuratively, a short prose study, poetic, picturesque, but sketchy.—**4.** In *textiles*, a soft half-faded tint in fabrics used for dress-materials: so called from its resemblance to the tones of old pastel drawings. [Recent.] *Dry Goods Economist*, June 13, 1908.

pastel-paper (pas′tel-pā″pėr), *n.* Paper coated with a very fine sandy material to form a surface that will catch and hold the colored chalks used in pastel-work. See *pastel*.

pastern, *n.* **3.** That part of a dog's foot just above the toes, or the metacarpals and metatarsals. Anatomically this corresponds to the palm of the hand and sole of the foot in man, or to the cannon-bone in a horse.

> Limit dogs was won by St. Elvan, flat in ribs, head good, but not clean cut, not first rate in *pasterns*; head ordinarily good. Royal Grand, second, excelled the winner in every way, as did Duke of Gloucester, third.
> *Forest and Stream*, Feb. 21, 1903, p. 151.

pasteurellosis (pas-tėr-e-lō′sis), *n.*; pl. *pasteurelloses* (-sēz). [F. *pasteurellose*; < *Pasteur* + *-elle* + *-osis*.] A generic name including a group of highly fatal infectious diseases in different species of animals, characterized by sudden onset, rapid course, marked hyperthermia, accelerated breathing and pulse, and caused by bacilli of the hemorrhagic septicemia group. For instance, the pasteurellosis of birds is the same as fowl-cholera; of rabbits the same as rabbit septicemia; of wild animals, the same as game and cattle disease; of cattle, the same as hemorrhagic septicemia; of buffalo, the same as barbone; of swine, the same as swine-plague, etc.

> The vaccination against *pasteurelloses*, by MM. Joseph and Marcel Lignières. The name *pasteurelloses* is applied to a group of diseases of the same type, including typhoid fever and pneumonia of the horse, chicken cholera and hæmorrhagic septicæmia of the sheep, ox, and pig. It has been proved by experiment that it is possible to prevent these diseases by a process of vaccination.
> *Nature*, May 29, 1902, p. 120.

Pasteurizer (pas-tėr′ī-zėr), *n.* An apparatus for sterilizing a fluid by the method of Pasteurization.

paste-water (pāst′wâ″tėr), *n.* In *bookbinding*, same as *paste-wash*.

pastiness (pās′ti-nes), *n.* Pasty consistence, feeling, or appearance.

pastor, *n.* **5.** A fish, *Nomeus gronovii*, which lives in the tropical parts of the Atlantic and Pacific oceans and swims near the surface in rather deep water. It is often found among the tentacles of the Portuguese man-of-war.

pastor (pȧs′tọr), *v. t.* [*pastor*, *n.*] To shepherd, literally or figuratively.

pastoral, *n.* **6.** A treatise on the duties of a pastor. *N. E. D.*

pastoralist (pȧs′tọr-ạl-ist), *n.* [*pastoral* + *-ist*.] **1.** A shepherd; a sheep- or cattle-farmer and -breeder. The squatters in Australia have taken this name as less invidious than *squatter*.

> The great dispute of 1890 [Australia] originated in a difference between the *pastoralists* and shearers, which caused a deadlock between the *Pastoralists'* Association and the Shearers' Union, and the consequent engagement of a number of non-union shearers for the season.
> *Encyc. Brit.*, XXXIII. 27.

> It so happens that the plants on which the *pastoralist* relies grow or are grown on soil of inferior value to the agriculturist.
> *G. L. Goodale*, in Smithsonian Rep., 1891, p. 641.

2. One who writes pastorals.

> The pretty fancies of sonnetteers, song-writers, and *pastoralists* he [John Donne] passed on one side, and witched les jeunes with a new and poignant lyric.
> *The Academy*, Dec. 15, 1900, p. 608.

3. One who leads a pastoral, rural life.

pastorality (pȧs-tọ-ral′ị-ti), *n.* [*pastoral* + *-ity*.] Pastoral quality in literature or landscape.

> Take . . . a glance at some other peculiarities of this school of 1850— . . . as the admixture of sharp political and personal satire with the fantastic *pastoralities* of the style. *G. Saintsbury*, in Social England, III. 478.

pastorium (pȧs-tō′ri-um), *n.*; pl. *pastoria* (-ạ̈). [NL., < *pastor* + *-ium* (after *auditorium*, etc.).] A parsonage. [Southern U. S.]

pastose (pas-tōs′), *a.* [It. *pastoso*, pasty.] In *painting*, charged with paint or color.

> Luminous shadows and *pastose* lights.
> *J. Barry*, in Lectures on Painting, vi.

pastosity (pas-tos′ị-ti), *n.* [*pastose* + *-ity*.] The character of being pastose. The quality of being charged with paint or color: said of a painting.

past-president (pȧst′prez″i-dẹnt), *n.* One who has been president; an ex-president.

> He was also a *past-president* of the Royal Meteorological Society. *Nature*, Feb. 12, 1903, p. 348.

pastural (pȧs′tụ̄r-ạl), *n.* and *a.* [*pasture* + *-al*^{1}.] **I.** *n*†. Pasture.

> Nocht far frome this is a toune named Ekilis, and thair lykwyse ane ample and plesand *pastural* called the forest in quhilke baith the gret and smal beistes of the Prince vses to feid.
> *J. Dalrymple*, tr. Leslie, Hist. Scotland, I. 19.

II. *a.* Of or pertaining to pasture; yielding pasture. Sometimes erroneously for *pastoral*.

> The *pastural* eminence of Primrose Hill.
> *Clough*, Poems, I. 221. *N. E. D.*

pasture, *n.* **5.** A rocky shore where codfish resort to spawn.—**Stinted pasture**, in *law*, pasturage in common, limited in the use.

> All these species, of pasturable common, may be and usually are limited as to number and time; but there are also commons *without stint*, and which last all the year. *Blackstone*, Com., II. 34.

> In Benson v. Chester it was decided that a right of common *without stint* could not exist in the law
> *J. M. Cooley*, note on foregoing.

pasul (pä′söl), *a.* [Heb.] In Jewish use, disqualified; defective. According to Hebrew tradition, the torah, as well as the megilloth, mezuzah, etc., must be written on parchment according to voluminous, strict rabbinical rules and regulations: the omission of even a single letter or an improperly spaced word or line renders it *pasul*, that is, unfit for ritual purposes. The term is also applicable to persons.

pat^{2}, *adv.* **2.** Just at the present point; just there; without acting or moving: used in the following phrase.—**To stand pat.** (*a*) In *poker*, to play a hand just as it is, without drawing other cards. Hence—(*b*) In *politics*, to adhere obstinately to an existing status or policy, refusing to consider proposals of change or reform; stand still, in a blind or stubborn refusal to disturb existing conditions when they are profitable to one's party or one's self.

Pata. An abbreviation of *Patagonia*.

pataca, *n.* **2.** A Portuguese coin of the seventeenth and eighteenth centuries, equal to 320 reis.—**3.** A Portuguese coin of Mozambique, equal to 6 crusados.—**4.** A silver coin of Macao and Timor, equivalent to 100 avos or 41.63 cents.—**5.** A copper coin of Portugal, equal to 2 cuartos.

patacon (pä-tä-kōn′ or -kôṅ′), *n.* [See *patacoon*.] **1.** A name common to Brabantine and Portuguese coins from the fifteenth to the eighteenth century. The silver dollar so known was worth from 600 to 640 reis.—**2.** A heavy Portuguese copper coin worth 40 reis, issued early in the nineteenth century.—**3.** A Spanish silver coin of the value of 4*s.* 3*d.*

patagon^{1}†, *n.* Same as *patacoon*.

Patagon^{2}† (pat′ạ-gon), *n.* [Sp. *patagon*, clumsy foot.] A member of a tribe of South American Indians, whence Patagonia received its name. *N. E. D.*

Patagonian formation. See ★*formation*.

patagorang (pat-ạ-gō′rang), *n.* [Native Australian.] An aboriginal name for the kangaroo. *E. E. Morris*, Austral English.

pataka^{1} (pä-tä′kä), *n.* [*pataca*, *patacca*. See *pataca*.] An old coin and money of Abyssinia; the dollar, worth two fifths of a sequin.

pataka^{2} (pä′ta-kä), *n.* [Maori.] A storehouse erected on piles. [Australia.]

patao (pä-tä′ō), *n.* [Cuban Sp., from an aboriginal name.] A fish, *Gerres brasilianus*, found in the West Indies and southward.

Patapsco group. See ★*group*[1].

Patarinism (pat′a̤-rin-izm), *n.* [*Patarine* + *-ism.*] The teachings of the Patarines.

pat-ball (pat′bâl), *n.* In *games*, the same as *rounders*.

patch, *n.* **11.** (*a*) A piece of court-plaster used to protect a small wound. (*b*) A piece of cloth, or the like, sewed on a coat or gown as a badge or ornament. In the extract it refers to the band on the cap.

One juvenile wearer of the "*patch*" belonging to H. M. S. Aurora, was in the thick of the fire, carrying messages to and fro.

Daily News (London), Aug. 22, 1900. *N. E. D.*

(*c*) A piece of stiffened cloth, or the like, or a pad, worn over an eye, to protect it.— **Hard patch**, a patch riveted on a boiler-shell or fire-box; one which can be calked by upsetting the edge of the plate into the joint: so called to distinguish it from a soft patch. See *soft* ★*patch*.— **Mucous patch**, a moist whitish tubercle of syphilitic nature, at the anus or on the mucous membrane of the vagina or in the buccal cavity.— **Patch method**, in *forestry*, the clean cutting of small patches to invite reproduction by self-sown seed from the surrounding forest.— **Patch sowing.** See ★*sowing*.— **Purple patch.** See ★*purple*.— **Soft patch**, a patch of boiler-plate put on over a defective place or a hole in the shell or other surface of a boiler and held in place by bolts and not by rivets. The impossibility of bolting the patch so as to make a joint tight enough to calk with the metal of the patch, as in the case of riveted work (see *hard* ★*patch*), compels the insertion of some elastic material, such as red lead or putty, on a fibrous core between the two plates: hence the softness of the joint. Rubber-sheet packing or asbestos sheet may be used; but whatever is used, the joint is not reliable when exposed to heat and internal pressure.

patch-bolt (pach′bōlt), *n.* **1.** A bolt which has a flaring head to fit a countersunk hole: used for bolting a patch on a boiler.—**2.** A bolt which has a flaring head from the top of which projects a square knob for turning the bolt into place, after which the knob is cut off; a tap-bolt.

patchoulene (pa-chö′lēn), *n.* [*patchouli* + *-ene.*] In *chem.*, a hydrocarbon ($C_{15}H_{24}$) obtained by the action of dehydrating agents upon patchouli alcohol. It has an odor like that of cedar, a specific gravity of .939, and a boiling-point of 254–256° C.

Patchouli alcohol, one of the constituents of patchouli oil, from *Pogostemon Patchouli*. It is a transparent, colorless, crystallizable substance, melting at 56° C., with the composition $C_{15}H_{26}O$; a sesquiterpene alcohol. It does not possess the odor of patchouli oil.— **Patchouli camphor.** See ★*camphor*.

patch-piece (pach′pēs), *n.* Same as ★*patch-plate*.

patch-plate (pach′plāt), *n.* A foot-casting; a casting bolted to a structure to form a base or seat for another part; a patch-piece; a packing-piece; a liner.

patch-up (pach′up), *n.* The act of repairing or mending, usually a clumsy temporary performance; the repair so made. [Colloq.]

patchwise (pach′wiz), *adv.* In the manner of a patch; as a patch.

pate[1], *n.* **5.** The flesh split obtained in splitting or leveling a side of leather. *Modern Amer. Tanning*, p. 162.

Pâte changeante, a variety of porcelain which appears to change color in different lights.

M. Regnault, who succeeded M. Ebelman in the directorate of Sevres, was the inventor, while at the Sevres manufactory, of *pâte changeante*. The ware appears, during the day, like gray céladon, and at night, under artificial light, changes to a beautiful pink, whence its name. *Jennie J. Young*, The Ceramic Art, p. 325.

Pâte dure, hard-paste, or natural, porcelain.

patel (pä′tel), *n.* [Marāthī *patil*, Hindustānī *patel*.] In *India*, the head-man of a village. The office is hereditary, and is often held under a government grant. *Yule and Burnell.*

patela, *n.* Same as *puteli*.

Patella ulnaris, a sesamoid found at the elbow-joint of some birds: most conspicuous in penguins.— **Riders' painful patella**, pain and tenderness on pressure of the patella, especially its inner border, occurring in riders who wear stiff and unyielding breeches.

Patellaria (pat-e-lā′ri-ä), *n.* [NL. (Fries, 1823), < L. *patella*, a little dish.] A genus of discomycetous fungi, type of the family *Patellariaceæ*. It has black, superficial, gregarious corneous ascocarps and 4- or more celled hyaline spores. About 30 species are known, occurring on dead wood and stems. *P. atrata* is a common and widely distributed species.

Patellariaceæ (pat-e-lā-ri-ā′sē-ē), *n. pl.* [NL., < *Patellaria* + *-aceæ*.] A family of discomycetous fungi, which has black coriaceous or corneous ascocarps.

patellaric (pat-e-lar′ik), *a.* [*Patellar*(*ia*) + *-ic.*] Derived from the lichen *Patellaria* (or *Parmelia*) *scruposa*.— **Patellaric acid**, a crystalline acid, $C_{17}H_{20}O_{10}$, with a bitter taste, extracted by means of ether. It melts above 100° C., yielding oxalic acid and orcinol.

patellaroid (pa̤-tel′a̤-roid), *a.* [*patellar* + *-oid.*] Shaped like a small, shallow dish.

patellidian (pat-e-lid′i-a̤n), *n.* A member of the *Patellidæ* or limpets.

patellofemoral (pa̤-tel-ō-fem′ọ-ra̤l), *a.* Relating to both the patella and the femur. *Buck*, Med. Handbook, I. 553.

paten[1], *n.* **4.** An iron plate used in making plate-armor. *Meyrick*, Ancient Armour, III. Glossary.

patency, *n.* **3.** Specifically, in *pathol.*, the state of being open or pervious, as a tube or canal.

The retention of vesicular quality depended upon *patency* in some of the tubes, and its amount varied with the proportion of tubes involved.

Med. Record, March 7, 1903, p. 394.

patent[1]. **I.** *a.*— **Patent blue.** See ★*blue*.— **Patent medicine.** (*b*) In England, a medicine which is not protected by letters patent, but is merely a proprietary medicine bearing a government stamp.

II. *n.*— **Lapse patent**, a land patent issued to another by reason of the neglect of the first patentee to perfect his title. It relates back to the date of the original patent, but renders void all conveyances by the ousted patentee.

patentably (pat′e̤n-ta̤-bli), *adv.* Made so that it can be patented; made in such a way that it is patentable.

As many of our readers are aware, patents have been granted in Great Britain under the old patent law, without any inquiry to learn whether the inventions were *patentably* new, according to the law and practice of that country. *Sci. Amer.*, Feb. 28, 1903, p. 159.

pater (pā′tėr), *n.* [L.] Father: used in certain compound words: as, *pater*familias, *pater*noster, etc.; also, colloquially, among schoolboys, as a term of address or mention, like *mater*.

pateraite (pat′e̤-rä̤-īt), *n.* [Named after A. *Patera*, who first examined it.] A black, massive mineral from Joachimsthal, Bohemia, supposed to be essentially cobalt molybdate, but known only in a very impure state.

paterfamiliar † (pā″tėr-fa̤-mil′yä̤r), *adj.* [*paterfamilias*, on the analogy of *familiar*.] Of or pertaining to the paterfamilias; paternal. *N. E. D.*

Paterina stage. See ★*stage*.

paternality (pa̤-tėr-nal′i̤-ti), *n.* Fatherhood; the personality of a father. *N. E. D.*

paternalize (pa̤-tėr′na̤l-īz), *v. t.*; pret. and pp. *paternalized*, ppr. *paternalizing*. [*paternal* + *-ize.*] To treat paternally; especially, to support and control so as to make dependent instead of self-reliant: used of governmental action.

There have been "popular" meetings in support of the measure [a municipal electric light plant for New York], it is true, but none that have any claim or right to be regarded as representative of anything but the socialistic spirit which pervades a certain portion of the population here as everywhere else, and that would have every man on the pay roll of the State or the municipality in a vast series of *paternalised* institutions.

Elect. World and Engin., April 11, 1903, p. 597.

Paternoster while, as long as it takes to say a paternoster.

paternoster (pā″tėr-nos′tėr), *v. i.* [*paternoster*, *n.*] To fish with a paternoster. See *paternoster*, 4.

When *paternostering* on the bottom, and the tidal current is slight, it may be found necessary to use small wire booms 3 inches or 4 inches in length to extend the hook-links from the vertical portion of the paternoster, which they might otherwise foul.

Encyc. Brit., XXXII. 487.

paternoster-work (pā″tėr-nos′tėr-wėrk), *n.* In *naval arch.*, the framing belonging to a chain-pump.

patesi (pä-tā′sē), *n.* [Sumerian.] The native title of the local rulers of the ancient cities of Babylonia. They were at first probably independent, but later were usually subject to the ruler or king of some more powerful city, such as Babylon, which acquired control over the others. The term is usually translated as *priest-prince*, since both functions were combined in the one person.

We have, then, a presentment of the famous viceroy or *patesi* of Lagash, if not in his habit as he lived, at least in the shape in which it pleased the sculptors of his time to represent him. *Athenæum*, March 18, 1905, p. 344.

path, *n.*— **Germinal path.** See ★*germinal*.— **Short path**, in *physiol.*, a short spinal reflex.

path., pathol. Abbreviations of *pathology*, *pathological*.

pathematology (path″ē̤-mā-tol′ọ̄-ji), *n.* [Gr. *πάθημα*(-τ-), suffering, + *-ology*.] In *psychol.*, the doctrine of the emotions or passions.

pathetic, *a.* and *n.* **I.** *a.* **3.** (*b*) Trochlear: in reference to the superior oblique muscle.

II. *n.* **2.** Same as ★*patheticus*, 2.

patheticus, *n.* **2.** The superior oblique muscle of the eye.

pathetize (path′e-tīz), *v. t.*; pret. and pp. *pathetized*, ppr. *pathetizing*. [Gr. *παθητικός*, passive, + *-ize*.] To make passive, under hypnotic influence; hypnotize.

pathetogenetic (path″e-tō-jē̤-net′ik), *a.* In *psychol.*, productive or provocative of pity.

The cry of a child or a cat, a minor key, the downfall of stage snow, . . . may have very peculiar *patheto-genetic* efficacy.

Saunders and Hall, in Amer. Jour. Psychol., XI. 586.

pathfinder, *n.* **2.** In *surg.*, a very slender whalebone sound which is insinuated through a tortuous and strictured urethra, a larger sound being then passed over or alongside it. —**3.** In *bot.*, same as ★*honey-guide*, 2.

The *pathfinders* of the purple-red *L. maculatum* are dark red with white markings.

Amer. Nat., June, 1903, p. 378.

4. Same as *gay* ★*cat*.

The third prisoner described himself as Edward James, but Dougherty said he was James Casey, a thief of the "gay cat," or "*pathfinder*" class.

N. Y. Times, Jan. 2, 1905.

pathmaker (pȧth′mā″kėr), *n.* One who makes paths; a pioneer.

pathoamine (path-ọ̄-am′in), *n.* [Gr. *πάθος*, disease, + E. *amine*.] A term suggested by Selmi to denote any basic substance found in urine in disease as a product of the morbid process.

pathogeneity (path″ọ̄-jē̤-nē′i̤-ti), *n.* Same as ★*pathogenicity*.

pathogenesy (path-ọ̄-jen′e-si), *n.* Same as *pathogenesis*.

pathogenicity (path″ọ̄-jē̤-nis′i̤-ti), *n.* [*pathogenic* + *-ity*.] The state or character of being pathogenic.

Pathogenicity may be taken as a type of those powers of the organism which are easily and profoundly modified by external conditions. On the other hand, there are numerous characters which appear to be extremely constant. *Science*, April 28, 1905, p. 669.

pathognomic (path-og-nom′ik), *a.* Same as *pathognomonic*.

pathognomy, *n.* **2.** The study of the symptoms or signs of particular diseases. *Goode.*

Pathologic regeneration, variation. See ★*regeneration*, ★*variation*.

pathologico-anatomical (path-ọ̄-loj″i-kō-an-a̤-tom′i-ka̤l), *a.* Of or pertaining to pathological anatomy.

pathology, *n.* **4.** The science of the feelings, passions, and emotions. *Bentham.*— **Experimental pathology**, scientific knowledge of morbid processes based upon the study of disease artificially induced in the lower animals.

pathometer (pa̤-thom′e-tėr), *n.* [Irreg. < E. *path* + Gr. *μέτρον*, measure.] An instrument for recording the distance traveled by a vehicle. It also indicates the directions followed and the altitudes ascended and descended.

pathonomy (pa̤-thon′ō-mi), *n.* [Gr. *πάθος*, disease, + *νόμος*, law.] The science of the laws of diseases.

pathopoietic (path″ọ̄-poi-et′ik), *a.* [Gr. *πάθος*, disease, + *ποιητικός*, < *ποιεῖν*, make.] Same as *pathogenic*.

pathosocial (path-ọ̄-sō′sha̤l), *a.* [Gr. *πάθος*, disease, + E. *social*.] Of or pertaining to social pathology or to the subject-matter of social pathology, that is, to any abnormal or diseased social condition.

Social pathology . . . seeks to analyze the causes of these abnormal or diseased social conditions, and in this respect it is a necessary preliminary to the prevention or amelioration of *patho-social* conditions.

Rep. U. S. Comm. Education, 1889–90, xviii.

path-racer (pȧth′rā″sėr), *n.* A bicycle used for racing on a cinder-path.

His prettiest machine being a fine *path-racer*.

Westminster Gazette, Nov. 7, 1896. *N. E. D.*

patiency (pā′she̤n-si), *n.* [L. *patiens* (-*t*-) + *-cy*. See *patient*.] In *logic*, the quality of being passive; the condition of being acted upon by another: the opposite of *agency*. [Rare.]

patient, *a.* **6.** Receiving impressions; being the subject of external agents; passive. [Rare.]

This motion betwixt the agent spirit, and *patient* matter, produceth an actual heat.

Howell, Familiar Letters, I. 293. *N. E. D.*

patiki (pä′ti-ki), *n.* [Maori *patiki* = Tahitian *patii* = Hawaiian *pakii*.] A common Maori name of a flounder, *Rhombosolea monopus*, found in the waters of New Zealand and Tasmania.

patiné (pă-ti-nā′), *a.* [F., pp. of *patiner*, < *patine*, *n.*] Patined.

patined (pat′ind), *a.* [*patine* + *-ed*2.] Covered with a patina; patinated.

> Numerous chipped flints, mostly oval or almond-shaped. . . . Since their manufacture many have been deeply *patined* and rusted sometimes even right through, in red, yellow, or chalky white colours by physical or chemical agency, implying great age.
>
> *Keane*, Ethnology, p. 84.

patinize (pat′i-nīz), *v. t.*; pret. and pp. *patinized*, ppr. *patinizing*. [*patine* + *-ize*.] To coat articles not made of bronze with a bronze or patinated coating. *Sci. Amer. Sup.*, Feb. 27, 1904, p. 23548.

patinous (pat′i-nus), *a.* [*patina* + *-ous*.] Covered with a patina; patinated.

pâtisserie (pä-tēs-rē′), *n.* [F., < *pâtissier*, pastry-cook, < *pâtisser*, knead paste to make cakes, < *pâte*, OF. *paste*, paste. See *paste*1.] 1. A pastry-cook's shop; a place where a light luncheon of cakes, pastry, etc., may be obtained; a confectioner's.

> One of the most doleful sights I have seen in Paris was a sad-looking gentleman in black sitting at a cold marble-topped table of an expensive *patisserie* lunching on a weak cup of tea and a plate of cream-puffs.
>
> *F. B. Smith*, How Paris Amuses Itself, p. 48.

2. Pastry; the delicacies sold at a pastry-cook's shop or pâtisserie.

Patlander (pat′lan″dėr), *n.* [*Pat*, dim. of *Patrick*, + *land* + *-er*.] An Irishman. [Slang.] *N. E. D.*

Pat. Off. An abbreviation of *Patent Office*.

patola (pä-tō′lä̤), *n.* [Burmese?] A Burmese guitar with three strings, two of silk and one of copper.

patolli (pä-tōl′ẹ), *n.* [Also *patole*; < Nahuatl *patolli*.] A game something like backgammon, common among the ancient Mexicans.

Patoot series. See ★*series*.

patrial, *a.* 2. Relating to one's fatherland.

patriarch, *n.*—**Ecumenical patriarch**, universal bishop, the title assumed by John, the Patriarch of Constantinople, at the end of the sixth century. The claim of the title rested on the civil supremacy of Constantinople, and implied supremacy over the Christian world.

patriarchate, *n.* 5. The state of social organization, in which the child is a member of the social division to which its father belongs.

patriarchium (pā-tri-är′ki-um), *n.*; pl. *patriarchia* (-ä̤). [ML. *patriarchium*, patriarchal residẹnce or dignity.] 1. In the *Gr. Ch.*: (*a*) The residence of the patriarch adjoining the church; (*b*) the council of the patriarch.—2. In Rome, the residence in the Lateran Palace which was founded by Gregory the Great and used for the instruction of young priests.

patrick2 (pat′rik), *n.* A base coin, the eighth of a denier, authorized for Ireland in 1460, under Henry VI.

patrilineal (pat-ri-lin′ẹ-a̤l), *a.* [L. *pater* (*patr-*), father, + *linealis*, < *linea*, a line.] Relating to descent on the paternal side.—**Patrilineal descent**, paternal descent.

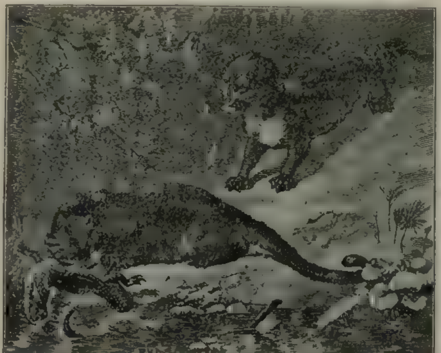
> All the phratry names so far recorded indicate that *patrilineal* descent is the rule in the north.
>
> *Nature*, Aug. 1, 1907, p. 334.

patrin (pat′rin), *n.* [Romany *patrin*, orig. leaf.] In Gipsies' cant, the marking of a trail by handfuls of grass or leaves dropped at intervals. Also *patteran*.

patrinia (pa-trin′i-ä̤), *n.* [From *Patrinia* (named in honor of E. L. M. *Patrin*, 1742–1815, a French naturalist and traveler in Siberia); an untenable genus name of these plants.] A name used in horticulture for plants of the genus *Fedia*, belonging to the family *Valerianaceæ*, and distinguished from other genera of the valerian family by the four stamens. They are hardy herbaceous perennials with mostly pinnate leaves and cymose clusters of yellow or, rarely, white flowers. There are about 15 species, natives of central and eastern Asia southward to the Himalayas. A few, as *Fedia Sibirica* and *F. scabiosæfolia*, are sometimes cultivated as ornamentals.

patrinite (pat′rin-īt), *n.* [G. *patrinit* (1845); named after E. L. M. *Patrin*. See ★*patrinia*.] A mineral from Berezof, in the Ural Mountains, a sulphid of bismuth, lead, and copper: better known as *aikinite*.

Patriofelis (pā-tri-ọ-fē′lis), *n.* [NL.] A genus of creodonts from the Middle Eocene (Wind River and Bridger) of North America. The animal was about as large as a jaguar and massively proportioned, with short heavy limbs and blunt-clawed feet. It has been thought that *Patriofelis* was of aquatic habits and more or less ancestral to the seals; but it was more probably terrestrial, since its teeth indicate adaptation to flesh food, not to fish eating. *Matthew.*



Patriofelis.
(From a skeleton in the American Museum of Natural History, New York.)

patristic, *a.*—**Patristic Chapters**, one of the tractates of the Mishnah, containing maxims, aphorisms, and moral precepts of the early Jewish sages from about 250 B.C. to 200 A.D. The chapters are six in number. They have been inserted in the Jewish prayer-book. A chapter is read every Saturday afternoon during the summer months from Passover to New-Year's day. Hebrew, *Pirke aboth* or simply *Aboth*. See ★*Aboth*.

II. *n.* One who studies or adheres to the doctrines of the fathers of the Christian church.

> The . . . system of the schoolmen . . . was . . . opposed by the old-fashioned Biblicists and *Patristics*.
>
> *G. S. Faber*, Prov. Letters, II. 149. *N. E. D.*

patrix (pā′triks or pat′riks), *n.*; pl. *patrices* (-tri-sēz). [NL., formed from L. *pater*, father, on a supposed analogy with *matrix* as related to L. *mater*, mother.] The reverse of *matrix*; in *calico-printing*, the steel roller, or molette, on which a design is formed in relief and then transferred by pressure to the printing-roller of a cylinder printing-machine.

patrologic (pā-trọ-loj′ik), *a.* [*patrolog*(*y*) + *-ic*.] Of or pertaining to patrology.

patrologist (pa̤-trol′ọ-jist), *n.* [*patrolog*(*y*) + *-ist*.] One who is versed in patrology.

patrol-wagon (pa̤-trōl′wag″ọn), *n.* 1. A large, covered, two-horse wagon belonging to the police force, used to carry prisoners to and from jail and for various other purposes.—2. A long, uncovered, two-horse wagon used by the fire-insurance patrol to carry men, with tarpaulins, etc., to fires, for the protection of insured goods.

patron, *n.* 9. The festival held on a saint's day.

patronage, *n.* 5. In *ancient Rome*, the relation borne by a patron to his client. See *patron*, *n.*, 1 (*b*).

> The client was regarded as a minor member (*gentilicius*) of his patron's gens . . . and . . . the *patronage* and the clientage were alike hereditary.
>
> *Encyc. Brit.*, XVIII. 413.

Disturbance of patronage. See ★*disturbance*.

patronym (pat′rọ-nim), *n.* [Gr. πατρώνυμος, named for the father. See *patronymic*.] A paternal name; a name derived from one's father or from one's ancestors in the male line.

> Objections may be raised . . . to the acceptance of metronyms in the genealogies as proofs of female kinship, while *patronyms* are rejected.
>
> *Nature*, Sup., May 5, 1904, p. xiii.

patronymic, *a.* 2. In *anthrop.*, relating to that form of society in which the child takes its name from the father's family, or in which the child is reckoned as a member of the paternal family.

patronymy (pa-tron′i-mi), *n.* [*patronym* + *-y*3.] The stage of social evolution in which family and clan names descend in the male line from father to son: in distinction from the metronymic stage. See ★*metronymic*, 2. *Giddings*, Elem. of Sociol., p. 187.

patruity (pa̤-trö′i̤-ti), *n.* [L. *patruus*, a paternal uncle.] The relationship of an uncle. [Rare.]

> Visible signs of paternity or *patruity*.
>
> *T. J. Hewlett*, Parsons and Widows, xxxvi. *N. E. D.*

patte, *n.* 3. Cleverness; skill in execution; genius. [French art slang.]—**Patte d'oie**, a coin, the gros blanc, struck under Jean le Bon (1350–1364) of France.

patten2, *n.* 4. A skate. [Local Eng.]

> Skates are termed *patines* in the Fens.
>
> *Baring-Gould*, Cheap Jack Zita, I. 184. *N. E. D.*

5. A round wooden plate fastened under the foot of a horse, to prevent it from sinking in marshy and soft ground. *N. E. D.*

patter2, *n.* 4. Rapid phrases introduced into a song in a speaking voice: sometimes applied to the whole text of a comedy. [Theatrical cant.]

> Mozart and many other composers often introduce bits of '*patter*' into buffo solos, as for instance the middle of 'Madamina' in 'Don Juan,' etc.
>
> *Grove*, Dict. Music, III. 654.

patteran (pat′ėr-a̤n), *n.* See ★*patrin*.

pattern, *n.* 11. A templet; a guide; a gage.—**Fitzhugh pattern**, a painted pattern on old Nankin porcelain, consisting of a central disk inclosing four pomegranates split in half and four hand-of-Buddha citrons, surrounded by four groups of flowers and symbolic figures. The border is a band of dull color with trellis-work of a darker shade. This pattern occurs in blue and occasionally in red or green. The porcelain on which it is found is usually of a whiter paste than that of the ordinary Nankin ware.—**Linen pattern**, in carved woodwork of the fifteenth and sixteenth centuries, a relief pattern resembling a folded napkin, the folds being often ingeniously imagined and combined, so that the surface of the panel is agreeably fluted. Also called *linen-fold pattern* and *napkin pattern*. See *linen-scroll*, with cut.—**Metric** or **metrical, rhythmic** or **rhythmical pattern**, in *music*. See ★*metric*2, ★*rhythmic*.—**Napkin pattern.** Same as *linen* ★*pattern*.—**Prunus pattern.** Same as ★*hawthorn decoration*. *N. Y. Times*, May 18, 1905.—**Reserve pattern**, in *ceram.*, a style of decoration in which the design is formed by the uncolored surface of the ware surrounded by a colored ground. The term is often applied to silver luster-ware in which the decorative design is reserved in white by applying a resist preparation to the glazed ware before the luster ground is put on. See *resist style*, under *resist*.—**Spade pattern.** See ★*spade*2.

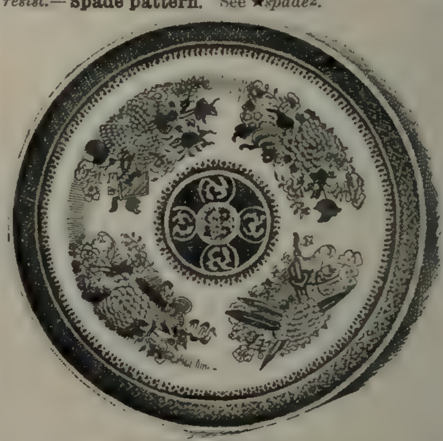


Plate with Fitzhugh Pattern.
(In Pennsylvania Museum, Philadelphia.)

patternable (pat′ėrn-a̤-bl), *a.* That can be used as a pattern.

patterner (pat′ėr-nėr), *n.* One who composes patterns; one who decorates or covers (a surface) with patterns or designs.

> Human emotion—the force which a mere *patterner* of spaces, a mere contemner of "subjects," would banish from pictorial art—plays a great part in the piece.
>
> *The Standard* (London), May 13, 1889, p. 3. *N. E. D.*

pattern-piece (pat′ėrn-pēs), *n.* A trial or experimental coin, not intended for circulation.

pattern-plate (pat′ėrn-plāt), *n.* A thin sheet of metal upon the surface of which designs are painted with an insulating varnish: used for operating the shedding mechanism of an electric Jacquard. This method was tried about 1860.

pattern-wheel, *n.* 3. A tracing-wheel (which see).

pattinsonization (pat″in-sọn-i-zā′shọn), *n.* The process of desilverizing lead by the Pattinson method. See *process*.

patu (pä′tö), *n.* [Maori.] A striking-weapon, such as a club. *E. E. Morris*, Austral English.

pau2 (pä′ö), *n.* [Hawaiian.] Formerly, the principal garment of the women of Hawaii, consisting of a number of pieces of tapa, generally five, wound around the waist and reaching to about the knee. *Jour. Amer. Folk-lore*, Oct.–Dec., 1900, p. 246.

paua (pou′ä̤), *n.* [Maori.] The Maori name of the mutton-fish: also used as the name for Maori fish-hooks, made of the paua-shell, the same word being adopted for fish, shell, and hook. *E. E. Morris*, Austral English.

paucine (pâ′sin), *n.* [*pauco* + *-ine*2.] A yellow crystalline alkaloid, $C_{27}H_{39}O_5N_5 + 6\frac{1}{2}\ H_2O$, found in pauco-nuts, the fruit of *Pentaclethra macrophylla*.

pauciplicate (pâ′si-pli-kāt), *a.* [L. *paucus*, few, + *plicatus*, folded. See *plicate*.] Having few folds or plications: said of certain shells which are provided with transverse ridges or plications.

> *Pauciplicate* Neanic Stage.—In this stage new striæ are introduced by implantation and not by bifurcation of the older ones. The striæ are strong, simple, and separated by spaces as wide as the striæ themselves. The number of plications is not great.
> *Amer. Jour. Sci.*, April, 1904, p. 290.

pauciramous (pâ-si-rā'mus), *a.* [L. *paucus*, few, + *ramus*, branch, + *-ous.*] Having few branches; sparsely branched.

pauco-nut (pâ'kō-nut), *n.* The fruit of *Pentaclethra macrophylla.*

pauhagen (pâ-hā'gen), *n.* [Also *paughaden*, *poghaden*, *porhagen*, *pauhaugen*; from an Algonkian form answering to Abenaki *pookagen* (Rasles), from a verb meaning 'grease the ground.' The fish was used by the Indians to manure their cornfields.] The menhaden. *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 252. [Maine, etc.]

pauhaugen, *n.* Same as ★*pauhagen.*

paukatea (pâ-ka-tē'ä), *n.* Same as ★*broadleaf*, 2.

Paulianite (pâ'li-an-īt), *n.* Same as *Paulianist.*

Paulicianism (pâ-lish'an-izm), *n.* [*Paulician* + *-ism.*] The doctrines professed by the Paulicians.

paulie (pâ'li), *a.* and *n.* [Also *pawlie*, *pallie*, *paley*, etc.; origin uncertain.] **I.** *a.* Weakly; sickly: used especially of lambs.

II. *n.* A very small, weak, or crippled lamb. [Scotch in all uses.]

paulin (pâ'lin), *n.* [Abbr. from *tarpaulin.*] The plain, unsurfaced canvas used in the army for covering stores, etc. [U. S.]

Pauline, *a.* **II.** *n.* 1. A member of one of the various religious orders of St. Paul.—2. A scholar of St. Paul's School, London.

> When in December, 1835, he returned to London, bringing with him the 'blue ribbon' of Oxford, an honour which no *Pauline* had at that time won, young Jowett at St. Paul's was a distinguished figure.
> *Abbott and Campbell*, Life and Letters of B. Jowett, I. 41.

Paulinian (pâ-lin'i-an), *a.* and *n.* [See *Pauline.*] **I.** *a.* Pertaining to, or characteristic of, St. Paul and his teachings.

II. *n.* A Paulinist.

Paulinistic (pâ-li-nis'tik), *a.* Pertaining to, or characteristic of, Paulinism or of a Paulinist.

Paulinize (pâ'lin-īz), *v. t.* and *i.*; pret. and pp. *Paulinized*, ppr. *Paulinizing.* [*Pauline* + *-ize.*] **I.** *trans.* To render Pauline; conform to the doctrines of St. Paul.

II. *intrans.* To imitate, obey, or follow St. Paul's teachings; become Pauline.

Paulism (pâ'lizm), *n.* Same as *Paulinism.*

Paulista (pou-lēs'tä), *n.* [Pg. *Paulista*, < *Paulo* (see def.).] A Portuguese and Indian half-breed, especially one from the state of São Paulo, Brazil. During the seventeenth century they ranged as freebooters through central Brazil, and by their extensive raids assisted in the spread of the Portuguese dominion.

> In Brazil the famous "*Paulistas*" (so called from the province of São Paulo), a cross between the first Portuguese immigrants and the aborigines, have always been the most vigorous and enterprising section of the community. Mainly to them is due the extension of the Portuguese domain from the Atlantic seaboard to the eastern slopes of the Cordilleras.
> *Keane*, Ethnology, p. 152.

Paulite (pâ'līt), *n.* [ML. *Paulites* (?); as *Paul* + *-ite*^{2}.] A member of the monastic order of the Hermits of St. Paul, founded in 1215. See *Paulist.*

paullinitannic (pâ″lin-i-tan'ik), *a.* [*Paullinia* + *tannic.*] Derived from *Paullinia sorbilis.*—**Paullinitannic acid**, a variety of tannin prepared from the seeds of *Paullinia sorbilis.*

paulo-post-future, *a.* 2. Pertaining to the near future: as, a *paulo-post-future* effect.

II. *n.* A future very near to the present.

> Here comes Dana, abstractedly loitering along,
> Involved in a *paulo-post-future* of song,
> Who 'll be going to write what 'll never be written
> Till the Muse, ere he thinks of it, gives him the mitten.
> *Lowell*, Fable for Critics, l. 939.

paulospore (pâ'lọ-spōr), *n.* [L. *paulus*, little, + E. *spore.*] A resting-spore or detached bud that is not motile.

paulotome (pâ'lọ-tōm), *n.* [NL. *Paulotome(a).*] A member of the genus *Paulotomea* of Haeckel.

Paulotomea (pâ-lọ-tō'mọ-ä), *n.* [NL.] One of the genera included by Haeckel in his family *Algariæ*, unicellular algæ without nuclei and without cilia.

Paulsen's defense. See ★*defense.*

pauper (pâ'pėr), *v. t.* [*pauper*, *n.*] Same as *pauperize. Tennyson*, The Falcon, i. 1.

pauperage (pâ'pėr-āj), *n.* [*pauper* + *-age.*] Pauperdom; pauperism.

pauperate (pâ'pėr-āt), *v. t.*; pret. and pp. *pauperated*, ppr. *pauperating.* To pauperize.

> It has *pauperated* many a lawful heir.
> *J. Rogers*, Antipopopriestian, XIV. 306. *N. E. D.*

pauperdom (pâ'pėr-dum), *n.* 1. The condition of a pauper; pauperism.—2. Paupers collectively.

Paurodontidæ (pâ-rọ-don'ti-dē), *n. pl.* [NL., < Gr. παῦρος, small, + ὀδούς (ὀδοντ-), tooth, + *-idæ.*] A family of small polyprotodont marsupial mammals, based on teeth and jaws from the Jurassic of Wyoming. *Marsh*, 1887.

Paurometabola (pâ″rọ-me-tab'ọ-lä), *n. pl.* [Gr. παῦρος, little, + μεταβολή, transformation.] In Brauer's system of classification, those insects in which the metamorphoses are slow, inconspicuous, and very incomplete, as the *Orthoptera.*

paurometabolous (pâ″rọ-me-tab'ọ-lus), *a.* [Gr. παῦρος, little, + μεταβολή, change, + *-ous.*] Characterized by incomplete metamorphosis; of or belonging to the *Paurometabola. Cambridge Nat. Hist.*, V. 199.

pauropod (pâ'rọ-pod), *n.* and *a.* **I.** *n.* A member of the *Pauropoda.*

II. *a.* Having the characters of or belonging to the *Pauropoda.*

pauropodous (pâ-rop'ọ-dus), *a.* Resembling or pertaining to the *Pauropoda.*

pausal, *a.* 2. In *Heb. grammar*, noting the form which a word receives in the pause of a sentence, in which in certain cases a vowel is changed (usually lengthened), or a weakened vowel reappears in full. *N. E. D.*

pause, *n.*—**General pause**, in *music*, a silence or rest on the part of all the voices or instruments, often marked by the sign

Its duration is entirely indeterminate, depending on the conductor's taste.

pause-rhythm (pâz'riᴛʜm), *n.* In *phonet.*, a rhythm of sound and pause; a rhythm produced, for example, by the sounding of a tone for a definite time at definite intervals. *E. W. Scripture*, Exper. Phonetics, p. 517.

pausimenia (pâ-zi-mē'ni-ä), *n.* [NL., < Gr. παῦσις, ceasing, + μήν, month.] In *physiol.*, the menopause. *Dunglison.*

paussid (pâ'sid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Paussidæ.*

II. *a.* Having the characters of or belonging to the family *Paussidæ.*

pavé (pä-vā'), *n.* [F., < *paver*, pave.] 1. A pavement; a paved road or street; the street.

> He has walked the Pall Mall *pavé* long enough.
> *Thackeray*, Pendennis, II. xxxi.

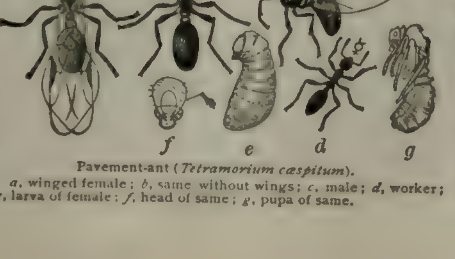
2. In *jewelers' work*, a setting in which the jewels are placed close together like a pavement, showing none of the gold.

pavement, *n.*—**Golden pavement.** Same as *king's* ★*land.*—**Nicholson pavement**, a kind of street pavement formed of sawed wooden blocks placed with the grain vertical on a platform of thin boards laid on the graded foundation of the road-bed. The interstices between the wooden blocks are filled with a mixture of coal-tar and gravel.—**Pavement cells.** See ★*cell.*—**Tessellated pavement**, a pavement formed of small square blocks (tesseræ); by extension, any mosaic pavement: but the pieces of such pavements are generally foursquare.

pavemental (pāv-men'tal), *a.* [*pavement* + *-al.*] Resembling a pavement; specifically, furnished with pavement-teeth.

> The dentition is typically *pavemental* in the Monœcious and ribbon-like in the Diœcious Gasteropoda; and, with certain exceptions, even admitting of explanation, the auditory sacs contain otoconia in the former case and single spherical otoliths in the latter.
> *J. D. Macdonald*, in Jour. Linnean Soc., XV. 166.

pavement-ant (pāv'ment-ȧnt), *n.* An ant, *Tetramorium cæspitum*, common to Europe and the United States. In Europe it is a common meadow-ant, but in the eastern United States it is a frequent resident of cities and towns, very often making its colonies under pavements.



Pavement-ant (*Tetramorium cæspitum*).
a, winged female; *b*, same without wings; *c*, male; *d*, worker; *e*, larva of female; *f*, head of same; *g*, pupa of same.

pavement-artist (pāv'ment-är″tist), *n.* One who sketches scenes and figures, in colored chalks, on a smooth stone pavement, with the view of extracting money from those passing by. *N. E. D.*

pavement-light (pāv'ment-līt), *n.* An arrangement of thick glass set in a metal frame which can be used as part of the flooring or of the pavement above a cellar or vault. There are many forms, mostly of private ownership. See *patent* ★*light.*

pavement-tooth (pāv'ment-töth), *n.*; pl. *pavement-teeth* (-tēth). A tooth which, with others, forms a structure like a pavement, as in certain sharks. See *pavement*, *n.*, 4.

pavement-toothed (pāv'ment-tötht), *a.* Having large rounded closely-set teeth, or pavement-teeth. See *pavement*, *n.*, 4.

> The second part of the first volume of *Records* of the Albany Museum contains five notes by Dr. R. Broom on South African anomodont reptiles. In one of these he discusses the affinities of the *pavement-toothed* genus Endothodon, which was placed by Mr. Lydekker among the dicynodonts, but transferred by Prof. Seeley to the theriodonts.
> *Nature*, May 5, 1904, p. 13.

paver, *n.* 4. In *porcelain making*, the bedstone of the grinding-mill.

> The particles are abraded . . . between the runners and *pavers.*
> *Guide Worcester Porcelain Works*, 1881, p. 12. *N. E. D.*

Pavia (pā'vi-ä), *n.* [NL., named in honor of Peter *Paaw* (1564–1617), a Dutch botanist.] A section or subgenus of *Æsculus*, the buckeye and horse-chestnut genus, still used by horticulturists as a generic name. Its members have four long-clawed petals, leaflets stalked, and winter buds not resinous. They are North American shrubs or small trees, of which the best known are *Æ. glabra*, *Æ. octandra* (*Pavia lutea*), and *Æ. Pavia* (*P. rubra* or *P. Michauxii*), with horticultural varieties.

Pavia pottery. See ★*pottery.*

pavie (pā'vi), *n.* [Sc.] A nimble, adroit movement of the body, as that of a juggler performing a trick; hence, a trick. *N. E. D.*

> For some of such had play'd a *pavie.*
> *Colvil*, Whig's Supplication, i. 72. *N. E. D.*

paviin (pā'vi-in), *n.* [*Pavia* + *-in*^{2}.] Same as *fraxin.*

pavilion, *n.* 7. In *anat.*: (*b*) The flaring extremity of a canal, as the external ear or the ovarian end of the Fallopian tube.—**Justices of the pavilion.** See ★*justice.*

paving-roller (pā'ving-rō″lėr), *n.* A paving-machine; a roller for pavements.

paving-set (pā'ving-set), *n.* A block of slag to be used for paving. *Phillips and Bauerman*, Elements of Metallurgy, p. 220.

pavonated (pav'ọ-nā-ted), *p. a.* [L. *pavo(n-)*, peacock, + *-ate*^{2}.] Colored like the neck of a peacock; of a brilliant bluish green.

> Very beautifully *pavonated* copper pyrites.
> *G. Mitchell*, tr. Karsten's Min. in Leskean Mus., p. 291. [*N. E. D.*

pavonazzo (pä-vō-nȧt'zō), *a.* and *n.* [It., peacock-colored.] Colored like a peacock: noting a marble like pavonazetto. See *marble*, 1.

pavor (pā'vôr), *n.* [L., fear, < *pavere*, fear.] Fear.—**Pavor diurnus**, daymare; day-terrors.—**Pavor nocturnus**, nightmare; night-terrors.

paw^3† (pâ), *a.* [Perhaps a variant of *pah!*] Improper; nasty; obscene. *N. E. D.*

> Lau. . . . I 'll tell him how often this Tarquin-steward would have kist me by force.
> Steph. Kiss you! fye, that 's a *paw*-word.
> Bet. No, no, he 's a cleanly man.
> *Sir W. Davenant*, Man 's the Master, iv. 1.

pawari (pa-wä'ri), *n.* [Guiana.] An intoxicating drink made by the natives of British Guiana.

pawky, *a.* 2. Crafty; shrewd; clever.—**Pawky play**, in *golf*, play conducted with shrewdness and full knowledge of one's limitations.

pawl-rim (pâl'rim), *n.* A ring of ratchet-teeth at the base of a capstan.

pawl-ring (pâl'ring), *n.* Same as ★*pawl-rim.*

pawn^1, *v. t.* 3. To put up as collateral: hypothecate, as stock for a loan. [Colloq.]

> Formerly it was possible for the jobbers in all important markets on the Stock Exchange to form a good idea, by comparing notes in each settlement, of what the condition of the speculative account really was, but it is less easy to do so now, because so much stock is "*pawned*" with banks that the conclusions arrived at by the jobbers from examining only what they are carrying over themselves are liable to be falsified.
> *Encyc. Brit.*, XXXII. 866.

pawn^2, *n.*—**Clear pawn,** in *chess,* the possession of one pawn more than the opponent, the extra pawn being not on the same file with any of the others in his position: an advantage obtained by a chess-player, in the course of the game, for which his adversary has no equivalent.—**Gambit pawn,** in *chess,* the pawn the sacrifice of which constitutes the gambit.—**Isolated pawn,** in *chess,* a pawn detached from support by other pawns, those on the adjacent rows being already removed from the board.—**Passed pawn,** in *chess,* a pawn that may be advanced without being obstructed by a pawn of the adversary either on the same file or either of the two adjacent files.—**Pawn-and-move opening.** See ★*opening.*—**To pass a pawn,** to establish a passed pawn. [Rare.]—**To queen a pawn,** to advance a pawn, in a game of chess, to its eighth square and thereupon make it a queen.

pawnage (pân′ạ̄j), *n.* [*pawn*^{1} + *-age.*] The act of depositing in pledge; the condition of being pledged or pawned. [Rare.]

pawnbrokerage (pân′brō″kėr-ạ̄j), *n.* [*pawnbroker* + *-age.*] The business of a pawnbroker.

pawnee^3 (pâ′nē), *n.* [Hind. *pānī.*] See *brandy-pawnee.*

paw-paw (pâ′pâ), *a.* [Redup. of *paw*^{3}.] Improper; naughty; indecent; obscene: a nursery word.

paxilliferous (pak-si-lif′ẹ-rus), *a.* [NL. *paxilla* + Gr. *-φορος,* < *φέρειν,* bear.] Bearing paxillæ.

paxilliform (pak-sil′i-fôrm), *a.* [NL. *paxilla* + *-form.*] Resembling or having the shape of paxillæ.

paxillose, *a.* **2.** Paxillate.

> The abactinal surface is *paxillose,* each paxillus having a circular crown of about eight papillæ, the centre being usually smooth. [Echinoderms.]
>
> *Proc. Zool. Soc. London,* 1900, p. 290.

pay^1, *v. i.*—**Paying-out leg,** the height of telegraph cable which is held at the bows of a cable-laying vessel; the leg (or side) which is allowed to run, in distinction from the opposite leg, which is held.

pay^1, *n.* **4.** In *gold-mining,* sufficient metal in a vein or bed to pay for working it.—**Longevity pay,** additional pay given to officers for long service in the United States army and navy. *Army and Navy Register,* XXIV. 290.

payable, *a.* **3.** Profitable; likely to be profitable or to pay: as, *payable* rock, gravel, quartz, etc., meaning yielding or likely to yield gold; a *payable* enterprise, one yielding or likely to yield profit.

pay-boarder (pā′bōr″dėr), *n.* A paying scholar who boards on the premises; opposed to day-scholar or free scholar.

> Among the *pay-boarders* . . . numbering in all thirty, there were six Non-conformists.
>
> *Rep. Com. on Welsh Education,* 1899. *N. E. D.*

pay-envelop (pā′en-vel″up), *n.* An envelop intended to contain the pay or wages of an employee on pay-day.

paying-out (pā″ing-out′), *n.* The act or operation of allowing a cord, cable, or rope to be pulled or drawn out; specifically, the operation of passing or running out a submarine cable from a ship which is laying it.

paym't, payt, pay't. Abbreviations of *payment.*

pay-rock (pā′rok), *n.* Any metal-bearing rock rich enough to pay for working.

paysanne (pā-zȧn′), *n.* [F.] A French peasant woman; hence, any countrywoman.

> Their only servant is a mere West Country *paisanne.*
>
> *Charlotte Smith,* Celestina, I. 190. *N. E. D.*

P. B. An abbreviation (*b*) of the Latin *Philosophiæ Baccalaureus,* Bachelor of Philosophy; (*c*) of *Primitive Baptist.*

pc. An abbreviation of *piece,* in the dry-goods trade.

P. C. An abbreviation (*c*) of the Latin *Patres Conscripti,* Conscript Fathers; (*d*) of *Perpetual Curate;* (*e*) [*l. c.*] of the Latin *per centum,* by the hundred; (*f*) of the Latin *pondus civile,* avoirdupois weight; (*g*) of *Post Commander;* (*h*) [*l. c.*] of *post-* or *postal-card;* (*i*) [*l. c.*] of the Latin *post consulatum,* after the consulship; (*j*) of *Principal Conductor;* (*k*) of *Privy Council.*

P. C. M. O. An abbreviation of *Principal Colonial Medical Officer.*

P. C. P. An abbreviation of *Past Chief Patriarch.*

P. C. S. An abbreviation of *Principal Clerk of Session.*

P. C. U. An abbreviation of *pound-centigrade-unit.* [Rare in U. S.]

P. D. An abbreviation (*b*) of *potential difference;* (*c*) of the Latin *Philosophiæ Doctor,* Doctor of Philosophy.

Pd. B. An abbreviation of the Latin *Pedagogiæ Baccalaureus,* Bachelor of Pedagogy.

Pd. D. An abbreviation of the Latin *Pedagogiæ Doctor,* Doctor of Pedagogy.

Pd. M. An abbreviation of the Latin *Pedagogiæ Magister,* Master of Pedagogy.

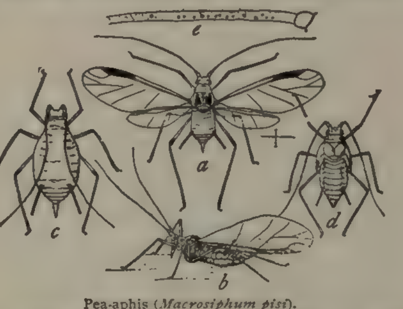
pe (pā), *n.* The seventeenth letter (פ) of the Hebrew alphabet, corresponding to the Greek *pi* (*π*) and the English *pe* (*p*). Its numerical value is 80.

Pe. In *chem.,* the symbol for *pelopium.*

P. E. An abbreviation (*c*) of *Presiding Elder.*

pea^1, *n.* **3.** In the manufacture of sulphuric acid, the workman's name for a fragment of iron pyrites, from an eighth to a half inch in diameter.—**4.** The balance or sliding weight used on a steelyard.—**Black-eyed pea.** (*a*) A cultivated form of the cow-pea, *Vigna Sinensis.* See ★*cow-pea.* (*b*) In the West Indies, *Dolichos sphærospermus.* Both of the plants bear white beans having a black spot around the hilum.—**Canada field-pea.** See *field-*★*pea.*—**Canada pea.** See *field-*★*pea.*—**Chaparral-pea,** a spiny leguminous bush, *Xylothermia montana,* of high altitudes in the Coast Range of middle and southern California, sometimes forming impenetrable thickets. It bears rose-purple pea-like flowers in the axils near the ends of the branches.—**Clay pea,** a cultivated form of the cow-pea, *Vigna Sinensis,* having buff-colored beans. This was the form originally called *cow-pea.*—**Coffee-pea,** the chick-pea, sometimes used as a substitute for coffee.—**Corn-field pea,** the cow-pea. See ★*cow-pea.*—**Darling pea,** *Swainsona galegifolia,* an Australian plant. Also called *native indigo, poison-pea,* and *poison-bush.* See *Swainsona.*—**Field-pea,** see *pea*^{1}, 1. The field-pea exists in many varieties, proving long cultivation. In northern latitudes it is a valuable forage-plant, furnishing hay and pea-meal. It is extensively raised in Canada, whence the varieties there grown are in the United States called *Canada field-pea,* or *Canada pea.*—**Flat pea.** (*b*) An Old World perennial, *Lathyrus sylvestris Wagneri,* related to and resembling the common sweet pea. It has been highly recommended as a forage-plant but has not met with much approval in the United States.—**Glory pea,** a plant of the genus *Clianthus.* [Australia.]—**Heart pea,** the balloon-vine. [Australia.]—**Lady-pea,** a variety of the cow-pea. See ★*cow-pea.*—**Leaf-spot of pea.** See ★*leaf-spot.*—**Mexican rosary pea,** *Dolicholus phaseoloides,* a twining trifoliate plant bearing small, hard, red-and-black seeds resembling the common crabs'-eyes (*Abrus Abrus*) of the West Indies. *Abrus,* however, has pinnate leaves. In Spanish-speaking countries the seeds of both are called *peronia.* See ★*colorin chiquito.*—**Monkey's pea,** in the West Indies, a cosmopolitan climber of the tropics, *Vigna lutea.*—**Purple-eyed pea.** See ★*cow-pea.*—**Red-pottage pea,** the lentil, supposed to have formed the material of the red pottage of Genesis xxv. 30.—**Southern pea,** the cow-pea. See ★*cow-pea.*—**Stinking pea,** in the Bahamas, *Cassia Bahamensis.*—**Texas** or **Texan pea,** a perennial bushy legume, *Astragalus Nuttallianus,* with bladdery pods, valuable for grazing in central and northern Texas.—**Whippoorwill-pea,** a variety of the cow-pea. See ★*cow-pea.*—**Wild pea,** in California, any native species of *Lathyrus,* southward mostly *L. vestitus.*—**Yellow pea,** the prairie false lupine, *Thermopsis rhombifolia.* See *false* ★*lupine.*

pea-aphis (pē′ā″fis), *n.* *Macrosiphum pisi,* an aphidid which has caused great loss in pea-plantations in the Eastern United States by puncturing and blighting the young shoots.



Pea-aphis (*Macrosiphum pisi*).

a, b, winged female; *c,* apterous female; *d,* nymph in last stage; *e,* third joint of antenna of winged form; *a, d,* enlarged, *e,* highly magnified. (Chittenden, U. S. D. A.)

pea-ballast (pē′bal″ạst), *n.* Coarse sand or very fine gravel used as ballast.

Peabody bird (pē′bọ-di bėrd). [From the *Peabody* Glen, White Mountains.] The white-throated sparrow, *Zonotrichia albicollis.*

peacemonger (pēs′mung″gėr), *n.* One who talks much, but impractically, of peace and peacemaking. *Southey.*

> Southey seems to have coined the useful "*peacemonger*" to distinguish unpractical praters about peace from true peacemakers. *Athenæum,* May 13, 1905, p. 587.

peace-warrant (pēs′wor″ạnt), *n.* In *Eng. law,* a warrant for the arrest of a person, issued by a justice of the peace. Same as *justice's warrant* (which see, under *warrant*) in the United States.

peach^1, *n.* **3.** A person or thing of a very high order; one who or that which is very nice. [Slang.]—**Little-peach,** a disease of peach-trees probably due to a fungus which attacks the very young trees. It causes the fruit to ripen while quite small, and in a few years kills the tree.—**Mountain-peach,** a spiny, branching shrub of the soapberry family, *Stocksia Brahuica,* or its edible fruit, which resembles in appearance a peach. It is found in Beluchistan, Afghanistan, and eastern Persia.—**Native peach.** (*b*) In Australia, the emu-apple, *Rancooria acidula.* (*c*) In Sierra Leone, the Guinea peach, *Sarcocephalus sambucinus.* See *Sarcocephalus.*—**Peach fruit-worm.** See ★*fruit-worm.*—**Peach-kernel oil.** See ★*oil.*—**Peach leaf-beetle.** Same as *plum* ★*leaf-beetle.*—**Peach leaf-roller.** See ★*leaf-roller.*—**Peach-oil.** Same as *peach-kernel* ★*oil.*—**Peach twig-borer.** See ★*twig-borer.*—**Vine-peach.** See ★*vine-peach.*

peach-aphis (pēch′ā″fis), *n.* Any one of several species of *Aphididæ* found on peach-trees.—**Black peach-aphis,** an American aphidid, *Aphis persicæ-niger,* which feeds on both roots and twigs, leaves and buds of peach. Also called *peach-louse.*

peach-berry (pēch′bėr-i), *n.* A Tasmanian shrub, *Styphelia strigosa,* of the family *Epacridaceæ;* or its fruit, a small, fleshy berry.

peach-bloom (pēch′blöm), *n.* **1.** The soft down of the peach-skin; hence, the delicate flush of a healthy complexion.—**2.** In *ceram.,* a glaze of Oriental porcelain of the color of the skin of a peach ripening in the sun, shading from pale red to pink. Compare *peach-blow,* 1.

peach-curculio (pēch′kėr-kū″li-ō), *n.* Same as *plum-curculio.*

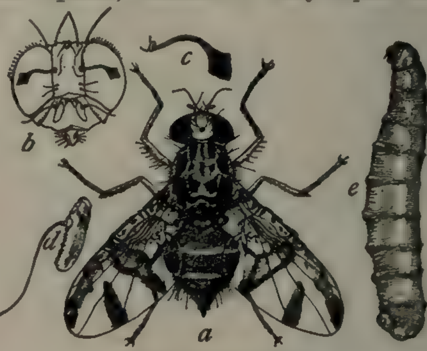
peach-curl (pēch′kėrl), *n.* Same as *curl,* 4.

pea-cheese (pē′chēz), *n.* A gelatinous preparation of pea-flour which is treated with a solution of gypsum: used for food by the Chinese.

peachen (pē′chẹn), *a.* Of or resembling a peach.

> Wrinkles mar a *peachen* cheek.
>
> *L. Wingfield,* Abigel Rowe, I. 171. *N. E. D.*

peach-fly (pēch′flī), *n.* A trypetid fly, *Ceratitis capitata,* abundant in many tropical and subtropical countries. Its larvæ bore into peaches and other fruits.



Peach-fly (*Ceratitis capitata*).

a, fly; *b,* head from front; *c,* spatula-like hair from face of male; *d,* antenna; *e,* maggot; *a* and *e,* enlarged; *b, c,* and *d,* greatly enlarged. (Insect life, U. S. D. A.)

peachiness (pē′chi-nes), *n.* The character of being peachy.

peachka (pēch′kạ), *n.* [Russian *pechka,* an oven, dim. of *pechŭ,* oven, stove.] A Russian stove, such as is used in Alaska.

peach-louse (pēch′lous), *n.* See *black* ★*peach-aphis.*

peach-maggot (pēch′mag″ọt), *n.* The larva of a cosmopolitan trypetid fly, *Ceratitis capitata.* It affects peaches as well as oranges and other fruit. See ★*peach-fly.*

peach-mildew (pēch′mil″dū), *n.* See ★*mildew.*

peach-moth (pēch′môth), *n.* Any one of several moths whose larvæ attack the peach, as the blue-spangled peach-moth, *Haploa lecontei,* of the family *Arctiidæ.*

peach-pit (pēch′pit), *n.* A peach-stone; the hard covering inclosing the kernel of the fruit.

peach-rosette (pēch′rọ-zet″), *n.* A contagious disease of peach-trees of unknown origin. The leaves form characteristic compact bunches which soon fall off, and the death of the tree takes place within a short time.

peach-rust (pēch′rust), *n.* See ★*rust*^{1}.

peach-scab (pēch′skab), *n.* See ★*scab.*

peach-scale (pēch′skāl), *n.* A brown naked scale-insect, *Eulecanium persicæ,* occurring on peach-trees and also on plum, quince, and other plants, and found in Europe, Canada, the United States, and Australia.—**West Indian peach-scale,** a diaspine scale-insect, *Diaspis pentagona,* occurring in many parts of the world and on a great variety of food-plants.

peach-tree, *n.*—**Blue-spangled peach-tree caterpillar.** See ★*caterpillar.*—**Pacific peach-tree borer.** See ★*borer.*—**Peach-tree bark-louse.** See ★*bark-louse.*—**Peach-tree borer.** (*b*) See ★*borer.*

peach-weevil (pēch′wē″vl), *n.* Same as *New-York weevil* (which see, under *weevil*).

peachy, *a.* **II.** *n.* A fermented drink made from peaches. [Rare.] *N. E. D.*

The inhabitants have a method of purifying cyder by frost, and separating the watery part from the spirit. . . . They make *peachy* and perry; grape, cherry, and currant wines; and good beer of pumkins, molasses, bran of wheat, spruce and malt.
S. Peters, A General Hist. of Conn., p. 245.

peacock, *n.* **2.** [*cap.*] In *astron.*, the constellation Pavo.—**Peacock throne**, a celebrated work of art, now in the possession of the Shah of Persia. It was one of the treasures of the King of Delhi, but was carried off as plunder in 1739 by the Persians when, under Nádir Shah, they took the city. The back of the throne is a peacock's tail of natural size, fully expanded and made of jewels.

peacock, *v. i.* **2.** To pick the 'eyes' out of the laud by selecting of buying up the choice pieces and waterfrontages so that the adjoining territory is practically useless to any one else. *E. E. Morris*, Austral English. [Australian slang.]

When the immediate advent of selectors to a run became probable, the lessees endeavoured to circumvent them by dummying all the positions which offered the best means of blocking the selectors from getting to water. This system, commonly known as "*peacocking*," was assisted by the use of Volunteer Land Orders.
W. Epps, Land Systems of Australasia, iii.

peacock-coal (pē′kok-kōl), *n.* See ★*coal*, 2.

peacock-copper (pē′kok-kop″ėr), *n.* A name given to bornite from its iridescent colors. Also called *peacock-ore*.

peacockery (pē′kok-ẹ-ri), *n.* Vainglorious display; the state of being puffed up with vanity. *N. E. D.*

peacock-fly (pē′kok-flī), *n.* Any one of a number of true flies of the family *Trypetidæ* or *Ortalidæ*, which have the habit of elevating their wings and strutting about.

peacock-heron (pē′kok-her″ọn), *n.* Same as *peacock-bittern* (which see).

peacock-moth (pē′kok-môth), *n.* A British collectors' name for *Opisthograptis notata*, a European geometrid moth which extends into northern Asia.

peacock-ore (pē′kok-ōr), *n.* Same as ★*peacock-copper*.

peacocky (pē′kok-i), *a.* **1.** Like the peacock in having a vain jauntiness of manner; self-conceited; showing off: said of a person.

It is love of adventure, of excitement, of fine dress and the pride of fame, all which are sentimental motives, which chiefly make a boy like going into the Guards better than into a counting-house. You fancy, perhaps, that there is a severe sense of duty mixed with these *peacocky* motives? And in the best of you there is.
Ruskin, Crown of Wild Olive, iii. 118.

2. Having a spirited, showy, high action: said of a horse.

pea-huller (pē′hul″ėr), *n.* A machine for threshing pea-plants and hulling the peas. It is fitted with the threshing machinery and all the accessories of a bean-thresher and is adapted to pea-plants. It has also hulling machinery, a recleaner, a bagger or bagging-machine for delivering the clean hulled peas into bags, and a bag-register.

peai (pē-ī′), *n.* [Carib *piai.*] Same as ★*peaiman*.

peai (pē-ī′), *v. i.* and *t.* [*peai*, *n.*] To practise the arts of a peaiman upon; treat with the peaiman's magic. *N. E. D.*

peaiism (pē-ī′izm), *n.* [*peai* + *-ism.*] The practices and sorcery of the *peaiman*.

To explain the system of *peaiism* here would take too long. All that need now be said is that it is based upon the belief that all illness and all other bodily evil is the work of hostile beings.
E. F. im Thurn, in Jour. Anthrop. Inst., XI. 366.

peaiman (pē-ī′man), *n.* [*peai* + *-man.*] In French and British Guiana, a witch-doctor; a soothsayer; a medicine-man; a conjurer. See ★*piache*.

peak¹, *n.* **4.** The maximum of a load-curve.

A plate properly constructed for even moderate rates, should not greatly depreciate when discharged at eight times the normal for short duration *peaks*, and at twelve times for "instantaneous" *peaks*.
Elect. World and Engin., May 21, 1904, p. 977.

5. In *mech.*, a heavy load; the heaviest load (on an engine or generator): so called because a peak or protruding point is formed in the line traced by the point of a recording dynamometer at the time of the heavy load or of a maximum load. See ★*load*², 8, and ★*peak-load*.

There are two combined sets; that is, engine, alternator, and tramway generator coupled on the same shaft. Other and larger alternators are in use during the "*peak*" of the load. *Encyc. Brit.*, XXV. 35.

6. In *turpentining*, the angle formed by the meeting of the two streaks on the face.—**7.** [*cap.*] A name applied to a village at one of the corners or extreme boundaries of a township: as, Derry *Peak*, on the eastern boundary of Derry. *Dialect Notes*, III. iii. [New Hampshire.]—**Instantaneous peak**, in *elect.*, a sudden increase in the load of a power station, which disappears again abruptly: so called from the form of the load-curve indicating such fluctuations.—**Peak of the load**, that portion of the load of a power station which corresponds to the peak of the load-curve.—**Short-stay peak**, the situation of the anchor when it is on the bottom, but about under the hawse-hole—when the cable is nearly up and down.—**Stay-peak**, the position when the cable and the fore-stay are parallel to one another—when the trend of the cable is such that it is parallel to the line of the fore-stay.

II. *a.* Pertaining or relating to the high point in the diagram from a recording meter, due to a peak or heavy load. See ★*peak*¹, *n.*, 4 and 5.

The direct-current ends of these rotary converters are often worked in multiple with an old generating station, at least during the *peak* hours of one or two months in the early winter.
Elect. World and Engin., May 9, 1903, p. 789.

peak¹, *v. t.* **2.** To accentuate.—**3.** Of a whale, to raise (the tail or flukes) high in the air when making a perpendicular dive: this act is called by the whalers *peaking the flukes*. *T. Beale*, Nat. Hist. Sperm Whale, p. 44. *N. E. D.*—**To peak the mizzen**, to cant the mizzen-yard so that it makes a sharp angle with the mast.

peak-bulkhead (pēk′bulk″hed), *n.* In *naval arch.*, a bulkhead fitted in the extreme forward part of a vessel, and generally referred to as the 'forward collision bulkhead.'

peaker (pē′kėr), *n.* **1.** A load of logs narrowing sharply toward the top, and thus shaped like an inverted V.—**2.** The top log of a load.

peak-load (pēk′lōd), *n.* That portion of the load of a power station which coincides with the time of greatest demand. The term is due to the fact that the variation of the load with time is shown graphically by means of a curve, the load-curve, the maximum peak of which indicates the time and amount of the greatest load or *peak-load*. See ★*load*², 8, and ★*peak*¹, *n.*, 4.

It is necessary at times of fall and winter *peak loads* to operate the steam plants in the three combination substation and subsidiary steam plants which the company was operating three years ago.
Elect. World and Engin., May 23, 1903, p. 866.

peak-tank (pēk′tangk), *n.* A compartment in the extreme forward part of a vessel for holding either fresh or ballast water, or a supply of turpentine, etc.

peaky-blinder (pē′ki-blīn″dėr), *n.* One of a class of hoodlums or hooligans in the Midlands, England: so called from their custom of wearing the peaks of their caps drawn down over their eyes when at their nefarious practices. *N. and Q.*, 9th Ser., VII. 94.

peal¹, *n.*—**Dumb peal**, a muffled peal of bells.—**Muffled peal**, in *bell-ringing*, a peal, or its sound, when the clappers are partly covered with leather so that half of the strokes are dull or indistinct: used on occasions of mourning.

peal⁵ (pēl), *n.* A name used in England for different species of the genus *Salmo*, as *S. salar*, the salmon, or *S. cambricus*, a trout found in England, Ireland, and Norway. The latter is also called *sewin*.

The growth and migrations of salmon (including sea-trout, salmon-trout, *peal*, sewin, etc.).
Science, Sept. 16, 1904, p. 383.

pea-louse (pē′lous), *n.* An aphidid found on the pea-vine.

Peanut butter, peanuts ground and generally mixed with a little water.—**Peanut methods**, the methods of peanut politics; petty or tricky methods. [Colloq.]—**Peanut-oil.** See ★*oil*.—**Peanut politics**, the petty ways and tricks of small-minded politicians; petty partizan action. [Colloq.]

pea-oil (pē′oil), *n.* See ★*oil*.

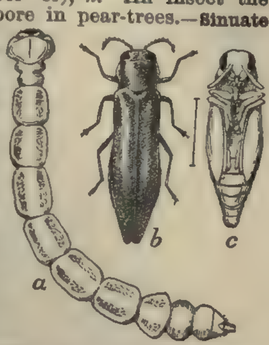
pea-plant (pē′plant), *n.* **1.** Any plant that bears peas.—**2.** In Australia, any one of several plants belonging to the pea or bean family, *Fabaceæ*.

pear¹, *n.*—**Bachelor's pear**, in Barbadoes, either of two tropical species of the genus *Solanum*, *S. mammosum* and *S. xanthocarpum*.—**Black rot of pear.** See *black* ★*rot*.—**Grape-pear.** (*b*) The shad-bush, *Amelanchier Botryapium*. Also called *swamp sugar-pear*.—**Native pear**, in Australia, same as *wooden pear* (which see, under *pear*¹).—**Oil of pear.** See ★*oil*.—**Pear ambrosia-beetle.** See ★*beetle*².—**Pear fruit-borer.** See ★*fruit-borer*.—**Pear-leaf blister.** See ★*blister*.—**Pear leaf-bug.** See ★*leaf-bug*.—**Pear leaf-miner.** See ★*leaf-miner*.—**Pear twig-girdler.** See ★*twig-girdler*.—**Vegetable pear.** Same as *cheyote*.

pear-aphis (pãr′ā″fis), *n.* An undetermined plant-louse that infests the leaves of the pear-tree in June.

Pear-blight beetle. (*b*) Same as *apple-tree* ★*shot-borer*.

pear-borer (pãr′bōr″ėr), *n.* An insect the larvæ of which bore in pear-trees.—**Sinuate pear-borer**, a buprestid beetle, *Agrilus sinuatus*, accidentally introduced from Europe into the United States. Its larvæ feed between the bark and wood of pear-trees, making very long zigzag galleries, finally girdling and killing the tree.

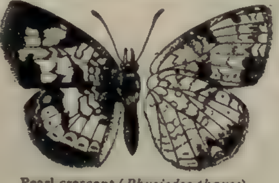


Sinuate Pear-borer (*Agrilus sinuatus*). *a*, larva; *b*, beetle; *c*, pupa. Enlarged. (Banks, U. S. D. A.)

pearceite (pērs′īt), *n.* [Named after Dr. Richard *Pearce* of Denver.] A sulpharsenite of silver, Ag_9AsS_6, analogous to the sulphantimonite polybasite, to which it is also related in crystallization: found in Montana and also in Colorado and Utah.

pear-conch (pãr′kongk), *n.* A pear-shell, or fig-shell: a species of *Pyrula*.

pearl, *n.* **15.** In *ship-rigging*, one of the bull's-eye rollers strung on the round iron band which spans the forward part of the gaff on fore-and-aft vessels, and which assist in the smooth hoisting of the spar, as well as confining it to the mast.—**Cyst-pearl**, a pearl formed in the ordinary manner, that is, in a cuticular cyst or sac.—**Fantasy pearl**, a name applied to the irregular, sometimes hollow, form of pearls, not formed loose and free as are the perfect pearls, but produced on the pearl shell, usually by the inclosure of some foreign substance, such as clay, a parasite, or even a liquid. These are detached from the shell and do not possess the value of the more perfect pearls.—**Pearl luster, ware.** See ★*luster*², ★*ware*².



Pearl-crescent (*Phyciodes tharos*). Natural size.

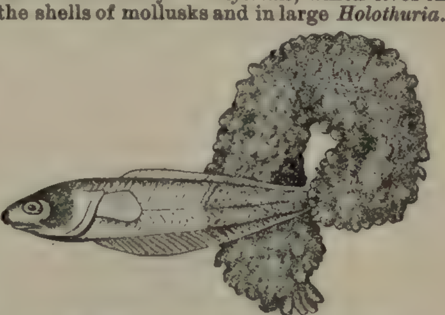
pearl-crescent (pėrl′kres″ẹnt), *n.* An American nymphalid butterfly, *Phyciodes tharos*, found practically throughout North America. Its larvæ feed on asters.

pearl-diabase (pėrl′dī″ạ-bās), *n.* Same as *variolite*.

pearler (pėrl′ėr), *n.* [*pearl* + *-er*¹.] A pearl-diver; one who is engaged in pearl-fishing.

In cases where a *pearler* has one boat, only sufficient room will be found for the storage of shell of one month's work (this should average three-fourths of a ton), but a plant of two or more boats has generally a schooner of from 30 to 75 tons as a storeship for shell and provisions, etc. *Sci. Amer. Sup.*, March 28, 1903, p. 22766.

pearl-fish (pėrl′fish), *n.* **1.** A common name of *Fierasfer affinis*, a fish found in the Bay of Panama, in the shells of the pearl-oyster; any fish of the family *Fierasferidæ*, which lives in the shells of mollusks and in large *Holothuria*.



Pearl-fish (*Fierasfer acus*) issuing from a Holothurian. (From Jordan's "Guide to the Study of Fishes.")

—**2.** A minnow, *Alburnus lucidus*, and other allied species, ranging over Europe and western Asia. The pearly matter from their scales is used in the manufacture of artificial pearls.

pearl-hardening (pėrl′härd″ning), *n.* In *paper-making*, gypsum prepared and used to give the appearance of body to a thin, sleazy paper.

pearlite, perlite (pėrl′īt), *n.* [*pearl* + *-ite*².] The eutectoid of steel. All slowly cooled steel containing 0.90 per cent. of carbon consists entirely of pearlite. With more than this amount of carbon, steel consists of pearlite associated with microscopic crystals of cementite; with less than 0.90 per cent. of carbon, it consists of pearlite and microscopic crystals of ferrite. Pearlite has a laminated structure, and consists of 86.5 per cent. of ferrite and 13.5 per cent. of cementite, in microscopic flakelets or crystals in the form of thin plates or scales, intimately mixed, and usually requiring a magnification of a thousand diameters to disclose it.

> The best condition for rail-steel is that in which the ferrite and *pearlite* appear in a closely-interlocking relation, while, if the ferrite appears in large enclosed polyhedrons, it indicates that the temperature before rolling was too high. *Engin. Mag.*, March, 1899, p. 1011.

> Steels containing 0.2 percent carbon show a *pearlite* structure until the tungsten content exceeds 10 percent. When they contain 0.8 percent carbon the *pearlite* structure holds only up to 5 percent tungsten. The *pearlite* steels are stronger the more tungsten they contain. *Jour. Phys. Chem.*, March, 1905, p. 272.

pearl-lightning (pėrl′līt″ning), *n.* A lightning-flash in disjointed sparks resembling a row of pearls or glistening drops.

pearl-organ (pėrl′ôr″gan), *n.* A small spine-like tubercle developed by many of the male fishes of the order *Plectospondyli.* The organs are present only during the breeding-season and are particularly well developed about the head and along the sides of the caudal peduncle and the anal fin.

> The males of certain species of North American fishes develop during the breeding season what are known as "*pearl-organs.*" These are hard spine-like thickenings of the epidermis, sometimes forming rows on the sides of the tail and on the anal fin. Their use long remained unknown. Mr. J. Reighard, of Michigan University, finds, however, that they are employed by the males of some species for fighting and in building their nests, while in all the species they are used for holding the spawning female. *Knowledge*, May, 1904, p. 96.

pearl-perch (pėrl′pėrch), *n.* See *perch*¹.

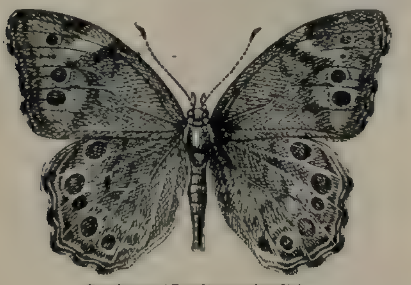
pearly, *a.*— **Pearly disease.** See ★*disease.*— **Pearly necklace-shell.** See ★*necklace-shell.*

II. *n. pl.* Clothes with large pearl buttons, worn by costermongers. *N. E. D.* [Slang.]

pearly (pėr′li), *adv.* In the manner of a pearl; like a pearl.

> Here is a shell; 't is *pearly* blank to me,
> Nor mark'd with any sign or charactery.
> *Keats*, Endymion, iii. 761.

pearly-eye (pėr′li-ī), *n.* An American agapetid butterfly, *Enodia portlandia*, which occurs from the southern United States to Nova Scotia and Manitoba. Its larvæ feed on grass.



Pearly-eye (*Enodia portlandia*).
Natural size.

pearlylite (pėr′li-līt), *n.* Same as ★*pearlyte.*

pearlyte (pėrl′īt), *n.* [*pearl* + *-yte.*] A kind of rock, a variety of quartz-trachyte, graduating into obsidian. Also known as *pearlstone* or *lithoidal rhyolyte.*

pear-midge (pãr′mij), *n.* See ★*midge.*

pear-oil (pãr′oil), *n.* See ★*oil of pear.*

pear-rust (pãr′rust), *n.* See ★*rust*¹.

pear-scale (pãr′skāl), *n.* Any one of several scale-insects found on pear-trees, as the two diaspine scales, *Aspidiotus pyri* and *Diaspis pyri*, and the naked scale, *Eulecanium pyri.*

Pearson's law of ancestral inheritance. See *ancestral* ★*inheritance.*

pear-stone (pãr′stōn), *n.* A nodule found in the pulp of the pear, composed of cells with strongly thickened walls which are penetrated by numerous fine branched canals. Compare ★*sclereid* and *sclerotic parenchyma*, under *sclerotic. Strasburger* (trans.), Manual of Histology, p. 47.

pear-thorn (pãr′thôrn), *n.* See *thorn*¹.

Pear-tree blister-beetle. See ★*blister-beetle.*— **Pear-tree borer.** See ★*borer.*

peasant, *n.*— **Peasants' revolt**, in *Eng. hist.*, a little-used name for the Wat Tyler rebellion of 1381.

peasantism (pez′ant-izm), *n.* [*peasant* + *-ism.*] The cult that "seeks to rescue art from the exclusive control of the leisure class and place it at the disposal of all mankind." *L. F. Ward*, Pure Sociol., p. 454. [Rare.]

peasantize (pez′ant-īz), *v.*; pret. and pp. *peasantized*, ppr. *peasantizing.* [*peasant* + *-ize.*] **I.** *trans.* To make peasant-like; reduce to the peasant class. [Rare.]

> Those who escape bondage to past and present alike and who are best fitted for life want . . . to go out into the world and make careers for themselves. They go West, to the colonies, the slums; devise new enterprises, sometimes almost want to *peasantize* themselves and fall in love with wheel-grease and the smell of the barnyard. *G. S. Hall*, Adolescence, II. 513.

II. *intrans.* To become clownish or peasant-like. [Rare.]

pea-scar (pē′skär), *n.* Same as ★*button-scar.*

peat-auger (pēt′â″gėr), *n.* A hollow tube having a sharp end, used for taking samples of peat from a peat-bog. It has a sharp-pointed piston for use in closing the tube temporarily when it is desired to take a sample below the surface. When the auger has been sunk to the point at which the sample is to be taken, the piston is drawn back, and the tube can then be forced down enough farther to get the sample.

peat-coal, *n.* **2.** Same as *peat-charcoal.*

peatery (pēt′ė-ri), *n.* [*peat*¹ + *-ery.*] A place where peat is dug; a peat-bog.

peat-mull (pēt′mul), *n.* A form of peat-straw, used as a disinfecting absorbent for purifying the air of closets and stables, for protecting trees from frost, as a filling between walls to render them warm and dry, for stuffing beds, etc.

peat-press (pēt′pres), *n.* A machine for compressing peat into blocks suitable for burning.

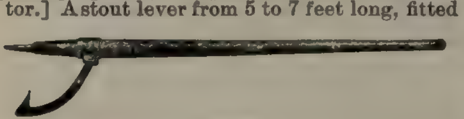
peat-straw (pēt′strâ), *n.* The cleansed, dried fiber of peat.

peau-de-cygne (pō-dė-sēn′), *n.* [F., swan's skin.] A weave of soft, highly-finished silk, closely resembling peau-de-soie. *Dry Goods Economist*, June 13, 1908.

peau-de-soie (pō-dė-swo′), *n.* [F., skin of silk.] A thick, soft silk, at one time much in vogue. The best grades are satin-finished on both sides.

pea-urchin (pē′ėr″chin), *n.* A very small species of sea-urchin of rounded form, *Echinocyamus pusillus. N. E. D.*

peavey (pē′vi), *n.* [Named from the inventor.] A stout lever from 5 to 7 feet long, fitted at the larger end with a metal socket and pike, and a curved steel hook which works on a bolt: used in handling logs, especially in driving. A peavey differs from a cant-hook in having a pike instead of a toe-ring and lip at the end.



Peavey.

Pe. B. An abbreviation of the Latin *Pedagogiæ Baccalaureus*, Bachelor of Pedagogics.

pebble, *n.* **7.** In Australia, a hard, obstinate person; a tough; also said of animals.

pebble-dash (peb′l-dash), *n.* Same as *pebble-dashing.*

> A cheap frame construction was used, the sides of which were treated with *pebble-dash* and the roof made of asphalted felt covered with crushed slag. *Smithsonian Rep.*, 1901, p. 106.

pebbling-jack (peb′ling-jak), *n.* In *leather-stamping*, a jack with a roller which makes a small round impression or print. *Modern Amer. Tanning*, p. 109.

Pebidian (pē-bid′i-an), *n.* In *geol.*, a series of volcanic beds of early Cambrian age in Pembrokeshire, Wales, originally described as of Precambrian age. They consist of tuffs, schists, and olivin-diabase and andesite sheets with intruded quartz-porphyries.

peca (pā′kä), *n.* A fruit-bat.

pecan, *n.*— **Bitter pecan.** (*b*) *Hicoria Texana*, of the Brazos River region, allied to the pecan, but with a very bitter seed.

pecego (pā′sā-gō), *n.* [Port., peach.] The fruit of a small tree of the soapberry family, *Chytranthus Mannii*, native to tropical West Africa. It is edible and is prized by the natives, but its seeds are poisonous.

pecilonomy, *n.* See *pæcilonymy.*

peck¹, *v.* **I.** *trans.*— **Pecked implement**, in *prehistoric archæol.*, a stone implement made of a tough stone which is shaped by being pecked and battered with another hard stone.

II. *intrans.* **2.** To fall or pitch forward: said in particular of a horse when he touches the ground with his toe first in a stride, instead of stepping on the whole foot.

> "Perhaps" . . . flew over [the last hurdle] but "Dandy Jim," who was rather blown, *pecked*, blundered and fell. *B. M. Croker*, Diana Barrington, xxiii.

peckiness (pek′i-nes), *n.* The state or condition of being pecky.

pecking-arm (pek′ing-ärm), *n.* A short staff or stick, operated by a cam, for throwing the shuttle in a loom. Also called *picker-stick. R. Marsden*, Cotton Weaving, p. 84.

pecking-cord (pek′ing-kôrd), *n.* A cord which connects the pecking-arms of a loom. *R. Marsden*, Cotton Weaving, p. 77.

Pecksniffery (pek-snif′ė-ri), *n.* [See *Pecksniffian.*] A hypocritical display of benevolence, resembling that of Pecksniff; Pecksniffianism.

Pecksniffianism (pek-snif′i-an-izm), *n.* [*Pecksniffian* + *-ism.*] A hypocritical display of benevolence resembling that of Pecksniff; the habit of such hypocrisy. See *Pecksniffian.*

pecky¹ (pek′i), *a.* [*peck*¹ + *-y*¹.] Decayed in such a manner that holes or pockets are formed: applied especially by lumbermen to cypress timber affected in this manner, and also to a similar decay of cedar (*Libocedrus*) and other timber. The specific fungus which produces the decay in most cases is not known.

pecky² (pek′i), *n.* The palmated sandpiper. *Stand. Dic.* [Cape Cod.]

pecorella (pe-kō-rel′ä), *n.* [It. *pecorella*, foam, white cloud, also a lamb, < *pecoro*, fem. *pecora*, a sheep, < L. *pecus* (*pecor-*), sheep, cattle.] A prepared chicken-skin, used by miniaturists.

> He painted upon card, chicken-skin (*pecorella*), or vellum, and on rare occasions upon rough bone. *Encyc. Brit.*, XXX. 762.

pectase (pek′tās), *n.* [*pect*(*ose*) + *-ase.*] A coagulating ferment found in various fruits and berries, which by its action upon pectose causes the formation of jellies in the juices of the corresponding fruits.

pectenoid (pek′te-noid), *a.* [NL. *Pecten-* + *-oid.*] Having the characters of, or related to, the pelecypod genus *Pecten.*

pectinaceous, *a.* **2.** Same as *pectic.*

pectinate (pek′ti-nāt), *v. i.*; pret. and pp. *pectinated*, ppr. *pectinating.* In *bot.*, to form an interdigitated arrangement (see *pectinated*, 2): said of fibrovascular bundles.

> The bundles of the trace of successive pairs all *pectinate* with one another. *De Bary* (trans.), Compar. Anat. Phanerogams and Ferns, [p. 248.

pectinatory (pek′ti-nā-tō-ri), *a.* [*pectinat*(*e*) + *-ory.*] In *bot.*, exhibiting, or relating to, pectination in sense 3; pectinated. See *pectinated*, 2.

> The word *pectinatory* will be used subsequently in describing the course of the vascular bundles. *De Bary* (trans.), Compar. Anat. Phanerogams and Ferns, [p. 128.

pectine, *n.* **2.** One of a pair of comb-like structures on the under side of the thorax of scorpions, just behind the hind legs.

pectinirhomb (pek-tin′i-romb), *n.* [L. *pecten* (*pectin-*), comb, + *rhombus*, rhomb.] In the *Echinodermata*, one of the rhombic areas of parallel stereome folds on the outer surfaces of certain thecal plates in some cystideans. New areas overlap the edges of adjoining plates and often exhibit a suppression of the folds along their diagonals, which coincide with the suture-lines, resulting in a division of the individual areas. They are similar to the pore-rhombs. Also termed *pectinated rhombs.*

pectinous (pek′ti-nus), *a.* [*pectin* + *-ous.*] Of or relating to pectin; pectic.

pectoid (pek′toid), *a.* [L. *pect*(*en*), comb, + *-oid.*] A term suggested by A. D. Cushman to describe the peculiar property possessed by some constituents of rocks of developing a colloidal film about their particles during decomposition. The property is of importance in understanding the bond or cementing power of macadam and the consolidation of sediments.

> This effect seems to be accompanied with direct decomposition of certain constituents of the rock magma, which results in forming colloidal films on the particles. The word '*pectoid*' is suggested to describe this condition. *Science*, Feb. 17, 1905, p. 260.

pectoral, *a.* **3.** Figuratively, proceeding from the breast, as of the heart; from the inner consciousness.— **Basal pectoral radius**, a brachial ossicle or an actinost. See *actinost.*

pectoriloquy, *n.*—**Aphonic** or **whispering pectoriloquy,** transmission of the whisper so that it is heard through the chest-wall on auscultation.

pectosinase (pek-tō'si-nās), *n.* [*pectose* + *-in* + *-ase.*] A ferment which converts pectose into pectin, and pectin into various sugars which undergo fermentation, with the production of hydrogen, carbon dioxid, and butyric acid.

Pectus carinatum. Same as *pigeon-breast*, 2.—**Pectus excavatum,** a deformity of the chest marked by a depression of the breast-bone.

pecudiculture (pek″ụ̄-di-kul'tụ̄r), *n.* [L. *pecus* (*pecud-*), cattle, sheep, + *cultura*, culture.] The raising of cattle; the keeping of flocks and herds; stock-raising.

> The Navaho also were modified for their betterment by contact with the Rio Grande culture and by racial mixture with some of the clans, through whom, no doubt, they received sheep and their first lessons in *pecudiculture.* *Rep. U. S. Nat. Mus.*, 1901, p. 351.

peculiar, *n.* **6.** In Oxford, a nickname for an Evangelical. *N. E. D.*

pecuniosity (pẹ̄-kū-ni-os'i̤-ti), *n.* [L. *pecuniosus*, wealthy.] The state of having plenty of money. [Rare.]

ped. **2.** An abbreviation of *pedestrian.* [Slang.]

pedagog, *n.* and *v. t.* A simplified spelling of *pedagogue.*

pedagogal (ped-a̤-gō'ga̤l), *a.* [*pedagog*(*ue*) + *-al*^{1}.] Of or pertaining to a pedagogue.

> He sat in the *pedagogal* chair, but not with the majesty of his predecessor. *S. Mayne*, A Tramp, v.

pedagogist (ped'a̤-gō-jist), *n.* [*pedagog*(*ue*) + *-ist.*] One who is expert in the science of pedagogics.

pedagoguery (ped'a̤-gog-ėr-i), *n.* **1.** A school or school-house.

> The children are . . . lodged in immense *pedagogueries.* *Sydney Smith*, Essays, p. 209. *N. E. D.*

2. The system of pedagogy; the office of a pedagogue.

> In his *pedagoguery* he was pessimistic. The boys learned self-repression. *T. Wainright*, Overland, ii.

3. A petty instructiveness; a dogmatic and narrow-minded method of dealing with things.

> If I decline to descant on [such] critics . . . it is not because of any poverty of matter for remark in the headlong sciolism of the one and in the piddling *pedagoguery* of the other. But hasty and shallow philologizing is everywhere common.
> *F. Hall*, Recent Exemplifications False Philol., p. 31.

pedagoguish (ped'a̤-gog-ish), *a.* Pedantic; like a pedagogue; narrow-minded.

> There is, however, a pitch of surpassing absurdity beyond what the most indulgent partiality can tolerate — a climax of *pedagoguish* vanity which the pride of grown men and women cannot stand.
> *Blackwood's Mag.*, XXVII. 482.

pedagogy, *n.* **3.** An establishment for instructing youth; a college. [Obsolete or rare.]

> An incredible number of colleges, gymnasia, *pedagogies.* *Geog. Mag.*, II. 151.

pedal, *a.* and *n.* **I.** *a.* **3.** (*b*) In *geom.*, pertaining to the feet of transversals on to the sides of a triangle through a given point and the vertices.—**Pedal gland,** in gastropods, one of the glands which secrete a mucous substance that lubricates the surface upon which the animal crawls, or, in certain cases, hardens on contact with air or water to form a thread which suspends the animal, or entangles bubbles of air to form a float for the eggs (*Ianthina*). The secreting cells of the gland may occur as isolated unicellular glands or may be aggregated in special invaginations of the skin.—**Pedal lobe.** See ★*lobe.*—**Pedal rod.** (*b*) In *pianoforte-making*, a rod which transmits the motion of a pedal to the action.—**Pedal triangle.** See ★*triangle.*

II. *n.* **5.** In *geom.*, a pedal triangle (which see, under ★*triangle*).—**Janissary pedal,** in old keyboard instruments, a pedal that brought into play little drums and cymbals, producing a quaint suggestion of martial music.—**Pedal of P with respect to A B C,** the triangle whose vertices are the feet of transversals on to the sides of A B C through P from the vertices of A B C.—**Piano pedal.** (*b*) In *pianoforte-making*, one of the foot-levers by which certain general effects are produced, including the damper-pedal, the soft pedal, the sustaining pedal, and sometimes others.—**Shifting pedal,** in *pianoforte-making*, that form of soft pedal, as in a grand pianoforte, that moves the whole action, including keyboard and hammers, slightly to one side, so that the hammers strike only one or two strings, instead of three. In old instruments this pedal was capable of two degrees of action, the smaller being called a *one-string shift*, the larger a *two-string shift*. The former is now rare. Hence, the direction *una corda* signifies simply the use of this pedal. Also *soft pedal.* See *pianoforte* and *pedal*, *n.*, 2.—**Swing-back pedal,** a bicycle pedal which can be rotated independently of the rest of the mechanism of the running-gear, or which will stay at rest while the remainder of the mechanism is moving; a coaster-brake pedal.

pedale^1, *n.* **3.** In *Scyphomedusæ*, one of the projections of the margin of the umbrella, which forms an enlarged base carrying a tentacle.

pedaliaceous (pẹ̄-dā-li-ā'shius), *a.* Belonging to or characteristic of the plant family *Pedaliaceæ.*

Pedalion (pẹ̄-dā'li-on), *n.* [NL.] The typical genus of the family *Pedalionidæ.* *Hudson*, 1871.

Pedalionidæ (pẹ̄-dā-li-on'i-dē), *n. pl.* [NL. *Pedalion* + *-idæ.*] A family of rotifers, of the order *Scirtopoda*, having six hollow limbs, the head truncate, corona with two concave lobes, velum as in the *Philodinidæ*, and the trophi malleoramate. It includes the genera *Pedalion* and *Hexarthra.*

pedalism (ped'a̤l-izm), *n.* [*pedal* + *-ism.*] Action of the feet, considered with reference to the communication of power of some kind. [Rare.]

> Mrs. Hayden was seated at some distance from the table, and her feet were watched by their believers until faith in *pedalism* slowly evaporated.
> *De Morgan*, From Matter to Spirit, pref. p. 41. *N. E. D.*

pedal-lever (ped'a̤l-lev″ėr), *n.* A part of the device for feeding cotton into the scutching- or picking-machine, the important function of which is to equalize the delivery of the cotton to the beater.

pedal-motion (ped'a̤l-mō″sho̤n), *n.* A mechanism attached to the feeding arrangement of a cotton-scutching machine, to produce good and even laps or work.

pedanticism, *n.* **2.** Same as *pedantry.*

pedantocrat (pẹ̄-dan'tō-krat), *n.* [*pedantocrat*(*ic*).] One who rules the people on unpractical, bookish theories; a pedantic ruler.

pedantocratic (pẹ̄-dan-tọ-krat'ik), *a.* [*pedantocracy* (*-crat-*) + *-ic.*] Pertaining to or of the nature of pedantocracy.

pedate, *a.* **2.** In *zoöl.*: (*c*) Relating or pertaining to the *Pedata.*

pedation (pẹ̄-dā'sho̤n), *n.* **1**†. "A staking, propping, or setting up of vines." *Blount*, Glossographia.—**2.** In *entom.*, the manner in which the feet of insects grow or are developed; the shape, etc., of all the parts of the feet; the general condition of the feet. *Mayne*, Expos. Lex. *N. E. D.* [Rare.]

pedatrophia, pædatrophia (pē-da̤-trō'fi-ä), *n.* [NL. *pædatrophia*, ‹ Gr. παῖς (παιδ-), child, + ἀτροφία, atrophy.] Marasmus or any wasting disease of childhood.

pedatrophy (pẹ̄-dat'rọ-fi), *n.* Same as ★*pedatrophia.*

peddler, *n.* **2.** In *entom.*, the larva of any one of the tortoise-beetles.

pedententous (ped-en-ten'tus), *a.* Same as *pedetentous.*

pedestal, *n.* (*d*) In *bridge-building*, that portion of an abutment or pier which furnishes the immediate support for an end of a bridge truss or girder.

pedestal-coil (ped'es-ta̤l-koil), *n.* A radiator made from a coil of steam-pipe wound about a vertical axis.

pedestal-gear (ped'es-ta̤l-gēr), *n.* A running-gear for a carriage or wagon, which has an inverted U to straddle the axle and carry the load to springs located below the axle, thus permitting the body to be set very low.

pedgery (pej'ėr-i), *n.* See ★*pituri.*

pediad (ped'i-ad), *a.* [*pedion* + *-ad*^{3}.] Pertaining to a pedion; characterized by the symmetry of the class of crystals of which the pedion is the typical form. See ★*symmetry*, 6.

pedialgia (ped-i-al'ji-ạ̈), *n.* [NL., ‹ L. *pes* (*ped-*), foot, + Gr. ἄλγος, pain.] Same as *podalgia.*

pediatrician (ped″i-a̤-trish'a̤n), *n.* [*pediatric* + *-an.*] Same as ★*pediatrist.* *Med. Record*, March 28, 1903, p. 513.

pediatrist (ped-i-at'rist), *n.* [*pediatr-y* + *-ist.*] A physician who treats especially diseases of children. *Trans. Amer. Pediatric Soc.*, IX. 44.

pedicellar (ped-i-sel'ạ̈r), *a.* [*pedicel* + *l-* + *-ar.*] Relating to or connected with pedicellariæ or pedicels: as, *pedicellar* pores.

Pedicellaster (ped″i-se-las'tėr), *n.* [NL.] The typical genus of the family *Pedicellasteridæ.* *Sars*, 1860.

Pedicellasteridæ (ped″i-sel-as-ter'i-dē), *n. pl.* [NL. *Pedicellaster* + *-idæ.*] A family of starfishes of the order *Cryptozonia*, which have opposite ambulacral ossicles, a small disk, narrow subcylindrical rays, biserial podia, and the abactinal skeleton consisting of narrow plates forming a quadrangular network. It includes the genera *Pedicellaster*, *Coronaster*, *Gastraster*, and *Lytaster.*

Pedicellina (ped″i-se-lī'nä), *n.* [NL., ‹ *pedicellus*, pedicel, + *-ina.*] The typical and only genus of the family *Pedicellinidæ.* *Sars*, 1835.

Pedicellinidæ (ped″i-se-lin'i-dē), *n. pl.* [NL. *Pedicellina* + *-idæ.*] A family of entoproctous polyzoans, which consists of stalked colonial forms attached to a creeping stolon and budding at the growing point of the stolon. The family is marine and contains the single genus *Pedicellina.*

pedicle, *n.* **2.** (*c*) In *ichth.*, the tapering posterior portion of the body lying just anterior to the caudal fin. Sometimes called *caudal pedicle.* (*d*) In brachiopods, the fleshy arm by which the entire animal is attached, as in *Lingula*: usually atrophied in later-growth stages of certain progressed forms like *Spirifer.*

pedicled (ped'i-kld), *a.* Having a pedicle; attached by means of a pedicle, as a tumor.

pedicle-muscle (ped'i-kl-mus″l), *n.* In brachiopods, one of the muscles attached to the base of the pedicle, which have their proximal ends inserted in the posterior portions of both valves and serve to retract the pedicle and to rotate the shell upon the pedicle as an axis.

pedicle-slit (ped'i-kl-slit), *n.* The foramen or passage for the pedicle in the ventral valve of some neotrematous brachiopods, which has the form of a long, narrow slit.

pediculated (pẹ̄-dik'ụ̄-lā-ted), *a.* Same as ★*pedicled.*

pediculid (pẹ̄-dik'ū-lid), *n.* and *a.* **I.** *n.* A member of the *Pediculidæ*; a louse.

II. *a.* Louse-like; having the characters of or belonging to the family *Pediculidæ.*

pediculophobia (pẹ̄-dik″ū-lọ-fō'bi-ạ̈), *n.* [NL. *pediculo*(*sis*) + Gr. φόβος, fear.] A morbid dread and false feeling of being afflicted with pediculosis. *Syd. Soc. Lex.*

pedicure (ped'i-kūr), *v. t.*; pret. and pp. *pedicured*, ppr. *pedicuring*. [*pedicure*, *n.*] To care for the feet of (some one), and to treat minor ailments of the feet, such as corns.

pedigraic (ped-i-grā'ik), *a.* [Irreg. ‹ *pedigree* + *-ic.*] Relating to, or of the nature of, a pedigree. [Rare.]

> The late Mr. . . . commenced the compilation of a *pedigraic* account which, if completed, would doubtless have removed most of the difficulties in the somewhat involved and complicated descent of this historical family.
> *N. and Q.*, 9th ser., IX. 480.

pedigree (ped'i-grē), *v. t.*; pret. and pp. *pedigreed*, ppr. *pedigreeing*. [*pedigree*, *n.*] To breed (animals) with reference to pedigree (chiefly). [Rare.]

> Necessity, it is said, knows no law, and necessity demanded that in Short-horn line breeding an outcross was essential, that the milk should not be *pedigreed* away.
> *Rep. Kansas State Board Agr.*, 1901–02, p. 5.

pediluvial (ped-i-lū'vi-a̤l), *a.* [NL. *pediluvi*(*um*) + *-al*^{1}.] Of or pertaining to pediluvium or the washing of feet.

pedimanous, *a.* **2.** Pertaining to or having the characteristics of the *Pedimana*: a term applied to both lemurs and opossums.

pedinaxon (ped-in-ak'son), *n.* [Gr. πεδινός, flat, + ἄξων, axis. See *axon.*] In sponge-spicules, a monaxon whose ideal axis lies in a plane, though the line may be straight or curved. Compare ★*spiraxon.*

> G. C. J. Vosmaer endeavours to introduce some improvements in the classification of siliceous sponge spicules. Thus in the group of monaxons, two fundamental divisions may be distinguished, according to the fact whether the ideal axis lies in a plane or not. In the former case the line may be straight, curved, bent, etc.; in the latter case the line is a screw helix (approximately, as all vital structures are). The spicules of the first set are called "*pedinaxons,*" those of the second "spiraxons."
> *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 503.

pediococcus (ped″i-ọ̄-kok'us), *n.*; pl. *pediococci* (-sī). [Gr. πεδίον, a plain, + κόκκος, berry. See *coccus.*] A form of *Micrococcus* in which the cocci divide into four parts by the formation of two septa intercepting each other at right angles.

pedion (ped'i-o̤n), *n.*; pl. *pedia* (-ạ̈). [Gr. πεδίον, a plain, ‹ πέδον, ground, earth, plain.] A form, belonging to the asymmetric or pediad class of the triclinic system, consisting of a single face only. *W. J. Lewis*, Crystallography, p. 148.

pedionomite (ped-i-on'ọ̄-mit), *n.* [Gr πεδιονόμος, one who dwells on a plain, + *-ite*2.] One who lives on a plain. [Rare.]

They would first occupy the eastern and afterwards the western slopes of the Apennines; and thence, emboldened by strength and security, they would overspread the surrounding lowlands; and become *pedionomites*.
R. F. Burton, Etruscan Bologna, ii.

Pedipalpa (ped-i-pal′pä̤), *n. pl.* [NL., neut. pl. of *pedipalpus*. See *pedipalp*.] The order of *Arachnida* of which the scorpion-spiders are examples.

pedipalpal (ped-i-pal′pa̤l), *a.* [*pedipalp* + *-al*1.] Concerning or pertaining to the pedipalps, or the appendages which, in the *Arachnida*, carry the large claws. *Huxley*, Anat. Invest., p. 384.—**Pedipalpal gland.** See ★*gland*.

peditis (pē-dī′tis), *n.* [NL., < L. *pes* (*ped-*), foot, + *-itis*.] Inflammation of the pedal bone of the horse, a complication of severe founder. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 423.

pedograph (ped′ọ̄-gráf), *n.* [L. *pes* (*ped-*), foot, + Gr. *γράφειν*, write.] An instrument for making automatically a topographical record of the ground traversed by a pedestrian. *Sci. Amer.*, May 28, 1904, p. 421.

pedological, pædological (pē-dọ̄-loj′i-ka̤l), *a.* Pertaining to pedology or to its methods. Also *paidological*.

They need to be individually studied by every *paidological* method, physical and psychic.
G. S. Hall, Adolescence, I. 407.

pedologically, pædologically (pē-dọ̄-loj′i-ka̤l-i), *adv.* In a pedological manner, or by pedological methods.

pedology, pædology (pē-dol′ọ̄-ji), *n.* [Gr. παῖς (*παιδ-*), child, + *-λογια*, < *λέγειν*, speak.] The science of the child, theoretical and applied; child-study in its widest sense. The term was apparently introduced by O. Chrisman in 1896. Also *paidology*. *Amer. Jour. Psychol.*, XII. 268.

pedomesoblast, pædomesoblast (pē-dọ̄-mes′ọ̄-blást), *n.* [(?) Gr. *παῖς* (*παιδ-*), child, + E. *mesoblast*.] The mesenchyme or ectomesoblast of certain marine larvæ, such as those of the annelids: distinguished from the *definitive* or *somatic mesoblast*.

pedomorphic, pædomorphic (pē-dọ̄-môr′fik), *a.* [Gr. *παῖς* (*παιδ-*), a child, + *μορφή*, form.] Of a juvenile character. The absence of a beard, the slight development of the larynx, and the shortness of the legs as compared with the arms, in the human male, are accounted pedomorphic traits.

pedomorphism, pædomorphism (pē-dọ̄-môr′fizm), *n.* [*pedomorph*(*ic*) + *-ism*.] The retention by the adult organism of infantile or juvenile characters. See ★*pedomorphic*. *Harrison Allen*, Jour. Acad. Nat. Sci., Philad., N. S., X. 432.

pedoparthenogenesis, pædoparthenogenesis (pē″dọ̄-pär″the-nọ̄-jen′e-sis), *n.* [NL., < Gr. *παῖς* (*παιδ-*), a child, + NL. *parthenogenesis*.] The reproduction of larval or immature animals by unfertilized eggs; pedogenesis.

This group (Diptera) furnishes some excellent examples of pædogenesis or *pædoparthenogenesis*, and the phenomena as shown in various genera grade into each other in such a manner that it becomes evident that no line of demarcation can be drawn between parthenogenetic development from eggs laid by adult females and pædogenesis.
E. F. Phillips, Proc. Amer. Philos. Soc., May–Dec., [1903, 299.

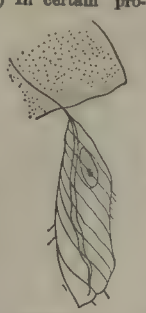
pedotribe, pædotribe (pē′dọ̄-trīb), *n.* [Gr. *παιδοτρίβης*, a teacher of gymnastics.] In *Gr. antiq.*, a teacher of wrestling and other athletic exercises; a teacher of gymnastics.

pedrail (ped′rāl), *n.* [Irreg. < L. *pes* (*ped-*), foot, or *ped*(*estrian*), + E. *rail*1.] A form of traction-engine, so constructed that the wheels rest their weight not on the ground-surface but on the units or links of a jointed chain, fed in front of the machine as it advances, and laid by it on the ground for the wheels to run on. These block- or link-rails are picked up by the wagon after it passes over them. The wheels do not sink in soft earth, as the track gives a greater bearing-surface for support. Great unevenness of surface is overcome by this plan, and the wheels can mount over logs and considerable obstacles.

The Diplock walking machine — called by the inventor the "*Pedrail*" — give[s] promise of a successful result. In this invention supports carrying rollers are placed on the ground, and the motor or traction engine may be said to be rolled over them so that a rail fixed to the waggon moves along while the wheels themselves are temporarily supported on the ground and picked up when the load has passed over them. *Encyc. Brit.*, XXXI. 18.

pedro, *n.* 2. In the game of cinch, the five of trumps and also the five of the same color.—**Double pedro.** See ★*cinch*, 4.—**Draw pedro,** a variety of cinch in which only six cards are dealt to each player and there is no left pedro. Twenty-one points is game. See ★*cinch*, 4.

peduncle, *n.*, 2. In *zoöl.*: (*e*) In certain protozoan parasites, a long and very delicate process, possibly a highly modified cilium, by which the organism is attached to the intestinal epithelium of its host, as in *Pyrsonympha vertens* and *Blepharocorus uncinata*.—**Caudal peduncle,** that part of a fish which is behind the anal and dorsal fins and which supports the caudal fin.—**Olfactory peduncle,** the stem or constricted portion of the brain, which bears the olfactory lobe.


Peduncle of *Pyrsonympha*.

Pyrsonympha vertens Leidy, attached by a delicate filament to the epithelium of the intestine of Termes flavipes. The filament appears to be continuous with a specialized (muscular?) band running through the whole length of the medulla. (After Porter) x 400.
(From Lankester's "Zoology.")

peebeen (pē′bēn), *n.* [Aboriginal name.] A myrtaceous tree of northern Queensland, *Syncarpia Hillii*, which yields a tough, close-grained wood of a dark pink color, useful for building purposes. It is often called *turpentine-tree* by the colonists.

peechi (pē′chi), *n.* Burchell's zebra.

peeke, *n.* See *peag*.

peeling-machine (pē′ling-ma̤-shēn″), *n.* Same as ★*cutting-machine*.

peen-to (pēn-tō′), *n.* [Canton *pīn t'o*, Mandarin Chinese *pien t'ao*, flat peach: *pīn*, *pien*, flat, + *t'o*, *t'ao*, peach, nectarine.] A peach of the South China race, *Prunus Persica*, var. *platycarpa*, now somewhat grown in the extreme southern part of the United States: characterized by a very flat fruit, as flat, in some cases, as a watch.

peeoy (pē-ō′i), *n.* [Scotch.] A firework; a small pyramid of damp powder squeezed into shape and lighted at the top. Also called *spitting-devil*.

Puttin' poother in [the man's] fire and *peeoys* in his window.
R. L. Stevenson, Master of Ballantrae, ii. *N. E. D.*

peer2, *n.*—**Peers of the realm,** the members of the House of Lords.—**Representative peers.** See *Peer of Ireland* and *Peer of Scotland*.

peet (pēt), *n.* [Native name.] In British Columbia, *Cristivomer namaycush*, the Great Lake trout.

pee-wee (pē′wē), *n.* 1. The magpie-lark. [New South Wales.]—2. Same as *pewee*.

peg, *n.* 7. One of the cells or natural divisions into which an orange may be separated after removing the skin. [West Indies.]

peg, *n.*—**King's peg,** a drink or 'peg' made of liqueur brandy and champagne.

Cranze kept up a steady soak on *king's peg*—putting in a good three fingers of the liqueur brandy before filling up the tumbler with champagne—and was naturally inclined to be argumentative.
Cutcliffe Hyne, A Master of Fortune, xi.

peg, *v. t.* 4. To pith (a frog); destroy the brain of, previous to certain experiments.—5. Same as *to* ★*peg out* (*a*).

"All the draf' was out av their tents watchin' Barney bein' *pegged*."
R. Kipling, The Big Drunk Draf', in Soldiers Three, [p. 62.

Pegged splint, in *farriery*, a special form of splint in which the bony enlargement passes across the posterior face of the cannon-bone. *U. S. Dept. of Agr.*, Rep. on Diseases of the Horse, 1903, p. 281.—**To peg out.** (*a*) To fasten down with (tent-) pegs, as an unruly soldier, as a punishment.

"'*Peg* him *out*, Sorr,' sez I, in a whisper.
"'*Peg* him *out!*' sez me orf'cer bhoy, up loud, . . .
"The non-coms tuk Peg Barney — a howlin' handful he was — an' in three minutes he was *pegged out* — chin down, tight-dhrawn — on his stummick, a peg to each arm an' leg, swearin' fit to turn a naygur white."
R. Kipling, The Big Drunk Draf', in Soldiers Three, p. 62.

(*b*) To mark out by pegs, as a miner's claim, each peg bearing the owner's name. [Australia.]

He was in high hopes that he might be one of the first to *peg out* ground on the goldfield.
G. Sutherland, Tales of Goldfields, p. 58, in E. E. [Morris, Austral English.

(*c*) In *croquet*, to put out by driving against the winning peg: said of a ball.

pega (pā̤′gä̤), *n.* [Sp. *pega*, the art of cementing or gluing, < *pegar*, join, unite, glue.] A name of the remora, *Echeneis naucrates*, a fish which is universally distributed over warm seas. It is interesting from the fact that it attaches itself to large fishes and turtles, but particularly to sharks, by a sucking-disk on top of its head. See ★*shark-sucker*, and cut under *Echeneis*.

pegall (pe-gâl′), *n.* [Carib *pegalla*.] In Guiana, a very light, closely woven basket of square or oblong form, with a cover which slips over it. It is made of strips of the hard outer portion of the leaf-stems of palms. Some of them are dyed and others are left the natural color. By means of twilled weaving elaborate patterns are produced. Called *Carib baskets* in the West Indies.

pegall-work (pe-gâl′wėrk), *n.* Woven basketry work made in checkered or twilled weave, generally with patterns in black and light, such as is used by the natives of Guiana.

pegamoid (peg′a̤-moid), *n.* [L. *pe*(*r*)*gam*(*ena*), parchment, + *-oid*.] A patented material made on a muslin back and embossed in imitation of leather: used especially in the binding of books and in upholstering.

The exterior of the balloon is made of *pegamoid*, which protects it both from sun and rain.
T. E. Curtis, in Strand Mag., Sept., 1900, p. 309.

peg-and-socket (peg′a̤nd-sok″et), *a.* Noting a method of articulation of the scales, confined entirely to ganoid fishes. The scales of these fishes develop from one to three tooth-like, bony processes on the upper or anterior border which fit into corresponding depressions in the scale next adjacent thereto.

pega-palma (pā-gä-päl′mä), *n.* [Sp. *pega-palma*, < *pegar*, to adhere to, + *palma*, palm-tree.] In Porto Rico, either *Marcgravia Sintenisii* or *M. rectiflora Jacquini*, climbing shrubs with simple leaves and long-stemmed umbels of flowers, which adhere to the trunks of palms and other forest-trees by rooting lateral branches. They are closely allied to the West Indian ivy, *Marcgravia umbellata*, of Jamaica and the Windward Islands. See *Marcgravia* and *West Indian* ★*ivy*.

pega-palo (pā-gä-pä′lō), *n.* [Sp. *pega-palo*, < *pegar*, to stick to, + *palo*, a tree or pole.] In Porto Rico, the cat's-claw liana, *Bignonia Unguis-cati*, a shrubby climber with claw-like tendrils by means of which it holds fast to the trunks of trees. See *cat's-claw*, 1 (*a*).

pega-pega (pā-gä-pā′gä), *n.* [Sp. *pegar*, to adhere, or stick to.] In Spanish America, the common name of a number of plants bearing fruit which readily adheres to other objects. In Porto Rico it is especially applied to the velvet-bur, *Priva echinata*, and to *Æschynomene Americana*, a leguminous plant with jointed pods. In Mexico it is applied to *Mentzelia adhærens*, a plant belonging to the *Loasaceæ*, armed with hooked hairs.

pega-pollo (pā″gä-pōl′yō), *n.* [Sp. *pega-pollo*, < *pegar*, to stick to or adhere, + *pollo*, chicken.] In Porto Rico, *Boerhaavia scandens*, a trailing weed belonging to the *Nyctaginaceæ*. The perianth-tubes inclosing the fruit are glutinous and easily detach themselves from the plant. They adhere to other objects, and young chickens and turkeys sometimes die in consequence of their eyes becoming sealed up by them.

pegasoid (peg′a̤-soid), *a.* [*Pegasus* + *-oid*.] Of or pertaining to the *Pegasidæ*, a family of fishes with wide-spreading pectoral fins.

peg-box (peg′boks), *n.* In musical instruments of the lute or viol families, the open part of the head in which the tuning-pegs are placed.

peg-circuit (peg′sėr-kit), *n.* On a telephone switchboard, a circuit between different lines made by inserting the pegs at the two ends of a connector into the requisite switch-holes.

pegged (pegd), *a.* Of a conical or peg shape, noting certain deformed teeth.

pegging. *n.* 6. In harvesting tobacco, the driving of a peg into the cut stalk to hang it upon while curing. For other methods see ★*spearing*, ★*splitting*.

pegman (peg′ma̤n), *n.* In *shoemaking*, see the extract.

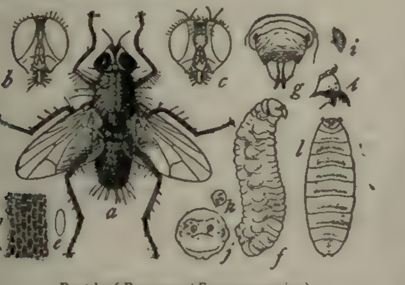
"Lasters," men or boys who place the closed uppers over the last and attach the bottom material (in hand-sewn work these are known as "makers," in "pegged work," now nearly obsolete, they are called "*pegmen*" or "rivetters"). *Webb*, Indust. Democracy, I. 418.

Pegmatitic texture. Same as *graphic* ★*texture*.

pegmatization (peg″ma̤-ti-zā′shọn), *n.* [*pegmatite* + *-ize* + *-ation*.] In *petrog.*, the filling of a rock with veins of pegmatite.

pegology (pē-gol′ọ̄-ji), *n.* [Gr. *πηγή*, water, spring, + *-ology*.] The science which treats of the origin and character of springs.

Pegomya (peg-ọ̄-mī′ä̤), *n.* [NL., < Gr. *πηγή*, water, + *μυῖα*, a fly (Desvoidy, 1830).] An important genus of anthomyiid flies which contains a number of European and American species injurious to agriculture, as the seed-corn maggot, *Pegomya fusciceps*, the beet-leaf miner, *P. vicina*, and others. Also called *Pegomyia.*—**Beet-leaf pegomya**, an American anthomyiid fly, *Pegomya vicina*, whose larva mines the leaves of the sugar-beet.



Beet-leaf Pegomya (*Pegomya vicina*).

a, fly; *b*, head of male fly; *c*, head of female; *d*, surface of egg, highly magnified; *e*, egg; *f*, maggot; *g*, *h*, head and cephalic hooks of maggot; *i*, prothoracic spiracles; *j*, anal segment; *k*, anal spiracles; *l*, puparium, all enlarged. (Howard, U. S. D. A.)

peg-pole (peg′pōl), *n.* A piece of gymnasium apparatus which consists of an upright pole having holes at regular intervals in which pegs may be inserted. It may be ascended by lifting the body by one peg while another is placed in the hole above.

peg-pot (peg′pot), *n.* Same as *peg-tankard.*

In 1873 a *peg-pot* . . ., and said to have been given by Capt. John Conolly in commemoration of the visit to Norwich of James, Duke of York, in March, 1681.
Athenæum, Jan. 24, 1903, p. 122.

pegroots (peg′rötz), *n.* See *setterwort.*

peg-tooth (peg′töth), *n.* 1. An undersized, cone-shaped tooth.—2. In *mech.*, a tooth having, in section, the shape of an isosceles triangle; a fleam-tooth.

Peg-top form. (*b*) In *naval arch.*, the form of a vessel whose midship-section outline is roughly that of a peg-top or a wide V with the upper ends rounded in.

In vessels with "*peg-top*" *forms* of cross-sections—such as the Symondite type of the Royal Navy—the metacentre occupies its highest position in the ship when she is at the load-draught, and falls gradually as the draught lightens. *White*, Manual of Naval Arch., p. 90.

Pegu (pe-gö′), *n.* A monosyllabic dialect of the Tibeto-Burman group: named from Pegu, a district in farther India.

pegwood (peg′wụ̈d), *n.* See *spindle-tree.*

pehla, *n.* See *pe-la.*

P. E. I. An abbreviation of *Prince Edward Island.*

peje (pā′hā), *n.* [Native name.] A small tree, *Iodina rhombifolia*, of the sandalwood family, found in Argentina, Uruguay, and southern Brazil. It yields a useful wood, and its leaves and bark, as well as the oil obtained from its seeds, are used in native medicine.

pejorate (pē′jọ-rāt), *v. t.*; pret. and pp. *pejorated*, ppr. *pejorating*. [L. *pejoratus*, pp. of *pejorare*, make worse.] To cause to deteriorate; depreciate the value of.

You do not appear to me to recognise the gravity of your situation, or you would be more careful not to *pejorate* the same by words which glance upon the purity of justice. *R. L. Stevenson*, Catriona, iv.

pejorism (pē′jō-rizm), *n.* [L. *pejor*, worse, + *-ism.*] The theory that the world is deteriorating or growing worse. [Rare.]

The future cannot be worse than the past. Man has believed in pessimism, he has hardly ever believed in *pejorism*, and that much decried philosophy of evolution, if it teaches us anything, teaches us a firm belief in a better future.
Max Müller, Lectures on the Origin and Growth of Religion, vii.

Pekin (pē-kin′), *n.* [*Pekin*, properly *Peking*, the capital of China.] 1. A silk fabric originally made in China.—2. A civilian; a contemptuous nickname originally bestowed in France by the soldiers of the first Napoleon. It is occasionally used in English. *N. E. D.* —**Pekin stripes**, in fabrics, a design in stripes of alternating colors, the stripes usually being of equal width. *Dry Goods Economist*, June 13, 1908.

pekoe, *n.* Pekoe tea (unqualified) is that made from the three pekoe leaves together (see below). It is of a black or grayish black color dotted with grayish or yellowish pekoe ends, and yields a strong dark liquor of fine flavor, technically described as "piquant."—**Flowery pekoe**, tea consisting of the terminal unexpanded leaf of the shoot, known as the *flowery pekoe leaf*. Practically, however, this tea contains the first two pekoes so far as they cure of a greenish or silvery gray tint. Also (incorrectly) a tea with an extra amount of pekoe ends. The tea flower is not used except for scenting.—**Hyson pekoe.** Same as *Dragon's-pool* ★*tea*.—**Orange pekoe**, tea corresponding theoretically to the orange pekoe leaf (second from the tip). Practically this tea includes the first and second pekoes so far as they cure yellowish or orange, as happens increasingly with advance of season.—**Pekoe end**, the downy summit of a pekoe leaf or the leaf as characterized by this; when very small called *pekoe tip*. The presence of pekoe ends adds greatly to the value of black tea.—**Pekoe leaf**, specifically, the third leaf from the tip on a shoot of the tea plant; more broadly, one of the first three.

pel, *n.* and *v. t.* A simplified spelling of *pell.*

pelagial (pẹ̄-lā′ji-ạl), *a.* [Gr. *πελάγιος*, pertaining to the open sea, + *-al*¹.] Of or belonging to the open sea; more recently, living on or near the surface of the ocean, at some distance from land; pelagic.

pelagian¹, *a.* 2. Inhabiting islands in the open sea.

Pelagian Negroes have long been well known inhabitants of the interior of the Penang islands, in the Archipelago of the Philippines, where they occupy rocky and mountainous tracts in the inland parts.
J. C. Prichard, Nat. Hist. of Man, p. 460.

pelagic, *a.* 1. Specifically, in *marine biol.*: (*a*) Living at the surface of the high sea at a distance from land. (*b*) Living at the surface of the sea. See the extract.

I . . . limit the meaning of the *pelagic* fauna and flora to those actively swimming or passively floating animals and plants, which are taken swimming at the surface of the ocean.
Haeckel (trans.), Planktonic Studies, in Rep. U. S. Fish [Com., 1889–91, p. 581.

(*c*) Living at the surface of the water, either salt or fresh. (*d*) Floating or swimming in the water, either at the surface or at any depth below it.

To a third quite different meaning has the conception of the *pelagic* living world been widened by Chun who extends it from the surface of the ocean down to the greatest depths.
Haeckel (trans.), Planktonic Studies, in Rep. U. S. Fish [Com., 1889–91, p. 577.

2. In *geol.* and *geog.*, of or pertaining to the deep ocean; far from land.

The investigation of the composition of the sea-bottom brought out some interesting facts. *Pelagic* deposits—using Sir J. Murray's nomenclature—are naturally little represented, as compared with those classed as terrigenous, which are derived from the land.
Geog. Jour. (R. G. S.), XVI. 551.

Pelagic fishery, a fishery on the high sea, three miles or more from land.—**Pelagic plankton.** See ★*plankton.* —**Pelagic sealing**, the killing of seals on the high seas.

Pelagothuria (pel″ạ-gọ̄-thū′ri-ä), *n.* [NL.] The typical and only genus of the family *Pelagothuriidæ*. *Ludwig*, 1893.

Pelagothuriidæ (pel″ạ-gọ̄-thụ̄-rī′i-dē), *n. pl.* [NL. *Pelagothuria* + *-idæ.*] A family of echinoderms having no tube-feet, the mouth and anus terminal, body cylindrical and around the crown of tentacles widened out into a thin disk, the edge of which is prolonged into a number of long flexible rays. There are no respiratory trees, ciliated organs, Cuvier's organs, or traces of a calcareous skeleton. The animal's shape recalls that of a medusa. It is pelagic, swimming by means of the disk and arms. The single species, *Pelagothuria natatrix*, is found in the Gulf of Panama and around the Galapagos Islands.

pelamis, *n.* 2. [*cap.*] A genus of sea-snakes of the family *Hydrophidæ*. *P. bicolor* is a common species recognizable by its black upper and yellowish lower parts. It is found widely distributed from Madagascar to the Gulf of Panama.—**Black-backed pelamis**, the black-backed sea-snake of India, *Pelamis bicolor*.

pelargonic, *a.* 2. Derived from *Pelargonium*. —**Pelargonic acid**, nonylic acid; an oily acid, $C_9H_{18}O_2$, of the fatty series. It melts, after cooling, at 12.5° C., and boils at 253–254° C. It occurs in the volatile oil of *Pelargonium roseum* and in the fusel-oil from sugar-beets. Also made synthetically.

Pelargonium, *n.* 2. [*l. c.*] A plant of the genus *Pelargonium*.—**Pelargonium oil.** See *geranium* ★*oil* (*a*).

pelecanine (pel′e-kạ̄-nin), *a.* [*Pelecan*(*us*) + *-ine*².] Pertaining to or having the characters of the genus *Pelecanus*.

pelecinid (pel-e-sin′id), *n.* and *a.* I. *n.* A member of the hymenopterous family *Pelecinidæ*.

II. *a.* Having the characters of or belonging to the family *Pelecinidæ*.

Pelecyornis (pel″e-sī-ôr′nis), *n.* [Gr. *πέλεκυς* (?), ax, + *ὄρνις*, bird.] A genus of extinct birds which resembled *Phorusrhacos*, but were smaller and more slenderly built, and had comparatively longer legs.

pelekus (pel′e-kus), *n.* [Gr. *πέλεκυς*, ax.] A Greek ax or battle-ax.

There can be no doubt I think that the giant is Procrustes, the *pelekus* being the characteristic weapon used for lopping him.
J. E. Harrison, in Jour. Hellenic Studies, X. 232.

pelele (pạ̄-lā′lạ̄), *n.* [South African.] A labret worn in the upper lip by some of the native tribes of South Africa. See ★*botoque* and *labret*.

Their [Baluana, tribe of Rhodesia] women wear the *pelele*, a metal disk inserted in a hole made in the upper lip, which is common to many tribes living east of the Loangwa river. *Geog. Jour.* (R. G. S.), XVIII. 73.

pelélith (pe-lā′lith), *n.* [*Pelé*(*e*), a volcano in Martinique, + *-lith.*] A specific name suggested for that form of eruptive rock presented by the spine of Mount Pelée, Martinique. Compare ★*cumulo-volcano*.

In view of the frequency of this form of volcanic plug it is proposed to apply the term *pelélith* to such peaks, the type illustration being the peak of Mont Pelé on the island of Martinique. *Amer. Geol.*, May, 1904, p. 319.

pelélithic (pe-lā′lith-ik), *a.* [*pelélith* + *-ic.*] Pertaining to, or of the nature of, a pelélith. Also *pelélitic*.

It is not necessary to multiply these illustrations of possible *pelélitic* roots. It is not intended to apply the new term to other rock masses than those that can be shown to have ascended bodily above the crater rim of an active volcano; and to suggest that perhaps there are more than have been supposed of the same kind.
Amer. Geol., May, 1904, p. 325.

pelerine, *n.* 2. A form of ladies' neckwear. *Dry Goods Economist*, June 13, 1908.

Pelican in her piety. (*b*) In *eccles. art*, the conventional representation of the pelican feeding her young from her breast, used as an emblem of Christ shedding his blood for mankind.

"*The Pelican in her Piety*" embroidered in white, shaded with grey, on a ground of red.
Maud R. Hall, Eng. Church Needle-work, p. 41.

Roseate pelican, *Pelecanus onocrotalus*, the great white pelican of southern Europe, whose plumage has a rosy tint in the breeding season. It breeds in large numbers in the marshes at the mouth of the Danube.—**Spotted-billed pelican**, *P. manillensis*, a white species of Southern Asia that makes its nest in the tops of tall trees.

pelican-ibis (pel′i-kạn-ī″bis), *n.* The East Indian *Pseudotantalus leucocephalus*, a bird related to the wood-ibis of North America. See *wood-ibis*.

pelicometer (pel-i-kom′e-tėr), *n.* [Gr. *πελίκα* (beside *πέλυξ*, stem *πελυκ-*), dial. form of *πέλλα*, a bowl (used in sense 'pelvis'), + *μέτρον*, measure.] Same as *pelvimeter*.

pelion² (pel′i-on), *n.*; pl. *pelia* (-ạ̈). [Gr. *πελιός, -όν*, livid, discolored.] In echinoderms, one of the rings of plates which support the suckers. Also *pellion*.

pelionite (pel′i-ọ̄-nīt), *n.* [*Pelion* (see def.) + *-ite*².] A bituminous coal which resembles English cannel-coal, from Monte Pelion, Tasmania.

peliosis (pel-i-ō′sis), *n.* [NL., < Gr. *πελιός*, livid, + *-osis.*] Purpura hæmorrhagica.—**Peliosis rheumatica.** Same as *purpura rheumatica*.

pelite-gneiss (pē′līt-nīs″), *n.* [*pelite* + *gneiss.*] In *petrog.*, a gneiss formed by the metamorphism of argillaceous deposits or pelites. *Rosenbusch*, 1898.

pellagrosein (pel-ạ-grō′sẹ̄-in), *n.* [It. *pellagroso* (< *pellagra*) + *-e-in*².] A basic substance found in an alcoholic extract of powdered maize, which had been allowed to ferment for 24–36 hours: supposed by Lombroso to be responsible for the clinical symptoms of pellagra.

pellet, *n.* 6. The indigestible part of the food of hawks and owls, consisting of bones, hair, feathers, etc., which is cast up or regurgitated in the shape of elongated balls.

Hawks and owls often swallow their smaller victims entire and tear the larger ones into several pieces, swallowing each fragment as it is detached. After the nutritious portion of the food has been absorbed, the indigestible parts, such as hair, feathers, scales, bones, and other hard parts, are rolled into a solid ball by the action of the muscles of the stomach. These masses, known as "*pellets*" are regurgitated before fresh food is taken. *Yearbook, U. S. Dept. of Agr.*, 1894, p. 217.

pellicle, *n.* 4. In *entom.*, the skin of the subimago of an ephemerid.—**Proligerous pellicle.** Same as *zoöglœa*. *Nature*, Feb. 25, 1904, p. 385.—**Surface pellicle**, in *biol.*, a thin film formed by vast colonies of bacteria or other micro-organisms on the surface of infusions and other liquids; the zoöglœa.

pellicula, *n.* 2. In infusorians, the cuticle.

pellin (pel-yēn′), *n.* [Native name.] In Chile, the wood of the roble (*Nothofagus obliqua*), a straight deciduous tree belonging to the *Fagaceæ*. The wood is heavy and durable, and is used for posts, joists, rafters, etc., but not for flooring.

pellitorin (pel′i-tō-rin), *n.* [*pellitor*(*y*) + *-in*².] A compound, soluble in alcohol, contained, in small quantity, in the resin from pellitory (pyrethrum).

pellitory-of-the-wall (pel′i-tọ̄-ri-ov-thẹ̄-wâl′), *n.* Same as *pellitory*, 1. *R. C. A. Prior*, Pop. Names of British Plants.

pell-mell^1 (pel′mel′), *a.* and *n.* [See *pell-mell, adv.*] **I.** *a.* Tumultuous; promiscuous; disorderly.

> And never yet did insurrection want
> Such water-colours to impaint his cause;
> Nor moody beggars, starving for a time
> Of *pellmell* havoc and confusion.
> *Shaks.*, I Henry IV., v. 1.

II. *n.* A mêlée; a confused fight; disorder.

> The Church in the *pell-mell* of Stephen's time
> Hath climb'd the throne and almost clutch'd the crown;
> But by the royal customs of our realm
> The Church should hold her baronies of me,
> Like other lords amenable to law.
> *Tennyson*, Becket, Prol. 1. 13.

pell-mell^1 (pel′mel′), *v. t.* [*pell-mell, adv.*] To mix up promiscuously; pile in confused heaps.

> Lyke these Herodians that mingled their sacrifices with the bloode, . . . they *pel-mell* the dead with the liuing all in one Kirk.
> *W. Birnie*, The Blame of Kirk-bvriall, p. 31.

pellote (pāl-yō′tā̤), *n.* See ★*peyote.*

pellotine (pel′ọ̄-tin), *n.* A crystalline alkaloid, $C_{13}H_{19}O_3N$, which occurs in *Lophophora Williamsi.* It melts at 110° C. See ★*mescal-button.*

pellucent (pe-lū′sẹnt), *a.* Same as *pellucid.*

pelmatozoic (pel″ma̤-tọ̄-zō′ik), *a.* [*Pelmatozoa* + *-ic.*] Pertaining to the *Pelmatozoa*; having the characters of the sessile *Pelmatozoa*; that is, having the body inclosed in a calyx or theca of many calcareous plates, elevated with its oral surface uppermost upon a column of calcareous plates, and with the mouth, arms, and madreporic plate lying in the sagittal plane of pentamerous radial symmetry, as in the typical *Cystoidea, Blastoidea, Crinoidea,* and *Edrioasteroidea.*—**Pelmatozoic theory,** a theory of the origin of the echinoderms according to which they are all remotely descended from a common ancestral ciliate floating organism, dipleurula, of small size, which is now represented by the pelagic bilateral ciliate larvæ of many echinoderms. The dipleurula, becoming adapted for life upon the bottom of the ocean, increasing in size, and acquiring a calcareous skeleton, became converted into a radiate organism whose structure is illustrated, with modifications, in the *Pelmatozoa,* which are considered to be the most primitive of the true echinoderms, while the *Eleutherozoa* are considered to have passed through a pelmatozoic stage. See ★*calycinal theory,* ★*pentactæa theory,* and ★*dipleurula.*

pelmatozoön (pel″ma̤-tọ̄-zō′on), *n.*; pl. *pelmatozoa* (-ä̤). Same as *pelmatozoan. Encyc. Brit.,* XXVII. 622.

pel-mel, *adv.* and *n.* A simplified spelling of *pell-mell.*

pelobatoid (pẹ̄-lob′a̤-toid), *a.* [NL. *Pelobat(es)* + *-oid.*] Resembling, or having the characters of, the frogs of the family *Pelobatidæ. Proc. Zool. Soc. London,* 1896, p. 553.

pelogenous (pē-loj′e-nus), *a.* [Gr. πηλός, clay, + -γενης, -producing, + *-ous.*] In *phytogeog.,* of fine-grained, earthy consistence: said of soils. Thurmann, the author of the term (1849), further distinguished pelogenous soils, from more to less subdivided, as perpelic, hemipelic, and oligopelic. Compare ★*psammogenous.*

pelolithic (pẹ̄-lọ̄-lith′ik), *a.* [Gr. πηλός, clay, + λίθος, stone, + *-ic.*] Noting a rock which is formed from clay.

> The Coral Rag is only an episode in the *pelolithic* series.
> *Geol. Mag.,* new ser. I. 526. *N. E. D.*

pelopium (pẹ̄-lō′pi-um), *n.* [NL.] The name given by H. Rose to a supposed new chemical element which he believed that he had detected in the mineral columbite from Bavaria. He afterward recognized its identity with niobium.

pelopsammic (pel-op-sam′ik), *a.* [Gr. πηλός, clay, + ψάμμος, sand, + *-ic.*] In *phytogeog.,* of a consistence between clayey and sandy. See ★*psammogenous.*

pelorian (pẹ̄-lor′i-a̤n), *a.* [*peloria* + *-an.*] Characterized by, or pertaining to, peloria; peloriate.

pelosine (pel′ọ̄-sin), *n.* Same as *bebeerin.*

pelota (pā-lō′tä), *n.* [Sp., a ball. See *pellet.*] A Spanish game played in a court with a ball and a curved device attached to the player's arm by which the ball can be hurled with great force and accuracy.

pelotage (pe-lō-täzh′), *n.* [F., lit. 'baling,' < *peloter,* put into balls or bales, < *pelot,* a ball: see *pellet, platoon.*] Spanish wool packed in bales.

pelt^2 (pelt), *v. t.* [*pelt*^{2}, *n.*] To skin; fleece; pluck the pelt from.

Peltastes (pel-tas′tēz), *n.* [NL., < Gr. πελταστής, a shield-bearer. See *peltast.*] A genus of diadematoid regular sea-urchins of the family *Saleniidæ,* which have tuberculate, spheroidal tests with large apical plates and the dorsocentral plate united to the large basals. The species are found in Upper Jurassic and Cretaceous formations.

peltecleis (pel′tē-klīs), *n.* [Gr. πέλτη, light shield, + κλείς, key.] In decapod crustaceans, a tubercle or nodule on the posterior margin of the carapace. Compare ★*pereicleis.*

pelter^3 (pel′tėr), *n.* [Origin obscure.] In *poker,* a hand which has no card higher than a nine and no chance for a flush or straight: sometimes called *Chicago pelter.* Also, *kilter.*

pelterer (pel′tėr-ėr), *n.* [*pelt*^{2}, *n.*] A dealer in skins; a furrier. *N. E. D.*

peltiferous (pel-tif′e̤-rus), *a.* [Gr. πέλτη, a shield, + φέρειν, bear.] In *bot.,* shield-bearing.

Peltigeraceæ (pel-tij-e̤-rā′sē-ē), *n. pl.* [NL., < *Peltigera* + *-aceæ.*] A family of frondose lichens, named from the genus *Peltigera,* which have the apothecia without a distinct margin. See *Peltigera.*

peltigerous (pel-tij′e̤-rus), *a.* [L. *pelta,* shield, + *gerere,* carry.] Shield-bearing.

peltinervate (pel-ti-nėr′vāt), *a.* Same as *peltinerved.*

Peltocaris (pel-tok′a̤-ris), *n.* [NL., < Gr. πέλτη, a shield, + καρίς, a shrimp.] A genus of phyllocarid crustaceans based upon circular bivalved shields found in the Silurian rocks of Great Britain.

pelure^2 (pe-lür′), *n.* [F. *pelure,* lit. peeling.] In *paper-making,* a crisp, hard paper, as thin as an onion peeling. Also *pelure paper.*

pelvicellulitis (pel-vi-sel-ụ̄-lī′tis), *n.* [NL., < *pelvis* + *cellulitis.*] Pelvic cellulitis.

pelviferous (pel-vif′e̤-rus), *a.* [L. *pelvis,* pelvis, + *-ferous.*] Having a pelvis.

pelvigraph (pel′vi-gråf), *n.* [NL. *pelvis* + Gr. γράφειν, write.] A device for recording the outline and dimensions of the pelvic cavity.

pelvigraphy (pel-vig′ra̤-fi), *n.* [*pelvigraph* + *-y*^{3}.] The graphic presentation of a series of measurements outlining the contours of the pelvis. *Lancet,* June 18, 1904, p. 1728.

pelvimetry, *n.* **2.** In *zoöl.,* the determination of the form of the pelvis by means of measurement. *Durkworth,* Morphology and Anthropology, p. 291.

pelvirectal (pel-vi-rek′ta̤l), *a.* [NL. *pelvis* + *rectum* + *-al*^{1}.] Pertaining to both the pelvis and the rectum.

pelvis, *n.*—**Conjugate diameter of the pelvis.** See ★*diameter.*—**Dynamic pelvis,** the human female pelvis considered in its relation to parturition.—**Funnel-shaped pelvis,** the human female pelvis with inlet of normal size but markedly narrowed outlet.—**Infantile pelvis.** Same as *funnel-shaped* ★*pelvis.*—**Justomajor pelvis,** one whose diameters are increased in equal proportions.—**Kyphotic pelvis,** a deformity of the pelvis due to kyphosis of the lumbar spine. The anteroposterior diameter of the inlet is increased and the transverse diameter of the outlet is shortened.—**Pelvis spinosa** a pelvis narrowed by a bony growth projecting from the inner surface.—**Rostrate pelvis,** one in which the sacrum and last lumbar vertebra project forward, narrowing its cavity.

pelvitrochanterian (pel-vi-trō-kan-tē′ri-a̤n), *a.* [*pelvis* + *trochanter* + *-ian.*] Relating to the pelvis and to the great trochanter of the femur.

pelycodoid (pel-i-kō′doid), *a.* [NL. *Pelycod(us),* a generic name, + *-oid.*] Resembling, or having the characters of, the extinct mammal *Pelycodus*; specifically, having molar teeth resembling those of *Pelycodus. Forsyth Major,* in Proc. Zool. Soc. London, 1893, p. 208.

pelycography (pel-i-kog′ra̤-fi), *n.* [Gr. πέλυξ (πελυκ-), a basin (pelvis), + γράφειν, write, + *-y*^{3}.] A written account of the pelvis. *Syd. Soc. Lex.*

pelycology (pel-i-kol′ọ̄-ji), *n.* [Gr. πέλυξ (πελυκ-), a collateral form of πέλλα, a bowl (used in sense of 'pelvis'), + -λογια, < λέγειν, speak.] The sum of knowledge regarding the pelvis in its various relations.

Pelycosauria, *n. pl.* **2.** In more recent use, a group, considered by Osborn an order, of reptiles, comprising extinct species having biconcave vertebræ, perforated by the notochord and with very long spinous processes. The ribs are two-headed; the interclavicle T-shaped; the humerus with an entepicondylar foramen. The order contains some remarkable forms, such as *Dimetrodon* and *Embolophorus* from the Trias of New Mexico. They were formerly included in the *Theromorpha,* but are quite distinct.

pembina (pem′bi-nä̤), *n.* [Chippewa *anepeminan* (with intrusive *b*), < Chippewa *nepsin,* summer, + *minan,* berry: now the name of a locality on the Red River, in North Dakota.] The cranberry-tree, *Viburnum Opulus.* See *cranberry-tree* and *Viburnum.* Also *pembina-berry.*

> Of the plants observed in this neighbourhood, besides the *pembina.*
> *S. H. Long,* Exped. to Source of St. Peter's River, II. 48.

Pemphigus contagiosus, an acute vesicular eruption which occurs as an endemic disease in the Philippines and other parts of the tropical East. The vesicles are situated chiefly in the axilla and groin, and cause much local irritation; there is, however, no constitutional disturbance. The disease is probably of microbic origin. *Jour. Trop. Med.,* July 15, 1903, p. 235.—**Pemphigus foliaceus,** a form of pemphigus in which the blisters are only partly filled with fluid, their walls therefore being flaccid.—**Pemphigus hemorrhagicus,** a variety of pemphigus in which the contents of the bullæ are bloody.—**Pemphigus pruriginosus,** a form of pemphigus in which the eruption is circumscribed in extent, resembling herpes, and is the seat of intense itching.—**Pemphigus vegetans,** a severe and usually fatal disease in which fungous growths follow the rupture of the vesicles.

pemphix (pem′fiks), *n.* Same as *pemphigus.*

pemphredonid (pem-frẹ̄-don′id), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Pemphredonidæ.*

II. *a.* Having the characters of or belonging to the family *Pemphredonidæ.*

pen^1, *n.* **5.** A weir or dam for penning up the water in a stream, canal, or river of any kind, to form a head.

pen^2, *n.*—**Hydraulic pen,** a form of fountain-pen having a cylinder and piston for forcing down the ink: sometimes applied to drawing-pens in which a thick, quick-drying ink is used.—**Inking-in pen.** See *to* ★*ink in.*—**Oblique pen,** a pen having the nibs so bent as to lie flat on the paper in writing.—**Pneumographic pen,** in *physiol.* and *psychophys.*: (*a*) The writing lever of a Marey tambour. *Harvard Psychol. Studies,* I. p. 312. (*b*) A pen or pencil used to record the various degrees of pressure employed in writing. A metal spring, which holds the writing point of metal or graphite, plays against a rubber air-capsule contained in the penholder and connected by rubber tubing to the ordinary recording apparatus.

pen. An abbreviation of *peninsula.*

peña, *n.* A misspelling of *piña*^{2}.

penacute (pēn-a̤-kūt′), *a.* and *n.* [*pen(ultimate)* + *acute.*] **I.** *a.* Having an acute accent on the penultimate syllable; paroxytone. *N. E. D.*

II. *n.* A word so accented. *N. E. D.*

penacute (pēn-a̤-kūt′), *v. t.*; pret. and pp. *penacuted,* ppr. *penacuting.* [*penacute, a.*] To accent acutely on the penultimate syllable. *N. E. D.*

penæaceous (pen-ē-ā′shius), *a.* [NL. *Penæace(æ)* + *-ous.*] Belonging to or characteristic of the plant family *Penæaceæ.*

penal, *a.*—**Bill penal.** See ★*bill*^{3}.—**Penal clause.** See ★*clause.*

penalization (pē″na̤l-i-zā′sho̤n), *n.* The act of penalizing.

penalize, *v. t.* **2.** To affix what amounts to a penalty to some act that is not in itself a penal offense; to subject to a disadvantage; handicap.

> To *penalize* improvements [is] what the proposed Mortgage Tax Law would amount to.
> *N. Y. Times,* April 1, 1905.

Penalty stroke. See ★*stroke*^{1}.

Penang rubber. See ★*rubber.*

Penarth beds. See ★*bed*^{1}.

pen-bearing (pen′bãr″ing), *p. a.* Noting those cephalopods in which the internal skeleton consists of a horny or chitinous structure, as in the squid.

pencatite (pen′ka-tīt), *n.* [Count J. Marzari-*Pencati* + *-ite*^{2}.] A massive granular rock from the neighborhood of Predazzo in southern Tyrol, described at first as a mineral species. It was later shown to be a mixture of calcite and brucite or hydromagnesite. The rock is similar to and is associated with predazzite.

pencil^1, *n.*—**Bearer of a pencil.** Same as ★*vertex of a pencil.*—**Chisel-point pencil,** a painters' pencil with the bristles graduated to a bevel like a chisel.—**Conic pencil,** in *geom.,* the pencil formed by the joins of correlated points of two coplanar non-costraight ranges, projective but not perspective.—**Parallel pencil,** in *geom.,* one whose bearer is at infinity.—**Pencil of conics,** in *geom.,* the assemblage of conics on which are the dots of a given tetrastigm.—**Pencil point,** in *geom.,* the bearer of a pencil.—**Perspective axial pencils,** in *geom.,* such pencils as are ejects of the same flat pencil.—**Perspective flat pencils,** in *geom.,* such pencils as are cuts of the same axial pencil, or ejects of the same range.—**Plane pencil.** Same as *flat pencil.*—**Vertex of a pencil.** See ★*vertex.*

pencil^1, *v. t.* **3.** In *med.,* to apply a remedy to (an inflamed spot, etc.) with a fine brush: as, to *pencil* a wound with lunar caustic.

pencil-cedar, *n.*—**Florida pencil-cedar,** *Juniperus Barbadensis,* a tree with fine foliage and small berry-like cones, sometimes attaining a height of 50 feet and a diameter of 2 feet, having a light, straight-grained, dull red, fragrant wood, formerly exclusively used in the manufacture of the best lead-pencils. It is chiefly West Indian, but occurs quite abundantly in western Florida and extends north to southern Georgia and west to Louisiana. It is called by Sargent "the most beautiful of the junipers," and is considerably cultivated in Europe, but more especially along the Gulf coast as far west as Texas, where it is known as *salt cedar.*—**Tasmanian pencil-cedar.** See *King William* ★*pine.*

penciler, penciller (pen′sil-ėr), *n.* A draughtsman; one who uses a pencil in any way, as a writer or a reporter: specifically, in *racing slang*, a bookmaker's clerk. *N. E. D.*

pencil-movement (pen′sil-mö̈v″ment), *n.* The parallel motion which carries the recording pencil on an engine-indicator.

pencil-ore (pen′sil-ōr), *n.* See ★*ore*1.

pencil-stone (pen′sil-stōn), *n.* Pyrophyllite.

pendant, *n.* 8. The cylindrical stem on a watchcase to which the guard-ring is attached. —9. A corollary.

> As a new experimental principle, forming a *pendant* to Carnot's principle.
> *E. Buckingham*, Theory of Thermodynamics, p. 153.

pendant-winding (pen′dant-wīn″ding), *a.* In *English watch-making*, same as ★*stem-winding.*

pendecagon (pen-dek′a-gon), *n.* [For **pentedecagon*, < Gr. πέντε, five, + δέκα, ten, + -γωνος, angled.] In *geom.*, a plane figure having fifteen angles and fifteen sides; a quindecagon. *N. E. D.* [Rare.]

pendency, *n.* 3. The state of being impending or threatening.

> Some will be surprised to know that the evident *pendency* of the American Civil War was the immediate occasion for the writing of this volume.
> *Living Church*, Oct. 17, 1903, p. 850.

pendent, *a.* 4. Grammatically incomplete. Also *pendant.* [Rare.]

> Though there be in the holy scriptures some *pendent* sentences, and inversions, and apparent solecisms, and other things of that kind, yet the same may be found in the most eloquent and approved authors.
> *W. Fitzgerald*, tr. Whitaker's Disputation on Holy Scrip- [tures, p. 150.

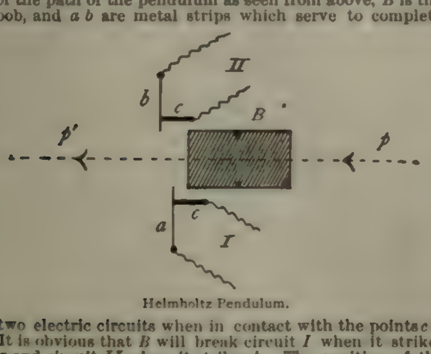
pendentes (pen-den′tēz), *n. pl.* [L. pl. of *pendens*, ppr. of *pendere*, hang.] In *civil law*, ungathered crops or fruits.

pendentive, *n.* **II.** *a.* Having pendentives; of the shape of or pertaining to pendentives.

> Strictly speaking, *pendentives* are the spandrels or triangular spaces between the arches or arch-headed walls, as the case may be, supporting a dome, which is continued down to the springing of such arches.
> *Penny Cyc.*, XVII. 402.

pendulograph (pen′dū-lō-grȧf), *n.* [NL. *pendulum* + Gr. γράφειν, write.] A tracing made by an instrument in which the movements of two or more pendulums are combined so as to trace a compound curve which represents a musical tone.

pendulum, *n.*—**Bifilar pendulum,** a pendulum suspended by two threads or wires so as to oscillate about a vertical axis in the plane of the suspension and lying midway between the threads.—**Complication pendulum.** See ★*complication.*—**Control pendulum,** in *psychophys.*, a physical pendulum, used to test the correctness or the constancy of the times recorded by the Hipp (or other) chronoscope. *E. B. Titchener*, Exper. Psychol., II. i. 205.—**Defforges's pendulum,** two convertible pendulums of the Repsold type, of equal weight, of different lengths, and having a single pair of knife-edges which can be transferred from the one to the other. This eliminates the effect of the yielding of the support. —**Helmholtz pendulum,** an apparatus devised by Helmholtz for the study of phenomena involving the determination of very short intervals of time. It consists of a heavy pendulum which in the course of its swing breaks successively two electrical circuits, thus putting into action one relay or other electrical device at the beginning of the time interval and another at its end. The principle upon which the instrument is constructed may be seen from the diagram in which *pp′* is a portion of the path of the pendulum as seen from above, *B* is the bob, and *a b* are metal strips which serve to complete two electric circuits when in contact with the points *c c.* It is obvious that *B* will break circuit *I* when it strikes *a* and circuit *II* when it strikes *b.* The position of the contact devices is adjustable along the path of the bob and with reference to each other, and the time interval may thus be varied through a considerable range. When *a* and *b* are exactly opposite one another the interval is zero and by slightly displacing one of them very small intervals may be obtained. For any setting of the contacts the interval may readily be computed from the angular distance between them and the speed of the bob. The Helmholtz pendulum is used in a great variety of physical experiments involving very short intervals of time. If, for example, it is desired to charge a condenser for one thousandth of a second and then discharge it, the contacts are set so as to give an interval of a thousandth of a second, the relay in circuit *I* is arranged so as to close the charging circuit, and the relay in circuit *II* so as to break that circuit and close the discharging circuit. —**Horizontal pendulum,** a pendulum mounted upon a vertical axis and free to swing in a horizontal plane only. Such pendulums are not put in motion by gravity, but afford a sensitive means for indicating and recording certain types of earth tremor.



Helmholtz Pendulum.

> The instrument of which he [Milne] now makes most use is called a *horizontal pendulum.*
> *G. H. Darwin*, The Tides, p. 131.

Kater's convertible pendulum, a pendulum having two knife-edges turned inward on opposite sides of the center of gravity so that it can be swung from either, and arranged to be so adjusted that the time of swing shall be the same in each case: constructed by Captain Kater in 1817.—**Optical pendulum,** in *psychophys.*, a pendulum so constructed that it admits the passage of a flash of light at the same moment that it makes or breaks an electrical circuit. *E. B. Titchener*, Exper. Psychol., II. i. 156.—**Pendulum bracket.** See ★*bracket*1.—**Pendulum chronoscope.** See ★*chronoscope.*—**Pendulum observation,** in *phys.*, an observation of the rate of oscillation of a standard pendulum, made for the determination of the acceleration of gravitation in the locality where the pendulum is mounted.—**Spherical pendulum,** a pendulum that is not confined to moving in one plane, but is so arranged that the bob can move in any circle on a given spherical surface.—**Von Sterneck's half-second pendulum,** a pendulum about 10 inches long swinging in half seconds: used in the determination of minute local variations in gravity. The instrument can be placed in a chamber which can be exhausted of air and maintained at any desired temperature.

pendulum-saw (pen′dū-lum-sâ), *n.* A cross-cutting or cutting-off saw, mounted in a swinging frame, which can be brought to its work by swinging the saw and frame in a vertical plane round the axis of the driving shaft. It is used to cut up long logs into short lengths when it is easier to move the saw to its work than to move the work to the saw.

pendulum-wheel (pen′dū-lum-hwēl), *n.* The escapement-wheel of a clock; the balance-wheel of a watch.

peneplain (pē′nē-plān), *n.* [L. *pæne, pene*, almost, + E. *plain.*] In *geol.*, a surface reduced by erosion nearly to the condition of a plain. There are many examples of once lofty mountains, now reduced to peneplains.

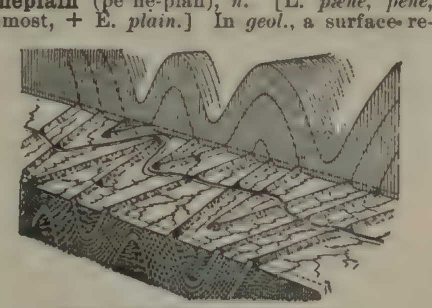


Diagram of peneplain, with residual ridges.

> "We saw unmistakable traces of a *peneplain.*"
> *G. K. Gilbert*, Harriman Alaska Exped., iii. 130.

peneplain (pē′nē-plān), *v. t.* [*peneplain, n.*] To reduce by erosion to a peneplain. *Chamberlin and Salisbury*, Geology, I. 83.

peneplanation (pē″nē-plā-nā′shon), *n.* [L. *pæne, pene*, almost, + E. *planate* + *-ion.*] The process of erosion which results in the production of a peneplain.

> There were numerous halts in the general movement and the Mesozoic and youngest Paleozoic beds here are completely stripped off the mountain summits. Several times the staying process has enabled partial *peneplanation* to take place. But the mountain blocks have become more and more tilted.
> *Amer. Geol.*, Sept., 1904, p. 162.

peneropline (pē-ner′ō-plin), *a.* [NL. *Peneroplis* + *-ine*2.] Characteristic of or pertaining to milioloid foraminifers; resembling foraminifers of the genus *Peneroplis*, which have the chambers undivided and either planispiral throughout or spiral only at the commencement, subsequently becoming rectilinear or cyclical.

penetralian (pen-ē-trā′li-an), *a.* [*penetralia* + *-an.*] Pertaining to or of the nature of penetralia.

penfieldite (pen′fēld-īt), *n.* [Named for Professor S. L. *Penfield* (1856–1906) of New Haven, Connecticut.] An oxychlorid of lead, $PbO.2PbCl_2$, found in the ancient lead slags of Laurion, Greece.

Penfield solution. See ★*solution.*

penfish, *n.* 2. A squid, as *Loligo.*

penicillus (pen-i-sil′us), *n.*; pl. *penicilli* (-ī). [L. *penicillus*, tuft of hair. See *pencil.*] **1.** One of the hair-like cells borne at the end of the smaller branches of *Dasya elegans* and similar algæ: usually in the plural.—**2.** Same as *penicil*, 2.—**3.** In *anat.*, one of the tufts formed by the ramifications of the portal vein in the liver and of the minute arteries in the spleen. *N. E. D.*

peniform (pē′ni-fôrm), *a.* [L. *penis* + *-form.*] Having the shape of or resembling a penis. *Proc. Zool. Soc. London*, 1901, p. 280.

Peniophora (pē-ni-of′ō-rä), *n.* [NL. (Cooke, 1879), < Gr. πηνίον, a shuttle, probably in allusion to the shape of the cystidea.] A genus of resupinate hymenomycetous fungi of the family *Thelephoraceæ*, which have the hymenium furnished with cystidia. About 50 species are known. They are widely distributed and occur chiefly on dead trunks and branches. *P. quercina* is a common species in Europe and America.

penitente (pā-ni-tān′tā), *n.*; pl. *penitentes* (-tās). [Sp. See *penitent.*] A penitent, especially in the ecclesiastical sense; specifically, one of a group of flagellants in New Mexico, who are said to submit themselves to crucifixion.

penitentiary, *a.* and *n.* **I.** *a.* 3. Liable to punishment by imprisonment of the offender in a penitentiary: said of an offense: as, a *penitentiary* offense.

II. *n.* 6. A member of the Penitents, certain religious orders. See *penitent*, 2.

> Recollects, *Penitentiaries*, Capuchins.
> *Weever*, Ancient Funeral Monuments, p. 139. *N. E. D.*

Penjdeh sore. Same as *Aleppo ulcer* (which see, under *ulcer*).

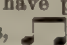
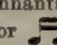
pen-keeper (pen′kē″pėr), *n.* In the West Indies, the keeper of the farm and animals on a plantation; one who has care of the estate or pen. See *pen*1, *n.*, 4, and the extract under ★*pen-keeping.*

pen-keeping (pen′kēp-ing), *n.* [*pen*1, *n.*, 4, + *keeping.*] See the extract.

> The rearing of cattle, horses, and mules is an important industry in Jamaica. This is known as "*pen-keeping*," the pens varying in size from 200 to 2,000 acres, and embracing for a pen of 1,000 acres about 350 to 400 head of cattle. Cattle raising is most largely engaged in by the pen-keepers, who rear both beef and draft animals.
> *Daily Cons. and Trade Rep.*, Oct. 19, 1907, p. 5.

Penn. An abbreviation of *Pennsylvania.*

Pennant2 (pen′ant), *n.* [A Welsh place-name.] In *geol.*, a local name for a series of sandstones, barren of coal, which are found between the upper and lower coal-measures of South Wales: as, *Pennant* grit, *Pennant* stone.

pennant-bar (pen′ant-bär), *n.* In *musical notation*, the bar connecting the stems of two or more notes which, if written separately, would have pennants, that is, eighth-notes, etc., as,  or .

pennant-ship (pen′ant-ship), *n.* The flagship of a squadron or fleet: so called because it carries the commander's or admiral's flag.

Pennaria (pe-nā′ri-ä), *n.* [NL.] The typical genus of the family *Pennaridæ.* *Goldfuss.*

Pennaridæ (pe-nā′ri-dē), *n. pl.* [NL. *Pennaria* + *-idæ.*] A family of tubularian hydromedusans in which the polyps have filiform and capitate tentacles. It includes *Pennaria, Cladonema, Heterostephanus*, and other genera. Also *Pennariidæ.*

pennated, *a.* 2. In medieval armor, having side-pieces which are pressed out by a spring: as, a *pennated* dagger or sword.

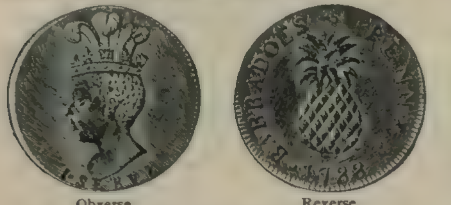
Pennatula, *n.* 2. [*l. c.*] A polyp of the genus *Pennatula*; a sea-pen.

penni (pen′i), *n.*; pl. *pennia* (-ä). A copper coin of Finland.

Pennine system. See ★*system.*

penny, *n.* 7. In *archery*, a measure of weight for arrows, equal to one twelfth of the weight of a new (British) silver shilling: as, a 4*s.* 6*d.* arrow.—**Anglesea penny,** a copper token, struck in England in 1784.—**A pretty penny,** a large sum of money. [Ironical.]—**Down pennies,** a local name of Roman coins found in Dorsetshire.—**Gold penny,** an

English coin of Henry III., issued in 1257.—**Irish penny**, a silver coin authorized for Ireland in 1304, in the reign of Edward I.—**Manx penny**, a coin bearing a device consisting of three legs arranged equidistantly about a circle or at the angles of a triangle.—**Pineapple penny**, a copper coin struck in Barbados in 1788.


Obverse. Reverse.

Pineapple Penny.
(Four fifths original size.)

penny-ante (pen′i-an′tē), *n.* The game of poker when the amount of the ante is limited to one penny (one cent).

penny-poise (pen′i-pois), *n.* A coin used in England in the reign of John (1199–1216), wanting an eighth of a penny and used as a weight for detecting light or clipped coins.

pennyroyal, *n.*—**Native pennyroyal**, in Australia, a native species of mint, *Mentha diemenica*, which is more acrid than the common pennyroyal. It is much used for medicinal purposes and for keeping away insects, especially fleas.

pennyweight, *n.* **2.** A proportional measure of one-twelfth, used in stating the fineness of silver. See *carat*. *N. E. D.*

> If the mass of silver be pure, it is called silver of 12 *penny-weights*; if it contain 1-12th of its weight of alloy, it is called silver of 11 *penny-weights*.
> *John Nicholson*, Operative Mechanic, II. 329.

Penokee (pen-ọ̄-kē′), *n.* [*Penokee* Iron Range in Wisconsin.] In *geol.*, a member of the Precambrian series of northern Wisconsin, comprising slates, cherts, quartzites, and iron ores, and equivalent to the Animikie group of the Huronian.

Penopus (pen′ọ̄-pus), *n.* [NL., < Gr. *πήνη*, thread, + *πούς*, foot.] A brotuloid genus of fishes found in the deep sea.

penoscrotal (pē-nō-skrō′ta̤l), *a.* [L. *penis* + E. *scrotal.*] Relating to both the penis and the scrotum. *N. E. D.*

pen-point (pen′point), *n.* A pen (apart from the holder). *Dialect Notes*, II. vi. [Local, U. S.]

Pensauken formation. See ★*formation*.

pense, *n.* An amended spelling of *pence*.

penserose (pen′se-rōs), *a.* An Anglicized form of ★*penseroso*. [Rare.]

penseroso (pen-se-rō′sō), *a.* and *n.* [Old Italian *penseroso*, late *pensieroso*, pensive. *Il Penseroso*, the title of a poem by Milton.] **I.** *a.* Meditative; melancholy; pensive.

> But the *penseroso* humour lasted not long.
> *Society*, I. 78. *N. E. D.*

II. *n.* One who is melancholy, meditative, or pensive.

> How I should like to see that pair of *penserosos* together, looking as grave as two sailors' wives of a stormy night. *R. Tyler*, The Contrast, ii. 1.

pensil², *a.* A simplified spelling of *pensile*.

pensile, *a.* **2.** Building a hanging nest: as, the *pensile* warbler.

pensionary, *n.* **3.** A house in which pensioners reside; formerly, at Cambridge, England, a residence for undergraduates not on the foundation of a college. *N. E. D.*

pensioner, *n.* **4**†. One who lives in a pension or boarding-house; one who lives in any institution as a boarder; a boarder.

> Hip. . . . Who goes there?
> Lau. We are the two new *Pensioners*, Laura and Violetta.
> Hip. Go in, to your Devotion.
> *Dryden*, The Assignation, iv. 4.

pensionnaire (poṅ-syo-nãr′), *n.* [F.] **1.** One who lives in a pension; a boarder.—**2.** One who receives a pension.—**3.** One of the two classes of actors at the *Comédie Française*, engaged yearly at a fixed salary and, after a certain number of years as a probationer, nominated and usually admitted ★*sociétaire* (which see).

pensionnat (poṅ-syo-nä′), *n.* [F., < *pension*, a payment, a boarding-school. See *pension*, *n.*, 5.] A boarding-school.

pensiv, *a.* A simplified spelling of *pensive*.

pen-staff (pen′stȧf), *n.* A penholder. *Dialect Notes*, II. vi. [Local, U. S.]

pent (pent), *n.* A penthouse; an overhanging shelter.

> But the man was already running; and together the three floundered back to the hangar. Behind them blows were already sounding above the howl of the wind; blows of musket-butts hammering on the wooden palisade. "Steady, men," grunted McQuarters as he reached the *pent*. "Give them time to break an opening—their files will be nicely huddled by this."
> *A. T. Quiller Couch*, Fort Amity, xxvii.

Pent. An abbreviation of *Pentecost*.

pentabasic (pen-ta̤-bā′sik), *a.* [*penta-* + E. *basic.*] Noting an acid containing five atoms of hydrogen readily replaceable by metals or electropositive radicals.

pentacarbon (pen-ta̤-kär′bon), *n.* [*penta-* + *carbon.*] Pertaining to or containing five atoms of carbon.

pentachlorid (pen-ta̤-klō′rid), *n.* [*penta-* + E. *chlorid.*] A chlorid containing five atoms of chlorin, as phosphorus *pentachlorid*, PCl_5.

pentachromic (pen-ta̤-krō′mik), *a.* [Gr. *πέντε*, five, + *χρῶμα*, color, + *-ic.*] Relating to five colors; noting a partially color-blind person who can distinguish five colors.

> Normal-sighted persons see six colours, some even seven; but the second class of the colour-blind see five colours, four, three, two, or one, according to the degree of their defect. For these five degrees the names *pentachromic*, tetrachromic, &c., were suggested.
> *Athenæum*, Nov. 14, 1903, p. 655.

pentacid (pen-tas′id), *a.* [Gr. *πέντε*, five, + E. *acid.*] Noting a base containing five combining units of the radical hydroxyl, HO, or one equivalent to a pentabasic acid, molecule for molecule.

pentacompound (pen-ta̤-kom′pound), *n.* [*penta-* + *compound.*] A compound containing five atoms of carbon.

pentacrinin (pen-tak′ri-nin), *n.* [NL. *Pentacrin(us)* + *-in*².] A pigment formed in *Pentacrinus* and other crinoids.

pentacron (pen-tak′ron), *n.*; pl. *pentacra* (-rä̤). [Gr. *πέντε*, five, + *ἄκρον*, peak.] A polyhedron with 5 summits.

pentactæa (pen-tak-tē′ä̤), *n.* [NL. < Gr. *πέντε*, five, + *ἀκτή*, point (?).] A hypothetical ancestor of the echinoderms which is supposed to be recapitulated in the pentactula larval stage of *Synapta*.—**Pentactæa theory**, a theory of the origin of the echinoderms which regards them as the divergent descendants of a pentactæa, or floating ciliate ancestral form without a calcareous skeleton or radial canals or radial nerves, these structures being held to have been independently acquired, and not to be homologous in all echinoderms. See ★*calycinal theory*, ★*pelmatozoic theory*.

pentactine (pen-tak′tin), *n.* and *a.* [Gr. *πέντε*, five, + *ἀκτίς* (*ἀκτιν-*), ray.] **I.** *n.* In the morphology of the sponge-skeleton, a spicule of triaxial form having the arms intersecting one another, with one ray atrophied.

> Dermal skeleton composed of hexactinic dermalia, the proximal ray of which is as a rule much longer than any other in the same spicule; no hypodermal *pentactins*; hexasters various.
> *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 502.

II. *a.* Having the characters of or relating to a pentactine sponge-spicule.

pentactinid (pen-tak′ti-nid), *a.* Same as *pentactinal*.

pentactula (pen-tak′tụ̄-lä̤), *n.*; pl. *pentactulæ* (-lē). [NL., < Gr. *πέντε*, five, + *ἀκτή*, a point, + *-ula.*] A free, ciliate, larval stage of *Synapta*, with five oral tentacles which contain water-tubes connected with the water-ring, but without a calcareous skeleton, radial tubes, or radial nerves.

pentacycle (pen′ta̤-sī-kl), *n.* [*penta-* + *cycle.*] A set of five circles.

pentad, *n.* **4.** A period of five days, introduced by Dove for use in climatological study. The pentads begin January 1–5, and continue in groups of five days each throughout the ordinary year. The twelfth pentad, from February 25–March 1, may be increased by one day, namely, February 29th, without disturbing the calendar dates of the subsequent pentads.

pentadactylate (pen-ta̤-dak′ti-lāt), *a.* [*pentadactyl* + *-ate*¹.] Having five fingers or toes; pentadactyl.

pentadactyloid (pen-ta̤-dak′ti-loid), *a.* [*pentadactyl* + *-oid.*] Resembling a structure with five digits, such as a typical vertebrate limb.

pentadecane (pen-ta̤-dek′ān), *n.* [*penta-* + *decane.*] A hydrocarbon, $C_{15}H_{32}$, of the paraffin series. Normal pentadecane melts at 10° C., yielding an oily liquid which boils at 270.5° C. It is made synthetically.

pentadecatoic (pen-ta̤-dek-a-tō′ik), *a.* [*pentadec(ane)* + *-at-* + *-o-ic.*] Derived from pentadecane.—**Pentadecatoic acid.** Same as ★*pentadecylic acid*.

pentadecine (pen-ta̤-dē′sin), *n.* Same as ★*benylene*.

pentadecylic (pen″ta̤-de-sil′ik), *a.* [Gr. *πέντε*, five, + *δέκα*, ten, + *-yl* + *-ic.*] Containing fifteen atoms of carbon in the molecule.—**Pentadecylic acid.** (*a*) A crystalline acid, $C_{14}H_{29}.COOH$, of the fatty series, which is made synthetically. It melts at 59–60° C. (*b*) A crystalline acid, $C_{14}H_{29}.COOH$, of the fatty series, which is made synthetically. It melts at 51° C. and is commonly called *quindecylic acid*.

pentadic (pen-tad′ik), *a.* [*pentad* + *-ic.*] In *chem.*, pentavalent.

pentadiene (pen-ta-dī′ēn), *n.* A hydrocarbon, $CH_2{=}CH{-}CH_2{-}CH{=}CH_2$, formed by the distillation of trimethylpiperidine. It boils at 42° C. Also called 1,4-*pentadiene* and *piperylene*.

pentadodecahedron (pen″ta̤-dō″dek-a̤-hē′dro̤n), *n.*; pl. *pentadodecahedra* (-drä̤). [*penta-* + *dodecahedron.*] A pentagonal dodecahedron; a dodecahedron whose 12 faces are pentagons.

pentadrachm (pen′ta̤-dram), *n.* [Gr. *πεντάδραχμον*, < *πέντε*, five, + *δραχμή*, drachma.] A Greek silver coin of the value of five drachmas.

pentaglucose (pen-ta̤ glö′kōs), *n.* [*penta-* + *glucose.*] Same as ★*pentose*.

pentagonal, *a.*—**Élie de Beaumont's pentagonal system**, a theory of the origin of the form of the earth based upon a supposed conformity of its main features with the pentagonal dodecahedron. The theory was presented in 1852 by Élie de Beaumont in his "Notice sur les systèmes de montagnes." A later theory of similar nature is the Lowthian Green tetrahedral theory.—**Pentagonal réseau.** See ★*réseau*.

II. *n.* In echinoderms, the nerve-ring which connects the five ambulacral nerves.

Pentagonaster (pen″ta̤-gọ̄-nas′tėr), *n.* [NL., < Gr. *πεντάγωνος*, five-angled, + *ἀστήρ*, a star.] The typical genus of the family *Pentagonasteridæ*. *Linck*, 1733.

Pentagonasteridæ (pen″ta-gon-as-ter′i-dē), *n. pl.* [NL. *Pentagonaster* + *-idæ.*] A family of starfishes, of the order *Phanerozonia*, which have the body generally pentagonal, the arms short, ambulacral plates opposite, large marginal plates, and tessellate abactinal skeleton. It includes more than 20 genera, among which are *Pentagonaster*, *Chitonaster*, *Comptonia*, and *Odontaster*.

pentagonohedron (pen-tag-ọ̄-nō-hē′dro̤n), *n.*; pl. *pentagonohedra* (-drä̤). [Gr. *πεντάγωνος*, five-angled, + *ἕδρα*, base, side.] A solid figure contained by pentagons. *N. E. D.*

pentagonoid (pen-tag′ọ̄-noid), *a.* and *n.* [*pentagon* + *-oid.*] **I.** *a.* Resembling a pentagon.

II. *n.* In *anthrop.*, a cranium the norma verticalis of which has the form of a pentagon with rounded corners. *G. Sergi* (trans.), Var. of the Human Species, in Smithsonian Misc. Coll., XXXVIII. 28.

pentagram, *n.* **2.** In *geom.*, a five-sided polygram.

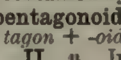
pentahaloid (pen-ta̤-hā′loid), *a.* [*penta-* + *haloid.*] Containing five atoms of one or more of the halogen elements, chlorin, bromine, and iodine.

pentahedroid (pen-ta̤-hē′droid), *a.* [*pentahedr(on)* + *-oid.*] In *math.*, a four-dimensional body bounded by 5 tetrahedra. *Stringham*, 1880.

pentahydrated (pen-ta̤-hī′drạ̄-ted), *a.* [Gr. *πέντε*, five, + *ὕδωρ* (*ὑδρ-*), water, + *-ated.*] Containing five molecules of water in combination, as crystallized cupric sulphate or common blue vitriol, $CuSO_4.5H_2O$.

pentakisdodecahedron (pen″ta̤-kis-dō″dek-a̤-hē′dro̤n), *n.*; pl. *pentakisdodecahedra* (-drä̤). [Gr. *πεντάκις*, five times, + E. *dodecahedron.*] A reciprocal Archimedean solid having 60 faces, 12 regular pentapleural summits, and 20 regular hexapleural summits. All the faces are triangular and the solid is reciprocal to the truncated icosihedron. It is in fact a bossed dodecahedron.

pental (pen′ta̤l), *n.* [Gr. *πέντε*, five, + *-al*³.] A trade-name of trimethylethylene,


$\begin{matrix}CH_3\\CH_3\end{matrix}\!>C=CHCH_3$. It is prepared by the action of zinc chlorid on amyl alcohol or fusel-oil. It boils at 38° C. and has been used as an anesthetic. Also called *amylene*.

pentalepton (pen-ta̤-lep′ton), *n.*; pl. *pentalepta* (-tä̤). [Gr. *πέντε*, five, + *λεπτόν*, a small coin.] A small Greek copper coin equal to five lepta, or about one cent.

pentalobate (pen-ta̤-lō'bāt), *a.* [Gr. *πέντε*, five, + *λοβός*, lobe, + *-ate*¹.] Having five equal or similar radial lobes, as the axial canals of certain crinoids and the constricted apertures of certain orthoceratites.

pentalogic (pen-ta̤-loj'ik), *a.* [*pentalog-y* + *-ic.*] Relating to or characterized by pentalogy; specifically, fivefold, from the point of view of scientific classification.

> The end in view is to exhibit the logical necessity of making a *pentalogic* classification of all the sciences of demonomy.
> *J. W. Powell*, in An. Rep. Bur. Amer. Ethnol., 1898–99, p. lx.

pentalogue (pen'ta̤-log), *n.* [Gr. *πέντε*, five, + *λόγος*, word, speech.] A series of five laws or rules (after the style of *decalogue*).

pentalogy (pen-tal'ọ̄-ji), *n.* [Gr. *πέντε*, five, + *-λογια*, ‹ *λέγειν*, speak.] Five mutually connected parts or principles; a pentad; specifically, a fivefold classification; the doctrine of the fivefoldness of the universe.

> It is easy to see that the desire to find a *pentalogy* in everything has led to somewhat fanciful distinctions, that there will necessarily be much overlapping in the practical application of a scheme of anthropology so formed. *Athenæum*, June 18, 1904, p. 788.

pentameral (pen-tam'e̤-ra̤l), *a.* [*pentamer(ous)* + *-al*¹.] Having the five-radial plan of symmetry, in which the body or organ consists of five subequal segments, as in the echinoderms, certain corals, jellyfishes, etc. Same as *pentamerous* or *quinqueradiate*.

pentamere (pen'ta̤-mēr), *n.* [Gr. *πέντε*, five, + *μέρος*, part.] 1. Any one of the five antimeres which compose the body of a pentamerous organism. Specifically—2. In hexactinellid sponges, especially the extinct *Dictyospongidæ*, one of the quadrules of the reticulate surface bounded by the smallest spicules of the fifth degree.

pentamerism (pen-tam'e̤-rizm), *n.* [*pentamer(ous)* + *-ism.*] The state or condition of being pentamerous, or composed of five antimeres.

pentamerously (pen-tam'e̤-rus-li), *adv.* In a pentamerous manner; dividing by fives.

> The nepiastic colony of *Unitrypa* is an object of exquisite beauty, consisting of a delicate translucent cup wherein is lodged the *pentamerously* branching trunk or stalk of the zoarium, with its slender arching carinæ and diamond-shaped incipient scalæ.
> *Cumings*, in Amer. Jour. Sci., Jan., 1904, p. 67.

pentamery (pen-tam'e̤-ri), *n.* [*pentamer(ous)* + *-y*³.] The character or condition of being pentamerous.

> Whilst in the *pentamery* and dimery of Dicotyledones there is usually a posterior sepal. *Encyc. Brit.*, XXV. 433.

pentamethylene (pen-ta̤-meth'i-lēn), *n.* [*penta-* + *methylene.*] Same as ⋆*cyclopentane.*

Pentane standard, in *photom.*, a standard of intensity consisting in the light from a lamp of specified form in which the fuel is the petroleum product pentane. The best-known forms of pentane standard lamp are those of Harcourt and of Dibdin. See ⋆*light standard.*

pentanediacid (pen"tān-dī-as'id), *n.* Same as ⋆*glutaric acid.*

Pentapetes (pen-tap'e-tēz), *n.* [NL. (Linnæus, proposed in 1747, established in 1753), ‹ Gr. *πενταπετές*, the name of some unidentified pentamerous or pentaphyllous plant.] A genus of trees or shrubs of the family *Sterculiaceæ*. See *Pterospermum* and ⋆*bayok.*

pentaphonic (pen-ta̤-fon'ik), *a.* Same as *pentatonic.*

pentaphyletic (pen"ta̤-fī-let'ik), *a.* [*penta-* + *phyletic.*] Having five strains in its heredity: said of some hybrid plants. *Jackson*, Glossary.

pentarch¹ (pen'tärk), *n.* [Gr. *πέντε*, five, + *ἀρχός*, ruler.] A member of a pentarchy.

pentarch² (pen'tärk), *a.* [Gr. *πέντε*, five, + *ἀρχή*, beginning.] Growing from five separate points; in *bot.*, having five centripetally developed xylem plates: said of some radial vascular cylinders.

> The xylem is triarch to *pentarch* and octarch.
> *De Bary* (trans.), Compar. Anat. Phanerogams and Ferns, p. 348.

pentarsic (pen-tär'sik), *a.* [Gr. *πέντε*, five, + *ἄρσις*, arsis.] In *prosody*, having five stresses. *N. E. D.*

pentasomic (pen-ta-sō'mik), *a.* [Gr. *πέντε*, five, + E. *som(ite)* + *-ic.*] Pertaining to, or comprising, five somites.—**Pentasomic vesicle.** See the extract.

> E. Herouard states what he calls the "Pentasomœa" theory of the echinoderm body, according to which somites arise in groups of fives, each of the groups forming a "*pentasomic vesicle.*" The five somites potentially included in a *pentasomic vesicle* do not begin to be individualised until the vesicle has been liberated into the blastocœle cavity. He compares the *pentasomic vesicle* of Echinoderms with the enterocœlic vesicle in Amphioxus. *Jour. Roy. Micros. Soc.*, Oct., 1904, p. 534.

pentastigm, pentastim (pen'ta̤-stim), *n.* [Gr. *πέντε*, five, + *στίγμα*, mark.] In *geom.*, a system of 5 coplanar points, with all the ranges they determine.

pentastyle, *a.* **II.** *n.* A structure having five columns; also, a portico of five columns.

pentasulphid (pen-ta̤-sul'fid), *n.* [*penta-* + *sulphid.*] A compound containing five atoms of sulphur united to a more electropositive element or radical: as, calcium *pentasulphid*, CaS_5.

pentasulphuret (pen-ta̤-sul'fụ̈-ret), *n.* Same as ⋆*pentasulphid.*

pentasyllabism (pen-ta-sil'a̤-bizm), *n.* [*pentasyllab(ic)* + *-ism.*] The character of being pentasyllabic.

pentasyllable (pen-ta-sil'a̤-bl), *n.* [Gr. *πέντε*, five, + *συλλαβή*, syllable.] A word having five syllables.

pentathionate (pen-ta̤-thī'ọ̄-nāt), *n.* [*pentathion(ic)* + *-ate*¹.] A salt of pentathionic acid: as, potassium *pentathionate*, $K_2S_5O_6$.

pentathionic (pen"ta̤-thī-on'ik), *a.* [Gr. *πέντε*, five, + *θεῖον*, sulphur, + *-ic.*] Noting a rather unstable, colorless acid obtained in solution by the interaction of sulphureted hydrogen and sulphurous acid. Its composition is $H_2S_5O_6$.

Pentathlon bars, apparatus of the nature of horizontal bars used in gymnasiums for exercising and for tests of strength.

pentatomic (pen-ta̤-tom'ik), *a.* [Gr. *πέντε*, five, + *ἄτομος*, atom, + *-ic.*] Containing in a single molecule five atoms altogether of the same or of different elements, as stannic chlorid, $SnCl_4$; or, containing in a single molecule five atoms of some one element, as a pentose, which is an aldehyde alcohol or a ketone-alcohol containing five atoms of carbon. Frequently used in the same sense as *quinquevalent.*

pentatomid (pen-tat'ọ̄-mid), *n.* and *a.* **I.** *n.* A member of the heteropterous family *Pentatomidæ.*

II. *a.* Having the characters of or belonging to the family *Pentatomidæ.*

pentatriacontane (pen-ta̤-trī-a-kon'tān), *n.* [Gr. *πέντε*, five, + *τριάκοντα*, thirty, + *-ane.*] A solid hydrocarbon of the paraffin series, $C_{35}H_{72}$. Normal pentatriacontane is the only variety known. It melts at 74.7° C. and boils at 331° C. at 15 millimeters pressure. It is made synthetically.

pentavalence (pen-tav'a̤-le̤ns), *n.* [*pentavalen(t)* + *-ce.*] The character of being pentavalent; the degree of combining power exhibited by an element of which one atom is capable of combining with five atoms of hydrogen or chlorin; quinquevalence.

pentavalency (pen-tav'a̤-le̤n-si), *n.* Same as ⋆*pentavalence.*

pentaxial (pen-tak'si-a̤l), *a.* [Gr. *πέντε*, five, + L. *axis* + *-al*¹.] Consisting of or having five arms intersecting one another, two being in a single axis and the other three lying in a plane at right angles to that axis: seen in hexactinellid sponges as the result of atrophy of one ray of an hexactinellid spicule.

pentazane (pen-taz'ān), *n.* [Gr. *πέντε*, five, + *azo-* + *-ane.*] Same as ⋆*pyrrolidine.*

penteconter² (pen'tẹ̄-kon-tėr), *n.* [Gr. *πεντηκοντήρ.*] In *Gr. antiq.*, a commander of fifty men. *N. E. D.*

pentene (pen'tēn), *n.* [Gr. *πέντε*, five, + *-ene.*] Same as *amylene.*—**R-pentene.** Same as ⋆*cyclopentane.*

pentenediacid (pen"tēn-dī-as'id), *n.* See ⋆*glutaconic.*

penthemimeris (pen-thẹ̄-mim'e̤-ris), *n.* [Gr. *πενθημιμερής*, consisting of five halves.] In *anc. pros.*, a group of two and a half feet.

Penthoraceæ (pen-thọ̄-rā'sẹ̄-ē), *n. pl.* [NL. (Van Tieghem, 1898), ‹ *Penthorum* + *-aceæ.*] A family of dicotyledonous choripetalous plants of the order *Rosales*, closely related to the *Crassulaceæ*, in which it is included by some authors. It consists of the single genus *Penthorum* (which see).

penthouse, *n.* 3. In *artillery*, a frame structure sometimes used to protect a sea-coast gun-carriage from continuous severe weather: so made that it can quickly be put in place or removed.

pentine (pen'tin), *n.* [Gr. *πέντε*, five, + *-ine*².] An oily, unsaturated hydrocarbon, C_5H_8, of the acetylene series. The true pentines contain the acetylene grouping $-C\vdots C-$, but certain isomeric hydrocarbons contain two ethylene groupings, $=CH-CH=$. They are all made synthetically. Also called *pentinene* and *pentylene.*

pentinene (pen'ti-nēn), *n.* [Gr. *πέντε*, five, + *-ine*² + *-ene.*] Same as ⋆*pentine.*

pentite (pen'tīt), *n.* [Gr. *πέντε*, five, + *-ite*².] A pentacid alcohol, as arabite, xylite, and adonite, $C_5H_7(OH)_2$, and rhamnite, $CH_3.C_5H_6(OH)_5$.

pentobolus (pen-tob'ọ̄-lus), *n.*; pl. *pentoboli* (-lī). [Gr. *πεντώβολος*, ‹ *πέντε*, five, + *ὀβολός*, obolus.] An Attic silver piece of five oboli.

pentoic (pen-tō'ik), *a.* [Gr. *πέντε*, five, + *-o-* + *-ic.*] Containing five carbon atoms.—**Pentoic acid.** Same as ⋆*pentadecatoic* or *valeric acid.*

pentone (pen'tōn), *n.* [Gr. *πέντε*, five, + *-one.*] An unsaturated hydrocarbon, C_5H_6. Valylene, pirylene, and pyropentylene are pentones.

pentosan (pen'tọ̄-san), *n.* [*pentose* + *-an.*] One of a class of complex carbohydrates which yield pentoses when hydrolyzed. They occur in most plants, in many gums, in turf, humus, and lignite.

pentosazone (pen-tōs-az'ōn), *n.* [*pentose* + *azone.*] An osazone derived from a pentose.

pentose (pen'tōs), *n.* [Gr. *πέντε*, five, + *-ose.*] One of a group of monosaccharides containing five atoms of carbon. They occur widely distributed in both the animal and the vegetable world. Well-known representatives are *arabinose*, *xylose*, and *rhamnose.*

pentosoid (pen'tọ̄-soid), *n.* [*pentose* + *-oid.*] A group of carbohydrates including true pentosans, as well as lignocelluloses and oxycelluloses which have not been hydrolyzed into pentoses.

pentosuria (pen-tọ̄-sū'ri-ạ̈), *n.* [NL., ‹ *pentose* + *-uria.*] A form of glycosuria in which the excreted sugar is a pentose.

Pentremital limestone. See ⋆*limestone.*

pent-road (pent'rōd), *n.* [*pent, p. a.,* + *road.*] A road open to the public but which may be closed or barred at its terminals. 30 *Atlantic Reporter*, p. 998.

Pentstemon, *n.* 2. [*l. c.*] A plant of this genus.—**Climbing pentstemon**, *Pentstemon cordifolius*, a species, woody below, climbing by long sarmentose branches which are thickly clothed with ovate leaves and bear at the tips clusters of bright scarlet blossoms. It is found from Santa Barbara to San Diego in California.

pentylene (pen'ti-lēn), *n.* [Gr. *πέντε*, five, + *-yl* + *-ene.*] Same as ⋆*pentine.*

pentylic (pen-til'ik), *a.* [*pentyl* + *-ic.*] Containing the radical *pentyl.*—**Pentylic alcohol**, normal amyl alcohol or pentanol-1, $C_5H_{11}(OH)$. A liquid, boiling at 137° C., which is formed by the fermentation of glycerol. It probably occurs in fusel-oil, and is also made synthetically.

penuchle (pē'nuk-l), *n.* [Also written *pinochle*, *pinuchle*, *pinocle*, *binocle*: said to be of German-American origin, but the original form and meaning are unknown.] A game of cards; a variety of bezique. The game is played by two, three, or four persons, with two packs of 24 cards each, the 9-spot being the lowest. The cards rank A, 10, K, Q, J, 9. The dealer gives twelve cards to each player, four at a time, turning up the last for trumps. If this is the lowest, called *dix*, it counts 10 for him immediately. When only two play the eldest hand leads, and as each trick is won a fresh card is drawn from the stock to refill the hand. As long as any cards remain in the stock it is not necessary to follow suit to anything, but when the stock is exhausted the second player must follow suit and win the trick if he can. When identical cards are played to the same trick, the one led wins. Before the stock is exhausted, and before drawing from it after winning a trick, a player may meld or announce anything he has in his hand that is of counting value by laying it on the table. Marriages (K and Q of any plain suit) count 20, in trumps, 40; the five highest trumps together, 150; four aces of different suits, 100; four kings, 80; four queens, 60; and four jacks, 40. Eight cards of one denomination count double; for example, 200 for eight aces. The spade queen and diamond jack are penuchle, worth 40. Double penuchle is worth 80. The dix may be exchanged for the trump card, counting 10 for it, provided the exchange is made after winning a trick and before drawing from the stock. After the last card is drawn from the stock, no further melds are allowed. At the end of the hand, each player counts the pip value of the cards he has taken in tricks, reckoning each ace as 11, tens as 10, kings as 4, queens as 3 and jacks as 1, regardless of suit. The last trick is worth 10. Game is 1,000 points, but the player first reaching that number should claim it in the course of play, because when the hands are counted at the end, if both are 1,000 the game must be continued to 1,250. Mental count is kept of the value of the tricks taken in, the melds being put down on a slate or pegged on a cribbage-board. When four play there is no stock and all melds are made before a card is led. The winning of a trick at any time makes these melds good; otherwise they are lost. In *auction penuchle*, the whole pack is dealt out, four cards at a time, to three or four players, but no trump is turned. Four may form partnerships. The highest bidder names the trump suit and leads for the first trick. If he fails to make good his bid in melds and tricks combined, he is set back the amount bid, the others scoring what they get. All melds are made before a card is played but are not good until the melder wins a trick. There must be at least one fresh card from the hand for each separate part of a meld containing cards that count in two or more ways; so that four kings and queens are worth 220, and the trump sequence 190. The winner is the player with the highest score at the end of an agreed number of deals, usually three rounds. *Widow penuchle* is the auction game for three players. When four play, the dealer takes no cards. Fifteen cards are dealt to each and three, face down, to the widow. The highest bidder turns the widow face up and shows what it contains. Then he takes it into his hand and discards three cards, which count for him at the end. He then names the trump suit, and leads for the first trick.

penult, *n.* **II.** *a.* Next to the last; penultimate.

> A new genus, Oregonia, from the Oregon coast, is so closely related to Eurypodius, that but for the *penult* joint of the eight posterior legs they would form the same genus. *Dana*, Crust., I. 76. *N. E. D.*

penultimate, *n.* **2.** In *whist* and *bridge*, the lowest but one of a suit.

penumbra, *n.* **4.** A surrounding fringe or border, as in the distribution of metamorphic effects produced by an igneous mass.

> A *penumbra* of hydromica and chlorite schists.
> *Dana*, Manual of Geology (4th ed.), p. 325.

penwithite (pen′with-īt), *n.* A hydrated manganese silicate (perhaps $MnSiO_3 + 2H_2O$) from the district of Penwith, Cornwall, England.

Pen-y-glog beds. See ★*bed*[1].

peo. An abbreviation of *people*.

peonage, *n.* **2.** The holding, by illegal methods, of free negroes or whites in a condition of semi-slavery, specifically in the southern part of the United States: also applied to the abuse of the convict lease system in the South.—**3.** In *India*, service or employment of peons as messengers, etc. *N. E. D.*

peonia[2] (pā-ọ-nē′ạ̈), *n.* [Amer. Sp., < *peon*, a pawn, a man, as in playing checkers. See *pawn*[2].] In Spanish-American countries, a small bright-colored seed of several plants, especially of *Abrus Abrus*, *Dolicholus phaseoloides*, and *Erythrina coralloides*, often used for playing games of chance, such as draughts. See ★*colorin*.—**Peonia de botica**, in Mexico, the tubers of *Cyperus esculentus*. See *earthnut*, 3.

peonia[3] (pā-ō′nẹ-ä), *n.* [Sp. *peonia*, peony.] In Mexico, a name applied to several plants with tuberous roots, especially to two composites, *Perezia runcinata* and *Zexmenia podocephala*, because of the resemblance of their roots to those of *Pæonia officinalis*. *Perezia runcinata*, which occurs in the southern United States and northern Mexico, is reputed to be a specific for epilepsy, and is sold in the drug markets of several Mexican cities. This virtue was attributed by the ancients to *Pæonia officinalis*, a plant used medicinally in Greece four centuries before the Christian era, and celebrated by Galen as a remedy for epilepsy and lunacy.—**Peonia de botica**, in Mexico, the tubers of a sedge, *Cyperus esculentus*.—**Peonia de la sierra**, in the state of Sonora, the tubers of *Zexmenia podocephala*.

people, *n.*—**Little people**, fairies.

peperino (pep-ẹ-rē′nō), *n.* Same as *peperine*.

peperite (pep′ẹ-rīt), *n.* [*peper*(*ine*) + *-ite*[2].] Same as *peperine*.

pepinillo (pā-pẹ-nēl′yō), *n.* [Sp. diminutive of *pepino*, cucumber.] In Porto Rico, *Melothria fluminensis*, a climbing plant of the cucumber family, the small fruits of which are made into pickles when green. In Mexico an allied species, *M. scabra*, is used for the same purpose.

pepino (pā-pē′nō), *n.* [Sp.] **1.** In Spain and in countries settled by the Spanish, the cucumber, *Cucumis sativus*.—**2.** In Peru and Central America, a cultivated plant, *Solanum muricatum*, which bears fruit resembling a melon or a papaw, used extensively in Peru as a vegetable but rather insipid and inferior to a melon in flavor.

peplum, *n.* **2.** In recent use, a long and pointed overskirt draped over the underskirt of a dress, slightly in the fashion of the ancient Greek robe.

pepper, *n.*—**Climbing pepper**, in Australia. Same as *native* ★*pepper* (*b*).—**Native pepper**, in Australia. (*a*) A tree of the magnolia family, *Drimys aromatica*, the aromatic drupes of which are used as a substitute for allspice or pepper. The leaves and bark have also a hot, biting, cinnamon-like taste. See *pepper-tree*, 2. (*b*) A tall shrub of the pepper family, *Piper Novæ-Hollandiæ*, found in dense forests where it climbs to the tops of the tallest trees. It is used in the treatment of catarrhal affections. Called also *native pepper-vine*.

pepper-brand (pep′ėr-brand), *n.* A disease of oats and other grasses due to the fungus *Tilletia caries*.

pepper-clam (pep′ėr-klam), *n.* An edible bivalve, *Scrobicularia piperata*, found in European seas.

peppercorn. I. *n.* **3.** See the extract and *peppercorn* ★*hair*.

> The black hair [of the Bushmen] has earned by its method of growth the name of "*pepper-corns*," for though it is distributed normally and evenly over the surface of the head, the little short black tufts cling together in tight spirals, leaving bare spaces between, and suggesting a sprinkling of pepper-corns over the scalp.
> *Knowledge*, July, 1905, p. 172.

II. *a.*—**Peppercorn hair.** See ★*hair*[1].—**Peppercorn rent**, a trifling nominal rent: formerly often an actual peppercorn specified as the nominal consideration. [Eng.]

pepper-oil (pep′ėr-oil), *n.* See ★*oil*.

pepper-vine, *n.*—**Native pepper-vine.** See *native* ★*pepper* (*b*).

pepper-worm (pep′ėr-wėrm), *n.* The larva of any one of those ptinid beetles which affect stored products. All feed on pepper, as the cigarette-beetle, the drug-store beetle, the brown spider-beetle, and others.

pepsinhydrochloric (pep-sin-hī-drọ-klō′rik), *a.* Peptohydrochloric.

pepsinogen (pep-sin′ọ-jen), *n.* [*pepsin* + *-o-gen*.] The inactive mother-substance of pepsin. It is transformed into the latter by the hydrochloric acid of the gastric juice.

Pepsis, *n.* **2.** [*l. c.*] Digestion.

peptase (pep′tās), *n.* [*pept*(*ic*) + *-ase*.] Any ferment which converts albumins into peptones.

peptenzym (pep-ten′zim), *n.* [*pept*(*ic*) + *enzym*.] A remedy for dyspepsia, said to be a mixture of all the digestive ferments.

peptic, *a.* and *n.* **I.** *a.*—**Peptic ulcer.** See ★*ulcer*.

II. *n.* **2.** *pl.* The organs of digestion. [Humorous and rare.]

> But tho' the port surpasses praise,
> My nerves have dealt with stiffer.
> Is there some magic in the place?
> Or do my *peptics* differ?
> *Tennyson*, Will Waterproof's Lyrical Monologue, st. x.

peptid (pep′tid), *n.* [*pept*(*ic*) + *-id*[1].] A hydrolytic decomposition-product of albuminous origin which contains one or more amino acids in combination (as dipeptids, tripeptids, tetrapeptids, polypeptids, etc.). The peptids stand on a lower scale of complexity of composition than the albumoses. See also ★*tryptic digestion*.

peptohydrochloric (pep-tọ-hī-drọ-klō′rik), *a.* Containing in admixture both pepsin and hydrochloric acid. Thus the gastric juice has been spoken of as a peptohydrochloric solvent of proteid substances.—**Peptohydrochloric acid**, a hypothetical compound of pepsin and hydrochloric acid which supposedly brings about the digestion of albumins in the stomach. Also called *pepsin-hydrochloric acid* and *chloropeptic acid*.

peptoid (pep′toid), *n.* [*pept*(*ic*) + *-oid*.] A product of proteolytic digestion which does not give the biuret reaction and probably stands very close to the end-products.

peptolysis (pep-tol′i-sis), *n.* [Gr. πέπτειν, cook, digest, + λύσις, a loosing.] Peptic digestion.

> When thus introduced in dogs, crude elastose, obtained by *peptolysis* of ligament elastin prepared by Richards and Gies's method, not only promptly appears in the urine, but may be identified in it by the heat-precipitation test. *Science*, Oct. 11, 1907, p. 476.

peptone, *n.*—**Witte's peptone**, a commercial peptone preparation, in the dry state, obtained from fibrin. It is largely composed of albumoses.

peptonemia (pep-tō-nē′mi-ạ̈), *n.* [*peptone* + Gr. αἷμα, blood.] The occurrence of peptone in the circulating blood.

peptonephridium (pep″tọ-nef-rid′i-um), *n.*; pl. *peptonephridia* (-ạ̈). [NL., < Gr. πέπτειν, digest, + NL. *nephridium*.] In some oligochætous worms, one of the nephridia situated in the anterior or posterior part of the body, opening into the alimentary canal instead of to the exterior and having apparently the function of a digestive gland. *Parker and Haswell*, Zoology, I. 441.

peptonizer (pep′tọ-nī-zėr), *n.* Something which peptonizes or predigests; hence anything, as mirth, which aids digestion.

> A good comedy is the best of *peptonizers*.
> *National Observer*, Aug. 5, 1893, p. 303. *N. E. D.*

pepton-water (pep′ton-wâ″tėr), *n.* In *bacteriol.*, a liquid medium used for cultivating bacteria.

Pepuzian (pe-pū′ziạn), *n.* A member of a sect of Montanists in the second century: so called from Pepuza in Phrygia. *N. E. D.*

> They had their name *Pepuzians* from a pretence that Jesus Christ appeared to one of their prophetesses in the city Pepuza in Phrygia, which was their holy city.
> *Chambers' Cyclo.* (1727–41).

Per and cui ('through [whom] and to whom'), in *law*, said of a writ of entry when it is directed against a second vendee or descendant from the disseizor. For example, A desseizes B and then sells to C, who sells to D. D's title is through (*per*) C, to whom (*cui*) A conveyed it, having wrongfully taken it from B.—**Per corpus**, by the body, or through an attachment.—**Per minas** ('through threats'), in *law*, a phrase used with reference to contracts which one party seeks to avoid because his assent was obtained by threats or improper coercion.—**Per primam intentionem**, by first intention: noting the healing of a wound without suppuration. Commonly, by abbreviation, *per primam*.—**Per quod** ('by which'), the title of a clause introducing in a pleading the legal conclusions from facts already stated.—**Per secundam intentionem**, by second intention: noting the healing of a wound by granulation. Commonly, by abbreviation, *per secundam*.—**Per totam curiam**, in *law*, by the entire court.—**Per universitatem**, in *civil law*, completely: applied to the disposal of property as an entirety, not by parcel.

per-. **3.** In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*[1]), a prefix used to form adjectives, and showing that the factor or component indicated is present in any division of igneous rocks, alone or in extreme amount—that is, that its ratio to another factor is greater than $\frac{7}{1}$: as, *peralkalic*, *perfelic*, *perfemane*, *perfemic*, etc.

per. An abbreviation of *period*.

peracid (pėr-as′id), *n.* [*per-* + *acid*.] An acid containing more than the usual amount of oxygen, as acetperacid ($CH_3CO_2.OH$), and benzoperacid ($C_6H_5.CO_2.OH$). Many of the peracids are extremely powerful germicides.

peradrenalone (pėr-ad-ren′ạ-lōn), *n.* [*per-* + *adrenalone*.] A compound, $(HO)_2C_6H_3CO\text{-}CONHCH_3$, prepared by the oxidation of adrenalone.

peræon (pe-rē′on), *n.*; pl. *peræa* (-ạ̈). Same as *pereion*.

> Rostral point small. *Peraeon* depressed. Very broad at the center; first segment short, seventh unusually long.
> *Trans. Linnæan Soc.*, Zool., May, 1897, p. 42.

peræopod (pe-rē′ọ-pod), *n.* Same as *pereiopod*.

> The term *peræopod* is here used to designate the thoracic legs behind the first two pairs, or gnathopods.
> *Amer. Nat.*, April, 1903, p. 269.

peralkalic (pėr-al-kal′ik), *a.* [*per-*, 3, + *alkalic*.] In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*[1]), extremely alkalic: said of salic minerals, or of magmas in which they preponderate, when the ratio of the salic K_2O and Na_2O to salic CaO is greater than 7:1. It is applied to femic minerals, or to magmas in which they preponderate, when the ratio of the femic K_2O and Na_2O to femic CaO, MgO, and FeO is greater than 7:1.

perambulant (pėr-am′bụ-lạnt), *a.* [See *perambulate*.] Strolling; rambling; perambulating. [Rare.]

> The poor found congenial recreation in bear-baiting, bull-fighting, and countless similar amusements — in fairs, dances, *perambulant* musicians, sham fights, and rude games.
> *Lecky*, Hist. Rise and Influence of the Spirit of Rationalism in Europe, II. 291.

perameloid (pẹ-ram′e-loid), *a.* [NL. *Perameles* + *-oid*.] Resembling bandicoots of the genus *Perameles*.

Peramium (pe-rā′mi-um), *n.* [NL. (Salisbury, 1812), of unexplained derivation.] A genus of orchidaceous plants. See *Goodyera*.

per an., per ann. [*l. c.* or *cap.*] Abbreviations of the Latin *per annum*, by the year.

Peranema (per-ạ-nē′mạ̈), *n.* [NL.] The typical genus of the family *Peranemidæ*. *Dujardin*, 1841.

Peranemidæ (per-ạ-nem′i-dē), *n. pl.* [NL. *Peranema* + *-idæ*.] A family of *Mastigophora*, of the order *Euglenida*, which have the body either stiff or plastic and usually symmetrical, one or two disimilar flagella at the anterior end, and a distinct mouth at the base of the flagella. The nutrition is holozoic. It contains about a dozen genera, among which are *Peranema*, *Zygoselmis*, *Petalomonas*, and *Anisonema*.

perbromate (pėr-brō′māt), *n.* [*perbrom*(*ic*) + *-ate*[1].] A salt of perbromic acid—if such a substance exists.

perbromic (pėr-brō′mik), *a.* [*per-* + *bromic*.] Noting an acid, a compound having the formula $HBrO_4$, analogous to perchloric acid, supposed by Kämmerer to be produced by acting on the latter in a dilute state with bromine. Its existence is very doubtful.

Percalates (pėr-ka̤-lā'tēz), *n.* [NL.] A genus of serranoid fishes living in fresh and brackish waters of southeastern Australia.

percalcic (pėr-kal'sik), *a.* [*per-*, 3, + *calcic.*] In *petrog.*, extremely calcic: said of salic minerals, or of the rocks in which they preponderate, when salic CaO is more than seven times the salic K_2O and Na_2O, and of femic minerals, or of the rocks in which they preponderate, when femic CaO is more than seven times the MgO and FeO. See ★*per-*, 3, and ★*rock*^{1}.

percarbide (pėr-kär'bid), *n.* [*per-* + *carbide.*] A compound of carbon with a more electropositive element or radical containing a maximum proportion of carbon.

percarbonate (pėr-kär'bo̤-nāt), *n.* [*percarbon(ic)* + *-ate*^{1}.] A salt of percarbonic acid. Potassium percarbonate has been obtained by the electrolysis of a solution of potassium carbonate at —15° C. It is an energetic oxidizing agent, readily giving off oxygen and reverting to the condition of carbonate.

percarbonic (pėr-kär-bon'ik), *a.* [*per-* + *carbonic.*] Noting an acid, $H_2C_2O_6$, of which the potassium salt has been obtained by the electrolysis of a solution of potassium carbonate.

percarburet (pėr-kär'bṳ̄-ret), *n.* [*per-* + *carburet.*] Same as ★*percarbide.*

Percarina (pėr-ka̤-rī'nä), *n.* [NL., < L. *perca*, perch, + *-ar(ius)* + *-ina*^{1}.] A genus of percoid fishes inhabiting the mouths of rivers which empty into the northern part of the Black Sea and the Sea of Azof.

per cent., per ct. [*l. c.* or *cap.*] Abbreviations of the Latin *per centum*, by the hundred.

percentage, *n.*—**Wake percentage,** in *naval arch.*, the ratio (expressed as a percentage) of the mean velocity of the water flowing forward in the wake of a vessel in the immediate vicinity of the stern to the speed of the vessel itself.

> This mean velocity of the wake is usually expressed as a percentage of the speed of the ship, and termed the "*wake percentage.*"
> *White*, Manual of Naval Arch., p. 456.

percentaged (pėr-sen'tā̤jd), *p. a.* Expressed or stated as a percentage. *New Eng. Jour. Education*, June 12, 1884, p. 376. *N. E. D.*

percental (pėr-sen'ta̤l), *a.* and *n.* [*per cent.* + *-al*^{1}.] **I.** *a.* Pertaining to, or of the nature of, percentage; expressed as a percentage; in percentage.

> A map showing, by means of six colours distinguishing different *percental* proportions, the distribution of German-speaking people. *Geog. Jour.* (R. G. S.), IX. 319.

II. *n.* In *com.*, same as *percentage:* as, at a ruinous *percental.* [Incorrect use.]

percentile. I. *a.*—**Percentile grades.** See ★*grade*^{1}.

II. *n.* **2.** In *math.*, a point upon a curve of errors which corresponds to a certain percentage of the total number of observations under discussion.

perception, *n.*—**Facial perception,** the faculty of judging of the proximity, direction, etc., of objects by the sensation felt in the skin of the face, a faculty especially developed in the blind. Also termed *facial vision. Buck*, Med. Handbook, III. 493.

perception-limen (pėr-sep'sho̤n-lī"men), *n.* In *psychophys.*, the stimulus-limen of perception, as of visual, cutaneous, or articular movement, of dual impression on the skin, etc. *E. B. Titchener*, Exper. Psychol., II. ii. 20.

perception-reflex (pėr-sep'sho̤n-rē"fleks), *n.* In *psychol.*, a reflex movement or group of movements (or a reflex readjustment of muscular tone) occurring in the organism when a perception is set up in consciousness. *Amer. Jour. Psychol.*, XIII. 97.

perception-time (pėr-sep'sho̤n-tīm), *n.* In *psychophys.*, the time required for the act or process of perception, as distinguished from the more complex intellectual processes of successive association, counting, etc.

> The time measured was, therefore, a single *perception-time* instead of a recognition-time.
> *Amer. Jour. Psychol.*, XIII. 258.

Perceptive economy. See ★*economy.*

perceptomotor (pėr-sep-to̤-mō'to̤r), *a.* Of or pertaining to a movement that follows directly upon, or is immediately released by, a perception: opposed to *ideomotor, sensorimotor.* [Rare.]

perch^1, *n.* **3.** Applied, with various epithets, to many fishes in Australia, none of which belong to the family *Percidæ.* The same fishes are called by various names in different localities. See *barramunda*, *bidyan* ★*ruff*, *black* ★*perch* (*g*), *fresh-water* ★*perch* (*b*), *golden perch*, ★*mado*, *Murray* ★*perch*, ★*parrot-fish* (*f*), *pearl perch*, ★*poddly*, *red-gurnet* ★*perch*, *red* ★*perch*, ★*rock-perch*, and ★*sea-perch*, 5 and 6.—**Black perch.** (*g*) A river-fish, *Therapon niger*, of the family *Hæmulidæ.* [New South Wales.]—**Fresh-water perch.** (*b*) The name given in Tasmania to a small perch called *Microperca tasmaniæ:* but the name *Microperca* was earlier given to an American fish.—**Murray perch,** a fresh-water fish, *Oligorus mitchelli*, closely allied to *Oligorus macquariensis*, the Murray cod, which belongs to the family *Percidæ. E. E. Morris.*—**Red-gurnet perch,** the name given in Victoria to a fish, *Sebastapistes percoides*, of the family *Scorpænidæ.* Also called *poddly*, *red gurnard* or *gurnet*, *kelp-fish*, and, in New Zealand, *pohuikaroa.* See ★*perch*^{1}, 3.—**Red perch.** (*c*) Same as ★*barber*^{1}, 3. (*d*) In Australia, *Caprodon longimanus.*—**Ringed perch.** Same as *ring-perch.*—**Silver perch.** (*e*) A fresh-water fish of New South Wales, the bidyan ruff. See ★*ruff*^{3}.—**Speckled perch.** (*b*) A common name of *Pomoxis annularis*, one of the sunfishes, found in the eastern United States. See *crappie*, with cut.—**Stone-wall perch,** a fish of the family *Oplegnathidæ*, found on the tropical Pacific coasts and north to Japan. The family is of doubtful relationship.—**Trumpeter perch.** Same as *trumpeter*, 6.

perch^2, *n.* **9.** In *leather-manuf.*, a frame on which a skin is stretched flat so that it may be worked smooth and soft. *Modern Amer. Tanning*, p. 201.—**10.** In *textile-manuf.*, a frame, usually with two overhead rolls, over which cloth is drawn to be examined for imperfections.—**11.** In *car-building*, a draft-timber.

perch^2, *v. t.* **3.** In *leather-manuf.*, to soften or draw out by means of a perch. See ★*perch*^{2}, *n.*, 9. *Modern Amer. Tanning*, p. 82.—**Perched rock.** See ★*rock*^{1}.

perching^1, *n.* **2.** In *leather-manuf.*, the process of stretching, as skins, on a perch. *C. T. Davis*, Manuf. of Leather, p. 362.

perchlorate, *n.*—**Potassium perchlorate,** a salt of potassium distinguished from the chlorate by being less soluble and more stable. It has been proposed for use in firework compositions as safer than the chlorate.

perchlorid (pėr-klō'rid), *n.* [*per-* + *chlorid.*] **1.** The chlorid of any particular element or radical with maximum proportion of chlorin.—**2.** Specifically, an abbreviation of *mercury perchlorid*, mercuric chlorid or corrosive sublimate, when used as an antiseptic in surgery.

perchlorinate (pėr-klō'ri-nāt), *v. t.*; pret. and pp. *perchlorinated*, ppr. *perchlorinating.* To combine or saturate (a substance) with the largest amount of chlorin which it is capable of holding.

perchlorination (pėr-klō-ri-nā'sho̤n), *n.* The process of perchlorinating; the saturation of an element or compound with the largest amount of chlorin which it is capable of holding.

perchromic (pėr-krō'mik), *a.* [*per-* + *chromic.*] Noting an acid, a substance known only in solution, produced by the interaction of chromic acid and hydrogen dioxid. It is very unstable, of an intense blue color, and probably has the composition $H_2Cr_2O_8$, analogous to that of persulphuric acid.

Percichthys (pėr-sik'this), *n.* [NL., < L. *perca*, perch, + Gr. ἰχθύς, fish.] A genus of serranoid fishes inhabiting fresh waters of the southwestern coast of South America.

Percilia (pėr-si.'i-ä̤), *n.* [NL., < L. *perca*, perch.] A genus of serranoid fishes found in fresh waters of Chile.

percoidean (pėr-koi'dẹ̄-a̤n), *a.* and *n.* **I.** *a.* Pertaining or belonging to the family *Percidæ.*

II. *n.* Any fish of the family *Percidæ. Science*, Jan. 3, 1902, p. 30.

Percoidei (pėr-koi'dē-ī), *n. pl.* Same as *Percoidea.*

percolative (pėr'ko̤-lā-tiv), *a.* [*percolate.*] Filtrative or allowing percolation or filtration: as, *percolative* soil.

percolator, *n.* **4.** A perforated plate or gauze partition through which a liquid, in passing, will become finely divided, or descend in a shower or mist.

percontation (pėr-ko̤n-tā'sho̤n), *n.* [L. *percontatio(-n-)*, an interrogation, < *percontare*, interrogate.] Interrogation; inquiry. [Rare.]

percur (pėr-kėr'), *v. t.*; pret. and pp. *percurred*, ppr. *percurring.* To traverse; run through. *N. E. D.* [Rare.]

percussion, *n.*—**Coin-percussion sound,** a sound of a metallic character heard, in cases of pneumothorax, by the ear placed against the back of the chest when two coins are clinked in contact with the anterior wall. *Med. Record*, June 13, 1903, p. 955.

percussion (pėr-kush'o̤n), *v. t.* **1.** To arrange (a firearm) by fitting it with a percussion-lock, so that it may be fired by percussion.

> When *percussioned*, the gun is shot at a target, and altered till it makes the required pattern.
> *W. W. Greener*, The Gun, p. 250.

2. In *med.*, to treat by means of percussion massage.

> The part being *percussioned* should become accustomed . . . to the manipulation.
> *Maguire*, Art of Massage, p. 47. *N. E. D.*

percussion-cartridge (pėr-kush'o̤n-kär"trij), *n.* A cartridge in which the primer is exploded by a blow: all modern cartridges are of this kind. See cut under *percussion-fuse.*

percussion-drill (pėr-kush'o̤n-dril), *n.* See ★*drill*^{1}.

percussion-sieve (pėr-kush'o̤n-siv), *n.* In *mining*, a machine, consisting of two screens to which a jarring motion is given, used for rapidly sorting ores, etc., according to the size of the pieces.

percute (pėr-kūt'), *v. t.*; pret. and pp. *percuted*, ppr. *percuting.* [See *percuss.*] To percuss, particularly in massage.

> After having . . . frictioned and *percuted* the muscles of the neck. *Maguire*, Art of Massage, p. 98. *N. E. D.*

perduction (pėr-duk'sho̤n), *n.* [L. *perductio (-n-)*, the act of leading through, < *perducere*, lead through.] The act of leading or bringing through; in recent use, the process of oxidation, as opposed to *reduction.*

> Whether or not there can be true decomposition, such as reduction and oxidation (or *perduction*) which takes place at all electrodes, is quite a different matter.
> *Trans. Amer. Inst. Elect. Engin.*, Jan.-July, 1902, [p. 315.

pereicleis (per'ī-klīs), *n.* [NL. *perei(on)* + Gr. κλείς, key.] In crustaceans, a tubercle or nodule of the posterior segment of the carapace, securing the latter behind. Compare ★*peltecleis.*

pereirine (pẹ̄-rā'rin), *n.* [*Pereira* (*Geissospermum læve*) + *-ine*^{2}.] An amorphous powdery alkaloid, $C_{19}H_{24}ON_2$, which occurs in Pereira (Pao-Pereira) bark from species of *Geissospermum.* The bark also contains other alkaloids, and is used as a febrifuge.

Peremptory rule. See ★*rule*^{1}.

perendinate (pėr-en'di-nāt), *v. t.* and *i.* [ML. *perendinare*, procrastinate.] **I.** *trans.* To defer till the day after to-morrow; put off for a day. *Blount*, Glossographia.

II. *intrans.* To defer going from day to day; to make an indefinitely long visit. [Rare.]

> The Master and scholars are not to permit any one to *perendinate* within their walls for a longer period than a fortnight.
> *Willis and Clark*, Arch. Hist. of the University of Cam-[bridge, I., introd., p. 89. *N. E. D.*

Perennial herb, a plant which dies to the ground each year but has a persistent root.

perennialize (pe-ren'i-a̤l-īz), *v. t.*; pret. and pp. *perennialized*, ppr. *perennializing.* To make perennial; make perpetual and never-failing.

> Welling springs, converging to a hollow, have *perennialized* a wide shallow pool.
> *Speaker*, Sept. 3, 1898, p. 287.

perfect, *a.* **11.** In the *Echinodermata*, having the entire series of ambulacral plates perforated from pole to pole, that is, from base to summit of corona.—**Perfect aggregate of points.** See ★*point*^{1}.—**Perfect series** or **set.** See ★*set*^{1}.

perfect, *v. t.*—**To perfect judgment.** See ★*judgment.*

perfectibilian (pėr-fek-ti-bil'ya̤n), *n.* A perfectionist; a perfectibilist.

perfectibilism (pėr-fek'ti-bil-izm), *n.* [*perfectible* + *-ism.*] The doctrine of the perfectibilists. See *Order of the Illuminati*, under *illuminati.*

perfectibility, *n.* **2.** The doctrine that historical religion will gradually lose its temporary and local character and be perfected according to the ideal formed by reason. This idea was suggested by Lessing.

perfectionism, *n.* **2.** The belief and system of the Perfectionists of the Oneida Community (which see, under *community*).

perfectionize (pėr-fek'sho̤n-īz), *v. t.*; pret. and pp. *perfectionized*, ppr. *perfectionizing.* To make perfect; to perfectionate. [Rare.]

perfectism (pėr'fek-tizm), *n.* Same as *perfectionism.*

perfectist (pėr'fek-tist), *n.* Same as *perfectionist.*

perfective, *a.* **2.** In *gram.*, expressing completed or perfected action, as a verb.

> In this system a clear distinction is drawn in nearly all verbs between those which express a process (durative verbs) and those which express a completed action (*perfective* verbs). . . . To strike is durative; to strike dead is *perfective.* *Encyc. Brit.*, XXXI. 676.

perfelic (pėr-fel'ik), *a.* [*per-*, 3, + *fel(dspar)* + *-ic.*] In *petrog.*, in the quantitative system (see ★*rock*^{1}), extremely felic; normative feldspar being more than seven times the normative quartz. See ★*per-*, 3.

perferrous (pėr-fer'us), *a.* [*per-*, 3, + *ferrous.*]

In *petrog.*, in the quantitative system (see ★*rock*^{1}), extremely ferrous; having more than seven times as much ferrous iron, FeO, as magnesia. See ★*per-*, 3.

perfluent (pėr′flö̤-ẹnt), *a.* [L. *perfluent*(*em*), ppr. (acc. sing. mas.) of *perfluere*, flow through.] Flowing through.—**Perfluent battery,** a voltaic battery within which a flow of the electrolyte is maintained.

perfoliation (pėr-fō-li-ā′shọn), *n.* [*perfoliate*, *a.*, + *-ion*.] The state of being perfoliated.

perforate, *a.* (*e*) Of the shells of gastropod mollusks, having a tubular cavity extending through the columella from the umbilicus to the apex: contrasted with *imperforate*, in which case the columella is solid.

Perforated zinc. See ★*zinc*.

perforating-press (pėr′fọ-rā-ting-pres″), *n.* A press having punches for making perforations in sheet-metal. The punches or dies are usually arranged in lines, and the press is fitted with feed-rolls which have a slight lateral motion after each stroke of the press to produce a staggered or alternating arrangement of the perforations, or a variable speed which causes a variation in the spacing of the lines of perforations. Gangs or groups of punches are also used for special work in making small perforated articles such as lamp-burners. See *perforating dies*, under ★*die*^{3}.

perforator, *n.* (*d*) The keyboard of the monotype type-setting and -casting machine; more precisely, the mechanism of the monotype keyboard which perforates the paper ribbon so that it will control the movements of the casting mechanism.

> From the *perforator* the spool passes to the casting and setting machine, an intricate piece of mechanism about 4 feet high.
> *Census Bulletin* 216, June 28, 1902, p. 58.

(*e*) In *archæol.*, a small chipped stone implement with a rather long and slender point and usually a broad base, supposed to have been used for drilling or boring holes. The name is also sometimes applied to other implements which have been evidently used for making holes, such as bone awls, etc. (*f*) A device for rapidly producing the perforations of a tape corresponding to the Morse code of signals and used in machine telegraphy.

perforatory (pėr′fọ-rā-tọ-ri), *a.* Same as *perforative*.

performance, *n.*—**Coefficient of performance.** See *admiralty* ★*coefficients*.

perfume, *v. t.* 2. Literally, to impregnate with the fumes or smoke of some burning object; fumigate, as with a disinfectant. *N. E. D.*

perfume, *n.*—**Concrete perfume,** a waxy, cerate-like mass obtained by extracting flowers with some special volatile solvent and completely removing the latter by distilling in vacuo. The odorous principles may be separated from the plant-wax by digesting with deodorized alcohol, subjecting to refrigeration, and then filtering: used in the manufacture of perfumes.

Perfumers' spirit. Same as ★*spirits of cologne*.

perfumery, *n.* 3. A perfumer's establishment.

perfusion, *n.* 2. In baptism, the act of pouring or sprinkling water over: the opposite of *immersion*. Occasionally used for the water which has been poured over.

> That this Rite was wont to be perform'd by Immersion, and not by *Perfusion*, appears both by the Propriety of the Word, and the Places chosen for its Administration.
> *J. Gale*, Reflections on Wall's Hist. of Infant-Baptism, [p. 134.

3. Irrigation of the tissues by the local subcutaneous transfusion of a saline solution.

> Tuesday, August 6, was devoted to a discussion upon a much more technical subject, the value of *perfusions*.
> *Nature*, Sept. 19, 1907, p. 534.

Perfusion solution, a solution used in perfusion experiments.

perhalide (pėr-hal′id), *n.* [*per-* + *halide* (?).] A compound of one or more of the halogen elements, chlorin, bromine, and iodine, with maximum proportion of the halogen or halogens.

perhorresce (pėr-ho-res′), *v. t.*; pret. and pp. *perhorresced*, ppr. *perhorrescing*. [L. *perhorrescere*, tremble or shudder greatly.] To feel a growing horror at; shudder at.

> It is not necessary to ask here whether this language be not really identifiable with the subjective idealism Mr. B. elsewhere *perhorresces*. It is more to the point to note that such language—if it be literally interpreted—will hardly satisfy the friends of religion.
> *W. Wallace*, in Fortnightly Rev., April, 1895, p. 544.

peri-acinal (per-i-as′i-nạl), *a.* Same as ★*peri-acinous*.

peri-acinous (per-i-as′i-nus), *a.* [Gr. περί, around, + NL. *acin*(*us*) + *-ous*.] Surrounding an acinus. *Buck*, Med. Handbook, II. 803.

periactus (per-i-ak′tus), *n.*; pl. *periacti* (-tī). [NL., < Gr. περίακτος, rotating.] In the Greek theater, a revolving prismatic apparatus with a different scene painted on each of the three sides in some simple way. There were two, one on each side of the stage. By turning the periactus the topos or locality of the action was changed.

perial (per′i-ạl), *n.* [Gr. περί, around, + *-al*^{1}.] The neurapophysis; the arch above the centrum of a vertebra through which the spinal cord runs. *Starks*, Synonymy of the Fish Skeleton, p. 524.

Perianal circlet, in *embryol.*, a circumanal band of cilia in the larvæ of certain marine worms: sometimes called the *perianal paratroch*.

periangiocholitis (per-i-an″ji-ọ-kọ-lī′tis), *n.* [NL., < Gr. περί, around, + ἀγγεῖον, vessel, + χολή, bile, + *-itis*.] Inflammation of the tissue surrounding a bile-duct.

periangioma (per″i-an-ji-ō′mạ̈), *n.*; pl. *periangiomata* (-mạ-tạ̈). [NL., < Gr. περί, around, + ἀγγεῖον, vessel, + *-oma*.] A tumor surrounding a blood-vessel.

periaortic (per″i-ạ̄-ôr′tik), *a.* [Gr. περί, around, + NL. *aorta* + *-ic*.] Surrounding the aorta.

periappendicitis (per″i-ạ-pen-di-sī′tis), *n.* [NL., < Gr. περί, around, + NL. *appendix* (*-dic-*) + *-itis*.] Inflammation of the parts surrounding the vermiform appendix. *Med. Record*, Aug. 17, 1907, p. 274.

periarterial (per″i-är-tē′ri-ạl), *a.* [Gr. περί, around, + ἀρτηρία, artery, + *-al*^{1}.] Surrounding an artery.

> White corpuscles of clot, wandering cells from arterial coats, and rarely also *peri-arterial* tissues . . . are attached to the frayed ends of the media which have been cut by the ligature.
> *Buck*, Med. Handbook, I. 540.

Periaxial wood, in stems of *Bignoniaceæ*, a zone of wood outside of the normal axial wood, interpenetrated by deep wedges of bast.

Peribranchial cavity, in ascidians, the space between the body-wall and the contained organs, communicating with the exterior through the atrial aperture. Also called the *atrial cavity*.

peribulbar (per-i-bul′bạ̈r), *a.* [Gr. περί, around, + L. *bulbus*, bulb, + *-ar*^{3}.] Surrounding a bulb, usually the eyeball.

peribursal (per-i-bėr′sạl), *a.* [Gr. περί, around, + NL. *bursa* + *-al*^{1}.] Extending around a bursa.

pericapsular (per-i-kap′sụ̄-lạ̈r), *a.* [Gr. περί, around, + NL. *capsula*, capsule, + *-ar*^{3}.] Surrounding any capsule. *Buck*, Med. Handbook, I. 108.

Pericardial cell, gland, sinus. See ★*cell*, ★*gland*, ★*sinus*.

pericardiothyroid (per-i-kär″di-ọ-thī′roid), *a.* [*pericardium* + *thyroid*.] Relating to the pericardium and the thyroid gland: noting a band of muscular tissue connecting these two structures.

pericardiotomy (per″i-kär-di-ot′ọ-mi), *n.* [Gr. περικάρδιον, pericardium, + Gr. -τομια, < ταμεῖν, cut.] Incision of the pericardium for the removal of a foreign body or for any other purpose.

pericardotomy (per″i-kär-dot′ọ-mi), *n.* Same as ★*pericardiotomy*.

pericaryoplasm, *n.* See ★*perikaryoplasm*.

pericaulome, pericaulom (per-i-kâ′lōm), *n.* [Gr. περί, around, + καυλός (= L. *caulis*), stem. See *caulome*.] In Potonié's theory of plant structure, the peripheral tissues, regarded by him as not axile but foliar in origin.

> Prof. Potonié, in a small work published by Gustav Fischer, gives an explanatory account of his *pericaulom* theory of the structure of plants. Probably the author would hardly accept as a description of his position the suggestion that it is an attempt to combine the views of Goethe and of Alex. Braun, but it seems nevertheless very much like it. The plant is conceived of as primarily originating from a dichotomising thallus, which gradually becomes, by unequal development of the two limbs, a sympodium.
> *Nature*, Feb. 12, 1903, p. 351.

pericecitis (per″i-sẹ̄-sī′tis), *n.* [Gr. περί, around, + E. *cecitis*.] Inflammation of the connective tissue and peritoneum in relation to the cecum. *Med. Record*, Aug. 17, 1907, p. 274.

pericellular (per-i-sel′ū-lạ̈r), *a.* [Gr. περί, around, + NL. *cellula*, cell, + *-ar*^{3}.] In *biol.*, surrounding or enveloping a cell or cells: as, the *pericellular* spaces or the *pericellular* accumulations of leucocytes, connective tissue, etc., in certain diseases.

pericementitis (per″i-sem-en-tī′tis), *n.* [*pericement*(*um*) + *-itis*.] Inflammation, usually followed by caries, of the pericementum.

pericementum (per″i-sẹ̄-men′tum), *n.* [NL. *pericæmentum*, < Gr. περί, around, + NL. *cæmentum*, cement.] A layer of bone-like substance covering the root of a tooth immediately beneath the periodontal membrane.

pericenter (per′i-sen″tėr), *n.* [NL. *pericentrum*, *pericentron*, < Gr. περί, around, + κέντρον, center.] That point in the path of a body having orbital motion in which it is at its least distance from the center of gravity of the system. In the case of the solar system the pericenter of an orbit is called the *perihelion*. Compare ★*apocenter*.

> In the matter of nomenclature some objection may fairly be raised to the apparently needless introduction of new terms in place of the familiar old ones, such as the logically inappropriate apocenter, *pericenter*, for apastron, periastron, in connection with double star orbits, and the rechristening of the Fraunhofer lines of the solar spectrum as Wollaston lines. *Science*, Feb. 7, 1902, p. 221.

pericentric (per-i-sen′trik), *a.* 1. Of or pertaining to a pericenter; pericentral.—2. In *geol.*, deposited around a center, as lava-flows or tuffs around a crater.

> In the volcanic mountain the stratification is *pericentric*, more completely so than in the alluvial cone.
> *Dana*, Manual of Geol. (4th ed.), p. 99.

pericentron, pericentrum, *n.* Same as ★*pericenter*.

pericephalic (per-i-se-fal′ik), *a.* [Gr. περί, around, + E. *cephalic*.] Surrounding the head; specifically, noting the external carotid artery.

Pericera (per-i-sē′rạ̈), *n.* [NL.] The typical genus of the family *Periceridæ*. *Latreille*, 1829.

pericerebral (per-i-ser′ẹ̄-brạl), *a.* [Gr. περί, around, + E. *cerebral*.] Surrounding the brain.

Periceridæ (per-i-ser′i-dē), *n. pl.* [NL. *Pericera* + *-idæ*.] A family of brachyurous podophthalmous crustaceans having eyes which are retractile within small circular orbits, and the basal joint of the second antennæ well-developed. The family contains about 20 genera, among which are *Pericera*, *Macrocœloma*, and *Libinia*. *L. emarginata* is said to occur in such numbers on the oyster-beds of Long Island as to interfere occasionally with the work of the steam oyster-dredgers.

Perichætidæ (per-i-kē′ti-dē), *n. pl.* [NL. *Perichæta* + *-idæ*.] A family of oligochætous worms of which the typical genus is *Perichæta*. It contains a larger number of species than any other family of earthworms.

perichondroma (per-i-kon-drō′mạ̈), *n.*; pl. *perichondromata* (-mạ-tạ̈). [NL., < *perichondr*(*ium*) + *-oma*.] A tumor springing from the perichondrium.

perichordal, *a.* 2. Noting a type of vertebra found in some *Batrachia*, in which the cartilaginous elements from which the centra develop are present on both the dorsal and the ventral faces of the notochord.—**Perichordal tube.** See ★*tube*.

perichylous (per-i-kī′lus), *a.* [Gr. περί, around, + χυλός, juice, + *-ous*.] In *bot.*, placed outside of the chlorenchyma and next to the epidermis: said of aqueous tissue which serves as a protection against drought, as in many *Bromeliaceæ* and in *Rhizophora*. Compare ★*endochylous*. *A. F. W. Schimper* (trans.), Plant-Geog., p. 11.

periclasite (per-i-klā′zīt), *n.* [*periclase* + *-ite*.] Same as *periclase*.

periclinal, *a.* 2. In *geol.*, sloping on every side from a common center; quaquaversal.

pericline, *n.* 2. In *bot.*, a periclinal cell-wall. *Jackson*, Glossary.—**Pericline law.** See *pericline twin*, under *twin*^{1}.

pericœlous (per-i-sē′lus), *a.* [Gr. περί, around, + κοῖλος, hollow, + *-ous*.] In *ornith.*, noting that condition of the intestine in which the second loop is left-handed, its sides not in contact, and inclosing the third loop: generally it is straight and its parts are in contact with each other.

pericolonitis (per″i-kọ-lọ-nī′tis), *n.* [Gr. περί, around, + NL. *colon* + *-itis*.] An improper form for *pericolitis*.

Pericolpa (per-i-kol′pạ̈), *n.* [NL., < Gr. περί, around, + κόλπος, bosom.] The typical genus of the family *Pericolpidæ*. *Haeckel*, 1880.

Pericolpidæ (per-i-kol′pi-dē), *n. pl.* [NL. *Pericolpa* + *-idæ*.] A family of *Peromedusæ* having 4 perradial tentacles, 4 interradial rhopalia, and 8 adradial marginal lobes. It contains the genera *Pericolpa* and *Pericrypta*.

pericopic (per-i-kop′ik), *a.* [*pericope* + *-ic*.] Pertaining to, or of the nature of, a pericope.

pericoxitis (per″i-kok-sī′tis), *n.* [NL., < Gr. περί, around, + L. *coxa*, hip-joint, + *-itis*.] Inflammation of the parts about the hip-joint.

pericranitis (per″i-krạ̄-nī′tis), *n.* [NL., < *pericran*(*ium*) + *-itis*.] Inflammation of the periosteum of the skull.

pericycle (per′i-sī-kl), *n.* [Gr. περί, around, + κύκλος, circle.] The outermost zone of cells of the stele immediately within the endodermis. *Jackson*, Glossary.

> In the *pericycle* around the central cylinder of the embryo at the cotyledonary node. *Encyc. Brit.*, XXVII. 338.

pericyclic (per-i-sik′lik), *a.* [*pericycle* + *-ic.*] Pertaining to, or of the nature of, the pericycle: as, *pericyclic* sclerenchyma.

Pericyclidæ (per-i-sik′li-dē), *n. pl.* [NL., < Gr. *περί*, around, + *κύκλος*, circle, + *-idæ.*] In Hyatt's classification, a family of magnosellarian eurycampylous ammonoid cephalopods having involute shells with ribs on the venter, broad hyponomic sinus, and with the broad inner lateral saddles of the suture-line divided by short lobes into two subequal saddles. The two principal genera are *Dimeroceras* of the Upper Devonian and *Pericyclus* of the Carboniferous limestone.

pericycloid (per-i-sī′kloid), *n.* [Gr. *περί*, around, + *κύκλος*, circle, + *-oid.*] The curve traced out by a point on the circumference of a circle which rolls without sliding upon a smaller circle within it. The contact is internal and the rolling circle touches the outside of the fixed circle.

pericyclone (per-i-sī′klōn), *n.* [*peri-* + *cyclone.*] A belt of high pressure which should surround a cyclone, according to Ferrel's theory: not identical with the areas of high pressure ordinarily shown on the weather-map.

pericyclonic (per″i-sī-klon′ik), *a.* [*pericyclone* + *-ic.*] Pertaining to or of the nature of a pericyclone.

pericystic (per-i-sis′tik), *a.* [Gr. *περί*, around, + *κύστις*, bladder (cyst), + *-ic.*] Surrounding a bladder of any sort, or a cyst.—**Pericystic space**, in siphonophorans, the space around the pneumatocyst.

pericystium (per-i-sis′ti-um), *n.*; pl. *pericystia* (-ä). [NL., < Gr. *περί*, around, + *κύστις*, bladder (cyst).] The outer wall of a cyst, containing blood-vessels.

pericystomatitis (per″i-sis-tō-ma-tī′tis), *n.* [Gr. *περί*, around, + NL. *cystoma* (-*t*-) + *-itis.*] Inflammation of the capsule surrounding a cystic tumor, especially an ovarian cyst.

pericytial (per-i-sī′ti-al), *a.* [Gr. *περί*, around, + *κύτος*, a hollow (a cell).] Same as ★*pericellular.*

peridermis (per-i-dėr′mis), *n.* Same as *periderm.*

Peridermium (per-i-dėr′mi-um), *n.* [NL. (Link, 1816), < Gr. *περί*, around, + *δέρμα*, skin.] A genus of rust-fungi parasitic on conifers, producing spermagonia and æcidia. Some of the species are known to be the early stages of other genera, as *P. oblongisporium*, which is the æcidial form of *Coleosporium Senecionis* and *P. Cornui* and is connected with *Cronartium Asclepiadeum*. *P. cerebrum* occurs on the trunks and branches of pines in the eastern United States, producing large rough bur-like swellings.

peridesm (per′i-desm), *n.* [Gr. *περί*, around, + *δεσμός*, a band.] In *bot.*, the investment of tissue which surrounds the individual strands of a stele after it breaks up into several. See ★*polystele.*

peridesmic (per-i-des′mik), *a.* [*peridesm* + *-ic.*] Forming or pertaining to a peridesm.

peridiastole (per″i-dī-as′tō-lē), *n.* [Gr. *περί*, around, + *διαστολή*, expansion, diastole.] The brief interval of time which intervenes between the diastole and the succeeding systole of the heart.

peridieine (pē-rid′i-in), *a.* [Irreg. < *peridi(um)* + *-e-* + *-ine*^{1}.] Like or resembling a peridium. *Encyc. Brit.*, XIV. 562.

peridinine (pe-rid′i-nin), *n.* A brown vegetable coloring-matter allied to chlorophyl.

peridot, *n.*—**Ceylonese peridot.** See *Ceylonese chrysolite*, under ★*chrysolite.*

peridotitic (per-i-dō-tit′ik), *a.* Same as *peridotic.*

periductal (per-i-duk′tal), *a.* [Gr. *περί*, around, + E. *duct* + *-al*^{1}.] Surrounding a duct or ducts. *Buck*, Med. Handbook, II. 470.

periecians (per-i-ē′shianz), *n. pl.* [Gr. *περίοικοι*, neighbors.] 1. Persons living in the same latitude but on opposite meridians.—2. In *Greek hist.*, in Laconia, the free inhabitants of the towns, with the exception of Sparta; provincials.

perifery, *n.* An amended spelling of *periphery.*

perifollicular (per″i-fo-lik′ū-lär), *a.* [Gr. *περί*, around, + NL. *folliculus*, follicle, + *-ar*^{3}.] Surrounding a follicle or follicles. *Buck*, Med. Handbook, I. 74.

perifolliculitis (per″i-fo-lik-ū-lī′tis), *n.* [NL., < Gr. *περί*, around, + NL. *folliculus*, follicle, + *-itis.*] Inflammation of the tissues surrounding a follicle.

perifrase, perifrastic. Amended spellings of *periphrase, periphrastic.*

perigalacteum (per″i-ga-lak′tē-um), *n.*; pl. *perigalactea* (-ä). [NL. **perigalactæum*, < Gr. *περί*, about, + *γαλαξίας* (*γαλακτ-*), the Milky Way, + *-æum*, as in *perigæum*, perigee.] The point of nearest approach to the Milky Way in the orbit of a star supposed to be revolving in an orbit within the galactic ring. *Amer. Jour. Sci.*, Aug., 1903, p. 137.

perigalactic (per″i-ga-lak′tik), *a.* [*perigalact(eum)* + *-ic.*] At a minimum distance from the Milky Way ring. See ★*perigalacteum*. *Amer. Jour. Sci.*, Aug., 1903, p. 136.

perigeal (per-i-jē′al), *a.* [*perige(um)* + *-al*^{1}.] Same as *perigean.*

periglandular (per-i-glan′dū-lär), *a.* [Gr. *περί*, around, + NL. *glandula*, gland, + *-ar*^{3}.] Surrounding a gland or glands. *Buck*, Med. Handbook, I. 128.

periglial (per-i-glī′al), *a.* [Gr. *περί*, around, + *γλία*, glue (NL. *glia*), + *-al*^{1}.] Surrounding the glia cells of the brain. *Buck*, Med. Handbook, II. 264.

periglœa (per-i-glē′ä), *n.* [Gr. *περί*, around, + *γλοία*, glue.] The gelatinous investment of certain diatoms.

periglossitis (per-i-glo-sī′tis), *n.* [NL., < Gr. *περί*, around, + *γλῶσσα*, tongue, + *-itis.*] Inflammation of the tissues about the tongue.

periglyph (per′i-glif), *n.* [Gr. *περί*, around, + *γλύφειν*, carve, scratch.] An instrument used for tracing orthogonal outlines of objects, placed under a varnished glass plate, by means of a sharp point which scratches the outlines in the plate: used particularly in craniography.

perigonadial (per″i-gō-nad′i-al), *a.* [Gr. *περί*, about, + NL. *gonadium*, gonad, + *-al*^{1}.] Of or pertaining to the spaces around the gonads or reproductive glands of an animal. *Lankester*, Nat. Sci., April, 1897, p. 268.

peri-insular (per-i-in′sū-lär), *a.* [Gr. *περί*, around, + L. *insula*, island, + *-ar*^{3}.] In *anat.*, surrounding an insula or island, specifically the island of Reil. *Amer. Anthropol.*, Oct.–Dec., 1903, p. 627.

peri-intestinal (per″i-in-tes′ti-nal), *a.* [Gr. *περί*, around, + E. *intestinal.*] Lying about or around the intestine. In insects, the peri-intestinal region of the cœlum is the second of the three regions into which it is divided by Graber, the others being the pericardial and the perineural.

perikaryon (per-i-kar′i-on), *n.*; pl. *perikarya* (-ä). [NL., < Gr. *περί*, around, + *κάρυον*, nut (nucleus).] The cell-body or cytoplasm of a nerve-cell, or neurone, as distinguished from its nucleus and its processes, the dendrites and neuraxon. The perikaryon consists of a twofold substance—an achromatic, fibrillar spongioplasm, regarded as conductive in function, and a trophoplasmic ground-substance, regarded as the seat of metabolic chemical changes.

perikaryoplasm (per-i-kar′i-ō-plazm), *n.* [Gr. *περί*, about, + *κάρυον*, nut, + *πλάσμα*, a molded form.] A zone of granular protoplasm seen in *Rosenbergia scandens*, in the cytoplasm of the resting pollen mother-cell on its approaching division. Also *pericaryoplasm*. *A. A. Lawson.*

> Lawson ('98 and :00) found that the nuclei of Cobea and Gladiolus previous to mitosis were surrounded by a zone of granular kinoplasm which he named *perikaryoplasm*. This zone developed a felted envelope of fibrillæ from which projections extended to form the cones of a multipolar figure. *Amer. Nat.*, Oct., 1904, p. 738.

Peril of death. See ★*death.*—**Yellow Peril**, a phrase applied to a possible and disastrous overflow of the Eastern yellow races into regions now dominated by Western civilization.

> The far-seeing statesmen of Europe . . . have dreaded the approach, in the not very distant future, of a coming "*Yellow Peril*"; for in the life of nations centuries, they argue, count but as days. The very thought that a compact mass of humanity, like the Chinese, comprising four hundred million units, might become seized with the modern idea of progress and conquest in industrial, commercial, and political domains, . . . was too dreadful to contemplate. *The Forum*, Jan.–March, 1904, p. 460.

White Peril, a dreaded possible incursion of the combined Western races into the countries of the East, with the complete subjugation of the races of the latter.

> The Japanese, quick-witted as they are, soon perceived in this European apprehension of a coming "Yellow Peril" an ominous symptom of a fast-approaching "*White Peril*," fraught with far-reaching consequences upon the fate of the yellow race.
> *The Forum*, Jan.–March, 1904, p. 460.

perilecithal (per-i-les′i-thal), *a.* [Gr. *περί*, around, + E. *lecithal.*] Of or pertaining to eggs, such as those of arthropods, in which the germinal vesicle or nucleus lies in the center surrounded with yolk on all sides: opposed to *telolecithal.*

perilenticular (per-i-len-tik′ū-lär), *a.* [Gr. *περί*, around, + E. *lenticular.*] Surrounding a lens, especially the crystalline lens of the eye.

perilobular (per-i-lob′ū-lär), *a.* [Gr. *περί*, around, + NL. *lobulus*, lobule, + *-ar*^{3}.] Surrounding a lobule or lobules.

perilogy (pē-ril′ō-ji), *n.* [Gr. *περί*, about, + *λόγος*, word, discourse.] The branch of biological science which deals with chorology, or the geography, distribution, migrations, etc., of living beings. *Haeckel* (trans.), Wonders of Life, p. 96. [Rare.]

periloph (per′i-lof), *n.* [Gr. *περί*, about, + *λόφος*, tuft.] A frill or collar encircling the truncated base of a hexactinellid sponge and serving as an organ of support and of attachment to the sea-bottom.

perilymphadenitis (per″i-lim-fad-e-nī′tis), *n.* [Gr. *περί*, around, + NL. *lymphadenitis.*] Inflammation of the tissues surrounding a lymph gland. *Med. Record*, Aug. 10, 1907, p. 219.

perilymphatic, *a.* 2. Situated around the lymphatic vessels.

> This *perilymphatic* inflammation is found in the thickness of the capsule of Glisson, and is observed in many [illegible]
> *Bumstead and Taylor*, Venereal Diseases (4th ed.), p. 612.

perimastitis (per″i-mas-tī′tis), *n.* [NL., < Gr. *περί*, around, + *μαστός*, breast, + *-itis.*] Inflammation of the connective tissue covering a mammary gland.

perimedullary (per-i-med′ū-lā-ri), *a.* [Gr. *περί*, around, + L. *medulla*, pith, + *-ary.*] 1. In *bot.*, immediately surrounding the medulla or pith, as the perimedullary zone of a stem which is outwardly bounded by the protoxylem.—2. Surrounding more or less completely the spinal cord, the medulla oblongata, or the marrow of a bone.

perimeningitis (per″i-men-in-jī′tis), *n.* [NL., < Gr. *περί*, around, + *μῆνιγξ*, membrane, + *-itis.*] Same as *pachymeningitis.*

perimeter, *n.*—**Wundt's perimeter**, in *exper. psychol.*, a large perimeter, having a steel quadrant of 1.1 meters radius, which can turn freely about its axis, and which is fitted with electric-motor color-mixers for daylight work and with gelatin lanterns for work in the dark room. *E. B. Titchener*, Exper. Psychol., I. ii. 26.

perimetrium (per-i-mē′tri-um), *n.* [NL., < Gr. *περί*, around, + *μήτρα*, uterus.] The layer of peritoneum covering the uterus.

perimorphism (per-i-môr′fizm), *n.* [*perimorph* + *-ism.*] The phenomenon, or kind of structure, exhibited by a perimorph.

perimyelitis (per″i-mī-e-lī′tis), *n.* [NL., < Gr. *περί*, around, + *μυελός*, marrow, + *-itis.*] Inflammation of the membrane which covers the spinal cord.

Perineal gland. See ★*gland.*

perineoplastic (per-i-nē″ō-plas′tik), *a.* Pertaining to, or of the nature of, perineoplasty.

perineorrhaphy, *n.* 2. An operation for uniting the edges of the wound in a case of ruptured perineum.

perineotomy (per″i-nē-ot′ō-mi), *n.* [Gr. *περίνεον*, perineum, + *-τομια*, < *ταμεῖν*, cut.] Incision into the perineum.

perineovaginal (per-i-nē-ō-vaj′i-nal), *a.* Relating to both the perineum and the vagina.

perineovulvar (per-i-nē-ō-vul′var), *a.* Relating to both the perineum and the vulva.

perineptunium (per″i-nep-tū′ni-um), *n.* [Gr. *περί*, about, + L. *Neptunus*, Neptune.] The point nearest Neptune in the orbit of its satellite.

perineural (per-i-nū′ral), *a.* [Gr. *περι*, around, + *νεῦρον*, nerve, + *-al*^{1}.] 1. Surrounding a nerve or nerves. *Buck*, Med. Handbook, II. 676.—2. Specifically, in insects, lying around the nerves. See ★*peri-intestinal.*

perineuritic (per″i-nū-rit′ik), *a.* [*perineurit(is)* + *-ic.*] Relating to or suffering from perineuritis.

perinuclear (per-i-nū′klẹ̄-ä̤r), *a.* [Gr. *περί*, around, + NL. *nucleus*, nucleus, + *-ar*³.] Surrounding, inclosing, or enveloping the cell-nucleus: as, the *perinuclear* cytoplasm.—**Neusser's perinuclear granules.** See ★*granule.*

period, *n.* 12. *pl.* The menses.—13. In *phys.*, the time of one complete oscillation or cycle of a periodic motion; the reciprocal of the frequency of a periodic motion.—14. In *astron.*, the time of the revolution of a planet or satellite around its primary. Also *orbital period.*—15. In *geol.*, technically, one of the larger divisions of geologic time of either the second or the third order, measured by the time of deposition of a 'group' or 'system' of formations, and characterized by the presence of a number of allied and similar faunas which as a whole differ from those of other periods. In Dana's classification the term is applied to the third order of time-division, while the more generally adopted scheme of the International Geological Congress accords it second rank. The relation between the two usages of this and other terms of time-nomenclature and the correlated structural and faunal equivalents is shown in the following table:

DANA'S CLASSIFICATION

		STRUCTURAL	CHRONOLOGIC
1	Paleozoic	Series	Eon or Time
2	Devonian	System	Era
3	Helderbergian	Group	Period
4	Coeymans	Stage	Epoch

INTERNATIONAL GEOLOGICAL CONGRESS

		STRUCTURAL	CHRONOLOGIC
1	Paleozoic	Group	Era
2	Devonian	System	Period
3	Helderbergian	Series	Epoch
4	Coeymans	Stage	Age
		Zone	Phase

Canicular period. See ★*canicular cycle.*—**Cave period,** the period of cave-dwellers: used particularly in the prehistoric archæology of Europe. The cave period is subdivided by De Mortillet into the Mousterian, Solutrian, and Madelenian periods.—**Cavern period.** Same as *cave* ★*period.*—**Champlain period.** See ★*Champlain.*—**Christiania period,** in *geol.*, the period of general submergence of the continent following the glacial period in northern Europe, essentially coincident in time and activity with the Champlain period of American glacialists.—**Effusive period.** See ★*effusive.*—**Eleven-years period,** the period of sun-spot frequency: more accurately, according to Newcomb, 11.13 years.—**Fluvial period,** in *geol.*, the time which succeeded the glacial period and which was marked by great floods from the melting ice-sheet.—**Glacial, glyptic period.** See ★*glacial*, ★*glyptic.*—**Hallstatt period.** See ★*Hallstattian.*—**Human period.** See ★*human*, 3.—**Lacustrine period.** Same as *Lacustrine* ★*age.*—**La Tène period,** a period of prehistoric culture characterized by the extended use of iron, and different from the earlier prehistoric culture of Hallstatt: so called from the shallows named La Tène at the end of the Lake of Neuchâtel.—**Monthly period,** the menses.—**Natural period,** in *physics*, the period of free vibration of a vibrating particle. See the extract.

> When the vibrating particle moves without being affected by external forces, its period *T* is said to be its 'period of free vibration' or its '*natural period.*'
>
> *Scripture*, Exper. Phonetics, p. 2.

Period of compression, a certain interval until the end of which the compression of two bodies in collision continues to increase.—**Period of restitution,** the interval in which the recovery of form takes place after the period of compression of two bodies in collision. *Poisson.*—**Pluvial period,** in *geol.*, the Champlain period of Pleistocene time. [Rare.]—**Primitive period,** a period no part of which is a period.—**Reproduction period,** in *forestry*, the space of time required for the renewal of a stand.—**Solar magnetic period,** a period of 26.67928 days, as computed by F. H. Bigelow, assumed to be identical with the period of rotation of the nucleus of the sun around its own axis, with corresponding periods in the phenomena of terrestrial magnetism and meteorology, and with the appearance of the solar corona.—**Terrace period.** See ★*terrace*¹.

periodate (per-ī′ọ̄-dāt), *n.* [*period*(*ic*)² + *-ate*¹.] A salt of periodic acid.

periodic¹, *a.* 5. In *math.*, with values which recur as the value of the independent variable continuously increases.—**Periodic decimal, motion, working.** See ★*decimal*, etc.

periodic² (pėr-ī-od′ik), *a.* [*per-* + *iodic.*] Noting an acid, a substance produced by the interaction of iodine and aqueous perchloric acid, known only in crystals which contain two molecules of water: $HIO_4.2H_2O$. Its solution has a strong acid reaction and it forms several distinct series of salts.

periodicity, *n.* 2. In *phys.*, the number of recurrences of a periodic motion, such as a vibration, in a unit of time; specifically, in *elect.*, the number of complete periods or cycles per second of an alternating or oscillating current: same as *frequency*. The usual electrical frequencies are 25 and 60 in the United States and 50 in Europe.

> In this country the first commercial alternators had smooth-core armatures with flat pancake coils, external yoke and radial internal poles. The *periodicities* used were 125 and 133 cycles.
>
> *Elect. World and Engin.*, March 5, 1904, p. 459.

3. In *bot.*, the habit in a plant of adjusting its growth or the movements of its organs to regular changes in conditions (of light, heat, etc.), either annual or diurnal. Periodicity is also exhibited in some spontaneous movements not correlated with time of day or season. See *phenology*, *sleep*, 5, *sensitive-plant*, and *periodic* ★*movement.*—**Factorial periodicity.** See ★*factorial.*—**Filarial periodicity,** the periodical nightly recurrence of filariæ in the blood of one who has become infected.—**Law of periodicity.** See ★*law*¹.—**Modulus of periodicity.** See ★*modulus.*

periodide (pėr-ī′ọ̄-did or -dīd), *n.* [*per-* + *iodide.*] An iodide with the maximum proportion of iodine, as potassium periodide, KI_3.

periodograph (pē-ri-od′ọ̄-graf), *n.* [Gr. *περίοδος*, a going round, + *γράφειν*, write.] The curve which connects the intensity with the period. See the extract.

> I believe that the curve which connects the intensity with the period will play an important rôle in meteorology. It is a curve which ought to have a name, and for want of a better one I have suggested that of '*periodograph.*' To take once more barometric variations as an example, it is easy to see that just as in the case of white light the *periodograph* would be zero for very short, and probably also for very long periods. There must be some period for which intensity of variation is a maximum. Where is that maximum? And does it vary according to locality? The answer to these questions might give us valuable information on the difference of climate. Once the *periodograph* has been obtained, the question of testing the reality of any special periodicity is an extremely simple one.
>
> *A. Schuster*, in Rep. Brit. Ass'n Advancement of Sci., [1902, p. 518.

periodontium (per″i-ọ̄-don′ti-um), *n.* [NL., < Gr. *περί*, around, + *ὀδούς* (*ὀδοντ-*), tooth.] The lining membrane of the tooth-sockets.

periodoscope (pē-ri-od′ọ̄-skōp), *n.* [Gr. *περίοδος*, a circuit (see *period*), + *σκοπεῖν*, view.] In *obstetrics*, a dial for calculating the period at which labor will probably occur.

Periœcians, *n. pl.* Same as ★*periecians.* See *Periœci.*

Periœcic (per-i-ē′sik), *a.* [*Periœc*(*i*) + *-ic.*] Of or pertaining to the Periœci or to Periecians.

periogue (per-i-ōg′), *n.* Same as *periagua.*

perionychia (per″i-ọ̄-nik′i-ä̤), *n.* [NL., < Gr. *περί*, around, + *ὄνυξ* (*ὀνυχ-*), nail.] Same as *paronychia*¹, 1.

perionychium (per″i-ọ̄-nik′i-um), *n.* [NL. See ★*perionychia.*] The border of skin which grows over the root of the nail.

perionyx (per-ī′ọ̄-niks), *n.* [NL.] 1. Same as ★*perionychium.*—2. In *embryol.*, a vestige or remnant of the epitrichial layer of the epidermis persisting at the base of a nail or claw.

periophthalmia (per″i-of-thal′mi-ä̤), *n.* [NL., < Gr. *περί*, around, + *ὀφθαλμός*, eye.] Inflammation of the cellular tissue within the orbit of the eye.

periophthalmitis (per-i-of-thal-mī′tis), *n.* [NL., < Gr. *περί*, around, + *ὀφθαλμός*, eye, + *-itis.*] Same as ★*periophthalmia.*

periople (per′i-ọ̄-pl), *n.* [Gr. *περί*, around, + *ὅπλον*, weapon (hoof).] The thin varnish-like layer on the outer surface of the hoofs of animals, which prevents excessive evaporation of moisture from the horny tissue.

perioplic (per-i-op′lik), *a.* [*periople* + *-ic.*] Of or pertaining to the periople.—**Perioplic band,** a narrow layer of secretory cells at the upper border of the hoofs of animals, the function of which is to secrete the periople.

periopticon (per-i-op′ti-kon), *n.*; pl. *perioptica* (-kä̤). [NL., < Gr. *περί*, around, + *ὀπτικός*, of seeing (see *optic*).] The third of the ganglionic swellings which compose the optic tract in the brain of an insect.

perioptometry (per″i-op-tom′e-tri), *n.* [Gr. *περί*, around, + *ὀπτ*(*ικός*), of seeing, + *-μετρια*, < *μέτρον*, measure.] See *optometry*, 2.

periorbitis (per″i-ôr-bī′tis), *n.* [NL., < Gr. *περί*, around, + L. *orbis*, orbit, + *-itis.*] Inflammation of the periosteal lining of the orbit.

periorchitis (per″i-ôr-kī′tis), *n.* [NL., < Gr. *περί*, around, + *ὄρχις*, testis, + *-itis.*] Inflammation of the parts about the testicles, specifically of the tunica vaginalis testis.

periorthocœlous (per-i-ôr-thọ̄-sē′lus), *a.* [Gr. *περί*, around, + E. *orthocœlous.*] In *ornith.*, having the second loop of the intestine coiled and the other loops straight and closed. *Proc. Zool. Soc. London*, 1892, p. 246.

periosteitis (per-i-os-tẹ̄-ī′tis), *n.* [NL., < *perioste-um* + *-itis.*] Same as *periostitis.*

periosteoma (per-i-os-tē-ō′mä̤), *n.*; pl. *periosteomata* (-mạ-tä̤). [NL., < *perioste*(*um*) + *-oma.*] A tumor of the periosteum which becomes transformed into bone.

periosteomedullitis (per-i-os″tẹ̄-ọ-med-ụ̄-lī′tis), *n.* [NL. *periosteum* + L. *medulla*, marrow, + *-itis.*] Inflammation of both the periosteum and the bone-marrow.

periosteophyte (per-i-os′tẹ̄-ọ̄-fīt), *n.* [NL. *periosteum* + Gr. *φυτόν*, a growth.] An osseous tumor which springs from the periosteum.

periosteotomy (per-i-os-tẹ̄-ot′ọ̄-mi), *n.* [NL. *periosteum* + Gr. *-τομια*, < *ταμεῖν*, cut.] Incision into the periosteum, usually to relieve tension when the subjacent bone is inflamed.

periostosis (per″i-os-tō′sis), *n.* [NL., < Gr. *περί*, around, + *ὀστέον*, bone, + *-osis.*] 1. Inflammatory enlargement of a bone.—2. [pl. *periostoses* (-sēz).] Same as ★*periosteoma.*

periovaritis (per″i-ō-vā-rī′tis), *n.* [NL., < Gr. *περί*, around, + NL. *ovarium*, ovary, + *-itis.*] Same as *perioöphoritis.*

peripachymeningitis (per-i-pak-i-men-in-jī′tis), *n.* [NL., < Gr. *περί*, around, + NL. *pachymeningitis.*] Inflammation of the connective tissue which surrounds the dura mater of the spinal cord.

peripancreatic (per-i-pan-krē-at′ik), *a.* [Gr. *περί* + E. *pancreatic.*] Surrounding the pancreas.

peripancreatitis (per-i-pan″krē-ạ-tī′tis), *n.* [NL., < Gr. *περί*, around, + NL. *pancreas* + *-itis.*] Inflammation of the peritoneum which covers the pancreas.

peripatetic, *n.* 4. *pl.* Journeyings here and there; a continual going to and fro. [Humorous.]

> J—— established an elaborate system of *peripatetics* through the galleries, with the hope of killing time.
>
> *N. Y. Times*, June 12, 1894.

Peripateticism, *n.* 2. [*l. c.*] The practice of walking to and fro; pedestrianism.

> The rest had turned in, after much of that sham *peripateticism* that the old traveller affects on board ship.
>
> *All the Year Round*, June 4, 1859, p. 133.

peripatid (pe-rip′ạ̄-tid), *n.* and *a.* **I.** *n.* A member of the family *Peripatidæ.*

II. *a.* Having the characters of or belonging to the family *Peripatidæ.*

peripatoid (pe-rip′ạ̄-toid), *a.* [NL. *Peripatus* + *-oid.*] Resembling myriapods of the genus *Peripatus.*

Peripharyngeal ridge. Same as *peripharyngeal band* (which see, under *peripharyngeal*). *Parker and Haswell*, Textbook of Zoology, II. 15.

peripheral, *a.*—**Peripheral theory of emotion.** See *James-Lange* ★*theory.*

II. *n.* One of the outer bony plates of the carapace of a turtle: commonly termed *marginal.*

peripherale (pe-rif-ẹ-rā′lē), *n.*; pl. *peripheralia* (-li-ä̤). Same as ★*peripheral.*

peripheroneural (pe-rif″ẹ-rọ̄-nū′rạl), *a.* [Irreg. < Gr. *περιφέρ*(*εια*), periphery, + *νεῦρον*, nerve, + *-al*¹.] Of or pertaining to the nerves which lie at the surface of the body.

> External psychic and autopsychic impressions transmitted *periphero-neural* impressions and similar exciting intestinal sources of peripheral irritation such as those which cause infantile convulsions, superadded to other forms of intestinal toxicity.
>
> *Alien. and Neurol.*, Aug., 1904, p. 326.

periphery, *n.* **II.** *a.* Pertaining to a periphery.—**Periphery angle,** an inscribed or a tanchord angle.

Periphractic region, a region which incloses others within itself.

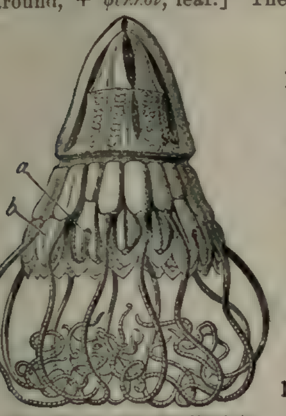
periphratic (per-i-frat′ik), *a.* Same as *periphractic.*

periphraxis (per-i-frak′sis), *n.* [NL., < Gr. *περίφραξις*, fencing about. See *periphraxy.*] A number associated with a place of two or more dimensions and indicating how many independent places it contains for simple closed pellicules, or bags, that have not room in the place to shrink indefinitely toward lines by an ordinary motion.

periphraxy, *n.* 2. In *geom.*: (*a*) The state of being periphractic. (*b*) The reduction of a periphractic surface or region to one that is not periphractic by cutting it across.

periphyll (per′i-fil), *n.* [See *periphyllum.*] 1. Same as *periphyllum.*—2. A gland, so called because it occurs chiefly near the margin of leaves. *Lindley*, Introd. Bot. (4th ed.), II. 307. *N. E. D.*

Periphylla (per-i-fil′a̤), *n.* [NL., < Gr. περί around, + φύλλον, leaf.] The typical genus of the family *Periphyllidæ*. *Haeckel.*



Periphylla mirabilis (after Haeckel).
The division of the exumbral surface into pedalia is well shown. *a*, tentaculocyst (interradial); *b*, subradial pedalia; four perradial and eight adradial tentacles are present.
(From Lankester's "Zoology.")

Periphyllidæ (per-i-fil′i-dē), *n. pl.* [NL. *Periphylla* + *-idæ.*] A family of *Peromedusæ* having 12 tentacles, 4 rhopalia, and 16 marginal lobes. It contains the genera *Periphylla* and *Peripalma*.

periplasm, *n.* 2. In ferns, the residuum of the dissolved tapetal walls, which forms a mucilaginous protoplasmic mass in which the spores eventually lie embedded. *Strasburger*, Text-book of Bot., p. 441.

periplast, *n.* 2. The peripheral or cytoplasmic portion of the cell, as distinguished from the endoplast, or nucleus: same as *periblast*. *Huxley*, 1853.—3. An indefinite term for the attraction-sphere of the cell. *Vejdovský*, 1888. — **Daughter periplast.** Same as ★*centrosome.*

periplegmatic (per″i-pleg-mat′ik), *a.* [Gr. περι, about, + πλέγμα, anything twined, < πλέκειν, twine, plait. See *plait.*] Noting an orbit of a kind met with in the problem of three or more bodies. According to the definition of Gyldén, who introduced the term, it is "a curve which keeps within the space between two concentric spheres, and at every point turns its concavity towards a straight line drawn through the center in such a way that a perpendicular dropped upon that line from the point under consideration shall pass through the inner sphere." Orbits of this kind may intertwine with each other; hence the name. *Science*, May 6, 1904, p. 720.

peripleural (per-i-plö′ral), *a.* [Gr. περί, around, + NL. *pleura* + *-al*^{1}.] Surrounding the pleura; noting the connective tissue on the attached surface of the pleura. *Buck*, Med. Handbook, II. 108.

peripneumonia (per″i-nū-mō′ni-a̤), *n.* [NL., < Gr. περί, around, + πνεύμων, lung.] 1. Pleuropneumonia.—2. Lobar pneumonia.

peripneumonitis (per-i-nū-mọ-nī′tis), *n.* [NL., < Gr. περί, around, + πνεύμων, lung, + *-itis.*] Same as ★*peripneumonia.*

peripneustic (per-ip-nū′stik), *a.* [Gr. περί, around, + πνευστός, < πνεῖν, breathe, + *-ic.*] Having prothoracic and a complete set of abdominal spiracles, the mesothoracic pair being atrophied or closed. This condition is found in the larvæ of *Neuroptera*, *Mecoptera*, *Trichoptera*, *Lepidoptera*, most *Diptera* and most of the *Hymenoptera*, as well as most *Coleoptera*.

peripodal (pe-rip′ọ-da̤l), *a.* [Gr. περί, around, + πούς (ποδ-), foot, + *-al*^{1}.] Surrounding the feet. — **Peripodal cavity,** in *insect embryol.*, the cavity formed by the invagination in which the appendages are situated.

peripolar (per-i-pō′lär), *a.* [Gr. περί, around, + πόλος, pole, + *-ar*^{3}.] In *electrotherap.*, surrounding the polar (zone).—**Peripolar zone,** the area which encircles the polar zone in the therapeutic application of electricity.

periproctal (per-i-prok′ta̤l), *a.* [Gr. περί, around, + πρωκτός, anus, + *-al*^{1}.] Surrounding the anus or rectum; specifically, of or pertaining to the periproct or anal region of echinoderms.

periproctic (per-i-prok′tik), *a.* Same as ★*periproctal.*

periproctitic (per″i-prok-tit′ik), *a.* [*periproctitis* + *-ic.*] Noting inflammation of the tissues which surround the rectum; affected with periproctitis.

peripteral, *a.* II. *n.* Any peripteral building, especially a Greek or Roman temple with columns on every side. Also *peripteros.* See cut at *opisthodomus.*

Periptychidæ (per-ip-tik′i-dē), *n. pl.* [NL.] A family of extinct mammals, belonging to the suborder *Condylarthra*, having a bunodont dentition, simple premolars, and five digits on each foot. The type genus, *Periptychus*, is from the Lower Eocene of New Mexico.

peripyema (per″i-pī-ē′ma̤), *n.* [NL., < Gr. περιπύημα, surrounding suppuration.] Suppuration surrounding a tooth or other parts.

peripylarian (per-i-pī-lā′ri-a̤n), *a.* [NL. *Peripylaria* + *-an.*] Having the characteristics of the *Peripylaria*; having the central capsule uniformly perforated by numerous fine pores, as in certain radiolarians.

peripyloric (per″i-pī-lor′ik), *a.* [Gr. περί, around, + NL. *pylorus* + *-ic.*] Surrounding the pylorus.

perique (pe-rēk′), *n.* [F. in Louisiana: said to be named from *Pierre* Chenet, who introduced tobacco culture among the Acadians of Louisiana.] 1. A tobacco produced in limited quantity in Louisiana by the descendants of the Acadians, mostly in St. James Parish. It is cured by subjecting it to intense pressure for twenty-four hours, thus forcing the juice to the surface, and then exposing it to the air for a few minutes during which the juices are reabsorbed. This process, which is many times repeated, calls the oxidizing enzyms into the fullest activity. The product is black but not strong, the nicotine being partly destroyed, and possesses a rich spirituous flavor which has given it great fame. It is marketed in the form of carrots.
2. The variety of tobacco-plant from which perique tobacco is made.

perisarcal (per-i-sär′ka̤l), *a.* Same as *perisarcous.*

perisark, *n.* Same as *perisarc.*

Perischoëchinoidea (pe-ris″kọ-ek-i-noi′dẹ-a̤), *n. pl.* [NL., < Gr. περίσχ(εσις) (irreg. < περιέχειν, encompass) + NL. *Echinoidea.*] In *zoöl.*, an order of regular echinoids having more than two series of interambulacral plates and more than two series of uniparous ambulacral plates. Their tests are spherical or ovoid, with plates either thick and rigid or thin and overlapping. The order includes a number of genera, *Archæocidaris*, *Palechinus*, *Oligoporus*, *Melonites*, etc., and all its representatives except one are of Paleozoic age.

perisclerium (per-i-sklē′ri-um), *n.* [NL., < Gr. περί, around, + σκληρός, hard. See *sclere.*] Fibrous tissue, surrounding ossifying cartilage as periosteum surrounds bone.

> The *perisclerium* is continuous with the periost of the pedicel portion [of the horn].
> *Proc. Zool. Soc. London*, 1902, I. p. 212.

periscope, *n.* 3. In *photog.*, a photographic lens having a wide angle (90° or more).

Periscopic eyepiece. See ★*eyepiece.*

perish^{1} (per′ish), *n.* [*perish*^{1}, *v. i.*] The act of perishing: in the following slang phrase.—**To do a perish,** to come near perishing; to do the act of perishing; to do a risky thing. [Australian slang.]

> I *did a* little *perish* for you, Helen; but the beast [exhausted horse] held out, and here is the charm.
> *J. L. Stanley*, Through Deep Waters, iii.

perisher (per′ish-ėr), *n.* An extreme action; the worst thing that could be done, under the circumstances: also, when applied to a person, a 'bounder'; a 'blighter'; a thoroughly unacceptable person. [Slang.]

> He went a tremendous *perisher*, backed the wrong horse and was cleaned out.
> *E. Browne*, Benton's Luck, iii.

perisigmoiditis (per-i-sig-moi-dī′tis), *n.* [Gr. περί, around, + E. *sigmoid* + *-itis.*] Inflammation of the tissues about the sigmoid flexure. *Med. Record*, Aug. 17, 1907, p. 274.

perisinuitis (per-i-sin-ụ̄-ī′tis), *n.* [NL., < Gr. περί, around, + L. *sinus* (*sinu-*), a hollow (sinus), + *-itis.*] Inflammation of the tissues which lie immediately about one of the venous sinuses of the brain.

perisinuous (per-i-sin′ū-us), *a.* [Gr. περί, around, + L. *sinus* (*sinu-*), a hollow (a sinus), + *-ous.*] Situated about one of the sinuses of the brain.

perisinusitis (per-i-sin-ụ̄-sī′tis), *n.* An improper form for ★*perisinuitis.*

Perisiphonia (per″i-sī-fō′ni-a̤), *n.* [NL., < Gr. περί, around, + σίφων, a tube, siphon.] The typical genus of the family *Perisiphonidæ*. *Allman*, 1888.

Perisiphonidæ (per″i-sī-fon′i-dē), *n. pl.* [NL. *Perisiphonia* + *-idæ.*] A family of campanularian hydroids having the hydrocaulus enveloped by peripheral tubes and the hydrothecæ never adnate and carried by the axial tube only. It includes the genera *Perisiphonia*, *Lafoëa*, *Cryptolaria*, and *Lictorella*. Also *Perisiphoniidæ.*

perisperm, *n.* 2. The pericarp or even the integuments of a seed. *Jackson*, Glossary.

perispermal (per-i-spėr′ma̤l), *a.* [*perisperm* + *-al*^{1}.] Same as *perispermic.*

perisphalsis (per-i-sfal′sis), *n.* [NL., < Gr. περίσφαλσις, a causing to slip around (used as in def.), < περισφάλλεσθαι, slip around.] Manipulation by rotation for the purpose of reducing a dislocated bone.

perisphere (per′i-sfēr), *n.* [Gr. περί, around, + σφαῖρα, sphere.] The outer zone or region of the attraction-sphere of a nerve-cell: opposed to *centrosphere*. *Von Lenhossék*, 1895.

Perisphinctes (per-i-sfingk′tēz), *n.* [NL., < Gr. περί, around, + σφιγκτός, bound.] A genus of pachycampylous *Ammonoidea* with discoid shells. They have rounded or subquadrate whorls, ornamented by non-tuberculated ribs, simple on the sides and bi- or trifurcating on the venter, which they completely traverse. The suture-line is very complex. The genus is abundantly represented in the middle part of the Upper Jurassic of Europe and western America.

perisplenic (per-i-splen′ik), *a.* [Gr. περί, around, + σπλήν, the spleen, + *-ic.*] Surrounding the spleen.

perisporiaceous (per-i-spō-ri-ā′shius), *a.* Having the characters of or resembling fungi of the family *Perisporiaceæ.*

Perisporiales (per-i-spō-ri-ā′lēz), *n. pl.* [NL., < *Perisporium* + *-ales.*] An order of pyrenomycetous fungi named from the genus *Perisporium*, having superficial perithecia frequently accompanied by a black aërial mycelium.

Perisporium (per-i-spō′ri-um), *n.* [NL. (Fries, 1821), < Gr. περί, around, + σπόρος, seed.] A genus of pyrenomycetous fungi of the order *Perisporiales*, having black superficial perithecia and elongate, dark-colored, 4-celled spores. About 10 species are included in the genus. *P. Kunzei* occurs on old paper, twine, etc.

Perissias (pe-ris′i-as), *n.* [NL., < Gr. περισσός, excessive, extraordinary.] A genus of flounders found in the deep sea in the Gulf of California and off the west coast of Lower California.

peristaphyline (per-i-staf′i-lin), *a.* [Gr. περί, around, + σταφυλή, bunch of grapes, swollen uvula.] About or encircling the uvula: noting two muscles, the external and the internal peristaphyline, or, respectively, the tensor palati and the levator palati muscles.

Peristediidæ (per″i-stẹ-dī′i-dē), *n. pl.* [NL., < *Peristedion* + *-idæ.*] A family of fishes, commonly known as the deep-water gurnards, found in the deep sea.

Peristedion (per-i-stē′di-on), *n.* [NL., an error for **Peristethion*, < Gr. περί, around, + στηθίον, dim. of στῆθος, breast.] A genus of deep-sea fishes of the family *Peristediidæ.*

peristeromorphous (pe-ris″tẹ-rọ-môr′fus), *a.* Same as *peristeromorphic.*

peristeronic (pe-ris-tẹ-ron′ik), *a.* [Gr. περιστερών, dove-cote, + *-ic.*] Pertaining to or concerned with pigeons: as, The National *Peristeronic* Society. *N. E. D.*

peristerophily (pe-ris-tẹ-rof′i-li), *n.* [Gr. περιστερά, a pigeon, + φιλεῖν, love.] The rearing of pigeons; specifically, the training of carrier-pigeons for military service. [Rare.]

peristylium (per-i-stil′i-um), *n.*; pl. *peristylia* (-a̤). [L.: see *peristyle.*] An unroofed space inclosed, or nearly inclosed, by a peristyle.

perisystole (per-i-sis′tọ-lē), *n.* [NL., < Gr. περί, around, + συστολή, systole.] The interval of time between the cardiac systole and diastole.

peritendineum (per″i-ten-din′ẹ-um), *n.*; pl. *peritendinea* (-a̤). [NL., < Gr. περί, around, + L. *tendo* (*tendin-*), tendon.] The sheath of a tendon.

peritestis (per-i-tes′tis), *n.* [NL., < Gr. περί, around, + L. *testis*, testis.] The tunica albuginea testis. See *albuginea.*

peritheca (per-i-thē′ka̤), *n.*; pl. *perithecæ* (-sē). [Gr. περί, around, + θήκη, a case.] The epitheca surrounding a compound group of stony corals.

perithecal (per-i-thē′ka̤l), *a.* [*peritheca* + *-al*^{1}.] Pertaining to or resembling a peritheca. *Proc. Zool. Soc. London*, 1900, p. 125.

perithelial (per-i-thē′li-a̤l), *a.* [*perithelium* + *-al*^{1}.] Relating to the perithelium. *Buck*, Med. Handbook, I. 354.

perithelioma (per-i-thē-li-ō′ma̤), *n.*; pl. *peritheliomata* (-ma̤-ta̤). [NL., < *peritheli(um)* + *-oma.*] A tumor originating from the outer wall of a blood-vessel. *Jour. Med. Research*, March, 1907, p. 138.

perithelium (per-i-thē′li-um), *n.*; pl. *perithelia* (-a̤). [NL., < Gr. περί, around, + (*epi*)*thelium.*] The sheath or outer coat of a small blood-vessel.

peritomize (pe-rit′ọ̄-mīz), *v. t.*; pret. and pp. *peritomized*, ppr. *peritomizing*. [*peritom*(*y*) + *-ize*.] To perform the operation of peritomy upon.

> The cornea recovers its transparency more completely in those cases which have been *peritomised* than in those in which other methods have been adopted.
> *Lancet*, May 30, 1903, p. 1516.

peritomy (pe-rit′ọ̄-mi), *n.* [Gr. *περιτομή*, circumcision, < *περί*, around, + *-τομος*, < *ταμεῖν*, cut.] 1. Excision of a strip of the conjunctiva, usually encircling the cornea, for the cure of pannus. *Lancet*, June 6, 1903, p. 1615. —2. Same as *circumcision*.

Peritoneal hernia. Same as ★*gut-tie*, 1.

peritoneomuscular (per″i-tọ̄-nē″ọ̄-mus′kụ̄-lạ̈r), *a.* Relating to or composed of peritoneum and muscular tissue. *Buck*, Med. Handbook, I. 18.

peritonism (per′i-tō-nizm), *n.* [*periton*(*eum*) + *-ism*.] 1. A pathological condition marked by the symptoms of peritonitis without actual inflammation of this membrane.—2. A condition which resembles shock, sometimes accompanying serious disease of some of the viscera having a peritoneal covering.

peritonsillar (per-i-ton′si-lạ̈r), *a.* [Gr. *περί*, around, + L. *tonsillæ*, tonsils, + *-ar*³.] Surrounding a tonsil. *Buck*, Med. Handbook, III. 332.

peritonsillitis (per-i-ton-si-lī′tis), *n.* [NL., < Gr. *περί*, around, + L. *tonsillæ*, tonsils, + *-itis*.] Inflammation of the tissues about a tonsil.

peritrichan, *n.* **II.** *a.* Same as *peritrichous*.

peritrichic (per-i-trik′ik), *a.* [Gr. *περί*, around, + *θριξ* (*τριχ-*), hair.] In *bacteriol.*, surrounded by flagellæ: said of micro-organisms.

peritrochoid (per-i-trō′koid), *n.* [Gr. *περί*, around, + E. *trochoid*.] The curve traced out by a point on the radius, or on the radius produced, of a circle which rolls without sliding upon a smaller circle within it. The contact is internal and the rolling circle touches the outside of the fixed circle.

peritrophic (per-i-trof′ik), *a.* [Gr. *περί*, around, + *τροφή*, nourishment.] Around the food, as the peritrophic membrane of an insect's alimentary canal.

periungual (per-i-ung′gwạl), *a.* [Gr. *περί*, around, + E. *ungual*.] Situated about the nail.

periuranium (per″i-ụ̄-rā′ni-um), *n.*; pl. *periurania* (-ạ̈). [Gr. *περί*, about, + NL. *Uranus*, Uranus.] The point which is nearest to Uranus in the orbit of any one of its satellites.

periureteral (per″i-ụ̄-rē′tẹ-rạl), *a.* [Gr. *περί*, around, + *οὐρητήρ*, ureter, + *-al*¹.] Surrounding a ureter.

periureteritis (per″i-ụ̄-rē-tẹ-rī′tis), *n.* [Gr. *περί*, around, + NL. *ureter* + *-itis*.] Inflammation of the connective tissue surrounding a ureter. *Med. Times*, Aug., 1907, p. 234.

periurethral (per″i-ụ̄-rē′thrạl), *a.* [Gr. *περί*, around, + *οὐρήθρα*, urethra, + *-al*¹.] Surrounding the urethra. *Buck*, Med. Handbook, I. 654.

periurethritis (per-i-ū-rẹ̄-thrī′tis), *n.* [NL., < Gr. *περί*, around, + *οὐρήθρα*, urethra, + *-itis*.] Inflammation of the tissues about the urethra.

perivaginal (per-i-vaj′i-nạl), *a.* [Gr. *περί*, around, + NL. *vagina* + *-al*¹.] Surrounding the vagina. *Buck*, Med. Handbook, I. 655.

perivaginitis (per-i-vaj-i-nī′tis), *n.* [NL., < Gr. *περί*, around, + NL. *vagina* + *-itis*.] Inflammation of the connective tissue about the vagina.

perivertebral (per-i-vėr′tē-brạl), *a.* and *n.* [Gr. *περί*, around, + L. *vertebra*, vertebra, + *-al*¹.] **I.** *a.* Surrounding a vertebra.

II. *n.* In *ichth.*, the neural arch above the centrum of each vertebra; the neurapophysis. *Starks*, Synonymy of the Fish Skeleton, p. 524.

perivesical (per-i-ves′i-kạl), *a.* [Gr. *περί*, around, + L. *vesica*, bladder, + *-al*¹.] Surrounding the bladder: as, *perivesical* cellulitis. *Buck*, Med. Handbook, I. 20.

periwinkle², *n.* 3. In Australia, a name given to the gastropod *Turbo undulatus*.

perjink (pėr-jingk′), *a.* [Origin uncertain.] Trim; exact; precise; prim. [Scotch.]

> Hendy had left home glumly, declaring that the white collar Jess had put on him would throttle him; but her feikieness ended in his surrender, and he was looking unusually *perjink*.
> *J. M. Barrie*, Window in Thrums, xiv.

perjinkety (pėr-jing′kẹ-ti), *a.* Same as ★*perjink*.

Perkinsia (pėr-kin′zi-ạ̈), *n.* [NL., named after George C. *Perkins*, a governor of California.] A genus of clupeoid fishes found on the California coast.

perknite (pėrk′nīt), *n.* [Gr. *περκνός*, dark, + *-ite*².] In *petrog.*, a name given by H. W. Turner (1901) to phanerocrystalline igneous rocks composed chiefly of monoclinic amphibole and monoclinic pyroxene. Chemically they are distinguished by being lime-magnesia-silicate rocks.

perl, *n.* and *v.* A simplified spelling of *pearl*.

perlate (pėr′lāt), *n.* Acid phosphate of sodium.—**Salt perlate**, disodium orthophosphate or common phosphate of soda.

perlatin (pėr′lạ̄-tin), *n.* [NL. *perlata* (see def.) + *-in*².] A pale-yellow crystalline compound, $C_{21}H_{20}O_7$, occurring in the lichen *Parmelia perlata*.

perlèche (pėr-lāsh′), *n.* [F.: origin uncertain.] A disease of the mouth in children, the chief symptom of which is a thickening with cracks at the angles of the mouth.

perlenic (pėr-len′ik), *a.* [*per-*, 3, + *le*(*ucite*) + *n*(*ephelite*) + *-ic*.] In *petrog.*, extremely lenic; having the normative lenic minerals (leucite, nephelite, sodalite) more than seven times the normative feldspars. See ★*per-*, 3, and ★*rock*¹.

perlid (pėr′lid), *n.* and *a.* **I.** *n.* A member of the plecopterous family *Perlidæ*.

II. *a.* Having the characters of or belonging to the family *Perlidæ*.

perling (pėr′ling), *n.* Same as *purlin*.

perlite², *n.* See ★*pearlite*.

perlon (pėr′lon), *n.* [Origin not ascertained.] A name used in New Zealand for *Notorhynchus indicus*, a notidanoid shark.

perlsucht (perl′sŏŏ̆cht), *n.* [G., < *perle*, pearl, + *sucht*, sickness.] Pearl-disease or tuberculosis in cattle.

> The case obviously shows that inoculation with *perlsucht* may lead to lupus and the subcutaneous formation of tuberculous pus. *Lancet*, April 4, 1903, p. 998.

permagnesic (pėr-mag-nē′sik), *a.* [*per-*, 3, + *magnesic*.] In *petrog.*, in the quantitative system of classification, extremely magnesic; having seven times as much MgO as FeO. See ★*per-*, 3, and ★*rock*¹.

Permanent sample plot. See ★*experiment area*.—**Permanent set.** See ★*set*¹.

Permanganate of lime. See ★*lime*¹.

permeability, *n.*—**Gravitational permeability**, the property of gathering in the lines of the earth's force as a mass of iron gathers in the lines of a magnetic field.

> The effect of gravitational permeability, if any form of matter possessed such a property, would be to modify the strength and direction of the earth's field in the neighborhood of the body; but no such effect has been detected even by the most delicate experiments. *J. H. Poynting*, in Smithsonian Rep., 1901, p. 208.

permeameter (pėr-mẹ̄-am′e-tėr), *n.* [*permea*(*bility*) + Gr. *μέτρον*, measure.] An instrument for the determination of the magnetic induction in iron, or the permeability, by means of the tractive force across a gap or joint in the magnetic circuit. The name was first applied to a simple apparatus devised by S. P. Thompson for the testing of samples of iron. It consisted of a rectangular block of wrought iron *b*, Fig. 1, with a central opening or slot into which a magnetizing-coil *c* is inserted. Through a cylindrical hole in the iron, which is in line with and forms a continuation of the axial opening of the coil, the specimen to be tested is inserted. The lower end of the specimen, which is an iron rod, is ground smooth and rests upon the polished surface of the iron block within the slot at *s*. When the magnetizing current is sent through the coil the base of the rod clings to the iron block and the force necessary to remove it, which is determined by means of a spring balance *w*, affords a measure of the permeability of the rod. The name is likewise applied to more refined instruments for the determination of permeability by means of the tractive force, the best known of which is the magnetic balance of Du Bois in which the test-piece *t*, Fig. 2, is clamped between two wrought-iron blocks $a_1 a_2$. The magnetizing-coil *c* which surrounds the middle of the test-piece has 100 turns of wire. A yoke of iron *y y*, which completes the magnetic circuit, is balanced above the blocks a_1 a_2 upon a knife-edge and is free to oscillate through a small range between the contact points c_1 c_2. The tractive force due to the magnetic flux is measured by means of weights on the horizontal scale attached to the yoke.

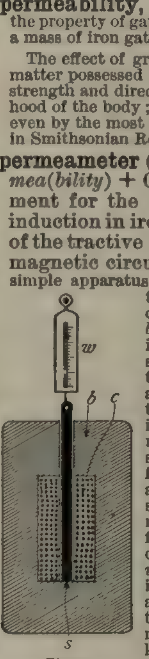


Fig. 1.

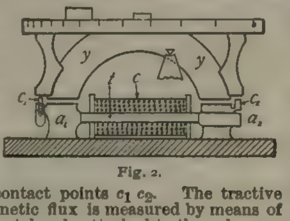


Fig. 2.

> Instruments of this kind for determining the flux density corresponding to a given magnetizing force in a complete magnetic circuit formed in part or in whole of a particular material are called *permeameters*.
> *Encyc. Brit.*, XXVIII. 119.

Drysdale's permeameter, an instrument for testing the magnetic qualities of the castings of generators or motors. The magnetizing- and exploring-coils are wound on a hollow plug which is inserted in an annular hole drilled in the casting by means of a special tool. The core left by this drill serves as a test-piece and the surrounding iron of the casting completes the magnetic circuit.—**Esterline's permeameter**, an instrument of the same general form as Koepsel's permeameter (see below), but with an armature in place of the moving coil. The voltage obtained, when the armature is driven at a given speed and a known current traverses the magnetizing-coil, gives the permeability of the yoke.—**Ewing's permeameter**, a permeameter the magnetic circuit of which consists of two bars surrounded by magnetizing-coils and two heavy yokes of soft iron. The bars are the samples to be tested.—**Koepsel's permeameter**, a permeameter the magnetic circuit of which consists of two pole-pieces like those of a voltmeter with a moving coil, as in such instruments, mounted in the cylindrical air-space between them. The test-piece, in the form of a rod surrounded by a magnetizing-coil, constitutes the yoke between the pole-pieces. The deflection of the moving coil when a known current traverses the magnetizing-coil indicates the permeability of the yoke.—**Picou's permeameter**, a permeameter in which the test-piece is in the form of a rectangular bar clamped between two massive U-shaped yokes of soft iron. The yokes are provided with windings the magnetizing power of which is adjusted so as precisely to overcome the reluctance of the joints, while a third coil serves to magnetize the test-piece.—**Torsion-permeameter**, an apparatus for the measurement of magnetic permeability in which the deflection of a suspended horse-shoe magnet is balanced by the torsional force of the suspending wire.

permeance (pėr′mẹ̄-ạns), *n.* [*perme*(*ate*) + *-ance*.] 1. The act or fact of permeating; permeation.—2. In *phys.*, the reciprocal of the reluctance of a magnetic circuit; magnetic conductance. *Trans. Amer. Inst. Elect. Engin.*, 1900, p. 680.—**Magnetic permeance**, the conducting power for flux, or lines of force, of a magnetic circuit: the reciprocal of reluctance.—**Specific permeance**, the magnetic permeance of a material compared with that of air; permeability.

permeation, *n.*—**Magnetic permeation**, magnetic flux through any medium which permits the passage of lines of force.

Permic (pėr′mik), *a.* [*Perm* + *-ic*.] Same as *Permian*.

permineralization (pėr-min″ẹ-rạl-i-zā′shọn), *n.* [*per-* + *mineralization*.] That change of character, exhibited by most fossil remains, in which the gradual removal of the animal substance has been accompanied by the replacement by mineral matter.

> The term *permineralization* applies to that condition of fossil remains of animals which differ least from their original condition as parts of living animals.
> *C. A. White*, in Smithsonian Rep. (Nat. Mus.), 1892, [p. 264.

permiric (pėr-mir′ik), *a.* [*per-*, 3, + *miric*.] In *petrog.*, extremely miric; having more than seven times as much MgO + FeO as femic CaO. See ★*per-*, 3, and ★*rock*¹.

permirific (pėr-mi-rif′ik), *a.* [*per-* + *mirific*.] Very wonderful of its kind. [Rare.]

> When the vein of the heart is touched by the grace of the Holy Spirit, forthwith, by the *permirific* sweetness of the harmony, an exceeding operation of sacred virtue is perceived more manifestly to spring forth. With this sweetness of spirit, Godric, the man of God, was filled from the very time of his boyhood.
> *Kingsley*, The Hermits, p. 314.

permirlic (pėr-mėr′lik), *a.* [*per-*, 3, + *mirlic*.] In *petrog.*, extremely mirlic; having seven times as much of MgO + FeO and the femic CaO as of femic $K_2O + Na_2O$. See ★*per-*, 3, and ★*rock*¹.

permissory (pėr-mis′ọ̄-ri), *a.* Pertaining to or of the nature of permission; permissive.

permit², *n.*—**Indian River permit.** Same as *round* ★*pampano*.

permitic (pėr-mit′ik), *a.* [*per-*, 3, + *mitic*.] In *petrog.*, extremely mitic; having more than seven times as much of mitic minerals (magnetite, hematite, ilmenite, titanite, perovskite, rutile, etc.) as of polic minerals (pyroxene, olivin, akermanite). See ★*per-*, 3, and ★*rock*¹.

permittance, *n.* 2. In *elect.*, the power of a dielectric to permit or aid induction.

permitted (pėr-mit′ed), *p. a.* Allowed; allowed expressly, as by law.—**Permitted islands, permitted ports**, ports in which it is permissible to trade.

permittivity (pėr-mi-tiv′i-ti), *n.* [*permit*¹ + *-ive* + *-ity*.] In *elect.*, degree of permittance; the ratio of permittance of a dielectric to that of air.

permutate (pėr-mū′tāt), *v. t.*; pret. and pp. *permutated*, ppr. *permutating*. [L. *permutatus*, pp. of *permutare*, change throughout.] It.

To interchange the substance of.—2. To exchange.—3. In *math.*, to subject to permutation or change of order. See *permute*, 3.

permutation, *n.*—**Cyclic permutation.** Same as *cyclical permutation.*—**Direct permutation,** one resulting from an even number of interchanges.—**Exponent of irregularity of a permutation.** See ★*exponent.*—**Odd permutation,** one resulting from an odd number of interchanges.

permutational (pėr-mų̈-tā′shọn-al̤), *a.* [*permutation* + *-al*^{1}.] Pertaining to, or of the nature of, permutation.

> These numerators are found in the 7th line of a table of figures which I call the *Permutational* Triangle.
> *J. T. Gulick*, in Jour. Linn. Soc., Zool., XX. 250. [*N. E. D.*

Perna (pėr′nä̤), *n.* [NL., < Gr. πέρνα, a ham.] A genus of prionodesmacean pelecypods typical of the family *Pernidæ.* They have equivalve shells with terminal beaks, edentulous hinge, and numerous ligamentary grooves. The genus ranges from the Trias to the Recent, and is specially abundant in the Jurassic and Tertiary formations.

pernavigate (pėr-nav′i-gāt), *v. t.*; pret. and pp. *pernavigated*, ppr. *pernavigating.* [L. *pernavigatus*, < *pernavigare*, sail through.] To navigate or sail through: as, he *pernavigated* the Straits of Magellan; they *pernavigated* the ocean.

Pernidæ (pėr′ni-dē), *n. pl.* [NL., < *Perna* + *-idæ.*] A family of prionodesmaceous mollusks characterized by a very broad multivincular ligament, and typified by the recent genus *Perna.*

pernyi-moth (pėr′ni-ī-môth″), *n.* A Chinese saturniid moth, *Antheræa pernyi.* Its larva is one of the tusser silkworms.

pero (pē′rō), *n.* [NL., < L. *pero*, a rawhide boot. It covers a part of the brain called the *pes* (‘foot’).] The outer layer of the olfactory lobe of the brain from which arise the olfactory nerves. *Buck*, Med. Handbook, II. 279.

perodactylism (pē-rọ-dak′ti-lizm), *n.* [Gr. πηρός, maimed, + δάκτυλος, finger, + *-ism.*] A condition of deficiency or absence of the fingers.

perodynia (pē-rọ-din′i-ạ̈), *n.* [NL., < Gr. πήρα, a pouch, + ὀδύνη, pain.] Pain in the stomach.

Peromedusæ (pē″rọ-mē-dū′sē), *n. pl.* [NL., < Gr. πήρα, pouch, + NL. *Medusæ.*] An order or suborder of *Scyphomedusæ.* They are medusiform, with 4 interradial tentaculocysts, the tentacles perradial and adradial in position, the 4 radial gastral pouches separated from one another by very short septa, and there is no alternation of generations. See cut under ★*Periphylla.*

peromelous (pē-rom′e-lus), *a.* [Gr. πηρομελής, with maimed limbs.] Resembling or having the characters of the *Peromela*, or limbless labyrinthodonts. *Huxley.* [Rare.]

Peromyscus (per-ọ-mis′kus), *n.* [NL.] A genus of rodents, typified by the common white-footed deer-mouse, *Peromyscus leucopus*, containing those small species formerly included in *Hesperomys.* It includes more species than any other North American genus.

peroneum, peronæum (per-ọ-nē′um), *n.* [NL., neut. sing. of *peronæus.* See *peroneus.*] A small ossicle, imbedded in the tendon of the peroneus longus and articulating with the cuboid in the little insectivore, *Limnogale.* *Trans. Linn. Soc.* (London), Nov., 1899, p. 510.

peronia^3 (pē-rō-nē′ạ), *n.* A corruption of ★*peonia*^{2}, which see.

peronine (pe-rō′nin), *n.* A finely crystalline compound which consists of the hydrochlorid of benzyl morphine. Its action is midway between that of morphine and codeine.

peronium (pe-rō′ni-um), *n.*; pl. *peronia* (-ạ̈). Same as *peronia*^{1}.

peronosporaceous (per-ọ-nos-pọ-rā′shius), *a.* Belonging to the *Peronosporaceæ*, a family of fungi.

Peronosporales (per-ọ-nos-pọ-rā′lēz), *n. pl.* [NL., < *Peronospora* + *-ales.*] An order of fungi of the class *Oömycetes*, so named from its principal family, *Peronosporaceæ.* Called *Peronosporineæ* by Engler and Prantl and some other authors.

Peronosporineæ (per-ọ-nos-pọ-rin′ẹ-ē), *n. pl.* See ★*Peronosporales.*

pero-olfactorius (per-ọ-ol-fak-tō′ri-us), *n.*; pl. *pero-olfactorii* (-ī). [NL.: see ★*pero* and *olfactory.*] The outer portion of the olfactory bulb.

perorational (per-ọ-rā′shọn-al̤), *a.* [*peroration* + *-al*^{1}.] Pertaining to, or of the nature of, a peroration.

perosseous (pėr-os′ẹ-us), *a.* [*per-* + *osseous.*] Transmitted through bone: noting especially the passage of sound-waves to the internal ear through the bones of the head and face.

peroxid, *n.*—**Hydrogen peroxid.** Same as ★*hydrogen dioxid.*

peroxidase (pėr-ok′si-dās), *n.* [*per-* + *oxidase.*] Same as ★*oxidase.* Also *peroxydase.*

peroxidizable (pėr-ok′si-dī-zạ̈-bl), *a.* Capable of forming a peroxid.

perpelic (pėr-pel′ik), *a.* [L. *per-*, very, + Gr. πηλός, clay, + *-ic.*] In *phytogeog.*, of very fine clayey consistency. See ★*pelogenous.*

perpendicular, *n.* 4. In *ship-building*, one of the three conventional lines perpendicular to the line of the keel, used as reference lines from which measurements in the fore-and-aft direction are taken. The conventional points through which these perpendiculars are passed vary. The *forward perpendicular* in old wooden vessels was at the intersection of the bottom line of the rabbet of the stem with the line of the lower deck. In modern practice in iron vessels it is usually at the intersection of the forward side of the stem with the normal load water-line, and this is its prescribed position in the United States navy. The *after perpendicular*, in wooden vessels, was at the intersection of the bottom line of the rabbet of the stern-post with the line of the lower deck. In modern vessels it is usually taken at the intersection of the after side of the rudder-post with the normal load-line, though it is sometimes taken through the axis of the rudder-stock. In the United States navy, however, it is taken at the intersection of the normal load water-line with the contour of the stern. The *middle perpendicular*, much less used than the other two, is midway of the length between the forward and after perpendiculars. The *length between perpendiculars* is the length of the vessel measured parallel to the keel between the forward and the after perpendiculars.—**To erect a perpendicular,** to construct from a given point a perpendicular to a given straight line when the point is on the line.—**To let fall a perpendicular,** to construct or drop from a given point a perpendicular to a given straight line when the point is not on the line.

perpend-stone (pėr′pend-stōn), *n.* Same as *perpend*^{3}.

perpetual, *a.* **II.** *n.* A perennial plant, especially a rose which blooms every month of the year.

perplication (pėr-plī-kā′shọn), *n.* [*per-* + *plication.*] A method of occluding the end of a divided artery. An incision is made in the side of the artery and the cut end is then drawn back through this opening.

perpolar (pėr-pō′lạ̈r), *n.* [L. *per*, through, + E. *polar.*] A perpendicular through the pole to the polar.

perpole (pėr′pōl), *n.* [L. *per*, through, + E. *pole*^{2}.] In *geom.*, as the pole (x_1, y_1) glides along a straight line, the perpolar will not in general turn about a point, but about some curve. But in three cases, when x_1 is constant, when y_1 is constant, when $y_1 : x_1$ is constant, that is, when the pole moves on a straight line parallel to either axis or through the center, the perpolar turns about a point, the *perpole* of the straight line.

perpolic (pėr-pol′ik), *a.* [*per-*, 3, + *polic.*] In *petrog.*, extremely polic; having more than seven times as much of polic minerals (normative pyroxene, olivin, akermanite) as of mitic minerals (magnetite, hematite, ilmenite, titanite, etc.). See ★*per-*, 3, and ★*rock*^{1}.

perpotassic (pėr-pọ-tas′ik), *a.* [*per-*, 3, + *potassic.*] In *petrog.*, extremely potassic; having more than seven times as much salic K_2O as salic Na_2O. See ★*per-*, 3, and ★*rock*^{1}.

perpsammic (pėr-sam′ik), *a.* [*per-* + Gr. ψάμμος, sand, + *-ic.*] In *phytogeog.*, coarsely sandy. See ★*psammogenous.*

perquaric (pėr-quä′rik), *a.* [*per-*, 3, + *quaric.*] In *petrog.*, extremely quaric; having more than seven times as much normative quartz as normative feldspar. See ★*per-*, 3, and ★*rock*^{1}.

perradially (pėr-rā′di-al̤-i), *adv.* In the direction or manner of a perradius. *E. T. Browne*, in Biometrika, Oct., 1901, p. 101.

perrico (pe-rē′kō), *n.* [Sp., dim. of *perro*, a dog.] A common name of *Pseudoscarus perrico*, a parrot-fish of the Pacific coast of Mexico.

perrovanter (per′ọ-van-tėr), *n.* [From the native name.] A thrush, *Mimocichla verillorum*, a native of the island of Dominica.

perruthenate (pė-rö′then-āt), *n.* [*perruthen*(*ic*) + *-ate*^{1}.] A salt which corresponds to the hypothetical perruthenic acid, as potassium perruthenate ($KRuO_4$). Sometimes written *perrutheniate.* Such a salt was formerly called a ruthenate.

perruthenic (pė-rö-then′ik), *a.* [*per-* + *ruthenic.*] Noting a hypothetical acid of the composition represented by the formula $HRuO_4$, corresponding to the acid oxid Ru_2O_7. Neither this oxid nor the acid is known, but one or two corresponding salts have been obtained, as, for instance, potassium perruthenate.

Pers. An abbreviation (*a*) of *Persia* or *Persian*; (*b*) [*l. c.* or *cap.*] of *person*; (*c*) of *personal*; (*d*) [*l. c.*] of *personally.*

persalane (pėr-sal′ān), *n.* See ★*per-*, 3, and ★*salane.*

persalt (pėr′sâlt), *n.* [*per-* + *salt*^{1}.] A salt of which the basic element or radical presents a higher degree of apparent valence than the corresponding protosalt. Thus ferric sulphate ($Fe_2(SO_4)_3$) is spoken of as one of the *persalts* of iron, in contrast to ferrous sulphate ($FeSO_4$), the corresponding protosalt of the same metal.

per saltum (pėr sal′tum). [L.] At a leap; without passing through intermediate stages or steps.

perscrutate (pėr-skrö′tāt), *v. t.*; pret. and pp. *perscrutated*, ppr. *perscrutating.* [L. *perscrutatus*, pp. of *perscrutare*, examine minutely.] To investigate or scrutinize (something) minutely. [Rare.]

> We might reply . . ., urging that the collectors of the savage myths were well acquainted with the savage languages, and that the evidence yielded by institutions was plain to the naked eye. But as long as he held that myth was a by-product of language, Mr. Max Müller seemed to think that, till we had all savage languages *perscrutated* by new Bopps and Kuhns, we could not move. *A. Lang*, in Contemporary Rev., Dec., 1900, p. 789.

Persea, *n.* 2. [*l. c.*] A plant of the genus *Persea.*—3. An unidentified tree, probably the peach-tree, sacred in ancient Egypt. See *Persea* (in etymology), and cut at *Avocado.*

> Such naturalness is unusual in the art of this period, when the conventional *persea* and the equally conventional lotus are almost the only vegetable forms which appear on the walls of the temples.
> *A. B. Edwards*, A Thousand Miles up the Nile, xiv.

Perseid, *n.* The flock of Perseids is of great extent and moves in a path apparently coincident with that of Tuttle's comet of 1862, and now forms almost a complete oval ring around the sun. It gives us, therefore, more or less of a shower each year, beginning in the latter part of July and lasting till late in August, but most abundant about August 12. The Perseids are for the most part yellowish, and move with medium velocity, not as swiftly as the bluish Leonids, but more swiftly than the Bielids.

perseite (pėr′sẹ-īt), *n.* [NL. *persea* (see def.) + *-ite*^{2}.] A crystalline heptacid alcohol, $C_7H_9(OH)_7$, which occurs in *Laurus persea*; it may be made synthetically. Also called *mannoheptite.*

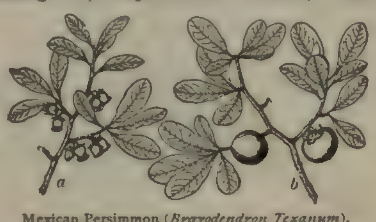
Persian bug. See ★*bug*^{2}.—**Persian dye-plant,** *Delphinium Zalil.* See ★*asbarg* and ★*zalil.*—**Persian yellow.** See ★*yellow.*

Persianize (pėr′shạ̈n-īz), *v. t.*; pret. and pp. *Persianized*, ppr. *Persianizing.* [*Persian* + *-ize*^{2}.] To make Persian in sentiments, ideas, or habits, as by imitation.

> This . . . kind of external imitation, this so-called literary cultivation of a language, frequently occurs in history. . . . Thus at Rome in the time of the Scipios, the young nobles not only studied Greek, they Hellenised the style of their own tongue. . . . To go farther back into the past, it is probable that the Persian *Persianised* in this way neighbouring tongues.
> *Tarde* (trans.), Laws of Imitation, p. 258.

persicleis (pėr′si-klīs), *n.* [*persi*(?) + Gr. κλείς, key.] A tubercle or nodule on the posterior margin of a macrurous crustacean.

persimmon, *n.*—**Mexican persimmon,** a small, branching tree, *Brayodendron Texanum*, common in central and western Texas, but attaining its maximum development in Nuevo Leon, Mexico. It is closely related to the true persimmons (*Diospyros*) and is included with them by most authors as *Diospyros Texana*, but it differs by several generic characters (united styles, anthers opening by nearly apical pores, glabrous filaments, and the absence of staminodia in the pistillate flowers). Also called *black persimmon* and *chapote.* See *chapote* and *persimmon*, 1.



Mexican Persimmon (*Brayodendron Texanum*).
a, flowering branch; *b*, fruiting branch.
(From Sargent's "Manual of the Trees of North America.")

> Next is the central Texas hill zone, with a rainfall of from over 30 to less than 25 inches, where occur mountain cedar, mountain oaks (five or six species), cedar elm, gum elastic, *Mexican persimmon*, and numerous others.
> *U. S. Dept. Agr.*, Bur. Forestry, Bulletin 47, p. 12.

persistence, *n.* **3.** In *elect.*, the time-constant of a circuit in which current is beginning to flow; the time required for an electric current to rise to $\frac{e-1}{e}$ or .634 of its final value.

persodic (pėr-sō′dik), *a.* [*per-*, 3, + *sodic.*] In *petrog.*, in the quantitative system, extremely sodic; having more than seven times as much salic soda as salic potash. See ★*per-*, 3, and ★*rock*¹.

persodine (pėr-sō′din), *n.* [*per-*, 3, + *sod*(*ium*) + *-ine*².] A trade-name for a solution of sodium persulphate which contains 12 in 1000 parts of water: used as an antiseptic.

persolution (pėr-sǫ-lū′shǫn), *n.* [*per-* + *solution.*] In *chem.*, solution of a persalt of a metal, as, for instance, a solution of perchlorid of tin (stannic chlorid) or persulphate of iron (ferric sulphate). The term is not in general use or to be commended.

person, *n.*—**Acceptance of persons.** See ★*acceptance.*—**Diligence against the person.** See ★*diligence.*—**Perpetual person,** in *law*, a corporation the duration of which is perpetual or undefined.

Personal selection. See ★*selection.*

personalist, *n.* **2.** An advocate of personalism in any sense.

personality, *n.* **Double** or **alternating personality,** in *psychol.* and *mental pathol.*, a more or less radical change of disposition, involving lapse of memory, alteration or reversal of emotion, etc., which may be induced by suggestion in the hypnotic state, and occurs spontaneously under certain (as yet very imperfectly understood) abnormal conditions; a change of behavior so marked as to suggest the housing of two different selves or persons in the same organism. See *double consciousness*, under *consciousness*.

> In the pathological cases known as those of *double* or *alternate personality* the lapse of memory is abrupt, and is usually preceded by a period of unconsciousness or syncope lasting a variable length of time.
> *W. James*, Prin. of Psychol., I. 379.

Personality classes. See ★*class.* **Secondary, tertiary,** etc., **personality,** in *abnormal psychol.*, a group of experiences, split off or dissociated from the normal or primary personality of an individual, which become systematized and organized, and thus constitute a second, third, etc., independent (though imperfect) personality, appearing in alternation with the normal. The phenomena are sometimes termed those of double (triple, etc.) consciousness, or of double (triple, multiple) personality.

> Cases of this kind are commonly known as "double" or "multiple personality," according to the number of persons represented, but a more correct term is disintegrated personality, for each *secondary personality* is a part only of a normal whole self.
> *M. Prince*, Dissociation of a Personality, p. 3.

persona non grata (pėr-sō′nạ̈ non grä′tạ̈). [L. See *persona grata.*] One who is not acceptable; one who is not in favor.

personeity, *n.* **2.** Same as *animism.* [Rare.]

> In order to obtain an intelligent grasp of the religion of tribes in their several culture provinces, it must be understood: (1) That the form of belief called animism by Tylor (more correctly speaking, *personeity*), was universal: everything was somebody, alive, sentient, thoughtful, wilful. This *personeity* lifts the majority of earthly phenomena out of the merely physical world and places them in the spirit world. Theology and science are one. All is supernatural.
> *Encyc. Brit.*, XXV. 379.

personifiable (pėr-son′i-fī-ạ-bl), *a.* Capable of being personified.

> And if in Fenwick's unoccupied chair there did not plainly sit all the time a silently upbraiding ghost, clad in a fog-dampened mourning veil, it was because outraged domesticity is not a *personifiable* quality. However, there was something in the nothing before us wonderfully potent and depressing.
> *G. A. Hibbard*, Harper's Mag., June, 1890, p. 48.

persp. [*l. c.* or *cap.*] An abbreviation of *perspective.*

perspectartigraph (pėr-spek-tär′ti-gráf), *n.* [L. *perspectus*, a looking through, + *ars* (*art-*), art, + γράφειν, write.] An instrument by means of which a true perspective drawing of the objects viewed through a movable telescope may be mechanically made. *Sci. Amer.*, April 2, 1904, p. 268.

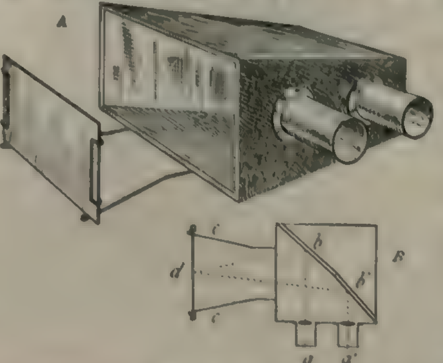
perspective. **I.** *a.* **4.** In *geom.*, said of two figures when each point of one can be so paired with a point of the other that the joins of all the pairs concur in one point.—**Perspective planes,** in *geom.*, planes which are correlated by projection from an outside vertex.—**Perspective ranges, sect, sheaves.** See ★*range*, ★*sect*¹, ★*sheaf*¹.—**Perspective view,** a view or drawing on a flat surface which shows an object in perspective, as distinguished from a view which shows an object in plane projection.

II. *n.* **Complete perspectives.** See ★*complete.* **Illusions of reversible perspective.** See ★*illusion*, 2.

perspectograph, *n.* **2.** An instrument for drawing the perspective of an object from its orthogonal projections, that is, its plan and elevations. Some forms of the instrument are also capable, by reversal, of representing the orthogonal projections of an object from its perspectives or photographs. The latter forms are used in photographic surveying (which see, under ★*surveying*). *Rep. U. S. Coast and Geodetic Surv.*, 1897, p. 729.

perspectometer (pėr-spek-tom′e-tėr), *n.* [L. *perspectus*, a looking through, + Gr. μέτρον, measure.] In *photographic surveying*, a plate of glass or other transparent material containing a diagram of convergent perspective lines with scales. The instrument is used to facilitate the reproduction of the plan and elevation of an object or of topographical points, by placing it over a perspective drawing or a photograph of the object or points.

perspectoscope (pėr-spek′tō-skōp), *n.* [L. *perspectus*, a looking through, + Gr. σκοπεῖν, view.] The trade-name of an instrument which enhances the perspective suggestion of a photograph, outline-drawing, etc., and thus simulates a stereoscopic effect. The instrument consists essentially of two observation-tubes, fitted with magnifying lenses, and of two boxed mirrors, so arranged that a picture held in a frame at right angles to the tubes is reflected through these to the two eyes. *Science*, May 6, 1898, p. 617.



Perspectoscope.

A, general view of the instrument, card-holder to the left; *E*, explanatory diagram: *a*, *a′*, viewing tubes with lenses; *b*, *b′*, mirrors; *c*, *c′*, card-holder; *d*, photograph.

perstriction (pėr-strik′shǫn), *n.* [LL. *perstrictio*(*n-*), < L. *perstringere*, bind together. See *perstringe.*] Arrest of hemorrhage by ligation or compression of the blood-vessels.

persulphid (pėr-sul′fid), *n.* [*per-* + *sulphid.*] A compound of sulphur with a more electropositive element or radical with the maximum proportion of sulphur.

persulphocyanate (pėr-sul-fō-sī′ạ-nāt), *n.* [*persulphocyan*(*ic*) + *-ate*¹.] A salt of persulphocyanic acid.

persulphocyanic (pėr-sul′fǫ-si-an′ik), *a.* [*per-* + *sulphocyanic.*] Containing more sulphur than sulphocyanic acid. **Persulphocyanic acid,** an acid, $H_2C_2N_2S_3$, existing in two forms: (*a*) *Isopersulphocyanic acid*, a yellow crystalline compound formed by the action of concentrated acids on sulphocyanic acid or its salts. Also called *xanthane hydrid*, *hydropersulphocyanic acid*, *hydroxanthic acid*, *persulphocyanhydric acid*, and *sulphureted hydrosulphocyanic acid*. (*b*) *Normal persulphocyanic acid*, which is not known in the free state. Its salts are made by the action of alkalies on isopersulphocyanic acid.

persulphocyanogen (pėr-sul′fǫ-si-an′ǫ-jen), *n.* [*per-* + *sulphocyan*(*ic*) + *-gen.*] A yellow amorphous powder, $C_3HN_3S_3$, formed by oxidizing sulphocyanic acid with nitric acid, chlorin, or hydrogen peroxid. Also called *cyanoxysulphid*, *perthiocyanogen*, *pseudosulphocyanogen*, and *cyanogen sulphid*. Probably identical with the yellow dye canarin.

persulphuret (pėr-sul′fụ-ret), *n.* [*per-* + *sulphuret.*] Same as a ★*persulphid.*

persulphuric (pėr-sul-fū′rik), *a.* [*per-* + *sulphuric.*] Noting an acid known only in aqueous solution, as produced, with escape of oxygen, when sulphur heptoxid is brought into contact with water. It is believed to have the composition $H_2S_2O_8$.

pertainment (pėr-tān′mẹnt), *n.* That which pertains or belongs; a belonging. [Rare.]

> The men of the United States possess some of the finest *pertainments* of the human race, but they are failures where women are concerned.
> *G. Atherton*, in Contemporary Rev., Sept., 1897, p. 415.

pertenencia (per-te-nen′thẹ-ä), *n.* [Sp., < ML. *pertinentia*, belonging: see *pertinence.*] **1**†. Appurtenance; a possession; property.—**2.** A mining claim, or the extent of such a claim. [Mexico.]

perthiocyanogen (pėr-thī′ǫ-sī-an′ǫ-jen), *n.* [*per-* + *thiocyanic* + *-gen.*] Same as ★*persulphocyanogen.*

perturbation, *n.* **4.** The dictum (see def. 4) that "all perturbations due to gravitation are, strictly speaking, periodical" has lately been demonstrated by Poincare to be at least questionable and very likely untrue. He has shown that the assumptions made as to the convergence of the mathematical series used hitherto in the calculations of perturbations are unwarranted and require proof which cannot be given. His work therefore invalidates the hitherto accepted conclusion that the planetary system is permanently stable as against gravitational actions. The demonstrations that have been given to prove it are inconclusive, but the result is not necessarily false; it is not proved that the system is self-destructive. **Magnetic perturbation,** the disturbance of the magnetic needle or magnetic elements by a magnetic storm; a deviation from the ordinary and normal magnetic oscillations. **Perturbation of seat,** in *Eng. eccles. law*, a violation of property rights in a pew.

perturbator, *n.* **2.** In *Eng. eccles. law*, a violator of property rights in a pew.

perturbatory, *n.* **II.** *a.* Perturbative; having the property of perturbing.

> Not to continue *perturbatory* measures with a view to promote . . . absorption too long.
> *Flint*, Prin. and Prac. of Med., p. 189. *N. E. D.*

perturbd, *p. a.* A simplified spelling of *perturbed.*

peruscabin (pe-rus′kạ-bin), *n.* [Formation uncertain.] A trade-name for benzyl benzoate, $C_6H_5CO_2O_7H_7$, a crystalline compound found in Peru balsam and also made synthetically. It is used in medicine. A solution of it in oil is called *pernol.*

Peruv. An abbreviation of *Peruvian.*

Peruvian. **I.** *a.* **Peruvian bluebell, carrot,** see ★*bluebell*, ★*carrot.* **Peruvian pottery.** See ★*pottery.*—**Peruvian slabs,** a trade-name for crude india-rubber from Peru in flat slabs, very dark in color on the outside, the product of species of *Hevea*, in quality about equal to Peruvian ball-rubber.

II. *n.* **2.** *pl.* A name applied to cob-money (formless lumps of stamped bullion), from the fact that it was struck in Peru, although frequently in other colonies also.

pervagate (pėr′vạ-gāt), *v. t.*; pret. and pp. *pervagated*, ppr. *pervagating.* [L. *pervagari*, wander through.] To wander through.

> Lord Waynflete, who, as we have seen, was in the habit of *pervagating* the neighborhood, . . . of course came across Mr. Mowbray soon after that gentleman's advent.
> *Mortimer Collins*, Marquis and Merchant, ii.

pervasiveness (pėr-vā′siv-nes), *n.* The character of being pervasive.

> The traditions of the two deities intermingle, and both under certain circumstances carry the cow's head. The *pervasiveness* of the idea of Sun-worship in Egypt supplies the link which Herodotus does not furnish by the mere names of these goddesses.
> *Gladstone*, Homeric Synchronism, p. 258.

perviability (pėr′vi-ạ-bil′i-ti), *n.* [*pervi*(*ous*) + *-ability.*] In *elect.*, specific inductive capacity.]

> The specific inductive capacity or *perviability* of the medium.
> *Nipher*, Electricity and Magnetism, p. 372.

perviance (pėr′vi-ạns), *n.* [*pervi*(*ous*) + *-ance.*] A name proposed for that property of a dielectric which admits of electrostatic flux or the conductance of lines of force.

perviset, *n.* See *parvis.*

pes³, *n.* **2.** In *music*: (*a*) Same as *ground bass* (which see, under *bass*³). (*b*) Same as ★*podatus.*—**3.** In *pros.*, either of the two quatrains which form the first part of a sonnet. *N. E. D.* **Pedes copulativi,** in *Diplopoda*, the copulatory appendages on the seventh segment of the body in the males: gonopods.

> The modified appendages of the seventh segment in the males of the Helminthomorphous Diplopods are commonly spoken of as "*pedes copulativi*," "gonopods," or, more simply, as "male genitalia."
> *Annals and Mag. Nat. Hist.*, Nov., 1903, p. 515.

Pes gigas, a condition of congenital hypertrophy of the foot.—**Pes olfactorius,** the inner layer of the olfactory bulb. **Pes planus,** flatfoot.

pescadito (pes-kä-dē′tō), *n.* [Sp., dim. of *pescado*, a fish, < L. *piscatus*, ppr. of *piscari*, fish, < *piscis*, a fish.] A common name of *Leuciscus nigrescens*, a minnow of the Rio Grande basin.

peseta, *n.* **3.** A silver coin struck by Christian VII. of Denmark for Iceland, Greenland, and the Faroe Islands. **Cent de peseta.** See ★*cent.*

peshkush (pesh′ kush), *n.* [Also *peshcush*, *peshkash*, *paishkush*, etc.; < Pers. *peshkash*, a present, lit. first-fruits, < *pēsh*, before, in front,

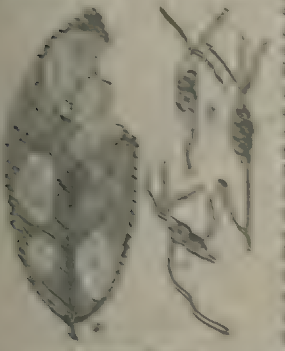
+ *kash*, < *kashan*, draw.] 1. A present, particularly in acknowledgment of a government appointment or favor.—2. A tribute or fine. [India.]

peso, *n.* 2. A silver siege-piece struck for Gerona in Spain, in 1808, during the Peninsular war.—**[illegible] de peso.** See [illegible].—**Peso duro** ('hard peso'), the Spanish or Mexican peso or dollar. The term is used in Mexico to distinguish the silver from the current [illegible].—**Peso gordo** ('thick peso'), a local name for the Spanish dollar among the French creoles of Louisiana.

pest, *n.*—**Tin pest**, an electrolytic change in tin by which white tin is transformed into gray tin. Also called *disease of tin*.

> When the process of transformation from white to gray tin is once started, the process goes on progressively; hence the name "tin pest."
> Elect. Review, July 9, 1908, p. 57.

Pestalozzia (pes-ta-lot'si-ä), *n.* [NL. (De Notaris, 1841), < *Pestalozzi* (Giuseppe Pestalozzi), an Italian physician and botanist.] A large genus of melanconiaceous fungi having black acervuli with 3- or more-septate spores, the two terminal cells being generally hyaline and the colored end provided with one or more hyaline appendages. Over 175 species have been described, some of which are parasitic, producing diseases of cultivated plants. *P. Guepini* is very destructive to leaves of the tea plant.



Pestalozzia Guepini.
a, [illegible] of tea plant showing the [illegible]; b, [illegible] spores, highly magnified. (From Massee's 'Plant Diseases.')

pesticemic (pes-ti-sē'mik), *a.* [Irreg. < L. *pestis*, pest, + Gr. αἷμα, blood.] Noting one of the forms of plague, usually called the septicemic form. Also *pestisemic*.

> The classification of plague cases under three heads—(1) bubonic, (2) pneumonic, (3) septicæmic. . . . The word 'pesticemic' is an even better [illegible] of 'septicæmic,' and though etymologically objectionable, it is adhered to herein as 'septicæmic' already has a specific and quite different meaning.
> [illegible] XXXV. [illegible]

Pestis minor. See *plague*, 2.

pestle, *n.*—**Knight of the pestle.** See *knight*.

petaliferous (pet-a-lif'e-rus), *a.* [Gr. πέταλον, petal, + L. *ferre*, to bear, + *-ous*.] In *bot.*, petal-bearing: often opposed to *apetalous*.

petaligerous (pet-a-lij'e-rus), *a.* Same as *petaliferous*.

petalobacteria (pet'a-lō-bak-tē'ri-ä), *n. pl.* [NL., < Gr. πέταλον, leaf (membrane), + NL. *bacterium*.] In *bacteriol.*, any bacteria which produce zoogloeæ in the form of a membrane on the surface of a liquid. *Billroth.*

petalococcus (pet'a-lō-kok'us), *n.*; pl. *petalococci* (-sī). [NL., < Gr. πέταλον, leaf (membrane), + NL. *coccus*.] In *bacteriol.*, any member of the *Coccus* bacteria which produces zoogloeæ in the form of a membrane on the surface of a liquid. *Billroth.*

petaloid, *a.* 3. Having the general form of a leaf.

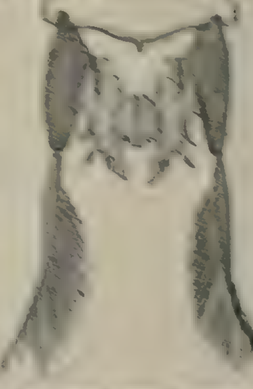
> A collection of Jamaican antiquities by MacCormack, including six specimens of petaloid celts, [illegible], etc., and 30 [illegible] implements.
> Smithsonian Rep., 1895, p. 46.

petanelle (pet-a-nel'), *n.* [Appar. trade-French in England, based on E. *peat*.] A fabric made of prepared peat fibers and wool, used for various articles of clothing, as shirts, [illegible], etc. *Hannan*, Textile Fibres of Commerce, p. 85.

petard, *n.* 2. A small paper cartridge used in ornamental fireworks, generally at the end of a [illegible], so arranged that the flame terminates with an explosion.

Petasidæ (pe-tas'i-dē), *n. pl.* [NL., < *Petasus* + *-idæ*.] A family of Trachomedusæ having 4 radial canals and 4 gonads, the stomach without a stalk, and the sense-tentacles either free or in vesicles. It includes several genera, among which are *Petasus*, *Gossea*, and *Aglauropsis*.

petasma (pe-tas'mä), *n.*; pl. *petasmata* (-ma-tä). [Gr. πέτασμα, something spread out.] In some macrurous crustaceans, a large membranous appendage attached to the base of the first pleopod in the male. In the female it is rudimentary.



Petasma of [illegible]. [illegible] of the male with [illegible] (See text.)

> The petasma is remarkably like that in P. [illegible], but as far as I can judge from the figure by [illegible] it appears to differ slightly in the structure of its anterior surface, which, instead of bearing two pairs of [illegible] prominences, one at the base and one at its distal extremity, bears one pair at the base directed towards the median surface of the abdomen, and [illegible] prominences directed [illegible] towards each other.
> Proc. Zool. Soc. London, 1904, p. [illegible].

petasospore (pe-tas'ō-spōr), *n.* [Gr. πέτασος, a broad hat, + σπορά, seed.] In *phytogeog.*, a plant whose seeds are distributed by means of a parachute-like process surmounting the achene, as in the dandelion. *F. E. Clements.*

petasus, *n.* 3. [*cap.*] The typical genus of the family *Petasidæ*. *Haeckel*, 1879.

pet-day (pet'dā), *n.* A name given in Scotland to a day when the weather is 'too fine to last'; in New England, a 'weather-breeder.'

> It was not however my brother nor me only that such things were done [illegible] . . . In the second, however, when [illegible] to keep the peace, I [illegible].
> Galt, Ringan Gilhaize, III. 88.

petechioid (pe-tek'i-oid), *a.* [*petechia* + *-oid*.] Resembling petechiæ. *Lancet*, April 4, 1903, p. 944.

Petenia (pe-tē'ni-ä), *n.* [NL., < *Peten*, a lake in Guatemala, the original locality of *P. splendida*.] A genus of fishes, of the family *Cichlidæ*, found on the coasts of tropical America.

peter², *n.* 3. In thieves' use, a traveling-bag, portmanteau, trunk, or any piece of baggage or a parcel.

> [illegible] brought it their [illegible]. People [illegible] luggage [illegible] and there was [illegible] to [illegible]. All the [illegible] were empty, and there were no [illegible].
> A. Morrison, Tales of Mean Streets, p. [illegible].

Peter or **Peter Funk.** A sham auctioneer or a sham bidder at a mock auction. [U. S.]

> A capital watch—you may see by the weight—
> Which one hundred dollars is easy to get—
> Or half of that sum is well down at the price—
> (Brown hears of 'Peter,' from Peter the Great;
> But says I can't recall,
> I'm reduced [illegible]
> . . . . .
> 'Don't want it,' quoth Brown—'I don't wish to buy.'
> J. G. Saxe, How Brown Bought a [illegible], [illegible].

peterkin (pē'tėr-kin), *n.* [Dim. of *Peter*.] An unceremonious diminutive for the spiritual and temporal position of the pope, as the successor of St. Peter. [Rare.]

> It surely was a fair question, whether it was worth while, having shaken off a [illegible] and [illegible] the [illegible] . . . in the [illegible] of the [illegible], Peterkin, to the reversion of the spiritual [illegible].
> Whately, Essays upon Some Controverted Questions, p. [illegible].

Peterman, *n.* 2. [*l. c.*] A [illegible] that who steals from vehicles. [Thieves' slang.] *Barrère.*—3. [*l. c.*] A thief who uses 'knock-out drops' as an aid to robbery. [Thieves' slang.] *The Sun*, March 1, 1908.

Petiolar node. See *node*.

Petiolventres (pet'i-ō-li-ven'trēz), *n. pl.* [NL., < L. *petiolus*, petiole, + *venter*, belly.] A group of hymenopterous insects ranking as a suborder and including those forms in which the abdomen is connected with what is apparently the thorax by a slender petiole, the posterior part of the apparent thorax being really an abdominal segment.

petiolular (pet-i-ol'ū-lär), *a.* [*petiolule* + *-ar*.] Of or pertaining to a petiolule.

petiotization (pet'i-ō-ti-zā'shon), *n.* [F. *pétiotisation*.] A process, much used in France (where it was invented by Pétiot, a Burgundian landowner) for producing a sort of secondary wine by adding to the marc or residue from the expression of the juice of the grapes a solution of sugar in water and submitting the mixture to fermentation. The added sugar supplies the material for the production of alcohol, and the various flavoring substances, tartar, tannin, coloring-matters, etc., are furnished by the marc. *Sadtler*, Handbook of Indust. Chem., p. 341.

petit, *a.*—**Petits chevaux.** See *horse*.—**Petit [illegible] mal.** See [illegible].

petit bleu (pe-tē' blė), *n.* [F. *petit*, little, + *bleu*, blue.] In Paris, a closed telegraph card sent by pneumatic tube to various central stations in the city and delivered by telegraph messenger. It is of a blue color, inclosed in the mailing and sealed on three sides by means of its gummed and perforated edges.

Petit Jacques, [illegible]. A [illegible] belonging to the West India fauna.

petiteness (pe-tēt'nes), *n.* The character of being petite; smallness; in recent use, insignificance; diminutiveness, with contemptuous [illegible].

Petition crown. See *crown*.

petitionee (pe-tish-o-nē'), *n.* [*petition* + *-ee*.] In *law*, a defendant or respondent against whom a petition is brought or filed.

petitioner, *n.* 3. [illegible] A [illegible] in an action commenced by petition.—[illegible] A petitioning creditor. *N. E. D.*

petitioning (pē-tish'on-ing), *n.* The act of offering a petition.—**Tumultuous petitioning**, in *Eng. law*, a misdemeanor created by statute (13 Car. II., c. 5) consisting in the act of more than twenty persons signing any petition to Parliament [illegible] to alter any matters legally established in Church or State, unless the petition has been approved officially [illegible], and further in the presentation of a petition by more than ten persons.

peto¹ (pā'tō), *n.* [Cuban Sp. use of Sp. *peto*, a breastplate, plastron.] A common name of *Acanthocybium solandri*, a scombroid fish widely distributed and rather common in the Florida Straits and about the West Indies.

petong (pe-tong'), *n.* [Chinese *pei-tung*, 'white copper.'] Same as *paktong*.

petoskeyte (pe-tos'kē-īt), *n.* [See the def.] A name suggested by A. W. Grabau for limestones formed of fine calcareous sands, derived from coral reefs and deposited in water near their sources: illustrated by strata at Petoskey, Michigan.

> In the hydroclastic subdivision [illegible] Petoskey [illegible], and the name is applied to all hydrocalcarenites which are derived from the [illegible] reefs and deposited in the neighborhood of the reef.
> [illegible] Grabau, in Econ. Geol., April, 1906, p. [illegible].

Petrarchian (pē-trär'ki-an), *a.* Pertaining to Petrarch; imitating or resembling his style.

> The sonnets from the [illegible] of Sir Sidney and others are more interesting [illegible] Spenser [illegible] the so-called Petrarchian arrangement [illegible] England has [illegible].
> G. Saintsbury, Hist. Elizabethan Lit. p. [illegible].

petreity (pē-trē'i-ti), *n.* [ML. *petreitas*, stoniness, < L. *petra*, stone.] The state of condition of being stone. [Rare.]

petrel¹, *n.*—**Diving petrel**, any petrel of the genus [illegible].—**Jamaica petrel**, [illegible], a species of petrel which breeds in the mountainous districts of Jamaica. It is threatened with extermination by the mongoose.—**Snowy petrel**, a small white species, *Pagodroma nivea*, of Antarctic seas.—**Sooty petrel**, a name sometimes applied to the [illegible], of the southern seas.

petrical (pet'ri-kal), *a.* [Gr. πέτρα, rock, + *-ic* + *-al*.] In *petrog.*, a term [illegible] applied to the coarser structural features of rocks, as bedding, jointing, etc., in distinction from the textural.

> [illegible] a term proposed by [illegible] for the [illegible] of rocks [illegible].
> J. F. Kemp, Handbook of Rocks (Glossary), p. [illegible].

pétrir (pā-trēr'), *v. t.*; pret. and pp. *pétri*, ppr. *pétrissant*. [F. *pétrir*, to knead. See *pétrissage*.] To knead (in massage), to grasp with the fingers and work (the flesh and muscles) with a sort of circular movement, with deep or light pressure as indicated.

Grasping between his thumb and four fingers those of the patient he *pétries* all the circumference for a few minutes. *Maguire*, Art of Massage, p. 57. *N. E. D.*

Petrified corn-cobs. See *Halymenites.*

Petrinize (pē′trin-īz), *v. t.*; pret. and pp. *Petrinized*, ppr. *Petrinizing.* To give a Petrine character to; to imbue with Petrinism.

Petri plate. See *Petri* ★*dish.*

pétrissage (pāt-rẹ-säzh′), *n.* [F., < *pétrir*, knead, < ML. **pisturire*, < L. *pistura*, a pounding (of grain, etc.), < *pinsere*, beat, pound. See *pestle, piston.*] A manipulation in massage in which the deeper parts are compressed and rolled without friction of the skin.

Petrist (pē′trist), *n.* A disciple of Petrus Lombardus.

petro-basilar (pet-rọ-bas′i-lạ̈r), *a.* In *anat.*, relating to the petrous portion of the temporal bone and to the basilar portion of the sphenoid and occipital bones.

The *petro-basilar* fissures are large and visibly pervious. This condition is found occasionally; significance doubtful; it is more frequent in young subjects. *An. Rep. Bur. Amer. Ethnol.*, 1895–96, p. 147.

petroblast (pet′rọ-blȧst), *n.* [Gr. πέτρα, rock, + βλαστός, germ.] A name suggested by Di Brazza and Pirenne for a supposed nucleus believed by them to be present in a petrocellule. Compare ★*petrocellule.*

Large Petro-cellule of Quartz, showing two protoplasmic substances, and nuclear *petroblast.* *Knowledge*, Aug., 1904, p. 183.

petrocellule (pet-rọ-sel′ūl), *n.* [Gr. πέτρα, rock, + E. *cellule.*] A name suggested by Di Brazza and Pirenne for the globular germ with which they believe inorganic crystals begin their separation from solution.

According to them [di Brazza and Pirenne], at the beginning of the crystallisation a tiny globule is seen to be differentiated from the uniform mass, being easily recognisable on account of its difference in refractive power. Studied closely, this globule shows within it a slight 'petroplasmic net-work,' which shows an analogy with the formation of animal and vegetable cells. Large *petro-cellule* of Quartz, showing two protoplasmic substances, and nuclear petroblast. Enlargement 750. *Knowledge*, Aug. 1904, p. 183.

petrofracteur (pe-trō-frak-tėr′), *n.* [F., < Gr. πέτρα, rock, + L. *fractura*, fracture.] A trade-name of an explosive consisting of 67 per cent. potassium chlorate, 20 per cent. potassium nitrate, 10 per cent. nitrobenzene, and 3 per cent. antimony sulphid.

petrogenesis (pet-rọ-jen′e-sis), *n.* [Gr. πέτρα, rock, + E. *genesis.*] The origination of rocks, generally or collectively considered.

How far Hutton was in advance of his time on matters relating to *petrogenesis* is illustrated by the fact that more than half a century elapsed before his ideas found expression in systematic treatises. *Smithsonian Rep.*, 1902, p. 290.

petrogenic (pet-rọ-jen′ik), *a.* [Gr. πέτρα, rock, + -γενης, -produced, + *-ic.*] In *geol.*, relating to the origin of rocks in general or of special masses.

In a fully represented *petrogenic* cycle at a batholithic area, then, the oldest intrusion should be a rock of gabbroid (basaltic) composition and the youngest an acid granite (chemically a rhyolite or quartz porphyry). Between these two an indefinite number of intermediate rock-types varying according to their degree and kind of differentiation from the syntectic—itself continuously varying in composition—might be represented in dikes or other satellitic forms. *Amer. Jour. Sci.*, July, 1908, p. 45.

Petrographical province. See ★*province.*

petrol, *n.* **2.** The lighter hydrocarbons from petroleum which are used as fuel in the motor-engines of vehicles and dirigible balloons; gasolene.

The import of Russian oil appears to be increasing and that of American decreasing, and there was a great increase in 1901 in the import of motor-car spirit or "*petrol.*" *Athenæum*, Feb. 7, 1903, p. 179.

petrol (pe-trōl′), *v. t.*; pret. and pp. *petrolled*, ppr. *petrolling.* To fill or supply with petrol: as, to *petrol* a motor-car.

petrol. An abbreviation of *petrology.*

petrolage (pet′rọ-lạ̄j), *n.* [*petrol* + *-age.*] Same as ★*petrolization.* *Lancet*, July 18, 1903, p. 186.

petrol-car (pe-trōl′kär), *n.* A motor-car which has an internal-combustion engine consuming gasolene. [Great Britain.]

petrolene, *n.* **2.** A name, first used by Boussingault, of the liquid portion of asphalt occurring mixed in various proportions with the solid ingredient asphaltene. Both these substances are probably themselves mixtures. See ★*asphaltene.*

petrol-engine (pe-trōl′en″jin), *n.* An engine which uses gasolene directly for the generation of power. See ★*petrol*, 2.

petroleous (pẹ-trō′lẹ-us), *a.* [*petrole*(*um*) + *-ous.*] Containing, producing, or resembling petrolẹum. [Rare.]

petroleum, *n.* Of the entire product of petroleum throughout the world approximately 50 per cent. is furnished by Russia, 40 per cent. by the United States, and 10 per cent. by Canada, Austria, Rumania, the Sunda Islands, Burmah, Japan, and (in quite small proportion) Germany, South America, and Italy. California, Texas, and Kansas have of late largely increased their output, chiefly of crude fuel-oil, while in Pennsylvania, Ohio, and West Virginia there has been a diminished yield. It should be noted that American and Russian petroleum differ materially in chemical composition, the former consisting mainly of hydrocarbons of the paraffin series, while the latter represent chiefly naphthenes, isomeric but not identical with the members of the olefine series.—**Petroleum briquet.** See ★*briquet*1.—**Solidified petroleum,** an attempted solidification of petroleum for use in ordinary grates. Two methods have been resorted to, namely, the soaking up of the liquid by a porous material, preferably itself combustible, such as dry, spongy peat, and the producing of a jelly-like emulsion by the addition of soap or oil and alkali to form a soap. The products are apt to lose petroleum by oozing in hot weather, and the value of the attempts is very doubtful, since they involve a sacrifice of the special advantages presented by liquid fuel.

petroleum-burner (pẹ-trō′lẹ-um-bėr″nėr), *n.* See ★*burner.*

petroleum-engine (pẹ-trō′lẹ-um-en″jin), *n.* An internal-combustion engine using crude petroleum oil as a source of heat supply.

petroleum-jelly (pẹ-trō′lẹ-um-jel″i), *n.* Same as *mineral* ★*jelly.*

petroleum-spirit (pẹ-trō′lẹ-um-spir″it), *n.* A mixture of the lighter hydrocarbons from American petroleum. The term is variously used, but most commonly is applied to a product of a density of .71 to .74 and a boiling-point of about 90° to 140° C. It is extensively used as a solvent in scouring, cleaning printers' type, etc., forming a substitute for turpentine in many applications.

petrolic (pẹ-trol′ik), *a.* [*petrol* + *-ic.*] **1.** Relating to, resembling, or produced from petrol or petroleum: as, *petrolic* ether.—**2.** Relating to the management of petrol as used in motor-cars.

An automobile for the *petrolic* instruction of army officers. *Autocar*, July 19, 1902, p. 69. *N. E. D.*

petrolization (pet″rọ-li-zā′shọn), *n.* [*petrolize* + *ation.*] The act or process of petrolizing; specifically, the spreading of petroleum on water which contains mosquito larvæ, for the purpose of destroying them.

The *petrolization* of mosquito-breeding pools is one of the most important measures to be undertaken in the warfare against mosquitoes. *L. O. Howard*, Mosquitoes, p. 193.

petrolize, *v. t.* **2.** To treat with petroleum; specifically, to spread petroleum on (water which contains mosquito larvæ); kill by means of petroleum, as the larvæ of mosquitos.

To the Italians we are indebted for a useful expression, which we might just as well adopt, namely, to "*petrolize*," meaning to treat waters with kerosene. *L. O. Howard*, Mosquitoes, p. 193.

3. To burn (a building) by means of petroleum, as in Paris during the supremacy of the commune in 1871.

petrol-motor (pe-trōl′mō″tọr), *n.* A gas-engine; any internal-combustion engine which uses gasolene as a fuel.

petrologic (pet-rọ-loj′ik), *a.* Same as *petrological.*

Petrometopon (pet″rọ-me-tō′pon), *n.* [NL., < Gr. πέτρα, rock, + μέτωπον, forehead.] A genus of serranoid fishes.

Petromyzontes (pet″rọ-mī-zon′tēz), *n. pl.* [Pl. of *Petromyzon* (which see).] The lampreys, considered as constituting a class of vertebrates. In this case the *Marsipobranchii* or *Cyclostomata* as a whole are raised to a super-class.

petrophilous (pẹ-trof′i-lus), *a.* [Gr. πέτρα, rock, + φιλεῖν, love.] Living upon or attached to rocks, as certain gastropods.

petrosal. **I.** *a.*—**Petrosal lobule.** See ★*lobule.*

II. *n.* **2.** In *ichth.*, same as *proötic* and *opisthotic.*

petroseline (pet′rọ-sẹ-lin), *a.* [NL. *Petroselinum* (which see).] Of or pertaining to parsley: as the *petroseline* family.

petrosulfol (pet-rọ-sul′fol), *n.* [*petro*(*leum*) + *sulf*(*ur*), *sulph*(*ur*), + *-ol.*] A trade-name of a bituminous product which contains sulphur. It closely resembles ichthyol in properties and uses but has a less disagreeable odor.

petrosum (pē-trō′sum), *n.*; pl. *petrosa* (-sạ̈). [NL., neut. of *petrosus*, stony (bony), < *petra*, rock.] In *ichth.*, same as *sphenotic* and *proötic.* The petrosum of Owen is the opisthotic of Parker, while the petrosum of Hallmann, Segemehl, and Erdl is the proötic of Parker.

petrotympanic (pet″rọ-tim-pan′ik), *a.* and *n.* [Gr. πέτρα, rock, + E. *tympanic.*] Noting the cranial bone formed by the fusion of the petrosal and tympanic bones.

The canal for the internal carotid pierces the *petro-tympanic.* *Amer. Jour. Sci.*, March, 1904, p. 213.

pe-tsai (pā-tsī′), *n.* [Chin. *pei-tsai*; *pei*, white, *tsai*, vegetable.] The so-called Chinese cabbage (*Brassica Pe-tsai*), now somewhat grown in American vegetable-gardens. It resembles a gigantic Cos lettuce. The leaves and midribs are cooked and eaten.

petterdite (pet′ėr-dīt), *n.* [Named after W. F. *Petterd* of Tasmania.] An oxychlorid of lead which occurs in thin white hexagonal plates: found in Tasmania.

petticoat, *n.* **7.** In *elect.*, on an insulator for outdoor service, a downward projecting mantle intended to shed the rain-water.

The line insulators have five *petticoats*, decreasing in size from top to bottom, and are made of porcelain. *Jour. Franklin Inst.*, May, 1903, p. 326.

petticoated, *a.* **2.** In *elect.*, having a petticoat. See ★*petticoat*, 7.

The terminals should be mounted on *petticoated* porcelain insulators and all parts of the lamp cap should be strictly water-tight and no part exposed to the weather should be made of any material other than gun metal, brass, phosphor bronze, copper or similar metal. *Elect. Rev.*, Sept. 3, 1904, p. 332.

petticoat-insulator (pet′i-kōt-in″sụ̄-lā-tọr), *n.* See ★*insulator.*

petty-single (pet′i-sing″gl), *n.* A falconers' term for the toe of a hawk.

Her foot a hand with *petty singles* instead of toes. *E. B. Michell*, Art and Practice of Hawking, p. 20.

petune (pē-tōn′), *n.* [See ★*petune*, *v.*, and *petun.*] The liquid employed in petuning. In Cuba, where petuning was first practised, this liquid is prepared by the extraction of tobacco stems, sometimes, at least, in a fluid containing ammonium carbonate. A hot solution of this is similarly used in the United States, but here the liquid is frequently made of rum, sour wine, licorice, etc., without extraction of stems.

At this stage the odor of the *petune* may be noticeable. *U. S. Dept. Agr.*, Rep. No. 62, p. 18.

petune (pẹ-tōn′), *v. t.*; pret. and pp. *petuned*, ppr. *petuning.* [F. *petuner*, to smoke tobacco, < *petun* (which see).] To spray (tobacco), during or after the sweating process, with a special liquid (see ★*petune*, *n.*), for the purposes stated in the following quotation. See ★*condition*, *v. t.*, 7.

The fillers only and not the wrappers [of cigars], are *petuned*, the intention being to give them a darkẹr color, an improved flavor, and the appearance and character of a strong tobacco. *U. S. Dept. Agr.*, Rep. No. 59, p. 19.

petunzite (pe-tun′zīt), *n.* [*petuntze* + *-ite*2.] A name proposed by Collins for the granitic rock commonly called in England Cornish stone, a mixture of partially but not completely kaolinized feldspar with quartz and little or no mica: used extensively in the manufacture of chinaware.

pet-wood (pet′wůd), *n.* [A corruption of the Burmese name *petwoon.*] The wood of *Espera cordifolia.* See *halmalille.*

peucedanin, *n.* **2.** A tasteless crystalline compound, $C_{16}H_{16}O_4$, found in the root of *Peucedanum officinale* and *Imperatoria Ostruthium.*

peucil, peucyl (pū′sil), *n.* A mixture of terpene hydrocarbons prepared by the distillation of terpene hydrochlorid with quicklime.

peucites (pū-sī′tēz), *n.* [Gr. πεύκη, the pine.] Fossilized coniferous wood.

peucyl, *n.* See ★*peucil.*

peumo (pā-ö′mō), *n.* [Native name.] In Chile, *Cryptocarya Peumus*, a tree belonging to the laurel family, the bark of which is used in southern Chile for tanning.

pew1, *v. t.* **2.** To put or shut in a pew. [Rare.]

The same men who were as willingly *pewed* in the parish church as their sheep were in night folds. *Examiner*, 1831, p. 71. *N. E. D.*

pew4 (pū), *n.* A thin stream of air or smoke; a fine thin stream of breath escaping through lips almost closed. [Scotch.]

Groups of little black dots moved across the green meadows in which the farmsteading of the Shalloch-on-Minnoch was set—a cheery little house, well thatched, and with a *pew* of blue smoke blowing from its chimney, telling of warm hearts within. *Crockett*, Men of the Moss-Hags, xliv.

pewage (pū'ạj), *n.* 1. The pews in a church, collectively; the arrangement of pews.

> If any walk in the church with hat on, shall pay one pen. . . . The former *pewage* was very antient; two pews bore the inscription 1590; Lanclot Broane, c. 1621, c.
> *G. Poulson*, Hist. and Antiq. of Seigniory of Holderness, II. 288.

2. The amount paid for the use of a pew.

> A letter was read from . . . the incumbent of the district objecting on the ground that the services might damage his income, arising almost entirely from "*pewage*." This "*pewage*,' Mr. C— says, is necessarily high; whilst the services to the boys were to be entirely free.
> *Guardian*, Dec. 27, 1866, p. 1327.

pewey (pū'i), *a.* [*pew* + *-ey* for *-y*¹.] Same as *pewy*.

pewter, *n.* 5. A material made of calcined tin, used in polishing marble.

pewtery, *a.* II. *n.* 1. Pewter collectively.— 2. A pewter closet; a place for keeping pewter.

pewy, *a.* 2. Like pews in a church: said of the going in hunting, where leaps (as over fences) are frequent, as if over the back of one pew after another with little room for take-offs. [Rare.]

> The working of the pack delighted . . . him . . . "My word, the little Johnnies can go," he said. "I have n't had better fun this season. It's a bit *pewey*; I don't seem to have been on terra firma for two minutes at a time."
> *Eyre Hussey*, Miss Badsworth, M. F. H., iii.

peyote (pā-yō'tạ), *n.* [Mex. *peyote*, < Nahuatl *peyotl*, or *peyutl*.] A name applied in certain parts of Mexico to several low, fleshy, spineless plants, especially to *Lophophora Williamsii*, which is used medicinally and has narcotic properties. Also written *pellotè*. See ★*mescal-buttons*.

peyotillo (pā-yō-tēl'yō), *n.* [Mex. *peyotillo*, diminutive of *peyote*.] A small spineless cactus, *Pelecyphora aselliformis*, resembling the peyote (*Lophophora Williamsii*) in habit, which grows in arid rocky soil near San Luis Potosí, Mexico, and is offered for sale in the market as a remedy for fevers and other maladies.

pezant, pezantry. Amended spellings of *peasant*, *peasantry*.

Pezizales (pē-zi-zā'lēz), *n. pl.* [NL., < *Peziza* + *-ales*.] An order of discomycetous fungi having the apothecia fleshy, superficial, and frequently colored. It is named from the principal genus *Peziza*. Sometimes written *Pezizineæ*.

Pezizineæ (pē-zi-zin'ẹ-ē), *n. pl.* See ★*Pezizales*.

pezograph (pez'ọ-gråf), *n.* [Gr. πέζις (?), a stalkless mushroom, + γράφειν, write.] A pitting, resembling a finger-mark, often observed on the surface of a meteorite.

> *Pezographs*, or finger-mark pittings, are visible on all surfaces of the mass, yet varying notably on different sides. On two sides they are few in number, and only dim depressions—though still unmistakable in their nature. *Amer. Jour. Sci.*, April, 1903, p. 318.

pezza (pet'sä), *n.* [It.: see *piece*.] 1. A gold coin of Leghorn of the value of 4 shillings.— 2. A gold coin of the Medici family, dukes of Florence or Etruria.— 3. A Tuscan money of account. The *pezza della rosa* or *livornina* is worth 5¼ lire.

pezzetta (pet-set'tä), *n.* [It., dim. of *pezza*. See ★*pezza*.] A billon coin of Monaco in the eighteenth century, and of the Swiss canton of Fribourg.

pf. An abbreviation (*b*) of *perfect*; (*c*) of *preferred*.

p. f. An abbreviation (*a*) of the Italian *piu forte*, a little louder; (*b*) [*caps.*] of *Procurator-Fiscal*.

Pfeiffer bacillus. Same as *influenza* ★*bacillus*.

pferdekraft (pfer'de-kräft), *n.* [G., 'horse-power': *pferd*, horse (see *palfrey*): *kraft*, power (see *craft*¹).] The horse-power of German mechanical engineers; the metric horse-power, or 4,500 kilograms raised one meter in one minute, which is 1¼ per cent. smaller than Watt's horse-power of 33,000 pounds raised one foot in one minute. *C. Hering*, Conversion Tables, p. 81.

Pflüger's law of contraction. See ★*contraction*.

P. G. An abbreviation (*a*) of *Past Grand*; (*b*) of the Latin *Pharmacopœia Germanica*, German Pharmacopœia.

P. g. In *ceram.*, the abbreviation of '*Paris granite*,' a trade-name.

P. G. M. An abbreviation of *Past Grand Master*.

phacellus (fā-sel'us), *n.*; pl. *phacelli* (-ī). Same as *phacella*.

Phacidiaceæ (fạ-sid-i-ā'sẹ-ē), *n. pl.* [NL., < *Phacidi(um)* + *-aceæ*.] A family of discomycetous fungi, so-named from the genus *Phacidium*.

Phacidiales (fạ-sid-i-ā'lēz), *n. pl.* [NL., < *Phacidi(um)* + *-ales*.] An order of discomycetous fungi, so-named from the principal family *Phacidiaceæ*. Called *Phacidiineæ* by Engler and Prantl.

Phacidiineæ (fạ-sid-i-ī'nẹ-ē), *n. pl.* See ★*Phacidiales*.

Phacidium (fạ-sid'i-um), *n.* [NL. (Fries, 1815), < dim. of Gr. φακός, a lentil.] A large genus of discomycetous fungi, type of the family *Phacidiaceæ*, having ascocarps embedded in the surface of the host, the upper covering rupturing at maturity in an irregular manner. The spores are hyaline and unicellular. About 70 species are known. *P. abietinum* occurs on the fir needles in Europe and America.

phacoidal (fạ-koi'dạl), *a.* [*phacoid* + *-al*¹.] Lens-like: referring to the form assumed by certain rock masses by shearing and flowage in metamorphism.

> In like manner, when the basic dykes are obliquely traversed by lines of disruption, they are deflected, attenuated, and within the shear zones appear frequently as *phacoidal* masses amid the reconstructed gneiss.
> *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 617.

phacometer (fạ-kom'e-tėr), *n.* [Gr. φακός, lentil (lens), + μέτρον, measure.] An instrument for determining the constants of lenses.

Phacops (fā'kops), *n.* [NL., < Gr. φακός, a lentil, a mole, + ὤψ, face.] A genus of trilobites typical of the proparian family *Phacopidæ*, with elliptical or oval carapaces, semicircular cephala with rounded genal angles, anterior lateral lobes fused with the frontal lobe to form a large swollen cranidium, and reduced posterior lateral lobes. The eyes are large, prominent, and schizochroal, the pleura rounded, and the pygidium semicircular with entire margin. The genus ranges from the Silurian to the Upper Devonian.

phacosclerosis (fak"ọ-sklẹ-rō'sis), *n.* [Gr. φακός, a lentil (lens), + σκλήρωσις, hardening.] Induration of the crystalline lens of the eye.

phacoscopic (fak-ọ-skop'ik), *a.* Pertaining to the phacoscope or to its use: as, *phacoscopic* images; *phacoscopic* experiments. *E. B. Titchener*, Exper. Psychol., I. ii. 237.

phacoscotoma (fak"ọ-skọ-tō'mä), *n.* [Gr. φακός, a lentil (lens), + σκότωμα, darkness of vision (used in sense of 'dizziness'), < σκότος, darkness.] Opacity of the crystalline lens.

Phacotidæ (fạ-kot'i-dē), *n. pl.* [NL. *Phacotus* + *-idæ*.] A family of *Mastigophora* having a greenish body surrounded by a thick shell-membrane which the body incompletely fills and which is frequently bivalved. It includes *Phacotus*, *Coccomonas*, *Chloraster*, and several other genera.

Phacotus (fạ-kō'tus), *n.* [NL.] The typical genus of the family *Phacotidæ*. *Perty*, 1852.

Phæacian (fẹ-ā'shạn), *a.* and *n.* [L. *Phæacia*, < Gr. Φαιακία, + *-an*.] I. *a.* Of or belonging to Phæacia, or Scheria, an island described by Homer, doubtfully identified with the modern Corcyra.

II. An inhabitant of Phæacia, or Scheria; hence, a gourmand, the Phæacians having been noted for their luxury.

phæism, pheism (fē'izm), *n.* [Gr. φαιός, dusky, + *-ism*.] Homœochromatism of a dusky shade. [Rare.] *Cambridge Nat. Hist.*, VI. 337.

phænozygous, *a.* Same as *phenozygous*.

phæocyst (fē'ọ-sist), *n.* [Gr. φαιός, dusky, dun, brown, + κύστις, bladder (cyst).] The nucleus of a plant cell. *Decaisne*.

Phæocystina (fē-ọ-sis-tī'nä), *n. pl.* [Gr. φαιός, dusky, + κύστις, bladder, pouch, + *-ina*.] A family of radiolarians, of the order *Tripylaria*, without skeleton or with loose skeletal structures, and with the central capsule in the center of the spherical body. It contains the genera *Phæodinia*, *Aulacantha*, and *Aulactinium*.

Phæodidymæ (fē-ọ-did'i-mē), *n. pl.* [NL., < Gr. φαιός, dusky, + δίδυμος, double.] A name applied by Saccardo to artificial divisions of various families and orders of fungi, especially those of the *Pyrenomycetes* and *Fungi Imperfecti*, designed to include the genera which have the spores brownish and uniseptate.

phæophore (fē'ọ-fōr), *n.* [Gr. φαιός, dusky, + -φορος, bearing, < φέρειν, bear.] The light-brown chromatophore of the algæ.

Phæophragmiæ (fē-ọ-frag'mi-ē), *n. pl.* [NL., < Gr. φαιός, dusky, + φράγμα, partition.] A name applied by Saccardo to artificial divisions of various families and orders of fungi, especially those of the *Pyrenomycetes* and *Fungi Imperfecti*, designed to include the genera which have the spores brownish and 2- or more septate.

Phæophyceæ (fē-ọ-fī'sẹ-ē), *n. pl.* [NL., < Gr. φαιός, dusky, + φῦκος, seaweed.] One of the four great classes of algæ containing most of those forms which are of a brown color. The vast majority of this class are marine.

phæophycean (fē-ọ-fī'sẹ-ạn), *n.* One of the *Phæophyceæ* or brown seaweeds.

phæophycean-starch (fē-ọ-fī'sē-ạn-stärch), *n.* A name given to bodies found in certain *Euphæophyceæ*, which are built up of concentric layers and attached to the chromatophores. *Encyc. Brit.*, XXV. 272.

phæoplast (fē'ọ-plåst), *n.* [Gr. φαιός, dusky, + πλαστός, < πλάσσειν, form.] One of the brown coloring-bodies or plastids in the cytoplasm of the brown algæ, *Phæophyceæ*, as distinguished from the red plastids (rhodoplasts) of the red algæ, *Rhodophyceæ*.

> The chromatophores of the higher brown Algæ (Phæophyceæ) and most of the red (Rhodophyceæ) have the discoid form characteristic of chloroplasts. They might be called *phæoplasts* and rhodoplasts if one wished to classify plastids according to their color.
> *Amer. Nat.*, May, 1904, p. 378.

phæoretin (fẹ-or'e-tin), *n.* [Gr. φαιός, dusky, + ῥητίνη, resin.] One of the resinous substances remaining after the crystalline substances have been removed from rhubarb extract. *Buck*, Med. Handbook, VI. 974.

phæosic (fẹ-ō'sik), *a.* [Gr. φαιός, dusky, + *-ose* (?) + *-ic*.] Noting an acid obtained from sweet-bay, *Laurus nobilis*.

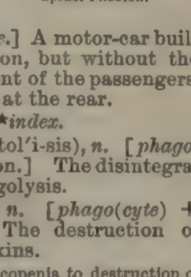
phæosin (fē'ọ-sin), *n.* [*phæos(ic)* + *-in*².] Same as ★*phæosic acid*.

Phæosporæ (fẹ-os'pọ-rē), *n. pl.* [NL., < Gr. φαιός, dusky, + σπορά, seed (spore).] A name applied by Saccardo to artificial divisions of various families and orders of fungi, especially those of the *Pyrenomycetes* and *Fungi Imperfecti*, made to include the genera which have the spores simple, ovoid, and brown.

phæospore (fē'ọ-spōr), *n.* [Gr. φαιός, dusky, + σπορά, seed (spore).] The spore, usually a zoöspore, of the brown algæ. [Rare.]

phæosporous (fẹ-os'pọ-rus), *a.* [*phæospore* + *-ous*.] Of or pertaining to the brown seaweeds.

phaëton, *n.*—**Demi-mail phaëton**, a heavy phaëton having a platform coach-gear instead of the perch-gear which is used in the mail phaeton.—**Dicky-seat phaëton**, a carriage having a stanhope body elongated by the addition of a dicky-seat for the driver, suspended upon four C-springs.—**Dog-cart phaëton**, a dog-cart transformed into a phaëton by mounting the body on a four-wheeled gear.—**Spider phaëton.** See the cut.



Spider Phaëton.

phaëtonette (fā"e-tọ-net'), *n.* [*phaëton* + *-ette*.] A motor-car built on the lines of a phaëton, but without the driver's seat or box in front of the passengers' seat, and with no rumble at the rear.

Phagocytic index. See ★*index*.

phagocytolysis (fag"ọ-sī-tol'i-sis), *n.* [*phagocyte* + Gr. λύσις, dissolution.] The disintegration of a phagocyte; phagolysis.

phagolysis (fa-gol'i-sis), *n.* [*phago(cyte)* + Gr. λύσις, dissolution.] The destruction of phagocytes, as by cytotoxins.

> Metchnikoff ascribes the leucopenia to destruction of the cells and uses the term "*phagolysis*" to express it. . . . That there is *phagolysis* at all has been strenuously denied by some. Durham convinced himself that the leucopenia is due solely to clumping or balling of the leucocytes, in which condition they are swept by peristalsis towards the omentum and other peritoneal surfaces on which they are deposited.
> *Jour. Med. Research*, July, 1906, pp. 6, 7.

phagolytic (fag-ọ-lit'ik), *a.* [*phagolysis*.] Relating to or consisting in phagolysis or destruction of the white blood-corpuscles. *Jour. Med. Research*, Dec., 1907, p. 263.

phalænid (fa-lē'nid), *n.* and *a.* I. *n.* A member of the family *Phalænidæ*.

II. *a.* Having the characters of or belonging to the family *Phalænidæ*.

phalange, *n.* 4. Same as ★*phalangiid.*

Phalangeal formula. See ★*formula.*

phalanger, *n.*—**Pygmy phalanger.** Same as *opossum-mouse.*

phalangic, *a.* 2. In *mil.*, pertaining to or characteristic of a phalanx.

phalangid (fạ-lan′jid), *n.* and *a.* Same as ★*phalangiid.*

Phalangidæ (fā-lan′ji-dē), *n. pl.* The typical family of the *Phalangidea* (which see).

phalangigrade, *a.* **II.** *n.* One of the *Phalangigrada*, as a camel or llama.

phalangigrady (fạ-lan′ji-grā-di), *n.* [*phalangigrade* + *-y*³.] The habit of walking on the phalanges. See *phalangigrade.*

phalangiid (fạ-lan′ji-id), *n.* and *a.* **I.** *n.* A member of the family *Phalangiidæ.*

II. *a.* Having the characteristics of or belonging to the family *Phalangiidæ.*

phalangioid (fạ-lan′ji-oid), *a.* and *n.* [NL. *Phalangioid(ea).*] **I.** *a.* Having the characteristics of or belonging to the superfamily *Phalangioidea.*

II. *n.* A member of the superfamily *Phalangioidea.*

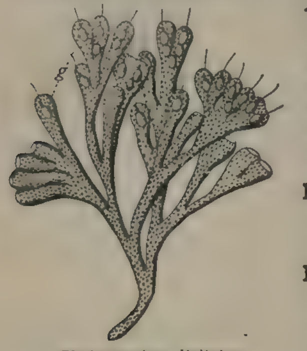
phalangitis (fal-an-jī′tis), *n.* [Gr. φάλαγξ, phalanx, + *-itis.*] Inflammation of one or more of the phalanges of the fingers or toes. *Lancet*, May 30, 1903, p. 1526.

phalangology (fal-an-gol′ọ-ji), *n.* [Gr. φάλαγξ (φαλαγ-), phalanx, + -λογια, < λέγειν, speak.] The pretended 'science' of telling fortunes by studying the fingers.

> When studying finger tips, or "*phalangology,*" as it (fortune-telling by the fingers) is called, the length of the tips above the ball of the finger must be noted.
> *Kansas City Daily Times*, June 15, 1903.

phalansteric (fal-a̤n-ster′ik), *a.* Same as *phalansterian.*

Phalansterina (fal″a̤n-stẹ̄-rī′nạ̈), *n. pl.* [NL. *Phalanster(ium)* + *-ina.*] A family of choanoflagellate infusorians, which consists of colonial animals, each individual in a granular gelatinous tube, with the collars narrow, conical, and of constant shape. The colonies form flat expansions or a dichotomously branching stock. It includes the genus *Phalansterium.*



Phalansterium digitatum (S. Kent).
g, collared cells.

Phalansterium (fal-a̤n-stē′ri-um), *n.* [NL. See *phalanstery.*] The typical genus of the family *Phalansterina.* *Cienkowsky*, 1870.

phalanstery, *n.* 2. A communal house of a primitive tribe.

phalanx, *n.* 6. In *entom.*, any one of the joints of the tarsus.—**Metacarpal phalanx,** the first phalanx of each finger which is articulated with the corresponding metacarpal bone.—**Metatarsal phalanx,** the first phalanx of each finger articulating with the corresponding metatarsal bone.

phalara (fal′a̤-rạ̈), *n. pl.* [Gr. φάλαρα, *pl.*] See ★*phalera.*

phalera (fal′e̤-rạ̈), *n.*; pl. *phaleræ* (-rē). [L., < Gr. φάλαρα, *pl.*] A metal disk or boss worn on the breast as an ornament by men, especially as a military decoration, or used to adorn the harness of horses.

phalerate (fal′e̤-rāt), *a.* [L. *phaleratus*, pp. of *phalerare*, adorn with trappings. See ★*phalera.*] Adorned with trappings; ornamented. [Rare.]

Phaleucian (fa-lū′si̤a̤n), *a.* [L. *Phaleucius* (for *Phalæcius*), pertaining to Phalæcus, + *-an.*] Same as *Phalæcean.*

Phallaceæ (fa-lā′sẹ-ē), *n. pl.* [NL., < *Phallus* (see *phallus*, 3) + *-aceæ.*] A family of basidiomycetous fungi. Same as *Phalloideæ*, which is an incorrect form.

Phallales (fa-lā′lēz), *n. pl.* [NL., < *Phallus* (see *phallus*, 3) + *-ales.*] An order of basidiomycetous fungi, which consists of the two families *Clathraceæ* and *Phallaceæ.* Many of the species have a very unpleasant odor, on account of which they are commonly known as *stinkhorns.* Sometimes called *Phallineæ.*

phallical (fal′i-ka̤l), *a.* Same as *phallic.*

phallin (fal′in), *n.* [NL. *phalloides* (see def.) + *-in*².] A toxalbumin contained in the fungi *Amanita phalloides, A. virescens, A. citrina, A. candida*, and others. Its action is similar to that of ricin and abrin.

Phallineæ (fa-lin′ẹ̄-ē), *n. pl.* See ★*Phallales.*

phalloid, *a.* **II.** *n.* A member of the fungous family *Phallaceæ.* *Nature*, Sept. 3, 1903, p. 421.

phallopod (fal′ō-pod), *n.* [Gr. φαλλός, penis, + πούς (ποδ-), foot.] In *Chilognatha*, one of the appendages, either the anterior or the posterior pair of the seventh segment, bearing the seminal pouch and duct. Compare ★*coleopod.* *Annals and Mag. Nat. Hist.*, Nov., 1903, p. 516.

phanal, *n.* Same as *fanal.*

> He flashes like a *phanal*, all men catch
> The flame, Rome 's just accomplished!
> *Browning*, Sordello, iv. 395.

phaneric (fa-ner′ik), *a.* [Gr. φανερός, visible, + *-ic.*] In *petrog.*, visibly crystalline; phanerocrystalline: applied to crystals which are visible without the aid of a magnifying-glass.

phanerite (fan′e̤-rīt), *a.* and *n.* [Gr. φανερός, visible, + *-ite*².] **I.** *a.* Visible or exposed to observation: used in geology of rocks which outcrop.

II. *n.* In *petrog.*, a phanerocrystalline rock; a rock whose component crystals can be seen with the unaided eye.

phanerocephalous (fan″e̤-rọ-sef′a̤-lus), *a.* [Gr. φανερός, visible, + κεφαλή, head, + *-ous.*] Having an evident prostomium which sometimes bears eyes, sensory processes, tentacles, and palps, as in some polychætous annelids: contrasted with *cryptocephalous.*

Phanerodon (fạ-ner′ō-don), *n.* [NL., < Gr. φανερός, visible, + ὀδούς (ὀδοντ-), tooth.] A genus of surf-fishes (*Embiotocidæ*) inhabiting the waters of the California coast.

Phanerogamic botany. See ★*botany.*

phanerogenic (fan″e̤-rọ-jen′ik), *a.* [Gr. φανερός, visible, + -γενος, produced, + *-ic.*] In *petrog.*, formed of easily recognizable minerals, as a rock. Same as ★*phaneric* and ★*phaneromeric.* *Haüy.*

phaneromania (fan″e̤-rọ-mā′ni-ạ̈), *n.* [NL., < Gr. φανερός, visible, + μανία, mania.] An uncontrollable habit of picking at loose bits of skin, warts, hangnails, etc.

phaneromeric (fan″e̤-rọ-mer′ik), *a.* [Gr. φανερός, visible, + μέρος, part, + *-ic.*] Same as ★*phanerogenic* and ★*phaneric.*

phaneron (fan′e̤-ron), *n.*; pl. *phanera* (-rạ̈). [NL., < Gr. φανερόν, neut. of φανερός, visible, manifest, < φαίνεσθαι, appear.] Whatever is in any sense present to the mind, whatever its cognitive value may be, and whether it be objectified or not. A term proposed by C. S. Peirce in order to avoid loading 'phenomenon,' 'thought,' 'idea,' etc., with multiple meanings.

Phanerophlebia (fan″e̤-rọ-flē′bi-ạ̈), *n.* [NL. (Presl, 1836), < Gr. φανερός, visible ("free"), + φλέψ (φλεβ-), a vein, in allusion to the two lower free veins.] A genus of simply pinnate polypodiaceous ferns, closely allied to *Polystichum*, but distinguished by their habit and pinnate, more or less anastamosing venation, and by having the sori disposed in several interrupted rows. There are about 9 species, natives of continental middle America, one of which, *P. auriculata*, extends northward to Texas and New Mexico.

Phaneropleuron (fan″e̤-rọ-plū′ron), *n.* [NL., < Gr. φανερός, visible, + πλευρόν, rib.] A genus of extinct dipnoan fishes of the subclass *Dipnoi* and family *Ctenodontidæ*, characterized by triangular upper dental plates with straight and crenulated radiating ridges, a long dorsal fin continuous with the caudal or tail fin, small and separate anal fin, and very thin cycloid scales marked with delicate radiating striæ. It occurs in the Old Red Sandstone (Devonian) of Europe and Canada.

phaneropterid (fan-e̤-rop′te̤-rid), *n.* and *a.* **I.** *n.* A member of the orthopterous family *Phaneropteridæ.*

II. *a.* Having the characters of or belonging to the family *Phaneropteridæ.*

phanerozoic (fan″e̤-rọ-zō′ik), *a.* [Gr. φανερός, visible, + ζῷον, animal, + *-ic.*] Of or pertaining to animals that live in places that are exposed to the daylight.

> [The] cryptozoic fauna imperceptibly blends with what by way of contrast may be called the "*phanerozoic.*"
> *Natural Science*, July, 1896, p. 8.

phanerozonate (fan″e̤-rọ-zō′nāt), *a.* [*Phanerozon(ia)* + *-ate.*] Having the characters of the *Phanerozonia*, a division of starfishes in which the plates on the margins of the arms are well developed.

Phanerozonia (fan″e̤-rọ-zō′ni-ạ̈), *n. pl.* [NL., < Gr. φανερός, visible, + ζώνη, girdle.] An order of euasterian starfishes characterized by the prominent development of the marginal plates. The genera comprised in the order range from Devonian to recent time.

phansigar (fan′si-gär), *n.* [Hindi *phānsigār*, a strangler, < *phānsi*, a noose.] A thug.

phantascope, *n.* See *fantascope.*

phantasime (fan′ta̤-sim), *n.* [Prob. It. *fantasima*, a phantasm.] A word used by Shakspere in the following passage and in one other in the same play (v. i.; there spelled *phantasim*) probably in the sense of 'a phantastic being.' Furness suggests that he "may have had in mind the Greek meaning of [φανταστής] making a show or parade."

> This Armado is a Spaniard that keeps here in court
> A *Phantasime*, a Monarcho, and one that makes sport
> To the Prince and his Booke-mates.
> *Shak.*, Love's Labor Lost, iv. i.

phantasm, *n.* 4. In *psychol.*: (*a*) A memory-image. (*b*) An image of imagination. [Rare and obsolescent in both senses.]

> In the earlier days of the English language, the representative power was called imagination, or phantasy, and then images and *phantasms* were appropriately and literally applied to its objects.
> *N. Porter*, Human Intellect, p. 253.

phantasmagorist (fan-taz′ma̤-gō-rist), *n.* [*phantasmagor(ia)* + *-ist.*] One who produces a phantasmagoria; one who is the author of fantastic ideas. [Rare.]

> Certainly, the more you examine those arch *phantasmagorists*, the philosophers who would leave nothing in the universe but their own delusions, the more your intellectual pride may be humbled.
> *Bulwer*, A Strange Story, lxxi.

phantasmascope (fan-taz′ma̤-skōp), *n.* [Gr. φάντασμα, phantasm, + σκοπεῖν, view.] Same as *phenakistoscope.*

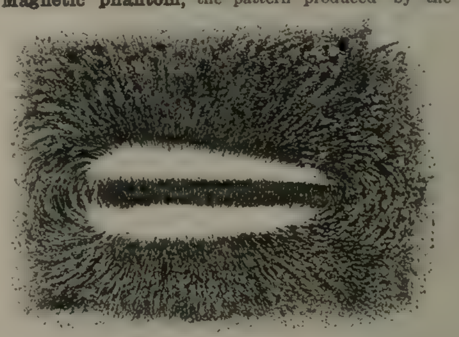
phantasmograph (fan-taz′mọ-gråf), *n.* [Gr. φάντασμα, phantasm, + γράφειν, write.] In *photog.*, an apparatus for printing lantern-slides. The negative and the lantern-plate are placed in contact at one end of a long box, while light is admitted by a hinged door at the other end. By this means extraneous light is excluded. *Stand. Dic.*

phantast, *n.* See *fantast.*

phantom. **I.** *n.* 4. A phantom crystal.—5. A map or diagram of the magnetic field made by strewing iron filings upon a plate of glass or other smooth surface and allowing them to arrange themselves along the lines of force.—**Electric phantom,** the representation of an electrostatic field in a liquid dielectric by means of suspended particles which tend to arrange themselves spontaneously along the lines of force. The phenomenon is analogous to the so-called magnetic phantom, but in three dimensions.

> The production of the *electric phantom* by conducting powders in dielectric liquids.
> *Science Abstracts*, VI., Sec. A, p. 115.

Magnetic phantom, the pattern produced by the arrangement of iron filings along the lines of force of a magnetic field.



Magnetic Phantom.

II. *a.*—**Phantom circuit.** See ★*circuit.*—**Phantom corpuscle.** See ★*corpuscle.*—**Phantom crystal,** a crystal, as of quartz or calcite, which exhibits within a distinct crystalline outline sometimes parallel to the external surface but often pertaining to a different form: it marks a stage in the growth of the complete crystal.

phantomic (fan-tom′ik), *a.* [*phantom* + *-ic.*] Of the nature of a phantom; phantomatic. Also *phantomical.*

phantoscope (fan′tọ-skōp), *n.* [Gr. φαντός, visible, + σκοπεῖν, see.] 1. A form of kaleidoscope, invented by W. S. Simpson, with an aperture in the end into which objects can be introduced.—2. A form of moving-picture machine invented by Francis Jenkins.

phar., pharm. [*l. c.* or *cap.*] Abbreviations (*a*) of *pharmaceutical*; (*b*) of *pharmacopœia*; (*c*) of *pharmacy*.

Pharaoh's corn. Same as *mummy-wheat.*

pharbitis-seed (fär-bī'tis-sēd), *n.* [*Pharbitis*, appar. of E. Indian origin, + E. *seed.*] The seed of *Pharbitis nil*, a convolvulaceous plant, growing wild in Bengal. It is in general use in India as a safe and valuable purgative, intermediate in activity between rhubarb and jalap. The native name is *kaladana.*

Phar. D. An abbreviation of the Late Latin *Pharmaciæ Doctor*, Doctor of Pharmacy.

Pharetrones (far-ẹ-trō'nēz), *n. pl.* [NL., for **Pharetreones, pl.*, < Gr. φαρετρεών, quiver.] A group of calcareous sponges having thick walls with the canal system, when present, like that of the *Lithistidæ*, and with spicules arranged in solid anastomosing fibers. They range from the Devonian to the Cretaceous.

pharisæan (far-i-sē'ạn), *a.* [L. *pharisæ*(*us*) + *-an.*] Same as *pharisaic.*

Phar. M. An abbreviation of the Late Latin *Pharmaciæ Magister*, Master of Pharmacy.

pharmacal (fär'mạ-kạl), *a.* [Gr. φάρμακον, a drug, + -*al*^{1}.] Same as *pharmaceutical.*

pharmacodynamical (fär"mạ-kọ̄-dī-nam'i-kạl), *a.* Same as *pharmacodynamic.*

pharmacol. An abbreviation of *pharmacology.*

pharmacologia (fär'mạ-kọ̄-lō'ji-ạ̈), *n.* [NL.] Same as *pharmacology.*

pharmacomania (fär"mạ-kọ̄-mā'ni-ạ̈), *n.* [NL., < Gr. φάρμακον, drug, + μανία, madness.] Excessive fondness for taking or prescribing drugs.

pharmacopedia (fär'mạ-kọ̄-pē'di-ạ̈), *n.* [Gr. φάρμακον, a drug, + παιδεία, instruction.] Instruction concerning the properties of drugs; that part of medical science which deals with the properties and preparation of drugs and medicines.

pharmacopedic (fär'mạ-kọ̄-pē'dik), *a.* [*pharmacoped*(*ia*) + *-ic.*] Pertaining to or of the nature of pharmacopedia.

pharmacopedics (fär'mạ-kọ̄-pē'diks), *n.* [Pl. of *pharmacopedic*. See *-ics.*] Same as ★*pharmacopedia.*

pharmacopœia, *n.* 3. A collection of drugs.

pharmacopœist (fär'mạ-kọ̄-pē'ist), *n.* [*pharmacopœ*(*a*) + *-ist.*] One who has compiled a pharmacopœia.

pharmacopolic (fär'mạ-kọ̄-pol'ik), *a.* [See *pharmacopolist.*] Drug-selling. [Rare.]

pharmacoposia (fär"mạ-kọ̄-pō'si-ạ̈), *n.* [NL., < Gr. φάρμακον, a drug, + πόσις, a beverage.] A medicinal liquid, usually a cathartic.

pharmacotherapy (fär"mạ-kọ̄-ther'ạ-pi), *n.* [Gr. φάρμακον, drug, + θεραπεία, medical treatment.] The treatment of disease by means of drugs.

pharmacy, *n.*—**Chemical pharmacy**, practically the same as *pharmaceutical chemistry*; that branch of chemistry which relates to pharmacy.

pharmic (fär'mik), *a.* [Gr. φάρμ(ακον), drug, + *-ic*. Cf. *alexipharmic.*] Relating to drugs or to pharmacy.

pharyngeal. I. *a.*—**Pharyngeal choke, croup, septum.** See ★*choke*^{1}, etc.

II. *n.*—**Inferior** or **lower pharyngeal**, in *fishes*, one of a pair of bones behind the fourth gill-arch. They are usually toothed and separate, though they are sometimes united into a single median bone. They are the remains of a fifth arch.—**Superior pharyngeal**, in *fishes*, one of a series of bones situated along the upper ends of the gill-arches. They usually bear teeth, and typically there is one on each side of each arch, though they are in different groups variously united and modified.—**Suspensory pharyngeal**, the superior pharyngeal of the first gill-arch in fishes. It is usually styliform and toothless, and suspends the gill-arches from the cranium.

pharyngic (fạ̄-rin'jik), *a.* Same as *pharyngeal.*

pharyngitis, *n.*—**Atrophic pharyngitis**, chronic pharyngitis marked by destruction of the glands in the mucous membrane.—**Hypertrophic pharyngitis**, chronic inflammation resulting in thickening of the mucous membrane of the pharynx: often a precursor of the atrophic form.—**Pharyngitis sicca**, inflammation of the mucous membrane of the pharynx, with atrophy of the membrane and scantiness of secretion.—**Phlegmonous pharyngitis**, acute inflammation, with abscess formation, of the mucous membrane of the pharynx.

pharyngobranchial (fạ̄-ring-gọ̄-brang'ki-ạl), *a.* and *n.* I. *a.* Same as *pharyngobranch.*

II. *n.* Same as *superior* ★*pharyngeal.*

pharyngocele (fạ̄-ring'gọ̄-sēl), *n.* [Gr. φάρυγξ (φαρυγγ-), pharynx, + κήλη, tumor.] A pouching of the wall of the pharynx near its junction with the esophagus.

pharyngo-epiglottic (fā-ring"gọ̄-ep-i-glot'ik), *a.* Pertaining to both the larynx and the epiglottis.

pharyngognathous, *a.* 2. Having the lower pharyngeals united: said of the labroid fishes.

pharyngohyal (fạ̄-ring-gọ̄-hī'ạl), *n.* [Gr. φάρυγξ (φαρυγγ-), pharynx, + E. *hy*(*oid*) + -*al*^{1}.] The most dorsal of the series of cartilages in the hyoid arch of fishes. Same as *hyomandibular.*

pharyngolaryngitis (fạ̄-ring-gọ̄-lar-in-jī'tis), *n.* [NL., < Gr. φάρυγξ (φαρυγγ-), pharynx, + λάρυγξ (λαρυγγ-), larynx, + *-itis.*] Inflammation of the mucous membrane of both the pharynx and the larynx.

pharyngopalatine (fạ̄-ring-gọ̄-pal'ạ-tin), *a.* [Gr. φάρυγξ (φαρυγγ-), pharynx, + L. *palatum*, palate, + -*ine*^{2}.] Same as *palatopharyngeal*. *Scripture*, Exper. Phonetics, p. 232.

pharyngoparalysis (fạ̄-ring"gọ̄-pạ-ral'i-sis), *n.* [NL., < Gr. φάρυγξ (φαρυγγ-), pharynx, + παράλυσις, paralysis.] Paralysis of the muscles of the pharnyx.

pharyngoplegic (fạ̄-ring-gọ̄-plē'jik), *a.* [*pharyngopleg*(*ia*) + *-ic.*] Pertaining to or suffering from pharyngoplegia.

pharyngoplegy (fạ̄-ring-gọ̄-plē'ji), *n.* Same as *pharyngoplegia.*

pharyngorrhagia (fạ̄-ring-gọ̄-rā'ji-ạ̈), *n.* [NL., < Gr. φάρυγξ (φαρυγγ-), pharynx, + -ραγια, < ῥηγνύναι, break.] Hemorrhage from the pharynx.

pharyngostenosis (fạ̄-ring"gọ̄-stẹ-nō'sis), *n.* [NL., < Gr. φάρυγξ (φαρυγγ-), pharynx, + στένωσις, narrowing.] Marked narrowing of the lumen of the pharynx.

pharyngotome (fạ̄-ring'gọ̄-tōm), *n.* [Gr. φάρυγξ (φαρυγγ-), throat, + τέμνειν, cut.] A surgical instrument for making an incision into the pharynx.

phasameter (fạ̄-sam'e-ter), *n.* Same as ★*phasemeter.*

phascaceous (fas-kā'shius), *a.* Relating to or having the characters of the *Phascaceæ.*

phascolome (fas'kọ̄-lōm), *n.* [See *Phascolomys.*] An animal of the genus *Phascolomys*; a wombat.

phase^1, *n.* 4. In *statistical mech.*, the condition of a system with respect to configuration and velocity. *J. W. Gibbs.*—5. In *math.*, the angle made with the positive ray of the x-axis by the radius vector from the origin to the point representing a complex number, taken between O and 2π or between $-\pi$ and $+\pi$; the amplitude or argument a in the trigonometric form of a complex number, $\rho(\cos a + i \sin a)$.—6. In *elect.*, the time or angle at which an electric wave reaches a certain relative value, as the maximum or zero.—7. In *phys. chem.*, one of the different homogeneous substances of which a heterogeneous thermodynamic system consists. If ice and salt are mixed there soon exist three homogeneous substances in the system, namely, brine, ice, and solid salt. All the ice existing at a given moment is one phase, all the solid salt existing at that moment is a second phase, and the brine produced up to that moment is a third phase.—**Conservation of density in phase.** See ★*conservation.*—**Conservation of extension in phase.** See ★*conservation.*—**Extension of phase.** See ★*extension.*—**In phase**, synchronous as to phase: said of two or more periodic motions or cyclic processes of whatever nature, and specifically of alternating currents or of the machines which produce them. To be permanently in phase, not only must the cyclic processes agree as to phase at a given instant, but the frequency must be the same for all. Also *in step.*—**Phase-angle**, the angle which gives the difference of phase between two harmonic or periodic motions; specifically, in *elect.*, the angle between two alternating currents or between the current and electromotive force in a circuit. **Phase converter.** See ★*converter*, 3.—**Phase-diagram**, a diagram which exhibits the phase relations in an alternating-current circuit.—**Phase difference.** See ★*difference.*—**Phase-displacement**, in *elect.*, the angle which measures the difference of phase between two alternating currents or between the current and electromotive force in a circuit.—**Phase of a complex quantity**, $x + iy$, the angle θ determined by $x = r \cos\theta$, $y = r \sin\theta$, where $r = |x + iy|$, the modulus.—**Phase rule**, in *phys. chem.*, a proposition determining the form of the law of equilibrium of a thermodynamic system, which was established by J. W. Gibbs and which states that the number of degrees of freedom of the system is equal to the number of components of the system increased by two and decreased by the number of phases in which it exists. Suppose a system composed solely of water, and existing in the three phases, liquid water, solid water or ice, and vapor of water: this system depends on pressure and temperature for its equilibrium. The number of components is one; the number of phases is three. If we put V for the number of degrees of freedom, or the variance, as it is often called, n for the number of components, and ϕ for the number of phases, we get $V = n + 2 - \phi = 0$, which indicates that the system has no degree of freedom; this agrees with the fact of observation that the system can exist at only one temperature and at only one pressure. The temperature is 0.007° C.: if we increase the temperature, the ice melts; if we decrease it, the water freezes. The pressure is 4.57 millimeters of mercury: if we increase it, the vapor phase disappears; if we diminish it, the water and ice evaporate. In case of each change the equilibrium no longer exists, and the system is replaced by a different system having fewer phases. In the case of a system consisting of liquid water and water vapor, one component and two phases give, according to the rule, one degree of freedom; accordingly, we may make the temperature what we please, but there is a given pressure corresponding to each temperature; or we may make the pressure what we please, but there is a given temperature corresponding to each pressure: we can give an arbitrary value to only one condition; if we vary, independently, two conditions we destroy the equilibrium of the system and so produce a different system. Suppose that the temperature is 20° C.; the pressure corresponding to this is 17.36 millimeters of mercury. Suppose that in this system, at this temperature, we make the pressure two hundred millimeters of mercury, the vapor is condensed to a liquid, and the equilibrium of the system and the system itself are destroyed. So also if we make the pressure less than 17.36 millimeters the water entirely evaporates, and the system is destroyed.

Furthermore, this glory is more and more resplendent every day; more and more clearly the author of the *phase rule* appears as the initiator of a chemical revolution; and many do not hesitate to compare the Yale college professor to our Lavoisier.

P. Duhem, in Jour. Phys. Chem., March, 1904, p. 214.

Solid phase, in *phys. chem.*, a phase of a thermodynamic system which consists of solid masses, or of a solid mass.

Beyond B, there is always a *solid phase* present from which we know that the temperature given on the curve cannot be that of the freezing-point and must be that of the boundary curve, along which we have already one solid phase and where tin is just beginning to separate from the solution. *Jour. of Phys. Chem.*, Feb., 1904, p. 92.

phase-indicator (fāz'in"di-kā-tọr), *n.* In *elect.*, a device for indicating when the pressures of two alternating-current circuits (as that of an alternater and that of the circuit to which it is to be connected) are in phase and in synchronism with each other.

phaselin (fā'se-lin), *n.* [*Phase*(*o*)*l*(*us*) + -*in*^{2}.] A globulin found in the kidney-bean (*Phaseolus vulgaris*).

phase-meter (fāz'mē"tėr), *n.* In *elect.*, an instrument for determining the phase of an alternating current, or for indicating differences of phase.

When a differential coil is added to a Rayleigh *phase-meter*, it is adapted to the measurement of iron losses in a loaded transformer.

Elect. World and Engin., Jan. 9, 1904, p. 88.

phaseolin (fạ̄-sē'ọ̄-lin), *n.* [*Phaseol*(*us*) + -*in*^{2}.] A globulin found in the kidney-bean, together with phaselin, but less soluble than the latter.

phaseolunatin (fạ̄-sē"ọ̄-lū-nā'tin), *n.* [L. *phaseolus*, a kind of bean. See *Phaseolus.*] A glucose ether of acetone cyanhydrin, $C_{10}H_{17}O_6N$, found in the lima bean, flax, and cassava.

phaseomannite (fā"sẹ-ọ̄-man'īt), *n.* [NL. *Phaseo*(*lus*) + *mannite.*] Same as ★*pinosite.*

phaser (fā'zėr), *n.* In *elect.*, a device for bringing alternating generators or motors into the same phase.

phase-splitter (fāz'split"ėr), *n.* In *elect.*, a device for obtaining two alternating currents differing in phase from a single-phase current. It consists essentially of a divided circuit the two branches of which differ in impedance.

phase-transformer (fāz'trȧns-fôr"mer), *n.* See ★*transformer.*

phasianic (fā-si-an'ik), *a.* [L. *phasian*(*us*), a pheasant, + *-ic.*] Of or pertaining to pheasants.

phasianoid (fā'si-ạ-noid), *a.* [L. *phasian*(*us*), pheasant, + *-oid.*] Resembling a pheasant.

phasing (fā'zing), *n.* and *a.* I. *n.* In *elect.*, the act of bringing two alternating-current circuits, as two alternaters, or a converter and its supply circuit, in phase with each other, so that their waves coincide, and they can be connected together.

II. *a.* Coinciding in phase. See *in* ★*phase.*

phasing-switch (fā'zing-swich), *n.* A switch, usually of the plug type, used for throwing in or connecting the phase-indicating apparatus for an alternating-current generator.

phasing-transformer (fā'zing-trȧns-fôr"mėr), *n.* See ★*transformer.*

phasmid (fas'mid), *n.* and *a.* I. *n.* A member of the orthopterous family *Phasmidæ.*

II. *a.* Having the characters of or belonging to the family *Phasmidæ.*

phasol (fā'sol), *n.* [*Phas*(*eolus*) + *-ol.*] A crystalline substance, $C_{15}H_{24}O$, found in the seed-coats of the bean, *Phaseolus vulgaris*. It is related to cholesterol.

phasotropy (fạ̄-sot'rọ̄-pi), *n.* [Gr. φάσις, phase, + -τροπια, < τρέπειν, turn.] In *chem.*, a name suggested by Brühl to designate that property by virtue of which certain compounds are supposed to exist as a mixture of two isomeric forms which are constantly undergoing a transformation each into the other. He distinguishes it from *tautomery*, where he supposes that the compound has a definite structure but may readily be transformed to its isomer under the influence of various reagents. The word has been little used. See *virtual* ★*tautomerism*.

phatagin (fat′a̤-jin), *n.* [Gr. *φαττάγης*, the pangolin.] The West African manis, or pangolin, *Manis tricuspis*, one of the so-called scaly ant-eaters, which has a long tail, scales with three points, and the under parts white; also any manis.

Ph. B. An abbreviation (*b*) of the Latin *Pharmacopœia Britannica*, British Pharmacopœia. Also *Ph. Br.*

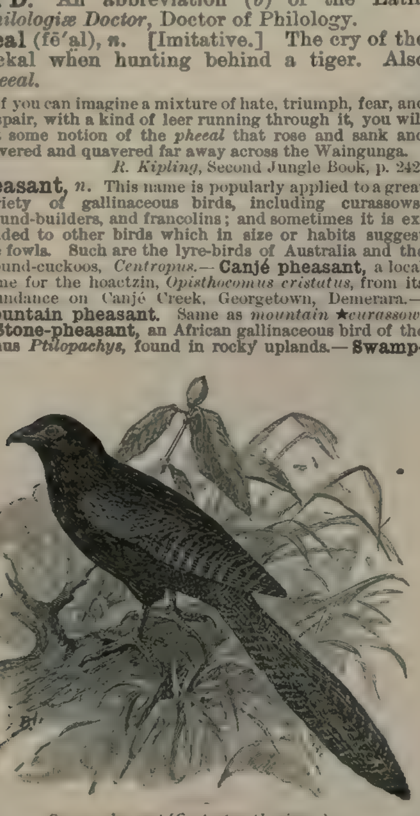
Ph. C. An abbreviation of *Pharmaceutical Chemist.*

Ph. D. An abbreviation (*b*) of the Latin *Philologiæ Doctor*, Doctor of Philology.

pheal (fē′a̤l), *n.* [Imitative.] The cry of the jackal when hunting behind a tiger. Also *pheeal.*

> If you can imagine a mixture of hate, triumph, fear, and despair, with a kind of leer running through it, you will get some notion of the *pheeal* that rose and sank and wavered and quavered far away across the Waingunga.
>
> *R. Kipling*, Second Jungle Book, p. 242.

pheasant, *n.* This name is popularly applied to a great variety of gallinaceous birds, including curassows, mound-builders, and francolins; and sometimes it is extended to other birds which in size or habits suggest the fowls. Such are the lyre-birds of Australia and the ground-cuckoos, *Centropus.*—**Canjé pheasant,** a local name for the hoactzin, *Opisthocomus cristatus*, from its abundance on Canjé Creek, Georgetown, Demerara.—**Mountain pheasant.** Same as *mountain* ★*curassow.*—**Stone-pheasant,** an African gallinaceous bird of the genus *Ptilopachys*, found in rocky uplands.—**Swamp-pheasant,** an Australian ground-cuckoo of the genus *Centropus*, which has a long tail and mottled plumage, the general appearance suggesting a hen-pheasant.



Swamp-pheasant (*Centropus phasianus*).

pheasant-duck, *n.* **2.** The pintail, *Dafila acuta*: so called on account of its long tail, which suggests that of a pheasant.

pheasant-eyed (fez′a̤nt-īd), *a.* Marked like the eye of a pheasant: applied to certain flowers. *N. E. D.*

pheasant-parrot (fez′a̤nt-par″ọt), *n.* An Australian parrakeet, *Platycercus adelaidensis.*

pheasant-wren (fez′a̤nt-ren), *n.* The emu-wren of Australia, a small bird of the genus *Stipiturus*, whose loosely webbed tail-feathers suggest the feathers of the emu, while the length of the tail is suggestive of a pheasant.

phellandral (fe-lan′dra̤l), *n.* [NL. *Phellandr(ium)* (bot. genus) + *-al*3.] In *chem.*, an aldehyde ($C_{10}H_{16}O$) isomeric with citral, found as a constituent of water-fennel oil. It readily undergoes oxidation on exposure to the air.

phellandrene (fe-lan′drēn), *n.* [NL. *Phellandr(ium)* + *-ene.*] A liquid hydrocarbon, $C_{10}H_{16}$, of the terpene series. The dextrorotatory variety occurs in fennel-oil, elemi-oil, the ethereal oil in the seeds of the water-hemlock, *Phellandrium aquaticum*, Australian eucalyptus-oil, etc. The levorotatory variety is also found in Australian eucalyptus-oil. Both varieties boil at 171–172° C. The phellandrenes from different sources are not apparently identical, since they give nitrites with different properties.

phellodermal (fel-ọ-dėr′ma̤l), *a.* [*phelloderm* + *-al*1.] In *bot.*, of or pertaining to phelloderm: as, a *phellodermal* layer.

phelloplastic (fel-ọ-plas′tik), *a.* [Gr. *φελλός*, cork, + *πλαστός*, < *πλάσσειν*, form.] Relating to or produced by the art of phelloplastics: as, a *phelloplastic* model.

phellyl (fel′il), *n.* [Gr. *φελλός*, cork, + *-yl.*] The radical of phellyl alcohol.—**Phellyl alcohol.** Same as *cerin.*

phen-. [Detached from *phen-ol.*] In *chem.*, a prefix which shows that the substance designated is derived from benzene: as, 1,2-*phendiol* or *pyrocatechol*, and *phenbutyldiol acid* or *phenyldihydroxybutyric acid.*

Phen., Phenic. Abbreviations of *Phenician.*

phenacetein (fen-as-ẹ-tē′in), *n.* [*phenacet(in)* + *-e-in.*] Same as ★*phenacetolin.*

phenacetin, *n.*—**Ethyl phenacetin.** See ★*ethyl.*

phenacetolin (fen-a-set′ọ-lin), *n.* [*phenacet(in)* + *-ol* + *-in*2.] A red amorphous powder, $C_{16}H_{12}O_2$, made by heating phenol with acetic anhydrid and zinc chlorid, or with glacial acetic acid and sulphuric acid. It is turned yellow by acids and red by alkalies. Also called *phenacetein* and *Degener's indicator.*

phenaceturic (fẹ-nas-e̥-tū′rik), *a.* [*phenacet(in)* + Gr. *οὖρον*, urine, + *-ic.*] Designating an acid found in urine.—**Phenaceturic acid,** phenylacetylglycocoll, $C_6H_5CH_2.CONH.CH_2CO_2H$, a crystalline acid which occurs in the urine of horses and in human urine after taking phenylacetic acid. It melts at 143° C. and is also made synthetically.

phenacism (fen′a̤-sizm), *n.* Same as ★*phenakism*, 2.

Phenacobius (fen-a̤-kō′bi-us), *n.* [NL., < Gr. *φέναξ* (*φενακ-*), impostor, + *βίος*, life. The fish has the deceptive appearance of an herbivorous fish with long intestines.] A genus of minnows of the eastern and southeastern United States.

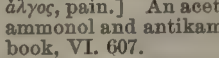
Phenacodontidæ (fē″na̤-kō-don′ti-dē), *n. pl.* [*Phenacodus*, type genus, + *-idæ*, family ending.] A family of mammals belonging to the suborder *Condylarthra*, which comprises generalized forms of moderate size having affinities with the carnivores. The brain was small and smooth; teeth short-rooted and tubercular; fore and hind feet with five hoofed toes; humerus with an entepicondylar foramen; and femur with a third trochanter. Remains of these small-headed, long-tailed, subplantigrade mammals occur in the Lower Eocene of the western United States and Upper Eocene of Europe. *Cope*, 1881.

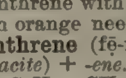
Phenacodus (fẹ-nak′ọ-dus), *n.* [Gr. *φέναξ*, an impostor, + *ὀδούς* (*ὀδοντ-*), tooth.] An extinct genus of hoofed animals of the family *Phenacodontidæ*, suborder *Condylarthra*, characterized by small elongated skull, proportionately very small brain-cavity, complete dentition, bunodont molars, and pentadactyl feet the axes of which pass through the third digit as in the *Perissodactyla*. The metapodial bones are keeled distally; the gait is digitigrade. Two species are known by nearly complete skeletons from the Wasatch formation (Lower Eocene). Related genera occur in the Lower Eocene Puerco formation of New Mexico. Teeth very similar to those of *Phenacodus* are known from the Upper Eocene of Switzerland.

phenakism, *n.* **2.** In *pathol.*, an *hallucination.*

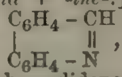
phenakist† (fen′a̤-kist), *n.* [Gr. *φέναξ* (*φενακ-*), an impostor, cheat, + *-ist.*] An impostor; a cheat.

phenalgin (fe-nal′jin), *n.* [Gr. *φένειν*, slay, + *ἄλγος*, pain.] An acetanilid mixture similar to ammonol and antikamnia. *Buck*, Med. Handbook, VI. 607.

phenanthraquinone (fẹ-nan″thra̤-kwī-nōn′), *n.* [*phenanthr(ene)* + *quinone.*] A quinone,  $C_6H_4\begin{array}{c}\diagup CO{-}CO \diagdown\\ \overline{}\end{array}C_6H_4$, obtained by oxidizing phenanthrene with chromic acid. It crystallizes in orange needles which melt at 205° C.

phenanthrene (fẹ-nan′thrēn), *n.* [*phen-* + *anthr(acite)* + *-ene.*] A crystalline hydrocarbon,  $\begin{array}{l} C_6H_4 - CH \\ \vert \qquad\quad \Vert \\ C_6H_4 - CH \end{array}$, found in coal-tar, and formed when various hydrocarbons are passed through red-hot tubes. Its solutions have a slight blue fluorescence. It melts at 99° C., but sublimes at a lower temperature.

phenanthrene-quinone (fẹ-nan″thrēn-kwī-nōn′), *n.* [*phenanthrene* + *quinone.*] Same as ★*phenanthraquinone.*

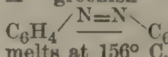
phenanthridine (fẹ-nan′thri-din), *n.* [*phenanthr(ene)* + *-id* + *-ine*2.] A crystalline basic compound,  $\begin{array}{l} C_6H_4 - CH \\ \vert \qquad\quad \Vert \\ C_6H_4 - N \end{array}$, formed by passing the vapor of benzylidene aniline through a red-hot tube. The aqueous solution has a slight blue fluorescence. It melts at 104° C.

phenanthroline (fẹ-nan′thrọ-lin), *n.* [*phenanthr(ene)* + *-ol* + *-ine*2.] A crystalline base, $C_{12}H_8N_2 + 2H_2O$, made by heating together metaphenylenediamine, metadinitrobenzene, glycerol, and sulphuric acid. It melts at 78.5° C. when anhydrous. When paraphenylenediamine is used the product is the isomeric pseudophenanthroline, $C_{12}H_8N_2 + 4H_2O$. It melts at 173° C. when anhydrous.

phenantipyrin (fẹ-nan-ti-pī′rin), *n.* [*phen-* + *antipyrin.*] Same as ★*phenopyrin.*

phenate (fē′nāt), *n.* The same as ★*phenylate.*

phenazine (fẹ-naz′in), *n.* [*phen-* + *azo-* + *-ine*2.] A yellow crystalline base, $C_{12}H_8N_2$, made by heating calcium azobenzoate with slaked lime. It melts at 170–171° C. and dissolves in sulphuric acid with a blood-red color.

phenazone (fẹ-naz′ōn), *n.* [*phen-* + *azo-* + *-one.*] **1.** The same as *antipyrin.*—**2.** A greenish yellow crystalline base,  $C_6H_4\begin{array}{c}\diagup N{=}N \diagdown\\ \overline{}\end{array}C_6H_4$, made synthetically. It melts at 156° C. Also called *dibenzo-orthodiazin.*

phene (fēn), *n.* [*phen(ol).* Cf. ★*phen-.*] Same as *benzene.*

phenegol (fē′ne-gol), *n.* [*phen-* + *egol.*] The trade-name of potassium nitrophenol-, parasulphonate of mercury, $(C_6H_3NO_2SO_3KO)_2Hg$. It is a powerful antiseptic and is used as a substitute for mercuric chlorid. *Buck*, Med. Handbook, III. 727.

phenetidine (fē-net′i-din), *n.* [*phen-* + *-et* + *-id* + *-ine*2.] A liquid compound, $NH_2C_2H_5O.C_6H_4$, or para-aminophenetol, made by reducing paranitrophenetol with tin and hydrochloric acid. It boils at 244° C. The acetyl derivative, $C_2H_3O.NH.C_6H_4.OC_2H_5$, is called *phenacetin*, and is used as an antipyretic. It is a white, odorless, tasteless, crystalline powder which is made by boiling phenetidine with acetic acid, and which melts at 135° C.

phenin (fē′nin), *n.* [*phen-* + *-in*2.] Same as *phenacetin.*

phenix, *n.* **4.** A silver coin of modern Greece, struck in 1828 by President Capo d' Istria. Its value is rather less than that of a lira.—**5.** A southern constellation formed by Theodori below Cetus (though the Sculptor now intervenes). It is bounded by Eridanus on the west, by Toucan on the south, and by Eridanus on the east. Its brightest star is of magnitude 2½.

phenocoll (fē′nọ-kol), *n.* [*phen-* + Gr. *κόλλα*, glue.] Aminoacetylphenetidine, $NH_2C_2H_2O.NH.C_6H_4.OC_2H_5$. It is a crystalline substance used as an antipyretic. Its acetate is called *salocoll.*

phenocrystal (fē-nọ-kris′ta̤l), *n.* [Gr. *φαίνειν*, show, + *κρύσταλλος*, crystal.] Same as *phenocryst.*

phenocrystalline (fē-nọ-kris′ta̤-lin), *a.* [Irreg. < Gr. *φαίνειν*, show, + *κρύσταλλος*, crystal, + *-ine*1.] **1.** In *petrog.*, same as *phanerocrystalline.*—**2.** In *mineral.*, having megascopically visible crystals: as, *phenocrystalline* quartz.

phenocrystic (fē-nọ-kris′tik), *a.* [*phenocryst* + *-ic.*] In *petrog.*, having the characters of, containing, or relating to, phenocrysts.

phenocyanine (fē-nọ-sī′a̤-nin), *n.* [*pheno(l)* + Gr. *κύανος*, blue, + *-ine*2.] A mordant coal-tar color of the oxazin type, prepared by the action of resorcin upon the gallocyanine from diethylaniline and gallic acid. It is used in calico-printing for the production of blues.

phenoflavin (fē-nọ-flav′in), *n.* [*pheno(l)* + L. *flavus*, yellow, + *-in*2.] An acid coal-tar color of the monoazo type, prepared by combining diazotized metasulphanilic acid with amino-phenol-sulphonic acid. It dyes wool yellow in an acid bath.

phenol-bismuth (fē′nol-biz″muth), *n.* A colorless, tasteless, pulverulent compound, $C_6H_5OBi(OH)_2$. It is used in medicine as a sedative and antiseptic for the gastro-intestinal tract.

phenolic (fẹ-nol′ik), *a.* [*phenol* + *-ic.*] **1.** Derived from or related to phenol: as, *phenolic* ethers, of which anisol, $C_6H_5(OCH_3)$, is the simplest.—**2.** Analogous to phenol. A phenolic hydroxyl group is directly united with a carbon atom of the ring of a benzene nucleus, as it is in phenol, and not with a carbon atom of a side chain.

phenologic, phænologic (fē-nọ-loj′ik), *a.* Same as *phenological.*

phenolphthalein (fē-nol-thal′ẹ̄-in), *n.* [*phenol* + *phthal(ic)* + *-e-in.*] A white crystalline compound, $C_{20}H_{14}O_4$, made by heating a mixture of phthalic anhydrid and phenol with a dehydrating agent, as stannic chlorid or sulphuric acid. The dilute alcoholic solution is much used as an indicator in titrating. It can be used with weak or strong acids and strong bases. It melts at 250–253° C.

phenolphthalin (fē-nol-thal′in), *n.* [*phenol* + *phthal*(*ic*) + *-in*2.] A crystalline compound, $C_{20}H_{16}O_4$, made by reducing phenolphthalein with zinc dust and caustic soda. It melts at 225° C. and is easily oxidized to phenolphthalein.

phenolsulphonate (fē-nol-sul′fọ-nāt), *n.* [*phenolsulphon*(*ic*) + *-ate*1.] A salt of phenolsulphonic acid.

phenolsulphonic (fē″nol-sul-fon′ik), *a.* [*phenol* + *sulphonic.*] Derived from phenol and sulphuric acid.—**Phenolsulphonic acid,** a sulphonic acid made by the action of sulphuric acid. Three isomeric monosulphonic acids, $C_6H_4(OH).SO_3H$, are known. They are all crystalline. The *a*-disulphonic acid, $C_6H_3(OH)(SO_3H)_2$, crystallizes, while the *β*-acid is a syrupy mass. The trisulphonic acid, $C_6H_2(OH)(SO_3H)_3$, is crystalline. What appears to be a tetrasulphonic acid, $C_6H(OH)(SO_3H)_4$, is known only by its salts.

phenomenalism, *n.*—**Psychophysical phenomenalism,** the metaphysical opinion that there are beneath phenomena no things-in-themselves of which we can have no experiential knowledge, but that physical phenomena directly affect psychical phenomena, whether it be true that psychical phenomena really affect physical phenomena or not. *C. A. Strong,* Why the Mind has a Body, p. 298.

phenomenalistic (fẹ-nom″e-nạl-is′tik), *a.* [*phenomenalist* + *-ic.*] Of or pertaining to phenomenalism; partaking of or tending toward the opinion of phenomenalists that what is real is not experientially incognizable.

phenomenistic (fẹ-nom-e-nis′tik), *a.* [*phenomenism.*] Pertaining to, of the nature of, or believing in, phenomenism.

phenomenologist (fẹ-nom-e-nol′ọ-jist), *n.* [*phenomenolog*(*y*) + *-ist.*] One who advocates a phenomenological epistemology or metaphysics. *G. S. Hall,* Adolescence, II. 50.

phenomenology, *n.* **2.** In Kantian terminology, a division of the metaphysics of nature which determines motion and rest merely in respect to the mode of representing them as phenomena of sense.—**3.** In Hegelian philosophy, the exposition of the evolution of knowledge.—**Cenopythagorean phenomenology,** universal phenomenology as it is understood by those who recognize the categories of ★*firstness*, ★*secondness*, and ★*thirdness* (which see).—**Phenomenology of conscience,** that branch of ethics which observes, analyzes, and generalizes the judgments of consciences and formulates their principles.—**Phenomenology of mind,** that branch of psychology which observes and generalizes the phenomena of mind.—**Phenomenology of spirit,** in Hegelian philosophy, the exposition of the development of consciousness from its first contradiction to absolute knowledge.—**Universal phenomenology,** the observation, analysis, and generalization of those kinds of elements that are present in the universal phenomenon. See ★*phenomenon.*

phenomenon, *n.* **4.** Any physiological or pathological change apparent to the senses.—**Argyll-Robertson phenomena.** Same as *Argyll-Robertson pupil* (which see, under *pupil*2).—**Babinski phenomenon.** (*a*) Involuntary extension of the toes in response to tickling the sole of the foot, instead of the flexion which occurs normally. It indicates disease in the pyramidal tract of the spinal cord. (*b*) Diminution of the Achilles tendon reflex in sciatica.—**Contact phenomena.** See ★*contact*1.—**Gore's phenomenon,** the momentary elongation observed in an iron wire when cooling from a bright red heat. The effect occurs at the temperature of recalescence (775° C.).

> At a certain stage (coincident with that at which *Gore's phenomenon* occurs), the process of cooling experiences a sudden check.
>
> *J. A. Ewing,* Magnetic Induction in Iron and other Metals, p. 161.

Hall's phenomenon. Same as *Hall effect.*—**Hittorf's phenomenon,** in *phys. chem.*, the migration of ions in opposite directions during electrolysis. If copper chlorid in solution is placed between electrodes of gas-carbon the ions of copper, each carrying a definite positive electrical charge, pass through the liquid toward the cathode, while the ions of chlorin, each carrying a definite negative electrical charge, pass in the other direction. In this case the copper ions give up their charges and are deposited as electrically neutral metallic copper on the cathode, while the chlorin ions give up their charges at the anode, and are given off as electrically neutral chlorin gas. (The liquid around the anode becomes poorer in copper, and that around the cathode becomes poorer in chlorin.) See *migration of* ★*ions.*—**Kerr's phenomenon.** Same as *Kerr* ★*effect.*—**Pfeiffer's phenomenon,** the bacteriolytic destruction of organisms by means of the serum of immunized animals.—**Porret's phenomenon,** swelling of muscular tissue at the negative pole when a galvanic current is passed through it.—**Purkinje phenomenon, Purkinje's phenomenon,** in *physiol.* and *psychol.*, the fact, first recorded by Purkinje in 1825, that fields of equal brightness but different color become unequally bright if the intensity of the objective illumination is uniformly decreased, the colors of the short-wave end of the spectrum growing relatively brighter, and those of the long-wave end relatively darker. The name of Purkinje's phenomenon is now generally given to the relative lightening and fading of the blues in a faint light; the marked brightening of green, which occurs when adaptation to dark has been established, has been termed the *extended Purkinje phenomenon.* In general, if a spectrum is darkened until all colors disappear and only a band of grays is left, and if such an achromatic spectrum is observed by a dark-adapted eye, the point of maximal brightness will be found to have shifted from what was originally yellow to what was originally green; the long-wave end is thus darkened, the short-wave end lightened. This is the complete Purkinje phenomenon, one of extreme importance for theories of color vision.—**Residual phenomena,** phenomena which pertain to nigh vacua; specifically, the phenomena of the electric discharge in vacuum-tubes in which the mean free path is very long.—**Soret phenomenon,** in *phys. chem.*, the fact that, if a homogeneous solution has its parts kept at different temperatures, it gradually becomes more concentrated in the colder regions. Also *principle of Soret.*

> The *Soret phenomenon* was explained by van 't Hoff on the assumption that equilibrium is reached when the osmotic pressure of the solute is the same in both parts of the tube. Since the diffusion of the solute to the colder portion must usually be accompanied by a displacement of the solvent, the conclusion of van 't Hoff can hold only for such dilute solutions that the volume occupied by the solute can be neglected. The real conditions for equilibrium have never been formulated.
>
> *Jour. Phys. Chem.*, Nov., 1904, p. 585.

Staircase phenomenon, the successive increase, up to a certain limit, of the contractions which result when a muscle is repeatedly stimulated with stimuli of equal intensity.—**Stokes-Adams' phenomenon,** extreme slowness of pulse and shortness of breath with attacks of vertigo and convulsions, due to disturbances of the circulation from arterial disease.—**Strümpell phenomenon,** an involuntary flexion at the ankle, occurring when the patient is made to flex the hip and knee.—**Toe phenomenon.** Same as *Babinski* ★*phenomenon.*—**Universal phenomenon,** that which is in any way before the mind (as by perception, imagination, conception, emotion, desire, etc.), considered only in its most general characters.

phenopyrin (fē-nọ-pī′rin), *n.* [*pheno*(*l*) + (*anti*) *pyrin.*] A colorless liquid made by mixing antipyrin and phenol in equal parts. It is used in medicine. Also called *phenantipyrin.*

phenoquinone (fē-nō-kwin′ōn), *n.* [*pheno*(*l*) + *quinone.*] A volatile, red, crystalline addition-compound of phenol and quinone, $C_6H_4O_2.2C_6H_5.OH$. It melts at 71° C. Caustic potash changes it to a blue color.

phenosafranine (fē-nọ-saf′rạ-nin), *n.* [*pheno*(*l*) + G. *safran,* saffron, + *-ine*2.] A basic dyestuff, $C_{18}H_{16}N_4O$, made by oxidizing a mixture of paraphenylenediamine and aniline with potassium bichromate. When repeatedly crystallized from hot water it is changed into the anhydrid, $C_{18}H_{14}N_4$, from which the salts are derived, as, for instance, the hydrochlorid, $C_{18}H_{14}N_4.HCl$. Sometimes used, also, as a synonym for *safranine* ($C_{20}H_{18}N_4$).

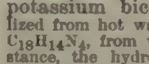
phenosal (fē′nọ-sal), *n.* [*phen*(*etidinacet*)*osal*(*icylic*).] The trade-name of phenetidinacetosalicylic acid, $C_2H_5\overset{1}{O}.C_6H_4\overset{4}{N}HCOCH_2.\overset{2}{O}.C_6H_4.COOH$. It crystallizes in colorless needles or plates and is used as an antiseptic.

phenosalyl (fē-nọ-sal′il), *n.* [*pheno*(*l*) + *sal*(*ic*)*yl*(*ic*).] An antiseptic syrupy mixture made by heating 90 parts of phenol, 10 parts of salicylic acid, and 20 parts of lactic acid to liquefaction and then adding 1 part of menthol.

phenoscopy (fẹ-nos′kọ-pi), *n.* [Irreg. < Gr. φαίνεσθαι, appear, + σκοπεῖν, contemplate, examine.] That study which observes, generalizes, and analyzes the elements that are always or very often present in, or along with, whatever is before the mind in any way, as percept, image, experience, thought, habit, hypothesis, etc. *C. S. Peirce.*

phenose (fē′nōs), *n.* [*phen*(*ol*) + *-ose.*] An amorphous, deliquescent, easily soluble compound, $C_6H_{12}O_6$, made by the electrolysis of a mixture of toluene, alcohol, and dilute sulphuric acid, or by the action of soda on the addition-product of benzene and hypochlorous acid. It has a sweet taste and reduces Fehling's solution, but is not fermentable.

phenosuccin (fē-nọ-suk′sin), *n.* [(*parethoxy*)*phen*(*yl*)*succin*(*imide*).] The trade-name of parethoxyphenylsuccinimide, $C_2H_5\overset{1}{O}C_6$-



$$H_4N\left\langle\begin{array}{l}CO.CH\\ \quad\ \ |\\ CO.CH\end{array}\right.$$

, prepared by the action of paraminophenol on succinic acid. It crystallizes in colorless needles and is used in medicine as an antipyretic and antineuralgic. Also called *pyrantin,* which is another trade-name.

phenoxy-. [*phen*(*yl*) + *oxy*(*gen*).] A prefix which shows that the compound indicated contains the group (OC_6H_5), composed of phenyl and an atom of oxygen: as, *phenoxyacetone,* $C_3H_5O(OC_6H_5)$.

phentriol (fen′tri-ol), *n.* [*phen-* + *tri-* + *-ol.*] Same as *phloroglucin.*

Phenyl carbonimide. Same as ★*carbanil.*—**Phenyl hydrate,** an incorrect name for *phenol.*—**Phenyl isocyanate.** Same as ★*carbanil.*

phenylacetic (fē″nil-a-set′ik), *a.* [*phenyl* + *acetic.*] Noting acetic acid, in which one hydrogen atom of the methyl has been replaced by a phenyl group ($C_6H_5.CH_2.COOH$).

phenylalanin (fē-nil-al′a-nin), *n.* [*phenyl* + *al*(*bumen*) + *-an* + *-in*2.] Phenyl-*a*-amino propionic acid, $C_6H_5.CH_2.CH(NH_2).COOH$: one of the essential radicals of the albuminous molecule.

phenylate (fē′ni-lāt), *n.* A salt of phenylic or phenic acid.

phenylene (fē′ni-lēn), *n.* [*phenyl* + *-ene.*] A bivalent organic radical derived from benzene by the removal of two hydrogen atoms. Its formula is $C_6H_4=$.—**Phenylene black.** Same as *anthracite* ★*black.*—**Phenylene blue.** Same as *new blue.*

phenylglucosazone (fē-nil-glö-kōs-az′ōn), *n.* [*phenyl* + *glucose* + *azo-* + *-one.*] An osazone, $C_{18}H_{22}O_4N_4$, made by the action of phenylhydrazinehydrochlorid and sodium acetate on glucose or fructose: also formed by warming cane-sugar or dextromannose with phenylhydrazine. It forms yellow, needle-like crystals which are nearly insoluble in water and melt at 204–205° C.

phenylglycin (fē-nil-glī′sin), *n.* [*phenyl* + *glycin.*] Anilidoacetic acid, $C_6H_5NH.CH_2$-CO_2H, a crystalline substance made by the action of aniline on bromacetic acid or chloracetic acid. It melts at 126–127° C., and yields indigo when fused with caustic soda.

phenylglycolic (fē″nil-glī-kol′ik), *a.* Same as ★*mandelic.*

phenylhydrazine (fē-nil-hī-draz′in), *n.* [*phenyl* + *hydr*(*ogen*) + *azo-* + *-ine*2.] A colorless crystalline mass, $C_6H_5.NH.NH_2$, which melts at 23° C. and then appears as an oily liquid which readily becomes brown from oxidation. It is extensively utilized as a reagent in the recognition of aldehydes and ketones (and hence of sugars), with which it forms characteristic compounds which in part belong to the hydrazones and in part to the osazones.

phenylon (fē′ni-lon), *n.* [*phenyl* + *-on.*] Same as *antipyrin.*

phenyloxamic (fē″nil-ok-sam′ik), *a.* [*phenyl* + *oxamic.*] Derived from phenyl and oxamic acid.—**Phenyloxamic acid.** Same as ★*oxanilic acid.*

phenyloxamide (fē″nil-oks-am′id), *n.* [*phenyl* + *oxam*(*ic*) + *-ide*1.] Same as ★*oxanilamide.*

Pherusidæ (fẹ-rū′si-dē), *n. pl.* Same as ★*Chlorhæmidæ.*

Ph. G. An abbreviation (*a*) of *Graduate in Pharmacy;* (*b*) of the Latin *Pharmacopœia Germanica,* German Pharmacopœia.

phi (fī), *n.* The Greek letter φ, corresponding to the English *ph* (*f*).

phialine (fī′ạ-lin), *a.* [Gr. φιάλη, a bowl (see *phial, vial*), + *-ine*1.] Shaped like a bowl or saucer. [Rare.]

Phidiac (fid′i-ak), *a.* Same as *Phidian.*

Phidian school, the name sometimes given to sculptors employed in the decoration of the Parthenon at Athens, who are supposed to have been pupils and assistants of Phidias, the famous Greek sculptor.

phil. An abbreviation (*a*) of *philosopher;* (*b*) of *philosophical;* (*c*) of *philosophy;* (*d*) [*cap.*] of *Philemon,* a book of the New Testament; (*e*) [*cap.*] of *Philippians,* a book of the New Testament.

Philadelphia brick. See ★*brick*2.

philander1, *n.* **3.** A flirtation; a philandering.

> Charteris. . . . Besides it was nothing but a *philander* with Julia—nothing else in the world, I assure you.
>
> Grace. So much the worse! I hate your philanderings.
>
> *G. B. Shaw,* The Philanderer, i.

philander2, *n.* Same as *filander*2.

philandering (fi-lan′dėr-ing), *n.* Flirting; "spooning."

philanthid (fi-lan′thid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Philanthidæ.*

II. *a.* Having the characters of and belonging to the family *Philanthidæ.*

philanthropine (fi-lan′thrọ-pin), *n.* [Gr. φιλανθρώπινος, philanthropic, humane.] One who advocates the educational system known as philanthropinism (which see).

philanthropize (fi-lan′thrọ-pīz), *v. i.* and *t.*; pret. and pp. *philanthropized,* ppr. *philanthropizing.* [*philanthrop*(*y*) + *-ize.*] To be or become philanthropic; practise philanthropy; also, treat with philanthropy; render philanthropic.

philatelical (fil-ạ-tel′i-kạl), *a.* Same as *philatelic.*

philatelism (fi-lat′e-lizm), *n.* Same as *philately.*

philhippic (fil-hip′ik), *a.* [Gr. φιλεῖν, love, + ἵππος, horse.] Fond of horses. [Rare.]

philhydrous (fil-hī′drus), *a.* [Gr. φιλεῖν, love, + ὕδωρ (ὑδρ-), water, + *-ous.* See *Philhydrus.*] Fond of or living in the water: said especially of aquatic insects.

Philidor's gambit. See ★*gambit.*

Philippine mahogany. See ★*asana.*

Philippino, *n.* See *Filipino.*

Philippistic (fil-i-pis′tik), *a.* Pertaining to or supporting the principles of Philippism (which see).

philippium (fi-lip′i-um), *n.* [NL.] A supposed new chemical element announced by Delafontaine as present in the mineral samarskite. Its existence has not been confirmed; what was supposed to be its oxid has been shown to be a mixture, probably, for the most part, of terbia and yttria.

philippus (fi-lip′us), *n.* [NL.] The silver crown struck by Philip II. of Spain during his occupation of the Low Countries.

philipstadite (fi-lip′sta-dīt), *n.* [Sw. *Philipstad* + *-ite*².] A variety of amphibole from Philipstad (Filipstad), in Sweden; it yields etching figures of unusual form.

Philistee†, *n.* Same as *Philistine.*

Philistine, *n.* **II.** *a.* **1.** Of or pertaining to the ancient Philistines.—**2.** Of or pertaining to or having the characteristics of Philistines in the modern social and literary sense (see the noun, def. 3.); commonplace; dully matter-of-fact and satisfied; conventional and unimaginative.

Philistinic (fil-is-tin′ik), *a.* [*Philistin(e)* + *-ic.*] Pertaining to, or exhibiting, Philistinism; Philistine.

Philistinize (fi-lis′tin-īz), *v. t.*; pret. and pp. *Philistinized,* ppr. *Philistinizing.* [*Philistine,* in senses 3 and 4, + *-ize.*] To render Philistine in character. See *Philistine,* 3 and 4.

> Children, perchance, and his hardening lawyer's head are secretly *Philistinizing* the demagogue, blunting the fine edge of his Radicalism, turning him into a slow-stepping Liberal, otherwise your half-Conservative in his convictions. *G. Meredith,* Tragic Comedians, xvi.

phillipite (fil′ip-īt), *n.* [Named (Domeyko, 1876) from some one named *Phillips.*] A hydrated sulphate of copper and iron which occurs in azure blue masses, granular and fibrous in structure: taken from the copper mines of Chile where it has been formed from the decomposition of chalcopyrite.

Phillipsia (fi-lip′si-ä̤), *n.* [NL.] A genus of opisthoparian trilobites of the family *Proëtidæ,* having small oval tuberculate carapaces with subcylindrical glabella provided with strong basal lobes, nine thoracic segments, and large multisegmented pygidium. It is the latest surviving genus of trilobites, ranging from the Lower Carboniferous into the Permian formations.

phillygenin (fi-lij′e-nin), *n.* [*philly(rin)* + *-gen* + *-in*².] A crystalline compound, $C_{20}H_{22}O_6$ (?), formed by the hydrolysis of phillyrin.

phillyrin (fil′i-rin), *n.* [*Phillyr(ea)* + *-in*².] A crystalline glucoside, $C_{26}H_{32}O_{11} + 1{}^1/_2\,H_2O$ (?), found in the bark of *Phillyrea latifolia.* When hydrolyzed with dilute acids it yields glucose and phillygenin.

philobiblic (fil-ọ-bib′lik), *a.* [Gr. φιλόβιβλος, ‹ φιλεῖν, love, + βίβλος, book.] Fond of books; bibliophilic. [Rare.]

philobiblist (fil-ọ-bib′list), *n.* [*philobibl(ic)* + *-ist.*] A lover of books; a bibliophile. [Rare.]

philocaly (fi-lok′ạ-li), *n.* [See *philocalist.*] The love of beauty. [Rare.]

philocatalase (fil-ọ-kat′ạ-lās), *n.* [*philo-* + *catalase.*] A ferment which prevents the destructive action of anticatalase upon catalase.

> The name *philocatalase* is given to a ferment which is present in many animal tissues; although without direct action on catalase it possesses the property of protecting the catalase against the destructive action of anticatalase. *Nature,* May 25, 1905, p. 96.

philocomal (fi-lok′ọ-mạl), *a.* [Gr. φιλόκομος, ‹ φιλεῖν, love, + κόμη, hair.] Paying much attention to the care of the hair. [Rare.]

philocubist (fi-lok′ụ̄-bist), *n.* [Gr. φιλόκυβος, fond of dice.] One who is fond of dice; a dice-player. [Rare.]

philocynic (fil-ọ-sin′ik), *a.* [Gr. φιλεῖν, love, + κύων, dog. See *cynic.*] Fond of dogs. [Rare.]

philocyny (fi-los′i-ni), *n.* [*philocyn(ic)* + *-y.*] Love of dogs. [Rare.]

philocytase (fi-lọ-sī′tās), *n.* [Gr. φιλεῖν, love, + κύτος, a hollow (a cell), + *-ase.*] Same as ★*amboceptor.*

Philodina (fil-ọ-dī′nä̤), *n.* [NL.] The typical genus of the family *Philodinidæ.* *Ehrenberg.*

Philodinidæ (fil-ọ-din′i-dē), *n. pl.* [NL. *Philodina* + *-idæ.*] A family of rotifers, of the order *Bdelloida,* having the corona a pair of circular lobes placed transversely, and the velum a continuous marginal curve bent on itself at the dorsal surface so as to encircle the corona twice, the mouth being between its upper and lower curves. It contains the genera *Philodina, Rotifer, Actinurus,* and *Callidina.*

philodox (fil′ọ-doks), *a.* [Gr. φιλόδοξος, ‹ φιλεῖν, love, + δόξα, fame, opinion.] Properly, loving fame or glory; in the extract, loving one's own opinions; dogmatic. [Rare.]

> A perswasion of certaintie is a manifest testimonie of foolishness and of extreame uncertaintie. And no people are lesse Philosophers and more foolish than Platoes *Phylodoxes,* or lovers of their owne opinions. *Florio,* tr. of Montaigne's Essays, ii. 12.

philodoxical (fil-ọ-dok′si-kạl), *a.* [Gr. φιλεῖν, love + δόξα, opinion, + *-ic* + *-al*¹.] In love with one's own theories or opinions. [Rare.]

philogastric (fil-ọ-gas′trik), *a.* [Gr. φιλεῖν, love, + γαστήρ, belly. See *gastric.*] Fond of one's stomach; epicurean; gluttonous. [Rare.]

philogenitive (fil-ọ-jen′i-tiv), *a.* [*philo-* + *genitive.*] Fond of begetting; having strong sexual impulses. [Rare.]

philograph (fil′ọ-gråf), *n.* [*philo-* + *-graph.*] An instrument for drawing objects in facsimile.

> He did not think that photography was suited for rapid sketches of country. The *philograph,* in which an exact picture was sketched on glass or celluloid of the objects seen through it, was useful and accurate, and excellent in its perspective. But it was the range-finder which had revolutionized topographical study. *Times* (London), March 1, 1894.

philogynous (fi-loj′i-nus), *a.* [*philogyn(y)* + *-ous.*] Fond of women. [Rare.]

Philol. An abbreviation (*a*) of *philological;* (*b*) of *philologist;* (*c*) of *philology.*

philomuse (fil′ọ-mūz), *a.* [Gr. φιλόμουσος, loving the Muses.] Loving the Muses or music and the other arts. [Rare.]

philonatural (fil-ọ-nạt′ụ̄-rạl), *a.* Loving the natural or the naturalistic method. [Rare.]

> The second method, the familiar philo-real or *philonatural,* hardly may be said to be a method for writing a novel: it is a mode of writing what you will. *H. D. Sedgwick,* Essays on Great Writers, p. 48.

Philonexidæ (fil-ọ-nek′si-dē), *n. pl.* [NL. *Philonexis* + *-idæ.*] A family of octopodous cephalopods having the hectocotylized arm autotomous, the other arms all alike in the two sexes, and large aquiferous pores near the head and funnel. It contains the genera *Philonexis* and *Tremoctopus.*

Philonexis (fil-ọ-nek′sis), *n.* [Gr. φιλεῖν, love, + νῆξις, a swimming.] The typical genus of the family *Philonexidæ.* *D'Orbigny.*

Philonian (fi-lō′ni-an), *a.* Same as *Philonic.*

Philonism (fī′lọ-nizm), *n.* [*Philon(ic)* + *-izm.*] The doctrines of the Jewish philosopher Philo.

Philonist (fī′lọ-nist), *n.* A follower of the Jewish philosopher Philo.

Philonize (fī′lọ-nīz), *v. i.*; pret. and pp. *Philonized,* ppr. *Philonizing.* [*Philon(ic)* + *-ize.*] To adopt the views of the Jewish philosopher Philo; imitate Philo's mode of thought.

philonoist (fi-lon′ọ-ist), *n.* [Gr. φιλεῖν, love, + νοῦς, mind.] A lover of intelligence or knowledge. [Rare.]

philopator (fil-ọ-pā′tộr), *a.* [Gr. φιλοπάτωρ, loving one's father; φιλόπατρις, loving one's fatherland.] Loving one's father or one's native country: applied as a surname to one of the Ptolemies and to other kings.

philopogon (fil-ọ-pō′gōn), *n.* [Gr. φιλεῖν, love, + πώγων, beard.] One who loves beards. [Rare.]

> Whatever absurdity in hair may be demanded by the trichotomists *philopogons* of Europe, I can at once supply it to any extent from Africa—gratis. *R. F. Burton,* Two Trips to Gorilla Land, I. 205.

philopornist (fil-ọ-pôr′nist), *n.* [Gr. φιλόπορνος, ‹ φιλεῖν, love, + πόρνη, harlot.] One who loves, or consorts with, harlots. [Rare.]

> To the mealy-mouthed modern *philopornist* the homely and hardy method of the old poet who first discovered or invented the penitent prostitute may seem rough and brutal in its lifelike straightforwardness. *Swinburne,* Studies in Prose and Poetry, p. 122.

philoprogenitive (fil″ọ-prọ-jen′i-tiv), *a.* [See *philoprogenitiveness.*] Fond of offspring; inclined to beget offspring; of or pertaining to fondness for offspring.

> As among brutes the *philoprogenitive* instinct is occasionally suppressed by the desire to kill, and even to devour, their young ones; so among primitive men this instinct is now and again over-ridden by impulses temporarily excited. *H. Spencer,* Prin. Sociol., iii. 11.

philopterid (fi-lop′tẹ-rid), *n.* and *a.* **I.** *n.* A member of the mallophagous family *Philopteridæ.*

II. *a.* Having the characters of or belonging to the family *Philopteridæ.*

philos. An abbreviation (*a*) of *philosophical;* (*b*) of *philosophy.*

philosophastry (fi-los′ọ-fas-tri), *n.* [See *philosophaster.*] The philosophy of philosophasters; pseudophilosophy. [Rare.]

philotechnist (fil-ọ-tek′nist), *n.* [*philotechn(ic)* + *-ist.*] One who is devoted to the study of the arts, especially of the industrial arts.

> In the following then I distinguish, first, those whom you indeed may call philotheorists, or *philotechnists,* or practicians, and secondly those whom alone you may rightly denominate philosophers, as knowing what the science of all these branches of science is, which may prove to be something more than the mere aggregate of the knowledge in any particular science. *Plato,* quoted in Coleridge, The Friend, vii.

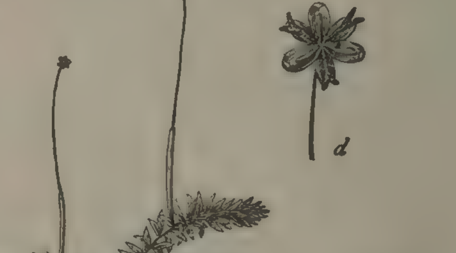
philotheism (fil-ō-thē′izm), *n.* [*philo-* + *theism.*] Love of God. *N. E. D.* [Rare.]

philotheist (fil-ọ-thē′ist), *n.* [★*philothe(ism)* + *-ist.*] One who loves God. *N. E. D.* [Rare.]

philothion (fil-ọ-thī′on), *n.* [Gr. φιλεῖν, love, + θεῖον, sulphur.] An enzyme discovered by De Rey-Pailhade, characterized by its power of forming hydrogen sulphid from free sulphur.

> De Rey-Pailhade gave the name "*philothion*" to the enzyme discovered by him. In 1885, in an investigation undertaken to determine the mechanism of the elimination, in the organism, of free sulphur taken into the gastro-intestinal tract, he was led to the conclusion that there is direct combination of this sulphur with nascent hydrogen of fermentation with the formation of hydrogen sulphide. *Amer. Chem. Jour.,* June, 1903, p. 517.

Philotria (fi-lō′tri-ä̤), *n.* [NL. (Rafinesque, 1818), probably incorrectly derived from φύλλον, leaf, + τρεῖς (τρι-), three, in allusion to the situation of the leaves in whorls of three.] A genus of perennial submerged water-plants belonging to the family *Vallisneriaceæ.* They have slender elongated branching stems with crowded opposite or whorled leaves, and solitary diœcious or polygamous flowers arising from an axillary, tubular, two-cleft spathe. The sterile flowers are small and have a perianth of six segments, the three inner of which are petal-like, while the fertile flowers have a perianth extended into a long slender tube with a six-parted limb. The staminate flowers usually break off and rise to the surface, where they shed their pollen around the stigmas of the fertile flowers raised to the surface by the elongated calyx-tube, which varies in length according to the depth of the water. About 10 species are recognized, found in fresh-water ponds and streams in temperate and tropical America. *P. Canadensis* is the *water-weed* or *choke-pondweed.* See *Babington's-curse.*



Philotria Canadensis.

a, a plant, reduced in size; *b,* diagram of flower; *c,* longitudinal section of ovary with four ovules; *d,* flower.

philoxenist (fi-lok′sẹ-nist), *n.* [*philoxen(y)* + *-ist.*] One who is hospitable to strangers. [Rare.]

philoxeny (fi-lok′sẹ-ni), *n.* [Gr. φιλοξενία, ‹ φιλόξενος, loving strangers, hospitable, ‹ φιλεῖν, love, + *ξένος*, stranger, guest.] Good will toward strangers; hospitality. [Rare.]

philozoism (fil-ǫ-zō'ism), *n.* [*philozo*(*ic*) + *-ism.*] The love of mankind for animals. *L. F. Ward*, Pure Sociol., p. 429.

philozoist (fil-ǫ-zō'ist), *n.* [*philozo*(*ic*) + *-ist.*] A lover of animals; one who has sympathy for the sufferings of animals.

The first in the field were the *philozoists*, commonly known as anti-vivisectionists. *Science*, Jan. 10, 1902, p. 45.

philtrum, *n.* **2.** The groove running from the septum of the nose down the central line of the upper lip.

It [Chimpanzee] has a widely grooved *philtrum* on the middle part of margin of lip.
Proc. Zool. Soc. London, 1899, p. 310.

phimotic (fī-mot'ik), *a.* [*phimosis* (*-ot-*) + *-ic.*] Pertaining to or characteristic of phimosis. *Buck*, Med. Handbook, I. 722.

phlebangioma (fleb″an-ji-ō'mä), *n.*; pl. *phlebangiomata* (-ma-tä). [NL., < Gr. *φλέψ* (*φλεβ-*), vein, + *ἀγγεῖον*, vessel, + *-oma.*] A tumor which consists chiefly of dilated veins.

phlebectasis (flę-bek'tą-sis), *n.* [NL.] Same as *phlebectasia.*

phlebectasy (flę-bek'tą-si), *n.* Same as *phlebectasia.*

phlebectomy (flę-bek'tǫ-mi), *n.* [Gr. *φλέψ* (*φλεβ-*), vein, + *ἐκτομή*, excision.] Excision of a portion of a vein.

phlebin (fleb'in), *n.* [Gr. *φλέψ* (*φλεβ-*), vein, + *-in*^{2}.] The hemoglobin present in venous blood.

Phlebodium (flę-bō'di-um), *n.* [NL. (J. Smith, 1841), < Gr. *φλέψ* (*φλεβ-*), a vein, + *ὀδούς*, a tooth; so called from the tooth-like junction of the veins in the areolæ.] A small genus of usually epiphytic middle-American ferns, allied to *Polypodium*, having broadly ovate, deeply pinnatifid fronds from 1 to 3 feet long, with veins copiously anastomosing to form one or more regular series of areolæ in which the sori are borne, each upon the united ends of two or more excurrent veinlets of the same areola. The type species of the genus, *P. aureum*, is abundant in the West Indies and extends to Florida, where it occurs uniformly on the trunks of the palmetto.

phlebœdesis (fleb-ę-dē'sis), *n.* [Gr. *φλέψ* (*φλεβ-*), vein, + *οἴδησις*, a swelling.] A swelling up or increase in the size of the peripheral vessels of the blood-vascular system, such as is found in *Arthropoda.*

These additional features include the ostiate heart and the "*phlebœdesis,*" that is to say, the peripheral portions of the blood-vascular system are swollen so as to obliterate to a large extent the cœlom, whilst the separate veins entering the dorsal vessel or heart coalesced, leaving valvate ostia, by which the blood passed from a pericardial blood-sinus formed by the fused veins into the dorsal vessel or heart.
Jour. Roy. Micros. Soc., Oct., 1904, p. 524.

phlebogenous (flę-boj'e-nus), *a.* [Gr. *φλέψ* (*φλεβ-*), vein, + *-γενης*, -producing.] Of venous origin.

phlebograph (fleb'ǫ-gräf), *n.* [Gr. *φλέψ* (*φλεβ-*), vein, + *γράφειν*, write.] A sphygmograph adapted to recording the movements of pulsation in a vein.

phlebosclerosis (fleb″ǫ-sklę-rō'sis), *n.* [NL., < Gr. *φλέψ* (*φλεβ-*), vein, + *σκλήρωσις*, hardening.] Fibrous thickening and hardening of the veins. *Buck*, Med. Handbook, II. 105.

phlebosclerotic (fleb″ǫ-sklę-rot'ik), *a.* Pertaining to or affected with phlebosclerosis.

phlebostenosis (fleb″ǫ-stę-nō'sis), *n.* [NL., < Gr. *φλέψ* (*φλεβ-*), vein, + *στένωσις*, narrowing.] Stricture of a vein; general narrowing of the veins.

phlegma, *n.* **2.** In making whisky or other spirits, the vinasse or residue left in the still after the alcohol has been practically removed as vapor. *Census Bulletin* 190, June 16, 1902, p. 12.

phlegmon, *n.*—**Gas phlegmon,** localized inflammation of the subcutaneous tissue accompanied by the formation of gas, due usually to the presence of a special micro-organism, *Bacillus aërogenes.*

phlegmonic (fleg-mon'ik), *a.* Same as *phlegmonous.*

Phlegmonous laryngitis. See ★*laryngitis.*

phlein (flē'in), *n.* [Gr. *φλοιός*, bark, membrane, + *-in*^{2}.] Same as ★*irisin.*

phlobaphene (flob'ą-fēn), *n.* [Irreg., < Gr. *φλο*(*ιός*), bark, + *βαφή*, dipping, + *-ene.*] One of a class of amorphous red compounds, insoluble in water but soluble in alcohol and caustic alkalies, obtained by boiling tannins with dilute mineral acids or caustic alkalies. It occurs also to some extent in the tannin-bearing plants, owing to oxidation by the air. Also called *cinchona-red*, *kino-red*, etc.

phlobaphenic (flob-ą-fē'nik), *a.* [*phlobaphene* + *-ic.*] Pertaining to or derived from phlobaphene.

phlœophagous (flę-of'ą-gus), *a.* [Gr. *φλοιός*, bark, + *φαγεῖν*, eat, + *-ous.*] Bark-eating: said of the *Scolytidæ* and other insects of similar food-habits.

phlœoterma (flē-ǫ-tėr'mą̈), *n.* [Gr. *φλοιός*, bark, + *τέρμα*, a limit.] The innermost layer of the primary cortex, usually not distinctly differentiated, but in the stems of land plants recognizable as a starch-sheath, and in those of aquatics forming the endodermis. An external as well as an internal phlœoterma is sometimes spoken of. *Strasburger.*

phlogistical (flǫ-jis'ti-kąl), *a.* Same as *phlogistic.*

phlogogenetic (flog″ǫ-ję-net'ik), *a.* Same as *phlogogenous.*

phlogosed (flō'gōst), *p. a.* [See *phlogosis.*] Inflamed.

phlogosin (flō-gō'sin), *n.* [Gr. *φλόξ* (*φλογ-*), flame, + *-ose* + *-in*^{2}.] A compound said to be obtained from the pus-bacterium *Staphylococcus pyogenes aureus.*

phloramine (flǫ-ram'in), *n.* [*phlor*(*izin*) + *amine.*] A compound, $NH_2.C_6H_3(OH)_2$ or 5-aminoresorcinol, which is formed by the action of ammonia on phloroglucinol. It forms silky, needle-like crystals which melt at 146–152° C.

phloretic (flǫ-ret'ik), *a.* [*phloret-in* + *-ic.*] Derived from phloretin.—**Phloretic acid,** a white crystalline acid, $C_9H_{10}O_3$, made by boiling phloretin with caustic potash. It melts at 129° C.

phloretin (flor'e-tin), *n.* [*phlor*(*izin*) + *-et* + *-in*^{2}.] A crystalline substance, $C_{15}H_{14}O_5$, made by hydrolyzing phlorizin with dilute acids. It melts at 253–255° C., and is changed into phloretic acid and phloroglucinol by boiling with caustic potash. It is a febrifuge.

phlorhizin, phloridzin, *n.* Same as *phlorizin.*

phlorizinize (flor'i-zin-īz), *v. t.*; pret. and pp. *florizinized*, ppr. *florizinizing.* [*phlorizin* + *-ize.*] To bring under the influence of phlorizin, the action of which induces glucosuria. Also *phlorhizinize*, *phlorrhizinize*, and *phloridzinize.*

phloroglucinol (flō-rǫ-glö'si-nol), *n.* Same as *phloroglucin.*

phloroglucite (flō-rǫ-glö'sīt), *n.* [*phloroglu-c*(*in*) + *-ite*^{2}.] A sweet crystalline compound, $C_6H_{12}O_3+2H_2O$ or 1,3,5-cyclohexanetriol, formed by reducing phloroglucinol with sodium amalgam.

phlorol (flor'ol), *n.* [*phlor*(*izin*) + *-ol.*] A liquid, $C_8H_9(OH)$ or 2-ethylphenol, found in creosote from wood-tar and also made synthetically, as by the distillation of barium phloretate with lime. It boils at 206.5–207.5° C.

phlorone (flor'ōn), *n.* [*phlor*(*izin*) + *-one.*] A yellow crystalline substance, $C_8H_8O_2$ or 1, 4-dimethylquinone, formed by distilling cresol from coal- or beech-tar with sulphuric acid and pyrolusite. It is also made by oxidizing certain amino compounds. Also called *p-xyloquinone.*

phlorose (flor'ōs), *n.* [*phlor*(*izin*) + *-ose.*] The sugar, probably glucose, which is formed when phlorizin is hydrolyzed by boiling with dilute acids.

phlorrhizin, *n.* Same as *phlorizin.*

Phlox, *n.*—**Alpine phlox,** a low tufted species, *Phlox Douglasii*, with pink, lilac, or white flowers, found in the Sierras of California.—**Prickly phlox,** a polemoniaceous woody herb, *Leptodactylon Californicum*, of the Californian chaparral, the stems densely covered with prickly leaves, the showy, phlox-like corollas pink and of a silky texture.

phloxin, *n.* **2.** A coal-tar color of the xanthene type. It is the sodium salt of tetrabrom-tetrachlor-fluorescein. It dyes wool and silk bluish pink and red in a slightly acid bath. Also called *phloxin TA* and *eosin 10B.*—**Phloxin P,** a coal-tar color of the xanthene type. It is the sodium or potassium salt of tetrabrom-dichlor-fluorescein. It dyes wool and silk bluish pink and red in a slightly acid bath. Also called *new pink* and *erythrosin BB.*

phlyctenophthalmia (flik″ten-of-thal'mi-ą̈), *n.* [NL., < Gr. *φλύκταινα*, a blister, + *ὀφθαλμός*, eye.] Same as *phlyctenular ophthalmia* (which see, under *phlyctenular*).

phlyctenosis (flik-te-nō'sis), *n.* [NL., < Gr. *φλύκταινα*, blister, + *-osis.*] Any skin-disease characterized by an eruption of small vesicles.

phlyzacious (flī-zā'shius), *a.* [*phlyzaci*(*um*) + *-ous.*] Of the nature of a phlyzacium, or pustule.

Ph. M. An abbreviation (*a*) of the Latin *Philosophiæ* (or *Philologiæ*) *Magister*, Master of Philosophy (or Philology); (*b*) of the Late Latin *Pharmaciæ Magister*, Master of Pharmacy.

phobia (fō'bi-ą̈), *n.* [NL., detached from *hydrophobia* and other words containing *-phobia*, < Gr. *-φοβια*, < *φοβεῖν*, fear.] Any morbid uncontrollable dread or fear.

The psychologist should also be thankful to the author for discarding the bewildering nomenclature of manias and *phobias*, and offering a simple and intelligible classification of mental diseases. *Nature*, May 1, 1902, p. 5.

There are many first hand investigators into the Subliminal who, not having themselves met with anything super-normal, would probably not hesitate to call all the reports of it erroneous, and who would limit the Subliminal to dissolutive phenomena of consciousness exclusively, to lapsed memories, subconscious sensations, impulses and *phobias*, and the like.
W. James, in Proc. Soc. Psychical Research, XVII. 18.

Phobian (fō'bi-ąn), *a.* [*Phob*(*os*) + *-ian.*] Of or pertaining to Phobos, a moon of Mars.

It would be only necessary to divide by one thousand the dimensions of any earthly object to ascertain its dimensions as modeled on a *Phobian* scale. . . . A ship of the size of the Great Eastern sailing on a *Phobian* ocean would be less than 7½ inches long. . . . A United States postage stamp would cover a space of nearly three *Phobian* city lots. *Sci. Amer.*, Aug. 20, 1892, p. 112.

phobic (fō'bik), *a.* [*phobia* + *-ic.*] Of or pertaining to a phobia; of the nature of morbid fear. *Ribot* (trans.), Psychol. of Emotions, p. 215.

phocenic (fǫ-sen'ik), *a.* [Also *phocænic*; < Gr. *φώκαινα*, a dolphin, + *-ic.*] Contained in porpoise- or dolphin-oil.—**Phocenic acid,** isovaleric acid. See ★*isovaleric.*

phocenin (fǫ-sē'nin), *n.* [*phocen*(*ic*) + *-in*^{2}.] An oil obtained from two species of dolphin, *Delphinum phocæna* and *D. globiceps.* It contains phocenic or isovaleric acid.

phocid (fō'sid), *n.* [*Phocid*(*æ*).] A member of the family *Phocidæ*; a seal.

Phocoidea, *n. pl.* **2.** In a more restricted sense, the earless seals, *Phocidæ*, raised to the rank of a superfamily. Correlative with *Otarioidea* and *Rosmaroidea.*

phocomelia (fō-kǫ-mē'li-ą̈), *n.* [NL., < Gr. *φώκη*, seal, + *μέλος*, limb.] In *teratol.*, a condition in which the hands and feet, one or all, are seemingly attached directly to the trunk, the intervening bones of the extremities being extremely short.

phocomelous (fǫ-kom'e-lus), *a.* [*phocomel*(*us*) + *-ous.*] Of the nature of a phocomelus or monster with very short extremities; exhibiting phocomelia.

phocomely (fǫ-kom'ę-li), *n.* Same as ★*phocomelia.* *W. Bateson*, Study of Variation, p. 399.

Phœbe^1, *n.* **2.** [*l. c.*] (*b*) A serranoid fish, *Prionodes phœbe*, of the West Indian fauna.— **3.** The ninth satellite of Saturn, announced and named by Professor W. H. Pickering, in 1899, as having been found on photographic plates made at Arequipa, in the South American branch of the observatory of Harvard University. The discovery remained unconfirmed until 1904, when the satellite was rediscovered upon a large number of more recent Arequipa plates, which furnish data for a complete determination of its orbit. According to Pickering, its distance from the planet is 8,000,000 miles (more than 2½ times as great as that of Iapetus, the most remote of the satellites previously known) and its period 546.5 days. Its motion appears to be retrograde—a most surprising result. It is extremely faint (sixteenth magnitude) and is probably beyond the reach of visual observation with any existing telescope. Its diameter is estimated at 200 miles.

Phœnicaceæ (fē-ni-kā'sę-ē), *n. pl.* [NL. (W. P. Schimper, 1871), < *Phœnix* (see *Phœnix*^{2}) + *-aceæ.*] The palm family. See *Palmæ*^{2}.

Phœnicantha (fē-ni-kan'thą̈), *n.* [NL. (Wight, 1906), < Gr. *φοῖνιξ*, red, + *ἄνθη*, blossom.] A genus of leguminous plants belonging to the family *Fabaceæ.* See *Sutherlandia.*

phœnicious (fę-nish'us), *a.* Same as *phenicious.*

phœnicite (fē'ni-sīt), *n.* [Gr. *φοῖνιξ* (*φοινικ-*), purple, + *-ite*^{2}.] Same as *melanochroite.*

phœnicochroite (fē-ni-kok'rǫ-īt), *n.* [Gr. *φοῖνιξ* (*φοινικ-*), purple, + *χρόα*, color, + *-ite*^{2}.] Same as *melanochroite.*

pholadian (fǫ-lā'di-ąn), *a.* and *n.* **I.** *a.* Of or pertaining to the *Pholadidæ.*

II. *n.* A pholad.

pholadid (fol'ą-did), *n.* Same as *pholad.*

pholadoid (fol'ą-doid), *a.* [*pholad* + *-oid.*] Resembling a pholad or the *Pholadidæ.*

pholcid (fol′sid), *n.* and *a.* **I.** *n.* A member of the family *Pholcidæ*.

II. *a.* Having the characteristics of or belonging to the family *Pholcidæ*.

Pholidapus (fọ-lid′ạ-pus), *n.* [NL., < *Pholis* (*-lid-*) + Gr. ἄπους, footless.] A genus of blennioid fishes found in the Okhotsk Sea.

Pholidichthys (fol-i-dik′this), *n.* [NL., < *Pholis* (*-lid-*) + Gr. ἰχθύς, fish.] A genus of blennioid fishes inhabiting tropical parts of the Pacific Ocean.

pholidolite (fọ-lid′ọ-līt), *n.* [Gr. φολίς (φολιδ-), scale, + λίθος, stone.] A hydrous silicate of aluminium, iron, magnesium, and potassium, occurring in minute grayish-yellow crystalline scales: found in Sweden.

pholidosis (fol-i-dō′sis), *n.* [Gr. φολίς (φολιδ-), scale, + *-osis.*] In *zoöl.*, the arrangement or pattern of the scales.

> An individual anomaly in the mental *pholidosis*.
> *Proc. Zool. Soc. London*, 1896, p. 927.

Pholiota (fō-li-ō′tạ̈), *n.* [NL. (Fries, 1821), < Gr. φολίς, scale, in allusion to the scaly pileus, + οὖς (ὠτ-), ear.] A large genus of rusty-spored agarics having a fleshy pileus and a continuous annulus. Over 120 species are reported by Saccardo. Some grow on the ground and some on decaying wood. *P. squarrosa* is common on decaying wood in Europe and North America.

Pholis (fō′lis), *n.* [NL., < Gr. φολίς, a scale.] A genus of elongate blennioid fishes inhabiting the shores of northern seas.

pholque (folk), *n.* [F., < NL. *Pholcus.* See *Pholcus.*] A spider of the genus *Pholcus.* [Rare.]

phon., phonet. [*l. c.* or *cap.*] Abbreviations of *phonetics*.

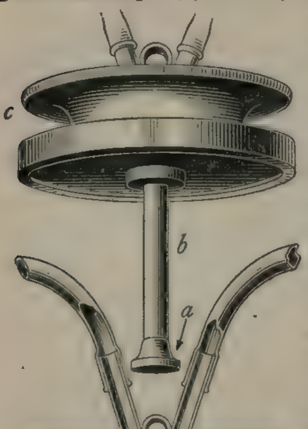
phonascus, *n.* **2.** A former name for a composer of melodies, as distinguished from ★*symphoneta*, a composer of part-music.

phonautograph, *n.*—**Hensen's phonautograph.** Same as *Hensen* ★*recorder*.

phoneme (fō′nēm), *n.* [Gr. φώνημα, a sound made, a voice, < φωνεῖν, make a sound, speak.] **1.** Same as *phone*^{1}, *n.*—**2.** A voice-sound imagined by the insane; a hallucination of voices. *C. Wernicke* (trans.), in Alien. and Neurol., Aug., 1904, p. 317.

phonendoscope (fọ-nen′dọ-skōp), *n.* [Gr. φωνή, sound, + ἔνδον, within, + σκοπεῖν, view.] A modification of the stethoscope in which the sounds transmitted to the ear are increased in intensity by means of two interposed disks of vulcanite or other material having similar physical properties.

> In regard to percussion, I would emphasize the value of auscultatory percussion, using the *phonendoscope* or a stethoscope of the Bowles' type.
> *Amer. Jour. Clinical Med.*, Oct., 1907, p. 1201.



Phonendoscope, with sectional view.

a, hard rubber cap on metal tube, *b*: this cap is placed in contact with the part to be auscultated and the sound-waves are transmitted to the two vulcanite disks, *d*. These sound-waves, intensified by the vibration of the inner disk, are collected in the hollow of the metal plate, *c*, and conveyed through the hollow tubes opening from it to the ears.

phonesis (fọ-nē′sis), *n.* [NL. *phonesis*, < Gr. φώνησις, < φωνεῖν, utter sounds, speak, < φωνή, a sound.] Articulation of sound; enunciation; pronunciation; phonetic character.

> Now, however, it is easily seen by anthropologists that language, like man himself, had a very humble beginning, and has reached its present marvellously perfect state sensim sine sensu, slowly improving in its *phonesis* and structure hand in hand with the slow improvement of the physical organs in virtue of which man has become a speaking animal. *Keane*, Ethnology, p. viii.

Phonetic complement, element, law. See ★*complement*, etc.

phonetico-ideographic (fọ-net″i-kọ-ī″dẹ-ọ-graf′ik), *a.* Pertaining or belonging to a kind of writing characterized by a mixture of ideograms and phonetic elements.

> This mixture of letters, hieroglyphics, and figurative signs, constitutes a kind of writing recalling the *phonetico-ideographic* stage through which primitive peoples (the Mexicans and Chinese certainly) passed, before the discovery of alphabetic writing.
> *C. Lombroso* (trans.), Man of Genius, p. 189.

phonetism, *n.* **2.** Phonetic status; the use of symbols with a definite phonetic value.

> At certain points in their [alphabets'] history all but one became crystallized, and remained to show us the steps by which the progress to *phonetism* can be made.
> *Encyc. Brit.*, I. 602.

Phonic explosives, wheel. See ★*explosive*, ★*wheel*^{1}.

phonism (fō′nizm), *n.* [*phone*^{1} + *-ism.*] In *psychol.*, a reproduced sensation of tone, regularly accompanying the arousal of sensation in certain other departments of sense: a form of synæsthesia. See ★*photism*.

> At the same period he noted *phonisms* of pain. These, however, were not prominent until the summer of 1899, when a badly injured finger gave occasion for a series of determinations of the 'pitch' of the pain.
> *Amer. Jour. Psychol.*, XI. 392.

phonocard (fō′nọ-kärd), *n.* [*phono*(*graphic*) + *card.*] Same as ★*phonopostal.* [Recent.]

phonog. An abbreviation of *phonography*.

phonoglyph (fō′nọ-glif), *n.* [Gr. φωνή, sound, + γλυφή, a carving.] An incised picture, figure, or sign representing a certain sound. Compare *phonogram*, 1. *Keane*, Man, Past and Present, p. 25.

phonogramic (fō-nọ-gram′ik), *a.* [*phonogram* + *-ic.*] Pertaining to or of the nature of a phonogram.

phonogrammatic (fō″nọ-gra-mat′ik), *a.* Same as ★*phonogramic*.

phonol. An abbreviation of *phonology*.

phonomassage (fō″nọ-ma-säzh′), *n.* [Gr. φωνή, sound, + E. *massage.*] Action upon the drum membrane and ossicles of the ear of sound-waves systematically directed against them, in the treatment of deafness resulting from ankylosis of the ossicles. *Buck*, Med. Handbook, III. 606.

phonometer, *n.* **2.** In *psychophys.*, an instrument for the production of accurately graded intensities of sound. The simplest form of phonometer is the ★*sound-pendulum* (which see). In Wundt's gravity-phonometer, ivory balls are dropped by electromagnetic releases from varying heights upon hard-wood plates. *E. B. Titchener*, Exper. Psychol., II. ii. 221. **3.** A clockwork instrument swung in gimbals, so that its face is always horizontal, and on whose dial are certain marks indicating intervals at which a whistle or other signal should be made to announce the compass course of the vessel.

phonometric (fō-nọ-met′rik), *a.* [*phonometr*(*y*) + *-ic.*] Of or pertaining to the measurement of acoustic pitch or intensity, specifically by the graphic method. See *phonometer*.

phonometry (fọ-nom′e-tri), *n.* [Gr. φωνή, sound, + -μετρια, < μέτρον, measure.] The measurement of the pitch or the intensity of sound; the scientific use of the phonometer.

phonomime† (fō′nọ-mīm), *n.* [Gr. φωνόμιμος, imitating voice.] A musical instrument imitating a chorus of voices. *N. E. D.*

phonomimic (fō-nọ-mim′ik), *a.* [*phonomim*(*e*) + *-ic.*] Noting a system of teaching in which each of the elementary sounds of speech is associated with an appropriate onomatopœic gesture. *N. E. D.*

phonopathy (fọ-nop′ạ-thi), *n.* [Gr. φωνή, sound, + -παθεια, < πάθος, disease.] Any disease of the organs concerned in voice-production.

phonophobia (fō-nọ-fō′bi-ạ̈), *n.* [Gr. φωνή, sound, + -φοβια, < φοβεῖν, fear.] Morbid dislike or dread of sounds.

phonophote (fō′nọ-fōt), *n.* [Gr. φωνή, sound, + φῶς (φωτ-), light.] An instrument for the production of luminous effects by means of sound-waves.

phonoplex, *n.* **II.** *a.* Of or pertaining to a system of telegraphy in which interrupted and undulatory currents are used simultaneously in signaling over the same wire.

phonopostal (fō′nọ-pōs-tạl), *n.* [*phono*(*graph*) + *postal.*] A postal card upon which a message has been recorded by a form of phonograph.

> The phonocard: The *phonopostal*, says La Nature, is an apparatus which registers and afterward reproduces the human voice, by means of a sheet of pasteboard, shaped like a postal card. Jules Verne conceived the idea of replacing the old wax cylinder used in other phonographs by a sheet of paper, which could be posted like a letter.
> *Sci. Amer.*, Sept. 23, 1905, p. 235.

phonotype (fō′nọ-tīp), *v. t.*; pret. and pp. *phonotyped*, ppr. *phonotyping*. [*phonotype*, *n.*] To print in phonotype or phonetic characters.

phonotypographic (fō-nọ-tip-ō-graf′ik), *a.* Of or pertaining to printing with a phonetic alphabet.

phonozenograph (fō-nọ-zēn′ọ-gråf), *n.* [Gr. φωνή, sound, + ξένος, foreign, + γράφειν, write.] An electrical device for determining the direction from which a sound comes. It consists of a microphone connected with a Wheatstone bridge, a battery, galvanometer, and telephone.

phony (fō′ni), *a.* [*phone* + *-y*^{1}.] Of the character of a 'phone' or of the talk heard over a 'phone'; unsubstantial; imitational; spurious. [Slang.]

> When the District Attorney's men destroyed the paraphernalia found in the palatial gambling den the articles proved to be what the detectives oddly styled "*phony*." That is a curious word and implies that, as regards merit, a thing so qualified has no more substance than a telephone talk with a supposititious friend.
> *Evening Telegram*, Dec. 9, 1904.

phooka, *n.* See ★*pooka*.

phorid (for′id), *n.* and *a.* **I.** *n.* A member of the dipterous family *Phoridæ*.

II. *a.* Having the characters of or belonging to the family *Phoridæ*.

phormine (fôr′min), *n.* [A metathesis of *morphine.*] Same as ★*oxydimorphine*.

phorometer (fọ-rom′e-tėr), *n.* [Gr. -φορος, bearing, + μέτρον, measure.] An instrument for determining the presence and degree of insufficiency of the extrinsic eye-muscles.

> Then with the lenses on the patient which correct the error of refraction, if there is one, I place a Steven's *phorometer* just in front of the eyes, base of the prisms in the instrument up and down. One should be careful to have the instrument perfectly level. This brings them into position to test the lateral muscles, the esophoria or exophoria, if either is present.
> *Optical Jour.*, July 14, 1904, p. 250.

phorometry (fọ-rom′e-tri), *n.* [*phorometer* + *-y*^{3}.] Measurement of the amount of insufficiency of the external muscles of the eye; the scientific use of the phorometer. *Optical Jour.*, June 23, 1904, p. 77.

phorone (for′ōn), *n.* An unsaturated ketone, $C_9H_{14}O$ or diisopropylidene-acetone, made by the action of quicklime on acetone, and also in other ways. It forms large yellowish-green crystals that melt at 28° C. Its odor somewhat resembles that of the geranium.

phoronic (fọ-ron′ik), *a.* [*phoron*(*e*) + *-ic.*] Noting an acid, $C_{11}H_{18}O_5$, derived from camphic acid.

Phoronis, *n.* **2.** [*l. c.*] A worm of the genus *Phoronis*. See cut at ★*Actinotrocha*.

phoronomy, *n.* **3.** That branch of science which treats of the movements of organisms in space; that branch of science which treats of the vital movements of organisms.

> The science of motion, or mechanics, is now taken . . . in the biological sense as *phoronomy*, the science of the movements of organisms in space.
> *Haeckel* (trans.), Wonders of Life, p. 259.

> It would be best to . . . restrict the name *phoronomy* to the science of the vital movements which are peculiar to organisms, in contrast to kinematics, the exact science of the inorganic movements of all bodies.
> *Haeckel* (trans.), Wonders of Life, p. 259.

Phororhacos (fọ-ror′ạ̈-kos), *n.* [NL., < Gr. φώρ, thief, + ῥάκος, rag.] A giant extinct flightless carinate bird, supposed to be wholly or partly carnivorous in habits, found in the Miocene deposits of the Santa Cruz formation in Patagonia. The feet are armed with powerful claws, and the head is provided with an enormous curved beak. The vertebræ of the neck are as large as those of a horse. The skull of one large species measures 27 inches in length by 7 inches in depth, exceeding in size the skull of a horse. From the sole of the foot to the top of the head this bird had a height of between 7 and 8 feet. *Phororhacos* is believed to be more or less distantly related to the herons.

phorotone (for′ọ-tōn), *n.* [Gr. -φορος, bearing, + τόνος, tension.] A device for strengthening the ocular muscles, by means of prisms, in cases of heterophoria.

phorozoöid (for-ọ-zō′oid), *n.* [Gr. -φορος, bearing, + E. *zoöid.*] In some ascidians, as the *Doliolidæ*, a foster form or nurse, which consists of a free-swimming sexually immature zoöid, having a ventrical outgrowth on which sexual zoöids, known as gonozoöids, are produced. Compare *gonozoöid* and *trophozoöid*.

phorozoön (for-ǫ-zō′on), *n.*; pl. *phorozoa* (-ạ̈). [NL. < φορά, motion, + ζῷον, animal.] Among the lower *Metazoa*, a member of the asexual generation which bears, in the form of buds or otherwise, the members of the sexual generation. *Med. Record*, Oct. 19, 1907, p. 636.

Phorusrhacos, *n.* Same as ★*Phororhacos*. *Phorusrhacos* is to be preferred under the law of priority.

phosote (fō′sōt), *n.* [*phos*(*phate*) + *-ote*.] A trade-name of creosote phosphate, a colorless, syrupy liquid. It is used as a remedy in tuberculosis where creosote is not readily tolerated.

phosphamic (fos-fam′ik), *a.* [*phosph*(*orus*) + *-amic*.] Noting an acid, a substance forming minute colorless crystals of sweetish taste, having the composition $(HO)_2.NH_2.PO$ or orthophosphoric acid with one hydroxyl group replaced by amidogen. Also called *phosphamidic acid* or *amidophosphoric acid*.

phosphamide (fos′fam-id), *n.* [*phosph*(*orus*) + *amide*.] A white substance, insoluble in water, said to be obtainable by the interaction of ammonia and phosphorus oxychlorid, of the composition $(NH_2)_3PO$. Its existence is doubtful.

phosphamidic (fos-fạ-mid′ik), *a.* [*phosphamide* + *-ic*.] Same as ★*phosphamic*.

phosphammonium (fos-fạ-mō′ni-um), *n.* [NL., < *phosph*(*orus*) + *ammonium*.] Same as ★*phosphonium*.

phosphane (fos′fān), *n.* [*phosph*(*orus*) + *-ane*.] A light white powder obtained by the interaction of ammonia and phosphorus pentachlorid. Its composition is somewhat doubtful, but is probably represented by the formula $P_3H_3N_6$.

phosphate, *n.*—**Dibasic phosphate**, usually understood as a salt of orthophosphoric acid in which two of the three hydrogen atoms are replaced by a metal or an electropositive radical, or by two different metals or radicals, as in the common phosphate of soda of the shops (Na_2HPO_4), or in microcosmic salt ($Na(NH_4)HPO_4$).—**Insoluble phosphate.** See *insoluble* ★*phosphoric acid*.—**Land phosphate**, a trade-name of that part of the South Carolina phosphatic deposits which is obtained by digging. Compare *river* ★*phosphate*.—**Monobasic phosphate**, usually understood as a salt of orthophosphoric acid in which but one of the three hydrogen atoms is replaced by a metal or an electropositive radical, as in monosodium phosphate (NaH_2PO_4).—**Monocalcium phosphate.** Same as *monocalcic phosphate*. See ★*calcium phosphate*.—**Navassa phosphate**, a phosphate of lime which occurs as a large deposit on the West Indian island of Navassa, whence it is exported for the manufacture of fertilizers. It contains a good proportion (from 60 to 70 per cent.) of tricalcic phosphate, but this is accompanied by a considerable amount of aluminium and iron compounds, so that the material is not well suited for the production of superphosphate of lime of high grade.—**Normal phosphate**, usually understood as a salt of orthophosphoric acid in which all three of the hydrogen atoms are replaced by a metal or electropositive radical, or by different metals or radicals, as in normal sodium phosphate (Na_3PO_4), or in sodio-diammonium phosphate ($Na(NH_4)_2PO_4$).—**Odorless phosphate**, basic slag; a light slag which contains enough phosphate to make a fertilizer.—**Phosphate rock.** See *phosphorite*.—**Redonda phosphate**, a phosphatic deposit from the island of Redonda in the West Indies. This material consists chiefly of aluminium phosphate, and is therefore not fit for use in the manufacture of superphosphate of lime. Phosphoric acid has been made from it to some extent.—**Reverted phosphate**, that portion of a superphosphate of lime for agricultural use which has become insoluble in water as the result of chemical change. See ★*phosphoric acid*.—**River phosphate**, a trade-name of that part of the South Carolina phosphatic deposits which is obtained from the river-beds by dredging. Compare *land* ★*phosphate*.—**Sodium phosphate.** See ★*sodium*.—**Soluble phosphate.** See *soluble* ★*phosphoric acid*.—**Thomas' phosphate**, the slag produced in the manufacture of steel from cast-iron containing much phosphorus by means of the basic or Thomas and Gilchrist process, in which lime is used as a lining for the converter or hearth. The slag contains a large proportion of calcium phosphate. In a finely ground condition it is extensively used as a manure.—**Tricalcium phosphate.** Same as *tricalcic phosphate*. See ★*calcium phosphate*.

Phosphatic slag. See ★*slag*¹.

phosphation (fos-fā′shọn), *n.* The union of phosphoric acid with a base, or the substitution of phosphoric acid for another combined acid, in either case producing phosphates. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. p. 206.

phosphatol (fos′fạ-tol), *n.* [*phosphate* + *-ol*.] A trade-name of a thick reddish-yellow liquid prepared by the action of phosphorus trichlorid on creosote. Chemically it resembles phosote.

phosphene, *n.*—**Accommodation phosphenes**, phosphenes sometimes observed, when in a dark room, following attempts at accommodation.

Phosphide of copper, a compound of phosphorus and copper, used to toughen commercial copper, and in admixture with sulphid of copper and potassium chlorate to fill Abel's magneto-electric fuses.—**Phosphide of tin.** Same as ★*phosphor-tin*.

phosphine, *n.* **2.** A coal-tar coloring matter related to acridine. It is a by-product in the manufacture of magenta, and is used chiefly for dyeing leather a reddish yellow. Also known as *leather-yellow* and *Philadelphia yellow G*.—**New phosphine**, a basic coal-tar color of the monoazo type. It dyes leather and tannin-mordanted cotton.

phosphinic (fos-fin′ik), *a.* [*phosphin*(*e*) + *-ic*.] Derived from phosphine.—**Phosphinic acid**, an acid, $R_2PO(OH)$, formed by the oxidation of a secondary phosphine, as, diethylphosphinic acid ($(C_2H_5)_2PO(OH)$).—**Phosphinic oxid**, a compound, R_3PO, formed by the oxidation of a tertiary phosphine.

phospho-albumin (fos″fō-al-bū′min), *n.* [*phospho*(*rus*) + *albumin*.] An albuminous substance containing phosphorus, as the nucleo-albumins (phosphoglobulins) and the nucleoproteids.

phosphocarnic (fos-fō-kär′nik), *a.* [*phospho*(*rus*) + L. *caro* (*carn-*) + *-ic*.] Noting an acid, a complex organic substance which was isolated by Siegfried from muscle-tissue. Its iron salt he calls *ferratin*. On decomposition it yields, among other bodies, a crystallizable acid, carnic acid, $C_{10}H_{15}O_5N_3$, which Siegfried regards as pure antipeptone.

phosphoferroproteid (fos-fō-fer-ō-prō′tē-id), *n.* An iron-containing proteid, such as the vitellin of the yolk of eggs.

phosphoglobulin (fos-fǫ-glob′ụ̄-lin), *n.* Same as ★*nucleo-albumin*.

phosphoglucoproteid (fos-fǫ-glö-kǫ-prō′tẹ-id), *n.* A proteid containing a largely developed carbohydrate group. Such bodies have been found in the pancreas and the mammary gland. The ichthulin found in the sperm of certain fishes also belongs to this order.

phosphomolybdate (fos″fō-mǫ-lib′dāt), *n.* [*phosphomolybd*(*ic*) + *-ate*¹.] A salt of phosphomolybdic acid.—**Ammonium phosphomolybdate**, $(NH_4)_3PO_4 12MoO_3$, is a bright canary-yellow crystalline powder, precipitated from a solution of an orthophosphate in moderately strong nitric acid on the addition of ammonium molybdate. It is used for the detection and determination of phosphorus and the radical of phosphoric acid in the course of chemical analysis of steel, fertilizers, etc.

phosphomolybdic (fos″fō-mǫ-lib′dik), *a.* [*phospho*(*rus*) + Gr. *μόλυβδος*, lead, + *-ic*.] Noting a complex acid, $H_3PO_4.12MoO_3$, which is used as a test for the vegetable alkaloids.

phosphonic (fos-fon′ik), *a.* [*phosph*(*orus*) + *-one* + *-ic*.] Derived from phosphorus.—**Phosphonic acid**, an organic acid of phosphorus, which may be regarded as phosphorous acid in which the hydrogen atom directly united with the phosphorus is replaced by an organic radical, as ethyl-phosphonic acid, $C_2H_5.PO_3H_2$.

phosphonium (fos-fō′ni-um), *n.* [NL., < *phosph*(*orus*) + *-on-ium*.] A hypothetical compound, analogous to ammonium, formed by the union of four atoms of hydrogen and one of phosphorus (PH_4). This, as well as the compounds in which from one to four of the hydrogen atoms are replaced by organic radicals, forms salts, as phosphonium iodide (PH_4I), phenylphosphonium iodide ($C_6H_5PH_3I$), tetrethylphosphonium chlorid ($(C_2H_5)_4PI$), etc.

phosphoproteid (fos-fǫ-prō′tẹ-id), *n.* [*phospho*(*rus*) + *proteid*.] An albumin containing a phosphorized radical, such as the nucleo-albumins and the nucleoproteids.

phosphoprotein (fos-fō-prō′tẹ-in), *n.* [*phospho*(*rus*) + *protein*.] A compound protein in which an albuminous radical exists in combination with a phosphorus-containing substance other than nucleic acid or lecithin.

phosphoptomaine (fos-fǫ-tō′mạ-in), *n.* [*phospho*(*rus*) + *ptomaine*.] One of a group of toxic substances found in the blood in cases of phosphorus-poisoning. They are supposedly basic products formed in the metabolism of the body, in combination with phosphorus.

phosphoreal (fos-fō′rẹ-ạl), *a.* [*phosphor*(*us*) + *-e-* + *-al*¹.] Pertaining to, or of the nature of, phosphorus; resembling phosphorus; phosphorescent.

phosphoret (fos′fǫ-ret), *n.* Same as *phosphuret*.

phosphoretic (fos-fǫ-ret′ik), *a.* [*phosphoret* + *-ic*.] Of the nature of a phosphoret; combined with phosphorus. *N. E. D.*

Phosphoric acid. In connection with the manufacture, analysis, and use of fertilizers this term is commonly used to signify, not the orthophosphoric acid of the scientific chemist (H_3PO_4), but phosphorus pentoxid (P_2O_5), which by the earlier chemists was called *phosphoric acid*. *Water-soluble* or simply *soluble phosphoric acid* is phosphorus pentoxid equivalent to the monocalcic phosphate (see ★*calcium phosphate*) present in a fertilizer, which is soluble in cold water. *Citrate-soluble phosphoric acid* is phosphorus pentoxid equivalent to the dicalcic phosphate (see ★*calcium phosphate*) or the aluminium or iron phosphate present in a fertilizer, which is insoluble in cold water but soluble in a cold aqueous solution of ammonium citrate; it represents the 'reverted phosphate' which is liable to form during storage of a fertilizer originally containing only monocalcic phosphate. *Insoluble phosphoric acid* is phosphorus pentoxid equivalent to the tricalcic or normal phosphate (see ★*calcium phosphate*) present in a fertilizer, which does not dissolve to a sensible extent either in water or in ammonium-citrate solution. Water-soluble phosphoric acid has the highest and insoluble phosphoric acid the lowest agricultural value.—**Phosphoric anhydrid.** See ★*anhydrid*.—**Phosphoric pig.** See ★*pig*¹.—**Reverted phosphoric acid**, the equivalent in phosphorus pentoxid (P_2O_5) of that portion of a superphosphate of lime which has become insoluble in water. See *reverted* ★*phosphate*.

phosphoriferous (fos-fō-rif′ẹ-rus), *a.* Bearing or containing phosphorus.

phosphorism (fos′fǫ-rizm), *n.* [*phosphor*(*us*) + *-ism*.] **1.** Chronic phosphorus-poisoning; necrosis of the jaw due to poisoning by phosphorus.

2†. Phosphorescence.

phosphorite, *n.*—**Quercy phosphorites**, in *geol.*, deposits of phosphates of lime at Quercy, central France, of lower Oligocene age, occupying depressions in Jurassic limestones and containing large numbers of vertebrate remains of types similar to those of the Paris gypsum beds.

phosphoritic (fos-fǫ-rit′ik), *a.* [*phosphorite* + *-ic*.] Pertaining to, of the nature of, or containing, phosphorite.

phosphornecrosis (fos″fọr-nek-rō′sis), *n.* Same as *phosphorus* ★*necrosis*.

phosphorochalcite (fos′fǫ-rǫ-kal″sīt), *n.* Same as *phosphochalcite*.

phosphor-tin (fos′fọr-tin), *n.* An alloy consisting of 94 parts of tin-sponge and 6 parts of phosphorus, heated together. It is used in the production of phosphor-bronze.

phosphorus, *n.* **3.** [With a pl. *phosphori* (-rī).] In early use, a substance which emits light otherwise than as the result of ordinary combustion. Thus mention is made of the phosphori of Canton, Homberg, Baldwin, etc. The principal causes of such emission of light are previous exposure to light (insolation), to heat, to mechanical violence (friction, percussion, etc.), to electrical discharge, and to slow surface oxidation, as also the vital processes in the bodies of animals and plants.—**Baldwin's phosphorus**, dried calcium nitrate when sufficiently heated to produce phosphorescence.—**Canton's phosphorus**, calcium sulphid, originally made by heating in a crucible lime from oyster-shells with flowers of sulphur. After exposure to bright light it glows or phosphoresces in the dark. See *Balmain's* ★*paint*.—**Homberg's phosphorus**, calcium chlorid prepared by Homberg by heating together sal ammoniac and slaked lime, and fusing the product, which he found to shine in the dark after exposure to light.—**Kunckel's phosphorus**, the element phosphorus, of modern chemistry, discovered by Brand of Hamburg in 1669 and independently by Kunckel of Wittenberg in 1670. Obtained by ignition of the solid residue from the evaporation of urine, it was for a time distinguished from the Bologna phosphorus (already known as a substance luminous in the dark) by attaching the name of Brand or Kunckel, or by the term *phosphorus urinæ*.—**Phosphorus necrosis.** See ★*necrosis*.—**Phosphorus oxychlorid.** See ★*oxychlorid*.—**Phosphorus pentachlorid**, a yellowish-white crystalline solid, of composition PCl_5, reacting upon water to form hydrochloric and phosphoric acids.—**Phosphorus steel.** See ★*steel*1.—**Phosphorus suboxid**, a substance of red color, produced in small quantity along with the higher oxids of the element when phosphorus is burned with a limited supply of air, and obtainable also by other processes. The formula assigned to it is P_4O. It is doubtful whether this substance is other than impure red phosphorus. A more definite compound, P_2O, can be obtained as a yellow powder by the interaction of phosphorus trichlorid and phosphorus acid.—**Phosphorus trichlorid**, a colorless liquid, produced by the direct action of chlorin on phosphorus, of composition PCl_3, reacting upon water to form hydrochloric and phosphorous acids.—**Red phosphorus.** This form of phosphorus has been shown to be only partly amorphous, a part consisting of microscopic crystals of a red-violet color. It has been recently stated that by heating to the boiling-point a solution of ordinary phosphorus in phosphorus tribromide a scarlet powder is obtained resembling red phosphorus, but of notably greater chemical activity, fitting it for use in the manufacture of friction-matches to ignite by striking on any rough surface. See *phosphorus*, 2.—**Salt of phosphorus.** Same as *microcosmic salt*.—**Wach's phosphorus**, calcium sulphid which has been strongly heated in a crucible after addition in small quantity of a compound of arsenic, antimony, zinc, cadmium, or tin. Such a preparation phosphoresces brightly after exposure to bright light. The sulphids of barium and strontium may be similarly treated.

phosphorus-steel (fos′fǫ-rus-stēl), *n.* See ★*steel*¹.

phosphoryl (fos′fǫ-ril), *n.* The radical PO. Thus phosphorus oxychlorid is sometimes called *phosphoryl chlorid*, $POCl_3$.

phosphosiderite (fos-fọ-sid′ẹ-rīt), *n.* [Gr. *φωσφόρος*, in NL. sense 'phosphorus,' + *σίδηρος*, iron, + *-ite*^{2}.] A hydrous ferric phosphate, $2FePO_4+3\frac{1}{2}H_2O$, occurring in red orthorhombic crystals: found in cavities in iron ore in the Siegen district, Germany.

phosphotage (fos′fọ-tạj), *n.* An anglicized form of a French term applied to a modification of the process of 'plastering' wine in which calcium diphosphate is substituted for calcium sulphate. *Sadtler*, Handbook of Indust. Chem., p. 205.

phosphotungstic (fos-fọ-tung′stik), *a.* [*phospho*(*rus*) + *tungst*(*en*) + *-ic.*] Noting a complex acid of which there are several forms. That best known has the composition H_3PO_4.-$12WO_3$. It is used in connection with stains for histological preparations to be examined under the microscope.

phosphuranylite (fos-fụ-ran′i-līt), *n.* [*phosph*(*orus*) + *uran*(*ium*) + *-yl* + *-ite*^{2}.] A hydrous uranium phosphate, occurring as a deep lemon-yellow pulverulent incrustation: found in North Carolina.

phossy (fos′i), *a.* [*phos*(*phorus*) + *-y*^{3}.] Produced by phosphorus poisoning. [Colloq.]—**Phossy jaw**, necrosis of the jaw caused by poisoning with phosphorus, as among match-makers. See ★*phosphorism.*

phot (fōt), *n.* [Gr. *φῶς* (*φωτ-*), light.] A proposed photometric unit equal to an illumination of one lux for one second; one lumen of light-flux applied to a surface of one square meter for one second of time.

phot., photog. Abbreviations (*a*) of *photographic*; (*b*) [*l. c.* or *cap.*] of *photography.*

photanamorphosis (fọ-tan″a-môr′fō-sis) *n.* [Gr. *φῶς* (*φωτ-*), light, + LGr. *ἀναμόρφωσις*, forming anew. See *anamorphosis.*] A distorted picture, obtained photographically, which if viewed in a cylindrical mirror properly placed thereon will have a normal appearance.

photechy (fō′tek-i), *n.* [Irreg. ‹ Gr. *φῶς* (*φωτ-*), light, + *ἔχειν*, hold.] The property of holding, developing, and giving off secondary rays sufficient to affect a photographic plate: a property possessed by paper and other substances, especially when affected by ink or a saline solution, after exposure to sunlight. *Sci. Amer. Sup.*, April 8, 1905, pp. 24, 467–8.

photee (fō-tē′), *n.* [E. Indian.] A fine variety of cotton grown in India for making Dacca muslins.

photeolic (fō-tẹ-ol′ik), *a.* [Gr. *φῶς* (*φωτ-*), light, + *αἰόλος*, moving, motile.] In *bot.*, assuming different positions with the presence or absence of light; affected with nyctitropism. See *sleep*, 5.

photerythrous (fọ-te-rith′rus), *a.* [Gr. *φῶς* (*φωτ-*), light, + *ἐρυθρός*, red, + *-ous.* The formation does not express the meaning assigned.] Sensitive especially to the red rays of the spectrum: noting a partial color-blindness.

> He began to notice colors at once, and, except in the case of green, could always recognize a color after having been told its name. With green he had more difficulty. and it may be that he is somewhat *photerythrous.*
> *Jour. Philos., Psychol. and Sci. Methods*, Aug. 18, 1904, [p. 468.

photic (fō′tik), *a.* [Gr. *φῶς* (*φωτ-*), light, + *-ic.*] **1.** Of or pertaining to those forms of radiation which are productive of luminous effects; relating to light.

> It is not at all likely that the differences in reaction-time here noted for electric and *photic* stimuli are due to the same conditions. *Biol. Bulletin*, Jan., 1904, p. 88.

2. In *phytogeog.*, well-lighted: designating the upper bright region of bodies of water in which the light is sufficiently intense for the normal development of microphytes. Correlated with ★*dysphotic* and ★*aphotic.* *Schimper* (trans.), Plant-Geog., p. 782.

Photinian, *n.* **II.** *a.* Of or pertaining to Photinus or to his doctrines.

photism (fō′tizm), *n.* [Gr. *φωτισμός*, illumination, ‹ *φῶς* (*φωτ-*), light.] In *psychol.*, a reproduced sensation of color regularly accompanying the arousal of sensation in certain other sense departments, especially in that of hearing: the commonest form of synæsthesia.

> In order to differentiate the *photisms* from the retinal light, several series of tests were made, in which M was seated in a noiseless dark room.
> *Amer. Jour. Psychol.*, XI. 379.

photistic (fọ-tis′tik), *a.* [Gr. *φωτιστικός*, illuminating, ‹ *φωτίζειν*, illuminate.] Pertaining to, or of the nature of illumination, physical or mental; illuminating; enlightening.

> When from the dull sense . . . the *photistic* thrill disengages itself as something different from the rest, it will not be denied that this is a perceptive gain, i. e. an accession not only to the creature's sensory store, but to his life-relations with reality.
> *J. Martineau*, Types of Ethical Theory, II. 356. *N. E. D.*

photo-actinic (fō″tọ-ak-tin′ik), *a.* [Gr. *φῶς* (*φωτ-*), light, + *ἀκτίς* (*ἀκτιν-*), ray, + *-ic.*] Capable of producing luminous effects, by exciting luminescence, and also actinic affects: said of certain rays.

> The *photo-actinic* rays proceeding from the bacteria which had been exposed to radium were capable of affecting a photographic plate through a double layer of lead foil. *Nature*, May 19, 1904, p. 69.

photo-aquatint (fō″tọ-ak′wạ-tint), *n.* A process of printing pictures from intaglio copperplates, similar to but simpler than photogravure. *Woodbury*, Encyc. Dict. of Photog., p. 345.

photo-autographic (fō-tọ-â-tọ-graf′ik), *a.* Of or pertaining to a telegraphic apparatus, for the transmission of messages in the handwriting of the sender, in which the receiving instrument makes its record photographically.

photoauxesis (fō″tọ-âk-zē′sis), *n.* [Gr. *φῶς* (*φωτ-*), light, + *αὔξησις*, growth.] In *bot.*, the production of leaves on a dorsiventral stem chiefly on one side, in response to the stimulus of diffused light. *Pfeffer* (trans.), Physiol. of Plants, II. 73.

photobacterium (fō″tō-bak-tē′ri-um), *n.*; pl. *photobacteria* (-ạ̈). [Gr. *φῶς* (*φωτ-*), light, + NL. *bacterium.*] A bacterium which emits phosphorescent light. *Salter*, tr. of Lafar, Tech. Mycol., I. 160.

photobathic (fō-tọ-bath′ik), *a.* [Gr. *φῶς* (*φωτ-*), light, + *βάθος*, depth, + *-ic.*] Of or pertaining to the greatest depths of the ocean to which light penetrates: as, the *photobathic* zone. *Chamberlin and Salisbury*, Geol., I. 361.

photocalque (fō′tọ-kalk), *n.* [Gr. *φῶς* (*φωτ-*), light, + F. *calque*, a counterdrawing.] A photographic reproduction from a non-photographic original design. *Woodbury*, Encyc. Dict. of Photog., p. 303.

photocaustic (fō-tọ-kâs′tik), *a.* [Gr. *φῶς* (*φωτ-*), light, + E. *caustic.*] Noting a photolithographic image in half-tone, obtained from a veiled negative.

photocauterization (fō″tọ-kâ″tėr-i-zā′shọn), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *cauterization.*] Cauterization by means of any form of radioactivity, such as light rays, X-rays, radium rays, etc.

photocautery (fō-tọ-kâ′tėr-i), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *cautery.*] **1.** An instrument for effecting photocauterization.—**2.** Same as ★*photocauterization.*

photoceramic (fō″tọ-se-ram′ik), *a.* [Gr. *φῶς* (*φωτ-*), light, + E. *ceramic.*] Noting ceramic work decorated by photographic processes. *N. E. D.*

photoceramics (fō″tọ-se-ram′iks), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *ceramics.*] A process of producing burnt-in photographic images on porcelain, glass, or similar materials. Tessié du Motay's method consists in carefully removing a collodion positive from its glass support and floating it in a toning-bath containing iridium and gold chlorids. The film is next carefully floated to the surface of the enameling-tablet, and after drying is heated in a muffle-furnace. At a certain stage of the baking an enamel composition, suspended in collodion, is poured over the picture and burned on. This must be repeated five or six times until the glaze is of sufficient thickness and the picture of the desired color. By this process an image is obtained which consists of pure metallic silver, gold, and iridium in an extremely fine state of division, fixed to the surface of an imperishable tablet, and protected by an equally hard, permanent, and impermeable glaze. Ceramic colors may be applied and burnt in during the making of such an enamel picture.

photoceramist (fō-tọ-ser′ạ-mist), *n.* [*photoceram*(*ic*) + *-ist.*] One who does photoceramic work.

Photochemical climate, engraving. See ★*climate*, ★*engraving.*

photochemigraphy (fō″tọ-ke-mig′rạ-fi), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *chem*(*ic*) + Gr. *-γραφια*, ‹ *γράφειν*, write.] The process of making, in a photographic way, zinc clichés from line-drawings (without half-tones) for printing from in a press. *E. L. Wilson*, Cyclopædic Photog., p. 275.

photochrome (fō′tọ-krōm), *n.* [See *photochromy.*] A colored picture produced by photochromy.

photochromic (fō-tọ-krō′mik), *a.* Same as *photochromatic.*

photochromography (fō″tọ-krọ-mog′rạ-fi), *n.* [Gr. *φῶς* (*φωτ-*), light, + *χρῶμα*, color, + *-γραφια*, ‹ *γράφειν*, write.] The art of producing prints in colors from originals that have been photographed on metal plates or on lithographic stone. *Woodbury*, Encyc. Dict. of Photog., p. 303.

photochromoscope (fō-tọ-krō′mọ-skōp), *n.* [Gr. *φῶς* (*φωτ-*), light, + *χρῶμα*, color, + *σκοπεῖν*, view.] A device so arranged that three transparent photographs can be placed within it, each one illuminated by a colored light, one by red, one by green, and one by blue-violet light. A system of reflectors combines the three images, so that the eye sees but one picture in the natural colors. See ★*chromascope*, 2.

> Mr. Ives has devised a special form of camera by which the three elementary negatives are taken simultaneously, and also an instrument, the *photochromoscope*, in which a system of mirrors and lenses brings to the eye a combination similar to that projected with the triple lantern. A double instrument of this kind forms the most perfect type of stereoscope, bringing out with great vividness from the prepared stereographs the combined effect of color, form, and binocular perspective.
> *Smithsonian Rep.*, 1895, p. 128.

photochromotype (fō-tọ-krō′mọ-tīp), *v. t.*; pret. and pp. *photochromotyped*, ppr. *photochromotyping.* [*photochromotype*, *n.*] To produce (prints or plates) in colors by means of photographic engraving. See *photochromotype, n.*

photochromotypy (fō-tọ-krō′mọ-tī-pi), *n.* [*photochromotyp*(*e*) + *-y*^{3}.] The art or process of making photochromotypes.

photochronograph, *n.* **3.** An instrument for the observation of star-transits by photography.—**4.** A chronograph in which the tracing or record is made by the action of a pencil of light on a sensitized surface.

photochronographically (fō-tọ-kron-ọ-graf′i-kạl-i), *adv.* By means of the photochronograph.

photoclistogamic (fō-tọ-klīs-tọ-gam′ik), *a.* [Gr. *φῶς* (*φωτ-*), light, + E. *clistogamic.*] Clistogamous as a result of photohyponasty. *Jackson*, Glossary.

photoclistogamy (fō″tọ-klīs-tog′ạ-mi), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *clistogamy.*] **1.** Clistogamy due to photohyponasty.—**2.** That type of pseudoclistogamy in which the flower remains closed under adverse conditions of light. *Pound and Clements*, Plant Life of Nebraska.

photocollograph (fō-tọ-kol′ọ-gråf), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *collograph*(*ic*).] A picture or print produced by a collographic process.

photocollographic (fō″tọ-kol-ọ-graf′ik), *a.* Pertaining or relating to photocollography.

photocollography (fō″tọ-ko-log′rạ-fi), *n.* [*photocollograph* + *-y*^{3}.] The art of producing a printing-surface, by aid of photography, upon a collotype plate of glass after it has received preparatory treatment. See ★*collotype* and *gelatin process*, under *gelatin.*

photocollotype (fō-tọ-kol′ọ-tīp), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *collotype.*] See ★*collotype.*

photocopy (fō′tọ-kop-i), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *copy.*] A copy made by some photographic process, as of an architectural or mechanical drawing. A common form is the blue-print.

photodecomposition (fō″tọ-dẹ-kom″pọ-zish′ọn), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *decomposition.*] In *photog.*, chemical change effected by light; specifically, the action of light on a sensitive surface or in a film.

> For the colored product as a whole, i. e., the product of *photo-decomposition* with its combined unchanged haloid, Carey Lea has proposed the convenient term "photo-salt." *Smithsonian Rep.*, 1890, p. 383.

photodermatism (fō-tọ-dėr′mạ-tizm), *n.* [Gr. *φῶς* (*φωτ-*), light, + *δέρμα* (*-τ-*) skin, + *-ism.*] Sensitiveness to light in epithelial cells, independently of connection with a nervous system.

> Nor should we deny that empirical methods, whether they have yet done so or not, are quite capable of giving sufficient evidence for the existence of psychic powers as radically different from our own as those claimed for *photodermatism* or the topochemical sense of the antennae of ants. *Science*, Oct. 14, 1905, p. 487.

photodoscope (phọ-tod′ọ-skōp), *n.* Same as *photoscope.*

photodromy (fọ-tod′rọ-mi), *n.* [Gr. *φῶς* (*φωτ-*), light, + *-δρομος*, < *δραμεῖν*, run.] The movement of suspended particles in a medium under the influence of light. Under certain conditions the movement is from shaded to illuminated regions of the medium, which constitutes *positive photodromy.* A movement toward shaded regions is *negative photodromy.*

> I think that the negative *photodromy* may also be explained by the heating effect of the light.
> *G. Quincke*, in Rep. Brit. Ass'n Advancement of Sci., [1901, p. 63.

Photo-electric fatigue, the decay, with time, of the photo-electric activity of a substance. *Phys. Rev.*, Jan., 1908, p. 21.

photo-electricity (fō″tọ-ē-lek-tris′i-ti), *n.* The effect of light upon electric phenomena, such as the discharge of an electrified body or the modification of the sparking distance between charged terminals.

photo-electrograph (fō″tō-ẹ-lek′trọ-gråf), *n.* An instrument for photographically registering the variations of the electrical conditions of the atmosphere. *Woodbury*, Encyc. Dict. of Photog., p. 346.

photo-electrolytic (fō″tọ-ẹ-lek″trọ-lit′ik), *a.* Of or pertaining to electrolytic effects produced by light, as in certain photographic films.

> A series of apparent resemblances between the retinal currents described by physiologists and *photoelectrolytic* changes in sensitised metal plates.
> *Nature*, March 5, 1903, p. 410.

photo-engraver (fō″tọ-en-grā′vėr), *n.* One who, by photography and etching, makes plates in relief for a type-printing press; also, the operator who retouches plates so prepared. *Scripture*, Exper. Phonetics, p. 53.

photo-engraving, *n.* 2. A print or plate made by photography and developed by etching for use on a type-printing press.—**Relief photo-engraving**, the process of making a plate for relief-printing by photographic processes.

photo-esthetic (fō″tọ-es-thet′ik), *a.* [Gr. *φῶς* (*φωτ-*), light, + E. *esthetic.*] Having or pertaining to the sensation of light.

> In seeking the possible nature of the two fundamental actions we are led to the view that the former or *photo-æsthetic* action (being photochemical) is due to the visual purple. *Smithsonian Rep.*, 1898, p. 194.

photo-etch (fō-tọ-ech′), *v. t.* To produce (a printing-surface) upon a photographed plate by etching with acids. When the printed surface is in relief, for use on the typographic press, the plate so made is known as a *photo-engraving* or a *process plate*; when the subject is below the surface, or in intaglio, it is known as *photogravure.*

photofiligrain (fō-tọ-fil′i-grān), *n.* In *photog.*, a method of producing designs on paper by pressure with a photographic relief. *Woodbury*, Encyc. Dict. of Photog., p. 348.

photofluoroscopy (fō″tọ-flö-ọ-ros′kọ-pi), *n.* [Gr. *φῶς* (*φωτ-*), light, + E. *fluoroscopy.*] The photography of the image obtained on a fluoroscopic screen. *Houston*, Dict. Elect.

photogalvanographic (fō″tọ-gal″va-nọ-graf′ik), *a.* [*photogalvanograph*(*y*) + *-ic.*] Pertaining to, or produced by means of, photogalvanography.

photogastroscope (fō-tọ-gas′trọ-skōp), *n.* [Gr. *φῶς* (*φωτ-*), light, + *γαστήρ* (*γαστρ-*), stomach, + *σκοπεῖν*, view.] An apparatus for photographing the interior of the stomach. It consists of a small water-cooled electric light which illuminates the interior, and of a series of mirrors which act as reflectors and bring the image to the lens-tube and camera. The stomach may be inflated by an arrangement through which air is forced.

photogelatin (fō-tọ-jel′a̤-tin), *a.* Noting a photographic process in which gelatin is used.

photogen, *n.* 2. A light-producing organ, as in some invertebrates.

> In Tomopteris there is on each parapodium, above and below, a brightly-coloured spherical organ, which for a long time was regarded as an eye, but from its structure appears to be a "*photogen.*"
> *Cambridge Nat. Hist.*, II. 296.

photogene, *n.* 2. A trade-name of naphtha distilled from bituminous shale, of specific gravity from .72 to .81 and boiling-point from 145 to 150° C. It is used as an illuminating oil and in the removal of grease from bones to prepare them for use instead of ivory.

photogenetic (fō″tọ-jẹ-net′ik), *a.* [Gr. *φῶς* (*φωτ-*), light, + E. *genetic.*] Producing light; emitting light; luminiferous; photogenic.

photogenic, *n.* 3. In general, light-producing; luminous.

> Experiments with a ctenophore, Mnemiopsis leidyi, show similar results with oxygen. Tissue in alkaline solutions becomes brilliantly *photogenic* under the influence of oxygen. The light is wholly extinguished when tissue is placed in acid solutions and does not reappear when oxygen is introduced. When the acid solution is made alkaline, the tissue again becomes *photogenic.*
> *Science*, Feb. 17, 1905, p. 267.

photoglyph (fō′tọ-glif), *n.* [Gr. *φῶς* (*φωτ-*), light, + *γλυφή*, carving, engraving.] A photo-engraving. *Wall*, Dict. of Photog., p. 485.

photoglyptic (fō-tọ-glip′tik), *a.* Same as *photoglyphic.*

photoglyptography (fō″tọ-glip-tog′ra̤-fi), *n.* [Gr. *φῶς* (*φωτ-*), light, + *γλυπτός*, engraved, + *-γραφια*, < *γράφειν*, write.] The art of producing an engraving of a photograph: usually by etching. Now generally called *photogravure.*

photogrammeter (fō-tọ-gram′e-tėr), *n.* [Gr. *φῶς* (*φωτ-*), light, + *γράμμα*, a writing, + *μέτρον*, measure.] A photographic camera adapted for use in surveying. It is commonly mounted accurately on altitude and azimuth circles, with arrangements for determining all instrumental corrections. The angular distance of any point on the photographic plate from the center of the plate is measured by a micrometer, whence the altitude and azimuth of any point of a cloud or of the landscape may be determined. Two photogrammeters operating simultaneously at neighboring stations give the data for determining the location and motion of any part of a cloud.

photogrammetric (fō″tọ-gra-met′rik), *a.* Of, pertaining to, or produced by means of a photogrammeter.

photogrammetry, *n.* 2. The scientific use of the photogrammeter; the taking of photographs for the purpose of constructing therefrom the plan and elevation of the points photographed: sometimes loosely used to cover the entire science of constructing the plan and elevation of an object or of a series of points from photographs. See ★*photogrammeter.*

photograph, *n.*—**Boudoir photograph**, a photographic print 5¼ by 8½ inches in size. **Cabinet photograph.** See ★*cabinet picture.*—**Caricature photograph**, a photograph representing the person or object in a distorted or grotesque manner. It is generally secured by rephotographing portions of other photographs ingeniously put together, or by the use of screens or of special cameras.—**Cathode photograph.** Same as *sciagraph*, 2.—**Diamond photograph**, a photograph 4⅛ by 4⅝ inches in size.—**Imperial photograph**, a size of photograph measuring 6⅞ by 9⅞ inches.—**Magic photograph**, a photographic print bleached by mercuric chlorid and redeveloped by a solution of sodium hyposulphite; also, a print developed by ammonia or tobacco-smoke. In the latter case the paper is inserted in a cigar- or cigarette-holder. *Woodbury*, Encyc. Dict. of Photog., p. 274.—**Spirit photograph**, a photograph on which there appears, beside or behind the ordinary image of the sitter, an indistinct or partial image of another person, taken before or after on the same plate. These indistinct images are due to accident or to manipulation. They were at one time imposed upon the credulous as actual photographs of spirits.

photograph-board (fō′tọ-gråf-bōrd), *n.* In photographic surveying, a special form of drawing-board containing a permanent diagram and lines on which photographs are mounted while being reduced or measured.

photographic, *a.* Hence—2. In *lit.*, imitated or imitating with precise and minute detail, indicating lack of artistic feeling and originality in the writer.—**Photographic chemistry.** Same as *photochemistry.*—**Photographic doublet.** See ★*doublet.*—**Photographic reflecting telescope.** See ★*telescope.*—**Photographic surveying.** See ★*surveying.*

photographist (fọ-tog′ra̤-fist), *n.* [*photograph* + *-ist.*] A photographer. [Rare.]

photographophone (fō-tọ-graf′ọ-fōn), *n.* [Gr. *φῶς* (*φωτ-*), light, + *γράφειν*, write, + *φωνή*, sound.] An instrument for the reproduction of sound by the aid of photography. The apparatus, devised by E. Ruhmer, concentrates the rays of light from a speaking arc or other sensitive flame, by means of a cylindrical lens, on a moving film. When light is projected through this developed and fixed film, upon a selenium cell in circuit with a battery and a telephone, every variation of the light impinging on the selenium cell produces a sound in the telephone. Prints may be taken of the film and are of equal value. The sounds are reproduced with great distinctness.

photographotype (fō-tọ-graf′ọ-tīp), *n.* [*photograph* + *type.*] A method of producing blocks for letter-press printing by the aid of photography and electrotyping. *N. E. D.*

photography, *n.*—**Animal photography**, the art of photography applied to the portraiture of animals in their natural surroundings or under conditions such as to convey that effect, at the same time showing their characteristic traits.—**Architectural photography**, the photographing of edifices and exteriors by the use of lenses which give the least distortion.—**Automatic photography**, photography by means of a slot machine which takes and delivers a finished ferrotype portrait of the person who starts the instrument and then poses before it.—**Cathode photography**, the process of taking sciagraphs.—**Ceramic photography.** See ★*photoceramics.*—**Color photography**, a series of photographic and mechanical operations by which a picture is produced which, in color, more or less resembles the original object: strictly, it is the process of photographing any object and producing a picture in the correct colors; generally it includes those processes in which several negatives, separate or combined, of the same object are taken, using different color-screens or ray-filters, and then printing the picture in the corresponding colored inks. The Lippmann process is the only one which produces an approximately correctly colored picture by purely photographic processes. The apparent color of an object is determined by the wave-length of the light which reaches the eye from it. (See *color*, 1.) Lippmann placed a photographic dry-plate film down upon the surface of mercury and exposed it through the glass back to a colored object (spectrum) and then developed the plate in the usual way. The negative thus produced, when viewed at the proper angle, appeared in approximately the same colors as the original object. The waves of light passing through the sensitive film of the dry plate fall upon the mercury and are reflected back through the film, forming with the advancing waves a series of nodes and loops. (See cuts under *nodal lines.*) The distance apart of these nodes is determined by the wave-length (color) of the light; hence their distribution in the film will depend upon the color of the light which falls upon that particular portion of the plate. The negative thus obtained is really devoid of color, in the usual sense, but viewed at the proper oblique angle, it will appear colored owing to the interference produced by the lines of opaque silver deposited at the nodal lines. (See *interference*, 5.) The best example of the other class of processes is that developed by Ives. Three negatives are taken through three colored screens—orange-red, blue-green, and blue. Each of these will give, by its gradations of density, a direct measure of the amount of light of that particular kind which falls upon the plate at that point. A positive transparency is made from each negative, and when viewed in the appropriate light, each will reproduce the object so far as that light is concerned. For example, the blue negative will show the object as it appears to a person blind to red and green, or when viewed through blue glass. If three lanterns so project these three positives in their appropriate color that they register perfectly on the screen, the combined image will appear in nearly its natural colors. Ives has made such an arrangement of mirrors that the three positives may be viewed subjectively, and the same result obtained. The Joly-Macdonough process does not use three screens and three negatives as above described, but one screen of three colored lines and one corresponding negative. The screen is ruled in transparent lines of the three colors, about 1/200 to 1/300 of an inch wide, adjoining each other so that every third line is orange-red, every third blue-green, etc. The negative obtained by placing such a screen immediately in front of the plate really corresponds to the three Ives negatives on one plate, each set of lines constituting a negative for its color. A positive made from this negative is viewed through a lined screen similar to the taking screen, except that the colors are red, green, and blue, so adjusted that the blue lines are superimposed upon those parts of the positive which were taken behind the blue lines, and similarly with the red and green. These lines are so narrow that they become blended to the eye and only their combined effect is perceived, and appears colored like the original. A mechanical device permits of covering two sets of lines of such a negative and of moving the negative during the printing by twice the line width, thus obtaining a positive similar to that one of the plates of the Ives process which corresponds to the color of the exposing line. It is very difficult to rule the color-screens for the above process without overlapping or leaving clear spaces. The Powrie-Waner process obviates this difficulty. A glass plate is coated with a thin film of bichromated colloid (albumin, gelatin, glue) and exposed under a negative of opaque lines twice as wide as the intervening spaces. On washing the resulting plate in warm water a set of fine lines of insoluble colloid, corresponding to the open spaces of the screen, is left. These lines are dyed green and set with formalin and chrome alum. A second coating of colloid is applied to the plate and it is again exposed so that the screen covers the green lines and half the spaces. Washing, dyeing red, and fixing give the second set of lines (red). A third coating of colloid is applied and the exposure is now from the back through the glass, the green and red lines now acting as the protecting negative. Washing, dyeing blue, and fixing fill all the remaining spaces with blue colloid, and no overlaps or open spaces are possible. Powrie obtains a negative similar to the Ives process by setting his line-negative a little way in front of the plate and exposing with oblique and normal illumination in the appropriate colored light. Lumière has produced a color-screen in dots or stipples by using colored grains of starch. Three lots of fine starch-grains are dyed red, green, and blue, respectively, and are mixed in the proportions proper to produce a gray. A plate is prepared with a layer of tacky material (gelatin, glue) and the starch-grains are dusted over it, the loose excess being removed and any possible open spaces filled by dusting on powdered carbon. Over this stippled colored screen is placed the ordinary dry-plate emulsion. The plate is exposed in the camera with the glass side toward the lens and developed in the usual way, but not fixed in the hypo. It is then placed in permanganate of potash and sulphuric acid to dissolve the metallic silver, leaving the undeveloped bromide. The plate is next exposed to light, and again developed, appearing now as a positive. The starch-grains finally serve as a viewing-screen. The pinatype process takes three negatives through color-screens and exposes under each a coating of sensitized gelatin. These coatings are dyed, stripped, and superimposed. The success depends upon the fact that only those portions of the gelatin which have been protected from the light take the dye.—**Meteorological photography**, photography applied either in the making of meteorological records in instruments or in recording phenomena.—**Pinhole photography**, photography by means of a camera having a minute circular aperture (pinhole) instead of a lens. The pinhole is made in cardboard by a red-hot needle.—**Psychic photography**, the alleged photography of spirits. See *spirit* ★*photograph.*—**Three-color photography.** See *color* ★*photography.*

photograver (fō-tọ-grā′vėr), *n.* One who practises photo-engraving; a photo-engraver.

photogravure, *n.* **2.** A print taken from a photograph upon copper, etched with acid, and produced by the copperplate process.

photogravurist (fō″tọ-grạ-vūr′ist), *n.* [*photogravur*(*e*) + *-ist.*] One who practises the art of photogravure.

photogyric (fō-tọ-jī′rik), *a.* [Gr. φῶς (φωτ-), light, + γῦρος, a turn, + *-ic.*] Relating to the behavior of a substance toward polarized light. See *optically active substance,* under *active.*

In the case of lactic fermentations, the *photogyric* nature of the resulting acids is given.
Nature, Feb. 5, 1903, p. 316.

photoheliography (fō-tọ-hē-li-og′rạ-fi), *n.* [*photoheliograph* + $-y^3$.] The art of using the photoheliograph; solar photography.

photohelioscope (fō-tọ-hē′li-ọ-skōp), *n.* Same as *photoheliograph.*

photohyalography (fō″tọ-hī-ạ-log′rạ-fi), *n.* [Gr. φῶς (φωτ-), light, + E. *hyalography.*] Same as *hyalography.*

photohyalotype (fō″tọ-hī′ạ-lọ-tīp), *n.* [Gr. φῶς (φωτ-), light, + E. *hyalotype.*] Same as ★*hyalotype.*

photohyponastical (fō″tọ-hī-pọ-nas′ti-kạl), *a.* Same as *photohyponastic.*

photo-impression (fō″tọ-im-presh′ọn), *n.* The effect, as of light, upon a photographic film; a photographic impression. *Smithsonian Rep.,* 1899, p. 158.

photo-ink (fō′tọ-ingk), *a.* Produced by photography so as to be printed in ink. *N. E. D.*

photo-intaglio (fō″tọ-in-tal′yō), *n.* [Gr. φῶς (φωτ-), light, + E. *intaglio.*] A photographed copperplate or print on which the subject has been developed below the surface, for printing by the copperplate process. Also used adjectively.

photolinol (fō-tọ-lin′ol), *n.* [Gr. φῶς (φωτ-), light, + L. *linum,* flax, + *oleum,* oil (see *linoleum*).] A trade-name of a linen fabric upon which photographs may be printed. The fabric is waterproof, and the photograph does not fade in the sun. Picturesque effects are obtained by coloring the photograph, which then appears as an oil-painting on canvas. The picture is visible by both transmitted and reflected light. *Sci. Amer.,* June 18, 1904, p. 475.

photolithotype (fō-tọ-lith′ọ-tīp), *n.* [*photo*(*graphic*) + *lithotype.*] A photolithographic print.

photolongitude (fō-tọ-lon′ji-tūd), *n.* [Gr. φῶς (φωτ-), light, + E. *longitude.*] A method of determining the geographical longitude of a place on the earth's surface by the astronomical method of lunar distances, in which the distance of the given star from the moon's limb is measured from a photographic plate, made with a telescope as a camera, instead of by direct telescopic measurements, as usually employed in the method of lunar distances.

Time observations by the Commission (meridian distance from Freetown), and from a *photo-longitude* plate.
Geog. Jour. (R. G. S.), X. 399.

photoluminescence (fō″tọ-lū-mi-nes′ẹns), *n.* [Gr. φῶς (φωτ-), light, + E. *luminescence.*] See ★*luminescence.*

photoluminescent (fō″tọ-lū-mi-nes′ẹnt), *a.* [Gr. φῶς (φωτ-), light, + E. *luminescent.*] Luminescent as the result of exposure to light. See ★*luminescence.*

photom. An abbreviation (*a*) of *photometrical;* (*b*) [*l. c.* or *cap.*] of *photometry.*

photomagnetic (fō″tọ-mag-net′ik), *a.* [*photomagnet*(*ism*) + *-ic.*] Pertaining to or exhibiting photomagnetism.

photomagnetograph (fō″tọ-mag-net′ọ-gråf), *n.* [Gr. φῶς (φωτ-), light, + E. *magnetograph.*] Same as *magnetograph,* 1.

photomania (fō-tọ-mā′ni-ạ̈), *n.* [NL., < Gr. φῶς (φωτ-), light, + μανία, madness.] A form of mania induced by exposure to prolonged light of great intensity, such as occurs in the arctic summer.

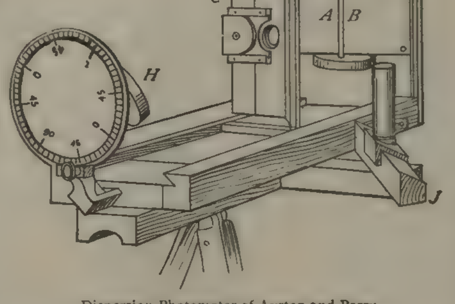
photomapper (fō-tọ-map′ėr), *n.* In *astron.,* an instrument adapted for mapping the heavens photographically.

photomapping (fō-tọ-map′ing), *n.* [*photo*(*graphic*) + *mapping.*] In *astron.,* the process of mapping the stars by means of photographs of the heavens.

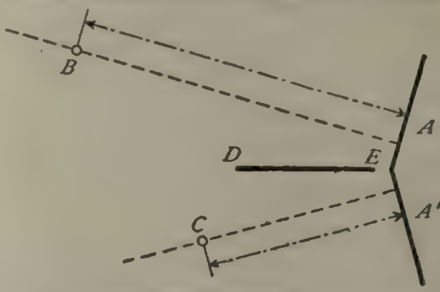
photometallograph (fō″tọ-me-tal′ọ-gråf), *v. t.* To photo-engrave by photometallography.

photometallography (fō-tọ-met-ạ-log′rạ-fi), *n.* [Gr. φῶς (φωτ-), light, + μέταλλον, metal, + -γραφια, < γράφειν, write.] Same as *photozincography.*

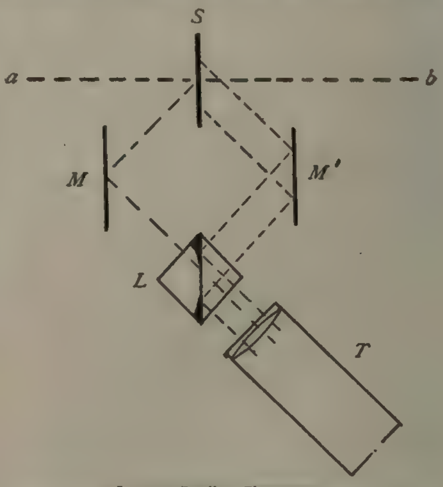
photometer, *n.* **2.** In *photog.,* a device for determining the proper length of time for exposure. See ★*actinometer.*—**Actinic photometer,** a photometer for measuring the actinic intensity of a light, or its power to produce actinic effects, which is often very different from the visual intensity of the same light. Sometimes a sensitive film is exposed to the light for a fixed time and the effect is compared with that produced by a standard light in the same time, or the time is determined which is necessary to produce the same effect as that produced by the standard light in a standard time.—**Arago-Davy photometer,** an actinometer in which one observes the temperature of two thermometers (black-bulb and bright-bulb, respectively), each in its own vacuous inclosure, and from the difference of their readings deduces, by Ferrel's formula, the relative intensity of the sunshine.—**Becquerel's electrochemical photometer,** an actinometer in which an electrometer shows the existence of an electric current in a wire connecting two plates of silver chlorid immersed in a jar of water. One of the plates is exposed to the sunlight and the current is due to the differential condition of the two plates.—**Blondel's photometer,** an integrating photometer for incandescent and arc-lamps. The instrument is given different forms in the two cases. When used for incandescent lamps it consists of a hollow sphere the inner surface of which is white and matte. The lamp to be tested is placed in the center of the sphere and a small translucent screen in an aperture in the sphere receives the diffusely reflected light from the inner walls but is protected from the direct rays of the lamp. The illumination of the screen is proportional to the mean spherical intensity of the lamp. Blondel's photometer for arc-lamps has a diffusing screen in the form of a portion of a hollow truncated cone in the horizontal axis of which the lamp is placed. The photometer disk, which is mounted on a bar in the usual manner, receives illumination from the surface of the cone but is shielded from the direct light of the lamp.—**Bouguer photometer,** a form of photometer devised prior to 1760. It is based on the law of inverse squares. An opaque screen is illuminated, on parts separated by a thin partition, by two sources of light. The lights are moved perpendicularly to the screen until equal illumination of the parts is secured; their distances from the screen are then measured and the calculation made. A translucent screen of matte glass was substituted for the opaque screen by Potter.—**Bunsen's and Roscoe's photometer,** a photographic actinometer in which sensitive chlorid-of-silver paper is blackened by daylight. For many reasons this is the form recommended for standard measurement relative to the special wave-lengths that effect the silver chlorid.—**Chemical photometer.** (*a*) An instrument designed to measure the intensity of light by the amount of chemical change produced. It is really an actinometer. (*b*) An instrument for determining the length of time proper for photographic exposures.—**Daylight photometer,** an instrument devised by A. H. Munsell for the comparison of the brightness of various colored surfaces illuminated by daylight or by artificial light. It consists essentially of two 'cat's-eye' shutters placed symmetrically toward a source of diffused light. Through one of these the light falls on the colored surface to be tested, through the other upon a standard white surface. The second shutter is then gradually closed until the resulting gray produced on the white screen just matches the colored surface in intensity, while a dial connected with this shutter shows, in percentage, how much darkening has been necessary to match the colored surface under test. The instrument has also been applied to the testing of light transmitted through colored media. *Nature,* Feb. 5, 1903, p. 332.—**Dispersion photometer of Ayrton and Perry,** a photometer in which the intensity of illumination of a screen varies inversely with the amount of the dispersion of the light tested. The apparatus consists of a Lambert screen *AB* illuminated by light reflected from the mirror *H* (fixed at an inclination of 45°) and dispersed by the action of the biconcave lens at *C,* and also by the light of a standard candle placed in a case and moved along *J.* The comparison of intensity is obtained by measuring the distances of the mirror *H,* of the lens, and of the standard candle from the screen.—**Flicker photometer,** an instrument for the comparison of sources of light in which the field of view is illuminated alternately by the two sources. When the illumination from the two lights is equal there is a cessation of flickering and this is the criterion upon which the use of the photometer depends. It has been shown by Rood, Whitman, and others that consistent results are obtainable with the flicker photometer, even when the differences in the color of the two sources are such as to render comparisons by other methods impossible. See *flicker* ★*photometry.*—**Foucault photometer,** a photometer whose sight-box contains two reflecting surfaces inclined to the observer and forming an obtuse angle. The lights examined are placed along normals to the surfaces, and a Lambert translucent screen is used to receive the reflected rays. A movable partition forms a line of separation for the two sets of reflected rays and secures a sharper contrast.—**Illumination photometer,** a photometer designed for the determination of the illuminating effect of light as distinguished from an instrument for measuring the candle-power or intensity of a source of light; an illuminometer. Such photometers usually consist of a test surface placed at the point at which the illumination is to be determined and some photometric device for comparing the brightness of this surface with that of a screen illuminated by a standard source of light under known conditions.—**Integrating photometer,** a photometer so constructed as to give from a single reading the mean spherical, or mean hemispherical, intensity of a source of light.—**Jet photometer,** an indicator of the light-giving power of gas. It consists essentially of a delicate pressure-gage for adjusting a pointed flame 7 inches in height. The pressure read in tenths of an inch is the approximate measure of the illuminating power.—**King's photometer,** an adaptation of Bunsen's photometer in which the bar, 100 inches long, is so graduated that the position of the movable screen, when equally illuminated on both sides, gives the intensity of the light tested in terms of the lesser source, usually a standard candle.—**Kirschmann's photometer,** a photometer constructed of cardboard disks of black (or gray) and white, rotating before a dark chamber: used for preliminary determinations of the photometric values of black, gray, and white papers or cards in psychophysical work. *E. B. Titchener,* Exper. Psychol., II. i. 35.—**Lambert photometer,** a shadow photometer devised by Lambert in 1760; later used by Rumford and known by his name.—**Lummer-Brodhun photometer,** a device for comparing the brightness of a light with that of a standard. One form of the optical train consists of an opaque diffusing-screen whose opposed surfaces are illuminated by the source of light and by the standard lamp respectively. The diffused light from each side is then reflected by mirrors, the two sets of rays falling on two juxtaposed right-angled prisms of such construction that the emergent rays appear to the observer looking through the monocular telescope as a central disk of light surrounded by a circle of light. By moving the screen an equal illumination of these two parts may be obtained and measurements of the distances of the lights from the screen taken. In an improved form the prism is so constructed that the rays impinging normally on each side of the prism are in some cases transmitted, in others totally reflected, and a composite field is secured. This form is known as the *contrast train.* This optical train in one form or the other is the screen adopted by the Reichsanstalt. In the newer form thin strips of glass are introduced next the faces of the prism to reduce the illumination when lights differing in color are tested.—**Marshall's photometer,** an illumination photometer consisting of a screen of the Bunsen type (see *Bunsen photometer*) mounted on the top of a closed box. The screen is lighted from below by an incandescent lamp within the box, and is exposed from above to the illumination to be tested. The box also contains a rheostat for regulating the lamp, a galvanometer, and a slide-wire bridge of which the lamp forms one arm. Measurements are made by adjusting the brightness of the lamp until the screen shows photometric equality and balansing



Dispersion Photometer of Ayrton and Perry.

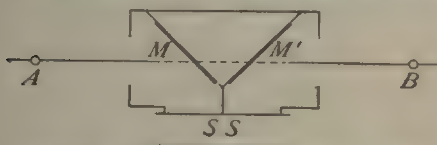


Foucault Photometer.
A, A′, reflecting surfaces; *B, C,* lights; *DE,* partition.

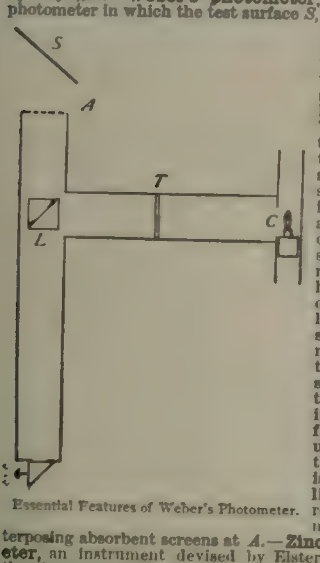


Lummer-Brodhun Photometer.
S, opaque screen in the line *ab* joining the lights to be compared; *M, M′,* mirrors reflecting light diffusely reflected from *S* to the Lummer-Brodhun prism, *L*; *T,* the observing telescope.

the bridge with the slide-wire. The position of the sliding contact then gives the illumination.—**Mascart's photometer,** a device for the study of illumination, consisting of two parallel tubes one of which contains a translucent screen illuminated by a gasolene flame. Light enters the other tube through a similar screen, illuminated from without, which forms the test surface. The two screens are viewed simultaneously through an eyepiece and their brightness is adjusted to equality by means of two iris diaphragms.—**Matthews' photometer,** an integrating photometer in which a set of plane-mirrors are so grouped around the arc of a semicircle, at the center of which the lamp to be tested is placed, as to direct the reflected light simultaneously to the photometer disk. The disposition of the mirrors is such that the illumination of the disk will always be proportional to the mean spherical intensity of the lamp. *Trans. Amer. Inst. Elect. Engs.*, 1902.—**Photometer bar,** a graduated wooden bar between the standard candle and the light to be tested. A Bunsen screen or other device is moved along this bar until equal luminous effects are obtained.—**Preece and Trotter's photometer,** an illumination photometer based on Lambert's law of the variation in the intensity of diffusely reflected light with the angle. The test surface, the illumination of which is to be measured, forms part of the cover of a closed box. Through slots in this surface a sheet of cardboard within the box may be seen and its brightness contrasted with that of the test surface. The cardboard is illuminated by a lamp within the box and adjustments of brightness are made by varying the angle of incidence of the light that falls upon it.—**Radial photometer,** an instrument for testing the value of the angular rays emitted by a flame, from the horizontal to the vertical, either above or below the former position. The disk is movable that its inclination to the standard light and the one tested may be the same. The apparatus consists of two standards, one fixed to the other, movable along a baseboard. A radial arm connects the two and insures that the lamp tested and the screen shall be equidistant no matter what the angle of the incident light. The standard lamp is adjustable to get equality of illumination.—**Reichsanstalt photometer,** a photometer provided with a Lummer-Brodhun optical train or sight-box.—**Relief photometer,** a photometer in which the two sides of the screen are placed at an angle of forty-five degrees with the incident beams, so that they may be viewed simultaneously without the aid of mirrors.—**Ritchie photometer,** a form of photometer in which the sight-box contains two mirrors placed vertically and dihedrally in the box, and at an angle of 45° to the photometrical axis. An opening in front of the apex of the mirrors is covered with a translucent screen, such as tissue-paper. Prisms may be substituted for the mirrors.—**Selenium photometer,** a photometer in which intensities of illumination are estimated by means of the decrease in the electric resistance of a selenium film upon which the light is allowed to fall.—**Spherical candle-power photometer.** Same as *integrating* ★*photometer.*—**Steinheil prism photometer,** a photometer in which the rays from two stars to be compared are brought by total reflection from two right-angled prisms through the two halves of a divided object-glass, and their light compared by changing the distances of the two half-objectives from the eyepieces until the diffuse star-images are equally intense.—**Translucent-disk photometer,** a photometer having a screen which is partly translucent and partly opaque, like a Bunsen screen.—**Varley's photometer,** a photometer in which the illumination of the screen is regulated by means of adjustable diaphragms placed in the path of the light.—**Vogel's chemical photometer,** a photometer in which sensitive chrome-paper is acted on by daylight.—**Weber's photometer,** an illumination photometer in which the test surface *S*, the brightness of which is to be measured, is viewed through a tube containing a Lummer-Brodhun cube *L*. This cube serves to introduce into the field of view a translucent screen *T* mounted in a tube at right angles to the line of sight and this screen is illuminated from behind by means of a benzin lamp *C*. Measurements are made by shifting the translucent screen within the tube, thus varying its distance from the lamp, until equality of the field of view is secured. The light from *S* is reduced when necessary by interposing absorbent screens at *A*.—**Zinc-ball photometer,** an instrument devised by Elster and Geitel for the determination of the intensity of the ultra-violet rays in sunlight. It depends upon the rate at which a negatively electrified ball of zinc with amalgamated surface loses its charge when exposed to ultra-violet radiation.—**Zöllner's photometer,** an early form of polarization-photometer in which the light of a star viewed through a small telescope is compared with that of an artificial star the brightness of which can be varied by means of a pair of Nicol prisms.



Ritchie Photometer.
A, B, lights to be compared; *M, M′*, mirrors; *SS*, translucent screen.



Essential Features of Weber's Photometer.

photometer-bench (fọ-tom′e-tėr-bench), *n.* The track or train along which the sight-box of a photometer may be moved in a plane parallel with the photometrical axis, while the lights to be compared are mounted at each end; or the bench supports a fixed sight-box and the lights are movable. In either form the bench is provided with appropriate scales giving the distances between the lights and the screen. *W. M. Stine*, Photometrical Measurements, p. 104.

photomethemoglobin (fō-tọ-met″hem-ọ-glō′-bin), *n.* [Gr. φῶς (φωτ-), light, + E. *methemoglobin.*] A substance closely related to methemoglobin, from which it results on exposure of its neutral solutions to sunlight.

photometric, *a.* **2.** In *biol.*, exhibiting phototometry; governed as to position by the varying intensity of light.—**Photometric scale.** See *absolute* ★*scale.*

photometrograph (fō-tọ-met′rọ-gråf), *n.* [*photometric* + Gr. γράφειν, write.] An instrument for registering the intensity of light at various depths beneath the surface of a body of water.

> I have here a graphic representation of the results of experiments I made to the south of Madeira with a *photometrograph* invented by my friend Dr. Regnard, which shows how rapidly light loses its intensity in penetrating below the surface [of the sea].
>
> *Geog. Jour.* (R. G. S.), XII. 453.

photometry, *n.* **2.** In *biol.*, the reactional movement, positive and negative, with an indifference point between, of organisms under changing intensity of illumination. *Oltmanns.*—**Flicker photometry,** the determination of the luminosity or brightness-value of a color (for instance, of the reflecting power of a colored paper) by determination of that intensity of colorless light which, when presented to the eye in fairly rapid alternation with the color, does not give rise to the phenomenon of flicker. (See *flicker* ★*photometer.*) The postulate underlying flicker photometry is that the flickering of intermittent visual stimuli depends not at all upon difference of color, but solely upon that of the luminosities of the stimuli. Suppose, then, that we have a series of cardboard disks, ranging by small differences of reflecting power between the limits black and white, and that we also have a red disk, the brightness-value of which is to be determined. All that we have to do is to mount the red and a gray disk together upon a color-mixer, so that the combined disk shows 180° of gray and 180° of red, to rotate the combined disk at a speed less than that required for complete fusion of the red and gray, and to observe whether or not the disk flickers. If it does, the brightness-values of the two partial disks are different; if it does not, these brightness-values are the same. The reflecting power of the gray is then determined by one or another of the regular photometric methods; and, knowing this, the reflecting power of the red paper also is known. The method was introduced by O. N. Rood in 1893, and has of late years been extended and refined by various investigators.—**Heterochromatic photometry,** the photometric comparison of light-sources which differ in color.—**Photographic photometry,** photometry in which the intensities of light-sources are compared by means of their photographic effects. Photographic photometry is confined, in practice, to the determination of stellar magnitudes.

photomezzotype (fō-tọ-mez′ọ-tīp), *n.* [*photo(graphic)* + *mezzo(tint)* + *type.*] A photomechanical printing process similar to collotype; also a print produced by it. *N. E. D.*

photomicrogram (fō-tọ-mī′krọ-gram), *n.* Same as *photomicrograph.*

photomicrography, *n.*—**Stereoscopic photomicrography,** in *photog.*, the process of obtaining photomicrographs that show stereoscopic effects. Two plates are exposed in quick succession in a photomicroscope, the condenser diaphragm being decentered to the right for one and to the left for the other, and the plates are developed together.

photomicroscope (fō-tọ-mī′krọ-skōp), *n.* [Gr. φῶς (φωτ-), light, + E. *microscope.*] A microscope combined with a camera.

photomicroscopic (fō″tọ-mī-krọ-skop′ik), *a.* [*photomicroscop(y)* + *-ic.*] Of or pertaining to the photography of minute objects enlarged by means of the microscope.

> *Photomicroscopic* investigation is made of metals and alloys, and especially of steel rails.
>
> *Nature*, Sept. 24, 1903, p. 506.

photomicroscopy (fō″tọ-mī-kros′kọ-pi), *n.* [Gr. φῶς (φωτ-), light, + E. *microscopy.*] The photography of enlarged images of minute objects by means of a photomicroscope or combination of microscope and camera.

> *Photomicroscopy* of Metals as practised by Steel Companies.
>
> *Jour. App. Micr.*, 1902, p. 1920.

photomorphosis (fō″tọ-môr′fọ-sis), *n.* [Gr. φῶς (φωτ-), light, + μόρφωσις, a shaping. See *morphosis.*] In *biol.*, the taking on of form so far as this is governed by the stimulus of light.

> The terms *photomorphosis*, chemomorphosis, photonasty, heliotropism, indicate the external agency which produces the reaction.
>
> *Pfeffer* (trans.), Physiol. of Plants, II. 137.

photonastic (fō-tọ-nas′tik), *a.* [*photonast(y)* + *-ic.*] Exhibiting or pertaining to photonasty: as, *photonastic* movements. *Pfeffer* (trans.), Physiol. of Plants, II. 104.

photonasty (fō′tọ-nas-ti), *n.* [Gr. φῶς (φωτ-), light, + ναστός, close-pressed, solid.] In *bot.*, the occurrence of curvature in a dorsiventral organ under the stimulation of diffused light. Compare *photo-epinasty. Pfeffer* (trans.), Physiol. of Plants, II. 73.

Photonectes (fọ-tọ-nek′tēz), *n.* [NL., < Gr. φῶς (φωτ-), light, + νήκτης, swimmer.] A genus of stomiatoid fishes found in deep seas.

photopapyrograph (fō″tọ-pạ-pī′rọ-gråf), *n.* A print produced by photopapyrography.

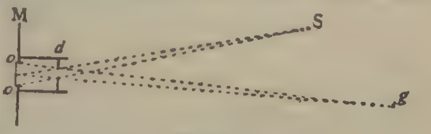
photopathic (fō-tọ-path′ik), *a.* [*photopath(y)* + *-ic.*] Of or pertaining to the movements of organisms in relation to intensity of illumination; exhibiting photopathy.

> In strong and moderate intensities of light it may be first negatively and later positively *photopathic;* to very weak intensity of light it may be positively *photopathic.* Some evidences of phototaxis are found under strong light, the aboral end being directed toward the light.
>
> *Biol. Bulletin*, May, 1904, p. 324.

photopathy (fọ-top′ạ-thi), *n.* [Gr. φῶς (φωτ-), light, + πάθος, affection.] The influence of light upon an organism, especially as causing the migration of the organism from a region of greater to one of less illumination (*negative photopathy*), or the reverse (*positive photopathy*), in relation to the intensity and not to the direction of the light.

> Phototaxis we defined as migration in the direction of the light rays and *photopathy* as migration toward a region of greater or less intensity of light.
>
> *C. B. Davenport*, Exper. Morphol., p. 203.

photoped (fō′tọ-ped), *n.* [Gr. φῶς (φωτ-), light, + L. *pes* (*ped-*), foot.] A photometric device used in the testing of gas flames. It is a perfected form of shadow-photometer consisting of a vertical screen of metal (M), with a square opening over which is stretched a sheet of paper. This opening (*o,o*), which forms the field of view, is illuminated by the two sources to be compared; a diaphragm (*d*) being so placed that the light from S illuminates one side of the opening, that from *g* the other. The two contiguous fields thus formed are viewed from behind the screen. *W. J. Dibdin*, Public Lighting, p. 53.



Photoped.

photophane (fō′tō-fān), *n.* [Gr. φῶς (φωτ-), light, + -φανης, < φαίνειν, show.] Same as ★*collotype.*

> The collotype process is worked universally, and is known by a variety of names; the Germans call it "Lichtdruck," the French "Phototypie," the Americans "Phototype," and we English have given it the titles of "Photo-print," "Heliotype," "Autotype," "*Photophane,*" "Photo-mezzo-type," "Graphotone," etc.
>
> *Jour. Soc. of Arts*, quoted in Sci. Amer. Sup., March 28, [1903, p. 22,767.

photophil (fō′tọ-fil), *a.* and *n.* [Gr. φῶς (φωτ-), light, + φιλεῖν, love.] **I.** *a.* Loving light; specifically, pertaining to the movement of organisms toward a more intensely illuminated area or exhibiting such movement; exhibiting positive photopathy or phototaxis.

> And it can be shown that it is an advantage to Hydra to be *photophil*, since many of the Entomostraca upon which it feeds are phototactic.
>
> *C. B. Davenport*, Exper. Morphol., p. 184.

II. *n.* A micro-organism or cell which exhibits positive phototaxis.

photophilous (fọ-tof′i-lus), *a.* [*photophil* + *-ous.*] In *phytogeog.*, thriving in full light; heliophilous. *Pound and Clements.*

photophobe (fō′tọ-fōb), *a.* and *n.* [G. *photophob*, < Gr. φῶς (φωτ-), light, + φοβεῖν, fear.] **I.** *a.* Fearing light; specifically, pertaining to the movement of organisms toward a less intensely illuminated area; exhibiting negative photopathy or phototaxis; photophobic.

II. *n.* A photophobic organism, or one that turns away from the light.

photophobous (fō̤-tof′ō̤-bus), *a.* [*photophobe* + *-ous.*] Avoiding light; photophobic.

Only when accidentally growing in the shade do they assume the bright red tints that distinguish their *photophobous* allies.
A. F. W. Schimper (trans.), Plant-geog., p. 793.

photophore (fō′tō̤-fōr), *n.* [Gr. φῶς (φωτ-), light, + -φορος, ‹ φέρειν, bear.] 1. A luminous spot which has connection with the nervous system in fishes, especially in deep-sea species. *Science*, March 20, 1908, p. 454.—2. An apparatus for illuminating any accessible internal part of the body for the purpose of inspection. —3. In *microscopy*, an apparatus, including a mirror, for finding sections when immersed in a staining fluid; a section-finder.

A little apparatus to which Ranvier has given the name *photophore* (light-bearer), but which may better be called with Obersteiner, section-finder.
Zimmermann (trans.), Bot. Microtechnique, p. 25.

photopile (fō′tō-pīl), *n.* [Gr. φῶς (φωτ-), light, + E. *pile*^{2}.] An apparatus, as the selenium-cell in a photophone, that is sensitive to light. See *photophone.*

photoplagiotropy (fō-tō̤-plā-ji-ot′rō̤-pi), *n.* [Gr. φῶς (φωτ-), light, + E. *plagiotropy.*] Plagiotropy due to the influence of light.

I was the first to show in some very striking examples that in habitually anisophyllous shoots we have to deal with *photo-plagiotropy.*
K. E. Goebel (trans.), Organography of Plants, I. 100.

photoplastography (fō″tō̤-plas-tog′ra̤-fi), *n.* [Gr. φῶς (φωτ-), light, + πλαστός, formed, + -γραφια, ‹ γράφειν, write.] In *photog.*, any process in which a plastic substance changes its form because of the action of light and returns to a thickness suitable for a colored gelatinous ink. *Woodbury*, Encyc. Dict. of Photog., p. 303.

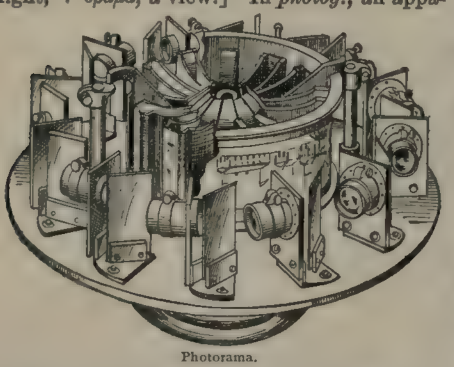
photopography (fō-tō̤-pog′ra̤-fi), *n.* A reduced form (by haplology) of ⋆*phototopography.*

photopolarigraph (fō″tō̤-pō̤-lar′i-gráf), *n.* [Gr. φῶς (φωτ-), light, + E. *polari*(*zation*) + Gr. γράφειν, write.] An instrument for the photographic study of the polarization of light from the sky or from celestial objects. It consists of a camera with a Nicol prism mounted in front of the objective.

photoprint (fō′tō̤-print), *n.* [Gr. φῶς (φωτ-), light, + E. *print.*] Any process of printing in which photography is the principal feature. *Trans. Amer. Inst. Elect. Engin.*, Feb. 26, 1904, p. 337.

photoptometry (fō-top-tom′e-tri), *n.* [Gr. φῶς (φωτ-), light, + ὀπτ(ικός), of vision, + -μετρια, ‹ μέτρον, measure.] Measurement of the acuteness of vision by means of varying degrees of illumination. *Buck*, Med. Handbook, VI. 392.

photorama (fō-tō̤-rä′mä), *n.* [Gr. φῶς (φωτ-), light, + ὅραμα, a view.] In *photog.*, an apparatus for exhibiting panoramic pictures.


Photorama.

It consists, as devised by Messrs. Lumière, of a circular photographic film, which, when illuminated by rays from a powerful search-light, is projected on the screen of a circular building. Twelve lenses on a revolving base serve to focus the picture on the screen. *Sci. Amer.*, May 17, 1902.

photoreceptive (fō-tō̤-rē̤-sep′tiv), *a.* [Gr. φῶς (φωτ-), light, + E. *receptive.*] Receptive or sensitive to light.

The evolution of the *photoreceptive* apparatus of planarians stands at such a low stage of differentiation that the light environment of these worms is of slight importance to them. *Science*, Feb. 7, 1908, p. 220.

photorefractor (fō″tō-rē̤-frak′to̤r), *n.* [Gr. φῶς (φωτ-), light, + E. *refractor.*] A photographic telescope, with lenses specially corrected for the purpose.

An exposure of twelve hours, spread over four nights, with the thirteen-inch *photo-refractor* of the International Survey, yielded the remarkable picture which forms our frontispiece.
A. M. Clerke, Problems in Astrophysics, p. 507.

photoregression (fō″tō̤-rē̤-gresh′o̤n), *n.* [Gr. φῶς (φωτ-), light, + E. *regression.*] The fading out of a photographic image, due to certain chemical reactions in the emulsion.

The *photo-regression* of the latent image is favoured by the presence of chromium salts in the emulsions, and is most troublesome with emulsions of bromide prepared in centrifugal apparatus. *Engineering*, July 24, 1903, p. 109.

photoret (fō′tō̤-ret), *n.* [*photo*(*graphic*) (*came*)*r*(*a*) + *-et*^{1}.] A miniature photographic camera. *Stand. Dict.*

photo-salt (fō′tō̤-sâlt), *n.* A salt so affected by light that it can be used in photography.

photosantonic (fō″tō̤-san-ton′ik), *a.* [Gr. φῶς (φωτ-), light, + E. *santon*(*in*) + *-ic.*] Formed by the action of light on santonin.—**Photosantonic acid**, a yellow crystalline acid, $C_{15}H_{22}O_5$, formed when a solution of santonin in acetic acid is allowed to stand in sunlight.

photoscopic (fō-tō̤-skop′ik), *a.* [*photoscop*(*e*) + *-ic.*] Pertaining to the photoscope or its use.

photosculptural (fō-tō̤-skulp′tṳ̄-ra̤l), *a.* [*photosculptur*(*e*) + *-al*^{1}.] Pertaining to, or of the nature of, photosculpture.

photosensitive (fō-tō̤-sen′si-tiv), *a.* [Gr. φῶς (φωτ-), light, + E. *sensitive.*] Sensitive to the action of light.

If the word "photography" be interpreted literally as writing or inscribing by light, without any reference to the subsequent permanence of the inscription, then the person who first intentionally caused a design to be imprinted by light upon a *photo-sensitive* compound must be regarded as the first photographer.
Smithsonian Rep., 1890, p. 377.

photospectroheliograph (fō-tō̤-spek-trō̤-hē′li-ō̤-gráf), *n.* Same as ⋆*spectroheliograph* (which see).

photospectroscope (fō-tō̤-spek′trō̤-skōp), *n.* [Gr. φῶς (φωτ-), light, + E. *spectroscope.*] A spectroscope fitted with photographic apparatus.

photospectroscopic (fō-tō̤-spek-trō̤-skop′ik), *a.* [*photospectroscop*(*e*) + *-ic.*] Of or pertaining to the photospectroscope or to photospectroscopy.

photospectroscopy (fō″tō-spek-tros′kō̤-pi), *n.* [*photospectroscop*(*e*) + *-y*^{3}.] The scientific use of the photospectroscope; the application of photography to spectroscopy.

photosphæria (fō-tō̤-sfē′ri-ä̤), *n. pl.* [NL., ‹ Gr. φῶς (φωτ-), light, + σφαῖρα, sphere.] The luminous or phosphorescent organs which are present in the *Euphausiidæ* and some other *Crustacea.*

photosurvey (fō″tō̤-sėr-vā′), *n.* A survey conducted by the method of photographic surveying (which see, under ⋆*surveying*).

photosurveying (fō″tō̤-sėr-vā′ing), *n.* The process of making a photosurvey.

On the other hand, "considerable outlay is saved in *photo-surveying* by drafting the map in office, at the expense of only the individual draughtsman. . . ."
Encyc. Brit., XXXIII. 95.

photosyntax (fō-tō̤-sin′taks), *n.* [Gr. φῶς (φωτ-), light, + E. *syntax.*] The original but less used term for ⋆*photosynthesis.*

photosynthesis (fō-tō̤-sin′the-sis), *n.* [NL., ‹ Gr. φῶς (φωτ-), light, + σύνθεσις, synthesis.] A chemical combination brought about by the action of light, as in the formation of carbohydrates in living plants from the carbon dioxid and water of the air under the influence of sunlight. *Jour. Roy. Micros. Soc.*, Feb., 1904, p. 73.

photosynthetic (fō″tō̤-sin-thet′ik), *a.* [*photosynthesis* (*-thet-*) + *-ic.*] Of or pertaining to photosynthesis or the power of certain wavelengths of light to promote chemical combination.

The relation between the *photosynthetic* activity of different parts of the spectrum and the absorption bands of the chlorophyll spectrum.
Nature, Sept. 24, 1903, p. 493.

photosynthometer (fō″tō̤-sin-thom′e-tėr), *n.* [*photosynth*(*esis*) + Gr. μέτρον, measure.] An instrument for measuring the amount of photosynthesis occurring in plants.

A new *photosynthometer*, by which the exchange of gases in photosynthesis may be exactly and conveniently measured, either for demonstration of the processes to classes, or in investigation for particular plants.
Science, March 11, 1904, p. 424.

phototachometric (fō-tō̤-tak-ō̤-met′rik), *a.* Same as *phototachometrical.*

phototactic, *a.* 2. In *biol.*, of or pertaining to the locomotion of organisms in relation to direction of light; exhibiting phototaxis or photopathy.

'The Theory of *Phototactic* Response' is a clarifying paper by Holt and Lee. They aim to show that organisms do not react to direction of light as well as to intensity of rays. The conditions of the organism itself must be more closely regarded. *Science*, Jan. 18, 1901, p. 111.

phototaxis, *n.* 2. In *biol.*, active migration of organisms, or of cells, in the line of rays of light affecting them—*positive phototaxis* if toward the source of light, and *negative phototaxis* if away from it. Compare ⋆*photopathy.*

By phytophysiological experiments, Sachs, Pfeffer, and many other trained experimenters have enlightened us . . . concerning *phototaxis*, chemotaxis, and similar interesting phenomena.
O. Hertwig (trans.), in Smithsonian Rep., 1900, p. 469.

phototelegraph (fō-tō̤-tel′ē̤-gráf), *n.* [Gr. φῶς (φωτ-), light, + E. *telegraph.*] 1. A device for the transmission of intelligence by means of light. See *heliograph* and *photophone.*—2. An instrument for the electric transmission to a distance of facsimiles of photographs or diagrams; a facsimile telegraph.

phototelegraphy (fō-tō̤-tel′ē̤-graf-i or -tē̤-leg′ra̤-fi), *n.* [*phototelegraph* + *-y*^{3}.] 1. The transmission of signals to a distance by means of light.—2. The electric transmission of facsimiles of photographs, drawings, etc.; facsimile telegraphy.

phototelescope (fō-tō̤-tel′e-skōp), *n.* [*photo*(*graphic*) + *telescope.*] A telescope fitted with apparatus for photographing the objects viewed.

phototelescopic (fō-tō̤-tel-e-skop′ik), *a.* [*phototelescop*(*e*) + *-ic.*] Of or pertaining to telescopic photography; of or pertaining to the phototelescope or its use.

phototest (fō′tō̤-test), *n.* [Gr. φῶς (φωτ-), light, + E. *test*^{1}.] The test of the existence and action of various rays, such as cathode rays, X-rays, or N-rays, by their effect upon a phosphorescent screen.

Inasmuch as M. Le Roux has lately advised investigators that before attempting to compare effects on the phosphorescent screen—which he proposes to call in future the "*phototest*"—they should avoid all brilliant light and remain in a dimly lighted room for a quarter of an hour, to be followed by five minutes in the dark before looking at the screen, the proportion seems fairly high.
Athenæum, Sept. 3, 1904, p. 324.

phototheodolite, *n.* Specifically, a photographic surveying instrument or photogrammeter in which a photographic field-camera and its accessories are combined with a theodolite, enabling both topographical photographs and topographical angular measurements to be made by the same instrument.

phototherapeutic (fō-tō̤-ther-a̤-pū′tik), *a.* [Gr. φῶς (φωτ-), light, + E. *therapeutic.*] Of or relating to phototherapy.

Facilities for hydrotherapeutic and *phototherapeutic* work and of such other accessories as may be necessary for carrying out the plans of the institution.
Phil. Med. Jour., Jan. 31, 1903, p. 208.

phototherapeutics (fō-tō̤-ther-a̤-pū′tiks), *n.* Same as ⋆*phototherapy.*

phototherapy (fō-tō̤-ther′a̤-pi), *n.* [Gr. φῶς (φωτ-), light, + θεραπεία, medical treatment.] Treatment of disease by rays derived from the sun or an electric lamp; Finsen treatment; light treatment. It is really a form of radiotherapy, for the rays employed are the non-luminous ultra-violet rays and not those of light.

Phototherapy is a new name covering new treatment of certain skin diseases by concentrated sunlight, or where sunlight is not bright enough, by electric light.
Amer. Inventor, Dec. 15, 1903, p. 299.

photothermic (fō-tō̤-thėr′mik), *a.* [Gr. φῶς (φωτ-), light, + E. *thermic.*] Of or pertaining to the thermic effects of light.

phototirage (fō-tō̤-ti-räzh′), *n.* [F., ‹ Gr. φῶς (φωτ-), light, + F. *tirage*, drawing.] Same as ⋆*photoprint.* *Woodbury*, Encyc. Dict. of Photog., p. 303.

phototopographic (fō″tō̤-top-ō̤-graf′ik), *a.* [*phototopograph*(*y*) + *-ic.*] Of or pertaining to phototopography, or the method of making topographical surveys and maps by the aid of photography. Also *phototopographical.*

The field work of a *photo-topographic* party consists primarily in execution of a triangulation by the usual methods which would be adapted to any ordinary topographical survey. *Encyc. Brit.*, XXXIII. 95.

phototopographical (fō-tō̤-top-ō̤-graf′i-ka̤l), *a.* Same as ⋆*phototopographic.*

phototopographically (fō-tō̤-top-ō̤-graf′i-ka̤l-i), *adv.* In a phototopographic manner; by means of phototopography.

phototopography (fō-tō̤-tō-pog′ra̤-fi), *n.* [Gr. φῶς (φωτ-), light, + E. *topography.*] Topographical surveying based on perspective views of the terrene obtained by means of the camera. *U. S. Coast and Geodetic Survey Report*, 1893, II. 38.

phototropic (fō-tọ-trop'ik), *a.* [*phototrop(y)* + *-ic.*] Of, pertaining to, or exhibiting phototropism or phototropy. *Philos. Trans. Roy. Soc.*, 1902, ser. B, p. 344.

phototropism (fọ-tot'rọ-pizm), *n.* [Gr. φῶς (φωτ-), light, + τρόπος, a turning, + *-ism.*] 1. The growth or the bending of organisms or of parts of organisms in relation to light; heliotropism.

> Not only plants, but also animals show the effects of heliotropism (*phototropism*) — that is, the tendency to turn toward or away from the light.
> *Smithsonian Rep.*, 1899, p. 379.

2. Same as ★*phototaxis*, 2.— 3. Same as ★*phototropy*, 2.

phototropy (fọ-tot'rọ-pi), *n.* [Gr. φῶς (φωτ-), light, + -τροπια, < τρέπειν, turn.] 1. Same as ★*phototropism*, 1 and 2.— 2. Change of color, due to exposure to light, of compounds otherwise unaltered in composition or structure. *Sci. Amer.*, Feb. 24, 1900, p. 123.

phototype, *n.* 3. A photomechanical process; phototypy.

phototypography (fō'tọ-tī-pog'ra-fi), *n.* [Gr. φῶς (φωτ-), light, + E. *typography.*] A general term designating a large number of photographic processes in which printing-surfaces are made by the aid of light.

photovisual (fō-tọ-viz'ū-al), *a.* [Gr. φῶς (φωτ-), light, + E. *visual.*] Having the same focal length for the ultra-violet and for the visible rays of the spectrum: said specifically of an objective the color-correction of which is such that when focused by the eye it is likewise in focus for the photographic plate.

photovitrotype (fō-tọ-vit'rọ-tīp), *n.* [Gr. φῶς (φωτ-), light, + L. *vitrum*, glass, + Gr. τύπος, type.] A photograph printed on a vitreous base, as glass, porcelain, or enameled ware. *Stand. Dict.*

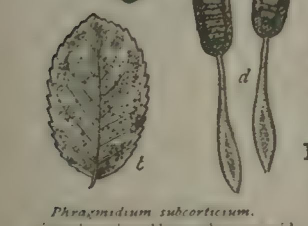
photoxylin (fọ-tok'si-lin), *n.* [Gr. φῶς (φωτ-), light, + E. (*pyr*)*oxylin.*] The trade-name of a nitrocellulose, similar to pyroxylin, but prepared from wood-pulp instead of cotton. It is used as a substitute for collodion.

photozincograph (fō-tọ-zing'kọ-gráf), *v. t.* To photo-engrave by photozincography. Same as ★*photometallograph.*

phoxocephalic (fok'sọ-se-fal'ik), *a.* [Gr. φοξός, pointed, + κεφαλή, head, + *-ic.*] In *craniom.*, having a hypsicephalic skull running up to an elevated point at the bregma. *Aitken Meigs.*

phr. An abbreviation of *phrase.*

Phragmidium (frag-mid'i-um), *n.* [NL. (Link, 1816), < dim. of Gr. φράγμα, partition.] A genus of rust-fungi, of the order *Uredinales*, having æcidia of the *Cæoma* type, uredospores with numerous germ-pores, and several-celled teleutospores. About 30 species are known, some of which cause serious diseases of cultivated plants. *P. subcorticium* attacks the leaves and stems of roses. See *rose*-★*rust.*



Phragmidium subcorticium.

a, rose branch and leaves showing æcidial stage of the fungus, reduced; *b*, leaf with sori of teleutospores, reduced; *c*, uredospores highly magnified; *d*, teleutospores, highly magnified.
(From Massee's "Plant Diseases.")

Phragmoceras (frag-mos'e-ras), *n.* [NL., < Gr. φραγμός, a partition, + κέρας, horn.] A genus of nautiloid cephalopods with compressed, rapidly expanding, strongly curved shells having large apertures which are much contracted laterally and have long hyponomic sinuses. Several species are known in Silurian and Devonian formations.

phragmocone (frag'mọ-kōn), *n.* Same as *phragmacone.*

Phragmocyttares (frag-mọ-sit'a-rēz), *n. pl.* [NL. (prop. F. pl.), < Gr. φραγμός, a partition, + κύτταρος, a cell (of a wasps' nest, etc.).] A group of social wasps founded by Saussure upon the structure of their nests, in which the layers of the comb are supported by the nest-envelop, each layer having a hole for communication.

phragmoid (frag'moid), *a.* [Gr. φραγμός, a partition, + εἶδος, form.] Having transverse septa, as the spores of many fungi.

Phrasal adverb. See ★*adverb.*

phrase, *n.*— **Adjectival phrase.** See ★*adjectival.*

phraseographic (frā'zē-ọ-graf'ik), *a.* [*phraseograph-y* + *-ic.*] Of or pertaining to phraseography; set down in the shorthand characters of that process.

> The *phraseographic* combinations are found to be quite as legible as the ordinary Phonography.
> *Pitman*, Phonographic Phrase Book, p. 4.

phraseological, *a.* 2. Indicating a tendency to coin phrases and to rely on mere wording for effect. [Rare.]

> It is hard to say which is worse—the light weekly journalism with its straining for *phraseological* smartness . . . or the serious sort with its inanimate verbosity.
> *Bookman*, May, 1905, p. 235.

phraser (frā'zėr), *n.* [*phrase*, *v.*, + *-er*¹.] 1. One who phrases or words a notion; one who puts ideas or feelings into words.—2. One who is gifted in making smart or imposing phrases.

phrase-sign (frāz'sīn), *n.* See *phrase-mark.*

phrasing-lever (frā'zing-lev'ėr), *n.* In mechanical piano-players, a lever or handle by which variations of tempo or touch can be made.

phrator (frā'tọr), *n.* [Gr. φράτωρ, by-form of φράτηρ, a clansman. See *brother.*] A member of a phratry. *Giddings*, Prin. of Sociol., p. 282.

phratral (frā'tral), *a.* [Gr. φράτρα, a clan, + *-al*¹.] Pertaining or belonging to a phratry.

> The kiva worship is controlled by the *phratral* unit; that is, by the brotherhood.
> *An. Rep. Bur. Amer. Ethnol.*, 1898–99, p. cix.

phratriac (frā'tri-ak), *a.* Same as *phratric.*

phreatic (frẹ-at'ik), *a.* [F. *phréatique*, < Gr. φρέαρ (φρεατ-), an artificial well.] Subterranean, as the sources of wells.

phren., phrenol. Abbreviations (*a*) of *phrenological*; (*b*) [*l. c.* or *cap.*] of *phrenology.*

phrenasthenia (fren-as-thē'ni-ä), *n.* [NL., < Gr. φρήν, diaphragm, heart, mind, + ἀσθένεια, weakness.] 1. Weakness of the diaphragm.—2. Mental exhaustion to the point of mild insanity.

> On the borderland between the psychoses proper, as mentioned before, and the neuroses a number of cases variously called neurasthenia and *phrenasthenia* were treated at the clinic. *Lancet*, June 18, 1904, p. 1737.

phrenesia (frẹ-nē'siạ̈), *n.* [NL.] Same as *phrenesis.*

phrenhypnotic (fren-hip-not'ik), *a.* [*phren*(*ology*) + *hypnotic.*] Relating to or combining phrenology and hypnotism.

Phrenic center. See ★*center*¹.

phrenogram (fren'ọ-gram), *n.* [Gr. φρήν, diaphragm, + γράμμα, a writing.] A graphic tracing of the movements of the diaphragm.

phrenograph (fren'ọ-gráf), *n.* [Gr. φρήν, diaphragm, + γράφειν, write.] An apparatus for recording the movements of the diaphragm during respiration. *Buck*, Med. Handbook, VI. 950.

phrenography, *n.* 2. The recording of the movements of the diaphragm.

phrenohepatic (fren'ọ-hẹ-pat'ik), *a.* [Gr. φρήν, diaphragm, + ἧπαρ (ἡπατ-), liver, + *-ic.*] Relating to both the diaphragm and the liver.

phrenologize (frẹ-nol'ọ-jīz), *v. t.*; pret. and pp. *phrenologized*, ppr. *phrenologizing.* [*phrenolog*(*y*) + *-ize.*] To subject to a phrenological examination; study or analyze phrenologically.

phrenonarcosis (fren'ọ-när-kō'sis), *n.* [Gr. φρήν (φρεν-), mind, + νάρκωσις, a benumbing. See *narcosis.*] In *pathol.*, stupor.

phrenopathy (frẹ-nop'a-thi), *n.* Same as *phrenopathia.* *Lancet*, Aug. 29, 1903, p. 619.

phrenosin (fren'ọ-sin), *n.* [Gr. φρήν, mind, + *-ose* + *-in*².] Same as *cerebrin.*

phrenotype (fren'ọ-tīp), *n.* [Gr. φρήν, mind, + τύπος, impression.] A set of symbols arranged in a way to impress the memory; a word, sentence, list of figures, etc.; spelled or arranged according to some mnemonic system.

phrenotype (fren'ọ-tīp), *v. t.*; pret. and pp. *phrenotyped*, ppr. *phrenotyping.* [*phrenotype*, *n.*] To cast into a form that shall impress the memory; reduce to a system of mnemonics: as, a *phrenotyped* French grammar.

phrenotypic (fren-ọ-tip'ik), *a.* [*phrenotype* + *-ic.*] 1. Noting an impression on the memory; associative; suggestive. See the extract.

> The rapidity and strength with which two given notions stick together is in the inverse ratio of their *phrenotypic* distance, . . . by which I mean the time that elapses between the two notions that are to be connected together acting upon the brain.
> *Major Beniowski*, in D. Kay, Memory, What It Is and [How to Improve It, p. 278, note.

2. Pertaining to phrenotypics or a system of mnemonics: as, a *phrenotypic* alphabet and orthography.

phrenotypics (fren-ọ-tip'iks), *n. pl.* [Pl. of **phrenotypic*, *n.*] A system of mnemonics; an artificial method of studying and committing to memory.

> *Phrenotypics*, a . . . description of the . . . feats of memory . . . performed by Major Beniowski . . . and . . . his pupils. [Title.] London, 1842.

Phreoryctes (frē-ọ-rik'tēz), *n.* [NL.] The typical genus of the family *Phreoryctidæ.* *Hoffmeister*, 1845.

Phreoryctidæ (frē-ọ-rik'ti-dē), *n. pl.* [NL. *Phreoryctes* + *-idæ.*] A family of limicolous annelids having a slender form, usually much elongated, with sigmoid setæ in four rows of single setæ or of couples, two pairs of spermducts opening separately without spermiducal glands, and no genital setæ. It contains the genera *Phreoryctes* and *Pelodrilus*, the former found in North America, Europe, and New Zealand.

phronema (frọ-nē'mạ̈), *n.* [Gr. φρόνημα, mind.] Haeckel's term for that part of the cerebral cortex which is occupied by the association-centers or thought-centers: opposed to and correlated with *sensorium.*

> The remarkable progress which has been made in the last few decades . . . does not yet, it is true, enable us to make a clear delimitation of the region of the *phronema.*
> *Haeckel* (trans.), Wonders of Life, p. 18.

phronetal (frọ-nē'tal), *a.* [*phronet*(*um*) + *-al*¹.] Of or pertaining to thought; having thought as its function; of or pertaining to the phroneta, in Haeckel's sense: as, *phronetal* elements; *phronetal* cells. Opposed to ★*æsthetal.* *Haeckel* (trans.), Wonders of Life, p. 14.

phronetic (frọ-net'ik), *a.* Same as ★*phronetal.* *Haeckel* (trans.), Wonders of Life, p. 330.

phronetum (frọ-nē'tum), *n.*; pl. *phroneta* (-tạ̈). [NL., < Gr. φρονεῖν, think, < φρήν, mind.] Haeckel's term for the subdivisions or 'thought-organs' of the phronema of the cortex.

> The instruments which form and link together the presentations are the organs of thought (*phroneta*).
> *Haeckel* (trans.), Riddle of the Universe, p. 298.

phrontist (fron'tist), *n.* [Gr. φροντιστής, a thinker, < φροντίς, thought.] A profound thinker: applied ironically to Socrates by Aristophanes. [Rare.]

phryganeid (frig-a-nē'id), *n.* and *a.* I. *n.* A member of the trichopterous family *Phryganeidæ.*

II. *a.* Having the characters of or belonging to the family *Phryganeidæ.*

Phrygania limestone. See ★*limestone.*

Phrygian, *n.* 3. An ancient language spoken in Phrygia, of which no record remains except some isolated words and proper names preserved in Greek literature. Upon these evidences the language is now classed as one of the Indo-European family. *Keane*, Ethnology, p. 412.

Phrygianize (frij'i-an-īz), *v. t.*; pret. and pp. *Phrygianized*, ppr. *Phrygianizing.* [*Phrygian* + *-ize.*] To render Phrygian in character; figuratively, frizzle. *N. E. D.*

> We really have at present in our city more good poets than we ever had; and the queer might be among the best if they pleased. But whenever an obvious and natural thought presents itself, they either reject it for coming without imagination, or they *phrygianize* it with such biting and hot curling-irons, that it rolls itself up impenetrably. They declare to us that pure and simple imagination is the absolute perfection of poetry.
> *Landor*, Letters of Pericles and Aspasia, liii.

Phrygionic (frij-i-on'ik), *a.* [L. *Phrygionius*, < *Phrygia*, Phrygia.] Relating to Phrygia or its productions.

> Pliny says that the Phrygians invented embroidery, and that garments so ornamented were called *Phrygionic.*
> *D. Rock*, S. K. Handbook, Textile Fabrics, p. 79.

phrynid (frin'id), *n.* and *a.* I. *n.* A member of the family *Phrynidæ.*

II. *a.* Having the characteristics of or belonging to the family *Phrynidæ.*

phrynin (frī′nin), *n.* [Gr. *φρύνη*, a toad, + *-in*^{2}.] A substance of poisonous character extracted from the skin of certain species of toads.

phrynium (frī′ni-um), *n.* [NL. *Phrynium*, an untenable name for the genus *Phyllodes*, in which these plants were formerly included.] Any one of a number of tropical West African marantaceous plants belonging to several related genera, especially *Sarcophrynium*, *Trachyphrynium*, and *Afrocalathea*. They have broad leaves resembling those of the canna or banana.

phrynolysin (frī-nol′i-sin), *n.* [Gr. *φρύνη*, a toad, + *λύσις*, dissolution, + *-in*^{2}.] The hemolytic poison of *Bombinator igneus*.

phthalazine (thal-az′in), *n.* [*phthal*(*ic*) + (*hydr*)*azine*.] A crystalline base, $C_8H_6N_2$, made by boiling phthalic aldehyde with an aqueous solution of hydrazine. It melts at 90–91° C.

phthalein (thal′ẹ-in), *n.* [*phthal*(*ic*) + *-e-in*.] One of the group of coloring-matters formed by the condensation of phthalic anhydrid with phenols. Some of the phthaleins have a purgative action when taken internally. They are of particular importance in the color-chemistry, and certain of their derivatives are valuable dyestuffs. See ★*phenolphthalein* and ★*phthalic anhydrid*.

phthalic (thal′ik), *a.* [(*na*)*phthal*(*ene*) + *-ic*.] Derived from naphthalene.—**Phthalic acid**, a colorless crystalline acid, $C_6H_4(COOH)_2$, made by the oxidation of naphthalene or alizarin, and in many other ways. It is made commercially by heating a mixture of naphthalene, concentrated sulphuric acid, and mercuric sulphate, and is used in large quantities in the manufacture of synthetic indigo. Formerly called *naphthalic acid* and *alizaric acid*. It is benzene-orthodicarbonic acid. The isomeric meta- and paradicarbonic acids are called *isophthalic* and *terephthalic acid*, respectively.—**Phthalic anhydrid**, a crystalline compound in the form of long needles, $C_8H_4O_3$, made by distilling phthalic acid. It readily yields condensation-products, and is much used in organic synthesis. It is employed in the preparation of an important group of artificial dyestuffs, sometimes called the *phthalic-anhydrid colors*. See ★*phthalein*.

phthalid (thal′id), *n.* [*phthal*(*ic*) + *-id*^{2}.] A crystalline compound, $C_8H_6O_2$, made variously, as by the reduction of phthalyl chlorid with zinc and hydrochloric acid. It is the anhydrid of orthomethylolbenzoic acid, $C_6H_4(COOH)(CH_2OH)$.

phthalimide (thal′i-mid), *n.* [*phthal*(*ic*) + *imide*.] A crystalline substance, $C_8H_5NO_2$, made by the action of dry ammonia gas on heated phthalic anhydrid, and in other ways. It melts at 233.5° C., and acts as a monobasic acid toward alkalis.

phthalin (thal′in), *n.* [*phthal*(*ic*) + *-in*^{2}.] A substance formed by the reduction of a phthalein. See ★*phenolphthalin*.

phthanite (than′īt), *n.* [Irreg. < Gr. *φθάνειν*, anticipate, + *-ite*^{2}.] In *petrog.*, a dense, compact metamorphic rock composed chiefly of cryptocrystalline quartz. It includes rocks called Lydian stone or lydite, hornfels, and jasper.

phthinode (thin′ōd), *n.* [Gr. *φθινώδης*, consumptive. See *phthisis*.] One who is suffering from phthisis; a consumptive.

phthinoid (thin′oid), *a.* [Gr. **φθινοειδής*, *φθινώδης*, consumptive, < *φθίνειν*, *φθίειν*, waste away (see *phthisis*), + *εἶδος*, form.] Presenting the symptoms or other characteristics of phthisis; phthisical. *Buck*, Med. Handbook, II. 811.—**Phthinoid chest.** See ★*chest*^{1}.

phthiriosis (thir-i-ō′sis), *n.* [NL., < Gr. *φθείρ*, a louse or similar parasite, + *-i-osis*.] A root-disease of the grape, primarily due to a cochineal insect, *Dactylopus vitis*, but considerably aggravated by the universal presence of the fungus *Bornetina corium*.

phthirophagous (thi-rof′a̤-gus), *a.* [Gr. *φθείρ*, a louse, + *φαγεῖν*, eat.] Eating lice.

phthisergate (thi-zėr′gāt), *n.* [Gr. *φθίσις*, a wasting away, + E. *ergate*.] A peculiar form of worker-ant pupa with very small head and eyes, produced by neglect of the larva and consequent precocious pupation. *Wheeler.*

phthisiogenetic (thiz″i-ọ-jẹ-net′ik), *a.* [Gr. *φθίσις*, a wasting away, + E. *genetic*.] Relating to the causation of phthisis. Also *phthisiogenic*.

> Prof. Behring, as had been anticipated, gave no exact details as to the method of obtaining or administering his latest therapeutic discovery, but the earlier stages of his work are to be explained in a forthcoming book entitled "Modern Problems of *Phthisiogenetic* and Phthisiotherapeutic Physiology illuminated by History."
>
> *Nature*, Oct. 12, 1905, p. 581.

phthisiogenic (thiz-i-ọ-jen′ik), *a.* Same as ★*phthisiogenetic*.

phthisiotherapeutic (thiz″i-ọ-ther″a̤-pū′tik), *a.* [Gr. *φθίσις*, phthisis, + E. *therapeutic*.] Of or pertaining to the treatment of phthisis.

phthisiotherapeutist (thiz″i-ọ-ther-a̤-pū′tist), *n.* [Gr. *φθίσις*, consumption, + *θεραπευτής*, medical attendant, + *-ist*.] One who devotes special attention to the treatment of phthisis. *Buck*, Med. Handbook, II. 555.

phthisiotherapist (thiz-i-ō-ther′a̤-pist), *n.* [Gr. *φθίσις*, a wasting, + E. *therapist*.] One who is skilled in the treatment of pulmonary tuberculosis. *Med. Record*, Nov. 9, 1907, p. 758.

phthisiotherapy (thiz″i-ọ-ther′a̤-pi), *n.* [Gr. *φθίσις*, consumption, + *θεραπεία*, medical treatment.] The medical treatment of phthisis or pulmonary tuberculosis. *Med. Record*, May 2, 1903, p. 719.

phthisis, *n.*—**Abdominal phthisis.** See ★*abdominal*.—**Black phthisis**, anthracosis.—**Mammary phthisis**, atrophy of the breasts.—**Phthisis anterior**, phthisis bulbi, which affects especially the anterior portion of the eyeball.—**Phthisis bulbi**, wasting and partial collapse of the eyeball.—**Potters' phthisis**, disease of the lung caused by the inhalation of dust, as in potters.—**Stonecutters' phthisis**, a chronic inflammation of the lungs excited by the irritation of inhaled dust and fine particles of stone; a form of pneumonoconiosis.

phthongal (thong′ga̤l), *a.* [Gr. *φθόγγος*, sound, + *-al*^{1}.] Of or pertaining to sound; vocal; sonant.

> Along with k, t, p, in the first place, go their nearest kindred, g, d, b. These are their sonant (or vocal, *phthongal*, intonated) counterparts. In the former, namely, there is no audible utterance, but complete silence, during the continuance of the closures.
>
> *Whitney*, Life and Growth of Lang., iv.

Ph. U. S. An abbreviation of *Pharmacopœia of the United States*.

phy., phys. Abbreviations of *physical*.

phyce, *n.* A bad spelling of *fise*^{2}.

phycite (fī′sīt), *n.* [Gr. *φῦκος*, seaweed, + *-ite*^{2}.] Same as *erythrite*, 3.

phycitid (fis′i-tid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Phycitidæ*.

II. *a.* Having the characters of or belonging to the family *Phycitidæ*.

phycochrom (fī′kọ-krom), *n.* [*Phycochrom*(*aceæ*).] A seaweed of the order *Phycochromaceæ*.

phycocyanogen (fī″kọ-sī-an′ọ-jen), *n.* Same as *phycocyanin*.

phycological (fī-kọ-loj′i-ka̤l), *a.* [*phycolog*(*y*) + *-ic-al*^{1}.] Of or pertaining to the algæ; pertaining to phycology.

phycopyrine (fī-kọ-pī′rin), *n.* [Gr. *φῦκος*, seaweed, + *πῦρ*, fire, + *-ine*^{2}.] One of the substances associated with chlorophyl in the chromatophore of the *Peridineæ*.

phylactery, *n.* (*a*) See also ★*tephillin*.

phylactocarp (fi-lak′tọ-kärp), *n.* [Gr. *φυλακτικός*, guarding, + *καρπός*, fruit.] In some *Hydromedusæ*, as the *Plumularidæ*, a modified hydrocladium bearing gonangia as well as nematophores and sometimes hydrothecæ. Compare *corbula*, 1.

phylactocarpal (fi-lak-tọ-kär′pa̤l), *a.* [*phylactocarp* + *-al*^{1}.] Pertaining to, or of the nature of, a phylactocarp.

phylarchic (fī-lär′kik), *a.* [*phylarch* + *-ic*.] Of or pertaining to a phylarch or to phylarchy.

phylastic (fī-las′tik), *a.* Same as *phyletic*.

phylaxin (fī-lak′sin), *n.* [Gr. *φύλαξις*, a watching, guarding, + *-in*^{2}.] Same as ★*alexin*, in the older sense of the word; a defensive proteid.

phylembryo (fī-lem′bri-ō), *n.* [Gr. *φῦλον*, race, tribe, + *ἔμβρυον*, embryo.] That stage in the development of an embryo during which the structures characteristic of the class make their appearance. Examples are the protaspis stage of trilobites, protegulum of brachiopods, protoconch of cephalopods, and prodissoconch of pelecypods. See ★*recapitulation*, 3.

> The *phylembryo* (fig. 27) is characterized by the first appearance of the lophophore, the secretion in most types of a chitinous or calcareous investment, and the origin of the true alimentary canal.
>
> *E. R. Cumings*, in Amer. Jour. Sci., Jan., 1904, p. 54.

phylembryonic (fī-lem-bri-on′ik), *a.* [*phylembryo*(*n-*) + *-ic*.] Of or pertaining to the earliest or embryonic stage in the ancestral or phylogenetic history of a race. [Rare.]

> They are in this way enabled to designate the primitive types of the phylum as *phylembryonic*.
>
> *Hyatt*, Biol. Lect., 1899, p. 133.

phylephebic (fī-le-fē′bik), *a.* [Gr. *φῦλον*, race, tribe, + *ἔφηβος*, an adult.] Of or pertaining to the prime or highest degree of development of a race or type. [Rare.]

> They are in this way enabled to designate . . . the full-blown acme as *phylephebic*.
>
> *Hyatt*, Biol. Lect., 1899, p. 133.

phyletic, *a.* **3.** In *bot.*, relating to the divisions of the vegetable kingdom viewed genetically; phylogenetic.

phyletically (fī-let′i-ka̤l-i), *adv.* From the point of view of phylogeny; phylogenetically.

> The qualities now developed [from eight to twelve years of age] are *phyletically* vastly older than all the neo-atavistic traits of body and soul, later to be superposed like a new and higher story built on to our primal nature.
>
> *G. S. Hall*, Adolescence, I. x.

phyletism (fī′lẹ-tizm), *n.* [MGr. **φυλετισμός*, < Gr. *φυλέτης*, a tribesman, < *φῦλον*, a tribe.] Racial feeling; clannishness.

> Its [the Orthodox Eastern Church's] head, the Bulgarian Exarch, was to reside at Constantinople. Naturally, this was resented by the Patriarch Anthimus, who stigmatized the racial basis of the Bulgarian Church under the name of *Phyletism*.
>
> *Encyc. Brit.*, XXXI. 383.

phylic (fil′ik), *a.* [*phyle* + *-ic*.] Pertaining to the phyle or clan in ancient Greek politics. See *phyle*.

> The increase of the Phylae involved changes in the institutions based upon the *phylic* system.
>
> *R. W. Macan*, in Jour. Hellenic Studies, XII. 30.

phyll-, phyllo-. [Gr. *φύλλον*, leaf.] A combining element meaning 'leaf,' used in descriptive terms and systematic names, chiefly in botany.

Phyllachora (fi-lak′ọ-rä̤), *n.* [NL. (Nitschke, 1869), < Gr. *φύλλον*, leaf, + *ἄχωρ*, scurf.] A large genus of parasitic fungi of the order *Dothidiales*, having the black stroma embedded in the surface of the host. The spores are unicellular, and hyaline or yellowish. About 200 species are known, most of which are tropical. *P. graminis* is common on grass-leaves. See ★*Polythrincium*.

phyllæscitannin (fi-les-i-tan′in), *n.* [Gr. *φύλλον*, leaf, + L. *æsc*(*ulus*), horse-chestnut, + E. *tannin*.] An amorphous variety of tannin, $C_{26}H_{24}O_{13}+H_2O$, found in the leaves of the horse-chestnut (*Æsculus*) when they are still inclosed in the bud.

Phyllaurea (fi-lâ′rẹ-ä̤), *n.* [NL. (Loureiro, 1790), so called in allusion to the leaf-markings, < Gr. *φύλλον*, leaf, + L. *aureus*, golden.] A genus of 4 or 5 species of shrubs or trees of the family *Euphorbiaceæ*, which occurs in Australia, the Malay Archipelago, and other islands of the Pacific. The plants are monœcious, with axillary, long, slender racemes. There are very many cultivated kinds, known by florists as *Croton* or *Codiæum*, prized chiefly for the varied and brilliant markings of the leaves. The colors are in shades of red, yellow, orange, and purple; the markings often run into white. They are used chiefly as greenhouse subjects, but are sometimes bedded out for summer. All the cultivated varieties are considered by J. Müller to be derived from the species *P. variegata* (*Codiæum variegatum* of Blume).

phyllerythrin (fil-e-rith′rin), *n.* [Gr. *φύλλον*, leaf, + *ἐρυθρός*, red, + *-in*^{2}.] Same as *erythrophyl*.

phyllic (fil′ik), *a.* [Gr. *φυλλικός*, < *φύλλον*, leaf.] Obtained from leaves.—**Phyllic acid**, a resinous acid, $C_{36}H_{64}O_8$ (?), extracted by alcohol from the leaves of the cherry-laurel and other members of the rose family. Its salts are crystalline.

phyllidium, *n.* **2.** In cestodes, an outgrowth from the side of the scolex, probably serving as an organ of locomotion or of attachment.

phylliform (fil′i-fôrm), *a.* [Gr. *φύλλον*, leaf, + *-form*.] Having the shape of a leaf; leaf-like.

phylline (fil′in), *a.* [Gr. *φύλλινος*, < *φύλλον*, leaf.] Pertaining to or resembling a leaf.

Phyllitis (fi-lī′tis), *n.* [NL. (Ludwig, 1757), < Gr. *φυλλῖτις*, a plant, probably *Phyllitis Scolopendrium*.] A genus of north temperate polypodiaceous ferns of the tribe *Asplenieæ*, formerly known as *Scolopendrium*. The best known species is the widely distributed hart's-tongue, *P. Scolopendrium* (*Scolopendrium vulgare*), which is extensively cultivated in many odd and diverse forms. See *Scolopendrium*.

phyllocactus (fil-ọ-kak′tus), *n.* [Gr. *φύλλον*, leaf, + *κάκτος*, cactus: an untenable genus name.] A horticultural name for *Epiphyllum*, a small genus of the family *Cactaceæ* found from Mexico to South America and cultivated in numerous horticultural forms, some of which are hybrids with other genera. They have flat, two-edged crenate branches, no spines but bristles, and showy flowers borne in the crenatures of the branches. See *Epiphyllum*.

Phyllocampyli (fil-ọ̄-kam'pi-lī), *n. pl.* [NL., < Gr. *φύλλον*, leaf, + *καμπύλος*, bent.] In Hyatt's classification of ammonoid cephalopods, a suborder characterized by the phylloidal bases of the suture-saddles. This suborder contains a large number of genera distributed among several families which range from Devonian to Cretaceous formations. Typical families are the *Prolecanitidæ*, *Arcestidæ*, and *Phylloceratidæ*.

phyllocarid (fi-lok'a-rid), *n.* and *a.* **I.** *n.* A member of the *Phyllocarida*.

II. *a.* Having the characters of or pertaining to the *Phyllocarida*.

Phyllocarida (fil-ọ̄-kar'i-dạ̈), *n. pl.* [NL., < Gr. *φύλλον*, leaf, + *καρίς*, shrimp.] An order of primitive malacostracan *Crustacea*, founded by Packard, characterized by having the head and thorax covered by a chitinous or calcified bivalved carapace which is usually hinged along the median dorsal line. The head has 5, the thorax 8, and the abdomen, which is of shrimp-like form, 2-8 segments, the terminal one of which carries 3 strong spines. *Nebalia* is the only recent survivor of the group, which has abundant fossil representatives in the middle and upper Paleozoic rocks, and few in the Mesozoic and Tertiary. The principal genera are *Ceratiocaris*, *Echinocaris*, and *Pephricaris*. The order is also known under the name of *Leptostraca* of Claus.

phyllocaulon (fil-ọ̄-kâ'lon), *n.*; pl. *phyllocaula* (-lạ̈). [NL., < Gr. *φύλλον*, leaf, + *καυλός*, stem.] The leaf-like expansion of the stem of some algæ. Compare *phyllocladium*.

Phylloceras (fi-los'ẹ-ras), *n.* [NL., < Gr. *φύλλον*, leaf, + *κέρας*, horn.] A genus of phyllocampylous ammonoid cephalopods with smooth or radially striate and involute shells, which have very complex phylloidal sutures, found in Triassic to Cretaceous formations.

phyllocladioid (fil-ọ̄-klā'di-oid), *a.* [*phyllocladi(um)* + *-oid.*] Resembling or having the character of a *phyllocladium*.

phyllocladium, *n.* **2.** A granular or scale-like body which occurs on the podetia of certain lichens, especially *Stereocaulon*.

> *Phyllocladia* ashy-gray, and whitish, passing into at length crowded, short branchlets.
> *E. Tuckerman*, North Amer. Lichens, I. 230.

phyllocladous (fi-lok'lạ-dus), *a.* [*phylloclad(ium)* + *-ous.*] In *bot.*, having phyllocladia.

phyllocyanic (fil'ọ̄-sī-an'ik), *a.* [Gr. *φύλλον*, leaf, + E. *cyanic.*] Noting an acid, a decomposition-product of chlorophyl, which is a homologue of bilirubin. Its formula is given as $C_{38}H_{44}O_6N_4$ or $C_{36}H_{40}O_6N_4$.

phyllode, *n.* **2.** In some echinoids, one of the leaf-shaped areas into which the ambulacra are expanded.

phyllodial (fi-lō'di-ạl), *a.* [*phyllodi(um)* + *-al*^{1}.] Of or pertaining to a phyllodium.

phylloerythrin (fil"ọ̄-e-rith'rin), *n.* [Gr. *φύλλον*, leaf, + *ἐρυθρός*, red, + *-in*^{2}.] A derivative of chlorophyl formed in the intestinal tract of ruminants.

phyllofuscin (fil-ọ̄-fus'in), *n.* [Gr. *φύλλον*, leaf, + L. *fuscus*, yellow, + *-in*^{2}.] A yellow pigment found in certain plants.

phyllogenetic (fil"ọ̄-jẹ̄-net'ik), *a.* [Gr. *φύλλον*, leaf, + E. *genetic.*] Of or pertaining to the production of leaves.

phyllogenous, *a.* **2.** Axillary, that is, leaf-produced: applied as shown in the extract.

> Nägeli distinguished between 'acrogenous' and '*phyllogenous*' (axillary) branching, and ascribed the latter to the Equisetaceæ and Spermophyta.
> *K. E. Goebel* (trans.), Organography of Plants, II. 432.

Phyllograptus (fil-ọ̄-grap'tus), *n.* [NL., < Gr. *φύλλον*, leaf, + *γραπτός*, written (see *graptolite*).] A genus of tetraprionidian graptolites found in Lower Silurian rocks.

phylloid, *a.* **II.** *n.* In algæ and in some *Characeæ* and *Bryophyta*, an appendage of the thallus, morphologically analogous to the leaf of higher plants, but less differentiated. Compare *rhizoid*. *Sachs* (trans.), Botany, p. 211.

phylloidal (fi-loi'dạl), *a.* [*phylloid* + *-al*^{1}.] Same as *phylloid*: employed in descriptions of ammonoid suture-lines.

phyllomancy (fil'ọ̄-man-si), *n.* [Gr. *φύλλον*, leaf, + *μαντεία*, divination.] Divination by means of the movements of leaves.

> We hear of a *Phyllomancy* among the Assyrians. . . . The orthodox Hebrews held . . . to the prophetic meaning in the agitation and rustling of the leaves of trees.
> *M. Lockwood*, tr. of Lenormant, Beginnings of Hist., [ii. 94.

phyllomorph (fil'ọ̄-môrf), *n.* [Gr. *φύλλον*, leaf, + *μορφή*, form.] A decorative motive or type based on a plant form. *Haddon*, Evolution in Art, p. 126.

phyllomorphic (fil-ọ̄-môr'fik), *a.* [*phyllomorph* + *-ic.*] **1.** Having the form of a leaf.—**2.** Pertaining or belonging to phyllomorphs. *Haddon*, Evolution in Art, p. 92.

phyllomorphous (fil-ọ̄-môr'fus), *a.* Same as ★*phyllomorphic*.

phyllophyte (fil'ọ̄-fīt), *n.* [Gr. *φύλλον*, leaf, + *φυτόν*, plant.] **1.** Same as *cormophyte*, referring, however, to the leaf-bearing character of the axis. *Sachs*, Text-book of Bot., p. 130.—**2.** A plant which obtains its sustenance chiefly through its leaves. *Boulger*.

phyllopode, *n.* **2.** In *Crustacea*, a phyllopod.

phyllopodium (fil-ọ̄-pō'di-um), *n.*; pl. *phyllopodia* (-di-ạ̈). [Gr. *φύλλον*, leaf, + *πόδιον*, a little foot.] The whole chief axis of a leaf, excluding its branches. *Bower*.

Phyllopora (fi-lop'ọ̄-rạ̈), *n.* [NL., < Gr. *φύλλον*, leaf, + *πόρος*, pore.] A genus of cyclostomatous *Bryozoa* allied to *Fenestella* and having a funnel-shaped zoarium which carries the cells on the outer side and consists of anastomosing branches which form a regular round-meshed network: found in the Devonian and Permian formations.

phylloporphyrin (fil-ọ̄-pôr'fi-rin), *n.* [Gr. *φύλλον*, leaf, + *πορφύρα*, purple, + *-in*^{2}.] A dark reddish-violet crystalline coloring-matter, $C_{32}H_{34}N_4O_2$, made by heating phyllotaonin with alcoholic potash. It has the same absorption-spectrum as hematoporphyrin and is otherwise closely related to it. It appears to be derived from pyrrol.

Phyllospondyli (fil-ọ̄-spon'di-lī), *n. pl.* [NL., < Gr. *φύλλον*, leaf, + *σπόνδυλος*, vertebra.] A suborder of the extinct stegocephalian amphibians, characterized by a persistent notochord "encased in imperfect barrel-shaped vertebræ formed by a pair of delicate hypocentra and downward prolongations of the neural arch, but without pleurocentra. Teeth simple, hollow." *Zittel* (trans.), Text-book of Palæon., II. 124.

phyllospondylous (fil-ọ̄-spon'di-lus), *a.* [NL. *Phyllospondyli* + *-ous.*] **1.** Of or pertaining to the *Phyllospondyli*.—**2.** Noting a type of vertebra characteristic of certain extinct amphibians, the *Phyllospondyli*. Each vertebra consists of a neural arch and a pair of delicate ventral ossifications, the hypocentra, not fused with the neural arch. Lateral ossifications (pleurocentra) are absent. The notochord is persistent and inclosed without constriction by the elements which compose each vertebra.

phyllotaonin (fil-ọ̄-tā'ọ̄-nin), *n.* [Gr. *φύλλον*, leaf, + *ταώς* (*ταων-*), peacock, + *-in*^{2}.] A steel-blue crystalline product, $C_{40}H_{40}O_6N_6$, made by hydrolyzing phyllocyanin with acids or alkalis.

phyllotriæne (fil-ọ̄-trī'ēn), *n.* [Gr. *φύλλον*, leaf, + *τρίαινα*, trident.] In the nomenclature of the sponge-elements, a tetraxial spicule in which three of the rays are foliately expanded.

phyllozoöid (fil-ọ̄-zō'oid), *n.* In *Hydromedusæ*, a hydrophyllium.

phylocycle (fī'lọ̄-sī-kl), *n.* [Gr. *φῦλον*, race, tribe, + *κύκλος*, cycle.] The cycle of racial development or phylogeny. Compare ★*ontocycle*. [Rare.]

phylocyclic (fī-lọ̄-sik'lik), *a.* [*phylocycle* + *-ic.*] Of or pertaining to the cycle of racial development or phylogeny.

phylogenal (fī-loj'e-nạl), *a.* Same as *phylogenic*.

Phylogenetic forces, influences that cause the reproduction of an organism or organization. "If by society we mean associated men in general there is no other social reproduction [except the reproduction of its individual units], but if we regard society as a plurality of social bodies or groups, social reproduction is a sort of gemmation." *L. F. Ward*, Pure Sociol., p. 260.—**Phylogenetic psychology.** See ★*psychology*.

phylogenetical (fī"lọ̄-jẹ̄-net'i-kạl), *a.* Same as *phylogenetic*. *Buck*, Med. Handbook, II. 308.

Phylogenic variation. See ★*variation*.

phylogenist (fī-loj'e-nist), *n.* [*phylogen(y)* + *-ist.*] **1.** A student of the phylogeny or ancestral history of living things.—**2.** One who believes that it is possible to reconstruct or restore the ancestral history of living things from their ontogeny or individual development.

phylogerontic (fī"lọ̄-jẹ̄-ron'tik), *a.* [Gr. *φῦλον*, race, tribe, + E. *gerontic.*] Pertaining to or exhibiting the old age of a race or phylum, as contrasted with the old age of individuals. [Rare.]

> Whether *phylogerontic* characteristics are inherited or simply have a common origin, the facts of correspondence remain the same. *Hyatt*, Biol. Lect., 1899, p. 134.
>
> *Phylogerontic* types are furthermore to be found in the majority of series, while some groups, such as Strombus, Cypræa, etc., are represented only by *phylogerontic* forms in the modern seas. *Amer. Nat.*, Dec., 1902, p. 917.

phylography (fī-log'rạ-fi), *n.* [Gr. *φῦλον*, race, tribe, + *-γραφια*, < *γράφειν*, write.] The science which describes the physical characteristics of the races of men. *Deniker*, Races of Man, p. 10.

phylological (fī-lọ̄-loj'i-kạl), *a.* [*phylolog(y)* + *-ic-al*^{1}.] Relating to the science of phylology; relating to the evolution of races. *G. J. Romanes*.

phylology (fī-lol'ọ̄-ji), *n.* [Gr. *φῦλον*, race, tribe, + *-λογια*, < *λέγειν*, speak.] The science which treats of the laws that govern the development of different racial types; the biological study of physical anthropology. *Deniker*, Races of Man, p. 10.

phyloneanic (fī"lọ̄-nẹ̄-an'ik), *a.* [Gr. *φῦλον*, race, tribe, + E. *neanic.*] Pertaining to or exhibiting the recent stages in the ancestry or phylogenetic history of a race. [Rare.]

> They are in this way enabled to designate . . ., the nearest ancestors as *phyloneanic*.
> *Hyatt*, Biol. Lect., 1899, p. 133.

phylonepionic (fī"lọ̄-nep-i-on'ik), *a.* [Gr. *φῦλον*, *φυλή*, tribe, + E. *nepionic.*] In *biol.*, pertaining to or characteristic of the nepionic stage of development of a race or type. See ★*nepionic*.

phylotrophy (fī-lot'rọ̄-fi), *n.* [Gr. *φῦλον*, race, tribe, + *-τροφια*, < *τρέφειν*, nourish.] Race-nutrition: opposed to ★*ontotrophy*. *L. F. Ward*, Pure Sociol., p. 291.

phylum, *n.* **3.** In *bot.*, a great group or subkingdom of the vegetable kingdom, next above a class. The *Spermatophyta* or seed-bearing plants constitute a phylum, formerly known as flowering plants or phanerogams. The cryptogams, or so-called flowerless plants, are now subdivided into several phyla. The vascular cryptogams constitute the phylum *Pteridophyta*. The *Bryophyta* are usually regarded as a phylum. With regard to the lower cellular cryptogams (*Algæ*, *Fungi*, etc.) the classification into phyla is still unsettled.

phyma (fī'mạ̈), *n.*; pl. *phymata* (-mạ-tạ̈). [Gr. *φῦμα*, a growth, a tumor, < *φύεσθαι*, grow.] A tubercle of the skin.

phymacerite (fī-mas'ẹ-rīt), *n.* [Gr. *φῦμα*, a growth, + *κέρας*, horn, + *-ite*^{2}.] In crustaceans, the tubercle at the base of the second antenna containing the external orifice of the green gland.

phymatic (fī-mat'ik), *a.* [Gr. *φῦμα* (*φυματ-*), a tumor, + *-ic.*] Pertaining to or of the nature of a phyma or tumor.

phymatid (fī'mạ-tid), *n.* and *a.* **I.** *n.* A member of the heteropterous family *Phymatidæ*.

II. *a.* Having the characters of or belonging to the family *Phymatidæ*.

Phymatoceras (fī-mạ-tos'ẹ-ras), *n.* [NL., < Gr. *φῦμα(τ-)*, tumor, + *κέρας*, horn.] A genus of pachycampylous ammonoid cephalopods which have compressed discoidal costate shells: found in Jurassic rocks.

Phymatodes (fī-mạ-tō'dēz), *n.* [NL. (Presl, 1836), < Gr. *φῦμα*, a tubercle, + *εἶδος*, form.] A genus of tropical ferns of varying habit, with entire, pinnatifid or pinnate fronds, similar in most respects to *Polypodium*, and differing mainly in having irregularly anastomosing venation, the large roundish sori often deeply sunk in pustulate depressions and borne in one or more series, generally upon the free included veinlets which are commonly recurved. Several species are common in cultivation, of which the Asiatic and Polynesian *P. Phymatodes* is the best known and the type of the genus. A single delicate West Indian species, *P. exiguum* (*Polypodium Swartzii*), extends to the Florida keys.

phymatoid (fī'mạ-toid), *a.* [Gr. **φυματοειδής*, *φυματώδης*, < *φῦμα(τ-)*, tumor, + *εἶδος*, form.] **1.** Resembling a tubercle, or the lesion called 'tubercle.'—**2.** Of or belonging to the *Phymatoida*.

Phymatoida (fī-mạ-toi'dạ̈), *n. pl.* [NL., < Gr. **φυματοειδής*, *φυματώδης*, full of tumors: see ★*phymatoid*.] A group of Jurassic pachycampylous ammonoid cephalopods, in Hyatt's classification, which comprises the families *Amaltheidæ* and *Phymatoidæ*, with compressed discoidal shells which have high, keeled volutions and costate surfaces.

phymatorhusin (fī"mạ-tọ̄-rū'sin), *n.* [Gr. *φῦμα(τ-)*, a tumor, + *ῥοῦς*, sumac, + *-in*^{2}.] A black pigment belonging to the melanins, which has been found in melanotic growths in man, and in the urine of the affected individuals.

phymatosis (fī-ma̤-tō′sis), *n.*; pl. *phymatoses* (-sēz). [NL., < Gr. *φῦμα(τ-)*, a growth, + *-osis.*] Same as *tuberculosis*, especially of the skin; the occurrence of cutaneous nodules.

phymolepra (fī-mō̤-lep′rä̤), *n.* [Gr. *φῦμα*, tumor, + *λέπρα*, leprosy.] The tubercular form of leprosy.

-phyre (fīr). [(*por*)*phyr*(*y*).] In *petrog.*, a termination used to form names of rocks which have a porphyritic texture: as *vitrophyre*, *granophyre*, etc.

phyri- (fī′ri). [(*por*)*phyr*(*y*) + *-i*, a letter indicating that the texture is microscopic.] In *petrog.*, in the quantitative system of classification of igneous rocks (see ⋆*rock*1), a prefix used before the name of a rock to indicate that its texture is microscopically porphyritic, the phenocrysts being not megascopically notable, or quite insignificant.

phyro- (fī′rō). [(*por*)*phyr*(*y*) + *-o*, a letter indicating that the texture is megascopic.] In *petrog.*, in the quantitative system of classification of igneous rocks (see ⋆*rock*1), a prefix used before the name of a rock to indicate that its texture is megascopically porphyritic.

phys. An abbreviation (*a*) of *physical*; (*b*) of *physician*; (*c*) [*l. c.* or *cap.*] of *physics*; (*d*) of *physiological*; (*e*) [*l. c.* or *cap.*] of *physiology*.

Physa, *n.* **2.** [*l. c.*] A pond-snail of the genus *Physa*.—**3.** [*l. c.*; pl. *physæ* (-sē).] In some anthozoans, as *Edwardsia*, the lower end of the body. It may or may not be retractile into the scapus. Compare ⋆*capitulum*, 6, and ⋆*scapus*, 6.

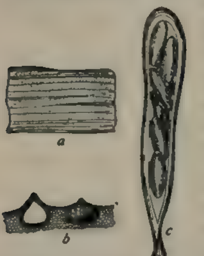
Its body is divisible into three portions, an upper capitulum bearing the mouth and tentacles, a median scapus covered by a friable cuticle, and a terminal *physa* which is rounded. *Encyc. Brit.*, XXV. 457.

physagogue (fis′a̤-gog), *n.* Practically the same as *carminative*.

physalin (fis′a̤-lin), *n.* [*Physalis* + *-in*2.] A yellowish, bitter, amorphous compound, $C_{14}H_{16}O_5$, extracted from the leaves of alkekengi, *Physalis Alkekengi*.

physaliphore (fī-sal′i-fōr), *n.* [Gr. *φυσαλλίς*, a bladder, + *-φορος* < *φέρειν*, bear.] In *biol.*, a cell containing vesicles which produce daughter-cells. *N. E. D.*

Physalospora (fis-a̤-los′pō̤-rä̤), *n.* [NL. (Niessl, 1876), < Gr. *φυσαλλίς*, bladder, + *σπορά*, seed.] A large genus of pyrenomycetous fungi having the perithecia seated beneath the epidermis of the host. The spores are unicellular, and hyaline or slightly colored. About 130 species have been described. *P. gregaria* is said to be the cause of a disease of trees called *black mauls*. *P. Festucæ* is frequently found on the leaves of various grasses, especially *Festuca*.



Physalospora Festucæ.
a, habit of growth of the fungus on a grass leaf, two thirds natural size; *b*, section through a portion of a leaf and two perithecia, enlarged; *c*, an ascus containing eight ascospores, still further enlarged.
(Drawn from Engler & Prantl's "Pflanzenfamilien.")

Physapoda (fī-sap′ō̤-dä̤), *n. pl.* Same as *Thysanoptera*.

Physaria (fī-sā′ri-ä̤), *n.* [NL. (Gray, 1848), < Gr. *φυσάριον*, a diminutive of *φῦσα*, a pair of bellows; in allusion to the shape of the pod.] A genus of spreading perennial plants of the family *Brassicaceæ*. It includes about four species of stellate-pubescent herbs with usually entire leaves and yellow flowers in terminal racemes, and is distinguished from *Lesquerella*, a near relative, by its strongly didymous fruit with a narrow partition. The species are natives of western North America. *P. didymocarpa* is the best known. See *Vesicaria*.

Physciaceæ (fis-i-ā′sē̤-ē), *n. pl.* [NL., < *Physcia* + *-aceæ.*] A family of lichens which have a foliaceous or branched thallus: typified by the genus *Physcia*.

physcianin (fi-sī′a̤-nin), *n.* [*Physcia* + *-an* + *-in*2.] Same as ⋆*atraric acid*.

physciol (fiz′i-ol), *n.* [*Physcia* + *-ol.*] Same as ⋆*atranorinic acid*.

physconia (fis-kō′ni-ä̤), *n.* [NL., < Gr. *φύσκων*, one having a fat paunch, < *φύσκη*, the large intestine, also a sausage.] Enlargement of the abdomen through corpulence or the growth of a solid tumor of one of the contained viscera.

physcony (fis′kō̤-ni), *n.* [Gr. *φύσκων*, pot-belly, < *φύσκη*, sausage, < *φυσᾶν*, blow up.] A tumor or swelling of the abdomen; parabysma. *N. E. D.*

physem (fī′sem), *n.* [Gr. *φύσημα*, a blowing, that which is blown, < *φυσᾶν*, to blow.] In *phonetics*, a name given by A. J. Ellis to "the bellows-actions of the lungs," that is, the speech-sounds so produced, including the varieties of *h* (the common aspirate).

'H. "Wheeze *Physem*."—This is a well known Arabic sound, which may be just mentioned. The wheeze is occasioned by forcing flatus, without voice, through the cartilaginous glottis. It is therefore closely related to the bleat :aayn. It occurs in the name of Mahomet Moo'haam·maad. *A. J. Ellis*, Speech in Song, p. 24.

physeter, *n.* **3.** A form of filter in which the rate of percolation of the filtrate is increased by pressure.

physic (fiz′ik), *a.* [See *physic*, *n.*] **1.** Physical.—**2.** Medicinal. [Obsolete or rare, in both uses.]

Physical chart, chemistry, doubles. See ⋆*chart*, ⋆*chemistry*, ⋆*double*, 18.—**Physical observatory, point, psychology, unit, water.** See ⋆*observatory*, etc.—**Physical rotation,** in *forestry*, same as *sylvical* ⋆*rotation*.

physicochemical, *a.* **2.** Relating to physical chemistry; due to the forces with which physical chemistry is concerned.

physicochemically (fiz″i-kō̤-kem′i-ka̤l-i), *adv.* By means of physical chemistry.

That can be comprehended which can be *physicochemically* explained. *Nature*, Sup., April 24, 1902, p. x.

physicogeographical (fiz″i-kō̤-jē″ō̤-graf′i-ka̤l), *a.* Of or pertaining to physical geography; physiographic.

Valuable material for *physico-geographical* considerations relative to the origin and life of these interesting formations. *Geog. Jour.* (R. G. S.), XV. 175.

physicologist (fiz-i-kol′ō̤-jist), *n.* [**physicolog*(*y*) (Gr. *φυσικά*, physics, + *-λογια*, < *λέγειν*, speak) + *-ist.*] A physicist. *Stand. Dict.*

physicomathematical (fiz″i-kō̤-math-ē̤-mat′i-ka̤l), *a.* **1.** Same as *iatrophysical*.—**2.** Dealing with or pertaining to both physics and mathematics: as, a *physicomathematical* problem or treatise.

The *Physico-Mathematical* Faculty of the University of Yuryeff. *Geog. Jour.* (R. G. S.), XII. 218.

physicomechanical (fiz″i-kō̤-mē̤-kan′i-ka̤l), *a.* Of or pertaining to mechanics as a branch of natural philosophy.

physicomorph (fiz′i-kō̤-môrf), *n.* [Gr. *φυσικός*, natural, + *μορφή*, form.] Any representation of an inanimate object or of an operation in the physical world, as the sun, clouds, rain, lightning, the whirlwind, etc.: applied especially to ornamental designs. *Haddon*, Evolution in Art, p. 118.

physicotherapeutic (fiz″i-kō̤-ther-a̤-pū′tik), *a.* [Gr. *φυσικός*, natural, + *θεραπευτικός*, of medical treatment.] Relating to medical treatment by physical agencies instead of drugs.

Dr. J. A. Rivière gives an account of the results achieved by him in the treatment of inoperable malignant growths by *physicotherapeutic* means, i. e. by a combination of X-rays, static electric discharges, and discharges of high frequency, together with the administration of calomel and quinine internally to promote elimination. *Nature*, Jan. 21, 1904, p. 280.

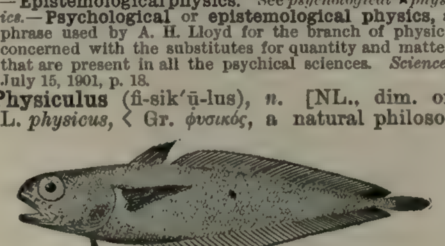
physicotherapeutics (fiz″i-kō̤-ther-a̤-pū′tiks), *n.* The treatment of disease by means of physical agencies (electricity, massage, etc.) instead of drugs.

physicotherapy (fiz″i-kō̤-ther′a̤-pi), *n.* [Gr. *φυσικός*, natural, + *θεραπεία*, medical treatment.] Same as ⋆*physicotherapeutics*.

Physicotherapy in the treatment of fibromata and prevention of neoplasms. *Med. Record*, June 27, 1903, p. 1055.

physics, *n.*—**Cosmical physics,** the physics of the heavenly bodies and of the earth's atmosphere and crust.—**Epistemological physics.** See *psychological* ⋆*physics*.—**Psychological** or **epistemological physics,** a phrase used by A. H. Lloyd for the branch of physics concerned with the substitutes for quantity and matter that are present in all the psychical sciences. *Science*, July 15, 1901, p. 18.

Physiculus (fi-sik′ṳ̄-lus), *n.* [NL., dim. of L. *physicus*, < Gr. *φυσικός*, a natural philosopher (?).] A genus of fishes of the family *Gadidæ*, found in the deep sea.



Physiculus fulvis.
(From Bulletin 47, U. S. Nat. Museum.)

physiochemical (fiz″i-ō̤-kem′i-ka̤l), *a.* [Gr. *φύσις*, nature, + E. *chemical.*] Of or pertaining to physiological chemistry.

physiognomonically (fiz-i-og-nō̤-mon′i-ka̤l-i), *adv.* Same as *physiognomically*.

physiognosy (fiz-i-og′nō̤-si), *n.* [Gr. *φύσις*, nature, + *γνῶσις*, knowledge.] Statical geognosy; that portion of the science of the earth which deals with the static relations of its constituents.

physiognotype (fiz-i-og′nō̤-tīp), *n.* A device used in making plaster casts of the face or head.

physiol. An abbreviation (*a*) of *physiological*; (*b*) [*l. c.* or *cap.*] of *physiology*.

physiolater (fiz-i-ol′a̤-tėr), *n.* [Gr. *φύσις*, nature, + *-λατρης*, worshiper. See *physiolatry*.] A worshiper of nature.

physiologer, *n.* **2.** A physiologist. [Obsolete or rare.]

physiologian (fiz′i-ō̤-lō′ji-a̤n), *n.* Same as *physiologist*. [Rare.]

physiological, *a.* **2.** Originating in normal physical conditions, as opposed to pathological.

The expression "*physiological*" albuminuria is an undesirable one, since healthy individuals ordinarily fail to show this symptom. There are, however, many other functions in the animal body where the border-line between the *physiological* and the pathological occasionally becomes obscure.
Mendel and *Hooker*, in Jour. Exper. Med., Oct. 1, 1901, [p. 647.

Physiological regeneration, rheoscope, salt solution, selection. See ⋆*regeneration*, ⋆*rheoscope*, ⋆*solution*, ⋆*selection*.—**Physiological solution.** Same as *physiological salt* ⋆*solution*.—**Physiological unit, water, zero.** See ⋆*unit*, ⋆*water*, ⋆*zero*.

physiology, *n.* **3.** A treatise on physiology or the functions of living organisms.—**Mental physiology.** See ⋆*mental*1.

physiomedical (fiz″i-ō̤-med′i-ka̤l), *a.* [Gr. *φύσις*, nature, + E. *medical.*] Of or pertaining to physiomedicalism.

physiometric (fiz″i-ō-met′rik), *a.* [*physiometr*(*y*) + *-ic.*] Of or pertaining to physiometry; conducted by definite numeration or measurements of physical objects: as, a *physiometric* investigation.

physiometry (fiz-i-om′e-tri), *n.* [Gr. *φύσις*, nature, + *μέτρον*, measure.] The accurate measurement of physical objects.

physiopathological (fiz″i-ō̤-path-ō̤-loj′i-ka̤l), *a.* Of or pertaining to physiopathology.

physiopathology (fiz″i-ō̤-pā-thol′ō̤-ji), *n.* [Gr. *φύσις*, nature, + E. *pathology.*] The sum of knowledge regarding the modification of function of living organisms caused by disease. *Buck*, Med. Handbook, III. 276.

physiophilist (fiz-i-of′i-list), *n.* [Gr. *φύσις*, nature, + *φιλεῖν*, love.] A lover of nature or of natural science. [Rare.]

physiophilosoph (fiz″i-ō̤-fil′ō̤-sof), *n.* [Gr. *φύσις*, nature, + *φιλόσοφος*, philosopher.] One versed in physiophilosophy.

physiophilosopher (fiz″i-ō̤-fi-los′ō̤-fėr), *n.* [See *physiophilosophy*.] An adherent of Oken's system of physiophilosophy.

physiophilosophic (fiz″i-ō̤-fil-ō̤-sof′ik), *a.* Same as ⋆*pysiophilosophical*.

physiophilosophical (fiz″i-ō̤-fil-ō̤-sof′i-ka̤l), *a.* Relating to or explained by physiophilosophy; specifically, pertaining to Oken's system of physiophilosophy.

physiophilosophy, *n.* **2.** Specifically, Oken's system of nature-philosophy in which he endeavored to construct nature, in thought, a priori.

physioplastic (fiz″i-ō̤-plas′tik), *a.* [Gr. *φύσις*, nature, + *πλάσσειν*, form.] Formed by nature; natural. [Rare.]

Physioplastic, anthropoplastic, by one or other of these appellatives will the condition of all beings by which any part of the field of Somatics is seen to be occupied, be found referable; *physioplastic*, the state in which being found in the bosom, they are supposed to have been formed by the hands, of nature. *Bentham*, Logic, Appendix, Works, VIII. 284.

physiopsychic (fiz″i-ō̤-sī′kik), *a.* [Gr. *φύσις*, nature, + *ψυχή*, mind, + *-ic.*] **1.** In *psychol.*, pertaining to both mind and body; psychophysical.

For certain crimes and criminals the largest influence ought to be recognized or accorded to the *physio-psychic* conditions of the individual, . . . yet this does not exclude the possible fact that . . . the *physio-psychic* anomalies of the individual are nothing but the effect of a deleterious social environment. *Smithsonian Rep.*, 1890, p. 639.

2. In *sociol.*, characterized by mental more than by bodily type: said of the social organism. See the extract.

> Many writers of late years have spoken of the social unit, the group or the nation, as an "organism." Some have further defined it as a "superorganism" or a "*physiopsychic* organism."
> *Brinton*, Basis of Social Relations, p. 39.

physiopsychology (fiz″i-ọ-sī-kol′ọ-ji), *n.* [*physio*(*logy*) + *psychology*.] The study of mind in its relations to the body, or in connection with the underlying bodily functions; psychophysiology; physiological psychology.

> In a general way, comparative *physio-psychology* has aided us in the search for the key to this great problem [of various intellectual endowment].
> *Amer. Anthropologist*, Oct.–Dec., 1903, p. 588.

physioradiogram (fiz″i-ọ-rā′di-ọ-gram), *n.* [Gr. φύσις, nature, + E. *radiogram*.] An image, upon a photographic plate, made by means of the secondary rays which emanate from some portion of the body, as the hand, upon its exposure to X-rays.

> It is only a step now to produce a "*physio-radiogram.*" . . . A record [was] made by the secondary activity emanating from my own hand stimulated by a stream of Rontgen rays.
> *Goodspeed*, Proc. Amer. Philos. Soc., May 15, 1903, [p. 101.

physioscopy (fiz-i-os′kọ-pi), *n.* [Gr. φύσις, nature, + σκοπεῖν, view.] Natural appearance; relative truth to nature in the delineation of physical objects. The term was coined by H. Spencer to express all those traits in a picture which concern the physical appearances of the objects represented: distinguished from the conception, composition, sentiment, expression, etc., of the picture. [See the extract.]

> I venture the new word just used, because there exists no word expressive of all those traits in a picture which concerns the physical appearances of the objects represented. Under "*physioscopy*" I propose to include the rendering of the phenomena of linear perspective, of aerial perspective, of light and shade, and of colour in so far as it is determined not by artistic choice, but by natural conditions — e. g. that of water as affected by the sky, the clouds, and the bottom. The conception, the sentiment, the composition, the expression, may some or all of them be good in a picture of which the *physioscopy*, in some or all of its elements, is bad; and vice versa. The characteristics included in the one group are entirely separate from those included in the other; and there needs a word by which the distinction may be conveyed without circumlocution.
> *H. Spencer*, Autobiography, II. 225, note.

physiotherapy (fiz″i-ọ-ther′ạ-pi), *n.* [Gr. φύσις, nature, + E. *therapy*.] Treatment of disease by means of physical remedies, such as massage, gymnastics, etc., instead of drugs.

> The first International Congress of *Physiotherapy* will be held at Liège from August 12 to 15 next.
> *Nature*, July 20, 1905, p. 274.

physiotype (fiz′i-ọ-tīp), *n.* [Gr. φύσις, nature, + τύπος, figure, image. See *type*.] A picture produced by developing a prepared paper which has received a mechanical impression (invisible before development) from the object itself, such as a leaf, a piece of lace, or the like; a nature-print.

physitheism, *n.* **2.** That form of religious concept in which the phenomena of nature become personified and are considered as deities. See the extract.

> In classifying Indian myths Major Powell distinguishes four stages in the growth of mythic philosophy. To the first of these he gives the name of hecastotheism, the stage in which supernatural powers are attributed to both animate and inanimate objects, an all pervading animism which answered the questions of how and why to the savage mind. In the second stage or zoötheism this attribution of extra-natural and mysterious potencies is confined to animate forms and animals, usually by reason of some special quality, as strength, swiftness, cunning, etc., become deified. In the third stage, to which he gives the name *physitheism*, the agencies of nature, sun, moon, stars, rain and wind become personified and exalted into omnipotence. The fourth stage, which includes the domain of the spiritual concept, has not yet been reached by any of the Amerindian tribes.
> *Amer. Jour. Psychol.*, Jan., 1903, p. 63.

physocarpous (fī-sọ-kär′pus), *a.* [Gr. φῦσα, bladder, + καρπός, fruit.] In *bot.*, having a bladder-like fruit.

physocarpus (fī-sọ-kär′pus), *n.* [*Physocarpus*, an untenable genus name for *Icotorus*: < Gr. φῦσα, bellows, + καρπός, fruit; in allusion to the inflated pods.] A name in horticulture for *Icotorus*, a genus of shrubs of the family *Rosaceæ*. It has white flowers in dense umbel-like clusters and is closely related botanically to *Spiræa*, differing however in its inflated pods, usually opening along both sutures, and in its shining seeds. There are four species, native to North America and eastern Asia. The common ninebark of the eastern United States is *Icotorus opulifolius* (*Spiræa opulifolia* of Linnæus). This and the similar *I. Amurensis* (*Physocarpus Amurensis* of Maximowicz) are sometimes planted as ornamental bushes.

physocephalus (fiz-ọ-sef′ạ-lus), *n.*; pl. *physocephali* (-lī). [Gr. φῦσα, bellows, + κεφαλή, head.] Tumor of the scalp due to the presence of gas in the underlying connective tissue.

physocœlia (fiz-ọ-sē′li-ạ̈), *n.* [Gr. φῦσα, bellows, + κοῖλος, hollow.] Tympanites.

physode (fī′sōd), *n.* [Gr. φῦσα, bellows, a bladder, + εἶδος, form, likeness.] A body differing from a microsome in surrounding a cavity filled with dissolved substances. *Crato.* Physodes are treated by Strassburger as merely a class of microsomes.

Physoderma (fī-sọ-dėr′mạ̈), *n.* [NL. (Wallroth, 1833), < Gr. φῦσα, bellows, + δέρμα, skin, in allusion to the pustules formed.] A genus of parasitic phycomycetous fungi of the order *Chytridiales*, having the mycelium and resting-spores intracellular. About 13 species are known, occurring in the parenchyma cells of flowering plants. *P. Menyanthis* is found in the leaves and petioles of *Menyanthes trifoliata* in America.

physodic (fī-sō′dik), *a.* [NL. *physodes* (see def.) + *-ic*.] Occurring in the lichen *Parmelia physodes*.—**Physodic acid,** a crystalline acid, $C_{20}H_{22}O_6$, which yields carbon dioxid and orcinol when boiled with baryta water. When boiled a long time with alcohol or other organic solvent it is changed into an amorphous variety.

physogastrism (fī-sọ-gas′trizm), *n.* [Gr. φῦσα, bellows, + γαστήρ, stomach, + *-ism*.] A condition of abdominal enlargement or inflation: used, in *entom.*, to describe the honey-bearers of the honey-ants and also certain symphilous beetles.

> Moreover, most symphilous beetles have a characteristic colour, namely, oily reddish-yellow or reddish-brown. They also show certain modifications of the mouth-organs, especially of the labium, as well as "*physogastrism*," accompanied by excessive development of the fat-bodies, or sexual glands. *Nature*, Feb. 12, 1903, p. 351.

physogradous (fī-sog′rạ-dus), *a.* Same as *physograde*.

Physonectæ (fī-sọ-nek′tē), *n. pl.* [NL., < Gr. φῦσα, bellows, bladder, + νήκτης, summer.] A group or section of *Siphonophora* which consists of siphonanthous forms having a pneumatocyst and several nectocalyxes and palpons, the nectocalyxes sometimes being replaced by bracts. The cormidia are ordinate or irregular.

physonectous (fī-sọ-nek′tus), *a.* [NL. *Physonectæ* + *-ous*.] Belonging to, or having the characters of, the *Physonectæ*; having an apical pneumatophore, with one or more coronæ of nectophores or bracts and no aurophore, as in certain siphonophorans.

physosterin (fī-sos′tẹ-rin), *n.* Same as ★*phytosterin*.

physostigmine, *n.* It is a powerful depressant and nerve-poison: used to counteract strychnine and atropin, also to contract the pupil. Its formula is $C_{15}H_{21}O_2N_3$. Also called *eserine*.—**Physostigmine salicylate,** $C_{15}H_{21}N_3O_2.C_7H_6O_3$, a substance used externally as a mydriatic, internally in spasmodic diseases, etc.—**Physostigmine sulphate,** $(C_{15}H_{21}O_2N_3)_2.H_2SO_4$, a substance used in medicine and by veterinary surgeons.

phytalbumin (fī-tal-bū′min), *n.* [Gr. φυτόν, plant, + E. *albumin*.] Vegetable albumin.

phytate (fī′tāt), *n.* [*phyt*(*ic*) + *-ate*²] A salt of phytic acid. *Science*, Feb. 28, 1908, p. 330.

phyteconomy (fīt-ẹ-kon′ō-mi), *n.* [Gr. φυτόν, plant, + E. *economy*.] Vegetable economy.

phyteris (fī′tẹ-ris), *n.* [Gr. φυτόν, plant, + ἔρις, strife, competition.] In *phytogeog.*, the competition of plants for the possession of the same ground. *F. E. Clements.*

phytic (fī′tik), *a.* [Gr. φυτόν, a plant, + *-ic*.] Derived from plants; specifically, noting an organic acid found in wheat; anhydroxymethylene diphosphoric acid. *Science*, Feb. 28, 1908, p. 330.

phytin (fī′tin), *n.* [Gr. φυτόν, a plant, + *-in*².] A phosphorized reserve material found in seeds, tubers, and rhizomes; a quadribasic acid of the composition $C_2H_8P_2O_9$.

phytobezoar (fī-tọ-bē′zōr), *n.* [Gr. φυτόν, plant, + E. *bezoar*.] A concretion, found in the stomachs of animals, composed of indigestible vegetable fiber, hair, etc., matted together into a spherical shape. Also called *hair-ball*.

> It is very important that crimson clover should be cut for hay not later than the time of full bloom. The calyx is covered with rough, sharp-pointed hairs, which become stiff and brittle when the clover is fully ripe. It has been found that these hairs are liable to cause the formation of intestinal concretions, *phyto-bezoars*, or hair-balls, especially when the ripe seed heads of the crimson clover are eaten by horses or cattle.
> *Yearbook, U. S. Dept. Agr.*, 1897, p. 501.

phytobiological (fī″tọ-bī-ọ-loj′i-kạl), *a.* [*phytobiolog*(*y*) + *-ic-al*¹.] Of or pertaining to phytobiology.

phytochrome (fī′tọ-krōm), *n.* [Gr. φυτόν, plant, + χρῶμα, color.] Same as *xanthophyl*.

phytocorid (fī-tok′ọ-rid), *n.* and *a.* **I.** *n.* A member of the heteropterous family *Phytocoridæ*.

II. *a.* Having the characters of or belonging to the family *Phytocoridæ*.

phytœcologist, phytecologist (fīt-ẹ-kol′ọ-jist), *n.* [*phytœcolog*(*y*) + *-ist*.] One who studies the œcology of plants.

phytœcology, phytecology (fīt-ẹ-kol′ọ-ji), *n.* [Gr. φυτόν, plant, + E. *œcology*.] The œcology of plants.

Phytoflagellida (fī-tọ-fla-jel′i-dạ̈), *n. pl.* [NL., < Gr. φυτόν, a plant, + L. *flagellum*.] An order of *Mastigophora*. It consists of flagellate unicellular organisms which may have chlorophyll and holophytic nutrition, or be without chlorophyll and saprophytic in nutrition. They are hence classed sometimes as plants and sometimes as animals. It contains the families *Chrysomonadidæ*, *Cryptomonadidæ*, *Chlamydomonadidæ*, *Phacotidæ*, and *Volvocina*.

phytogelin (fī-tọ-jel′in), *n.* [Gr. φυτόν, plant, + *gel*(*atin*) + *-in*².] The gelatinous matter of algæ. *N. E. D.*

phytogenic (fī-tọ-jen′ik), *a.* [Gr. φυτόν, plant, + -γενης, -producing, + *-ic*.] **1.** Of or pertaining to phytogenesis; phytogenetic.—**2.** Of plant or vegetable origin; specifically applied by A. W. Grabau to those rocks of which the materials are derived from plants, as coal.

> Biogenic rocks fall naturally into two groups, those in which the material is derived from the air and those in which it is derived from the water. The former are due chiefly to the activities of plants (*phytogenic*) and the latter chiefly to those of animals (zoögenic).
> *Amer. Geol.*, April, 1904, p. 231.

phytogenous (fī-toj′ẹ-nus), *a.* [Gr. φυτόν, plant, + -γενης, -producing, + *-ous*.] Same as *phytogenetic*.

phytogeographically (fī-tọ-jē-ọ-graf′i-kạl-i), *adv.* With respect to phytogeography; in a phytogeographical manner.

> Well differentiated both topographically and *phytogeographically*. *Bot. Gazette*, XXV. 387.

phytogeography, *n.* Phytogeography in its unqualified sense is plant-geography, the science of the topical distribution of plants. In this aspect it is purely descriptive, noting the locations in which a species occurs and the merely historical reason for its being there; that is, it answers the questions whether the plant is indigenous or introduced, and if the latter, whence. At this stage also the habitat (that is, the particular sort of situation in which a species grows, as mountain, bog, or seaside) is recorded; but that in the nature of the plant which determines it to its particular station is not yet investigated. Though the abundance or scarcity of a species may be noted, the interest is here in species rather than in individuals or masses, and accordingly the subject-matter of the science is the flora of the earth or of a region, the plant-content of an area taxonomically considered. Plant-taxonomy—based on morphology, which yields the *natural system* (which see, under *natural*)—is a prerequisite of plant-geography, since nothing can be said of the distribution of plants until they are separated into kinds recognizable by constant characters. The science as thus limited has in recent times (by Warming and others) been denominated *floristic plant-geography* or *floristics*, in contrast with ★*œcological phytogeography* (which see). Historically and in natural order of thought the floristic view is first, being represented by numerous floras, by the descriptions of botanical travelers, and by more systematic accounts which pass into the later point of view.

phytoglobulin (fī-tọ-glob′ụ-lin), *n.* [Gr. φυτόν, plant, + E. *globulin*.] A vegetable globulin.

phytograph (fī′tọ-gråf), *n.* [Gr. φυτόν, plant, + γράφειν, write. See *phytography*.] A nature-print of a plant.

phytolaccic (fī-tọ-lak′sik), *a.* [NL. *Phytolacca* + *-ic*.] Pertaining to or occurring in *Phytolacca*.—**Phytolaccic acid,** a light-brown, transparent, gum-like compound, of uncertain composition, found as the potassium salt in the fruit of the pokeweed, *Phytolacca Kæmpferi* and *P. decandra*.

phytolaccin (fī-tọ-lak′sin), *n.* [*phytolacc*(*ic*) + *-in*².] Same as ★*phytolaccic acid*.

phytome (fī′tōm), *n.* [Gr. φυτόν, plant, + *-ome* (*-oma*).] According to Nägeli, the plant body of unicellular plants and of pluricellular ones so long as the cells are entirely similar to each other.

> Endeavors have also been made to establish the idea of a '*phytome*' in addition to that of the thallus.
> *K. E. Goebel* (trans.), Organography of Plants, I. 21.

phytomonera (fī″tọ-mọ-nē′rạ̈), *n. pl.* [Gr. φυτόν, plant, + NL. *monera*. See *moneron*.] Vegetable organisms without nuclei. Few botanists admit the existence of plants without nuclei. Since nuclei have been demonstrated in some of the so-called *phytomonera*, failure to find them in others is no proof of their absence.

phytoparasite (fī-tọ̄-par′ạ-sīt), *n.* [Gr. *φυτόν*, plant, + E. *parasite.*] Same as *parasite*, 2 (*c*).

phytophenological (fī-tọ̄-fē-nọ̄-loj′i-kạ̈l), *a.* [Gr. *φυτόν*, plant, + E. *phenological.*] Of or relating to the phenology of plants.

phytophil (fī′tọ̄-fil), *n.* [Gr. *φυτόν*, plant, + *φιλεῖν*, love.] An animal which lives on plants, as any plant-feeding insect. Also *phytophile.*

To the few hygrophilous "*phytophiles*" given there should be added Linocephalus elegans, which species is typically halophilous in New Jersey.
Entomological News, XVI. 22.

Phytophthires (fī-tof′thi-rēs), *n. pl.* [NL.] Same as *Phytophthiria.*

phytophylogenetic (fī″tọ̄-fī″lọ̄-jẹ̄-net′ik), *a.* [Gr. *φυτόν*, plant, + E. *phylogenetic.*] Of or pertaining to phytophylogeny or the phylogeny of plants.

phytophylogeny (fī″tọ̄-fī-loj′e-ni), *n.* [Gr. *φυτόν*, plant, + E. *phylogeny.*] The phylogeny of plants.

phytoplankton (fī-tọ̄-plangk′tọn), *n.* [Gr. *φυτόν*, plant, + NL. *plankton.*] That part of the plankton of any body of water which consists of plants, usually algæ.

In the spring months there is a great development of diatoms and other *phytoplankton*, which render the water less transparent than at other times of the year.
Geog. Jour. (R. G. S.), XV. 336.

phytoplasm (fī′tọ̄-plazm), *n.* [Gr. *φυτόν*, a plant, + *πλάσμα*, something molded or formed. See *plasm.*] The living substance of plants, as contrasted with that of animals.

phytopsyche (fī′tọ̄-sī-kē), *n.* [Gr. *φυτόν*, a plant, + *ψυχή*, soul.] The plant soul or plant mind. *Haeckel* (trans.), Riddle of the Universe, p. 157.

phytoptid (fī-top′tid), *n.* and *a.* **I.** *n.* A member of the acaridan family *Phytoptidæ.*

II. *a.* Having the characters of or belonging to the family *Phytoptidæ.*

phytoptocecidium (fī-top″tō-sē-sid′i-um), *n.*; pl. *phytoptocecidia* (-ạ̈). [NL. *Phytoptus cecidium* + Gr. *κηκίς* (*κηκιδ-*), a gallnut.] The gall formed by mites of the family *Phytoptidæ.*

phytosaurian (fī-tọ̄-sâ′ri-ạn), *a.* and *n.* **I.** *a.* Pertaining to or having the characters of the genus *Phytosaurus* or *Belodon.*

II. *n.* A member of the genus *Phytosaurus.*

Phytosaurus (fī-tọ̄-sâ′rus), *n.* [NL., < Gr. *φυτόν*, plant, + *σαῦρος*, lizard.] Same as *Belodon.*

phytoscopic (fī-tọ̄-skop′ik), *a.* [Gr. *φυτόν*, plant, + *σκοπεῖν*, view, + *-ic.*] A term suggested by Poulton to describe the effect of the plant environment upon the color of insects: distinct from *phytophagic. Cambridge Nat. Hist.*, VI. 336.

phytosterin (fī-tos′tẹ-rin), *n.* [Gr. *φυτόν*, plant, + *στερεός*, solid, + *-in*^{2}.] A colorless crystalline substance of waxy or fatty appearance, closely allied to cholesterin in composition, found in many different plants, as in peas, beans, lupines, Calabar beans, maize, and the fat oils of the olive, almond, rapeseed, mustard-seed, etc. Also called *phytosterol* and *physosterin.*

phytosterol (fī-tos′tẹ̈-rol), *n.* Same as ⋆*phytosterin.*

phytostrote (fī′tọ̄-strōt), *n.* [Gr. *φυτόν*, plant, + *στρωτός*, spread.] In *phytogeog.*, a plant in which the whole organism is the unit of distribution: including both plankton and terrestrial plants such as tumbleweeds. *F. E. Clements.*

phytotechnic (fī-tọ̄-tek′nik), *a.* [Gr. *φυτόν*, plant, + *τέχνη*, art, + *-ic.*] Relating to that stage of culture in which plants play an essential part in the industries of a people; the stage to which belongs the gradual development of agriculture.

Southeastward from the Muskhogean area lie the Antilles, the Orinoco basin, the Amazon basin, the Mato Grosso and the Pampas. In them men had little to do save to hunt and fish, to fight and to sleep in their hammocks. They were zootechnic, passing into *phytotechnic.*
O. T. Mason, in Pop. Sci. Mo., Feb., 1902, p. 341.

phytotechny (fī-tọ̄-tek′ni), *n.* [*phytotechn*(*ic*) + *-y*^{3}.] The group of industries relating to plants. See ⋆*phytotechnic.*

phytoteratology (fī-tọ̄-ter-ạ-tol′ō-ji), *n.* [Gr. *φυτόν*, plant, + E. *teratology.*] That division of teratology which relates to plants; vegetable teratology. See *teratology*, 2.

phytotoxin (fī-tọ̄-tok′sin), *n.* [Gr. *φυτόν*, plant, + E. *toxin.*] A vegetable toxin, such as abrin, ricin, crotin, etc.

phytovitellin (fī″tọ̄-vī-tel′in), *n.* [Gr. *φυτόν*, plant, + L. *vitellus*, yolk of an egg, + *-in*^{2}.] A vitellin of vegetable origin. *Simon*, Physiological Chem., p. 31.

P. I. An abbreviation of *Philippine Islands.*

pia-arachnoid (pī″ạ-a-rak′noid), *n.* The pia mater and arachnoid considered as one membrane.

piache (pi-ä′chā), *n.* [Also *piace*; South American (Tamanac); Carib. *piai.*] A medicine-man or witch-doctor among the Indians of Central and South America. Also *peai.* See ⋆*peaiman. N. E. D.*

piaga (pi-ä′gä), *n.* [It. *piaga*, sore, wound.] Same as *Aleppo ulcer* (which see, under *ulcer*).

piagnone (pẹ̄-än-yō′nạ̄), *n.*; pl. *piagnoni* (-nẹ̄). [It. *piagnone*, a funeral attendant, a mourner.] A mourner: a name given to the followers of Savonarola in Florence in the latter part of the fifteenth century, from their penitential attitude and appearance.

The Sacre Rappresentazioni, so popular toward the turn of the century in *piagnone* Florence.
B. Berenson, in Burlington Mag., March, 1903, p. 19.

pialin (pī′ạ-lin), *n.* [Gr. *πιαλέος*, fat, + *-in*^{2}.] Same as ⋆*lipase.* Also *pialyn.*

pialler (pi-al′ėr), *v. i.* [A sort of Pidgin-English.] To speak. *E. E. Morris*, Austral English. [Australia.]

pianata (pē-ä-nä′tä), *n.* [It. ? < *piano.*] A street-piano.

pianic (pi-an′ik), *a.* [*pian* + *-ic.*] Pertaining to or suffering from pian or frambœsia.

pianiste (pi-a-nēst′), *n.* [F.] Same as *pianist*: sometimes used as if it were the feminine form of that word.

piano^1, *a.* **II.** *adv.* Softly; in a low tone or voice. Abbreviated *p.*

Chords of three or four notes . . . produce rather a bad effect when played *piano*; they seem rich and energetic only when played loud and boldly.
Berlioz (trans.), Treatise on Modern Instrumentation [and Orchestration, p. 5.

III. 1. *n.* A passage or series of notes sung or played softly; a soft or gentle tone.

An harpsichord, on which . . . may be performed either one or two unisons, or two unisons and one octave, either in the forts or *piano.*
Rimbault, The Pianoforte, its Origin, Progress and [Construction, p. 149.

piano^2, *n.*—**Barrel piano**, a mechanical pianoforte played by a revolving barrel, as the common street-piano.—**Enharmonic piano**, a pianoforte with more than twelve keys to the octave.—**Kafir piano.** Same as *zanze.*—**Piano feed.** See ⋆*feed.*—**Piano hand.** See ⋆*hand.*—**Piano méchanique**, a form of pianoforte, invented by Debain of Paris, which can be played either in the ordinary way or mechanically by means of a board with pins that engage levers connected with a special set of hammers.—**Piano style**, in *music*, a style of composition or of performance characterized by sharp accentuation, detached chords or notes, and rapid passages or delicate embellishments, such as are common in pianoforte music.—**Piano theory of hearing**, in *physiol.* and *psychophys.*, the resonator theory of audition proposed by Helmholtz: opposed to the *telephone* ⋆*theory* of Rutherford. *Baldwin*, Dict. of Philos. and Psychol., I. 451.—**Piano theory of the soul**, in *metaph.*, the dualistic theory which "compares the soul to a musician who plays an interesting piece (the individual life) on the instrument of the body, and then deserts it to live forever on its own account." *Haeckel* (trans.), Wonders of Life, p. 16.—**Upright grand piano**, a form of grand pianoforte, occasionally made from the middle of the eighteenth century, in which the whole body of the instrument was vertical instead of horizontal. It was superseded by the upright or cabinet piano, which is now made with a grand action, but with shorter strings.

piano^3 (pē-ä′nō), *n.*; pl. *piani* (-nẹ̄). [It. *piano*, a plane, a floor, or story. See *piano*^{1}.] In Italian, a story; a floor; the French *étage*: in English, used only in such borrowed phrases as *piano nobile*, the principal story; *pian' terreno*, a ground floor.

The next evening I descended to the *piano nobile* . . . for the annual function at the Palazzo Lugani.
A. and E. Castle, La Bella, in The House of Romance, [p. 34.

piano-action (pi-an′ō-ak″shọn), *n.* In *pianoforte-making*, the entire mechanism by which the tone is produced by the player, including the keyboard and the hammer- and damper-action. See cut under *pianoforte.*

piano-failure (pi-an′ō-fāl″ụ̈r), *n.* Pianists' cramp.

In cases of *piano-failure*, I always examine carefully the extensors of the wrist and fingers.
Allbutt's Sys. Med., VIII. 12. *N. E. D.*

pianofortist (pi-an′ō-fôr-tist), *n.* [*pianofort*(*e*) + *-ist.*] A pianist. [Rare.]

pianola (pẹ̄-ạ-nō′lạ̈), *n.* [Dim. of *piano*^{2}.] The trade-name of a form of ⋆piano-player (which see).

piano-lamp (pi-an′ō-lamp), *n.* A lamp intended for use with a piano: usually one with a firm tripod or other base and an adjustable standard by which it can be raised or lowered.

piano-machine (pi-an′ō-mạ-shēn″), *n.* A machine with pins or keys that are operated by the fingers, like those on a piano, for punching holes in the pattern-cards of a Jacquard machine.

piano-making (pi-an′ō-mā″king), *n.* The art, trade, or occupation of making pianofortes. It properly includes the making of the metal parts, especially the strings and the frame, with its braces and bridges, the making of soundboards and the wooden framework in general, the making of the key- and pedal-action in full, including the keyboard and the very complicated hammer- and damper-action, the assembling of these parts and their regulation, and the making and finishing of the case in which the instrument is inclosed. Most makers buy some or many parts ready-made. Piano-factories, however, are generally complete manufacturing establishments.

piano-organ (pi-an′ō-ôr″gạn), *n.* A mechanical piano constructed in the manner of a barrel-organ. *N. E. D.*

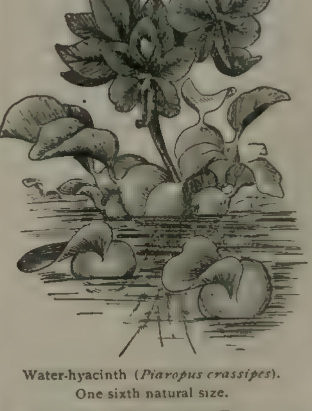
piano-player (pi-an′ō-plā″ėr), *n.* **1.** One who plays upon the pianoforte.—**2.** A mechanical device by which a pianoforte may be sounded automatically, without the action of the player's hands upon the keys. A number of such machines are now made, either in a form detachable from the piano itself or contained within the piano-case. Usually they consist of a blowing apparatus operated by treadles, like a reed-organ (occasionally by electricity), which supplies compressed air both to put in revolution a music-roll with perforations which represent the tones of a given piece, and to actuate a series of levers or 'fingers' that operate the keys of a pianoforte. The music-roll is so inserted that as it is rolled from one cylinder to another its perforations pass over a row of small orifices through which the air is admitted to or discharged from the bellows through pneumatics that control the 'fingers': when a perforation coincides with one of these orifices, its 'finger' is suddenly released and strikes the appropriate key on the keyboard. As now perfected, with various mechanisms for varying the speed of the roll and the loudness of the tones, piano-players have become distinctly important as means for the enjoyment and study of many classes of music, especially as thousands of pieces of music are available for use upon them, including transcriptions of orchestral works and the like that could not otherwise be played by a single player directly.

piano-score (pi-an′ō-skōr), *n.* See *score*^{1}, 9.

pianotype (pi-an′ọ̄-tīp), *n.* A form of electric music-recorder that can be attached to a pianoforte.

piano-wire (pi-an′ō-wīr), *n.* Steel wire such as is used for the stringing of pianos. It has great tensile strength and evenness of size and structure. Also *music-wire.*

Piaropus (pī-ar′ọ̄-pus), *n.* [NL. (Rafinesque, 1836), in allusion to the swollen petioles; < Gr. *πιαρός*, fat, + *πούς*, foot.] The genus of monocotyledonous plants of the family *Pontederiaceæ*, which includes the water-hyacinth, a choice aquatic plant in conservatories of the northern United States and a pestilent river-weed in Florida and Louisiana. The water-hyacinth is most commonly known to florists as *Pontederia azurea* or *P. crassipes*, but the recently accepted disposition is to place it in the allied genus *Piaropus*, where it is known as *P. crassipes.* The specific name *azurea* really belongs to an allied species, *P. azureus*, differing from the common water-hyacinth in not having inflated petioles. Technically, *Piaropus* differs from *Pontederia* in having the mature ovary 3-partitioned and many-ovuled. *Piaropus crassipes* (*Eichhornia speciosa* of Kunth) is a floating plant from Brazil, bearing bladder-like buoys made by the expansion of the hollow petioles. The leaf-blades are ovate and entire. The showy flowers are borne in an



Water-hyacinth (*Piaropus crassipes*).
One sixth natural size.

erect cluster, pale violet in color marked with blue and yellow. In the St. John's river, Florida, the plant has become so abundant as to impede navigation. In shallow water it roots in the mud.

piassava, *n.*—**Bahia piassava**, the fiber of *Attalea funifera.* See *piassava*, 1, *bast-palm*, and *Attalea.*—**Liberian piassava**, the thick, wiry fiber obtained from the leaf-stalks of the bamboo-palm, *Raphia vinifera.* It is largely exported and used for making stiff brooms and brushes. See *West African* ★*bass.*—**Madagascar piassava**, the fiber of *Dictyospermum fibrosum.* See ★*vonitra* and *Madagascar* ★*bass.*—**Para piassava**, the fiber of *Leopoldinia Piassaba.* See *piassava*, 1, *bast-palm*, *monkey* ★*bass*, and *Leopoldinia.*

piatak (pyä-täk′), *n.* [Russ. *pyatákŭ.*] A Russian copper coin of the value of 5 copecks.

piatti (pẹ-ät′tẹ), *n.pl.* [It., pl. of *piatto*, a dish, plate: see *plate.*] In *music*, same as *cymbals.*

piauzite (pi-ou′zīt), *n.* [*Piauze* (see def.) + *-ite.*] A fossil resin of asphalt-like appearance and very high melting-point (315° C.), found in brown coal at Piauze, near Neustädtel, in Carniola, and near Tüffer in Styria.

piazin (pi-az′in), *n.* [Gr. πί(ων), fat, + *azo-* + *-in*².] Same as ★*pyrazin*, 1.

pibcorn (pib′kôrn), *n.* [Gael. *piob*, pipe, + *corn*, horn.] Same as *hornpipe*, 1.

piblockto (pi-blok′tō), *n.* [Greenland Eskimo.] In Greenland, a frenzied condition of dogs which results from continued exposure to extremely cold weather.

> I pushed on until the "*piblockto*," or Greenland dog madness, induced by the continued exposure, got such a hold of my dogs as to make it absolutely impracticable for me to go further, and I cached most of my provisions and turned back. *Geog. Jour.* (R. G. S.), XI. 228.

pic³ (pēk), *n.* [F.] A peak.

picadura (pik-ạ-dö′rạ̈), *n.* [Sp. *picadura*, pricking, puncture.] The scraps which accumulate in making "book d" fillers for cigars.

> These scraps, or *picadura*, as they are called by the trade, etc. *U. S. Dept. Agr.*, Rep. No. 62, p. 18.

picapica (pẹ-kä-pē′kä), *n.* [Sp. *picar*, to sting or prick.] In countries settled by the Spanish, a name of several stinging or prickly plants: in Porto Rico, especially, *Schychowskya æstuans* (*Fleurya æstuans*, of Gaudichaud), a common weed of the nettle family, and *Stizolobium pruriens*, belonging to the *Fabaceæ*, the pods of which are covered with minute stinging hairs.

picarel (pi-kä-rel′), *n.* [F.: see *pickerel.*] A common name of fishes of the family *Mænidæ*, shore-fishes chiefly of the Old World.

picaroon¹, *n.* **3.** A small pirate ship; a privateer or corsair. *N. E. D.*

piccadilly (pik′a-dil-i), *n.* [See *piccadill.*] **1.** Same as *piccadill.*—**2.** A standing collar with the point turned over, worn in London about 1870.—**Piccadilly weepers**, long side-whiskers such as were worn about the middle or third quarter of the nineteenth century. [Slang.]

piccaninny, *n.* **II.** *a.* Little; small: as, a *piccaninny* handful. [Southern U. S. and Australia.]

Piccinnist (pi-chē′nist), *n.* [*Piccinni* (see def.) + *-ist.*] An admirer of the style of Piccinni as an operatist in opposition to that of Gluck: a term much used in the later eighteenth century.

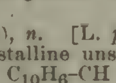
picciolo (pē′chọ̄-lọ̄), *a.* and *n.* [It., small, < *piccolo*, small.] **I.** *a.* Of musical instruments, small: as, a violino *picciolo*, a small violin or pochette.

II. *n.* A small copper coin of Malta, equal to one fifth of a grano.

piccolo, *n.* **3.** The small or treble bugle, usually pitched in E flat.

picconou (pik-ō-nö′), *n.* [Appar. a Canadian F. form of an Amerindian name.] A common name of *Moxostoma lesueuri*, a sucker found in northern North America.

picein (pī′sẹ̄-in), *n.* [L. *picea* (see def.) + *-in*².] A crystalline glucoside, $C_{14}H_{18}O_7 + H_2O$, found in the needles of the fir, *Pinus picea.* When hydrolyzed by emulsin or dilute acids it yields glucose and p-hydroxyacetophenone.

picene (pī′sēn), *n.* [L. *pix* (*pic-*), pitch, + *-ene.*] A crystalline unsaturated polycyclic hydrocarbon,  $\begin{array}{l}C_{10}H_6-CH\\ | \qquad\quad \|\\ C_{10}H_6-CH\end{array}$, with blue fluorescence, which is found in the pitch-like residues from the distillation of lignite-tar and petroleum. It is also made synthetically.

piceol (pī′sẹ-ol), *n.* [*pice*(*in*) + *-ol.*] A name given to p-hydroxyacetophenone obtained by the hydrolysis of picein before its identity was discovered.

piceorufous (pī″sẹ̄-ọ̄-rö′fus), *a.* [L. *piceus*, pitchy, + *rufus*, red, + *-ous.*] Of a very dark, dull red suffused with black.

piceously (pī′sẹ̄-us-li), *adv.* Of a piceous or pitchy color.

picescent (pi-ses′ẹnt), *a.* [See *piceous.*] Nearly or somewhat pitch-black in color. [Rare.]

picha-de-gato (pē″chä-dā-gä′tō), *n.* [Sp. *picha*, penis, + *de*, of, + *gato*, cat.] In Porto Rico, *Scolosanthus versicolor*, a rubiaceous shrub armed with sharp slender spines and bearing small white berries crowned with the persistent calyx.

picha-de-perro (pē″chä-dā-per′rō), *n.* [Sp. *picha de perro*, cynophallus, < *picha*, penis, + *de*, of, + *perro*, dog.] In Cuba, a seaside shrub or small tree, *Capparis cynophallophora*, indigenous to the West Indies and tropical America, bearing peculiar reddish-brown fruit having a flavor of mustard, and sometimes used as a remedy for dropsy. See *bottle-cod.*

pichey, pichy (pich′i), *n.* [Guarani?] A local name in Chile and Argentina of the rare little armadillo, *Dasypus minutus.* *Proc. Zool. Soc. London*, 1902, p. 277.

pichi (pē′chē), *n.* [S. Amer.] In Chile, *Fabiana imbricata*, a small shrub of the nightshade family, with white flowers and the general aspect of a heath. From its leafy resinous tops a fluid extract has been prepared which is efficacious as a remedy for cystitis and inflammation of the urethra.

Pichurim-bean fat. See ★*bean*¹.—**Pichurim camphor, Pichurim fat.** See ★*camphor.*

picite (pī′sīt), *n.* [NL. *picites*, < L. *pix* (*pic-*), pitch, + *-ite.*] An amorphous hydrated ferric phosphate, occurring in dark-brown coatings and stalactitic forms.

pick, *v. t.*—**Pick-off attachment**, an automatic gripping-device for removing the ware or other objects stamped or drawn in a sheet-metal press having a dial-feed. It picks off and removes the object from the revolving female dies as they pass beyond the male die. In this sense it is allied to the ejector.—**To pick the rear.** See *to* ★*sack the rear.*—**To pick up.** (*e*) To catch with the eye; recognize or identify (a distant object looked for).

> The haze in the daytime makes it very difficult to see far, and the mist at sunrise is still worse. We found, on many occasions, that with all our telescopes and field-glasses we could not *pick up* a flag at a range of 4 or 5 miles, or even less. *Geog. Jour.* (R. G. S.), X. 246.

pick¹, *n.* **11.** One weft-thread in a piece of cloth.—**Double pick**, in *weaving*, two picks of weft-threads in the same shed of the warp.—**Round pick**, a small depression of the surface of an electrotype plate: usually caused by an unperceived air-bubble between the copper shell and its base of type-metal.—**Solid pick**, an unintended small dot or blotch in print caused by the accidental adhesion of a bit of metal upon the printing-plate.

pickaroon (pik-ạ-rōn′), *n.* Same as *picaroon*².

pick-a-tree (pik′ạ-trē), *n.* The great green woodpecker. *N. E. D.*

pickax (pik′aks), *v.* **I.** *trans.* To cut or clear away with a pickax.

II. *intrans.* To use a pickax.

pick-dressing (pik′dres″ing), *n.* The process of shaping a stone with the point of a pick. It is a more delicate form of hammer-dressing.

picker, *n.* **3.** (*j*) In *agri.*, an apparatus or machine for picking or gathering cotton in the fields. (*k*) In *mining*: (1) A particular form of hand-chisel. (2) A wire or needle used to pick out the tamping from over a blasting-charge that has failed to explode. [Eng.]

picker-stick (pik′ėr-stik), *n.* Same as ★*pecking-arm.*

picket¹, *n.*—**Small pickets**, pointed stakes employed in forming a military obstacle.

picket¹, *v. t.* **6.** To place a picket or guard (see *picket*¹, *n.*, 3) near a shop or mill, during a strike, to prevent men who do not belong to the striking organization or body from obtaining work in the shop, or to prevent the employers from securing such laborers.

> The men formerly in his employ may be actually drawing "strike pay" from their unions, and "*picketing*" his works to prevent their places being filled. *Encyc. Brit.*, XXXIII. 15.
>
> Kay invented many other machines for carding or combing cotton and others, which may be seen in the Patent Museum in South Kensington. He was beset and *picketed* and much ill-used by those whom he benefited. He had to leave Bury to save his life, and died in poverty and obscurity in France, and it is not known where he is buried. *Sci. Amer. Sup.*, Jan. 10, 1903, p. 22594.

pick-handspike (pik′hand″spīk), *n.* A handspike into the butt of which a steel spike is fitted.

picking, *n.* **9.** A rough sorting or cleaning, as of coal, from impurities.—**Coarse picking** or **plucking**, in *tea-growing*, a picking in which larger leaves are taken than in fine picking.—**Fine picking**, in *tea-growing*, the picking of the unexpanded bud and first three young leaves for the finest grades of tea. Sometimes only a part of a given leaf is taken. See ★*pekoe.*

picking-bed (pik′ing-bed), *n.* The layers of stone beneath the external crust or rag in an English quarry. *M. A. Green*, Eighteenth Century Architecture of Bath, p. 94.

picking-machine (pik′ing-mạ-shēn″), *n.* In *cotton-manuf.*, a scutcher or picker.

picking-plate (pik′ing-plāt), *n.* A piece of metal against which the picking-cam or tappet strikes in throwing the shuttle across a loom.

picking-scroll (pik′ing-skrōl), *n.* A picking-motion employing a scroll for throwing a shuttle across the loom.

picking-shaft (pik′ing-shȧft), *n.* The shaft of a loom which carries the picking-cam or tappet for operating the mechanism which propels the shuttle.

picking-table (pik′ing-tā″bl), *n.* In *transportation*, a platform-carrier or a belt-conveyer when used as a sorting-table. Coal, city refuse, or other mixed material to be sorted is fed to the moving conveyer and carried between two rows of pickers or sorters, who stand on each side of the moving table and pick the slate from the coal, or the old metals, fabrics, etc., from the refuse, as it passes between them. It is used in coal-breakers and destructor plants.

pick-it-up (pik′it-up), *n.* A local (child's) name for the Australian diamond-bird, *Pardalotus*, given on account of its sharp note. *E. E. Morris*, Austral English.

pickle², *n.* **7.** A solution of salt and sulphuric acid in which skins are packed to preserve them. Sometimes other ingredients are used. *Flemming*, Practical Tanning, p. 184.

pickle-moth (pik′l-môth), *n.* The adult of the pickle-worm (which see).

pickle-plant (pik′l-plant), *n.* Same as *slender* or *jointed* ★*glasswort.*

pickle-pot (pik′l-pot), *n.* An early form of condenser for steam-engines, consisting of a small vessel attached to the end of the cylinder and containing water.

> Such condensers were known as "*pickle-pots.*" *Nature*, Nov. 19, 1903, p. 68.

pickle-weed (pik′l-wēd), *n.* Same as *woody* ★*glasswort.*

pickling (pik′ling), *n.* **1.** The act of putting anything in pickle or brine; the process of preserving in pickle.—**2.** The immersion of sheet-iron or wire in acid, in order to clean it.

pickpole (pik′pōl), *n.* A pole into the butt of which a steel point, or pick, is fastened: used by lumbermen. [U. S.]

pickpurse, *n.*—**Purgatory pickpurse, pickpurse purgatory**, a dyslogistic term of sixteenth century controversy, used originally apparently by Latimer, in reference to the use made of the doctrine of purgatory to obtain payments for masses for departed souls, etc.

> It may be well and justly called *Purgatorie Pickpurse*; . . . wealth and great riches of the clergy, was the only mark they aimed at. *H. Smith*, Arrow agst. Ath., 60. *N. E. D.*

pick-up, *a.* **II.** *n.* In *printing*, types already composed and previously used, claimed by the type-setter as his own composition.

picnic, *n.* **2.** Something undeniably good or easy; a 'soft thing'; a snug berth; a treat; an easy job. [Slang.]—**3.** A lively, difficult, or awkard experience. [Slang.]

> I had a *picnic* with him [a kicking horse] coming down the hill by Arbuckle's. *The Century*, LXII. 223.

picoid (pī′koid), *a.* [L. *picus*, woodpecker, + *-oid.*] Resembling or having the characters of the *Picidæ* or woodpeckers.

picoline (pik′ọ̄-lin), *n.* Methylpyridine, $C_5H_4.N.CH_3$, an oily basic liquid formed by the dry distillation of coal, and also made synthetically. There are three varieties, α-, β-, and γ-picoline, which boil at 129°, 143.5°, and 142.5–144.5° C., respectively. Alpha-picoline is found in bone-oil. All three varieties have a strong odor resembling pyridine; they attack organic substances and are strong bases.

picolinic (pik-ọ̄-lin′ik), *a.* [*picoline* + *-ic.*] Derived from picoline.—**Picolinic acid**, a crystalline compound, 2-pyridine-carboxylic acid, $C_5H_4N.COOH$, made by oxidizing α-picoline with potassium permanganate. It melts at 134.5–136° C. and is easily reduced to α-picoline. The two isomeric acids, made by the oxidization of β- and γ-picoline, are known as *nicotinic* and *isonicotinic acid*, respectively.

Picopasseres (pī-kō-pas′ẹ-rēz), *n. pl.* [NL., < L. *picus*, a woodpecker, + *passer*, pl. *passeres*, a sparrow.] A group of birds comprising the *Passeres, Pici*, and a few other families of birds, the combination varying according to the view of the authority. Seebohm calls the group an order, while Fürbringer extends its limits and considers it a suborder.

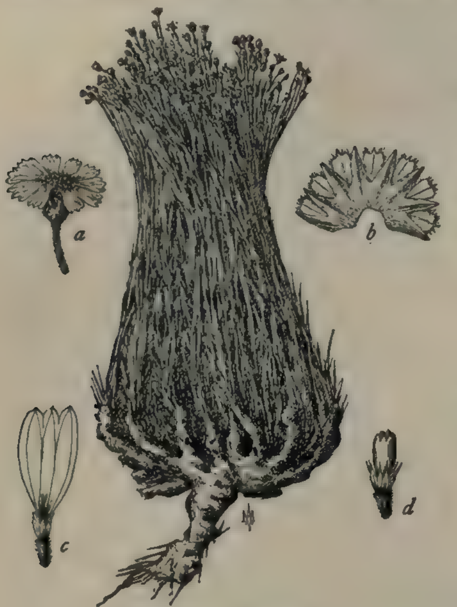
picopasserine (pī-kō-pas′ẹ-rin), *a.* [*Picopasser(es)* + *-ine*¹.] Pertaining to or having the characters of the *Picopasseres*.

picotah, picottah (pi-kọt′ạ̈), *n.* [Also *picota, pacota*; < Pg. *picota*, the brake of a ship's pump.] The name in southern India, of a device for raising water similar to the *shadoof*. See *shadoof*. *Yule and Burnell.*

picqueter (pik′e-tėr), *n.* [F. *piquet* (*de fleurs*), a bunch of artificial flowers, + *-er*.] One who arranges artificial flowers in bunches. *N. E. D.*

picraconitin (pik-ra-kon′i-tin), *n.* [Gr. πικρός, bitter, + E. *aconite* + *-in*².] An amorphous alkaloid of uncertain composition, perhaps $C_{31}H_{43}O_{11}N$, found in aconite-root, and also made by heating aconitin with dilute hydrobromic acid. Also called *benzoylaconin*.

Picradenia (pik-ra-dē′ni-ạ̈), *n.* [NL. (Hooker, 1834), < Gr. πικρός, bitter, + ἀδήν, gland; in allusion to the bitter glands of the corolla in *Picradenia Richardsoni*.] A genus of annual or perennial yellow-flowered herbaceous plants of the family *Asteraceæ*. There are about 12 species, natives of the western United States. The genus is characterized by alternate entire narrow or narrowly lobed leaves, and a double involucre composed of an outer series of narrow rigid bracts which are connate at the base and form a sort of cup inclosing an inner series of separate broader ones. A variety of *P. floribunda* is widely distributed in the southwestern United States and is locally known as *rabbit-weed* or *pingue*. Its rootstocks contain a resinous substance somewhat resembling rubber and the plant has been considered as a possible source of a substitute and adulterant for low-grade rubbers.



Picradenia floribunda.
a, flower-head; *b*, involucre; *c, d*, flowers.

picradonin (pik-rad′ọ-nin), *n.* [Gr. πικρός, bitter, + E. *adon(id)in*.] A very pure form of adonidin.

picramic (pik-ram′ik), *a.* [*picr(ic)* + *am(ine)* + *-ic*.] Derived from picric acid by reduction.—**Picramic acid**, a red crystalline compound, 4,6-dinitro-2-aminophenol, $C_6H_2(OH)(NO_2)_2(NH_2)$, made by the reduction of picric acid with acetic acid and iron, or by some other mild reducing-agent.

picramide (pik-ram′id), *n.* [Gr. πικρός, bitter, + E. *amide*.] A dark-yellow crystalline compound with a bluish luster, made by the action of ammonia on ethyl picrate; 2,4,6-trinitroaniline, $C_6H_2NH_2(NO_2)_3$. It melts at 188° C.

Picrasma (pik-raz′mạ̈), *n.* [NL. (Blume, 1825), in allusion to the bitter bark and wood; < Gr. πικρασμός, bitterness.] A genus of dicotyledonous trees or shrubs belonging to the family *Simaroubaceæ*. They are characterized by their large, unequally pinnate leaves and small flowers in axillary panicles. The 8 species are natives of tropical regions. See *Picræna*.

picrasmin (pik-raz′min), *n.* [*Picrasma* + *-in*².] A bitter principle contained in the wood of quassia, *Picrasma excelsa*.

picrate, *n.*—**Ammonium picrate.** See ★*ammonium*.—**Brugère's picrate powder.** See ★*powder*.—**Potassium picrate**, a substance, crystallizing in golden-yellow needles, which explodes with a heavy shock. Its explosive force is much increased by the addition of potassium nitrate or chlorate, but it becomes much more dangerous in use. It has been employed in the manufacture of Designolle's powder and other powders.

picrin (pik′rin), *n.* [Gr. πικρός, bitter, + *-in*².] A bitter substance, probably impure digitalin, obtained from the foxglove, *Digitalis purpurea*.

picro-. [Gr. πικρός, bitter.] An occasional prefix with mineralogical names, used to indicate the presence of magnesium.

picrocrocin (pik-rọ-krō′sin), *n.* [Gr. πικρός, bitter, + κρόκος, saffron, + *-in*³.] A bitter crystalline glucoside, $C_{38}H_{66}O_{17}$, extracted from saffron. When hydrolyzed it yields glucose and a terpene, $C_{10}H_{16}$. It melts at 75° C.

picrocyanic (pik″rọ-sī-an′ik), *a.* [Gr. πικρός, bitter, + E. *cyanic*.] Noting an acid, the same as *isopurpuric acid*.

picroerythrin (pik″rọ-e-rith′rin), *n.* [Gr. πικρός, bitter, + E. *erythrin*.] A bitter crystalline substance made by boiling erythrin with water, alkalis, or alcohol. It is monoörsellinate of erythrite, $C_{12}H_{16}O_7 + 3H_2O$, the boiling effecting a partial hydrolysis of the erythrin. When boiled with lime it is broken down into carbon dioxid, orcinol, and erythrite. It melts at 158° C.

picroglycion (pik-rọ-glis′i-ọn), *n.* [Gr. πικρός, bitter, + γλυκύς, sweet, + *-i-on*.] Same as *dulcamarin*.

picrol (pik′rol), *n.* [Gr. πικρός, bitter, + *-ol*.] A trade-name of potassium diiodoresorcinolsulphonate, $(\overset{1.3}{HO})_2C_6HI_2SO_3K$, a colorless, odorless, bitter crystalline powder. It is used in surgery as a substitute for iodoform.

picromel (pik′rọ-mel), *n.* [Gr. πικρός, bitter, + μέλι, honey.] A bitter-sweet substance obtained from bile. *N. E. D.*

picronitrate (pik-rọ-nī′trāt), *n.* Same as *picrate*.

picropharmacolite (pik-rọ-fär′ma-kọ-līt), *n.* [Gr. πικρός, bitter, + φάρμακον, drug, + λίθος, stone.] A hydrous phosphate of calcium and magnesium, occurring in white spherical or botryoidal aggregates.

picropodophyllin (pik-rọ-pod-ọ-fil′in), *n.* [Gr. πικρός, bitter, + E. *podophyll(ic)* + *-in*².] The lactone of podophyllic acid. It crystallizes in needles which have a bitter taste and melt at 227° C.

picrosclerotin (pik-rọ-sklē′rọ-tin), *n.* [Gr. πικρός, bitter, + *σκληρωτός, hardened (see *sclerosis*), + *-in*².] A bitter, poisonous alkaloid found in ergot of rye.

picrotin (pik′rọ-tin), *n.* [Gr. πικρός, bitter, + *-t-* + *-in*².] A crystalline, non-toxic, bitter substance, $C_{25}H_{30}O_{12}$ or $C_{15}H_{18}O_7$(?), found in moonseed, *Menispermum cocculus*. It melts at 250–251° C., first turning yellow and beginning to fuse at 245° C.

picrotoxid (pik-rọ-tok′sid), *n.* [*picrotox(in)* + *-id*¹.] A crystalline compound, $C_{15}H_{16}O_6$, formed by the action of acetyl chlorid on picrotoxin, or by passing hydrochloric-acid gas through its ethereal solution. It melts above 310° C.

picrotoxinin (pik-rọ-tok′si-nin), *n.* [*picrotoxin* + *-in*².] A crystalline, poisonous, bitter compound, $C_{15}H_{16}O_6 + H_2O$, formed, together with picrotin, when picrotoxin is boiled with benzene or chloroform, and also in other ways. It melts at 200–201° C.

picryl (pik′ril), *a.* [*picr(ic)* + *-yl*.] Pertaining to or derived from picric acid.—**Picryl brown.** See ★*brown*.

pictarne, *n.* Same as *picktarny*.

pictarnie, *n.* A better spelling of *picktarny*.

pictoglyph (pik′tọ-glif), *n.* [L. *pictus*, painted, + Gr. γλυφή, a carving.] A picture carved in a rock or other hard surface: sometimes synonymous with *petroglyph*.

pictographically (pik-tọ-graf′i-kạl-i), *adv.* In a pictographic manner; by means of pictographs.

pictorial, *a.* **II.** *n.* A pictorially illustrated periodical.

pictorialize (pik-tō′ri-ạl-īz), *v. t.*; pret. and pp. *pictorialized*, ppr. *pictorializing*. [*pictorial* + *-ize*.] To represent pictorially; represent in or as in a picture. [Rare.]

> If he has not so trained himself he is certain to *pictorialize* what he should conventionalize.
> *Encyc. Brit.*, XXXI. 4.

pictura, *n.* **2.** The art of painting; style of painting.

> The models set by the great *pictura* in the works of Polygnotus and his school were familiar to all.
> *Eugénie Sellers*, in Jour. Hellenic Studies, XIII. 9.

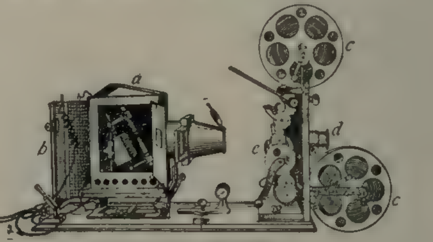
picture, *n.* **8.** A representative; a pattern: as, a *picture* of incompetence; a perfect *picture* of a horse. [Chiefly colloquial.] *Halliwell.*

> I 've seen a vast o' dogs, but Rip was t' prettiest *picter* of a cliver fox-tarrier 'at iver I set eyes on.
> *R. Kipling*, Private Learoyd's Story, Soldiers Three, p. 31.

9. In *med.*, the aggregation of phenomena presented by a disease.

> Tubercular, carcinomatous or syphilitic ulcerations in the rectum may closely simulate the *picture* of dysentery with localization of the lesions in the lower end of the colon. *Phil. Med. Jour.*, Jan. 31, 1903, p. 214.

10. In *theatr.*, the combined optical effect of the scenery, furniture, lighting, etc., and the groupings in which the performers may happen to be placed at any given moment in the play. As each group of performers tends to dissolve, as they move through the action of the play, there is presented on the stage a continuous series of pictures, one insensibly melting into the next, each being a combination of a group of people, with the scenery. The last picture in each act is usually held motionless for an instant to fix it upon the minds of the audience and thus suspend the interest until the next act.—**Final picture**, the last picture in a play; it is designed to be a pictorial presentation of the logical outcome of the problem presented by the play. See *stage position*, under ★*stage*.—**Moving-picture machine**, a machine operated by hand or by a small motor and used in producing the optical effect called a *moving-picture*. The most simple form is the mutoscope. For projections, the machine is a specialized form of lantern, having the usual lens and lamp and a special type of shutter, and also an apparatus for passing a ribbon containing a large number of transparent positives (slides) through the focus of the lens. The ribbon, wound upon a spool, is led by guides before the lens and rewound upon a second spool. This movement is controlled either by sprocket-wheels whose sprockets engage perforations in the edge of the ribbon, or by cams which press at intervals upon the ribbon. Under each of the systems the movement is made intermittent, the ribbon moving the length of one positive or until exactly in focus, when it pauses for a fraction of a second and then advances until the next positive is in position, and so on. This intermittent motion coincides exactly with the operation of the shutter of the lantern, the shutter being closed while the ribbon is in motion and open during the pause, thus allowing each positive in turn to project its image on the screen when at rest. The result of this combined movement of shutter and ribbon is the projection of a series of pictures alternated with periods of darkness when no picture is visible on the screen, persistence of vision serving completely to hide from the spectator the absence of light and causing all of the pictures of the series to blend into one continuous picture. Since each picture exhibits a phase of the motion of the object photographed, the sum of the combined pictures is one picture, apparently exactly reproducing the actual motions and changes of the original scene.



Moving-picture Machine.
a, arc-lamp; *b*, rheostat; *c,c*, film-holders; *d*, objective; *e*, mechanism for moving film and operating shutter.

picture-card (pik′tụ̄r-kärd), *n.* **1.** A card containing a picture: usually intended for the instruction or amusement of children.—**2.** A court card in a pack of cards.

picture-hat (pik′tụ̄r-hat), *n.* A woman's hat supposed to be made in imitation of one shown in some striking portrait (as, for example, a portrait by Gainsborough): usually a wide-brimmed hat with flowing plumes. See *Gainsborough hat*, under *hat*¹. [Colloq.]

picucule (pik′ụ̄-kūl), *n.* [F., < L. *picus*, woodpecker, + *cuculus*, cuckoo.] A bird of the family *Dendrocolaptidæ*.

picuda (pẹ-kö′dä), *n.* [Sp. *picuda*, fem. of *picudo*, beaked, peaked, pointed: see ★*picudo*.] A fish, *Sphyræna picuda*, of the tropical West Atlantic; the great barracuda.

picudilla (pē-kö-dēl′yä), *n.* [Sp., dim. of *picuda*; as a substantive, a species of birds, etc. See ★*picuda*.] A common Spanish name of *Sphyræna picudilla*, a fish of the West Indies and south to Brazil.

picudo (pẹ-kö′dō), *n.* [Sp. *picudo*, beaked, peaked, pointed, < *pico*, a beak, point. See *pike*¹.] A common name in southern Texas and Mexico for the Mexican cotton-boll weevil, *Anthonomus grandis*.

pidgery, *n.* Same as ★*pitcheri*.

pidyon ha ben (pid-yōn′ hä ben′). [Heb.: *pidyon*, redemption, ‹ *padah*, redeem; *ha*, (of) the; *ben*, son.] Among the Jews, 'the redemption of the [first-born] son': a ceremony based upon the words of Exodus xiii. 2, 15: "Sanctify unto me all the first-born, . . . both of man and of beast; . . . but all the first-born of my children I redeem." When the first-born male child is a month old, his father presents him to the priest and says: "This my first-born son is the first-born of his mother, and the Holy One, blessed be his name, commanded me to redeem him," etc. The father then puts five shekels of silver, or its equivalent in money of the country in which he resides, in the hands of the priest. The priest then asks: "Which would you prefer—to give me the child or the five shekels?" The father replies: "I wish to redeem him, and here is the value of his redemption." Then the father pronounces a blessing, and the priest holds the money over the head of the child, and at the same time says: "This [money] is instead of that; this is the exchange for that; this is in remission of that."

pie[1], *n.*—**Washington pie**, sponge layer-cake with pastry cream or chocolate filling.

pie[6] (pẹ-ä′), *n.* [Sp. *pie* = It. *piè*, foot, ‹ L. *pes* (*ped-*), foot. See *foot*.] A Spanish and Spanish-American unit of length, the foot, equal to from 10.97 to 11.13 inches in Spain, and to 11.37 inches in Argentina.

piè (pẹ-ä′), *n.* [It., = Sp. *pie*. See ⋆*pie*[6].] In Italy, a measure of length, the foot, equal, at Lucca, to 11.94 inches.

piece, *n.* 15. A small portion of time; a little while. [Colloq.]

> "Dad," said Dan, "we've done our chores. Can't we go overside a *piece?*" *R. Kipling*, Captains Courageous, iii.

Clear piece, in *chess*, a gain during play which leaves a player with a superiority of forces: as, to have a *clear* rook, bishop, or knight, that is, to have one more rook, bishop, or knight on the board than one's opponent, the other pieces and pawns being in equal numbers on the board.—**Macaroni-piece.** See ⋆*macaroni*, 5.—**Salon piece,** a piece of salon music.—**Set piece.** (*a*) See *set*[1], *p. a.* (*b*) In fireworks, a piece, more or less elaborate, which is fastened to a standard, and when it is ignited, shows a design, such as a face, etc.—**Town piece,** an English copper token issued by a town.—**Twenty-shilling piece,** an English gold coin of Charles I.

piece-fraction (pēs′frak″shọn), *n.* In *printing*, a fraction made by combining two figures (one containing the dividing-line) on bodies one half the size of the type of the text: as in $\frac{11}{22}$ ($^{11}_{22}$).

piece-hall (pēs′hâl), *n.* A building in which piece-goods are kept or sold. See the extract.

> The *piece-hall*, a large quadrangular structure occupying more than 2 acres of ground, erected in 1799 for the lodgment and sale of piece goods, but now used as a market for fish and vegetables. *Encyc. Brit.*, XI. 384.

piece-labor (pēs′lā″bọr), *n.* Labor paid by the piece.

piece-lace (pēs′lās), *n.* Lace made in broad pieces which can be cut and used like cloth. *N. E. D.*

piece-looker (pēs′lu̇k″ėr), *n.* An inspector of cloth that is woven in definite lengths or pieces. *N. E. D.*

piece-market (pēs′mär″ket), *n.* The market for cloth sold by the piece. *N. E. D.* [Eng.]

piece-trade (pēs′trād), *n.* The trade in pieces of cloth. *N. E. D.* [Eng.]

piece-velvet (pēs′vel″vet), *n.* Velvet made in pieces of greater width than that of a ribbon.

piece-wool (pēs′wu̇l), *n.* A small quantity of assorted wool sufficient for the manufacture of a piece, or web, of goods of a certain length and weight: a term used when cloth-manufacture was a home industry.

piecing-machine (pē′sing-ma-shēn″), *n.* In *cotton-manuf.*, a small machine used for piecing two threads together.

Pie-crust ware. See ⋆*ware*[2].

pied-à-terre (pyā-dä-tãr′), *n.* [F., *pied*, foot, *à*, to, on, *terre*, earth.] 1. A temporary lodging; a lodging or small apartment which one keeps for convenience to use in passing through a town, etc.—2. *Mil.*, a foothold; a place from which to sally forth and upon which to retreat, as in a sortie upon an enemy.

> It was on Richthofen's recommendation that the bay of Kiao-chow was selected for the German *pied-à-terre* in China, and the province of Shantung as a German "sphere of influence." *Encyc. Brit.*, XXVIII. 629.

piedmont (pēd′mont), *n.* and *a.* [A generalized use of *Piedmont*, F. *Piémont*, It. *Piemonte* (ML. *Pedemons*, *Pedemontium*), 'foot of the mountain,' a district and province of northwestern Italy. Compare ⋆*monadnock*.] I. *n.* In *phys. geog.*, a district lying along or near the foot of a mountain-range, like the plain of northwestern Italy near the Alps: applied, for example, to the rolling land next east of the Blue Ridge in Virginia, called sometimes the *Piedmont Plain*.

II. *a.* Having the physical character of a piedmont or its relations to a mountain-range: as, a *piedmont* region or district.

> The Mattapony and Pamunkey rivers rise in the "*piedmont*" region of Virginia, and, flowing south-east, join at West Point to form York river, which is throughout a tidal estuary. *Encyc., Brit.*, XXVIII. 918.

> Würm or Starnberger Lake, 15 miles southwest of Munich, is one of several water-bodies *piedmont* to the Alps on the upland of southern Bavaria.
> *W. M. Davis*, in Science, Nov. 29, 1901, p. 858.

Alluvial piedmont plain, a compound alluvial fan; a succession of alluvial fans fringing the base of a mountain-range. The lower edge of such a plain is usually lobate. *Chamberlin and Salisbury*, Geol., I. 173.—**Piedmont belt,** the region at the foot of a mountain-range: as, the *piedmont belt* of Virginia. *W. M. Davis*, in Science, Nov. 29, 1901, p. 859.—**Piedmont glacier.** See ⋆*glacier*.

piedra (pẹ-ā′drä), *n.* [Sp., stone, ‹ L. *petra*, a rock, a stone.] A disease of the hair observed in South America (Colombia), marked by the formation of numerous minute bead-like enlargements.

> In 1876, Osorio of Bogota, described an alteration in the hair, fairly common in Colombia on the hair of women, but exceptional on the hair of men, consisting of a whitish nodosity, hard, of variable size and disposition, which he believed due to the concretion of cells of the hair. The disease is commonly known as *piedra* (stone) on account of the consistence of the nodes and from the crepitation when a comb passes over the affected hairs. Two years later Desenne, in hair from Colombia affected with *piedra*, found nodes formed of spores 12–15 μ, strongly refractile, colourless, with articulated filaments, irregularly scattered outside the hair. Analogous nodular lesions were found in Europe by Knoch in Russia in 1866, Lindermann in 1867, and Beigel in 1869 in England, on the hair of wigs and the hair of patients.
> *Jour. Trop. Med.*, Dec. 15, 1904, p. 393.

pieno (pẹ-ā′nō), *a.* [It. *pieno*, m., *piena*, fem., ‹ L. *plenus*, full. See *plenty*.] In *music*, full: as, *organo pieno*, full organ; *coro pieno*, full chorus; *a voce piena*, with full voice.

pier, *n.*—**Compound pier,** in *arch.*, a pier made up of several prisms or cylinders, or both, or of parts of them. A clustered column is one form of a compound pier.

pier-dam (pēr′dam), *n.* A pier built from the shore, usually slanting down-stream, to narrow and deepen the channel, to guide logs past an obstruction, or to throw all the water on one side of an island; a wing-dam.

Pierian, *a.*—**The Pierian spring,** a fountain in Pieria (a region in northern Thessaly and southern Macedonia), sacred to the Muses, and said to confer poetic and intellectual fire on all who drank of it.

pierid (pī-er′id), *n.* and *a.* I. *n.* A member of the lepidopterous family *Pieridæ*.

II. *a.* Having the characters of or belonging to the family *Pieridæ*.

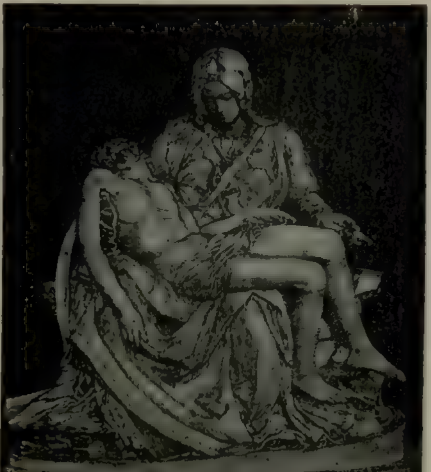
Pierrette (pye-ret′), *n.* [F. fem. dim. of *Pierre*, Peter.] A female buffoon. See *Pierrot*.

piesoclase, *n.* Same as ⋆*piezoclase*.

piesoluminescence, *n.* Same as ⋆*piezoluminescence*.

Piet[2] (pēt), *n.* [D. *Piet*(*er*), Peter.] A nickname for a Boer.

> I ain't more proud of 'avin won,
> Than I am pleased with *Piet*.
>   Ah there, *Piet!*—picked up be'ind the drive!
>   The wonder wasn't 'ow 'e fought, but 'ow 'e kep' alive!
> *R. Kipling*, The Five Nations, Piet, st. 5.



Pietà, by Michelangelo. – In the Vatican.

pietà (pẹ-ạ-tä′), *n.* [It. See *piety*.] In Italian art, painting or sculpture, a composition which represents the Madonna seated and bearing in her arms or on her knees the dead body of Christ. The most famous example is the Pietà of Michelangelo in the Capella della Febbre at St. Peter's, Rome.

> Puvis [de Chavannes] first exhibited in the Salon of 1850 a "*Pietà*." *Encyc. Brit.*, XXXII. 96.

piezoclase (pī′e-zō-klās), *n.* [Irreg. ‹ Gr. πιέζειν, press, + κλάσις, fracture.] In *geol.*, a name proposed by A. Daubrée for those small fractures in rocks which are the result of pressure in earth-movements. *Geikie*, Text-book of Geol., p. 658.

piezocrystallization (pī″e-zō-kris″tạ-li-zā′-shọn), *n.* [Irreg. ‹ Gr. πιέζειν, press, + E. *crystallization*.] Crystallization under great pressure, as in rock-masses. The pressure may be due to both the weight of the superincumbent rock-mass and to orographic movement. *Geikie*, Text-book of Geol., p. 718.

piezo-electric (pī″e-zọ-ẹ-lek′trik), *a.* [Irreg. ‹ Gr. πιέζειν, press, squeeze, + E. *electric*.] Pertaining to or of the nature of piezo-electricity.

piezoluminescence (pī″e-zō-lū-mi-nes′ẹns), *n.* [Irreg. ‹ Gr. πιέζειν, press, + E. *luminescence*.] The emission of light, observed in certain crystals, as the result of pressure. See ⋆*luminescence*.

piezometer, *n.* 6. An instrument for measuring the degree of resistance of the tissues of the body.

piezometric (pī″e-zō-met′rik), *a.* [*piezometer* + *-ic*.] Relating to the piezometer; relating to the pressures measured by the piezometer; relating to pressure in general, especially in the atmosphere, ocean, or other fluid, or within elastic or viscous solids.

piezometry (pī-e-zom′e-tri), *n.* [*piezometer* + *-y*[3].] The measurement of pressures, specifically of the great pressures employed in the investigation of the compressibility of matter; the use of the piezometer.

pifferaro (pif-ẹ-rä′rō), *n.* [It., ‹ *piffero*. See *piffero*.] An Italian strolling musician who plays the piffero.

piffle (pif′l), *v. i.*; pret. and pp. *piffled*, ppr. *piffling*. [Imitative.] 1. To do something (or nothing) in a lazy, ineffective way; idle; dawdle; talk idly or nonsensically.—2. To be squeamish. [Colloq. in both uses.]

piffle (pif′l), *n.* [*piffle*, *v.*] Something trifling or nonsensical; trifling talk; twaddle. [Colloq.]

> He 'd talk a lot of *piffle*, would n't he—oh, but he 's a brilliant sort of chap.
> *Oliver Onions*, Compleat Bachelor, ii.

> After one long afternoon at a garden party, he explained to his major that this sort of thing was "futile *piffle*," and the major laughed.
> *R. Kipling*, The Brushwood Boy, in The Day's Work, p. [397.

piffler (pif′lėr), *n.* A trifler; a twaddler. *N. E. D.*

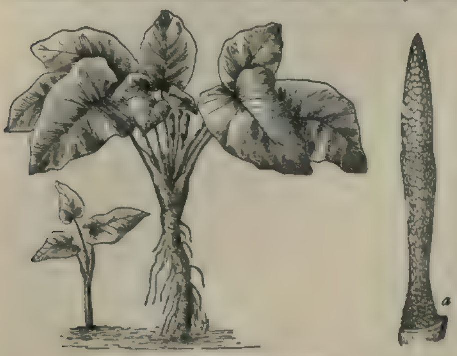
> Lord; but this chap is dull . . . Dull! he 's a perfect *piffler*. *Westminster Gaz.*, Dec. 4, 1896.

piffling (pif′ling), *a.* [*piffle*, *v.*] Trifling; insignificant; twaddling. [Colloq.]

> We are sorry to learn that the long controversy carried on in the English Notes and Queries in regard to the use of the split infinitive has closed with but a *piffling* result.
> *N. Y. Times*, March 18, 1905.

pig[1], *n.* 5. Pig-iron collectively or any specified amount of iron pigs.—6. In *forestry*, see ⋆*rigging-sled*.—**Forest pig,** a species of pig, *Hylochœrus meinhertzhageni*, recently described from the forest region of the upper Kongo, intermediate in its characters between the common pig and the wart-hog.—**Open pig,** open-grained pig-iron; pig-iron having a comparatively large, open grain, usually classed as No. 1 or No. 2 foundry pig.—**Phosphoric pig,** the trade-name for pig-iron containing a large proportion of phosphorus, so as to affect materially its properties and fitness for use.—**Pig-and-ore process.** See ⋆*process*.—**Pigs-in-clover,** a puzzle or game at one time popular (about 1895), consisting of a small round board, with 'pens' or compartments, into and out of which a number of marbles (the pigs) would roll as the board was tipped. The 'game' was to get all the marbles into their assigned places by tipping the board; but as the board was tipped, some other pigs, already penned, would roll out of their pens.—**Scotch pig,** high-grade pig-iron; pig-iron containing a small percentage of impurities: so named because it was formerly imported from Scotland. It is now produced in the United States.

piga (pē′gä), *n.* [Chamorro *piga* = Tagalog *biga*, Fijian *via*, names of species of *Alocasia*.] In Guam, *Alocasia Indica* and *A. macrorrhiza*, giant aroids widely spread throughout the East Indies, the Philippine Islands, and the islands of the Pacific. The starchy corm and stem, though very acrid, owing to the presence of raphides of oxalate of calcium, are eaten in times of scarcity after



Piga (*Alocasia macrorrhiza*).
a, spadix.

having been thoroughly cooked, the application of heat having the effect of breaking up the raphides. See ★*dranu.*

pig-breaker (pig′brā″kėr), *n.* A workman who breaks iron pigs from the sow; also, a machine used for this purpose.

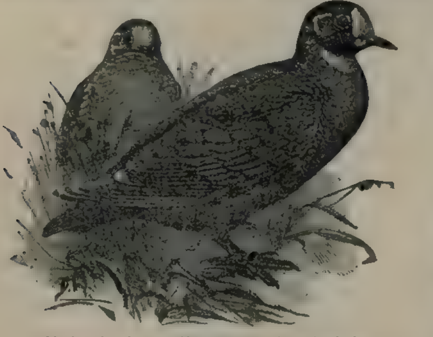
pig-cart (pig′kärt), *n.* A cart in which crockery is carried to be sold. [Scotch.]

pig-cony (pig′kō″ni), *n.* The guinea-pig.

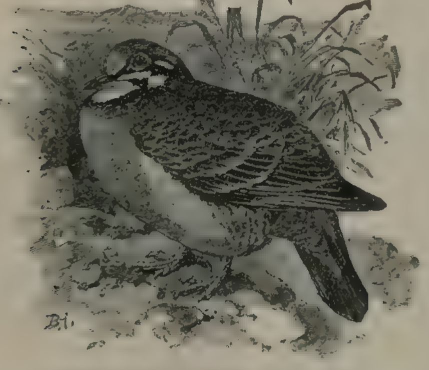
pig-copper (pig′kop″ėr), *n.* Copper in ingots or blocks.

pig-dog (pig′dog), *n.* An Australian name for any dog used in hunting pigs.

pigeon, *n.*—**Cuckoo-pigeon,** a general name for pigeons of the genus *Macropygia*, and their allies. These have long wedge-shaped tails, with plumage more or less brown, often barred. Also called *cuckoo-dove.*—**Harlequin pigeon,** a name applied to the bronzewing, *Histriophaps histrionica*, an Australian fruit-pigeon, on account of its party-colored plumage. *Gould.*—**Painted pigeon,** any one of several small, brightly colored fruit-pigeons of the genus *Ptilopus*, found in Australia, Polynesia, and the Malay Archipelago. A typical example is *P. swainsoni* of eastern Australia, which is orange below, greenish-yellow above. The upper breast is dull green, marked at the lower end by a lilac band, and the crown is lilac edged with yellow.—**Partridge-pigeon,** an Australian ground-pigeon, *Geophaps scripta*, of considerable size, brown above with green reflections, and conspicuous black and white markings on the cheeks.—**Topknot pigeon,** *Lopholaimus antarcticus.* [Australia.]—**Torres Straits pigeon,** a large white variety, *Myristicivora spilorrhoa.* *E. E. Morris*, Austral English.



Harlequin pigeon (*Histriophaps histrionica*).



Partridge-pigeon (*Geophaps scripta*): male.

pigeonberry, *n.* **2.** Locally in California, the cascara sagrada, *Rhamnus Purshiana.* Its fruit is eaten by wild pigeons, to whose flesh it imparts a bitter flavor.—**3.** Locally elsewhere in North America: (*a*) the dwarf raspberry, *Rubus Americanus*; (*b*) the northwestern service-berry, *Amelanchier alnifolia*; (*c*) the bristly sarsaparilla, *Aralia hispida*; (*d*) the alternate-leafed dogwood, *Cornus alternifolia*; (*e*) the partridge-berry, *Mitchella repens.*

pigeonberry-tree (pij′o̤n-bėr-i-trē″), *n.* An Australian tree of the laurel family, *Litsea dealbata*, which yields a tough, close-grained, fragrant yellowish wood.

pigeon-chest (pij′o̤n-chest), *n.* Same as *pigeon-breast*, 2.

pigeon-fieldfare (pij′o̤n-fēld″fãr), *n.* The fieldfare. [Eng.]

pigeon-guillemot (pij′o̤n-gil″e-mo̤t), *n.* One of the sea-pigeons, *Cepphus columba*, inhabiting the North Pacific. It has a white bar on the wing, but no white on the under surface.

pigeon-horntail (pij′o̤n-hôrn″tāl), *n.* Same as *pigeon-tremex.*

pigeon-post (pij′o̤n-pōst), *n.* The method of sending letters by carrier-pigeons. It has been employed largely on islands such as those of New Zealand, and in military stations.

> The last news received was a letter by *pigeon post*, dated July 13. *Geog. Jour.* (R. G. S.), XI. 457.

pigeonpox (pij′o̤n-poks), *n.* A disease of pigeons, chickens, and other fowls, thought to be caused by a fungus. It affects principally the head, in the form of an eruption of round yellow nodules varying in size from a pinhead to a pea.

pigeon's-blood, *n.* **2.** In *ceram.*, a glaze of Oriental porcelain resembling the color of pigeon's blood; a variety of sang-de-bœuf.

pigeon-shot (pij′o̤n-shot), *n.* One who is (well or ill) skilled in pigeon-shooting.

pigeon's-wings (pij′o̤nz-wingz), *n. pl.* Two detent-levers in the building-motion of a cotton-roving frame: so called because of their action. See ★*building-motion.*

pigeon-tick (pij′o̤n-tik), *n.* A true tick, *Argas reflexus*, of the family *Ixodidæ*; the dove-tick. It is found mainly in pigeon-houses in Europe and the United States, and sucks the blood of the birds.

pigeon-toe (pij′o̤n-tō), *v. i.* and *t.*; pret. and pp. *pigeon-toed*, ppr. *pigeon-toeing.* To walk with the toes turned in, as a pigeon does. Also used transitively.

> A green parrot *pigeontoed* his way down the gravel walk. *F. B. Smith*, How Paris Amuses Itself, p. 153.

pigeon-whistle (pij′o̤n-hwis″l), *n.* Same as ★*dove-whistle.*

pig-iron, *n.*—**Whitening of pig-iron,** the fusion of pig-iron in a refinery hearth and the casting of it into flat ingots in a chilled mold, preparatory to conversion into wrought-iron by the puddling process.

pig-jawed (pig′jâd), *a.* Having the upper jaw projecting decidedly beyond the lower, as a dog. *Shaw*, Illustrated Book of the Dog, v.

pig-lifter (pig′lif″tėr), *n.* One who is employed in moving pig-iron. *N. E. D.*

pig-lily (pig′lil″i), *n.* The calla, *Richardia Africana.* [South Africa.]

pig-louse (pig′lous), *n.* Same as *hog-louse.*

pig-magnet (pig′mag″net), *n.* A large electromagnet attached to a crane or hoist and used for handling pig-iron.

pig-maker (pig′mā″kėr), *n.* One who manufactures pig-iron.

pig-man (pig′ma̤n), *n.* One who vends crockery; a mugger. [Scotch.]

pig-market (pig′mär″ket), *n.* **1.** A market held for the purchase and sale of swine.—**2.** [*cap.*] A name vulgarly given to the Proscholium or antechamber of the Divinity School at Oxford. *N. E. D.*

pig-meater (pig′mē″tėr), *n.* A beast fit only for pigs to eat; one that will not fatten. *E. E. Morris*, Austral English. [Australia.]

> '*Pigmeaters!*' exclaimed Ernest; 'what kind of cattle do you call those? Do bullocks eat pigs in this country?' 'No, but pigs eat them, and horses too.'
> *Rolf Boldrewood*, Colonial Reformer, xviii.

pigment, *n.*—**Malarial pigment,** a pigment produced by the malarial organism from the blood-pigment. Two distinct pigments have been described: the one a brownish melanin which does not give the Prussian-blue reaction for iron; the other, possibly a hydroxid of iron, of a yellowish color and giving the reaction in question.—**Pigment-bacteria.** See ★*bacterium.*—**Pigment brown.** See *Sudan* ★*brown.*—**Pigment style,** in *calico-printing*, the method called *pigment-printing.* Very finely ground mineral colors, mixed with albumin, are used as a thickening agent and as a mordant. The cloth is afterward steamed and dried. The steaming has the effect of coagulating the albumin and rendering it insoluble, leaving the colors permanently deposited on the fiber.—**Respiratory pigments,** such bodies as hemoglobin, hemocyanine, and the floridins (found in certain invertebrates and having supposedly a respiratory function), which are intimately concerned in the oxidation-processes which take place in the animal body: they are essentially oxygen-carriers.—**Pigmentary cancer.** Same as *melanocarcinoma* and *melanosarcoma.*—**Pigmentary cirrhosis.** See ★*cirrhosis.*

pigment-printing, *n.* **2.** A photographic process in which the image consists of a pigment held in gelatin. The colors used are standard brown, engraving black, sepia, and red chalk. *Woodbury*, Encyc. Dict. of Photog., p. 375.

pig-mouse (pig′mous), *n.* The water-shrew. *N. E. D.*

pignolia (pig-nō′li-ä̤), *n.* [An It. dimin. of *pignon.*] The seed of the nut- or stone-pine of southern Europe, *Pinus Pinea*, or its kernel. These are eaten like almonds and are used in confectionery. See *nut-pine* and *stone-pine* (*a*) under *pine*^{1}.

pig-pea (pig′pē), *n.* A variety of field-pea. *N. E. D.*

pig-rattle (pig′rat″l), *n.* A terra-cotta rattle in the form of a pig, found in excavations in Cyprus.

> Two bristly fragments may be referred to *pig rattles.*
> *Jour. Hellenic Studies*, XII. 138.

pig-ring (pig′ring), *n.* Same as *hog-ring.*

pig-run (pig′run), *n.* A run or narrow, deep-trodden path made by wild pigs.

> Compactness indispensable to rapid movement in dense forest where the *pig-runs* are the only means of passage.
> *Geog. Jour.* (R. G. S.), XVI. 174.

pig-shop (pig′shop), *n.* A crockery-shop. [Scotch.]

pigskin, *n.* **3.** A foot-ball. [Colloq.]

pigsticker, *n.* **4.** A horse trained to the sport of pigsticking.

pigsticking (pig′stik″ing), *n.* The sport of hunting wild boars, the huntsman being mounted and armed with a spear.

pig-stone (pig′stōn), *n.* A concretion occurring in the intestines of the wild boar. *N. E. D.*

pigtail, *n.* **5.** In *logging*, an iron device driven into trees or stumps to support a wire or small rope.

pigtail-insulator (pig′tāl-in″sṳ̄-lā-to̤r), *n.* See ★*insulator.*

pig-washing (pig′wosh″ing), *n.* The process of removing the silicon from pig-iron by oxidation while molten, but at a comparatively low temperature, so that carbon also will not be oxidized. Phosphorus is also removed. The process is only of limited application. *Phillips and Bauerman*, Elements of Metallurgy, p. 297.

pig-wife (pig′wīf), *n.* A woman who vends crockery. [Scotch.]

pig-wool (pig′wu̇l), *n.* The finer hair of the swine, used in making flies for anglers. *N. E. D.*

pig-yoke (pig′yōk), *n.* *Naut.*, a navigator's name for the common quadrant of reflection, from its resemblance in shape to the yoke sometimes placed around the neck of a pig to keep the animal from rooting.

piharau (pē′hä-rou), *n.* [Maori.] A New Zealand lamprey, *Geotria chilensis.* *E. E. Morris*, Austral English.

piitis (pī-ī′tis), *n.* [NL., < *pia* + *-itis.*] Inflammation of the pia mater.

pike^2, *n.* **2.** (*e*) A chilodopterid fish, *Dinolestes lewini.*—**Gray pike.** (*b*) Same as *sauger.*—**Great Lakes pike,** the common pike.—**Great northern pike,** a maskalonge, *Lucius masquinongy immaculatus*, found in lakes and rivers of Wisconsin and Minnesota.—**Sacramento pike.** Same as ★*squaw-fish.*

pike^3, *v. i.* **2.** To bet very small amounts here and there all over the lay-out, usually following in the wake of some player who is betting heavily.

pike^7 (pīk), *n.* [See *piker.*] A piker.

piker^1, *n.* **2.** One who makes small bets all over the lay-out. See ★*pike*^{3}, *v. i.*, 2.—**3.** On the stock-exchange, a professional speculator. See the extract. [Slang.]

> In the absence of complaisant lambs, the financial cannibals known as "room traders" and "*pikers*" tried to "scalp eighths" out of each other for weeks—to take advantage of fractional fluctuations instead of waiting for big movements. *McClure's Mag.*, June, 1901, p. 159.

piker^2 (pī′kėr), *n.* [*pike*^{1}, *v.*, + *-er*^{1}.] One who uses a pike or pointed implement; specifically, in the United States, in *ice-harvesting*, one who thus controls the movement of cakes of ice.

> Different methods are employed at different places for forcing the cakes of ice through these channels to the runways of the storehouses. The method illustrated in the photograph provides for forces of men known as "*pikers*," who stand beside the channels and force the cakes of ice, as fast as loosened, in the direction of the ice house. *Sci. Amer. Sup.*, Jan. 2, 1904, p. 23408.

Pikermi beds. See ★*bed*^{1}.

pil, *v.* and *n.* A simplified spelling of *pill*.

pila^4 (pē′lä), *n.* [Sp. *pila*, a stone water-trough, a font, < L. *pila*, a mortar. See *pila*^{1}.] A stone horse-trough.

pilæ (pī′lē), *n. pl.* [L. *pila*, pillar.] In *conch.*, concentric ridges developed on the dorsolateral slopes of senile shells in some ammonoid cephalopods.

pilaf, pilaff (pi-läf′), *n.* [Russ. *pilávŭ* (pẹ-läf′), NGr. πιλάφι, a Levantine pronunciation of Turk. *pilāw*, Pers. *pilāu*, etc. See *pilau*.] Same as *pilau*.

pilarite (pil′a̤-rīt), *n.* [Named after Professor *Pilar* of Agram.] A kind of chrysocolla containing a considerable amount of alumina, found in Chile; also, a similar variety which occurs in Utah.

Pilastered femur. See ★*femur*.

pilastering (pi-las′tėr-ing), *n.* **1.** Pilasters collectively.—**2.** In *anthrop.*, the conformation of the femur, in which the dorsal ridge—the linea aspera—assumes large size, thus increasing the relative sagittal diameter of the bone.

pilastrade (pi-las-trād′), *n.* [It. *pilastrata*, ornamented with pilasters.] A row or range of pilasters. *N. E. D.*

pilastric (pi-las′trik), *a.* [*pilaster* + *-ic*.] In *anthrop.*, relating to that form of the femur which is characterized by a strong development of the linea aspera, which assumes the form of a pilaster. *Philos. Trans. Roy. Soc.* (London), 1897, ser. B, p. 143.

pilation (pi-lā′sho̤n), *n.* [L. **pilatio(n-)*, < *pilare*, grow hairy, < *pilus*, hair.] A fracture of the skull marked by a narrow crack without separation or displacement of the bones.

pilaui (pē-lou′ẹ̄), *n.* [Tagalog name.] A tree, *Canarium Luzonicum*, belonging to the family *Balsameaceæ*, closely resembling the Java almond-tree, *Canarium commune*. It yields the soft, white, fragrant resin known commercially as *brea-blanca*, or Manila elemi. Its elongated, pointed, three-sided, edible nuts, called *pili*, have an almond-like flavor and yield a fine oil resembling the oil of almonds. See ★*brea-blanca* and ★*pili*^{3}. [Philippine Islands.]

pilchard, *n.* **2.** (*b*) A fish, *Sardinella sagax*, which visits the Australian shores periodically in large shoals: apparently the same as the Californian and Chilean pilchard, and closely related to the English pilchard, *Sardinella pilchardus*. *E. E. Morris*, Austral English.

pilcher^1, *n.* **4.** *pl.* A child's drawers. [West Indies.]

pile^1, *n.*—**Parallel pile**, the pile of an arrow so shaped as to have the same diameter throughout its length.

pile^3, *n.* **6.** In *gambling*, all the capital a player has to lose on the game; all the chips in front of a player.—**7.** A single hemorrhoidal tumor. See *piles*.—**8.** In *artillery*, a heap of shot or shells piled up by horizontal courses in parallel tiers into a pyramidal or wedge-like form, the form being determined by that of the base, which may be a triangle, a square, or a rectangle. In a triangular pile the base is an equilateral triangle, and there is one sphere at the apex. The numbers in the successive horizontal tiers, reckoned from the top downward, are the triangular numbers 1, 3, 6, 10 . . . $\frac{1}{2}n(n+1)$.—**Muscular pile**, a voltaic pile constructed of layers of muscular tissue, employed in certain physiological experiments.—**Pile of plates**, in *optics*, an arrangement consisting of several parallel glass plates, one behind the other, for the production of polarized light by multiple reflection.

pile^3, *v. t.* **4.** To arrange (spheres) so as to occupy the minimum of volume.

II. *intrans.* To form a pile or heap; often with *up*: as, his debts *piled up*.—**To pile in**, to crowd hastily into something, as a wagon. [Colloq.]—**To pile off**, to hasten off to something, as a picnic. [Colloq.]

pile^4, *n.*—**Pile-fabric frame**, a board, each end of which is provided with transverse metallic arms, the inner edges of which are in turn provided with hooks, upon which plushes, etc., are mounted, to prevent crushing in packing and shipping. These hooks are just far enough apart to permit the pile of these fabrics to remain upright.

pile-building (pīl′ bil″ding), *n.* Same as *pile-dwelling*.

piled, *a.* **3.** In *iron-making*, made up of bars, fagots, or piles, placed together and welded.

pile-drawer (pīl′drâ″ėr), *n.* A pile-puller; a device for drawing piles out of the ground.

pile-driver, *n.*—**Gunpowder pile-driver**, a machine which drives piles by the impact of a weight sliding in ways and thrown up by the force of gunpowder exploded in a mortar-like chamber attached to the head of the pile, the recoil of the explosion also aiding in forcing down the pile.—**Pile-driver car**, a flat car carrying at one end a pile-driver and at the other a cabin containing a steam-boiler and winding-engine. In some cars the pile-driver stands upon a pivoted platform which projects beyond the end of the car, and in others the cabin is also placed upon a platform as a counterweight, the platform in each case serving to bring the pile-driver into any position before or on either side of the car.

pile-house (pīl′hous), *n.* A house built on piles; a pile-dwelling. See *lake-dwelling*, with cut.

Pilema (pī-lē′mä̤), *n.* [NL.] The typical genus of the family *Pilemidæ*. *Haeckel*, 1880.

Pilemidæ (pī-lem′i-dē), *n. pl.* [NL. *Pilema* + *-idæ*.] A family of *Discomedusæ* which consists of rhizostomatous forms having 4 separated subgenital pits, dorsal as well as ventral sucking-frills on the 8 oral arms, 8 rhopalia, and 8–16 or more branched and anastomosing radial canals with a circular canal. It includes *Pilema*, *Phyllorhiza*, *Stomolophus*, and several other genera.

pilentum (pī-len′tum), *n.*; pl. *pilenta* (-tä̤). [L.] A closed carriage with two or four wheels, used by Roman women. Like similar medieval wagons it was arranged with entrance doors in the middle on both sides. Two or three pilenta are represented on the column of Theodosius at Constantinople.

pileole (pil′ẹ̄-ōl), *n.* Same as *pileolus*, 1.

piles, *n. pl.*—**Bleeding piles**, hemorrhoidal tumors, composed of dilated capillaries, which frequently bleed when the bowels move.

pile-screw (pīl′skrö), *n.* The screw or thread cast on the lower end of a cast-iron pile by means of which it is forced into the soil, the pile being turned by a worm-and-gear attachment at the upper end.

pileum, *n.* **2.** In *human anat.*, a cerebral hemisphere. *Buck*, Med. Handbook, II. 148.

pileus, *n.* **5.** A nipple-shield.—**6.** The disk or umbrella of a jellyfish.

pilferage (pil′fėr-ā̤j), *n.* [*pilfer* + *-age*.] The act of pilfering; also things pilfered. [Rare.]

pilgrim, *n.*—**Pilgrim Psalm**, one of the group of Psalms cxx.–cxxxiv., so called by critics who hold that the much-disputed title (see *Gradual Psalms*) has reference to the pilgrimages to the annual festivals at Jerusalem.

pilgrim-scallop (pil′grim-skol″o̤p), *n.* A European scallop, especially *Pecten jacobeus*, the palmer-shell, so called because worn by pilgrims as an evidence of having visited the Holy Land.

pili^2 (pē′lē), *n.* [Polynesian *pili*, to adhere, or stick to.] In the Hawaiian Islands, a long coarse grass, *Andropogon contortus*, used for thatching houses, but very troublesome to sheep on account of its twisted awns which become entangled in their wool.

pili^3 (pē-lē′), *n.* [Tagalog and Bisaya *pili*.] A Philippine name of the nuts of the pilaui-tree, *Canarium Luzonicum*. They are nearly triangular in cross-section and are pointed at each end. The oily kernel has an almond-like flavor and is eaten by the natives. See ★*pilaui*.

pilifer (pil′i-fėr), *n.* [? L. *pilus*, hair, + *ferre*, bear. Cf. *piliferous*.] A lateral prominence on the labrum of a lepidopterous insect, often mistaken for a mandible.

Piliferous cyst. See ★*cyst*.

piliganine (pil′i-ga̤-nin), *n.* A light-yellow, amorphous, poisonous alkaloid, $C_{15}H_{24}ON_2$, found in a club-moss, *Lycopodium saururus*. Also called *pillijanine*.

pilikai (pē-lē-kī′), *n.* [Native name.] In the Hawaiian Islands, *Argyreia tiliæfolia*, a semi-shrubby morning-glory with cordate leaves and beautiful large rose-purple flowers. Unlike many other morning-glories it is not a constant bloomer but blossoms in the autumn. The flowers do not easily fade, but will last a long time after having been plucked. The plant is widely distributed in the East Indies, the Philippine Islands, and some of the islands of the Pacific. In Guam the children string the trumpet-shaped flowers into garlands and on sticks, and are very fond of them as ornaments.

piline (pī′lin), *a.* [L. *pilus*, hair, + *-ine*^{2}.] Consisting of hair; of the nature of hair; hairy.

piling^1, *n.* **3.** Logs ready to be made into piles, or from which piles are made.

piling^3 (pī′ling), *n.* See *pile*^{3}, *v.*—**Antinormal piling**, a system of piling spheres consistent with minimum volume, that is, maximum compactness, giving parallel tiers in triangular arrangement but each tier fitted over the one below so that those of the third tier are placed in spaces vertically above those of the first.

> On normal and *anti-normal piling*. The object of the paper is to exemplify a convenient method of dealing with systematic assemblages of points. Normal piling denotes a particular homogeneous assemblage, whereas the arrangement in *anti-normal piling* is made up of two homogeneous assemblages. *Nature*, Dec. 17, 1903, p. 165.

Normal piling, the piling of spheres as in an artillery pile, where the spheres of the third tier or horizontal course are not vertically above those of the first. See ★*pile*^{3}, *n.*, 8.

pill^3, *n.*—**Compound cathartic pills**, pills containing compound extract of colocynth, calomel, resin of jalap, and gamboge: the *pilulæ catharticæ compositæ* of the United States Pharmacopœia.

pillar, *n.* **13.** In ship-building, a column which supports a deck-beam in the interior of a vessel. Such columns are cylindrical, hollow or solid, or they may be built up of plates and bars. They are shaped at the heads and heels so that they can be securely riveted to the beam or the plating of the deck or hold. A *hold-pillar* is one which extends between the inner bottom or top of the frame floors to the lowest tier of deck-beams. A *deck-pillar* extends between two decks. A *center-line pillar* is on the center-line of the vessel. A *quarter-pillar* is midway between the center-line and the side. Also called *deck-stanchions* and *beam-stanchions*.

> "We also," began the deck-beams, "are discoverers and geniuses. We are of opinion that the support of the *hold-pillars* materially helps us. We find that we lock up on them when we are subjected to a heavy and singular weight of sea above."
>
> *Kipling*, The Ship that Found Herself, in The Day's [Work, p. 100.

Board and pillar working. See *pillar and breast*, under *pillar*.

pillar-bolt (pil′ä̤r-bōlt), *n.* A bolt which projects some distance from the piece in which it is screwed for the purpose of carrying another piece at its outer end; a stud.

pillar-buoy (pil′ä̤r-boi), *n.* A spar-buoy.

pillar-cloud (pil′ä̤r-kloud), *n.* An approximately vertical pillar of cloud, especially the middle portion of a thunder-head, anvil-cloud, or mushroom-cloud, connecting the flat base with the spreading top. See cut at ★*mushroom-cloud*.

pillar-cock (pil′ä̤r-kok), *n.* A gas-cock which controls a gas-burner.

pillar-crane (pil′ä̤r-krān), *n.* A crane in which the boom or the jib is supported by a pillar which may be stationary or may revolve.

pillar-drill (pil′ä̤r-dril), *n.* See ★*drill*^{1}.

Pillared eye. Same as ★*turban-eye*.

pillar-iron (pil′ä̤r-ī″ėrn), *n.* Special rolled iron or steel sections used for building up phenix columns. (See *phenix post*, under *post*^{1}.) The section is that of a curved web channel, or an arc of a circle, with external flanges for bolting or riveting it to the sections on each side, four or more such sections forming a circle.

pillar-plate (pil′ä̤r-plāt), *n.* The plate of a watch-movement next behind the dial. *N. E. D.*

pillar-pump (pil′ä̤r-pump), *n.* A lift- or force-pump carried by a column or pillar which is attached to a suitable base. The pump is usually driven by a handle attached to a fly-wheel, but may be of the lever variety.

pillar-screw (pil′ä̤r-skrö), *n.* A screw used for securing the top plate of a watch or clock to one of the pillars.

pillar-stone (pil′ä̤r-stōn), *n.* A kind of rudely cut monolith found in Porto Rico. They vary in size and shape from simple slabs decorated with incised pictographs on one or both surfaces to rude idols with a head sculptured on one end.

pill-crab (pil′krab), *n.* Same as *pea-crab*.

pillican (pil′i-ka̤n), *n.* [Origin obscure.] A straw fringe, with a heavy plaited head, used as a decoration of the stall-posts in a stable.

pillijanine (pil′i-ja̤-nin), *n.* See ★*piliganine*.

pill-masser (pil′mas″ėr), *n.* A machine for compounding the mass out of which pills are made. *N. E. D.*

pill-nettle (pil′net″l), *n.* The Roman nettle, *Urtica pilulifera*. *N. E. D.*

pillow-lava (pil′ō-lä″vä̤), *n.* A peculiar form of lava-flow which is broken up into ellipsoidal or pillow-like masses.

> The writer has therefore concluded that, on the best working hypothesis, the Newfoundland rock is the product of the extrusion of basic lava into sea-water of some depth. That view is confirmed by Russell's recent discovery of *pillow-lava* formed where the Snake River basalt ran into lake-basins. *Amer. Geol.*, Aug., 1903, p. 78.

pillow-structure (pil′ō-struk″tṳ̄r), *n.* In *petrog.*, the appearance assumed by certain diabases upon weathering, whereby they become rounded along joints and resemble a pile of pillows. *Geikie*, Text-book of Geol., p. 136.

pilocarpidine (pī-lọ-kär′pi-din), *n.* [NL. *Pilocarpus* + *-id* + *-ine*^{2}.] A syrupy alkaloid, $C_{10}H_{14}N_2O_2$, found in jaborandi-leaves (*Pilocarpus pennatifolius*). It has the same physiological effect as pilocarpine, though weaker.

Piloceras (pī-los′ẹ-ras), *n.* [NL., < ? Gr. πῖλος felt, a felt hat, + κέρας, horn.] A genus of holochoanitic orthoceraconic nautiloid cephalopods having heavy, stout, short shells with very wide siphuncle, the apical portions of which are solidified by excessive deposition of shell substance. It occurs in Lower Silurian formations.

Pilocereus (pī-lō-sē′rē̤-us), *n.* [L. *pilus*, hair, + NL. *Cereus*.] A genus or group of cacti, closely allied to *Cereus*, characterized by the presence of copious hairs or bristles in the fruiting area. They are mostly Mexican. *P. Senilis* is the familiar old-man cactus, so named from the white hair-like covering.

pilocystic (pī-lō̤-sis′tik), *a.* [L. *pilus*, hair, + E. *cystic*.] Noting a tumor which contains hair. [Rare.]

pilolite (pī′lō̤-līt), *n.* [Gr. πῖλος, felt, + λίθος, stone.] A name given by Heddle to some kinds of mountain-cork and mountain-leather from Scotland. They are supposed to be peculiar in composition, particularly in being largely hydrated.

pilomotor (pī-lō̤-mō′tọr), *a.* [L. *pilus*, hair, + *motor*, mover.] Designating the muscles, and the nerves innervating them, which are attached to the hair-follicles: their contraction causes the condition called 'goose-flesh.' *Med. Record*, Sept. 28, 1907, p. 544.

pilonidal (pī-lō̤-nī′dal), *a.* [L. *pilus*, hair, + *nidus*, nest, + *-al*1.] Noting a bunch of hair arranged in the shape of a nest: as, a *pilonidal* cyst or sinus, that is, a dermoid cyst or sinus containing hair arranged in the form of a wad.

pilosebaceous (pī″lō̤-sē̤-bā′shius), *a.* [L. *pilus*, hair, + E. *sebaceous*.] Relating to the hairs and the sebaceous glands associated with them. *Buck*, Med. Handbook, I. 79.

pilosism (pī′lō-sizm), *n.* [L. *pilosus*, hairy, + *-ism*.] An abnormal development of hairiness in an individual plant, or a high degree of hairiness normal to a species, due to ecological causes, as in desert plants.

pilosofimbriate (pī-lō-sō̤-fim′bri-āt), *a.* [L. *pilosus*, hairy, + E. *fimbriate*.] Fringed with soft hairs.

pilosohispid (pī-lō-sō̤-his′pid), *a.* In *bot.*, having somewhat stiff hairs. *N. E. D.*

pilot, *n.* 8. In *mach.*, a smaller element acting in advance of another or principal element of the same sort, and causing the latter to come into play when desired.—**Black pilot.** Same as *cow-pilot*.—**Cock-eye pilot**, a fish, *Eupomacentrus leucostictus*, of the West Indies.—**Inland pilot license**, a license issued by the United States local inspectors of steam-vessels, which authorizes the holder to pilot yachts, tugs, and steamboats on certain inland waters of the country.

pilotage, *n.* 5. The house in which a pilot lives; the office of the pilots of a port.

Kettle nodded a word of praise for the mixture and thanks to its concoctor, and Mrs. Nilssen gave a flash of white teeth, and then shuffled away off the verandah, and vanished within the bamboo walls of the *pilotage*.
Cutclyffe Hyne, A Master of Fortune, ii.

pilot-balloon (pī′lọt-ba-lön″), *n.* A small balloon used for ascertaining the direction of air-currents at different levels: most frequently used before ascents of manned balloons.

pilot-chart (pī′lọt-chärt), *n.* A chart published officially by the hydrographic office of any nation, showing the average wind and weather, magnetic variations, ocean currents, fog, ice, temperatures, storm-paths, the best routes for steamers and sailing-vessels, buoys, beacons, lighthouses, storm- and weather-signals, dangerous rocks or shoals, and other information that may be of value to navigators.

pilot-flame (pī′lọt-flām), *n.* Same as *pilot-light*.

pilot-kite (pī′lọt-kīt), *n.* 1. A kite sent up in advance of and used to lift another kite into the air.

The apparatus of Mr. Simmons is described as consisting of a huge '*pilot*' *kite* 49 feet high and 49 feet wide, with another kite below, still larger. The *pilot kite* was first to be raised, and to carry up the second; the two were to be adjusted to the breeze, and the aeronaut was to be suspended in a car, and allowed to ascend 200 or 300 yards.
O. Chanute, Progress in Flying Machines, p. 177.

2. The initial or first kite at the outer end of a line of kites.

The first kite attached to the extreme end of the cable acts as a *pilot*, or initiatory *kite* to raise the series from the ground. *Sci. Amer. Sup.*, April 11, 1903, p. 22804.

pilot-lamp (pī′lọt-lamp), *n.* See ★*lamp*1.

pilot-light, *n.* 2. A lamp placed on a dynamo to show that it is working properly.—3. A small burner burning continuously, used in motor-car practice to ignite the main burner when the demand for power exceeds the supply of energy stored in the generator from a previous ignition.

pilot-major† (pī′lọt-mā″jọr), *n.* A chief or head pilot; also a distinguished voyager and discoverer.

One of the ships, the Edward Bonaventure, Commanded by Richard Chancellor, *pilot-major* of the fleet, was separated from the rest of the little squadron.
W. Scoresby, Account of the Arctic Regions, I. 72.

pilot-motor (pī′lọt-mō″tọr), *n.* See ★*motor*.

pilot-nut (pī′lọt-nut), *n.* A thin nut or tapped thimble screwed temporarily on the threaded end of a bolt to protect the threads from injury while the bolt is being forced through a hole.

pilot-relay (pī′lọt-rē-lā″), *n.* See ★*relay*1.

pilot-signals (pī′lọt-sig″nalz), *n. pl.* Certain prescribed signals, both for day and for night use, by the employment of which a pilot may be summoned on board a vessel to carry her into or out of port.

pilot-snake, *n.* 2. The bull-snake, or pine-snake, *Pityophis*.—3. The copperhead, *Agkistrodon contortrix*. [Rare.]

The Copperhead, also known in different localities by the names Upland Moccasin, Chunkhead, Deaf Adder, *Pilot Snake*, etc., is perhaps to be more dreaded than any other American snake. *Sci. Amer.*, Feb. 14, 1903, p. 118.

pilot-transformer (pī′lọt-trȧns-fôr″mėr), *n.* See ★*transformer*.

pilot-tube (pī′lọt-tūb), *n.* In subaqueous tunneling, a wrought-iron or steel cylindrical shell whose axis coincides with the axis of the tunnel, and whose diameter is less than that of the tunnel, open at both ends, and forced into the soil in advance of the finished tunnel, for the purpose of providing a protection to the men employed in excavating the material at the heading inside the tube, and also of furnishing a central support for the inner ends of radial struts placed outside the tube to support the material forming the roof and sides of the tunnel until permanently supported by the lining. The rear end of the pilot-tube is also used as a support for the radial struts, or the centering, used in constructing the permanent tunnel lining.

The Hudson River tunnel, says Engineering Record, has long held a unique place in American engineering. When it was first started, few believed in it. The method of carrying on the work was changed several times. The *pilot-tube* system of tunneling was invented by Captain Anderson for use in this work, and proved very serviceable. *Sci. Amer. Sup.*, Sept. 12, 1903, p. 23162.

pilot-valve (pī′lọt-valv), *n.* A leading valve; a small valve for admitting steam, water, or air to the operating device of the main valve (of an engine or machine); an auxilliary valve.

pilot-wheel (pī′lọt-hwēl), *n.* A hand-wheel having radial handles projecting from the rim.

pilpul (pil′pöl), *n.* [Aram., discussion, controversy.] Argumentation; searching debates and reasonings on Talmudic subjects among rabbinical scholars.

pilpulist (pil′pọ̈-list), *n.* [*pilpul* + *-ist*.] One who is skilled in disputation; especially one who is versed in the discussions of the rabbis.

The native Jews do not extend their studies further, and I was assured that there is not among them a talmudist or *pilpulist* of any reputation. . . . The Jews who immigrate to Jerusalem usually possess a certain knowledge of the Talmud and a more enlarged experience.
P. Beaton, Jews in the East, II. 93.

pilpulistic (pil-pọ̈-lis′tik), *a.* Pertaining to or of the nature of pilpul.

At this moment, appositely enough, we passed by the village Beth-Hamidrash, whence loud sounds of "*pilpulistic*" (wire-drawn) argument issued. The driver clapped his palms over his ears.
Zangwill, Dreamers of the Ghetto, p. 264.

piltock (pil′tọk), *n.* The name in Shetland, Orkney, and Caithness of the coal-fish, *Merlangus carbonarius*, in its second year. *N. E. D.*

pilulier (pē-lü-lyā′), *n.* [F., < *pilule*, pill.] 1. An instrument for measuring and rolling pills; a pill-making machine.—2. An earthenware pill-pot.

pilus, *n.*—**Pili annulati**, monilethrix.

pily2 (pī′li), *a.* [*pile*4, *n.*, + *-y*1.] Having a soft, woolly coat next the skin, covered by longer hairs: said of dogs. The term is also applied to a coat that is soft when it should be harsh. *Shaw*, Illustrated Book of the Dog, v.

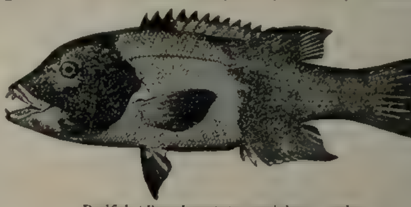
Pimaric acid, an acid, $C_{20}H_{30}O_2$, found in galipot, the resin of a pine, *Pinus maritima*.

pimelic (pi-mel′ik), *a.* [Gr. πιμελή, fat, lard, + *-ic*.] Noting an acid, $C_5H_{10}(COOH)_2$. Several varieties are known. *Normal* or *a-pimelic acid* is heptane diacid, $CO_2H.(CH_2)_5COOH$, and is formed by oxidizing suberone with concentrated nitric acid; it is crystalline and melts at 105° C. *Beta-pimelic acid* is formed when castor-oil is oxidized by nitric acid; it is crystalline and melts at 105.5–106° C. *Gamma-pimelic acid* is made by oxidizing menthol with potassium permanganate; it is crystalline and melts at 86–87.5° C. *Isopimelic acid* is made by boiling amylene bromide and potassium cyanide with water. It forms crystals which melt at 104° C. When camphoric acid is melted with caustic potash another variety is formed, *isopropylsuccinic acid*, $(CH_3)_2CH.CH(COOH)CH_2(COOH)$. It forms crystals that melt at 103° C.

Pimelodella (pim″e-lō̤-del′ä̤), *n.* [NL., < Gr. πιμελώδης, fatty, fat (< πιμελή, fat, lard, + εἶδος, form), + dim. *-ella*.] A genus of catfishes, confined chiefly to the Amazon region.

pimeloma (pim-e-lō′mä̤), *n.*; pl. *pimelomata* (-ma̤-tä̤). [NL., < Gr. πιμελή, fat, + *-oma*.] Same as *lipoma*.

Pimelometopon (pim″e-lō̤-me-tō′pon), *n.* [NL., < Gr. πιμελή, fat, + μέτωπον, forehead, front.] A genus of labroid fishes, found on the American tropical Pacific coast.


Redfish (*Pimelometopon pulcher*): male.
(From Jordan's "Guide to the Study of Fishes.")

pimelorrhea (pim″e-lō̤-rē′ä̤), *n.* [NL. *pimelorrhœa*, < Gr. πιμελή, fat, lard, + ῥοία, flow.] Diarrhea with discharge of fat in the stools.

pimelorthopnœa (pim″e-lôr-thop-nē′ä̤), *n.* [NL., < Gr. πιμελή, fat, + ὀρθός, right, + -πνοια, < πνεῖν, breathe.] Orthopnœa due to excessive obesity.

pimelosis (pim-e-lō′sis), *n.* [NL., < Gr. πιμελή, fat, + *-osis*.] 1. The formation of fat.—2. Fatty degeneration.

pimeluria (pim-e-lū′ri-ä̤), *n.* [NL., < Gr. πιμελή, fat, + οὖρον, urine.] The discharge of fat, or of material resembling it, in the urine.

pimento, *n.*—**Mexican pimento**, a commercial term for the dried berries and flower-buds of a small Brazilian tree, *Myrtus Pseudocaryophyllus*, which are used as a spice.

pimento-dram (pi-men′tō-dram), *n.* A drink made from pimento berries.

Ripe pimento berries are used to make *pimento dram*, a native drink.
Daily Cons. and Trade Reports, Oct. 5, 1907, p. 11.

pimento-grass (pi-men′tō-grȧs), *n.* See *St. Augustine* ★*grass*.

Pimephales (pi-mef′a-lēz), *n.* [Orig. a F. pl. (Rafinesque, 1820); NL., irreg. < Gr. πιμε(λή), fat, lard, + (κε)φαλή, head. An Eng. name of the genus is *fathead* (q. v.).] A genus of minnows of waters of the middle and eastern United States.

pimienta (pē-mē-en′tä), *n.* [Sp. *pimienta*, the fruit of the pepper. See *pimento*.] 1. In Spain, black pepper (*Piper nigrum*) and various kinds of red pepper (*Capsicum*).—2. In the Spanish West Indies and in Mexico, the allspice, *Pimenta Pimenta*.—3. In Porto Rico, the bayberry, *Pimenta racemosa*, which is used in making bay-rum.—**Pimienta malagueta.** (*a*) A name originally applied to the melegueta pepper, or grains of paradise, *Amomum Melegueta* (which see, under *grain*1). (*b*) In Cuba and Porto Rico, the allspice, *Pimenta Pimenta*, and the bayberry, *Pimenta racemosa*.

pimmy (pim′i), *n.* [Samoyed?] A kind of long boot, made of deerskin with sealskin soles, worn by the Samoyeds. See the extract under ★*loupthu*.

pimola (pi-mō′lä̤), *n.* [A trade-name, < *pim(ento)* + *ol(ive)* + *-a*.] An olive stuffed with red sweet peppers.

pimpinellin (pim-pi-nel′in), *n.* [*Pimpinella* + *-in*2.] A bitter crystalline substance, $C_{14}H_{12}O_5$ (?), found in the root of *Pimpinella saxifraga*.

pimple, *n.*—**Amboyna pimple.** Same as *Amboyna* ★*button*.

pimple-land (pim′pl-land), *n.* A local name in Georgia for certain areas the surface of which is marked by concretions of limonite, which are afforded by the clays of the Altamaha formation.

At some localities small brown iron oxide accretions from the size of buckshot to walnuts are abundant at the surface, and the land where these are found is commonly referred to as "*pimple*" *land*. *Science*, Jan. 10, 1908, p. 71.

pimploes (pim′plōz), *n.* [Prob. < Sp. *pimpollo*, a sucker, sprout, or shoot.] In the West Indies, same as *prickly-pear*, 2.

pin¹ (pin), *n.* **10.** (*b*) In *archery*, a place in a bowstaff where a lateral twig has been trimmed off. Such places are weak if the twig is cut off flush.—**12.** In *ceram.*, a small three-sided rod of fire-clay inserted in the side of the saggar to support the ware (as a plate) while it is fired in the kiln.—**Neat as a pin** or **new pin**, perfectly neat or new. [Colloq.]

> She was *neat as a pin* about her housekeepin', too. I tell you, she used to make me walk chalk when I come in the kitchen with mud on my boots!
> *McClure's Mag.*, June, 1901, p. 141.

Pin and girdle, the name of a kind of swindling game.—**Split pin.** (*a*) A metal pin made of wire bent around to form an eye: the points can easily be separated or spread apart after the pin is inserted in its hole, and it is thus prevented from coming out accidentally. Much used for linch-pins. (*b*) A tapered wooden pin having a split in the small end, in which a wedge is inserted to keep the pin from falling out.—**Steady pin.** (*c*) A stud, pin, or short sunk feather, employed for the purpose of preventing a wheel or pulley from turning round upon its shaft. The pin is made to fit a corresponding recess in the part which fits on the shaft. *Lockwood*, Dict. Mech. Eng. Terms.—**To lift** or **raise a pin**, in *archery*, to strengthen a pin by leaving more wood around it than on the rest of the bow. See ★*pin*1, 10 (*b*).

pin¹, *v. t.*—**To pin in**, to drive small wedges or tips of stone into (the mortar joints of masonry) before they dry, the purpose being to force the half-liquid mortar strongly into the large blocks.

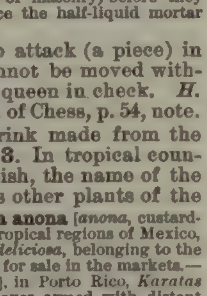
pin², *v. t.* **3.** In *chess*, to attack (a piece) in such a fashion that it cannot be moved without leaving the king or queen in check. *H. Staunton*, Laws and Prac. of Chess, p. 54, note.

piña², *n.* **2.** A sweet drink made from the juice of the pineapple.—**3.** In tropical countries settled by the Spanish, the name of the pineapple and of various other plants of the family *Bromeliaceæ.*—**Piña anona** [*anona*, custard-apple], in the tropical and subtropical regions of Mexico, an introduced fruit, *Monstera deliciosa*, belonging to the arum family, frequently offered for sale in the markets.—**Piña de cuervo** [of the crow], in Porto Rico, *Karatas Karatas*, a plant with large leaves armed with distant incurved spines and yielding a strong fiber; also *Pitcairnia angustifolia*, a plant growing on rocks or on trees, with glaucous leaves and scarlet flowers.—**Piña de sapo** [of the toad], in Porto Rico, an epiphytal bromeliad, *Guzmania erythrolepis.*

pinabete (pē-nä-bā′tā), *n.* [Sp., the silver fir, < *pino*, pine, + *abeto* (*abete*), fir.] In Spain, *Abies Picea*, the silver fir; in Mexico, the sacred fir, *Abies religiosa*, a tree growing in the mountains which yields turpentine having a lemon-like odor and a bitter taste. This is used in medicine as a balsam and in the arts as a medium for mixing paints.

pinac (pē-näk′), *n.* [Pampanga *pinac.*] In Luzon, a lake, especially one that is formed in the rainy season and later disappears.

pinacate-bug (pin-a-kä′te-bug), *n.* Any one of several species of beetles of the tenebrionid genus *Eleodes.* They are clumsy beetles, living under stones and other objects on the ground. When alarmed they elevate the abdomen and discharge an oily fluid.



Pinacate-bug (*Eleodes dentipes*). Natural size.

pinaceous (pi-nā′shius), *a.* Of or pertaining to the *Pinaceæ* or pine family.

Pinacoceras (pin-a-kos′ē-ras), *n.* [Gr. πίναξ (πινακ-), board, + κέρας, horn.] A genus of discocampylous ammonoid cephalopods having compressed discoid involute shells with exceedingly complicated suture-lines: found in Triassic rocks.

pinacoid, *n.* Some authors extend the use of this term to embrace any form which has but two parallel faces; according to this usage, all the possible faces of a holosymmetric triclinic crystal are called *pinacoids.*

Pinacoidal class. See ★*symmetry*, 6.

pinacolin (pi-nak′ō-lin), *n.* [*pinac*(*one*) + *-ol* + *-in*².] An oily liquid, $CH_3.CO.C(CH_3)_3$ or dimethylbutanone, made by distilling pinacone with dilute sulphuric acid, by the dry distillation of calcium isobutyrate, and in other ways. It has an odor like peppermint, and boils at 106° C.

pinacone (pin′a-kōn), *n.* [Gr. πίναξ (πινακ-), a tablet, + *-one.*] **1.** A colorless crystalline compound, $(CH_3)_2C(OH).C(OH)(CH_3)_2$ or tetramethylglycol, made by reducing aqueous acetone with sodium. It melts at 35–38° C. Its crystalline hydrate, $C_6H_{14}O_2 + 6H_2O$, melts at 46.5° C. It loses water when heated, and then boils at 172° C.—**2.** One of the higher homologues of pinacone; any ditertiary alcohol, as butyrone pinacone, $(C_3H_7)_2C(OH)(OH)C(C_3H_7)_2$.

pinacotheca (pin″a-kō-thē′kä), *n.*; pl. *pinacothecæ* (-sē). [L., < Gr. πινακοθήκη, a repository for pictures, < πίναξ (πινάκ-), a board, tablet, picture, + θήκη, a repository.] A picture-gallery, especially in *Gr. antiq.* One of the most important stood just outside the Propylæa on the Acropolis at Athens, on the left as one entered.

pinacothek (pin′a-kō-thek), *n.* Same as ★*pinacotheca.*

pinakid (pin′a-kid), *n.* [Gr. πινακίδιον, dim. of πίναξ, a tablet.] A sponge-spicule of flattened, scale-like form, supposed to be derived from the caltrop.

pinakiolite (pi-nak′i-ō-līt), *n.* [Gr. πινάκιον, dim. of πίναξ, a tablet, + λίθος, stone.] A borate containing magnesium and manganese (formula perhaps $3MgB_2O_4.MnMn_2O_4$), occurring in black tabular orthorhombic crystals: found in Sweden.

pinakoid, *n.* See *pinacoid.*

pinakothek, *n.* Same as ★*pinacotheca.*

Pinales (pī-nā′lēz), *n. pl.* [NL. (Britton, 1901), < *Pinus* + *-ales.*] An order of gymnospermous plants embracing the families *Pinaceæ* and *Taxaceæ.* It is equivalent to the *Coniferæ* of most authors, which it replaces under the rule that the name of a higher group must be formed from that of some genus in the group. See *Coniferæ.*

piña-nona (pē-nyä-nō′nä), *n.* A corruption of *piña anona.* See ★*piña*².

> Another East Indian fruit, called by the Mexicans *piña-nona* (*Monstera deliciosa*), is naturalized in the tropic and subtropic zones of Mexico and is frequently offered for sale in the markets.
> *Amer. Anthropologist*, Jan.–March, 1900, p. 71.

pinastric (pi-nas′trik), *a.* [NL. *pinaster* (*pinastr-*) + *-ic.*] Derived from *Cetraria pinastri.*—**Pinastric acid**, a golden-yellow crystalline acid, $C_{19}H_{14}O_6$, found in the lichens *Cetraria pinastri*, *C. juniperа*, and *Lepra flava*, from which it is extracted by ether. It melts at 178–180° C. Also called *chrysocetraric acid.*

pinatype (pin′a-tīp), *n.* A colored picture obtained by superimposing three gelatin films which have been exposed under negatives taken behind color-screens and dyed corresponding colors. Where the sensitized gelatin is exposed to light it is hardened and will not take the dye.

pinball (pin′bâl), *n.* **1.** Same as *bead-sight.* Also called *pinball-sight.*—**2.** A small round pincushion, usually made on cardboard: sometimes of other forms.

pin-basket (pin′bås″ket), *n.* A large ornamental pincushion, with pins of various lengths artistically inserted so as to resemble a basket, formerly, in some places, presented to the mother of a family on the birth of each child; hence, the youngest child in a family. *N. E. D.* [Eng.]

pin-block, *n.* **2.** Same as *wrest-block.*

pin-bone (pin′bōn), *n.* The end of the pelvis formed by the ischium, showing as a protuberance on either side of the tail.

> Leaving this part, we come to that which gives the Short-horn its standing as a beef animal. Beginning back of the shoulder and along the top we find the valuable cuts which are desirable for the market. The lines on each side of the back should be carried true to the last rib, with a loin thick, preferably inclined to raise some, followed by hooks well covered and smooth, and a long hind quarter, ending in a level tail head and wide *pin-bones.* *Rep. Kansas State Board Agr.*, 1901–02, p. 89.

pin-borer, *n.* **2.** A name also given to various scolytid beetles which make minute holes in the bark of infested trees.—**Apple pin-borer.** Same as *apple* ★*bark-beetle.*

pin-boss (pin′bos), *n.* The boss at the pin end of an engine-crank.

pin-box (pin′boks), *n.* **1.** A box for holding pins.—**2.** In *mech.*, the box which incloses or forms a bearing for the crank-pin or wrist-pin of an engine.

pin-bush² (pin′bůsh), *n.* An Australian tree, *Hakea leucoptera.* See ★*needle-bush* and ★*water-tree*, 2.

pincers, *n. sing.* and *pl.* **3.** A species of herring, *Sardina escamuda.*

pinch, *v.* **I.** *trans.* **9.** To arrest (an offender). [Slang.]

> But the cops *pinched* him just as he was making the fast freight and that finished the gang.
> *McClure's Mag.*, XVI. 570.

10. To steal. [Slang.]

> The youngest pirate was arrested for *pinching* a pocketbook, for economic reasons of his own, and never reached the rendezvous at all. *N. Y. Times*, Sept. 2, 1902.

11. *Naut.*, to sail (a vessel) as close to the wind as she can be brought without spilling the wind out of the sails, that is, without luffing her. A sailing-vessel is said to be *starved for wind* when she is pinched hard.—**Pinch her!** (*naut.*), an order to the helmsman to shiver the sails a little; a command to bring the ship a little closer to the wind while close-hauled.—**To pinch a bet**, in *gambling*, to reduce the amount of a bet, usually after winning the previous one. See *progression.*—**To pinch the wind**, to sail very close to the wind; to point the nose of the vessel so close to the wind that the luffs of the sails lift.

II. *intrans.*—**To pinch out**, in *mining*: (*a*) To run out or disappear; peter out: said of a vein of mineral.

> Sometimes 100 to 200 tons of payable quartz would be raised from one of these so-called reefs, when they would *pinch out*, and it would be found that they were unconnected with other leaders or veins.
> *Goldfields of Victoria*, p. 22, quoted in E. E. Morris, [Austral English.

(*b*) To compress or be squeezed out, as mineral ore from between rock strata.

pinch, *n.* **6.** In *mining*, a partial caving in or compression of the walls of a vein of ore or of a coal-bed, sufficient to disturb the ore or coal-bed. Sometimes called a *pinch-out.*—**To make a pinch**, to make an arrest.

> They *make a pinch* o' some second-class old thief like Jim . . . and tell the reporters they've copped out the flyest man on the turf. *McClure's Mag.*, XVI. 574.

pin-chain (pin′chān), *n.* A chain composed of detachable links fastened together by a pin driven through a hole in the end of one link and corresponding holes in the open ends of the next link. It is used in conveyers and elevators.

pinch-dog (pinch′dog), *n.* A dog used on a wood-turning lathe, in which the piece to be turned is clamped or pinched.

pinch-fit (pinch′fit), *n.* A method of fastening an arm or lever to a shaft by the use of a bolt passing through lugs on the hub of the lever. The bolt squeezes the lugs together, thus pinching the shaft. Also used to clamp the tail-spindle in turning-lathes.

pinch-out (pinch′out), *n.* Same as ★*pinch*, 6.

Pincian (pin′sian), *a.* [L. *Pincianus*, < *Pincius* (It. *Pincio*), the name of a Roman gens, applied, in *Mons Pincius*, to the eighth hill of Rome.] Of or pertaining to a small hill (*Mons Pincius*, Italian *Monte Pincio*, once called *Collis hortorum*, 'Garden Hill') situated within the walls of Rome.

pincoffin (pin′cof-in), *n.* [*Pincoff*, its first manufacturer, + *-in*².] A prepared form of madder, used by dyers. It is made from garancin by acting on it with superheated steam, so that the purpurin is destroyed, while the alizarin remains unaltered.

pindling (pind′ling), *a.* [Appar. a variant of *spindling.*] Spindling; 'peaked'; delicate; unhealthy. [New Eng.]

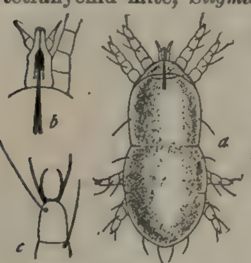
> "Seems to me Leviny's lookin' kinder *pindlin'*, ain't she?" said the fleshy old lady, who was Mrs. Potter; she had buried a good many children of her own years ago.
> *M. E. Wilkins*, Brakes and Wild Vi'lets, Humble Ro-[mance, p. 110.

pine¹, *n.*—**Black pine.** (*e*) In Australia, *Callitris calcarata*, called also *cypress-pine*, *Murray pine*, *red pine*, and *scrub-pine*; and *Callitris robusta*, called also *common pine*, *cypress-pine*, *dark pine*, *Lachlan pine*, *Murrumbidgee pine*, *rock-pine*, and *white pine.* See *coorong* and *cypress*1, 1 (*b*).—**Bristle-cone pine.** Same as *foxtail-pine* (which see, under *pine*1).—**Coast scrub-pine.** See *scrub-*★*pine* (*c*).—**Colonial pine**, the hoop-pine, *Araucaria Cunninghamii.*—**Common pine**, in Australia, *Callitris robusta.* See *coorong.*—**Coulter's pine**, *Pinus Coulteri*, a tree 50 to 70 feet high, scattered at 3000 to 6000 feet altitude through the coast ranges of California. The cones are 10 to 14 inches long, with beaked scales. The seeds were formerly gathered in large quantities by the Indians. The wood is occasionally used for fuel.—**Cuban pine.** Same as *slash-pine.*—**Cypress-pine**, any one of the Australian species of *Callitris.* See *black* ★*pine* (*e*).—**Dark pine**, in Australia, *Callitris robusta.* See *black* ★*pine* (*e*).—**Dundathu pine**, the Queensland kauri, *Dammara robusta.*—**Fat pine**, the long-leafed pine: so called from its resin content.—**Hickory-pine.** (*a*) See *table-mountain pine*, under *pine*1. (*b*) Same as *foxtail-pine* (which see, under *pine*1).—**Huon pine.** See *huon-pine.*—**Illawara Mountain pine**, the Oyster Bay pine, *Callitris rhomboidea.*—**Indian pine**, the loblolly-pine, *Pinus Tæda.*—**Jack-pine.** Same as *gray pine* (which see, under *pine*1). In Canada and Michigan this tree covers extensive sandy levels. In Michigan these are known as *Jack-pine plains.*—**Jeffrey pine.** Same as *bull-pine* (*a*) (which see, under *pine*1).—**Joint-pine**, a plant of the genus *Ephedra* and perhaps other gnetaceous plants; joint-fir.—**King William pine**, *Athrotaxis cupressoides.* Also called *Tasmanian pencil-cedar.*—**Lachlan pine**, see *black* ★*pine* (*e*).—**Light pine**, in Australia, the Oyster Bay pine, *Callitris rhomboidea.*—**Limber pine**, *Pinus flexilis*, one of the Rocky Mountain white pines (see *white pine* (*d*), under *pine*1). It is a short-trunked tree, from 40 to 50 feet high, with a wide, round-topped head. It is thus called from the pliable wood.—**Long-straw pine,** the long-leafed pine, and sometimes the loblolly-pine, which also has the needles rather long.—**Macquarie pine.** Same as *huon pine*.—**Marsh-pine.** Same as *pond-pine* (which see, under *pine*^{1}).—**Mexican nut-pine,** *Pinus cembroides*.—**Murray pine.** (*a*) Same as *black pine* (*a*) (which see, under *pine*^{1}). (*b*) See *black* ★*pine* (*e*).—**Murrumbidgee pine.** See *black* ★*pine* (*e*).—**New Caledonian pine,** *Araucaria Cookii*. See *Araucaria*.—**New Zealand yellow pine.** Same as ★*manoao*.—**Old-field pine.** (*b*) In Florida, same as *cedar pine* (which see, under *pine*^{1}).—**Parasol-pine.** (*a*) Same as *umbrella-pine*. See *Sciadopitys*. This tree is planted around temples in Japan. Its wood is of some economic value. (*b*) Same as *stone-pine* in any of the senses.—**Pine bark-beetle, blister, blister-blight, bunch-grass, leaf-miner, leaf-rust.** See ★*bark-beetle*, etc.—**Pine-leaf fungus.** See ★*fungus*.—**Pine-leaf tube-builder,** a tortricid moth, *Eulia politana*, common to Europe and the northeastern United States, whose larvæ form tubes of pine-needles lined with silk.—**Pine measuring-worm.** See *pine* ★*span-worm*.—**Pine plant-louse.** See ★*plant-louse*.—**Pine saw-fly.** See ★*saw-fly*.—**Pine-slip reaction.** See ★*reaction*.—**Pine span-worm.** See ★*span-worm*.—**Pine web-worm.** Same as ★*pine-pest*.—**Pine-wood still.** See ★*still*^{2}.—**Pitch-pine.** (*d*) In California, same as *Coulter's* ★*pine*. The *Western pitch pine* is the same as *yellow pine* (*c*) (which see, under *pine*^{1}).—**Poverty pine.** Same as *Jersey pine* (which see, under *pine*^{1}).—**Prickle-cone pine.** Same as *Obispo pine* (which see, under *pine*^{1}). This tree is found somewhat abundantly on the California coast northward. It grows 40 to 50 feet high, having at maturity a handsome compact round head. The trunk is occasionally sawn into lumber. Also *swamp-pine*.—**Prickly pine.** (*a*) In Queensland, the spotted tree, *Flindersia maculosa*. (*b*) Same as *table-mountain pine* (which see, under *pine*^{1}).—**Red pine.** (*c*) In Australia, *Callitris calcarata*. See *black* ★*pine* (*e*).—**Riga pine.** See *Riga pine*.—**Rock-pine.** (*a*) A form of the Western yellow pine or bull-pine, ranging widely over the Rocky Mountain region, forming on the Colorado plateau the most extensive pine forests of the continent. See *yellow pine* (*c*). (*b*) In New South Wales, a variety of *Callitris robusta*. See *black* ★*pine* (*e*).—**Sabine** or **Sabine's pine.** Same as *digger-pine* (which see, under *pine*^{1}).—**Scots pine.** Same as *Scotch pine*. [Great Britain.]—**Scrub-pine.** (*b*) See *black* ★*pine* (*e*). (*c*) A low tree, *Pinus contorta*, ranging along the Pacific coast from Alaska to northern California and to some extent inland. It has either a compact round head or an open picturesque one which has given rise to the name *twisted pine*. It seems to grade into the lodge-pole pine. The saccharine cambium is eaten by the Indians. Also *coast scrub-pine*.—**She-pine.** (*a*) See *she-pine*. (*b*) Same as *slash-pine*. Also *she pitch-pine*.—**Swamp-pine.** (*a*) Same as *prickle-cone* ★*pine*. (*b*) Same as *slash-pine*. (*c*) The loblolly-pine.—**Twisted pine.** See *twisted*.—**White-barked** or **white-stemmed pine,** *Pinus albicaulis*, often forming the timber-line in the Rocky, Sierra Nevada, and other Western mountains. It is marked by the brown or creamy-white plate-like scales of its bark. Its timber is of little value. Its large sweet seeds are eaten by the Indians.—**White pine.** (*f*) See *black* ★*pine* (*e*).—**Wild pine.** (*a*) and (*b*) See *wild*. (*c*) In the Bahamas, a species of air-plant, *Tillandsia Balbisiana*. Compare *wild pine* (*b*), under *wild*.—**Yellow pine.** (*f*) In New Zealand, the manoao, *Dacrydium Colensoi*.

pineapple, *n.*—**Oil of pineapple.** See ★*oil*.—**Pineapple penny.** See ★*penny*.—**Pineapple ware.** See ★*ware*^{2}.—**Sugar-loaf pineapple,** a sweet and juicy variety well known in warm countries, but too tender and perishable to ship well.

pineapple-blight (pīn'ap″l-blīt), *n.* See ★*blight*.

pineapple-mite (pīn'ap″l-mīt), *n.* A small tetranychid mite, *Stigmæus floridanus*, which occurs at the bases of the imbricated leaves of pineapple, where its punctures give access to the spores of destructive fungi.



Pineapple-mite (*Stigmæus floridanus*): female.
a, mite; *b*, mouth-part; *c*, claws.
Highly magnified.

pine-borer (pīn'bōr″ėr), *n.* Any one of numerous cerambycid, buprestid, or other beetles which bore into pine timber. Among them are the large pine flat-headed borer, *Calcophora virginiensis*; the Oregon buprestis, *Calcophora angulicollis*; the pine dicerca, *Dicerca tenebrosa*; the common longicorn pine-borer, *Monohammus confusor*; the lesser pine-borer, *Asemum mæstum*; the pine euderces, *Euderces pini*, and many others.—**Ribbed pine-borer,** an American cerambycid beetle, *Rhagium lineatum*, whose larvæ live in the sap-wood of pitch-pine.

pine-butterfly (pīn'but″ėr-flī), *n.* An American pierid butterfly, *Neophasia menapia*, occurring in the Pacific States and in Colorado, whose larvæ live on pine-needles.

Pine-cone fungus. See ★*fungus*.

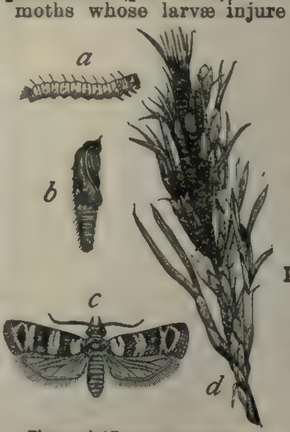
pine-goldfinch (pīn'gōld″finch), *n.* Same as *pine-finch*, 2.

pine-grass (pīn'gràs), *n.* See ★*grass*.

pine-land (pīn'land), *n.* Land covered with a growth of pines.

pine-lily (pīn'lil″i), *n.* See *bear-*★*grass* (*c*).

pine-moth (pīn'môth), *n.* Any one of several moths whose larvæ injure pine-trees. More than 50 species are known to have this habit in the United States, and more than 70 in Europe. The pine-moth of Nantucket is a specific example. It is a tortricid, *Evetria frustrana*, occurring in the northeastern United States, where its larvæ damage the new growth of pine-trees.



Pine-moth (*Evetria frustrana*).
a, larva; *b*, pupa; *c*, moth; *d*, branch showing work of insect.
(After Comstock.)

pinenchyma (pi-neng'ki-mä̤), *n.* [Gr. πίναξ, a tablet, + ἔγχυμα, infusion.] Tissue consisting of thin, flat cells; tabular parenchyma. *N. E. D.*

pinenchymatous (pin-eng-kī'ma̤-tus), *a.* Pertaining to, or of the nature of, pinenchyma.

pinene (pī'nēn), *n.* [*pine*^{1} + *-ene*.] The principal constituent of a large number of volatile oils, especially of those obtained from many varieties of pine. It has the composition $C_{10}H_{16}$, and is the most important of the terpenes. It exists in a dextrorotatory and levorotatory as well as in an inactive form. The compounds formerly called *terebenthene*, *australene*, *eucalyptene*, *laurene*, *olibene*, and *massoyene* are more or less pure pinene, the names having been given when the methods of identifying terpenes were imperfectly developed.

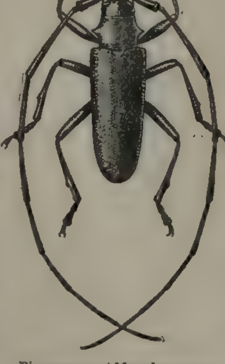
pine-pest (pīn'pest), *n.* An American phycitid moth, *Pinipestis zimmermanni*, occurring in the northeastern United States, where its larvæ bore into the trunks of pines, causing large quantities of gum to exude.

piner^2 (pī'nėr), *n.* [*pine*^{1} + *-er*^{1}.] In Tasmania, a man who cuts Huon pine and brings it down to the coast. *E. E. Morris*, Austral English.

pinery, *n.* **3.** The field or ground in which pineapples are grown.

pine-sap, *n.*—**Sweet pine-sap.** See *Schweinitzia*.

pine-sawyer (pīn'sâ″yėr), *n.* Any one of several cerambycid beetles whose larvæ bore into pine-trunks, as *Monohammus confusor* (sometimes known as the *larger pine-sawyer*), *M. marmorator*, and *M. scutellatus*.



Pine-sawyer (*Monohammus scutellatus*).
Slightly enlarged.

pine-sesian (pīn'sē″ṣiạn), *n.* An American sesiid moth, *Parhamonia pini*, occurring in the eastern United States, whose larvæ bore under the bark of the pine. Also called *pitch-worm*.

pine-slashings (pīn'slash″ingz), *n. pl.* See *slashing*, *n.*, 3.

pine-straw (pīn'strâ), *n.* The fallen needles of pines.

> Mulching the trees with *pine straw*, oak leaves, or something of this nature.
> *U. S. Dept. Agr.*, Div. Veg. Physiol. and Pathol., Bulletin 8, 1896, p. 20.

pine-sugar (pīn'shủg″ä̤r), *n.* Same as ★*pinite*^{2}.

pine-tag (pīn'tag), *n.* The staminate inflorescence of a pine.

> Dinner was fairly pushed off the stove by the decoctions of herbs, spice-wood, *pine tags*, etc.
> *C. D. Warner*, in Harper's Mag., Feb., 1888, p. 486.

pine-tassel (pīn'tas″l), *n.* The pine-weed, *Sarothra gentianoides*, both names noting the resemblance of the branches to pine-needles.

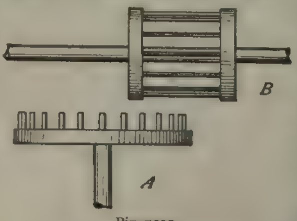
pine-twister (pīn'twis″tėr), *n.* A disease due to the fungus *Melampsora Tremulæ*, which attacks the needles of pine seedlings, causing the thicker ones to become twisted.

pine-wax (pīn'waks), *n.* A waxy substance found in small quantity on the needles of the Scotch fir, *Pinus sylvestris*.

pin-frame (pin'frām), *n.* A false reed in a loom, used in lappet-weaving for the shuttle to run against. *T. W. Fox*, Mechanism of Weaving, p. 273.

pingao (ping'gou), *n.* [Maori.] A spreading seaside cyperaceous plant, *Scirpus spiralis*, native to New Zealand. It has three-angled culms, from 1 to 3 feet high, and long, concave, keeled leaves, which are used for plaiting into belts.

pin-gear (pin'gēr), *n.* A form of toothed gearing, for transmitting motion or power, in which one of the wheels carries cylindrical pins which mesh into the spaces between the teeth of the other wheel. These pins may project from the face of a disk (crown-gear), or may be held between disks on the shaft (lantern-gear); in either case the pin is parallel to the shaft. This gear is used, in modern practice, only in small pinions for clocks and similar light mechanisms. In older millwrighting, wooden pins were much used, even in massive transmissions. When the pins are secured in disks at each end, the lantern-pinion results, so called from its cage-like form. When pins on the face of a disk were used to drive pins in a lantern-gear, the transmission could drive shafts at an angle of 90°. When parallel shafts are to be driven, one wheel must be a toothed wheel, having its contact surfaces mainly inside of the pitch-circle, and with ample clearance-spaces formed at the bottoms of the teeth.



Pin-gear.
A, crown-gear; *B*, lantern-gear.

ping-pong (ping'pong), *n.* [A varied reduplication of *ping*, expressing repeated strokes. Compare *ding-dong*.] Tennis played with small rackets upon a table on which the courts may be marked.

ping-suey (ping-sö'i), *n.* [Chinese.] An inferior grade of China teas, imitating different types of green tea, by some believed not to be the product of the tea-plant at all.

pingue (pē̤n'göā), *n.* [Sp. *pingüe* (*Dict. Sp. Acad.*), fat: referring to the fatty or resinous substance contained in the rootstocks.] A plant of the great plains, *Picradenia floribunda*. See ★*Picradenia*.

pinguedinous (ping-gwed'i-nus), *a.* [L. *pinguedo* (*pingued-*), fatness, + *-ous*.] Fat; greasy. [Rare.]

pinguefaction (ping″gwē̤-fak'sho̤n), *n.* [NL. **pinguefactio(n-)*, < *pinguefacere*, make fat. See *pinguefy*.] Same as ★*pimelosis*.

pinguescence (ping-gwes'e̤ns), *n.* [See ★*pinguescent*.] The process of becoming fat. [Rare.]

pinguescent (ping-gwes'e̤nt), *n.* [L. *pinguescent(em)*, acc. sing. of ppr. of *pinguescere*, grow fat.] Growing fat; flourishing.

Pinguiculaceæ (ping-gwik-ṳ-lā'sē̤-ē), *n. pl.* [NL. (Dumortier, 1829), < *Pinguicula* + *-aceæ*.] A family of dicotyledonous sympetalous plants of the order *Polemoniales*; the bladderwort family. It includes 5 genera, of which *Pinguicula* is taken as the type, and *Utricularia* is the only other important genus. See *Lentibulariaceæ*.

pinguidity (ping-gwid'i-ti), *n.* [*pinguid* + *-ity*.] Fatness.

pinhole, *n.* **3.** In *archery*, the exact center of the target. Hits in the gold are measured by their distance from the pinhole. Compare *pin*^{1}, *n.*, 2 (*b*).—**Pinhole photography.** See ★*photography*.

Pinic acid, a crystalline bibasic acid, $C_9H_{14}O_4$, formed by the oxidation of α-pinonic acid with sodium hypobromite. It melts at 102° C.

pinings (pīn'ingz), *n. pl.* [*pine*^{1} + *-ing*^{1}.] The droppings of pine-needles under a pine-tree or in a pine-wood. [Rare.]

> The morning sun . . .
> On the red *pinings* of their forest floor,
> Drew a warm scent abroad.
> *M. Arnold*, A Dream, l. 5.

pinion^1, *n.* **6.** One of two wings or flat projections of any kind.

> Celts, with sockets similar to those which are so often found in Europe, are unknown in Egypt, but celts with *pinions* are met with there which approach in appearance those with sockets. The *pinions*, which are folded around the handle, are found only on one side.
> *Smithsonian Rep.*, 1890, p. 511.

Ash-gray pinion, a noctuid moth, *Xylina antennata*, whose larva sometimes bores into young apples and peaches in the eastern United States. Formerly known also as *Xylina cinerea*, which see, with cut.

pinion^2, *n.*—**Planetary pinion.** Same as *planet-wheel*, 2.

pinion-shaft (pin′yọn-shȧft), *n.* A shaft which carries a pinion, as in a clock.

pinipicrin (pin-i-pik′rin), *n.* [L. *pinus*, pine, + Gr. *πικρός*, bitter, + *-in*^{2}.] A light yellowish-brown, amorphous, bitter substance, $C_{22}H_{36}O_{11}$, found in the needles of the pine, *Pinus sylvestris*, and in the green parts of the white cedar, *Thuja occidentalis*. When hydrolyzed with dilute sulphuric acid it yields sugar and ericinol.

pinitannic (pin-i-tan′ik), *a.* [L. *pinus*, pine, + E. *tannic*.] Derived from the pine family. —**Pinitannic acid**, a form of tannin found in the white cedar or arbor vitæ, *Thuja occidentalis*.

pinite^{2} (pīn′īt), *n.* [L. *pinus*, pine, + *-ite*^{2}.] A variety of sugar derived from hexahydrobenzene, $C_6H_6(OH)_5(OCH_3)$, which exudes from wounds in the California sugar-pine, *Pinus Lambertiana*. It also occurs in senna-leaves and in Madagascar caoutchouc from *Mateza roritina*. When treated with hydriodic acid it yields methyl iodide and dextro-inosite. Also called *matezite*.

pinivorous (pī-niv′ọ-rus), *a.* [L. *pinus*, pine, + *vorare*, devour.] Feeding upon the seeds or kernels of pine-cones, as do the crossbills. [Rare.]

pink^{2}. **I.** *n.*—**Aniline pink**, an old name for safranine.—**Barbados pink**, the cypress-vine, *Quamoclit Quamoclit*.—**Diamine pink**, a direct cotton coal-tar color of the monoazo type, derived from thioparatoluidine. It dyes unmordanted cotton pink in a salt bath. Also called *diamine rose*.—**English pink**. Same as *Italian pink*.—**Ground pink**. (*a*) See ★*ground-pink*. (*b*) Same as *moss-pink*.—**Indian pink**. (*c*) In California, *Silene Californica*, with flowers of a brilliant scarlet, elegantly slashed, appearing in summer. (*d*) Locally, one of several other plants, namely: in Massachusetts, the wild pink, also the fringed polygala (see *Polygala*, 1); in Illinois, the scarlet painted cup, *Castilleja coccinea*; in the southeastern States, one of the wake-robins, *Trillium stylosum*.—**Marsh-pink**, one of several species of *Sabbatia*, as *S. dodecandra*, the large marsh-pink. See *Sabbatia*.—**New pink**. Same as ★*phloxin P.* —**Pompadour pink**. Same as *rose Pompadour* (which see, under *rose*^{1}).—**Swamp-pink**. (*a*) See *swamp-pink*. (*b*) Same as *grass-pink* (which see, under *pink*^{2}). (*c*) A plant of the bunch-flower family, *Helonias bullata*, found locally in swamps from southern New York to Virginia, and said also to occur on the higher Alleghanies. Its raceme of purple flowers is borne on a stout scape rising from a tuft of leaves which elongate after flowering-time. —**Wild pink**. See *Silene*.

II. *a.*—**Pink 'un.** (*a*) [*cap.*] A nickname given originally to the London Sporting Times, an evening journal which was the first printed on pink paper; hence applied to other evening papers and especially to papers of a low, vulgar type. [Slang.] (*b*) A salacious story. [Slang.]

> Tell us a good story . . . "Lovely needlework"? That's a funny beginning for a *pink 'un*. Well?
> *R. Hichens*, The Londoners, xvi.

pink^{7} (pingk), *a.* and *n.* [Detached from *pink-eye*, *pink-eyed*, and treated, esp. in the dim. *pinky*, as an imitative word, like *dinky*, etc.] Small: said of the eyes and of other things. *Eng. Dial. Dict.* [Prov. Eng.]

pinken (ping′kn), *v. i.* [*pink*^{2} + *-en*^{1}.] To grow pink: flush. [Rare.]

> But with the rising glow of sunrise it [Fusiyama] defines its spotless tip first *pinkening* like the point of some wondrous bud: then it becomes all gold-white.
> *L. Hearn*, in Harper's Mag., Nov., 1890, p. 867.

pinkes (pin′kes), *n.* [Aram., < Gr. *πίναξ*, a board, a tablet.] Among the Jews, a book kept in a synagogue in which are recorded the transactions of the congregation.

pink-fish (pingk′fish), *n.* Same as *blind* ★*goby*.

pink-grass (pingk′gräs), *n.* A sedge, as *Carex glauca* or *C. præcox*, found in pastures. [Eng.]

pinking-iron, *n.* **2.** A sword. See *pink*^{1}, *v.*, 1.

pinking-machine (ping′king-ma-shēn″), *n.* In *shoe manuf.*, a hand- or power-machine for cutting the ornamental edging called *pinking*, used in finishing and decorating shoes. It consists essentially of a leather or hard rubber roll over which the leather or cloth is run, and which serves as a revolving anvil for a revolving cutter which trims and stamps out the edge of the material. By changing the cutter a variety of patterns may be produced.

pinking-punch (ping′king-punch), *n.* An implement for pinking cloth; a kind of pinking-iron.

pink-rust (pingk′rust), *n.* See ★*rust*^{1}.

pinkwood, *n.* **2.** In Tasmania, a tree of the family *Eucryphiaceæ*, *Eucryphia Billardieri*, one of the most beautiful trees in Tasmania, growing from 70 to 100 feet high, with a very straight trunk, 6 to 7 feet in circumference. It bears numerous white flowers, from 1 to 2 inches across, which resemble single white roses, and yields a wood of a pale reddish color.—**3.** In Australia, the wallaby-bush, *Beyeria viscosa*.

pinky^{4} (ping′ki), *a.* and *n.* [Dim. of *pink*^{7}; ult. resting on *pink*^{3}. Compare ★*dinky*.] **I.** *a.* **1.** Of eyes, narrow; drooping.—**2.** Small, in general; very small: as, a *pinky* ring; the *pinky* finger. [Prov. Eng. in both uses.]

II. *n.* The little finger. [Prov. Eng.]

pin-maul (pin′mâl), *n.* Same as ★*ship-maul*.

pinna^{1}, *n.*—**Pinna marina**, the soft, silky golden-brown threads of the byssus of *Pinna*. *The Field*, Oct. 6, 1900, p. 547.

Pinnacites (pin-ạ-sī′tēz), *n.* [NL., prob. an error for **Pinacites*, < Gr. *πίναξ* (*πινακ-*), a board, a tablet.] A genus of microcampylous ammonoid cephalopods having highly involute compressed shells with acute venter and goniatitoid sutures: found in Devonian formations.

pinnacocyte, *n.* An incorrect spelling of *pinacocyte*.

pinnal (pin′ạl), *a.* [*pinna*^{1} + *-al*^{1}.] Of or pertaining to the pinna or outer ear.

pinnatic (pi-nat′ik), *a.* Relating to or resembling a pinna, or slender pointed organ, like those on the arms of crinoids.

pinnatisected (pi-nat′i-sek-ted), *a.* Same as *pinnatisect*.

pinnatodentate (pi-nā-tō-den′tāt), *a.* Pinnate, with toothed leaflets. *N. E. D.*

pinnatopectinate (pi-nā-tō-pek′ti-nāt), *a.* Having lateral projections like the teeth of a comb, arranged pinnately. *N. E. D.*

Pinnatopora (pin-ạ-top′ọ-rä), *n.* [NL., < L. *pinnatus*, pinnate, + (?) Gr. *πόρος*, pore.] Same as *Glauconome*.

pinnel (pin′ẹl), *n.* [Origin obscure.] Coarse gravel: sandstone conglomerate. *N. E. D.* [Local, Eng.]

pinniferous (pi-nif′ẹ-rus), *a.* Having or bearing fins.

pinnigerous (pi-nij′ẹ-rus), *a.* Same as ★*pinniferous*.

pinning-out (pin″ing-out′), *n.* In the manufacture of felt hats. See the extract.

> The second-sizing and *pinning-out* is done by hand at so-called batteries, but instead of doing three at a time wrapped in cloth, only one body is manipulated, being rolled on a board with an instrument not unlike an ordinary rolling-pin. The battery is a large tub surrounded octagonally by planks sloping slightly inward, and filled with water kept hot by condensed steam.
> *Sci. Amer.*, Sept. 30, 1905, p. 262.

pinnulation (pin-ụ-lā′shọn), *n.* In crinoids, the arrangement of the pinnules, or secondary branches, on the arms.

pinnule, *n.* **4.** A small pin fixed upon a pre-telescopic astronomical instrument and serving, like the sight of a gun, to enable the observer to make an accurate pointing upon a star or other celestial object. *Sci. Amer. Sup.*, Dec. 29, 1900, p. 20896.

pinnuliferous (pin-ụ-lif′ẹ-rus), *a.* Bearing pinnules, as the arms of crinoids.

pinny^{1}, *a.* **2.** Noting bronze or wrought-iron when it contains a great many hard spots.

pino (pē′nō), *n.* [Sp. *pino*, a pine-tree.] In Spain and countries settled by the Spanish, a general name for pines and their allies. In Mexico occur the following: *pino blanco* (white pine), *Pinus Montezumæ*; *pino de corcho* (cork-pine), *Pseudotsuga mucronata*; *pino oyamel*, the sacred fir, *Abies religiosa*; *pino piñon*, the nut-pines, *Pinus edulis*, *P. Parryana*, and *P. cembroides*; and *pino real* (royal pine), *Pinus Ayacahuite* and *P. oöcarpa*. See ★*ocotilla* and ★*teocote*.

pinochle, *n.* See *penuchle*.

pinola (pi-nō′lạ̈), *n.* Same as *pinole*, 2.

pinoline (pīn′ọ-lin), *n.* [L. *pinus*, pine, + *-ol* + *-ine*^{2}.] A trade-name of the lighter liquid product obtained in the destructive distillation of resin or colophony. It comes over before the resin-oil, which is the principal product of the distillation. It is used to burn in lamps and for the manufacture of some varnishes. Also known as *resin-spirit*.

piñon, *n.* **2.** In Mexico, the edible seed of *Pinus cembroides*.—**Piñon de Indias**, in countries settled by the Spanish, a name often applied to the oily seeds of *Jatropha Curcas*, the physic-nut.—**Piñon espinoso** (thorny piñon), in Porto Rico, *Erythrina Corallodendron*, a thorny shrub or small tree bearing beautiful clusters of scarlet flowers. Freshly cut stakes of this tree readily take root when thrust into the ground and are consequently much used for forming living fences or hedges about garden-patches.

piñon-bird (pēn-yōn′, pin′yọn-bėrd), *n.* The piñon jay, *Cyanocephalus cyanocephalus*. [Uncommon.]

piñoncillo (pēn-yōn-thēl′yō), *n.* [Sp.-Amer. *piñoncillo*, diminutive of *piñon*, which see.] In countries settled by the Spanish, a name often applied to the oily seeds of several euphorbiaceous plants having purgative properties; in Mexico, especially to *Euphorbia Lathyris*, the introduced caper-spurge, and to *Jatropha Curcas*, the physic-nut.

pinonic (pi-nō′nik), *a.* [*pin*(*ene*) + *-one* + *-ic*.] Derived from pinene.—**Pinonic acid**, a crystalline ketonic acid, $C_{10}H_{16}O_3$, formed by oxidizing pinene with potassium permanganate. It melts at 104° C.

pin-pool (pin′pöl), *n.* See *pool*^{2}.

pin-prick (pin′prik), *n.* The prick of a pin; hence, figuratively, an intentional trifling irritation.—**Pin-prick policy** or **policy of pin-pricks**, in *politics*, a system of small but intentional annoyances which, while they irritate the victim, are too slight to be resented by an open quarrel, and are thus doubly pleasing to the irresponsible tormentor. The phrase was applied at one time to irritations between Great Britain and France said to be fomented by certain politicians and newspapers.

pin-rot (pin′rot), *n.* A fungous disease of the incense-cedar, *Libocedrus decurrens*, caused by one of the *Basidiomycetes*.

pin-spot (pin′spot), *n.* Each of a number of small round spots like pinheads forming a pattern upon a textile fabric. *N. E. D.*

pin-spotted (pin′spot″ed), *a.* Marked by pin-spots, as a fabric. See ★*pin-spot*.

pintadine (pin′tạ-dēn), *n.* [Sp.-Amer. *pintadina*.] A pintadina or pearl-oyster.

> On the acclimatisation and culture of *pintadines*, or true pearl oysters, on the coasts of France, and on the forced production of fine pearls, by M. Raphaël Dubois. Successful experiments have been carried out with Margaritifera vulgaris, which has been acclimatised and made to yield pearls which, although small, are of good quality.
> *Nature*, Oct. 29, 1903, p. 639.

pinto^{2} (pēn′tọ), *n.* [Pg., a particular use of *pinto*, a chicken, lit. spotted. See *pinto*^{1}.] A Portuguese gold coin of the eighteenth century, equal to 400 reis.

pinto^{3} (pin-tō′), *n.* [Tagalog.] In the Philippine Islands, a door.

pin-tooth (pin′töth), *n.* **1.** One of the pointed teeth of the escapement-wheel of a clock or watch.—**2.** A canine tooth. *N. E. D.*

pin-tumbler (pin′tum″blėr), *n.* A small round pin used in certain locks to prevent any but the right key from operating the lock. The pin is in two parts, and the joint must be brought into line with the joint between the case and the key-barrel before the latter will turn. These pin-tumblers are used in Yale locks.

piñuela (pē-nū-ā′lä), *n.* [Sp. *piñuela*, diminutive of *piña*, pineapple.] **1.** In many tropical countries colonized by the Spanish, a name applied generally to plants of the pineapple family, from their resemblance in habit of growth to a pineapple, especially *Bromelia Pinguin*, a plant with rigid, sword-like leaves armed with recurved spines and much used for hedges to inclose garden-patches.—**2.** In Porto Rico, a name applied to epiphytal bromelias and other epiphytal plants, including a number of orchids; among the latter, *Cyrtopodium punctatum*, *Ornithidium coccinium*, and *Oncidium Baueri*.

pinule (pin′ūl), *n.* [NL. **pinulus*, dim. of *pinus*, pine-tree.] In the sponge-spicules, a hexactinellid element in which one or more of the rays have the form of a plume or pine-cone.

pinulhexactine (pin″ūl-hek-sak′tin), *n.* [NL. **pinulus*, pinule, + E. *hexactine*.] In the morphology of the sponge-spicules, a hexactinellid element in which one of the six rays is developed into a plume or pinule.

pinulus, *n.* See *pinnulus*.

pin-valve (pin′valv), *n.* A valve consisting of a conical opening of small diameter into which a tapered plug or pin enters when the valve is closed; a needle-valve.

> The pressure is admitted to or withdrawn from the piston by means of a *pin-valve* actuated by an electromagnet in circuit with a signal battery, which again is under the control of the track battery circuit.
> *Elect. World and Engin.*, July 18, 1903, p. 115.

pinweed (pin′wēd), *n.* **1.** Any plant of the genus *Lechea* (which see), so called from the slender round stem and branches.—**2.** The stork's-bill or alfilerilla, *Erodium cicutarium*.

pin-wire (pin′wīr), *n.* Brass or steel wire of the correct diameter for making pins.

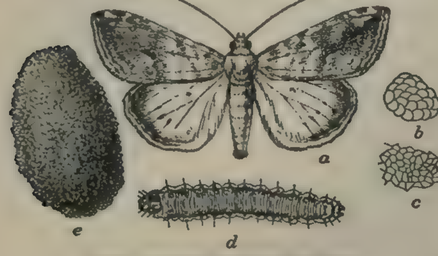
pinyon (pin′yọn), *n.* An Anglicized form of *piñon*.

piod (pē′ōd), *n.* [Chamorro name.] On the island of Guam, the seaside plum, *Ximenia Americana*, a shrub or small tree bearing an edible, spherical, orange-colored drupe which tastes somewhat like a crab-apple with a flavor of bitter almonds. See *Ximenia*.

> A fruit much relished by the fruit-eating pigeons was the *piod* (Ximenia americana), which resembles a small yellow plum with a slight flavor of bitter-almond.
> *Amer. Anthropologist*, Oct.–Dec., 1902, p. 720.

piojo (pi-ō'hō), *n.* [Sp., a particular use of *piojo*, a louse, = Pg. *piolho* = Cat. *poll* = OF. *peoil*, *peou*, ‹ L. *pediculus*, in a vernacular form **peduculus*, a louse: see *pedicular*.] Same as *ten-pounder*, 3.

Pionea (pī-ọ̄-nē'ạ̈), *n.* [NL. (Guenée, 1854), ‹ Gr. *πίων*, fat.] 1. A genus of pyralid moths, erected for certain small European, North American, and African forms. Its species have since been separated and the so-called *cabbage pionea* of North America is now placed in the genus *Evergestis*.—2. [*l. c.*] A moth of this genus.—**Cabbage pionea**, an old popular name of the adult of the cross-striped cabbage-worm, *Evergestis rimosalis*, a pyralid moth occurring in different parts of the United States.



Cabbage Pionea (*Evergestis rimosalis*).

a, moth; *b*, egg-mass; *c*, sculpture of egg; *d*, larva; *e*, cocoon. *a*, *d*, *e*, somewhat enlarged; *b*, *c*, more enlarged. (Chittenden, U. S. D. A.)

Pioneer bee. See ★*bee*¹.

pionemia (pī-ọ̄-nē'mi-ạ̈), *n.* [NL. *pionæmia*, ‹ Gr. *πίων*, fat, + *αἷμα*, blood.] Same as *piarrhæmia*. See *lipæmia*.

piorno (pē-ōr'nō), *n.* [Sp. *piorno*, the Spanish broom.] In Spain, a name of several spiny shrubs, chiefly belonging to the genus *Genista* and related genera, especially *G. florida*, *G. aspalatoides*, *Cytisus albus*, and *Adenocarpus Hispanicus*. *Piorno amarillo* (yellow broom) is *Genista Bætica*; *piorno azul*, or *piorno negro* (blue or black broom), is the hedge-hog plant, *Erinacea Erinacea*; *piorno de crucetillas* (the little-cross broom) is *Vella spinosa*, a cruciferous shrub; and *piorno fino* (fine broom) is a name applied to *Genista Boissieri* to distinguish it from the coarser *G. horrida*.

piorthopnœa (pī-ôr-thop-nē'ạ̈), *n.* [Gr. *πί(ων)*, fat, + *ὀρθός*, right, + *-πνοια*, ‹ *πνεῖν*, breathe.] Same as ★*pimelorthopnœa*.

piously, *adv.* 2. Heartily; sincerely. [Colloq.]

> "I 'm *piously* hoping the drunken brute will tumble over board," Hamilton muttered; "it would save a lot of trouble for everybody."
> *Cutcliffe Hyne*, A Master of Fortune, xi.

Pipa, *n.* 2. [*l. c.*] A toad of the genus *Pipa*.

pipage, *n.* 2. The amount charged for conveyance by pipes or pipe-lines.

> This differential affected adversely a large percentage of Kansas oil. Another gouge was a *pipeage* discount of three per cent. for impurities, which producers declared did not exist. *Outlook*, May 6, 1905, p. 24.

pip-card (pip'kärd), *n.* In a pack of playing-cards, a card in which there are pips only; a card that is not a court card.

> He persuaded him by degrees to make the exchange with twelve figure and fourteen *pip cards*, in all twenty-six cards of the pack. *Burlington Mag.*, Dec., 1903, p. 246.

pipe¹, *v.* I. *intrans.* 6. To wrinkle: said of soft- or loose-grained skins where the grain sometimes wrinkles up in ridges or pipes. *Flemming*, Practical Tanning, p. 375.

II. *trans.* 8. To set or solidify, leaving a hollow or hole in the center: said of steel ingots.—**To pipe the side.** When the commanding officer of a naval vessel, or the president or vice-president of the country, or other dignitaries, or superior officers of foreign governments, or crowned heads, or members of royal families, or of the nobility, are received on board, or are leaving a man-of-war, a certain prescribed number of boys or seamen are assembled at the gangway, where they form two lines from the side of the ship inboard, facing each other, and as the dignitary passes through the lines, the boatswain, or one of his mates, winds (blows) his call (silver whistle) and the side-boys salute by holding their right hands steadily to their caps while the whistle blows. This ceremony is under the immediate charge of the officer of the deck, and is known as *piping the side*.—**To pipe to quarters.** The assembling of the officers and crew at their several stations for exercise, drill, or battle, by the sound of the boatswain's call, is known as *piping to quarters*.

pipe¹, *n.* 23†. See the extract. [Australia.]

> These were the days of '*pipes*.' Certain supposed home truths . . . were indited in clear and legible letters on a piece of paper which was then rolled up in the form of a pipe, and being held together by twisting at one end was found at the door of the person intended to be instructed on its first opening in the morning.
> *Ross*, Hobart Town Almanack, p. 105, quoted in E. E. [Morris, Austral English.

Picco pipe, a diminutive whistle or flageolet about 3¼ inches long, with three holes: so named from the blind performer Picco, who in 1856 astonished London audiences by artistic music on this insignificant appliance.—**S-pipe**, a pipe, usually of lead, molded into a shape resembling the letter S, and used as a trap or water-seal in plumbing or to connect two parallel runs of straight pipe, with provision for slight relative motion with strain on the connecting length.—**Telescopic pipe**, a pipe made in two parts, one of which telescopes or slides into the other; a pipe surrounding the top pipe of a deep-well tube. The use of such a casing permits of some adjustment in the length of the well-tube. Sometimes called a *telescopic suction-slide*.—**T-pipe**, in a locomotive, the short connecting-pipe in the boiler which delivers dry steam to the two pipes which convey the steam to the cylinders.—**Volcanic pipe**, the conduit through which lava and explosive products from deep-seated sources reach the surface.

pipeage, *n.* See *pipage*.

pipe-beetle (pīp'bē"tl), *n.* A beetle of the family *Curculionidæ*: so named from the long proboscis.

pipe-bender, *n.* 3. A machine for bending brass, copper, or iron pipe for cooling-coils or radiators.—4. A concave anvil or block on which sheet-metal is curved to form a pipe.

pipe-carrier (pīp'kar"i-ėr), *n.* In *railroading*, a rolling support for the pipe-rods of a signaling-plant. It consists of a wheel having a concave face, in which the pipe rolls as it is drawn forward or back by the movement of the lever in the signal-cabin. The wheel may turn on a shaft supported by a casting, or may have a fixed arbor which rolls in a horizontal slot in the casting.

pipecolic (pip-ẹ̄-kol'ik), *a.* [*pipecol(ine)* + *-ic*.] Derived from pipecoline.—**Pipecolic acid**, a crystalline acid, $C_5H_{10}N(COOH)$, made by heating dichlorpicolinic acid, with fuming hydriodic acid. It is hexahydropicolinic acid, a derivative of piperidine.

pipecoline (pip'ẹ̄-kō-lin), *n.* [*pipe(ridine)* + *(pi)coline*.] A base, $C_6H_{13}N$, or methylpiperidine. *Alpha-pipecoline*, or 2-methylpiperidine, is an oily liquid which boils at 116.5° C.; it is made by reducing a-picoline, dissolved in alcohol, with sodium. *Beta-pipecoline*, or 3-methylpiperidine, is a liquid which boils at 125–126° C. It is made by reducing 3-methylpyridine (β-picoline) with sodium.

pipe-connection (pīp'kọ-nek"shọn), *n.* A general term for any form of pipe-fitting used to join pipes together.

pipe-coupling, *n.* When a short, bent, or offset pipe is used to connect two pipes which are not in line, it is called an *offset*; if the pipes are at an angle to each other, such a coupling, used in place of an elbow, is called a *bend*; if the two pipes are side by side, it is called a *return-bend*.

pipe-covering (pīp'kuv"ėr-ing), *n.* A covering made from a poor conductor of heat, such as cork or asbestos, placed around a pipe to prevent the flow of heat to or from the interior.

pipe-crimper (pīp'krim"pėr), *n.* A pair of sheet-metal shears fitted with crimping-jaws for crimping sheet-metal pipe.

pipe-dream (pīp'drēm), *n.* A confused fantastic 'dream' or mental illusion produced by smoking opium; hence, figuratively, any fantastic or illusory notion. [Colloq.]

> To just one girl I 've tuned my sad bazoo [lament],
> Stringing my *pipe-dream* off as it occurred.
> *Wallace Irwin*, Love Sonnets of a Hoodlum, Epil., l. 2.

pipe-drop (pīp'drop), *n.* In *elect.*, the fall of potential along a line of metal pipe which forms an accidental return circuit for the current from any system of conductors such as the overhead wires of an electric railway.

> CC represents the voltage of different points of the rails (rail-drop) and EE the voltage of different points of the earth or accidental auxiliary returns (earth-drops or *pipe-drops*). *Elect. Rev.*, Oct. 8, 1904, p. 568.

pipe-fish, *n.*—**Great pipe-fish**, *Siphostoma californiensis*, found on the Pacific coast of the United States.—**Ocean pipe-fish**, *Syngnathus æquoreus*, found on both sides of the temperate Atlantic.—**Sargasso pipe-fish**, *Siphostoma pelagicum*, a large pipe-fish found in tropical parts of the Atlantic, and common in the Mediterranean Sea: often taken in the open sea among floating seaweed of the genus *Sargassum*.

pipe-fitting (pīp'fit"ing), *n.* A coupling, band, elbow, or the like, used in fitting pipes together.

pipe-hanger (pīp'hang"ėr), *n.* In *steam-fitting*, an adjustable loop or support for holding a heavy steam-, gas-, or water-pipe suspended from a ceiling. The loop is hinged at the bottom for convenience in setting up, and is supported by a screw from the ceiling beam or by a clamp that clasps the beam. It is often made square with two supports, having rolls on the loop to allow the pipes to move under expansion or contraction. A ring-shaped loop without hinges and supported on a hook is called a *pipe-ring*. When fitted with a plate for screws it is a *ring pipe-hanger*.

pipe-hyperboloid (pīp'hī-pėr"bọ̄-loid), *n.* One of the two principal species of quadrics in Riemannian space.

> In Riemannean space, we find two principal species—*ellipsoid* (with the varieties ellipsoid of revolution, tube sphere), *pipe-hyperboloid* (with the varieties cone, hyperboloid of revolution or elliptic tube, two planes).
> *Science*, Sept. 16, 1904, p. 365.

pipe-jack (pīp'jak), *n.* A jack adapted to the work of driving an iron pipe in a horizontal direction through the soil. The pipe, protected by a conical plug, is laid in the trench with the point against the unexcavated soil, as under a walk or railroad-track, and the jack is placed upon it, when, by the movement of the handle, the pipe is forced through the soil.

pipe-jointer (pīp'join"tėr), *n.* One who makes or closes the joints in a line of pipe.

> A record should be kept of the history of the pipe from the time it is cast to the time it is laid and jointed in the ground, giving the date, number, diameter, length, thickness, and proof pressure, with the name of the *pipe-jointer* whose work closes the record.
> *Encyc. Brit.*, XXV. 509.

Pipe-line certificate, a receipt, akin to a warehouse receipt, given by a pipe-line to a producer of oil who has paid into its tanks or pipes 1000 barrels of oil. Certificates are not given for less amounts. They are negotiable.

pipe-line (pīp'līn), *v. t.*; pret. and pp. *pipe-lined*, ppr. *pipe-lining*. To convey by means of a pipe-line; provide with a pipe-line.

pipeman (pīp'mạn), *n.* A member of an engine company who is detailed to hold the nozle or pipe of the hose and direct its play. *Amer. Inventor*, May 1, 1904, p. 205.

pipemouth, *n.* Specifically—2. A common name of fishes of the genus *Fistularia*, found in tropical seas, and also of the related genus *Macrorhamphosus* of the Mediterranean. See *Fistularia* and *snipe-fish*.

piper¹, *n.* 3. In *ichth.*: (*c*) Same as ★*balao*¹.—8. In Newfoundland, a haddock which is only half dried.

pipe-rack, *n.* It is also called a *rack-board*.

Piperales (pip-ẹ-rā'lēz), *n. pl.* [NL. (Lindley, 1833), ‹ *Piper*² + *-ales*.] An order of dicotyledonous archichlamydeous (apetalous) plants embracing the three families *Piperaceæ*, *Saururaceæ*, and *Chloranthaceæ*.

piperazine (pip-ėr-az'in or pip'ėr-a-zin), *n.* [L. *piper*, pepper, + *azine*.] A deliquescent crystalline base, $(C_2H_4)_2(NH_2)_2$ or diethylenediamine, which is made by the action of alcoholic ammonia on ethylene chlorid, and in other ways. It melts at 104° C. It is a valuable solvent for uric acid and is used in medicine for that purpose.

piperideine (pī-pe-rid'ẹ̄-in), *n.* Same as ★*hexazene*.

piperidic (pī-pe-rid'ik), *a.* [*piper(ine)* + *-id* + *-ic*.] Derived from piperine.—**Piperidic acid**, a crystalline acid, $NH_2.C_3H_6.COOH$ or 4-aminobutyric acid, made by the successive action of cold nitric and hot hydrochloric acid on piperidyl urethane.

piperidinic (pī-per-i-din'ik), *a.* [*piperidine* + *-ic*.] Derived from piperidine.—**Piperidinic acid.** Same as ★*piperidic acid*.

piperidyl (pī-per'i-dil), *n.* [*piperid(ine)* + *-yl*.] The hypothetical radical, $C_5H_{10}N$, of piperidine.—**Piperidyl urethane**, a liquid, $C_5H_{10}NCO_2C_2H_5$, made by the action of piperidine on ethylchloroformate. It yields piperidic acid when oxidized with nitric acid. It boils at 211° C.

pipe-ring (pīp'ring), *n.* See ★*pipe-hanger*.

piperitone (pī-per'i-tōn), *n.* [L. *piper*, pepper, + *-i-* + *(ke)tone*.] A cyclic ketone contained in the oil of the peppermint-eucalyptus from Australia.

piperno (pē-per'nō), *n.* [It. *pipero*, ‹ *Piperno*, a town in Italy.] An Italian name for trachyte or trachytic tuff characterized by the presence of dark spots or streaks in a light-colored mass, as though brecciated.

> The foundation of the hill [Camaldoli] consists of a volcanic rock, which is quarried at Pianura as building-stone, and which is known by the name of *piperno*.
> *Geog. Jour.* (R. G. S.), X. 478.

pipe-roll, *n.* 2. A roller whose diameter is smaller at the center than at the ends, used as a support for a pipe so that the latter may be free to move endwise when it expands or contracts because of a change of temperature.

piperonal (pī-per'ọ̄-nal), *n.* [L. *piper*, pepper, + *-one* + *-al*³.] A white crystalline substance, $C_8H_6O_3$, the methylene ether of protocatechuic aldehyde. It is made by oxidizing piperic acid with potassium permanganate, and in other ways. Known in perfumery as *heliotropin*, on account of its odor.

piperonylic (pī″pe̤-rō̤-nil′ik), *a.* [*piperon*(*al*) + *-yl* + *-ic.*] Derived from piperonal.—**Piperonylic acid,** a crystalline acid, $C_8H_6O_4$, the methylene ether of protocatechuic acid. It occurs in Paracoto bark and is formed by oxidizing piperonal.

piperovatine (pī″pe̤-rō̤-vā′tin), *n.* [*Piper ovat*(*um*) + *-ine*^{2}.] A crystalline alkaloid, $C_{16}H_{21}NO_2$, extracted from *Piper ovatum* by ether. It melts, with decomposition, at 123° C.

pipery (pip′e̤-ri), *n.* [F. *piperie.*] A native raft or float in the West Indies and South America, of the same nature as a catamaran. *N. E. D.*

piperylene (pī′pe̤-ri-lēn), *n.* [L. *piper*, pepper, + *-yl* + *-ene.*] An oily, unsaturated hydrocarbon, C_5H_{10} or 1,4-pentadiene, made by distilling trimethylpiperidine. It boils at 42° C.

pipe-screwing (pīp′skrö″ing), *n.* **1.** The act or process of joining two pipes by a screwed joint.—**2.** The process of cutting a thread on the end of a pipe.

pipe-stanchion (pīp′stan″sho̤n), *n.* A column made from wrought-iron pipe, for supporting a deck in a ship.

pipe-stand (pīp′stand), *n.* A frame or bracket for holding pipes or for supporting a line of pipe.

Pipe-stem arteries. See ⋆*artery.*

pipe-stone, *n.* **2.** The cast-iron prism lying on the back-stone of a lead-ore hearth and containing an opening for the twyer.

pipe-stop, *n.* **2.** In *organ-building*, a stop of true pipes, that is, flue-pipes, as distinguished from a *reed-stop;* also, any stop on a pipe-organ as distinguished from one on a reed-organ.

pipe-story (pīp′stō″ri), *n.* A fantastic or impossible story, such as one may conceive in a 'pipe-dream.' [Colloq.]

> What appears on its face to be the veriest *pipe-story.*
> *N. Y. Times*, Oct. 16, 1904.

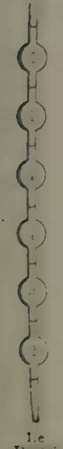
pipe-stove (pīp′stōv), *n.* A hot-blast stove for use in connection with a blast-furnace. The blast is heated by passing through pipes which are heated either by a fire or by the hot gases from the blast-furnace.

pipe-threader (pīp′thred″ėr), *n.* A machine for cutting screw-threads on the ends of pipes or in pipe-fittings.

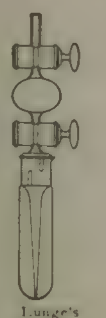
pipe-threading (pīp′thred″ing), *n.* The act or process of cutting a screw-thread on a pipe.

pipe-tower (pīp′tou″ėr), *n.* **1.** A tower or trestle used to support one or more lines of pipe.—**2.** A trestle or support made from pipes or tubing.

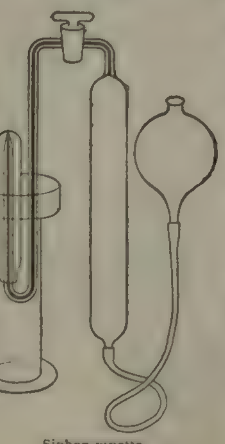
pipette, *n.* **3.** A funnel-shaped attachment, with the small end downward, midway in a barometer, to act as a trap to prevent air-bubbles from rising to the top.—**Crampton's pipette,** a pipette especially graduated for use in sugar-analysis.—**Grethen's weighing-pipette,** a graduated glass vessel provided with a stop-cock and an outer guard-tube, used in weighing fuming acids.—**Le Docte's pipette,** a special form of pipette for delivering definite volumes shown by graduation.—**Lunge's pipette,** a special form of pipette used in weighing fuming acids.—**Mohr's pipette,** a pipette used in volumetric analysis.—**Rothe's pipette,** a pipette used in iron analysis.—**Safety pipette,** a pipette for delivering uniformly a given volume of a liquid.—**Siphon-pipette,** an apparatus for transferring gases. It consists of a glass vessel connected with a capillary tube bent on itself and having a stop-cock, and also connected with a reservoir of mercury by means of a piece of rubber pressure-tube.—**Sprengel pipette,** a glass pipette, bent to the shape of the letter U, and terminating in two horizontal capillary tubes: used with advantage as a substitute for the common specific-gravity bottle in determining the density of liquids.—**Treskow's pipette,** a pipette for measuring exact quantities of culture-material into test-tubes.—**Vanier's overflow pipette,** an apparatus consisting of a reservoir for a solution and a graduated device which each time it is filled to overflowing will deliver the same measure of liquid.



Le Docte's Pipette.

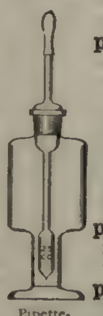


Lunge's Pipette.



Siphon-pipette.

pipette-bottle (pi-pet′bot″l), *n.* A bottle or container having a capped pipette in place of a stopper: used especially for volatile liquids.



Pipette-bottle.

pipe-union (pīp′ū″nyo̤n), *n.* **1.** A screwed union; a device for coupling pipes which consists of three pieces and permits of coupling the pipes without turning either one. One piece is screwed on the end of each pipe, and these are then drawn together by the third, which screws on one of them and has a lip which catches a lip on the other.
2. A flanged union.

pipe-valve (pīp′valv), *n.* Any valve in a line of pipe, as a globe stop-valve.

pipe-welding (pīp′wel″ding), *n.* The act or process of welding together the edges of an iron plate or skelp to form a tube. As the tube is welded it is drawn over a mandrel and through a die, this operation making it round and of the correct size.

pipe-worm (pīp′wėrm), *n.* Same as *tube-worm.*

pipi^2 (pē′pē), *n.* [Maori.] A Maori name of *Mezodesma novæ-zelandicæ*, an edible shell-fish sometimes erroneously called the cockle. *E. E. Morris*, Austral English.

piping-frog (pī′ping-frog), *n.* A small North American tree-frog, *Hyla pickeringi.*

piping-roller (pī′ping-rō″lėr), *n.* The Australian piping-crow, *Gymnorhina tibicen.*

pipiri (pip′i-rē), *n.* [W. Indies. Imitative?] A popular name for one of the larger tyrant-flycatchers, *Tyrannus dominicensis* or *griseus*, common in the West Indies.

pipit, *n.*—**New Zealand pipit,** a name applied to two quite distinct birds, one *Corydalla novæ-zealandiæ*, a true pipit, the other, *Sphenœacus punctatus*, a relative of the nightingale.

pipitzahuac (pē-pit-sä-wäk′), *n.* [Aztec name.] In Mexico, one of several species of *Perezia*, especially *P. Alamani, P. adnata*, and *P. Wrightii*, composites with heads of fragrant rose-purple or white two-lipped flowers, and spinulose-dentate leaves. From the roots of *P. Alamani* and *P. adnata* is prepared a substance called by the same name which has powerful drastic properties and an odor of valerian. It has the form of golden-yellow flakes and is sometimes used as a dye. *Perezia Wrightii* and *P. nana* have tufts of a soft silky substance on the lower part of the stem which is used by the Indians as a styptic to check the flow of blood in wounds. In some parts of Mexico *P. nana* is also sold in the markets as a remedy for gonorrhea.

pipmenthol (pip′men-thol), *n.* [L. *pip*(*er*), pepper, + E. *menthol.*] The menthol from English and American peppermint-oil, which is said by some authorities to be different from ordinary menthol.

Piptomeris (pip-tom′e̤-ris), *n.* [NL. (Turczaninow, 1853), < Gr. *πίπτειν*, to fall, + *μερίς*, part, the calyx lobes in the type species being deciduous after flowering.] A genus of plants of the family *Fabaceæ.* See *Jacksonia.*

pipunculid (pi-pung′kṳ̄-lid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Pipunculidæ.*
II. *a.* Having the characters of or belonging to the family *Pipunculidæ.*

pipy, *a.* **2.** Inclined to pipe or wrinkle on the grain. See ⋆*pipe*^{1}, *v. i.*, 6. *Flemming*, Practical Tanning, p. 432.

piqué, *n.* **4.** In *billiards*, a draw, with the cue held almost perpendicularly, necessitated by the nearness of the cue-ball to an obstructing ball or cushion. It often passes for a massé. See *massé*^{2}. *W. Broadfoot*, Billiards, p. 255.—**Piqué gloves,** gloves in which the inner piece of each finger is sewed on so as to overlap the side pieces.

Piqueria (pi-kwē′ri-ä̤), *n.* [NL. (Cavanilles, 1794), named in honor of Andr. *Piquerio*, a Spanish physician and scientist of the eighteenth century.] A small genus of tropical American composite herbs or subshrubs. It is of general interest because it contains the so-called *Stevia* (but not a true *Stevia*) of florists, much grown for its small, white, fragrant flowers. This plant is *Piqueria trinervia*, of Mexico. It is used for bedding. There is also a form with white-margined leaves and a dwarf compact form. The usual or normal form of the species makes a plant one or two feet tall.

piquet, *n.* **2.** Twelve cards are dealt to each player, two at a time, and no trump is turned. The remaining eight cards are placed on the table face down, divided so that five on the top lie across the three on the bottom. If either player finds he has been dealt a hand which contains no court-card, he scores 10 at once for 'carte blanche.' The object of the game is to hold and score for point, sequence, triplets, and fours. The hands are improved by discarding. The eldest hand discards first, and may take any number of cards from one to five, but must take one. If he takes less than five, he may look at those he might have taken. The dealer can take any or all that the eldest hand leaves, both players discarding before they draw. Announcements are then made, the eldest hand declaring first and in the following order: The point is the suit of the greatest numerical value, reckoning aces 11, court-cards 10, and all others at their pip-value. If the dealer has not a better point than that called by the eldest hand, he says "Good"; if he has an equal one, he says so; if he has better, he says "Not good." The point scores toward game, 1 for each card in it. Sequences are then called. There must be at least three cards, the greatest number in one suit being good. Numbers being equal, the highest card decides which is good. Sequences of five, six, seven, and eight cards count 15, 16, 17, and 18 respectively; three and four, 3 and 4 only. The player holding the best sequence in play can also score any inferior ones he holds, but his adversary cannot score any. Triplets and fours are then called, but they must be tens or better. Four of a kind count 14, three of a kind 3 only. If each has the same number, the highest counts and entitles the holder to count any inferior triplets or fours. After the eldest hand has made all his announcements and has been told whether they are good or not, he leads a card, adding 1 for it, and calling out the total of his score so far. The dealer then announces what he has that is good against the eldest hand's calls. If he wins the first trick, he adds a point for it. The winner of one trick leads for the next, and a point is added for every card led and every winning card played by the second player. If the leader wins the trick, it counts 1 only. Each player constantly repeats the total of his score. If either wins more than six tricks, he adds 10 for cards; if he wins them all, he adds 40 for capot. If either can count to 30 in hand and play combined before his adversary scores a point, he adds 30 to his score for 'pique.' If he can count to 30 in hand alone before his adversary scores a point, he adds 60 for repique. The dealer can never make pique, since the card led stops him, but he may make repique. Equalities do not save the repique. The ordinary game is 100 points, and it is a double game if the loser has not reached 50. *Rubicon piquet* is the modern game, each player having three deals, at the end of which the lower score is deducted from the higher and 100 points added to the winner's side. If the loser has failed to reach 100, all he has scored is added to the winner's score, instead of being deducted.

piracy, *n.* **3.** In *geol.*, that process whereby, because of a higher natural gradient, and therefore more efficient eroding power, one stream cuts back a divide and taps off the head-waters or a tributary of another stream. The captured stream usually turns a sharp angle into its new course and leaves a wind-gap where it formerly flowed. Also called *stream-piracy.*

> The beheading of one stream by another is treated as "*piracy,*" and both "foreign" and "domestic piracy" are explained, the latter phrase being applied to cutting off an ox-bow in a meandering stream.
> *Nature*, July 27, 1905, p. 289.

Domestic piracy, the capture of the head-waters of a stream by one of its own minor tributaries. This form of piracy is possible in very crooked streams where a tributary cutting back may tap the main stream above one of its large bends. *Chamberlin and Salisbury*, Geol., I. 99.—**Foreign piracy,** piracy involving two different stream systems, in contrast with *domestic piracy*, where but one system is affected. See *domestic* ⋆*piracy. Chamberlin and Salisbury*, Geol., I. 99.

pirate, *n.* **5.** A stream that, by reason of its more favorable situation or its greater activity, encroaches upon the territory of a neighboring stream to such extent as to capture a part of its watercourse. *Chamberlin and Salisbury*, Geol., I. 98.

pirate-bug (pī′rā̤t-bug), *n.* Any bug of the family *Reduviidæ* (which see). Also called *cannibal-bug. L. O. Howard*, Insect Book, p. 293.

piratine (pī′ra̤-tin), *a.* [*Pirates* + *-ine*^{1}.] Having the characters of or related to the species of the reduviid genus *Pirates* and its allies.

Piratinera (pī-rat-i-nē′rä̤), *n.* [NL. (Aublet, 1775), of Guianian origin.] A genus of trees of the family *Moraceæ.* See *Brosimum, Galactodendrum*, and *letter-wood.*

pirijao (pē-rẹ̄-bä′ọ̄), *n.* [Native name in Venezuela.] The peach-palm, *Guilielma speciosa.*

piripiri (pē-rẹ̄-pē′rē), *n.* [Polynesian *pili* or *piri*, to adhere or stick to.] The Maori name of *Acæna ovina* and *A. Sanguisorbæ*, with bur-like fruit, which is a pest to sheep. The leaves are made into tea by the natives and are used medicinally. See ⋆*biddy-bid.*

pirita (pē′rẹ̄-tä̆), *n.* [Maori *pirita*, or *kareau pirita*, < *kareau*, whipcord, + *piri*, to fasten together, or entangle.] Same as ⋆*kareau* (which see).

piritu (pē-rē-tö′), *n.* [Braz.] A name given in some parts of Brazil to the sloth.

pirlicue (pėr′li-kū), *n.* [Also *pirliecue, purlicue, parlicue*; < F. *par le queue*, by the tail, at the end.] 1. A dash or flourish at the end of a word in writing. Compare *curlicue.*—2. A review or recital, at the end of a series of addresses or sermons, of the topics treated.

> I doubt the *pirliecue* will please you as little!
> *R. L. Stevenson*, Kidnapped, xxiv.

3. *pl.* Peculiarities or oddities of manner. [Scotch in all uses.]

Piroplasma (pī-rō-plaz′mạ̈), *n.* [NL., < L. *pira*, pear (?), + Gr. πλάσμα, anything formed.] 1. A genus of sporozoans, of the order *Hæmosporidia*. *P. bigeminum* is the parasite which causes Texas cattle-fever and is transmitted by the bites of ticks. Also *Pyrosoma*. *Patton*, 1895.—2. [pl. *piroplasmata* (-mạ-tạ̈).] A protozoan of this genus.

> The Leishman-Donovan body or parasite has been the subject of a research by Lieut. Christophers (Sc. Mem. of the Gov. of India, No. 8). It is met with in India in patients suffering from chronic fever, cachexia, and enlarged spleen. It occurs as a small round or ovoid body 1.5 to 3.5 μ in diameter, free or contained within the leucocytes in the liver and spleen and bone-marrow, but not in the muscles or in the peripheral blood. Christophers observed the parasites also in the arachnoid and in ulcers of the large intestine. He agrees with other British observers that the organism is not a *piroplasma*, as stated by Laveran. *Nature*, May 26, 1904, p. 85.

piroplasmosis (pī″rọ-plaz-mō′sis), *n.* [NL., < *Piroplasma* + *-osis.*] A general name, in human and comparative medicine, for infections of the red blood-corpuscles by parasitic protozoa of the genus *Piroplasma*. These diseases are characterized in general by fever, sudden and very extensive reduction in the red blood-corpuscles, thin watery blood, hematuria, thickened bile, and emaciation. A number of animals are affected at the same time. The infection is spread by means of ticks (*Ixodidæ*). Sometimes *pyroplasmosis.*

> In addition, 'the tropical *piroplasmosis* could not be inoculated into susceptible cattle even with large quantities of blood containing the small piroplasma (*P. parvum*) in great numbers.
> *Jour. Trop. Med.*, Nov. 15, 1904, p. 361.

Piroplasmosis bovis, bovine piroplasmosis, the type of which is Texas fever.—**Piroplasmosis canis**, a very serious anemia of dogs caused by an endoglobular protozoan parasite, *Piroplasma canis*, which is transmitted by ticks (*Hæmaphysalis leachi*).—**Piroplasmosis hominis.** (*a*) A synonym of *dumdum* ★*fever* or ★*kala-azar* (tropical non-malarial splenomegaly) of man, the parasite of which was classified by some authors as a *piroplasma*. See *Leishman-Donovan* ★*body.*" (*b*) Proposed by Wilson and Chowning (1904) as a technical name for Rocky Mountain spotted fever of man, under the supposition that it was caused by a parasite classified as *Piroplasma hominis.*—**Piroplasmosis ovis**, or ovine piroplasmosis, a disease of sheep, similar to Texas fever of cattle, found especially in the valley of the Danube, and caused by a microscopic parasitic protozoön (*Piroplasma ovis*) which lives in the red blood-corpuscles. It is transmitted to healthy sheep by adult ticks (*Rhipicephalus bursa*) descended from parent ticks which have fed on other sheep suffering from the same disease. Known as *carceag.*

pirouette, *n.* 3. In old reed-instruments of the oboe class, the globular cup or bowl in which the reed was inclosed and which served as a kind of mouthpiece. *Sci. Amer. Sup.*, April 29, 1905, p. 24518.

pirssonite (pēr′sọ-nīt), *n.* [Named after Professor L. V. *Pirsson* of New Haven, Connecticut.] A hydrated carbonate of calcium and sodium, $CaCO_3.Na_2CO_3+2H_2O$, occurring in colorless or white prismatic crystals: found at Borax Lake, California.

pirylene (pir′i-lēn), *n.* An unsaturated hydrocarbon, C_5H_6, with a double and a triple bond, made by distilling dimethylpiperideine-*a*-methyl iodide over soda-lime. It is a liquid with a peculiar odor and boils at 60° C.

pisang (pẹ̄-sang′), *n.* [Malay.] In the Malay Archipelago, the banana, *Musa paradisiaca.*—**Wild pisang**, a South African plant, *Strelitzia angusta.*

pisang-ayer (pẹ̄-saug″ä′yär), *n.* [Malay *pisang*, banana, + *ayer*, water.] In the East Indies, the traveler's-tree, *Ravenala Madagascariensis*. See *traveler's-tree.*

piscatorially (pis-kạ̄-tō′ri-al-i), *adv.* In a piscatorial manner; with piscatory intent, as a fisherman.

> Brush Lake, one mile east of the Park, affords rare attractions to the *piscatorially* inclined visitor.
> *Buck*, Med. Handbook, IV. 247.

Piscian (pis′i-ạn), *a.* [NL. *Pisces* (pl. of *piscis*), + *-i-an.*] Denoting stars which have spectra resembling that of the star 19 Piscium: a term proposed by Lockyer.

> Reference is also made to Prof. Hale's suggestion that because the lines which are widened in sun-spots appear as strong dark lines in *Piscian* stars, the effect may be produced because sun-spots are more numerous in such stars. *Nature*, July 14, 1902, p. 262.

piscidine (pis′i-din), *n.* [*Piscid*(*ia*) + *-ine*².] A poisonous crystalline substance, $C_{29}H_{24}O_8$, extracted from the bark of *Piscidia erythrina*. It dilates the pupil of the eye. It melts at 192° C.

pishogue (pi-shōg′), *n.* [Ir. *piseog*, witchcraft.] Witchcraft; incantation; charm. [Irish.]

pisimetacarpal (pī-si-met-ạ-kär′pạl), *a.* Pertaining both to the pisiform bone and to the metacarpus.

pisky (pis′ki), *n.* Same as *pixy.*

Pisolitic iron ore. See ★*iron.*

pisselæum (pis-e-lē′um), *n.* [NL., < Gr. πίσσα, pitch, + ἔλαιον, oil.] An oil-like liquid substance which makes its appearance in boiling pitch. [Rare.]

pistachio-oil (pis-tā′shiō-oil), *n.* See ★*oil.*

pistic² (pis′tik), *a.* [Gr. πιστικός, faithful, genuine, < πίστις, faith, trust.] Pertaining to or of the nature of faith.

Pistillaria (pis-ti-lā′ri-ạ̈), *n.* [NL. (Fries, 1821), < *pistillum*, a pestle, in allusion to the shape of the fungus.] A genus of hymenomycetous fungi of the family *Clavariaceæ*, having simple, clavate, stipitate fruiting-bodies and basidia bearing two spores. About 50 species have been described, most of which are saprophytic. *P. micans* occurs on dead herbaceous stems and leaves in Europe and North America.

pistilligerous (pis-ti-lij′ẹ-rus), *a.* [NL. *pistillum*, pistil, + L. *gerere*, bear, + *-ous.*] Same as *pistillate.*

pistillode (pis′ti-lōd), *n.* [NL. *pistillum*, a pistil, + Gr. εἶδος, form.] The rudiment or vestige of a pistil. Compare *staminode.*

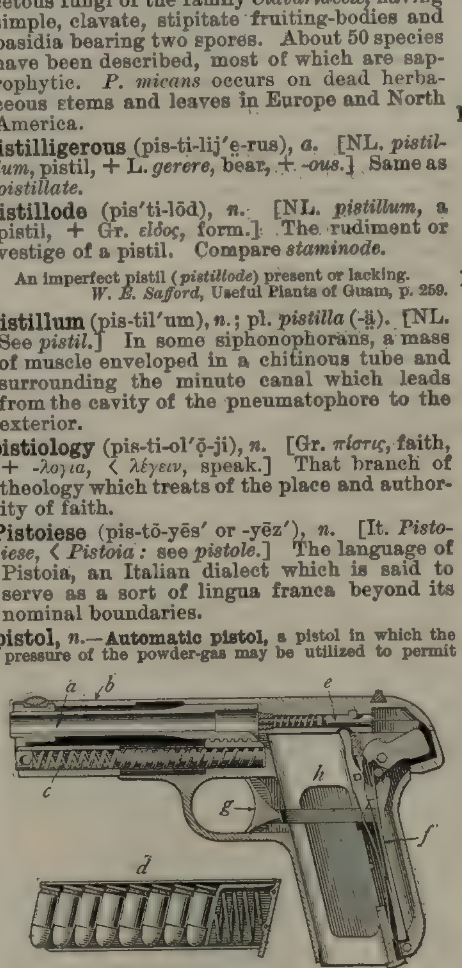
> An imperfect pistil (*pistillode*) present or lacking.
> *W. E. Safford*, Useful Plants of Guam, p. 259.

pistillum (pis-til′um), *n.*; pl. *pistilla* (-ạ̈). [NL. See *pistil.*] In some siphonophorans, a mass of muscle enveloped in a chitinous tube and surrounding the minute canal which leads from the cavity of the pneumatophore to the exterior.

pistiology (pis-ti-ol′ọ̄-ji), *n.* [Gr. πίστις, faith, + -λογια, < λέγειν, speak.] That branch of theology which treats of the place and authority of faith.

Pistoiese (pis-tō-yēs′ or -yēz′), *n.* [It. *Pistoiese*, < *Pistoia*: see *pistole.*] The language of Pistoia, an Italian dialect which is said to serve as a sort of lingua franca beyond its nominal boundaries.

pistol, *n.*—**Automatic pistol**, a pistol in which the pressure of the powder-gas may be utilized to permit continuous firing by continuing pressure on the trigger: there are various kinds, as the Colt, Luger, Mannlicher, etc.



Automatic Pistol.

a, barrel; *b*, slide; *c*, retractor-spring; *a*, cartridge-magazine; *e*, firing-pin; *f*, mainspring; *g*, trigger; *h*, seat for cartridge-magazine.

piston, *n.*—**Combination piston.** See ★*combination.*—**Displacer piston**, an auxiliary piston used in some internal-combustion engines for driving the products of combustion out of the cylinder. A more common device is to flush the cylinder with air after each explosion.—**Spring-piston**, any engine-piston which has spring packing-rings.—**Telescopic piston**, an arrangement of a central piston working in a hollow piston or tube which may work either in a fixed cylinder or in another tube: used in some forms of hydraulic elevators.

piston-area (pis′tọn-ā″rẹ̄-ạ̈), *n.* The area of the flat surface or end of a piston; in an engine, the area of the cross-section of the bore of the cylinder. This is usually slightly greater than the area of the piston, on account of the clearance allowed and the wear, the piston-rings keeping the piston tight.

piston-bellows (pis′tọn-bel″ōz), *n.* A piston-blower; a machine for moving air, consisting of a cylinder which has suitable supply- and exhaust-passages, fitted with valves, and a piston which is moved back and forth in the cylinder.

piston-displacement (pis′tọn-dis-plās″mẹnt), *n.* 1. The distance the piston has traveled from the end of its stroke.—2. The volume of a cylinder having the same diameter as the piston and a length equal to its stroke.

piston-elevator (pis′tọn-el″ẹ̄-vā-tọr), *n.* A form of elevator or lifting-apparatus in which the cage or platform is at the end of a piston-rod, whose piston receives the effort of air, steam, or water to overcome the resistances of the load. When the piston is above the cage, the device is applicable only to small lifts; when it is below, the cylinder can be let into the ground, and less limit in height is set. When the cylinder is below the cage or platform it is usually a ★plunger-elevator (which see).

piston-meter (pis′tọn-mē″tėr), *n.* A device for measuring the quantity of water flowing through a pipe. It operates by the pressure of the water, which moves reciprocating pistons.

piston-motor (pis′tọn-mō″tọr), *n.* Any engine which transforms the pressure of a fluid or gas into rotary motion through the medium of a reciprocating piston and a connecting-rod and crank; a piston-engine. The ordinary steam-engine is an example. *F. R. Hutton*, Gas Engine, p. 77.

piston-recorder (pis′tọn-rẹ̄-kôr″dėr), *n.* In *exper. physiol.* and *psychol.*, a recording-instrument which replaces the Marey tambour in work with the plethysmograph, etc. Within a glass cylinder, which is connected by rubber tubing to the plethysmograph, etc., slides a disk of hard rubber, plaster of Paris, or the like, joined by a vertical rod to the writing lever. The disk and rod constitute the piston. *Amer. Jour. Psychol.*, XII. 327.

piston-ring (pis′tọn-ring), *n.* A packing-ring; a ring, usually of cast-iron, brass, or steel, placed in a groove in a piston for the purpose of preventing the steam or gas from passing the piston. These rings can spring outward and press on the walls of the cylinder either by their own elasticity or because of springs placed behind them to push them out.

piston-spring, *n.* 2. A spring used to force a packing-ring, or other packing for a piston, against the walls of the cylinder.

piston-valve, *n.* 2. A valve located in a piston.

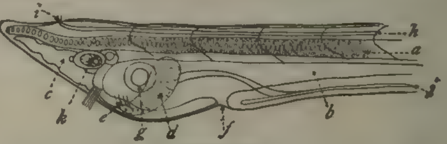
pit¹, *n.* 13. A cavity in the side of the head, between the eye and nostril, found in the poisonous snakes of the subfamily *Crotalinæ*, whence their name of *pit-vipers*. This pit is lined with membrane supplied with branches from the trigeminal nerve, but its exact function is not known. See cut under *pit-viper*

> The word "*pit*" relates to the deep depression found in rattlesnakes, copperheads, and moccasins on both sides of the face between the nostril and the eye. Furthermore, this characteristic applies only to the Crotalids, and its presence at once places the serpent in the "dangerous" category. *Sci. Amer.*, Feb. 14, 1903, p. 118.

Bordered pit. See ★*bordered.*—**Cold pit**, in *gardening*, an earth-pit.—**Floridean pit**, the central pit in the cross-wall of all the red algæ which belong to the *Florideæ*. The pits are closed by a thin membrane and do not permit the free passage of the cell contents in bulk.—**Genetic pit**, a term applied to two pits in a wall separating two plant-cells, together with the fine strands of protoplasm which perforate the wall.

> The common wall separating the pits of the two adjoining cells is pierced by strands of protoplasm. The whole structure, consisting of the two pits and the wall between, is known as a *genetic pit*.
> *Encyc. Brit.*, XXV. 408.

Preoral pit, a depression on the left side in the roof of the buccal cavity of the lancelet, or *Amphioxus*. This pit is constricted off from the anterior end of the archenteron during early life as the left one of a pair of cœlomic pouches, and gives rise to the groove of Hatschek.



Preoral Pit.

Anterior end of young larva of *Amphioxus lanceolatus*, highly magnified. *a*, notochord; *b*, enteric canal; *c*, cœlome of head; *d*, club-shaped gland; *e*, its external aperture; *f*, first gill-slit; *g*, mouth; *h*, nerve-tube; *i*, neuropore; *j*, subintestinal vein; *k*, preoral pit.

(From Parker and Haswell's "Zoology," after Korschelt and Heider, after Hatschek.)

pita, *n.* **3.** In southern Mexico, Central America, and tropical South America, a name applied to various textile plants and the fiber produced from them: especially applied in the low, moist regions of Mexico and Central America to *Karatas Karatas,* which yields a strong and durable fiber.—**Pita de zapateros** (shoemakers' pita), on the Isthmus of Panama, where it grows in the forests, *Karatas Karatas,* the fiber of which is used by the native shoemakers for sewing shoes.

pitahaya, *n.*—**Pitahaya agria** (sour pitahaya), a columnar cactus, *Cereus Cumengii,* common on the peninsula of Lower California, and especially so in the region of Cape St. Lucas. Its fruit, about the size of an egg, is filled with a red, juicy pulp having an agreeable sweet-acid flavor, and is highly esteemed by the natives, who eat it either fresh or in the form of jelly or paste.—**Pitahaya de Agosto,** the fruit of a strawberry-cactus, or alicoche, *Echinocereus conglomeratus,* which in northern Mexico ripens during the month of August.—**Pitahaya de monte** (forest pitahaya), on the Isthmus of Panama, an epiphytal cactus, *Epiphyllum Phyllanthus,* with flat leaf-like branches having a mid-rib and lateral veins, and a crenated margin from the crenatures of which grow the large handsome flowers.—**Pitahaya de San Juan,** the fruit of a strawberry-cactus, or alicoche, *Echinocereus stramineus,* which in northern Mexico is ripe on St. John's day.—**Pitahaya dulce** (sweet pitahaya), a columnar cactus, *Cereus Thurberi,* of the southwestern United States and northern Mexico, the sweet juicy fruit of which is highly esteemed by the Indians and Mexicans. It is larger and sweeter than that of *C. giganteus,* and is used by the Pimas, Maricopas, and Yuma Indians for making a fermented intoxicating drink upon which they become intoxicated on certain festive occasions, the revelry continuing for a week or two at a time and the Indians taking turns so that they may not all be drunk at the same time.

pitajaya (pē-tä-hä'yä), *n.* See *pitahaya.*

pitanga (pē-täng'gä), *n.* [Tupi.] Any one of three species of trees belonging to the genus *Eugenia, E. uniflora, E. Pitanga,* and *E. dasyblasta,* especially the first named. They are natives of Uruguay, Paraguay, and southern Brazil, and bear well-tasting subacid edible fruits. *E. uniflora* is cultivated in the warmer regions of both hemispheres on account of its excellent fruit, and is more commonly known as *Surinam cherry.* See *Surinam* ★*cherry* (*b*).

pitangatuba (pē-täng"gä-tö'bä), *n.* [Tupi.] A Brazilian fruit-tree of the myrtle family, *Eugenia edulis,* the edible fruits of which are the size of apples.

pitayita (pē-tä-yē'tä), *n.* [Mex. *pitahayita,* diminutive of *pitahaya,* which see.] **1.** In Mexico, one of several fruit-bearing cacti which climb upon the trunks and limbs of trees by means of roots; especially *Cereus compressus,* a plant with 3-angled branches rooting at the joints, and large fruit with a pleasant sweet-acid flavor.—**2.** In southern Mexico, one of several species of *Epiphyllum,* sometimes called pitayita de agua, especially *Epiphyllum angulifer, E. latifrons,* or *E. phyllanthoides,* plants with flat, crenated, leaf-like branches, having a mid-rib and lateral veins, and handsome white or red flowers growing from the crenatures.—**3.** In Lower California and several islands of the Gulf of California, *Cereus striatus,* a straggling, weak-stemmed cactus, which hangs over rocks and bushes for support. It has large, fleshy roots, which are sliced and dried, and offered for sale as a remedy for maladies of the throat and lungs.

pit-bank (pit'bangk), *n.* In *mining,* the raised ground or platforms upon which the coals are sorted and screened at the surface. *Gresley.*

pit-bar (pit'bär), *n.* A timber used to support the sides of the shaft of a mine. *N. E. D.*

pit-bird (pit'bėrd), *n.* The reed-warbler. [Local, Eng.]

pit-bottomer (pit'bot"um-ėr), *n.* In *mining,* one who works at the pit-bottom. [Local, Eng.]

pit-brow (pit'brou), *n.* A mound at the mouth of a mine built by the dumping of the refuse.

pitch^1, *v. t.* **10.** To set out, as plants.

> After your crop is *pitched* or planted, in the manner directed, it will require your closest attention.
> *W. Tatham,* Culture and Commerce of Tobacco, p. 122.

11. In *golf,* to strike (the ball) with a lofted club so that it goes up into the air and alights with little roll.

pitch^1, *n.* **7.** (*g*) In *textile manuf.,* the setting, or distance apart, of the wire teeth in card-clothing.—**15.** In *golf,* a ball played with more or less loft. *W. J. Travis,* Practical Golf, p. 65.—**16.** In *cricket:* (*a*) That part of the cricket-field upon which the batting and bowling are done. (*b*) The point at which the ball first touches the ground when bowled. (*c*) Of the ball bowled, the distance between the bowler's wicket and the point where the ball first touches the ground; the length.—**17.** In *building,* the slope, as of a roof; the angle with the horizon, generally stated in terms of the horizontal and vertical. Thus, a tin roof may have a pitch of one in twenty-four, or half an inch to a foot.—**18.** In an electric generator or motor, the distance from the center of a pole to that of the next pole of opposite sign, measured along the pitch-line. *Encyc. Brit.,* XXVII. 578.—**Absolute pitch,** in *music:* (*a*) Precise pitch determined theoretically according to some particular standard or system. (*b*) The memory of such precise pitch, or the power to reproduce it at will. A person with the sense of absolute pitch can name tones correctly upon hearing them, even in fortuitous or distracting relations; can produce particular tones with the voice without help from instruments or other artificial reference; and can even give tones at correct pitch while incorrect tones are being sounded. The capacity or faculty of noting absolute pitch seems to vary in different persons, but it can be greatly cultivated by attention and practice. Many otherwise good musicians lack it, while some who are not specially musical have it. It is often notable in the case of the blind.—**Axial pitch,** the pitch of a screw, the distance between the successive convolutions of the thread of a screw, being the axial distance passed over by the thread of the screw or other helix in one complete revolution around the axis.—**Cake-pitch.** Same as ★*ingot-pitch.*

> Refiners commonly distinguish "ingot- or *cake-pitch*" and "wire-bar pitch"; copper brought to the former contains more cuprous oxide than the latter. These two pitches are, however, not absolutely fixed; they vary with the practice of the individual refiner and with thickness of the cake or bar that is to be cast.
> *Electrochem. Industry,* March, 1904, p. 88.

Circular pitch, the distance along the pitch-circle of a gear or rack from a point on one tooth to the corresponding point on the next tooth. This distance can be found by dividing the pitch-circumference of the gear by the number of teeth on the gear.—**Commercial pitch.** Same as *auction-pitch* (which see, under *pitch*^{1}).—**Forward pitch,** in *elect.,* a pitch or twist of an armature-winding in a clockwise direction, as viewed from the commutator.—**Fractional pitch,** the pitch of a screw-thread which is not an aliquot part of an inch and is not, therefore, directly divisible by or into the pitch of a lead-screw. The ratio of the gears necessary to cut such a thread can be found by reducing the ratio of the pitch of the lead-screw to the pitch to be cut to a simple fraction: thus, if it were necessary to cut a screw of $11\frac{1}{2}$ threads per inch with a lead-screw of 4 threads per inch, we have $\frac{4}{11\frac{1}{2}} = \frac{8}{23}$, the necessary ratio of the gears. **In tough pitch,** in *copper-refining,* said of the metal when by means of the poling process oxygen has been eliminated and carbon not introduced, so that the metal is at its maximum of toughness.—**Normal pitch,** the pitch of a screw, worm, or worm-gear measured normal or perpendicular to the direction of the teeth, as distinguished from the circumferential pitch of wheels or the axial pitch of helices.—**Pitch memory.** See ★*memory* and *absolute* ★*pitch.*—**Pitch number,** in *acoustics,* a numerical designation of the frequency of a musical tone; the number of vibrations which a sounding body makes in a second of time.

pitch^2, *n.*—**Earth-pitch.** Same as *mineral pitch* (which see, under *mineral*).—**Pitch cap.** See ★*cap*^{1}.—**Road-pitch,** boiled coal-tar, brought to the proper consistence and temperature for use in filling the interstices between bricks or wooden blocks in laying pavement.—**Stearin pitch,** a black, lustrous, brittle material, resembling pitch, which is left in the stills after the fatty acids intended for candle-making have been distilled with superheated steam. It is used in making black varnish and for other purposes.—**Trinidad pitch,** a trade-name for asphalt or bitumen from the pitch lake of the island of Trinidad, extracted on a large scale for industrial purposes.

pitchblende, *n.* It is a black mineral found chiefly in the mines of the Erzgebirge, between Saxony and Bohemia, and until recently known simply as the chief source of oxid of uranium, used in staining glass and painting on porcelain. In it have been found many of the substances which have been observed to present the property of radioactivity.—**Joachimsthal pitchblende,** the uranium ore known as pitchblende or uraninite, which has been the chief source of uranium oxid and more recently of radium compounds. It is found at Joachimsthal and Přibram in Bohemia, and on the other side of the same mountain-range at Johanngeorgeustadt, Marienberg, and Schneeberg in Saxony.

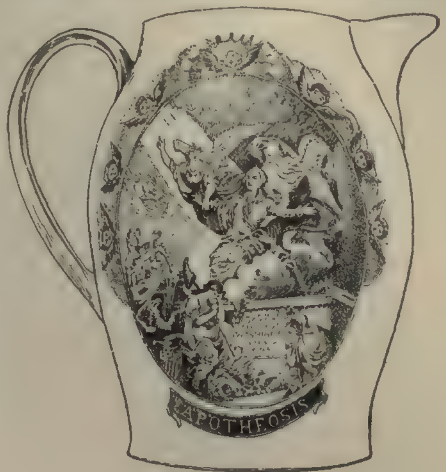
pitch-brand (pich'brand), *n.* [*pitch*^{2} + *brand.*] A brand or mark of ownership made with pitch upon a sheep, etc.; also, figuratively, a distinctive evil mark or characteristic. *N. E. D.*

pitch-cone (pich'kōn), *n.* In *gearing,* the imaginary cone on the surface of which lie the pitch-circles of a bevel-gear; an imaginary cone generated by the revolution of a line drawn from the intersection of the axes of two bevel-gears, to a point in the plane of the axes whose distance from the axes is proportional to the diameters of the gears.

pitch-curve (pich'kėrv), *n.* In *phonet.,* a phonographic curve of a vowel, spoken isolatedly; a curve which shows the course of pitch changes during a vocal utterance.

> The course of pitch is greatly influenced by the neighboring consonants; the more emphatic the consonant, the greater is its influence on the *pitch-curve;* the following consonant often cuts the vowel off at or near the maximum. *Scripture,* Exper. Phonetics, p. 478.

pitcher^2, *n.*—**Washington pitcher,** a jug of cream-colored ware, supposed to be of Liverpool manufacture, having a black printed portrait or design commemorative of Washington.



Washington Pitcher.
Liverpool, England, 1800.
(In the Pennsylvania Museum, Philadelphia.)

pitcheri, pitchery (pich'e̤-ri), *n.* [Also *pitcherie, pidgery,* etc.] A colonial form of ★*pituri.*

> *Pitcherie* is extensively chewed among the aboriginal Australians; it consists of twigs of about the thickness of rye-grass stems, which are first chewed into a mass, then mixed with the ash of gum trees, and made into a paste which is chewed for its stimulating and narcotic effects. *Lancet,* July 18, 1903, p. 152.

pitch-feeling (pich'fē"ling), *n.* In Wundt's *psychol.,* a simple feeling or affective process, specifically correlated with tonal pitch. *W. Wundt* (trans.), Outlines of Psychol., p. 34.

pitchfork, *n.* **3.** *pl.* Either *Bidens cernua,* the nodding bur-marigold, or *B. frondosa,* the black beggar-ticks: so called from the two prong-like awns of the adhesive achenes. See ★*devil's-pitchforks.*

pitchi (pich'i), *n.* [Australian.] A wooden vessel used for carrying food, water, and occasionally infants. [Central Australia.]

> *Pitchi,* a name given to a wooden receptacle hollowed out of a solid block of some tree, such as the Batswing Coral (Erythrina vespertilio), or Mulga (Acacia aneura), and carried by native women in various parts of Australia for the purpose of collecting food in, such as grass seed or bulbs, and sometimes for carrying infants. The shape and size varies much, and the more concave ones are used for carrying water in.
> *E. E. Morris,* Austral English.

pitch-impression (pich'im-presh"o̤n), *n.* In *psychol.* and *phonet.,* the apparent pitch of a tonal complex. Usually the lowest tone of the complex gives the pitch to the whole; but this is not always the case.

> The results obtained by the preceding methods give the *pitch-impressions* of various mouth positions, and, in as far as these mouth positions represent the positions for the vowels, they are of value as phenomena of hearing.
> *Scripture,* Exper. Phonetics, p. 289.

pitch-line, *n.* **2.** In *elect.,* the mean path traveled, in revolving, by the active wires of the armature of a generator or motor.

> The *pitch-line* being defined as a circle drawn through the middle of the length of the inductors, or, in other words, as the mean path traversed by them in their rotation. *Encyc. Brit.,* XXVII. 578.

pitch-mop (pich'mop), *n.* A kind of brush with which melted pitch is laid on the surface of perpendicular work.

pitch-off (pich'ôf), *n.* An unusually abrupt slope.

> At Keeling atoll, in the Paumotu Archipelago, Captain Fitzroy, R. N., found no bottom in 7200 feet at 2200 yards from the breakers—which gives a *pitch-off* exceeding 1: 0.92. *Dana,* Manual of Geol. (4th ed.), p. 20.

pitchometer (pich-om'e-tėr), *n.* [Irreg., < *pitch*^{1} + *-o-meter.*] An instrument for measuring the pitch of a screw-propeller. It consists of an arm normal to and pivoting around a shaft placed in the axial line of the propeller, which carries a sliding pointer-arm with an adjustable point at right angles to the first arm and parallel to the axis of the propeller. By bringing the point of the pointer-arm in contact with a point on the surface of the propeller-blade, its distance from the axis and from the plane of reference at right angles to the axis, formed by the first arm, can be determined from suitable scales on the arm and the pointer. By revolving the system around its axis, a series of such points on the surface can be measured.

pitch-pocket (pich'pok"et), *n.* A cavity in wood, filled with resin.

pitch-rhythm (pich′riᴛʜm), *n.* In *phonet.*, a rhythm produced in its purest form by the alternation of two tones of the same tint, of equal energies and durations, but of different pitches, and with no interval of silence between them. *Scripture*, Exper. Phonetics, p. 519.

pitch-streak (pich′strēk), *n.* In *lumbering*, a seam or shake filled with resin.

pitch-surface (pich′sėr″fās), *n.* In any toothed wheel or gear, the imaginary surface so located with respect to the axis of the wheel that if the teeth were to disappear, and the wheel to drive by frictional contact with a similar surface on the other wheel, the angular-velocity ratio of the two wheels or shafts would be the same as it is with the teeth in action. In spur-gears the pitch-surface is a cylinder; in bevels it is a cone, in skew-bevels a hyperboloid. The laying out of teeth by proper curves is always started from the pitch-surface; the distance between teeth should be measured on it.

pitchuri, *n.* Same as ★*pituri.*

pitch-worm (pich′wėrm), *n.* Same as ★*pinesesian.*

pit-dwelling (pit′dwel″ing), *n.* A dwelling or hut which is largely below the surface so that little more than the roof projects above ground, this often being covered with earth. The term is especially applied to such ancient dwellings of which little more remains than the hole or pit which they occupied.

At Inyanya there are countless "*pit dwellings,*" consisting of a pit and passage and hut platforms. The elucidation of the mystery of their use is assisted by a study of the Niekerk ruins, which are the most remarkable in the country. The area of these ruins is not less than fifty square miles, and within this area it is almost impossible to walk more than ten yards without coming upon a wall. *Athenæum*, Dec. 16, 1905, p. 842.

On the Ancient *Pit-Dwellings* of the Pelorus District, South Island, N. Z. *Geog. Jour.* (R. G. S.), XI. 102.

pit-eye, *n.* **2.** See the extract.

The cages came up crammed and crammed again with the men nearest the *pit-eye*, as they call the place [in a mine] where you can see daylight from the bottom of the shaft.
R. Kipling, At Twenty-Two, in Indian Tales, p. 113.

pit-gage (pit′gāj), *n.* A rain-gage set up at the center of a shallow saucer-like pit, so that the mouth of the gage is at the same height as the surrounding ground.

Professor Joseph Henry, about 1850, recommended to the observers of the Smithsonian Institution the use of the "*pit-gauge*" [rain-gauge]. *Encyc. Brit.*, XXX. 701.

pith, *n.* **2.** (*c*) The soft interior portion of the shaft of a feather.

pithecan (pi-thē′kan), *a.* and *n.* [Gr. πίθηκος, ape, + *-an.*] **I.** *a.* Of or pertaining to apes of the hominiform or manlike type, as *Pithecanthropus.*

II. *n.* A hominiform or man-like ape: a hypothetical animal of higher brain-capacity than the anthropoid apes, but lower than the average in man, yet approaching man in erect gait. See ★*Pithecanthropus*, 1.

Pithecanthropus (pith″ẹ-kan-thrō′pus), *n.* [NL., < Gr. πίθηκος, ape, + ἀνθροπος, man.] **1.** A hypothetical genus proposed by Haeckel to fill the gap between the anthropoid apes and man.

These Ape-like men, or *Pithecanthropi*, very probably existed toward the end of the Tertiary period. They originated out of the Man-like Apes, or Anthropoides, by becoming completely habituated to an upright walk, and by the corresponding stronger differentiation of both pairs of legs. *Haeckel* (trans.), Hist. Creation, II. 293.

2. An extinct hominiform animal approaching the human type more closely than any of the anthropoid apes. The genus is based only on two molar teeth, an incomplete calvarium, and a diseased femur found in central Java, in a deposit of volcanic ash said to be of Pliocene age. The capacity of the calvarium is about two thirds the average of that of the human skull. It is characterized by a low forehead and prominent supra-orbital ridges. The femur measures 455 millimeters in length, is straight, and indicates by its shape that the animal walked erect. The name *Pithecanthropus erectus* was given to it by the discoverer (Dubois) "in order to furnish with a definite habitation and a name the theoretical *Pithecanthropus* of Haeckel." *Beddard*, Mamm., p. 584.

Still, however, in every case earliest man was unmistakably man. No links connecting him with other anthropoids had been found. Very recently, however, have been found, by Du Bois, in Java, the skull, teeth, and thigh bone of what seems to be a veritable missing link, named by the discoverer *Pithecanthropus erectus.* The only question that seems to remain is whether it should be regarded as an ape more manlike than any known ape, or a man more apelike than any yet discovered. The age of this creature was either latest Pliocene or earliest Quaternary. *Le Conte*, in Pop. Sci. Mo., Feb., 1900, p. 548.

pithecian (pi-thē′si-an), *a.* [NL. *Pitheci*(*a*) + *-an.*] Characteristic of or relating to the New World monkeys of the genus *Pithecia;* pithecine: contrasted with ★*cebian.*

pitheciine (pi-thē′si-in), *a.* [NL. *Pitheciinæ.*] Pertaining to or having the characters of the monkeys of the subfamily *Pitheciinæ;* pithecian.

Pithecoid reversion. See ★*reversion.*

pithecometric (pith-ẹ-kọ-met′rik), *a.* [Gr. πίθηκος, ape, + μέτρον, measure.] Of or pertaining to the measurement or proportions of the bodies of the apes in comparison with the human body.

The standard *pithecometric* proposition would then be worded in this more exact way: "The comparative anatomy of all organs within the catarrhine group leads us to one and the same result—the morphological differences between man and the anthropomorphous Old-World apes are not so great as those which separate these anthropoids from the papiomorphous baboons, the lowest of the catarrhines.
Haeckel (trans.), in Smithsonian Rep., 1898, p. 465.

pithecomorphic (pith-ẹ-kọ-môr′fik), *a.* [Gr. πίθηκος, ape, + μορφή, form, + *-ic.*] Having the form or characters of an ape; ape-like. Contrasted with *anthropomorphic.*

pith-fleck (pith′flek), *n.* A minute brown speck found in the wood-layer of many trees, due to the boring of insects.

pit-hole, *n.* **2.** The grave. *Halliwell.*

pit-lathe (pit′lāᴛʜ), *n.* A lathe for which a pit is provided, just in front of the headstock, to allow for the turning of work of large diameter, such as fly-wheels for engines, etc.

pitman, *n.* **4.** See the extract.

Pitsawing was done by two men with a long saw that had cross handles on each end. A stick of timber, hewed square, was placed over a pit, or elevated on trestles. One man stood on top of it and pulled the saw up, and one man stood in the pit below to pull the saw down. The workman on top, who guided the saw along the chalk line and who was supposedly the better man, was called the top-sawyer. The one below was called the *pit-man.* *Fox*, quoted in Dialect Notes, II. vi.

pitomba (pē-tōm′bä), *n.* [Native name in Brazil.] A tree of the myrtle family, *Eugenia Luschnathiana*, native to northern Brazil, which bears edible fruit.

pitombeira (pē-tọm-bā-ē′rä), *n.* [Native name in Brazil.] A tree of the soapberry family, *Talisia esculenta*, native of Brazil. The fleshy aril of the seeds is edible.

piton (pi-toṅ′), *n.* [F.] A point; a peak.

Northern Martinique, like other West Indian islands, is a labyrinth of mornes and *pitons*, i.e., of singularly steep peaks and ridges (partly volcanic cones, partly erosional forms), densely clothed with forests and herbage. *Pop. Sci. Mo.*, July, 1902, p. 274.

pit-planting (pit′plan″ting), *n.* See ★*trench-planting.*

pit-shop (pit′shop), *n.* A cellar or other underground place used as a workshop.

As far back as 1854 we find the [Glasgow tailors'] union resolving that the members employed in a certain notorious underground cellar "should finish their jobs and leave, until a better workshop was got." In the next year . . . the general meeting resolved: "that those employers who have *pit-shops* . . . receive notice to get proper workshops." *Webb*, Indust. Democracy, I. 359.

pittancery (pit′an-sẹ-ri), *n.* The office of the pittancer of a convent; the estate belonging to this office. *N. E. D.*

pitted, *a.* **2.** In *leather-manuf.*, said of skins having little spots or holes in the grain which mark but do not pierce it. They are caused by decomposition or sometimes by the action of salt. *Modern Amer. Tanning*, p. 35.—**Pitted ground.** Same as ★*thimble-surface.*—**Pitted plain.** See ★*plain*1.

pitterpatter (pit′ėr-pat″ėr), *adv.* Same as *pitapat;* also noting a slighter and quicker beat, as of drops of water.

pitting, *n.* **8.** In *geol.*, the excavation of small pits in a surface of rock, usually by some process of solution.

Subsequently an ancient soapstone quarry near Tenallytown was examined. The ancient *pitting* corresponded quite closely with that of the bowlder quarries and the condition of the pits indicated equal age.
Smithsonian Rep., 1890, p. 48.

pittite1 (pit′īt), *n.* [*pit*1 + *-ite*2.] One who frequented the pit in the theater: especially in evidence during the O. P. (old-price) Riots in Covent Garden Theatre, London, in the early part of the nineteenth century.

Then there is an especially noisy night, when rows of standing *pittites* are impelled one row over the other, in dire confusion. *Doran*, Annals of Eng. Stage, II. xxv.

Pittite2 (pit′īt), *n.* [*Pitt* (see def.) + *-ite*2.] One who advocated the policies of William Pitt, especially with regard to France.

pitto (pit′ō), *n.* [Dahomey *kpitu.*] The native name of a kind of beer, made in West Africa, from fermented maize or rice; maize-beer. *N. E. D.*

pittosporaceous (pit″ọ-spọ-rā′shius), *a.* Pertaining to or having the characters of the *Pittosporeæ.*

Pittsford shale. See *Salina* ★*beds.*

pituitary, *a.*—**Pituitary extract**, a substance extracted from the pituitary gland of animals, the action of which in man is to strengthen and retard the action of the heart.—**Pituitary pouch**, a small pocket or pouch, opening in the bottom of the olfactory sac of the lamprey. *Parker and Haswell*, Zoology, II. 124.

pituri (pit′ụ-ri), *n.* [Also *pitury*, *pitchurie*, *pitchiri*, *pitcheri*, *pitcherie*, *pitchery*, *pidgery*, *pedgery*, and *bedgery;* from an aboriginal name.] An Australian solanaceous shrub, *Duboisia Hopwoodii*, the leaves and twigs of which are used as a narcotic masticatory by the aborigines of central Australia. It is sometimes smoked, when dampened and mixed with the ashes of certain plants and rolled up in the form of a cigar. When used in small quantities it acts as a powerful stimulant, assuaging hunger, and enabling long journeys to be made without fatigue. It yields a brown, liquid, acrid alkaloid, called piturine, which is similar to nicotine.

piturine (pit′ụ-rin), *n.* [*pituri* + *-ine*2.] A liquid base, C_6H_8N(?), found in a certain Australian drug obtained from *Duboisia Hopwoodii.* It has an odor resembling nicotine, with which it is believed by some chemists to be identical. See ★*pituri.*

pit-village (pit′vil″āj), *n.* A village formed of pit-dwellings: particularly used in reference to groups of ancient underground dwellings found in England.

pit-wheel (pit′hwēl), *n.* A large gear on a horizontal axis at the end of a rolling-mill: so called because a pit is made for it to allow the rolls to come close to the floor.

pityocampa (pit″i-ọ-kam′pä), *n.* [Gr. πιτυοκάμπη, < πίτυς, pine, + κάμπη, caterpillar.] The larva of the pine procession-moth, *Cnethocampa pityocampa.* *N. E. D.*

pityriasis, *n.*—**Pityriasis linguæ**, the presence of whitish patches of epithelial cells on the tongue.—**Pityriasis nigricans**, a form of chromidrosis in which a dark discoloration of the skin takes place.

piuri, *n.* Same as *purree.*

piutim (pẹ-ö′tēm), *n. pl.* [Heb.] Hymns incorporated in the Jewish festival liturgies. Most of the piutim are acrostically written and contain the name of the composer. See ★*maḥzor.*

pivot-truck (piv′ọt-truk), *n.* A single car-truck, without a car-body, used to transport logs, telegraph-poles, and long timbers. Two trucks are used, the ends of the logs resting on a pivoted bar on each truck, the load joining the two trucks, and the pivots enabling the trucks to pass a curve in the track.

pixol (pik′sol), *n.* Pine-tar made soluble by the addition of soap. It is antiseptic and disinfectant.

P. J. An abbreviation (*a*) of *Justice of the Peace;* (*b*) of *Police Justice;* (*c*) of *Presiding Judge;* (*d*) of *Probate Judge.*

P. L. An abbreviation (*a*) of *Paradise Lost;* (*b*) of *Poet Laureate;* (*c*) [*l. c.* or *cap.*] in *psychol.*, of *partial limen.*

placage (plak′āj), *n.* [F. *plaquer*, to plate. See *plaque.*] The facing of walls with thin slabs of marble or the like, or with stucco or plaster. *N. E. D.*

placard, *n.*—**The Placards**, placards containing the protests of the Reformers against the mass, widely distributed throughout Paris and posted on the walls everywhere in the winter of 1534–5. See the extract.

For the next six years Francis's attitude towards the Reformers oscillated from persecution to favour, according as he was anxious to win the support of the Pope or that of the German princes. But after the winter of 1534–1535, when the breach between the two religious parties was enormously widened by the affair of the "*Placards*" and the terrible persecution which followed it, the king's face began to be set steadily towards Catholicism.
A. Tilley, Lit. French Renaissance, I. 9.

place, *n.* **24.** In *mining*, a drift driven at right angles to a wide lode to form the starting-place for a slide.—**25.** In sporting contests, the relative rank or success secured; specifically, that of the winner, the second, or the third.—**In place.** (*e*) In *mining*, inclosed in fixed rocks: said of a vein or lode which has not been disturbed by a break or slide of the rock.—**Place kick.** See ★*kick.*

placeable (plās′a-bl), *n.* That may be placed.

place-holder (plās′hōl″dėr), *n.* **1.** One who holds a place or office; an office-holder.—**2.** A deputy.

place-mode (plās′mōd), *n.* A statistical mode which prevails in a given species of organisms at a given place and season. See ★*mode*¹, 12.

> It is not thinkable that there should be two "*place-modes*" for the same species and character at the same place and during the same season.
> *Biometrika*, April, 1902, p. 312.

placenta, *n.*—**Allantoic placenta,** that condition of the placenta found in clawed mammals, in which the allantois joins the chorion at an early date.—**Annular placenta,** a placenta which surrounds the fetal envelops like a ring.—**Basal placenta.** See ★*basal.*—**Chorionic placenta,** the condition of the placenta found in ungulates, in which the allantois remains distinct from the chorion for a considerable time.—**Diffuse placenta.** See *diffuse*, 1 (*c*).—**Fetal** or **embryonic placenta,** the portion of the placenta, or afterbirth, derived from the embryo: opposed to the *maternal* ★*placenta*, or portion derived from the uterine tissues of the mother.—**Fundal placenta,** a placenta attached to the fundus of the uterus.—**Maternal placenta,** the portion of the placenta, or afterbirth, which is formed by the uterine tissues of the mother: opposed to the *fetal* or *embryonic* ★*placenta.*—**Placenta marginata,** a placenta the edges of which have no chorionic attachment.—**Placenta truffée,** a diseased placenta which is marked by the presence of numerous small dark-red infarcta.—**Zonary placenta.** Same as *annular* ★*placenta.*

Placental decidua. Same as *decidua serotina.* See *decidua.*

Placenticeras (plas-en-tis'ẹ-ras), *n.* [NL., ‹ L. *placenta*, cake, + Gr. κέρας, horn.] A genus of pachycampylous ammonoid cephalopods having smooth, involute, compressed discoidal shells, often of large size, with very complex sutures, which are of ceratitoid outline in young stages of growth. The genus occurs in Cretaceous rocks.

placentocytotoxin (plạ-sen"tọ-sī-tọ-tok'sin), *n.* [*placenta* + *cytotoxin.*] A cytotoxin directed against placental cells.

placentophagy (plas-en-tof'a-ji), *n.* [NL. *placenta* + Gr. φαγεῖν, eat.] The eating of the placenta: practised in certain parts of the Sudan.

placentule (plạ-sen'tūl), *n.* [NL. *placentula*, dim. of *placenta.*] A small placenta.

placer¹, *n.* **2.** In *ceram.*, a workman in a pottery who places the unburned ware in the saggars and arranges the saggars in the kiln.

placer², *n.*—**Ancient beach placers,** deposits found on the coastal plain along a line of elevated beaches. *U. S. Geol. Surv.*, Bulletin 328, p. 142.—**Bench placers,** gravel deposits in ancient stream-channels and flood-plains which stand from fifty to several hundred feet above the present streams. *U. S. Geol. Surv.*, Bulletin 328, p. 142.—**Creek placers,** gravel deposits in the beds and intermediate flood-plains of small streams. *U. S. Geol. Surv.*, Bulletin 328, p. 142.—**Dry placer,** a deposit of gold in the bed of a stream which has dried up.—**Gravel-plain placers,** placers found in the gravels of the coastal or other lowland plains. *U. S. Geol. Surv.*, Bulletin 328, p. 142.—**Hillside placers,** a group of gravel deposits intermediate between the creek and bench placers. Their bed-rock is slightly above the creek bed, and the surface topography shows no indication of benching. *U. S. Geol. Surv.*, Bulletin 328, p. 142.—**River-bar placers,** placers on gravel flats in or adjacent to the beds of large streams. *U. S. Geol. Surv.*, Bulletin 328, p. 142.—**Sea-beach placers,** placers reconcentrated from the coastal-plain gravels by the waves along the seashore. *U. S. Geol. Surv.*, Bulletin 328, p. 142.—**Wet placer,** a deposit of gold in the bed of a stream which has not dried up. *Engin. Mag.*, June, 1899, p. 535.

placer² (plā'sėr), *v. t.* [*placer*², *n.*] In *mining*, to mine by the hydraulic process; wash out (gold) from a bank by a stream of water.

placidamente (plä-chẹ̄-dạ̈-men'te), *adv.* [It.] In *music*, in a quiet and placid manner; calmly.

placobranchoid (plak-ọ̄-brang'koid), *a.* [*Placobranch*(*ia*) + *-oid.*] Resembling the *Placobranchia.*

placochromatic (plak"ọ̄-krọ-mat'ik), *a.* [Gr. πλάξ (πλακ-), a plate, + χρῶμα(τ-), color, + *-ic.*] In diatoms, having the endochrome distributed in plates or disks. Compare ★*coccochromatic.*

placodermoid (plak-ọ-dėr'moid), *a.* [*placoderm* + *-oid.*] Resembling or having the characters of the fish-like vertebrates known as *Placodermi* or *Ostracophori.*

placodialin (plạ-kō'di-ạ-lin), *n.* [*Placodi*(*um*) + *-al*³ + *-in*².] A compound found in *Placodium chrysoleucum.* It crystallizes in plates or prisms which melt at 154–156° C.

placodin (plak'ọ-din), *n.* [*Placod*(*ium*) + *-in*².] A compound found in *Placodium melanaspis.* It crystallizes in copper-red plates which melt at 245° C.

placodontoid (plak-ọ-don'toid), *a.* [*placodont* + *-oid.*] Resembling the placodonts.

Placopharynx (plak-ō-far'ingks), *n.* [NL., ‹ Gr. πλάξ (πλακ-), a disk, + φάρυγξ, pharynx.] A genus of suckers found from Michigan to Georgia.

placoplast (plak'ọ̄-plást), *n.* [Gr. πλάξ (πλακ-), a plate, + πλαστός, molded.] A stabiloplast in contact with a chromatophore of a diatom. Compare ★*libroplast.*

placuntoides (plak"un-toi'dēz), *a.* [NL., ‹ Gr. πλακουντοειδής, like a cake, ‹ πλακοῦς (πλακουντ-), a cake, + εἶδος, form.] In *anthrop.*, noting a cranium having a low forehead and a very flat vertex. *G. Sergi* (trans.), Var. of the Human Species, p. 45.

pladobole (plad'ọ-bōl), *n.* [Gr. πλάδος, abundance of fluids, + -βολος, thrown.] In *phytogeog.*, a bolochore in which the propulsion is effected by means of hygroscopicity. See ★*bolochore.* *F. E. Clements.*

plagiator (plā'ji-ā-tọr), *n.* Same as *plagiarist.*

Plagihedral class of crystals. See ★*symmetry*, 6.

plagiocephalus (plā"ji-ọ-sef'ạ-lus), *n.*; pl. *plagiocephali* (-lī). [NL., ‹ Gr. πλάγιος, oblique, + κεφαλή, head.] A plagiocephalic individual.

plagioclinal (plā"ji-ọ̄-klī'nạl), *a.* [Gr. πλάγιος, oblique, + κλίνειν, incline.] In *geol.*, descriptive of or relating to structures which run diagonally or obliquely to the strike of the strata, such as ridges whose axes do not coincide with the strike of the beds.

> Amongst the characteristics of the sculpture there are two noteworthy features. In the first place, there are no escarpments and very little differential denudation: indeed, nearly all the exposed ridges are *plagioclinal*, and at Collier Hill, Beacon Hill, Broombriggs and elsewhere not only are the rocks seen to strike obliquely across the ridges as a whole, but even the smaller crags are *plagioclinal* too.
> *Geog. Jour.* (R. G. S.), XXI. 628.

plagiocœlous (plā"ji-ọ̄-sē'lus), *a.* [Gr. πλάγιος, oblique, + κοῖλος, hollow.] In *ornith.*, noting that condition of the intestine in which the second loop and frequently other loops are folded upon themselves.

Plagiogrammus (plā"ji-ọ-gram'us), *n.* [NL., ‹ Gr. πλάγιος, oblique, + γραμμή, a line.] A genus of blennioid fishes found off the coast of California.

plagiograph (plā'ji-ọ-gráf), *n.* [Gr. πλάγιος, oblique, + γράφειν, write.] An extension of the pantograph, invented by Sylvester, which enlarges or reduces figures, but may be turned at any required angle to the original. Called also a *skew pantograph.*

plagiopatagium (plā"ji-ọ-pat-ạ-jī'um), *n.*; pl. *plagiopatagia* (-ạ̈). [Gr. πλάγιος, oblique, + NL. *patagium.*] That portion of a bat's wing which lies back of the arm and between the fifth finger, the side of the body, and the hind leg. It comprises the 'endopatagium' and 'mesopatagium' of Harrison Allen.

> Fur close and fine, about 7 mm. long on the back. General colour above pale grey, the individual hairs dull whitish, with dark brown tips. Under surface nearly white. Membranes brown, the *plagiopatagium* and interfemoral inconspicuously edged with white.
> *Annals and Mag. Nat. Hist.*, May, 1904, p. 386.

Plagiostomidæ (plā"ji-ọ̄-stō'mi-dē), *n. pl.* [NL. *Plagiostomum* + *-idæ.*] A family of small, usually cylindrical turbellarians of the order *Alloiocœla*, with one genital opening, no accessory female apparatus, and with the testicular follicles in front of, alongside, and behind the brain. The pharynx varies in position and size, and there is no otocyst. It includes several genera, among which are *Plagiostomum*, *Acmostomum*, and *Vorticeros.*

Plagiostomum (plā-ji-os'tọ-mum), *n.* [Gr. πλάγιος, oblique, + στόμα, mouth.] The typical genus of the family *Plagiostomidæ.* *O. Schmidt*, 1851.

plagiotriæne (plā"ji-ọ-trī'ēn), *n.* [Gr. πλάγιος, oblique, + E. *triæne.*] In sponge-spicules, a triæne whose cladi are directed obliquely forward.

plagiotropous (plā-ji-ot'rọ-pus), *a.* Same as *plagiotropic.*

> Some of the *plagiotropous* shoots [of mosses] are isophyllous.
> *K. E. Goebel* (trans.), Organography of Plants, I. 100.

plagiotropy (plā-ji-ot'rọ-pi), *n.* Same as *plagiotropism.*

plagose (plā'gōs), *a.* [L. *plagosus*, ‹ *plaga*, a blow.] Inclined to strike or flog. [Rare.] *N. E. D.*

plague, *n.* **2.** It is an acute infectious disease, known since the second century of the Christian era, occurring chiefly in the poorer quarters of large cities, where the crowding is greatest and the hygienic conditions are bad, and caused by a specific micro-organism, *Bacillus pestis.* The disease prevails most in the tropics or in cities of the temperate zone during the hot season. It occurs under four forms which differ markedly in the severity of their symptoms, the mode of propagation, and the seat of the principal lesions. These forms are: *bubonic plague*, the most common, in which the glands in the groin and sometimes the axilla become enlarged, and there is high fever, with a dry brown tongue, and frequently an eruption due to hemorrhages in the skin; *septicemic plague*, a more virulent form in which the disease usually kills before there is time for the formation of buboes; *pneumonic plague*, or *plague-pneumonia*, the most fatal form of the disease, in which the bacilli lodge in the air-cells and smaller bronchial tubes, where they set up the lesions of pneumonia; *pestis minor*, a very mild form of bubonic plague in which there is but slight swelling of the glands, the fever is never high, and the patient scarcely feels ill. It is common at the beginning of an epidemic outbreak. The pneumonic form is the most infectious, the bacilli being contained in the particles of moisture exhaled in the breath and expelled in coughing. In the bubonic form the infection is probably spread through the agency of fleas and possibly other insects. The lower animals, especially rats, are very subject to this variety of plague. Preventive inoculation with Haffkine's serum (containing dead bacilli and toxins) has been extensively practised in India, with favorable results. Yersin's serum is an antitoxic serum for the cure of developed cases, but is also of service in the prevention of the disease.—**Black plague.** Same as *the black death* (which see, under *death*).—**Cold plague.** See ★*cold.*—**Parrots' plague,** a distemper to which parrots are subject. Also called *parrots' rinderpest.*—**Siberian plague,** a cattle-disease in Siberia, marked by the occurrence of a malignant furuncle or carbuncle: perhaps the same as *anthrax.*—**Tarbagan plague,** a term applied to the bubonic plague in certain parts of Mongolia, where it affects the tarbagan, a marmot-like rodent (*Artomys bobac*), as it does the rats of seaboard places. *Nature*, Nov. 21, 1907, p. 59.—**The white plague,** tuberculosis.

plague-house (plāg'hous), *n.* **1.** A house infected with the plague. *Pepys.*—**2.** A house in which plague-stricken patients are cared for.

plague-pneumonia (plāg'nụ-mō"ni-ạ̈), *n.* Same as *pneumonic plague* (which see, under ★*plague*²).

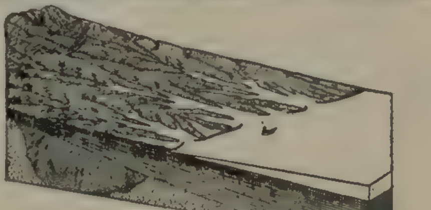
> It has been discovered that only those plague patients who suffer from *plague-pneumonia*—a condition which is fortunately infrequent—are centers of infection, and that the real transmitters of the plague are the rats.
> *Pop. Sci. Mo.*, Sept., 1901, p. 462.

plaid-neuk (plad'nūk), *n.* The corner of a plaid, folded over so as to form a pocket. [Scotch.]

plaidoyer (plā-dwo-yā'), *n.* [F. See *plead.*] In *law.*, a pleading; a plea.

plain¹. **I.** *a.* **16.** In *old music*, said of certain graces or embellishments, like the beat, backfall, etc., when without extension by a shake: opposed to ★*shaked.* Also called *smooth.*

II. *n.*—**Aggradation plain.** See ★*aggradation.*—**Alluvial piedmont plain.** See ★*piedmont.*—**Belted coastal plain,** a coastal plain made of strata of varying texture and composition, arranged roughly parallel to the shore-line.—**Bulwark plains,** dark nearly circular plains upon the moon, surrounded by a ring of mountains: differing from many of the large flat-bottomed craters, like Plato, in being much larger, with diameters exceeding 100 miles.—**Coastal plain,** in general, a plain along the sea-border of a land-area; specifically, a plain thus located, formed by the emergence of a former sea-bottom.—**Embayed coastal plain,** a dissected coastal plain which has been slightly depressed, allowing the ocean waters to enter the valleys, as the region around Chesapeake Bay, Maryland.—**Gradation plain,** a plain formed by a river at grade. *U. S. Geol. Surv.*, *Monographs*, XLI. ill. 93.—**Graded plain,** a plain on which there is an essential balance between corrosion and deposition. *Chamberlin and Salisbury*, Geol., I. 159. **Overwash plain,** the accumulation of debris spread out at the front of a glacier by the action of glacial streams.



Embayed Coastal Plain.

> *Overwash plains.*—The material which lies outside the moraine, and which is believed to be of equal age with it, consists mainly of the gravel and sand carried on beyond the ice by the running waters which emanated from it. Where the waters issuing from the edge of the ice found no valley to receive them, they deposited their burden upon the territory just outside of the ice, building up sand and gravel plains. Such plains slope somewhat promptly away from the moraine, and the deposit of sand and gravel grades off to a thin edge at no great distance from the ice.
> *R. D. Salisbury*, in Geol. Surv. of New Jersey, 1892, p. 40.

Pitted plain, in *geol.*, a glacial plain in which hollows remain, marking the site of ice-blocks.—**Plain of marine denudation,** a nearly even surface produced by the abrasion of a land-mass by the action of the sea, especially by the waves and currents of the shore.—**Plain of subaërial denudation,** a nearly even surface produced by the erosion of a land-mass by weather and streams.—**Stratum-plain,** a land surface reduced by erosion to conformity with the bedding of the underlying rock.—**Structural plain,** a plain conformable to the underlying strata.—**Subaqueous overwash plain,** debris washed out from the front of a glacier and deposited under water. See *overwash* ★*plain.*

If a moraine was being formed at the edge of the glacier at the same time that the numerous glacial streams were building their deltas in the bordering lake, the moraine would be bordered on its outer edge by an overwash plain having the characteristics of a delta, or of a series of coalescing deltas. For overwash plains or glacial deltas of this type the senior author has already proposed the name "*subaqueous overwash plains.*"
R. D. Salisbury, in Geol. Surv. of New Jersey, 1893, p. 240.

plain-fish (plān′fish), *n.* Same as ★*escolar.*

plain-laid (plān′lād), *a.* *Naut.*, noting a rope composed of three strands laid together right-handed, that is, from left to right, or with the sun, or with the revolution of the hands of a clock.

plain-tail (plān′tāl), *n.* Same as ★*escolar.*

plaintif, *n.* A simplified spelling of *plaintiff.*

Plaintiff in error. See ★*error.*

plain-tile (plān′tīl), *n.* [*plain* + *tile*^{1}.] A flat roofing-tile. See *plain tile*, under *tile*^{1}.

Plaisancian (plā-san′si-an), *a.* and *n.* [F. *Plaisance*, a town in France, + *-ian.*] In *geol.*, noting the earliest division of Pliocene time, in the classification by Gaudry and de Lapparent of the European Pliocene: represented by the Pikermi, Baltavar, Mont Lebéron, and Concud beds, which furnish evidence that herbivorous mammals were at that time widely dispersed and abundant.

planar, *a.* **2.** Of or pertaining to a plane. —**Planar lens.** See ★*lens.*

II. *n.* See ★*anastigmat.*

planarity (plā-nar′i-ti), *n.* [*planar* + *-ity.*] The character of being planar or flat.

planation (plā-nā′shon), *n.* [NL. **planatio*(*n*-), < LL. *planare.* See *plane*^{1}, *v.*] The act of planing or making plane or flat; specifically, in *geol.*, the erosive process by which a stream or a glacier produces a nearly level surface; also the result of erosive processes.

The study of the relief of the land in various regions has shown that there are many such remnants, left by incomplete *planation.*
I. C. Russell, Rivers of North America, p. 49.

This period of deposition was in turn closed by a renewed disturbance of an orogenic kind, comparatively slight in amount and local, chiefly affecting certain lines in a northwest and southeast direction. Next came renewed denudation or '*planation*,' and this continued until the enormous volcanic extravasations of the Miocene began. *Science*, March 15, 1901, p. 406.

Lateral planation, the removal of material and the production of a plain by the lateral meandering of a graded stream. *Chamberlin and Salisbury*, Geol., I. 78.

planchment (planch′ment), *n.* [*planch* + *-ment.*] Planking; especially, a ceiling. [U. S.]

Planchment.—Ceiling. Now seldom heard. An old woman said: "The roof wets so, I 'm afraid the *planchment* 'll fall." From planched, that is boarded.
Jour. Amer. Folk-lore, April–June, 1891, p. 159.

plane^1. **I.** *a.*—**Plane figure.** See ★*figure.*—**Plane symmetry.** In *crystal.* See ★*symmetry.*—**Plane wave.** See ★*wave*^{1}.

II. *n.*—**Actinic plane.** See ★*actinic.*—**Anticlinal planes.** Same as ★*anticlinal walls.*—**Apical plane.** See ★*apical.*—**Automatic plane.** Same as *double-acting inclined plane* (which see, under *plane*^{1}).—**Complex plane**, the plane each point of which represents a complex number.—**Cone of planes.** See ★*cone.*—**Declination of a plane.** See ★*declination.*—**Diametral plane.** (*a*) In *crystal.*, see *diametral.* (*b*) In *geom.*, a plane through the center of a sphere.—**Disruption-plane**, in *geol.*, a zone of displacement; a fault-plane.

These lines of movement traverse the Lewisian plateau in various directions, producing planes of disruption, molecular rearrangement of the minerals and the development of foliation. . . . Close to the well-defined *disruption-planes*, . . . the gneiss loses its low angle, is thrown into sharp folds, the axes of which are parallel with the planes of movement.
Rep. Brit. Ass'n Advancement of Sci., 1901, p. 617.

Divisional plane, a plane marking a division between two beds or other masses of rock. See ★*division-plane.*—**Focal plane.** (*a*) In *optics*, see *focal.* (*b*) In *line-geom.*, one of the planes of which two are determined by each straight of the congruence taken with each of the two straights consecutive to it by which it is intersected.—**Geometric plane**, in *persp.*, a ground-plane.—**German horizontal plane**, the plane defined by two straights joining on each side the deepest point of the lower eye-socket rim with the point of the upper rim of the osseous auditory passage or acoustic duct lying perpendicularly above the center of the ear-aperture.—**Listing's plane**, a plane which contains the vertical and transverse axis of the eyeball and forms a right angle with the anteroposterior axis.—**Nodal plane**, a node or nodal point in a vibrating column of air, as in an organ-pipe.—**Occipital plane.** (*b*) A plane drawn through the base of the skull in such manner as to cut through the anterior and posterior (more properly the dorsal and ventral) edges of the foramen magnum. The angle formed by the occipital plane and the basicranial axis is open in man and less than a right angle in fishes.—**On plane**, in *coal-mining*, in a direction at right angles to the plane or main joints of a coal-seam.—**Opisthiobasilar plane**, the plane at right angles to the medial plane and passing through the opisthion and the basion.—**Plane of fire**, in *gun.*, the vertical plane containing the line of fire.—**Plane of Hensen**, a plane or line passing through the center of a series of the sarcous elements of a muscle-fibril.—**Plane problem**, a problem concerning points, lines, and figures, which lie in one plane.—**Planes of reference**, systems of planes from which are measured the distances of objects in order to fix their position in space.—**Solution plane**, a direction in a crystal, usually parallel to some simple crystallographic face, in which the substance yields with relative ease to solvent action, as when the crystal of a rock-mass is subjected to great pressure. The development of the minute inclusions to which the schiller is due takes place along solution planes. See ★*schillerization.*—**Structure plane**, a plane that is definitely related to certain geologic structures of a region or terrane, as a fault-plane, joint-plane, or contact-plane between formations.

The tendency of the modern school of physiographers seems to be to ascribe "little importance to geological *structure planes* as a factor in determining the position and the orientation of water courses."
W. H. Hobbs, in Jour. of Geol., Sept.–Oct., 1901, p. 469.

Trochoided plane, a flat surface the center of which moves at a uniform speed in a circle, the plane being kept normal to the surface of a trochoidal wave. *Hargrave.*—**Unit planes**, in *optics*, two planes at right angles to the axis of an optical system, as a lens system, so situated that the distance from the axis to a point in one of the planes is equal to the distance from the axis to its conjugate point in the other plane.

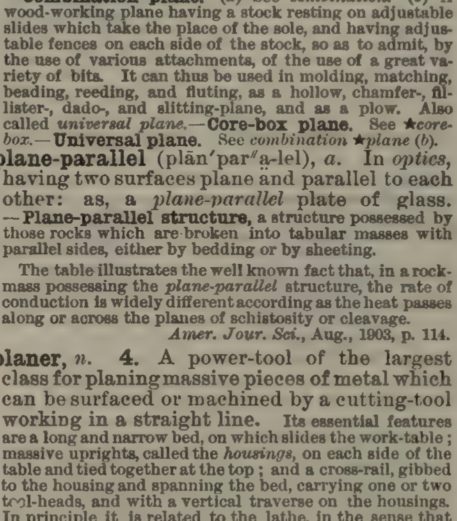
plane^2, *v. t.*—**To plane down**, to press down with a planer the types in a form prepared for press to make them of uniform height and equally level under the impression of a press; also, to shave down the printing-block that is more than type high.

plane^2, *n.*—**Adjustable plane**, a plane in which the angle of the cutting-edge may be varied with respect to the face of the block or stock, and in which the opening at the throat for the chip can be made greater or less.—**Bull-nose plane**, a plane which has the plane-iron at the front end to enable the workman to plane into a corner.—**Combination plane.** (*a*) See *combination.* (*b*) A wood-working plane having a stock resting on adjustable slides which take the place of the sole, and having adjustable fences on each side of the stock, so as to admit, by the use of various attachments, of the use of a great variety of bits. It can thus be used in molding, matching, beading, reeding, and fluting, as a hollow, chamfer-, fillister-, dado-, and slitting-plane, and as a plow. Also called *universal plane.*—**Core-box plane.** See ★*core-box.*—**Universal plane.** See *combination* ★*plane* (*b*).

plane-parallel (plān′par″a-lel), *a.* In *optics*, having two surfaces plane and parallel to each other: as, a *plane-parallel* plate of glass.—**Plane-parallel structure**, a structure possessed by those rocks which are broken into tabular masses with parallel sides, either by bedding or by sheeting.

The table illustrates the well known fact that, in a rock-mass possessing the *plane-parallel* structure, the rate of conduction is widely different according as the heat passes along or across the planes of schistosity or cleavage.
Amer. Jour. Sci., Aug., 1903, p. 114.

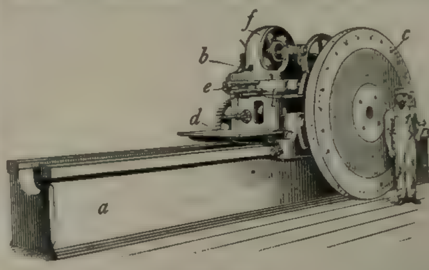
planer, *n.* **4.** A power-tool of the largest class for planing massive pieces of metal which can be surfaced or machined by a cutting-tool working in a straight line. Its essential features are a long and narrow bed, on which slides the work-table; massive uprights, called the *housings*, on each side of the table and tied together at the top; and a cross-rail, gibbed to the housing and spanning the bed, carrying one or two tool-heads, and with a vertical traverse on the housings. In principle it is related to the lathe, in the sense that the work advances against a fixed cutting-tool. It differs from the lathe in the presentation of the work to the tool in a horizontal plane, and from the shaper, slotting-machine, and key-seater in respect to the direction of the effort of the cutting-tool and in the fact that in these machines the work is at rest while the cutting-tool moves; but all five machines are essentially tools making a planer cut, as opposed to the chipping cut of a milling-machine.



Planer.

a, bed with V-ways for traversing table; *b*, traversing work-table; *c*, housings; *d*, cross-rail with vertical traverse on housings; *e*, tool-heads with horizontal traverse on cross-rail; *f*, tool-heads at side of work with vertical traverse on housings; *g*, brace, tying housings together; *h*, mechanism controlling traverse of cross-rail.

The important feature of the planer is the mechanism for operating the traveling work-table. A typical method is by rack and gear. The advance of the work-table carrying the work against and under the cutting-tool held in the cutter-head is slow and powerful; the return of the table under the idle cutter is four times as fast. The feed-motion applied to the cutter-heads gives a cross-feed for those supported by the cross-rail. Where other cutter-heads are supported, one on each side of the uprights of the housing, they are given a vertical feed. By the use of four cutter-heads, two on the cross-rail and two on the uprights, four cuts can be made at each stroke.—**Open-side planer**, a metal-planing machine having only one fixed housing or upright to support the cross-rail, thus leaving the bed unobstructed on one side to receive large pieces.—**Planer and jointer.** See ★*planing-machine.*—**Plate-edge planer**, a machine particularly adapted to planing the edges of plates, angles, and other rolled sections.—**Pony planer**, a wood-planing machine for small work.—**Rack-and-pinion planer**, a planing-machine the bed of which is driven by a rack-and-pinion, as distinguished from a crank-planer or a worm-driven planer.—**Rotary planer**, a power-tool having a large revolving disk armed on the face or the side with a large number of cutting-tools. This disk is mounted on a carriage traveling on a long bed, or, in some machines, is supported by a cross-rail and housing over the work-table. It is essentially a milling-machine.—**Side planer**, a planer having the housing at one side of the bed. A massive arm supported by the housing extends over the bed and carries the cross-rail and cutter-head.



Rotary Planer.

a, bed of machine; *b*, saddle with traverse on bed; *c*, circular cutter-head armed with a great number of inserted cutters; *d*, platform for operators; *e*, control; *f*, motor. Work is placed on the floor close to the cutter-head.

Pläner (plā′ner), *n.* [G. *pläner*, *planer*, rag-stone, also impure chalk.] In *geol.*, a series of limestones, marls, shales, sandstones, and conglomerates representing the littoral facies of both the lower members (Cenomanian and Turonian) of the Cretaceous system in northeastern Germany. Many of the component beds are highly fossiliferous and contain chiefly ammonites, echinoderms, pelecypods, and brachiopods.

plane-sect (plān′sekt), *n.* A definite area or piece of a given plane.

plane-sheaf (plān′shēf), *n.* In *geom.*, the ∞^2 planes on a point.

plane-shear (plān′shēr), *n.* Same as *plank-sheer.*

plane-space (plān′spās), *n.* In *geom.*, a space with the plane as element: the dual of a point-space.

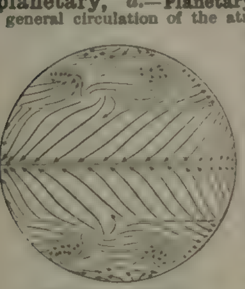
planet, *n.*—**Error of a planet.** See ★*error.*—**Inferior planet**, a planet between the earth and the sun: so called because in ancient astronomy, the earth being supposed to be at the center of the system, these planets are below the sun, which is higher from the earth than they are. Opposed to *superior planet.* See *superior.*—**Minor planet**, one of the multitude of small bodies called *asteroids* or (less correctly) *planetoids.* Their orbits lie between those of Jupiter and Mars, with periods ranging from three years to nine, Eros alone excepted, its perihelion lying very near the orbit of the earth, and its mean distance from the sun and its period being slightly less than those of Mars. (See ★*Eros*, 3.) *Discovery.* Ceres, the first, was discovered by accident on the first night of the nineteenth century by Piazzi at Palermo; but, with very few exceptions, all the rest of the number (now nearing 600) have been discovered by systematic search. Until 1891 this search was conducted by minute examination of fields of the heavens which had been carefully charted (usually by the planet-hunters themselves). If stars not upon the charts were found, a few hours, or at most days, of observation would show whether the interloper was merely a (variable) star overlooked in charting or really in motion. If the latter, a short computation would usually show whether it was a new planet or one previously known. In some cases, however, it is necessary, in order to decide the question, to make an extended calculation of perturbations suffered by the older planet since it was last observed. By October, 1891, 321 asteroids had thus been discovered and duly numbered and named. A new and more fruitful method, the photographic, was then introduced by Max Wolf at Heidelberg, which consists in attaching a camera to an equatorial mounting, driven by accurate clockwork, and pointing it to the sky during an exposure of several hours. The stars in the field will appear on the negative as small round dots, while any moving object, as a planet, will be recognizable at once as a streak. Sometimes several are thus captured upon the same plate. The first planet thus discovered by him, in November, 1891, was (322) Brucia, named in honor of the late Miss Bruce of New York, who supplied the funds with which to procure his instrument, a double camera with 16-inch lenses. Other observers immediately adopted the method, and since 1891 over 250 planets have thus been added to the list, only three or four of them by the old visual process. The year 1903 alone yielded 41, though a number of them may not retain a permanent place on the roll. *Designation.* At first names were assigned from classical mythology (all feminine excepting Eros), but as the supply fell short other mythologies were resorted to, and now names of countries, cities, and people appear, slightly disguised. Since 1894 a considerable number remain unnamed, designated only by the number inclosed in a circle, which constitutes the planet's symbol and makes a name unnecessary. These numbers generally, but now not always, follow the order of discovery, and are assigned by the Berliner Rechenanstalt as soon as sufficient observations have been obtained to determine the planet's orbit and to establish its non-identity with any of the older asteroids, a considerable number of which are now 'adrift,' not having been observed for years, and are every now and then picked up. In 1892, when the photographic discoveries began to crowd in, it was found necessary to devise a provisional designation to be used until the planet's definite number could be assigned. Accordingly, the planets are given letters in the order of announced discovery. After the alphabet was exhausted, astronomers began again with BA, BC, etc. It was in this way that Eros (433) was at first announced as DQ, 1898. *Orbits.* The orbits are of course all ellipses, but with a much wider range of eccentricity and inclination to the ecliptic than those of the major planets. According to the data of the "Annuaire du Bureau des Longitudes" for 1904, there are among the first 500 sixteen with eccentricities exceeding 0.30. Occlo (475) stands at the head with the almost cometary eccentricity of 0.38. Pallas (2) has the greatest inclination, 34⅔°, and there are seven others with inclinations exceeding 25°. These little bodies, on account of their great disturbances by Jupiter, are far more troublesome to follow by calculation than the major planets, and their number is now so great, to say nothing of the probable thousands still undiscovered, that it becomes necessary to limit elaborate computations to such only as present some interesting peculiarity, orbital or 'personal,' so to speak. Indeed, the almost too successful hunt for them may before long be abandoned as unprofitable; and yet there always remains the alluring possibility that any night the negatives may reveal an ultra-Neptunian planet, faint from remoteness but immense, thus at a stroke doubling the known dominion of the sun. *Size.* Ceres (1), the largest, has a diameter of about 500 miles, Pallas (2) about 300, Vesta (4) about 250 (although she is the brightest of the family and is sometimes barely visible to a keen eye), and Juno (3) about 120: all according to measures by Barnard. The rest are much smaller, many of the new discoveries probably not exceeding 15 or 20 miles in diameter, so faint as to be visible only in the largest telescopes, if at all. In mass Ceres may possibly be as much as one five-thousandth as large as the earth, and the united mass of the whole assemblage cannot well be one fiftieth of the earth, as is proved by the non-existence of perceptible perturbations on Mars. *Axial rotation.* A few of these planets show at times marked and regularly periodic variations of brightness, probably due to a spotted surface and axial rotation. On that assumption it is found that Eros rotates in 5 hours 16 minutes, and three others—Lirona (116), Hertha (135), and Tercidina (345)—at about the same rate. Our telescopes are not as yet able to supply any information as to the nature and condition of their surfaces. Presumably they are simply airless rocks. *Origin.* It seems altogether probable that these bodies constitute a single family, but how it came to pass that the matter composing them came to be so scattered instead of forming a single planet is a subject of mere speculation. Various theories have been suggested. The oldest is that they are fragments of an exploded planet; another, that they are due to the disturbing action of Jupiter upon a nebulous ring: but knowledge on this point, if ever attainable, is for the future.—**Station of a planet.** See ★*station.*

plane-table, *n.*—**Photographic plane-table,** in *photographic surveying*, a surveying-camera having its top surface arranged as a plane-table and provided with an alidade to be used in determining and mapping the position of the point or station from which the photographs are taken and the direction in which the axis of the camera is pointed at each exposure.

planetarian (plan-e-tā'ri-an), *a.* and *n.* [*planetary* + *-an.*] **I.** *a.* Of or pertaining to a planet or the planets; planetary.

II. *n.* An inhabitant of a planet.

planetary, *a.*—**Planetary circulation,** an ideal general circulation of the atmosphere of the earth considered as a smooth globe; a system of trade-winds, anti-trades, and lower west winds, and the whirls between them, assumed to correspond with this ideal. Numerous such ideals have been sketched by Thomson, Ferrel, Davis, and others.—**Planetary ellipsoid, hour, system, transmission.** See ★*ellipsoid*, ★*hour*, *solar system*, ★*transmission*.—**Planetary winds.** See ★*planetary circulation.*



Planetary Circulation.
(*Davis.*)

II. *n.*; pl. *planetaries.* An abbreviation of *planetary nebula.* See *nebula.*

> Both the Wolf-Rayet blue bands were present, as in certain *planetaries.*
> *A. M. Clerke*, Problems in Astrophysics, p. 381.

planetesimal (plan-e-tes'i-mal), *a.* and *n.* [NL. **planetesimus*, < *planet(a infinit)esimus*, used to mean 'an infinitesimal or minute planet,' + *-al*^{1}. See *planet* and *infinitesimal.*] **I.** *a.* Of or pertaining to a minute planet or planetary body.—**Planetesimal hypothesis,** a modified form of the meteoritic hypothesis, proposed by Professor T. C. Chamberlin. It assumes that the motions of the small solid masses (*planetesimals*) which compose the original cloud or nebula are orbital and concurrent, so that collisions are infrequent and not violent, and the process of aggregation is extremely gradual. In the meteoritic hypothesis, on the other hand, the meteors, like the molecules in the kinetic theory of gases, are supposed to move indiscriminately in all directions with widely different velocities, so that collisions and rebounds are violent.

> The critical application of accepted principles of physics to the nebular hypothesis by Professor Chamberlin has revealed its weakness even under direct attack. The *planetesimal hypothesis* which he has formulated as a substitute seems much better to explain both the astronomical and geological phenomena. It may not be immediately and universally accepted, as it destroys the present foundation of many geological theories, and because the leaders in science are committed to the old ideas; and in all its claims it may not be true. But its main postulate, that the globe was formed by accretion of cold matter, will probably stand.
> *Amer. Geol.*, Feb., 1904, p. 95.

II. *n.* One of the minute bodies moving in planetary orbits, from time to time overtaking each other and coalescing, and so gradually building up the planets, according to the planetesimal hypothesis.

> The new hypothesis holds that the disseminated planet-forming matter had lost its heat while yet existing in the loose form, as rings or zones or wisps of the parent nebula, and that the globular planets were formed by the slow accretion or infalling of cold, discreet bodies or particles ("*planetesimals*").
> *Amer. Geol.*, Feb., 1904, p. 95.

planetogeny (plan-e-toj'e-ni), *n.* [Gr. *πλανήτης*, planet, + *-γενεια*, < *-γενης*, -producing.] The genesis of planets, or a theory relating to that subject.

planetoid, *n.* See *minor* ★*planet.*

planetologic (plan″e-tọ̄-loj'ik), *a.* [*planetolog(y)* + *-ic.*] Of or pertaining to planetology.

> In Paleozoic times, then, it was the earth itself, not the sun, to which plant and animal primarily stood beholden for existence. This gives us a most instructive glimpse into one *planetologic* process.
> *P. Lowell*, in The Century, Feb., 1908, p. 505.

planetology (plan-e-tol'ọ̄-ji), *n.* [Gr. *πλανήτης*, planet, + E. *-ology.*] The scientific (astronomical) study of the planets.

> *Planetology*, however, will give us the clue to this beclouded hothouse state of things. The earth's own heat, not directly on the crust, but directly on the water, and thence through its atmosphere, was responsible for Paleozoic conditions.
> *P. Lowell*, in The Century, Feb., 1908, p. 505.

planet-stirrer (plan'et-stėr″ėr), *n.* A stirring-paddle which rotates on its own axis while describing a circular path round the inner wall of the vessel in which it operates, as the mixing-vessel in a dyeing- or printing-establishment. *Georgievics* (trans.), Chem. Technol. Textile Fibres, p. 249.

plangorous (plang'go̤-rus), *a.* [*plangor* + *-ous.*] Marked by lamentation.

planing-machine, *n.* **1.** When it contains more than one set of revolving cutter-heads placed in different positions, the planing-machine is called a *surfacer and matcher* or *planer and jointer*; when used in finishing only one surface at a time, it is sometimes called a *surfacer*; when used to finish heavy timber it is called a *timber-dresser*; and when used for combing, planing, matching, and jointing, it is known as a *timber-dresser, -matcher, and -jointer.*

planirostrate (plā-ni-ros'trāt), *a.* Same as *planirostral.*

planispherium (plan-i-sfē'ri-um), *n.*; pl. *planispheria* (-i̤). [NL. *planisphærium.*] Same as *planisphere.*

planity (plan'i-ti), *n.* [*plane*^{1} + *-ity.*] The character of being plane; planeness. [Rare.]

> And so of the straightness of lines, the *planity* of surfaces, and other like geometrical conceptions: they are transcendentalisms suggested (only) by experiences, not in reality comparable with them any more than infinity of space is comparable with mere immensity.
> *R. A. Proctor*, Familiar Science Studies, p. 21.

plank, *n.*—**Plank way of the wood,** with the grain of the wood instead of across it. In Europe before the time of Bewick (1753–1828) blocks for wood-engraving were cut in this manner. It has been the common custom in Japan.

> He (Bewick) engraved across the grain instead of with it, or the "*plank way of the wood*" as he called it.
> *G. E. Woodberry*, Hist. of Wood-engraving, p. 155.

plankage† (plang'kạ̄j), *n.* [OF. *plancage.* See *plank.*] A port-charge sometimes made for the use of planks in dock to discharge or take on a ship's cargo.

plank-buttress (plangk'but″res), *n.* [Translation of G. *plankengerüst.*] One of the broad, flat roots developed vertically at the base of some species of trees as if for props. The plank-buttress is feebly illustrated by the roots of the common American elm and some other Northern trees. Also called *plank-root.*

> The *plank-buttress* is a peculiarity of trees in a tropical climate with abundant rainfall. . . . The physiological causes of the phenomenon and its significance to the life of the tree are still obscure.
> *A. F. W. Schimper* (trans.), Plant-Geog., p. 305.

planking, *n.*—**Inner planking.** Same as *inside* ★*planking.*—**Inside planking,** the ceiling of a vessel.—**Internal planking.** Same as *inside* ★*planking.*

plank-plant (plangk'plant), *n.* An Australian plant, *Bossiæa scolopendria.* *N. E. D.*

plank-root (plangk'röt), *n.* Same as ★*plank-buttress.*

plank-scraper (plangk'skrā″pėr), *n.* A device, usually home-made, for leveling or scraping the soil of agricultural fields to produce a level or uniform surface convenient for irrigation. The scraper is also used for opening or cleaning out distributing-ditches. *Yearbook, U. S. Dept. Agr.*, 1900, p. 504.

planktograph (plangk'tọ̄-gráf), *n.* [NL. *plankton* + Gr. *γράφειν*, write.] A chart showing by means of plotted lines the distribution of the plankton in relation to temperature, time of year, and other controlling factors.

planktology (plangk-tol'ọ̄-ji), *n.* [*plankt(on)* + *-ology.*] That branch of biological science which treats of plankton or the organisms that float or swim in the water.

> On a new theoretical treatment in *Planktology.*
> *Jour. Roy. Micros. Soc.*, June–Oct., 1904, p. 438.

plankton (plangk'ton), *n.* [NL. (in G. spelling) *plankton* (Haeckel), lit. 'that which is drifting,' < Gr. *πλαγκτόν*, neut. of *πλαγκτός*, wandering, drifting (as a ship, a cloud, a road, etc.), < *πλάζεσθαι*, wander, rove (*οἱ πλαζόμενοι*, the planets), in active form *πλάζειν*, cause to wander, lead astray; connected with *πλάγιος*, slanting, oblique.] **1.** In *biol.*: (*a*) The minor animals and plants, including especially the lower organisms, that float or swim together in the water, considered collectively and in contrast with those that live upon the bottom under the water, or on land.

> The *plankton*, the swimming or drifting fauna which never rests on the bottom. *Encyc. Brit.*, XXXIII. 932.

(*b*) The minor animals and plants that float passively in the water, considered collectively and in contrast with those that swim actively. See ★*nekton.*

> Fishes in the form of eggs and young belong in the highest degree to the *plankton*, but not when mature animals.
> *Haeckel* (trans.), Planktonic Studies, in Rep. U. S. Fish [Com., 1889–91, p. 580.

2. Specifically in *phytogeog.*, an aquatic vegetation consisting of freely floating microscopic algæ. Warming divides the plankton flora into oceanic, that of the open sea; neritic (Haeckel), that of the coast; and fresh water. Schimper distinguishes only pelagic, that of the sea, and limnetic, that of fresh-water lakes, the neritic being included in hemiplankton. In pelagic plankton are represented chiefly the *Bacillariaceæ* (diatoms), *Peridiniaceæ*, and *Cyanophyceæ*, chiefly *Oscillatoriaceæ*. Some other groups, as *Protococcaceæ*, are sparingly included. In limnetic plankton the diatoms predominate, the *Cyanophyceæ* come next, and other groups are represented by a few species. As these organisms must exist wholly or mostly in a free-swimming condition, their adaptations are developed toward this end, according to Schimper, in the two directions of decreasing specific gravity and increasing surface with the least possible use of heavy material. The plankton microphytes exist in all seas and lakes in all zones, often in such immense numbers as to give color to the water, as that of the Red Sea, and are also the source of phosphorescence. Plankton is the fundamental nourishment of all animal life in the sea, and is therefore of the highest interest to fishery. The *Cyanophyceæ*, however, are injurious, driving fish away.—**Bathybic plankton,** the animals that float or swim over the bottom of the deep sea without touching or resting upon it; the hypoplankton. See *hypoplankton.*—**Limnetic plankton,** the animals and plants that float or swim at or near the surface of fresh water; the limnoplankton. See ★*limnoplankton.*—**Monotonic plankton,** an aggregation of floating or swimming organisms in which one family or genus predominates, forming half or more than half of the total volume.—**Neritic plankton,** the animals and plants that float or swim in the water in the vicinity of the coast, considered collectively and in contrast with the fauna and flora of the high sea. See *oceanic* ★*plankton.*—**Oceanic plankton,** the animals and plants that float or swim in the high sea, considered collectively and in contrast with those that inhabit the waters near land.—**Pelagic plankton,** the animals and plants that float or swim at or near the surface, considered collectively and in contrast with those that inhabit the depths of the water; the epiplankton. See ★*epiplankton.*—**Plankton pulse,** the repeated occurrence of a regular and gradual appearance and disappearance of the entire volume of the plankton of any body of water.

> The phenomenon of a periodic increase of the plankton volumetrically as a whole, from a minimum to a maximum, followed by a decline to another maximum; the rise and fall being more or less gradual and the data forming when plotted a more or less symmetrical curve resembling that known as the "probability of error" curve, may be designated as the *plankton pulse.*
> *C. A. Kofoid*, Bulletin Ill. St. Lab. Nat. Hist., VI. 298.

Polymixic plankton, an aggregation of floating or swimming organisms in which no one family, genus, or species forms more than half of the total volume. *Haeckel* (trans.), Planktonic Studies, in Rep. U. S. Fish Com., p. 608.—**Zonary plankton,** the organisms that occur in zones of definite depth and are rarely found above or below their natural level. The term is nearly, but not exactly, synonymous with *mesoplankton.* See ★*mesoplankton.*

planktonic (plangk-ton′ik), *a.* [*plankton* + *-ic.*] 1. Belonging to the plankton; floating or swimming.

> The *planktonic* larvæ of epibenthic adults must settle on a suitable bottom within a certain period or die.
> *Encyc. Brit.*, XXXIII. 935.

2. Of or pertaining to the animals and plants that float or swim in the water: as, *planktonic* problems.—**Planktonic current**, a stream or current of floating or swimming organisms; a zoöcurrent. See ★*zoöcurrent.*

plankton-net (plangk′tọn-net), *n.* A conical net of silk bolting-cloth or similar material, provided with a small cup for collecting the plankton from a body of water.

planktonokrit (plangk-ton′ọ̄-krit), *n.* [*plankton* + Gr. κριτής, a judge, umpire (compare *criterion*).] A centrifugal machine which throws out of a sample of water the organisms constituting the plankton, in order that they may be examined and counted.

plankton-pump (plangk′tọ̈n-pump), *n.* A pump which delivers accurately a known quantity of water at each stroke: used for collecting plankton at various depths.

planktont (plangk′tont), *n.* [*plankton* + Gr. ὤν (*οντ-*), being.] An individual of the class of organisms constituting plankton. [Rare.]

> After six years' time and all the manipulation noted the various *planktonts* are apparently as good for microscopic study or for numerical estimation as they were at the start. *Trans. Amer. Micros. Soc.*, 1899–1900, p. 240.

plankway (plangk′wā), *n.* *Naut.*, the narrow portion of deck between the side and the frame of the hatch in a wherry, etc. *N. E. D.*

Planocera (plạ̄-nos′ẹ̈-rạ̈), *n.* [NL.] The typical genus of the family *Planoceridæ*. *De Blainville*, 1828.

Planoceridæ (plạ̄-nọ̄-ser′i-dē), *n. pl.* [NL., < *Planocera* + *-idæ.*] A family of polyclad turbellarians, having no suckers, nuchal tentacles, the mouth about median, and the male copulating apparatus directed backward. It includes several genera, among them being *Planocera*. *Stylochus*, and *Conoceros*.

plano-cylindrical (plā″nō-si-lin′dri-kạl), *a.* Having one plane and one cylindrical surface: said of any cylindrical lens having one plane face.

planocyte (plan′ọ̄-sīt), *n.* [Gr. πλάνος, wandering, + κύτος, a hollow (a cell).] A leucocyte or wandering cell: so called from the fact that it is able to move about in the blood-vessels or other cavities of the body by throwing out pseudopodia like an amœba.

planoferrite (plā-nọ̄-fer′īt), *n.* [L. *planus*, level, + *ferrum*, iron, + *-ite*².] A hydrated ferric sulphate, $Fe_2O_3.SO_3.15H_2O$, occurring in yellowish-green to brown tabular crystals: from the Lautaro mine near Morro Moreno, Atacama.

planographic (plā-nọ̄-graf′ik), *a.* [L. *planus*, level, + Gr. γράφειν, write.] 1. Of or pertaining to plan- or map-making. See *planographist.*—2. Relating to printing from plane surfaces of stone, metal, and the like, in distinction from intaglio and relief-printing.

planography (plạ̄-nog′rạ-fi), *n.* [L. *planus*, plane, + Gr. γράφειν, write.] 1. The art of drawing plans or maps.—2. The art of printing from plane surfaces. See ★*planographic.*

planolite (plan′ọ̄-līt), *n.* [Gr. πλάνος, wandering, + λίθος, stone.] Any fossil impression of an indeterminate cylindrical annelid found on the surface of a stratum.

planoparabolic (plā-nọ̄-par-ạ-bol′ik), *a.* [L. *planus*, level, + E. *parabolic*².] Having characteristics of the plane and the parabola.

planorbiform (plạ̄-nôr′bi-fôrm), *a.* [NL. *Planorbis* + *-form.*] Having the spire depressed so that the whorls lie in the same plane, like those of the genus *Planorbis*; planorboid.

planorboid (plạ̄-nôr′boid), *a.* [NL. *Planorbis* + *-oid.*] Of or pertaining to the gastropod genus *Planorbis*; more particularly, having the form of shell characteristic of that genus; subdiscoid with many whorls and flaring aperture; planorbiform.

> When the whorls become depressed so as practically to lie in one plane, a "*planorboid*" protoconch is produced (Dall). *Amer. Nat.*, Dec., 1902, p. 919.

planorosion (plā-nọ̄-rō′zhọ̈n), *n.* [L. *planus*, flat, + E. (*e*)*rosion.*] The removal and subsequent deposition of fine silt by the rivers in the arid districts of the southwestern United States, when swollen to floods by sudden heavy rains. The deposited silt may be afterward modified by the winds.

> That the deposits in question are composed chiefly of fine clays is due mainly to the effects of *planorosion*, or flood-sheet erosion as it is termed by McGee.
> *Amer. Jour. Sci.*, Dec., 1907, p. 472.

planorosive (plā-nō-rō′ziv), *a.* [L. *planus*, flat, + E. (*e*)*rosive.*] Characteristic of planorosion.

> The two most vigorous geologic processes of the arid regions—the eolian and the *planorosive*, the latter more widely known among the dwellers of those regions as sheet-flood erosion. Both are practically unknown to people living in those parts of the world where there are abundant rains. *Amer. Jour. Sci.*, Dec., 1907, p. 471.

plano-spherical (plā″nō-sfer′i-kạ̈l), *a.* Having one plane and one spherical surface: said of spherical lenses which are either plano-convex or plano-concave.

planospore (plā′nọ̄-spōr), *n.* [Gr. πλάνος, wandering, + E. *spore.*] A spore or detached bud that is motile or able to swim.

plant¹, *n.* 11. In *billiards* generally, the lay or position of balls; in pocket-pool, a sure shot from frozen balls; in one kind of pin-pool, a procedure by which a player may unwittingly make another, instead of himself, winner of the stakes.—**Aërating plants.** See ★*aërate.*—**Aquatic plants.** See ★*aquatic.* **Cultural plant formation.** See ★*formation.*—**Enchanter's plant.** See ★*enchanter.*—**Fungus-digesting plant,** a plant which, having a fungus within its root-cells, is, upon the death of the fungus, able to utilize the albuminoid substances given up by it. *Frank.*—**Le Sueur plant,** the plant or collective machinery required to carry out the Le Sueur process, one of the methods of preparing bleach-liquor by the electrolysis of a solution of common salt.—**Plant formation.** See ★*formation.*—**Plant œcology.** See ★*œcology.*

plant¹, *v. t.* 13. In *chess*, to play (a piece) to a square whence it cannot easily be dislodged.

> Black is now enabled to *plant* the Queen at her 6th.
> *Morphy*, Games of Chess, p. 375.

planta, *n.* 3. (*b*) The sole of a proleg of a lepidopterous larva. *A. S. Packard*, Text-book of Entom., p. 638.

plantad (plan′tad), *adv.* [L. *planta*, sole, + *-ad*³.] In *anat.*, toward the sole of the foot.

plantaginaceous (plan″tạ-ji-nā′shius), *a.* Of or pertaining to the *Plantaginaceæ*.

Plantaginales (plan″tạ-ji-nā′lēz), *n. pl.* [NL. (Engler, 1886), < *Plantago* (*Plantagin-*) + *-ales.*] An order of dicotyledonous sympetalous plants containing the family *Plantaginaceæ* only (which see).

plantain¹, *n.*—**Bracted** (or **large-bracted**) **plantain,** *Plantago aristata*, a species with very narrow leaves and long narrow bracts, native mostly west of the Mississippi but now a common weed eastward from Maine to Georgia.—**Indian plantain.** (*b*) See ★*Mesadenia.*—**Lance-leafed plantain,** the ribwort or English plantain, *Plantago lanceolata*, a weed of lawns and meadows, sometimes regarded as a forage-plant.—**Native plantain,** an Australian fodder-plant, *Plantago varia*, relished by stock, especially sheep.

plantain-shoreweed (plan′tạ̄n-shōr″wēd), *n.* A plant, *Littorella lacustris.*

Plantar neuralgia. Same as *erythromelalgia.*

plantation, *n.* 4. (*b*) (2) See the extract.

> In the Carolinas and Georgia the reports of rice irrigation were generally made for plantations instead of farms. In these states the term "*plantation*" is often applied to small holdings, the word, as thus used, being synonymous with "farm."
> *Dept. of Commerce and Labor* (Bureau of Census), [Bull. 16, p. 18.

7. In *organ-building*, the disposition or arrangement of the pipes of a stop, or of all the stops, on a wind-chest.

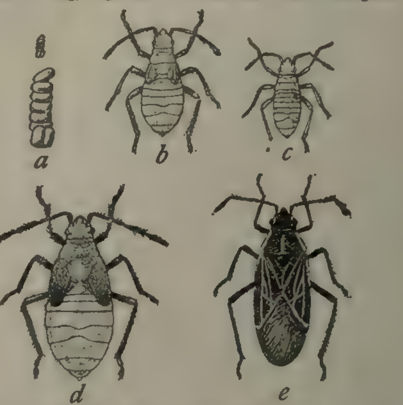
plantationer† (plan-tā′shọ̈n-ėr), *n.* One who took part in the plantation or colonization of Ulster. *N. E. D.*

plantation-measure (plan-tā′shọ̈n-mezh″ụ̈r), *n.* The variety of land-measure formerly used in the plantations of Ireland, in which the acre contained 7840 square yards. *N. E. D.*

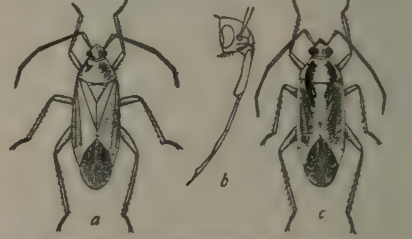
plant-beetle (plant′bē″tl), *n.* A beetle of the family *Chrysomelidæ*; a leaf-beetle.

plant-breeding (plant′brē″ding), *n.* The systematic management of plants by methods designed to secure improved types. The two resources for plant-improvement are selection and hybridization. The former (see *artificial selection* and *methodical selection*, under *selection*) may be practised upon 'chance seedlings' which show desirable characters, as a few heads of wheat in a field, or upon the best individuals from plots grown under conditions favorable to desired variations. The best seeds of the chosen individuals are sown to produce 'mother-plants,' and from the best seeds of approved mother-plants a centgener (see ★*centgener*, 2) is grown, upon which and its offspring (see ★*nursery stock*) selection is practised till a variety is fixed. In place of seedling selection, 'bud selection' is practised in case of plants propagated by cuttings, the best branches or other propagules being chosen. Hybridization (see *hybrid, n.*) serves more or less to combine the desirable qualities of two types, but the great majority of hybrids are worthless, or when not worthless unstable, so that selection must still be practised to secure permanent useful varieties. Plant-breeding aims at some specific end, for example, the removal of an undesirable character, as the beard of wheat, or the enhancement of a valuable quality, as sugar content in the sugar-beet, or the combination of two or more desirable qualities in the same variety, as earliness or good quality with large yield.

plant-bug, *n.*—**Black-lined plant-bug.** Same as *four-lined* ★*leaf-bug.*—**Box-elder plant-bug,** an American coreid bug, *Leptocoris trivittatus*, which does great damage to the box-elder on the tree claims in the western United States.—**Four-lined plant-bug.** Same as *four-lined* ★*leaf-bug.*—**Four-striped plant-bug.** Same as *four-lined* ★*leaf-bug.*—**Hooded plant-bug,** an American coreid bug, *Euthoctha galeator*, of wide distribution and known to suck the sap of young twigs of orange, plum, and other trees.—**Leaf-footed plant-bug.** (*a*) A large American coreid bug, *Leptoglossus phyllopus*, having the hind tibiæ each furnished with a leaf-like expansion: common in the southern United States, where it damages fruit. (*b*) Any one of several members of the genus *Leptoglossus*, which see, with cut.—**Northern leaf-footed plant-bug,** an American coreid bug, *Leptoglossus oppositus*, having a more northern distribution in the United States.—**Southern leaf-footed plant-bug,** the large brown coreid bug, *Leptoglossus phyllopus*, common in the southern United States.—**Tea plant-bug,** either of several East Indian capsid bugs of the genus *Helopeltis*, which damage growing tea-plants: same as ★*mosquito-blight.*—**Timothy plant-bug,** a capsid bug, *Oncognathus binotatus*, common to Europe, Africa, and North America, which feeds on timothy-grass, chenopodium, and other plants.—**Uhler's green plant-bug,** an American pentatomid bug, *Liodrma uhleri*, occurring in the western United States and Mexico.

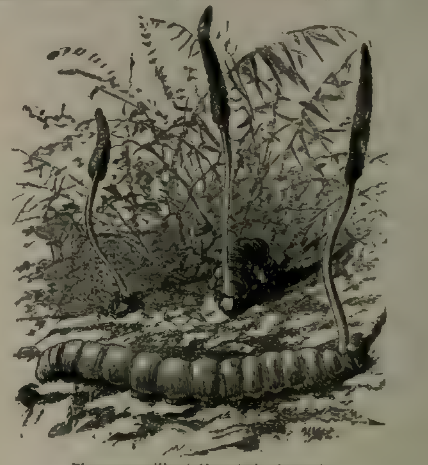


Box-elder Plant-bug (*Leptocoris trivittatus*).
a, eggs, enlarged; *b*, *c*, *d*, stages of nymphs; *e*, adult: all enlarged.
(Marlatt and Howard, U. S. D. A.)



Timothy Plant-bug (*Oncognathus binotatus*).
a, female bug; *b*, enlarged head and beak; *c*, male; *a*, *c*, enlarged; *b*, more enlarged. (After Howard, U. S. D. A.)

plant-caterpillar (plant′kat″ėr-pil-ạ̈r), *n.* The larva of any one of probably several hepialid moths occurring in Australasia, upon



Plant-caterpillar (*Abantiades ingens*).

which grows a fungus, *Sphæria robertsii.* A New Zealand species, *Charagia virescens*, was formerly supposed to be one of the species, but its larva is a trunk-borer, not a root-borer. *Abantiades ingens*, also from New Zealand, is more likely to be one of the infested forms. The fungus kills the caterpillar and sends up a long shoot from the head, which has given rise to another popular name, the *bulrush caterpillar*.

planted, *p. a.* 3. Buried. [Slang.]

> I was sent out here 'long with a lot more tenderfeet to plant beans for our own support, and to spread the gospel for the glory of America. Well, the other tenderfeet are *planted*, and I 'm the only one that 's got any kick left.
> *Cutcliffe Hyne*, A Master of Fortune, ii.

planter, *n.* 5. Specifically, in the Newfoundland fisheries, a middleman between the fisherman and the large dealer. See the extract.

> The merchant, as he is known in Newfoundland, is the large dealer who exports the fish to the tropics and Europe. He buys both from the fishermen and *planters*. The latter are a sort of middlemen, and usually have "stations" located at different points along the coast.
> *Sci. Amer. Sup.*, May 30, 1903, p. 22910.

6. A cattle-thief: so called from their habit of hiding the stolen cattle. [Australia.]

> What 's a little money . . . if your children grow up duffers and *planters*?
> *Rolf Boldrewood*, Colonial Reformer, xxv.

plant-food, *n.* In general, it is any substance that the plant takes in and utilizes in its life-process, as water with its mineral salts, and carbon dioxid. In a special sense it is sometimes restricted by botanists to the first organic compounds (starch-like materials) that are made by the plant, since these are used more or less directly in nourishing the plant.

plant-form (plant′fôrm), *n.* In *decorative design*, a motive or type taken from a plant; a phyllomorph.

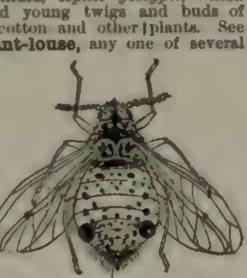
plantigrady (plan′ti-grā-di), *n.* [*plantigrade* + *-y*^{3}.] The state or condition of walking with the sole of the foot applied to the ground, as do the bears: contrasted with ★*digitigrady.*

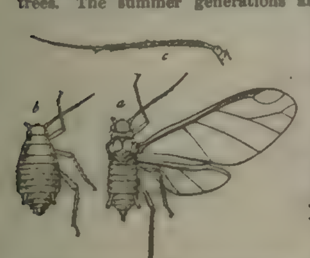
> In the first group the pes is little different from the typical terrestrial running foot. The phalanges have, as in the raccoons, become much elongated and the soles are often naked. In some cases a distinct *plantigrady* has replaced the previous digitigrady.
> *Amer. Nat.*, Nov., 1903, p. 733.

planting, *n.*—**Quincunx planting,** a method of planting trees in which young trees are set in the center and at each corner of successive squares.—**Square planting,** a method of planting trees in which the distance between the rows is equal to the distance between the young trees in the rows.—**Triangular planting,** a method of planting trees in which the unit of arrangement is an equilateral triangle, at each apex of which young trees are placed.

planting-stick (plan′ting-stik), *n.* A stick used to make holes in the soil for the purpose of planting seeds, setting out plants, etc.

plant-louse, *n.*—**Cabbage plant-louse,** a cosmopolitan aphidid, *Aphis brassicæ*, a species common to the United States and Europe. It infests young cabbage-plants.—**Cherry-tree plant-louse.** See ★*cherry-tree.*—**Collier plant-louse,** an English gardeners' name for *Aphis rumicis*, a species which sometimes occurs in enormous numbers on bean-plants in England and on the continent of Europe. Also called *black fly*, *bean-aphis*, and *black dolphin.*—**Corn plant-louse.** See ★*corn*^{1}.—**Currant plant-louse,** an American aphidid, *Aphis ribis*, which affects the leaves of currant, causing them to curl and die.—**Dolphin plant-louse.** Same as *collier* ★*plant-louse.*—**Orange plant-louse,** an American aphidid, *Aphis gossypii*, which feeds on the leaves and young twigs and buds of orange as well as upon cotton and other plants. See ★*cotton-aphis.*—**Pine plant-louse,** any one of several species of *Aphididæ* found commonly on the pine. The common pine plant-louse is *Lachnus strobi*. The white pine schizoneura, *Schizoneura pinicola*, and the pine-leaf chermes, *Chermes pinifoliæ*, are other abundant forms.—**Plum plant-louse,** *Myzus mahaleb*, a species common to Europe and the United States. It hibernates on plum- and peach-trees, and the autumnal and several spring generations are born on these trees. The summer generations are found in various annual plants.—**Wheat plant-louse,** a small green aphidid, *Siphocoryne avenæ*, which sometimes does much damage to winter wheat in the late spring and early summer. Also called *European grain-louse.*


Pine Plant louse (*Lachnus strobi*), enlarged. (After Gissler.)



Wheat Plant-louse (*Siphocoryne avenæ*).
a, migratory female; *b*, sexual female; *c*, antenna of migratory female. Much enlarged.
(Pergande, U. S. D. A.)

plant-totem (plant′tō″tem), *n.* A plant used as a totem. Most totems are animals, but in some cases plants and inanimate objects are used as true totems of clans.

> The prevalence of *plant-totems*.
> *Geog. Jour.* (R. G. S.), XVI. 435.

plantulation (plan-tụ̄-lā′shọn), *n.* [NL. *plantula*, dim. of L. *planta*, a plant, + *-ation.*] In *bot.*, germination. [Rare.]

plan-view (plan′vū), *n.* A top-view; a projection or plan of an object in which the object is supposed to be seen from above.

plappart (plä′pärt), *n.* [G., also *plappert*, *plaphart*, < ML. *blaffardus*, etc.] A German or Swiss coin or money of account formerly in use, of the value of twopence or less.

plaque, *n.* 7. A billon or silver coin current in the fourteenth and fifteenth centuries in Brabant, Liège, Lorraine, and France.

plashing^1, *n.* 2. A surface colored so as to look like granite. See *plash*^{1}, *v. t.*, 2.

plasma-cell (plas′mä̤-sel), *n.* A granular cell in connective tissue. Also *plasma-corpuscle.*

plasma-corpuscle (plas′mä̤-kôr″pus-l), *n.* Same as ★*plasma-cell.*

plasmapsis (plas-map′sis), *n.* [Gr. πλάσμα, plasm, + ἁψίς, a joining.] A fusion of the outer unspecialized protoplasm of reproductive cells: the first stage in the process of conjugation. The subsequent stages are karyapsis and mitapsis. *Cook* and *Swingle.*

plasmase (plas′mās), *n.* [*plasm* + *-ase.*] The ferment which causes the clotting of blood; fibrin ferment.

plasma-stain (plas′mä̤-stān), *n.* In *cytol.*, a stain which differentiates the cytoplasm of a cell, as opposed to a nuclear stain.

plasmatorrhexis (plas″mạ̈-tọ̄-rek′sis), *n.* Same as ★*plasmorrhexis.*

plasminic (plas-min′ik), *n.* [*plasm* + *-in* + *-ic.*] Noting an acid, $C_{15}H_{28}N_6P_6O_{30}$, a derivative of yeast nucleinic acid: apparently representing an intermediary product between thyminic acid and the original substance.

plasmochyma (plas-mọ̄-kī′mä̤), *n.* [Gr. πλάσμα, for 'plasma,' + χυμός, juice.] Those components of cell-protoplasm which are especially rich in albumins.

plasmocyte (plas′mọ̄-sīt), *n.* [Gr. πλάσμα, for 'plasma,' + κύτος, a hollow (a cell).] A colorless blood-corpuscle, or leucocyte, supposed to be a free attraction-sphere. *G. Eisen*, 1897.

plasmodesmus (plas-mō-des′mus), *n.*; pl. *plasmodesmi* (-mi). [NL., < Gr. πλάσμα, for 'plasma,' + δεσμός, band.] One of the delicate protoplasmic strands or bridges which unite the cytoplasm of adjacent cells in plants. *Strasburger*, 1901.

Plasmodium malariæ. (*b*) Same as ★*plasmodium quartanæ.*—**Plasmodium malignum,** the parasite of estivo-autumnal or pernicious malarial fever.—**Plasmodium præcox.** Same as ★*plasmodium malignum.*—**Plasmodium quartanæ,** the parasite of quartan fever.—**Plasmodium tertianæ,** the parasite of tertian fever.—**Plasmodium vivax.** Same as ★*plasmodium tertianæ.* See ★*malaria* (with cut).

plasmodoma (plas-mod′ọ̄-mä̤), *n. pl.* [NL. See *plasmodium.*] Organisms that manufacture proteids out of inorganic matter; plants, as contrasted with animals, which are dependent upon plants for their proteids. See ★*plasmodomism.* *Haeckel.* [Rare.]

plasmodomism (plas-mod′ọ̄-mizm), *n.* [*plasmodom*(*a*) + *-ism.*] The manufacture of proteids out of inorganic matter, in the way that is characteristic of plants. [Rare.]

> The carbon-assimilation in plants—what I call *plasmodomism* . . .—means that the plant is able, under the influence of sunlight, to form carbo-hydrates, and from these new plasm, out of simple inorganic compounds (water, carbonic acid, nitric acid, and ammonia). . . . The animal is unable to do this. It has to take its plasm in its food. . . . We therefore give the title of plasmophagous to these animal "plasma-eaters."
> *Haeckel* (trans.), Wonders of Life, p. 212.

plasmodomous (plas-mod′ō-mus), *a.* [*plasmodom*(*ism*) + *-ous.*] Manufacturing proteids out of inorganic matter, in the way that is characteristic of plants. [Rare.]

> It starts with the Monera, non-nucleated masses of protoplasm which 'stand exactly at the limit between the organic and the inorganic worlds' and have originated by spontaneous generation. Of these, two varieties existed, differing in their physiological activities; the one group, the phytomonera, being *plasmodomous*, building up protoplasm from unorganized material, and the other, the zoomonera, being plasmophagous, finding their nutrition in already organized material.
> *Science*, Aug. 4, 1905, p. 138.

plasmodomy (plas-mod′ọ̄-mi), *n.* [*plasmodom*(*ism*) + *-y*^{3}.] Subsistence upon inorganic matter in the way that is characteristic of plants. [Rare.]

plasmogenesis (plas-mọ̄-jen′e-sis), *n.* [Gr. πλάσμα, for 'plasma,' + E. *genesis.*] The science of the artificial imitations of protoplasm. *Herrera.*

plasmogeny (plas-moj′e-ni), *n.* Same as *plasmogony.*

plasmogony, *n.* 2. The formation or production of the first living beings, as contrasted with *autogeny* or the production of the first living matter. [Rare.]

> I distinguished . —autogeny—(the formation of the first living matter . . .) and *plasmogony* (the formation of the first individualized plasm).
> *Haeckel* (trans.), Wonders of Life, p. 354.

plasmolytically (plas-mọ̄-lit′i-kạ̈l-i), *adv.* In a plasmolytic manner; by the process of plasmolysis. *Science*, May 1, 1903, p. 706.

plasmoma (plas-mō′mä̤), *n.*; pl. *plasmomata* (-mạ̈-tä̤). [NL., < *plasma* + *-oma.*] Any new growth containing many plasma-cells.

> Recently Wright has described in the cells of such a tumor a resemblance to plasma cells and speaks of the new growth as a *plasmoma*.
> *Jour. Exper. Med.*, Nov. 29, 1901, p. 54.

Plasmopara (plas-mop′ạ̈-rä̤), *n.* [NL. (Schörter, 1886), < Gr. πλάσμα, for 'plasma,' + L. *parere*, bring forth.] A genus of parasitic fungi of the family *Peronosporaceæ*, having the mycelium intercellular, the haustoria small and globular, the conidia sometimes forming swarm-spores, and the oöspores globose, smooth, and brownish. About 15 species are known. *P. viticola* causes a serious disease of the grape known as *downy mildew.* See *grape-mildew* and *cucumber* ★*mildew.*

plasmophaga (plas-mof′ạ̈-gä̤), *n. pl.* [NL., < Gr. πλάσμα, for 'plasma,' + φαγεῖν, eat.] Organisms that are dependent upon proteids for their nutrition; animals, as contrasted with plants, which manufacture proteids out of inorganic matter. *Haeckel.* See ★*plasmodomism.*

plasmophagism (plas-mof′ạ̈-jizm), *n.* [*plasmophag*(*a*) + *-ism.*] Subsistence upon proteids that are either immediately or ultimately the products of plants, in the way that is characteristic of animals.

plasmophagous (plas-mof′ạ̈-gus), *a.* [*plasmophag*(*ism*) + *-ous.*] Subsisting upon proteids which are obtained ready made, in the way that is characteristic of animals.

> Plants are plasmodomous; animals *plasmophagous.*
> *Haeckel* (trans.), Wonders of Life, p. 212.

plasmophagy (plas-mof′a-ji), *n.* [*plasmophag*(*ous*) + *-y*^{3}.] Subsistence upon ready-made proteids, in the way that is characteristic of animals. *Haeckel* (trans.), Wonders of Life, p. 213.

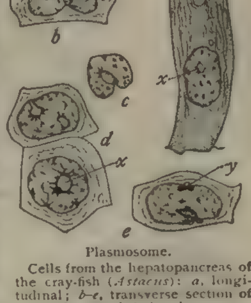
plasmorrhexis (plas-mọ̄-rek′sis), *n.* [NL., < Gr. πλάσμα, for 'plasm,' + ῥῆξις, breaking.] Disintegration of the cell-protoplasm by granular degeneration, vacuolation, and escape of the cell-contents.

plasmoschisis (plas-mos′ki-sis), *n.* [NL., < Gr. πλάσμα, for 'plasm,' + σχίσις, splitting, cleaving.] The process of disorganization of a cell through fission of its protoplasm.

plasmosoma (plas-mō-sō′mä̤), *n.*; pl. *plasmosomata* (-mạ̈-tä̤). [NL.] Same as ★*plasmosome.*

plasmosome (plas′mọ̄-sōm), *n.* [NL. *plasmosoma*, < Gr. πλάσμα, for 'plasm,' + σῶμα, body.] A true cell-nucleolus, distinguished by its affinity for the plasma-stains such as the acid tar-colors: opposed to ★*karyosome.* *Ogata*, 1883.

> In one type this nucleolus remains a *plasmosome*, or true nucleolus, which fades away at the time of division, the chromosomes arising nearly in the usual manner from the chromatin network.
> *Science*, May 31, 1901, p. 865.



Plasmosome.
Cells from the hepatopancreas of the cray-fish (*Astacus*): *a*, longitudinal; *b*–*e*, transverse section of cells. In *a* and *d*, the plasmosome (*x*), or pyrenosome, is seen within the nucleus; in *b* and *c*, it is at a reëntrant angle of the nuclear wall; in *e*, it is seen passing out into the cytoplasm at *y*.
(From Gurwitsch's "Morphologie und Biologie der Zelle.")

plasmosphere (plas′mō-sfēr), *n.* [Gr. πλάσμα, for 'plasm,' + σφαῖρα, sphere.] Same as ★*perisphere.*

plasmotomy (plas-mot′ọ̄-mi), *n.* [Gr. πλάσμα, as 'plasm,' + -τομια, < τέμνειν, cut.] The breaking up of a multinucleate cell into multinucleate fragments, as in the *Myxosporidia*.

Cohn and Doflein have discovered cases of *plasmotomy*, in which a kind of protoplasmic bud of ectosarc and endosarc containing some nuclei becomes detached; these little masses have but to grow in order to form the ordinary protoplasmic masses. *Encyc. Brit.*, XXXII. 817.

Multiple plasmotomy, the formation of buds from the protoplasmic body, as in *Myxidium*.—**Simple plasmotomy**, ordinary fission.

plasome (plas'ōm), *n.* [Gr. πλάσις, a forming, + *-ome*.] One of the hypothetical units of living protoplasm, supposed to possess the properties of assimilation, growth, and reproduction. *Wiesner*, 1892.

In other cases the assumption of invisible protoplasmic units has been inspired by a desire . . . to explain the general vital and assimilative powers of protoplasm, as, for example, the "micellæ" of Nägeli and the "*plasomes*" of Wiesner. *Encyc. Brit.*, XXXII. 41.

plasson (plas'ọn), *n.* [NL., < Gr. πλάσσων, ppr. of πλάσσειν, form: see *plasma*.] The protoplasmic substance of which a cytode, or cell without a nucleus, is supposed to consist. *L. F. Ward*, Dynamic Sociol., I. 316.

plassonellum (plas-ọ-nel'um), *n.*; pl. *plassonella* (-ạ̈). [NL. dim. of *plasson*.] One of the hypothetical living particles without organization, assumed as the representatives of a stage in the evolution of life prior to and culminating in the production of the first organisms. [Rare.]

-plast. [Gr. -πλαστος, πλαστός, formed, molded, < πλάσσειν, form.] A terminal element in some biological words, denoting any primitive living unit or cell: as, *bioplast*, *protoplast*, etc.

plastein (plas'tẹ-in), *n.* [Gr. πλαστός, formed, + *-e-in*.] An albuminous condensation-product formed through the action of certain ferments, such as chymosin and papayotin, upon albumoses in concentrated solution.

plaster, *n.* 4. In a general sense, calcium sulphate, whether deprived by heat of its water of crystallization or not, as, for instance, the crust of hydrated calcium sulphate which forms on salt-boilers' pans, or natural gypsum used as a fertilizer and known as *land-plaster*.

plaster-bead (plȧs'tėr-bēd), *n.* Same as *ground*, in the sense of a plaster strip or molding against which the wet plaster is stopped. See *ground*^{1}, 10 (*i*).

plaster-work (plȧs'tėr-wėrk), *n.* The preparing or putting up of plaster, in the sense of two or three coats, or more, of mortar upon walls or ceilings.

plastic, *a.* 5. Applied by Liebig to the proteid constituents of animal food as serving to form the principal tissues of the body, in contradistinction to the non-nitrogenous portion of the food, which he called *respiratory* as serving for the production of bodily heat by their oxidation.—6. Capable of receiving and of responding to environmental impulses which induce more or less rapid evolution of an organism as a whole or of certain of its organs: the opposite of *conservative* and *persistent*.—**Plastic bronze.** See ★*bronze*.

II. *n.* 1. The art of modeling or molding; sculpture.—2. A molder; a modeler; a statuary. [Now rare, in both uses.]—3. The commercial name for any one of a class of substances, such as celluloid or viscose, which are worked into shape for use by molding or pressing when in a plastic condition.

plasticity, *n.*—**Latent plasticity**, the property of viscous flow which rocks develop, when buried so deep within the earth as to be under a load greater than their crushing resistance at the surface, and yet so tightly confined that they can only yield by flowage. *Geikie*, Textbook of Geol., p. 396.

plastid, *n.* 3. A general name for any permanent organ of the cell except the nucleus and centrosome. *Amer. Nat.*, Oct., 1905, p. 700.

plastidogenetic (plas″ti-dọ-jẹ-net'ik), *a.* [*plastid* + *genetic*.] Producing or giving rise to plastids or cells.

plastid-plasm (plas'tid-plazm), *n.* In *cytol.*, the portion of the cell-protoplasm of plants which gives rise to the plastids, as distinguished from the karyoplasm, or nuclear plasma, and the general cytoplasm. [Rare.]

Thus three forms of protoplasm, nucleoplasm, *plastid-plasm* and cytoplasm comprise all the living material of the cell and may be sharply contrasted with the non-protoplasmic contents. *Amer. Nat.*, May, 1904, p. 371.

Plastin granule, one of the highly refractive granules of plastin, a reserve food-material stored in the cytoplasm of the *Sporozoa* among the *Protozoa*. *Jour. Exper. Med.*, March 17, 1902, p. 306.

plastinoid (plas'ti-noid), *a.* [*plastin* + *-oid*.] Resembling plastin.

plastique (plas-tēk'), *n.* [F. See *plastic*.] A composition, somewhat like plaster of Paris, used in modeling.

plastodynamia (plas″tọ-dī-nā'mi-ạ̈), *n.* [Gr. πλαστός, formed, + δύναμις, power.] The power or capability to develop, such as is exhibited by the living cell.

plastodynamic (plas″tọ-dī-nam'ik), *a.* [Gr. πλαστός, formed, + δύναμις, power, + *-ic*.] Possessing or relating to plastic or formative force.

plastogamic (plas-tọ-gam'ik), *a.* [*plastogamy* + *-ic*.] Pertaining to, exhibiting, or resulting from, plastogamy.

plastogamy (plas-tog'ạ-mi), *n.* [Gr. πλαστός, formed, + γάμος, marriage, + *-y*^{3}.] The fusion of the cytoplasmic bodies of two reproductive cells or of two unicellular organisms.

The difficulty of determining the correlation between the size of Actinosphaeria and the number of cysts built was encountered chiefly in the liability of the creatures to divide or fuse one with another (*plastogamy*) after they had been placed in the vessels to starve and to encyst. *Biometrika*, June, 1903, p. 242.

plastomenite (plas-tom'e-nīt), *n.* A trade-name of a kind of smokeless powder, a mixture of dinitrotoluene and nitrated wood-pulp.

plastotype (plas'tọ-tīp), *n.* [Gr. πλαστός, formed, + τύπος, type.] A model cast from a primary type.

Horizon and Locality.—In the Fort Riley limestone of the lower Permian, three miles west of Stockdale, Kansas. The *plastotype* is in the Yale University Museum. *Amer. Jour. Sci.*, July, 1904, p. 24.

plastron, *n.* 6. In the *Echinodermata*, a space surrounded by the subanal fasciole lying beneath the anus, in spatangoid echinoids.

plata (plä'tä), *n.* [Sp. *plata*, silver. See *plate*, *n.*] Silver.—**Plata pina**, in *metal.*, the spongy silver obtained after the separation of the mercury. *Phillips and Bauerman*, Elements of Metallurgy, p. 747.

platanillo (plä-tä-nēl'yō), *n.* [Sp. *platanillo*, dim. of *plátano*.] 1. In tropical America, a name for the common milkweed, *Asclepias curassavica*.—2. In Mexico, *Canna indica*.

platanist (plat'ạ-nist), *n.* [*Platanist(a)*.] The Gangetic dolphin, *Platanista gangetica*.

platano (plä'tä-nō), *n.* [Sp. *plátano*, < L. *platanus*. See *platanus*.] In countries settled by the Spanish, the common name of the banana and plantain (*Musa paradisiaca* and *M. sapientum*). In Porto Rico the name is especially applied to the starchy plantains, which must be cooked before they can be eaten, the sweet bananas being called *guinéos*.

plate, *n.* 16. In *bacteriol.*, the film of agar-agar or gelatin poured upon a glass plate or into a Petri dish for the purpose of separating specific organisms. See ★*plating*, 3. Also called *poured plate*.—17. A butchers' term for the long, thin cut of beef, weighing usually about 60 pounds, and including the brisket, the navel piece, and the thinner inside piece called the skirt.—18. In *geol.*, a wide area of flat and undisturbed strata.

Towards the north, however, a very extensive '*plate*' without folding appears, which stretches nearly to the Arctic archipelago. *Athenæum*, July 15, 1905, p. 82.

Adanal plate. See ★*adanal*.—**Amalgamated plates**, in *gold-milling*, copper plates (sometimes silver-plated) having an amalgamated surface which are used to catch gold in the stamp-milling process.—**Barlow's plate**, an old device, consisting of a flat form of soft iron, placed in the vicinity of a ship's compass for compensating the latter against the magnetism of the ship's iron. It might be termed the forerunner of the *Flinders bar* (which see).—**Basal plate.** See ★*basal*. **Cathammal plate.** See ★*cathammal*, 2.—**Chlorid plate**, a photographic plate coated with a gelatinochlorid emulsion. -**Cut-off plate.** See ★*cut-off*.—**Dental plate.** (*a*) In *zoöl.*: (1) The plate of pavement-like teeth, as in the jaws of some skates, or any bony plate in the mouth of a fish which bears teeth or has the function of teeth. *Amer. Jour. Sci.*, Aug., 1904, p. 143. (2) In polychætous annelids, one of the chitinous jaws. (3) In the *Brachiopoda*, one of the two erect shelly plates which support the teeth of the ventral valve and rest on the bottom of that valve. By their convergence and union they form the spondylium in some species, and this structure may be supported on a single median plate or septum. See ★*spondylium*. (*b*) In *dental surgery*, a plate of metal, hard rubber, or other material, molded to the shape of the roof of the mouth, which serves as a support for false teeth.—**Ectethmoidal plate**, the ectethmoid, pars plana, or antorbital plate.—**Fundamental plate** or **zone**, the dorsal portion of the lateral wall of the medullary tube on either side.—**Genital plate**, in ophiuroids, the larger of the two barlike plates which bound the genital slit. See *genital* ★*scale*.—**Give-and-take plate.** See ★*give-and-take*.—**Intermarginal plates**, in some starfishes, a series of plates developed between the inframarginals and the supramarginals.—**Marginal plate**, one of the horny plates covering the outer edge of the carapace in turtles.—**Marsupial plate**, in certain crustaceans, one of the lamellate appendages on the basal joints of some of the thoracic limbs, forming, with similar appendages, a brood-pouch or cavity into which the eggs enter and there develop. *Trans. Linn. Soc.*, Zool., May, 1897, p. 30.—**Oral-angle plates**, in ophiuroids, the five pairs of large plates forming the framework which surrounds the mouth.—**Oral plate.** (*a*) In the *Crinoidea*, one of the calyx plates which surround the oral aperture. (*b*) Same as ★*buccal shield*.—**Petri plate**, a Petri dish containing the nutrient medium ready to receive the material from which a culture is to be obtained.

In a *plate* of *petri* at 20° we notice some rare yellow granulated colonies with irregular borders, presenting often some prolongations. After five days some of the colonies from the surface spread, and present one prolongation and rarely two, as the tail of a comet. *Jour. Trop. Med.*, Jan. 15, 1903, p. 31.

Pile of plates. See ★*pile*^{3}.—**Plate-edge planer.** See ★*planer*.—**Plate-girder bridge**, a form of bridge in which trusses are replaced by plate-girders, each formed by a wide, thin, vertical steel plate called the *web*, having on each edge a flange composed of angle-irons riveted to the web. The web is further stiffened by angle-iron stiffeners extending from flange to flange.—**Polar plate.** See ★*polar field*. *Parker and Haswell*, Zoology, I. 203.—**Poured plate.** See ★*plate*, 16.—**Poured plate culture.** See ★*culture*.—**Prochordal plate**, an embryonic tissue situated dorsocephalad of the anterior end of the notochord. It is continuous caudally with the parachordals.—**Punched plate**, in *music-printing*, a plate for printing in which the note-heads, the words, and many technical characters are incised by dies, while the staff-lines, note-stems, etc., are cut by a burin. The indentations thus made are filled with wax to retain the ink. Most sheet-music is thus printed.—**Quarter-wave plate**, in *optics*, a plate of doubly refracting crystal of such thickness that the two components of a beam of light traversing it acquire a difference of phase of $\frac{\pi}{2}$ or a difference of path of a quarter-wave length. Same as *Senarmont's* ★*compensator*.—**Rostral plate**, the anterior plate in the dorsal shield of certain Upper Silurian and Lower Devonian fishes of the family *Pteraspidæ*, order *Heterostraci*.—**Scattering-plate**, a plate, either solid or perforated, against which a jet of water or other fluid may impinge and be broken up and spread into thinner films or smaller masses: used in surface-condensers of steam-engines, for example, to force the steam or the water to exert its heating or cooling effect over a larger area than that of the cross-section of the inlet opening.—**Segmental plate**, the plate of mesoblast on either side of the notochord at the posterior end of the vertebrate embryo. It is from this plate that the mesoblastic segments, or somites, are successively cut off.—**Septal plate**, in the dorsal valve of the articulate brachiopods, one of the vertical plates which support the hinge-plate and rest on the bottom of the shell.—**Sheffield plate**, copper plated with silver; a cheap substitute for solid silver, used for all the purposes for which silver had previously been used. The process, which consisted in rolling out the plate after the sheets of silver and copper had been fused together, originated at Sheffield, England, near the middle of the eighteenth century. The foundation of the best Sheffield plate was composed of copper and brass. This rolled plate was far more durable than the electroplate of the present day.—**Silver plate.** (*a*) See *plate*, 4 and 5. (*b*) A thin coating of silver deposited over the surface of an article made of some other metal.—**Wet plate**, in *photog.*, a glass plate covered with collodion containing soluble chlorids, bromides, and iodides, which, after being put in a bath of silver nitrate, is exposed in the camera while still moist. The process was devised by Scott Archer.

plate, *v. t.* 6. In *paper-making*, to pass a finished or machine-calendered paper through the supplementary rolls called the ★*supercalenders* (which see). See also *supercalendered*.

plateasm (plạ-tē'azm), *n.* [Gr. πλατειασμός, < πλατειάζειν, speak or pronounce broadly, < πλατύς, flat, broad: see *plat*^{3}.] A broad pronunciation. *Blount*, Glossographia.

plateau, *n.*—**Continental plateau**, the mass of a continent considered as rising above the deep ocean-floor, and including the shallow sea-bottom near the land.

On the inner borders of *continental plateaus*, which are the submerged portion of the continental domes, detritus accumulates by marine erosion. *Geog. Jour.* (R. G. S.), X. 129.

Intermont plateau, a plateau which lies between two mountain-ranges. *Dana*, Manual of Geol. (4th ed.), p. 25.—**Plateau glacier.** See ★*glacier*.

plateaulith (pla-tō'lith), *n.* [E. *plateau* + Gr. λίθος, stone.] An eolithic implement found in the plateau gravels of Kent, England. *Nat. Sci.*, Feb., 1898, p. 115.

plate-bolt (plāt'bōlt), *n.* 1. A bolt which slides on a flat plate.—2. A bolt having a wide, flat head. *N. E. D.*

plate-box, *n.* 3. In *founding*, a thin flask or box used in molding plates or very thin, flat pieces. Also called *plate-flask*.

plate-carrier (plāt'kar″i-ėr), *n.* In *photog.*, a thin loose blackened frame inserted in the plate-holder to permit the use of a plate smaller than that for which the holder was originally constructed. Also used in photo-engraving to hold the half-tone screen near to the sensitive plate during exposure. Same as *kit*^{1}, 4.

plate-cylinder (plāt'sil″in-dėr), *n.* See ★*cylinder*.

plate-fish (plāt′fish), *n.* Same as *trunk-fish*; any ostraciont.

plate-flask (plāt′flȧsk), *n.* Same as ★*plate-box*, 3.

plate-frame, *n.* **2.** Same as ★*web-frame.*

plate-furnace (plāt′fėr″nạs), *n.* A furnace, either of the reverbatory or forge type, used by boiler-makers and ship-smiths for heating plates which are to be bent, flanged, or welded.

plate-gilled (plāt′gild), *a.* Having lamella-like gills, as a bivalve; lamellibranchiate.

plate-knee (plāt′nē), *n.* A metal knee consisting of two flat plates giving an extended surface for the bolts. *N. E. D.*

plate-lifter (plāt′lif″tėr), *n.* In *photog.*, a thimble to which a projecting point is fastened for lifting plates from baths.

Platelminthes (plat-el-min′thēz), *n. pl.* Same as *Platyhelminthes.*

plate-lock (plāt′lok), *n.* A lock having the outer case of wood, commonly used on outside doors; also, a lock in which the works are pivoted on an iron plate. *N. E. D.*

platen, *n.* **2.** The feed-roll of a typewriter against which the paper rests while receiving an impression.—**3.** The table of a machine-tool to which the piece to be cut is fastened.

Platephemera (plat-e-fem′ẹ-rạ̈), *n.* [NL., < Gr. *πλατύς*, broad, + NL. *Ephemera.*] A genus of fossil insects based upon a fragmentary neuropteroid wing found in Devonian rocks.

plate-pitch (plāt′pich), *n.* A variety of tough-pitch copper in which the poling, or removal of oxygen, has been carried beyond the wire-bar pitch stage.

> Refiners commonly distinguish "ingot- or cake-pitch" and "wire-bar pitch;" copper brought to the former contains more cuprous oxide than the latter. These two pitches are, however, not absolutely fixed; they vary with the practice of the individual refiner and with thickness of the cake or bar that is to be cast: The thicker the piece, the more oxygen will have to remain in the metal, if a flat surface is to be obtained. A third degree of pitch aimed at is that required by very thin castings, such as electrodes 0.5 inch in thickness. As this pitch lies beyond that of wire-bar copper and differs from it more than to permit its being designated merely a shading, it may be called "*plate-pitch.*"
>
> *Electrochem. Industry*, March, 1904, p. 88.

plate-roll (plāt′rōl), *n.* One of the rolls in a mill for rolling iron or steel plates; a plate-roller.

plate-tongs (plāt′tôngz), *n. pl.* **1.** A pair of tongs for handling hot metal plate in the rolling process.—**2.** Tongs for handling photographic plates or negatives.

plate-tower (plāt′tou″ėr), *n.* An arrangement for bringing about absorption of a gas by a liquid, used in various chemical industries, notably in the manufacture of sulphuric acid. The space within a tower or column is divided up by a number of superposed horizontal partitions with small intervals between them. Each of these partitions consists of a number of stoneware plates perforated with small holes, the holes in any one plate occupying somewhat different positions from those in the plates of the next partitions below and above. The absorbing liquid drips gradually from each partition to the one below it, but a little rim to each perforation secures the retention at all times of a thin film of liquid on the surface of each plate. The gas or mixture of gases passes upward through the tower. The effect is the same as that of the older 'coke-tower'; but greater uniformity of distribution of the liquid, and therefore greater efficiency, is secured.

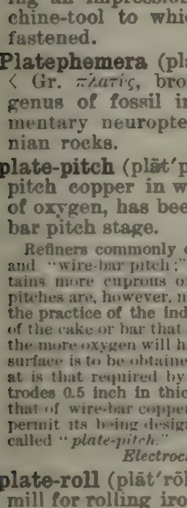


Plate tower.

a, a, a, lead lining; *b, b*, perforated porcelain plates; *c*, bearer, to support plate; *d, e*, distributing pipes for liquid from *f, f*, reservoir; *g*, gas-inlet; *h*, gas-exit.

platform, *n.* **8.** In *phys. geog.*, a shallow sea-bottom near a continent; a continental shelf: as, the Patagonian *platform.*

> British and Continental *Platform.*—A gently shelving platform stretching seawards to varying distances from 20 to 200 miles, terminating in a declivity or escarpment at depths (according to distance from land) varying from 100 to 200 fathoms. *Geog. Jour.* (R. G. S.), XIII. 286.

9. In certain extinct genera of atrematous brachiopods (*Trimerella, Monomerella, Lingulasma*), a raised structure in the posterior portions of the valves, the surface of which served as places of attachment for muscles, while the cavities beneath stored the hepatic and reproductive glands.—**Charging-platform,** the platform from which the charge of fuel and ore is delivered to a blast-furnace, or the charge of fuel and iron to a cupola.—**Flood-platform,** the terrace cut back and leveled off by a stream at its times of flood.

> In its minor features the *flood-platform* resembles the foreshore of a craggy sea-coast. Terraced reefs and irregular bosses of rock, sometimes high enough to form islands at flood-time, roughen its surface; and it is deeply pitted with well-like "pot-holes," ground smooth and true by the rock-drill of whirling torrent-driven stones. The amygdaloidal structure of the basalt is peculiarly favourable to the production of these pits, which, by their numbers and size, are a striking characteristic of the floor of the gorge in many places.
>
> *Geog. Jour.* (R. G. S.), Feb., 1908, p. 141.

Moving platform, a device for transporting passengers a limited distance, consisting of an endless belt or platform which is made to move continuously at a prescribed speed by suitable stationary engines or by motors on the axles of the platform. Seats are usually provided for the passengers, who, by the aid of slower-moving short station platforms, get on and off the platform while it is in motion. A second platform, at higher speed than the first, may be used in connection with the latter, its elements being borne on the top of the carrying-wheels on whose axles the first platform is borne. As the top of a rolling wheel goes through space twice as fast as its axle, the upper platform without gearing goes twice as fast as the main flooring. Compare ★*conveyer*, 4, ★*escalator*, and ★*ramp*, 9.

platform-deck (plat′fôrm-dek), *n.* See ★*deck*, 2.

Platichthys (plạ̈-tik′this), *n.* [NL., < Gr. *πλατύς*, flat, + *ἰχθύς*, fish.] A genus of flounders of the northern Pacific.

platina, *n.* **1.** The word in this form, with the original spelling, is now generally used to signify the mineral, a natural alloy of the pure metal platinum with palladium, rhodium, iridium, osmium, ruthenium, iron, and copper.

platinate (plat′i-nāt), *n.* A compound which may be viewed as a salt produced by the union of platinum dioxid with the oxid of a more basic or electropositive metal: as, sodium *platinate*, $Na_2Pt_3O_7$ or $Na_2O.(PtO_2)_3$.

plating, *n.* **3.** In *bacteriol.*, the pouring of liquefied gelatin or agar-agar containing a mixed culture of bacteria upon a glass plate or into a Petri dish, where the medium hardens and thus permits the isolation of specific organisms. Also *plating-out.*—**4.** In *iron ship-building*, the plates, collectively, arranged in strakes covering any part: as, side-*plating*, the plates forming the outer skin of the vessel above the turn of the bilge; bottom-*plating*, the plates forming the outer bottom of a vessel below the turn of the bilge; deck-*plating*, the covering of the deck-beams, etc.

Outside plating. See ★*shell-plating.* **Plating-behind-armor,** in a war-ship, the heavy plating supported by strong framing on the side of the vessel or in the interior to support the armor-plates. The armor is not usually placed directly on the plating, but interposed between the inner face of the armor and the outer surface of the plating-behind-armor is a thickness of wood backing arranged like the planking of a wooden ship.—**Thimble-plating,** a name used in Great Britain to describe the method of making a cylindrical boiler-shell or -flue of successive rings of plate, in which each ring is made slightly tapering so as to be smaller at one end than at the other by the amount necessary to enter within the end of the next ring to form the lap of the joint. These successive rings should be so arranged that the current of flame or hot gases does not impinge upon the exposed end of the plate at the larger end of the ring. The alternate arrangement of the rings is designed to render them cylindrical, but alternately large and small so as to lap externally and internally alternately; or to render them telescopic, making the boiler of smaller diameter at the end farthest from the fire.

platini-. In *chem.*, a prefix signifying the presence of platinum with apparently tetrad valence: as, potassium *platini*chlorid, K_2PtCl_6, also called potassium chloroplatinate.

platinichlorid (pla-tin-i-klō′rid), *n.* [*platinum* + *chlorid.*] A compound producible by the union of platinum tetrachlorid with the chlorid of a more basic or electropositive metal or radical. Also called *chloroplatinate:* as, potassium *chloroplatinate*, K_2PtCl_6.

platinite (plat′i-nīt), *n.* [*platinum* + *-ite*2.] **1.** A hypothetical compound of platinum monoxid with the oxid of a more basic or electropositive metal. No such compound has actually been obtained in a definite form.—**2.** An alloy of steel with forty to fifty per cent. of nickel, used to replace the metallic filaments of platinum or electric incandescent or glow-lamp bulbs. It has so nearly the same coefficient of expansion as that of glass that difficulties are avoided which occur when a more expansive metal is to be sealed into glass. Used particularly in France. *Nature*, July 6, 1905, p. 237.

platino-. In *chem.*, a prefix signifying the presence of platinum with apparently dyad valence: as, potassium *platino*chlorid, K_2PtCl_4, also called potassium chloroplatinite.

platinocyanic (plat″i-nọ-sī-an′ik), *a.* [*platinum* + *cyan*(*ogen*) + *-ic.*] Containing platinum and cyanogen.—**Platinocyanic acid,** an acid, $H_2Pt(CN)_4$, known only in its salts or in solution. Also called *cyanoplatinous acid.*

platinocyanide (plat″i-nọ-sī′ạ̈-nid), *n.* [*platinocyan*(*ic*) + *-ide.*] A salt of platinocyanic acid. Also called *cyanoplatinite.* The most important is *barium platinocyanide*, $BaPt(CN)_4.4H_2O$ (which see, under ★*barium*).

platinoid, *n.* **2.** An alloy, resembling German silver, composed of 60 parts copper, 14 parts nickel, 24 parts zinc and 1 to 2 parts tungsten. It has a greater resistance than German silver, and it is used largely in electrical work.

platino-iridium (plat″i-nọ-ī-rid′i-um), *n.* Same as ★*iridio-platinum.*

platinum, *n.*—**Birmingham platinum,** an alloy of copper and zinc, the proportions of the former varying from 20 to 46.5 parts and of the latter from 53.5 to 80 parts. The alloy is very brittle, but it casts well and is used only for buttons, on which the letters or designs are brought out by careful pressing. Also known as *platinum-lead.*—**Deville and Debracy's platinum process,** a process in which platinum ore is mixed with an equal weight of galena and fused in a reverberatory furnace, where some glass and litharge are added. The alloy of osmium and iridium accompanying the platinum sinks to the bottom, while the metallic lead combined with the platinum remains at the top and is cast into ingots. The lead is subsequently removed from the platinum by cupellation.—**Mock platinum,** an alloy consisting of 8 parts of brass and 5 parts of zinc.—**Platinum degree, lamp, silver.** See ★*degree*, etc.—**Platinum sponge,** metallic platinum in the form of a soft, loosely aggregated mass, of gray color and without luster, obtained by heating to redness ammonium platinochlorid. It absorbs gases in large quantity, so that if exposed to a stream of hydrogen in the presence of air, hydrogen and oxygen condensed in the pores combine, the metal becomes incandescent, and the hydrogen is set fire to and burns with flame.—**Platinum standard.** Same as *Violle's platinum standard.* See ★*light standard.*—**Platinum tetrachlorid,** platinic chlorid, $PtCl_4$. What is very commonly called by either of these names, the orange-yellow substance produced by dissolving platinum in aqua regia and evaporating the solution, extensively used as an analytical reagent, contains in addition the elements of hydrochloric acid, and is properly called chloroplatinic acid, H_2PtCl_6.—**Platinum toning.** See ★*toning.*—**Scale of the platinum thermometer.** See *thermometer* ★*scale.*—**Wollaston's platinum process,** a wet method of extraction, which consists essentially in bringing platinum into solution with aqua regia, precipitating from this solution platinum-ammonium chlorid by means of ammonium chlorid and ammonia, and then decomposing this compound and separating platinum at a red heat. The platinum obtained from this method is not free from iridium.

platinum-bronze (plat′i-num-bronz″), *n.* An alloy composed chiefly of nickel and tin, with the addition of some platinum and, in some cases, silver and brass. The proportions vary greatly, according to the use of the alloy. Thus, while in the metal for table-utensils the proportion of platinum is less than 1 per cent., it is over 14 per cent. in the alloy used for telescope tubes. The alloy is also used for bells (with some silver), ornaments, and articles of luxury. Platinum-bronzes are not affected by air or water, and retain their polish for a long time.

platinum-lead (plat′i-num-led″), *n.* See *Birmingham* ★*platinum.*

platitudinal (plat-i-tū′di-nạl), *a.* Same as *platitudinous.*

Platner's bile, crystals. See ★*bile*2, ★*crystal.*

platnosphæra (plat-nọ-sfē′rạ̈), *n.* [NL.] In *promorphology*, a polyhedron of many surfaces, all the corners of which coincide with the surface of a sphere.

> The flattened sphere, or facetted sphere (*platnosphæra*).
>
> *Haeckel* (trans.), Wonders of Life, p. 124.

Platoda (plạ-tō′dạ̈), *n. pl.* [NL., < Gr. *πλατύς*, broad, + *εἶδος*, form.] Same as *Platyhelminthes.*

platode, *a.* **II.** *n.* Any platode worm; any member of the phylum *Platyhelminthes.*

Platonician (plā-tọ-nish′ạ̈n), *n.* Same as *Platonist.*

Platonicism (plạ-ton′i-sizm), *n.* Same as *Platonism.*

Platophrys (plat′ọ-fris), *n.* [NL., < Gr. *πλατύς*, flat, + *ὀφρύς*, brow.] A genus of flounders widely distributed in warm seas.

Plattdeutsch (plät′doich), *a.* and *n.* [G., < *platt*, flat, level, low (see *plat*3), + *deutsch*, German (see *Dutch*).] **I.** *a.* Low German: used especially with reference to language. See II.

II. *n.* The Low German language, in a restricted sense; the popular speech of northern

Germany, possessing a considerable literature. See *Low German*, under *German*^{2}, *n.*

Plattel (plä'tel), *n.* A series of shaly gas-coal beds in the upper portion of the Permian Coal-measures of Pilsen, Bohemia, which has afforded valuable gas-producing bituminous shales and also is of high interest through its fauna and flora. It contains primitive *Reptilia* and *Amphibia*, fish, insects, spiders, scorpions, and ferns.

platter-faced (plat'ėr-fāst), *a.* Having a flat, broad face, as the Eskimos and some Asiatic peoples.

Plattner's balance. See ★*balance.*

platy, *a.* **2.** In *geol.*, made up of thin plates of hard rock, or splitting into such thin plates. — **Platy fracture,** a fractured surface of cast-iron from which plates peel off, like mica. This effect is due to the graphite in the cast-iron. *Phillips and Bauerman*, Elements of Metallurgy, p. 272.

platyan (plat'i-an), *a.* [Gr. *πλατύς*, flat, + *-an.*] Having both faces of the vertebral centrum flattened; amphiplatyan.

platybregmate (plat-i-breg'māt), *a.* [Gr. *πλατύς*, flat, + *βρέγμα*, the front part of the head, + *-ate*^{1}.] Same as ★*platybregmatic.*

platybregmatic (plat″i-breg-mat'ik), *a.* [Gr. *πλατύς*, flat, + *βρεγμα(τ-)*, sinciput, + *-ic.*] In *craniom.*, having a flat bregma, or having the region of the bregma flattened.

platycephalic, *a.* **2.** Belonging to one of the divisions of cranial forms given by Aitken Meigs, and characterized by mesaticephalism with flat vertex and rounded occiput.

platycephaloid (plat-i-sef'a-loid), *a.* and *n.* [*platycephal(ous)* + *-oid.*] **I.** *a.* Somewhat platycephalous.

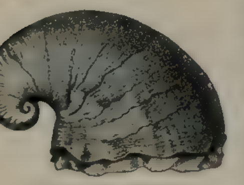
II. *n.* A platycephaloid individual.

Platycephaloidea (plat″i-sef-a-loi'dē-ä), *n. pl.* [NL., < Gr. *πλατύς*, flat, + *κεφαλή*, head, + *εἶδος*, form.] A superfamily of mail-cheeked fishes, having a greatly depressed head and body.

platycephaloidean (plat″i-sef-a-loi'dē-an), *a.* Of or pertaining to the family *Platycephalidæ*, an Old World family of mail-cheeked fishes.

Platycephalus, *n.* **3.** [*l. c.*] A platycephalic cranium. *G. Sergi* (trans.), Var. of the Human Species, p. 44.

Platyceras (plā-tis'e-ras), *n.* [Gr. *πλατύς*, broad, + *κέρας*, horn.] A genus of fossil capuloid gastropods having shells with large body-whorls and small bent or spirally inrolled apex with smooth folded or spinose surface. The genus is represented by numerous species ranging from Upper Cambrian to the Trias, and is specially abundant in Lower Devonian and Subcarboniferous formations.



Platyceras erectum.

platyceroid (plā-tis'e-roid), *a.* [*Platycer(as)* + *-oid.*] Resembling or related to the gastropod genus *Platyceras*. *Amer. Nat.*, Oct., 1907, p. 618.

platychamæcephalic (plat″i-kam″ē-se-fal'ik), *a.* [NL., < Gr. *πλατύς*, flat, + *χαμαί*, on the ground (low), + *κεφαλή*, head, + *-ic.*] In *craniom.*, being both platycephalic and chamæcephalic.

> The Scottish skulls are *platychamæcephalic.*
> *Science*, Oct. 30, 1903, p. 568.

Platychelys (pla-tik'ē-lis), *n.* [NL., < Gr. *πλατύς*, flat, + *χέλυς*, tortoise.] An extinct turtle belonging to the suborder *Amphichelydia*, family *Pleurosternidæ*, from the Upper Jurassic of Europe. It possesses a somewhat depressed carapace, with a number of more or less distinct ridges or prominences on the neurals and costals; neurals short and of irregular contour; sternal bridge short; mesoplastrals not meeting in the middle line; vertebral shields much wider than long; nuchal shield present; intergular undivided; no articulation between pelvis and plastron. It occurs in the Upper Jura of Bavaria, France, and England.

platycnemy (pla-tik-nē'mi), *n.* Same as *platycnemia.*

platycœlian (plat-i-sē'li-an), *a.* Same as *platycœlous.*

platycranial (plat-i-krā'ni-al), *a.* [Gr. *πλατύς*, broad, + *κρανίον*, skull, + *-al*^{1}.] In *anthrop.*, characterized by or exhibiting a skull of more than middle breadth.

> Brachycephaly is associated with *platycranial* characters.
> *W. R. Macdonell*, in Biometrika, March-July, 1904, [p. 240.

platycyrtean (plat-i-sėr'tē-an), *a.* [Gr. *πλατύς*, flat, + *κυρτός*, curved.] Noting a vertebra having the anterior face of the centrum flattened and the posterior face rounded.

platydactylous (plat-i-dak'ti-lus), *a.* Same as *platydactyl.*

platydolichocephalous (plat″i-dol″i-kō-sef'a-lus), *a.* Same as *platydolichocephalic.*

platyglossate (plat-i-glos'āt), *a.* Same as *platyglossal.*

Platygobio (plat-i-gō'bi-ō), *n.* [NL., < Gr. *πλατύς*, flat, + L. *gobio*, goby.] A genus of minnows found in the Mississippi valley.

platyhieric (plat″i-hī-er'ik), *a.* [Gr. *πλατύς*, broad, + *ἱερόν*, sacrum, + *-ic.*] In *anthrop.*, having a sacral index more than 106. *Philos. Trans. Roy. Soc.* (London), 1897, ser. B, p. 187.

platylekanic (plat″i-le-kan'ik), *a.* [Gr. *πλατύς*, flat, + *λεκάνη*, dish (pelvis), + *-ic.*] Same as ★*platypellic*, *Turner.*

platymeria (plat-i-mē'ri-ä), *n.* [NL., < Gr. *πλατύς*, flat, + *μηρός*, thigh, femur.] Sagittal flattening of the upper part of the human femur, a condition found frequently in some races of man.

> The upper third of the femur in some races is sagittally flattened, a condition which is called *platymeria.*
> *Encyc. Brit.*, XXV. 398.

platymeric (plat-i-mer'ik), *a.* [*platymeria* + *-ic.*] Characterized by platymeria. *Philos. Trans. Roy. Soc.* (London), 1897, ser. B, p. 143. — **Platymeric index.** See ★*index.*

platymery (plā-tim'e-ri), *n.* Same as ★*platymeria.* *Philos. Trans. Roy. Soc.* (London), 1897, ser. B, p. 143.

platymesocephalic (plat″i-mes″ō-se-fal'ik), *a.* [Gr. *πλατύς*, flat, + *μέσος*, middle, + *κεφαλή*, head, + *-ic.*] Same as *platymesaticephalic.*

Platyostoma (plat-i-os'tō-mä), *n.* [NL., < Gr. *πλατύς*, flat, + *στόμα*, mouth.] A genus of fossil gastropods having shells composed of numerous rapidly expanding, rounded, closely coiled whorls with small low spire and thickened reflexed inner lip; the *Diaphorostoma.* The genus is represented by numerous species ranging from Silurian to Carboniferous, and is specially abundant in the Lower Devonian formations. Properly *Platystoma.*

platypellic (plat-i-pel'ik), *a.* [Gr. *πλατύς*, flat, + *πέλλα*, bowl (pelvis), + *-ic.*] In *anthrop.*, having an index of the pelvic-brim less than 90. *Amer. Anthropologist*, April–June, 1902, p. 343.

platypezid (plat-i-pez'id), *n.* and *a.* **I.** *n.* A member of the dipterous family *Platypezidæ.*

II. *a.* Having the characters of or belonging to the dipterous family *Platypezidæ.*

platyphippic (plat-i-fip'ik), *a.* and *n.* [Gr. *πλατύς*, flat, + *ἐφίππιος*, for putting on a horse.] **I.** *a.* Having the anterior face of the vertebral centrum flattened and the posterior saddle-shaped.

II. *n.* A vertebra having the centrum flattened in front and saddle-shaped behind.

platypodous (plā-tip'ō-dus), *a.* [*platypod* + *-ous.*] Pertaining to, or having the characters of, the *Platypoda.*

Platypœcilus (plat-i-pē'si-lus), *n.* [NL., < Gr. *πλατύς*, flat, + *ποικίλος*, spotted.] A genus of fishes of the family *Pœciliidæ*, found in fresh waters from Mexico to Panama.

platypsyllid (plat-ip-sil'id), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Platypsyllidæ.*

II. *a.* Having the characters of or belonging to the family *Platypsyllidæ.*

Platyptera, *n.* **2.** In Packard's system of the classification of insects, the fourth order of ametabolous insects. They have four net-veined wings and the mouth-parts adapted for biting, and include the *Termitidæ* and the *Mallophaga.*

platypterigid (plā-tip-ter'i-jid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Platypterigidæ.*

II. *a.* Having the characters of or belonging to the family *Platypterigidæ.*

Platyrhinoidis (plat″i-rī-noi'dis), *n.* [NL. prop. **Platyrrhinoides*, < *Platyrrhina* + Gr. *εἶδος*, form.] A genus of rays of the family *Rhinobatidæ*, found off the coast of southern California.

platyrhynchous (plat-i-ring'kus), *a.* Same as *platyrhynchine.*

platysmal (plā-tis'mal), *a.* [*platysma* + *-al*^{1}.] In *anat.*, originating in or relating to the platysma myoides, a thin muscle lying just beneath the skin on the under anterior side of the neck. *Proc. Zool. Soc. London*, 1899, p. 316.

Platysternidæ (plat-i-stėr'ni-dē), *n. pl.* [NL., < *Platystern(um)*, the type genus, + *-idæ.*] A family of Asiatic fresh-water turtles, known at present from a single species, *P. megalocephalon.*

Platysternum (plat-i-stėr'num), *n.* [Gr. *πλατύς*, broad, + *στέρνον*, the breast.] A genus of fresh-water turtles comprising a small species from southeastern Asia, distinguished at a glance by the great size of the head. The body is depressed, the tail long, slender, and covered with square scales. The only known species, *P. megalocephalon*, is found on the borderland between China and Burma.

platystigmat (plat-i-stig'mat), *n.* [Gr. *πλατύς*, flat, broad, + E. *stigmat(ic).*] A photographic objective of two lens systems of four lenses each, made of Jena glass. The shutter is fitted between the systems. It is a long-focus anastigmat. *Encyc. Brit.*, XXXI. 696.

> Several combinations of triple lenses, constructed more or less on the principles enunciated by Dr. Rudolph, have been brought out by several English and foreign makers, among them Steinheil's "Orthostigmats," made in England by Messrs. R. & J. Beck; Wray's "*Platystigmats*"; Ross's "New Symmetrical Anastigmats"; . . . may be noted.
> *Encyc. Brit.*, XXXI. 696.

Platytroctes (plat-i-trok'tēz), *n.* [NL., < Gr. *πλατύς*, flat, + *τρώκτης*, trout.] A genus of fishes of the family *Alepocephalidæ*, found in the deep sea.

platyurous (plat-i-ū'rus), *a.* [Gr. *πλατύς*, flat, + *οὐρά*, tail.] Having a flat or broad tail.

plaustrum (plâs'trum), *n.*; pl. *plaustra* (-trä). [L.] A heavy two-wheeled cart used by the ancient Romans.

play^1, *v.* **I.** *intrans.*—**To play back,** in *cricket*, to strike the ball with the bat after having stepped back or toward the wicket. *Hutchinson*, Cricket, p. 61.—**To play up.** (*c*) To be equal to the occasion. [Slang.] (*d*) To follow another successfully, with apparent sympathy, in his vein or mood from the theatrical use.

II. *trans.* **16.** In *base-ball*, *foot-ball*, and similar games, to place (a player) in a certain position.—**17.** To accompany in action with music.

> It was the band of the Mavericks *playing* the regiment into its camp; for the men were route-marching with their baggage.
> *R. Kipling*, Kim, v.

To play down and out, in *bridge* and *whist*, to play the higher of two cards, neither of them an honor, on a partner's lead, to show that the third round of the suit can be trumped. See ★*echo*, 8.

play^1, *n.* **14.** A method or manner of performing on a musical instrument, especially as regards the action of the hands. See *close* ★*play.*—**15.** The act or an act of playing (in a game); a separate act of playing.—**Close play,** in *lute-playing*, holding or using the right hand so as to avoid all needless motions. Also called *covert play.* —**In play.** In *golf*, a ball is in play as soon as the player has made a stroke at the teeing-ground at each hole, and it remains in play until it is holed out.—**Mass** or **massed play,** in *foot-ball*, play in which the players act en masse.

> The principle will be laid down that Statehood is not to be achieved by "*massed plays*"—to quote a football term; "one at a time" must be the order of procedure.
> *Rev. of Revs.*, April, 1903, p. 398.

Problem play, a play dealing with some special social or ethical problem, usually divorce, the relations of the sexes, or the enslaved condition of woman: originally applied to plays of Alexandre Dumas.

> Alexander Dumas had created and still monopolized the *problem play*, of which Le Demi-Monde, Le Fils Naturel, La Question d'Argent, Les Idées de Madame Aubray, La Femme de Claude, Monsieur Alphonse, La Visite de Noces, L'Etrangère, Francillon, and Denise may be mentioned as the most characteristic specimens. The *problem play* is the presentation of a particular case, with a view to a general conclusion on some important question of human conduct.
> *Encyc. Brit.*, XXVII. 523.

playa (plä'yä), *n.* [Sp., 'shore,' 'strand.'] In *geol.*, a general name for the plain of silt or mud that marks the bottom of a desiccated lake-basin in the western United States.

playa-lake (plä'yä-lāk), *n.* A lake formed during the wet season, but disappearing by evaporation during the dry season. Playa-lakes are generally very shallow.

> Other lakes, which indicate still more pointedly the contrast between an arid and a humid climate, we may call *playa lakes.* These are broad sheets of shallow water, covering many square miles in winter season, but evaporating to dryness during the summer, their beds becoming hard, smooth mud plains or playas. In many

instances a lake is formed over a playa during a single stormy night, only to disappear beneath the next noonday sun.
I. C. Russell, quoted in Amer. Geol., Sept., 1904, p. 184.

play-boy (plā'boi), *n.* 1†. A boy actor. *B. Jonson*, New Inn, I. i. *N. E. D.*—2. A comic actor.

Where was the *play-boy* could claim an equality,
At comicality, Father, wid you?
A. P. Graves, Father O'Flynn, st. 4.

3. The jack of trumps in spoil-five.

play-club (plā'klub), *n.* In *golf*, a driver; a wooden-headed club with a full-length shaft, used in driving a ball to a great distance.

player, *n.* (*f*) In *harness-manuf.*, a small piece of metal attached by links to the mouthpiece of the bridle.—**Short-card player,** a poker-player: usually applied to a sharper only.

Playhouse tune. See ★*tune*.

playing-place (plā'ing-plās), *n.* In *ornith.*, a locality where the male displays or 'shows off' his plumage to the female; the bower, or run, of a bower-bird.

play-instinct (plā'in″stingkt), *n.* In *psychol.*, one of the group of human instincts which subserve the life and development of the individual as a conscious being. It covers the need of physical exercise, the taste for a life of adventure, the passion for gambling, esthetic activities, etc.

The *play-instinct*, if we use this word to designate the tendency to expend superfluous activity, . . . is a stock which puts forth several branches.
Ribot (trans.), Psychol. of Emotions, p. 198.

P. L. B. An abbreviation of *Poor-law Board*.

P. L. C. An abbreviation of *Poor-law Commissioners*.

Pl. D. An abbreviation of *Plattdeutsch*, Low German.

plea, *n.*—**Negative plea,** in *equity*, a plea not pure. See ★*plea not pure*. **Plea not pure,** in *equity*, a plea which tends to negative the allegations of the complainant's bill, as distinguished from a *pure* ★*plea* (which see). **Plea of the general issue.** Same as *general issue* (which see, under *issue*). **Pure plea,** in *equity*, a plea which sets up as a defense matters wholly outside of the complainant's bill. See ★*plea not pure*.—**Sham plea.** See *sham*.

plead, *v. t.*—**Rule to plead,** a rule or order of court, entered as of course, requiring the defendant to plead within a given time. Failure to comply with it entitles the plaintiff to a judgment by default.

pleasure, *n.*—**Calculus of pleasure.** See *hedonic* ★*calculus*.

pleasure-pain (plezh'ūr-pān″), *n.* and *a.* **I.** *n.* In *psychol.*, a collective term for pleasant and unpleasant affective processes.

As soon as we give up the reference of feeling to a subjective condition of *pleasure-pain*, or of some similar pair of subjective opposites, we have no reason for uniting affective states in general in a common class.
W. Wundt (trans.), Human and Animal Psychol., p. 211.

II. *a.* In *psychol.*, relating to the pleasant and unpleasant affective processes, collectively regarded: as, *pleasure-pain* theories, *pleasure-pain* experiments.

pleasuring (plezh'ūr-ing), *n.* The act of taking pleasure; a pleasure-trip.

plebicolous (plẹ̄-bik'ọ-lus), *a.* [L. *plebs*, the common people, + *colere*, cultivate.] Courting the common people; demagogical. [Rare.]

plebiscitarian (pleb″i-si-tā'ri-ạn), *a.* Same as *plebiscitary*.

plebiscitic (pleb-i-sit'ik), *a.* [*plebiscite* + *-ic*.] Pertaining to, of the nature of, or established by, a plebiscite.

Plectascineæ (plek-tạ-sin'ẹ̄-ē), *n. pl.* [NL., < Gr. πλεκτός, plaited, + ἀσκός, a bag (sac), + *-ineæ*.] A name used by some recent authors to include the order of fungi ★*Aspergillales* (which see).

plectenchyma (plek-teng'ki-mạ̈), *n.* [Gr. πλεκτός, woven, + ἔγχυμα, an infusion.] Same as *pseudoparenchyma*. *Lindau.*

Plectobranchus (plek-tō-brang'kus), *n.* [NL., < Gr. πλεκτός, plaited (infolded), + βράγχια, gills.] A genus of blennioid fishes of the northern Pacific.

plectonephric (plek-tọ-nef'rik), *a.* [Gr. πλεκτος, plaited, twisted, + νεφρός, kidney, + *-ic*.] Having nephridia consisting of networks of fine tubes: as, the *plectonephric* genera of earthworms.

[They] have ceased altogether to look like the excretory tubes in the usual "*plectonephric*" genera.
Proc. Zool. Soc. London, 1894, p. 382.

Plectonephric nephridia, nephridia consisting of networks of fine tubes lying on the body-wall and septa in each segment, as in some earthworms. They open to the exterior and sometimes into the cœloma. Also called *diffuse nephridia*. Compare ★*meganephric*.

plectopter (plek-top'tėr), *n.* [*Plectopter(a)*.] In *entom.*, a member of the order *Plectoptera*.

plectopterous (plek-top'tẹ-rus), *a.* [*Plectopter(a)* + *-ous*.] Having the characters of the *Plectoptera*.

plectospondyly (plek-tọ-spon'di-li), *n.* [Gr. πλεκτός, twisted, < πλέκειν, twist, plait, + σπόνδυλος, a vertebra, + *-y*³.] The condition of being abnormally twisted: noting a condition of vertebræ. *Proc. Zool. Soc. London*, 1894, p. 100.

Plectranthias (plek-tran'thi-as), *n.* [NL., < Gr. πλῆκτρον, spur, + NL. *Anthias*.] A genus of serranoid fishes found in the western tropical Pacific.

Plectromus (plek-trō'mus), *n.* [NL., < Gr. πλῆκτρον, spur, + ὦμος, shoulder.] A genus of berycoid fishes of the deep sea.

Plectropoma (plek-trop'ọ-mạ̈), *n.* [NL., < Gr. πλῆκτρον, spur, + πῶμα, lid.] A genus of serranoid fishes found in the Indian and western Pacific oceans.

Plectrypops (plek'tri-pops), *n.* [NL., < Gr. πλῆκτρον, spur, + ὑπό, under, + ὤψ, eye.] A genus of fishes of the family *Holocentridæ*, of the West Indian fauna.

pledget, *n.* 2. A string of oakum, such as is used in calking the seams of a vessel.

plein air (plañ ãr). [F.: *plein* (< L. *plenus*), full, + *air*, air.] In *painting*, open air, from the phrase *en plein air*, in the open air, out of doors: a term used to characterize the modern point of view in painting, which considers the natural effects of light in nature rather than the artificial effects of the studio. Painting out of doors in plein air appears to have been first adopted as a definite practice by the English painter Constable (1776–1837.) Also *plain-air*.

Not long before the Franco-Prussian war, Manet, finding himself in the country with a friend, for the first time discovered the true value of open air to the effects of painting in his picture "The Garden," which gave rise to the "open air" or *plein air* school.
Encyc. Brit., XXX. 518.

plein-airist (pla-nãr'ist), *n.* [*plein air* + *-ist*.] An artist of the plein-air school.

Plein-airists like Mr. Clausen, Mr. Lathangue, or Mr. Stott have laboriously painted with separate touches of a pigment so stiff that, even though it is applied with a brush, the result has all the appearance of having been done with sticks of colour.
Athenæum, Feb. 7, 1903, p. 183.

pleiobar (plī'ọ-bär), *n.* [Gr. πλείων, more, + βάρος, weight.] An area of high barometric pressure on the daily weather-map: a term introduced by Prestel in 1870.

pleiochromia (plī-ọ-krō'mi-ạ̈), *n.* [NL., < Gr. πλείων, more, + χρῶμα, color.] Increased coloration; specifically, secretion in abnormal amount of the coloring-matter of the bile.

pleiocyclic (plī-ọ-sik'lik), *a.* [Gr. πλείων, more, + κύκλος, circle, + *-ic*.] In *bot.*, perennial; blooming more than one season: said of herbs. Contrasted with ★*hapaxanthous*. Compare ★*dicyclic*, 3 (*b*). See quotation under ★*vegetation-forms*. *Pound and Clements.*

pleiomastia (plī-ọ-mas'ti-ạ̈), *n.* [Gr. πλείων, more, + μαστός, breast.] The condition of having more than one nipple on the breast.

pleiomerous (plī-om'ẹ-rus), *a.* [Gr. πλείων, more, + μέρος, part.] In *bot.*, having more than the normal number of leaf-like parts or organs.

pleiomery (plī-om'ẹ-ri), *n.* [Gr. πλείων, more, + μέρος, part, + *-y*³.] In *bot.*, an increase in the normal or usual number of leaf-like parts or organs.

Pleistocenic (plīs-tọ-sen'ik), *a.* [*Pleistocene* + *-ic*.] Of or pertaining to the Pleistocene.

pleistoseist (plīs'tọ-sīst), *n.* [Gr. πλεῖστος, most, + σειστός, shaken.] In an area affected by an earthquake, that interior portion which has suffered most violently from the shock. It surrounds the epicentrum and extends from it for a distance arbitrarily established by the observer who plots the effects. *Seebach.*

The diagram on page 186 indicates the intensity of a shock in the locus technically called a *pleistoseist* as about four ninths of its intensity at the epicenter.
Science, Dec. 16, 1904, p. 838.

plemochoë (plẹ̄-mok'ọ-ē), *n.* [Gr. πλημοχόη, an earthern water-vessel.] In *Gr. antiq.*, a toilet-vase; a tureen-like receptacle with a standard, for pouring out water. It was especially associated with the last day of the Eleusinian festival.

plemyrameter (plem-i-ram'e-tėr), *n.* [Gr. πλήμυρα, usually πλήμμυρα, flood-tide, + μέτρον, measure.] 1. An apparatus for recording the level and the movements of water, such as a Pitot tube; a water-meter.—2. An apparatus for recording the number, frequency, or length of the waves of water in a lake; specifically, Forel's plemyrameter, which was ultimately replaced by the more accurate limnometer of Sarasin. See ★*limnometer*, with cut.

Plen. An abbreviation of *Plenipotentiary*.

plenalvia (plẹ̄-nal'vi-ạ̈), *n.* [NL., < L. *plenus*, full, + *alvus*, bowels.] Same as ★*grain-sickness*.

Plenary ability. See ★*ability*.

plenipotential (plen″i-pọ-ten'shạl), *a.* [L. *plenus*, full, + *potentia*, power, + *-al*¹.] Same as *plenipotentiary*.

plenitudinous (plen-i-tū'di-nus), *a.* Same as *plenitudinary*. [Rare.]

Plenum fan. See ★*fan*¹.

pleochroitic (plē″ọ-krọ-it'ik), *a.* Pertaining to, or characterized by, pleochroism.

pleocleis (plē'ọ-klīs), *n.* [Gr. πλείων, more, + κλείς, key.] In crustaceans, a tubercle or wart-like protuberance on the first somite of the pleon preventing the elevation of the carapace behind.

pleogamous (plẹ̄-og'ạ-mus), *a.* [*pleogam(y)* + *-ous*.] Characterized by pleogamy.

pleogamy (plẹ̄-og'ạ-mi), *n.* [Gr. πλείων, more, + γάμος, marriage.] In *bot.*, a combination of different types of polygamy.

pleonectic (plē-ọ-nek'tik), *a.* [*pleonexia*.] Pertaining to or characterized by pleonexia; morbidly greedy or covetous.

pleopoda (plẹ̄-op'ọ-dạ̈), *n. pl.* [NL., pl. of *pleopodon*. See *pleopod*.] The swimmerets or appendages of the abdomen of some crustaceans. They may be natatory or branchial in function, or used for retaining the eggs until hatched. In some cases they are rudimentary or lacking entirely or in part.

The abdomen [of a parasite of the hermit crab] consists of six fleshy segments, five of which bear a pair of *pleopoda*.
Bulletin U. S. Fish Com., XXI. 54.

pleopodon (plẹ̄-op'ọ-don), *n.* Same as *pleopod*.

pleopsidic (plē-op-sid'ik), *a.* [*Pleopsid(ium)* + *-ic*.] Derived from *Pleopsidium*.—**Pleopsidic acid,** an acid found in *Pleopsidium chlorophanum*. It forms very thin crystalline plates which melt at 144–145° C.

Pleospora (plẹ̄-os'pọ-rạ̈), *n.* [NL. (Rabenhorst, 1857), alluding to the many-celled spores; < Gr. πλέων, more, + σποράς, seed (spore).] A large genus of pyrenomycetous fungi of the order *Sphæriales*, having scattered or gregarious erumpent perithecia with papillate ostiola. The spores are muriform and yellowish or brown. Over 225 species have been described, fruiting on dead stems, mostly of herbaceous plants. *P. herbarum* is a species common in Europe and North America.

Pleosporaceæ (plē″ọ-spọ-rā'sẹ̄-ē), *n. pl.* [NL., < *Pleospora* + *-aceæ*.] A family of pyrenomycetous fungi named from the principal genus, *Pleospora*.

plerocercoid (plē-rọ-sėr'koid), *n.* [Gr. πλήρης, full, + κέρκος, tail, + *-oid*.] The solid elongate larva, with no bladder, of some cestodes, as *Bothriocephalus latus*, an intestinal parasite found in man and the dog. Compare ★*plerocestoid*.

Dibothriocephalus latus Lühe 1899. . . . Adult parasitic in small intestine of man, dog, and cat; larva (*plerocercoid*) in the muscles and among the viscera of various fish.
Buck, Med. Handbook, II. 792.

plerocestode (plē-rọ-ses'tōd), *n.* Same as ★*metacestode*.

plerocestoid (plē-rọ-ses'toid), *n.* [Gr. πλήρης, full, + E. *cestoid*.] A sexless, encysted stage of a cestoid, as *Bothriocephalus latus*. Also *metacestode*.

pleromal (plẹ̄-rō'mal), *a.* [Gr. πλήρωμα, fullness, + *-al*¹.] 1. Full; abundant; pleromatic.

As variations increase with the number of atoms in a molecule, there may be . . . "billions or trillions of protoplasmic substances, and not one only, as was once assumed." As most closely related to this great *pleromal* sea of life, abounding stand in the higher plants and animals the sexual organs. *G. S. Hall*, Adolescence, I. 412.

2. In *gnosticism*, pertaining to the pleroma, or world of light, or body of eons.—3. Of or pertaining to the plerome, in either the botanical or the zoölogical sense.

plerome, *n.* 3. In *zoöl.*, the mesodermic tissue which fills out the space between the gut and the external epithelium in the body of a tunicate.

The paper includes a useful discussion of the morphological value of the different layers of the Tunicate body, and a suggestion of the term "*plerome*" for the mesodermic tissue filling up the space between the gut and the external epithelium.
Jour. Roy. Micros. Soc., Oct., 1903, p. 603.

plerosis (plḗ-rō′sis), *n.* [NL., ‹ Gr. *πλήρωσις*, a filling, ‹ *πληροῦν*, fill.] Regeneration; specifically, the return of flesh after a wasting illness.

plerotic (plḗ-rot′ik), *a.* [*plerosis* (*-ot-*) + *-ic.*] Relating to, exhibiting, or promoting plerosis, or the restoration of lost flesh or tissue.

Plesiadapidæ (plē″si-ạ̈-dap′i-dē), *n. pl.* [NL., ‹ *Plesiadapis*, generic name, + *-idæ.*] A family of lemur-like animals, which includes small species from the Lower Eocene of Europe and America. *Trouessart*, 1897.

plesiobiosis (plē″si-ọ-bī-ō′sis), *n.* [NL., ‹ Gr. *πλησίος*, near, + *βίωσις*, living.] A form of incipient symbiosis shown by colonies of ants of different species living in close proximity to one another, as, for example, under the same stone, without forming true mixed colonies. *Wheeler*, 1901.

plesiometacarpal (plē″si-ọ-met″ạ̈-kär′pạ̈l), *a.* [Gr. *πλησίος*, near, + E. *metacarpal.*] Possessing vestiges of the upper or proximal portions of the first and fifth metacarpals: applied to certain deer. Contrasted with ⋆*telemetacarpal.*

plesiometacarpalian (plē″si-ọ-met″ạ̈-kär-pā′-li-ạ̈n), *a.* [*Plesiometacarpi* + *-al*^{1} + *-ian.*] Pertaining to or having the characters of the *Plesiometacarpi*.

Plesiometacarpi (plē″si-ọ-met″ạ̈-kär′pī), *n. pl.* [Gr. *πλησίος*, near, + NL. pl. *metacarpi.*] A division of the deer family containing those species in which vestiges of the proximal ends of the second and fifth metacarpals are present. Contrasted with ⋆*Telemetacarpi.*

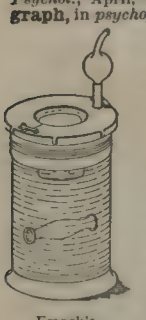
plesiotype (plē′si-ọ-tīp), *n.* [Gr. *πλησίος*, near, + *τύπος*, type.] A specimen identified with some species already described, but not selected by the original describer of that species: in this last respect it differs from an heautotype. *U. S. Nat. Mus.*, Bulletin 53, I. 12.

plessigraph (ples′i-graf), *n.* [Gr. *πλήσσειν*, strike, + *γράφειν*, write.] A special form of pleximeter, designed to reduce the percussed surface to a minimum, so that the user may be able to map out more exactly the limits of any organ or dull area. *Syd. Soc. Lex.*

plessimetry (ple-sim′e-tri), *n.* [*plessimeter* + *-y*^{3}.] The use of the plessimeter, or pleximeter.

plessite (ples′īt), *n.* [Origin uncertain.] A name given by Reichenbach to the nickel-iron alloy which, as seen in the etched surface of a section of meteoric iron, forms a sort of ground-mass inclosed by the bands of kamacite and thin lines of tænite. See *Widmannstättian figures* and ⋆*meteorite.* Plessite is now regarded as an eutectic mixture of kamacite and tænite.

plethysmograph, *n.*—**Finger plethysmograph**, in *physiol.* and *psychophys.*, a plethysmograph which registers the changes of volume occurring in a single finger, instead of in the hand and forearm (as is done by the ordinary forms of the instrument). *Amer. Jour. Psychol.*, April, 1901, p. 327.—**Franck's plethysmograph**, in *psychophys.*, a simple form of plethysmograph, consisting of an upright glass jar for the reception of hand and wrist. The fingers of the hand are closed round a wooden bar set transversely toward the bottom of the jar. The mouth of the jar is closed, first by a rubber cap, and then by a metal cover; both are pierced for the reception of the wrist. A small round opening in the covers allows the passage of a rubber tube, which leads (by way of an expanded glass tube) to another rubber tube, and so to a Marey tambour. The plethysmograph is filled with water up to the middle of the glass tube; the remainder of the transmitting system is filled with air.—**Mosso's plethysmograph**, in *physiol.* and *exper. psychol.*, an instrument devised by A. Mosso for recording changes in the volume of a limb or of some isolated bodily organ. As ordinarily used, the name applies to the hydrosphygmograph, an instrument akin to the plethysmographs of Fick, Kronecker, Franck, Lehmann, and others. A glass tube, filled with warm water, receives the hand and forearm; and changes in the water-level, due to changes in the volume of the limb, are graphically recorded. The physiological plethysmograph consists of a metal box, filled with oil, in which the isolated heart or kidney, etc., is placed. Tubes set in the side of the box allow of the supply of an artificial circulation. Changes in the volume of the organ are recorded as before.



Franck's Plethysmograph.

plethysmographically (plḗ-this-mọ-graf′i-kạl-i), *adv.* By means of a plethysmograph, or after the manner of a plethysmograph.

plethysmography (pleth-is-mog′rạ̈-fi), *n.* The scientific use of the plethysmograph.

pleura^1, *n.*—**Genital pleuræ**, in some *Enteropneusta*, two folds on the dorsal side of the branchial region in which the bulk of the gonads are contained. *Encyc. Brit.*, XXVI. 85.

pleural^2, *a.* **II.** *n.* A pleural process. Specifically: (*a*) One of the bones that in turtles overlie and unite with the ribs, forming the greater portion of the carapace; a costal: correlative with *neural.* Most commonly used in the plural. (*b*) In fishes, one of the long rays of bone attached to the side of the vertebræ and extending downward partly around the abdominal cavity; a rib. *Starks*, Synonymy of the Fish Skeleton, p. 525.

pleurale (plọ̈-rā′lē), *n.*; pl. *pleuralia* (-li-ạ̈). Same as ⋆*pleural*^{2}, *n.*

pleuranthous (plọ̈-ran′thus), *a.* [Gr. *πλευρά*, side, + *ἄνθος*, flower.] In *bot.*, flowering at the side: said of a sympodium in which the inflorescences are borne on lateral axes, the shoot which for the year forms the main axis ending without inflorescence. *J. C. Willis*, Manual and Dict. of Flowering Plants and Ferns, II. 272.

Pleurapophysial lamella. See ⋆*lamella.*

Pleuraspidotheriidæ (plọ̈-ras″pi-dō-thḗ-rī′-i-dē), *n. pl.* [NL., ‹ *Pleuraspidotherium*, type genus, + *-idæ.*] A family of extinct ungulate mammals, of the suborder *Condylarthra*, containing species of small size, with tuberculate molars. The type species is *Pleuraspidotherium*, from the Lower Eocene of Rheims, France.

pleuremphytic (plö-rem-fit′ik), *a.* [Gr. *πλευρά*, side, + *ἔμφυτος*, implanted, inborn.] In *zoöl.*, pertaining to sessile attachment by fixation of the side of an animal to its host or the sea-bottom.

pleurisy, *n.*—**Fibrinous pleurisy** dry pleurisy with considerable fibrinous exudation.—**Humid pleurisy**, bronchitis.—**Serous pleurisy**, the opposite of dry or fibrinous pleurisy, in which there is a profuse watery effusion, but little fibrinous exudate.—**Typhoid pleurisy**, a form of pleurisy marked by symptoms of great prostration.

pleuritogenous (plö-ri-toj′e-nus), *a.* [*pleurit(is)* + *-o-* + *-gen* + *-ous.*] Causing pleurisy.

pleurobranch (plö′rọ-brangk), *n.* Same as *pleurobranchia*^{1}.

pleurobronchitis (plö″rọ-brong-kī′tis), *n.* Pleurisy combined with bronchitis.

pleurocentesis (plö″rọ-sen-tē′sis), *n.* [NL., ‹ Gr. *πλευρά*, rib, pleura, + *κέντησις*, puncture.] Same as *thoracentesis.*

pleurocentrum, *n.* **2.** A dorsal element in the rachitomous vertebræ of certain ganoid fishes and stegocephalian amphibians. It is homologous with the centrum of the reptilian and mammalian vertebra.

pleurochondrite (plö-rọ-kon′drīt), *n.* [Gr. *πλευρά*, the side, + *χόνδρος*, cartilage, + *-ite*^{2}.] The lateral cartilaginous element that by growth and ossification becomes the transverse process in a completed vertebra: correlated with ⋆*centrochondrite* and ⋆*neurochondrite.*

pleurochord (plö′rọ-kôrd), *n.* [Gr. *πλευρά*, side, + E. *chord.*] One of a pair of lateral evaginations of the gut in the collar region in *Actinotrocha* and *Cephalodiscus.*

> As regards Actinotrocha, we suffer from a multiplicity of so-called "notochords." Masterman describes in Actinotrocha and Cephalodiscus a pair of "*pleurochords*," lateral evaginations of the gut in the collar region, the cells of which are vacuolated; these lie farther back than the Enteropneustan stomochord, and do not project into the protocœle. *Encyc. Brit.*, XXIX. 251.

pleurochordal (plö-rọ-kôr′dạl), *a.* [*pleurochord* + *-al*^{1}.] Of or pertaining to the pleurochord; provided with a pleurochord.

pleurocutaneous (plö″rọ-kū-tā′nḗ-us), *a.* [NL. *pleura*, pleura, + E. *cutaneous.*] Relating to both the pleura and the skin.

Pleurodictyum (plö-rọ-dik′ti-um), *n.* [Gr. *πλευρά*, the side, + *δίκτυον*, a net.] A genus of tabulate corals with depressed discoidal coralla consisting of small polygonal funnel-shaped corallites having irregularly perforate walls and faint or obsolete septa. The center of the base of the corallum often holds a vermiform foreign body, which is considered to be the dwelling-tube of a commensal worm.

Pleurodictyum problematicum, Goldf. Lower Devonian; Coblenz. Natural Size. Vermiform foreign body in the center.
(From Zittel's "Palæontology.")

pleurodynic (plö-rọ-din′ik), *a.* [*pleurodyn(ia)* + *-ic.*] Relating to or affected with pleurodynia.

pleurogenous (plö-roj′e-nus), *a.* Same as *pleurogenic.*

Pleurogrammus (plö-rọ-gram′us), *n.* [NL., ‹ Gr. *πλευρά*, side, + *γραμμή*, line.] A genus of fishes of the family *Hexagrammidæ*, found in the northern Pacific.

pleuromarginal (plö-rọ-mär′ji-nạl), *a.* [Gr. *πλευρά*, side, + E. *marginal.*] Relating to the pleural and marginal bones of turtles that form the top and edge of the carapace or bony shell.—**Pleuromarginal fontanelle**, the space or opening that in young turtles, or in the adults of some species, lies between the marginal bones and the ends of the pleurals. *G. R. Wieland*, in Amer. Jour. Sci., Feb., 1904, p. 130.

Pleuromya (plö-rō′mi-ạ̈), *n.* [NL., ‹ Gr. *πλευρά*, the side, + NL. *Mya*^{1}.] A genus of fossil pelecypods typical of the family *Pleuromyacidæ*, with elongate, somewhat gaping shells, which are abundant in formations from the Triassic to the Lower Cretaceous.

Pleuronautilus (plö-rọ-nâ′ti-lus), *n.* [NL., ‹ Gr. *πλευρά*, ribs, + NL. *Nautilus.*] A genus of orthochoanitic cephalopods with discoidal shells having stout volutions and large umbilical opening: found in Triassic rocks.

Pleuronectinæ (plö″rọ-nek-tī′nē), *n. pl.* [NL., ‹ *Pleuronectes* + *-inæ.*] A subfamily of flounders having an unsymmetrical mouth and the teeth chiefly on the blind side.

pleuronectism (plö-rọ-nek′tizm), *n.* [NL. *Pleuronectes* + *-ism.*] The fact or condition of having one side paler than the other, as in flounders (*Pleuronectidæ*). [Rare.]

> A curious asymmetry in the coloration of this species has been noted by more than one observer—'a sort of *pleuronectism*,' van Beneden terms it.
> *F. E. Beddard*, Book of Whales, p. 158.

Pleuronichthys (plö-rọ-nik′this), *n.* [NL., irreg. ‹ Gr. *πλευρά*, the side, + *ἰχθύς*, fish.] A genus of flounders found on both sides of the Pacific Ocean.

pleuropathy (plọ̈-rop′ạ̈-thi), *n.* [Gr. *πλευρά*, the side (pleura), + *πάθος*, disease.] Same as *pleuropathia.*

pleuropericardial (plö-rọ-per-i-kär′di-ạl), *a.* [*pleura* + *pericardium* + *-al*^{1}.] Relating to both pleura and pericardium. *Buck*, Med. Handbook, II. 821.

Pleurophorus (plọ̈-rof′ọ-rus), *n.* [NL., ‹ Gr. *πλευρά*, ribs, + *-φορος*, ‹ *φέρειν*, bear.] A genus of small teleodesmaceous pelecypods which have elongated shells with terminal beaks, smooth or radially ribbed surface, two cardinal teeth in each valve, and the anterior adductor scar forming a deep pit. The genus ranges from the Devonian to the Trias, and is especially abundant in Permian rocks.

pleurophthalmic (plö-rof-thal′mik), *a.* [NL. *Pleurophthalma* + *-ic.*] Relating or pertaining to the *Pleurophthalma*; having the eyes at the external borders of the tentacles, as in certain gastropods.

pleuroplastic (plö-rọ-plas′tik), *a.* [Gr. *πλευρά*, side, + E. *plastic.*] In *plant physiol.*, developing tissue, by a stretching of the meristem, all along the primordium at once: said of a type of leaves. Correlated with *basiplastic*, that is, developing tissue at the apex first and thence to the base; and *eucladous*, forming lobations in the embryonal tissue before the meristem has begun to stretch, which does not happen in the other cases. *Prantl*, cited by K. E. Goebel (trans.), Organography of Plants, II. 312.

pleuropneumonia, *n.* **2.** In *medicine*, pleurisy combined with pneumonia.

pleuropodium (plö-rọ-pō′di-um), *n.*; pl. *pleuropodia* (-ạ̈). [NL., ‹ Gr. *πλευρά*, side, + *πούς* (*ποδ-*), foot.] One of a pair of temporary embryonic or early larval organs on the under side of the first abdominal segment of many insects. They are variously considered as glands, blood-gills, and sense-organs.

pleuropterygian (plö-rop-tẹ-rij′i-ạ̈n), *a.* [NL. *Pleuropterygii* + *-an.*] Pertaining to or having the characters of the selachian fishes of the order *Pleuropterygii.*

Pleuropterygii (plö-rop-tẹ-rij′i-ī), *n. pl.* [NL., ‹ Gr. *πλευρόν*, rib, + *πτερύγιον*, fin.] An extinct order of selachian fishes, chiefly of Carboniferous age. They are characterized by a well-calcified endoskeleton; apparently unsegmented notochord: the pterygoquadrate arcade movably articulated with the cranium; paired fins supported by unjointed, parallel radial cartilages, which may be partly fused at the base, but extend directly outward to the edge of the fin-membrane; and the pelvic fins of males without claspers. The *Pleuropterygii* "exhibit the nearest approach to the hypothetical lateral fin-fold yet met with." *A. S. Woodward*, Vertebrate Palæontol., p. 29.

pleurorhizous (plö-rọ-rī'zus), *a.* Same as *pleurorhizal.*

pleurosperm (plö'rọ-spėrm), *n.* [NL., < Gr. *πλευρόν*, rib, + *σπέρμα*, seed.] In *bot.*, an angiosperm of the group or class which are supposed by Treub to have begun with chalazogamy and to have subsequently assumed the normal mode of fertilization.

pleurosteite (plọ-ros'tẹ-īt), *n.* [Gr. *πλευρόν*, rib, + *ὀστέον*, bone, + *-ite*1.] The center of ossification in the cartilaginous segment that, by ossifying, becomes a rib: correlated with *chondrosteite* and ★*neurosteite.* See the extract under ★*neurosteite.*

pleurostosis (plö-ros-tō'sis), *n.* [NL., < Gr. *πλευρά*, the side (pleura), + *ὀστέον*, bone, + *-osis.*] Ossification of the pleura.

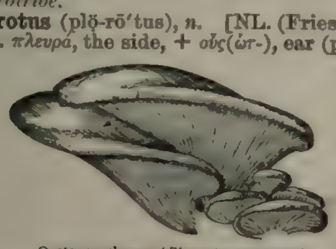
pleurotetanus (plö-rọ-tet'a̤-nus), *n.* [NL., < Gr. *πλευρά*, the side, + *τέτανος*, spasm.] Same as *pleurothotonos.*

pleurotomy (plọ-rot'ọ-mi), *n.* [Gr. *πλευρά*, the side, + *τομή*, a cutting.] Incision through the pleura.

pleurotonus (plọ-rot'ọ-nus), *n.* [Gr. *πλευρά*, the side, + *τόνος*, tension.] Same as *pleurothotonos.*

pleurotribal (plö-rọ-trī'ba̤l), *a.* Same as *pleurotribe.*

Pleurotus (plö-rō'tus), *n.* [NL. (Fries, 1821), < Gr. *πλευρά*, the side, + *οὖς* (*ὠτ-*), ear (pileus); so called from the lateral pileus.] A large genus of white-spored fleshy fungi of the family *Agaricaceæ*, having the pileus usually sessile and attached by one side or with a short eccentric stipe. About 250 species have been described, occurring chiefly on decaying wood. *P. ostreatus* is a common edible species known as the oyster-mushroom, having the flavor of oysters.



Oyster-mushroom (*Pleurotus ostreatus*).
About one third natural size.

pleurotyphoid (plö-rọ-tī'foid), *n.* [*pleur*(*isy*) + *typhoid.*] Typhoid fever accompanied by pleurisy.

pleurum (plö'rum), *n.*; pl. *pleura* (-rä̤). [NL.] Same as *pleuron.* *J. B. Smith*, Econ. Entom., p. 25.

plex, *v. i.* 2. In *phys. chem.*, to acquire greater molecular complexity by having two or more molecules condensed into one molecule; become polymerized. *Trans. Amer. Inst. Elect. Engin.*, 1898, p. 130.

plex (pleks), *n.* [*plex*(*us*).] In *phys. chem.*, the degree of molecular complexity, or of polymerization. *Trans. Amer. Inst. Elect. Engin.*, 1898, p. 131. [Rare.]

Plexaura (plek-sâ'rä̤), *n.* [NL.] The typical genus of the family *Plexauridæ.* *Lamouroux*, 1812.

Plexauridæ (plek-sâ'ri-dē), *n. pl.* [NL. *Plexaura* + *-idæ.*] A family of alcyonarians having a branched colony with a horny axis, the polyps situated all over the thick cœnenchyma, and the spicules large, the cortical being club-shaped and the deeper spindle-shaped. It contains the genera *Plexaura, Eunicea, Psammogorgia*, and *Platygorgia.*

plexial (plek'si-a̤l), *a.* [*plex*(*us*) + *-ial.*] Same as *plexal.*

plexiality (plek-si-al'i̤-ti), *n.* [*plexial* + *-ity.*] The state of being plexiform or of a complex structure.

Plexiform gland, in echinoderms, same as ★*axial organ.*

pleximetry (plek-sim'e-tri), *n.* The use of the pleximeter.

plexodont (plek'sọ-dont), *a.* [Gr. *πλέξις*, a weaving, + *ὀδούς* (*ὀδοντ-*), tooth.] Having complex teeth; having molars with a complicated crown and provided with more than one root. *Proc. Zool. Soc. London*, 1899, p. 555.

plexus, *n.* 4. In *bot.*, the mass of branched and anastomosing filaments of certain algæ.—5. In *phys. geog.*, the irregular and complicated junction of a number of similar features, such as ridges, river channels, etc.

> Stone applies the aptly chosen term of "*plexus*" to such areas, and characterizes them as follows: they are "the most remarkable of all deposits left by glacial rivers . . . its surface covered with a jumble of heaps, mounds, cones, and ridges inclosing all forms of hollows, funnels, hopper-holes, kettle-holes, basins and Roman theatres, many of which are so deep as to inclose lakelets without visible outlet." *Amer. Geol.*, Sept., 1903, p. 166.

Leber's plexus, a network of small veins anterior to Schlemm's canal in the eye.

plezant, *a.* An amended spelling of *pleasant.*

plezurabl, plezure. Amended spellings of *pleasurable, pleasure.*

plf., plff. [*l. c.* or *cap.*] Abbreviations of *plaintiff.*

P. L. G. An abbreviation of *Poor-law Guardians.*

plica, *n.*—**Plicæ circulares**, transverse folds in the mucous membrane of the intestines.—**Plicæ conniventes.** Same as *valvulæ conniventes.*—**Plica epigastrica**, a prominent line on the inner surface of the anterior abdominal wall indicating the course of the epigastric artery.—**Plica hypogastrica**, a prominent line on the posterior surface of the anterior abdominal wall formed by the lateral ligament of the bladder; the remains of the hypogastric artery.—**Plica lunata**, a fold of the conjunctiva at the outer border of the caruncula lacrymalis.—**Plica urachi**, a prominent line on the posterior surface of the anterior abdominal wall, extending from the bladder to the umbilicus, marking the course of the urachus.

plication, *n.*—**Armorican chain of plication**, in *geol.*, a line of upheaval or mountain-making, of late Paleozoic age, extending from the mouth of the Shannon to that of the Loire. *Geikie*, Text-book of Geol., p. 314.

plicator, *n.* 2. More generally, one who or that which causes folds or plaits.

> Each spicule has its musculus exsertor, which is not a single muscle, but is composed of two components,—a *plicator* and a fixator of the sheath.
> *Jour. Roy. Micros. Soc.*, April, 1903, p. 181.

plim1 (plim), *n.* [A minced form of *plumb.*] A plumb; a plummet.

plim1 (plim), *a.* 1. Perpendicular; straight; plumb.—2. Smooth; neat. [Prov. Eng.]

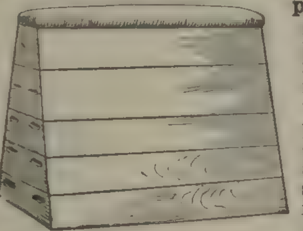
plim2 (plim), *a.* [A minced form of *plump.*] Stout; fat; plump. *Halliwell.* [Prov. Eng.]

plim2, *v.* II. *trans.* To puff or plump out; fill out. [Prov. Eng.]

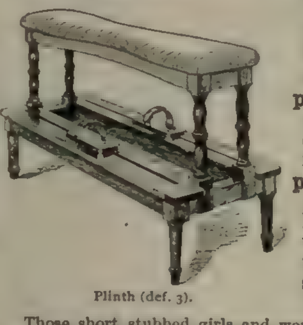
Plimmer bodies. See ★*body.*

Plinian, *a.* 2. In *geol.*, noting the final, most vigorous stage in volcanic eruptions, especially of Vesuvius, during which violent explosions occur, with expulsion of large quantities of steam, ashes, scoriæ, and lava: named after Pliny, the describer of the great eruption of 79 A.D.

plint (plint), *n.* [Sw.] Same as ★*plinth*, 2 and 3.



Plinth (def. 2).



Plinth (def. 3).

plinth, *n.* 2. A gymnastic apparatus, a vaulting-box, consisting of several wooden sections placed on top of one another, so as to make possible variations in height.—3. An apparatus used in therapeutic gymnastics on which the patient sits or lies.

plinthiform (plin'thi-fôrm), *a.* Having the form of a plinth.

plinthlike (plinth'līk), *a.* Like a plinth, with no variation of outline; squarely built. [Rare.]

> Those short, stubbed girls and women . . . of *plinthlike* bigness up and down.
> *W. D. Howells*, in Harper's Mag., July, 1905, p. 195.

Pliocene, *n.* It was the final period of Tertiary time, during which the distribution of land and sea was very much as it is now. The uptilted deposits of this age, which are of world-wide distribution, consist of mostly unconsolidated sands, clays, and marls of marine and terrestrial origin, containing invertebrate and plant remains very similar to those of the present. The vertebrate fauna, on the other hand, differs widely, with numerous extinct types of large size, among which *Dinotherium, Mastodon, Elephas, Equus, Hippopotamus, Rhinoceros*, and *Machærodus* were of gigantic proportions. The Pliocene of southern Europe has been divided into the following stages: lower, Messinian or Plaisancian; middle, Astian; upper, Arnusian or Sicilian. In North America, marine deposits of this age are represented by the Floridian series of the Gulf coast and the Merced and San Pedro series of the Pacific coast; and the terrestrial deposits by the Palo Duro and Blanco beds of Texas and Oklahoma.

Pliocenic (plī-ọ-sen'ik), *a.* [*Pliocene* + *-ic.*] Of or pertaining to the Pliocene period of Tertiary time.

pliosaur (plī'ọ-sâr), *n.* [NL. *Pliosaur*(*us*).] An individual of the genus *Pliosaurus*, which comprises gigantic plesiosaurs with large head, short neck, elongated mandibular symphysis, jaws provided with powerful carinated teeth sometimes 25 centimeters long, and with limb-girdles similar to those of *Plesiosaurus.* The genus occurs in rocks from the Lias to the Upper Jura, in Europe and India.

plique-à-jour (plēk-ä-zhör'), *n.* [F., 'open-work layer.'] A variety of enameling in which the cloisons were not attached to a foundation, but formed a grating into the interstices of which the enamels were melted.

> By *plique-à-jour* we mean filigree-work executed in gold or silver, and filled up with transparent enamels. It existed in the time of Benvenuto Cellini.
> *Henry Cunynghame*, Art-Enamelling, p. 95.

plissé (plẹ-sā'), *a.* [F., pp. of *plisser*, plait, shirr, < *pli*, pl. *plis*, a plait, ply. See *ply.*] Gathered or shirred: said of dress-goods, etc.

plocamobranchiate (plok″a̤-mọ-brang'ki-āt), *a.* Relating to, or having the characteristics of, the *Plocamobranchia;* having rigid filamentary branchial processes, as some gastropods.

plombière (plom-bi-ãr'), *n.* [F., < *plomb*, lead.] An ice-cream in which fruit is frozen.

plot1, *n.*—**Plot survey.** See ★*valuation survey.*—**Sample plot.** See ★*valuation area* and ★*experiment area.*—**Town plot**, an official plan or draft of the site of a town, with its streets, public parks, etc.

plot1, *v. t.* 4. To divide into plots, as a building-site.

> The acre is *plotted* into three building lots.
> *N. Y. Times*, June 23, 1898 (advt.).

plot3 (plot), *v. t.* [F. *peloter*, form into a ball, < *pelote*, a ball. See *pellet* and compare *platoon.*] To press into cakes or balls, as soap.

ploteric (plọ-ter'ik), *a.* [Gr. *πλωτήρ*, a sailor, seaman, < *πλώειν*, sail, float, drift.] Drifting. In marine biology, ploteric organisms are those that drift passively with the current, as contrasted with those that direct their own movements through the water.

plotting-board (plot'ing-bōrd), *n.* *Milit.*, a drawing-board or -table, used in connection with a range-finder, on which the course of a towed target for sea-coast cannon practice, or of a hostile ship, is laid out and a later position predicted. *Jour. U. S. Artillery*, Nov.–Dec., 1903, p. 253.

plout3 (plout), *v. i.* [Origin obscure.] To fall with a splash or plump; plunge or splash in water. [Prov. Eng.] *N. E. D.*

plout3 (plout), *n.* [*plout*3, *v.*] A heavy fall of rain. [Prov. Eng.] *N. E. D.*

plow, *n.* 1. As to their manner of acting upon the soil, plows are either *turning-plows* (those most properly named 'plows'), or *shovel-plows.* They are, further, either *wheel-plows* or *swing-plows* (see *swing-plow*), according as the beam is or is not supported by a wheel; either *walking plows* or *riding plows* (see below); either *single-furrow, double-furrow*, or *multiple-furrow* (gang) *plows* (see *gang-plow*, under *plow*). Turning-plows are either *single-moldboard* (single-breasted), as most often, or *double-moldboard* (double-breasted) (see under *plow;* see also ★*middle-breaker*); and are either *pulverizing plows* (*stubble-plows*) (see under ★*plow;* see ★*scooter*1, 3), or *sod-plows* (which see). For other distinctions see under *plow* and ★*plow.* About the beginning of the nineteenth century English plows were still commonly made of wood, except the share and colter, other working parts being sheathed with sheet-iron. The beam and handles (*stilts*) and the clevis (*bridle, muzzle*) were somewhat as now; the left stilt, joined to the butt of the beam, descended from the latter to the sole, forming the *foot* or *heel;* the sole or slade (*chep*) was the horizontal basal timber; the *sheath* or *head* descended from the beam to the sole in front; the share (*sock*) was fitted upon a mandrel of the sheath or sometimes of the sole; the mold-board or breast (*turn-furrow, wrest*) was so secured to the sheath that its front edge was protected by it, while in the rear it was attached to the foot; the share was often developed into a horizontal cutting edge (*fin* or *feather*) and was then a *broad-finned, feathered*, or *winged sock;* a *mole* or *spear-head sock*, on the contrary, penetrated the soil without cutting the slice, and with this was sometimes used a *bastard colter*, a narrow blade forming a cutting edge for the sheath; land plates (forerunners of the *land-side*) were sometimes placed on the *land side* (that is, the side toward the yet unbroken ground) of the sole.

5. An arm and wooden mold-board, shod with leather, two of which in a gunpowder-incor-

porating mill serve to draw the mixture of niter, sulphur, and charcoal into the track of the heavy edge-runners.—**Breaking plow.** Same as *sod-plow.*—**Calf-tongue plow,** a small plow built on the general lines of a bull-tongue plow.—**Chilled plow,** a plow which has the point and edges of the share of chilled steel or of chill-hardened steel. It is made in many forms. **Digging plow,** a pulverizing plow. [England.]—**Double-breasted plow,** a double mold-board plow. [England.]—**Double-furrow plow.** Same as *double plow* (*a*).—**Multiple-furrow plow,** a gang-plow.—**One-way plow.** Same as *turn-wrest plow.*—**Pulverizing plow,** a turning-plow with steep concave mold-board, fitted to break up the furrow-slice, and thus adapted to stubble-land; a stubble-plow.—**Riding plow.** Same as *sulky-plow* (which see, under *plow*).—**Stump-jump plow.** Same as ★*stump-jumper.*—**Two-furrow plow.** Same as *double-furrow* ★*plow.*—**Walking plow,** any plow operated by the plowman on foot, as distinguished from a sulky-plow.

plow, *v. t.* 7. In *carp.*, to groove the edge of (a board) in tonguing and grooving.—8. To turn over (grain) in malting, so as to expose fresh surfaces to the air and equalize temperature. **To plow out.** (*b*) In *carp.*, see *to* ★*horse out.*

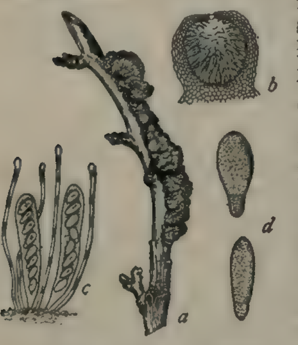
plow-grinding (plou′grīn″ding), *n.* The process of grinding the sides of the wire teeth of card-clothing so as to give them a chisel- or knife-edge. *Nasmith*, Cotton Spinning, p. 135.

plow-ground (plou′ground), *a.* Ground as it were by a plowing or grooving action, that is, ground between: said of card-clothing wire teeth that are ground on their sides by means of an emery disk which passes between them. *Taggart*, Cotton Spinning, I. 176.

plowing (plou′ing), *n.* [Also *ploughing*; < *plow*, *v.*, + *-ing*¹.] 1. The act of turning up earth with a plow; the cultivation of the ground by the plow: as, the *plowing* of new ground; the spring and fall *plowing.*—2. The making of furrows or grooves in anything. See *plow*, *v.*—**Crown-and-furrow plowing,** the process of so running the furrows that new water-furrows occupy the place of the crowns of old ridges or lands; cleaving. Compare ★*casting*, 13, and ★*gathering*, 6.—**Flat plowing,** plowing with flat furrows. See *flat* ★*furrow.*—**Lap-plowing,** plowing with lap furrows. See *lap* ★*furrow.*—**Rib-plowing.** Same as *ribbing*, 2.—**Subsoil-plowing,** plowing with a plow so formed as to stir the under layer of soil without bringing it to the surface; subsoiling.—**Trench-plowing,** plowing with a trench-plow, that is, one so modeled as to cut deep and to mix the upper and lower layers of soil.

plow-light (plou′līt), *n.* A light formerly maintained by husbandmen before certain images in some churches in England. The solicitation of money on Plow Monday (which see) was originally for the support of this light. *London Encyc.*, article *plough.*

Plowrightia (plou-rī′ti-ạ̈), *n.* [NL. (Saccardo, 1883), named for C. B. *Plowright*, an English mycologist.] A genus of pyrenomycetous fungi having the perithecia embedded in black stromata and the spores two-celled and hyaline or light yellow. About 20 species have been described. *P. morbosa* is a parasite which attacks plum- and cherry-trees and forms more or less extensive warty excrescences on the branches, called *black-knots.* See *black-knot*, 2, and ★*black-knot of the gooseberry.*



Plowrightia morbosa, on the cultivated Plum.

a, stroma of the fungus, one third natural size; *b*, perithecium with asci; *c*, asci and paraphyses; *d*, ripe ascospores: *b*, *c*, *d*, highly magnified.

plowter (plou′tėr), *v.* and *n.* Same as *plouter.*

pluck¹, *v.* I. *trans.* 6. In *geol.*, to pry off or tear away, as blocks of rock from the lee side of cliffs or projections, or more moderate slopes: said of the action of moving ice, as in glaciers. See ★*plucking.*

II. *intrans.* 1. To pull sharply, as if at the folds of a skirt: used with *at.*—2. In *geol.*, to break off easily in large pieces, as granite. See ★*plucking.*

plucking (pluk′ing), *n.* An act denoted by the verb *pluck*; specifically in *geol.*, the process by which blocks of bed-rock are torn from their ledges by moving ice. The term is applied especially to this effect on the downward slopes, where the dragging action of ice seems to be of importance, as indicated in the term. Plucking is the process involved in the head-ward extension of glacial valleys and of the excavation of cirques.

> Great stress is laid upon the excavating action of ice by the process of "*plucking*," in which "blocks of bed-rock, being partly surrounded by the ice, are forced from their bearings and rolled or slidden forward" (p. 203).
> *Nature*, July 7, 1904, p. 218.

Close plucking, in *tea-growing*, the system of picking the shoots while very young, leaving no new growth except the *jhannum*, or sheath-leaf, at the base of the shoot. Except late in the season this results in weakening the bushes.—**Coarse plucking,** in *tea-growing*, a mode of picking in which larger leaves are taken than in fine ★plucking (which see).—**Fine plucking,** the picking of the unexpanded terminal leaf and first three young leaves for the finest grades of tea. Sometimes only part of a given leaf is taken.—**Hard plucking,** in *tea-growing*, the policy of picking for the largest immediate returns.

plucky, *a.* 2. In *photog.*, clear and bright: said of a negative or print. Gelatinobromide papers for contact-printing are so designated.

> It is not generally understood that the drying of a negative has a great influence upon its character. If it is dried as quickly as possible the result is a *pluckier* negative richer in contrasts.
> *Woodbury*, Encyc. Dict. of Photog., p. 297.

3. Capable of being plucked; fracturing easily along certain planes: as, a *plucky* rock. See ★*plucking.*

plug, *n.* 13. In *geol.*, a cylindrical mass of lava, a remnant of the last eruption from a volcanic vent, which chilled in the conduit and plugged it up. See *neck*, 6 (*k*), and ★*stock*¹, 35.

> Mount Kenya is an ancient, much-eroded volcano; the highest peak is formed of the rocks of the central *plug.*
> *Geog. Jour.* (R. G. S.), XVI. 249.

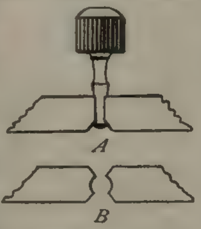
14. A book that does not sell at all. [Booksellers' slang.]—15. In *stone-cutting*, a wedge which is driven into a hole that has been drilled in a stone for the purpose of splitting it. For large pieces of stone a series of holes is drilled and a wedge or plug driven into each.—16. In a steam-engine: (*a*) A plug-rod; a plug-frame. (*b*) A safety-plug; a fusible plug inserted in a boiler and made of some alloy which will melt if the temperature of the metal plate of the shell rises above a certain point by reason of low water.—17. Same as ★*peg*, 7. [Local, U. S.]—**Boat-plug** (*naut.*), a small plug used to stop up the drainage-hole in the bottom of a boat.—**Dittrich's plugs,** inspissated yellowish masses of the size of a small bean, found sometimes in the expectorated matter in putrid bronchitis.—**Navy plug,** a plug tobacco prepared for the British navy, of American material known as *navy leaf*, at present consisting largely of white Burley filler.

plug-and-knock-down (plug″and-nok′doun), *n.* In *lumbering*, a device for fastening boom-sticks together, in the absence of chains. It consists of a withe secured by wooden plugs in holes bored in the booms.

plug-box (plug′boks), *n.* In *mining*, a wooden pipe to carry off water while putting the water-tight casing to a shaft. *N. E. D.*

plug-contact (plug′kon″takt), *n.* In *elect.*, a contact for closing the circuit between neighboring blocks of a resistance-box, which consists of a conical plug fitting into a tapered hole between the blocks.

> The contacts are an old form of the Cambridge Instrument Company's type of *plug-contact*, the cheeks being made of a special white alloy held in round Doulton-ware cups.
> *Rep. Brit. Ass'n Advancement of Sci.*, 1903, p. 36.



A shows the plug in place, closing the electric circuit between two contiguous blocks; *B*, the usual form of the hole as seen from above.

plug-draining (plug′drā″ning), *n.* A system of draining heavy clay land, in which plugs or blocks of wood are placed at the bottom of the cutting to keep the channel open, and are withdrawn after the cutting has been filled up. *N. E. D.* See *plug* ★*drain.*

plug-frame (plug′frām), *n.* A plug-rod; a slotted rod attached to the walking-beam of a Cornish or other slow-moving engine, and so arranged that the ends of the slot hit the valve-handle and control the admission and exhaust of steam to and from the cylinder. *The Engineer* (London), Oct. 23, 1903, p. 404.

plug-gage (plug′gāj), *n.* A solid cylindrical gage or standard for measuring the size of a hole.

plugging (plug′ing), *n.* 1. The act of stopping or occluding a cavity or opening by means of a plug; as applied to an artery, occlusion of the vessel by means of a blood-clot or thrombus. *U. S. Dept. of Agr.*, Rep. on Diseases of the Horse, 1903, p. 203.—2. Wood or metal from which plugs or bungs are to be made.—3. Plugs collectively; specifically, wooden pins inserted in brick- or stonework, to which battens are nailed.—4. The act of testing a melon or a cheese by taking a plug from it. [Local, U. S.]—5. The act of hitting with a ball or bullet. [Local, U. S.]—6. Hard study; cramming. [Slang.]

plug-key (plug′kē), *n.* In *elect.*, a circuit-closing key consisting of a conical plug of metal inserted between metallic blocks. See cut at ★*plug-contact.*

plug-pedal (plug′ped″ạl), *n.* A pedal or a rod ending in a disk or button head, which is pushed with the foot to operate some mechanism, such as a brake.

plug-piston (plug′pis″tọn), *n.* A solid piston; a piston having no packing-rings, and usually longer than is common in the direction of its motion, as related to its diameter.

plug-riots (plug′rī″ọtz), *n. pl.* A name given to certain riotous proceedings about 1842, when cotton-mills in Lancashire were stopped from working by the removal or drawing of a few bolts or 'plugs' in the boilers, so as to prevent steam from being raised. *N. E. D.*

plug-tip (plug′tip), *n.* A rounded apical prolongation of the leaves of *Musa* and some other monocotyledons which are convolute in the bud, regarded by Goebel (the author of the term) as serving to close up the bud. This tip also fills up the space formed by the convolution of the leaf next above. *K. E. Goebel* (trans.), Organography of Plants, II. 309.

plug-tray (plug′trā), *n.* In *ordnance*, a tray on which the breech-plug of a gun travels in and out.

plum¹, *n.* 7. In southern New South Wales, a handsome timber-tree, *Eucryphia Moorei*, having a clear, moderately hard wood of a light brown color. It is often called *acacia*, or *acacia-plum*, since, when not in flower, it resembles some of the larger species of that tree.—**Acacia-plum.** Same as ★*plum*¹, 7.—**Batoko plum,** in southern Africa, a small tree, *Flacourtia Ramontchi*, widely distributed over southern Asia and Africa; or its edible fruit, which is round, sweet, and of the size of a plum. See *Flacourtia*, and *East Indian plum* under *plum*¹.—**Bullace-plum.** See *bullace.* The Southern bullace-plum is *Prunus umbellata*, called also *black sloe* and *hog-plum.*—**Burdekin plum,** a Queensland tree of the cashew family, *Pleiogynium Solandri*, with a hard dark brown wood resembling black walnut.—**Canada plum.** (*b*) A species, *Prunus nigra*, formerly confused with the common wild plum, *P. Americana*, but differing in its less globose orange-red fruit and other details. It is chiefly Canadian, but reaches Georgia. The wild fruit is gathered, and it is the source of some cultivated varieties. To this species mainly belongs also the name of *horse-plum.* See *horse-plum*, 2.—**Cape plum,** the wild plum, *Pappea Capensis*, of South Africa. See *Pappea.*—**Cashmere plum,** *Prunus insititia*, cultivated in Cashmere and Bokhara for its fruit.—**Garden wild plum,** *Prunus hortulana*, a species native from Illinois southward, distinguished from the common wild plum only in recent times. It is the source of many horticultural varieties, of which the wild-goose plum is the best known.—**Goa plum.** Same as the *gray plum* (which see, under *plum*¹).—**Gray plum.** (*b*) In Australia: (1) A large tree of the ebony family, *Diospyros pentamera*, the tough, durable, reddish wood of which is used for tool handles. (2) The caper-tree, *Capparis nobilis.*—**Hog-plum.** (*a*) See *hog-plum.* (*b*) See *bullace-*★*plum.* (*c*) A low species, *Prunus injucunda*, with a very bitter fruit, found in Georgia and Alabama.—**Horse-plum.** (*a*) See *horse-plum.* (*b*) See *Canada* ★*plum.*—**Indian plum.** Same as *East Indian plum* (which see, under *plum*¹).—**Munster plum,** a potato.—**Native plum,** in Australia: (*a*) Same as *black* ★*apple.* (*b*) The *Port Arthur plum* (which see, under *plum*¹).—**Ogeeche plum.** Same as *Ogeeche lime* (which see, under *lime*³).—**Pigeon-plum.** (*c*) In the Bahamas, any one of three species of *Coccolobis*, *C. obtusifolia*, *C. retusa*, and *C. Wrightii.*—**Plum canker.** See ★*canker.*—**Plum-kernel oil.** See ★*oil.*—**Plum leaf-beetle.** See ★*leaf-beetle.*—**Plum-leaf blister.** See ★*blister.*—**Plum plant-louse.** See ★*plant-louse.*—**Sand-plum,** *Prunus Watsoni*, a shrub of sandy lands from Nebraska to Arkansas.—**Sow-plum,** *Prunus normalis*, a species of the southwestern United States.—**White plum,** the Australian ironwood, *Notelæa ligustrina.*

plum, *n.*, *a.*, *adv.*, *v.* A simplified and former spelling of *plumb*².

pluma² (plö′mä), *n.* [Sp. *pluma*, < L. *pluma*, a feather. See *plume.*] A name in the West Indies of a fish, *Calamus calamus.*

plumage, *n.*—**Eclipse plumage,** a dull-colored plumage, usually resembling that of the female, worn for a short time by a brightly colored male bird.

> The *Eclipse plumage* lasts for several weeks till the quills have been renewed.
> *Ogilvie Grant*, Guide to the Gallery of Birds, Brit. Mus., p. 63.

plumagery (plö′māj-ri), *n.* [*plumage* + *-ry.*] The preparing of feathers for use in the arts; feather-working.

plum-aphis (plum′ā″fis), *n.* An aphis, *Aphis prunifolii* Fitch, a species that infests the under sides of plum-leaves, especially in the late spring and early summer.

plumasite (plū′ma-sīt), *n.* [*Plumas* county, California, + *-ite*^{2}.] In *petrog.*, a phaneric igneous rock of variable grain, composed of oligoclase with about 16 per cent. of corundum. *Lawson*, 1903.

plumb^2, *v.* **I.** *trans.* **5.** In *plumbing*, to seal an opening by closing it with solder or other soft metal.

II. *intrans.* To coincide in direction with the plumb-line; be vertically above or below.

> According to them the centre of gravity *plumbs* behind the hip, in front of the knee and through the ankle-joint. Meyer claims that the centre *plumbs* in front of the ankle-joint. *Buck*, Med. Handbook, III. 857.

plumbageous (plum-bā′jẹ-us), *a.* Same as *plumbaginous*. *Annals and Mag. Nat. Hist.*, May, 1901, p. 426.

plumbagin (plum-bā′jẹn), *n.* [Irreg. < *Plumbago*, 2, + *-in*^{2}.] A name given by Dulong to ophioxylin, through an error in identifying the plant from which he obtained the compound.

plumbate (plum′bāt), *n.* [L. *plumbum*, lead, + *-ate*^{1}.] A compound which may be considered as a product of the union of lead dioxid with the oxid of a more basic or electropositive metal: as, potassium *plumbate*, K_2PbO_3 or $K_2O.PbO_2$. Orthoplumbates and metaplumbates are known.

Plumbic dioxid. Same as ⋆*lead dioxid.*

plumbiferous, *a.* **2.** Containing lead: applied, in *ceramics*, to a glaze in which one of the principal ingredients is lead. See *lead-glaze.*

plumbisolvent (plum-bi-sol′vent), *a.* [L. *plumbum*, lead, + E. *solvent.*] Dissolving lead.

plumbite (plum′bīt), *n.* [L. *plumbum*, lead, + *-ite*^{2}.] A rather unstable compound of lead monoxid, which usually acts as a strongly basic oxid, with a still more basic or electropositive metallic oxid: as, potassium *plumbite*, K_2PbO_2 or $K_2O.PbO$.

plum-bladder (plum′blad″ėr), *n.* Same as ⋆*plum-pocket.* See ⋆*Exoascus.*

plumbo-. [L. *plumbum*, lead.] An element in names of minerals indicating the presence of lead.

plumbojarosite (plum″bọ-ja-rō′sīt), *n.* [L. *plumbum*, lead, + E. *jarosite.*] A variety of jarosite which contains lead: from New Mexico. See ⋆*jarosite.*

plumboresinite (plum-bọ-rez′i-nīt), *n.* [L. *plumbum*, lead, + *resina*, resin, + *-ite*^{2}.] Same as *plumbogummite.*

plumbosolvency (plum-bọ-sol′ven-si), *n.* [*plumbosolven(t)* + *-cy.*] Capability of dissolving lead, as in the action of certain natural waters upon the metal of pipes used for their transmission. [Rare.]

> Indeed, the methods of counteracting *plumbo-solvency* in peaty water which are adopted in the moorland districts consist in neutralising the acids in the water with carbonate of soda, with carbonate of lime, or with slaked lime. *Nature*, March 26, 1903, p. 498.

plumbosolvent (plum-bọ-sol′vent), *a.* [L. *plumbum*, lead, + *solvens*, solvent.] Capable of dissolving lead, as water transmitted through a leaden pipe or stored in a lead-lined cistern. [Rare.]

> Further, a decrease of *plumbo-solvent* power is noticed when these acids are reduced in quantity by various natural causes, or by artificial neutralisation. *Nature*, March 26, 1903, p. 498.

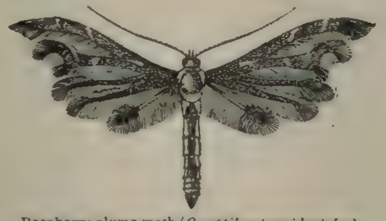
plumbous (plum′bus), *a.* [L. *plumbosus*, containing lead, < *plumbum*, lead. See *plumb*, *n.*, and *-ous.*] In *chem.*, containing lead as a constituent; more specifically, containing lead with apparently dyad valence: as, *plumbous* chlorid, $PbCl_2$, as distinguished from plumbic chlorid, $PbCl_4$.

Plumbum corneum ('horny lead'), in *chem.*, an old name for lead dichlorid, $PbCl_2$, on account of its solidifying from fusion as a translucent mass of tough, horn-like texture. Also, in English form, *horn-lead.*

plumcot (plum′kot), *n.* [*plum* + (*apri*)*cot.*] A name for a class of hybrids between the plum and the apricot, originated by Luther Burbank.

> They are new creations in the fullest sense of the term, like Burbank's *plumcots.* *Science*, Feb. 13, 1903, p. 263.

plume-grass (plöm′gràs), *n.* Any grass of the genus *Erianthus*, the name alluding to the very showy feathery panicles of several species; woolly beard-grass. For the ornamental *E. Ravennæ*, see *Erianthus.* *E. saccharoides*, of the southern United States, also deserves culture for decorative purposes. *E. alopecuroides*, found from New Jersey to Texas on the coast plain, is the *spiral-awned* or *fox-tail plume-grass.*



Raspberry plume-moth (*Oxyptilus tenuidactylus*).
About four times natural size.

plume-moth, *n.*— **Gartered plume-moth**, an American pterophorid moth, *Oxyptilus periscelidactylus*, whose larvæ web together the leaves of the grape-vine.— **Raspberry plume-moth**, an American pterophorid moth, *Oxyptilus tenuidactylus*, of wide distribution in the United States. Its larvæ web the leaves of the raspberry and other plants.

plumeous (plö′mẹ-us), *a.* [L. *plume(us)*, downy, + *-ous.*] Of the nature of down; downy; feathery.

plumiform (plö′mi-fôrm), *a.* [L. *pluma*, feather, + *-form.*] Having the form of a feather; feather-shaped.

plum-knot (plum′not), *n.* Same as *black-knot*, 2.

plummer, plumming. Simplified spellings of *plumber, plumbing.*

plum-moth (plum′môth), *n.* Any one of several moths whose larvæ feed on the foliage of the plum, as the tineid, *Enarmonia* (*Grapholitha*) *prunivora*, or lesser apple-worm, the mottled plum-tree moth, *Apatela superans*, the geometrid *Ania limbata*, the plum-tree sphinx, and the plum-underwing. See cut under *Grapholitha.*

plumosite (plö′mọ-sīt), *n.* [*plumose* + *-ite*^{2}.] Same as *jamesonite.*

plumpen (plum′pẹn), *v. t.* [*plump*^{1}, *a.*, + *-en.*] To make plump; swell out. *N. E. D.*

plumper, *n.* **4.** A tannage which gives leather weight or thickness. *Flemming*, Practical Tanning, p. 375.

plum-pocket (plum′pok″et), *n.* The disease of plums due to *Exoascus Pruni*, which causes the young fruit to swell and dry up. It may also attack the leaves and stems.

plum-pudding, *n.* **2.** See the extract.

> A muscular, fibrous substance known as "*plum pudding*" permeates the blubber of the tongue of these two species of whales [bowhead and right whales], extending longitudinally through the central part and in greater abundance near the roots. Most of it is utterly worthless and is thrown overboard when detached from the fat of the tongue. At times, however, when the fat predominates, the "*plum pudding*" is saved and boiled out with the tongue or the refuse of the whale. *Sci. Amer. Sup.*, March 5, 1904, p. 23551.

plum-rust (plum′rust), *n.* See ⋆*rust*^{1}.

plum-scab (plum′skab), *n.* See ⋆*scab.*

plum-sphinx (plum′sfingks), *n.* Same as *plum-tree* ⋆*sphinx.*

plum-tree, *n.* **2.** In Queensland, a tree of the cashew family, *Buchanania mangoides*, with close-grained, tough, pinkish wood.— **Mottled plum-tree moth.** See ⋆*moth*^{1}.— **Plum-tree sphinx.** See ⋆*sphinx.*

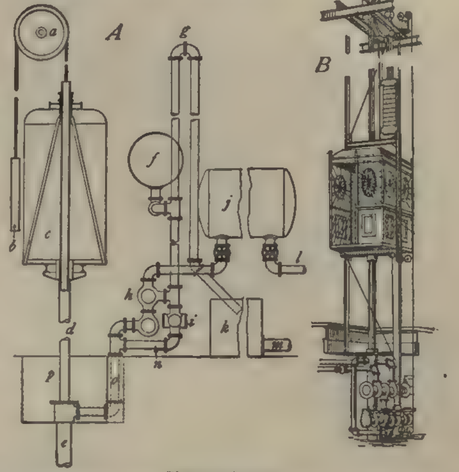
Plumulites (plö-mụ-lī′tēz), *n.* [NL., < L. *plumula*, dim. of *pluma*, feather, + *-ites*, E. *-ite*^{2}.] A generic term applied by Barrande to a Silurian cirriped to which Woodward had previously applied the name *Turrilepas.*

plum-underwing (plum′un″dėr-wing), *n.* See ⋆*underwing.*

plum-wart (plum′wârt), *n.* Same as *black-knot*, 2.

plunge, *v. t.* **4.** In *hort.*, to sink (a pot or box containing a plant) in the ground to the rim or edge. Pots of greenhouse plants are often plunged in the open in warm weather, both for the good of the plants and for their effect in ornamentation.— **5.** To turn over (the telescope of a surveyor's transit or theodolite) in a vertical plane, making the object-glass pass underneath. In transiting the telescope it may pass either above or below.— **6.** In *geol.*, to dip under the surface: used in reference to such structural features as folds where, unless the axis is perfectly horizontal, one end pitches below the horizon or general surface. *Chamberlin and Salisbury*, Geol., I. 488.

plunger-elevator (plun′jėr-el″ẹ-vā-tọr), *n.* A form of elevator or lifting apparatus in which the cage or platform is borne on the top of a long column of steel or iron, which can be slid up and down through the top of a hydraulic cylinder by water-pressure in the latter. The cylinder can be let down into the ground the necessary distance, and when water under pressure is let into it, the plunger is forced upward, carrying up the load at its top. The column is therefore always under the cage, and, except from breakage of the piping or failure of the valves, the fall of the cage is only a remote possibility. The cage and part of the weight of the plunger are counterweighted, and in high lifts the failure of a counterweight cable might cause accident, as well as the fracture of the plunger. In this latter case the danger would be from the cage being projected upward.



Plunger-elevator.
A, diagram of parts; *B*, general view: *a*, overhead pulley; *b*, counterweight; *c*, cage; *d*, plunger; *e*, hydraulic cylinder; *f*, equalizing or auxiliary discharge-tank; *g*, exhaust- or discharge-pipe; *h*, *i*, controlling valves; *j*, receiving water-tank, from pump; *k*, receiving-tank for discharge or exhaust water; *l*, delivery-pipe from pressure-pump; *m*, suction-pipe to pump; *n*, by-pass pipe from pressure to exhaust sides; *o*, thoroughfare pipe between valves and pressure-cylinder; *p*, pit below floor-level, to act also as air-cushion.

plunger-pump, *n.*— **Hollow-plunger pump**, a plunger-pump having a hollow plunger to save weight and wear.

plunk (plungk), *v.* [An imitative variant of *plump*^{2} (compare *bump*^{2}, *hunk*^{2}, *hump*, etc.). In some uses it is directly imitative.] **I.** *trans.* **1.** To strike suddenly, with a dull sound; knock; bang: as, they *plunked* him with stones. [Slang.]— **2.** To knock (away); knock (from).

> One may knock, pop . . . *plunk* . . . the [middle marble] from the "taw." *Dialect Notes*, 1890, p. 24.

3. To shoot; fill full of 'lead' (missiles). [Slang.]

> Instead of using old family shot-guns and *plunking* each other they fought four rounds with bare knuckles. *Boston Transcript.*

4. To pluck (a stringed instrument) so as to produce a low or deep sound; in general, twang.

> An' dey *plunked* de banjo hard,
> An' dey *plunked* de banjo fine.
> *Negro Song*, MS.

II. *intrans.* **1.** To make or emit an abrupt and usually heavy sound: especially used of the rough sounding of a stringed instrument, and sometimes strung out with arbitrary variations (as in the quotation).

> Vulgar tunes that bring the laugh that brings the groan —
> . . . .
> With my "*Plunka*-lunka-lunka-lunka-lunk !"
> *R. Kipling*, Song of the Banjo, st. 12.

2. To croak or cry as a raven. [Scotch.] *N. E. D.*— **3.** To plunge or drop down abruptly. *N. E. D.*

plunk (plungk), *n.* [*plunk*, *v.* For the slang use (def. 3) compare the similar use of *dump*^{2}, *n.*, 2.] **1.** A hard, dull blow: as, to hit one a *plunk.* [Slang.]— **2.** A twang; a twanging sound: as, the *plunk-plunk* of the banjo.— **3.** A dollar. [U. S. slang.]

plunk (plungk), *adv.* [Elliptic use of *plunk*, *v.* or *n.* See ⋆*kerplunk.*] Suddenly; plump: as, he came *plunk* against the half-open door. [Colloq.]

pluperfect, *a.* **2.** In *music*, augmented: said of intervals.

plur. [*l. c.* or *cap.*] An abbreviation (*a*) of *plural*; (*b*) of *plurality.*

pluralism, *n.* **3.** The doctrine that there are as many distinct and separate worlds as there are minds. See the extract.

> The resulting conception would be that of a *pluralism*. Instead of a single continuous world, a universe, we should have as many little worlds as there are minds.
> *C. A. Strong*, Why the Mind has a Body, p. 252.

pluralist, *n.* **2.** An advocate of the theory that the human races have developed from a number of ancestral forms: opposed to *monogenist*.—**3.** In general, one who recognizes a plurality, as of causes, reals, etc.

> Among the *pluralists* no uniform basis of classification has been established. Those who rely strictly upon the morphology of the human malarial parasites rather uniformly agree upon the existence of three species—quartan, tertian, and æstivo-autumnal.
> *Jour. Exper. Med.*, March 25, 1901, p. 483.

pluralistical (plö-ra̤-lis'ti-ka̤l), *a.* Same as *pluralistic*.

pluralistically (plö-ra̤-lis'ti-kal-i), *adv.* In a pluralistic way; in a way that takes into account the existence of several (causes, reals, etc.).

> It ignores all psychological experiences in which the inworkings of a transcendent moral person are known—experiences construed now monistically and now *pluralistically*.
> *Jour. Philos., Psychol. and Sci. Methods*, Aug. 4, [1904, p. 442.

pluranium (plö̦-rā'ni-um), *n.* [NL., < L. *plus* (*plur-*), more (*plures*, several), + *-an-ium*, as in *uranium*, *titanium*, etc.] A name given by Osann to a supposed new chemical element which he thought he had discovered in Russian native platina. He found afterward that it was merely a mixture of already known substances.

plurannual (plö̦-ran'ū̦-a̤l), *a.* and *n.* [L. *plures*, many, several, + *annus*, year: see *annual*.] **I.** *a.* Noting a plant which is normally perennial or biennial, but which becomes annual in a short-season climate because killed by frost, as castor-bean, scarlet-runner bean. See ★*annual*, 3. [Rare.]

> The tomato is often cited as an example, for it is perennial or at least *plur-annual* in its original home.
> *L. H. Bailey*, Survival of the Unlike, p. 295.

II. *n.* A plurannual plant.

plurative (plö'ra-tiv), *a.* [L. *plurativus*, plural.] **1**†. Plural.—**2.** In *logic*, noting a judgment in which more than half, but not all, of the subject is taken. *Atwater*.

pluricarinate (plö-ri-kar'i-nāt), *a.* [L. *plus* (*plur-*), more, + E. *carinate*.] Having several ridges; specifically applied to the scales of reptiles. *Proc. Zool. Soc. London*, 1897, p. 198.

pluricarpellary (plö-ri-kär'pe-lā̤-ri), *a.* [L. *plus* (*plur-*), more, + *carpellary*.] In *bot.*, relating to or having more than one carpel.

> The *pluricarpellary* origin of the pistil in the Lauraceæ.
> *Nature*, Oct. 10, 1907, p. 608.

pluricentral (plö-ri-sen'tra̤l), *a.* [L. *plus* (*plur-*), more, + *centr*(*um*) + *-al*^{1}.] Having more than one center or nucleus.

pluricipital (plö-ri-sip'i-ta̤l), *a.* [L. *plus* (*plur-*), more, + *caput* (*capit-*), head, + *-al*^{1}.] In *bot.*, having more than one head, as a root.

pluricuspidate (plö-ri-kus'pi-dāt), *a.* [L. *plus* (*plur-*), more, + E. *cuspidate*.] Having many cusps, as the tooth of an insectivore; multicuspidate.

plurifetation (plö″ri-fē̦-tā'sho̤n), *n.* [L. *plus* (*plur-*), more, + E. *fetation*.] The condition of bearing or being pregnant with more than one embryo.

plurinuclear (plö-ri-nū'klē̦-ä̤r), *a.* [L. *plus* (*plur-*), more, + *nucleus*, nucleus, + *-ar*^{3}.] Having several nuclei; multinuclear or multinucleate; plurinucleate. *Philos. Trans. Roy. Soc.* (London), 1902, ser. B, p. 364.

pluriovular (plö-ri-ō'vū̦-lä̤r), *a.* [L. *plus* (*plur-*), more, + E. *ovule* + *-ar*^{3}.] Containing more than one ovule: as, a *pluriovular* Graafian follicle.

pluripersonal (plö-ri-pėr'so̤n-a̤l), *a.* [L. *plus* (*plur-*), more, + *persona*, person, + *-al*^{1}.] Supposing several persons: as, a *pluripersonal* hypothesis. *Southey*, Doctor, interchap. xiii.

pluripolar (plö-ri-pō'lä̤r), *a.* [L. *plus* (*plur-*), more, + *polus*, pole, + *-ar*^{3}.] In *biol.*, having several poles: said of ganglion-cells and certain karyokinetic spindles in abnormally dividing cells known as *pluripolar mitoses*. *Nature*, Feb. 4, 1904, p. 320.

plurisegmental (plö″ri-seg-men'ta̤l), *a.* [L. *plus* (*plur-*), more, + E. *segment* + *-al*^{1}.] Having or referring to several segments. *Philos. Trans. Roy. Soc.* (London), ser. B, 1898, p. 152.

pluriserially (plö-ri-sē'ri-a̤l-i), *adv.* In several series.

plurivariant (plö-ri-vā'ri-a̤nt), *a.* [L. *plus* (*plur-*), more, + E. *variant*.] In *phys. chem.*, having a variance equal to three or more. The variance V of a chemical system is expressed by the equation $V = C + 2 - \phi$, where C is the number of independent components, and ϕ is the number of phases in which the system may exist.

plurivore (plö'ri-vōr), *n.* [L. *plus* (*plur-*), more, + *vorare*, eat, devour.] A parasitic fungus which is capable of infecting several different host-plants.

plurivorous (plö̦-riv'ō̦-rus), *a.* [L. *plus* (*plur-*), more, + *vorare*, eat, + *-ous*.] In *bot.*, living upon various hosts. said of parasites. See ★*univorous*.

Plus number. Same as *positive* ★*number*.

plush, *n.*—**Velvet plush**, a short-piled plush fabric.

plush (plush), *v. i.* [*plush*, *n.*] To crush, so as to resemble the surface of plush: said of velveteen and other textiles with a long nap. [Colloq.]

> Velveteen *plushes* for skirts, but it makes nice blouses.
> *The People* (London), Oct. 8, 1905.

plusiid (plö'si-id), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Plusiidæ*.

II. *a.* Having the characters of or belonging to the family *Plusiidæ*.

plusquamperfect (plus-kwam-pėr'fekt), *a.* [NL. *plusquamperfectus*, L. *plus quam perfectus*, 'more than perfect.'] In *gram.*, same as *pluperfect*.

pluteal (plö'tē̦-a̤l), *a.* [*plute*(*us*) + *-al*^{1}.] Of or pertaining to a pluteus.

plutean (plö'tē̦-an), *a.* Same as ★*pluteal*.

plutellid (plö̦-tel'id), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Plutellidæ*.

II. *a.* Having the characters of or belonging to the family *Plutellidæ*.

plutocratical (plö-tō̦-krat'i-ka̤l), *a.* Same as *plutocratic*.

plutodemocracy (plö″tō̦-dē̦-mok'ra̤-si), *n.* [Gr. πλοῦτος, wealth, + E. *democracy*.] A democracy controlled by plutocrats.

plutolatry (plö̦-tol'a̤-tri), *n.* [Gr. πλοῦτος, wealth, + λατρεία, worship.] Worship of wealth. *Lowell*, Latest Lit. Essays, p. 157. *N. E. D.*

plutomania (plö-tō̦-mā'ni-ä̤), *n.* [Gr. πλοῦτος, wealth, + E. *mania*.] A mad desire for wealth; specifically, a form of insanity characterized by the delusion of wealth.

plutonometamorphism (plö″tō̦-nō̦-met-a̤-môr'fizm), *n.* [*pluton*(*ic*) + *-o-* + *metamorphism*.] In *geol.*, very deep-seated metamorphism, such as would take place far down in the earth, under great pressure and at high temperature. *Geikie*, Text-book of Geol., p. 765.

plutonomic (plö-tō̦-nom'ik), *a.* [*plutonom*(*y*) + *-ic*.] Of or pertaining to plutonomy or the science of wealth.

plutonomy (plö̦-ton'ō̦-mi), *n.* [Gr. πλοῦτος, wealth, + νόμος, law.] The science of wealth or riches.

> With regard to his [Ruskin's] economic and social ideas there is far less general concurrence, though the years that have passed since Unto this Last appeared have seen the practical overthrow of the rigid *plutonomy* which he denounced.
> *Encyc. Brit.*, XXXII. 333.

Pluvial period. See ★*period*.

pluviogram (plö'vi-ō̦-gram), *n.* [L. *pluvius*, rain, + Gr. γράμμα, a writing.] A record made by a pluviograph.

pluviographic (plö″vi-ō̦-graf'ik), *a.* [*pluviograph* + *-ic*.] Of or pertaining to the pluviograph or self-recording rain-gage; given by or derived from the pluviograph: as, a *pluviographic* record.

pluviography (plö-vi-og'ra̤-fi), *n.* [L. *pluvius*, rain, + Gr. -γραφια, < γράφειν, write.] The method of recording rainfall; the invention and study of pluviographs and pluviograms.

Pluviometric coefficient. See ★*coefficient*.

pluviosity (plö-vi-os'i̤-ti), *n.* [L. *pluvios*(*us*), rainy, + *-ity*.] The condition or character of being rainy; in *meteor.*, the condition of the climate as to rainfall; the pluviometric coefficient of Raulin, or the actual rainfall for any interval of time, expressed as a fraction of an ideal uniform distribution of rain; the normal rainfall for any month divided by one twelfth of the normal rainfall for the year.

Plymouth porcelain. See ★*porcelain*^{1}.

Plynteria (plin-tē'ri-ä̤), *n. pl.* [Gr. Πλυντήρια, neut. pl. of πλυντήριος, of or for washing.] A festival of purification and atonement at Athens. The image of Pallas was stripped, and the clothes carried to the sea and washed. It occurred about the 21st to 25th of the month of Thargelion.

Pm. An abbreviation (*b*) of *premium*.

P. M. An abbreviation (*d*) of *Pacific Mail*; (*e*) of *Past Master*; (*f*) of *Past Midshipman*; (*g*) of *Paymaster*.

P. M. G. An abbreviation (*a*) of *Paymaster-General*; (*b*) of *Postmaster-General*.

pneomanometer (nē″ō̦-mā̤-nom'e-tėr), *n.* [Irreg. < Gr. πνεῖν (indic. πνέω), breathe, + E. *manometer*.] Same as *spirometer*.

pneum. An abbreviation (*a*) of *pneumatic*; (*b*) of *pneumatics*.

pneuma, *n.* **3.** In *theol.*, the spirit; the highest in man and the seat of the divine indwelling, as distinguished from the soul, the seat of the natural human life.

pneumadenia (nū-ma̤-dē'ni-ä̤), *n.* [Gr. πνεῦμα, air, wind, + ἀδήν, a gland.] The gas-secreting thick epithelium in the basal part of the pneumatocyst of the *Physalidæ*.

pneumadrome (nū'ma̤-drōm), *n.* [Gr. πνεῦμα, wind, + -δρομος, < δραμειν, run.] A name given by J. M. Partridge to an air-ship invented by him in 1847. *F. Walker*, Aërial Navigation, p. 117.

pneumatelectasis (nū″ma̤-te-lek'ta̤-sis), *n.* [NL., < Gr. πνεῦμα, breath, + NL. *atelectasis*.] See *atelectasis*.

pneumatic. **I.** *a.* **5.** In *theol.*, relating to the spirit or pneuma, as distinguished from both soul and body; spiritual. See *soul* and *spirit*.—**Pneumatic broom**, an apparatus which employs compressed air in cleaning car-cushions, carpets, etc. In one form a nozle or air-brush at the end of a hose delivers a thin sheet of air under great pressure, which quickly removes dust and dirt from carpets and cushions; in another form the air is drawn into the hose through the nozle by an exhaust. The nozle, when moved over an object, as a carpet, sucks up all litter, dust, and dirt, and conveys them away through the pipes. Collecting- and settling-tanks separate the dirt from the air, so that it may be removed and burned.—**Pneumatic caisson**, a chamber either cylindrical or prismatic in shape used in sinking shafts or excavating for piers, tunnels, or foundations, made either of steel or iron or wood, and so constructed that a pressure of air can be maintained within it. This air-pressure is to be sufficient to keep out the influx of any water which may be met, by balancing the head of such water at the open or working face of the caisson. It requires an air-lock and device for hoisting, as in the standard design defined under caisson. See *caisson*, 3 (*c*).—**Pneumatic chipper.** See ★*chipper*^{1}.—**Pneumatic extension ladder.** Same as *aërial* ★*truck*.—**Pneumatic hammer, jack, sand-rammer, sand-sifter.** See ★*hammer*^{1}, etc.—**Pneumatic school.** See *pneumatic physicians*.—**Pneumatic shutter, stamp, tool, traction.** See ★*shutter*, etc.

II. *n.* **3.** An inflatable rubber tire.—**4.** A vehicle, as a bicycle, motor-cycle, or motor-car, fitted with inflatable rubber tires.

pneumatist (nū'ma̤-tist), *n.* [*pneumat*(*ic*) + *-ist*.] A pneumatic physician. See *pneumatic*.

pneumatized (nū'ma-tīzd), *a.* [Gr. πνεῦμα(τ-), breath, air, + *-ize*.] Provided with air-sacs or -chambers.

> It is noteworthy that some large reptilian Sauropsida . . . had *pneumatized* bones with air-cavities, while the bones of small reptiles are not pneumatic.
> *Smith*, Misc. Coll., IV. Quart. Ser., Pt. 3., p. 392.

pneumatocele (nū'ma̤-tō̦-sēl), *n.* [NL., < Gr. πνεῦμα(τ-), breath (for πνεύμων, lung), + κήλη, tumor.] A tumor or hernia containing air or gas; specifically, hernia of a portion of the lung through an intercostal space.

pneumatogenetic (nū″ma̤-tō̦-jē̦-net'ik), *a.* Same as ★*pneumatogenic*.

pneumatogenic (nū″ma̤-tō̦-jen'ik), *a.* [Gr. πνεῦμα(τ-), breath, + -γενής, -producing, + *-ic*.] Originating by the aid of the heated vapors which are given off by cooling and consolidating masses of eruptive rock: applied to those ores, as cassiterite, which are customarily associated with minerals containing fluorin, boron, etc.

pneumatogenous (nū-ma̤-toj'e-nus), *a.* Same as ★*pneumatogenic*.

pneumatogram, *n.* **2.** A despatch sent by means of a pneumatic tube. [Rare.]

> The pneumatic tube system had been in use for some time. . . . The development of the system was very rapid. It began with the despatch of *pneumatograms*, following the example of Paris.
> *W. T. Stead*, If Christ came to Chicago, v. 6.

pneumatograph (nū′ma-tọ-gråf), *n.* [Gr. *πνεῦμα(τ-)*, breath, + *γράφειν*, write.] An instrument for recording the respiratory movements. See ★*pneumograph.*

pneumatolitic (nū″ma-tọ-lit′ik), *a.* An erroneous spelling of ★*pneumatolytic.*

pneumatologic (nū″ma-tọ-loj′ik), *a.* Same as *pneumatological.*

pneumatolysis (nū-ma-tol′i-sis), *n.* [Gr. *πνεῦμα(τ-)*, air, breath (gas), + *λύσις*, dissolution.] The general process of the formation of minerals, and especially ores, along the contacts of intrusive igneous rocks with their walls, and through the agency of vapors or gases emitted by the molten magma.

The importance of *pneumatolysis* in forming ore deposits was emphasized by the discovery on this continent, soon after the publication of Lindgren's paper, of a number of economically important deposits, especially of copper, which would come within his definition of contact deposits. *Smithsonian Rep.*, 1904, p. 335.

pneumatolytic (nū″ma-tọ-lit′ik), *a.* [*pneumatolysis* (*-lyt-*) + *-ic.*] Belonging to or resulting from pneumatolysis or the action of gases contained in molten rock-magmas. The vapors or gases escaping from molten magmas may act as mineralizers in adjacent rocks and be a source of some ore deposits.

The greisen is an example of Prof. Vogt's "*pneumatolytic*" action in thoroughly acid rocks.
Nature, Feb. 26, 1903, p. 406.

Pneumatomachist (nū-ma-tom′a-kist), *n.* Same as *Pneumatomachian.*

Pneumatomachy (nū-ma-tom′a-ki), *n.* The beliefs of the Pneumatomachians.

pneumatonomy (nū-ma-ton′ọ-mi), *n.* [Gr. *πνεῦμα(-τ)*, spirit, + *νόμος*, law.] Same as *pneumatology*, 3.

pneumatophany (nū-ma-tof′a-ni), *n.* [Gr. *πνεῦμα(τ-)*, spirit, + *-φανεια*, < *-φανης*, < *φαίνεσθαι*, appear.] A manifestation of the Spirit or of spirits. *C. S. Briggs*, Address at Union Sem., New York, May, 1893.

pneumatophobia (nū″ma-tọ-fō′bi-ä), *n.* [Gr. *πνεῦμα(τ-)*, spirit, + *-φοβια*, < *φοβεῖν*, fear.] Fear or dislike of the spiritual.

pneumatophore, *n.* **2.** An apparatus for supplying a person with oxygen when in a place filled with bad or unwholesome air. It consists of a breathing-bag containing alkali in solid form to absorb the carbonic acid gas breathed out of the lungs, and two steel cylinders filled with oxygen at a pressure of about 1,800 pounds per square inch. The apparatus is used principally for entering coal-mines after explosions. Also *pneumatophor.*

In the earlier forms of the *pneumatophor*, the supply of oxygen was adjustable by the wearer of the apparatus, but now the appliance is fitted with an equilibrium valve, rendering the supply automatic and constant and requiring no attention whatever on the part of the wearer.
Sci. Amer. Sup., Feb. 27, 1904, p. 23545.

3. In *phytogeog.*, a lateral root, submerged or more often exposed to the air, at least periodically, so differentiated as to serve the purpose of respiration; a respiratory root. In submerged pneumatophores the aërating tissue often consists of aerenchyma; in projecting pneumatophores it consists of air-containing cork or cortex. Projecting pneumatophores assume an upright position, due to negative geotropism. An example is presented by the knees of the bald cypress. See *knee*, 3 (*d*).

pneumatorachis, pneumatorrhachis (nū-ma-tọ-rā′kis), *n.* [Gr. *πνεῦμα(τ-)*, air, + *ῥάχις*, spine.] The presence of air in the spinal canal.

pneumatotherapeutics (nū″ma-tọ-ther-a-pū′tiks), *n.* [Gr. *πνεῦμα(τ-)*, air, + E. *therapeutics.*] The employment of compressed or rarefied air in the treatment of disease. *Buck*, Med. Handbook, I. 131.

pneumatotherapy (nū″ma-tọ-ther′a-pi), *n.* Same as ★*pneumatotherapeutics.*

pneumaturgy (nū′ma-tėr-ji), *n.* [Gr. *πνεῦμα(τ-)*, spirit, + *ἔργον*, work, + *-y*³.] The control of a person by a spirit; possession. [Rare.]

I claim that this substitution of personality, or spirit-control, or possession, or *pneumaturgy*, is a normal forward step in the evolution of our race.
F. W. H. Myers, in Proc. Soc. Psychical Research, [XVII. 68.

pneumaturia (nū-ma-tū′ri-ä), *n.* [NL., < Gr. *πνεῦμα(τ-)*, air, + *οὖρον*, urine.] The passage of gas from the urethra during micturition.

pneumectasis (nụ-mek′ta-sis), *n.* [NL., < Gr. *πνεῦμα*, breath, + *ἔκτασις*, extension.] Pulmonary emphysema.

pneumic (nū′mik), *a.* [Irreg. < Gr. *πνεύμ(ων)*, lung, + *-ic.*] Pertaining to or derived from the lungs; noting an acid, present in the lungs of man and other mammals, which is supposed to set free the carbonic acid brought to the lungs in the form of carbonate of sodium.

pneumobacillus (nū″mọ-ba-sil′us), *n.*; pl. *pneumobacilli* (-ī). [NL., < Gr. *πνεύμων*, lung, + NL. *bacillus.*] Same as *Friedländer's* ★*bacillus.*

In 1880, Friedländer claimed that he had isolated such an organism, but the *pneumobacillus* then described appears to be inactive as compared with the pneumococcus, isolated by Fraenkel and Talamon. This latter organism, which is usually found in the sputum, is an encapsuled diplococcus. *Encyc. Brit.*, XXXI. 526.

pneumococcal (nū-mọ-kok′al), *a.* [*pneumococcus* + *-al*¹.] Pertaining to or resembling a pneumococcus. *Science*, April 8, 1904, p. 578.

pneumococcic (nū-mọ-kok′sik), *a.* [*pneumococc(us)* + *-ic.*] Same as ★*pneumococcal. Buck*, Med. Handbook, II. 770.

pneumococcous (nū-mọ-kok′us), *a.* Same as ★*pneumococcal.*

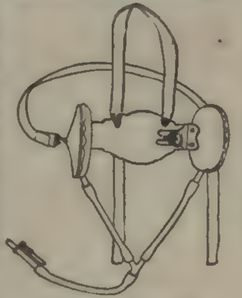
pneumococcus (nū-mọ-kok′us), *n.*; pl. *pneumococci* (-sī). [NL., < Gr. *πνεύμων*, lung, + NL. *coccus.*] A diplococcus which is regarded as the causative factor of acute croupous pneumonia. Also termed *diplococcus pneumoniæ* or *Fraenkel's pneumococcus.* See ★*diplococcus.*

The relationship of the *pneumococcus* and the meningococcus from an epidemiological standpoint.
Med. Record, Feb. 7, 1903, p. 236.

pneumodynamics (nū″mọ-dī-nam′iks), *n.* [Gr. *πνεῦμα(τ-)*, air, + E. *dynamic(s).*] The dynamics of air or gases; pneumatics.

pneumoëmpyema (nū-mọ-em-pi-ē′mä), *n.* [Gr. *πνεῦμα(τ-)*, air, + NL. *empyema.*] In *pathol.*, empyema characterized by the presence of gas.

pneumograph, *n.*—**Fitz pneumograph.** Same as *Harvard* ★*pneumograph.*—**Harvard pneumograph,** in *physiol.* and *psychophys.*, a simple form of pneumograph, originally devised by Marey, but given up by him in favor of a tambour-pneumograph. It consists of a stout spiral spring, incased in rubber tubing, from the one end of which a length of smaller tubing leads to the recording apparatus. The main tube is strapped or chained about the subject's body. Also called *Fitz pneumograph* and *Sumner pneumograph. E. B. Titchener*, Exper. Psychol., I. ii. p. 184.—**Sumner pneumograph.** See *Harvard* ★*pneumograph.*—**Verdin pneumograph,** in *physiol.* and *psychophys.*, a form of pneumograph devised by Marey and made by Verdin of Paris. It consists of two oval tambours, held upon a metal plate and connected by rubber tubing with the recording apparatus. The metal plate is supported by a silk sling, which passes round the neck of the subject; and the plate and tambours are kept in place upon the thorax or abdomen by silk tapes tied round the body. *E. B. Titchener*, Exper. Psychol., I. ii. p. 184.



The Verdin Pneumograph.

Pneumographic pen. See ★*pen*².

pneumolith (nū′mọ-lith), *n.* [Gr. *πνεύμων*, lung, + *λίθος*, stone.] A calculus in the lung. *Buck*, Med. Handbook, III. 232.

pneumolithiasis (nū″mọ-li-thī′a-sis), *n.* [NL., < Gr. *πνεύμων*, lung, + *λιθίασις*, the presence of stone (calculus).] The occurrence of concretions in the lungs.

pneumologic (nū-mọ-loj′ik), *a.* Same as *pneumological.*

pneumologist (nụ-mol′ọ-jist), *n.* [*pneumolog(y)* + *-ist.*] A specialist in diseases of the air-passages; a student of pneumology.

pneumomalacia (nū″mọ-ma-lā′si-ä), *n.* [NL., < Gr. *πνεύμων*, lung, + *μαλακία*, softness.] Softening of the lungs.

pneumomassage (nū″mọ-ma-säzh′), *n.* [Gr. *πνεύμων*, lung, + E. *massage.*] The process of moving the drum-membrane of the ear by means of alternate compression and rarefaction of air in the external auditory canal.

The effect of excessive *pneumo-massage* by the use of rarefacteurs is exerted principally upon the posterior segment of the tympanic membrane, the fibres of which become weakened, resulting in relaxation of the drum membrane. *Detroit Med. Jour.*, Feb., 1903, p. 715.

pneumonectasis (nū-mọ-nek′ta-sis), *n.* [NL., < Gr. *πνεύμων* (*πνευμον-*), lung, + *ἔκτασις*, extension.] Same as ★*pneumectasis.*

pneumonectomy (nū-mọ-nek′tọ-mi), *n.* [NL., < Gr. *πνεύμων* (*πνευμον-*), lung, + *ἐκτομή*, excision.] Same as *pneumectomy. Med. Record*, June 27, 1903, p. 1055.

pneumonia, *n.*—**Caseous pneumonia.** Same as *cheesy pneumonia* (which see, under *pneumonia*).—**Cerebral pneumonia,** pneumonia accompanied with marked delirium.—**Contusion pneumonia,** pneumonia following a blow or other non-penetrating injury of the chest.—**Fibrinous pneumonia.** Same as *croupous pneumonia* (which see, under *pneumonia*).—**Hypostatic pneumonia,** congestion and consolidation of the dependent portion of the lungs when the dorsal position is long maintained, as when one is confined to bed by a long illness or by a broken leg.—**Inhalation pneumonia,** pneumonia due to the inhalation of foreign material, such as dust, food-particles, etc.—**Lobar pneumonia.** See *lobular pneumonia*, under *pneumonia.*—**Massive pneumonia,** pneumonia with a great amount of exudation, choking the air-cells and bronchioles and causing solidification of a large part of the affected lung.—**Septic pneumonia,** inflammation of the lungs following the inhalation of septic material.—**White pneumonia,** syphilitic disease of the lung in the new-born.

Pneumonic plague. See ★*plague*, 2.

pneumonocace (nū-mọ-nok′a-si), *n.* [Gr. *πνεύμων*, lung, + *κάκη*, evil.] Gangrene of the lung.

pneumonomycosis (nū″mọ-nō-mī-kō′sis), *n.* [Gr. *πνεύμων*, lung, + NL. *mycosis.*] Growth of fungus in the lungs. *N. E. D.*

pneumonopexy (nū″mọ-nō-pek′si), *n.* [Gr. *πνεύμων*, lung, + *πῆξις*, fastening.] Fixation of the lung to the chest-wall after partial excision.

pneumonophlebitis (nū″mọ-nọ-flẹ-bī′tis), *n.* [Gr. *πνεύμων*, lung, + *φλέψ* (*φλεβ-*), vein, + *-itis.*] Inflammation of the pulmonary veins.

pneumonophorous (nū-mọ-nof′ọ-rus), *a.* [Gr. *πνεύμων*, lung, + *φέρειν*, bear.] Having lungs.

pneumonopome (nū′mọ-nọ-pōm), *n.* [Gr. *πνεύμων*, lung, + *πῶμα*, lid.] Same as *pneupome.*

pneumonopomous (nū″mọ-nọ-pō′mus), *a.* [*pneumonopome* + *-ous.*] Of or pertaining to a pneumonopome or pneupome.

pneumonotomy (nū-mō-not′ọ-mi), *n.* [Gr. *πνεύμων*, lung, + *-τομια*, < *ταμεῖν*, cut.] Same as *pneumotomy.*

pneumopericardial (nū-mọ-per-i-kär′di-al), *a.* [*pneumopericardi(um)* + *-al*¹.] Pertaining to or indicating the presence of pneumopericardium: applied to a sound heard, by auscultation, in pleurisy.

pneumoperitoneum (nū″mọ-per″i-tō-nē′um), *n.* [Gr. *πνεύμων*, lung, + *περιτόναιον*, peritoneum.] The presence of gas in the peritoneal cavity.

pneumoperitonitis (nū″mọ-per″i-tọ-nī′tis), *n.* [Gr. *πνεύμων*, lung, + NL. *peritonitis.*] Inflammation of the peritoneum with the presence of gas in the peritoneal cavity.

pneumophysis (nụ-mof′i-sis), *n.*; pl. *pneumophyses* (-sēz). [Gr. *πνεύμων*, lung, + *φύσις*, growth.] One of two membranous air-sacs connected with the ductus ejaculatorius of a male honey-bee.

pneumotherapy (nū-mọ-ther′a-pi), *n.* [Gr. *πνεύμων*, lung, + *θεραπεία*, medical treatment.] Aërotherapeutics.

Pneumotherapy is a branch of physical and physiological treatment which has not received much attention in this country. *Med. Record*, July 11, 1903, p. 71.

pneumothyra (nū-moth′i-rä), *n.*; pl. *pneumothyræ* (-rē). [NL., < Gr. *πνεύμων*, lung, + *θύρα*, a door.] In siphonophorans, one of the communications between the concentric chambers of the pneumatocyst.

pneumotoxin (nū-mọ-tok′sin), *n.* [Gr. *πνεύμων*, lung, + E. *toxin.*] A glycerin extract of the *Diplococcus pneumoniæ*, which supposedly contains the specific toxic principle of the organism.

pneumotyphoid (nū-mọ-tī′foid), *n.* [Gr. *πνεύμων*, lung, + E. *typhoid.*] Typhoid fever accompanied by pneumonia.

pneumotyphus (nū-mọ-tī′fus), *n.* [NL., < Gr. *πνεύμων*, lung, + NL. *typhus.*] Pneumonia complicating typhoid or typhus fever.

pnixis (nik′sis), *n.* [NL., < Gr. *πνῖξις*, choking, < *πνίγειν*, choke, suffocate.] Suffocation.

pnxt. [*l. c.* or *cap.*] An abbreviation of the Latin *pinxit*, he (or she) painted (it).

po. An abbreviation of *pole*, a measure.

P. O. An abbreviation (*c*) of *Postal Order;* (*d*) of *Province of Ontario.*

poach², *v. i.* **2.** To gain an unfair advantage at the start of a race. [Slang.]

With a rope, just as with the starting-gate which has been introduced of late years in the horse race, there is no possibility of *poaching* at the start or of a false start.
E. N. Gardner, in Jour. Hellenic Studies, XXIII. 264.

Poales (pọ-ā′lēz), *n. pl.* [NL. (Small, 1903), < *Poa* + *-ales.*] A large order of monocotyledonous plants characterized by having the flowers in the axils of dry chaffy scales or glumes, and arranged in spikes or spikelets.

It embraces the *Poaceæ*, or grass family, and the *Cyperaceæ*, or sedge family. See *Glumaceæ*.

pob (pob), *n.* [Also *pab;* origin obscure.] The refuse of flax or jute. [Scotch.]

pochade (pọ-shäd′), *n.* [F., < *pocher*, sketch quickly, lit. pocket, < *poche*, a pocket.] A slight, rough sketch which can easily be erased for correction. [French art slang.]

pochard, *n.*—**Tufted or crested pochard**, a European duck, *Aythya cristata*, something like the redhead but having a crest.

pochettino (pọ-chet-tē′nō), *a.* [It., dim. of *pochetto*, little. See ★*pochetto*.] In *music*, in the phrase *un pochettino*, a very little.

pochetto (pọ-chet′tō), *a.* [It., dim. of *poco*, a little. See *poco*.] In *music*, in the phrase *un pochetto*, a little.

pochote (pō-chō′tạ), *n.* [Mex., < Nahuatl *pochotl*.] A name applied to several trees yielding silk-cotton, especially to *Ceiba pentandra* and *C. grandiflora*, and in the state of Tabasco to *Maximilianea hibiscoides*.

pocil. An abbreviation of the Latin *pocillum*, a little cup.

Pocillopora (pō-si-lop′ọ-rạ̈), *n.* [NL.] The typical genus of the family *Pocilloporidæ*. *Lamarck.*

Pocilloporidæ (pō″sil-lọ-pō′ri-dē), *n. pl.* [NL. *Pocillopora* + *-idæ*.] A family of madreporarian corals, consisting of colonial forms having tabulæ, small septa, well or slightly developed columella, polyps with disk, tentacles, and one pair of long mesenterial filaments. The intercorallite structure is cœnenchymal and solid. It contains the genera *Pocillopora* and *Seriatopora*.

pocket, *n.* 12. A small cavity in a rock-surface or in the channel of an intermittent stream, sometimes holding a pool of water. Also called a *water-pocket*.—13. In Australia: (*a*) A bar formed by a river at a bend, much curved and hollowed out near its shore end. (*b*) A circular, hollowed-out spot in thick scrub.—**Blind pocket**, in *billiards*, a pocket the elbow or edge of which is likely to repel a ball. This can usually be overcome by giving the ball a twist.—**Branchial pocket.** See ★*branchial*.—**Iliac pocket.** Same as *iliac* ★*recess*.—**Pocket measure**, a bill in the hands of a member of a legislature, which he may or may not introduce, according to circumstances.—**Seessel's pocket**, a depression in the pharyngeal membrane in the embryo.—**To enlarge the pocket**, in *ball-pool* and *Eng. billiards*, to use twist in order to help the cue-ball to hole itself. *W. Broadfoot*, Billiards, p. 259.

pocketable (pok′et-ạ-bl), *a.* [*pocket* + *-able*.] That can be pocketed; of a book, small enough to be put into one's pocket. [Rare.]

> But of course the [book] is not portable in the sense of being *pocketable*.
> *N. Y. Times*, Sat. Rev., July 1, 1905, p. 436.

pocket-book, *n.* 5. A fresh-water mussel, *Lampsilis capax* or *L. ventricosus*, which has round valves of great depth.

pocket-boom (pok′et-böm), *n.* In *lumbering*, a boom in which logs are held after they are sorted.

pocket-hole (pok′et-hōl), *n.* The opening by which the hand may be introduced into a pocket.

pocketing (pok′et-ing), *n.* A cotton fabric of which the pockets of men's clothes are made. It is both plain and twilled and of various colors. Usually in the plural.

pocket-loup (pok′et-löp), *n.* A magnifying-glass or -lens for the pocket.

pocksha (pok′shạ̈), *n.* [Appar. from one of the Amerindian forms of ★*pocosin*.] A tangled, swampy tract of country. [Maryland.]

Pocono series. See ★*series*.

pocosin (pō-kō′sin), *n.* [Also *pocoson*, *pocason*, *poquosin*, *poquoson*, *pocoarson*, etc. (see also ★*pocksha*); from an Algonkian dialect of Maryland or Virginia, perhaps **poquoesin*, 'at or near the opening out or widening' (of a river?), cognate with Massachusetts *pohqui*, it breaks, is broken, *pohquanum*, he opens, etc., with many derivates (J. Hammond Trumbull, Natick dict., p. 128), Ojibwa *pâkissin*, it is open.] A tract of low land; a swamp; a marsh. [Maryland, Virginia, and part of the Carolinas.] *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 253.

pod, *n.* 5†. The blade of a cricket-bat.

> It [the bat] was therefore made straight in the *pod*.
> *Hutchinson*, Cricket, p. 6.

Black pod, a disease which attacks the pods of the chocolate-tree, *Theobroma Cacao*, caused by the fungus *Phytophthora omnivora*.

pod, *v. i.* 4. To assemble in small bands: specifically applied to the pups, or young, of the fur-seal.

> The "*podding*" of these young pups in the rear of the great rookeries of St. Paul, is one of the most striking phases of this remarkable exhibition of highly-organized life. *Elliott*, Fur Seal Islands of Alaska, p. 41.

P. O. D. An abbreviation (*a*) of *Pay on delivery;* (*b*) of *Post-office Department*.

podal (pō′dạl), *a.* [Gr. πούς (ποδ-), foot, + *-al*[1].] Pertaining to the foot or to a footlike organ; resembling a foot; pedal; podalic.

> The minimum amount of *podal* surface is offered to the water in resistance. *Amer. Nat.*, Jan., 1904, p. 23.

Podal membrane, in some worms, as the *Spionidæ*, a membrane usually attached along the outer margin of the notopodial cirri and the neuropodia.

podanipter (pō-dạ-nip′tėr), *n.* [Gr. ποδανιπτήρ.] In *class. antiq.*, a vessel for washing the feet; a foot-pan.

podarthrocace (pō-där-throk′a-sē), *n.* [NL., < Gr. πούς (ποδ-), foot, + NL. *arthrocace*.] Destructive inflammation of the joints of the foot.

podatus (pọ-dā′tus), *n.* [ML.] In *medieval musical notation*, a ligature which represents an ascending step or skip. Also called *pes*.

Podaxaceæ (pod-ak-sā′sẹ-ē), *n. pl.* [NL., < *Podaxon* + *-aceæ*.] A small family of gasteromycetous fungi, so named from the typical genus *Podaxon*.

Podaxon (pọ-dak′son), *n.* [NL. (Fries, 1829), < Gr. πούς (ποδ-), foot, + ἄξων, axis.] A genus of gasteromycetous fungi of the family *Podaxaceæ*, which have the peridium more or less elongate and scaly, with a stipe which extends through to the apex of the peridium in the form of a columella. Some 16 species have been described. They occur in the warmer arid portions of the earth. *P. carcinomalis* is found in South Africa.

pod-corn (pod′kôrn), *n.* See ★*maize*, 1.

poddly (pod′li), *n.* [Origin obscure.] A New Zealand and Australian fish, *Sebastapistes percoides*, called in Victoria *red-gurnet perch*. *E. E. Morris*, Austral English.

poddy, *a.* **II.** *n.* A common name of *Myxus elongatus*, a fish found in Australia.

podeon (pō′dẹ-on), *n.* [NL., < Gr. ποδεών, a narrow end, < πούς (ποδ-), foot.] That portion of the abdomen of a petiolate hymenopterous insect which constitutes the petiole proper, between the propodeon and the metapodeon. *Cambridge Nat. Hist.*, V. 491.

podial, *a.*—**Podial pore**, in echinoderms, one of the openings through which the tube-feet project. *Proc. Zool. Soc. London*, 1896, p. 1037.

II. *n.* A general term for a bone of the carpus or tarsus. The plural, 'podials,' is commonly used to denote the bones of the carpus and tarsus considered collectively.

> This motion is confined to the proximal *podials*.
> *Amer. Nat.*, Jan., 1904, p. 2.

Podicipidæ (pod-i-sip′i-dē), *n. pl.* The commonly accepted form of *Podicipedidæ*.

podicipidine (pod-i-sip′i-din), *a.* [*Podicipidæ* + *-ine*.] Pertaining to, resembling, or having the characters of the *Podicipedidæ* or grebes.

> The pelvis in Æchmophorus occidentalis well exhibits all the characters of this compound bone among the *podicipidine* types. *Amer. Nat.*, Jan., 1904, p. 20.

podion (pō′di-on), *n.* Same as *podium*.

podium, *n.* 5. In echinoderms, one of the tube-feet.

podobranch (pod′ọ-brangk), *n.* Same as *podobranchia*.

podocarp (pod′ọ-kärp), *n.* [Gr. πούς (ποδ-), foot, + καρπός, fruit.] In *bot.*, a stipitate fruit, that is, one in which the ovary is borne by a gynophore. *Jackson*, Glossary.

podocarpic (pod-ọ-kär′pik), *a.* [*Podocarp*(*us*) + *-ic*.] Derived from *Podocarpus*.—**Podocarpic acid**, a crystalline acid, $C_{17}H_{22}O_3$, almost the only constituent of the resin of old trees of *Podocarpus cupressina imbricata*, a Javan evergreen. It melts at 187–188° C.

podocarpous (pod-ọ-kär′pus), *a.* [*podocarp* + *-ous*.] Of the nature of a podocarp; pertaining or belonging to the *Podocarpeæ*.

Podocnemididæ (pod″ok-nẹ-mid′i-dē), *n. pl.* [NL. *Podocnem*(*us*) + *-idæ*.] A family of pleurodiran turtles ranging possibly from the Upper Cretaceous to the recent period: distinguished from the *Pelomedusidæ* in having the quadratojugal connected with the parietals.

podoconus (pọ-dok′ọ-nus), *n.*; pl. *podokoni* (-nī). [NL., < Gr. πούς (ποδ-), foot, + κῶνος, a cone.] In some radiolarians, a conical mass of endoplasm, rich in food particles and granules, which connects the perforated disk with the center of the central capsule.

pododerm (pod′ọ-dėrm), *n.* [Gr. πούς (ποδ-), foot, + δέρμα, skin.] The true skin or cutis continued downward within the horn capsule or hoof of animals. It contains no sweat- or oil-glands. Its function is to secrete the horn of the hoof. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 554.

podomancy (pod′ọ-man-si), *n.* [Gr. πούς (ποδ-), foot, + μαντεία, divination.] Same as *pedomancy*.

podomere (pod′ọ-mēr), *n.* [Gr. πούς (ποδ-), foot, + μέρος, part.] One of the joints which compose the axis of the leaf-like abdominal appendage in the phyllopod *Crustacea*. *Parker and Haswell*, Zoology, I. 488.

Podophthalmidæ, *n. pl.* 2. A family of cyclometopous brachyurous crustaceans containing the genus *Podophthalmus*.

podophyllic, *a.* 2. Derived from *Podophyllum*.—**Podophyllic acid**, an amorphous acid, $C_{15}H_{16}O_7$, salts of which are formed when podophyllotoxin is boiled with alkalies. The free acid is separated by adding acetic acid to a solution of its salts.

podophylloquercitin (pod-ọ-fil-ọ-kwėr′si-tin), *n.* [*Podophyllum* + *quercitin*.] A yellow crystalline substance, $C_{23}H_{16}O_{10}$, perhaps identical with quercitin, which is found in the root of the May-apple, *Podophyllum peltatum*. It melts at 180–182° C.

podophyllotoxin (pod-ọ-fil-ọ-tok′sin), *n.* [*Podophyllum* + *toxin*.] A bitter crystalline substance, $C_{15}H_{14}O_6 + 2H_2O$, found in the root of the May-apple, *Podophyllum peltatum*. It melts at 117° C. or, when anhydrous, at 157° C.: used as a purgative.

podophyllous, *a.* 2. Noting the tissue of that part of the inner surface (keratogenous membrane) of the hoofs of animals which forms the sensitive wall.

> The seat of greatest congestion will always be found in the neighborhood of the toe, because of the increased vascularity of that part, and, although at times it is limited to the *podophyllous* tissue alone, any or all parts of the keratogenous membrane may be affected by the congestion and followed finally by inflammation.
> *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, [p. 421.

podostemaceous (pod″ọ-stẹ-mā′shius), *a.* Pertaining to, or having the characters of, the *Podostemaceæ*.

podostemad (pod-ọ-stē′mad), *n.* A plant of the order *Podostemaceæ*.

podosthenic (pod-os-then′ik), *a.* [Gr. πούς (ποδ-), foot, + σθένος, strength, + *-ic*.] Having the locomotor organs in front: said of certain animals.

Podothecus (pod-ọ-thē′kus), *n.* [NL., < Gr. πούς (ποδ-), foot, + θήκη, a case. The name alludes to the groove for the receptacle of the ventrals, which appears in preserved specimens.] A genus of agonoid fishes of northern seas.

Podozamites (pod″ọ-za-mī′tēz), *n.* [NL. (Friedrich Braun, 1843), < Gr. πούς (ποδ-), a foot, + *Zamites*. The chief character distinguishing it from *Zamites* is the short subpedicel or footstalk of the leaflets.] A large genus of fossil plants classed in the family *Cycadaceæ*, but probably belonging to the *Bennettitaceæ*, known only by its stems and foliage. It is characterized by pinnate leaves with numerous lanceolate leaflets which are narrowed at the base into a short subpedicel, joined to the rachis by an articulation, and deciduous. A large number of species has been described from nearly all Mesozoic deposits, especially from the Jurassic.

pod-rust (pod′rust), *n.* A fungous disease of beans which attacks the stems, leaves, and fruit: caused by *Colletotrichum Lindemuthianum*. Also called *anthracnose of beans*.

Podsnappery (pod′snap-ẹ-ri), *n.* [Mr. *Podsnap*, a character in Dickens's "Our Mutual Friend."] The characteristic or mental attitude of Mr. Podsnap. See the extract.

> Happily acquainted with his own merit and importance, Mr. Podsnap settled that whatever he put behind him he put out of existence. . . . He considered other countries [except as a medium for commerce] . . . a mistake; and of their manners and customs would conclusively observe, "Not English!" when PRESTO! with a flourish of the arms . . . they were swept away. . . . Nothing else [than his notions] To Be — anywhere! As so eminently respectable a man, Mr. Podsnap was sensible of its being required of him to take Providence under his protection. Consequently he always knew exactly what Providence meant. Inferior and less respectable men might fall short of that work, but Mr. Podsnap was always up to it. And it was very remarkable (and must have been very comfortable) that what Providence meant, was invariably what Mr. Podsnap meant.
> *Dickens*, Mutual Friend, I., i. 11.

podurid (pō-dū′rid), *n.* and *a.* **I.** *n.* A member of the thysanurous family *Poduridæ*.

II. *a.* Having the characters of or belonging to the family *Poduridæ*.

Pœcilia (pē-sil′i-ä), *n.* [NL., < Gr. *ποικίλος*, spotted.] A genus of small fishes of the family *Pœciliidæ*. They are mud-eating and viviparous, and inhabit fresh and brackish waters in the West Indies and Mexico, and southward to South America.

Pœciliidæ (pē-si-lī′i-dē), *n. pl.* [NL., < *Pœcilia* + *-idæ*.] A family of fishes of the suborder *Haplomi*, found in fresh and brackish water, some of them in bays and arms of the sea, in southern Europe, Asia, Africa, and America.

pœcilitic, *a.* and *n.* **2.** In *petrog.*, a term used by G. H. Williams in 1886 (in the form *poikilitic*) to designate the texture of those igneous rocks in which comparatively large crystals act as a matrix for many smaller ones, which are included in the larger ones, and, when these are cleavable, produce luster-mottling.

pœciloblast (pē′si-lō-blȧst), *n.* [Gr. *ποικίλος*, many-colored, + *βλαστός*, germ.] A nucleated red blood-corpuscle of abnormal shape. Also *poikiloblast*.

pœcilocythemia (pē″si-lō-sī-thē′mi-ä), *n.* [NL., < Gr. *ποικίλος*, many-colored, + *κύτος*, a hollow (a cell), + *αἷμα*, blood.] Same as *pœcilocytosis*.

pœcilocyttaria (pē″sil-ō-si-tā′ri-ạ), *n. pl.* [NL., < Gr. *ποικίλος*, variegated, + *κύτταρος*, a cell or a comb.] In Saussure's classification of the social wasps (in the French form *Polycyttares*), those forms in which the layers of comb have a paper covering and are supported by an object such as the branch of the tree on which the nest is built.

Pœcilodermis (pē″si-lō-dėr′mis), *n.* [NL. (Schott and Endlicher, 1832), < Gr. *ποικίλος*, mottled, + *δέρμα*, skin: so named from the character of the calyx in the type species.] A genus of tropical or subtropical Australian sterculiaceous trees or shrubs with entire or lobed leaves and axillary, paniculate, or rarely racemose inflorescence. It is distinguished from *Sterculia* mainly by the position of the radicle next the hilum and by the villous seeds usually adhering to the equally villous carpels. Eleven species are recognized, a few of which are known in cultivation in Europe. See *bottle-tree* and ★*hat-tree*, 2.

pœcilodynamous (pē″si-lō-dī′nạ-mus), *a.* [Gr. *ποικίλος*, many-colored, + *δύναμις*, power, potency.] Of various potencies or characters: said of an organism cross-bred between two pure parental races or varieties which exhibits a patchwork or mosaic combination in regard to a parental character, with respect to this character. [Rare.]

> In such a case Correns speaks of the characters as *pœcilodynamous*, a sufficiently expressive term.
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., [1902, I. 156.

pœcilogenesis (pē″si-lō-jen′e-sis), *n.* [Gr. *ποικίλος*, variegated, + E. *genesis*.] The origin or beginning of the color-markings shown by many animals. [Rare.]

> The Origin of the Markings of Organisms (*Pœcilogenesis*) due to the Physical rather than to the Biological Environment; with Criticisms of the Bates-Muller Hypotheses.
> *A. S. Packard*, Proc. Amer. Phil. Soc., XLIII. No. 178, [p. 393.

pœcilogeny (pē-si-loj′e-ni), *n.* [Gr. *ποικίλος*, variegated, + *-γενης*, -producing.] The growth or development of color-markings in organisms. [Rare.]

> If we examine the works of Brongniart and of Scudder on fossil insects it becomes apparent that *pœcilogeny* was an active process as early as the Carboniferous period.
> *A. S. Packard*, Proc. Amer. Phil. Soc., XLIII. 1904, p. 446.

pœcilogony (pē-si-log′ō-ni), *n.* [Gr. *ποικίλος*, various, + *γόνος*, generation.] Diversity among the germ-cells of an organism.

> Green algæ may have a more or less important influence on the development of the ova; there is sometimes a kind of symbiosis, the occurrence of which may give rise to a kind of *pœcilogony*.
> *Jour. Roy. Micros. Soc.*, Oct., 1904, p. 509.

pœciloid (pē′si-loid), *a.* [Gr. *ποικίλος*, variegated, + *εἶδος*, form.] Of or pertaining to the family *Pœciliidæ*, fresh-water fishes of southern Europe, Asia, Africa, and America: commonly known as *killifishes*. Some of them occur in bays and arms of the sea.

pœcilomere (pē′si-lō-mēr), *n.* [Gr. *ποικίλος*, variegated, + *μέρος*, part.] A spot on the body of an animal where change of color is particularly liable to take place.

> Shortly before the moult in many animals the colour of the pelage fades, beginning along certain definite areas and from certain centres, termed "*pœcilomeres*."
> *Jour. Roy. Micros. Soc.*, Feb., 1905, p. 41.

pœcilothermal (pē″si-lō-thėr′mạl), *a.* Same as *pœcilothermic*.

pœcilothermous (pē″si-lō-thėr′mus), *a.* Same as *pœcilothermic*.

Poederlian (pē-dėr′li-an), *n.* [*Poederle*, a district in Belgium.] In *geol.*, a member of the Middle Pliocene series of Belgium, which forms the upper part of the Scaldesian stages of marine sands.

poenamu, *n.* See ★*pounamu*.

poeticize (pō-et′i-sīz), *v. t.*; pret. and pp. *poeticized*, ppr. *poeticizing*. Same as *poetize*.

poetomachia (pō″et-ō-mā′ki-ä), *n.* [Gr. *ποιητής*, poet, + *μάχη*, fight.] A battle of the poets. The quotation refers to a stage quarrel between Ben Jonson and Marston, Dekker, and others at the end of the sixteenth century.

> Mr. Fleay . . . regards ["Every Man out of his Humour"] as the cause of the so-called Elizabethan *poetomachia*.
> *N. and Q.*, 9th ser., IX. 282.

poet's-viol (pō′ets-vī″ọl), *n.* See ★*rebab*.

Pogonichthys (pō-gō-nik′this), *n.* [NL., < Gr. *πώγων*, beard, + *ἰχθύς*, fish.] A genus of fishes of the family *Cyprinidæ*, found in fresh waters of the Pacific slope.

pogonion (pō-gō′ni-on), *n.*; pl. *pogonia* (-ä). [NL., < Gr. *πωγώνιον*, dim. of *πώγων*, beard.] In *craniom.*, the most prominent point of the mental protuberance. *Von Török.*

pogonip (pog′ō-nip), *n.* [Amerindian.] A frozen fog, formed in the coldest weather in the mountain valleys of Idaho, Nevada, and Colorado. When inhaled it often produces severe pulmonary trouble.

> The *pogonip* fog is peculiar to elevated altitudes in the Nevada Sierras. It ascends from the valleys, and its chill embrace is so much feared by the Indians, who are predisposed to affections of the lungs, that they change their camp if apprised by the atmospheric conditions that the dreaded fog is approaching.
> *Sci. Amer.*, April 16, 1892, p. 240.

Pogonip group. See ★*group*1.

pogonologist (pō-gō-nol′ō-jist), *n.* [*pogonolog(y)* + *-ist*.] One who makes a study of beards; a writer on beards. [Rare.]

pogonology (pō-gō-nol′ō-ji), *n.* [Gr. *πώγων*, beard, + *-ology*.] The study of beards; a treatise on beards. [Rare.]

Pogonoperca (pō″gō-nō-pėr′kä), *n.* [Gr. *πώγων*, beard, + *πέρκη*, perch.] A genus of serranoid fishes of the Indian and western tropical Pacific oceans.

pogonotrophy (pō-gō-not′rō-fi), *n.* [Gr. *πώγων*, beard, + *τροφή*, nourishment.] The growing or cultivation of a beard. [Rare.]

pogrom (pō-grom′), *n.* [Russ. *pogromŭ*, desolation.] In Russia, an organized massacre, particularly a massacre of Jews that is countenanced more or less openly by the officials.

> The *Pogroms* are attributed by Mr. Lucien Wolf, a well-known and responsible writer, to direct Governmental action. They were, however, carried out by the assistance of local mobs, animated by interested prejudice, if not by superstition.
> *Athenæum*, Jan. 26, 1907, p. 99.

pogromist (pō-grom′ist), *n.* [*pogrom* + *-ist*.] In Russia, one who takes part in or promotes organized massacre, as of Jews.

> France, Mr. Wolf explains, has her investments, and we our "Agreement" to ease us from pressure in our Persian interests:
> "Small wonder that the '*pogromists*' laugh at Europe, and now pursue their work without intermission or disguise! But here the victims are not only Russian Jews, or even Russian Liberals and Revolutionists. The whole moral consciousness of the free nations of the West—and not least of England herself—is being degraded by this officially nurtured apathy."
> *Athenæum*, Jan. 26, 1907, p. 99.

pogy, *n.* **3.** Same as *Lake Tahoe trout* (which see, under *trout*1).

poi2 (pō′ē), *adv.* [It., < L. *post*, after.] In *music*, then; later: as, *adagio poi allegro*, slowly, then quickly; or *poi segue*, then follows.

poids de marc (pwo dẹ mär′). [F.: *poids*, weight; *de*, of; *marc*, a weight of 8 ounces (half a pound): see *marc*2.] A system of weights used in France before the partial adoption of the metric system in 1812. *C. Hering*, Conversion Tables, p. 61.

poietic (poi-et′ik), *a.* [Gr. *ποιητικός*, < *ποιητής*, a maker. See *poet*, *poetic*.] Creative; originative.

> The importance of preserving the "*poietic*," i.e. originative, types of man.
> *Nature*, Aug. 10, 1905, p. 337.

poikilitic, *a.* Same as ★*pœcilitic*.

poikiloblast (poi′ki-lō-blȧst), *n.* Same as ★*pœciloblast*.

poikilocyte (poi′ki-lō-sīt), *n.* Same as *pœcilocyte*.

poikilocytosis (poi″ki-lō-sī-tō′sis), *n.* Same as *pœcilocytosis*.

poikilothermal (poi″ki-lō-thėr′mạl), *a.* Same as ★*pœcilothermal*.

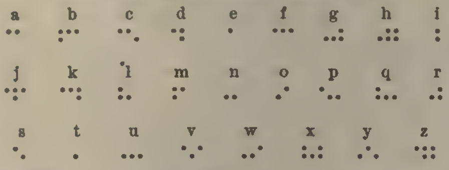
poikilothermic (poi″ki-lō-thėr′mik), *a.* Same as *pœcilothermic*.

poikilothermous (poi″ki-lō-thėr′mus), *a.* Same as ★*pœcilothermous*.

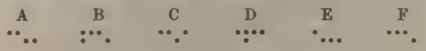
poimenic (poi-men′ik), *a.* [Gr. *ποιμενικός*, pastoral, < *ποιμήν*, a shepherd.] Of or pertaining to pastoral theology.

point1, *n.* **2.** (*l*) In *med.*, same as *vaccine-point*.—**11.** (*g*) In *medieval musical notation*, a punctus or note.—**26.** (*d*) In *archery*: (1) The forward end of an arrow: opposed to *butt*. (2) *pl.* Credits given in a shooting-match for the highest score and the highest number of hits. Two points are given for total score, two for total hits, and one each for score and hits at each distance.—**30.** One of the colored lines woven into the short edge of the Mackinaw or Hudson Bay blanket, which, according to their number, determine the quality, and therefore the value, of the blanket: as, a one- or two-*point* blanket.—**31.** A system of embossed writing and printing for the use of the blind, the letters and signs being composed of groups of embossed points. The printing is done (*a*) from movable type on which the points are cast, the type being set as in the usual way; (*b*) from stereotype or electrotype plates; (*c*) from metal sheets, upon which the characters for literature, music, etc., have been embossed by the stereograph, a machine designed for this purpose. See ★*point system*, below.—**Actual point.** Same as *finite* ★*point*.—**Arago's neutral point,** a region about fifteen to twenty degrees above the antisun where, after sunset and before sunrise, Arago found that the sky light is not polarized but is neutral.—**Babinet's neutral point,** a region in the sky, about as far above the sun as Arago's point is above the antisun, characterized by the absence of polarized light.—**Basal points,** in *geom.*, those common to a pencil of conics.—**Base point.** (*b*) A place for a target in an archery ground, usually marked with white tape. Also *target point*.—**Boscovichian point.** See ★*Boscovichian*.—**Brewster's neutral point,** a region below the sun similar to Babinet's neutral point.—**Brianchon point,** the point which is the bearer of the 3 diagonals in Brianchon's theorem of the hexagram. This hexagram has 60 Brianchon points.—**Brocard points.** [From a French geometer, H. *Brocard*.] The point within a triangle which its sides will contain after equal positive rotations, ω, about their vertices is the direct or first *Brocard point*, Ω; after equal negative rotations, $-\omega$, about their vertices is the retrograde or second *Brocard point*, Ω', of the triangle. The angle $+\omega$ is called the *Brocard angle of the triangle*.—**Broca's point,** the central point of the external auditory meatus.—**Cardinal point.** (*d*) In *psychophys.*, the point on the curve which correlates stimulus with intensity of sensation (see *Weber's law*, under *law*1) at which the ratio of sensation to stimulus is greatest; that is, the point at which change of sensation-intensity is exactly proportional to change of stimulus.—**Cold-rigor point.** See ★*cold*.—**Corresponding points.** See ★*corresponding*.—**Critical point.** (*c*) See ★*critical*. (*d*) The point of temperature or other variable at which a physical or chemical change in an element or compound takes place. When the change extends over several degrees, the area of the change is called a *critical range* or *critical zone*. (*e*) If, with temperatures for abscissæ and pressures for ordinates, we construct the curve which shows the pressure of the saturated vapor of the liquid as it varies with temperature, the curve will rise from left to right and will terminate in a point corresponding to the critical temperature and pressure. This point is called the *critical point of the pressure curve* for the given substance, or, briefly, the *critical point* for that substance. Sometimes the critical temperature is called the critical point.—**Cuspidal point,** in *geom.*, a double point whose two tangents coincide.—**Cuspidal point of a surface.** Same as *pinch-point*.—**Darwin's point.** Same as *Darwin's tubercle* (which see, under *tubercle*).—**Disparate points,** in *optics*, points upon the two retinas which are not identical. See *identical* ★*points*.—**Double points of a homographic transformation,** the two points which are unchanged by the transformation. Thus, if the transformation is $x' = \frac{(a+c)x-ab}{x-b+c}$, the double points are $x = a$ and $x = b$.—**Essential singular point,** in the *theory of functions*, a point $x = c$ of the function fx when fx has for c an essential singularity.—**Eutectic point** or **temperature,** in *phys. chem.*, the fusing-point of a eutectic mixture.—**Expression-point.** (*a*) See *expression-point*. (*b*) A term used by Cope to denote the appearance in large numbers of a group of animals for some time in existence, but not prominent. This usually marks the culminating point of the group and gives a definite character, or 'expression,' to the fauna of that period.—**External point,** in the plane of a conic, a point such that from it two tangents can be drawn to the curve.—**Far-point,** in *optics*, the point which marks the outer limit of distinct vision; the point beyond which an object is no longer clearly seen. Opposed to *near-point*.—**Figurative point,** in *geom.*, the point common to two parallels.—**Finite point,** in *geom.*, one which can be reached from any assigned point by a finite number of finite operations. — **Fixed point of a transformation,** in the *theory of functions,* a point not altered by the transformation. — **Focal point,** in *line geom.*, one of the ∞^2 points, two on each ray or straight of the congruence, where this straight is intersected by two consecutive to it. — **Frégier point** of a given point on a conic, the cointersection point of chords subtending a right angle at the fixed point. — **French point.** See *punto di Venezia* ★*lace.* — **Full point,** in *printing,* the period or full stop placed at the end of a completed sentence or of an abbreviation. — **Fundamental points,** in projective coördinates, the points whose coördinates are ∞ and 0. — **Gambler's point,** in *all-fours,* the point for game, which is the only one that must be played for. — **Geometry on a point.** See ★*geometry.* — **Gergónne's point,** Γ, the point common to the sects from the vertices of a triangle to the points of contact of the inscribed circle. — **Grebe point.** Same as *Lemoine* ★*point.* — **Harmonically conjugate points.** Same as *harmonic conjugates.* — **Harmonic points,** in *geom.* See ★*harmonic.* — **Harmonic points on a conic,** in *projective geom.*, four points on a conic projected from any (and so every) fifth point on the conic by 4 harmonic straights. — **Ideal point,** in *geom.*: (*a*) Same as *figurative* ★*point.* (*b*) The point determined by two ultraparallels. — **Identical points,** in *physiol.* and *psychol. optics,* retinal points which are anatomically congruent, that is, points upon the two retinas which, if the eyes are in the primary position, are similarly situated with regard to the center of the retina. See ★*corresponding points* (*b*). — **Indicator-point.** See ★*indicator-point.* — **Indifferent point,** in *phys. chem.*, a point on the curve which exhibits the relation between temperature and the solubility of a given salt, which corresponds to an indifferent equilibrium. — **Infinitely distant point.** Same as *figurative* ★*point.* — **Intercardinal points,** southeast, southwest, northwest, northeast. — **Intersecting point.** See *perspective, n.*, 3. — **Invariable points** of a system of 3 directly similar figures, three fixed points on the circle of similitude through which pass every triad of copunctal corresponding straights. — **Inverse point.** If on a ray from a fixed point O we take P_1 and P' such that the rectangle $OP_1 . OP'$ equals the square on a fixed sect *r*, then the points P_1 and P' are each the inverse of the other with regard to O, the center of inversion, and r, the radius of inversion. — **Isolated point** of a set, one about which a region can be marked out containing no other point of the set. — **Jugomaxillary point,** in *craniom.*, the point on the antero-inferior angle of the malar bone. — **Lemoine point,** the symmedian point; the isogonal conjugate to the centroid of a triangle. See also *cosine* ★*circle.* — **Limiting point.** (*a*) See *limit, v.* (*b*) In an infinite aggregate of points not extending to an infinite distance, a point *a* such that the points of the aggregate which are in the neighborhood of *a* for any number *h* however small, themselves constitute an infinite aggregate. It may or may not be a point of the aggregate. — **McBurney's point,** a point on the abdomen midway between the umbilicus and the anterior superior spine of the ilium, where pressure usually causes pain in cases of appendicitis. See ★*appendicitis.* — **Material point,** in *mech.*, a point to which mass is assigned; or a body the volume of which is supposed to be zero and its mass concentrated in a point: a conception employed to simplify dynamical relations. — **Mean point.** See ★*mean*³. — **Median point.** See ★*median*¹. — **Middle point.** When a sailing vessel is hove-to, she will round up into the wind, then fall off until the after canvas fills, when she will again come up to the wind, and the point midway between this coming up and falling off is termed the *middle point,* to which must be applied the leeway, variation, and deviation in order to obtain the true course made good. — **Monro's point,** the point on the outer edge of the rectus abdominis muscle where it is crossed by a line drawn from the umbilicus to the anterior superior spine of the ilium. — **Multiple point.** (*a*) See *multiple.* (*b*) In *physical chemistry,* a point (in the diagram which expresses the circumstances of a thermodynamic system) in which more than two curves intersect. Also called a *transition point.* *American Chemical Journal,* March, 1904, p. 302. (*c*) On a surface, a point through which three or more sheets of the surface pass. — **Nagel's point,** N_g, the point common to the sects from the vertices of a triangle to the points of contact of the escribed circles in its sides. — **Neutral point,** in *thermo-elect.*, the point at which the electromotive force between the two metals used in a thermocouple becomes zero. The neutral point is reached when the mean temperature of the two junctions has a certain value. It is constant for a given couple, but varies with the combination of metals employed. — **Nodal points.** (*b*) Two conjugate points, in a lens system, such that a ray through the one is conjugate and parallel to a ray through the other. — **Non-essential singular point,** the point $x = c$ when the analytic function fx can be made analytic about c by multiplication by $(x - c)^m$ where m is a positive integer. — **Opposite points,** the end-points of a sphere's diameter. — **Ordinary point,** a value of the variable of a function for which that function has a determinate finite value. — **Pencil point.** See ★*pencil*¹. — **Perfect aggregate of points,** an aggregate all of whose points are limiting points of it, and all whose limiting points are points of it. — **Physical point,** in *physics,* a point to which are assigned all the properties which mass involves with the exception of volume or extension. See *point*¹, 12. — **Point at infinity.** (*b*) Same as *figurative* ★*point.* — **Point involution.** See ★*involution.* — **Point of augmentation,** in *musical notation,* same as *dot*¹ (*c*) (1). — **Point of condensation.** Same as *limiting* ★*point* (*b*). — **Point of undulation,** in *math.*, a critical point on both sides of which $\frac{d^2y}{dx^2}$ has the same sign. At a point of undulation the tangent does not cross the curve, but has higher contact with it. — **Point-print, -printing.** See ★*point*¹, 31, ★*point system.* — **Point system,** a system of raised points used in forming symbols that stand for letters, both lower case and capitals, numerals, punctuation and other marks, and musical notation and signs. Several systems of points have been used. See ★*Braille.* A system in common use among the blind in the United States is called the *New York point system.* In this system the letters, numerals, and other marks or signs are formed out of four basic groups of points arranged in two horizontal parallel lines. These groups are called bases and are as follows: first base, :, second base, ::, third base, :::, fourth base, ::::—all lower-case letters being formed of the first three bases and the capitals from the fourth base.

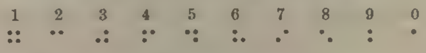
NEW YORK POINT SYSTEM ALPHABET.



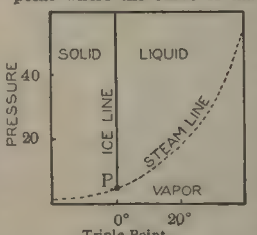
Capitals are formed by adding to each small letter one or two additional points to raise the letter to the fourth (four-point) base. The following letters show how the capital is developed from the small letter:



Numerals are formed from the first and second bases as follows, but are always preceded by the third-base character to distinguish them from lower-case letters:



See ★*kleidograph* and ★*stereograph,* 2. Compare also *Moon* ★*system.* — **Point to point method.** See ★*method.* — **Point writing.** See ★*point-writing.* — **Proper point.** Same as *finite* ★*point.* — **Quiescent point,** in *naval arch.*, the point in the interior of a vessel which is approximately stationary when the vessel is rolling in smooth water. The vessel may be considered as swinging like a pendulum on a horizontal axis passing through the quiescent point. — **Rational point,** in *geom.*, a point whose coördinates are rational. — **Real point.** Same as *finite* ★*point.* — **Regular point,** a point in whose neighborhood a given monogenic function is always finite. — **Representative point** for $z \equiv x + iy$, the point whose rectangular coördinates are x, y. — **Rubber points,** points added to the score of the side which wins the rubber, 2 in whist and 100 in bridge. — **Scale of points,** a list of the numerical values accorded certain physical characteristics of animals, used in determining the degree of excellence of the animals. — **Schedule point,** in the *postal service,* a post-office at which the time of starting of outgoing mails is fixed by an official schedule. — **Shooting** or **standing point,** a place for an archer to stand while shooting: usually marked with red tape. — **Singular point.** (*b*) In the theory of functions, one about which a one-valued analytic function is not analytic. For example $1/(x-c)^m$ is analytic about all points near $x = c$, but not about $x = c$. — **Singular point of a function,** a singular point of the curve or surface which represents the function. See *singular.* — **Steiner's point,** the point of the circumcircle diametrically opposite Tarry's point. — **Symcentral point.** See ★*symcentral.* — **Symmedian point.** See ★*symmedian* and *cosine* ★*circle.* — **Target point.** See *base* ★*point* (*b*). — **Tarry's point,** the point on the circumcircle of a triangle at which the perpendiculars from its vertices upon the sides of its first Brocard triangle are concurrent. — **Topically ordinary point.** See ★*ordinary.* — **Transition point.** Same as *multiple* ★*point.* — **Triple point.** (*a*) See *triple.* (*b*) In *phys.*, the point where the curve of maximum vapor-pressure of a liquid meets the ice-line of that substance. At the pressure and temperature which correspond to the *triple point* (P) all three phases of the substance, the solid, liquid, and gaseous, may coexist in stable equilibrium. (*c*) In *phys. chem.*, a point in the diagram which expresses the circumstances of a thermodynamic system, in which three curves intersect. — **United points,** in *geom.*, in every conjective correlation the two points which coincide with their corresponding points. — **Unit point.** (*a*) In projective coördinates, the point whose coördinate is 1. (*b*) In *optics,* the points in which the unit planes of a lens system intersect the axis of the system. — **Vandyke points.** See *Vandyke,* 1. — **Yield point,** in *elasticity,* that point upon the curve representing the elongation of a stretched wire, beyond which the wire is no longer able to sustain the pull without further elongation. The yield point lies between the elastic limit and the breaking point.



Triple Point.

> After passing the *yield point* the elongation increases very rapidly with the load.
>
> *Poynting and Thomson,* Properties of Matter, p. 55.

point¹, *v.* **I.** *trans.* **12.** To dress (as stone) with a point. Pointing is the first operation when stone is to be faced smoothly. — **13.** To establish the position of selected points in (a work of sculpture). If three points are given the position of a fourth may be determined by its distance from them. See *pointing,* 4. — **14.** Same as ★*gun*¹.

II. *intrans.* — **To point high,** to sail close to the wind.

point-aggregate (point′ag″rẹ̄-gāt), *n.* The set of points, in *n*-dimensional space, constituting the domain of definition of a function of *n* variables.

pointer-board (poin′tėr-bōrd), *n.* In *ordnance,* a contrivance belonging to the days of smooth-bore ordnance, which was designed to assist the gun-captain in training his piece upon the target.

point-charge (point′chärj), *n.* An electric charge which for convenience in mathematical discussion is regarded as concentrated in a single point in space.

> Taking the electrostatic field due to a *point-charge,* the author [S. J. Barnett] considers the equilibrium of a portion of the field bounded by an elementary circular cone and two concentric spheres, and shows that the tension along the lines of force requires a pressure of equal amount at right angles to them.
>
> *Nature,* March 2, 1905, p. 409.

point-circle, *n.* **2.** A circle whose radius is zero.

point-complex (point′kom″pleks), *n.* A lineoid. See ★*lineoid.*

point-congruence (point′kong″grọ̈-ẹns), *n.* The intersection of two independent lineoids.

pointed, *a.* **4.** In *printing,* pierced with points: said of a sheet of paper.

pointer, *n.* **9.** See the extract and ★*silker.*

> From the cutters' room the leather, which has assumed the shape of the glove, is sent to the "silkers," who embroider the back, and then to the "makers." Some make the gloves, that is they sew the fingers and put the thumbs in; others, called "welters," are engaged in welting or hemming the glove round the edge of the wrist; still others, called "*pointers,*" work the ornamental lines on the back.
>
> *Sci. Amer. Sup.*, Jan. 24, 1903, p. 22629.

10. Same as ★*gun-pointer.*

> The turrets are trained by one man, the trainer; and each gun is pointed by another man, the *pointer,* who fires the gun. *Sci. Amer.*, June 18, 1904, p. 475.

11. One of a pair of bullocks yoked ahead of the pole-bullocks. See the extract.

> Twelve bullocks is the usual number in a team, the two polers and the leaders being steady old stagers; the pair next to the pole are called the '*pointers,*' and are also required to be pretty steady.
>
> *C. H. Eden,* My Wife and I in Queensland, p. 36, quoted [by E. E. Morris, Austral English.

12. In *surveying,* particularly hydrographic surveying, a plotting-instrument comprising a graduated circle with three projecting radial arms capable of being set at given angular distances apart: used for the purpose of determining on a map the unknown position of a point or station by the three-point problem. — **White pointer,** an Australian name for the great white shark, *Carcharodon rondeletii,* the so-called man-eater.

point-field (point′fēld), *n.* In *geom.*, the ∞^2 points on a plane.

point-firing (point′fīr″ing), *n.* In *vet. surg.*, same as ★*line-firing,* except that the operation is done by means of a pointed iron or thermo-cautery: an operation used chiefly in cases of bony enlargements where deep firing is necessary. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 291.

point-group (point′gröp), *n.* **1.** In *geom.*, a discrete system of points.

> The effect of a group of N points in determining an algebraic curve of order *n* (called hereafter a C_n) need not depend on N and *n* alone. It may, and often does, happen that the N points do not supply N independent conditions for a C_n, but only a smaller number $N - r_n$. In any case, if the *point-group* N is given, the number r_n has a definite positive (integral or zero) value.
>
> *F. S. Macaulay,* in Proc. London Math. Soc., XXIX. 673.

2. A system of points of intersection of two curves.

> This theorem [of Euler's], which includes Pascal's theorem for conics, introduced *point groups,* or systems of points of intersection of two curves, into geometry.
>
> *Fink,* History of Mathematics, p. 240.

pointillage (pwaṅ-tē-yäzh′), *n.* [F., < *pointiller,* to dot, stipple.] Massage with the finger-tips.

pointillé, *a.* **2.** Painted or produced by means of dots of pure tints. See ★*pointillism.*

pointillism (pwaṅ′til-izm), *n.* [F. *pointillisme.* See *pointillé.*] A method of painting in which luminosity is produced by laying on the colors in points or dots which are blended by the eye, invented by French impressionists; a form of impressionism. See the extract.

> It was in 1886 that the doctrinaire ferment came to a head, and what was supposed to be a scientific method of colour was formulated. This was *pointillisme,* the resolution of the colours of nature back into six bands of the rainbow or spectrum, and their representation on the canvas by dots of unmixed pigment. These dots, at a sufficient distance, combine their hues in the eye with the effect of a mixture of coloured lights, not of pigments, so that the result is an increase instead of a loss of luminosity.
>
> *Encyc. Brit.*, XXIX. 414.

pointillist (pwaṅ′til-ist), *n.* and *a.* [F. *pointilliste*. See *pointillism*.] **I.** *n.* A painter who follows the methods of pointillism.

> Pissarro experimented in the new method, but abandoned it, and other names among the *Pointillistes* are Paul Signac, Vincent van Gogh, and van Rysselberghe. The theory opened the way for endless casuistries,'and its extravagances died out in the later exhibition of the Indépendants or were domesticated in the Salon by painters like M. Henri Martin. *Encyc. Brit.*, XXIX. 414.

II. *a.* Of or relating to pointillism or the pointillists; exhibiting pointillism.

> There are several fallacies, however, theoretical and practical, in this "spectral palette" and *pointillist* method. If we depart from the three primaries of the Helmholtz hypothesis, there is no reason why we should stop at six hues instead of six hundred. *Encyc. Brit.*, XXIX. 414.

pointing, *n.* **9.** In *printing*, the operation of making points in paper as guides to exact register.

> Three-fourths of the folding machines of the present day are supplied with automatic feeders. Folding machines have been greatly improved also by parallel-fold arrangements and by automatic *pointing*. *Census Bulletin* 216, June 28, 1902, p. 65.

pointing-box (poin′ting-boks), *n.* See ★*box-tool*.

point-net (point′net), *n.* An imitation Brussels lace.

point-plane (point′plān), *n.* A plane of points or a point-field.

point-print (point′print), *n.* Paper embossed with dots or raised points arranged according to the point system of tangible writing or printing used by the blind. See ★*point*^{1}, 31, ★*point-printing*, and ★*point system*.

point-printing (point′prin″ting), *n.* Printing in the point system used by the blind. See ★*point*^{1}, 31, and ★*point system*. It is point-embossing on paper to produce what is called *point-print*. Point-printing employs no ink and the composing is done with one point or type by hand, the type being set up in the stick in two lines to form the characters of the point-alphabet. Embossing is done in any form of embossing-press and the type can be stereotyped and copied into electrotype plates. Sheet-metal plates can be embossed in the stereograph and then used to emboss paper. Paper can also be embossed in a form of type-writer called the *kleidograph*. See ★*kleidograph*, ★*point system*, and ★*stereograph*, 2.

point-row (point′rō), *n.* In *geom.*: (*a*) the aggregate of all points on a straight; (*b*) certain separate costraight points.

pointsman, *n.* **2.** In *grouse-shooting*, a driver stationed on the flank of the line of a drive, to turn the birds toward the guns.

point-source (point′sōrs), *n.* A source of light or a source from which any system of waves emanates, the dimensions of which are so small that the waves may be regarded as emanating from a single point in space.

> If the *point-source* is in motion, the pan-potential requires Dopplerisation as well as the ordinary potential. *Nature*, Jan. 1, 1903, p. 203.

point-space (point′spās), *n.* In *geom.*, space with the point as element.

> The Plane Geometry of the Point in *Point-Space* of Four Dimensions. *Science*, Oct. 2, 1903, p. 435.

point-transformation (point′trans-fôr-mā″shon), *n.* See ★*transformation*.

point-writing (point′rī″ting), *n.* Writing by means of the point system used by the blind. See ★*point*^{1}, 31, and ★*point system*. It is done by embossing the points on paper by means of a stylus formed of a short piece of wire inserted in a suitable handle and having a blunt, rounded point. The paper is laid on a metal plate with grooves or indentations arranged in parallel lines, each point being embossed in the paper by pressing it into the grooves or indentations. The embossing proceeds from right to left, suitable spaces being left after each letter and after each word. When the sheet of paper is embossed it may be painted on the back with a solution of shellac in alcohol. This, when dry, stiffens the paper to prevent the points from breaking down under the pressure of the finger when being read by touch. The sheet is then reversed and read by touch from left to right.

poison, *n.* **2.** In its scientific sense this word applies to any substance which, taken in small quantity into the body of a living animal, is capable by its chemical action, exerted locally or after absorption into the blood, of producing death or notable injury. This definition excludes substances which act mechanically, such as broken glass, or physically, as very hot water.—**English purple poison,** a trade-name of an arsenical insecticide, a by-product from the manufacture of aniline red: essentially the same as *London purple* or *Paris* ★*purple*.—**Hemotropic poison,** a poison which has a selective affinity for the red corpuscles of the blood.—**Poison apparatus,** in *entom.*, the apparatus for the secretion and injection of poison, consisting usually of one or two glands connected with the sting, as in bees, wasps, and ants, or with the beak, as in mosquitos, biting-flies, and the predatory *Heteroptera*.—**Poison land.** See ★*land*^{1}.

poisonberry-tree (poi′zn-ber-i-trē″), *n.* Same as ★*butter-bush*.

poison-bush (poi′zn-bush), *n.* In Australia, same as *poison-plant*, in all senses.—**Desert poison-bush.** Same as *poison-plant* (*a*).—**Dogwood poison-bush,** *Myoporum deserti*, an Australian shrub which is especially poisonous to sheep, but only when in fruit.—**Ellangowan poison-bush,** in Queensland, same as *dogwood* ★*poison-bush*.—**Peach-leaved poison-bush,** *Trema aspera*, a shrub or tree of the nettle family.

poison-claw (poi′zn-klâ), *n.* One of the first pair of legs in the myriapods of the orders *Chilopoda* and *Schizotarsia*. The poison-glands with which they are provided secrete a liquid poison which runs down a canal into the chitinous claw and so into the wound made by the claw.

poison-cup, *n.* **2.** In *bot.*, the remnants of the volva or veil which persist in cup-like form at the base of the stem of many of the poisonous mushrooms.

poison-daisy (poi′zn-dā″zi), *n.*; pl. *poison-daisies* (-ziz). The mayweed.

poison-fish (poi′zn-fish), *n.* A fish, *Emmydrichthys vulcanus* Jordan, of Tahiti, with stinging spines. It lies in crevices of lava, and can scarcely be distinguished from an irregular lump of lava-rock.

Poison-fish (*Emmydrichthys vulcanus* Jordan).
(From Jordan's "Guide to the Study of Fishes.")

poison-flag (poi′zn-flag″), *n.* See ★*flag*^{3}.

poisoning (poi′zn-ing), *n.* **1.** The administration of a poison.—**2.** The morbid state, acute or chronic, induced by any poison.—**Forage poisoning,** a non-infectious disease which principally affects horses. It results from eating moldy food or food which is undergoing fermentation. Also called *cerebrospinal meningitis*.

Poisonous spines. See ★*spine*.

poison-root (poi′zn-röt), *n.* *Æsculus pavia*, the twigs and roots of which were used to stupefy fish. *N. E. D.*

poison-tree, *n.* **2.** In Australia, the blinding-tree or tiger's-milk, *Excæcaria Agallocha*, often called *river poison-tree* on account of its habitat and in distinction from another species of the same genus. See *tiger's-milk*.—**Scrub poison-tree,** a small Queensland tree, *Excæcaria Dallachyana*.

Poitea (poi′tẹ̄-ạ̈), *n.* [NL. (Ventenat, 1808), named in honor of Antoine *Poiteau* (1766–1854), a French botanist.] A genus of plants of the family *Fabaceæ*. They are shrubs with rose or purple flowers in axillary pendulous racemes. Four species are recognized, natives of Haiti and Santo Domingo. *P. galegoides* is sometimes cultivated in hot-houses as an ornament. See *Vilmorinia*.

poivrade (pwo-vräd′), *n.* [F., < *poivre*, pepper.] Pepper-sauce.—**Poivrade sauce.** See ★*sauce*.

poke^1, *v. t.* **3.** In *cricket*, to bat in a cramped, over-cautious style.

poke^1, *n.* **5.** In *cricket*: (*a*) A cramped, timid batting stroke. (*b*) A batsman who plays in a cramped, over-cautious style.

poke-blown (pōk′blōn), *a.* [*poke*^{2} + *blown*.] Having the air-bladder unduly distended, the eyes bulging out, and the esophagus protruding from the mouth: a condition of fishes which have been brought up from a considerable depth in the sea.

poke-hole (pōk′hōl), *n.* A hole in the wall of a furnace through which a slice-bar or poker can be thrust for the purpose of poking the fire.

poke-hooked (pōk′hukt), *a.* [*poke*^{2} + *hooked*.] Hooked in the stomach, having swallowed bait, hook, and all: said of a fish.

> "Help us here, Harve. It 's a big un. *Poke-hooked* too." . . .
> He had taken the bait right into his stomach, . . .
> "Say, this is great!" Harvey cried as the fish came in gasping and splashing — nearly all *poke-hooked* as Dan had said. *R. Kipling*, Captains Courageous, iii.

pokeloken (pōk-lō′kẹn), *n.* [Also *pokeloke*, *pokologan*; identical with *Popelogan*, a place-name in New Brunswick, and the probable source of both *logan* and *bogan* in like sense; appar. of like origin, in the first element, as *pocosin*, namely, Massachusetts *pohqui*, open out, Ojibwa *pâkissin*, it is open. One writer derives it "from the Maliseet *pecelaygan*, a place for stopping."] A marshy tract or stagnant pool extending into the land from a stream or lake. See the quotation under ★*logan*^{2}. *Jour. Amer. Folk-lore*, Oct.-Dec., 1902, p. 254; also April–June, 1903, p. 129.

poke-pudding (pōk′pud″ing), *n.* [*poke*^{2}, *n.*, + *pudding*.] **1.** A pudding cooked in a bag; a bag-pudding: applied in ridicule to a corpulent person. [Scotch.]—**2.** One of several local English names for the bottle-tit or long-tailed tit, *Acredula caudata*.

poker^1, *n.* (*d*) In *cotton-manuf.*, a vertical rod or rack which sustains and gives motion to the bobbin or ring-rail of a roving or ring-spinning machine; also, a rod with similar functions in other machines: sometimes called a *lifting-poker*.

poker^3, *n.*—**Domino poker,** a game resembling poker, played with dominoes instead of cards.—**Show-down poker,** a game of poker in which the limit is so small that one cannot bluff, and the hands must always be shown to win the pool.—**Stud poker.** See ★*stud-poker*.

poker-dice (pō′kėr-dīs), *n.* A game played with five ordinary dice, or with special dice having on their faces the A, K, Q, J, 10, 9 of any suit in a pack of cards. Any number can play, each in turn having three throws. After the first cast the player can take up and cast again as many of the five dice as he pleases, setting aside what he wishes to keep out. After setting aside what he wishes from the second throw he can cast the remaining dice again. He is not obliged to throw more than once or twice if he is satisfied with the cast so far. The best poker combination wins. In the eastern United States, when ordinary dice are used aces beat sixes, but in the western United States and in Australia aces are low.

poker-work (pō′kėr-wėrk), *n.* A method of drawing or engraving on wood by the use of a red-hot poker; also, the work so produced. See *poker-painting* and *pyrography*.

Pol. An abbreviation of *Polish*.

Polack, *n.* **2.** A name given to the Jews of the Polish provinces, by their Lithuanian coreligionists. The former, in turn, call the latter ★*Litvaks* (which see).

polampore, *n.* Same as *palampore*.

Poland-China (pō′lạnd-chī′nạ̈), *n.* An American breed of hogs originating in Ohio in 1840 as the result of crossing several breeds, including the Poland and Big China. The original Poland-China, a large, coarse animal, was crossed with the Berkshire and the modern breed is a black and white pig that yields a large amount of merchantable meat.

Polandian (pọ̄-lan′di-ạ̈n), *n.* Same as *Polandian* ★*epoch*.

polar, *a.* **6.** Having opposite properties at its two ends.

> This kind of multiplication, where AB=—BA, is called *polar* because the product AB has opposite properties at its two ends. *R. F. Scott*, Treatise on the Theory of Determinants, [p. 13.

International Polar Commission. See ★*commission*^{1}.—**Polar axis.** (*b*) In *geom.*, the initial line for polar coördinates.—**Polar body,** one of two minute cells, known respectively as the *first* and *second polar bodies*, which arise by a very unequal mitotic division of the animal ovum, or primary oöcyte, before or soon after fertilization. The second polar body sometimes divides again equally, so that the egg thus gives rise to one large cell (the egg proper) and three small cells (polar bodies). These four cells are sometimes called *oötids*, and are morphologically equivalent to the four equal spermatids derived by two successive so-called maturation divisions from a primary spermatocyte.—**Polar caps of cold air.** See ★*cap*^{1}.—**Polar capsule,** in the spores of *Myxosporidia*, a pear-shaped body containing a spirally coiled filament and situated at one pole of the spore. The capsules vary from one to four in number and each communicates with the exterior by a fine canal through which the filament may be shot out, the discharge being naturally effected by the action of the digestive juices of the host upon the capsule. The filament enters the epithelium of the digestive tract and acts as an organ of fixation holding the spore in place. The valves of the spore then separate allowing the sporozoite to escape. The latter emerges in the form of a minute amœbula and penetrates the wall of the digestive tract.—**Polar cubic, cyclone.** See ★*cubic*, etc.—**Polar discontinuity,** the sort of discontinuity which exists at a non-essential singular point or a pole of an analytic function, *fx*.—**Polar field,** in ctenophorans, as *Hormiphora*, one of a pair of elongated, band-like, ciliated tracts into which the sensory pit is produced on either side in the sagittal plane. Also called *polar plate*.—**Polar filament,** in *Myxosporidia*, a coiled thread contained in a polar capsule.—**Polar ray.** See ★*ray*^{1}.—**Polar reciprocal of a surface.** See ★*reciprocal*.—**Polar region,** in *electrother.*, the part of the body lying directly below or surrounding the electrode. Also *polar zone*.—**Polar symmetry.** See ★*symmetry*, 6.

II. *n.* **2.** A great circle two of whose points are each a quadrant from a given point: it is the polar of the given point.—**3.** Given a trihedral; to each face from the vertex erect a perpendicular ray on the same side as the third edge; the trihedral they form is the polar of the given one.—**Method of**

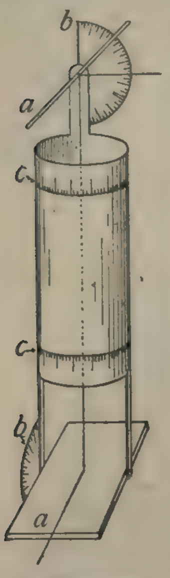
reciprocal polars. See ★*method.*—**The polar of a triangle,** ABC, for a conic *a*, the axis *s* of perspective of the triangle ABC and its reciprocal A′B′C′.

polarimeter, *n.*—**Pickering's polarimeter,** one in which the light to be examined passes through a grille with parallel bars and spaces of equal width. The light enters a double-image prism of Iceland spar which separates the centers of the ordinary and of the extraordinary images of the spaces by the width of the spaces so that one set of images is seen alternating with the other. These are examined by the analyzer or Nicol prism, which is turned about its axis until the two sets of images appear of exactly the same brightness.

polarimetric (pō″lar-i-met′rik), *a.* In *optics*, of or pertaining to the measurement of polarized light; of or pertaining to polarimetry or the scientific use of the polarimeter.

From a *polarimetric* investigation of the racemisation of amygdalin, the author shows that it is probable that the process is a catalytic one induced by the presence of alkalies. *Jour. Phys. Chem.*, May, 1904, p. 372.

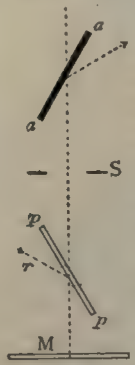
polariscope, *n.*—**Biot's polariscope,** a simple reflecting polariscope. It consists of two polished mirrors of black glass whose angles and positions relative to one another may be varied.—**Nörrenberg polariscope,** a form of polariscope having as polarizer an unsilvered glass plate and as analyzer a mirror of black glass. A ray of light (*r*) is reflected downward at the angle of complete polarization by the unsilvered mirror *pp* and is returned in a vertical path by the silvered mirror M. A portion of this ray reaches the analyzer of black glass *aa* at the angle of complete polarization. The analyzing mirror *aa*, which is mounted so as to revolve about an axis in the vertical ray, reflects an amount of light which varies with its position. When the plane of incidence of the analyzer is at right angles with that of the polarizer, extinction of the ray occurs. The object to be observed under the action of the polarized light is placed upon the stage S. The Nörrenberg polariscope has the advantage of simplicity of construction, mirrors being used instead of polarizing prisms. It also affords a large field. It is, however, deficient in illumination.—**Savart's polariscope,** a device for detecting small amounts of plane polarized light. It consists of two thin plates of equal thickness cut from a uniaxial crystal such as quartz. These are superposed with their principal sections at right angles and are mounted in front of a Nicol prism the polarizing plane of which bisects the angle of the principal sections of the plates. Polarization of the light passing through this instrument is indicated by interference fringes in the field.



Biot's Polariscope.

(From Preston's "Theory of Light.")

a, *a*, mirrors; *b*, *b*, semicircles; *c*, *c*, graduated rings.



Nörrenberg Polariscope.

Polariscopic analysis, the determination or identification of substances by means of polarized light.—**Polariscopic camera.** See ★*camera.*

polaristrobometrograph (pō-lạr-i-strob-ọ-met′rọ-gräf), *n.* [NL. *polaris*, polar, + Gr. *στρόβος*, a whirling about, + *μέτρον*, measure, + *γράφειν*, write.] An instrument for following the progress of chemical reactions between optically active substances where such reactions affect the rotation of the plane of polarization of light transmitted by the substances; a form of recording-polarimeter.

polarite (pō′lär-īt), *n.* [*polar* + *-ite*^{2}.] A trade-name for a sand which contains magnetic oxid of iron. It was used for filter-beds in England, but was found to be expensive.

Each of the filter beds has an area of 900 square feet and a normal thickness of 3 feet 1 inch. The top layer is fine sand, the second is sand and *polarite* mixed in the proportion of 6 inches of the latter to 5 inches of the former, and then follow layers of material of gradually increasing size. *Engin. Record*, Nov. 26, 1898, p. 561.

polarity, *n.* **1.** (*b*) In *biol.*, the imaginary cause of the regeneration in a mutilated organism of a part like that which has been removed.

Trembley, Spallanzani, and Bonnet knew that, in general, at the end of a piece of an animal from which a head has been cut off a new head develops, and from the posterior cut surface of a piece a new posterior part is regenerated. Allman was the first to give the name "*polarity*" to this phenomenon. *T. H. Morgan*, Regeneration, p. 38.

If a planarian is cut in two at almost any level a new tail regenerates on the posterior end of the anterior piece and a new head on the anterior end of the posterior piece. It appears that the same material is doubly potent, being able at nearly every level to form a head or a tail. Something in the piece itself determines that a head shall develop at the anterior cut surface and a tail at a posterior cut surface. This "something" is what we call *polarity*. *Amer. Nat.*, July–Aug., 1904, p. 503.

(*c*) That endowment of plants, plant-organs, and even of spores and cells, by virtue of which they tend to develop axially and with a distinction of base and apex; verticibasality. This polarity inheres even in small pieces of a stem in such wise that they tend to throw out roots from the end originally nearest the base and shoots from that farthest from it. Accordingly the basal end of a piece or whole is termed (first by Vöchting) the *root-pole*, the apical end the *shoot-pole*, the latter also *stem-pole* (Pfeffer). Polarity is either (relatively) stable, as in flowering plants, or labile (changeable). Some low organisms are apolar.

5. In *geom.*, a conlocal reciprocation in which any two corresponding elements are doubly correlated.—**Plane polarity** (*geom.*), a reciprocation between two coplanar planes in which any two corresponding elements are doubly correlated.—**Quadric polarity,** in *geom.*, a polarity in which the reciprocation is with regard to a quadric.

In the biology notes the body cavities and nephridia of the Actinotrocha are discussed by Dr. R. P. Cowles, while the mathematical notes deal with linear correspondences, the orthic cubic curve, and the construction of *quadric polarity* in space. *Nature*, June 9, 1904, p. 140.

polarization, *n.* **3.** In *geom.*, the passing to or taking the polar: of two polar figures or formulas either results from the other by polarization.—**4.** In *biol.*, the replacement or regeneration of lost parts in the axial or stereometrical relations which they exhibited before they were lost. See ★*polarity*, 1 (*b*).

Likewise, there are animals every piece of which produces, at either end, that organ towards which it was directed in the normal condition. We may speak in such cases of *polarization*. *J. Loeb*, Biol. Lectures, 1893, p. 43.

5. In *elect.*, the property of acting differently according as the current, electric or magnetic, is in one direction or the opposite direction.—**Arago's law of polarization,** the law that when a beam of light is partially polarized at the surface of a transparent medium the reflected and transmitted beams exhibit equal amounts of polarization, the planes of polarization being at right angles to each other.—**Electrochemical polarization,** the counter-electromotive force produced by the passage of an electric current through an electrolytic conductor (see ★*conductor*, 9 (2)), due to the deposition of the products of decomposition of the electrolyte on the terminals.—**Magnetic polarization,** the fact of being permanently magnetized and so responding to one magnet pole by attraction and to the other by repulsion.—**Polarization cell, tube.** See ★*cell*, ★*tube.*—**Remanent polarization,** in *elect.*, residual polarization of an electrolytic or voltaic cell.—**Rotatory polarization.** See *rotatory.*—**Residual polarization,** electrolytic polarization that persists after the removal of the impressed electromotive force.

polarize, *v. t.*—**Polarizing colorimeter,** a colorimeter in which the comparison tint is obtained by placing a properly cut selenite plate between Nicol prisms.

II. *intrans.* In *elect.*, to fall off in electromotive force, as a voltaic cell, by the liberation of hydrogen at the positive terminal.

In the local battery system, since the work required of the battery is intermittent and during only a small per cent. of the time, the batteries used are, with very few exceptions, of the open-circuit type; unfortunately, there is not yet a battery of this class known that will not *polarize* in a short time, which means that it has temporarily exhausted itself and must rest for awhile before it is as efficient as it was at the beginning of its work. *Elect. World and Engin.*, Jan. 24, 1903, p. 150.

polba (pōl′bä), *n.* [Russian.] Same as *spelt*^{1}.

pole^1, *n.* **5.** The tall, erect, flowering stem sent up by the species of *Agave* (century-plant) when about to complete their life-cycle, particularly that of the sisal hemp, *Agave rigida*, cultivated for its fiber in Yucatan, Florida, etc. Plants at the pole-bearing stage are said to be *in pole.* Plantlets are formed on the branches of the inflorescence which serve for propagation, and are known as *pole-plants.*—**6.** In *forestry*, a tree from 4 to 12 inches in diameter breast-high. See *tree* ★*class.* A *small* or *low pole* is a tree from 4 to 8 inches in diameter breast-high; a *large* or *high pole*, one from 8 to 12 inches in diameter breast-high. Also called *high pole.*—**7.** In *archery*, a case of canvas, or other material, to carry bows from place to place.—**Spring pole.** (*a*) A springy pole attached to the tongue of a logging-sled and passing over the roll and under the beam, for holding the weight of the tongue off the horses' necks. (*b*) A device for steadying a cross-cut saw, so that one man can use it, instead of two.—**To go up the pole,** in British army slang, to "go in" for promotion; to climb toward the top.

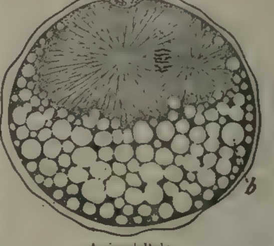
"Have a drink, Tom?"
"No, I 'm *going up the pole.*"
N. and Q., 9th ser., XI. 238.

pole^1, *v. t.* **4.** The melted metal is stirred with a stick of green wood, the steam evolved serving to agitate the metal thoroughly and to bring all parts of it into contact with the charred surface of the wood, the carbon of the latter combining with and eliminating the last traces of oxygen which render the metal brittle. The advantage of the method consists in the ease with which the action can be suspended by removing the wood while a sample of copper is taken out and tested as to its toughness, the process being in like manner permanently stopped when the desired 'tough pitch' has been attained, since continued contact with carbon would lead to this element being taken up and the copper again rendered brittle. See *poling*, 2.

pole^2, *n.* **8.** In *math.*: (*d*) The cointersection point of the joins when two correlated polystigms have the joins of their paired dots and codots copunctal. (*e*) In *function-theory*, a non-essential singular point.—**9.** In *cytol.*, one of the ends of the achromatic spindle in mitosis, or indirect cell-division. The opposite end is sometimes called the *antipole.*

The equatorial chromatic wreath resolves itself into loops arranged with their closed ends directed inwards towards a central point and their free ends outwards. These loops undergo horizontal cleavage from looped to free end, and the looped ends pass along the surface of the spindle towards *pole* and antipole. *Encyc. Brit.*, XXV. 393.

Animal pole, in *embryol.*, that portion of the egg which goes to form the nervous and sensory organs, as opposed to the *vegetative pole* which forms the alimentary tract.—**Blue pole,** in *elect.*, that pole of a magnet which according to convention is sometimes painted blue to indicate its character: usually the south-seeking pole of a magnet.—**Compression of the poles.** See ★*compression.*—**Coronal poles,** the hypothetical poles of magnetization of the sun's nucleus. *F. H. Bigelow*, U. S. Weather Bur., Bulletin 11, p. 501.—**False pole,** in *elect.*, a consequent pole due to irregular magnetization, as when a bar is so magnetized as to have poles elsewhere than at its ends.—**Guards or guardians of the pole.** See ★*guard.*—**Magnetic pole.** (*c*) That point or region of a magnet through which the lines of flux pass in entering or leaving the iron.—**Pole of a circle** on a sphere, a point in which the perpendicular to the circle's plane through the center meets the sphere.—**Pole of a function,** $f(x)$, a value of x for which $f(x) = \infty$. **Pole of a straight,** MN, for two points A and B, the fourth harmonic of the cross of MN and AB for A and B.—**Pole of a triangle,** ABC, for a conic *a*, the center O of perspective of the triangle ABC and its reciprocal A′B′C′.—**Pole of a wave,** in *optics*, that point, in a wave-front from which the wave reaches a given point external to the wave in the least time. The pole of a plane wave, with respect to any external point, is that point in the wave-front which is nearest to the external point.—**Pole of cold** or **cold pole,** in high latitudes, the place of lowest temperature: in January the pole of cold is probably not at the north pole, but in northeastern Siberia, near Verkhoyansk.—**Pole of snow,** in high latitudes, the place of most or of longest-lasting snow. *Geog. Jour.* (R. G. S.), XI. 175.—**Red pole.** (*b*) That pole of a magnet which according to convention is sometimes painted red to indicate its character: usually the north-seeking pole of a magnet.—**Salient pole,** a pole at the end of a bar-magnet, or of the core of an electromagnet, as distinguished from a consequent pole.—**Testing pole,** in *electrotherap.*, the indifferent electrode.—**Trailing pole-corner,** that corner or edge of the pole-piece of a dynamo-electric generator from which conductors on the surface of the armature move after they have entered the air-gap of the machine; the following pole-corner. The other edge or corner of the pole-piece is called the *leading pole-corner.*—**Vegetative pole,** in *embryol.*, the lower or yolk-laden pole of the ovum: so called because in teloblastic ova it gives rise to the alimentary tract or 'vegetative' organs of the embryo: opposed to the *animal* ★*pole*, which see.



Animal Pole.

Egg of the annelid *Nereis*, showing polar bodies, *a*, at the animal pole, in the granular protoplasm of which lies the dividing cleavage nucleus; below is the vacuolated vegetative pole; *b*, oil-globule. Enlarged.

(From Wilson's "The Cell.")

pole-burn (pōl′bėrn), *n.* See ★*burn*^{1}, 5 (*b*).

polecat-tree (pōl′kat-trē), *n.* A native buckthorn, *Rhamnus Caroliniana*, a shrub or small tree found through the southern United States. It bears a small, black, globose, sweetish fruit, whence it is generally called *Indian cherry.* Also called *yellow-wood.* [Texas.]

pole-cell (pōl′ sel), *n.* **1.** A polar body or directive; one of the minute cells which are separated from the egg before fertilization is completed.—**2.** Same as ★*teloblast.*

pole-compass (pōl′kum″pạs), *n.* See ★*compass.*

pol. econ., polit. econ. Abbreviations of *political economy.*

pole-corpuscle (pōl′kôr″pus-l), *n.* The centrosome of a cell. *Van Beneden.*

pole-cure (pōl′kūr), *v. t.*; pret. and pp. *pole-cured*, ppr. *pole-curing.* To cure (tobacco) mainly without artificial heat, by suspending (it) on poles in open or closed sheds or barns.

The wilted plant is fixed directly upon the poles with twine or is supported by sticks crossing from pole to pole; or the 'primed' leaves are strung on twine stretching from stick to stick. The curing may be regulated by controlling the ventilation, and fire may be used in case of extreme dampness. This method is practised with nearly all American tobaccos, except those named under ★*fire-cure* and ★*flue-cure.*

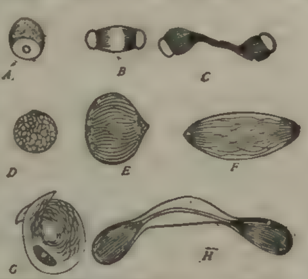
> The present method of manipulating these tobaccos after they are *pole-cured* is quite different.
> *U. S. Dept. Agr.*, Rep. 62, p. 30.

poleman (pōl′man), *n.* One who carries a pole or uses a pole as a weapon.

polemize (pol′e-mīz), *v. i.*; pret. and pp. *polemized*, ppr. *polemizing.* [Gr. *πολεμίζειν*, wage war.] To engage in controversy; write polemically.

pole-plant (pōl′plant), *n.* See ★*pole*^{1}, 5.

pole-plate, *n.* **2.** One of the masses or spheres of achromatic substance at the poles of the mitotic spindle in dividing protozoa. The pole-plates probably represent the attraction-spheres of other animals. Also called *end-plates.* — *R. Hertwig*, 1877.



Mitotic Division in Infusoria. (R. Hertwig.)

A-C, macronucleus of *Spirochona*, showing pole-plates; *D-H*, successive stages in the division of the micronucleus of *Paramæcium*; *D*, the earliest stage, showing reticulum; *G*, following stage ("sickle-form") with nucleolus; *F*, chromosomes and pole-plates; *F*, late anaphase; *H*, final phase. (From Wilson's "The Cell.") Highly magnified.

poler (pō′lėr), *n.* [*pole*^{1}, *v.*, + *-er*^{1}.] **1.** A person who poles a boat; one who pushes something, as a car, with a pole.— **2.** In Australia, one of a pair of bullocks yoked to the pole.

> Twelve bullocks is the usual number in a team, the two *polers* and the leaders being steady old stagers.
> *C. H. Eden*, My Wife and I in Queensland, p. 36, quoted [by E. E. Morris, Austral English.

pole-seat (pōl-sēt), *n.* A seat designed to be attached to a telegraph or cable pole. *Elect. World and Engin.*, Feb. 18, 1905, p. 363.

pole-shoe (pōl′shö), *n.* In an electric machine, the broadened end of the field pole where it faces the armature.

Pole-star recorder, a device for keeping a record of the visibility of the pole-star during the night-time. Pickering's pole-star recorder consists simply of a photographic lens or telescope and a sensitive plate on which is made the record of the circle described by the star's image.

pole-sweat (pōl′swet), *n.* Same as *pole-burn.* See ★*burn*^{1}, 5 (*b*).

pole-trap (pōl′trap), *n.* A trap set on the top of a pole to catch birds.

> The introduction last July into Parliament of a Bill to abolish the *pole-trap* is likewise the subject of a commendatory note. *Nature*, Oct. 15, 1903, p. 578.

polic (pol′ik), *a.* [*p*(*yroxene*) + *ol*(*ivin*) + *-ic.*] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*^{1}), containing or having the properties of the normative minerals, pyroxene, olivin, and akermanite.

Police judge, justice. See *police magistrate.*

policy^{1}, *n.*— **Pin-prick policy.** See ★*pin-prick.*— **Tea-kettle policy,** the advocacy of the boiling of all water employed for drinking and culinary purposes, as a preventive of typhoid fever, cholera, and other water-borne diseases. [Colloq.]

policy^{2}, *n.*—**Floating policy,** in *insurance law*, a policy which insures goods of a certain defined class the specific articles of which are subject to change, as a stock of merchandise in a store, etc.— **Mixed policy** in *insurance*, a policy which is valued as to certain specified property and open as to other. See *open* and *valued policy*, under *policy.* — **Voyage policy,** in *marine insurance*, a contract of insurance, the duration of the risk of which is determined by the time taken for a specified voyage by the insured vessel.

Poligné shale. See ★*shale*^{2}.

poling, *n.* **6.** In *dyeing*, the process of working loose cotton or wool fiber in dye-vats with poles.— **7.** In *elect.*, the adjustment or arrangement of the poles of an open magnetic circuit.

> By this arrangement and a suitable *poling* of the coils a minimum of mutual induction may be made to take place. *Elect. World and Engin.*, Nov. 21, 1903, p. 843.

poling-board (pō′ling-bōrd), *n.* One of several short planks or scantlings used at the heading of a tunnel through soft material. They are driven parallel with the axis of the tunnel into the material to be excavated, near the top of the heading and in advance of the lining or permanent timber, and serve to support the roof of the heading until the entire face of the heading can be excavated and the lining or permanent timbering can be brought up and completed. See ★*forepale*, 2.

polinium (pọ-lin′i-um), *n.* [NL.] The name given by Osann to a supposed new chemical element which he thought he had detected in Russian native platinum. He afterward found that it was merely impure iridium.

polioplasm (pol′i-ọ-plazm), *n.* [Gr. *πολιός*, gray, + *πλάσμα*, something formed.] The internal granular plasma or protoplasm proper of the cell, as distinguished from the cortical plasma, paraplasm, or hyaloplasm. *Nägeli.*

polisandro (pō-lẹ-sän′drō), *n.* A corruption of *palisandro*, a name for rosewood. Same as ★*cobano.* See also *palisander.*

polish^{1}, *n.*— **Desert polish.** See ★*desert*^{1}, *n.*

polisher, *n.* (*c*) Same as *polissoir.* (*d*) In *marble-working*, a hinged horizontal arm, carrying a polishing-disk. It is adjustable to various heights and is free to swing over the table on which the slabs of marble to be polished are laid.

polishing-block (pol′ish-ing-blok), *n.* **1.** A block held by the jaws of a vise and shaped to receive, or furnish a rest for, an object to be polished.— **2.** A block used for polishing with a fine powder, such as crocus. The polishing-powder adheres to the block, which is of softer material than the piece to be polished.

polishing-machine, *n.*— **Belt polishing-machine.** See ★*sandpapering-machine.*

polishing-red (pol′ish-ing-red), *n.* A workman's name for colcothar or red oxid of iron, Fe_2O_3, used as a polishing material.

polissoir, *n.* **2.** A small implement for polishing the finger-nails.

polista (pọ-lēs′tạ), *n.* [Philippine Sp., < *polo*, a form of servitude. See ★*polo*^{3}.] In the Philippine Islands, a native obliged, under Spanish rule, to render the personal service called *polo.* See ★*polo*^{3}.

Polistotrema (pọ-lis-tọ-trē′mä), *n.* [NL., irreg. < Gr. *πολύς*, many, + *-ιστος*, superlative suffix, + *τρῆμα*, hole. The name alludes to the large number of gill-openings.] A genus of hagfishes, of the family *Heptatremidæ*, found in the eastern Pacific.

politarch (pol′i-tärk), *n.* [Gr. *πολιτάρχης*, < *πολίτης*, citizen, + *-αρχης*, < *ἄρχειν*, rule.] A civic magistrate, in certain cities, under the Romans.

politarchic (pol-ī-tär′kik), *a.* [Gr. *πολιτεία*, citizenship, + *ἀρχή*, rule.] Noting the national stage of social aggregation. *L. F. Ward*, Dynam. Sociol., I. 466.

politics, *n.*— **Peanut politics,** mean, unworthy, underhand politics. [U. S. Slang.]

politzerization (pol″it-zėr-i-zā′shọn), *n.* The act of politzerizing; the process of forcing air through the Eustachian tube into the middle ear by means of a rubber bulb with tube attachment. The tube is inserted into one nostril, the other nostril is closed, and as the patient swallows, thereby shutting off the pharynx from the nares, the bulb is compressed and the current of air dilates the Eustachian tube.

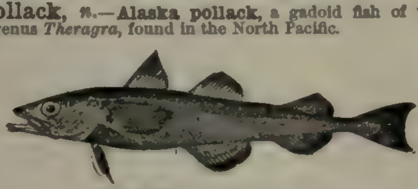
Politzer's bag. See ★*bag*^{1}.

polk^{4} (pōlk), *n.* [Russ. *polkŭ*, an army, a regiment.] In Russia, a regiment.

Polka redowa, a quick dance in triple measure.

poll^{1}, *v. t.*— **To poll a jury.** See ★*jury.*

pollack, *n.*— **Alaska pollack,** a gadoid fish of the genus *Theragra*, found in the North Pacific.



Pollack (*Theragra chalcogramma*).
From Jordan's "Guide to the Study of Fishes.")

pollack-whale (pol′ak-hwāl″), *n.* One of the smaller finback-whales, *Balænoptera borealis*, which reaches a length of 40 feet. It is bluish black above with light spots, and white below. Known in Norway as the *Sejhval* and in books as *Rudolphis rorqual.* *Amer. Nat.*, Sept., 1904, p. 614.

pollakiuria (pol″ạ-ki-ū′ri-ạ̈), *n.* [NL., < Gr. *πολλάκις*, often, + *οὖρον*, urine.] Frequent urination.

pollantine (pol′an-tin), *n.* [*poll*(*en*) + *ant*(*itoxin*) + *-ine*^{2}.] A trade-name for serum antitoxin prepared with pollen, for use as a cure for hay-fever.

pollen-basket (pol′en-bȧs″ket), *n.* Same as *corbiculum.*

pollenin (pol′en-in), *n.* [For **pollinine*, < L. *pollen* (*pollin-*) + *-ine*^{2}.] A name formerly given to the residue which remains after treating pollen with water, alcohol, and caustic potash. It is apparently impure cellulose.

pollenizer (pol′en-ī-zėr), *n.* [*pollenize* + *-er*^{1}.] Any agency that pollenizes flowers, as wind, water, or insects.

> Müller finds it difficult to explain the origin of the blue coloring by the selective influence of the *pollenizers*, and regards the question of its evolution as still unsolved.
> *Amer. Nat.*, June, 1903, p. 382.

pollen-tetrad (pol′en-tet″rad), *n.* One of the groups of four in which, by subdivision of a mother-cell, pollen-grains are usually produced.

> The lie of the division-walls in the *pollen-tetrad*, is determined by the conformation of the pollen-mother-cells.
> *K. E. Göbel* (trans.), Organography of Plants, II. 625.

pollex, *n.* **2.** (*c*) The movable joint of the forceps of the lobster, crawfish, or crab; a dactylopodite.

> The added structure is, however, not a true forceps with one movable finger, but a movable piece with two immobile prongs that otherwise resemble the index and *pollex* of a forceps. [An Aberrant Limb in a Cray-fish.]
> *Biol. Bulletin*, Jan., 1904, p. 75.

pollinator (pol′i-nā-tôr), *n.* Same as ★*pollenizer.*

> It would be difficult to find greater extremes in conspicuousness than is presented by the magnificent color masses of Rhododendron and Kalmia, and the small concealed flowers of Gaultheria, yet these latter do not want for *pollinators.* *Amer. Nat.*, June, 1903, p. 368.

polmitic (pol-mit′ik), *a.* [*p*(*yroxene*) + *ol*(*ivin*) + *m*(*agnetite*) + *i*(*lmenite*) + *t*(*itanite*) + *-ic.*] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*^{1}), having equal or nearly equal amounts of polic minerals (normative pyroxene, olivin, akermanite) and mitic minerals (normative magnetite, ilmenite, titanite, etc.).

polo^{1}, *n.* The game may be played by any number of persons, from two or three to half a dozen on a side. The ponies are limited to a specified height or weight, and are specially bred and trained for the sport. The mallet is long enough for the player to reach the ball on the ground when he is sitting upright in the saddle, and is provided with a strap which goes over the hand. The object of the game is to drive the ball through goals erected at each end of the field. The side which succeeds in driving the ball through these goals the greater number of times during certain fixed periods of play wins the game. There is one referee whose duty it is to start the play, and also to throw the ball in when it has been knocked out of bounds. The boundary of the field consists of a board projecting above the ground about a foot, which usually prevents the rolling ball from going out of bounds. The rules of the game differ somewhat in different countries. The English rules insist upon on-side methods, but allow the hooking of mallets; while the American rules admit of off-side play, but not of thus interfering with an opponent's stroke.

polo^{3} (pō′lō), *n.* [Philippine Sp., usually in pl., in the phrase *polos y servicios*; from a native term.] In the Philippine Islands, formerly, an obligation imposed upon each Filipino man, except those of high rank, to labor forty days in each year on public works, such as the making or repair of roads and bridges, etc. The obligation lasted from the age of 16 or 18 years to the age of 60 years, and could be commuted by a money payment.

polo^{4} (pō′lō), *n.* [Polynesian name.] In Samoa, the cannibal apple, *Solanum Uporo*, and other plants of the nightshade family, bearing smooth red fruit. See *cannibal* ★*apple*, and *cannibal's tomato*, under *tomato.*

poloid (pol′oid), *n.* [*pole*^{2} + *-oid.*] Same as *polhode.*

polonium (pọ-lō′ni-um), *n.* [NL., < *Polonia*, Poland.] A radioactive substance discovered in pitchblende by M. and Mme. Curie in 1898: named in honor of Poland, the native country of Mme. Curie. It was found that bismuth precipitated by sulphureted hydrogen from an acid solution of pitchblende carried down with it something possessed of marked radioactivity. The radiation caused electrical conduction in gases, rendered phosphorescent a screen coated with barium platinocyanide, and produced a latent image on a photographic plate protected by a screen opaque to ordinary light. The radioactive substance in question was found to resemble bismuth, not only in being thrown down by sulphureted hydrogen, but in furnishing salts soluble in acid but precipitated by water and by ammonia. Partial separation from bismuth was effected, but only to the extent of producing salts of the latter metal of considerably increased radioactivity. Polonium is identical with the radioactive bismuth of Giesel and the radiotellurium of Marckwald. The last-named investigator has gone much farther in the separation of polonium from other substances. By deposition from solution on a plate of metallic bismuth, and by precipitation by stannous chlorid, separating bismuth and in part tellurium, an extremely active product was obtained, but in very small quantity—only 1.5 gram from 2 tons of pitchblende. Afterward, by precipitating all remaining tellurium by hydrazine hydrochlorid, and throwing down the polonium by stannous chlorid, the radioactive substance was obtained in the finally concentrated state as a precipitate weighing only 4 milligrams, or 1 part from 500 million parts of pitchblende. The radioactivity of this final product was, however, extraordinary, one hundredth of a milligram sufficing to render a surface of zinc sulphid phosphorescent so that it could be seen by a large audience. Even in this most concentrated form no directly visible light is given off. The radiation is of the *α* or non-penetrating type. No gaseous emanation is given off, and activity is not induced on surrounding bodies. The activity of polonium gradually decreases, and falls to half its original value in 143 days. Rutherford has shown that polonium is a disintegration-product of radium and accordingly of uranium. It is the seventh successive product which has been identified as formed from the radium emanation, and is therefore known as radium G.—**Polonium rays.** See ★*ray*1.

polot (pō-lōt′), *n.* [Tagalog.] Syrup of any kind. [Philippine Is.]

poltergeist (pọl′tėr-gīst), *n.*; pl. *poltergeister* (-gīs-tėr). [G., < *poltern*, rumble, rattle, clatter (earlier *boldern*, variant of *bollern*: see *boulder*, *n.*), + *geist*, spirit, = E. *ghost.*] A ghost or spirit that indicates its presence by the sound of moving objects, knocks, and similar noises.

Vampires appear in the character of the *poltergeist* or knocker, as causing those disturbances in houses which modern spiritualism refers in like manner to souls of the departed. *E. B. Taylor*, Primitive Culture, II. 193.

poltina (pọl-tē′nä), *n.* [Russ. *poltina.*] A Russian silver coin, the half-ruble.

poltophagy (pol-tof′a̤-ji), *n.* [Gr. *πόλτος*, porridge, + *-φαγια*, < *φαγεῖν*, eat.] The practice of masticating the food thoroughly, and not merely biting it into bits, before swallowing. [Rare.]

I have called this way of taking food *Poltophagy* (poltos=masticated, finely divided), and the other, psomophagy (psomos=biting, tearing). *H. Higgins*, Humaniculture, p. 52.

poltorak (pōl′tọ-räk), *n.* [Pol. *póltorak*, < *póltora* (Russ. *poltorá*), one and a half.] A Polish coin equal to one and one half groschen, or one twenty-fourth of a thaler.

poltra (pōl′tra̤), *n.* [Hung. *póltra*, a half-groschen: compare ★*poltorak.*] A small copper coin of Hungary.

polvillos (pọl-vēl′yōs), *n. pl.* [Sp. *polvillo*, fine dust.] The metallic sulphids and mercury remaining in a tentadura after the earthy and lighter particles have been washed off. *Phillips and Bauerman*, Elements of Metallurgy, p. 743.

polyacid (pol-i-as′id), *a.* [Gr. *πολύς*, many, + E. *acid.*] In *chem.*, of a base, equivalent in combining capacity to an acid radical of valence greater than unity.—**Polyacid alcohols.** See ★*polyvalent.*

polyacron (pol-i-ak′ron), *n.*; pl. *polyacra* (-ra̤). [Gr. *πολύς*, many, + *ἄκρον*, summit.] In *geom.*, the figure formed, or the solid bounded, by plane polygons so situated that each side is common to two, the number of summits determining its type; a polyhedron.

polyact, *a.* **II.** *n.* A polyaxon sponge-spicule; a polyactine.

polyactine (pol-i-ak′tin), *n.* [Gr. *πολύς*, many, + *ἀκτίς* (*ἀκτιν-*), ray.] A sponge-spicule of many rays. *Encyc. Brit.*, XXXII. 813.

polyadenoma (pol″i-ad-e-nō′ma̤), *n.*; pl. *polyadenomata* (-ma̤-ta̤). [Gr. *πολύς*, many, + *ἀδήν*, gland, + *-oma.*] The enlargement of an aggregation of glands.

polyanthy (pol′i-an-thi), *n.* [*polyanth*(*ous*) + *-y*3.] In *phytogeog.*, the production of numerous flowers, viewed as a means, through abundant seed-production, of the maintenance or extension of the hold of the species.

polyarch (pol′i-ärk), *a.* [Gr. *πολύς*, many, + *ἀρχή*, origin.] In *bot.*, having numerous centripetally developed xylem plates: said of some radial vascular cylinders.

polyarchical (pol-i-är′ki-ka̤l), *a.* Of the nature of a polyarchy. See *polyarchy*1.

polyarchy2 (pol′i-är-ki), *n.* [*polyarch* + *-y*3.] The character or condition of being polyarch. See ★*polyarch.*

The thick roots of *Iris* . . . are examples of a high degree of *polyarchy.* *De Bary* (trans.), Comp. Anat. Phanerogams and Ferns, [p. 357.

polyargyrite (pol-i-är′ji-rīt), *n.* [Gr. *πολύς*, many, + *ἄργυρος*, silver, + *-ite*2.] A sulphantimonite of silver ($12Ag_2S.Sb_2S_3$) occurring in black isometric crystals: found at Wolfach in Baden.

polyarthritic (pol″i-är-thrit′ik), *a.* Pertaining to or suffering from polyarthritis.

polyatomicity (pol-i-at-ọ-mis′ị-ti), *n.* [*poly-* + *atomicity.*] Atomicity or valence of a grade higher than unity. See *valence*2, 1.

polyaxile (pol-i-ak′sil), *a.* Same as *polyaxial.*

polyaxon, *a.* **2.** In *neurol.*, noting nerve-cells which have several axons, or axis-cylinder processes: opposed to ★*monaxon*, 2.

polyazin (pol-i-az′in), *n.* [Gr. *πολύς*, many, + E. *azin.*] In *organic chem.*, any compound containing in its molecules a cyclic linking of atoms two or more of which consist of nitrogen.

polyazole (pol-i-az′ōl), *n.* [Gr. *πολύς*, many, + E. *azole.*] An azole with two or more nitrogen atoms in place of the same number of methine groups.

polybathic (pol-i-bath′ik), *a.* [Gr. *πολύς*, much, + *βάθος*, depth.] In *biol.*, living at great depths in the sea. *N. E. D.*

polyblast (pol′i-blast), *n.* [Gr. *πολύς*, many, + *βλαστός*, germ.] In *embryol.*, the cell-mass forming the segmenting ovum; the morula. *E. R. Lankester*, 1873.

polyblastic (pol-i-blas′tik), *a.* [*polyblast* + *-ic.*] Pertaining to, or of the nature of, a polyblast or morula.

polybromide (pol-i-brō′mid), *n.* [Gr. *πολύς*, many, + E. *bromide.*] In *chem.*, a simple bromide containing in its molecule more than a single atom of bromine.

polybunic (pol-i-bū′nik), *a.* Same as ★*polybunous.*

polybunous (pol-i-bū′nus), *a.* [Gr. *πολύς*, many, + *βουνός*, a hill.] Having teeth with many rounded tubercles. *Proc. Zool. Soc. London*, 1893, p. 205.

polybuny (pol-i-bū′ni), *n.* [*polybun*(*ous*) + *-y*3.] The fact or condition of having teeth with many rounded tubercles. See *bunodont.* *Proc. Zool. Soc. London*, 1893, p. 205.

polycarboxylic (pol″i-kär-bok-sil′ik), *a.* [Gr. *πολύς*, many, + E. *carboxyl* + *-ic.*] Containing more than one carboxyl group.—**Polycarboxylic acid,** a polybasic organic acid, or one that contains more than one carboxyl group, as succinic acid, $C_2H_4(COOH)_2$, or ethane-dicarboxylic acid.

polycarpous, *a.* **2.** Same as *polycarpic.*

Polycarpous, those [roots] which produce successive crops. *Rusby and Jelliffe*, Morphol. and Hist. of Plants, p. 150.

polycarpy (pol′i-kär-pi), *n.* [*polycarp*(*ous*) + *-y*3.] In *bot.*, an abnormal number of carpels: a teratological condition.

polycentral (pol-i-sen′tra̤l), *a.* Same as *polycentric.*

Another paper . . . shows that there were seven distinct centres of destructive violence, and that the earthquake was a true *polycentral* one. *Nature*, Feb. 21, 1907, p. 398.

polycephalic (pol″i-se-fal′ik), *a.* [Gr. *πολύς*, many, + *κεφαλή*, head.] Having several or many heads; polycephalous.

polychætal (pol-i-kē′ta̤l), *a.* Polychætous. *Nature*, Dec. 11, 1902, p. 144.

polycheiria (pol-i-kī′ri-a̤), *n.* [NL., < Gr. *πολύς*, many, + *χείρ*, hand.] A condition in which there is a supernumerary hand.

polychlorid (pol-i-klō′rid), *n.* [Gr. *πολύς*, many, + E. *chlorid.*] In *chem.*, a simple chlorid containing in its molecule more than a single atom of chlorin.

polychromasia (pol″i-krọ-mā′zia̤), *n.* [NL., prop. **polychromatia*, < Gr. *πολύς*, many, + *χρῶμα*, color.] Same as ★*polychromatophilia.*

polychromate (pol-i-krō′māt), *n.* [*polychrom*(*ic*) + *-ate*1.] In *chem.*, a salt which may be viewed as consisting of two or more combining units of chromium trioxid combined with the oxid of a more basic element or radical, as potassium trichromate, $K_2Cr_3O_{10} = K_2O.(CrO_3)_3$.

Polychromatic sculpture, sculpture on the surface of which various colors have been applied. Polychromatic effects may be secured by paint, by glazes on a clay foundation, or by the use of different materials, as ivory and gold.

polychromatist (pol-i-krō′ma̤-tist), *n.* [*polychromat*(*ic*) + *-ist.*] One who uses, or favors the use of, many colors in painting or decoration. *N. E. D.*

polychromatophil, polychromatophile (pol-i-krō′ma̤-tọ-fil), *a.* and *n.* [Gr. *πολύς*, many, + *χρῶμα*(*τ-*), color, + *φιλεῖν*, love.] **I.** *a.* Having an affinity for more than one dye; taking both acid and basic stains: noting especially certain degenerated or immature forms of red blood-corpuscles.

Polychromatophile degeneration is present in a small degree. *Med. Record*, Feb. 28, 1903, p. 324.

II. *n.* A degenerated or immature form of red blood-corpuscle which stains not only in the presence of the acid dyes, as does the normal cell, but also in that of the basic dyes.

polychromatophilia (pol″i-krō′ma̤-tọ-fil′i-a̤), *n.* [NL., < Gr. *πολύς*, many, + *χρῶμα*(*τ-*), color, + *-φιλια*, < *φιλεῖν*, love.] The condition of the red blood-corpuscles, in which they take both acid and basic stains; polychromasia.

polychromatophilic (pol″i-krō″ma̤-tọ-fil′ik), *a.* Same as ★*polychromatophil.*—**Polychromatophilic degeneration.** See ★*degeneration* and ★*polychromatophil.*

polychromatous (pol-i-krō′ma̤-tus), *a.* Same as *polychromatic.*

polychromia (pol-i-krō′mi-a̤), *n.* [NL., < Gr. *πολύς*, many, + *χρῶμα*, color.] In *pathol.*, excessive formation of pigments, as in the bile.

polychromine (pol-i-krō′min), *n.* [Gr. *πολύς*, many, + *χρῶμα*, color, + *-ine*2.] A direct cotton coal-tar color. Same as ★*primulin*, 2.—**Polychromine B,** a direct cotton coal-tar color of the stilbene type. In a salt bath it dyes unmordanted cotton a reddish brown, but it is not until it is subsequently diazotized and developed that the best results are obtained. When developed with *β*-naphthol a claret red is produced, and with phenylene-diamine a deep brown.

polychromism (pol′i-krō-mizm), *n.* [*polychrome* + *-ism.*] The condition of being spotted or marbled with several colors or shades of color.

Albinism, partial albinism and *polychromism* in hagfishes. *Amer. Nat.*, Index, Jan., 1904.

polychromous (pol′i-krō-mus), *a.* [*polychrome* + *-ous.*] Same as *polychrome.*

polyclad (pol′i-klad), *n.* [*Polyclad*(*ida*).] One of the *Polycladida.*

In Triclads and *Polyclads* the brain is little more than a thickening due to the fusion of these tracts at the anterior end and on the ventral surface. *Encyc. Brit.*, XXXI. 793.

polyclade (pol′i-klād), *n.* Same as ★*polyclad.* *Buck*, Med. Handbook, IV. 658.

Polycladida (pol-i-klad′i-da̤), *n. pl.* [NL., < Gr. *πολύκλαδος*, having many branches.] An order of marine turbellarians. They have the pharynx leading into a central enteron which is produced laterally into a number of cæca that sometimes branch and extend nearly to the margin of the body.

polycladose (pol-i-klā′dōs), *a.* [Gr. *πολύκλαδος*, many-branched.] Having cladomes with many branches: said of sponge-spicules.

polycormic (pol-i-kôr′mik), *a.* [Gr. *πολύς*, many, + *κορμός*, tree-trunk.] In *bot.*, having several trunks or coördinate stems.

polyctenid (pō-lik′te-nid), *n.* and *a.* **I.** *n.* A member of the hemipterous family *Polyctenidæ.*

II. *a.* Having the characters of or belonging to the family *Polyctenidæ.*

polycyanide (pol-i-sī′a̤-nid), *n.* [Gr. *πολύς*, many, + E. *cyanide.*] A simple cyanide containing in its molecule more than one combining unit of the radical cyanogen.

polycyclic, *a.* **2.** In *elect.*, noting a system of electric distribution by alternating currents, in which the energy maxima of the flow of power of the different circuits overlap so as to give a total flow of power of constant intensity. This is the case in a symmetrical or hemisymmetrical polyphase system. See ★*polyphase.* *Jour. Inst. Elect. Engin.* (London), 1902–03, p. 751.—**3.** In *chem.*, containing more than one atomic ring in the molecule.—**Polycyclic hydrocarbon,** a hydrocarbon containing more than one atomic ring, as naphthalene, $C_{10}H_8$, and anthracene, $C_{14}H_{10}$, which are dicyclic and tricyclic, respectively.

Polycystidea (pol″i-sis-tid′ẹ-a̤), *n. pl.* [NL., < Gr. *πολύς*, many, + *κύστις*, bag, + *-idea.*] A group of gregarines having the body differentiated into protomerite, deutomerite, and (sometimes) epimerite; the *Septata.* Compare *Monocystidea.*

polycystin (pol-i-sis′tin), *n.* [*Polycystis* + *-in*2.] A little known crystalline carotin, found in the alga *Polycystis flosaquæ.*

polycystinan (pol-i-sis′ti-nan), *a.* Same as ★*polycystin.*

polycythemic (pol-i-sī-them′ik), *a.* [*polycythemia* + *-ic.*] Relating to or affected with polycythemia.

Polydactylus (pol-i-dak′ti-lus), *n.* [NL., < Gr. *πολύς*, many, + *δάκτυλος*, finger.] A genus of fishes of the family *Polynemidæ*, containing numerous species found in warm seas.

polydemic (pol-i-dem′ik), *a.* [Gr. *πολύς*, many, + *δῆμος*, people, + *-ic.*] In *phytogeog.*, growing in several countries, as a genus or species: opposed to ★*endemic:* introduced by Fenzl (1833), to replace the term *sporadic* of de Candolle. See ★*sporadic.*

polydemonism (pol-i-dē′mọn-izm), *n.* [Gr. *πολύς*, many, + *δαίμων*, demon.] That form of religion which is based on the belief that all phenomena of nature are controlled by independent supernatural powers, more or less anthropomorphic.

polydemonistic (pol-i-dē-mọ-nis′tik), *a.* Pertaining to or characterized by polydemonism.

polydomous (po-lid′ọ-mus), *a.* [Gr. *πολύς*, many, + *δόμος*, house, + *-ous.*] Consisting of or inhabiting more than one nest: opposed to ★*monodomous:* applied to a formicary or ant colony. *Forel.*

polydrometry (pol-i-drom′e-tri), *n.* [Gr. *πολύς*, many, + *δρόμος*, course, + *μέτρον*, measure.] That part of the science of mathematics which treats of polydromic figures or functions.

polydynamic (pol″i-dī-nam′ik), *a.* [Gr. *πολύς*, many, + *δύναμις*, power.] Pertaining to or having many powers or forces. [Rare.]

polyeidism (pol-i-ī′dizm), *n.* [Gr. *πολυειδής*, of many forms or kinds (< *πολύς*, many, + *εἶδος*, form), + *-ism.*] The assumption of several different forms by an organism during its life-history, as, for example, among insects which undergo metamorphosis. *Lubbock.*

polyelectronic (pol″i-ē-lek-tron′ik), *a.* [*poly-* + *electron* + *-ic.*] Containing two or more electrons.

polyergic² (pol-i-ėr′jik), *a.* [Contraction of *polyenergidic;* < Gr. *πολύς*, many, + E. *energid* (see def. below), < Gr. *ἐνεργεῖν*, to work, + *-ic.*] In *plant physiol.*, having more than one protoplasm unit, that is, nucleus with the dominated protoplasm (the *energid* of Sachs): opposed to ★*monergic.* The energid is taken as the plant unit instead of the cell, because several may be contained in one cell and because some are without cell walls.

> Our recently acquired knowledge of the cell teaches us then that we must no longer distinguish between unicellular and pluricellular but between monergic and *polyergic* plants.
> *K. E. Goebel* (trans.), Organography of Plants, I. 23.

polygalactia (pol″i-ga-lak′ti-ạ̈), *n.* [NL., < Gr. *πολύς*, many, + *γάλα* (*γαλακτ-*), milk.] The secretion of an abnormal amount of milk.

polygalic (pol-i-gal′ik), *a.* [*Polygala* + *-ic.*] Derived from *Polygala.*— **Polygalic acid,** an acid found in Seneca snakeroot, *Polygala Senega*, from the aqueous abstract of which it is precipitated by lead acetate.

polygamic (pol-i-gam′ik), *a.* [LGr. *πολύγαμος*, polygamous, + *-ic.*] Pertaining to or of the nature of polygamy; polygamous.

polyganglionic (pol″i-gang-gli-on′ik), *a.* [Gr. *πολύς*, many, + *γάγγλιον*, ganglion, + *-ic.*] Possessing many glands or ganglia.

polygene (pol′i-jēn), *a.* [Gr. *πολύς*, many, + *γέν(εσις)*, origination.] Noting those volcanic cones which are the result of successive eruptions: contrasted with ★*monogene.* The term was suggested by A. Stübel. *Geikie*, Text-book of Geol., p. 322.

polygenesis, *n.* **2.** Origination or derivation from more than one species, or, in a very restricted sense, from more than one pair: contrasted with *monogenesis.* Compare ★*polyphylesis.*

> From this suggestion sprang the doctrine of *polygenesis*, which was opposed by those who preferred the theory of monogenesis, i.e., the descent of all mankind from a single pair. *Sci. Amer. Sup.*, 1906, p. 25192.

Polygenetic colors. See ★*color.*— **Polygenetic regeneration.** Same as *facultative* ★*regeneration.*

polygenetically (pol″i-jẹ̄-net′i-kạl-i), *adv.* In a polygenetic manner; relating to the origin of organisms by polygenesis.

polygerm (pol′i-jėrm), *n.* [Gr. *πολύς*, many, + E. *germ.*] The developing egg of certain *Encyrtidæ* and other parasitic *Hymenoptera*, which ultimately develops into several or many embryos. *L. O. Howard*, in Science, Dec. 21, 1906, p. 813.

poly-germander (pō′li-jėr-man″dėr), *n.* Same as *poly.*

polyglobulism (pol-i-glob′ụ̄-lizm), *n.* [Gr. *πολύς*, many, + L. *globulus*, globule, + *-ism.*] An increase in the number of the red blood-corpuscles.

polyglottal (pol-i-glot′ạl), *a.* Same as *polyglottous.*

polyglottist (pol′i-glot-ist), *n.* [*polyglot* + *-ist.*] Same as *polyglot*, 2.

polyglycolid (pol-i-glī′kọ̄-lid), *n.* [*poly-* + *glycolid.*] See ★*glycolid.*

Polygnotan (pol-ig-nō′tạn), *a.* [*Polygnot*(*us*) + *-an.*] Of or pertaining to Polygnotus, a famous painter who flourished in ancient Athens in the middle of the fifth century B.C., or to his work, or his severe and powerful style; especially, describing certain vase paintings which are supposed to resemble his work in style or composition.

polygon, *n.* **2.** A train of sects whose last point is identical with the first.— **3.** In *ordnance*, a place especially arranged for making ballistic tests of guns, projectiles, armor, and powder. Same as *proving-ground.*— **Cyclic polygon,** a polygon whose vertices are concyclic.— **Diagonal of a polygon,** a sect that is not a side, but whose end-points are vertices of a polygon.— **Exterior polygon,** in *fort.*, the polygon having as vertices the bastion-centers of a fortification.— **Heronic cyclic polygon,** a cyclic polygon whose sides, diagonals, and area are expressible by whole numbers.— **Link polygon.** Same as *funicular polygon.*— **Plane polygon,** a polygon whose vertices are coplanar.— **Polar polygon,** in *geom.*, of a convex spherical polygon ABCD . . ., a new spherical polygon A′ B′ C′ D′ . . . , where A′ is that pole of BC which has A in its hemisphere, etc.— **Polygon of motion.** See ★*motion.*— **Polygon of vectors,** the geometrical construction, or vector diagram, based upon the principle of vector addition and utilized in mechanics for the composition and resolution of forces, velocities, accelerations, or other vector quantities. If AB, BC, CD, DE, EF, etc., are lines representing forces or other vector quantities, and if these are joined as shown in Fig. 1, the length of each line representing the magnitude of the quantity and the direction of the line its direction, then the line FA is the resultant obtained by the composition of all these vector quantities. Conversely, if AF is a line representing by its length and direction any vector quantity such as force or velocity, any polygon whatever, of which AF is one of the sides, will give a possible resolution of this vector quantity into components, the remaining sides of the polygon representing the components into which AF is resolved. If the vector quantities in question are forces, the diagram is called the *polygon of forces;* if they are velocities, it is called the *polygon of velocities.* Where only two forces, velocities, accelerations, or other vector quantities are to be combined, or where it is desired to resolve such a vector quantity into two components, the polygon becomes a *triangle of forces, velocities*, or *accelerations.* If AB and BC, Fig. 2, represent two vector quantities, AC is the resultant vector; and if, conversely, AC is a vector quantity, any two lines, AB and BC, which form sides of a triangle of which AC is the third side, are two possible components into which AC may be resolved. The *parallelogram of forces, velocities*, etc., is a form of vector diagram based upon the same principle as the triangle of vectors; but in this case the two vector quantities to be combined are drawn from the same point (the point of application) and their resultant is the diagonal of the parallelogram of which the two vectors AB and AC, Fig. 3, are adjacent sides. The diagonal AD of this parallelogram is obviously of the same length and has the same direction as the third side of the corresponding triangle of vectors in Fig. 2.— **Simple polygon,** a polygon all of whose vertices are distinct from one another, no vertex falling within a side, and no two sides having a point within in common.— **Star polygon,** a regular polygon whose sides intersect.— **Undivided polygon,** a polygon no side of which cuts another.

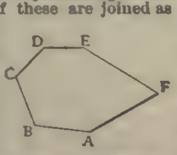


Fig. 1. Polygon of Vectors.

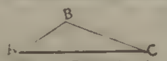


Fig. 2. Triangle of Vectors.

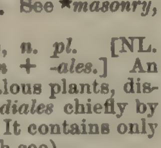


Fig. 3. Parallelogram of Vectors.

Polygonal masonry, method. See ★*masonry*, ★*method.*

Polygonales (pol-i-gọ̄-nā′lēz), *n. pl.* [NL. (Lindley, 1833), < *Polygonum* + *-ales.*] An order of dicotyledonous apetalous plants, distinguished from the *Chenopodiales* chiefly by the fruit, which is an achene. It contains only the family *Polygonaceæ* (which see).

polygonation (pol″i-gọ̄-nā′shọn), *n.* The work of conducting a survey by the polygonal method; a survey system conducted by the polygonal method: an alternative method to triangulation.

> *Polygonation*, or geodetic traverse-work, as it should be called here, is, on the other hand, an operation that may be easily carried on by the bottom of valleys, at the side of the roads or paths already existent.
> *Geog. Jour.* (R. G. S.), XVI. 330.

polygonic (pol-i-gon′ik), *a.* [*polygon* + *-ic.*] Same as *polygonal.* [Rare.]

polygonin (pọ̄-lig′ọ̄-nin), *n.* [*Polygon*(*um*) + *-in*².] A crystalline compound, apparently a glucoside, $C_{21}H_{20}O_{10}$, found in the root-bark of *Polygonum cuspidatum.* It is a derivative of methylanthraquinone.

polygraf, polygrafy. Amended spellings of *polygraph, polygraphy.*

polygram, *n.* **2.** In *geom.*, a system of *n* coplanar straights (sides), with all the flat-pencils (fans) they determine.

polygraph, *n.* **4.** A modified form of sphygmograph by which two or more tracings can be taken simultaneously.

polygynæcial, *a.* Same as *polygynœcial.*

polygyny, *n.* **2.** Of a male animal, the state of having more than one female mate. *N. E. D.*

polygyria (pol-i-jī′ri-ạ̈), *n.* [NL., < Gr. *πολύς*, many, + *γῦρος*, turn (see *gyrus*).] The presence of more than the usual number of convolutions in the brain.

Polyhedral cell. See ★*cell.*

polyhedron, *n.*— **Convex polyhedron,** a polyhedron through no edge of which pass more than two faces, and which has no summits on different sides of the plane of a face.— **Eulerian polyhedron,** a polyhedron that satisfies Euler's theorem that the number of faces increased by the number of summits exceeds by two the number of edges.— **Simple polyhedron,** a polyhedron having the summits all distinct from one another, no summit within an edge, and no two faces with a point within in common.

polyhistorian (pol″i-his-tō′ri-ạn), *n.* [*polyhistor* + *-ian.*] Same as *polyhistor.*

> The same neglect, at least of sculpture and painting, strikes us in Voltaire, who as *polyhistorian* can in some measure compare with Leibnitz.
> *Smithsonian Rep.*, 1891, p. 661.

polyhistoric (pol″i-his-tor′ik), *a.* [*polyhistor*(*y*) + *-ic.*] Pertaining to or exhibiting polyhistory or wide and varied knowledge. [Rare.]

polyhistory (pol-i-his′tọ̄-ri), *n.* [*polyhistor* + *-y*³.] Great and varied learning; the attainments of a polyhistor. [Rare.]

polyhydria (pol-i-hī′dri-ạ̈), *n.* [NL., < Gr. *πολύς*, much, + *ὕδωρ* (*ὑδρ-*), water.] Dropsy.

polyideic (pol″i-ī-dē′ik), *a.* [*polyide*(*ism*) + *-ic.*] Pertaining to or characterized by polyideism.

polyideism (pol″i-ī-dē′izm), *n.* [Gr. *πολύς*, many, + *ἰδέα*, idea, + *-ism.*] In *psychol.*: (*a*) The concurrence of a number of ideas in consciousness: opposed by Ribot, as the normal state of consciousness, to the relative *monoideism* of attention. (*b*) Extreme suggestibility; openness to suggestion by ideas of all kinds: applied by Ochorowicz to the hypnotic state.

polyinfection (pol″i-in-fek′shọn), *n.* [Gr. *πολύς*, many, + E. *infection.*] Infection with more than one variety of pathogenic organism. *Buck*, Med. Handbook, VII. 128.

polyiodide (pol-i-ī′ọ̄-did), *n.* [Gr. *πολύς*, many, + E. *iodide.*] A simple iodide containing in its molecule more than a single atom of iodine.

polylith (pol′i-lith), *n.* [Gr. *πολύς*, many, + *λίθος*, stone.] A shaft or column built up of several blocks: opposed to *monolith.* [Rare.]

polylithic, *a.* **2.** Noting a deposit consisting of several kinds of minerals or rocks.

> These crevices and fissures are filled with a *polylithic* mass of brown and white "calcic spar" in a soft talcose quartz, together with quartz-porphyrite and intensely hard quartz-rhyolite in a more or less "brecciated" condition. *Sci. Amer. Sup.*, Jan. 25, 1908, p. 61.

polylithionite (pol-i-lith′i-ọ̄-nīt), *n.* [Gr. *πολύς*, much, + NL. **lithion* for *lithium* + *-ite*².] A lithium-mica from Greenland, near zinnwaldite, but containing more alkalis and very little iron.

polylobular (pol-i-lob′ụ̄-lạ̈r), *a.* [Gr. *πολύς*, many, + E. *lobule* + *-ar*³.] Having many lobules.

polymastic (pol-i-mas′tik), *a.* [*polymast*(*ia*) + *-ic.*] Pertaining to or exhibiting polymastia, or the presence of more than two breasts or nipples.

Polymastigina (pol-i-mas-ti-jī′nạ̈), *n. pl.* [NL.] A family of flagellate protozoans. The body is somewhat oval, with a broader or pointed hinder end produced into two flagella. At the anterior end there are two or three flagella on each side. The family includes the genera *Hexamitus* and *Megastoma.*

polymastism (pol-i-mas′tizm), *n.* Same as *polymastia.* *Buck*, Med. Handbook, II. 465.

polymasty (pol′i-mas-ti), *n.* Same as *polymastia.* *G. S. Hall*, Adolescence, I. 421.

polymelian, *a.* **II.** *n.* An animal having supernumerary limbs; a polymelius.

> In the enormous majority of *polymelians* the repetition consists of parts of a complementary pair.
> *Bateson*, Material for a Study of Variation, 9, p. 554.

polymelous (po-lim′e-lus), *a.* [Gr. *πολυμελής*, having many limbs, + *-ous.*] Having more than the normal number of limbs; polymelian.

Three *Polymelous* Frogs. *Amer. Nat.*, Jan., 1901, p. 27.

polymeniscous (pol″i-mẹ̄-nis′kus), *a.* [*poly-* + *menisc*(*us*) + *-ous.*] Consisting of, or having, many lenses, or facets, as an insect's eye. *J. A. Thomson*, Outlines of Zoology, p. 304. *N. E. D.*

polymeric, *a.* 2. Same as *polymerous.*

polymeter, *n.* 3. A meteorological instrument consisting of a combination of thermometer and hair-hygrometer for the determination of temperature, humidity, dew-point, etc.

polymethylene (pol-i-meth′i-lēn), *n.* [*poly-* + *methylene.*] A cyclic compound containing three or more methylene groups. The most important are the naphthenes or derivatives of hexamethylene or hexahydrobenzene.

polymetochic (pol″i-me-tō′kik), *a.* Pertaining to or characterized by polymetochia.

polymicrobial (pol″i-mī-krō′bi-ạl), *a.* [*poly-* + *microbe* + *-ial.*] Relating to or caused by more than one form of micro-organism.

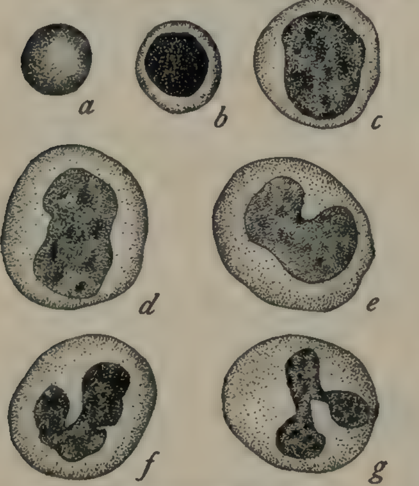
On acute *polymicrobial* osteomyelitis, by M. Ragalski. In a case of osteomyelitis of the clavicle, both the coli bacillus and staphylococcus were found to be present in the blood from the bone. *Nature*, May 8, 1902, p. 48.

polymixic (pol-i-mik′sik), *a.* [Gr. πολύς, much, + μῖξις, mixture.] Manifesting much mixture; much mixed. In *marine biol.*, an aggregation of organisms is said to be polymixic if no one form or group of forms comprises more than one half of the total volume. —**Polymixic plankton.** See ★*plankton.*

Polymorpha (pol-i-môr′fä), *n. pl.* [NL., < Gr. πολύς, many, + μορφή, form.] A series or suborder of coleopterous insects, in Sharp's system, including the older series *Clavicornia* and *Serricornia.*

polymorphistic (pol″i-môr-fis′tik), *a.* [*polymorphism.*] Pertaining to, or exhibiting, polymorphism.

polymorphonuclear (pol-i-môr-fō-nū′klẹ̄-är), *a.* [Gr. πολύς, many, + μορφή, form, + L. *nucleus*, nucleus, + *-ar*^{3}.] Having polymorphous nuclei; containing numerous nuclei of variable size and shape, as certain leucocytes.



Polymorphonuclear Cells.

From the normal blood of man; magnified 1200 times (from dry preparation of H. F. Müller).

a, red blood-cell; *b*, lymphocyte; *c* and *d*, mononuclear leucocytes; *e*, transitional leucocyte; *f* and *g*, leucocytes with polymorphous nuclei.

(From Böhm-Davidoff-Huber's "Text-book of Histology.")

There is practically entire absence of infiltration by *polymorphonuclear* leucocytes. *Med. Record*, Feb. 14, 1903, p. 271.

polymorphosis (pol-i-môr′fọ̄-sis), *n.* Same as *polymorphism.*

polymyodous (pol-i-mī-ō′dus), *a.* [*Polymyodi* + *-ous.*] Having many muscles attached to the syrinx; pertaining to or resembling the *Polymyodi*, or *Oscines.* [Rare.]

polymythy (pol′i-mith-i), *n.* [*poly-* + *myth* + *-y*^{3}.] Multiplicity of myths or stories; specifically, the introduction of several stories into one narrative or play.

Polymythy (Polymythie) in Shakespeare's Dramatic Poems, . . . I must confess that this word is new to me, but the paper has reference to Shakespeare's manner of combining several plots or actions in one play, and so obtaining by likeness or contrast a fulness of effect which could not have been got by simply setting forth the main action of the play. *Trans. New Shak. Soc.*, 1877–79, App. iv.

Polynephria (pol-i-nef′ri-ạ̈), *n. pl.* [NL., < Gr. πολύς, many, + νεφρός, kidney.] Those insects which possess many Malpighian or urinary tubes, as distinguished from the *Oligonephria.*

polynephrious (pol-i-nef′ri-us), *a.* In *entom.*, possessing many urinary tubules, as the *Polynephria.* *A. S. Packard*, Text-book of Entom., p. 354.

Polynesian, *a.* 3. Noting a family of languages having general affinities of form and considerable similarity of vocabulary, spoken throughout Polynesia, except in the western areas included in Melanesia and Micronesia. They are of simple structure, with a minimum of sounds and a prevalence of vowels. Though fluent to a degree that makes them comparable with Italian, they are without inflections, and are in other respects similar to the Malayan languages with which they form a larger group called the *Malay-Polynesian* or *Malayo-Polynesian.* —**Polynesian rosewood.** Same as ★*banago* (*a*).

Polynesic (pol-i-nē′sik), *a.* 1. Same as *Polynesian.*—2. [*l. c.*] Occurring in insulated patches. *Allbutt*, System of Medicine, VII. 50. *N. E. D.* [Rare.]

polyneural (pol-i-nū′rạl), *a.* [Gr. πολύς, many, + νεῦρον, nerve, + *-al*^{1}.] Relating to, containing, or innervated by, several nerves.

polyneuritic (pol″i-nụ̄-rit′ik), *a.* [*polyneuritis* + *-ic.*] Relating to, associated with, or affected with, polyneuritis: as, a *polyneuritic* psychosis. *Med. Record*, Aug. 1, 1903, p. 177.

polynodal (pol-i-nō′dạl), *a.* [Gr. πολύς, many, + L. *nodus*, node, + *-al*^{1}.] Having or producing many nodes: as, a *polynodal* oscillation: said of certain complex types of vibration.

polynoid (pol′i-noid), *n.* and *a.* [*Polynoë* + *-oid.*] A marine annelid of the genus *Polynoë*; resembling such an annelid.

Certainly the *Polynoids*, bristling as they do with stiff chaetae along each side, must be rather unpleasant to their smaller enemies. *Cambridge Nat. Hist.*, II. 266.

polynomic (pol-i-nom′ik), *a.* Same as *polynomial.*

polynuclear, *a.* II. *n.* A cell, such as certain colorless blood-corpuscles or leucocytes, which contains many nuclei. *R. C. Cabot*, Clinical Exam. of the Blood, p. 64.

polynucleate (pol-i-nū′klẹ̄-āt), *a.* Same as *polynuclear.*

polynucleated (pol-i-nū′klẹ̄-ā-ted), *a.* Containing many nuclei; polynuclear. *Buck*, Med. Handbook, II. 30.

polynucleolar (pol-i-nī′klē-ọ-lạ̈r), *a.* [*poly-* + *nucleolus* + *-ar*^{3}.] Having more than one nucleolus in the nucleus: said of certain cells.

polynym (pol′i-nim), *n.* [An erroneous form for *polyonym.*] One of several names (pseudonyms) appearing together as those of authors of a work.

C. M., J. H. G., M. R., *polynym* [Campbell Mackinnon, now of Jamaica] [Joseph H. Gibbs] [Montgomerie Ranking]. *Ralph Thomas*, Handbook Fictitious Names, p. 35.

polyodic^{1} (pol-i-ō′dik), *a.* [Gr. πολύς, many, + ᾠδή, song, + *-ic.*] In *music*, same as *polyphonic*, 3. Attempts are occasionally made to differentiate these terms (as by Rockstro in *Grove's* Dict. of Music (edition 1883), III. 288, note), but they are not sustained by usage.

polyodic^{2} (pol-i-od′ik), *a.* [Fr. *polyodique*, < Gr. πολύς, many, + ὁδός, way.] In *biol.*, advancing along several paths: used by Giglio-Tos, in the phrase *polyodic development*, opposed to the *monodic development* advocated by him, which sets out with the principle that owing to the nature of 'bimolecular development' two daughter-cells must be different from each other and from the mother-cell. [Rare.]

polyodontal (pol″i-ọ̄-don′tạl), *a.* [*polyodont* + *-al*^{1}.] 1. Same as *polyodont.*—2. In *elect.*, having several armature teeth for each pole of the field: said of certain generators and motors.

Low-voltage machines are usually provided with *polyodontal* windings, these windings having several separate armature teeth per pole per phase, while the high-voltage machines are generally monodontal. *Encyc. Brit.*, XXXI. 889.

polyodontia (pol″i-ọ̄-don′ti-ạ̈), *n.* [NL., < Gr. πολύς, many, + ὀδούς (ὀδοντ-), tooth.] The presence of supernumerary teeth.

polyœstrous (pol-i-es′trus), *a.* [*polyœstr*(*um*) + *-ous.*] Having two or more recurrent periods of sexual desire: contrasted with ★*monœstrous.* *Philos. Trans. Roy. Soc.* (London), 1903, ser. B, p. 50.

polyœstrum (pol-i-es′trum), *n.* [NL., < Gr. πολύς, many, + οἶστρος, vehement desire.] The fact or condition of having several successive periods of sexual desire, as some domesticated animals.

There is a perfect gradation between the monœstrous condition of some wild sheep and the extreme *polyœstrum* of certain merinos. *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 484.

polyonychia (pol″i-ọ̄-nik′i-ạ̈), *n.* [NL., < Gr. πολύς, many, + ὄνυξ, nail.] The presence of supernumerary nails.

polyophthalmia (pol″i-of-thal′mi-ä), *n.* [NL., < Gr. πολύς, many, + ὀφθαλμός, eye.] In *teratol.*, the presence of more than two eyes.

Polyopia monophthalmica, a condition in which an object regarded by one eye appears double or multiple. *Buck*, Med. Handbook, III. 493.

polyopsia, poliopsy (pol-i-op′si-ạ̈, -op′si), *n.* [NL., < Gr. πολύς, many, + ὄψις, view.] Same as *polyopia.*

polyorchis (pol-i-ôr′kis), *n.* [Gr. πολύς, many, + ὄρχις, testicle.] One who has more than two testicles.

polyorchism (pol-i-ôr′kizm), *n.* [Gr. πολύς, many, + ὄρχις, testicle, + *-ism.*] A condition in which there are more than two testes.

polyorexia (pol″i-ọ̄-rek′si-ạ̈), *n.* [NL., < Gr. πολύς, much, + ὄρεξις, appetite.] Excessive appetite. Also *polyorexis.*

polyose (pol′i-ōs), *n.* [*poly-* + *-ose.*] An old name for ★*polysaccharide.*

polyotia (pol-i-ō′shi-ä), *n.* [NL., < Gr. πολύς, many, + οὖς (ὠτ-), ear.] In *teratol.*, the presence of more than two ears.

polyp, *n.* 2. In *pathol.*, same as *polypus*, 2.

polypal (pol′i-pạl), *a.* [*polyp* + *-al*^{1}.] Of or pertaining to a polyp.

The *polypal* wall throughout is nearly transparent and only slightly coloured. *Trans. Linn. Soc.*, Zool., Oct., 1902, p. 299.

polypapilloma (pol-i-pap-i-lō′mạ̈), *n.* [NL., < Gr. πολύς, many, + NL. *papilloma.*] An affection characterized by the presence of many papillomata.

polypathia (pol-i-path′i-ạ̈), *n.* [NL., < Gr. πολύς, many, + πάθος, disease.] The simultaneous occurrence of several diseases in the same individual.

polypeptide (pol-i-pep′tid), *n.* [Gr. πολύς, many, + E. *peptide.*] A chemical product formed by the condensation of two or more amino-acid radicals. *Emil Fischer.*

polyperythrin (pol″i-pe-rith′rin), *n.* [*polyp* + *erythrin.*] A floridin (respiratory pigment) found in certain cœlenterates.

polypetal (pol′i-pet-ạl), *n.* [*polypetal*(*ous*).] A polypetalous plant. *Grant Allen.* [Rare.]

polyphagist (pọ̄-lif′ạ-jist), *n.* [*polyphag*(*ic*) + *-ist.*] One who practises polyphagy; an omnivorous animal. [Rare.]

polyphagous, *a.* 2. Specifically, of certain animal parasites, requiring more than one host in order to complete their life-cycle: contrasted with ★*monophagous*, 2.

polyphalangism (pol-i-fạ̄-lan′jizm), *n.* [Gr. πολύς, many, + φάλαγξ, phalanx, + *-ism.*] The presence in a finger or toe of more than the normal number of phalanges.

polypharmacist (pol-i-fär′mạ-sist), *n.* [*polypharmac*(*y*) + *-ist.*] One who practises polypharmacy. [Rare.]

polypharmacon (pol-i-fär′mạ-kon), *n.*; pl. *polypharmaca* (-kạ̈). [Gr. πολυφάρμακος, having many drugs, < πολύς, many, + φάρμακον, drug.] A compound remedy containing many ingredients.

polyphase (pol′i-fāz), *a.* [Gr. πολύς, many, + E. *phase*^{1}, *n.*] In *elect.*, having components of various phase: referring to an alternating-current system in which several currents of equal frequency are used, which differ from one another in phase by a definite fraction of a period, as, in the three-phase system, three currents differing by one third period, in a quarter-phase system, two currents differing by one quarter period. Polyphase systems have the advantage of being better suited for power transmission and distribution than the single-phase system, and are therefore usually preferred. They require three or more conductors for transmission, and apparatus can be connected either between the different conductors of the system, or from the respective conductors to a common neutral conductor. In the former case the connection is called *ring-connection*, in the latter, *star-connection*, and the currents flowing in these respective connections *ring-currents* and *star-currents.* In the three-phase system, the ring-connection is usually called *delta-connection*, the star-connection *Y-connection.* The different circuits of polyphase apparatus may be designed for star- or for ring-connection, without essential change of their electrical characteristics.

polyphaser (pol′i-fā-zėr), *n.* In *elect.*, a polyphase alternating-current generator.

polyp-head (pol′ip-hed), *n.* Same as ★*hydrocephalis.*

polyphrasia (pol-i-frā′ziạ̈), *n.* [NL., < Gr. πολύς, much, + φράσις, speaking.] Garrulousness, especially as a symptom of a pathological condition.

polyphylesis (pol″i-fī-lē′sis), *n.* [Gr. πολύς, many, + φῦλον, tribe, + *-esis.*] In *biol.*, the independent or polyphyletic origin of a variety or race or species at different times or in different places.

> Whether or not the peach has proceeded from the almond, it has certainly given rise to nectarines. . . . Peter Collinson, in 1741, recorded the first case of a peach-tree producing a nectarine, and in 1766 he added two other instances. . . . Professor Chapman states that he has often seen in Virginia very old peach-trees bearing nectarines.
> *Darwin*, Variation of Animals and Plants, I. 360–362.

> The growing belief in *polyphylesis.*
> *Science*, June 10, 1904, p. 885.

polyphyodontism (pol-i-fī-ọ-don′tizm), *n.* [*polyphyodont* + *-ism.*] The fact or condition of having several sets of teeth, or a succession of teeth, as fishes and toothed reptiles. *Proc. Zool. Soc. London*, 1897, p. 598.

polypide-bud (pol′i-pid-bud″), *n.* In polyzoans, a bud originating in the zoœcium or in a statoblast. In the former case the development of the bud follows the degenerative changes that result in the formation of the ★brown body (which see).

> The budding of Polyzoa has been studied by Seeliger (*loc. cit.*), who finds, with most others who have investigated this subject, that the *polypide-bud* is derived from ectoderm and mesoderm only. *Encyc. Brit.*, XXXI. 527.

polypine (pol′i-pin), *a.* [*polyp* + *-ine.*] Of the nature of or belonging to polyps. *N. E. D.*

polyplast (pol′i-plȧst), *n.* [Gr. πολύς, many, + πλαστός, formed.] A polyplastic cell; a cell that assumes various forms or undergoes transformation into an element of different character.

Polyplastina (pol-i-plas-tī′nạ̈), *n. pl.* [NL.] In Labbe's classification of the *Coccidiidea*, a group in which the schizont divides into numerous archispores. It includes *Eimeria*, *Klossia*, and other genera. Compare ★*Oligoplastina.*

polyplegia (pol-i-plē′ji-ạ̈), *n.* [NL., < Gr. πολύς, many, + πληγή, stroke.] **1.** Paralysis of many muscles simultaneously or in succession.—**2.** Same as ★*pamplegia.*

polypnœic, polypneic (pol-ip-nē′ik), *a.* [*polypnœa* + *-ic.*] Relating to, characterized by, or causing, polypnœa or rapid breathing.

polypodia (pol-i-pō′di-ạ̈), *n.* [NL., < Gr. πολύπους, many-footed, < πολύς, many, + πούς (ποδ-), foot.] In *teratol.*, the presence of more than two feet.

polypodous (pọ-lip′ọ-dus), *a.* [Gr. πολύπους (πολυποδ-), many-footed, + *-ous.*] Having many legs, or having many abdominal legs; polypod. *A. S. Packard*, Text-book of Entom., p. 22.

polypody, *n.* **2.** In *zoöl.*, the condition of having many legs or many abdominal legs.

> In these insects the *polypody* in the embryo is outgrown, or lost, the embryos and larvæ not having even the temporary rudiments of abdominal appendages.
> *A. S. Packard*, Text-book of Entom., p. 707.

3. Same as ★*polypodia.*—**Golden polypody**, *Phlebodium aureum*, an epiphytic middle American fern, the stout creeping rootstock of which is densely clothed with bright golden chaffs.—**Gray polypody**, the hoary polypody, *Polypodium polypodioides.* See *polypody*, 1.

polyporaceous (pol″i-pō-rā′shius), *a.* Resembling or belonging to the fungous family *Polyporaceæ.*

polypore (pol′i-pōr), *n.* [NL. *Polyporus.*] A fungus belonging to the genus *Polyporus.*

> Several years ago a correspondent in the Northwest sent me a fine specimen of a *polypore* which he found on the trunk of a tall tree in northern Idaho or western Montana. *Science*, Dec. 12, 1902, p. 954.

polyporic (pol-i-pō′rik), *a.* [*Polyporus* + *-ic.*] Found in plants of the genus *Polyporus.*—**Polyporic acid**, a yellowish crystalline acid, $C_{18}H_{14}O_4$, found in a fungus of the genus *Polyporus.*

polypose² (pol′i-pōz), *n.* [*poly-* + *pose*².] **1.** A combination or trick photograph in which a person appears in several positions on the same plate.—**2.** A multiphotograph. See ★*multiphotography.* *Wall*, Dict. of Photog., p. 520.

polypotrite (pol′i-pọ-trīt), *n.* [L. *polypus*, polypus, + *tritus*, pp. of *terere*, crush.] A surgical instrument used for the removal of polypi by crushing.

polypragmatism (pol-i-prag′mạ-tizm), *n.* [*polypragmat(ic)* + *-ism.*] The character of being polypragmatic, or officious, or meddlesome.

polypragmatist (pol-i-prag′mạ-tist), *n.* [*polypragmat(ic)* + *-ist.*] One who is polypragmatic, or officious, or meddlesome.

polyprene (pol′i-prēn), *n.* The colorless hydrocarbon $C_{10}H_{16}$, occurring in india-rubber. The impurities are removed by successive extraction with water, alcohol, and ether. The residue is dissolved in chloroform and precipitated as pure polyprene by adding alcohol. It is apparently a polyterpene of high molecular weight.

polyprothesy (pol-ĭ-proth′e-si), *n.* [Gr. πολύς, many, + πρόθεσις, preposition. See *prothesis.*] In *philol.*, the habit of using many prepositions: opposed to ★*oligoprothesy.*

polyprothetic (pol″i-prọ-thet′ik), *a.* Characterized by polyprothesy.

polypsychical} (pol-i-sī′ki-kạl), *a.* [*poly-* + *psychical.*] Having many souls; many-souled. *N. E. D.* [Rare.]

> The master [Wordsworth], indeed, was a prophet of humanity; but he was wiser in love than terror, in admiration than pity, and rather intensely than actively human; capacious to embrace within himself the whole nature of things and beings, but not going out of himself to embrace anything; a poet of one large sufficient soul, but not *polypsychical* like a dramatist.
> *Mrs. Browning*, The Book of the Poets, p. 393.

polypsychism (pol-i-sī′kizm), *n.* [Gr. πολύς, many, + ψυχή, soul, + *-ism.*] **1.** The doctrine or theory that a multiplicity of souls exists in each person.

> Polyzoism.—The property, in a complex organism, of being composed of minor and quasi-independent organisms (like the polyzoa or "sea-mats"). . . . The word *polypsychism* is sometimes used to express the psychical aspect of polyzoism.
> *F. W. H. Myers*, Human Personality, I. Glossary.

2. The belief that natural phenomena are caused by a multiplicity of spiritual beings. *N. E. D.*

polyricinoleic (pol-i-ris-i-nō′lẹ-ik), *a.* [*poly-* + *ricinol(ic)* + *-e-ic.*] Formed, by condensation, from ricinolic acid.—**Polyricinoleic acid**, a name applied to complex acids formed by the condensation of ricinolic acid, which can be recovered by treatment with hot alcoholic potash.

polysaccharide (pol-i-sak′ạ-rid), *n.* [*poly-* + *saccharide.*] One of the group of complex carbohydrates which yield simple sugars when hydrolyzed by the action of enzymes, acids, or alkalis. The term sometimes includes the disaccharides and trisaccharides, but is more correctly limited to substances of the general formula $(C_6H_{10}O_5)_n$, where *n* is probably a large number. Starch, cellulose, dextrine, glycogen, and gums are polysaccharides.

polysaccharine (pol-i-sak′ạ-rin), *a.* Of the nature of a polysaccharide.

polysalicylide (pol-i-sal′i-si-līd), *n.* A crystalline condensation-product of salicylic acid, $\left(C_6H_4<\begin{matrix}CO\\O\end{matrix}\right)_n$, formed, together with tetrasalicylide, when a solution of the acid in toluene is heated with phosphorus oxychlorid. It is slowly converted into salicylic acid by the action of boiling concentrated caustic soda.

polyscopic (pol-i-skop′ik), *a.* [*polyscop(e)* + *-ic.*] Pertaining to, or of the nature of, a polyscope; multiplying objects, as a lens. See *polyscope*, 1.—**Polyscopic lens.** See ★*lens.*

polysemant (pol-i-sē′mạnt), *n.* [LG. πολυσήμαντος, having many meanings, < Gr. πολύς, many, + σῆμα, sign.] A word having more than one signification.

polysemantic (pol″i-sẹ-man′tik), *a.* [*polysemant* + *-ic.*] Having more than one signification, as a word.

polysemous (pol-i-sē′mus), *a.* [Gr. πολύς, many, + σῆμα, sign.] Having many meanings.

polyseptate (pol-i-sep′tāt), *a.* Same as *multiseptate.*

polyserial (pol-i-sē′ri-ạl), *a.* [Gr. πολύς, many, + L. *series*, series, + *-al*¹.] Arranged in many or multiple series.

polysialia (pol″i-sī-ā′li-ạ̈), *n.* [NL., < Gr. πολύς, many, + σίαλον, saliva.] Excessive flow of saliva; salivation; ptyalism.

polysiderite (pol-i-sid′e-rīt), *n.* [Gr. πολύς, many, + E. *siderite.*] A name given by Daubrée to those meteoric stones, or aërolites, which are characterized by a relatively large amount of nickeliferous metallic iron present in disseminated grains. See ★*meteorite.*

polysilicate (pol-i-sil′i-kāt), *n.* [Gr. πολύς, many, + E. *silicate.*] A salt which may be viewed as containing two or more combining units of silicon dioxid combined with the oxid or oxids of more basic elements or radicals, as orthoclase, $KAlSi_3O_8$ or $K_2Al_2Si_6O_{16} = K_2O.Al_2O_3.(SiO_2)_6$.

polysilicic (pol″i-si-lis′ik), *a.* [Gr. πολύς, many, + E. *silicon* + *-ic.*] Noting an acid which may be viewed as containing two or more combining units of silicon dioxid combined with the elements of water, as the hypothetical acid represented by the formula $H_4Si_3O_8 = (H_2O)_2.(SiO_2)_3$.

polysiphonic (pol″i-sī-fon′ik), *a.* [Gr. πολύς, many, + E. *siphon* + *-ic.*] Composed of several adherent tubes, as the hydrocaulus of some hydromedusans. Compare ★*monosiphonic.* *Sedgwick*, Textbook of Zoölogy, I. 125.

polysolvol (pol-i-sol′vol), *n.* [*poly-* + L. *solvere*, dissolve, + *-ol.*] A trade-name of sodium sulphoricinate.

polysomatous (pol-i-sō′mạ-tus), *a.* [Gr. πολύς, many, + σῶμα (σωματ-), body, + *-ous.*] Having several bodies.

polysomia (pol-i-sō′mi-ạ̈), *n.* [NL., < Gr. πολύς, many, + σῶμα, body.] In *teratol.*, the condition of having more than one body.

polyspermatous (pol-i-spėr′mạ-tus), *a.* Same as *polyspermous.*

polyspermia (pol-i-spėr′mi-ạ̈), *n.* [NL., < Gr. πολύς, many, much, + σπέρμα, seed.] **1.** Excessive secretion of semen.—**2.** Same as *polyspermy.*

polyspermic (pol-i-spėr′mik), *a.* [*polysperm(y)* + *-ic.*] Pertaining to or characterized by polyspermy or polyspermia.

polyspondyly (pol-i-spon′di-li), *n.* [Gr. πολύς, many, + σπόνδυλος, vertebra.] The character of being made up of a number of slender rings more numerous than the neural and hæmal arches: noting a type of vertebral column characteristic of the chimæroid fishes.

polystation (pol′i-stā-shọn), *n.* [Gr. πολύς, many, + E. *station.*] In *telephony*, a station having a party line and thus serving several subscribers. Also *multistation.* *Abbot*, Telephony, v.

polystele (pol′i-stēl), *n.* [Gr. πολύς, many, + στήλη, pillar.] In *bot.*, an axial cylinder which has more than one plerome strand. See ★*stele*³, 2.

polystelic (pol-i-stē′lik), *a.* [*polystele* + *-ic.*] In *bot.*, having more than one stele or plerome strand in the axial cylinder, as in the genus *Gunnera.* See ★*stele*³, 2.

polystelous (pol-i-stē′lus), *a.* Same as ★*polystelic.*

polystely (pol-i-stē′li), *n.* [*polystele* + *-y*³.] In *bot.*, the condition of being polystelic.

polystichia (pol-i-stik′i-ạ̈), *n.* [NL., < Gr. πολύς, many, + στίχος, row.] The presence of more than one row of eyelashes on each lid.

polystichoid (pọ-lis′ti-koid), *a.* [NL. *Polystich(um)* + *-oid.* See *polystichous.*] Of, having the characters of, or resembling, *Polystichum*, a genus of polypodiaceous ferns. See ★*Polystichum.*

Polystichum (pọ-lis′ti-kum), *n.* [NL. (Roth, 1800), < Gr. πολύς, many, + στίχος, row, probably referring to the rows of sori.] A genus of dryopteroid polypodiaceous ferns well marked by their erect habit, dryish texture, and chaffy vascular parts, and by having the ultimate divisions of the frond mainly auriculate and spinulose. It is distinguished from *Dryopteris* by its centrally peltate indusia. There are about 75 species, mainly boreal in distribution, many of them well known. See *holly-fern*, *Christmas fern* (under *Christmas*), and *Aspidium*, 1.

Polystictus (pol-i-stik′tus), *n.* [NL. (Fries, 1851), < Gr. πολύς, many, + στικτός, punctured, dotted, spotted.] A large genus of fungi of the family *Polyporaceæ*, having the pileus mostly leathery and the pores consisting of a single layer, usually developing from the center toward the margin. Over 450 species are given by Saccardo. They are widely distributed and occur chiefly on decaying wood. *P. sanguineus* is a common species having a bright red pileus.

polystigm, *n.* 2. See ★*polystim.*

polystim (pol′i-stim), *n.* [For *polystigm.*] In *geom.*, a system of *n* coplanar points (dots), with all the ranges they determine (connectors).

polystomous (pọ-lis′tọ-mus), *a.* Same as *polystomatous.*

polystylar (pol-i-stī′lạ̈r), *a.* Same as *polystyle.*

polysulphid (pol-i-sul′fid), *n.* [Gr. πολύς, many, + E. *sulphid.*] A simple sulphid containing in its molecule more than one atom of sulphur, as calcium pentasulphid, CaS_5.

polysulphonic (pol″i-sul-fon′ik), *a.* [Gr. πολύς, many, + E. *sulphonic.*] Containing more than one sulphonic group, $(-SO_3H)$.—**Polysulphonic acid**, an organic acid containing more than one sulphonic group, as benzene-trisulphonic acid, $C_6H_3(SO_3H)_3$.

polysulphuret (pol-i-sul′fụ̄-ret), *n.* Same as ★*polysulphid.*

polysyllabicity (pol″i-sil-ạ̈-bis′i-ti), *n.* [*polysyllabic* + *-ity.*] Same as *polysyllabicism.*

polysyndetic (pol″i-sin-det′ik), *a.* [*polysyndet*(*on*) + *-ic.*] Of the nature of or characterized by polysyndeton.

polysynthetize (pol-i-sin′the-tīz), *v. i.*; pret. and pp. *polysynthetized*, ppr. *polysynthetizing*. [*polysynthet*(*ic*) + *-ize.*] To employ, or exhibit, polysynthesis; have a polysynthetic character.

> More remarkable still is the usage of the *polysynthetising* languages of North America, where the idea of time or mode is altogether absent from the verb, and personal relations are alone indicated.
>
> *Sayce*, Principles of Comparative Philol., p. 93.

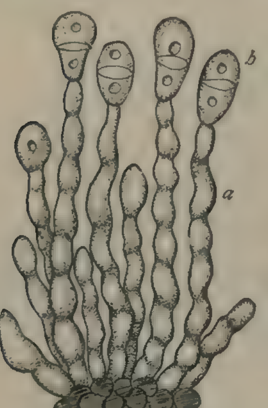
polytechnician (pol″i-tek-nish′ạ̈n), *n.* [F. *polytechnicien*, < *polytechnic* + *-ian.*] A student or graduate of a polytechnic school.

polytelite (pọ-lit′e-līt), *n.* [Gr. πολυτελής, very valuable, + *-ite*2.] A finely granular ore from mines near Freiberg in Saxony, probably an argentiferous tetrahedrite.

polythelia (pol-i-thē′li-ạ̈), *n.* [NL., < Gr. πολύς, many, + θηλή, nipple.] The presence of supernumerary nipples on the breasts.

polythionic (pol″i-thī-on′ik), *a.* Noting any one of a series of acids each member of which contains in its molecule two atoms of hydrogen and six of oxygen, with a number of sulphur atoms varying from two to six: as dithionic acid, $H_2S_2O_6$, and tetrathionic acid, $H_2S_4O_6$.

Polythrincium (pol-i-thrin′si-um), *n.* [NL. (Kunze, 1817).] A genus of hyphomycetous fungi having erect dark-colored fasciculate conidiophores which bear uniseptate greenish conidia. The single species, *P. Trifolii*, causes a leaf-spot of clover. It is said to be the conidial condition of *Thyllachora Trifolii.*



Polythrincium Trifolii.
a, conidiophores; *b*, conidia. Enlarged.
(Drawn from Engler and Prantl's "Pflanzenfamilien," after Corda.)

polytone (pol′i-tōn), *n.* [Gr. πολύς, many, + E. *tone*1.] Having several or varied tones: opposed to *monotone.*

polytopic (pol-i-top′ik), *a.* [Gr. πολύς, many, + τόπος, place, + *-ic.*] 1. Same as ★*polytopical.*—2. Of or pertaining to polyphylesis with respect to space, or the independent origin, in two or more places, of a variety or race or species.

> The idea that a species may originate in more than one place, simultaneously or not, did not originate with Briquet, but he resuscitated it and christened it the *polytopic* theory. *Science*, June 10, 1904, p. 885.

polytopical (pol-i-top′i-kạ̈l), *a.* [*polytopic* + *-al*1.] Relating to or discussing a number of topics.

> Polygraphic denoting . . . collections of several works by one or many authors, *polytopical* denoting works on many subjects.
>
> *C. A. Cutter*, Rules for a Dict. Cat. (4th ed.), p. 21.

polytrichia (pol-i-trik′i-ạ̈), *n.* [NL., < Gr. πολύτριχος, very hairy, < πολύς, many, + θρίξ (τριχ-), hair.] The presence of hair on unusual locations or in excessive amount.

polytrophic (pol-i-trof′ik), *a.* [Gr. πολύς, many, + τροφή, nourishment, + *-ic.*] Capable of carrying on more than one kind of fermentation: applied to certain bacteria. See ★*monotrophic.*

polytropic, *a.* 2. Versatile; capable of adopting various expedients. *N. E. D.* [Rare.]—3. Noting the action of certain poisons upon more than one variety of cells or tissues.

> In the case of "*polytropic*" poisons—and a very large number of poisons must come under this category—the chief response—i.e., the chief antitoxin production—might take place in tissues which the clinician could not discover to have been affected.
>
> *Lancet*, March 16, 1901, p. 784.

Polytropic curve. See ★*curve.*

polytungstate (pol-i-tung′stāt), *n.* [*poly-* + *tungstate.*] A salt which may be viewed as consisting of two or more combining units of tungsten trioxid combined with the oxid of a more basic element or radical, as sodium metatungstate, $Na_2W_4O_{13} = Na_2O.(WO_3)_4$.

polytungstic (pol-i-tung′stik), *a.* [*poly-* + *tungst*(*en*) + *-ic.*] Noting an acid which may be viewed as containing two or more combining units of tungsten trioxid combined with the elements of water, as metatungstic acid, $H_2W_4O_{13} = H_2O_1\,(WO_3)_4$.

polytypal (pol-i-tī′pal), *a.* [Gr. πολύς, many, + τύπος, type, + *-al*1.] Same as *polytypical.*

polyvalence (pọ-liv′ạ-lẹns), *n.* [*poly-* + *valence*2.] Same as *multivalence.*

polyvalent (pọ-liv′ạ̈-lẹnt), *a.* [*poly-* + *valent.*] Having a valence greater than unity: used of chemical elements and radicals. The term is sometimes used, less correctly, of compounds, especially of alcohols and phenols, derived from polyvalent radicals. Such compounds are now correctly termed *polyacid alcohols.*

> The oxidation of *polyvalent* phenols by laccase leads not only to organic acids, but even to the production of carbonic acid. Bertrand observed in one case that for 23.3 cc. absorbed oxygen as much as 13.7 cc. of carbonic acid were produced. *U. S. Dept. Agr.*, Rep. 59, p. 26.

Polyvalent serum. See ★*serum.*

polyxene (pol′ik-sēn), *n.* [Gr. πολύς, many, + ξένος, host.] The name given by Hausmann to native platina on account of the large number of rare metals it contains.

polyxeny (pọ-lik′se-ni), *n.* [Gr. πολύς, many, + ξένος, host, + *-y*3.] De Bary's term for fungi which inhabit hosts of several different species. See ★*monoxeny* and ★*dixeny.*

polyzoic, *a.* 2. Having the characters of the *Polyzoa*; existing in the form of a colony composed of a number of zoöids.—3. In *Sporozoa*, designating a spore that produces many falciform bodies. Contrasted with ★*monozoic*, ★*dizoic*, etc. *Labbé.*—4. In cestodes, having the body consisting of metamerically arranged regions each containing a set of generative organs, as in *Tænia.* Compare ★*monozoic.*

polyzoism (pol-i-zō′izm), *n.* [*polyzo*(*ic*) + *-ism.*] The habit of life of the *Polyzoa*; existence as a colony of zoöids.

polyzoniid (pol-i-zō′ni-id), *n.* and *a.* I. *n.* A member of the myriapodous family *Polyzoniidæ.*

II. *a.* Having the characters of or belonging to the family *Polyzoniidæ.*

pom., pomol. Abbreviations of *pomological.*

pomace-fly (pum′ạ̄s-flī), *n.* Any one of several flies, of the genus *Drosophila*, which are attracted to and breed in overripe fruit or apple-pomace.—**Vine-loving pomace-fly**, *Drosophila ampelophila*, a species of fly fond of overripe grapes.

pomarosa (pō-mä-rō′sä), *n.* [Sp. *poma*, apple, + *rosa*, rose.] The rose-apple. See ★*jambos.*

pomato (pọ-mä′tō or pọ-mā′tō), *n.* [*po*(*tato*) + (*to*)*mato.*] A fruit said to be the result of amalgamation of the potato and tomato, produced by Luther Burbank. It is a small tomato-like fruit, with white flesh, edible either raw or cooked.

> The "*pomato*," one of the most wonderful creations, now under way. This may be called a tomato growing upon a potato. It produces in abundance a white, fragrant, succulent, delicious fruit upon the potato-tops, something unlike any fruit ever known before, and may be eaten cooked or as a salad, or as other fresh fruits, the flavor resembling the "po-ha" berry of the Hawaiian Islands. *The Century*, March, 1905, p. 668.

pomegranate.—**Native pomegranate**, in Australia, either of two small trees of the caper family, *Capparis nobilis*, also called *caper-tree*, and *C. Mitchellii*, also known as *native orange.* The fruits of the latter species are less than half the size of those of the former; hence it is usually known as *small native pomegranate.* See *caper-tree* and *native* ★*orange* (*b*).

pomette bleue (po-met′blė′), *n.* [French, *pommette*, dim. of *pomme*, apple; *bleue*, fem. of *bleu*, blue.] The hog's-haw, *Cratægus brachyacantha*, found along streams, etc., from southern Arkansas to Louisiana and Texas. It is a beautiful round-topped tree 40 or 50 feet high, with clusters of bright blue fruit in August.

pomiculture (pō′mi-kul-tụ̈r), *n.* [L. *pomum*, fruit, + *cultura*, cultivation.] Fruit culture; the cultivation and improvement of fruit.

> The Bosniacs show themselves absolutely incapable of *pomiculture*; they plant their fruit-trees almost as close together as cabbages and expect them to thrive. Our Consul produced magnificent peaches by simply planting the miserable Bosnian substitute properly.
>
> *A. J. Evans*, Through Bosnia, vi.

pomiculturist (pō′mi-kul″tụ̈r-ist), *n.* [*pomicultur*(*e*) + *-ist.*] One who is occupied with pomiculture or the raising of fruit.

pommel-joint (pum′el-joint), *n.* Same as *saddle-joint.* *Buck*, Med. Handbook, I. 552.

pommer (pum′ėr), *n.* [G.] Same as *bombard*, 6.

Pomodon (pō′mọ-don), *n.* [NL., < Gr. πῶμα, lid, + ὀδούς (ὀδοντ-), tooth.] A genus of serranoid fishes found on the coasts of Chile and Peru.

Pomona green. (*b*) Same as *iodine* ★*green* (*b*).

pomonic (pọ-mō′nik), *a.* [*Pomon*(*a*) + *-ic.*] Of or pertaining to fruits. [Rare.]

pomp2 (pomp), *n.* Short for *pompadour.* [Colloq.]

Pompadour pink. Same as *rose Pompadour* (which see, under *rose*1).

Pompadourism (pom′pạ̈-dör-izm), *n.* [*Pompadour* (see def.) + *-ism.*] Frivolity, like that of the Marquise de Pompadour; a frivolous act or thing. [Rare.]

> It is unfair to relegate it [pastel-painting]—as fashion has foolishly done for so long—to the bunch of pretty triflings which Carlyle called "*Pompadourisms.*"
>
> *Encyc. Brit.*, XXXI. 495.

pompano, *n.*—**Great pompano.** Same as *permit*2.—**Silvery pompano**, *Trachinotus argenteus*, a fish of the West Indies.

pompey1 (pom′pi), *v. t.*; pret. and pp. *pompeyed*, ppr. *pompeying.* [Humorous for *pamper.* Invented by Dickens.] To pamper.

> When I was old enough, I was to be apprenticed to Joe, and until I could assume that dignity I was not to be what Mrs. Joe called "*Pompeyed*," or (as I render it) pampered. Therefore, I was not only odd-boy about the forge, but if any neighbour happened to want an extra boy to frighten birds . . . I was favoured with the employment. *Dickens*, Great Expectations, vii.

pompey2 (pom′pi), *a.* [Origin obscure.] Bulging or sagging in a dangerous degree: said of a floor in a burning building; also, applied to ice when it is in a similar dangerous condition from thawing, etc. [Local, U. S.]

> The floor is "*pompey*," as the firemen say, when it bulges and sags. It is then time to get out. That is all true. It was thought time and again that firemen had been lost in the building. *N. Y. World*, Jan. 3, 1904.

pompholygous (pom-fol′i-gus), *a.* [Gr. πομφόλυξ (-λυγ-), a bubble, + *-ous.*] Affected with pompholyx. *N. E. D.*

> I have received a Scotch paper, in which it is stated that poor "Maud" is to be slashed all to pieces by that mighty man, that *pompholygous*, broad-blown Apollodorus, the gifted X.
>
> *Tennyson*, in Alfred Lord Tennyson: A Memoir, I. 410.

pompier (pôṅ-pyā′), *n.* [F., a pump-maker, etc., < *pompe*, a pump.] 1. In France: (*a*) A fireman. (*b*) In the tailoring business, a bushelman; a repairer.—2. A scaling-ladder used by firemen. See cut under *ladder.*

> The . . . *pompier* as it is called consists of a 15-foot length of narrow and very tough hickory, with a two-foot steel hook on one end and stout hickory crossbars at intervals of a foot throughout the length of the ladder. The hook, it may be explained, is armed with sharp teeth.
>
> *Sci. Amer.*, April 4, 1903, p. 240.

pompilid (pom′pi-lid), *n.* and *a.* I. *n.* A member of the hymenopterous family *Pompilidæ.*

II. *a.* Having the characters of or belonging to the family *Pompilidæ.*

pompom1 (pom′pom), *n.* [Imitative of the sound of the discharge.] A one-pounder automatic Maxim gun. [Colloq.]

pompom2 (pom′pom), *n.* [American Indian (Yakima).] A religious dance observed by the Yakima Indians of Washington, similar in character to the religious dances held by other tribes of the plateaus of Washington, Idaho, Montana, and British Columbia. It seems that the pompom relates to the belief of the return of the dead. Young people have the right to contract marriages during these dances.

pompon^3 (pom-pōn′), *n.* [Cuban Sp.] A common name of *Anisotremus surinamensis*, of the family *Hæmulidæ*, found from Florida to Brazil.

ponceau^1, *n.*—**Anisidine ponceau.** Same as *anisidine* ★*scarlet.*—**Brilliant ponceau G.** Same as ★*ponceau 2R.*—**Brilliant ponceau 2G.** Same as ★*ponceau 2G.*—**Brilliant ponceau 4R.** (*a*) An acid dyestuff of the monoazo type prepared by combining diazotized β-naphthylamine-monosulphonic acid with α-naphthol-monosulphonic acid. Also called *double brilliant scarlet.* (*b*) Same as *cochineal* ★*red A.*—**Crystal ponceau,** an acid coal-tar color of the monoazo type derived from β-naphthylamine. It dyes wool scarlet in an acid bath. Also *crystal scarlet 6R.*—**Cumidine ponceau,** an acid coal-tar color of the monoazo type derived from cumidine. Also *ponceau 4R.*—**Fast ponceau 2B,** an acid coal-tar color of the diazo type prepared by combining diazotized aminoazobenzene-disulphonic acid with β-naphthol-disulphonic acid. It dyes wool scarlet from an acid bath. Also called *ponceau S.*—**Ponceau B, BO, 5R, 3RB, 4RB, 6RB, 2S,** and **10RB,** acid coal-tar colors of the diazo type produced by combining diazotized azo-amido compounds with the various β-naphthol-sulphonic acids. They all dye wool various hues of scarlet from an acid bath.—**Ponceau 2G,** an acid coal-tar color of the monoazo type prepared by combining diazotized aniline with one of the β-naphthol-disulphonic acids. It dyes wool a reddish orange from an acid bath. Also called *orange R* and *brilliant ponceau 2G.*—**Ponceau G, 2G, J, JJ, GR, R, 2R, 3R, 4R,** and **RT.,** acid coal-tar colors prepared by combining diazotized amidobenzene, toluene, xylene, or cumidine with one of the β-naphthol-sulphonic acids. They all dye wool various hues of scarlet from an acid bath. **Ponceau 4GB.** Same as *crocein* ★*orange.*—**Ponceau 6R.** Same as ★*scarlet 6R.*—**Ponceau S.** Same as ★*acid-ponceau.*

poncif (poṅ-sēf′), *n.* [F., < *ponce*, pounce.] In *ceram.*, a paper pattern with perforated outlines through which a design can be pounced on to the ware as a guide in decorating it.

pond-duck (pond′duk), *n.* A wild duck.

ponderant (pon′dẹ-rant), *a.* [See *ponderance.*] Having weight; heavy.

ponderary (pon′dẹ-rā̤-ri), *a.* Same as *ponderal.*

pond-hunter (pond′hun″tėr), *n.* A naturalist who devotes himself to the investigation of pond life. *Encyc. Dict.*

> The *pond-hunter* of twenty-five years ago would have found a treasure indeed in a book like this.
>
> *Nature*, Jan. 21, 1897, p. 266.

ponding (pon′ding), *n.* [*pond* + *-ing*^{1}.] The checking of a stream current or the damming back of its waters by some temporary obstruction. The chief causes of natural ponding are faulting and differential elevation or warping of the strata, an effective dam often resulting from the folding or displacement.

> If the *ponding* is slight, a marsh may develop above the obstruction; if more considerable, a lake is formed.
>
> *Chamberlin and Salisbury*, Geol., I. 163.

pond-man (pond′man̤), *n.*; pl. *pond-men* (-men). In *logging*, one who collects logs in the mill-pond and floats them to the gangway.

pond-skater (pond′skā″tėr), *n.* Any one of the aquatic bugs of the family *Hydrobatidæ*. See *skater*, 2.

pond-smelt (pond′smelt), *n.* *Hypomesus olidus.* See *smelt*^{2}, 1 (*b*).

pond-tortoise (pond′tôr″tis), *n.* Any small fresh-water turtle.

pone^3, *n.* 2. In English and American card games, as bridge, the player who sits at the right of the dealer. See ★*bridge*^{2}.

ponerid (pọ-nē′rid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Poneridæ*.

II. *a.* Having the characters of or belonging to the family *Poneridæ*.

poneroid (pọ-nē′roid), *a.* [NL. *Poner(a)* + *-oid.*] Resembling ants of the family *Poneridæ*.

pong (pong), *v. i.* [Origin obscure.] To improvise on the stage; gag. [Slang.]

pongo, *n.* 3. The larger flying phalanger of Australia, belonging in the genus *Petauroides*. [Australia.]

Pon. Max. An abbreviation of the Latin *Pontifex Maximus*, Supreme Pontiff.

Pons-oblongata, the pons Varolii and medulla oblongata considered together.

pont^1†, *n.* [L. *pons* (*pont-*), a bridge.] A bridge.

pont^2 (pont), *n.* [D. *pont*, a boat.] 1†. A large flat-boat; a float.—2. A ferry-boat operated by means of a cable. [South Africa.]

Pontian stage. See ★*stage.*

ponticello (pọn-ti-chel′lō), *n.* [It., dim. of *Ponte*, < L. *pons* (*pont-*), bridge. See *pons.*] 1. Same as *bridge*^{1}, 7.—2. A break in the voice, especially that below the falsetto. See *break, n.*, 9.—**Sul ponticello,** in *violin-playing*, with the bow close to the bridge.

ponticin (pon′ti-sin), *n.* [NL. (*Rha*)*pontic(um)* + *-in*^{2}.] A crystalline glucoside found in certain species of rhubarb, *Rheum Rhaponticum* and *R. undulatum*.

ponticular (pon-tik′ū-lär), *a.* [*ponticulus* + *-ar*^{3}.] Relating to the ponticulus or propons. *Buck*, Med. Handbook, II. 251.

ponticule (pon′ti-kūl), *n.* [NL. *ponticulus.*] Same as ★*ponticulus*. *Buck*, Med. Handbook, I. 637.

ponticulus (pon-tik′ū-lus), *n.* [NL. use of L. *ponticulus*, a little bridge, dim. of *pons*, a bridge.] In *anat.*: (*a*) Same as *propons*. (*b*) A ridge on the posterior surface of the concha of the ear, giving attachment to the retrahens aurem muscle. (*c*) A ridge which passes between the pyramid and the promontory on the wall of the tympanum. (*d*) A bridge which passes between the right lobe of the liver and the lobus Spigelii.

pontif, *n.* A simplified spelling of *pontiff*.

pontific, *a.* 3. Of or relating to a bridge. [A punning use.]

> 'T is an ill wind, said he, catching off the notary's castor. . . . The poor notary crossed the bridge. . . . Luckless man that I am! said the notary . . . to be driven forth out of my house by domestic winds, and despoiled of my castor by *pontific* ones!
>
> *Sterne*, Sentimental Jour., p. 243.

pontifical^1, *a.*—**Pontifical States,** formerly, in Italy, several central states forming a sovereignty under the spiritual and temporal rule of the Pope. They were, for the most part, merged in the kingdom of Italy in 1860.

Pontine fibers. See ★*fiber*^{1}.

pontinium (pon-tin′i-um), *n.* [NL.] An alloy of 1000 parts of lead, 15 parts of tin, and 1 part of sodium. It is used for lead accumulators. *Electrochem. Industry*, April, 1904, p. 159.

Pontinus (pon-tī′nus), *n.* [NL., < L. *pontinus*, < *pons*, a bridge. The name alludes to the suborbital stay.] A genus of scorpænoid fishes found in rather deep water in warm seas.

ponto (pon′tō), *n.* A factory form of *pontil*.

pontoon, *n.* 6. Same as ★*catamaran*, 4.

pontospinal (pon-tọ-spī′nal̤), *a.* Relating both to the pons Varolii and to the spinal cord.

pony, *n.* 8. Something very small of its kind: an attributive use.

> Besides the full reports delivered to large papers are the "*pony*" reports condensations of the full reports, sold at a cheaper rate.
>
> *Census Bulletin* 216, June 28, 1902, p. 67.

Pony express. See ★*express.*

II. *a.* Having rather short, well rounded bodies: applied to cattle.

pony, *v. t.* 2. To pay; settle; put: with *up*. [Slang, U. S.]

> "*Pony up* or we will run you in." is the formula which secures the requisite backsheesh to the officers of the law. *W. T. Stead*, If Christ came to Chicago, v. 3.

> I took him on to oblige a friend of mine, and to-day a walking delegate told him he would have *to pony up* 10 dols. if he wanted to stay on the job. He has n't earned that much yet.
>
> *Architect and Contract Reporter*, Sup., April 24, 1903, [p. 28.

ponya (pon′yä̆), *n.* [Hopi.] A sort of altar constructed by the religious societies of the Hopi during their ceremonies. *Amer. Anthropologist*, April–June, 1901, p. 212.

pony-grass (pō′ni-gràs), *n.* One of the reed-bents, *Calamagrostis neglecta*, native in northern Europe and North America, ranging along the northern borders of the United States, and most abundant in the Rocky Mountain region. It is liked by stock, especially horses, and has succeeded well under experimental cultivation.

pony-man (pō′ni-man̤), *n.* A man who looks after ponies, or has charge of ponies in a caravan, etc. *Geog. Jour.* (R. G. S.), XV. 563.

poo (pö), *n.* See ★*mancala*.

pooja, *n.* Same as ★*poojah*.

poojah, puja (pö′jä), *n.* [Skt. *puja*, worship.] Rites performed in Hindu idol-worship; any Hindu religious ceremony or rite; also figuratively, in ridicule. *N. E. D.*

pook^1 (pu̇k), *n.* [Also *puck*. Origin uncertain.] 1. A heap, as of hay, oats, or barley: a cock. [Local, Eng.]—2. A thin, tall stack of corn in the sheaf, in shape a steep cone, 9 or 10 feet high, built up temporarily in the harvest-field in wet seasons, for drying the corn before it is carried to the main rick. *N. E. D.* [Local, Eng.]

pook^1 (pu̇k), *v. t.* To make a pook of; make into a pook. [Local, Eng.]

pook^2 (pök), *v. t.* [Origin uncertain.] To pluck or pick with the thumb and finger. [Scotch.]

pooka (pö′kä̆), *n.* [Ir. *pūca*: see *puck.*] In Irish tradition, a spirit or spook in the form of a horse.

pookawn (pö-kân′), *n.* [Also *pookhaun*; appar. a transferred use of Ir. *pucán*, a he-goat.] A one-masted fishing-smack; a 'hooker.' *Eng. Dial. Dict.*

> Unseaworthy curraghs and *pookawns*.
>
> *Jane Barlow*, Founding of Fortunes, p. 170.

pool^1 (pöl), *v.* **I.** *trans.* In *quarrying*, to make a hole in (rock) for inserting a wedge; also, to undermine (coal) to cause (it) to fall.

II. *intrans.* To form pools, as water; stagnate.

pool^2, *n.* 2. There are many varieties of billiards included under the name of *pool*, but they may be reduced to four classes, namely, *pocket-*, *pin-*, *cork-*, and *bottle-pool*, which are variously played with from two to twenty-two balls, the first named usually on a six-pocket and occasionally on a four-pocket table, the second and third on a table without pockets, and the fourth on one with or without pockets.—**Ball-pool,** a game of billiards in which counting is done wholly by holing balls, such as 'pyramid,' 'snooker,' 'two-ball,' etc.; in America, the game usually played with sixteen balls on a six-pocket table.—**Black pool,** an amplification of English billiard-pool, deriving its name from the introduction of a black ball to which exceptional monetary awards and penalties attach. A pink ball is also sometimes added. Masking balls cannot be lifted out of the way, as once was the custom in almost all the English pool games, and as obtains in most still.—**Chicago pool,** one of the varieties of billiard-pool, of American origin. Its object is to hole balls, numbered from 1 to 15, in their numerical order. Also known as *rotation pool* and *crazy pool.*—**Color-ball pool.** See *pool*^{2}, 2 (*b*).—**Continuous pool,** a form of billiard-pool in which the scoring of the game is continued until all the balls in each frame have been pocketed, and the game may consist of any number of balls or points up which may be agreed upon. Each ball pocketed scores one point for the striker, and the game is usually scored upon the string of buttons over the table, as in regular billiards.—**Cork-pool,** a French variety of billiard-pool in which the object is to knock down a cork on top of which the stakings are placed. It is variously played according to locality, sometimes with one cork and sometimes with more. *W. Broadfoot*, Billiards, p. 429.—**Domino pool,** the block-game of dominoes, played for a pool by any number of persons from three to six.—**Fifteen-ball pool.** See *pool*^{2}, 2 (*a*).—**Following pool.** Same as *color-ball* ★*pool.*—**Italian pool,** substantially the same as pin-pool, with the exception that a fourth (blue) ball is used.—**Keeley pool,** an American version of ball-pool.—**Nearest-ball pool,** an English billiard-pool game in which the striker must play at that one of the fifteen object-balls which is nearest his own, unless all balls are in balk when he himself is in hand.—**Pyramid pool.** See *pool*^{2}, 2 (*a*).—**Selling pool,** an English billiard game in which a small stake is played for: not a true pool.—**Single pool,** a variation of ordinary English or color-ball pool. *W. Broadfoot*, Billiards, p. 416.—**Skittle pool,** a billiard game, played in America with ten white and three black pins, and in England with ten white pins, but with never more than two and sometimes with no black pins. The score is 31.—**Snooker pool,** a game in which to the fifteen red balls and most of the ways of English pyramid pool are added many of the ways of ordinary English or following pool, together with four of its balls (brown, blue, green, and yellow), with sometimes a pink and a black ball, the white, as in pyramid pool, always being the cue-ball.—**Three-pool,** a variation of ordinary English or color-ball pool.

pool-table (pöl′tā″bl), *n.* A billiard-table with pockets, usually 6 in number, one in the middle of each side and one at each corner.

poon^2 (pön), *n.* [Korean *hpun*, answering to Chinese *făn* (*fun*), a tenth part.] A subsidiary coin of Korea, equivalent to .08 of a United States cent.

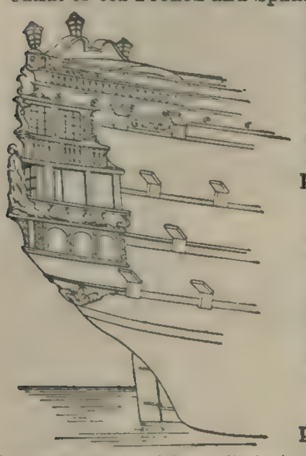
poonac (pö′năk), *n.* [Cingalese.] The oil-cake left after expressing cocoanut-oil from copra or from fresh cocoanuts. It forms an important article of export from Ceylon and is used for feeding cattle and for fertilizing.

Poonah painting. See ★*painting*.

poöphyte (pō′ọ-fīt), *n.* [Gr. πόα, grass, + φυτόν, plant.] A grass-land plant. Poöphytes are regarded by Pound and Clements (the authors of the term) as a subdivision of mesophytes. See ★*mesophyte*.

poöphytic (pō-ọ-fit′ik), *a.* [*poöphyte* + *-ic.*] In *phytogeog.*, consisting of, having the character of, or pertaining to, poöphytes. *Pound and Clements.*

poop-royal (pōp-roi′a̤l), *n.* A short deck peculiar to old French and Spanish ships of the line, and which was placed over the after part of the poop-deck for the exclusive use of the admiral and his staff.



Poop-royal of the Royal George (England).

poop-staff (pöp′ ståf), *n.* A flagstaff at the stern of a vessel.

> The Grosser Carl had fallen away before the wind, and was spouting flame from stem-head to *poop-staff.*
> *Cutcliffe Hyne,* A Master of Fortune, xii.

poop-stringer (pöp′ string″-ėr), *n.* In *nav. arch.*, a continuous horizontal plate fitted on the ends of the poop-deck beams to connect and to strengthen them.

pooquaw (pö′kwâ), *n.* [A reduction of **poquaock, pequaock,* < Narragansett *poquaûhock* (whence also *quahog*), lit. 'closed shell' (in distinction from the gaping clam, *Mya arenaria*), < *pohkeni,* dark (closed), + *hogki,* it covers, in comp., as a noun, a shell, a scale.] The round clam (hard clam). *Jour. Amer. Folk-lore,* Oct.–Dec., 1902, p. 254. [Nantucket.]

poor, *a.*—**Little Sisters of the Poor,** a religious association of women founded in France by the Abbé Le Pailleur for the care of the old and infirm poor. It is now spread throughout the world.

II. *n.* In England, a gadoid fish, *Gadus minutus.*

poor (pör), *v. t.* [*poor, a.*] To pet in a pitying, compassionate way. [Local, U. S.]

poor-man's-flannel (pör″manz-flan′el), *n.* The mullen, *Verbascum Thapsus.*

poor-soldier (pör′sōl″jėr), *n.* A local Australian name for the friar-bird, *Philemon corniculatus,* a large bareheaded honey-eater.

poor-weed (pör′wēd), *n.* One of the button-weeds, *Diodia teres,* found in dry or sandy soils from Connecticut to New Mexico, chiefly near the coast. It is a brownish plant of a low, radiating habit.

pooseback (pös′bak), *adv.* [Appar. < (*pap*) *poose* + *back*¹ (after *pickaback*)] Same as *pickaback. Jour. Amer. Folk-lore,* Oct.–Dec., 1902, p. 254.

pootly-nautch (pöt′li-nâch), *n.* [Also *putli-, puttully-nautch;* < Hind. *kāṭh-putlī-nāch,* 'wooden puppet-dance': *kāṭh,* wood, *putlī,* puppet, *nāch,* dance.] A puppet-show. *Yule and Burnell.*

pop¹, *n.* **4.** The time during which a reaction or pop safety-valve stays open.

> The construction of these valves embodies a self-adjusting feature which automatically regulates the "*pop*" of the valve or maintains the least waste of steam between the opening and closing points, an improvement which will be readily appreciated, as there is no necessity of re-adjusting to regulate the *pop* on changes in the set pressure. *Elect. World and Engin.,* May 28, 1904, p. 1039.

pop⁵ (pop), *n.* A colloquial shortening of *pop-corn:* as, the golden *pops.* See ★*maize,* 1.

pop. An abbreviation of *population.*

p. o. p. In *photog.,* an abbreviation of *printing-out paper. Nature,* Sept. 25, 1902, p. 519.

popadam (pop′a̤-da̤m), *n.* [Also *poppadum, popodam;* < Tamil *pappaḍam,* contr. of *paruppu-aḍam,* lentil cake.] A thin scone or wafer, made of any kind of pulse or lentil flour, seasoned with asafetida, etc., fried in oil, and in western India baked crisp, and often eaten at European tables as an accompaniment to curry. *Yule and Burnell.*

Popanoceras (pop-a̤-nos′e̤-ras), *n.* [NL., < Gr. πόπανον, a round cake, + κέρας, horn.] A genus of phyllocampylous ammonoid cephalopods with compressed discoid, mostly strongly involute shells having a flattened venter and rather simple sutures. They occur in the Permian rocks.

pop-beer (pop′bēr), *n.* A non-alcoholic, sweetened, and variously flavored beverage containing carbon dioxid, sold in bottles: so named from the explosive noise produced by the opening of the bottle. [Colloq., U. S.] *Dialect Notes,* III. iii. p. 196.

pop-centered (pop′sen″tėrd), *a.* Having a conical hole at the center in which to start a drill.

pop-chamber (pop′chām″bėr), *n.* Same as ★*huddling-chamber.*

pop-corn, *n.*—**Golden, pearl, rice pop-corn.** See ★*maize,* 1.

popcorn-flower (pop′kôrn-flou″ėr), *n.* In California, a plant of the genus *Plagiobothrys,* or, more broadly, of any of the genera ncluded under the name *white* ★*forget-me-not* (which see). The white flowers are crowded on the outside of a curled rachis, giving them somewhat the appearance of pop-corn.

pop-eye (pop′ī), *n.* **1.** A deep-sea fish, *Macrourus cinereus,* found in Bering Sea.—**2.** A disease of fishes. It more frequently occurs among those that are kept in hatchery-ponds than among those that are left in a more natural state. In fish affected by it, the eyes protrude from the head, and frequently little blisters appear on different parts of the body.

> They consisted of water bacteria, the pus cocci, bacteria obtained from diseased fishes, a chromogen from the disease known as "*pop-eye.*"
> *Rep. U. S. Fish Com.,* 1901, p. 126.

pop-glove (pop′gluv), *n.* The foxglove.

Popian (pō′pi-a̤n), *a.* Of, belonging to, or resembling, the poet Pope. [Rare.]

> John Keats, in his poem entitled 'Sleep and Poetry,' has well characterized the soulless poetry of the period between the Restoration and the poetical revival in the latter part of the eighteenth century, but more especially of the *Popian* period.
> *H. Corson,* Introd. to Study of Browning's Poetry, i.

Poplar box, goat-moth, leaf-beetle, mocha-stone moth. See ★*box*¹, ★*goat-moth,* ★*leaf-beetle,* ★*moth*¹.

poplar-aphis (pop′lä̤r-ā″fis), *n.* Either *Pemphigus bursarius* or *P. spirothecæ,* both of which form galls on the leaf-stalks of the poplar.

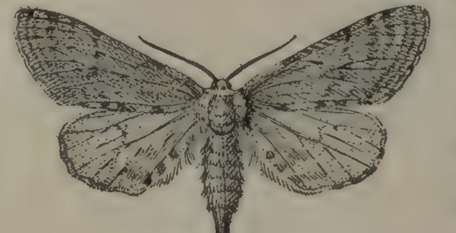
poplar-beetle (pop′lä̤r-bē″tl), *n.* A chrysomelid beetle, *Lina populi,* which feeds on poplar leaves.

poplar-hawk (pop′lä̤r-hâk), *n.* A large sphingid moth, *Smerinthus populi.*

poplar-pine (pop′lä̤r-pīn), *n.* Same as *Lombardy poplar.*

poplar-rust (pop′lä̤r-rust), *n.* See ★*rust*¹.

poplar-worm (pop′lä̤r-wėrm), *n.* Any one of many species of lepidopterous larvæ which feed on the poplar. Among them are the stout poplar span-worm, larva of *Lycia ursaria,* the larvæ of the antiopa, arthemis, and disippus butterflies, the larva of the io moth, and many others, including more than 60 species in the United States alone.



Moth of Poplar Span-worm (*Lycia ursaria*).
Female. Natural size.

poplin, *n.*—**Norwich poplin,** a poplin with a silk warp and a linen weft.

Popliteal fossa. See ★*fossa*¹.

Popocrat (pop′o̤-krat), *n.* [*Pop*(*ulist*) + (*Dem*)*ocrat.*] In U. S. politics, a name sometimes applied to a member of the Democratic party who was alleged to have adopted the principles of the Populists. [Humorous.]

popofka (po-pof′kä̤), *n.* [Russ.] An obsolete Russian type of monitor in which the outline of the deck was approximately circular: named from its inventor, Admiral Popoff.

popoluca (pō-pō-lö′kä̤), *n.* [Nahuatl *popoloca,* one who speaks badly, that is, speaks Nahuatl badly, and hence one who speaks another language.] One who speaks a foreign tongue: a name applied to members of various tribes in Mexico and Central America, but not the name of any particular tribe. Its use has led to much confusion. *Stand. Nat. Hist.,* VI. 207.

popover (pop′ō-vėr), *n.* A kind of hot bread made of thin, smooth, well-beaten batter baked in earthen cups or gem-pans.

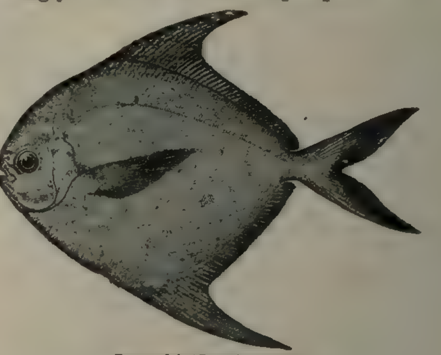
poppet, *n.*—**Sliding poppet,** the tail-stock of a lathe; a head or support carrying the dead-center, which can be slid along the ways to accommodate various lengths of work.

poppet-lashings (pop′et-lash″ingz), *n. pl.* In *nav. arch.,* chain-cables which are used in launching to support a vessel by being passed around the poppets and over the poppet-rib-bands, from side to side.

poppling (pop′ling), *n.* An agitation of the surface waters of the ocean, moderate in character and without uniformity.

poppy, *n.*—**Iceland poppy,** the arctic poppy, *Papaver alpinum.*—**Matilija poppy.** See ★*Romneya.*—**Tulip-poppy.** See ★*Hunnemannia.*

poppy-fish (pop′i-fish), *n.* **1.** In Jamaica, a species of harvest-fish, *Peprilus paru,* of the family *Stromateidæ.*—**2.** In California, a related species, *Palometa simillima,* often wrongly called the California pompano.



Poppy-fish (*Peprilus paru*).
(From Jordan's "Guide to the Study of Fishes.")

popularist (pop′ṳ̄-lä̤r-ist), *n.* [*popular* + *-ist.*] One who aims at popularizing scientific and other technical subjects; a popularizer.

> To say nothing of Mr. Wells and other competent *popularists,* examples may readily be drawn from more recondite sources. *Nature,* Sept. 8, 1904, p. 450.

population, *n.* **4.** In *biometry,* a species, race, variety, or group of organisms that can be differentiated from other groups.

> For the biometrician the type of any group (or "*population*" in the biometric sense) is fixed by the whole complex of statistical constants . . . which suffice to differentiate it sensibly from other groups or populations.
> *Biometrika,* Nov., 1903, p. 510.

Center of population. See ★*center*¹.—**Median point of population,** the point of intersection of the east-and-west line which equally divides the population as regards north and south, with the north-and-south line which equally divides the population as regards east and west, as regards numbers and not assumed weight, as in determining the ★*center of population* (which see). In 1900 the meridian 84° 51′ 29″ divided the population of the United States equally as regards east and west, and the parallel of lat. 40° 4′ 22″ N. divided it equally as regards north and south, both lines meeting in Spartanburg, Indiana. In 1880 the median point was in lat. 39° 57′ N. and long. 84° 7.2′ W.—**Moment of population.** See ★*moment.*

populational (pop-ṳ̄-lā′sho̤n-a̤l), *a.* [*population* + *-al*¹.] Of, pertaining to, or based on, population. *N. E. D.* [Rare.]

Populism (pop′ṳ̄-lizm), *n.* [L. *populus,* people, + *-ism.*] The political principles and policies of the Populists.

> In 1896 the spirit of *Populism* wholly captured the Democratic organization. *Rev. of Revs.,* Aug., 1900, p. 133.

Populist (pop′ṳ̄-list), *a.* and *n.* **I.** *a.* Of or pertaining to the People's Party, a political organization established in the United States in 1891, having for its chief objects expansion of the currency, State control of railways, and the placing of restrictions upon the ownership of land.

> It has been well said that a Socialism which proposes, like Bellamy's, to abolish the separate states of the American Union, is therein attempting quite as hard a feat as the abolition of private property. The *Populist* Party is not fully committed to either attempt.
> *Encyc. Brit.,* XXXII. 671.

II. *n.* A member of the People's Party.

Populistic (pop-ṳ̄-lis′tik), *a.* [*Populist* + *-ic.*] Of or pertaining to the Populists or to Populism; of the nature of Populism.

> [The free-silver movement] had been taken up by the *Populistic* element in certain Western farming States, because that element had always favored cheap money and high prices. *Rev. of Revs.,* Aug., 1900, p. 133.

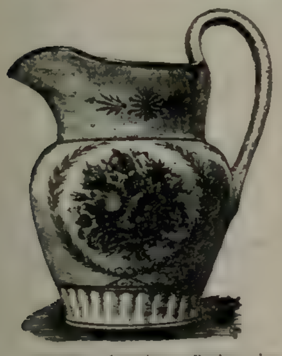
pop-valve (pop′valv), *n.* A pop safety-valve; a safety-valve which, by reason of an increase in the area over which the steam-pressure acts as the valve begins to open, opens very quickly with a popping sound.

> On a level road, at a speed of 10 or 12 miles per hour, the steam is usually maintained at a pressure of 150 pounds to the square inch. The *pop-valve* is set at 240 pounds.
> *Hiscox,* Horseless Vehicles, p. 108.

porae (pō′rä-ā̤), *n.* [Maori.] In New Zealand, a cirritoid fish, *Chilodactylus douglasi.*

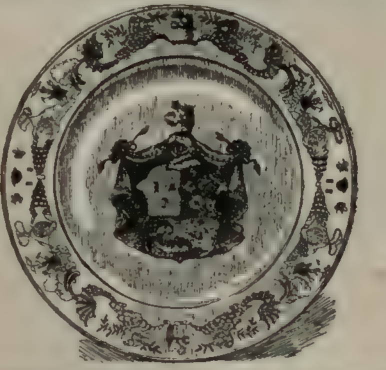
Porambonites (pō″ram-bō-nī′tēz), *n.* [NL., < Gr. πόρος, pore, + ἄμβων, a ridge.] A genus of protrematous brachiopods having globose thick shells with concentrically ribbed and pitted surface, found in the Silurian rocks of the Baltic region of Europe.

porangi (pō′ran-gi), *a.* [Maori *porangi*, hurried, deranged, mad.] Sad; sorry; sick; in low spirits. *E. E. Morris*, Austral English.



American Porcelain. Pitcher by William Ellis Tucker, Philadelphia, hard porcelain, about 1832.

In the Pennsylvania Museum, Philadelphia.



Armorial Porcelain. Plate, Chinese, Eighteenth Century. In the Pennsylvania Museum, Philadelphia.

porcelain^1, *n.*—**American porcelain.** Porcelain was not made in America until about the beginning of the nineteenth century. The following are the more important varieties: (1) *Bennington Parian*, the first Parian ware produced in the United States, after its introduction in England about 1842, at the United States Pottery at Bennington, Vermont, beginning with 1845. The principal productions were ornamental figures and jugs and pitchers with relief decorations, either in plain white or a blue-pitted ground. See ★*thimble-surface*, also *Bennington* ★*pottery*. (2) *Carr porcelain*, soft-paste porcelain and Parian ware produced by James Carr, of New York city, from about 1876 until 1885. (3) *Cartlidge porcelain*, soft-paste porcelain and Parian, made by Charles Cartlidge, at Greenpoint, New York, from 1848 to 1856. Among his products were table-services, door-plates and hardware furnishings artistically painted, and Parian portraits, plaques, and busts of eminent men. (4) *Carved Belleek*, a variety of Belleek porcelain made at Trenton, New Jersey, and carved in artistic low-relief designs while in the dry clay state, before burning. Vases and lamp-shades have been made in this style, the effect of the varying thickness of the walls, when artificial light is introduced, being that of a lithophane. (5) *Greenpoint porcelain*, a name given to the hard-paste porcelain produced at the Union Porcelain Works, at Greenpoint, New York, from 1865 to the present time. The principal product has been hardware furnishings, but a large amount of decorative ware, in the form of vases, figures, groups, and busts, has also been produced there. (6) *Hemphill porcelain*, a hard-paste porcelain made in Philadelphia from 1832 to 1837. See *Tucker* ★*porcelain*, below. (7) *Hulme porcelain*, hard-paste porcelain produced in Philadelphia in 1828. See *Tucker* ★*porcelain*, below. (8) *Kurlbaum and Schwartz porcelain*, hard-paste porcelain manufactured in Philadelphia from about 1851 to 1855. This product was of the finest quality of body and mechanical execution, the decorations being carefully painted in gold. (9) *Mead porcelain*, a fine quality of soft-paste porcelain made by Dr. Mead, in New York city, during the second decade of the nineteenth century: the first soft-paste porcelain that is known to have been produced in the United States. Known vases of this manufacture are entirely white, with handles modeled in the forms of winged female figures. (10) *Smith-Fife porcelain*, hard-paste porcelain made in Philadelphia about 1830, somewhat resembling the Tucker porcelain of the same period, in body, decorations, and shapes, but of a more yellowish tint of paste. (11) *Tucker porcelain*, a true hard-paste porcelain, with a small percentage of bone-ash, of a bluish tint, made by William Ellis Tucker, of Philadelphia, from 1825 to 1832. The earliest products were decorated with brown or sepia landscapes. In 1828 Thomas Hulme formed a copartnership with Tucker, under the style of Tucker & Hulme, but retired from the firm in about one year. In 1832 Joseph Hemphill was admitted as a partner, and a few months later Mr. Tucker died. The business was then carried on by Hemphill alone for several years. In 1837, Thomas Tucker, a brother of the founder, became sole proprietor, but in the following year the manufacture ceased. During Hemphill's proprietorship the ware was greatly improved. Potters and decorators were brought from Europe, and for a few years the manufacture was eminently successful. The ware resembled the French hard-paste porcelain of the same period, in body, shapes, and painted decorations. During the best period landscapes and wreaths of flowers were painted on the glaze in refined colorings, and the quality of the gilding was superior to that of the imported wares. The products of the factory were table-services, decorative jugs, vases in the French style, fruit-baskets, ornamental figures, ornate cologne-bottles, night-lamps, and a multiplicity of shapes, both useful and ornamental. This was the first hard-paste porcelain produced in America, and in many respects it has not since been surpassed. **Anspach porcelain,** hard-paste porcelain made at Anspach, Bavaria, after 1718. This ware, which was variously marked, was well made and decorated.—**Armorial porcelain,** a variety of hard-paste porcelain made in China in the eighteenth century, with painted and enameled armorial bearings of prominent European families, brought from the East by the East India Company. Often improperly called *Lowestoft porcelain.*—**Asbestos porcelain,** a porous substance, somewhat resembling ordinary porcelain, made from powdered asbestos.—**Bourg-la-Reine porcelain,** soft-paste porcelain manufactured at Bourg-la-Reine, France, by Jacques and Jullien, who transferred their works from Mennecy in 1773. **Broseley porcelain.** See *Broseley* ★*dragon* and *Salopian* ★*porcelain.* **Carr porcelain.** See *American* ★*porcelain.* **Caughley porcelain.** Same as *Salopian* ★*porcelain.*—**Chelsea-Derby porcelain,** soft-paste porcelain made at Derby and Chelsea, England, conjointly, by William Duesbury, who, being at that time proprietor of the Derby works, purchased in 1769 the Chelsea works. The Chelsea-Derby period, as it is called, lasted from that time until about 1786. During this period some of the best productions of these celebrated factories were made, including the famous Chelsea-Derby figures.—**Ch'ing porcelain.** See *Tsing* ★*porcelain.*—**Clignancourt porcelain.** A factory was established at Clignancourt, France, in 1775, by Pierre Deruelle, for the manufacture of hard- and soft-paste porcelain, under the patronage of the Count de Provençe, brother of the king.—**Coalbrookdale porcelain.** See *Coalport* ★*porcelain.*—**Coal porcelain,** vessels and other objects cut out of compact anthracite coal or turned on lathes and afterward polished on the buffing-wheel. *Sci. Amer.*, Sept. 12, 1903, p. 191.—**Coalport porcelain,** soft-paste porcelain made by John Rose at Coalport, England. In 1799 Rose bought the Caughley works from Thomas Turner (see *Salopian* ★*porcelain*), and in 1814 the business was removed to Coalport. In 1822 the Nantgarw works, near Cardiff, Wales, were also absorbed by the Coalport works.—**Duck-egg porcelain,** a local name for certain old Welsh porcelains, especially that made at the manufactory in Swansea, which was established in 1768. *W. Turner*, in Burlington Mag., V. 397.—**Frankenthal porcelain,** hard-paste porcelain made at a factory established at Frankenthal, Bavaria, by Paul Hannong, in 1754. The factory was closed in 1800.—**Fürstenberg porcelain,** hard-paste porcelain made at Fürstenberg, Germany. The manufacture was established in 1750 by a workman from the Hochst factory, under the patronage of the Duke of Brunswick. The usual mark is the capital letter F in script.—**Greenpoint porcelain.** See *American* ★*porcelain.* **Green porcelain.** Same as ★*martaban.*—**Gripsholm porcelain,** porcelain made in China, marked in large lettering "Gripsholm," for the royal Swedish palace, about thirty miles from Stockholm, on the southern shore of Lake Mälaren. Pieces of this porcelain are found in public collections.—**Herend porcelain,** hard-paste porcelain made at Herend, Hungary, by Maurice Fischer, from about 1800 to 1830. His products include many well-executed imitations of various wares of Europe and Asia, such as Capodimonte and Chinese porcelain. They are usually marked with the shield and crown of Hungary.—**Hirado porcelain,** a pure white, or blue-and-white, porcelain of fine texture and beautiful workmanship, made in the district of Mikawachi, Japan. It derives its name from a family named Hirado. The best examples of Hirado ware were produced about the middle of the eighteenth century. Also called *Mikawachi porcelain.*—**Höchst porcelain,** hard-paste porcelain made from 1720 to 1794 at a previously established faience-factory at Höchst, Germany. The manufacture was introduced by a workman named Ringler, who came from the Vienna works. Fine ware was produced, especially in figures and groups. The mark consisted of a star inclosed in a circle, adapted from the arms of the Archbishop of Mainz.—**Kronenburg porcelain.** See *Ludwigsburg* ★*porcelain.*—**Limbach porcelain,** hard-paste porcelain made at Limbach, Saxe-Meiningen, Germany, from about 1761.—**Louis Philippe porcelain,** porcelain made at the Sèvres factory, France, for King Louis Philippe, and bearing his monogram and the names of his various châteaux.—**Lowestoft porcelain.** (*b*) See *armorial* ★*porcelain.*—**Ludwigsburg porcelain,** hard-paste porcelain made from 1758 to 1821, under the patronage of Charles Eugène, Duke of Wurtemberg. The manufacture was established at Ludwigsburg (Kronenburg), Germany, by a workman named Ringler, who came from the Vienna works. This was one of the largest manufactories in Germany, justly celebrated for the beauty of its ware. The mark was a crown above a double C, the initial of Duke Charles.—**Mikawachi porcelain.** Same as *Hirado* ★*porcelain.* Also written *Mikawaji.*—**Ming porcelain,** a style of Chinese porcelain supposed to have been made during the Ming dynasty, from 1368 to 1643 A.D. Authors differ widely as to its characteristics and prevailing color.—**Nantgarw porcelain,** porcelain made at the factory in Nantgarw in Wales, which was established in 1811 and closed in 1822. *W. Turner*, in Burlington Mag., V. 397.—**Napoleon porcelain,** porcelain made at the Sevres factory, France, for the use of Napoleon III., and bearing the initial N.—**New Hall porcelain,** hard-paste porcelain made at New Hall, Hanley, England, from about 1781 to 1812, noted for being the first porcelain successfully manufactured in the Staffordshire district. About the year 1812 bone china superseded the hard-paste porcelain at New Hall, and continued to be made until 1825, when the manufacture of porcelain at these works ceased. See *Bristol porcelain*, under *porcelain*^{1}, also *Plymouth* ★*porcelain.* **Niderviller porcelain,** hard-paste porcelain made at Niderviller, France, from about 1760. Artistic work was produced here by the best artists. A characteristic style of decoration, on both porcelain and pottery, was the imitation of veined woods, on which frequently appeared the representation of white cards bearing pictures in black, a style that was afterward imitated at other European factories.—**Plymouth porcelain,** hard-paste porcelain made by William Cookworthy, of Plymouth, England, from about 1768. The mark for Plymouth porcelain is the sign for the planet Jupiter and the chemical symbol for tin, a character resembling the figures 2 and 4 combined. See *Cookworthy porcelain*, under *porcelain*^{1}.—**Porcelain stone,** feldspar; growan stone.—**Red porcelain,** vitrified ware of a deep-red color; specifically, a red ware made by the Elers brothers in Staffordshire, late in the seventeenth century. See *Elers* ★*ware.*—**Royal Saxon porcelain.** See *Dresden porcelain*, under *porcelain*^{1}.—**Rudolstadt porcelain,** hard-paste porcelain manufactured from about 1758 at Sitzerode, or Volkstadt, and afterward removed to Rudolstadt, Schwarzburg, Germany. The later products of this factory are blue-and-white porcelain.—**St. Cloud porcelain,** soft-paste porcelain made at St. Cloud, France, from about 1695 to 1773. This was the first soft-paste porcelain made in France.—**St. Petersburg porcelain,** hard-paste porcelain made at St. Petersburg, Russia, particularly that produced at the imperial factory. The manufacture was established about 1744 by the Empress Elizabeth Petrovna, through workmen from the Dresden factory. The ware is of fine paste and usually has a bluish tint. The marks which have been used are the ciphers of the reigning monarchs.—**Salopian porcelain,** a soft-paste porcelain made at Caughley, Shropshire, England, after 1772, by Thomas Turner. One of the most characteristic varieties of ware made at this factory was blue transfer-printed china imitating Oriental patterns. See *willow pattern*, under *willow*^{1}, and *Broseley* ★*dragon.* See also *Salopian ware*, under *Salopian*^{1}.—**Sung porcelain,** a Chinese porcelain or stoneware supposed to have been produced under the Sung dynasty, from 960 to 1279 A.D.—**Tsing porcelain,** a variety of porcelain made in China since 1643, in the present Tsing dynasty.—**Tucker porcelain.** See *American* ★*porcelain.*—**Vienna porcelain,** hard-paste porcelain made at Vienna from about 1720. This factory was started by a workman from the Dresden works. In 1747 the factory was purchased by the government. Vienna porcelain is noted for its artistic decorative work. The mark was the shield of the arms of Austria, usually painted in blue beneath the glaze. After 1784 pieces were also marked with the date scratched in the paste.

porcelainization (pôrs″lạ̄n-i-zā′shọn), *n.* The process or the result of porcelainizing. See *porcelainized.*

porcelainize (pôrs′lạ̄n-īz), *v. t.*; pret. and pp. *porcelainized*, ppr. *porcelainizing.* To make porcelain; convert into porcelain; in *geol.*, cause to resemble porcelain. See *porcelainized.*

porcelain-kiln (pôrs′lạ̄n-kil), *n.* A porcelain-oven. See the extract.

> It [hard porcelain] is fired in biscuit at a low temperature, in the second story of the *porcelain kiln*, using for its baking the surplus heat passing away after having done its greater work in the first story or glost kiln where the glazing is done. At this first burning the ware receives only sufficient fire to make it properly fasten together in form. . . . In this condition it is what is termed porcelain biscuit, and is ready for the glaze-tub. . . . The pieces are placed separately in the saggers. The heat in firing hard porcelain [in the first story or glost kiln] is carried to such a high degree that the ware touches the point of pliability, almost the melting-point. At this great heat the body is vitrified; at the same time the glaze, from its slightly softer composition, is melted into the body of the ware, producing a hard, vitreous, and homogeneous material properly known as true, hard porcelain.
>
> *E. A. Barber*, Pottery and Porcelain of the U. S., p. 258.

porcelain-mill (pôrs′lạ̄n-mil), *n.* A mill for grinding materials used in the manufacture of porcelain.

porcelainous, *a.* Same as *porcelanous.*

porcelain-printing (pôrs′lạ̄n-prin″ting), *n.* 1. The printing of cloth with a white color on a blue ground: a method carried into Europe by the French from their East Asiatic colonies.—2. The transfer of a printed engraving to porcelain, usually before it is glazed.

porcelain-shell (pôrs′lạ̄n-shel), *n.* A kind of cowry.

porcelanic (pôr-se-lan′ik), *a.* Same as *porcelanous.*

Porcellanaster (pôr-se-lạ̄-nas′tėr), *n.* [NL.] The typical genus of the family *Porcellanasteridæ.* *Sir C. W. Thomson.*

Porcellanasteridæ (pôr″se-lạ̄-nas-ter′i-dē), *n. pl.* [NL., < *Porcellanaster* + *-idæ.*] A family of starfishes of the order *Phanerozonia*, having opposite ambulacral plates, and thin lamelliform marginal plates traversed by cribriform organs. It includes several genera, among them being *Porcellanaster*, *Caulaster*, and *Ctenodiscus.*

Porcellia (pôr-sel′i-ạ̈), *n.* [NL., < Gr. πόρκης, a ring or hoop.] A genus of rhipidoglossate gastropods with discoidal, widely umbilicate shells, having a long slit subtended by a prominent slit-band along the median line of the outer whorls. It occurs in Devonian and Carboniferous rocks.

porcherine (pôr′she-rin), *n.* A trade-name of a synthetical sweetening substance, used in the same manner as saccharin.

Porcupine opener. See ★*opener.*

porcupine-bird (pôr′kū-pīn-bėrd), *n.* The striated wren, *Amytis striata*, of Australia, which inhabits the thick porcupine-grass.

porcupine-boiler (pôr′kū-pīn-boi″lėr), *n.* A steam-boiler having a vertical center cylinder or drum from which radiate horizontally many straight radial tubes. This makes a combination of the water-tube and cylindrical boilers. *Power*, March, 1904, p. 146.

porcupine-grass, *n.* 2. In Australia, any one of several species of grasses belonging to the genus *Triodia*, especially *T. Mitchelli*, *T. irritans*, and *T. pungens*, growing on the sand-hills of desert regions. They form rounded tussocks as large as 10 feet in diameter, from which the stiff, sharp-pointed leaves radiate in all directions, often causing discomfort to the traveler.—**Porcupine-grass ant.** See ★*ant*1.

porcupine-hair (pôr′kū-pīn-hãr″), *n.* In *pathol.*, same as *hystricismus*.

porcupine-machine (pôr′kū-pīn-ma-shēn″), *n.* In *cotton-manuf.*, any machine used in the preparatory processes having a cylinder or beater with a number of teeth, spikes, or blades.

porcupine-parrot (pôr-kụ̄-pīn-par″ọt), *n.* A local name for a ground-parrakeet, *Geopsittacus occidentalis*, of central Australia, which frequents the dense porcupine-grass of that region.

pore^2, *n.*—**Aboral pore.** See ★*aboral.*—**Bordered pore.** Same as ★*bordered pit.*—**Dermal pores.** (*a*) In sponges, the perforations in the dermal membrane over the incurrent canals. (*b*) Minute openings, in the integument of starfishes, through which project the dermal branchiæ.—**Dorsal pores,** openings in the body-wall of many species of earthworms which place the body-cavity in communication with the exterior.—**Genital pore.** (*a*) In *ichth.*, an opening through the wall of the urogenital sinus through which the ova pass to the exterior. (*b*) In the *Cystoidea*, a small opening in the plates of the calyx occasionally present between the mouth and the anus. Also called the *ovarian aperture.*—**Male pore,** in oligochætous annelids, the opening of the sperm-duct to the exterior. *Proc. Zool. Soc. London*, 1896, p. 203.—**Neurenteric pore,** the termination of the neurenteric canal.—**Physical pore,** a pore or interstice too small to be detected under the microscope or by any direct means. The existence of physical pores is inferred from certain properties of matter such as its compressibility. See *pore*^{2}, 1.—**Sensible pore,** a pore or interstice of such size that it may be detected by direct observation. See *pore*^{2}, 1.—**Urinary pore,** the common external opening of the two ureters in fishes; the urinary pore opens either into a urogenital sinus, or directly on the outer surface of the body.

pore-area (pōr′ā″rẹ̄-ạ̈), *n.* In sponges, an aggregation of ostia into sieve-like areas. Also called *pore-sieve*.

> The larger specimen has 20 oval depressed *pore-areas* and 2 oscules, . . . the floor of the *pore-areas* is covered with membrane perforated by groups of pores.
> *Proc. Zool. Soc. London*, 1900, p. 132.

pore-canal (pōr′kạ-nal″), *n.* 1. See ★*canal*^{1}.—2. One of the fine canals in the integument of many insects, which pass through the chitinous layers and end externally in minute pores. *A. S. Packard*, Text-book of Entom., p. 188.

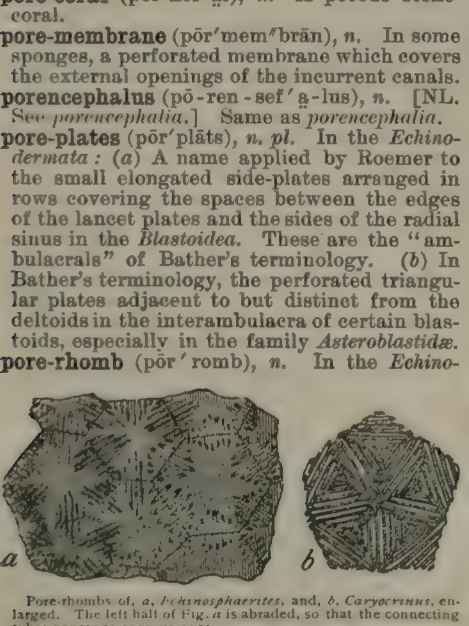
pore-coral (pōr′kor″ạl), *n.* A porous stone-coral.

pore-membrane (pōr′mem″brān), *n.* In some sponges, a perforated membrane which covers the external openings of the incurrent canals.

porencephalus (pō-ren-sef′ạ-lus), *n.* [NL. See *porencephalia*.] Same as *porencephalia*.

pore-plates (pōr′plāts), *n. pl.* In the *Echinodermata*: (*a*) A name applied by Roemer to the small elongated side-plates arranged in rows covering the spaces between the edges of the lancet plates and the sides of the radial sinus in the *Blastoidea*. These are the "ambulacrals" of Bather's terminology. (*b*) In Bather's terminology, the perforated triangular plates adjacent to but distinct from the deltoids in the interambulacra of certain blastoids, especially in the family *Asteroblastidæ*.

pore-rhomb (pōr′romb), *n.* In the *Echinodermata*, a type of rhombic area traversed by parallel canals terminating in pores, observed on the external surfaces of some cystidean thecæ. Each area overlaps the edges of two adjoining plates in such manner that the suture between the plates forms an axis of the rhomb.



Pore-rhombs of, *a*, *Echinosphaerites*, and, *b*, *Caryocrinus*, enlarged. The left half of Fig. *a* is abraded, so that the connecting tubes appear as open grooves.

(From Zittel's "Palaeontology.")

pore-sieve (pōr′siv), *n.* Same as ★*pore-area.*

porfyritic, porfyry. Amended spellings of *porphyritic*, *porphyry*.

porge (pōrj), *v. t.*; pret. and pp. *porged*, ppr. *porging*. [Perhaps from L. *purgare*, cleanse.] In *Jewish ritual*, to make ceremonially clean, as a slaughtered animal, by drawing out and removing the sinews and veins. *N. E. D.*

porgee^1 (pôr′jē), *n.* An East Indian silk fabric of coarse texture.

porgee^2 (pôr′gi), *n.* Same as *porgy*.

porger (pōr′jėr), *n.* [*porge, v.*] In *Jewish ritual*, one who porges. See ★*porge*.

porgy, *n.* 2. Same as *white perch* (which see, under *perch*^{1}).—**Deep-water porgies,** fishes of the genus *Otrynter*, found in deep water off the west coast of Florida.—**Grass-porgy,** *Calamus arctifrons*, of the Gulf of Mexico.—**Jolt-head porgy,** *Calamus bajonado*, of the West Indies.—**Little-head porgy,** *Calamus proridens*, of the West Indies.—**Little-mouth porgy,** *Calamus penna*, found from Florida to Brazil.—**Red porgy,** *Pagrus pagrus*, found on both sides of the Atlantic.—**Saucer-eye porgy,** *Calamus calamus*, of the West Indies.—**Shad-porgy.** Same as *grass-*★*porgy*.—**Southern porgy,** *Stenotomus aculeatus*, of the South Atlantic coast of the United States.—**White-bone porgy,** *Calamus leucosteus*, of the South Atlantic coast of the United States.

Poria (pō′ri-ạ̈), *n.* [NL. (Persoon, 1797), < Gr. πόρος, a pore.] A large genus of fungi of the family *Polyporaceæ*, having the fructification resupinate and frequently spreading over considerable areas of dead trunks and branches. Over 280 species are reported by Saccardo. *P. Radula*, a species with white angular toothed pores, is frequent on dead wood in Europe and North America.

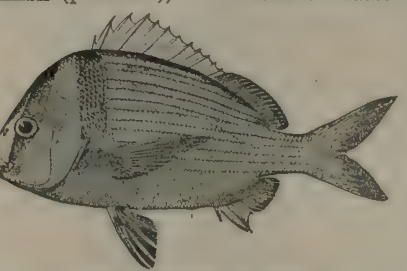
Porichthys (pọ-rik′this), *n.* [NL., < Gr. πόρος, pore, + ἰχθύς, a fish.] A genus of fishes of the family *Batrachoididæ*, found on the Pacific coast of America.

Porina (pọ-rī′nạ̈), *n.* [NL. (Acharius, 1810), < Gr. πόρος, a pore, + dim. *-ina*.] 1. A large genus of pyrenocarpous lichens of the family *Pyrenulaceæ*, having the thallus crustaceous and simple scattered perithecia with punctiform ostioles. About 150 species have been referred to this genus. They occur on bark of trees and rocks.—2. A genus of chilostomatous bryozoans having erect or incrusting zoaria with flattened branches and raised tubular zoœcial orifices. It is represented by species ranging from the Cretaceous to recent time.

porinin (pō′ri-nin), *n.* [*Porina* + *-in*^{2}.] A colorless crystalline compound, $(C_3H_6O)_n$, found in the lichen *Porina* (*Pertussaria*) *glomerata*.

porion (pō′ri-ọn), *n.*; pl. *poria* (-ạ̈). [NL., < Gr. πόρος, pore.] In *craniom.*, the median point at the posterior border of the canalis incisivus. *Von Török.*

porkfish (pōrk′fish), *n.* A common name of *Anisotremus virginicus*, a fish of the family *Hæmulidæ*, found from Florida to Brazil.



Porkfish (*Anisotremus virginicus*).

(From Jordan's "Guide to the Study of Fishes.")

pork-measles (pôrk′mē″zlz), *n.* See ★*measles*.

pornographist (pôr-nog′ra-fist), *n.* Same as *pornographer*. [Rare.] *The Nation*, Aug. 3, 1893, p. 79.

Poroclinus (pō-rọ-klī′nus), *n.* [NL., < Gr. πόρος, pore, + NL. *Clinus*.] A genus of blennioid fishes found in northern seas.

Porocottus (pō-rọ-kot′us), *n.* [NL., < Gr. πόρος, pore, + NL. *Cottus*.] A genus of cottoid fishes found in northern seas.

porocyte (pō′rọ-sīt), *n.* [Gr. πόρος, pore, + κύτος, a hollow.] In sponges, an epithelial cell perforated by a pore. The pore places the gastral cavity in communication with the exterior by means of an intracellular duct or canal.

porodic (pọ-rod′ik), *a.* [Gr. πωρώδης, πωροειδής, like tufa (< πῶρος, tufa, + εἶδος, form), + *-ic*.] Like tufa; in *petrog.*, colloid: chiefly applied to structureless rocks or minerals, such as flint, wood-opal, hyalite, etc.

porodine (pō′rọ-din), *n.* [Gr. πόρος, pore, + εἶδος, form, + *-ine*^{2}.] In *petrog.*, an amorphous mineral or rock derived from a colloidal mass, such as gelatinous silica, in contrast to one that is a glass. *Breithaupt.*

porodite (pō′rọ-dīt), *n.* [Gr. πωρώδης, πωροειδής, like tufa (see *porodic*), + *-ite*.] See the extract.

> The unaltered fragmental forms of the basalts, as well as of the other volcanic rocks, are called tufas, while I have denominated all the altered and old fragmental forms as *porodites*.
> *M. E. Wadsworth*, Harvard University, Museum of [Comparative Zoology, Bulletin, v. 280.

poroditic (pō-rọ-dit′ik), *a.* Of the nature of porodite.

porogam (pō′rọ-gam), *n.* [*porogam*(*ic*).] A porogamic plant. See ★*porogamic*.

porogamic (pō-rọ-gam′ik), *a.* [Gr. πόρος, pore, + γάμος, marriage, + *-ic*.] In *bot.*, fertilized by way of the micropyle instead of the chalaza. See ★*porogamy*.

porogamous (pọ-rog′ạ-mus), *a.* [*porogam*(*y*) + *-ous*.] Characterized by porogamy.

porogamy (pọ-rog′ạ-mi), *n.* [Gr. πόρος, passage.] In *bot.*, fertilization by the passage of the pollen-tube through the micropyle: the most common method with flowering plants. In a limited number of plants the pollen-tube enters through the chalazal region (*chalazogamy*), when the fertilization is said to be *basigamous*, or rarely through the apex, when the fertilization is termed *acrogamous*. *K. E. Goebel* (trans.), Organography of Plants, II. 615.

porokeratosis (pō-rọ-ker-ạ-tō′sis), *n.* [NL., < Gr. πόρος, pore, + κέρας (κερατ-), horn, + *-osis*.] An affection of the horny layer of the skin marked by a depressed area bounded by an irregular raised ridge.

Poromitra (pō-rọ-mit′rạ̈), *n.* [NL., < Gr. πόρος, pore, + μίτρα, belt, girdle.] A genus of fishes of the family *Berycidæ*, found in the deep sea.

Poromya (pō-rọ-mī′ạ̈), *n.* [NL., < Gr. πόρος, pore, + L. *mya*. See *Mya*.] The typical genus of the family *Poromyidæ*. *Forbes*, 1844.

Poromyidæ (pō-rọ-mī′i-dē), *n. pl.* [NL. *Poromya* + *-idæ*.] A family of septibranchiate bivalves having short siphons, an elongated foot, and well-developed palps. On each half of the septum there are several groups of lamellæ separated by orifices. It includes two genera, *Poromya* and *Silenia*.

poroplastic (pō-rọ-plas′tik), *a.* [Gr. πόρος, pore, + E. *plastic*.] Porous and plastic: applied to a kind of porous felt, plastic when heated, used by surgeons. *N. E. D.*

> A *poroplastic* felt splint. *Lancet*, March 16, 1901, p. 780.

poroporo (pō-rō-pō′rō), *n.* [Maori *poroporo*, *poporo*, plants of the genus *Solanum*.] In New Zealand, *Solanum aviculare*, a shrub bearing fruit about the size of a small plum, edible when ripe, but very acrid before maturing. This fruit was commonly used by the early colonists in the neighborhood of Wellington for making jam. See *kangaroo-apple*.

poros (pō′ros), *n.* [Gr. πῶρος, a kind of marble, tufa, a stalactite, etc.] A limestone quarried near Piræus: the common building stone of Athens. Previous to the occupation by the Persians in 480 B.C. all the monuments on the Acropolis were of this material. Many interesting remains, often charmingly colored, have been recovered.

poroscope (pō′rọ-skōp), *n.* [Gr. πόρος, pore, + σκοπεῖν, view.] An apparatus for determining the porosity or degree of permeability of a substance.

> The examination of the plans, number of stories, construction and interior arrangement of the house should include the permeability and hygroscopic properties of the building material. Our general knowledge of the relative permeability of different kinds of building material will enable us to form an opinion, but for exact determinations the use of a *poroskop*, or gasometer and manometer, becomes necessary.
> *Buck*, Med. Handbook, IV. 768.

porose, *a.* 3. Of or pertaining to the *Porosa*.

porosity, *n.*—**Selective porosity,** in *geol.*, porosity (of a rock) as determining the presence in it of ores: noting the dissemination of ores in open-textured rock, into which they have entered in solution because of its porosity, in preference to less open rock.

Here, as at Cripple Creek, we have examples of the doctrine of "*selective porosity*" — that is to say, certain zones of rock are rich, because the metal-bearing solutions found the fissured portions to be the easiest channels for their passage, and coursed with greater abundance through them. *Encyc. Brit.*, XXX. 763.

porotic (pọ̄-rot'ik), *a.* and *n.* **I.** *a.* Causing porosis or the formation of callus; indurating.
II. *n.* Any drug or other agent which promotes the growth of connective tissue, induration of the tissues, or the formation of callus.

poroto (pọ̄-rō'tọ̄), *n.* [Native.] A Chilian popular name for the brown or reddish bean.

Porphyra, *n.* 2. [*l. c.*] In *med.*, same as *purpura*.

porphyrate (pôr'fi-rāt), *n.* [*porphyr*(*ic*) + *-ate*.] A salt of porphyric acid.

porphyration (pôr-fi-rā'shọn), *n.* Same as *porphyrization*.

Porphyrian (pôr-fir'i-ạn), *a.* [L. *Porphyrius*, Porphyry, + *-an*.] Of or pertaining to Porphyry (about 233–305 A.D.), a neo-Platonic philosopher and opponent of Christianity.

porphyric^1 (pôr-fir'ik), *a.* Same as *porphyritic*. *Encyc. Brit.*, XXV. 426.

porphyric^2 (pôr-fir'ik), *a.* [Gr. *πορφύρα*, purple, + *-ic*.] Noting an acid, $C_{10}H_4N_2O_7$, obtained from euxanthone by the action of nitric acid. With ammonium carbonate it produces a deep-red color.

porphyrine (pôr'fi-rin), *n.* [Gr. *πορφύρα*, purple, + *-ine*^{2}.] A white amorphous alkaloid, $C_{21}H_{25}N_3O_2$, found in the bark of *Pala constricta*. Its salts have a blue fluorescence. It melts at 97° C.

porphyrogene (pôr'fi-rọ̄-jēn), *n.* [Gr. *πορφύρα*, purple, + *-γενης*, -born.] Born in the purple. *Poe*, The Haunted Palace, st. 3. See *porphyrogenitus*.

porphyrogenite†, *n.* Same as *porphyrogenitus*.

porphyrous (pôr'fi-rus), *a.* [Gr. *πόρφυρος*, purple, + *-ous*.] Purple.

> O spirit of rage and might,
> Who canst unchain the links of winter-stark,
> And bid earth's stubborn metals flow like oil,
> Her *porphyrous* heart-veins boil;
> Whose arrows pierce the cloudy shields of dark.
> *R. Bridges*, Prometheus the Firegiver, l. 1272.

porphyroxine (pôr-fi-rok'sin), *n.* [Gr. *πορφύρα*, purple, + E. *ox*(*ygen*) + *-ine*.] A substance found in opium, once believed to be a distinct alkaloid, but now known to be a mixture of several alkaloids.

porphyruria (pôr-fi-rö'ri-ạ̈), *n.* [NL., < Gr. *πορφύρα*, purple, + *οὖρον*, urine.] The presence in the urine when voided of a purplish pigment derived from the blood.

porphyry, *n.* 4. In *ceram.*, a hard colored body made by Josiah Wedgwood, in imitation of porphyry.—**Artificial porphyry**, a trade-name for iron furnace-slag used for building and paving.—**Bird's-eye porphyry**, a name, current among miners, for any porphyritic, eruptive rock with round phenocrysts, especially of quartz. *Contrib. to Econ. Geol.*, U. S. Geol. Surv., 1902, p. 72.—**Claystone-porphyry.** See ★*claystone-porphyry*.—**Rhomben-porphyry** [*G.*], porphyry in which the phenocrysts of feldspar (soda-orthoclase to potash-oligoclase) have a form approaching that of a rhombohedron, yielding rhombic cross-sections. It is related to the syenites and occurs chiefly in Norway. *Von Buch.*

Porpita (pôr'pi-tạ̈), *n.* [NL.] The typical genus of the family *Porpitidæ*. *Lamarck.*

Porpitidæ (pôr-pit'i-dē), *n. pl.* [NL. *Porpita* + *-idæ*.] A family of siphonophorans having a circular umbrella without crest and a pneumatocyst which is divided into an octoradiate central part and numerous concentric rings. The gonostyles are provided with mouths, the tentacles have many stalked cnidospheres, and pneumothyræ are present. It contains the genera *Porpita*, *Porpitella*, *Porpalia*, and *Porpema*.

porporate (pôr'pọ̄-rāt), *a.* [It. *porporato*, < L. *purpuratus*, clad in purple, < *purpura*, purple.] Clad or robed in purple. [Rare.]

> Make your brothers priests,
> Paul shall be *porporate*, and Girolamo step
> Red-stockinged in the presence when you choose,
> But save one Franceschini for the age.
> *Browning*, Ring and Book, v. 227.

Porro prism binocular. See ★*binocular* and *Porro's system of* ★*prisms*.

port^1, *n.* —**Courtesies of the port.** See ★*courtesy*.—**Open port.** See the extract.

In China at the present time (1902) certain *ports* are designated "free and *open*." This phrase means that the ports in question are (1) open to foreign trade, and (2) that vessels engaged in over-sea voyages may freely resort there. Exemption from payment of customs duties is not implied, which is a matter distinct from the permission granted under treaty engagements to foreign vessels to carry cargoes to and from the "treaty ports." *Encyc. Brit.*, XXVIII. 514.

Port of refuge. See the extract.

Whatever the reason for putting into the *port of refuge*, provided it was necessary for the common safety, the expenses of going in, and the consequent expenses of getting out (if she sails again with all or part of her original cargo), are allowed as G. A. *Encyc. Brit.*, XXVI. 32

To run down a port, in *navigation*, to sail north or south until the latitude of the port is reached, then head due east or west on that parallel until the port heaves into view. This method was formerly commonly used by the poorly schooled merchant navigator who had no chronometer to aid him in finding the longitude of his ship, and whose knowledge of nautical astronomy enabled him merely to manipulate the ancient pig-yoke for a meridian observation of the sun.—**Treaty port.** See ★*treaty-port*.

port^2, *n.*—**Reëntrant port**, a gun-port on a war-ship in which the side of the vessel is inflected inward so as to permit a greater angle of training without making a large opening. See cut under ★*battle-ship* showing reëntrant ports on gun-deck. Also called *embrasure-port*.

portage^1 (pōr'tạ̄j), *v.*; pret. and pp. *portaged*, ppr. *portaging*. [*portage*^{1}, *n.*] **I.** *trans.* To carry; pack, as a boat around a portage.

I took with me a King folding canvas boat. It was perfection in its way, but I made a mistake in buying a 14-footer. It is altogether too large for one man to *portage*. *Recreation*, April, 1901, p. 277.

II. *intrans.* To carry; proceed by carrying (a boat or load); make a portage.

After *portaging* across a divide, we may on the same day have the enjoyment of descending a swift-flowing stream. *Geog. Jour.* (R. G. S.), X. 4.

portative, *a.* **II.** *n.* Same as *portative organ* (which see, under *organ*^{1}).

port-buckler (pōrt'buk″lėr), *n.* See *buckler*, 2.

port-captain (pōrt'kap″tạn), *n.* *Naut.*, the marine superintendent of a line of vessels.

port-duty (pōrt'dū″ti), *n.* Harbor dues.

ported, *a.* 2. In *mech.*, having ports; fitted with ports for admission or exhaust or for both.

porter^2, *n.* 4. (*e*) A rope-carrier or supporter; a wheel or roller on a support used to sustain a traction- or transmission-rope and prevent its sagging and striking the ground between its terminal points.

Porteranthus (pōr-tẹ-ran'thus), *n.* [NL. (Britton, 1894), < *Porter* + Gr. *ἄνθος*, flower; named in honor of T. C. *Porter* (1822–1901), an American botanist.] A genus of plants of the family *Rosaceæ*. See *Gillenia*.

porter-bar (pōr'tėr-bär), *n.* Same as *porter*^{2}, 4 (*b*).

Porter-Clark process. See ★*process*.

Port Ewen limestone. See ★*limestone*.

Portheus (pōr'thẹ̄-us), *n.* [NL., appar. < Gr. *πορθειν*, ravage.] A gigantic extinct teleost fish of the family *Ichthyodectidæ*, characterized by a single row of strong conical teeth of variable size fixed in sockets in both jaws, an ossified sclerotic in the orbit, movable articulation of palatine and ethmoid, three suborbital plates, and a large well-developed operculum. The pectoral and pelvic fins are provided with broad anterior rays. The dorsal fin is short and situated well back, and the caudal fin is forked. The total number of vertebræ is 83. The dimensions of the large species *Portheus molossus* Cope are as follows: total length, 15 feet 8 inches; length of skull, 2 feet 2 inches; spread of tail, 3 feet 9 inches. The genus is confined to the Cretaceous rocks, and the finest specimens have been obtained from the Niobrara Chalk of Kansas. Found also in European Cretaceous.

port-hole, *n.* 3. In *zoöl.*, one of the minute apertures or cinclides in the body-wall of a sea-anemone through which the gastric filaments or acontia are protruded. *Parker and Haswell*, Zoology, I. 175.

portico, *n.*—**Subgenital portico**, in some *Discomedusæ*, a large single central chamber lying immediately below the floor of the stomach and above the brachial disk. *Parker and Haswell*, Zoology, I. 171.

portion, *n.*—**Schroeder's portion of urea**, the amount of daily urea formation which occurs in the liver.

portiuncula (pōr-ti-ung'kụ̄-lạ̈), *n.* [ML. use of L. *portiuncula*, dim. of *portio*(*n*-), portion.] An indulgence granted to those who on August 2 visit the churches in which the Third Order of St. Francis is canonically established.

port-light (pōrt'līt), *n.* A plate of heavy glass set in a hinged frame and fitted to a port in a ship's side.

portmanteau-word (pōrt-man'tō-wėrd″), *n.* A name given by Lewis Carroll (C. L. Dodgson), in "Through the Looking-glass," to words formed by him on the composite system. [Humorous.]

> "'Twas brillig, and the slithy toves
> Did gyre and gimble in the wabe:
> All mimsy were the borogoves,
> And the mome raths outgrabe.

"'Slithy' means 'lithe' and 'slimy.' . . . You see it's like a portmanteau — there are two meanings packed up into one word. . . . 'Mimsy' is 'flimsy and miserable' (there's another *portmanteau* for you)."
Lewis Carroll, Through the Looking-glass, pp. 127–129

Porto Bello ware. See ★*ware*^{2}.

portolan (pōr'tọ̄-lan), *n.* Same as ★*portolano*.

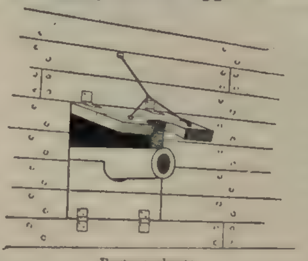
A series of World-maps and Mediterranean *portolans*. *Geog. Jour.* (R. G. S.), XII. 374.

portolano (pōr-tō-lä'nō), *n.*; pl. *portolani* (-nē). [It. *portolano*, pilot, log-book.] Originally the book of sailing-directions accompanying a chart, but later applied to any chart or map.

In fact, there is hardly any map of the middle age, before the beginning of the *Portolani*, which can sustain a comparison in the matter of contour with the "Cottoniana." *Geog. Jour.* (R. G. S.), XV. 131.

Porto Rico bark. See ★*bark*^{2}.

port-pendants (pōrt'pen″dạnts), *n. pl.* Ropes belonging to the upper sections of the port-shutters or lids of old-fashioned men-of-war. They were made fast to rings on the outside of the lids and then rove through holes in the sides of the vessel on the decks next above the ports. By means of these pendants and a tackle the upper covers were raised and lowered.



Port-pendants.

portrayment (pōr-trā'mẹnt), *n.* Same as *portrayal*.

port-riggle (pōrt'rig″l), *n.* *Naut.*, same as *port-flange* (which see).

portsman (pōrts'mạn), *n.*; pl. *portsmen* (-mẹn). A citizen or inhabitant of one of the Cinque Ports. *N. E. D.* [Eng.]

portulano, *n.* Same as ★*portolano*.

portunal (pōr'tụ̄-nạl), *n.* [G., < L. *Portunalis*, pertaining to *Portunus*, the god of harbors.] An organ-stop, the pipes of which are of wood and are open, and larger at the top than at the mouth. Also *portunal-flute*. *Stainer and Barrett.*

portunal-flute (pōr'tụ̄-nạl-flöt″), *n.* [See ★*portunal*.] In *organ-building*, a stop with open wooden pipes, larger at the top than at the bottom.

port-vent (pōrt'vent), *n.* [As of F. **porte-vent*, carry-wind.] A pipe conveying the wind in an organ or bagpipe. *N. E. D.*

Thereupon Malcolm set his *port-vent* to his mouth, rapidly filled his bag, . . . and then sent from the instrument such a shriek, . . . that . . . his adversary pressed both hands to his ears.
Geo. MacDonald, Marquis of Lossie, xi.

Port-wine mark or **stain.** Same as *capillary* ★*nævus*.

porulose (pō'rọ̈-lōs), *a.* [NL. **porulosus*, < **porulus*, dim. of *porus*, pore.] Having minute apertures or pores; minutely porose.

Free; disk-shape, circular, nearly flat above and below; both surfaces minutely *porulose*.
Dana, Zoophytes, p. 705.

porus, *n.* 2. In *entom.*, one of the minute pits on the upper surface of the antennæ, supposed to be olfactory in function.

In a great number of insects Erichson described on the upper surface of the antennæ peculiar minute bits, "*pori*," which, according to him, were covered by a thin membrane, and to which he ascribed the perception of smell. *A. S. Packard*, Text-book of Entom., p. 266.

pos., **poss.** Abbreviations (*a*) of *possession*; (*b*) of *possessive*.

posaune, *n.* 2. In *organ-building*, a powerful reed-stop, usually of 16-feet pitch.

posca (pos'kạ̈), *n.* [L.] A drink consisting of vinegar or wine diluted with water.

pose^2, *v. t.* 6. At *dominoes*, to set (the first domino). *Amer. Hoyle*, p. 445.

poseur (pō-zėr'), *n.* [F., < *poser*, pose. See *pose*^{2}.] One who poses, or takes an attitude, physical or mental, which is assumed for effect; one who attitudinizes.

Above all, she never affronted genuine artists by inviting self-advertising quacks and *poseurs* to meet them and make capital from the association.
J. L. Ford, in Smart Set, Sept., 1905, p. 91.

Posidonia (pos-i-dō'ni-ạ̈), *n.* [NL., < Gr. Ποσειδώνιος, adj., < Ποσειδῶν, Poseidon (Neptune).] Same as ★*Posidonomya*.

Posidonomya (pos-i-dō-nọ-mī'a̤), *n.* [NL., < *Posidonia* + *Mya*, genera of *Pelecypoda*.] A genus of prionodesmacean pelecypods having compressed, equivalve, concentrically plicated, thin-walled shells, with rounded outlines and short straight hinge-line. The species range from Silurian to Jurassic, and are especially abundant in Permian, Triassic, and Jurassic formations.

position, *n.* 5. Specifically, in *archery*, the attitude or standing of an archer in the act of shooting.—**Casselberry position,** a prone position of a patient after intubation, in which swallowing can occur without danger of fluid entering the tube.—**Day position,** in *bot.*, the position assumed by leaves during the day, as compared with that assumed by them during the night: that is, chiefly a horizontal position. Compare *night* ★*position*.—**Diagonal position,** in *bot.*, the position of an organ intermediate between median and lateral.—**Maritime positions,** the latitude and longitude of certain places on the seacoast.—**Night position,** in *bot.*, the position assumed by leaves during the night, as compared with that assumed by them during the day: that is, a more or less vertical position. Compare *day* ★*position*.—**Position cosine.** Same as *direction cosine*.—**Principal position,** in the *optics of crystals*, that position of a crystal, in the field of the polariscope, where the plane of the optic axes of the specimen coincides with the plane of polarization of the analyzer or with that of the polarizer. Another position, sometimes called the *second principal position*, is that where the plane of the optic axes makes an angle of 45° with the plane of the analyzer.—**Sims's position,** in *surg.*, a posture on the side with the under arm behind the back and the knees drawn up, assumed by the patient in gynecological examinations.—**Trendelenburg position,** in *surg.*, a posture on the back with the legs hanging down over the foot of the operating-table, the latter being so inclined that the body rests on a plane of 45°, the pelvis being higher than the head.—**Walcher's position,** in *surg.*, a position on the back, at the foot of a table, with the thighs hanging down over the edge. A woman in labor is sometimes placed in this position in order to increase the size of the pelvic inlet.

position-circle (pọ-zish'ọn-sėr"kl), *n.* The graduated circle of a position-micrometer.

positival (poz-i-tī'va̤l), *a.* [*positive* + *-al*^{1}.] Of a positive, real, or actual, character: opposed to *ideal*. *Grote*, Moral Ideals, p. 13. *N. E. D.*

positive, *a.* 11. Specifically, noting an oiling or lubricating device in which the oil is made to flow by pressure, due either to gravity or to pumping.

> Instead of depending on splash lubrication alone for oiling every part of the engine, *positive* oil feeds are led to each of the crankshaft bearings, and the crankshaft is pierced with suitable passages to conduct oil to the cranks themselves, so that the connecting rod boxes also receive plenty of oil. *Sci. Amer.*, Feb. 21, 1903, p. 134.

Positive culture. See ★*culture*.—**Positive number.** See ★*number*.

II. *n.*—**Bronze positive,** in *photog.*, a picture obtained by exposing a glass plate coated with a mixture of cane-sugar, glucose, gum arabic, and honey, which is sensitized by ammonium bichromate, and which after exposure is developed by applying bronze powder with a tuft of cotton-wool.

positively, *adv.* (*h*) In *mech.*, depending only on that which cannot fail without breaking; not depending on springs or gravity. See *positive motion*.

positivity, *n.* 2. The degree of exactness reached in the scientific determination of phenomena. *L. F. Ward*, Outlines of Sociol., p. 7.

positor, *n.* 2. In *surg.*, a repositor.—**Uterine positor,** an instrument employed in rectifying malpositions of the uterus.

poso (pō-sō'), *n.* [Tagalog *posó*.] In the Philippine Islands, a knot of hair held together by a comb, worn by Tagalog women.

posong (pọ-song'), *n.* [Tagalog *posong*, proud, arrogant, passionate, Ilocano *pusóng*, pride, arrogance.] In the Philippine Islands, a person who runs amuck.

possess, *v. t.*—**Not possessed,** a plea to an action of trover denying that the plaintiff was possessed of the goods when the action was commenced.

possession, *n.* 8. In the terminology of psychical research, a change of mental disposition, occurring in the state of trance, so marked as to suggest the substitution of a novel personality for the known personality of the subject.

> Trance is a name applied to a form of automatism, whether healthy or morbid, in which the automatist appears to be in some way altered, or even asleep, but in which he may speak or write certain matter of which his normal personality is ignorant at the time, and which it rarely remembers on his return to waking life. If there appears to be not merely a modification but a substitution of personality in the trance, it is called *possession*. Trance occurs spontaneously in so-called somnambulism, as a result of disease in hysteria, and as a result of suggestion, etc., in hypnotic states. A fuller analysis shows classes which slide into each other in various ways.
> *F. W. H. Myers*, in Proc. Soc. Psychical Research, [June, 1902, p. 67.

Law of possession. See ★*law*^{1}.

possessival (po-se-sī'va̤l), *a.* [*possessiv(e)* + *-al*^{1}.] Of or pertaining to the possessive case; possessive. *J. Earle*, Philol. Eng. Tongue, p. 522. *N. E. D.*

possessor, *n.*—**Naked possessor,** an occupant of land whose only apparent right or title to the land is the fact of possession.

possum-grape (pos'um-grāp), *n.* See ★*grape*^{1}.

possum-haw (pos'um-hâ), *n.* The deciduous holly, *Ilex decidua*, found on borders of streams and swamps from Maryland through the coast States to Texas and northward to Missouri. It is a small tree, or eastward a shrub.

post^{1}, *n.* 7. In a lock, a wire or cylindrical projection over which the tube of the key fits. Its purpose is to interfere with or prevent the picking of the lock by a lever or wire.—**Heads and posts.** See ★*head*.—**Inner post** (*naut.*), an oak timber joined to the foreside of the stern-post for the seating of the transoms.—**Post-and-rail tea.** See ★*tea*^{1}.—**Silence post,** in Australian race-tracks, a post erected at some distance from the members' stands, and beyond which book-makers are not allowed to ply their calling. *Encyc. Brit.*, XXIX. 334.

post^{2}, *n.*—**Cossack post,** an outpost composed of a few soldiers under a non-commissioned officer.—**General post,** in the early days of the postal service of Great Britain, the post despatched from the general post-office in London, once a day or on certain stated days, to all post-offices (then established) throughout the country: distinct from the local service known as the *penny post*, and later the *twopenny post*, which was under different management. See *penny post*, under *post*2.—**General-post day,** the day on which the general post was despatched or received.—**General-post delivery,** the delivery of the letters received by the general post; the first delivery of the day.

post^{2}, *v. t.* 6. To order or detail.

> Colonel Tanner returned from Gilgit in April, 1882, and, after a few months' absence on leave to England, was *posted* in November, 1882, to the charge of the Darjeeling party. *Geog. Jour.* (R. G. S.), XI. 557.

7. In *chess*, to move (a piece) to a square; occupy a square with (a piece).

> The White King would have been *posted* at Q's 4th.
> *Morphy*, Games of Chess, p. 47.

post^{5}, *adv.* and *prep.*—**Post litem motam,** in *law*, after the commencement of an action, or after the dispute has arisen.

postage, *n.* 3†. The hire of a horse for traveling; the sum paid for the hire.

> Each horse's hire or *postage*.
> *Act of* 1660, quoted in Joyce, Hist. of Post Office, p. 29, [note.

4. The sending of letters, etc., by post.

Postal scales. See ★*scale*2.—**Postal telegraph.** See ★*telegraph*.—**Postal trade,** the purchasing of goods through the post by means of 'mail orders.' See the extract.

> What is called in England "*postal trade*," and in America "mail order business," is growing very rapidly.
> *Encyc. Brit.*, XXV. 99.

Postal treaty. See ★*treaty*.

postantennal (pōst-an-ten'a̤l), *a.* [L. *post*, behind, + NL. *antenna* + *-al*^{1}.] Situated behind the antennæ.—**Postantennal organ,** Lubbock's name for the prostemmatic or ante-ocular organ possessed by certain *Collembola*.

postatlantal (pōst-at-lan'ta̤l), *a.* [L. *post*, behind, + *atlas* (*-ant-*) + *-al*^{1}.] Lying behind the atlas, or first cervical vertebra. *Philos. Trans. Roy. Soc.* (London), 1891, ser. B, p. 73.

post-auger (pōst'â"gėr), *n.* See *post-hole auger* and cut, under *auger*, 2.

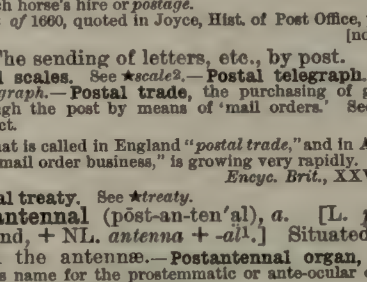
postauricular (pōst-â-rik'ū-lä̤r), *a.* [L. *post*, behind, + *auricula*, auricle, + *-ar*^{3}.] Situated behind the auricle, or ear. *Annals and Mag. Nat. Hist.*, Sept., 1903, p. 343.

postaxiad (pōst-ak'si-ad), *adv.* Same as ★*postaxially*. *Proc. Zool. Soc. London*, 1895, p. 319.

Postaxial border, the posterior edge of a limb when extended at right angles to the body: often well defined.

postaxially (pōst-ak'si-a̤l-i), *adv.* Backward; posteriorly of the median line of a limb which is extended at right angles to the body.

post-beetle (pōst'bē"tl), *n.* A beetle the larva of which bores in posts or other timber.—**Powder post-beetle,** any one of several species of ptinid beetles: applied especially to species of the genus *Lyctus* the larvæ of which bore into dry hardwood timber, filling their burrows with a fine powder. They do especial damage to hardwood furniture and to ax handles and the handles of agricultural implements.



Powder Post-beetle (*Lyctus planicollis*).

a, larva; *b*, adult; *c*, pupa; *d*, leg of larva; *a*, *b*, *c*, much enlarged, *d*, more enlarged. (Chittenden, U. S. D. A.)

post-boat (pōst'bōt), *n.* A mail-boat; a packet-boat.

postbrachium (pōst-brā'ki-um), *n.*; pl. *postbrachia* (-a̤). [NL., < L. *post*, behind, + *brachium*, arm.] The posterior process of the corpus quadrigeminum. *Buck*, Med. Handbook, II. 163.

postbuccal (pōst-buk'a̤l), *a.* [L. *post*, behind, + E. *buccal*.] Situated behind the buccal region: as, the *postbuccal* segments of leeches. *Buck*, Med. Handbook, IV. 701.

postbulbar (pōst-bul'bä̤r), *a.* [L. *post*, behind, + E. *bulbar*.] Situated or occurring behind or caudal to the spinal bulb or oblongata. *Philos. Trans. Roy. Soc.* (London), ser. B, 1898, p. 168.

postcæcal (pōst-sē'ka̤l), *a.* [L. *post*, behind, + *cæc(um)* + *-al*^{1}.] Situated behind the cæcum.

postcalcarine (pōst-kal'ka̤-rin), *n.* [L. *post*, behind, + E. *calcarine*.] Noting the posterior portion of the calcarine fissure. G. Elliot Smith has substituted *retrocalcarine* because *postcalcarine* has been employed in another sense by other writers. *Trans. Linn. Soc.*, Zool., Feb., 1903, p. 327.

post-card, *n.*—**Picture** or **pictorial post-card,** a post-card upon the reverse side of which a picture, photographic or other, is printed: said to have been first introduced in Switzerland. It is not an official government issue and requires a stamp, one cent in the United States and a halfpenny in Great Britain.

postcardinal (pōst-kär'di-na̤l), *a.* [L. *post*, behind, + E. *cardinal*.] Situated behind the heart; specifically, noting a vein in embryos and in certain fishes which is posterior to the heart and conveys the blood from the mesonephros, vertebral column, and trunk. *Proc. Zool. Soc. London*, 1898, p. 4.

post-cart (pōst'kärt), *n.* A cart in which mail is carried.

> Jamie was to sail from London to Dundee, and come on to Thrums from Tilliedrum in the *post-cart*.
> *J. M. Barrie*, Window in Thrums, xvi.

post-cenal (pōst-sē'na̤l), *a.* [L. *post*, after, + *cena*, dinner, + *-al*^{1}.] Occurring, or relating to what occurs, after dinner. [Rare.]

postcentral (pōst-sen'tra̤l), *a.* [L. *post*, behind, + E. *central*.] In *anat.*, situated behind the central fissure of the brain. *Buck*, Med. Handbook, II. 137.

postcentralis (pōst-sen-trā'lis), *n.* [NL., < L. *post*, behind, + *centralis*, central.] A fissure in the cerebral cortex caudad or posterior to and more or less parallel with the central fissure or fissure of Rolando. *Proc. Zool. Soc. London*, 1903, p. 20.—**Postcentralis superior,** the dorsal, superior, or upper portion of the postcentral fissure.

postcentrum (pōst-sen'trum), *n.*; pl. *postcentra* (-trä̤). [NL., < L. *post*, behind, + *centrum*, center.] One of the vertebral disks without neural and hæmal arches which occur in conjunction with those thus provided. The condition is found in some fishes. Contrasted with ★*precentrum*.

postcerebellar (pōst"ser-ẹ-bel'ä̤r), *a.* [L. *post*, behind, + E. *cerebellar*.] Situated in the hinder part of the cerebellum.

postcerebral (pōst-ser'ē-bra̤l), *a.* [L. *post*, behind, + E. *cerebral*.] Situated behind or posterior to the cerebrum. *Proc. Zool. Soc. London*, 1902, p. 181.

postchiasmatic (pōst"kī-az-mat'ik), *a.* [L. *post*, behind, + E. *chiasm* + *-atic*.] Situated behind the chiasm.—**Postchiasmatic commissure.** See ★*commissure*.

postcibal (pōst-sī'ba̤l), *a.* [L. *post*, after, + *cibus*, food, + *-al*^{1}.] Happening, done, or uttered, after a meal: as, a *postcibal* speech.

postclavicula (pōst-kla-vik'ụ-lä̤), *n.*; pl. *postclaviculæ* (-lē). [NL.] Same as *postclavicle*. *Starks*, Synonymy of the Fish Skeleton, p. 521.

postclival (pōst-klī'va̤l), *a.* [L. *post*, behind, + *clivus* + *-al*^{1}.] Situated posterior to any clivus, particularly the clivus Blumenbachii of the sphenoid bone, or the superior inclined surface of the vermis of the cerebellum.—**Postclival fissure.** See ★*fissure*.

postclypeus (pōst-klip'ẹ-us), *n.*; pl. *postclypei* (-ī). [NL., < *post-* + *clypeus*.] In *entom.*, the posterior of the two sclerites into which the clypeus of insects is sometimes divided. *Cambridge Nat. Hist.*, V. 93.

post-Columbian (pōst-kọ-lum′bi-ạn), *a.* After the discovery of America by Columbus. See ★*Columbian*^{2}.

> The Cracau globe is, except the Lenox globe, the first known *Post-Columbian* globe, and is quite the first to show any part of the New World, to divide the same from Asia, and to apply to it the name America.
> *Geog. Jour.* (R. G. S.), XVIII. 221.

postcolumellar (pōst″kol-ū-mel′ạ̈r), *a.* [L. *post*, after, + E. *columellar*.] Situated behind the columella.

postcommissural (post-kọ-mis̱′ū-ral), *a.* [L. *post*, behind, + E. *commissural*.] Relating to the posterior commissure of the brain.—**Postcommissural fibers.** See ★*fiber*^{1}.

postcondylar (pōst-kon′di-lạ̈r), *a.* [L. *post*, behind, + E. *condylar*.] Lying back of a condyle, or joint, especially back of the condyle of the human humerus.

postconnubial (pōst-kọ-nū′bi-ạl), *a.* [L. *post*, after, + *connubi*(*um*), marriage, + *-al*^{1}.] Subsequent to marriage.

post-contact (pōst′kon″takt), *a.* In *anthrop.*, relating to the period after contact between a primitive culture and the trade and influence of a higher.

postcornu (pōst-kôr′nū), *n.*; pl. *postcornua* (-ạ̈). [NL., < L. *post*, behind, + *cornu*. See *cornu*.] The posterior horn of the lateral ventricle of the brain. *Trans. Linn. Soc.*, Zool., Feb., 1903, p. 382.

post-croaker (pōst′krō″kėr), *n.* A fish, same as *spot*, 7 (*a*).

post-Darwinian (pōst-dạ̈r-win′i-ạn), *a.* Subsequent to the time of Charles Darwin: noting, in particular, biological science since the publication of "The Origin of Species," or since the period when the researches of biologists were directed and stimulated by Darwin's example. As there are few great lines of biological research that were not considered by Darwin, there is no distinctively post-Darwinian biology, although such great progress has been made in the investigation of many biological problems that they may properly be regarded as new.

> Next to phylogenetic research, investigations in cell-division and fertilisation stamp the *Post-Darwinian* period of Zoology. *Nat. Sci.*, Nov., 1896, p. 313.

postdental (pōst-den′tạl), *a.* [L. *post*, behind, + E. *dental*.] Situated behind the teeth; in *phonetics*, applied to a consonant pronounced by placing the tongue against the gum or palate just behind the teeth. *N. E. D.*

postdevelopmental (pōst″dē̱-vel-up-men′tal), *a.* [L. *post*, after, + E. *development* + *-al*^{1}.] Occurring after the period of development has ceased. *Buck*, Med. Handbook, V. 107.

postdigital (pōst-dij′i-tạl), *a.* [L. *post*, behind, + E. *digital*.] Lying behind the digits or toes.

postdiphtheritic (pōst″dif-thē-rit′ik), *a.* [L. *post*, after, + E. *diphtheritic*.] Following an attack of diphtheria. *Buck*, Med. Handbook, I. 284.

postdiscoidal (pōst-dis-koi′dạl), *a.* [L. *post*, behind, + E. *discoidal*.] In *entom.*, situated behind the discoidal cell in the wing of a lepidopterous insect. *Proc. Zool. Soc. London*, 1898, p. 419.

postembryonal (pōst-em′bri-ọn-ạl), *a.* Same as *postembryonic*. *Geog. Jour.* (R. G. S.), XVIII. 85.

postepileptic (pōst″ep-i-lep′tik), *a.* [L. *post*, after, + E. *epileptic*.] Following an epileptic paroxysm. *Buck*, Med. Handbook, III. 847.

posteriad (pos-tē′ri-ad), *adv.* [*posteri*(*or*) + *-ad*^{3}.] In a posterior direction; toward the posterior end of the animal body; posteriorly. *Trans. Amer. Micros. Soc.*, Nov., 1903, p. 58.

posteriormost (pos-tē′ri-ọr-mōst), *a.* Situated the farthest behind in a series of several posterior elements.

posterodorsad (pos″te̱-rọ̄-dôr′sad), *adv.* [L. *posterus*, hinder, + E. *dorsad*.] Backward and toward the line of the back; in a quadruped, backward and upward. *Trans. Amer. Micros. Soc.*, Nov., 1903, p. 59.

posterodorsal (pos′te̱-rọ̄-dôr′sal), *a.* [L. *posterus*, hinder, + E. *dorsal*.] Situated on the hinder part of the back. *Proc. Zool. Soc. London*, 1901, p. 281.

postero-external (pos″te̱-rọ̄-eks-tėr′nạl), *a.* [L. *posterus*, hinder, + E. *external*.] Posterior and external, or on the outer side.

> The longer axis of each process is diagonal, *posteroexternal* and anterointernal; the conjoined process is subtrigonal, the angles *posteroexternal* and anterior.
> *Bulletin Amer. Mus. Nat. Hist.*, 1902, p. 293.

postero-inferior (pos″te̱-rọ̄-in-fē′ri-ọr), *a.* [L. *posterus*, hinder, + E. *inferior*.] Posterior and inferior: used quite generally in anatomical descriptions to locate the position of any part of a structure or organ with reference to the head or anterior end of the body, or with reference to the part of the same structure or organ which may be in advance of and above the level of the part described. *Buck*, Med. Handbook, II. 162.

> It differs from the grebes in that it articulates with the *postero-inferior* angle of the ischium upon either side.
> *Amer. Nat.*, Jan., 1904, p. 30.

postero-internal (pos″te̱-rọ̄-in-tėr′nạl), *a.* [L. *posterus*, hinder, + E. *internal*.] Posterior and internal, or on the inner side.

> A *postero-internal* cusp on crown of second molar.
> *Amer. Jour. Sci.*, Jan., 1904, p. 29.

posteromedial (pos″te̱-rọ̄-mē′di-ạl), *a.* [L. *posterus*, hinder, + E. *medial*.] Situated behind and toward the median line. *Proc. Zool. Soc. London*, 1901, p. 263.

posteromedian (pos″te̱-rọ̄-mē′di-ạn), *a.* [L. *posterus*, hinder, + E. *median*.] Situated in the median line posteriorly.

> Marked degeneration of the *postero-median* columns of the cord. *Buck*, Med. Handbook, I. 118.

posteromesial (pos″te-rọ̄-mes′i-ạl), *a.* [L. *posterus*, hinder, + E. *mesial*.] Situated at the back and on the middle line.

posteropygal (pos″te̱-rọ̄-pī′gal), *a.* and *n.* [L. *posterus*, hinder, + E. *pygal*.] **I.** *a.* Noting the median one of the pygal plates when three are present, the pygal plates being those bony plates, not connected with any vertebra, which lie behind the neurals and form part of the carapace in turtles.

II. *n.* A posteropygal plate.

posterosuperiorly (pos″te̱-rọ̄-sū-pē′ri-ọr-li), *adv.* Backward and upward, or toward the line of the back.

posterotemporal, *a.* **II.** *n.* Same as *supraclavicle*. *Starks*, Synonomy of the Fish Skeleton, p. 520.

posteroventrad (pos″te̱-rọ̄-ven′trad), *adv.* [L. *posterus*, hinder, + E. *ventrad*.] Backward and downward, or toward the ventral side; posteroventrally.

> Where it approaches the posterior end of the sinus venosus (*sv*) it arches ventrad, gradually assuming a dorso-ventral attitude posterior to the heart (*ht*) and *postero-ventrad* to the sinus venosus.
> *Trans. Amer. Micros. Soc.*, Nov., 1903, p. 57.

posteroventrally (pos″te̱-rọ̄-ven′trạl-i), *adv.* Backward and downward; posteroventrad. *Proc. Zool. Soc. London*, 1902, I. 89.

posterula (pos-ter′ụ-lạ̈), *n.* [NL., dim., < L. *posterus*, behind.] The space behind the turbinated bodies in the nose.

postessive (pōst-es′iv), *a.* [L. *post*, after, + *esse*, be, + *-ive*.] In *gram.*, noting the case which expresses position behind. *Amer. Anthropologist*, Jan.–March, 1903, p. 26.

postethmoid (pōst-eth′moid), *a.* [L. *post*, after, + E. *ethmoid*.] Situated behind the ethmoid bone.

postface (pōst′fās), *n.* [L. *post*, after, + E. (*pre*)*face*.] See the extract.

> A *postface* may be [said to be] a . . . preface at the end of a book, . . . for which a great writer of French fought hard. *G. Saintsbury*, Pref. to Scott's Dryden, p. ix.

postfixed (pōst-fikst′), *a.* Noting certain muscular and cutaneous areas in which some of the nerves of supply originate at a more caudal level than in allied species. *Philos. Trans. Roy. Soc.* (London), 1898, ser. B, p. 116.

postfixture (pōst-fiks′tụ̄r), *n.* From a comparative standpoint, the condition where nerve-fibers from a more caudal level are distributed to given muscular and cutaneous areas. *Philos. Trans. Roy. Soc.* (London), 1898, ser. B, p. 116.

postfossette (pōst-fo-set′), *n.* The pit or depression just back of the second cross-crest, or metaloph, in such a tooth as the molar of a horse or rhinoceros. See cut under ★*tooth*, 1.

postfrontal. **I.** *a.*—**Postfrontal shield,** the loral shield of snakes and lizards. The term is somewhat indefinite.

II. *n.* **2.** Same as ★*postfrontal shield*.

postganglionic (pōst″gang-gli-on′ik), *a.* [L. *post*, behind, + E. *ganglionic*.] Noting the region behind or posterior to a ganglion, as nerve-fibers which are about to pass through a ganglion. *Nature*, Feb. 25, 1904, p. 407.

postgenerate (pōst-jen′e̱-rāt), *v. t.*; pret. and pp. *postgenerated*, ppr. *postgenerating*. [L. *post*, after, + E. *generate*.] To regenerate (an embryo or organism) from a part.

> A half-embryo develops from either of the first two blastomeres of the frog's egg, if the other blastomere has been injured or destroyed, but . . . subsequently the missing half of the embryo is *postgenerated*.
> *T. H. Morgan*, Regeneration, p. 216.

postgeneration (pōst″jen-e̱-rā′shọn), *n.* The restoration or regeneration of a whole organism from a part by the rearrangement of the material contained in the part.

> *Post-generation* now begins in the reorganized and cellulated half; the cells become changed over into the different layers and organs that make the new half-embryo. *T. H. Morgan*, Regeneration, p. 220.

postgenerative (pōst-jen′e̱-rạ̄-tiv), *a.* Pertaining to, of the nature of, or illustrative of, postgeneration.

> It is most difficult to account for these *post-generative* changes. *T. H. Morgan*, Regeneration, p. 221.

postgenial (pōst-jē̱-nī′ạl), *a.* and *n.* [L. *post*, behind, + E. *genial*.] **I.** *a.* Situated behind the chin.

II. *n.* In *herpet.*, one of the posterior of two pairs of large horny shields lying back of the mental and between the infralabials, on the under side of the jaw; a posterior chin-shield: correlated with ★*pregenial*.

post-glacial, *a.* **2.** Of or pertaining to any portion of Pleistocene time subsequent to the final recession of the continental ice-sheet.

II. *n.* A sediment deposited under conditions consequent upon the retreat of a continental glacier.

postglottidean (pōst-glo-tid′ē̱-an), *a.* [L. *post*, behind, + E. *glottidean*.] Situated back of the glottis. *Proc. Zool. Soc. London*, 1899, p. 91.

postgracile (pōst-gras′il), *a.* [L. *post*, behind, + (*lobus*) *gracilis*.] Posterior to the lobus gracilis: noting a fissure which separates the slender and semilunar lobes of the cerebellum.

postgula (pōst′gū-lạ̈), *n.*; pl. *postgulæ* (-lē). [NL., < *post-* + *gula*.] In *entom.*, a sclerite behind the gula, present in the second maxilla or labium of dermapterous insects. *A. S. Packard*, Text-book of Entom., pp. 54, 68.

posthemiplegic (pōst″hem-i-plej′ik), *a.* [L. *post*, after, + NL. *hemiplegia* + *-ic*.] Following an attack of hemiplegia. *Buck*, Med. Handbook, I. 599.

posthemorrhagic (pōst″hem-ọ-raj′ik), *a.* Following a profuse loss of blood. *Buck*, Med. Handbook, I. 281.

postheterotype (pōst-het′e̱-rọ̄-tīp), *a.* [L. *post*, after, + E. *heterotype*.] Following upon heterotype mitosis or cell-division: said of the differentiation of the spermatids and oötids after the divisions of the spermatocytes and oöcytes.

> Thus in a fern, the whole prothallium is composed of *post-heterotype* cells, and the sexual elements only arise from a relatively small number of them.
> *Nature*, Feb. 4, 1904, p. 321.

post-hook (pōst′hůk), *n.* In a harness for a horse, the ornamental hook over which the check-rein is hung.

post-horn, *n.* **2.** Same as *bugle*^{2}, 1.—**3.** A musical phrase or call, such as is given by a post-horn or bugle.

posthyoidean (pōst-hī-oi′dē̱-an), *a.* [L. *post*, after, + E. *hyoid* + *-e-an*.] In *embryol.* and *anat.*, situated behind or posterior to the hyoid arch.—**Posthyoidean cleft.** See ★*cleft*^{1}.

posthypnotic (pōst-hip-not′ik), *a.* Occurring after arousal from the somnambulistic state of hypnosis, or relating to the period following upon such arousal

> Many cases of the *post-hypnotic* effects of suggestion appear explicable on these two principles of the condition of memorial functioning and of autosuggestion.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 332.

posthypophysis (pōst-hī-pof′i-sis), *n.*; pl. *posthypophyses* (-sēz). [NL., < *post-* + *hypophysis*.] The posterior lobe of the cerebral hypophysis. *Buck*, Med. Handbook, II. 145.

posticum, *n.* **4.** [pl. *postica* (-kạ̈).] In Rauff's terminology of sponge morphology, the cloacal openings of the exhalant canals or aporrhysa.

postilium (pōst-il′i-um), *n.*; pl. *postilia* (-ạ̈). [NL., < *post*, behind, + *ilium*.] In *ornith.*, that part of the ilium which lies back of the acetabulum or socket for the head of the femur. *Proc. Zool. Soc. London*, 1898, p. 96.

postillon (pos-tē̱-yôn′), *n.* [F. *postillon*, a postilion.] In *music*, same as ★*post-horn*, 3.

postinfluenzal (pōst″in-flọ̈-en′zạl), *a.* [L. *post*, after, + E. *influenza* + *-al*^{1}.] Occurring after an attack of influenza. *Buck*, Med. Handbook, V. 16.

postinsular (pōst-in′ṣū-lär), *a.* [L. *post*, after, + *insula*, island, + *-ai*^{3}.] Situated behind an insula; specifically, behind the island of Reil. *Amer. Anthropologist*, Oct.–Dec., 1903, p. 627.

postjacent (pōst-jā′sẹnt), *a.* [L. *post*, behind, + *jacens* (*jacent-*), lying. See *adjacent.*] Lying or situated behind or in the rear; posterior.

postlarval (pōst-lär′vạl), *a.* [L. *post*, after, + E. *larval.*] Subsequent to metamorphosis; after having passed through the larval or immature stage: generally used in speaking of tailless amphibians that have gone through the tadpole stage, or in the case of tailed amphibians, that have shed their external gills and undergone the changes that accompany this process. Thus *Amblystoma* is the postlarval form of siredon.

> The next moult leads at once to the *postlarval* stage, in which the adult form is assumed.
> *Proc. Zool. Soc. London*, 1903, p. 26.

postlicentiate (pōst-lī-sen′shi-āt), *a.* [L. *post* + E. *licentiate.*] Subsequent to the title of licentiate: applied to a degree given to a licentiate of any profession.

> The suggestion made that the *post-licenciate* title of Doctor of Public Health be established by legal enactment in the State of New York.
> *Med. Record*, Feb. 14, 1903, p. 266.

postmandibula (pōst-man-dib′ụ̄-lạ̈), *n.* In *ichth.*, same as ★*articulary.*

postmandibular (pōst-man-dib′ụ̄-lạ̈r), *a.* [L. *post*, behind, + E. *mandibular.*] Situated behind the mandible: as, the *postmandibular* arch.

postmastoid (pōst-mas′toid), *a.* [L. *post*, after, + E. *mastoid.*] Situated behind the mastoid process. *Buck*, Med. Handbook, II. 261.

postmaximal (pōst-mak′si-mạl), *a.* [L. *post*, after, + *maxim*(*um*) + *-al*^{1}.] Following a maximum, in any sense of that word. *Buck*, Med. Handbook, I. 139.

postmeatal (pōst-mẹ̄-ā′tạl), *a.* [L. *post*, after, + *meat*(*us*) + *-al*^{1}.] Situated behind a meatus.

postmedia (pōst-mē′di-ạ̈), *n.* [NL., < *post-* + *media.*] A longitudinal vein in the wings of certain insects, between the media and the cubitus. It is vein VI of Comstock's system. *Comstock*, Manual of Insects, p. 65.

postmedial (pōst-mē′di-ạl), *a.* [L. *post*, after, + E. *medial.*] Beyond the median cell in the wing of a lepidopterous insect. *Proc. Zool. Soc. London*, May–Dec., 1902, p. 306.

postmesenteric (pōst″mez-en-ter′ik), *a.* [L. *post*, after, + E. *mesenter*(*y*) + *-ic.*] Situated behind the mesentery; being in the posterior part of the mesentery. *Buck*, Med. Handbook, II. 675.

postmesoræum (pōst-mes-ọ̄-rē′um), *n.*; pl. *postmesoræa* (-ä). [L. *post*, behind, + NL. *mesoræum.*] The posterior fold of the mesentery in elasmobranchs (sharks and rays), carrying the digitiform process of the intestine and that part of the intestine lying posterior to it. *Proc. Zool. Soc. London*, 1890, p. 671.

postmineral (pōst-min′ẹ-rạl), *a.* Subsequent to the deposition of minerals, either ore or gangue, in a vein or other ore-body: chiefly employed in discussions of the origin and geological history of ore-deposits and specially applied to faults.

> *Post-mineral* or Secondary Fissures.—It is important to look for evidence of recent or *post-mineral* faulting that may be connected with secondary enrichment of the deposits; where, as is often the case, this is parallel, or nearly so, to the plane of the vein, it is sometimes difficult to detect. *Technical Lit.*, Sept., 1907, p. 189.

Post-mortem wart. See ★*wart.*

postmundane (pōst-mun′dān), *a.* [L. *post*, after, + *mundanus*, of the world (see *mundane*).] Subsequent to the end of the world. See *antemundane.*

postmutative (pōst-mū′tạ̄-tiv), *a.* [L. *post*, after, + E. *mutative.*] Applied to languages in which words are inflected by means of affixes placed after the stem or radical part. *N. E. D.*

post-Mycenæan (pōst″mī-sẹ̄-nē′ạn), *a.* [L. *post*, after, + E. *Mycenæan.*] Subsequent to the Mycenæan period. See ★*Mycenæan. Nature*, Nov. 20, 1902, p. 59.

postnasal, *n.*—**Postnasal shield**, a horny scale which forms part of the head-covering of some lizards, and lies just back of the supranasal. The term is somewhat indefinite and the shield is found only when there are several shields in the region of the nose.

postnatus, *n.* **II.** *a.* Referring to a second son; referring to a person born after a particular event. See the noun.

postneural (pōst-nū′rạl), *a.* and *n.* [L. *post*, behind, + E. *neural.*] **I.** *a.* Posterior to the neural plate.

II. *n.* An unpaired membrane-bone in the carapace of the turtle, lying immediately posterior to the last neural plate. There are from two to four of these postneural plates, the last of which in shape and position forms part of the peripheral or marginal series of plates. These are also termed *pygals* or *pygal plates.*

postnodal (pōst-nō′dạl), *a.* and *n.* [L. *post*, after, + *nodus*, node, + *-al*^{1}.] **I.** *a.* Situated behind the nodus of a dragon-fly's wing.

II. *n.* Any one of several cells behind the nodus of the wing of a dragon-fly.

postocular, *a.* and *n.* **I.** *a.*—**Postocular shield**, in *herpet.*, a shield or scute lying back of the eye and below the supraocular.

II. *n.* Same as ★*postocular shield.*

> Frontal small, slightly broader than the supraocular . . . ; one *postocular.*
> *Proc. Zool. Soc. London*, 1903, p. 128.

post-office, *n.*—**Distributing post-office**, an office where mail-matter is distributed by the carriers or sent to substations for local delivery.

Postoral circlet, in *embryol.*, a postoral band of cilia in the larvæ of certain marine worms.

Postorbital process. See *postorbital*, 1 (*a*).

postpalatine, *n.* **II.** *a.* Pertaining to the posterior portion of the palatine bones: as, the *postpalatine* region, *postpalatine* process, etc. *Annals and Mag. Nat. Hist.*, Jan., 1901, p. 44.

postpalmar (pōst-pal′mạ̈r), *a.* and *n.* [L. *post*, after, + E. *palmar.*] In Wachmuth's and Springer's terminology of crinoid structure, noting those plates of the brachia which are above the palmars and which form the free portions of the crinoid arms. They are termed *fourth brachials*, etc., in Bather's terminology.

postparalytic (pōst″par-ạ-lit′ik), *a.* [L. *post*, after, + E. *paralysis* (*-lyt-*) + *-ic.*] Following paralysis. *Buck*, Med. Handbook, V. 95.

postparietal, *a.* **2.** In *anat.*, referring to the posterior portion of the parietal lobe of the brain; noting an artery supplying this part. *Buck*, Med. Handbook, II. 253.

postpatagium (pōst-pat-ạ̄-jī′um), *n.*; pl. *postpatagia* (-ạ̈). [NL., < L. *post*, after, + *patagium.*] In *ornith.*, the triangular fold of skin, just back of the shoulder-joint, which runs from the side of the body to the upper posterior face of the upper arm. *Parker and Haswell*, Zoology, II. 352.

postpeduncle (pōst-pẹ̄-dung′kl), *n.* Same as *postpedunculus.*

postpeneplain (pōst-pē′nẹ̄-plān), *a.* [L. *post*, after, + E. *peneplain.*] Subsequent to the peneplanation of a district. [Rare.]

> The structural axes in this region have a general northwest-southeast trend, which is paralleled by the trend of the pre-Eocene schistosity as well as the axes of post-Miocene folding and faulting and the later *post-peneplain* warping in the adjacent Ellensburg quadrangle.
> *Science*, June 17, 1904, p. 921.

postperforated (pōst-pėr′fọ̄-rā-ted), *a.* Perforated posteriorly.—**Postperforated space.** Same as *posterior perforated space.* See *perforated space* (*b*), under *perforated.*

postpermanent (pōst-pėr′ma-nẹnt), *a.* [L. *post*, after, + E. *permanent.*] Coming after the permanent set of molars.

> A potential 4th dentition, the *post-permanent* series.
> *Proc. Zool. Soc. London*, 1896, p. 584.

postpubertal (pōst-pū′bėr-tạl), *a.* [L. *post*, after, + E. *pubert-y* + *-al*^{1}.] Subsequent to the period or occurrence of puberty. *Buck*, Med. Handbook, IV. 420.

post-pump (pōst′pump), *n.* A pump which is attached to a post for support.

post-pyramid (pōst-pir′ạ̈-mid), *n.* [L. *post*, behind, + E. *pyramid.*] In *anat.*, the funiculus gracilis, formerly called the *posterior pyramid.*

post-rank (pōst′rank), *n.* The rank of post-captain in a navy.

> The promotion to *post-rank*, to which he was fully entitled, came somewhat tardily in August 1801.
> *Encyc. Brit.*, VII. 539.

postremogeniture (pōs-trē-mọ̄-jen′i-ṭūr), *n.* [L. *postremus*, last, + E. *geniture.* See *primogeniture.*] The right of the youngest born.

postretinal (pōst-ret′i-nal), *a.* [L. *post*, behind, + NL. *retina* + *-al*^{1}.] Situated behind the retina.—**Postretinal fiber.** See ★*fiber*^{1}.

post-road, *n.* **2.** In the United States, any road, way, or street, including water-routes, over which the United States mail is carried.

postrostral (pōst-ros′trạl), *a.* [L. *post*, behind, + E. *rostral.*] Situated behind the rostrum.

post-route (pōst′röt), *n.* A route, whether by rail or boat, designated as the required line or route for the transmission of the mails.

postscapula (pōst-skap′ụ̄-lạ̈), *n.*; pl. *postscapulæ* (-lē). [NL., < L. *post-*, behind, + *scapula.*] The part of the scapula below the spine.

postscarlatinal (pōst″skär-lạ-tī′nạl), *a.* [L. *post*, after, + NL. *scarlatina* + *-al*^{1}.] Following scarlet fever as a sequela. *Buck*, Med. Handbook, V. 378.

postseptal (pōst-sep′tạl), *a.* [L. *post*, after, + *sept*(*um*), septum, + *-al*^{1}.] Situated posterior to any septum, especially to one of the structures so designated in the brain or medulla.—**Postseptal fissure.** See ★*fissure.*

postsequent (pōst-sē′kwẹnt), *a.* [L. *post*, after, + E. *sequent.*] Noting a river or valley which has originated on the side slope of a consequent valley.

postspinous (pōst-spī′nus), *a.* [L. *post*, behind, + E. *spinous.*] Situated back of the spine of the scapula.—**Postspinous fossa**, the depression on the posterior side of the spine of the scapula. More commonly *postscapular fossa.*

postsplenial (pōst-splē′ni-ạl), *a.* [L. *post*, behind, + E. *splenial.*] Noting a sulcus or fissure on the median surface of the carnivore brain, posterior to and sometimes joining the splenial fissure. *Trans. Linnean Soc., London*, Zool., Feb., 1903, p. 388.

post-spoon (pōst′spön), *n.* A long-handled shovel having a spoon-shaped blade. A similar shovel with a wider and shorter blade is called a *telegraph-spoon.*

poststernal (pōst-stėr′nạl), *a.* [L. *post*, behind, + E. *sternal.*] Situated behind the sternum.

postsylvian, *a.* **II.** *n.* A postsylvian process; specifically, a fissure in the mammalian brain lying behind, or posterior to, and more or less parallel with, the Sylvian fissure. Also known as the *posterior suprasylvian*, or *fissura postsylvia. Trans. Linnean Soc., London*, Zool., Feb., 1903, p. 334.

postsynapsis (pōst-si-nap′sis), *n.* [NL., < L. *post*, after, + NL. *synapsis.*] In *cytol.*, the stage following upon or succeeding the synapsis of the chromosomes in the cell-nucleus. Also called *late synapsis. Biol. Bulletin*, Feb., 1904, p. 158.

postsynsacral (pōst-sin-sā′krạl), *a.* and *n.* [L. *post*, behind, + *synsacrum* + *-al*^{1}.] **I.** *a.* Situated behind the synsacrum.

II. *n.* A vertebra back of the synsacrum of a bird; a caudal vetebra. [Rare.]

> There are 6 or 7 *post-synsacrals*—free caudal vertebræ. Of these the 4th and 6th bear pointed intercentra, which, however, are completely fused with their respective centra. *Proc. Zool. Soc. London*, 1903, p. 273.

postsyphilitic (pōst″sif-i-lit′ik), *a.* [L. *post*, after, + NL. *syphilis* + *-it-ic.*] Following an attack of syphilis as a sequela. *Buck*, Med. Handbook, VII. 378.

post-tergum (pōst-tėr′gum), *n.*; pl. *post-terga* (-gạ̈). [NL., < L. *post*, after, + *tergum*, back.] The last of the three parts into which the tergal aspect of an abdominal or thoracic segment of a coleopterous larva is supposed, normally, to be divided, the other parts being the prætergum and the tergum.

post-thoracic (pōst-thọ̄-ras′ik), *a.* [L. *post*, behind, + E. *thoracic.*] Lying behind the thorax; back of those vertebræ that bear ribs connected with the sternum: in this sense restricted to birds and reptiles, since the thorax of mammals includes all rib-bearing vertebræ, whether the ribs reach the sternum or are floating ribs.

> Dr. Gadow correctly observes of the geckos that they possess very long and slender *post-thoracic* ribs, which meet each other in the middle line.
> *Nature*, May 5, 1904, p. 6.

post-thyroidal (pōst-thī′roi-dạl), *a.* [L. *post*, behind, + E. *thyroidal.*] Situated back of the thyroid cartilage of the larynx. *Proc. Zool. Soc. London*, 1901, p. 297.

post-tragus (pōst-trā′gus), *n.*; pl. *post-tragi* (-jī). [NL., < L. *post*, behind, + *tragus.*] A prominence back of the tragus, found in the ears of some animals.

post-traumatic (pōst-trâ-mat′ik), *a.* [L. *post*, after, + E. *traumatic.*] Occurring after, or as a consequence of, a wound.

post-triangular (pōst-trī-ang′gụ̈-lạ̈r), *a.* and *n.* [L. *post*, after, + E. *triangular.*] **I.** *a.* Situated behind the triangular: noting the triangular cell in the hind wing of a dragon-fly. *Proc. Zool. Soc. London*, 1896, p. 522.

II. *n.* The triangular cell in the hind wing of a dragon-fly.

post-Tridentine (pōst-trī-den′tin), *a.* [L. *post*, after, + E. *Tridentine.*] Belonging to a time subsequent to the Council of Trent.

post-trigonal (pōst-trig′ọ̄-nạl), *a.* [L. *post*, behind, + E. *trigonal.*] Situated behind or beyond the trigonal or triangular cell in a dragon-fly's wing. *Proc. Zool. Soc. London*, 1902, p. 73.

post-trochal (pōst-trō′kạl), *a.* [L. *post*, behind, + Gr τροχός, wheel, circle, + *-ic.*] Situated behind the prototroch: said of the position of cells or organs in the trochophore larva of marine annelids.

postulancy (pos′ṭụ̄-lạn-si), *n.* [*postulan(t)* + *-cy.*] The status or period of candidacy of a postulant. See *postulant.*

postulate, *n.*— **Dedekind's postulate.** If S_1 and S_2 are any two non-empty subsets in S, such that every element of S belongs either to S_1 or to S_2, and every element of S_1 precedes every element of S_2, then there is an element X in S such that (1) any element that precedes X belongs to S_1, and (2) any element that follows X belongs to S_2.— **Euclid's postulate,** with regard to parallels. See *postulate*, 2 (5). As translated by Williamson (Oxford, 1781), the postulate is: "And if a straight line meeting two straight lines make those angles which are inward and upon the same side of it less than two right angles, the two straight lines being produced indefinitely will meet each other on the side where the angles are less than two right angles."— **Farkas Bolyai's postulate,** every three points are costraight or concyclic.— **Ludlam's parallel postulate,** "two straight lines which cut one another cannot both be parallel to the same straight line" (1794). See *Euclid's* ★*postulate.*— **Parallel postulate,** the postulate that through a given point there is not more than one parallel to a given straight line. See *Euclid's* ★*postulate.*— **Postulate of closure.** Same as *Dedekind's* ★*postulate.*— **Postulate of the circle.** See ★*circle.*— **Saccheri's postulate,** the postulate that there is a triangle whose angle-sum is two right angles.

posture, *n.*— **Trendelenburg posture.** Same as *Trendelenburg* ★*position.*

postvaccinal (pōst-vak′si-nạl), *a.* [L. *post*, after, + E. *vaccine* + *-al*¹.] Following vaccination, especially as a sequela. *Buck*, Med. Handbook, VII. 251.

post-Vedic (pōst-vē′dik), *a.* [L. *post*, after, + E. *Vedic.*] Belonging to a time subsequent to that of the Rig Veda.

postvertebral (pōst-vėr′tẹ̄-brạl), *a.* [L. *post*, after, + NL. *vertebra* + *-al*¹.] Situated behind one or more vertebræ.

pot¹, *n.* **11.** (*c*) In *poker*, a jack-pot; a pool formed by equal contributions from all the players before the deal. —**15.** In *geol.*: (*a*) The earthy or consolidated material found in a pot-hole. (*b*) A pot-like cavity in rock, which contains earthy matter. (*c*) A rounded and pot-like mass of ore, such as often occurs in the case of brown hematites or limonites distributed through clays and ochers.— **Ace in the pot.** See ★*ace.* **Pattinson's pots,** a series of pots used in separating silver and lead, the method being based on the fact that the greater the proportion of silver, the higher is the melting-point of the alloy.— **Pots and pearls,** an abbreviation for potash and pearlash. [Colloq.]

> For John had worked in his early day,
> In "*Pots and Pearls,*" the legends say,
> And kept a shop with a rich array
> Of things in the soap and candle way.
> *J. G. Saxe*, Proud Miss MacBride, st. xvii.

Rich pot, in the Pattinson process for desilverizing lead, the pot, at the opposite end of the series of such vessels from the market pot, in which rich lead accumulates, containing about 600 ounces of silver to the ton, to be cupeled in order completely to isolate the silver.— **Sheffield pot,** a crucible or pot made of graphite, in which crucible-steel is melted: so called because it was early used at Sheffield, England. *Nature*, May 5, 1904, p. 1.— **To be in one's pots,** to be intoxicated.— **To sweeten the pot,** in *poker*, to add to a jack-pot that has not been opened on the previous deal, each player contributing one chip. Also called *fattening.*

pot⁴ (pot), *n.* [Dan., a pot, a measure. See *pot*¹.] A Danish liquid measure equal to .212 gallons.

Pot. An abbreviation (*a*) of the Latin *potassa*, potash; (*b*) [*l. c.*] of *potential;* (*c*) of the Latin *potio*, potion.

potability (pō-tạ-bil′ị-ti), *n.* The character of being potable; potableness.

potage² (pọ-täzh′), *n.* [F.] Soup.

potagerie (po-täzh-rē′), *n.* [F.] Herbs or vegetables collectively; a kitchen-garden.

potagery† (po-taj′ẹ-ri), *n.* An Anglicized form of ★*potagerie.*

> *Potagery*, is a Term signifying all sorts of Herbs or Kitchen-plants, and all that concerns them, considered in general.
> *Evelyn*, tr. De La Quintinye, Compleat Gard'ner, Dictionary. *N. E. D.*

pot-ale (pot′āl), *n.* The residue left in the still from the first distillation of fermented wash in the manufacture of whisky. It contains a little lactic acid, which can be recovered and utilized in connection with dyeing processes.

potamian (pọ-tā′mi-ạn), *a.* Same as *potamic.*

Potamogetonaceæ (pot″ạ-mọ-jē″tọ-nā′sẹ-ē), *n. pl.* [NL. (Engler, 1886), < *Potamogeton* + *-aceæ.*] A family of monocotyledonous plants of the order *Naiadales*, the pondweed family, typified by the genus *Potamogeton.* It is distinguished from the *Naiadaceæ*, with which it was formerly united, chiefly by the distinct carpels and the disk-like or cup-like stigmas. It contains nine genera, of which *Potamogeton, Zostera, Ruppia*, and *Zannichellia* are the most important.

potamogetonetum (pot″ạ-mọ-jē″tọ-nē′tum), *n.* [*Potamogeton* + *-etum.*] A zone of vegetable growth near the shore of a body of water, characterized by the presence of the genus *Potamogeton.*

potamologist (pot-ạ-mol′ọ-jist), *n.* [*potamolog(y)* + *-ist.*] A student of potamology.

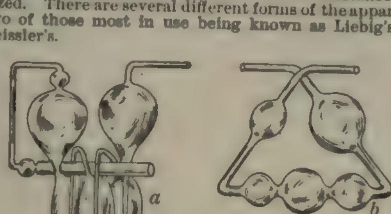
potamometer (pot-ạ-mom′e-tėr), *n.* [Gr. ποταμός, river, + μέτρον, measure.] An instrument for measuring the force of a current of water.

potamophobia (pot″ạ-mọ-fō′bi-ạ̈), *n.* [NL., < Gr. ποταμός, river, + -φοβια, < φοβεῖν, fear.] Morbid fear of rivers, especially of crossing one. *Ribot* (trans.), Psychol. of Emotions, p. 213.

potamoplankton (pot″ạ-mọ-plangk′tọn), *n.* [Gr. ποταμός, river, + NL. *plankton.*] The plankton of rivers as distinguished from that of lakes and oceans. See *pelagic* and *limnetic* ★*plankton.*

potash, *n.*— **Bichromate of potash.** See *potassium bichromate*, under *potassium.*— **Potash blue.** See ★*blue.* — **Stick potash,** caustic potash (potassium hydroxid) cast into cylindrical sticks one fourth or one third of an inch in diameter, for surgical use as an escharotic: also frequently used in this form in the chemical laboratory to absorb vapor of water and carbon dioxid from gaseous mixtures.

potash-bulbs (pot′ash-bulbz), *n. pl.* In *chem.*, a piece of apparatus, used in the ultimate analyses of organic substances, consisting of several connected bulbs of light glass containing a strong solution of potassium hydroxid. The potassium hydroxid absorbs the carbon dioxid formed in burning a weighed portion of the substance to be analyzed, the gain in weight of the apparatus showing the quantity of carbon dioxid produced, from which can be calculated the quantity of carbon in the substance analyzed. There are several different forms of the apparatus, two of those most in use being known as Liebig's and Geissler's.



Potash-bulbs.
a, Geissler's form; *b*, Liebig's form.

potassio-antimonious (pọ-tas″i-ọ-an-ti-mō′ni-us), *a.* Containing potassium and antimony (with its lower valence) as constituents. Potassio-antimonious tartrate is common tartar emetic, $2(K(SbO)C_4H_4O_6).H_2O$.

potassiobismuthic (pọ-tas″i-ọ-biz′muth-ik), *a.* Containing potassium and bismuth as constituents. Potassiobismuthic nitrate, in strongly alkaline solution, is Böttger's reagent for the detection of glucose in urine.

potassiomercuric (pọ-tas″i-ọ-mėr-kū′rik), *a.* Containing potassium and mercury (with its higher valence) as constituents. Potassiomercuric iodide ($KHgI_3$) is frequently used as a reagent for the detection of vegetable alkaloids, and sometimes for their quantitative determination.

potassioplatinic (pọ-tas″i-ọ-plạ-tin′ik), *a.* Containing potassium and platinum (with its higher valence) as constituents. Potassioplatinic chlorid is the same as potassium chloroplatinate (K_2PtC_6).

potassiosulphate (pọ-tas″i-ọ-sul′fāt), *n.* A double sulphate of potassium and some other metal or radical: as, aluminium *potassiosulphate*, common alum.

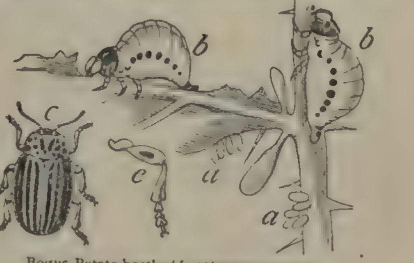
Potassium chloroplatinate. See ★*platinichlorid.*— **Potassium chloroplatinite.** See ★*chloroplatinite.* — **Potassium hydrogen sulphate,** potassium acid sulphate, or bisulphate of potash ($KHSO_4$).— **Potassium iodide.** See ★*iodide.*— **Potassium manganate,** the "mineral chameleon" (see *chameleon mineral*) of earlier chemists, so named from the readiness with which its solution changes color from green to purple by taking up oxygen, producing the permanganate. It is chiefly as material for the production of this latter salt that the manganate is now made.— **Potassium perchlorate.** See ★*perchlorate.*— **Potassium permanganate,** a salt which dissolves in water with a rich red-purple tint, the color disappearing on removal of oxygen which is easily given up in definite amount to substances which are ready to combine with it. Hence this salt, of which the formula is $KMnO_4$, is extensively used in volumetric analysis, as, for example, in the determination of iron in its ores.— **Potassium sulphate,** a salt which is produced largely, in working the Stassfurt deposits, from kainite and by decomposing the potassium chlorid of carnallite with kieserite: extensively used in the manufacture of glass and of alum, and in a more or less crude condition as an ingredient of fertilizers.

potassoxyl (pō-tas-ok′sil), *n.* The radical consisting of an atom of oxygen in combination with an atom of potassium (KO).

potato, *n.*— **Bacteriosis of the potato.** See ★*bacteriosis.*— **Black rot of sweet potato.** See *black* ★*rot.*— **Brown rot of the potato.** See ★*rot.*— **Chinese potato.** See ★*cinnamon-vine* and *yam*, 1.— **Chytridiose of potato.** See ★*chytridiose.*— **Goa potato,** the prickly yam, *Dioscorea aculeata*, a species widely spread in the East Indies and in the islands of the Pacific. The starchy tubers form an important food-staple in many places during certain seasons of the year.— **Horse potatoes,** a sailors' name for yams.— **Kafir potato,** a Natal plant of the mint family, *Plectranthus esculentus.* It bears tubers resembling potatoes, which are used by the natives as food.— **Salaga potato,** a West African plant of the mint family, *Coleus Salagensis*, native to Togoland, which bears edible tubers resembling potatoes.— **Potato early blight, potato late blight.** See ★*blight.*— **Potato flea-beetle, flea-bug.** See ★*flea-beetle*, ★*flea-bug.*— **Sweet-potato borer.** See ★*borer.*

potato-ball (pọ-tā′tō-bâl), *n.* The globose berry of the potato, *Solanum tuberosum.* See *potato*, 2.

potato-beetle, *n.*— **Bogus potato-beetle,** an American chrysomelid beetle, *Leptinotarsa juncta*, which rather closely resembles the Colorado potato-beetle and feeds on wild species of *Solanum.*— **Striped potato-beetle.** (*a*) The Colorado potato-beetle. (*b*) A meloid beetle, *Epicauta vittata.* Also called the *old-fashioned potato-beetle.*— **Three-lined potato-beetle,** an American chrysomelid beetle, *Lema trilineata*, yellow in color and with three black elytral stripes. It feeds on the leaves of the Irish potato. See cut at *Lema.*



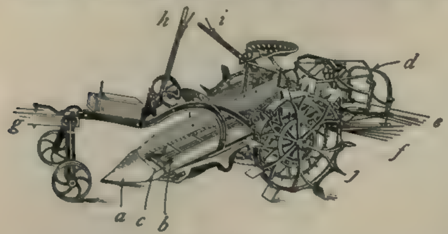
Bogus Potato-beetle (*Leptinotarsa juncta*).
a, a, eggs; *b, b*, larvæ; *c*, beetle; *e*, leg: *a, b, c*, enlarged; *e*, more enlarged. (After Riley.)

potato-clay (pọ-tā′tō-klā), *n.* A fine silicious lumpy clay used as a base by the Hopi in the manufacture of certain artificial ceremonial pigments. *Smithsonian Rep.* (Nat. Mus.), 1900, p. 469.

potato-curl (pọ-tā′tō-kėrl), *n.* A disease of the potato-plant, marked by the curling and withering of the leaves, caused by a fungus, *Verticillium atroalbum.*

potato-cutter (pọ-tā′tō-kut″ėr), *n.* In *agri.*, a hand-machine for slicing potatoes. It consists of a rectangular box, open below, containing fixed knives and a pivoted cover for pressing a potato laid upon the knives down upon them and pushing the cut pieces out below. It cuts in slices or quarters or both, and preserves the eyes of each piece ready for planting. Other machines have a knife-box and a simple hand-lever for pushing the potato through the nest of knives.

potato-digger, *n.* The smallest of these machines is a simple double or lifting plow having long steel fingers at the back. The plow lifts the soil, tubers, and plants, and pushes them upon the fingers, the soil falling between them, and the roots and tops being left behind on the ground. Another form of plow is provided with a horizontal wheel armed with long fingers. As the plow opens the soil, the revolving wheel picks out and separates the tubers and roots, and throws them to one side. More powerful machines, operated by four horses, open the rows and, by means of screens, clean the tubers from the soil, separate them from the tops, and deliver tops and tubers in separate lines, behind. Sometimes called a *potato-harvester.*



Potato-digger.

a, shovel point for lifting plants and soil; *b*, screen for sifting out soil; *c*, elevator with flights carrying plants and tubers over and up screen; *d*, vibrating rack for shaking tubers out of plants; *e*, rack made of rods delivering the plants; *f*, rack delivering tubers; *g*, pole; *h*, lever controlling depth of shovel point; *i*, lever controlling delivery; *j*, wheel supporting machine and delivering power to elevator and rack, and armed with radial stops to prevent slipping in soft ground.

potato-fly (pọ-tā'tō-flī), *n.* Any one of several species of blister-beetles which eat potato-leaves. *Epicauta vittata* is an example.

potato-gun (pọ-tā'tō-gun), *n.* A special form of powder-gun for dusting potato-plants with an insecticide.

potato-harvester (pọ-tā'tō-här″ves-tėr), *n.* Same as ★*potato-digger.*

potato-hiller (pọ-tā'tō-hil″ėr), *n.* A horse-tool for scraping and gathering the loose soil about young potato-plants, in hilling or ridging. It consists of two mold-boards placed under a plow-beam. The tool is guided by means of plow-handles. It resembles a ridger. See ★*ridger*, 3.

potato-moth (pọ-tā'tō-môth), *n.* A cosmopolitan gelechiid moth, *Phthorimæa operculella*, whose larva attacks potato tubers and also mines the leaves of tobacco.

potato-planter, *n.* These machines have reached a high degree of efficiency. Some forms open the soil, automatically deposit the seed-potatoes at fixed distances, and cover them by means of followers or disks. Others, under the guidance of a boy riding behind the driver, distribute the seed as desired. Some forms employ a cutter or disk in advance of the plow to assist in opening the soil, and all types employ some form of attachment for distributing fertilizer in connection with the planting.

potato-plow (pọ-tā'tō-plou), *n.* A potato-digger (which see).

potato-race (pọ-tā'tō-rās), *n.* A race in which each runner picks up and carries to the starting-line, one at a time, potatoes placed at intervals along the course. Usually there are eight potatoes for each runner, placed at intervals of two yards.

potato-scab (pọ-tā'tō-skab), *n.* A disease of the potato tuber due to the fungus *Oöspora scabies.*—**Potato-scab gnat.** See ★*gnat*1.

potato-sorter (pọ-tā'tō-sôr″tėr), *n.* A machine for cleaning and sorting potatoes. Some are cylindrical riddles; others use a traveling elevator-screen which cleans and sorts the potatoes and packs the merchantable ones in barrels.

potato-sphinx (pọ-tā'tō-sfingks), *n.* A large sphingid moth, *Phlegethontius quinquemaculata*, whose larva feeds on potato-, tomato-, and tobacco-plants.

potato-sprayer (pọ-tā'tō-sprā″ėr), *n.* A machine for spraying rows of potato-plants.

potato-stones (pọ-tā'tō-stōnz), *n. pl.* A local name for hollow brown nodules of quartz lined with crystals of the same mineral found at Bristol, England.

potato-tree (pọ-tā'tō-trē), *n.* A hardy, showy Chilian shrub, *Solanum crispum*, which grows from 12 to 15 feet high, and bears fragrant bluish-purple flowers and yellowish-white fruit the size of peas.

potato-weevil (pọ-tā'tō-wē″vl), *n.* Same as *potato-stalk weevil* (which see, under *weevil*).

potato-worm (pọ-tā'tō-wėrm), *n.* The larva of the potato-sphinx.

pot au feu (pō tō fė'). [F., 'pot at the fire.'] A French dish which resembles beef stew: also used to designate soup stock and the pot in which soup stock is prepared.

Poteau stage. See ★*stage.*

Potency of a set or series, in *math.*, its power or cardinal number.—**The potency of the continuum**, the potency of the sequence of all the numbers from 0 to 1, or of all the points of the sect (0, 1).

potential. I. *a.*—**Potential gradient**, in *elect.*, the mean decrease of potential per unit distance. *Science Abstracts*, III, Sec. A, p. 395.—**Potential slope.** Same as ★*potential gradient.*—**Potential variation.** See ★*variation.*

II. *n.* 2. (*e*) In *elect.*, an incorrect abbreviation of *potential difference*, or *electric pressure.*—**Contact difference of potential**, in *elect.*, a difference of potential produced by the contact of two different metals or other substances, and not due to any chemical action between them.—**Difference of potential.** (*b*) See ★*difference.*—**Discharge potential**, in *elect.*, the voltage at the terminals of a vacuum-tube or similar apparatus, between which an electric discharge occurs.—**Electrostatic potential.** See *potential*, 2 (*c*).—**Negative potential**, electric potential of a point or region, such that the tendency of flow is from the earth toward it.—**Thermodynamic potential**, a function of the energy, entropy, temperature, pressure, and volume of a system which has its minimum value when the system is in equilibrium. One of its usual forms, known as the *thermodynamic potential at constant pressure*, is given by the equation $\zeta = \epsilon - \theta\eta + \rho\nu$.

potentialize, *v. t.* 2. To give power to; make potent. [Rare.]

> [He] felt assured of victory if his war club was made in imitation of that of the enemy and *potentialized* by a plume or inscription appealing to the Apache deity.
> *An. Rep. Bur. Amer. Ethnol.*, 1897–98, p. xxiii.

potentiometer, *n.*—**Liquid potentiometer**, in *elect.*, a device for measuring the fall of potential in a liquid column traversed by an electric current.

potentite (pō'ten-tīt), *n.* [*potent* + *-ite*2.] A trade-name of an explosive consisting of a mixture of finely divided guncotton (about 45 to 65 per cent.) with potassium nitrate.

Poterioceras (pọ-tē-ri-os'ẹ-ras), *n.* [NL., < Gr. ποτήριον, a drinking-cup, + κέρας, horn.] A genus of cyrtochoanitic nautiloid cephalopods with short, stout, and straight or curved shells, the apertures of which are subtrigonal in senile individuals. Several species are known from the Silurian to the Carboniferous.

Poteriocrinus (pọ-tē-ri-ok'ri-nus), *n.* [NL., < Gr. ποτήριον, a drinking-cup, + κρίνον, lily (see *crinoid*).] A genus of dicyclic fistulate crinoids, with very large tubular ventral sac as long as the arms, represented by numerous species in the Upper Devonian and Lower Carboniferous rocks.

potestal (pọ-tes'tal), *a.* [L. *potestas*, power, + *-al*1.] In *Rom. antiq.*, of or pertaining to potestas. See *potestas.* [Rare.]

> The leaders . . . of the other school are of the opinion that my action is only suspended while the child or slave is in my potestas, because I cannot proceed against myself, but that it revives on the *potestal* relationship coming to an end. *Muirhead*, Gaius, IV. § 78.

pot-grease (pot'grēs), *n.* Fat saved from the household cooking of meat, used in soap-making. Also known as *kitchen-stuff.*

pothead, *n.* 2. A form of joint or connector used in electric line work in passing from a single conductor to a group of parallel wires.

> The station terminal of the cable is on the ground floor and consists of a series of concrete cells, the cable being provided with a *pot-head* at this point and spreading from a three-conductor cable to single-conductor cable. *Elect. World and Engin.*, March 5, 1904, p. 427.

pot-head (pot'hed), *v. i.* To expand at the end to form a cup or pot: said of electrical cables which, when used for very high voltages, have their covering or armor spread out to form a cup, which is then filled with insulating material. The armor is usually of lead, hence the potheading can easily be done, and prevents short-circuiting between the cable and cover or armor.

pot-hole (pot'hōl), *v. t.*; pret. and pp. *pot-holed*, ppr. *pot-holing.* To produce in (a solid rock mass) a hole by the action of stones and silt whirled around in an eddy of water. The effect of such action is to produce a deep cylindrical hole, called a *well*, or a hollowed cavity, called a *pot-hole*, or, in rare cases, a very large and deep, more or less cylindrical and hollowed cavern, called a *giants' kettle* or *cauldron.*

> The vertical extent of such erosion works out at about 2 millimetres per year, which corresponds to the removal of only 5 milligrammes of rock per ton of silt-laden water, and of this Mr. Ball thinks that at least two-thirds is accounted for by the *pot-holing* action.
> *Geog. Jour.* (R. G. S.), XXI. p. 672.

pot-leg (pot'leg), *n.* 1. The leg of a pot.—2. Broken pieces of cast-iron used as shot.

> And at shot-range a man can be killed just as definitely by a dose of *pot-leg* out of a gas-pipe barrel as he can by a dum-dum bullet sent through scientific rifling. Indeed, for close-quarter fighting *pot-leg* is far more comprehensive, and far less likely to miss than the lonely modern bullet. *Cutcliffe Hyne*, A Master of Fortune, iii.

pot-man, *n.* 3. The workman who ladles the lead crystals into the pots in the Pattinson process. *Phillips and Bauerman*, Elements of Metallurgy, p. 691.

Potomac cat. See ★*cat*1.—**Potomac formation**, or **group.** See ★*formation.*

potomato (pō-tọ-mä'tō or pō-tọ-mā'tō), *n.* [*po*(*tato*) + *tomato.*] A name given to plants produced by grafting the potato on the tomato and vice versa. The plants are readily intergrafted, and the union will persist throughout the normal life of the particular plants that are grafted; but no economic results follow the operation. Recently, the word *pomato* has also been used, chiefly for reputed sex crosses between the potato and tomato. See ★*pomato.*

potong† (pō-tong'), *n.* [Tagalog.] In the Philippine Islands, a colored wrap for the head, as worn by the Tagals at the time of the Spanish conquest.

potoroo (pō-tọ-rö'), *n.* [Native Austral.] One of the small rat-kangaroos of the genus *Potorous*, the generic name being a Latinization of the native name.

pototromoparanœa (pō″tọ-trō-mọ-par″ạ-nē'ạ̈), *n.* [L. *potus*, drink, + Gr. τρόμος, a trembling, + παράνοια, delirium.] Delirium tremens.

potrero (pō-trā'rọ), *n.* [Sp. *potrero*, pasture, < *potro*, a colt.] In Spanish-American countries, a cattle-farm or ranch.

pot-seine (pot'sān), *n.* A net with a central pot or bag, used in taking fishes.

> The purpose of this contrivance is to provide a *pot-seine* to be used with or without scows and adapted to fish only with the tide and to be held by leads or guides, one at each side. *Sci. Amer.*, Feb. 28, 1903, p. 160.

pot-spade (pot'spād), *n.* In *whaling*, a long-handled, sharp-edged spade used for handling the blubber while boiling out the oil.

pot-steel (pot'stēl), *n.* Cast-steel; crucible steel: so called because it is melted in a pot or crucible.

pot-stick, *n.* 2. In a camp, the stick or pole on which the kettle is suspended over the fire.

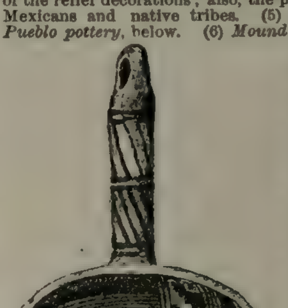
> Camping-grounds, *pot-sticks*, fire, implements, utensils, canoes, and geographical names.
> *Geog. Jour.* (R. G. S.), X. 3.

Potters' asthma, pneumonoconiosis.—**Potters' bronchitis.** Same as ★*potters' asthma.*

potter-bee (pot'ėr-bē), *n.* See ★*bee*1.

potter-wasp, *n.*—**Fraternal potter-wasp**, an American wasp, *Eumenes fraterna*, which builds clay cells and stores them with canker-worms or similar slender lepidopterous larvæ.

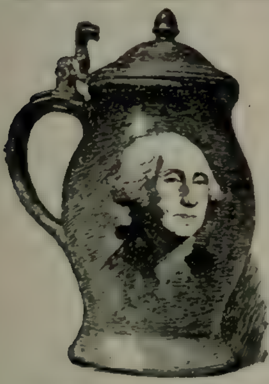
pottery, *n.*—**Akahada pottery**, earthenware made in Akahada, a province of Yamato, Japan, in the seventeenth and eighteenth centuries.—**American pottery.** (*a*) *Aboriginal pottery.* Pottery has been produced by various native peoples throughout North, Central, and South America from an early period, and in certain sections is still manufactured. The most important and characteristic of the native American warés are the following: (1) *Cliff-dwellers' pottery.* See *Pueblo pottery*, below. (2) *Costa Rican pottery*, a rude earthenware made by the natives of Costa Rica and found in the ancient ruins of that country. Cinerary urns are abundant in this ware. (3) *Atlantic Indian pottery*, a coarse, sandy pottery made by the Indian tribes of the Atlantic coast from Maine to Florida. It is partly baked and usually occurs in the forms of pots or jars with rude ornamentation produced by scratching simple patterns on the plastic surface or molding the clay in the interior of coarse textile fabrics or basketwork. (4) *Mexican pottery*, ware found among the ancient remains of Mexico. The most distinctive variety is a black or red pottery modeled in grotesque shapes, in which serpents, heads of gods, and symbolical figures form conspicuous features of the relief decorations; also, the pottery of the modern Mexicans and native tribes. (5) *Moki pottery.* See *Pueblo pottery*, below. (6) *Mound pottery*, a primitive pottery found in the ancient mounds of the Mississippi valley. Also called *mound-builders' pottery.* It is generally of coarse texture, though sometimes of fine, smooth clay, and is occasionally covered with a dark-red pigment. The usual forms are bowls and pots, frequently made in the rude semblance of the human figure, animals, and vegetable forms. (7) *Nicaragua pottery*, ware made by the natives of Nicaragua in Central America. It is distinguished by its modeled forms in imitation of animals, idols, and conventional sculptures. Much of it is of a mortuary or sepulchral nature. (8) *Peruvian pottery*, pottery found in the ancient cemeteries of Peru. The ware is either red or black, and occurs in a great variety of shapes simulating almost every object in nature and illustrating



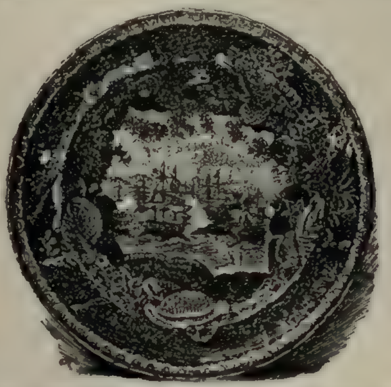
Pueblo Pottery.—Dipper, from ancient ruins in Arizona.

(In the Pennsylvania Museum, Philadelphia.)

every phase of domestic life. The portrait-vases or water-vessels are carefully modeled in the forms of human heads, lifelike or grotesque. Many of these are furnished with an arched tube extending above, from which rises a central spout. (9) *Pueblo pottery*, a peculiar variety of earthenware made by the Pueblo Indians, or house-building tribes, of the western slope of the Rocky Mountains. This pottery is of several varieties, the best having a grayish-white body with geometrical decorations in black and various colors, covered with a gloss, produced by polishing or rubbing the surface with smooth stones. In the ancient cliff ruins of Colorado, Utah, New Mexico, and Arizona this ware has been found in surprising abundance. The modern Moki Indians of Arizona and the Pueblo and Zuñi Indians of New Mexico still practise the ancient art of their ancestors. (10) *Zuñi pottery*. See *Pueblo pottery*, above. (*b*) The first white settlers in America made pottery, but not until the end of the seventeenth century was any attempt made to produce a better grade of ware than the commonest sorts of household utensils. The following are the more important varieties produced after that time: (1) *Beech pottery*, pottery made by Ralph Bagnall Beech, of Philadelphia, between 1845 and 1857; particularly a white ware with inlaid designs of mother-of-pearl, and painted portraits of prominent men on a black or blue enameled or japanned ground. (2) *Bennington pottery*, earthenware made at Bennington, Vermont, between 1846 and 1858, at the United States Pottery, which was operated by Lyman and Fenton. Brown-glazed, Rockingham, and scrodled wares, of good body and excellent glaze, were produced there in a great variety of forms, as picture-frames, toby jugs, hunting-pitchers, book-shaped flasks, mantel ornaments, and figures of animals, such as well-modeled deer, cows, dogs, and lions. See *flint-enameled ware*, below. (3) *Biloxi pottery*, a common pottery body made in a great variety of eccentric shapes and frequently covered with rich, mottled glazes. The principal features of this ware are extreme thinness and lightness of weight and originality of treatment by crimping, crumpling, and twisting the clay in every conceivable manner. It is made at Biloxi, Mississippi. (4) *Burlington white ware*, ware first produced at Burlington, New Jersey, about 1684, by agents of Dr. Daniel Coxe, of London, one of the proprietors and afterward governor of West New Jersey. This was the first white ware made in the American colonies. (5) *Cushman stoneware*, a salt-glazed stoneware with cobalt-blue decorations and, occasionally, incised designs, made by Paul Cushman at Albany, New York, about 1809,—a date found on numerous pieces bearing his name. (6) *Flint-enameled ware*, a fine grade of Rockingham or tortoise-shell ware, made at Bennington, Vermont. The glaze is heavy and brilliant, with mottlings of brown, blue, and olive, sometimes in monochrome and occasionally in combination. Patented by Lyman and Fenton in 1849. (7) *Grueby faïence*, a hard pottery body covered with opaque enamels in dull or mat finish, produced by the Grueby Faïence Co. of Boston, Massachusetts. The prevailing color is cucumber-green, although other colors, such as claret, light blue, and yellow, have been used. The shapes are adopted mainly from ancient Egyptian forms, the ornamentation being principally conventionalized leaf forms in low relief. (8) *Hammered pottery*, a variety of decorative earthenware made at Chelsea, Massachusetts. The surface of the ware is hammered before burning, and is thus covered with a network of flat facets in regular patterns, resembling the surface of hammered metal. Over this indented groundwork carved sprays of flowers are applied in relief designs. (9) *Jersey City pottery*, earthenware produced at the Jersey City Pottery, New Jersey, between 1825 and 1892, consisting of hunting-pitchers, toby jugs in brown glaze, coarse blue and white ware, after the style of Wedgwood's jasper ware, and household and druggists' wares of every description. The principal modeler of these works was Daniel Greatbach, who originated many of the now famous shapes. (10) *Pennsylvania-German pottery*, coarse red earthenware made by the German settlers in eastern Pennsylvania during the eighteenth century and the first half of the nineteenth. The art was brought from Germany, where slip-decoration flourished for several centuries. See *tulip ware*, below. (11) *Rookwood pottery*, a manufactory of pottery established at Cincinnati, Ohio, in 1880, by Mrs. Maria Longworth Nichols; also, the ware produced at Rookwood Pottery, which is of a hard earthenware or stoneware body with underglaze decorations painted in colored clays on the green ware. One of the distinguishing features of Rookwood is the tinting and blending of the ground colors beneath the heavy, transparent, colored glazes. Among the most important styles of ware produced at this establishment are cameo or shell-tinted, dull-finished, carved, modeled, and mat-glazed wares; but the factory is more especially noted for its 'standard' ware, with tinted grounds and heavy glazes, and the highly artistic quality of its ornamentation. (12) *Southwark white ware*, a fine grade of pottery made at Southwark, a suburb of Philadelphia, from 1769 to 1774. This ware was of white body with blue underglaze decorations, after the style of the Bow and Worcester wares of that period. (13) *Teco ware*, a modern pottery made by the American Terra Cotta and Ceramic Co. of Chicago, Illinois, with modeled or sculptured decorations and mat glazes, usually of a mottled grayish-green color. (14) *Tulip ware*, a name given to the sgraffito and slip-decorated red earthenware made by the Pennsylvania-German potters in eastern Pennsylvania during the eighteenth century and the first half of the nineteenth, in the decoration of which the tulip predominated.—**Anglo-American pottery**, English cream-colored ware of the first third of the nineteenth century, bearing transfer-printed designs of American subjects, such as views of prominent buildings, scenery, and portraits of eminent men. This ware was made especially for the American market. It was printed at first in black or dark blue, and later in various colors.—**Arabic pottery**, pottery made by the Arabs from the eighth to the sixteenth century, consisting of tiles, mosaics, and decorative earthenware. The earliest pottery of the Arabs in Europe was probably a silicious glazed ware. In 1239 James I. of Aragon granted a special charter to the Saracen or Arab potters of Játiva (now San Felipe de Játiva), allowing them to pursue their calling on the payment annually of one bezant. Early in the sixteenth century the Saracenic potters were producing well-made gilded faïence.—**Avisseau pottery**, an imitation of the rustiques figulines of Bernard Palissy by Victor Avisseau of Tours, France, whose pottery was established in 1842.—**Avon pottery**. (*a*) Earthenware made at Avon, near Fontainebleau, France, in the early part of the seventeenth century, consisting principally of figures of animals and figurines. (*b*) A modern faïence with tinted ground, somewhat resembling the earlier products of the Rookwood Pottery, made at the Avon Pottery, Cincinnati, Ohio, about 1885.—**Azimgarh pottery**, a rude earthenware made at Azimgarh, India, of a fine black color, with silvery ornamentation, produced by scratching the pattern on the surface of the burned ware and rubbing into the lines an amalgam of tin and mercury.—**Azure pottery**, a variety of stoneware decorated in blue. See the extract.



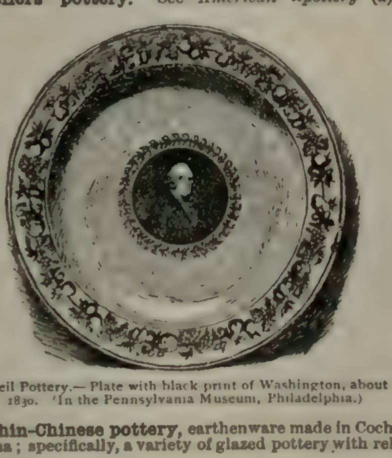
Rookwood Pottery.— Mug, Cincinnati, Ohio, underglaze decoration, portrait of General Washington.
(In the Pennsylvania Museum, Philadelphia.)



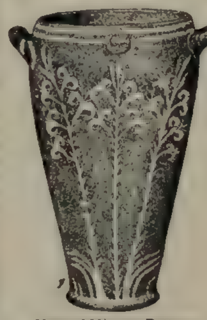
Anglo-American Pottery.— Plate with dark blue print of Captain McDonough's victory on Lake Champlain, 1814.
(In the Pennsylvania Museum, Philadelphia.)

> Among the other French potteries of the sixteenth century we must mention those of Savignies and La Chapelle-aux-Pots, small villages in the neighbourhood of Beauvais, where . . . a kind of stoneware covered with plain blue enamel was also manufactured. This ware, mentioned by Rabelais and the historians of that period, by whom it is termed *azure pottery*, was of sufficient value to be presented to sovereigns. It is now rather scarce.
>
> *Gasnault and Garnier*, S. K. Handbooks, French Pottery, p. 31.

Barbizet pottery, an imitation of the rustiques figulines of Bernard Palissy made by Victor Barbizet, of Paris, France, since 1850. See *Palissy ware*, under *ware*^{2}.—**Biloxi pottery**. See *American ★pottery* (*b*).—**Bordeaux pottery**, stanniferous faïence made at Bordeaux, France, during the eighteenth century, in the styles of the Rouen, Nevers, and Moustiers potteries.—**Cafaggiolo pottery**, majolica ware made at Cafaggiolo, Italy, in the fifteenth and sixteenth centuries. Its principal characteristics are a pure white enamel and a rich dark-blue grounding laid on with a coarse brush.—**Castel Durante pottery**, majolica produced at Castel Durante, Italy, during the sixteenth and seventeenth centuries. The decorations frequently consist of grotesques, dolphins, sea-horses, masks, and festoons, arranged in symmetrical patterns. Many of the pharmacy jars and plaques with paintings of large heads are attributed to Castel Durante.—**Cliff-dwellers' pottery**. See *American ★pottery* (*a*).—**Cochin-Chinese pottery**, earthenware made in Cochin-China; specifically, a variety of glazed pottery with relief decorations.—**Costa Rican pottery**. See *American ★pottery* (*a*).—**Creil pottery**, cream-colored ware, or queen's-ware, made at Creil, France, late in the eighteenth and in the first half of the nineteenth century, by a firm of English potters who introduced transfer-printing in the decoration of table-services.—**Deruta pottery**, tin-enameled pottery made at Deruta, Italy, in the sixteenth century. Some pieces ascribed to this source possess a beautiful madreperla luster, similar to that of the Pesaro pottery.—**Forli pottery**, tin-enameled pottery, or majolica, made at Forli, Italy, in the fifteenth and sixteenth centuries.—**Gien pottery**, a variety of pottery which somewhat resembles tin-enameled ware but has a plumbiferous glaze, made at Gien, France, in imitation of the styles of Marseilles, Rouen, and other French faïence and of certain old Italian wares.—**Gombei pottery**, Japanese earthenware with a rough gray glaze, more or less crackled, made by Gombei Kurisaki at Matsue, Japan, before 1695. See *Idzumo ★pottery*.—**Gubbio pottery**, majolica made at Gubbio, Italy, in the sixteenth century, particularly a rich, ruby-lustered pottery made by Giorgio Andreoli.—**Higo pottery**, earthenware made in the province of Higo, Japan, showing Korean influence.—**Idsumo pottery**. Same as *Idzumo ★pottery*.—**Idzumo pottery**, earthenware made in the province of Idzumo, Japan, the most common variety having a brilliant reddish-brown glaze, shading into yellow. Also written *Idsumo*.—**Iga pottery**, earthenware made in the province of Iga, Japan.—**Imbe pottery**, earthenware made at Imbe, in the province of Bizen, Japan. See *Bizen pottery*, under *pottery*.—**Indian pottery**. See *American ★pottery* (*a*).—**Ipsen pottery**, terra-cotta made in the style of the ancient Greco-Roman pottery, at Copenhagen, Denmark. In beauty of form and purity of decorative designs the Ipsen reproductions compare favorably with the classical vases.—**Jersey City pottery**. See *American ★pottery* (*b*).—**Karatsu pottery**, hard pottery made at Karatsu, in the province of Hizen, Japan; particularly prized by the Japanese.—**Kishiu pottery**, earthenware made at Wakayama, in the province of Kii, Japan.—**Kiyomizu pottery**, a kind of pottery manufactured in the Kiyomizu district, Kioto, Japan. Also written *Kiyomidsu*. See *Kiyomidzu porcelain*, under *porcelain*.^{1}—**Lille pottery**, a stanniferous faïence, resembling that of Rouen, made at Lille, France, in the eighteenth century. It is distinguished by a fine white enamel and inferior decorations and colors.—**Limoges pottery** a name given to underglaze, slip-painted earthenware, or barbotine, first produced about 1875 at Limoges, France, and extensively imitated by amateur decorators in the United States. Also called *Haviland faïence*.—**Longwy pottery**, a faïence produced at Longwy, France, since about 1838, decorated with enameled colors, often in Oriental styles and frequently covered with a crackled glaze.—**Lunéville pottery**, stanniferous faïence made at Lunéville, France, from about 1731; also, biscuit figures and groups, made of a local white clay, frequently stamped "Terre de Lorraine."—**Malaga pottery**, a variety of pottery made at Malaga, Spain, in the fourteenth and fifteenth centuries, noted for its beautiful golden luster. This was probably the most ancient center for the manufacture of Hispano-Moresque pottery.—**Marseilles pottery**, tin-enameled faïence produced at Marseilles, France, from before 1700 to the end of the eighteenth century. This ware was noted for its beautifully modeled shapes and graceful handles and feet, and its fine colors. The mark generally used was the fleur-de-lis.—**Mexican pottery**. See *American ★pottery* (*a*).—**Mino pottery**, a pottery which derives its name from the province of Mino, Japan, where it is made.—**Minoan pottery**, pottery of the Minoan period found in Crete. There are three styles — early, middle, and late.—**Mi Shima Karatsu pottery**, Karatsu pottery, made in Japan, in the Mi Shima style of decoration. See *Karatsu ★pottery* and *Mi Shima ★ware*.—**Moki pottery**. See *Pueblo pottery*, under *American ★pottery* (*a*).—**Mound-builders' pottery**. Same as *mound ★pottery*.—**Mound pottery**. See *American ★pottery* (*a*).—**Moustiers pottery**, tin-enameled faïence made at Moustiers, France, from about 1679 through the eighteenth century.—**Nevers pottery**, stanniferous faïence made at Nevers, France, in the latter part of the sixteenth and through the seventeenth and eighteenth centuries, in the style of Italian majolica. The clay and glaze were of considerable hardness, while the colorings of the decorations were weak. See *faïence patriotique*.—**Nicaragua pottery**. See *American ★pottery* (*a*).—**Ohi pottery**, earthenware made at Ohi, a village in the eastern part of Kanazawa, Japan.—**Pavia pottery**, pottery produced at Pavia, Italy, in the seventeenth century, of a rich brown color, with sgraffito decorations.—**Pennsylvania-German pottery**. See *American ★pottery* (*b*).—**Peruvian pottery**. See *American ★pottery* (*a*).—**Pesaro pottery**, majolica made at Pesaro, Italy, in the sixteenth century, noted for its madreperla luster.—**Pueblo pottery**. See *American ★pottery* (*a*).—**Raku pottery** [Jap. *raku*, ease, comfort], earthenware of light gray clay and of a coarse texture, with a heavy glaze, usually red or black. It is made at various places in Japan, particularly in Kioto. See the extract.



Creil Pottery.— Plate with black print of Washington, about 1830. (In the Pennsylvania Museum, Philadelphia.)



Vase of Minoan Pottery.
Found in the Minoan palace at Cnosus, Crete.
(From "Annual of the British School at Athens.")

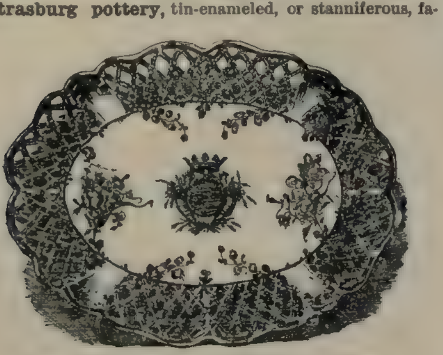
> *Raku* derives its name from incidents connected with its first production. Chōjiro, the son of a Korean potter, attracted the attention of Hideyoshi, who invited him to build an oven near a pleasure-house named Juraku. Hideyoshi became his patron and later gave to Chōjiro's son a gold seal or stamp bearing the character *Raku*, which signifies happiness.
>
> *E. S. Morse*, Japanese Pottery, p. 259.

Rato pottery, earthenware made at Rato, Portugal, in a great variety of styles, including imitations of Palissy, Rouen, and other wares.—**Rimini pottery**, majolica of the fifteenth, sixteenth, and seventeenth centuries, made at Rimini, Italy; characterized by good painting, strong coloring, and fine enamel. Lead-glazed ware was also produced there.—**Romano-British pottery**, pottery made by the ancient Romans in Great Britain or found there among Roman remains.—**Rookwood pottery.** See *American* ★*pottery* (*b*).—**Saracenic pottery.** See *Arabic* ★*pottery*.—**Savona pottery**, earthenware made at Savona, Italy, in the seventeenth and eighteenth centuries. Vases, drug-jars, and services were produced in abundance.—**Sceaux pottery**, tin-enameled faïence made at Sceaux, near Paris, France, in the latter half of the eighteenth century. This ware was frequently modeled in artistic shapes, figures, and groups, and painted with floral and figure subjects.—**Shigaraki pottery**, earthenware made at Shigaraki, province of Omi, Japan. It is of a reddish tint, with a rough surface, often having a heavy running glaze over the surface glaze.—**Shino pottery**, a rough, hard pottery, with a coarse white crackled glaze, produced in the province of Owari, Japan, usually in the forms of bowls, plates, and incense-boxes. See the extract.

> Records state that the earliest pieces recognized under the name of *Shino* date back to 1700 or before, and are due to Shino Saburo or Shino Oribe (pseudonym Shino So-on), a tea-lover who made them by order of his prince.
> *E. S. Morse*, Japanese Pottery, p. 191.

Siena pottery, majolica made at Siena, Italy, in the sixteenth century, of excellent finish and carefully painted.—**Sinceny pottery.** Same as *Sinceny ware* (which see, under *ware*2).—**Soma pottery**, a variety of earthenware made in the province of Iwaki, Japan, frequently bearing a decorative design of a tethered horse and the crest of the house of Soma. See the extract.

> The founder of *Sōma pottery* was Tashiro Goyemon. . . . Tashiro remained with Ninsei for seven years, and this great potter in reward for Tashiro's diligence and faithfulness permitted him to use Sei, one of the characters of his name, and thus Tashiro Goyemon became Tashiro Seijiyemon, and the mark Sei was used in his work. Tashiro [Seijiyemon] returned to Nakamura in 1631, and made pottery at the order of his master (the lord of Sōma).
> *E. S. Morse*, Japanese Pottery, p. 310.



Strasburg Pottery.—Platter with openwork border, 18th century, from Strasburg, Alsace-Lorraine. (In the Pennsylvania Museum, Philadelphia.)

Strasburg pottery, tin-enameled, or stanniferous, faïence made at Strasburg, from about 1710 (?) to about 1780. It was noted for its lightness of weight, its milky-white enamel, and the brilliancy of its colors, particularly the purples and pinks.—**Takatori pottery**, pottery made at Takatori, a village in Chikuzen province, Japan. It is usually of a fine clay, covered with brown glaze.—**Talavera pottery**, pottery made at Talavera, one of the principal sites of the industry in Spain, during the seventeenth and eighteenth centuries, particularly a ware with white glaze and well-painted decorations.—**Urbino pottery**, majolica ware made at Urbino, Italy, in the sixteenth and seventeenth centuries. The vases and other pieces were usually of large size and well modeled, and painted with subjects from sacred and profane history.—**Vegetable pottery**, a variety of earthenware made of clay mixed with the powdered bark of the carisse or pottery-tree of Brazil.—**Yatsushiro pottery**, earthenware produced near the town of Yatsushiro, province of Higo, Japan.—**Zuñi pottery.** See *Pueblo pottery*, under *American* ★*pottery* (*a*).

potting, *n.* 5. In *billiards*, the act of holing a ball.

pot-valve (pot′valv), *n.* A lift safety-valve which somewhat resembles a pot in form. Guides are cast on the top of the seat-casting to keep the valve in position when it is lifted.

pouch, *n.*—**Abdominovesical pouch.** See ★*abdominovesical*.—**Cæcal pouches.** See ★*cæcal*.—**Cœlomic pouch.** See ★*cœlomic*.—**Douglas's pouch.** Same as *rectovaginal pouch* (which see, under *pouch*).—**Enterocœlic pouch**, in *embryol.*, an outpouching or diverticulum of the enteron, and hence containing a portion of the enterocœle or primitive gut-cavity.—**Esophageal pouch**, in earthworms, one of the paired hollow projections along the posterior portion of the esophagus, with the lumen of which they are in communication.—**Gastric pouch**, in jellyfishes, as *Aurelia*, one of the interradial prolongations of the stomach toward the circumference.—**Gutteral pouch**, an elongated dilated sac communicating at one end with the middle ear and at the other end with the pharynx, and containing air. It is found only in solipeds and is the same as the Eustachian tube of man. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 128.—**Internemal gastral pouch**, in *Narcomedusæ*, an interradial pouch projecting from a radial pouch into the lobes of the peripheral part of the umbrella.—**Prussak's pouch.** Same as *Prussak's* ★*space*.—**Rathke's pouch**, a pocket or depression in the roof of the mouth, just in front of the septum, which temporarily separates the mouth from the pharyngeal cavity in embryonic vertebrates. The wall of Rathke's pouch takes part in forming the pituitary body.

pouching (pouch′ing), *n.* 1. The act of putting anything into a pouch or pocket.—2. The formation of a pouch or of a sac-like projection or indentation; the pouch or sac thus formed. See the extract under *pouch*, *v. i.*

pouch-shell (pouch′shel), *n.* The shell of a small pond-snail, *Physa hypnorum*.

poudre (pödr), *n.* [F.] Powder; gunpowder.—**Poudre B**, an explosive, one of the earlier kinds of smokeless powder, manufactured in France for use in the Lebel rifle, pattern of 1886. It consisted of about 68 per cent. guncotton, 30 per cent. soluble pyroxylin, and 2 per cent. paraffin. Also known as *Vieille's powder*.—**Poudre BN**, an explosive, a modified form of poudre B, consisting of insoluble pyroxylin (guncotton) and soluble pyroxylin, but with the addition of barium and potassium nitrates and a little sodium carbonate.

poulard (pö-lärd′), *n.* [F. *poularde*.] A young hen fattened for the table; a spayed hen. *N. E. D.*

Poulson telephonograph. Same as ★*magnetophonograph*.

Poultry acariasis. See ★*acariasis*.

poultry-car (pōl′tri-kär), *n.* A special type of box-car fitted with racks for poultry-boxes containing live poultry, and provided with conveniences for feeding and watering the birds in transit.

poultry-tick (pōl′tri-tik), *n.* An American ixodid, *Argas americanus*, destructive to poultry in the southwestern United States.

pounamu (pō-ö-nä′mö), *n.* [Maori.] Nephrite; jade; greenstone. [Australia.]

pounce-powder (pouns′pou″dėr), *n.* Same as *pounce*2.

pouncet† (poun′set), *n.* [*pounce*2 + *-et*.] Same as *pounce*2, 2 (in *pouncet-box*).

pound1, *n.*—**Egyptian pound**, a current coin, the unit of money of the English protectorate in Egypt and the Sudan. It is divided into 100 piasters, and is equivalent to $4.943 in United States gold.

> The unit is the *Egyptian pound*, which is divided into 100 piastres, the piastre being again divided into 10 milliemes. The *Egyptian pound* weighs 8.500 grammes, and contains 875 parts out of 1000 of fine gold. Its approximate value in English currency is £1, 0s. 6d.
> *Encyc. Brit.*, XXVII. 700.

Mint pound, the troy pound adopted by act of Congress in 1828 as the basis for all coinage in the United States, and kept at the United States Mint in Philadelphia. It is taken from its safe only at the annual meeting of the Assay Commission. It is of brass of unknown density, and therefore fit to serve as a standard only for the practical purpose prescribed by law. The Bureau of Standards regards this troy pound as agreeing with the troy pound deduced from the standard kilogram 20, which is the ultimate standard for all weights in the United States. See ★*prototype*, 2.—**Pound-and-pint idler**, an English naval term, referring to the purser of the ship.—**Pound Col**, a proposed industrial unit for electrochemical energy equivalent to 500 ampere-days; the electrical quantity which will generate one pound of hydrogen.

pound2, *n.* 1. (*b*) A compartment in an abattoir in which animals can be kept until they are slaughtered. *Encyc. Brit.*, XXXII. 644.

poundage1, *n.* 4. A commission of so much in a pound upon the earnings of weavers, paid in some parts of England to superintendents of weaving-plants. *R. Marsden*, Cotton Weaving, p. 476.

poundage2, *n.* 3. The series of pounds in an abattoir in which animals can be kept until they are slaughtered. *Encyc. Brit.*, XXXII. 644.

pound-degree (pound′dē̤-grē″), *n.* A compound unit which denotes the quantity of heat necessary to raise one pound of water one degree in temperature at the temperature corresponding to the greatest density of water. The value of a Fahrenheit pound-degree is one British thermal unit or 778 foot-pounds.

pour1, *n.* 3. In *founding*: (*a*) the quantity of material or molten metal poured from one charging of a cupola; (*b*) the act or operation of pouring molten metal into a mold.

pouring-stick (pōr′ing-stik), *n.* In *plumbing*, a notched stick or wooden spatula used in guiding the stream of hot solder in wiping a joint.

pourprite (pör′prit), *n.* [F. **pourprite*, < *pourpre*, purple.] A dark blackish-red material found in the sediment of old wines. It is probably a mixture of several substances.

pourriture (pö-ri-tür′), *n.* [F., < *pourrir*, < L. *putrire*, rot.] A decay of the roots of the vine due to unfavorable environment: distinguished from *pourridié*.

Pourtalesia (pör-ta-lē′ṣi-ạ̈), *n.* [NL.] A genus of living apetalous irregular echinoids, of the spatangid family of *Echinoidea*, remarkable on account of the extreme reduction and partial obliteration of members of the apical system of plates.

poussé (pö-sā′), *a.* [F., pp. of *pousser*, push.] In *violin-playing*, with an up-bow.

powami (pō-wä′mē̤), *n.* [Also *powamu*; a Hopi word.] An annual ceremony performed by the Hopi of Oraibi, usually during February.

> The name *Powami* is derived from powatani, to put in order, in proper shape or condition, as by this ceremony the fields and gardens are put in proper condition, symbolically, protected against destructive forces (sand storms, ants, etc.), and in every way consecrated, as it were, for the approaching planting season.
> *Field Columbian Museum Pub.*, Anthrop. ser., III. 71, [note.

powan, *n.* 2. A name applied to the salmon in parts of Great Britain: equivalent to the Welsh name *gwyniad*.

powder, *n.*—**Alizarin blue powder.** See ★*blue*.—**Alizarin powder.** Same as *alizarin* ★*carmine*.—**Amide powder.** See ★*amide*.—**Atlas powder**, an explosive mixture containing 75 per cent. of nitroglycerin, mixed with wood-fiber, sodium nitrate, and magnesium carbonate: used principally for blasting.—**Blue powder**, a by-product in the manufacture of zinc-white, consisting partly of oxidized and partly of finely divided metallic zinc. It settles nearer the hearths than does the zinc-white.—**Brown powder**, a gunpowder in which the charcoal is prepared at a low temperature or is underburned. The proportions of the ingredients are niter 82 parts, sulphur 3 parts, and charcoal 15 parts.—**Brugère's picrate powder** or **Brugère powder**, a smokeless gunpowder consisting of 54 per cent. of ammonium picrate and 46 per cent. of potassium nitrate.—**Castellanos powder**, a trade-name of an explosive consisting of a mixture of nitroglycerin, nitrobenzene, "fibrous material," and silicious earth. Another variety contains a picrate along with nitroglycerin, sodium nitrate, carbon, sulphur, and an insoluble mineral salt, such as silicate or oxalate of calcium.—**Colonia powder**, an explosive, originally made at Cologne, consisting essentially of nitroglycerin, infusorial earth, nitrate of baryta, wood-pulp, sulphur, and bicarbonate of soda.—**Courteille's triumph safety-powder**, a trade-name of an explosive consisting of sodium nitrate, sulphur, charcoal, peat and coal, metallic sulphates, and oleaginous matter.—**David powder**, a powder applied to plants as a fungicide and insecticide, made with 30 parts of quicklime and 8 parts of copper sulphate (the former slaked and the latter dissolved with as little water as possible), the mixture being dried in the sun.—**Designolles's powder**, an explosive consisting essentially of potassium picrate and niter in varying proportions. In some varieties charcoal also is introduced.—**Dupont's powder**, a kind of smokeless powder, originated at the Dupont powder-works, and consisting of guncotton dissolved in nitrobenzene.—**E. C. powder, No. 1**, a trade-name of a smokeless powder for sporting use, consisting of soluble pyroxylin and barium nitrate, with small quantities of other substances.—**Gray powder**, a powder made by triturating mercury with chalk, occasionally employed as a remedy for acid diarrhea in children.—**Green powder.** Same as *methyl green* (which see, under *green*1).—**Hercules powder**, a trade-name of an explosive consisting of 40 per cent. nitroglycerin, 31 per cent. potassium nitrate, 3.34 per cent. potassium chlorate, 10 per cent. magnesium carbonate, and 15.66 per cent. sugar: but it is made of various strengths, ranging from 20 to 75 per cent. nitroglycerin, and sodium nitrate is said to be used in place of potassium nitrate.—**Johnson's powder**, an explosive for use in sporting firearms, consisting essentially of nitrocellulose less highly nitrated than the most explosive guncotton. It is similar in general character to E. C. powder and Schultze powder.—**Judson powder**, a trade-name of a variety of dynamite, the lowest grade of which consists of 5 per cent. nitroglycerin, 64 per cent. sodium nitrate, 16 per cent. sulphur, and 15 per cent. cannel-coal. Other grades are made, up to 33 per cent. nitroglycerin.—**Leonard powder**, a smokeless gunpowder consisting largely of nitroglycerin, with some insoluble guncotton and a slowing agent.—**Mammoth powder**, the largest size of granulation into which the mill-cake of ordinary gunpowder is broken.—**Maxim powder**, an explosive agent, a variety of smokeless powder for use in firearms, patented by Hiram S. Maxim. It is prepared in a special way, and consists of nitroglycerin, insoluble and soluble guncotton, sodium carbonate, and a little castor-oil. In a grade of later introduction a small quantity of urea was employed.—**Melland's paper powder**, an explosive for use in firearms, prepared by dipping strips of porous paper in a watery solution of potassium chlorate, nitrate, ferrocyanide, and a little chromate, with starch and suspended charcoal powder, drying, and protecting against moisture by a coating of xyloidine dissolved by acetic acid.—**Nobel's safety-powder**, a blasting-material composed of nitroglycerin absorbed by a porous, inexplosive substance: now generally known as *dynamite No.* 1. See ★*dynamite*.—**Normal powder**, a trade-name of an explosive, a variety of smokeless powder, manufactured in Sweden, consisting of 96.21 per cent. insoluble nitrocellulose, 1.80 per cent. soluble nitrocellulose, and 1.99 per cent. resin: said to have been adopted for use in the Swiss army.—**Pebble powder**, gunpowder in very large grains, up to 1¼ or 2 inches in diameter, approximately cubical in shape, made from a slab of press-cake of the proper thickness, which is divided by two pairs of cutting-rolls into strips of width equal to the thickness and then into cubical blocks of length equal to the width: to be distinguished from *prism* or *prismatic powder*, of which the grains are formed individually by pressure.—**Pertuiset's powder**, the trade-name of an explosive, composed of 2,000 parts of potassium chlorate, 1,000 parts of sulphur, 125 parts of sporting gunpowder, and 20 parts of animal charcoal. It has been used in the manufacture of explosive bullets.—**Peyton powder**, a smokeless gunpowder consisting of 40 per cent. of nitroglycerin and 40 per cent. of guncotton, with other substances, the whole being incorporated into a plastic mass and then formed into grains of proper size for the gun in which it is to be used.—**Podechard powder,** a French insecticide and fungicide preparation designed for use upon grape-vines. It consists of 100 kilograms of quicklime, 20 of sulphate of copper, 10 of flowers of sulphur, 15 of wood-ashes, and 50 liters of water at 20° C. The sulphur is added after the rest of the mixture has stood for 24 hours; the whole is then well mixed, dried, and forced through a fine sieve.—**Powder blue.** See ★*blue.*—**Powder of fusion,** a name given to a mixture of 3 parts niter, 1 sulphur, and 1 sawdust, which, if set on fire in a walnut-shell filled with it, produces so high a temperature that a small silver or copper coin embedded in the material is melted. Also known as *Baumé's quick flux.*—**Prism powder.** Same as *prismatic powder* (which see, under *powder*). The grains are produced, individually, by heavy pressure in a mold.—**Progressive powder,** a gunpowder so made that it burns slowly at first and afterward more rapidly, in order to avoid the high pressures due to immediate rapid combustion. This is accomplished by so molding the grain as to make its surface more dense than the interior, or by forming a number of small dense grains into a large grain.—**Schultze powder,** a trade-name of an explosive, sold as a kind of smokeless powder for sporting-guns, consisting of about 32.5 per cent. insoluble nitrocellulose, 28 per cent. soluble nitrocellulose, 1.5 per cent. cellulose, 27.5 per cent. barium nitrate, 2.5 per cent. sodium nitrate, 2.5 per cent. potassium nitrate, 4 per cent. paraffin, and 1.5 per cent. moisture or other volatile matter. See ★*nitrolignin.*—**Smokeless powder.** See ★*gunpowder.*—**Triumph safety powder,** a trade-name for an explosive, analogous to ordinary gunpowder but made with sodium nitrate instead of potassium nitrate and having peat, coal, and less valuable substances instead of much of the charcoal. Also known as *Courteille's powder.*—**Vieille's powder.** Same as ★*poudre B.*—**Volney's powder,** an explosive made by mixing nitrated derivatives of naphthalene with saltpeter and sulphur. Two grades have been prepared, the more powerful consisting of nitrated naphthalene No. I (chiefly tetranitronaphthalene) 2.18 lbs., saltpeter .19 lb., and sulphur .16 lb.; and the less violent nitrated naphthalene No. II (chiefly mononitronaphthalene) 1.00 lb., saltpeter 3.30 lbs., and sulphur .51 lb.—**W. A. powder,** a variety of smokeless powder proposed for use in guns of all calibers of the United States army and navy. Insoluble guncotton of the highest grade is used, and carefully prepared nitroglycerin. The latter is dissolved in acetone, and the guncotton added, with more acetone and the necessary deterrent, until complete gelatinization is effected. The pasty mass is pressed into solid threads or perforated cords or cylinders to suit the various calibers, and these are then cut to proper lengths and carefully dried.—**Wetteren powder,** a kind of smokeless powder manufactured at Wetteren by the Belgian government. It was originally composed of nitroglycerin and nitrocellulose, incorporated with the aid of amyl acetate as a solvent, but its composition has undergone modification, one variety being essentially a nitrocellulose compound.—**White powder,** an explosive proposed by Augendre and Pohl as a substitute for common gunpowder. It consists of potassium chlorate, potassium ferrocyanide, and cane-sugar, all in fine powder and simply mixed, not requiring granulation; but its storage and use are not free from danger, and on explosion it erodes iron or steel guns to a serious extent.—**Wood powder,** a trade-name of a smokeless powder designed for sporting use and consisting mainly of nitrated cellulose. There are several modifications, containing in varied proportions insoluble and soluble pyroxylin, sometimes with unaltered cellulose or lignin, and with barium, sodium, or potassium nitrate.

powder-barrel (pou′dėr-bar″el), *n.* A barrel made especially for the shipment and storage of gunpowder.

powder-blue (pou′dėr-blö″), *n.* A peculiar dull shade of blue used on Chinese porcelain. See the extract.

> The calcined cobaltiferous ore of manganese was either mixed with the white glaze . . . or it was blown through gauze upon the raw white body of the piece and subsequently glazed over to produce the magnificent effect of *powder blue.* *S. W. Bushell*, Oriental Ceram. Art, p. 312.

powder-hog (pou′dėr-hog), *n.* *Naval*, a floating magazine: same as ★*powder-vessel* (which see).

powdering-machine (pou′dėr-ing-ma̤-shēn″), *n.* 1. A machine for spreading bronze- or other powder over a surface to which it will adhere.—2. A pulverizing-machine. [Rare.]

powderize (pou′dė̤-rīz), *v. t.*; pret. and pp. *powderized*, ppr. *powderizing.* [*powder* + *-ize.*] 1. To reduce to a powder; pulverize.—2. To fill or mix with a powder, such as talcum, as soap.

> When a large quantity of filling material is needed, it becomes very difficult to rub the soap through the sieves. In case this difficulty arises, only one thing can be done to lighten the task, and that is to *powderize* the soap when the mixed materials are still warm, and this facilitates the work very much.
> *Sci. Amer. Sup.*, April 18, 1903, p. 22818.

powder-posted (pou′dėr-pōs″ted), *a.* Noting posts, and other timber, which have been attacked by the dry-rot fungus *Merulius lachrymans.* See *dry-rot*, 1.

powder-tank (pou′dėr-tangk), *n.* A metallic case with sides and bottom of sheet-copper, and the top of composition with an air-tight fitting cover.

powder-vessel (pou′dėr-ves″l), *n.* A naval vessel designed for carrying powder, always distinguishable by the red flag which she flies. See ★*powder-hog.*

powellite (pou′el-īt), *n.* [Named after J. W. *Powell* of the United States Geological Survey.] Calcium molybdate, $CaMoO_4$, occurring in yellow tetragonal crystals: found in Idaho, also in Michigan.

powellize (pou′el-īz), *v. t.*; pret. and pp. *powellized*, ppr. *powellizing.* [W. *Powell* of Liverpool, the inventor of the process.] To saturate (wood), at a boiling temperature, with a solution of cane-sugar in order to increase its durability. *Sci. Amer. Sup.*, Sept. 5, 1903, p. 23138.

power[1], *n.* 15. In *geom.*: (*b*) The power of a point A with respect to a point-pair PP′ costraight with it is the product of the two sects from it to the pair—positive if it is on the same side of them, negative if it is between them. If m is the sect from A to the midpoint M of the sect PP′, and h half the sect PP′, then $AP.AP' = (m+h)(m-h) = m^2-h^2$. This power is null if A coincides with P or P′. (*c*) The power of one point with respect to another is the square of the sect between them. (*d*) The power of a point with respect to a straight is the perpendicular from the point to the straight. (*e*) The power of a point with respect to a sphere or circle is its power with respect to a point-pair costraight with it and on the sphere or circle. (*f*) The square on the center-sect of two circles less the squares on their radii is the power of the two circles, or the power of one circle with respect to the other.—23. In the *theory of assemblages*: (*a*) If the aggregates or sets A and B are equivalent they are said to have the same power. (*b*) A transfinite cardinal.

> The transfinite cardinals, which are also called *powers*, may be defined in the first place so as to include the finite cardinals. *B. A. W. Russell*, Prin. of Math., p. 304.

Apparent power, in an alternating-current circuit, the product of volts and amperes which is greater than the true power if the current is out of phase with the electromotive force, that is, if the current reverses earlier or later than the electromotive force, or if the current wave differs in shape from the wave of electromotive force.—**Calorific power.** See ★*calorific.*—**Center of power.** See ★*center*[1].—**Illusory power** or **illusory appointment.** In *law*, when the donee of a power, having discretion to appoint among several beneficiaries, disposes of the estate in an unequal and inequitable manner between them, he is said to make an illusory appointment: for example, A has a power to appoint an estate worth $1,000 between C and D, and he gives C $950 and D $50. Such an appointment was good at the common law, though not in equity.—**Maritime power,** a country which possesses seaports and a navy of sufficient power to protect them.—**Naked power,** in *law*, a collateral power. See *power*[1], 7 (*c*).—**Power of appointment.** See appoint, *v. t.*, 5.—**Resolving power.** (*b*) In *spectroscopy*, the power of any device used for dispersion, such as a prism, grating, or echelon, to separate adjacent spectral lines.—**Restraining powers,** in *law*, limitations or restrictions imposed by the donor of a power upon the donee.—**Separating power,** in *astron.*, the power of a telescope in showing as separate two luminous points near each other. It is usually expressed by stating the least angular distance at which the separation is perceptible.—**Specific refracting power.** Same as *specific* ★*refractivity.*—**Thermo-electric power,** the electromotive force due to a thermo-electric couple, consisting of two given metals, when the difference between the temperatures of the hot and the cold junction is one degree centigrade.—**Tractive power,** power available for pulling or hauling; the hauling-power that can be exerted by a locomotive or other motor. It is a certain definite proportion of the weight on the driving-wheels, usually, in wheels on tracks, one fourth or one fifth.—**Unit of power.** See ★*unit.*

power[1] (pou′ėr), *v. t.* [*power*[1], *n.*] To furnish with power, specifically with motive power.

> It is in the *powering* of the two vessels that the great advance in marine engineering is most apparent.
> *Engin. Mag.*, March, 1899, p. 1011.

power[2] (pou′ėr), *n.* [Also *poor*; Cornish dial. *power*, of obscure origin.] A small codfish, *Gadus minutus*, called also *power-cod.* *Jago*, The Ancient Language, and the Dialect of Cornwall, p. 242. [Cornwall.]

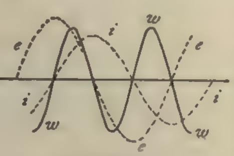
power-board (pou′ėr-bōrd), *n.* In *elect.*, a switchboard for circuits used in the distribution of power, as distinguished from a switchboard for lighting-circuits.

> The *power-board* is a handsome marble panel equipped with Weston ammeter and voltmeter arranged for taking readings on the various circuits. There are over-load and under-load circuit-breakers for the storage battery charging circuit, and the necessary knife switches, tubular fuses, regulating resistances, etc.
> *Elect. Rev.*, Sept. 17, 1904, p. 444.

power-boat (pou′ėr-bōt), *n.* A boat which is propelled by an engine; specifically, a boat having an internal-combustion engine to furnish the driving power. See ★*motor-boat.*

power-cod (pou′ėr-kod), *n.* Same as ★*power*[2].

power-curve (pou′ėr-kėrv), *n.* In *elect.*, a curve showing the variations in the instantaneous values for the power developed in an alternating-current circuit. Since the power at any instant is the product of current and electromotive force, the power-curve, which is usually a curve of sines, has a zero ordinate whenever either current or electromotive force is zero. The curve w in the figure is the power-curve of a circuit in which e is the curve of electromotive force and i the curve of current. These are in quadrature, for which case the power-curve is a curve of sines of twice the frequency of e or i and incloses equal positive and negative areas. The power developed in such a circuit therefore always equals that absorbed.



Power-curve.

power-door (pou′ėr-dōr), *n.* In *ship-building*, a sliding water-tight door which can be opened or closed quickly by electric, hydraulic, or pneumatic power attachments. In recent United States war-vessels there are several such doors which can be closed in an emergency from a distant position (as the pilothouse) by a suitable controlling mechanism.

power-factor (pou′ėr-fak″tọr), *n.* The ratio of the real to the apparent power in an alternating-current circuit. In a circuit where the wave-forms of current and electromotive force are sine-forms, the power factor is numerically equal to the cosine of the phase-difference.—**Power-factor meter.** See ★*meter*[1].

power-feed (pou′ėr-fēd), *n.* and *a.* **I.** *n.* In any machine, the feed or feeding mechanism which is operated by power, as distinguished from a feed operated by hand.

II. *a.* Having a feed mechanism operated by power.

power-gas (pou′ėr-gas), *n.* Any form of gas used for generating power; specifically, gas which is generated in a gas-producer and is used in an internal-combustion engine. It is poorer in the illuminant gases than the ordinary gas-works product used for lighting purposes, but often has a higher calorific value or heating-power. It can usually be produced more cheaply than illuminating-gas since it does not have to be enriched by other hydrocarbon elements.

> The heat of the gases respectively of the producer is entirely sufficient for furnishing such a quantity of steam as is required for the generation of an effective *power-gas.* The utilization of the fuel in suction gas producers is much higher than in pressure producers and reaches 80 per cent. or more. *Elect. Rev.*, Sept. 24, 1904, p. 515.

power-meter (pou′ėr-mē″tėr), *n.* An instrument, usually an integrating wattmeter, for measuring the power delivered to an electric circuit. *Science Abstracts*, VI. sec. B, p. 66.

power-myth (pou′ėr-mith), *n.* See ★*myth.*

power-plant (pou′ėr-plant), *n.* An aggregation of boilers, gas-producers, and engines and their accessories for the generation of power; a station where power is generated by steam or other engines or by water-wheels. The power may be transformed into electrical energy in the same station.

power-rail (pou′ėr-rāl), *n.* An insulated rail through which current is conveyed to the motors of certain types of electric railway. *Trans. Amer. Inst. Elect. Engin.*, 1899, p. 220.

power-scale (pou′ėr-skāl), *n.* A device for indicating the amount of power transmitted, as by shafting.

power-series (pou′ėr-sē″riz), *n.* A series which proceeds according to the ascending positive integral powers of a variable. Thus the series $a_0 + a_1x + a_2x^2 + \ldots + a_nx^n + \ldots$ whose coefficients a are independent of x, is a power-series or integral series in x.

power-station (pou′ėr-stā″shọn), *n.* A power-house; a building or buildings with the machinery and appliances contained therein for converting thermal or mechanical potential energy into a utilizable force; a place where power is generated or converted.

power-wheel (pou′ėr-hwēl), *n.* In *ceram.*, a potters' wheel, operated by a mechanical force such as water-power, steam, or electricity.

Pozzuolana cement. See ★*cement.*

P. P. An abbreviation (*a*) of *Parish Priest*; (*b*) of the Latin *Pater Patriæ*, Father of his Country; (*c*) [*l. c.*] in *law*, of *per procuration*, done by proxy; (*d*) of the Latin *punctum proximum*, nearest point (namely, of accommodation to which the eye can adjust itself).

P. P. I. An abbreviation of *Policy Proof of Interest.*

ppp., pppp. Symbols representing the word *pianissimo.*

PP. S. An abbreviation of the Latin *post postscriptum*, a second postscript.

P. Q. An abbreviation (*a*) of *Previous Question*; (*b*) of *Province of Quebec*.

Pr. 2. In *chem.*, the symbol for *praseodymium*.

P. R. An abbreviation (*a*) of the Latin *Populus Romanus*, the Roman People; (*b*) of *Porto Rico*; (*c*) of the Latin *punctum remotum*, farthest point (namely, of accommodation to which the eye can adjust itself).

P. R. A. An abbreviation of *President of the Royal Academy*.

practico (präk′ti-kō), *n.* [Sp., a practitioner, etc. See *practice*.] In the Philippines and Cuba, a guide.

practicum (prak′ti-kum), *n.*; pl. *practica* (-kä̤). [NL., < Gr. πρακτικός, of or pertaining to action. See *practic*.] An example for student practice, as in laboratory or field work. *Hunt*, The Cereals in America.

præabdomen, preabdomen (prē-ab-dō′men), *n.* [NL., < L. *præ*, before, + *abdomen*.] The anterior broad portion of the abdomen of scorpions. *Parker and Haswell*, Zoology, I. 605.

præbrachium, prebrachium (prē-brā′ki-um), *n.*; pl. *præbrachia, prebrachia* (-ä̤). [NL. *præbrachium*, < L. *præ*, before, + *brachium*, arm.] 1. The anterior process of the corpus quadrigeminum.—2. In *zoöl.*, that part of the wing-membrane of a bat lying in advance of the arm; the antebrachial membrane or propatagium.

præcentralis, precentralis (prē-sen-trā′lis), *n.* [NL., < L. *præ*, before, + *centralis*, central.] A fissure cephalad or anterior to, and more or less parallel with, the central fissure (fissure of Rolando) of the brain.—**Præcentralis superior.** Same as *supercentral* ★*fissure*. *Proc. Zool. Soc. London*, 1903, p. 16.

præcentrum, precentrum (prē-sen′trum), *n.*; pl. *præcentra, precentra* (-trä̤). [NL., < L. *præ*, before, + *centrum*.] One of the vertebral disks which carry neural and hemal arches, when found alternating with those that are not thus furnished: contrasted with ★*postcentrum*. The condition is found in some fishes. *Gadow*.

præcordium, precordium (prē-kôr′di-um), *n.*; pl. *præcordia, precordia* (-ä̤). Same as *precordial region* (which see, under *precordial*).

præcornual, precornual (prē̤-kôr′nṳ̄-al), *a.* [NL. *præcornu* + *-al*¹.] Relating to the præcornu. *Buck*, Med. Handbook, II. 171.

Prædentata (prē-den-tā′tä̤), *n. pl.* [NL., < L. *præ*, before, in front, + *dentatus*, toothed.] A suborder of herbivorous dinosaurs including quadrupedal and bipedal forms. It is distinguished by the presence of a toothless predentary bone in front of the mandible; by the premaxillæ being either wholly or partly edentulous; and by the slender postpubes, which are directed downward and backward parallel to the ischium. Its members may be armored or unarmored. They occur in formations from the Upper Jura to the Upper Cretaceous in North America and Europe. Also *Predentata*.

præ-ilium, pre-ilium (prē-il′i-um), *n.*; pl. *præ-ilia, pre-ilia* (-ä̤). [NL., < L. *præ*, before, + *ilium*.] In *ornith.*, that part of the ilium which lies in front of the acetabulum.

præmedia, *n.* See ★*premedia*.

prænarial, *a.* 2. Preceding or situated anterior to the nares or nostrils: applicable either to anatomical structure, as, *prænarial* border; or to direction, as, *prænarial* elongation of snout. *Trans. Zool. Soc. London*, Dec., 1900, p. 182.—**Prænarial septum**, a vertical bony plate situated in front of the narial openings.

II. *n.* That portion of the facial region of a vertebrate head which lies anterior to the opening of the nares or nostrils.

Prænestine (prē̤-nes′tin), *a.* and *n.* [NL. *Prænestinus*, adj., *Prænestini*, n. pl., < *Præneste*, Gr. Πραίνεστος and Πραίνεστε, an ancient city of Latium.] **I.** *a.* Of or pertaining to Præneste.

> The engraved metal caskets of the kind commonly known as *Prænestine* cistæ, because they have been found for the most part at Prænestê, the modern Palestrina.
> *Woltmann and Woermann*, History of Painting, I. 88.

II. *n.* An inhabitant of Præneste (now Palestrina).

> The Romans. . . . were inclined to sneer at the pronunciation and idiom of the *Prænestines*.
> *Encyc. Brit.*, XXXIII. 897.

præpatagium, prepatagium (prē-pat-ā̤-ji′um), *n.*; pl. *præpatagia, prepatagia* (-ä̤). [NL., < L. *præ*, before, + *patagium*.] The triangular membrane on the front of a bird's wing, lying between the humerus and forearm. *Parker and Haswell*, Zoology, II. 352.

præpenna, prepenna (prē-pen′ä̤), *n.*; pl. *præpennæ, prepennæ* (-ē). [NL., < L. *præ*, before, + *penna*, feather.] A feather of the nestling plumage of birds which resembles the succeeding feather, or teleoptile, and is not of the nature of down.

> The neossoptiles of the Palæognathæ consist of *prepennæ* only, but these present many features of great interest. Trans. *Zool. Soc. London*, Dec., 1900, p. 162.

præplumulæ, preplumulæ (prē-plö′mṳ̄-lē), *n. pl.* [NL., < L. *præ*, before, + *plumula* (which see).] The downy covering of young birds when it does not consist of prepennæ, that is, is not connected with the definite feathers which appear later. *Trans. Linnean Soc.*, Zool., Nov., 1898, p. 253.

præscutellar, prescutellar (prē-skū′te-lär), *a.* [*præscutell*(*um*) + *-ar*³.] In *entom.*, of or pertaining to the præscutellum. *Proc. Zool. Soc. London*, 1898, p. 318.

Præsian (prē′si-a̤n), *a.* Of or pertaining to the ancient Præsus in Crete, especially to antiquities discovered by excavations in its site.

> The stone jambs characteristic of *Praesian* houses are here more massive than usual.
> *R. C. Bosanquet*, in An. Brit. School at Athens, VIII. [262.

prætergum, pretergum (prē-tėr′gum), *n.*; pl. *præterga, preterga* (-gä̤). [NL., < L. *præ*, before, + *tergum* (which see).] The anterior of the three parts into which the tergal aspect of a segment of a coleopterous larva is normally divided.

pragmatic, *a.* 3. A term used (by Kant) to denote rules of action (otherwise denominated 'counsels of prudence') which have to do with the attainment of happiness. As used by him, it is antithetic to the term 'practical,' which refers to principles of action (otherwise called 'categorical imperatives') which have to do with the attainment of virtue.

> We might . . . call the first kind of imperatives technical (belonging to art), the second *pragmatic* (to welfare), the third moral (belonging to free conduct generally, that is, to morals).
> *Kant* (trans.), Fundamental Principles of the Meta- [physic of Ethics, p. 40.

4. Having to do with pragmatism as a philosophy: as, the *pragmatic* movement; *pragmatic* thought. See ★*pragmatism*, 3.

pragmaticism (prag-mat′i-sizm), *n.* [*pragmatic* + *-ism*.] A special and limited form of pragmatism, in which the pragmatism is restricted to the determining of the meaning of concepts (particularly of philosophic concepts) by consideration of the experimental differences in the conduct of life which would conceivably result from the affirmation or denial of the meaning in question.

> He [the writer] framed the theory that a conception, that is, the rational purport of a word or other expression, lies exclusively in its conceivable bearing upon the conduct of life. . . . To serve the precise purpose of expressing the original definition, he begs to announce the birth of the word "*pragmaticism*."
> *C. S. Peirce*, in The Monist, April, 1905, p. 166.

pragmatism, *n.* 3. In *philos.*, a method of thought, a general movement or tendency of thought, and a specific school, in which stress is placed upon practical consequences and practical values as standards for explicating philosophic conceptions and as tests for determining their value and, especially, their truth. The word is used in a variety of senses, of greater or less breadth and definiteness. The following meanings of the term are arranged in the order of descending generality: (*a*) An attitude of mind, namely that of "looking away from first things, principles, 'categories, supposed necessities, and of looking toward last things, fruits, consequences, facts." *W. James*, Pragmatism, a New Name for Some Old Ways of Thinking, p. 55. (*b*) A theory concerning the proper method of determining the meaning of conceptions. "Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object." *C. S. Peirce*, in Baldwin's Dict. of Philos. and Psychol., II. This theory was first propounded by Mr. Peirce in an article upon "How to Make our Ideas Clear" in the "Popular Science Monthly" in 1878. The term 'pragmatism' does not, however, appear there. In an article in the "Monist" for 1905, Mr. Peirce says that he "has used it continually in philosophic conversation, since, perhaps, the mid-seventies." The term was publicly introduced in print by Professor William James in 1898 in an address upon "Philosophic Conceptions and Practical Realities," in which the authorship of the term and of the method is credited to Mr. Peirce. The latter has recently used the term 'pragmaticism' to express this meaning. (*c*) The theory that the processes and the materials of knowledge are determined by practical or purposive considerations—that there is no such thing as knowledge determined by exclusively theoretical, speculative, or abstract intellectual considerations. This definition expresses the net or mean sense of the term in its various uses. "Now quite the most striking feature of the new theory was its recognition of an inseparable connection between rational cognition and rational purpose; and that consideration it was which determined the preference for the name 'pragmatism.'" *C. S. Peirce*, in The Monist, 1905. F. C. S. Schiller has defined pragmatism as "the thorough recognition that the purposive character of mental life generally must influence and pervade also our most remotely cognitive activities." Humanism, Philosophic Essays, p. 8.

> *Pragmatism*—by which I mean the doctrine that reality possesses practical character and that this character is most efficaciously expressed in the function of intelligence.
> *J. Dewey*, in Essays Philosophical and Psychological, p. [59.

(*d*) A theory of the nature of truth, namely, that the correspondence between fact and idea which constitutes truth consists in the power of the idea in question to work satisfactorily, or to produce the results intended by it.

> Such then would be the scope of *pragmatism*—first, a method, and second, a genetic theory of what is meant by truth. *W. James*, Pragmatism, p. 65.

(*e*) A metaphysical theory regarding the nature of reality, namely that it is still in process of making, and that human ideas and efforts play a fundamental rôle in its making: the equivalent of *humanism* as a metaphysical term.

> The essential contrast is that for rationalism reality is ready-made and complete from all eternity, while for *pragmatism* it is still in the making, and awaits part of its complexion from the future.
> *W. James*, Pragmatism, p. 257.

> *Pragmatism* . . . is a conscious application to epistemology (or logic) of a teleological psychology, which implies, ultimately, a voluntaristic metaphysic.
> *F. C. S. Schiller*, Studies in Humanism, p. 12.

pragmatist, *n.* 2. One who adheres to or professes the philosophy of pragmatism; more loosely, an opponent of rationalism and absolutism in philosophy; a supporter of the experimental method of reasoning in philosophy; a supporter of empiricism, but, unlike other empiricists, one who judges by consequences rather than by antecedents. See ★*pragmatism*, 3.

prairie, *n.* 2. Any small open space in a forest. See the extract. [Local, California.]

> The word "*prairie*," as used in Mendocino and Humboldt counties, may be broadly defined as any small open space among the timber, whether covered with grass or with dwarf brush. Along the coast of Mendocino County the name is applied to the areas of light, sandy "white-ash" soil covered with dwarf scrub and surrounded by timber. In the interior the "*prairies*" are open pastures surrounded by either timber or brush.
> *U. S. Dept. Agr.*, Bureau of Plant Industry, Bulletin 12, [1902, p. 27.

Bald prairie, a local type of prairie. See the extract. [Alabama.]

> The eminences of the lower swells of the plain with the strata of the limestone near the surface and destitute of arboreal growth are called *bald prairies*.
> *C. Mohr*, Plant Life of Alabama, p. 104.

Prairie region. Same as ★*cane-brake region*.—**Prairie twister.** Same as ★*twister*, 1 (*h*).—**Salt prairies**, nearly level tracts, in arid countries, covered with saline deposits.—**Soda-prairie, water-prairie.** See ★*soda-prairie*, ★*water-prairie*.

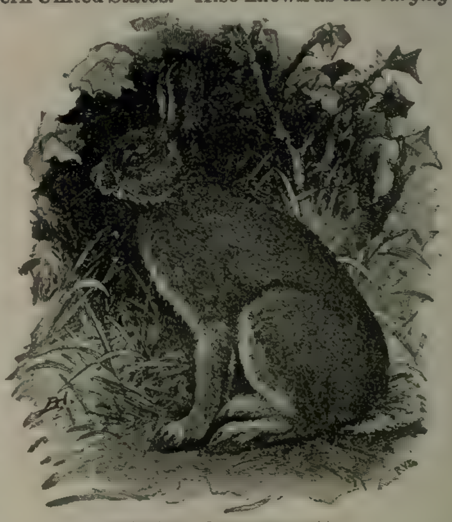
prairie-breaker (prā′ri-brā″kėr), *n.* A plow for cutting a wide, shallow furrow, and completely inverting the furrow slice. *N. E. D.*

prairie-dock, *n.* 2. The American feverfew, *Parthenium integrifolium*.

prairie-fowl (prā′ri-foul), *n.* The prairie-hen.

prairie-grouse (prā′ri-grous), *n.* The prairie-hen.

prairie-hare (prā′ri-hãr), *n.* A common light gray hare, *Lepus campestris*, of the western United States. Also known as the *varying hare* because in the northern portion of its range it turns white in winter.



Prairie-hare (*Lepus campestris*).

prairie-itch (prā'ri-ich), *n.* A skin affection, pruritus hiemalis, occurring in those engaged in agricultural pursuits and others wearing coarse, dyed clothes; winter itch. *Dunglison.*

prairie-larkspur (prā'ri-lärk″spėr), *n.* See ★*larkspur.*

prairie-lily (prā'ri-lil″i), *n.* See ★*lily.*

prairie-oats (prā'ri-ōts), *n.* Same as ★*side-oats.*

Praline powder, equal parts of shelled almonds and shelled filberts cooked in a syrup of sugar and water, and, when cold, pounded in a mortar to a coarse powder: used for café or chocolat praliné, to make the coating for nuts pralinés, or to fill chocolate and other hollow confections, which are then said to be *pralinés* (fem. *pralinées*).

praliné (prä-lē-nā'), *a.* [Fem. *pralinée:* F., < *praline*, praline.] Noting the addition of praline powder, as to a café- or chocolat-parfait mixture before freezing, or as a coating to nuts, or as a filling to confections. See ★*praline powder.*

pralltriller (präl'tril-ėr), *n.* [G., < *prallen*, bounce, + *triller*, < *trillen*, trill.] The German name for the inverted mordent or passing trill (which see, under *trill*[2]).

pram[2], *n.* **2.** A sort of push-cart for carrying milk on a route to customers.

praseodidymium (prā″sē-ọ-dī-dim'i-um), *n.* [NL.] Same as ★*praseodymium.*

praseodyme (prā'sẹ-ọ-dīm), *n.* Same as ★*praseodymium.*

praseodymia (prā″sẹ-ọ-dim'i-ạ̈), *n.* [NL.] In *chem.*, one of the so-called rare earths, the oxid of praseodymium.

praseodymium (prā″sẹ-ō-dim'i-um), *n.* [NL. for **praseodidymium* (prop. *prasio-*), < Gr. πράσιος adj., < πράσον, a leek, + NL. *didymium.*] One of the two elements into which, in 1885, Auer von Welsbach succeeded in resolving what had previously been known as didymium. See ★*neodymium.* Praseodymium forms two oxids—Pr_2O_3, which is of a dingy greenish-white color, and PrO_2, which is dark blackish-brown. The salts are bright leek-green when crystallized or in solution, and give an absorption-spectrum which contains few of the lines of the original didymium. A characteristic spark-spectrum can also be obtained. The atomic weight of praseodymium is 139.4 (H = 1) or 140.5 (O = 16).

Praxillean (prak-si-lē'ạn), *a.* [L. *Praxilleus*, < Gr. Πραξίλλειος, adj., < Gr. Πράξιλλα (> L. *Praxilla*), a poetess of Sicyon.] Of or pertaining to Praxilla, a poetess of Sicyon: applied to a form of logaœdic verse consisting of three dactyls followed by two trochees.

prayer[1], *n.*—**Prayer of process,** in *law*, a formal petition in a bill in equity for the issuance of a subpœna against the defendant.—**Signature-prayer.** See ★*signature-prayer.*

prayer-cylinder (prãr'sil″in-dėr), *n.* A form of praying-wheel. See *praying-wheel.*

A window in which was fixed a *prayer-cylinder* revolved by the wind, which whirred monotonously by day and night. *Geog. Jour.* (R. G. S.), X. 35.

prayer-flag (prãr'flag), *n.* A tall votive flag called *da-cha* (written 'dar-lch'og'), inscribed with pious sentences, prayers, charms, etc., set up by pious Buddhists in Tibet and elsewhere for the purpose of obtaining merit and of bringing luck to the whole neighborhood.

The religion of the Mantzu [of western China] is Buddhism or Lamaism of the Tibetan type. Except in Western Tibet, I have never seen a country in which the externals of religion are so prominent. Nearly all the larger villages have lamaserais on heights above them; rock Buddhas and Buddhas in relief on tablets are numerous; poles 20 feet long, with narrow *prayer-flags* of nearly the same length, flutter from every house-roof; groups of *prayer-flags* in memory of the dead are planted beside every village. *Geog. Jour.* (R. G. S.), X. 44.

prayer-paper (prãr'pā″pėr), *n.* A written prayer that is burned by the natives of Siam, China, Tibet, etc., to propitiate the devil and other demons.

Not only did every man shout continuously at the top of his voice, but great flares were continually made on the poop by the ignition of *prayer-papers*, burnt to propitiate the devil that was in that current.
Geog. Jour. (R. G. S.), XI. 468.

praying-cylinder (prā'ing-sil″in-dėr), *n.* Same as ★*prayer-cylinder.*

praying-flag (prā'ing-flag), *n.* See ★*prayer-flag.*

pre-. **2.** In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*[1]), a prefix used to indicate that one factor predominates over another to an extent greater than 5:3: as, ★*prealkalic*, ★*precalcic*, ★*prefelic*, etc.

preabdomen, *n.* See ★*præabdomen.*

preacher-bird (prē'chėr-bėrd), *n.* A toucan.

preadamitism (prē-ad'ạ-mīt-izm), *n.* [*pre-adamit(e)* + *-ism.*] The belief that there were human beings on the earth before Adam.

preadult (prē-ạ-dult'), *a.* [*pre-* + *adult.*] Youthful; prior to the advent of adult life. *Buck*, Med. Handbook, IV. 527.

preagonal (prē-ag'ọ-nạl), *a.* [L. *præ*, before, + Gr. ἀγών, a contest, + *-al*[1].] Immediately preceding death. *Buck*, Med. Handbook, I. 563.

preagonic (prē-a-gon'ik), *a.* Same as ★*preagonal.* *Buck*, Med. Handbook, II. 777.

prealkalic (prē-al-kal'ik), *a.* [*pre-*, 2, + *alkali* + *-ic.*] Predominantly alkalic: said of salic minerals when the ratio of $K_2O' + Na_2O'$ to CaO' is greater than 5:3; of femic minerals when the ratio of $K_2O'' + Na_2O''$ to $MgO + FeO + CaO''$ is greater than 5:3.

preanal, *a.* **II.** *n.* A preanal process; specifically, in *herpet.*, a preanal scale, one of those immediately in front of the anus. *Proc. Zool. Soc. London*, 1903, p. 125.

preantepenult (prē-an″tẹ-pẹ-nult'), *a.* Immediately preceding the antepenult.

preantiseptic (prē″an-ti-sep'tik), *a.* [*pre-* + *antiseptic.*] Occurring before the introduction of the practice of antiseptic surgery. *Buck*, Med. Handbook, IV. 448.

pre-Aryan (prē-är'yạn), *a.* [*pre-* + *Aryan.*] Prior to the Aryan period or the Aryans.

In Europe a case in point are the Basques, shown by their speech to be at least partly descended from a *pre-Aryan* or a non-Aryan race, which has elsewhere apparently disappeared, but which has far more probably become amalgamated with the intruding Aryan peoples.
Keane, Ethnology, p. 204.

preaseptic (prē-a-sep'tik), *a.* [L. *præ*, before, + E. *sepsis* (*sept-*) + *-ic.*] Prior to the establishment of asepsis; antedating the period of introduction of aseptic surgery.

The much-dreaded secondary hemorrhage of the *preaseptic* times. *Buck*, Med. Handbook, II. 98.

preassurance (prē-ạ-shör'ạns), *n.* Assurance or assumption in advance.

preataxic (prē-a-tak'sik), *a.* [L. *præ*, before, + NL. *ataxia* + *-ic.*] Antedating the appearance of ataxia or muscular incoördination.

preauricular (prē-â-rik'ụ-lạ̈r), *a.* [*pre-* + *auricula* + *-ar*[3].] Situated in advance of the ear, as a tuft of hair; specifically, in *anthrop.*, relating to that part of the skull, particularly of the circumference of the skull, which is situated in front of the outer ear. *Amer. Anthropologist*, Jan.–March, 1901, p. 38.

preaxiad (prē-ak'si-ad), *adv.* [*pre-* + *axi(al)* + *-ad*[3].] Forward; toward the head. *Proc. Zool. Soc. London*, 1895, p. 372.

preaxially (prē-ak'si-al-i), *adv.* Forward; anteriorly; preaxiad of the median line of a limb which is extended at right angles to the body.

preb. An abbreviation of *prebend*, *prebendal*, *prebendary.*

prebacteriologic (prē-bak-tē″ri-ọ-loj'ik), *a.* Prior to the development of the science of bacteriology. *Buck*, Med. Handbook, IV. 391.

prebronchial, præbronchial (prẹ-brong'ki-al), *a.* and *n.* **I.** *a.* Situated in advance of the bronchi: as, the *prebronchial* air-sacs of birds.

II. *n.* A prebronchial process; specifically, one of a pair of air-sacs which lie in front of the windpipe in birds. *Proc. Zool. Soc. London*, 1890, p. 146.

precalcic (prē-kal'sik), *a.* [*pre-*, 2, + *calcic.*] Predominantly calcic: said of salic minerals when the ratio of CaO' to $K_2O' + Na_2O'$ is greater than 5:3, and of femic minerals when the ratio of CaO'' to $MgO + FeO$ is greater than 5:3.

precalculate (prē-kal'kụ-lāt), *v. t.*; pret. and pp. *precalculated*, ppr. *precalculating.* To calculate or reckon in advance.

Precambrian (prē-kam'bri-ạn), *a.* and *n.* **I.** *a.* Noting rocks older than the Cambrian or first fossiliferous strata: used by many writers as preferable to *azoic*, *eozoic*, *archæan*, *primitive*, etc., because it is non-committal.

II. *n.* Precambrian strata.

The western province in the arctic regions was shut out from the eastern by a belt of *pre-Cambrian* extending from eastern Mackenzie through Boothia, Prince of Wales Land and North Somerset.
Amer. Geol., Sept., 1903, p. 154.

precancerous (prē-kan'sẹ-rus), *a.* [L. *præ*, before, + E. *cancer* + *-ous.*] Prior to the occurrence of cancer. *Med. Record*, Feb. 28, 1903, p. 349.

precantation (prē-kan-tā'shọn), *n.* [LL. *præcantatio*, < L. *præcantare*, pretell.] A foretelling or prophesying.

The sea, the mountain-ridge, Niagara, and every flower-bed, pre-exist, or super-exist, in the *pre-cantations*, which sail like odors in the air, and when any man goes by with an ear sufficiently fine, he overhears them and endeavors to write down the notes without diluting or depraving them. *Emerson*, Essays, The Poet, p. 25.

precarcinomatous (prē-kär-si-nom'ạ-tus), *a.* Preceding the development of a carcinoma.

This seems to continue, as Ribbert stated, until the whole *precarcinomatous* area is exhausted.
Lancet, May 23, 1908, p. 1467.

precartilage (prē-kär'ti-lạ̄j), *n.* [*pre-* + *cartilage.*] Embryonic tissue which is not yet developed into cartilage proper. *Biol. Bulletin*, June, 1904, p. 39.

Precaval sinus. Same as *ductus Cuvieri.* *Parker and Haswell*, Zoology, II. 146.

precentorial (prē-sen-tō'ri-ạl), *a.* [*precentor* + *-ial.*] Of or pertaining to a precentor.

Precentral gyrus. See ★*gyrus.*

precentrum, *n.* See ★*præcentrum.*

preceptoral (prẹ-sep'tọ-rạl), *a.* [*preceptor* + *-al*[1].] Of or pertaining to a preceptor.

preceptual (prẹ-sep'tụ̄-ạl), *a.* [Irreg. < L. *præceptus.* See *precept.*] Of the nature of a precept, or containing precepts.

precess (prẹ-ses'), *v. i.* [Cf. *precession.*] To undergo an east to west movement like that of the equinoxes. *Jour. Brit. Inst. Elect. Engin.*, 1902–03, p. 83.

precession, *n.* **4.** In *mech.*, the cyclic movement of the axis of rotation of a body which revolves about a free axis in a field of force. In order that precession shall occur the body must not be a homogeneous sphere and the axis of rotation must be inclined to the lines of force of the field.—**Constant of precession.** See ★*constant.*—**Gyroscopic precession,** the steady motion in which the axis of the top describes a right circular cone about the vertical.

precessional, *a.* **2.** Of or pertaining to the phenomenon of precession in general. See ★*precession*, 4.

For instance, the *precessional* motion of a top cannot be reversed unless we reverse the spin.
Encyc. Brit., XXVII. 571.

Precessional motion. Same as *gyroscopic* ★*precession.*

precheliceral (prē-kẹ-lis'ẹ-rạl), *a.* [*pre-* + *cheliceral.*] Situated anteriorly to the chelicerae, as in scorpions.

In the scorpion embryo he found three *precheliceral* neuromeres, each with a pair of optic ganglia. In each optic ganglion was an invagination.
Biol. Bulletin, Dec., 1904, p. 41.

précieuse (prā-syėz'), *n.* [F., fem. of *précieux*, *a.*, nice; fastidious. See ★*precious*, 6.] A woman who is affectedly fastidious in language or taste; a woman who is over-refined: from the title of Molière's "Les précieuses ridicules."

precinctive (prẹ-singk'tiv), *a.* [*precinct* + *-ive.*] Pertaining to or of the nature of a precinct; restricted to a given (geographical) area.

"*Precinctive* forms" means therefore forms that are confined to the area specified.
Fauna Hawaiiensis, II. iii. 91, note.

preciosity, *n.* **4.** The character of being precious in sense 6 or 7. See ★*precious*, 6.

On this superb ground there is worked a bold architectural design of compartments with figures, relieved in gold and silver thread, but with here and there notes of colour used with a *preciosity* and perfection of taste which leave one wondering what sort of people they were that had this exquisite refinement of sensibility.
Athenæum, May 20, 1905, p. 632.

precious, *a.* **6.** Affectedly fastidious, especially in the use of words; finically refined in one's literary style or artistic taste.

The design of the Annunciation in these is of surpassing beauty, comparable to the finest Italian draughtsmanship of a slightly later period. Quite different in effect from the restrained and *precious* beauty of these religious designs is the flaunting magnificence of a chasuble made from a horse-trapping (Case I).
Athenæum, May 20, 1905, p. 633.

7. Characterized by a strained or affected refinement of style, in literature or art; affectedly fine.

The author's style is not always unintelligible and *precious*, and by dint of a great deal of quotation we are brought fairly near to that strange inspirer of Newman.
Athenæum, March 27, 1905, p. 656.

Imitation precious stones, compositions of strass or crystal glass with a large proportion of lead, colored by the addition of certain metallic oxids in imitation of the real gems. Since the surface of such imitation stones is very easily scratched, it is sometimes protected by a thin plate of rock-crystal or light-colored garnet, thus forming what are called *doublets.* An extensive sale is found for imitation precious stones both in civilized countries and among savages.

precipitate, *n.*—**White precipitate**, either of two different substances: (*a*) *Infusible white precipitate*, an insoluble white powder (probably of the composition $NHg_2Cl.NH_4Cl$) which decomposes below a red heat without melting: produced by precipitating with ammonia a solution of mercuric chlorid. (*b*) *Fusible white precipitate*, colorless crystals, soluble in water (probably of the composition $NHg_2Cl.3NH_4Cl$), which melt and then decompose on being heated: produced by boiling the infusible white precipitate with a solution of ammonium chlorid.—**Yellow precipitate**, in *chem.*: (*a*) Mercuric oxid as produced by precipitation of a mercuric salt in solution with potassium or sodium hydroxid. (*b*) An abbreviated term sometimes used to signify the bright yellow precipitate of ammonium phosphomolybdate frequently obtained in analysis as a proof of the presence of, or as the means of quantitatively determining, phosphorus or the radical of phosphoric acid and phosphates.

precipitation, *n.*—**Fractional** or **partial precipitation**, in *chem.*, a process by which different substances are sometimes separated, advantage being taken of the different degrees of ease with which they undergo precipitation, so that under the influence of the same precipitant gradually added they are found apart in successive portions of the deposit formed.—**Latent heat of precipitation.** See ★*heat.*

precipitation-tank (prẹ-sip-i-tā'shọn-tangk″), *n.* A receptacle into which a liquid is run to give an opportunity for any solid matter carried in it to be precipitated. Sometimes precipitation is promoted in such a tank by adding certain ingredients or by a change of temperature.

precipitin (prẹ-sip'i-tin), *n.* [*precipit*(*ate*) + *-in*^{2}.] An adaptation-product which is formed in the blood-serum of an animal of one species when immunized with albumins or albuminous derivatives obtained from an animal of an alien species. When the sera of the two animals are brought together a precipitate results, in the formation of which the immunizing substance plays the active and the immune substance the passive rôle.

precipitinogen (prẹ-sip-i-tin'ọ-jen), *n.* [*precipitin* + *-o-* + *-gen.*] An antigen of albuminous character which upon immunization will give rise to a precipitin as the corresponding antibody. *Jour. Med. Research*, Dec., 1907, p. 232.

precipitinophoric (prẹ-sip″i-tin-ọ-for'ik), *a.* [*precipitin* + Gr. -φορος, -bearing, + *-ic.*] Pertaining or referring to that group of the precipitins to which their specific properties are due.

precipitogen (prẹ-sip'i-tō-jen), *n.* Same as ★*precipitinogen.* *Jour. Med. Research*, May, 1907, p. 173.

precipitoid (prẹ-sip'i-toid), *n.* [*precipit*(*in*) + *-oid.*] A precipitin which has lost its precipitinophoric group. Such bodies result from the precipitins on heating. In the simultaneous presence of precipitins and precipitoids no precipitation occurs, or the process is incomplete.

precisional (prẹ-sizh'ọn-a̤l), *a.* [*precision* + *-al*^{1}.] Of the nature of, or exhibiting, precision.

precision-screw (prē-sizh'ọn-skrö), *n.* The screw by means of which the fine adjustment of an instrument, as a telescope upon a star, a microscope to its focus, or a spectrometer upon a line, is made.

precleavage (prē-klē'vạj), *n.* [*pre-* + *cleavage.*] A collective term for the stages of the egg preceding cleavage or segmentation.

> Lyon also found this summer that Arbacia eggs required more oxygen during *precleavage* and gave off more CO_2 during cleavage than at other times.
> *Biol. Bulletin*, April, 1904, p. 225.

preclitellar (prē-kḷi-tel'ạ̈r), *a.* [*pre-* + *clitel-l*(*um*) + *-ar*^{3}.] Situated in front of, or preceding, the clitellum; preclitellian. *Proc. Zool. Soc. London*, 1901, p. 192.

preclival (prē-klī'va̤l), *a.* and *n.* [L. *præ*, before, + *cliv*(*us*) + *-al*^{1}.] **I.** *a.* Anterior to any clivus, especially the clivus of the cerebellum.

II. *n.* A preclival process; specifically, same as ★*fissura præclivalis* or ★*fissura prima.* *Nature*, May 22, 1902, p. 94.

precocious, *a.* **5.** In *biol.*, present in an egg or embryo at a very early stage in an imperceptible condition; present before becoming manifest.—**6.** Noting birds that, like chickens, are able to run about as soon as hatched; precocial. See *Præcoces.* *Parker and Haswell*, Zoology, II. 382.

precociously, *adv.* **2.** In *biol.*, at a very early stage and in an imperceptible way: said of eggs and embryos. See the extract.

> Eggs that admit of complete orientation at the first or second cleavage, or even before cleavage begins, are commonly supposed to reflect *precociously* the later organization, while eggs in which such early orientation is impossible are supposed to be more or less completely isotropic and destitute of organization.
> *E. B. Wilson*, Biol. Lectures, 1893, p. 13.

precognizable (prē-kog'ni-za̤-bl), *a.* That may be known beforehand.

precognizant (prē-kog'ni-za̤nt), *a.* Knowing beforehand; capable of previous knowledge (of a subject).

precombustion (prē-kọm-bus'cho̤n), *n.* Same as ★*preignition.*

precommissural, præcommissural (prē-kọ-miṣ'ụ-ra̤l), *a.* [*precommissure* + *-al*^{1}.] Of or pertaining to the precommissure. *Trans. Linnean. Soc.*, Zool., Feb., 1903, p. 332.—**Precommissural fibers.** See ★*fiber*^{1}.

precommissure (prē-kom'i-ṣūr), *n.* [L. *præ*, before, + *commissura*, commissure.] The anterior commissure of the brain. See ★*commissura ventralis.*

preconcept (prē-kon'sept), *n.* [*pre-* + *concept.*] In *psychol.*, a higher recept: a type of intellectual process which, according to G. J. Romanes, "occupies the interval between the receptual life of brute and the earliest dawn of the conceptual life of man."

> Higher Recepts, then, are what may be conveniently termed *Pre-concepts.*
> *G. J. Romanes*, Mental Evolution in Man, p. 185.

preconceptional (prē-kọn-sep'sho̤n-a̤l), *a.* [L. *præ*, before, + *conceptio*(*n-*), conception, + *-al*^{1}.] Formed in advance of mental conception or actual knowledge.

> In every stage of development, knowledge is a resultant of preconception and observation; and it is a striking and at first sight paradoxical fact that knowledge advances chiefly through the weakening and gradual elimination of the *preconceptional* component.
> *J. W. Powell*, An. Rep. Bur. Amer. Ethnol., 1894–95, [p. lxxxix.

precondylar, præcondylar (prē-kon'di-lạ̈r), *a.* [*pre-* + *condylar.*] Lying in front of a condyle; specifically, in *ornith.*, in front of the occipital condyle. *Proc. Zool. Soc. London*, 1903, p. 260.

preconsider (prē-kọn-sid'ėr), *v. t.* To consider in advance.

preconsideration (prē-kọn-sid-ẹ-rā'sho̤n), *n.* The act of preconsidering; a preliminary consideration.

precontact (prē-kon'takt), *a.* In *anthrop.*, relating to the period before contact between a primitive culture and the trade and influence of a higher.

precooler (prē-kö'lėr), *n.* A box or cylinder in which a substance is cooled just before it is to be used or operated upon. A precooler is sometimes used to cool air before it enters the cylinder of an air-compressor, thus preventing the compressor from getting too hot.

> From the compressor, the air passes successively through an aftercooler; a separator; two cylinders, containing potassium hydroxide in sticks and calcium chloride respectively, in order to remove the carbon dioxide and water vapor; and finally through a *precooler* charged with broken ice or snow—reaching the liquefier at a temperature of about 2°. *Phys. Rev.*, Nov., 1904, p. 330.

Precoracoid arch. See ★*arch*^{1}.—**Precoracoid process**, in *ornith.*, a process from the outer face of the coracoid, near the distal end. Same as ★*procoracoid.* See cut under ★*acrocoracoid.* *Proc. Zool. Soc. London*, 1898, p. 95.

Precordial fright. See ★*fright.*

precornu, precornual. Same as *præcornu*, ★*præcornual.*

precostal (prē-kos'ta̤l), *a.* [*pre-* + *costal.*] Situated in front of the ribs.

precranial, præcranial (prē-krā'ni-a̤l), *a.* [*pre-* + *cranial.*] Situated on or located in the anterior portion of the cranium. *Proc. Zool. Soc. London*, 1895, p. 383.

precreate (prē-krē-āt'), *v. t.*; pret. and pp. *precreated*, ppr. *precreating.* [*pre-* + *create.*] To create in imagination before the event; create before (something else occurs).

precreative (prē-krẹ-ā'tiv), *a.* [*pre-* + *creative.*] Being before the creation. [Rare.]

precritical, *a.* **2.** In *pathol.*, noting the time prior to the occurrence of a crisis.

> The febrile period lasts 24 or 36 to 40 hours, is marked by a pseudo-crisis and *precritical* elevation, the fever describing, in the three-hourly chart, a characteristic course which differs from that of the mild or common tertian paroxysm.
> *J. Ewing*, in Jour. Exper. Med., March 25, 1901, p. 453.

precrucial (prē-krö'shia̤l), *a.* [*pre-* + *crucial.*] Situated, in the brain, in front of the crucial sulcus.

precrural (prẹ-crö'ral), *a.* and *n.* [L. *præ*, before, + *crus* (*crur-*), leg, + *-al*^{1}.] **I.** *a.* Anterior to the leg in animals.

II. *n.* **1.** The region directly in front of the thigh of animals.—**2.** Any one of the lymph-glands situated in front of the thigh in animals.

precursor, *n.* **2.** Specifically, in the history of the fine arts, an early artist of a school or period, or an artist who preceded such a school or period. The precursors of the Renaissance in Italy are the sculptors and painters of the thirteenth and fourteenth centuries, such as Niccola Pisano, Giotto, etc.

predacity (prẹ-das'i-ti), *n.* [*pred*(*acious*) + *-acity.*] The character of being predacious.

pre-Darwinian (prē-där-win'i-a̤n), *a.* Preceding the time of Charles Darwin: noting, specifically, the doctrines or opinions of biologists at an earlier date than that of the publication of Darwin's "Origin of Species."

> There is no system of biological doctrine which is pre-Darwinian as such. Lamarck, who still has many disciples, was an earnest defender of the mutability of species, as were other naturalists, although the most distinctive doctrine of those who opposed Darwin's account of the origin of species is that which is commonly called the doctrine of the immutability or fixity of species. According to this doctrine, a biological species (the 'genus' or 'kind' of the logicians) is an entity or reality which its representatives exhibit or manifest but do not constitute, since it is held to be independent of them and of everything else in the natural world—the self-sufficient reality of which its representatives are only the expression. Traces of this doctrine are still to be found in the opinion that variation is departure from a type, and that the aberrant individual is qualitatively different from the mediocre individual, although Darwin has shown that the species or type or kind is neither in the representatives nor independent of them, since it consists in that interaction between them and their external world which he has summarized under the phrases 'struggle for existence' and 'survival of the fittest.'

predazzite (prē-dät'sīt), *n.* [*Predazzo*, in the Tyrol, + *-ite*^{2}.] In *petrog.*, a crystalline rock composed of calcite and brucite, sometimes with periclase and hydromagnesite: a product of contact metamorphism of dolomite in the neighborhood of syenite.

Predentata, *n. pl.* See ★*Prædentata.*

predentate, *a.* **II.** *n.* A member of the suborder *Prædentata*, a group of extinct reptiles.

predication, *n.*—**Primitive predication**, a synthetic proposition of the type, 'It is A,' which necessarily implies the existence of its subject.

prediction, *n.*—**Horary prediction**, in *astrol.*, a prediction derived from the figure of the heavens erected at the moment the question is asked.

predigital, prædigital (prē-dij'i-ta̤l), *a.* and *n.* [*pre-* + *digital.*] **I.** *a.* Preceding a digit or the digits.

II. *n.* One of the two outermost primaries in the wing of a bird which are attached to the second phalanx of the second digit. The outermost predigital is very small and is that called the *spurious primary*, or *remicle.* *Parker and Haswell*, Zoology, II. 357.

predikant (pre-di-känt'), *n.* [D.] A minister of the Dutch Protestant Church, especially in South Africa. *N. E. D.*

Predominant group. See *subdominant* ★*group.*

pre-Dravidic (prē-dra-vid'ik), *a.* Of or pertaining to a people which occupied, or is supposed to have occupied, India before the Dravidian race. *Ratzel* (trans.), Hist. of Mankind, III. 356.

predrift (prē-drift'), *a.* In *geol.*, preglacial. [Rare.]

> The filling up, during a period of subsidence, of the *predrift* glen. *Geog. Jour.* (R. G. S.), XVIII. 83.

predunal (prē-dū'na̤l), *a.* [*pre-* + *dune* + *-al*^{1}.] In *phytogeog.*, established before the formation of dunes: said of vegetation. See quotation under ★*dunal.*

predynastic (prē-dī-nas'tik), *a.* Of or pertaining to that period of ancient Egypt which preceded the first-known dynasty.

> Prof. Flinders Petrie has, I believe, recently discovered a vase of immeasurable antiquity of the "*Pre-Dynastic*" period in Lower Egypt which is incised with a delineation of the Kudu antelope.
> *Sir Harry Johnston*, The Nile Quest, p. 5.

pre-eclamptic (prē-ek-lamp'tik), *a.* [L. *præ*, before, + NL. *eclampsia* (*eclampt-*) + *-ic.*] Before the appearance of convulsions. *Buck*, Med. Handbook, VI. 310.

preëfficient (prē-e-fish'ẹnt), *n.* [L. *præ*, before, + E. *efficient.*] An external cause which precedes its effect in time.

preëmpt (prẹ-empt'), *n.* [*preëmpt*, *v.*] A right to preëmpt; a preëmptive right. *E. E. Morris*, Austral English.

> My friend has the run and the stock and the *pre-empts* all in his own hands. He'll do well out of 'em, or I'm much mistaken.
> *Rolf Boldrewood*, Colonial Reformer, xxiv.

Preëmption claimant, one who settles upon land subject to preemption, intending and proceeding to acquire full title thereto.—**Preëmption right,** a preference given by law to settlers upon public lands of the United States to purchase the lands in limited quantities. Such settlers must reside on the land and declare their intent to take title. The preëmption laws were repealed in 1891.

preëmptioner (prẹ-emp'shọn-ėr), *n.* One who preëmpts; a preëmptor.

preëxilian (prē-eg-zil'i-ạn), *a.* Same as *preëxilic.*

preëxistentism (prē-eg-zis'tẹn-tizm), *n.* [*preëxistent* + *-ism.*] The doctrine that the soul has a preëxistent state before it is united with the body.

Prefect apostolic, a priest invested by the Pope with episcopal powers, but without the rank or dignity of a bishop.

The government of the various mission-fields is generally carried on by "Vicars-Apostolic" (i.e., titular bishops acting as vicars or delegates of the Apostolic See) or "*Prefects-Apostolic*" (i.e., priests with similar powers, but without episcopal rank). *Encyc. Brit.*, XXXII. 276.

Prefect of discipline. See ★*discipline.*—**Prefect of studies,** the director of the curriculum of studies in Jesuit schools.

prefecundation (prē-fek-un-dā'shọn), *n.* [*pre-* + *fecundation.*] In *embryol.*, the changes or conditions exhibited by the egg previous to its fertilization, or fecundation.

prefecundatory (prē-fẹ-kun'dạ-tō-ri), *a.* Of or pertaining to the prefecundation of the ovum.

prefelic (prē-fel'ik), *a.* [*pre-*, 2, + *felic.*] Predominantly felic; having normative feldspar more than 5:3 of normative quartz or lenads: said of the feldspathoid minerals.

preference, *n.* 5. A European game of cards, something like boston.—**Law of preference.** See ★*law*^{1}.—**Surrender of preference.** See ★*surrender.*

Preferential dividend. See ★*dividend.*—**Preferential mating.** See ★*mating.*—**Preferential rules,** in *evidence*, the rules by which the best evidence or that admissible is selected. *Wigmore*, Evidence, § 1172.

prefixed (prẹ-fixt'), *p. a.* [*prefix, v.*] Being in the location or condition resulting from the act denoted by the verb 'prefix'; specifically, in *comp. anat.*, noting certain muscular and cutaneous areas in which some of the nerves of supply originate at a more cephalic level than in allied species. *Philos. Trans. Roy. Soc.* (London), 1898, ser. B, p. 85.

prefixture, *n.* 2. In *comp. anat.*, the condition (viewed from a comparative point of view) in which nerve-fibers from a higher cephalic level are distributed to given muscular and cutaneous areas. See ★*prefixed. Philos. Trans. Roy. Soc.* (London), 1898, ser. B, p. 82.

preformationism (prē-fôr-mā'shọn-izm), *n.* Same as ★*preformism.*

preformism (prē-fôr'mizm), *n.* [Irreg. < *preform* + *-ism.*] 1. The doctrine of preformation or evolution.—2. Belief in this doctrine. See *theory of preformation* (under *preformation*) and *doctrine of* ★*evolution.*

preformist (prē-fôr'mist), *a.* [Irreg. < *preform* + *-ist.*] Of or pertaining to the theory of preformation.

prefossette (prē-fo-set'), *n.* [*pre-* + *fossette.*] The depression or pit which lies in front of the second cross-crest, or metaloph, in such a tooth as that of a horse or rhinoceros. *Amer. Mus. Jour.* Sup., Jan., 1903, Guide Leaflet No. 9, p. 20.

prefrontal. I. *a.*—**Prefrontal lobe.** See ★*lobe.*—**Prefrontal process,** in *ornith.*, a bony projection directed backward from the prefrontal, typically present in some parrots.—**Prefrontal shield,** in *herpet.*, a shield or horny plate which forms part of the covering of the head and lies in advance of the frontal shield in about the position of the prefrontal bone.

II. *n.* 1. In fishes it is a lateral bone in the anterior part of the cranium slightly under the end of the frontal. It is articulated below with the vomer and, usually, with the parasphenoid, and at the side with the ethmoid. The olfactory nerve typically pierces it, though sometimes the neural foramen is between it and the ethmoid.

2. A prefrontal process or shield.

pregammation (prē-ga-mā'shi-on), *n.*; pl. *pregammatia* (-ạ̈). [L. *præ*, before, + MGr. *γαμμάτιον*, a figure like gamma (Γ).] An element, in the anatomical structure of the head of the Devonian fish *Palæospondylus*, which lies in front of the gammation. See ★*gammation*, 2.

preganglionic (prē"gang-gli-on'ik), *a.* [*pre-* + *ganglionic.*] Of or pertaining to nerve-fibrillæ or other structures that are proximal with reference to a ganglion. *Nature*, Oct. 13, 1904, p. 588.

pregastrular (prē-gas'trọ̈-lạ̈r), *a.* [*pre-* + *gastrular.*] Of an earlier stage of development than the gastrula-stage.

This consideration led some morphologists to insist on the need of a more precise investigation of the *prægastrular* stages. *E. B. Wilson*, Biol. Lectures, 1889, p. 2.

pregenetic (prē-jẹ-net'ik), *a.* [L. *præ*, before, + Gr. *γένεσις*, birth (see *genetic*).] 1. Before birth; antenatal.—2. Literally, before genesis; noting views, theories, etc., held in science before the introduction of the genetic method and point of view. [Rare.]

Before their day, everything was classification, nomenclature, fixed species, just as with the *pregenetic* psychologists everything was faculties and processes, analyses and categories. *G. S. Hall*, Adolescence, II. 62.

pregenial (prē-jẹ-nī'ạl), *a.* and *n.* I. *a.* [*pre-* + *genial*^{2}.] Situated before the chin or mentum.

II. *n.* A pregenial process; in *herpet.*, one of the anterior of two pairs of shields, or scutes, lying back of the mental and between the infralabials, on the under side of the jaw; an anterior chin-shield: correlated with ★*postgenial.*

pregeological (prē"jē-ọ-loj'i-kạl), *a.* [*pre-* + *geological.*] Occurring before the beginning of trustworthy geological records; cosmical.

Another theory that attributes the formation of the main geographical lines to *pre-geological* incidents is given in a paper by Prinz, "Sur les similitudes que presentent les cartes terrestes et planétaires." *Geog. Jour.* (R. G. S.), XIII. 229.

pregeologically (prē"jē-ọ-loj'i-kạl-i), *adv.* In pregeological time. *Geog. Jour.* (R. G. S.), XIII. 234.

Preglacial drift. See ★*drift.*

preglobulin (prē-glob'ụ-lin), *n.* [*pre-* + *globulin.*] A complex albuminous substance, described by A. Schmidt as occurring in animal cells: probably a nucleoproteid.

preglottidean (prē-glo-tid'ẹ-ạn), *a.* [*pre-* + *glottidean.*] Situated in advance of the glottis. *Proc. Zool. Soc. London*, 1899, p. 92.

pregnancy, *n.*—**Abdominal pregnancy.** Same as ★*abdominal gestation.*—**Ampullar pregnancy,** development of the ovum which has been arrested in the first or expanded portion of the Fallopian tube.—**Cervical pregnancy,** the development of the impregnated ovum in the canal of the cervix uteri.—**Hydatid pregnancy,** the presence in the uterus of a hydatid mole.—**Multiple pregnancy,** a pregnancy in which there is more than one fetus.—**Mural pregnancy.** Same as *mural* ★*gestation.*

pregnant, *a.*—**Affirmative pregnant,** an affirmation which implies a negative favorable to the adverse party, or from which an inference of such a negative may be drawn.

pregonium (prẹ-gō'ni-um), *n.*; pl. *pregonia* (-ạ̈). [L. *præ*, before, + Gr. *γωνία*, angle.] In *craniom.*, the recess on the lower margin of the body of the lower jaw in advance of the angle. *Harrison Allen.*

pregracile^1 (prẹ-gras'il), *a.* [L. *prægracilis*, very slender, < *præ*, before, + *gracilis*, slender: see *gracile.*] Very slender.

pregracile^2 (prē-gras'il), *a.* [L. *præ*, before, + (lobus) *gracilis.*] Anterior to the slender lobe of the cerebellum. See *lobus gracilis.*—**Pregracile fissure.** See ★*fissure.*

preheated (prē-hē'ted), *p. a.* That has been through a preheater; heated before using or being used.

An enormous extent of brickwork surface, which we will assume for the moment has been highly *preheated*, so that they [gases] are heated by contact with it to a light yellow heat, say 1100° C. (2012° F.). *Encyc. Brit.*, XXIX. 582.

preheater (prē-hē'tėr), *n.* A chamber or cylinder in which a substance is heated before being used or operated upon. Compressed air which is to be used in an engine is usually passed through a preheater, thus raising its temperature, increasing its energy, and preventing the very low temperatures to which the air would otherwise expand. The blast for blast-furnaces is usually passed through a preheater called a *stove.*

preheating (prē-hē'ting), *n.* The act or process of passing a substance, as air or gas, through a preheater before using it or operating upon it.

This method of *preheating* may follow either the regenerative or the recuperative system. *Engin. Mag.*, Nov., 1898, p. 245.

prehensility (prē-hen-sil'i-ti), *n.* [*prehensile* + *-ity.*] The character of being prehensile.

prehensive (prẹ-hen'siv), *a.* [L. *prehensus*, ppr. of *prehendere*, seize, + *-ive.*] Seizing or laying hold of; of the mind, apprehending.

prehensorial (prē-hen-sō'ri-ạl), *a.* Same as *prehensile.*

One cannot but wonder how the spider maintains a secure hold back downwards, especially when the powerful *prehensorial* legs of the first and second pairs are released, as released they must surely be, to seize an alighting butterfly. [New "Bird's-dung" Spider from Ceylon.] *Proc. Roy. Zool. Soc. London*, 1903, p. 51.

prehepaticus (prē-hẹ-pat'i-kus), *n.* [NL. *præhepaticus*, < L. *præ*, before, + Gr. *ἡπατικός*, of the liver.] In *embryol.*, an accumulation of connective and vascular tissue in the septum transversum. The entodermal diverticula, to form the liver, grow into the prehepaticus, which becomes the interstitial hepatic tissue.

preheterocercal (prē-het"ẹ-rọ-sėr'kạl), *a.* [*pre-* + *heterocercal.*] Protocercal or horizontal and pointed: applied to a fish's tail before it becomes turned upward at the end or heterocercal. But the latter stage may sometimes precede the former.

prehnidine (pren'i-din), *n.* [*prehn*(*ite*) + *-id-* + *-ine*^{2}.] A crystalline substance, $C_{10}H_{13}$.-NH_2; aminoprehnitene or 5-amino-1,2,3,-4-tetramethylbenzene, a homologue of aniline. It is made by reducing nitroprehnitene with iron and acetic acid. It melts at 64–66° C.

prehnitene (pren'i-tēn), *n.* [*prehnit*(*e*) + *-ene.*] Vicinal or 1,2,3,4-tetramethylbenzene, $C_6H_2(CH_3)_4$, an oily hydrocarbon which boils at 204° C. Also called *prehnitol.*

prehnitic (pre-nit'ik), *a.* [*prehnit*(*e*) + *-ic.*] Derived from prehnitene.—**Prehnitic acid,** a crystalline acid, $C_6H_2(COOH)_4 + 2H_2O$, or 1,2,3,4-benzenetetracarboxylic acid, made by oxidizing prehnitene with potassium permanganate, and in other ways.

prehnitol (pren'i-tol), *n.* [*prehnite* + *-ol.*] Same as ★*prehnitene.*

prehypophysis (prē-hī-pof'i-sis), *n.*; pl. *prehypophyses* (-sēz). [L. *præ*, before, + NL. *hypophysis.*] The anterior lobe of the hypophysis of the brain.

preignition (prē-ig-ni'shọn), *n.* [*pre-* + *ignition.*] An ignition of the combustible charge of fuel and air in an internal-combustion engine before the piston, on its compressing stroke, has reached the inner dead-center, or completed the normal compression of the charge. See ★*ignition*, 5.

preinsula (prē-in'sụ-lạ̈), *n.*; pl. *preinsulæ* (-lē). [L. *præ*, before, + *insula*, island.] The anterior portion of the island of Reil. *Amer. Anthropologist*, Oct.–Dec., 1903, p. 615.

preinsular (prē-in'sụ-lạ̈r), *a.* [L. *præ*, before, + *insul*(*a*), island, + *-ar*^{3}.] In *anat.*, anterior to the island of Reil.

The left insula in both was the better developed, and in the younger Seguin, whose linguistic powers were indisputably remarkable, the *preinsular* portion was so redundant that the surrounding opercular parts have been crowded apart and a small triangular portion of the insular pole is thus made visible on the lateral aspect. *Amer. Anthropologist*, Oct.–Dec., 1903, p. 615.

prelabial (prē-lā'bi-ạl), *a.* [*pre-* + *labial.*] Situated in front of the lips or of a labium.

prelabrum (prē-lā'brum), *n.*; pl. *prelabra* (-brạ̈). [L. *præ*, before, + *labrum*, lip.] In *entom.*, same as *clypeus.*

prelacteal (prē-lak'tẹ-ạl), *a.* and *n.* [*pre-* + *lacteal.*] I. *a.* Coming before the milk-teeth: applied to certain structures in the jaws of embryonic marsupials which are considered to be vestiges of a dentition preceding the milk-teeth.

II. *n.* Any tooth-like structure which precedes the milk-teeth.

The conviction that the deciduous premolar . . . must belong to the same series as the so-called "*prelacteals.*" (*E. D.*) *Quart. Jour. Micros. Sci.*, Jan., 1897, p. 441.

prelaryngoscopic (prē-lạ-ring-gọ-skop'ik), *a.* [*pre-* + *laryngoscope* + *-ic.*] Antedating the invention of the laryngoscope. *Buck*, Med. Handbook, V. 431.

prelenic (prẹ-len'ik), *a.* [*pre-*, 2, + *lenic.*] In *petrol.*, predominantly lenic; having lenads more than 5:3 of the normative feldspars.

prélèvement (prạ-lāv-moṅ'), *n.* [F.] In *Fr. law*, that portion of partnership property to which a member of a solvent firm is entitled before any division of further assets is made between the partners.

prelimen (prel'i-men), *n.* [L. *præ*, before, + *limen*, threshold.] Something to be done before the main proceeding; a preliminary step. [Rare.]

The requisite *prelimen* to the original aim of the inquiry. *Philos. Trans. Roy. Soc.* (London), 1898, ser. B, p. 50.

preliminary, *n.* 2. *pl.* In college use, tests in certain elementary subjects previous to the final examinations for entrance. [U. S.]

pre-Linnean (prē-li-nē'ạn), *a.* Before the time or work of Linnæus; existing, written, or proposed, before Linnæus: as *pre-Linnean* writers. *Pop. Sci. Mo.*, Jan., 1903, p. 211.

prelithic (prē-lith'ik), *a.* [L. *præ*, before, + Gr. *λιθος*, stone, + *-ic.*] Preceding the use of stone implements; antedating the stone age proper. Compare ★*zoömimetic.*

> In general, the stage would seem to be antecedent to that defined by the chance-dominated use of stone, which has already been characterized as protolithic; it corresponds with the stage provisionally outlined by Cushing as *prelithic;* but, taking due account of the materials, processes, and motives characteristic of the stage, it may be distinguished as hylozoic, or perhaps better as zoomimic. *Smithsonian Rep.*, 1900, p. 63.

prelocalization (prē-lō"ka̤l-i-zā'sho̤n), *n.* [*pre-* + *localization.*] In *embryol.*, the supposed original localization of the various organs of the adult, as specific substances or structures, in different regions of the unsegmented egg.

> A second general division of his work included the experimental study of *prelocalization* in the unsegmented egg, which yielded results of no less interest than the cleavage stages. *Carnegie Inst. Yearbook*, 1903, p. xliv.

prelusion (prē-lū'zho̤n), *n.* [L. *prælusio(n-)*, < *præludere*, rehearse, prelude.] A prelude.

premandibula (prē-man-dib'ṳ-lä̤), *n.*; pl. *premandibulæ* (-lē). [NL., < L. *præ*, before, + *mandibula.* See *mandible.*] A median bilaterally symmetrical bone in front of the anterior end of the mandible in certain fishes, especially the *Aspidorhynchidæ* of Mesozoic age: similar to the predentary bone of certain dinosaurs. Also called *presymphysial.*

Premandibular segment. See ★*segment.*

Premaxillary process, in *ornith.*, a process running upward and backward from the anterior part of the premaxillary. The culmen is formed by this process. *Proc. Zool. Soc. London*, 1903, p. 262.

premaximal (prē-mak'si-ma̤l), *a.* [L. *præ*, before, + *maxim(um)* + *-al*^{1}.] Preceding a maximum in any sense. *Buck*, Med. Handbook, I. 139.

premedia (prē-mē'di-ä̤), *n.*; pl. *premediæ* (-ē). [L. *præ*, before, + *media*, fem. of middle.] One of the longitudinal veins in an insect's wing lying between the media and the radius. It is vein IV of Comstock's system. *Comstock*, Manual of Insects, p. 65.

premedical (prē-med'i-ka̤l), *a.* [*pre-* + *medical.*] Occurring before (the scientific study of) medicine; preceding medicine; not yet having entered upon the study of medicine. [Rare.]

> This general text-book of botany is written for *premedical* and pharmaceutical students in particular and the nonprofessional undergraduate incidentally. *Bot. Gazette*, March, 1904, p. 225.

premegalithic (prē"meg-a̤-lith'ik), *a.* [*pre-* + *megalith* + *-ic.*] Of or pertaining to time previous to the erection of megaliths; antedating the erection of megaliths. *Amer. Anthropologist*, Jan.–March, 1902, p. 78.

premetallic (prē-me-tal'ik), *a.* [*pre-* + *metal* + *-ic.*] Of or pertaining to a period anterior to that in which metals were used for the manufacture of artifacts.

premier, *n.* **2.** In *roulette*, a bet that one of the numbers from 1 to 12 inclusive will win.

première, *n.* **2.** The first performance of a drama or opera.

premiership, *n.* **2.** Specifically, the first prize in any competitive show, as for dogs or horses.

> The secretary was directed to write to the Duchess of Newcastle, offering the *premierships* and medals for competition at any show to be given by the Ladies' Branch of the English Kennel Club. *Field and Fancy*, April 6, 1900.

premiotic (prē-mī-ot'ik), *a.* [*pre-* + *miotic.*] Of or pertaining to a stage in spermatogenesis which precedes the maturation, or miotic divisions. Also incorrectly written *premaiotic. Nature*, June 15, 1905, p. 164.

premis, *n.* A simplified spelling of *premise*, *n.*

Premium pudicitiæ [L., 'price of chastity'], in *law*, a sum of money paid or promised as consideration of a contract for illicit cohabitation. The contract must be under seal, and the money paid or promised must be for past cohabitation. A parole promise, or a contract for future cohabitation is void.

premoral (prē-mor'a̤l), *a.* [*pre-* + *moral.*] In *sociol.*, prior to the existence of morality or a moral code in society. *Ward*, Outlines of Sociol., p. 112.

premortal (prē-môr'ta̤l), *a.* [L. *præ*, before, + *mors* (*mort-*), death, + *-al*^{1}.] Immediately preceding death.

> The *premortal* rise of nitrogen excretion. *Jour. Exper. Med.*, March 17, 1902, p. 238.

premorula (prē-mor'ọ-lä̤), *n.*; pl. *premorulæ* (-lē). [L. *præ*, before, + NL. *morula.*] In *embryol.*, a stage preceding the morula.

premundane (prē-mun'dān), *a.* [L. *præ*, before, + E. *mundane.*] Existing or occurring before this world was created; antemundane.

premuscle (prē-mus'l), *n.* [*pre-* + *muscle.*] In *embryol.*, dense mesoblastic or mesenchymatous tissue just before its conversion into true muscular tissue. [Rare.]

> This is surrounded by a mass of dense mesenchyma, evidently *premuscle* tissue. *Biol. Bulletin*, June, 1904, p. 39.

premutative (prē-mū'tạ̄-tiv), *a.* [*pre-* + *mutative.*] Inflected by means of prefixes, as a language. *N. E. D.* [Rare.]

pre-Mycenæan (prē-mī-sẹ-nē'a̤n), *a.* Belonging to a civilization apparently earlier than the Mycenæan. See ★*Mycenæan.*

> Primitive pottery of days long anterior to the Mycenæan period has been found at Phaistos, and in the near neighbourhood is Agios Onouphrios, where one of the most important discoveries in Crete, that of burials of the primitive *pre-Mycenæan* or "Amorgian" period, containing Egyptian scarabs of the twelfth dynasty (*c.* 2200 B.C.), was made in 1887. *Nature*, Nov. 20, 1902, p. 59.

prenarcotic (prē-när-kot'ik), *a.* [*pre-* + *narcosis* (*narcot-*) + *-ic.*] Prior to the occurrence of narcosis.

> The *prenarcotic* period — that is, the time from the beginning of the anesthetic to the pupilary dilatation — varies from thirty seconds to five minutes. *Therapeutic Gazette*, Feb. 15, 1903, p. 100.

prenarial, *a.* and *n.* See ★*prænarial.*

prenaris, *n.* See *prænaris.*

prenebular (prē-neb'ṳ-lä̤r), *a.* [*pre-* + *nebular.*] Existing or occurring before the nebular state, as the universe.

preneural, præneural (prē-nū'ra̤l), *a.* and *n.* [*pre-* + *neural.*] **I.** *a.* Situated in front of a neural.

> There is a *preneural* bone, whose anterior border has occupied a notch in the hinder border of the nuchal. *Amer. Jour. Sci.*, Oct., 1904, p. 274.

II. *n.* A preneural structure; specifically, a bone lying just in advance of the first neural and forming part of the carapace of some turtles: unlike the neurals it is not connected with an underlying vertebra.

pre-Noachian (prē-nọ-ā'ki-a̤n), *a.* Prior to Noah; of or pertaining to the period preceding Noah's deluge.

prenodal (prē-nō'da̤l), *a.* and *n.* [L. *præ*, before, + *nodus*, node, + *-al*^{1}.] **I.** *a.* In *entom.*, before, or proximad of, the node on the wing of a dragon-fly: as, the *prenodal* cells.

II. *n.* A prenodal cell.

> Six *prenodals* and 5 postnodals on the fore wing. Dragonflies. *Proc. Zool. Soc. London*, 1902, I. 67.

prenoid (prē'noid), *n.* [Gr. *πρηνής*, prone, + *εἶδος*, form.] In *bot.*, a minute body imbedded in the chromatophores of many algæ and of one of the hepatics. Its function is not definitely known, although it is supposed by some to be a reserve proteid.

prenuncial (prē-nun'ṣi-a̤l), *a.* [Irreg. < L. *prænuntiare*, announce beforehand, predict, + *-al*^{1}.] Announcing; presaging; in *geol.*, pertaining to a brief, precurrent, transient appearance of a migrating exotic fossil fauna in the midst of an indigene fauna of an earlier formation than that in which the exotic fauna eventually makes its permanent habitation and presents its full development.

prenuptial (prē-nup'sha̤l), *a.* [*pre-* + *nuptial.*] Prior to marriage: as, a *prenuptial* contract.

Preocular shield, in *herpet.*, a horny plate forming part of the covering of the head and lying just in advance of the eye.

preoperative (prē-op'ẹ-rạ̄-tiv), *a.* [*pre-* + *operate* + *-ive.*] In *surg.*, relating to the period preceding an operation. *Buck*, Med. Handbook, II. 455.

preopercular, *a.* **II.** *n.* Same as *præoperculum*, 2. *Starks*, Synonymy of the Fish Skeleton, p. 515.

Preoral circlet, in *embryol.*, a preoral band of cilia in the larvæ of certain marine worms. Usually called the *prototroch.*—**Preoral lobe.** (*a*) In *Chætopoda* and some other worm-like animals, the prostomium. (*b*) The anterior end of the lancelet, which projects beyond the mouth, or oral opening.—**Preoral pit.** See ★*pit*^{1}.

preorbital (prē-ôr'bi-ta̤l), *a.* and *n.* [L. *præ*, before, + *orbita*, orbit, + *-al*^{1}.] **I.** *a.* Placed in front of the orbit of the eye.—**Preorbital process**, a bony projection situated on the anterior side of the bony orbit of the eye: typically present in the skull of a rabbit. *Proc. Zool. Soc. London*, 1899, p. 11.

II. *n.* In *ichth.*, a bone in front of the eye which belongs to the suborbital series of dermal bones. It usually bears a sensory tube continued from the suborbitals.

preorganic (prē-ôr-gan'ik), *a.* [*pre-* + *organic.*] Pertaining to the indefinite period of the earth's history which was antecedent to the first appearance of life, or to rocks which were formed during that period and are without traces of fossil organisms: not recognized as the name of a unit of geologic time. See *archæan* and *azoic.*

preorganized (prē-ôr'ga̤-nīzd), *p. a.* [*pre-* + *organized.*] Organized beforehand; specifically, occurring or apprehended by virtue of antecedent organization.

> First, we are told that it is not the emotion that gives rise to the bodily expression, but that, on the contrary, "the bodily changes follow directly the perception of the existing fact," it being beyond doubt "that objects do excite bodily changes by a *pre-organized* mechanism." *Encyc. Brit.*, XXXII. 65.

preosseous (prē-os'ẹ̄-us), *a.* [L. *præ*, before, + *osseus*, bony.] Of or relating to embryonic tissue which is on the way to become bone: as, *preosseous* substance. *Proc. Zool. Soc. London*, 1902, I. 206.

preparateur (pre-par-ä-tėr'), *n.* [F.] Same as *preparator*, 1. *Science*, Sept. 18, 1903, p. 362.

preparator, *n.* **2.** Same as ★*amboceptor.*

prepared (prẹ-pãrd'), *p. a.* Being in a state or condition of preparation; specifically, in *math.*, transformed in certain ways so as to be brought to a shape convenient for discussion: said of an equation, form, or function.

preparietal (prē-pạ̄-rī'e-ta̤l), *a.* [*pre-* + *parietal.*] Relating to the anterior portion of the parietal lobe of the brain; noting the artery which supplies this part. *Buck*, Med. Handbook, II. 253.

preparin (prep'a̤-rin), *n.* [L. *præpar(are)*, prepare, + *-in*^{2}.] Same as ★*amboceptor.*

preparing-machine (prẹ-pãr'ing-ma̤-shēn"), *n.* In *calico-printing*, a machine for padding the cloth in the open width with olein oil, after bleaching and before printing. *G. Duerr*, Bleaching and Calico-printing, p. 25.

prepatagial (prē-pat-ạ̄-jī'a̤l), *a.* [NL. *prepatagi(um)* + *-al*^{1}.] Pertaining to or connected with the prepatagium. *Proc. Zool. Soc. London*, 1901, p. 322.

prepelvic (prē-pel'vik), *a.* [*pre-* + *pelvic.*] Situated in advance of the pelvis. *Parker and Haswell*, Zoology, II. 61.—**Prepelvic ridge**, a ridge running forward from the anterior border of the pelvic fin of a shark. [Rare.]

prepenial (prē-pē'ni-a̤l), *a.* [L. *præ*, before, + *pen(is)* + *-i-al*^{1}.] Lying in advance of the penis, as the scrotum of marsupials. *Proc. Zool. Soc. London*, 1892, p. 369.

prepercept (prē-pėr'sept), *n.* In *psychol.*, an anticipatory perception; a memory-idea aroused by, and clustering round, the presentation of an element or elements of a familiar perception.

> The sight of ice yields a forefeel of its coldness, the smell of baked meats a foretaste of their savour. Such *prepercepts* differ from free ideas just as after-percepts do: they are still sense-bound and sense-sustained. *Encyc. Brit.*, XXXII. 59.

preperitoneal (prē-per"i-tọ-nē'a̤l), *a.* [*pre-* + *peritoneum* + *-al*^{1}.] Anterior to the peritoneum. *Buck*, Med. Handbook, VII. 521.

pre-Persian (prē-pėr'sha̤n), *a.* In *Gr. archæol.*, a term applied to the monuments in Athens which were built before the second Persian invasion in 480 B.C. and which were destroyed at that time. Many interesting remains have been recovered.

> His view that the *Pre-Persian* temple was a temple of Athena Polias is merely a deduction from his supposed demonstration that the Parthenon was so. *J. G. Frazer*, in Jour. Hellenic Studies, XIII. 177.

prepineal (prē-pin'ẹ̄-a̤l), *a.* [L. *præ*, before, + E. *pineal.*] Situated in advance of, or anterior to, the pineal body. *Phil. Trans. Roy. Soc.* (London), 1891, ser. B, p. 108.

prepontile, *a.* **II.** *n.* Same as ★*prepontine.*

prepontine (prē-pon'tin), *a.* and *n.* [*pre-* + *pontine*^{2}.] **I.** *a.* Same as *prepontile.*

II. *n.* The region just cephalad or anterior to the pons Varolii. Also *prepontile. Philos. Trans. Roy. Soc.* (*London*), 1898, ser. B, p. 128.

prepotency, *n.* **2.** In *biol.*, the preponderating power or tendency of one germ-cell, one parent, or one ancestor to fix the character of descendants.

> *Prepotency* is the preponderating transmission from one parent. *C. B. Davenport*, Biol. Lectures, 1899, p. 271.

Differential prepotency, the difference between the parents or other ancestors, in value or significance (in ancestral inheritance) considered or investigated in reference to specific points of difference between them.

Consequently though some of the evidence to be adduced bears on the question of *differential prepotency*, we can offer as yet no plain answer to the original question.
Bateson and Saunders, Rep. Evol. Com. Roy. Soc., [1902, I. 5.

Intermittent prepotency, the resemblance of some, but not of all of the children to one parent, as respects any quality, to the partial or complete exclusion of the influence of the other parent as respects this quality.

Now the fundamental point . . . is this, that apart from sex-prepotency, neither unit prepotency nor *intermittent prepotency* need in any way influence the parental correlations. *Biometrika*, Nov., 1903, p. 390.

Sex-prepotency. (*a*) The impression upon descendants of its own characteristics by some one ancestor to the total or partial exclusion of the influence of other ancestors. (*b*) The resemblance of a child to its parent of the same sex as regards any quality.

By *sex-prepotency* I understand that the offspring of one or other sex or of both sexes are more like the male or the female parent as the case may be.
K. Pearson, in Biometrika, Nov., 1903, p. 389.

prepotent, *a.* **3.** In *biol.*, exhibiting or possessed of prepotency.

prepubertal (prē-pū′bėr-tal̤), *a.* [*pre-* + *pubert*(*y*) + *-al*^{1}.] Prior to the occurrence of puberty. *G. S. Hall*, Adolescence, I. 250.

prepubescent (prē-pū̦-bes′e̤nt), *a.* [*pre-* + *pubescent.*] Prior to the occurrence of puberty. *G. S. Hall*, Adolescence, I. x.

prepyramid (prē-pir′a̤-mid), *n.* [*pre-* + *pyramid.*] The anterior pyramid in the medulla oblongata.

prepyramidal (prē-pi-ram′i-dal̤), *a.* [*pre-* + *pyramid* + *-al*^{1}.] Of or pertaining to the anterior pyramid in the medulla oblongata.

prequadrate, præquadrate (prē-kwod′rāt), *a.* and *n.* [*pre-* + *quadrate.*] **I.** *a.* Lying in advance of the quadrate: as, the *prequadrate* process of the sphenotic. *Proc. Zool. Soc. London*, 1895, p. 399.

II. *n.* A prequadrate process.

prequaric (prē-kwor′ik), *a.* [*pre-*, 2, + *quaric.*] In *petrol.*, predominantly quaric; having nominative quartz more than 5:3 of the nominative feldspars.

preradial (prē-rā′di-al̤), *a.* [L. *præ*, before, + *radius*, ray, + *-al*^{1}.] In *cytol.*, preceding the formation of the achromatic rays of the spindle: as, the *preradial* stage of mitotic cell-division.

Five stages in the formation of the spindle are described, viz., the *preradial* stages, the radial stages, formation of the felt, the multipolar spindle, and the completion of the spindle.
Bot. Gazette, Sept., 1903, p. 234.

Preraphaelite, *a.* **2.** Said of painting done according to the methods or style of the Preraphaelite Brotherhood.—**Preraphaelite Brotherhood**, the name given to a group of painters which appeared in England in the middle of the nineteenth century. The movement began in 1848 when Dante Gabriel Rossetti entered the studio of Ford Madox Brown. He was soon after joined by William Holman Hunt and John Everett Millais. Later were added Thomas Woolner (sculptor), James Collinson (replaced afterward by Walter Howell Deverell), Frederick George Stephens, and W. M. Rossetti. Their purpose was to protest against the conventionality of modern English art and to bring about a return of the sincerity and high endeavor of the earlier part of the *Quattro-cento*, the period in Italian art which preceded Raphael. With this were combined great poetic feeling, delicacy of color, and fine appreciation of nature. The name Preraphaelite is sometimes applied to similar movements in other countries, notably to an earlier one in Germany.

II. *n.* **2.** A member of the Preraphaelite Brotherhood.

Preraphaelitism, *n.* **2.** The cult of the Preraphaelite Brotherhood.

prerational (prē-rash′o̤n-al), *a.* [*pre-* + *rational.*] Antecedent to the maturation of intelligence.

Not reasoning, but some deep *pre-rational* instinct, like that on which our faith in memory rests, is the basis of our belief in other minds.
C. A. Strong, Why the Mind has a Body, p. 274.

prerelease (prē-rē-lēs′), *n.* [*pre-* + *release.*] Early release; release before the right time; in an engine, the opening of the exhaust-port before the piston has reached the end of its stroke. This is done to allow the steam or gases time to escape before the piston starts on its return stroke.

Prerogative court. (*b*) A court having jurisdiction of wills and decedents' estates; specifically, in New Jersey, a court presided over by the chancellor for the hearing of appeals from the Orphans' Court.

pre-Rolandic (prē-rō̦-lan′dik), *a.* Anterior to the fissure of Rolando in the brain. *Buck*, Med. Handbook, II. 400.

pre-Roman (prē-rō′ma̤n), *a.* Noting the history or art of a country before its occupation by the Romans.

The *pre-Roman* architecture of the Haurân includes successively three general divisions of style.
H. C. Butler, Architecture and Other Arts, p. 321.

Pres., Presb., Presby′n. Abbreviations of *Presbyterian.*

presacral, *a.* **II.** *n.* Any vertebra in front of the sacrals, generally used in the plural.

This compares closely with the supposed number of *presacrals* in the Eusuchia.
Amer. Jour. Sci., April, 1904, p. 320.

presbyacousia (pres″bi-a̤-kö′si-ạ̈), *n.* [NL.] Same as ★*presbycousis.*

presbycousis, presbykousis (pres-bi-kö′sis), *n.* [NL., ‹ Gr. πρέσβυς, an old man, + ἄκουσις, hearing.] Partial deafness due to senile changes in the ear.

Presbyterian Alliance, an organization founded in London in 1875, similar to the Evangelical Alliance, but confined to the Reformed churches holding the Presbyterian system. Its object is to promote closer relations between the Presbyterian churches of the world, without compromising their separate existence and independence. The first of the triennial councils was held in Edinburgh in 1877, at which were present representatives from twenty-five different countries. Also, *Alliance of the Reformed Churches.*

presbytia (pres-bish′i-ạ̈), *n.* [NL., ‹ Gr. πρεσβυτής, old age.] Same as *presbyopia.*

prescriptorial (prē-skrip-tō′ri-al̤), *a.* [L. *præ*, before, + *scriptor*, writer, + *-ial.*] Of or pertaining to the period before the use of writing; anterior to the use of writing.

In the several languages the names are associative or symbolic in the vague fashion characteristic of *prescriptorial* ideation.
J. W. Powell, An. Rep. Bur. Amer. Ethnol., 1894–95, [p. xcvi.

prescutellum, *n.* See *præscutellum.*

presedentary (prē-sed′e̤n-tạ̄-ri), *a.* [*pre-* + *sedentary.*] Preceding the sedentary or attached stage, as in the development of organisms that are free-swimming in their earlier life. *E. R. Cumings*, in Amer. Jour. Sci., Jan., 1904, p. 49.

presegmenting (prē-seg′men-ting), *a.* [*pre-* + *segment*, *v.*] Segmenting or dividing in advance (of some other process).—**Presegmenting bodies.** See ★*body.*

presence, *n.*—**The presence**, an obsequious title used in India by a servant speaking to his master.

"Dinner for '*the presence*' is laid at some distance" . . . "and also the easy chair. With aged persons how shall argument be made? If '*the presence*' himself would be pleased to give an order, the ancient will doubtless obey."
A. I. R. Glasfurd, Rifle and Romance in the Indian [Jungle, xv.

presenile (prē̦-sē′nil), *a.* [*pre-* + *senile.*] Relating to or showing the lesions of presenility.

The patients in the severe cases are men as a rule in the *pre-senile* stage and they present well-marked cardiovascular lesions. *Lancet*, Aug. 22, 1903, p. 517.

presenility (prē-sē̦-nil′i̤-ti), *n.* [*pre-* + *senility.*] Premature old age; a condition in which the arterial and other changes characteristic of advanced age occur in one in middle life.

present^2, *v. i.* **2.** In *obstet.*, to appear first: said of the part of the fetus which is in advance during labor. See *presentation*^{1}, 6.

presentational (prez-en-tā′sho̤n-al̤), *a.* [*presentation* + *-al*^{1}.] In *psychol.*, relating to, due to, or composed of, presentations.

Again, the continuous differentiation and redintegration of the *presentational* continuum which mark the progress of perceptual experience are resolved into an original multiplicity of presentational atoms which are associated by "adhesion" of the contiguous.
Encyc. Brit., XXXII. 58.

presentativeness (prē̦-zen′ta̤-tiv-nes), *n.* The character of being presentative; specifically used by H. Nichols to express "the ultimate and irreducible fact . . . that . . . sensory components or qualities can be and commonly are combined in . . . entirely unique togetherness," that is, in one consciousness, while they "might perfectly well exist in as many separate minds."

presentative-representative (prē̦-zen′ta̤-tiv-rep-rē̦-zen′ta̤-tiv), *a.* In *psychol.*, containing both presentative and representative elements; partaking of the nature of both presentation and representation.

Thus pleasure becomes an anticipation, as in the case of the dog when his food is being brought to him; to employ the term used by Herbert Spencer, it is a *presentative-representative* state.
T. Ribot (trans.), Psychol. of Emotions, p. 55.

Yet it is saying too much, regardless of this defect, to describe a percept as a *presentative-representative* complex, if representation is to imply the presence of a free or independent idea. *Encyc. Brit.*, XXXII. 59.

presentoir, *n.* **3.** A shallow bowl supported on a tall stem, designed to hold fruit or flowers.

preseptal (prē-sep′ta̤l), *a.* [L. *præ*, before, + *septum*, a fence, partition, + *-al*^{1}. See *septum.*] Lying before the septum.—**Preseptal cone**, in certain genera of the Silurian nautiloid cephalopods (*Endoceras*, *Nanno*), the unchambered apical portion of the conch.

preserv, *v.* and *n.* A simplified spelling of *preserve.*

preservaline (prē-zėr′va-lin), *n.* [*preserve* + *-al*^{3} + *-ine*^{2}.] The trade-name of a substance used to prevent the decay of foods.

Presidential year. See ★*year.*

presocial (prē-sō′sha̤l), *a.* [*pre-* + *social.*] Prior to the establishment of the social instincts and habits. *L. F. Ward*, Outlines of Sociol., p. 112.

presodic (prē-sō′dik), *a.* [*pre*(*dominantly*) + *sodic.*] Moderately rich in soda: applied in the quantitative system of classification of igneous rocks to those in which both soda and potash are present, but soda predominates over potash, the ratio of the former to the latter being greater that 5:3, but less than 7:1.

prespinous (prē-spī′nus), *a.* [*pre-* + *spinous.*] In advance of the spine of the scapula; prespinal: as, the *prespinous* fossa. *Parker and Haswell*, Zoology, II. 488.—**Prespinous fossa**, the depression on the anterior side of the spine of the scapula: more commonly called *prescapular fossa.*

prespiracular (prē-spī-rak′ū̦-lạ̈r), *a.* [*pre-* + *spiracular.*] Lying in advance of the spiracle. *Nature*, Oct. 16, 1902, p. 604.

presplenial (prē-splē′ni-al̤), *n.* [*pre-* + *splenial.*] Applied by Baur to the splenial of turtles under the impression that the bone termed by Kingsley *dermarticulare* was the splenial. *Science*, Dec. 25, 1903, p. 830.

press^1, *v.* **I.** *trans.*—**To press a bet.** See ★*bet*^{2}.

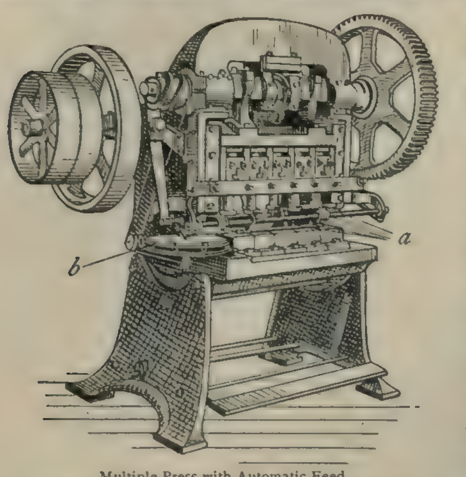
II. *intrans.* **8.** In *golf*, to strive to hit the ball harder than usual, or harder than it can be hit with accuracy, in order to gain greater distance.

press^1, *n.* **14.** A machine for forming, shaping, or working metal by stamping, drawing, or cutting. It consists essentially of a gate carrying a punch, to which a reciprocating motion is given by a crank-shaft and connecting-rod or pitman, or by a cam, and a die on which the material to be worked is placed. Such a machine is called a *drawing-*, *coining-*, *stamping-*, *punching-press*, etc., according to its use, and an *arch*, *open-front*, *pillar*, *inclinable*, *single-acting*, or *double-acting press* according to its construction. It may also be classified according to the articles made on it, as *cartridge-*, *primer-*, *tin-can*, *shot-shell press*, etc.

15. A chitinous structure with attached pyramidal muscles in the silk-duct of lepidopterous and trichopterous larvæ (and certain hymenopterous larvæ as well) which serves to regulate the diameter of the silk threads and the amount of gum surrounding them.

In the case of Apanteles glomeratus the *press* is highly developed. It commences at the union of the two conducting tubes in the region of the labium and occupies more than half of the common duct. Dorsally the *press* is concave, traversed by a longitudinal furrow into which pass the dorsal pair of muscles.
Amer. Nat., Sept., 1907, p. 573.

Associated Press. See ★*associated.*—**Cox duplex press**, a flat-bed perfecting-press in which the type beds are stationary, one above the other, the cylinders rolling back and forth upon them. The paper is fed in from a roll and is cut and folded in printing. As the printing is done from type forms without stereotyping it is much used by newspapers having small editions.—**Double-action press**, a press having two plungers for operating double-action dies that perform more than one operation; a cutting-, drawing-, and stamping-press.—**Double-supplement press**, a rotary printing-machine constructed to print with the main or larger outer sheet, and to insert in it, one or more supplemental pages or sheets. *Census Bulletin* 216, June 28, 1902, p. 63.—**Double-tub press**, a form of cider-press in which the fruit is placed in an annular space between two concentric perforated tubs. A corresponding annular piston is forced down into the space between the tubs, and the juice escapes both outward and inward.—**Inclined press**, a drawing- or stamping-press the bed and die of which are inclined to the horizontal to facilitate the insertion and withdrawing of the work.—**Multiple-die press.** Same as ★*gang-press.*—**Multiple press**, in sheet-metal work, a stamping-press employing two or more separate similar dies, used at the same time and making the same thing; or a press with a gang of different dies, each performing a different piece of work upon a series of blanks fed to them in succession by a dial-feed or other feeding device; a gang-press. The term is a general one applied to presses employing dies in gangs, but not properly to one employing a perforating-die, even though the die stamps many holes in a sheet-metal blank at the same time. See ★*dial-feed* and ★*die*^{3}, 9.—**Octuple press,** a rotary printing-machine, used for newspapers, which combines the operations of eight single machines.



Multiple Press with Automatic Feed.

a, dies, moving together and each forming a progressive step from cutting out the blank to delivering the finished article; *b*, feed-mechanism carrying the blank from die to die, in turn, till finished.

The *octuple* is sometimes constructed by piling four double presses one above another.

Census Bulletin 216, June 28, 1902, p. 63.

Quadruple press, a rotary printing-machine that combines four machines in one construction and does the work of four single machines: first made by R. Hoe & Co. in 1887. It produced eight-page newspapers at the speed of 48,000 copies in one hour.—**Sextuple press,** a rotary printing-machine that combines six machines in one construction and does the work of six single machines. Form-cylinders and impression-cylinders are placed parallel and not at right angles, as in the quadruple and double-supplement machines. It is fed from three rolls and prints twenty-six miles of paper, five feet wide, in one hour, or 24,000 copies pasted, folded, and ready for delivery.—**Sheet-metal press,** a press for cutting, bending, drawing, or otherwise working sheet-metal.—**Sheet-perfecting press,** a printing-machine that, by one operation of sheet-feeding, delivers the sheet perfectly printed on both sides. Two impression-cylinders are used, one for the first side, and another for the second side.—**Single-rotary press,** a printing-machine that has its type or stereotype plates fastened on a rotating cylinder, and is automatically fed from a roll of paper. The first practical machine on this principle was made by William Bullock of New York, in 1865. R. Hoe & Co., in 1871, made for the use of the New York *Tribune* a single rotary press that produced 14,000 copies in one hour, properly cut, folded, and ready for delivery. This machine was the beginning of enlargements now known as quadruple, sextuple, octuple, etc., presses.—**Upsetting-press,** a tire-upsetting machine; a machine for reducing the girth of a wheel tire by compressing it at one place while it is hot.—**Web perfecting-press,** a printing-machine, automatically fed from a roll of paper, that prints on both sides of the paper and cuts and folds in separate sheets for instant delivery at a high rate of speed. See *rotary press*, under *rotary*, *quadruple* ★*press*, and *sextuple* ★*press*.—**Yellow press.** See ★*yellow*.

press-bed, *n.* 2. In *printing*: (*a*) In the cylinder printing-machine, a flat table of iron which upholds the form of type and passes to and fro under the impression cylinder. (*b*) In the hand-press, an iron table upholding the form of type that passes to and fro under the platen. See cut of stop-cylinder machine at *printing-machine*.

press-board (pres′bōrd), *n.* 1. Millboard; pasteboard.—2. An ironing-board; a board used in pressing cloth.—3. *pl.* See *press-boards*.

press-cake, *n.* 1. It is the product obtained by the application of hydraulic pressure to powder-meal which has been formed by crushing between rolls the mill-cake or wheel-cake which comes from the incorporating mill. The object of the pressing, which precedes granulation, is to give uniform density and the particular degree of density desired.

2. In the manufacture of fatty acids for candles, the residual cake of stearic and palmitic acids from which the 'red oil' or oleic acid has been removed by pressure.

press-drill (pres′dril), *n.* 1. A drill or seed-planter fitted with a pressing-device for firming or pressing down the soil after the seed is dropped. It is only available on very dry soils and is not in general use. *Yearbook U. S. Dept. Agr.*, 1900, p. 541.—2. An obsolete form of drilling-machine in which the drill was fed to its work by being pressed down by a weighted lever.

pressel (pres′l), *n.* [*press*^{1}, *v. t.*] In *elect.*, a push-button; specifically, a push-button attached to a flexible conductor.

Pressel. A press switch or push connected to the end of a flexible, pendant conductor. *Houston*, Dict. Elect.

presser, *n.* 3. (*e*) A part in a foundry molding-machine which presses down or rams the sand in the mold.

presser-bar, *n.* 2. Same as *presser*, 3 (*b*).—3. The vertical bar which carries the presser-foot of a sewing-machine at its lower end.

presser-eye (pres′ėr-ī), *n.* The aperture at the end of the spindle-flier, on a cotton-roving machine, through which the roving passes to the bobbin. *Nasmith*, Cotton Spinning, p. 340.

pressing, *n.* 3. In *ceram.*, the process of forming vessels with plastic clay, in a mold or on a jigger, by hand.

press-mark, *n.* 2. The letter or number, printed on the margin of a newspaper, that specifies the press on which it was printed.

press-number (pres′num″bėr), *n.* The number which identifies a particular book and fixes its location in a press or bookcase.

pressor (pres′o̤r), *a.* [L. *pressor*(*ius*), that serves for pressing.] Causing constriction of the smaller blood-vessels and a consequent rise of blood-pressure.

Inequality of Accessibility to local reflex *pressor* Impulses.

Philos. Trans. Roy. Soc. (London), 1898, ser. B, p. 161.

press-revise (pres′rē-vīz″), *n.* The first impression of a form of type, prepared for press, which is revised by the last proof, for the detection of possible uncorrected faults.

pressure, *n.* 7. In *elect.*, a term sometimes used for *voltage*, *electromotive force*, or *difference of potential*.—8. In *psychol.*, the specific quality of sensation furnished by the pressure-spots of the skin and by the organs of the articular sensitivity; pressure-sensation.

The quality of articular sensation, like that of muscular, is not distinguishable from *pressure*.

E. B. Titchener, Outline of Psychol., p. 69.

Active pressure, in *elect.*, the impressed electromotive force in an electric circuit minus the counter-electromotive force: the term is used chiefly in dealing with alternating currents.—**Belt of high pressure,** a long, irregular, rather narrow region over which the barometric pressure, reduced to sea-level, is higher than on either side. Such ridges frequently connect two areas of higher pressure and last for a day or two. The belt that nearly surrounds the earth near the tropic of Capricorn is quite permanent; the corresponding belt near the tropic of Cancer in the northern hemisphere varies much with the seasons of the year.—**Center of pressure.** (*c*) See ★*center*^{1}.—**Critical pressure,** the pressure exerted by the gaseous phase of a substance when at the critical temperature. A gas can be liquefied only when reduction of its volume will not raise the pressure to the critical pressure.—**Effective pressure,** the unbalanced pressure on a piston; the net pressure available for doing work; the absolute pressure on the pressure side of an engine-piston minus the back pressure or absolute pressure on the exhaust-side of the piston: usually called *mean effective pressure*.—**Equatorial belt of low pressure,** a long narrow region nearly encircling the earth near the equator over which low barometric pressure, with warm showery weather and light winds or calms, prevails. Ferrel has shown that the low pressure is due to the existence of the northeast and southeast trade-winds and the deflecting force due to the earth's rotation. The trade-winds are not due to the low pressure, but the reverse.—**Goldscheider's' secondary pressure,** in *psychophys.*, a sharp, thrilling sensation following the primary pressure sensation when the point of a pin which is held loosely between the thumb and forefinger of the one hand is dropped lightly upon the back of the other hand. The secondary sensation is due to the coexcitation of a pain spot. The experiment was described by A. Goldscheider in 1891.—**High pressure.** (*c*) In *meteor.*, a reading of the barometric column above its normal value for the locality and date; a condition of the atmosphere such that its elastic pressure is greater than the average. For stations near the level of the ocean the high pressure would be somewhat more than 15 pounds to the square inch.—**Hydrostatic pressure,** that type of stress in which the three mutually perpendicular components are equal; the pressure of a fluid at rest upon an element of a surface with which it is in contact.

Hydrostatic pressure is a stress in which all three pulls are equal.

Nichols and Franklin, Elements of Physics, I. 101.

Initial pressure, the pressure exerted by the fluid in a thermal engine at the beginning of the stroke.—**Intrinsic pressure,** the pressure due to the attraction between two portions of a fluid, separated by an imaginary plane.

The intrinsic pressure K is $K = \sigma^2\int_0^a(\psi)z\,dz$, where σ is the density of the fluid and $(\psi)z$ is the attraction of an infinite layer of a fluid of unit density, bounded by a plane, upon a unit mass at a distance z from the plane.—**Low pressure.** (*b*) In *meteor.*, a reading of the barometric column below the normal value for the locality and date. a condition of the atmosphere such that its elastic pressure is less than the average. For stations near the level of the ocean a low pressure would be somewhat less than 15 pounds to the square inch.—**Low-pressure cylinder.** See ★*cylinder*.—**Magnetic pressure,** pressure exerted at right angles to the lines of a magnetic field upon a substance within the field.

These changes are due to the differences of the "*magnetic pressures*" perpendicular to the lines of force in the liquid and the surrounding gas.

Nature, April 24, 1902, p. 589.

Maxwell-Bartholi pressure, the exceedingly minute mechanical pressure to which a surface exposed to radiation is subjected by impact of the ether-waves.—**Mean effective pressure.** See *effective* ★*pressure*.—**Mean pressure,** the average pressure in a steam-cylinder from the beginning to the end of a stroke.—**Osmotic pressure.** See ★*osmotic*.—**Pascal's principle of fluid pressures.** Same as *Pascal's* ★*law*.—**Pressure gradient.** See ★*gradient*.—**Pressure harness.** See ★*harness*.—**Pressure neuritis.** See ★*neuritis*.—**Pressure sensation.** See ★*sensation*.—**Radiation pressure,** the mechanical pressure due to the impact of the ether-waves constituting radiation upon a body placed in their path. The radiation pressure due to sunlight upon a square centimeter of surface of a black body is equivalent to a weight of 4×10^{-5} milligrams. The first actual measurements of radiation pressure were made independently by Nichols and Hull and by Lebedew (1901). Same as ★*light-pressure*.—**Solution pressure,** in *phys. chem.*, the force acting to bring into solution the molecules of a solid immersed in the solvent. The osmotic pressure of the molecules already in solution opposes this solution pressure. When the osmotic pressure equals the solution pressure the amount dissolved in unit volume of the solution no longer increases, if the temperature is not changed. *Electrochem. Industry*, March, 1904, p. 98.—**Standard pressure,** the pressure adopted as the standard or fundamental condition to which all measurements are to be reduced in so far as they depend upon the pressure. In steam-engineering, standard pressures are expressed in pounds per square inch. In anemometry, wind-pressure is expressed in pounds per square foot. In hydraulic engineering, water-pressure is expressed in pounds per square inch or by the height in feet of the column of water. In meteorology, atmospheric pressure is expressed in a variety of terms: occasionally as pounds per square inch or kilograms per square meter; more generally as inches or millimeters of the mercurial barometric column; frequently in atmospheres. The standard pressure of one atmosphere is defined by the International Bureau of Weights and Measures as the weight of a column of pure mercury 760 millimeters high under the standard force of gravity, namely, that which prevails on the average at sea-level at latitude 45°. This value of gravity is that computed from numerous observations made in all parts of the globe and is deduced on the assumption that the earth is a homogeneous spheroid. Slightly different standard atmospheres have been used. Bird and Troughton and early English authors adopted 30 inches of mercury at 62° F. at London, which is equivalent to 29.924 at 32° F. at 45° latitude and sea-level; a committee of the Royal Society, in 1777, adopted 29.3 inches of mercury at 50° F. at London; Sir George Shuckburgh-Evelyn, in 1779, chose 30.0 inches at 50° F. at London; Welsh, about 1840, selected for Kew Observatory 29.922 inches, or 760 millimeters, at 32° F. under the force of gravity at Kew, which is equivalent to 760.46 millimeters under a normal gravity; Regnault's standard atmosphere was 760 millimeters under gravity at his laboratory in Paris, latitude 48° 50′ 14″ and altitude 60 meters above sea-level, which is equivalent to 760.25 millimeters under normal gravity. At the present time the international value of 760 millimeters under gravity at 45° latitude and sea-level is in general use among meteorologists.—**Subpermanent areas of pressure,** the areas of high pressure over the continents in the winter but over the oceans in the summer; also, the complementary areas of low pressure over the continents in the summer and the oceans in winter. Both of these retain their characteristics for several months while temporary highs and lows are moving around them.—**Terminal pressure.** (*a*) In an engine, the pressure of the steam or gas in the cylinder at the end of the stroke, or the pressure it would have if the exhaust-port were not opened until the end of the stroke. (*b*) In a compressor, the pressure of the air or gas at the end of the stroke after it is compressed.—**Vapor pressure,** the pressure exerted by an atmosphere of vapor. If a small quantity of any liquid is introduced into the vacuum above the mercury of a barometer its vapor will depress the mercury column. This depression measures its vapor pressure at the temperature at which the experiment is made. Same as *vapor-tension*.—**Vapor pressure of a solution,** the pressure exerted by the vapor in a closed vessel which is partly filled by the solution in question. This is always less than the corresponding pressure over the solvent.

pressure-balance (presh′ṳr-bal″ans), *n.* In *exper. psychol.*, an instrument for applying pressure-stimuli to the cutaneous surface. The apparatus is constructed in various forms, but always upon the model of the physical balance. It may be used for the determination of the limen of continuous change (application of a continuously increasing or decreasing pressure), for the determination of the stimulus limen or difference limen (application of a graded series of minimally different pressures), or for the bisection of a pressure distance (method of mean gradations with successive stimuli). *E. B. Titchener*, Exper. Psychol., II. ii. 136.

pressure-bar, *n.* 2. In *car-building*, an iron bar which connects the draw-bar with the buffer-spring and unites the draft-spring with it so that either may be used to relieve the other. It also serves to control the buffer-plate and keep it in position between the cars when they are in motion.

pressure-block (presh′ṳr-blok), *n.* In Japanese wood-engraving, an engraved but uninked block used to give texture to the surface of paper in printing.

An uninked *pressure block* was sometimes brought into service either to give a damask surface to white drapery, or to produce an effect like that of impasto.

W. Anderson, in Portfolio, N. S., XVII. 32.

pressure-boiler (presh′ṳr-boi″lėr), *n.* A closed vessel of sufficiently strong material (often iron, steel, or gun-metal) and commonly furnished with a safety-valve, in which liquids may be heated above their normal boiling-points as a result of the pressure produced by the tension of accumulated vapor. *Sadtler*, Handbook of Indust. Chem., p. 180.

pressure-bottle (presh′ṳr-bot″l), *n.* A bottle of strong glass, with a stopper held down by a metallic clamp, used in chemical laboratories as a ★pressure-boiler (which see) on a small scale. Water may, in such a vessel, be applied at a temperature of 130° C. or even more. Also called *pressure-flask.*

pressure-bowl (presh′ṳr-bōl), *n.* In *calico-printing*, the large roller against which the cloth to be printed presses on one side, while on the other it is pressed against by the copper cylinder on which the pattern is engraved.

pressure-flask (presh′ṳr-flȧsk), *n.* Same as ★*pressure-bottle.*

pressure-height (presh′ṳr-hīt), *n.* Atmospheric pressure expressed in terms of the height of a barometric column of fluid of uniform density equal to that of the air at the point where the pressure is to be measured. Same as *height of a homogeneous* ★*atmosphere.*

pressure-key (presh′ṳr-kē), *n.* In *exper. psychol.*: (*a*) A pneumatic key, pressure upon which moves the writing lever of a Marey tambour to which the key is connected. *Amer. Jour. Psychol.*, XII. 327. (*b*) A reaction-key, pressure upon which breaks the reaction-circuit.

pressure-log (presh′ṳr-log), *n.* An instrument which records the velocity of a stream, measured by the height of the water in a tube. It is also referred to as a pressure-gage, which indicates the pressure of fluids.

> By means of a number of ingenious *pressure-logs*, the velocities of the streams at different points were measured by the heights of water in tubes.
> *White*, Manual of Naval Architecture, p. 455.

pressure-plate (presh′ṳr-plāt), *n.* In a steam-engine, a cover-plate; a plate on the back of a slide-valve designed to relieve the pressure of the valve on the seat; a balance-plate designed to receive the pressure of the steam against a fixed abutment, so that such pressure does not reach the sliding valve and force it against its seat.

pressure-point (presh′ṳr-point), *n.* **1.** A point on the surface of the body, pressure on which may excite or arrest a paroxysm of hystero-epilepsy.—**2.** A spot on the skin which is sensitive to pressure.

pressure-pump (presh′ṳr-pump), *n.* A force-pump; a pump for compressing or applying pressure to a fluid, as distinguished from a pump in which the action is by suction or exhaust.

pressure-ridge (presh′ṳr-rij), *n.* A ridge produced in a solidifying lava by the influence of a force applied in the flowing of subcrustal molten matter. These ridges vary in size, with the energy of the movement and the thickness of the forming crust, from a few inches to 30 feet in height. The term was introduced by I. C. Russell. *U. S. Geol. Surv.*, Bulletin 199, 1902, p. 94.

pressure-sense (presh′ṳr-sens), *n.* Passive touch; the sense which furnishes the sensation-qualities of tickle, contact, and pressure.

pressure-shift (presh′ṳr-shift), *n.* The change of position of lines in the spectrum of a gas due to the pressure to which the radiating gas is subjected. With increase of pressure the displacement is generally toward the red end of the spectrum.

pressure-table (presh′ṳr-tā″bl), *n.* A table of figures which show the pressure sustained by a gun.

pressure-touch (presh′ṳr-tuch), *n.* In *pianoforte-playing*, a method of using the fingers so as to depress the keys with a steady, clinging pressure, instead of with a sharp blow.

pressure-tube (presh′ṳr-tūb), *n.* **1.** A tube of thick glass originally closed at one end and, after the introduction of liquid reagents, closed also, by fusion, at the other. On cautiously heating such a tube interaction of its contents may be brought about at a much higher temperature than would be possible in an open vessel and therefore under ordinary atmospheric pressure.—**2.** The brass, or German silver, or highly elastic steel tube used in the Bourdon pressure-gage.

presternal, *a.*—**Presternal process,** a projection from the anterior border of the sternum such as is found in pterodactyls. *Amer. Jour. Sci.*, April, 1904, p. 319.

II. *n.* A presternal process.

Preston beds. See ★*bed*¹.

Prestwichia (prest-wich′i-ä), *n.* [NL., named after the English geologist Sir Joseph *Prestwich.*] A genus of fossil limuloid arthropods of the order *Xiphosura*, similar in form to the modern horseshoe-crab, *Limulus*, but with seven spiny abdominal segments and a short caudal spine: found in the Carboniferous of Europe and North America.

presume, *v. t.* **3**†. To take; to take to oneself: with *of.*

> *Presume of* what thou wilt at his house, for he is out of the way by this time .
> . . . .
> *Presume* you & your friend . . . *of* what may satisfie you at your vncles. *Chapman*, May-Day, iii.

presumption, *n.*—**Natural presumption,** in *law*, the conclusion, from given facts, reached through probable reasoning by one of average intelligence.

Presumptive title. See ★*title.*

presymphysial, *a.* **II.** *n.* Same as ★*premandibula.*

presynsacral (prē-sin-sā′kra̤l), *a.* and *n.* **I.** *a.* Situated in advance of the synsacrum; specifically, in *ornith.*, noting any vertebra in advance of the synsacrum, or that mass of united vertebræ commonly spoken of as the sacrum.

> All the *presynsacral* vertebræ [of cuckoos] are heterocœlous and all the thoracic vetebrae are free.
> *Proc. Zool. Soc. London*, 1903, p. 271.

II. *n.* A presynsacral vertebra.

pretemporal (prē-tem′pọ-ra̤l), *a.* [*pre-* + *temporal.*] Preceding time; antemundane.

preternormal (prē-tėr-nôr′ma̤l), *a.* [*preter-* + *normal.*] Beyond the normal. *Outlook*, Jan. 21, 1899, p. 188.

pretertiary (prē-tėr′shi-ạ̄-ri), *a.* [*pre-* + *tertiary.*] Living or occurring before the Tertiary.

> All are marine and many are pelagic and of very wide distribution. No *prætertiary* members of this division, as here defined, have yet been found.
> *Annals and Mag. Nat. Hist.*, March, 1904, p. 181.

prethoracic (prē-thō-ras′ik), *a.* [*pre-* + *thoracic.*] Situated in front of the thorax.

prethyroid (prē-thī′roid), *a.* [*pre-* + *thyroid.*] Anterior to the thyroid gland or to the thyroid cartilage.

> A small, probably congenital, *prethyroid* cyst.
> *Med. Record*, Feb. 7, 1903, p. 234.

prethyroidal (prē-thī-roi′da̤l), *a.* Same as ★*prethyroid* and ★*prethyroideal.*

prethyroideal (prē-thī-roi′dẹ-a̤l), *a.* In advance of the thyroid cartilage of the larynx. *Proc. Zool. Soc. London*, 1901, p. 297.

prethyroidean (prē-thī-roi′dẹ̄-a̤n), *a.* Same as ★*prethyroid.*

Pretorian front, the front of a Roman camp toward the enemy. In its center was the pretorian gate, porta pretoria, one of the terminations of the via pretoria, one of two main streets which quartered the camp, the other being the via principalis.

pretracheal (prē-trā′kẹ-a̤l), *a.* [L. *præ*, before, + NL. *trachea* + *-al*¹.] Anterior to the trachea.

> Some of these trunks end, according to Poirier, in the prelaryngeal glands, others in a *pretracheal* gland, and still others in one of the glands of the middle or inferior sterno-mastoid chain (Most).
> *Lancet*, June 18, 1904, p. 1711.

pretrochal (prē-trō′ka̤l), *a.* [*pre-* + *trochal.*] **1.** Anterior to the trochal disk.

> The entire ectoblast of the trochal and *prae-trochal* regions. *E. B. Wilson*, Biol. Lectures, 1893, p. 10.

2. Lying in front of the prototroch: said of the position of cells or organs in the trochophore larva of the marine annelids.

pretty-face (prit′i-fās), *n.* A small kangaroo. *E. E. Morris*, Austral English.

pretuberculous (prē-tū-bėr′kụ̄-lus), *a.* [*pre-* + *tuberculous.*] Preceding the onset of tuberculosis. *Buck*, Med. Handbook, II. 809.

preumbonal (prē-um′bọ̄-na̤l), *a.* [L. *præ*, before, + *umbo*, a projection, + *-al*¹.] Lying in front of the beaks or umbones: used in descriptive zoölogy with reference to the shells of pelecypod mollusks.

prevaccinal (prē-vak′si-na̤l), *a.* [*pre-* + *vaccine* + *-al*¹.] Before vaccination: noting usually the period before the adoption of vaccination as a preventive of smallpox. *Buck*, Med. Handbook, VII. 245.

preventer, *n.*—**Single preventer,** in *cotton-manuf.*, a device attached to a drawing-frame for actuating a mechanism for immediately stopping the machine upon the breakage or omission of a single end or strand of sliver. *Taggart*, Cotton Spinning, II. 23.

preventer-bolt (prẹ̄-ven′tėr-bōlt), *n.* See ★*preventer-plate.*

preventer-plate (prẹ̄-ven′tėr-plāt), *n.* In *wood ship-building*, a plate or bar fitted on the side and forming an extension downward of the chain-plate. Together with the chain-plate, it is bolted at its upper end through the side of the vessel by a chain-bolt and at its lower end it is bolted through the side by a preventer-bolt.

preventer-stays (prẹ̄-ven′tėr-stāz), *n. pl.* Same as ★*jumper-stays.*

prevernal (prē-vėr′na̤l), *a.* [L. *pre-* + *vernal.*] **1.** Elapsing just before the leafing of the earliest trees: as, the *prevernal* period.—**2.** Blooming at this period. Prevernal bloomers comprise proteranthous trees, such as the silver and red maples and white elm, and low bulbous herbs, such as skunk-cabbage and *Erigenia. Science*, Feb. 7, 1908, p. 206.

prevomer (prē-vō′mėr), *n.* [*pre-* + *vomer.*] A median bone of the under side of the cranium, which occupies the place of the vomer but develops in connection with the paraseptal cartilages: found in *Platypus* and lizards. *Nature*, Dec. 18, 1902, p. 168.

prey-brother (prā′bruᴛʜ″ėr), *n.* A member of a secret society of the Zuñi Indians in whose charge the ceremonial of the prey-god is placed. *F. H. Cushing.*

prey-god (prā′god), *n.* A deity of the Zuñi Indians representing an animal of prey. *F. H. Cushing*, in An. Rep. Bur. Amer. Ethnol., 1880–81, p. 16.

prezoic (prē-zō′ik), *a.* [L. *præ*, before, + Gr. *ζωή*, life.] Antedating or preceding the appearance of life upon the earth. *Smithsonian Rep.*, 1899, p. 233.

prezonal (prē-zō′na̤l), *a.* [*pre-* + *zone* + *-al*¹.] Anterior to the pelvic arch.

P. R. I. An abbreviation of *President of the Royal Institute* (of Painters in Water-colors).

Priapulidæ (prī-a-pū′li-dē), *n. pl.* [NL. *Priapul*(*us*) + *-idæ.*] The single family of the *Priapuloidea*, which has the characters of the group. It includes two genera, *Priapulus* and *Halicryptus.*

Priapuloidea (prī-ā-pṳ-loi′dẹ̄-ä), *n. pl.* [NL. *Priapul*(*us*) + *-oidea.*] A group of unsegmented vermiform animals having an anterior and a posterior terminal opening of the alimentary canal, the central nervous system not separated from the ectoderm, and the renal and reproductive organs entirely separate from the body-cavity. They are marine animals found in the sand and mud of the North Sea. The sexes are separate and the development is unknown. It contains the single family *Priapulidæ.*

Priapulus (prī-ap′ṳ-lus), *n.* [NL. dim. of *Priapus.*] The typical genus of the family *Priapulidæ. Lamarck.*

Priapus, *n.* **4.** [*l. c.*] In medieval warfare, some kind of projecting machine, probably an early form of cannon. *Meyrick*, Ancient Armour, III. Glossary.

pribble-prabble, *n.* A Welshman's rendering of *bribble-brabble*, a reduplication of *brabble* (which see).

> It were a goot motion if we leave our *pribbles* and *prabbles*, and desire a marriage between Master Abraham and Mistress Anne Page. *Shak.*, M. W. of W., i. 1.
>
> All these squabbles and jokes, and *pribbles* and *prabbles*, look you, may be omitted.
> *Thackeray*, Newcomes, I. ii.

price, *n.*—**Certain price,** in foreign exchanges, the fixed sum in one currency of which the value is expressed by a varying sum in another. *N. E. D.*—**Competition** or **competitive price.** See ★*competitive price.*—**Contract prices.** See ★*contract.*—**Long price,** the full retail price, without deduction, discount, or rebate.—**Spot price,** the price set or quoted for payment on delivery.—**Time prices,** prices set for goods sold on credit or to be paid at a future date.

price-changer (prīs′chān″jėr), *n.* A mechanical device, forming part of the mechanism of a prepayment gas-meter, by which the number of cubic feet of gas delivered for a coin of a certain size placed in the slot is adjusted to the price the gas is sold at in the district. *W. J. Dibdin*, Public Lighting, p. 170.

price-mark (prīs′märk), *n.* A label or ticket, placed on goods for sale, with the price marked on it.

pricing-machine (prī′sing-ma̤-shēn″), *n.* A machine for printing prices on cards or tickets, similar in construction to a ★dating-machine (which see). *Engin. Mag.*, July, 1904, p. 606.

prick-bar (prik'bär), *n.* A firing-tool; a long iron bar used for pricking or breaking up a bituminous coal fire and for cleaning clinker from the grate. *Witham*, Const. Steam Engineer., p. 724.

pricker, *n.* 1. (*k*) In machine telegraphy, one of the vertical rods in a Wheatstone transmitter which makes the signal-contacts through perforations in the tape. (*l*) A prick-bar.

prick-fish (prik'fish), *n.* One of the lantern-fishes, *Macrostoma angustidens*, of the family of *Myctophidæ*, found in the Atlantic and Indian oceans.

prickfoot (prik'fůt), *n.* A prickly, prostrate plant of the parsley family, *Eryngium vesiculosum*, found in Australia, Tasmania, and New Zealand.

pricking, *n.* 6. *Naut.*, an English term referring to the propulsion of a punt in shallow water by means of a long pole thrust against the bottom. In America it is called *punting*, or *poling*.

prickle-machine (prik'l-mạ-shēn″), *n.* In *cheese-making*, see the extract.

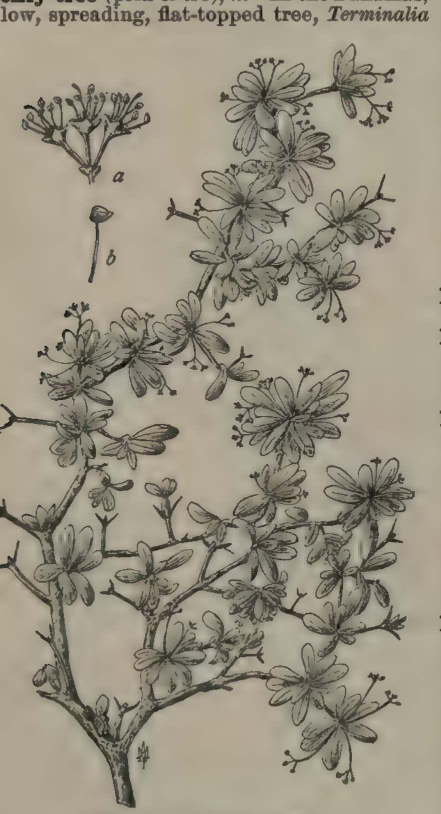
> In the caves the cheeses are salted at least twice with a coarse hard-grained salt. In this process they are first salted on one side and then laid in piles of three for the salt to diffuse into the cheese. At the second salting the other side receives the salt. They are allowed to drain some time after salting. After the surface has dried somewhat they are run through a brushing machine which leaves a clean surface. They then go through the *prickle-machine*. This machine has a disk set with long parallel needle-like spikes which make numerous holes through the cheese to let in the air for the growth of mold.
> *Rep. Bureau of Animal Industry*, 1905, p. 102.

prickly-cedar, *n.* 2. See ★*cedar*.

prickly-elder (prik'li-el″dėr), *n.* See ★*elder*^{2}.

prickly-fern (prik'li-fėrn), *n.* See ★*fern*^{1}.

prickly-tree (prik'li-trē), *n.* In the Bahamas, a low, spreading, flat-topped tree, *Terminalia spinosa*, of the family *Combretaceæ*, with horizontal spiny branches, bearing fascicles of thick, smooth, obtuse leaves, and axillary spikes of small greenish flowers.



Prickly-tree (*Terminalia spinosa*).
a, flower; *b*, stamen.

prick-mark (prik'märk), *n.* In old English silver, decoration or inscription composed of fine depressions made with a sharp point or punch.

> They are almost always found with the initials in *prick-mark* letters of donor and recipient together with the date.
> *Percy Macquoid*, in Burlington Mag., I. 174.

pride^1, *n.*—**Pride of the morning** (*meteor.*), a mist or light shower at sunrise, through which the tropical sunbeams sometimes penetrate with beautiful prismatic effect.

pride^2, *n.* 2. The larval lamprey. [Prov. Eng.]

Priests' code. See ★*code*.

primage, *n.* 3. A duty of one per cent. imposed by the Victorian Parliament 1893–95, on the prime, or first entry of goods. *E. E. Morris*, Austral English.

Primal figure. See ★*figure*.

primary. I. *a.*—**Primary belief.** See ★*belief*.—**Primary circuit**, in a transformer or induction-coil, the circuit in which the inducing current flows.—**Primary coil**, the coil of a transformer or apparatus for the production of induced current, in which the inducing current flows.—**Primary cortex.** (*a*) Same as *periblem*. (*b*) The body of the bark which lies between the epidermis and stele (central cylinder) in the stems of phanerogams, as also the corresponding zone in the root. In this sense sometimes simply *cortex*. *Strasburger*.—**Primary current**, the inducing current in a transformer or induction-coil.—**Primary resistance**, the resistance of the inducing circuit of a transformer or induction-coil.—**Primary terminals**, the free ends of the coil in the inducing circuit of a transformer.—**Primary turns**, in a transformer or induction-coil, the ampere-turns in the inducing coil.—**Primary voltage**, the voltage applied to the terminals of the inducing coil of a transformer.—**Primary winding**, the coil of the inducing circuit of a transformer.

II. *n.* 6. In *elect.*: (*a*) In an alternating-current transformer, induction-motor, or other apparatus containing two circuits in inductive relation to one another, that circuit which receives power from the impressed electromotive force. (*b*) Sometimes, in an alternating-current transformer, the high potential coil, the low potential coil being the secondary.—7. In *physiol. optics*, one of the primary colors or primary color-sensations.

> As a matter of scientific analysis, the *primaries* of white light are red, green, and purple, but the pigmental *primaries* are red, yellow, and blue.
> *Encyc. Brit.*, XXXII. 16.

8. A lesion of the initial stage of syphilis, a chancre: usually in the plural.—9. In *Echinodermata*: (*a*) In echinoids, a plate which extends from the outer edge of an ambulacral area to the median suture of that area. (*b*) In echinoids, a spine of the largest order extending beyond the shorter secondaries. (*c*) In crinoids, according to Bather's terminology, any one of those plates which are first developed in the ontogeny and phylogeny, including the abactinal system of columnals, cirrals, infrabasals, basals, radials, brachials, pinnulars, and the actinal system of orals and ambulacrals. (*d*) In the *Echinoidea*, one of the large and completely developed tubercles on the surface of the test, which serve as articulating bases for the spines.—**Spurious primary.** See ★*predigital*.

primate, *n.* II. *a.* Relating to or characteristic of the order *Primates*.

prime, *n.* 12. The golden number: so called because it shows the prime of the moon.—13. The grade next below the finest variety of a fleece of merino wool.

prime, *v.* I. *intrans.* 4. To occur or come in advance of others: thus, flood-tide lags between new moon and full moon, but *primes* between full and new.—5. To have precedence, as one claim over another. [Rare.]

II. *trans.* 3. In *tobacco-growing*: (*a*) To gather the ripe lower leaves from: said of the plant. (*b*) To gather as ripe: said of leaves. (*c*) To gather later instalments of (leaves). See ★*priming*, 5.

primer^2, *n.*—**Detonating primer**, a primer for detonating high explosives upon being itself exploded by a fuse or by electricity.—**Electric primer**, a primer which is fired by passing an electric current through it. See *primer*^{2}, 1 (*a*).—**External primer**, in *ordnance*. The external friction-primer is the same as the *vent-sealing* ★*primer*, but is exploded by means of a wire and lanyard (as in the ordinary friction-primer) instead of a firing-lock. This primer is employed in case of damage to the firing-lock.—**Quill friction-primer**, in *ordnance*, a primer made of two quills, one being inside the other, and filled with antimony trisulphid, potassium chlorate, flour of sulphur, and a small amount of gum-arabic. Within the quills are wires, and when the lanyard is pulled these wires are withdrawn, and the primer is exploded by friction.—**Quill tube-primer**, in *ordnance*, a friction-primer.—**Vent-sealing primer**, in *ordnance*, a primer used in modern breech-loading guns, on the principle of a pistol-cartridge, and fired by a mechanism called a "firing-lock." The flame from the primer passes through the stem of the mushroom, into the powder charge in the chamber of the gun, and the lead bullet closes the vent and prevents the escape of gas rearward.

primibrach (prī'mi-brak), *n.* [L. *primus*, first, + *brachium*, arm.] In Bather's terminology of crinoid morphology, one of the ossicles (*primibrachialia*) of a pinnulate dichotomous arm situated between the upper margins of the radials and below the first axillaries, which by other writers have been called radials of the first order, and costals.

primicerius (pri-mi-sē'ri-us), *n.*; pl. *primicerii* (-ī). [LL., lit. 'one of the first page,' one named on the first page or at the head of a list, < L. *prima cera*, the first tablet or page: *primus*, first (see *prime*), *cera*, a wax tablet, lit. wax. See *cere*.] In medieval use, a leader or superintendent in various relations, chiefly ecclesiastical; specifically, a precentor or cantor in a cathedral.

priming, *n.* 5. In *tobacco-growing*: (*a*) The act of gathering an instalment of leaves. (*b*) The leaves of one of the gatherings. See ★*prime*, 3 (*a*).

> The first *priming*, which means the first four leaves taken from the stalk, also the last *priming*, which means the last four or six leaves taken from the top of the stalk, are kept separate. *U. S. Dept. Agr.*, Rep. 62, p. 14.

6. In *brewing*, an addition of sugar to the beer in the settling back, furnishing material for further fermentation.

priming-valve (prī'ming-valv), *n.* 1. A relief-valve; a pet-cock; a valve to permit the water of condensation to escape from an engine.—2. A valve which affords communication to the top of a pump so that water can be poured in to prime the pump, filling the clearances, displacing the air, and causing the valves to operate with certainty in starting.

primite (prī'mīt), *n.* [L. *primus*, first, + *-ite*^{1}.] In gregarines, the first member of a chain-like association or colony. Compare ★*satellite*, 5. *Sedgwick*, Text-book of Zool., I. 57.

Primitia (pri-mish'i-ä), *n.* [NL., < L. *primitiæ*, the first-fruits. See *primitiæ*.] A genus of small fossil *Crustacea* of the order *Ostracoda*, with ovate or oblong bivalve shells. They occur abundantly in some shales and limestones of Lower Paleozoic age.

primitiv, *a.* and *n.* A simplified spelling of *primitive*.

primitive, *a.* 7. In the history of art, belonging to an early and not fully developed period.—8. In *group-theory*, not imprimitive.—**Primitive band.** See ★*band*^{2}.—**Primitive form.** (*b*) In *crystal.*, see *decrement*, 4.—**Primitive predication.** See ★*predication*.—**Primitive solution**, in *math.*, same as *complete primitive*. See *primitive*, 3.

II. *n.* 4. [*cap.*] In the *fine arts*, a craftsman or artist who belongs to an early or underdeveloped period; especially, in the history of European painting, those painters of Italy, Flanders, Germany, and France who flourished in the fourteenth and fifteenth centuries, at the close of the medieval period and the beginning of the Renaissance. See ★*painting*, 1.

> If, as is said, this picture was painted when Madox Brown was in Antwerp under Wappers, it is really the archetype of the whole school. It shows, indeed, that the term Pre-Raphaelite was a misnomer, for these artists did not really go to the Italian *primitives*, but to the Flemish.
> *Athenæum*, April 1, 1905, p. 408.

5. A work of art produced by one of the primitives.

> Now it is a very beautiful Italian *primitive*, a cassone front of the great Florentine period.
> *N. Y. Times*, May 6, 1903.

Primitive of a differential equation. See ★*equation*.

primogenito (prē-mō-hā'nẹ-tō), *n.* [Sp., < L. *primogenitus*, first-born. See *primogeniture*.] In the Philippine Islands, the official birth of the eldest son of a cabeza de barangay, who has to act as substitute in the absence of his father. See ★*barangay*.

primordium, *n.* 3. In *embryol.*, the first trace of a future organ.

primrose, *n.*—**Native primrose**, a perennial herbaceous Australian and Tasmanian plant, *Goodenia geniculata*, which has yellow flowers, from one half to one inch long, and leaves resembling the common primrose.—**Primrose day.** See ★*day*^{1}.

primsign (prim'sīn), *v. t.* [Icel. *primsigna*, < ML. *prima signatio*, 'the first signing' with the sign of the cross: see *prime* and *signation*, and cf. *sign*, *v.*, 1.] In reference to Old Norse use, to mark or sign with the sign of the cross: a religious act preliminary to christening.

> In Greece, he [Olaf] had, according to the legend, only been *primsigned*—i.e., marked with the sign of the cross. This was regarded as a sort of compromise between the old faith and the new, and was supposed to secure a certain favor from Christ the White, without entirely forfeiting the good-will of the old gods.
> *Boyesen*, Story of Norway, p. 138.

Primula, *n.* 3. [*l. c.*] In *dyeing*, Hofmann's violet.

primulin, *n.* 2. A direct cotton coal-tar color of the thiazol type. It dyes unmordanted cotton yellow in a neutral or slightly alkaline bath. When yarn dyed in this way is diazotized and developed with β-naphthol, the yellow color is changed to a bright red which possesses good fastness to washing.—**Primulin process.** Same as ★*diazotype*.

prin. An abbreviation of *principal.*

prince, *n.*—**Prince Albert coat.** See ★*coat*2.—**Prince of the blood,** the son, brother, or uncle of a reigning sovereign.

Princess of the blood, the daughter, sister, or aunt of a reigning sovereign.

princewood, *n.* 2. A small West Indian rubiaceous tree, *Exostema Caribæum.* See *Exostema, Caribbean bark* (under *bark*2), and *seaside beech* (under *beech*1).

principal. I. *a.*—**Principal axis of symmetry, principal plane of symmetry.** See ★*symmetry,* 6.—**Principal triangle.** See ★*triangle.*

II. *n.* 8. (*b*) A main truss, as of a roof, where there may be many principals.—13. In the Philippine Islands, every member, present or past, of the council of a pueblo; also, a first-born son of a gobernadorcillo or of a cabeza de barangay. See ★*barangay.*

principale (prin-si-pā′lē), *n.*; pl. *principalia* (-li-ạ̈). [L. neut. of *principalis,* principal.] In hexactinellidan sponges, one of the large, regular hexactinal spicules arranged to correspond with the intervals between the thimble-shaped chambers.

principal-work (prin′si-pạ̈l-wėrk), *n.* In *organ-building,* a collective term for all the flue-stops which have open metal pipes, yielding tones of either the diapason or the string class.

principle, *n.*—**Active principle,** a substance, either alkaloid or glucoside, contained in a crude vegetable drug, upon which the chief medicinal property of the drug depends: thus morphine is one of the active principles of opium.—**Babinet's principle** or **theorem,** a theorem, dealing with the diffraction of light, which may be stated thus: complementary screens produce diffraction patterns which are identical with the exception of the central region, corresponding to zero angle of diffraction. *C. S. Hastings,* Light, p. 130.—**Clausius's principle of the increase of entropy.** See ★*entropy.*—**Hadley's principle,** an arbitrary rule, assumed by George Hadley in 1744, to the effect that a body projected meridionally north or south from any point on the earth's surface gradually deviates to the east or west respectively because it retains its original eastward velocity while passing over regions that move with less or greater eastward diurnal rotatory speed. Hadley's explanation of trade-winds and anti-trade winds was first overthrown by Ferrel in 1856.—**Hamilton's principle,** the principle that if a system of bodies is at A at the time t_0 and at B at the time t_1, it always goes from the first situation to the second in such a way that the mean value of the difference between the kinetic and potential energy, in the interval of time which separates the two epochs t_0 and t_1, may be as small as possible.—**Lavoisier's principle.** Same as *the* ★*principle of the conservation of mass.*—**Mayer's principle.** Same as *the law of the conservation of energy.*—**Newton's principle,** the principle that action is equal to reaction.—**Pascal's principle.** See *Pascal's* ★*law.*—**Principle of least time.** See *Fermat's* ★*law.*—**Principle of motor excess.** See ★*excess.*—**Principle of relativity,** the principle that the laws of physical phenomena should be the same for a fixed observer and one carried along in a uniform motion of translation.—**Principle of Soret.** See *Soret* ★*phenomenon.*—**Principle of the conservation of mass,** the principle that the quantity of matter as tested by the balance is unchangeable by any transmutation of form or state.—**Thermokinetic principle** the principle that if a thermodynamic system, the energy of which consists of two parts, T and U (the potential energy), receives increments of energy δT and δU, while the work done upon it is $\Sigma P_i\,dq_i$ and the heat absorbed is δQ, then the integral for the time interval $t_1 \ldots t_0$,

$$\int_{t_0}^{t_1} dt\,(\delta T - \delta U + \Sigma P_i dq_i + \delta Q),$$

is equal to zero.—**Zymotic principle.** Same as *contagium,* 2.

pringle (pring′gl), *v. t.* and *i.*; pret. and pp. *pringled,* ppr. *pringling.* To crackle or crunch.

> I . . . dropped upon my knees on her sacred soil [France] and, with the strong smell of the seaweed in my nostrils, pressed my lips upon the wet and *pringling* gravel.
>
> *A. Conan Doyle,* Uncle Bernac, in Cosmopolitan Mag., [Jan., 1897, p. 263.

print, *n.* In *founding:* (*a*) A core-print; a projection on the pattern which leaves a recess in the sand in which to rest the end of the core for a hollow casting. (*b*) The impression left in the sand by a projecting part of the pattern, in which the end of the core is to rest.—**Contact print.** See ★*contact*1.—**Hammered print,** an early engraving in which the design was worked out with a sharp point and hammer; dotted print. See *dotted manner* (under *dot*1). *Singer and Strang,* Etching, Engraving, etc., p. 105.—**Point print.** See ★*point-print.*—**Tangible print,** raised or embossed letters or groups of dots impressed upon paper by means of an embossing-typewriter or by means of embossed plates used in a press to transfer the marks to paper. See ★*kleidograph,* ★*point-printing,* and ★*point system.*—**Tartaric-acid print,** in *photog.,* a silver print made on paper immersed in a solution of tartaric acid previous to being floated in a bath of aceto-silver nitrate. *E. L. Wilson,* Cyclopædic Photog., p. 379.

print-butter (print′but″ėr), *n.* See ★*butter*1.

print-color (print′kul″ọr), *n.* A color applied to a textile fabric on a printing-machine.

printing, *n.*—**Contact-printing.** See ★*contact.*—**Dry printing,** a method of printing from relief surfaces on dry paper that has not been subjected to the old preliminary process of dampening to make it more pliable under the impression of the press. For illustrations of delicacy, as in the half-tones of photo-engraving, with shallow counters liable to be choked with ink, calendered or surfaced papers are preferred. The dry paper confines impression to the surface only of the engraving; it does not overlap and thicken lines, as was almost unavoidable when impression was made on damp paper.—**Embossed printing,** the stamping of letters or designs with enough force to raise them above the surface of the paper, so that they can be read by the blind by sense of touch. This method is also used in decorative printing to enforce contrast of light and shade.—**Point printing.** See ★*point-printing.*—**Stigmatypic printing,** the printing on boards from types hot enough to burn or brand: brand-printing: descriptive of prints or plates made from compositions of stigmatype.—**Vigoureux printing,** a method of printing the sliver from a wool- or cotton-combing machine for the production of variegated yarn.

printing-machine, *n.*—**Cylinder printing-machine,** a machine that gives impression to type or plates upon a flat surface by a cylinder. When the type or plates are on one cylinder, and receive impression from another cylinder, the machine so constructed is known as a *rotary.*

printing-press, *n.*—**Double-feeding printing-press,** a press which requires two feeders, each handling a separate sheet of paper: usually a cylinder-machine.—**Duplex printing-press,** a press having two cylinders and two end-plates, which prints one side with the forward and the other with the backward movement of the bed.—**Eight-cylinder printing-press,** a type-revolving press having eight impression-cylinders.—**Eighth-medium printing-press,** a job-printing press made to print type or plates on paper about 6 × 10 inches in size. See *half-medium* ★*printing-press.*—**Half-medium printing-press,** a press for job-work, made to print forms of half-medium size, about 10 × 12 inches.—**Perrotine printing-press,** in *calico-printing,* a block-printing machine operated without manual labor. The pattern is cut in relief on the blocks, which are equal in length to the width of the fabric and from two to five inches wide: used only to a very limited extent outside of Alsace and Belgium. Invented by Perrot of Rouen in 1834.—**Quarter-medium printing-press,** a small printing-machine made for job-work, to print a sheet about 10 × 12 inches in size.

print-meter (print′mē″tėr), *n.* In *photog.,* an instrument which shows the time of exposure in contact-printing. Also used for testing speeds of plates and papers.

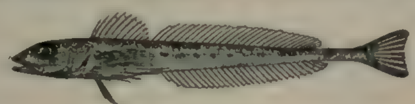
> A "*Print meter*" is also made for showing the exposures in contact-printing on sensitive papers, but it can also be used for testing speeds of plates and papers.
>
> *Encyc. Brit.,* XXXI. 702.

priocerous (prī-os′e̤-rus), *a.* [Irreg. < Gr. *πρίων,* saw, + *κέρας,* horn.] In *entom.,* having serrate antennæ.

priodont (prī′ō-dont), *n.* [Irreg. < Gr. *πρίων,* saw, + *ὀδούς* (*ὀδοντ-*), tooth.] A form of mandible in the coleopterous family *Lucanidæ* which exhibits the simplest development.

Prionace (prī-on′ạ-sē), *n.* [NL., < Gr. *πρίων,* saw, + *ἀκή,* a point.] A genus of sharks, of the family *Galeidæ,* found in warm seas.

Prionistius (prī-ọ̄-nis′ti-us), *n.* [NL., so called in allusion to the form of the dorsal fin; < Gr. *πρίων,* saw, + *ἱστίον,* sail.] A genus of cottoid fishes found on the Alaska coast.



Prionistius macellus.
(From Bulletin 47, U. S. Nat. Museum.)

Prionites, *n.* 2. A genus of discocampylous ammonoid cephalopods found in the Triassic rocks.

prionodesmacean (prī″ọ̄-nọ̄-des-mā′sẹ̄-ạn), *a.* Of or pertaining to the *Prionodesmacea.*

prionodesmaceous (prī″ọ̄-nọ̄-des-mā′shius), *a.* Same as ★*prionodesmacean.*

prionodesmatic (prī″ọ̄-nọ̄-des-mat′ik), *a.* Same as ★*prionodesmacean.*

prionoid (prī′ọ̄-noid), *a.* [*πρίων,* a saw, + *-oid.*] Notched or toothed like a saw.

Prionotus (prī-ọ̄-nō′tus), *n.* [NL., for **Priononotus,* < Gr. *πρίων,* saw, + *νῶτος,* back.] A genus of fishes of the family *Triglidæ* having numerous species, most of which are American. See cut at *striped* ★*gurnard.*

Prionus, *n.* 2. [*l. c.*] A beetle of this genus.—**Broad-necked prionus,** an American cerambycid beetle, *Prionus laticollis.* See *Prionus.*—**Tile-horned prionus,** a large American cerambycid beetle, *Prionus imbricornis.* See cut under *Prionus.*

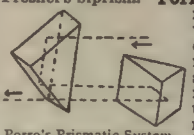
priority, *n.*—**Law of priority.** See ★*law*1.

Priscian, *n.*—**To scratch Priscian,** to make a small grammatical error. See *to break Priscian's head,* under *break.*

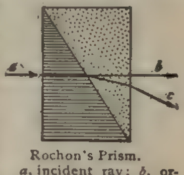
> Bon, bon, fort bon! *Priscian* a little *scratched,* 't will serve.
>
> *Shak.,* L. L. L., v. 1.

Priscillian (pri-sil′yạn), *a.* Of or pertaining to Priscillian or the Priscillianists. See *Priscillianist.*

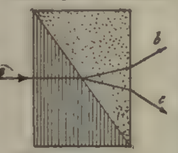
prism, *n.* 1. According to some authors any form having two pairs of parallel faces is called a *prism;* in this sense the term includes the domes of the orthorhombic system (this name being then restricted to a form having two faces only intersecting in an edge) and the hemipyramids of the monoclinic system.—**Foucault prism,** a modification of Nicol's prism for the polarization of light, in which an air-film is substituted for the layer of Canada balsam and the length of the rhomb of calcite is greatly reduced.—**Govi's prism,** a combination of two similar right-angled prisms of equal size with the hypotenusal faces half-silvered and placed together so as to form a rectangular body of glass with a diagonal reflecting surface.—**Objective prism,** a large prism of small refracting angle placed in front of the object-glass of a telescope to form, at the focus, the spectra of all the stars included in the field of view: first used by Fraunhofer, and reintroduced by Secchi. The combination constitutes a slitless spectroscope. The term is sometimes, though rarely, used to denote a reflecting prism placed outside the object-glass to deflect the rays as they enter the instrument.—**Ohm's prism,** a form of biprism for the production of interference-fringes which consists of two similar wedges of glass of very small angle placed with their thicker edges in contact and two of the faces in the same plane. The other faces then form a very obtuse angle, as in Fresnel's biprism.—**Porro's prisms,** a system of totally reflecting prisms of glass placed within a telescope or within each of the tubes of a binocular field-glass, between objective and eyepiece, for the purpose of increasing the focal length of the instrument. The arrangement of Porro's prisms is shown in the diagram.—**Rochon's prism,** a prism of doubly refracting material which polarizes a ray of common light and also effects a divergence of the extraordinary from the ordinary ray. It consists of two prisms, one cut parallel and the other cut perpendicular to the optic axis, cemented together. The deviation of the extraordinary ray, *c,* is toward the apex of the second prism if the crystal is positive (calc-spar) or toward the base if it is negative (as some quartz).—**Sun-prism,** an attachment to the telescope devised by Colzi, an Italian astronomer, for reducing the brightness of the solar image. The beam of light at the eye end of the telescope is reflected from the interface between a glass prism and a liquid having nearly but not quite the same index of refraction as the glass. Under these conditions the reflected ray, which goes to form the image, is greatly diminished in intensity.—**Wollaston's prism,** a prism of doubly refracting material similar in construction and effect to Rochon's (which see). Both the ordinary and the extraordinary rays undergo deviation.



Porro's Prismatic System.



Rochon's Prism.
a, incident ray; *b,* ordinary ray; *c,* extraordinary ray.
(From Preston's "Theory of Light.")



Wollaston's Prism.
a, incident ray; *b,* ordinary ray; *c,* extraordinary ray.
(From Preston's "Theory of Light.")

prismatic, *a.* 3. In *anat.,* noting muscles whose fibers run direct and parallel with one another from the point of origin to the point of insertion: correlative with ★*pyramidal,* 3, and ★*rhomboidal,* 2.

> Muscles of the former group are called *prismatic* or bandlike; those of the latter, triangular or pyramidal.
>
> *Encyc. Brit.,* XXV. 395.

Prismatic binocular, camera, eyepiece. See ★*binocular,* etc.—**Prismatic fabric,** in *petrog.,* a texture in rocks produced by crystals mostly prismatic in shape.—**Prismatic spectrum,** a spectrum produced by the passage of light through a prism or train of prisms. In prismatic spectra the distribution of wave-lengths is not uniform, the law of dispersion depending upon the material of the prism. When a glass prism is used, the dispersion within the visible spectrum is greatest in the violet and decreases continuously toward the red.

prismatine (priz′mạ̈-tin), *n.* [Gr. *πρίσμα(τ-),* a prism, + *-ine*2.] A mineral near ★kornerupine (which see).

prismatoid, *n.* 2. A term used by N. Story Maskelyne for a crystal form whose faces are parallel to one of the crystallographic axes while meeting the other two axes.

prismoid, *n.* 2. A prismatoid whose base and top have the same number of sides, and every corresponding pair parallel. See *prismatoid,* 1.

prism-spherometer (prizm′sfẹ̄-rom″e-tėr), *n.* A prism designed for use in ascertaining the curvature of surfaces.

prism-stereoscope (prizm′ster″ẹ̄-ọ̄-skōp), *n.* In *exper. psychol.,* Dove's name for the *total-reflection* ★*pseudoscope. E. B. Titchener,* Exper. Psychol., I. ii. 295.

prisometer (pri-zom′e-tėr), *n.* [Gr. *πρῖσις,* a severing, + *μέτρον,* measure.] An apparatus devised by Riverchon for measuring the time required for a cement to set.

prisoner, *n.* 6. In *mech.,* a piece of metal used to connect two adjacent parts of the rim of a fly-wheel. The prisoner is usually put in place in recesses in the rim while hot, so that its contraction during cooling will draw the two parts of the rim together very tightly. *F. R. Hutton*, Power Plants, p. 346.—**Prisoner at large**, a prisoner who is allowed the freedom of a ship when it is unnecessary to keep him in close confinement in order to prevent his escape, as when the vessel is at sea.—**Prisoner of war**, a person who, in time of war, is taken and held by the enemy. The fact that a state of war exists may alone justify the act.

Pristacanthus (pris-ta-kan′thus), *n.* [NL., < Gr. *πρίστης*, sawfish, + *ἄκανθα*, a spine.] An extinct genus of fishes based on fin-spines (ichthyodorulites). The type of spine to which the generic name *Pristacanthus* has been applied is elongated and greatly compressed laterally, so that the inner canal is reduced to a narrow cleft. The anterior margin is sharp and cutting, the posterior margin saw-like, with a row of teeth. From the Bathonian of Oxfordshire and the Upper Devonian of New York.

Pristigaster (pris-ti-gas′tėr), *n.* [NL., < Gr. *πρίστης*, sawfish, + *γαστήρ*, belly.] A genus of clupeoid fishes found on the coast of Guiana and Brazil.

pristin, *a.* A simplified spelling of *pristine*.

pristoid (pris′toid), *n.* and *a.* **I.** *n.* One of the *Pristidæ*; a sawfish.

II. *a.* Of or pertaining to the *Pristidæ*.

privet-moth (priv′et-môth), *n.* Any one of several moths whose larvæ feed on privet, as the privet hawk-moth of Europe, *Sphinx ligustri*, or the adult of the privet web-worm.

privilege, *n.* **5.** In the High Peak, Derbyshire, the land on which a house stands, including the garden, even if the garden is on the other side of the road.

> The village of Little Hucklow, where I have a *privilege* . . . is about two miles from Tideswell.
> *L. O. Addy*, in N. and Q., Sept. 10, 1904, p. 201.

Attachment of privilege, in *Eng. law*: (*a*) A process by which a man, by virtue of his privilege, calls another to litigate in that court to which he himself belongs, and who has the privilege to answer there. (*b*) A writ issued to apprehend a person in a privileged place. *Bouvier*, Law Dict.—**Testimonial privilege.** See ★*testimonial*.—**Viatorial privilege**, the exemption of a witness from attendance at court until duly summoned and indemnified in advance for his expenses. For sufficient reason the court may excuse him from attending at all, and may issue a commission to take his testimony. *Wigmore*, Evidence, § 2197.

prize^1, *n.*—**Booby prize**, in games, a prize, generally more or less ludicrous, given to the player who has made the lowest score.—**Scotch prize** (*naut.*), a capture that is illegal, and which must be given up.

prize^3, *n.* **3.** In *tobacco-manuf.*: (*a*) A press operated by a lever. Compare ★*prize-beam*.

> The packer gets into a hogshead, placed under a *prize*, fixed in a post like a cider *prize*, and a person outside hands him the tobacco. *W. Tatham*, Cult. and Com. of Tobacco, p. 116.

(*b*) The pressure exerted by a lever or press.

> The cake or stratum which is under *prize*.
> *W. Tatham*, Cult. and Com. of Tobacco, p. 52.

prize-beam (prīz′bēm), *n.* [*prize*^{3} + *beam*.] A lever consisting of a long timber, often with a platform to receive weights, used in prizing tobacco.

> So must the *prize-beam* retain its depressed position until two distinct ends are attained. *W. Tatham*, Cult. and Com. of Tobacco, p. 52.

prize-crew (prīz′krö), *n.* *Naval*, a body of seamen (and firemen) put on board a captured vessel to work her into port.

proambient (prō-am′bi-ent), *a.* [L. *pro*, before, + *ambiens*, going about: see *ambient*.] Moving or circulating in front of something else. [Rare.]

> To the light given forth by the glowing melted surface, with that of the stream of ignited particles flowing away behind the flying mass, must be added the enormously greater light of *proambient* air, itself heated by the compression mentioned.
> *Sci. Amer. Sup.*, July 9, 1904, p. 23840.

proanaphora (prō-an-af′ọ-ra̤), *n.*; pl. *proanaphoræ* (-rē). [NL., < Gr. *πρό*, before, + *ἀναφορά*, offering. See *anaphora*.] The introductory part of the Eastern liturgies, including all that preceded the Sursum Corda or anaphora.

proanaphoral (prō-an-af′ọ-ral), *a.* Of or pertaining to the proanaphora.—**Proanaphoral service**, in the Eastern liturgies, that part of the mass which is preparatory to the anaphora or offering of the eucharist.

proanthropos (prō-an-thrō′pos), *n.*; pl. *proanthropoi* (-poi). [NL., < Gr. *πρό*, before, + *ἄνθρωπος*, man.] A very primitive type of man, regarded as a precursor of the actual or existing type. Such a type is considered by many to have existed in *Pithecanthropos erectus* (of which the remains have been discovered in Java), taken to be a primitive species of man differing from all known human races in traits which those races have in common, and in them resembling the apes.

> We may postulate a Tertiary "precursor," a "*proanthropos*," but exhibit one of his bones in the broad light of day we cannot. *Buck*, Med. Handbook, IV. 40.

Proarthropoda (prō-är-throp′ọ-da̤), *n. pl.* [NL., < Gr. *πρό*, before, + NL. *Arthropoda*.] The hypothetical stock from which the *Arthropoda* have been supposed to be descended.

> The Arthropoda appear to me to form such a natural group. Their ancestral stock, the *Pro-Arthropoda*, joins with the ancestral stocks of the Chætopoda and Rotifera, forming the large natural group of the Appendiculata.
> *E. R. Lankester*, in Nat. Sci., April, 1897, p. 264.

proasma (prō-as′ma̤), *n.*; pl. *proasmata* (-ma̤-ta̤). [Gr. *προάσμα*, < *πρό*, before, + *ᾆσμα*, a song.] In *music*, a prelude or overture.

proatlantoatlantic (prō-at-lan″tọ-at-lan′tik), *a.* Relating to the proatlas and atlas. *Proc. Zool. Soc. London*, 1891, p. 113. [Rare.]

probabilize (prob′a̤-bl-īz), *v. t.*; pret. and pp. *probabilized*, ppr. *probabilizing*. [L. *probabilis*, probable, + *-ize*.] To make probable or to seem probable.

> Some, again, are now seeking to vindicate or *probabilize* the fact of inspiration and some of the other functions of the Holy Spirit by a new scrutiny of not only genius but of ecstatic and hypnoid states.
> *Amer. Jour. Relig. Psychol. and Education*, May, 1904, p. 2.

probang, *n.*—**Sponge probang**, in physical laboratory apparatus, a bit of sponge fastened to a stick or probe with which to clean the interior of a tube.

probe, *n.*—**Electric** or **telephonic probe**, a probe so constructed that when it touches a metallic body (such as a bullet) in a wound an electric circuit is established and a sound is made.

Probeloceras (prō-bē-los′ẹ-ras), *n.* [NL., < Gr. *πρό*, before, + NL. *Beloceras*.] A genus of phyllocampylous ammonoids or goniatites, of the family *Prolecanitidæ*, found in the Upper Devonian formation of New York.

probion (prọ-bī′on), *n.* [Gr. *πρό*, before, + *βίος*, living thing.] The term used by C. Nägeli to designate the hypothetical organism which forms the connecting link between inorganic matter and the lowest known form of organic life.

> Such a *Probion* resulting from spontaneous generation would be "merely a drop of homogeneous structureless plasma, devoid of any definite form and composed of albuminates, associated only with the compounds necessary for nutrition."
> *Salter*, tr. of Lafar, Tech. Mycol., I. 11.

problem, *n.*—**Dirichlet's problem**, a problem to find a real function satisfying Laplace's equation and taking assigned values at the boundary of the region; or to find a real function continuous within a closed surface, satisfying Laplace's equation and taking given values on that surface.—**Halley's problem**, a problem to determine the orbit of a planet from three heliocentric positions.—**Latin square problem**, the problem of placing n letters, $a, b, c, \ldots n$, one in every one of the n^2 compartments of a square lattice of order n in such a way that every row and every column contains every letter, no compartment is empty, and no letter occurs twice either in the same row or in the same column.—**Problem novel, play.** See ★*novel*, ★*play*^{1}.—**Problem of derangements**, a problem to find the number of permutations such that exactly n of the letters are in the places they originally occupied.—**Problem of the Virgins**, the designation by which Euler and his contemporaries knew the bipartite case in the analytical theory of multipartite denumeration, or the enumeration of the partitions of multipartite numbers in combinatory analysis.

proboscis-fish (prọ-bos′is-fish), *n.* Any fish of the genus *Mormyrus* of the order *Scyphophori*, found in fresh waters of tropical Africa. Species found in the Nile were objects of veneration to the ancient Egyptians. The Egyptians did not eat them, since they thought them to be one of the three different kinds of fishes which devoured a member of the body of Osiris.

> An extremely interesting feature in the report is the notes on the habits of the numerous species of Nile fishes kept in the aquarium. From these it appears that the *proboscis-fish* (Mormyrus kannume) is chiefly nocturnal, and employs its long snout in probing about among stones for animal food. *Nature*, June 9, 1904, p. 130.

proboscis-pore (prọ-bos′is-pōr), *n.* **1.** In nemertines, the external opening of the proboscis.—**2.** In *Balanoglossus*, a pore by which the cavity of the proboscis communicates with the exterior. *Parker and Haswell*, Zool., II. p. 2.

proboscis-sheath (prọ-bos′is-shēth), *n.* In nemertines, the canal or pouch lying dorsal to the alimentary canal and containing the proboscis when the latter is retracted.

Procaviidæ (prō-ka-vī′i-dē), *n. pl.* [NL., < *Procavia*, type genus, + *-idæ*.] A family of ungulate mammals including the hyraces. The name replaces *Hyracidæ*, this being antedated. *Thomas*, 1892.

procede, *v.* An amended and former spelling of *proceed*.

procedure, *n.*—**Oat-field procedure**, an extra-legal procedure against evil-doers or other socially objectionable persons: essentially a mild form of lynch-law, and practically the same as the 'whitecapping' once frequent in Indiana.

> Similar societies exist among the Yoruba Negroes of Guinea, and the traces of like institutions are found in Europe, as, for example, the famous *oat-field procedure* (Haberfeld treiben), an ancient custom which is kept up in the region of upper Bavaria situated between the Inn and the Isar. It is a sort of trial by a secret tribunal of misdemeanours which are not reached by the ordinary penal law. The court of Munich had in 1896 to deal with one of these procedures, which have now become very rare. *Deniker*, Races of Man, p. 254.

proceeding, *n.*—**John Doe proceedings**, in *law*, an inquisition directed against a fictitious person having for its object the discovery of the real person or persons guilty of some offense.

procellariine (pros-e-lā′ri-in), *a.* [NL. *Procellariinæ*.] Relating to, or characteristic of, the petrels.

Procerebral lobes. See ★*lobe*.

process, *n.*—**Acheson process.** See ★*Egyptianized clay*.—**Acid process**, in *iron metallurgy*, a process in which the furnace-lining is made of acid material, usually silica. Thus in the Bessemer and in the open-hearth processes the furnace may be lined either with an acid material (silica) or with a basic material (for example, calcined dolomite). In the former case the slag produced should be acid in character; in the latter it should be basic. An acid slag is irretentive of phosphorus, and therefore phosphorus cannot be eliminated from iron during its purification and manufacture into steel by the acid process. It is, then, necessary to use pig-iron low in phosphorus, since this element has a deleterious effect on the quality of the steel.—**Addie's process**, a process for recovering ammonia from the gases of blast-furnaces, coke-ovens, and fuel-gas generators by the action of gaseous sulphur dioxid, forming ammonium sulphite, which is absorbed by water in scrubbers. *Groves and Thorp*, Chem. Technol., I. 277.—**Alberini's process**, in *photog.*, an asphalt process in which by the use of crude bitumen the exposed portion of the film becomes disintegrated and is removed by flooding with alcohol and gentle friction with cotton wool. The exposed bitumen is thereby broken up into small scales or grains, without, as is usually the case, becoming insoluble. *Wall*, Dict. of Photog., p. 12.—**Aluminium processes**, processes for the extraction of aluminium. The following are the most important: (*a*) *Bradley's process*, a process in which an electric current is made to perform the double function of keeping the ore and the other substances melted, by converting a part of its electrical energy into heat, and of producing the electrolytic decomposition. This process can be carried out without the use of a crucible, a body of the ore itself being used as a vessel in which the reduction takes place. (*b*) *Cowles's process*, a process for making aluminium and other alloys, by placing a mixture of alumina, carbon, and the metal to be alloyed between two large carbon rods, the terminals of an interrupted current of high power. The intense heat melts the metal and converts the alumina into aluminium, while the oxygen escapes as carbonic oxid. (*c*) *Deville's process*, a process in which aluminium sodium chlorid is reduced by sodium, with cryolite or fluor-spar as a flux. Deville was the first to produce aluminium in an almost pure state (1854) and to determine its properties *en masse*. He also discovered simultaneously with Bunsen a method of decomposing alum sodium chlorid by an electric battery. (*d*) *Grabau's process*, a process based on the electrolysis of a bath composed of aluminium fluoride and caustic soda of potash, or their carbonates. The substitution of aluminium fluoride for cryolite greatly increases the purity of the metal. (*e*) *Hall's process*, an electrolytic process by which most of the aluminium in the United States is produced. In this process the alumina is dissolved in a fused bath composed of the fluorides of aluminium and sodium, and then electrolyzed by a current with a carbonaceous anode. The positive electrode may be of carbon, copper, platinum, or any other suitable material, copper being preferred on account of the copper oxid which protects the electrode from further oxidation. In the production of aluminium alloys the metal to be alloyed is used as a negative electrode and the alloy formed sinks to the bottom of the crucible. In the Hall process, as used by some of the larger manufacturers, the electrolytic tanks are iron troughs lined with carbon and connected up in series, each trough being connected by a stout copper bar with the anodes of the adjoining trough or with the negative conductor of the generator, according to its position in the series. Thus the tank itself acts as the cathode. The anodes are carbon rods suspended from a copper bar, which are placed above the vat and are partly immersed in the fused electrolyte. (*f*) *Héroult's process*, a process similar to that of Hall but discovered independently by Héroult in 1886. It is the only process which is used for the production of aluminium on a large scale outside of the United States. (*g*) *Minet's process*, a process consisting in the electrolysis of a mixture of sodium chlorid with either aluminium fluoride or the separate or double fluorides of aluminium and sodium. The mixture is melted in a non-metallic crucible, or in a metallic crucible inclosed in a thin refractory jacket to avoid filtration, and the aluminium fluoride decomposed is regenerated by causing the fluorin vapors evolved to act on bauxite or alumina placed somewhere about the anode. *Phillips and Bauerman*, Elements of Metallurgy, p. 579. (*h*) *Rose's process* (1855), a modification of Deville's method, cryolite being substituted for aluminium chlorid. *Phillips and Bauerman*, Elements of Metallurgy, p. 575. (*i*) *Wöhler's process.* Wöhler is regarded as the first to succeed in isolating aluminium. In his experiments of 1845 he reduced aluminium chlorid by means of pure potassium. The metal was obtained in the shape of small globules and contained some platinum from the tube in which it had been prepared. He was also the first to give a more or less accurate description of the chemical properties of aluminium and to determine its specific gravity. —**Ammonia nitrate process**, in *photog.*, a process of keeping an emulsion, at a moderate temperature, in a state of strong alkalinity with ammonia. *Woodbury*, Encyclopedic Dict. of Photog., p. 30.—**Ammonia-soda process.** See ★*ammonia.*—**Anderson process**, a process for the purification of drinking-water. The water is carried through revolving cylinders in which it is brought into contact with metallic iron, in borings, turnings, etc., continually agitated, is then exposed to the air to precipitate dissolved iron as ferric hydroxid, and is finally led to settling-tanks and sand-filters. The method has been applied on a working scale at Boulogne, Choisy-le-Roi, Antwerp, and other places.—**Andreoli process**, an electrolytic process for the extraction of gold from its ores. It is a modification of the Siemens-Halske process, and is based on the use of lead peroxid anodes and iron cathodes. The gold collects in the cathodes and is removed from time to time by a brief immersion in molten lead.—**Aniline process**, in *photog.*, a process based on the oxidation of aniline by chromic acid and used for copying tracings, maps, etc. *Woodbury*, Encyc. Dict. of Photog., p. 37.—**Arnold utilization process**, a trade-name for a method of dealing with waste and spoiled food-materials in large cities by treatment with steam, furnishing grease for soap-making, etc., and nitrogenous matter for the manufacture of fertilizers.—**Artique's process**, in *photog.*, a method of carbon-printing without transfer. A special paper coated with pigmented gelatin is sensitized by ammonium bichromate. After exposure behind a negative the picture is developed by soaking the paper in a mixture of sawdust and water. *Wall*, Dict. of Photog., p. 49.—**Asphalt process**, in *photog.*, the first process employed for producing a fixed photograph, in the usual sense of the term. It was devised by Niepce. Asphalt dissolved in benzol is used to coat a metal plate. When the dry surface is exposed behind a negative or a positive, the light which passes through renders the asphalt insoluble. When the soluble portions are washed away the exposed metal is etched. The plate then serves for printing. *Wall*, Dict. of Photog., p. 53.—**Balbach process.** (*a*) An electrolytic process for parting gold and silver. The operation is carried on in a stoneware tank with carbon bottom which forms the cathode. The bottom is covered with small silver plates on which the crystals of silver are deposited and which are connected with a negative overhead feeder. The anode plates, consisting of the gold-silver alloy, are placed in wooden boxes with slatted bottoms, the plates resting on canvas covers and connected with the positive overhead feed. The silver is shoveled out at intervals. The copper accumulates in the solution, while gold remains in the anode mud, from which it is subsequently removed. (*b*) A process for desilverizing lead by treating it with zinc and subjecting the mixture to a temperature sufficiently high to melt the lead but leave the zinc-silver alloy merely softened. During the operation air is excluded in order to prevent the formation of metallic oxids.—**Beaujard process**, a patented process for the manufacture of glycerin by heating fats with water and a little finely divided zinc. —**Becker's sodium process.** The apparatus used in this process is a modification of that employed in the Castner ★process (which see). The cathode passes through a tube inserted in the bottom of the vessel and closed at the lower end with a ring made of lava, porcelain, or some similar material. The tube is also surrounded by a double-walled water-jacket, or other cooling device, put there for the purpose of keeping the electrolyte within in a pasty or, if possible, solid state, so as to prevent any of it from escaping through the joint between the tube and the closing ring. The cathode is of metal or of retort carbon, and is generally somewhat conical in shape. The anode, which must not reach the bottom of the vessel nor exceed in height the cathode, is ring-shaped and completely surrounds the cathode. It is suspended by one or more rods, which serve also as conductors. Above the cathode is a metal cone insulated from the apparatus and intended to collect the globules of metal from the surface of the electrolyte. The diameter of this metal cone must be somewhat greater than that of the cathode and less than that of the anode, so that the metallic globules detached from the cathode pass into the conical receiver, while the gases generated at the anode escape around the outside. In the middle of the cone there is a rising-tube, covered at the top and provided with an exit-pipe passing in a downward direction through the walls of the vessel. The cone is surrounded by a rim which protects it from the electrolyte and is connected to the negative conductor by a resistance-coil through which only a small portion of the main current passes, making the cone a supplementary cathode, so that the metal liberated at the principal cathode becomes negative again as it comes in contact with the inner surface of the cone and passes through the tube which carries it out of the apparatus.—**Belgian process** for the extraction of zinc. The furnace employed in this process consists of a vertical arched chamber in which are generally placed from 60 to 80 circular or elliptical retorts arranged in four or more rows. The fireplace is sometimes placed underneath the chamber, and gas recuperative or regenerative firing is now largely employed. The retorts are somewhat inclined toward the mouth, so that the corrosive slag flows down to the coolest part. The distilled zinc passes into condensers attached to the retorts, where the fumes are condensed to liquid zinc. In some Belgian furnaces used in the United States the number of retorts exceeds 300, even reaching 900 in some cases.—**Bell-Krupp process.** Same as *Krupp* ★*process* (*a*).—**Bell process**, a process for the removal of excessive phosphorus from pig-iron, invented by Sir Lowthian Bell in 1875. Pig-iron rich in phosphorus is run into a reverberatory furnace lined with iron ore or some other substance rich in oxidized iron, and a powerful action of the peroxid of iron on the pig is produced either by stirring or by the arrangement of the furnace, the temperature being merely sufficient to keep the pig fluid. The Bell process was displaced, before it had come into general use, by the basic process.—**Berthier's process**, a process for determining the heat of combustion of a fuel, in which the oxygen for complete combustion is derived from an oxid of lead and its amount is computed from the mass of the metal reduced in the course of the reaction.—**Bessemer copper process**, a process for desulphurizing copper matte by blowing air through it. The sulphur furnishes heat enough, by its oxidization, to keep the bath molten. The sulphids of other metals in the matte lose their sulphur first and sink to the bottom of the bath as alloys, and being thence drawn off are separated by electrolysis. The remaining matte is then blown again until it is 99 per cent. copper, which is then cast, remelted, and poled for final purification.—**Betts's process**, an electrolytic process for the refining of lead. In this process the impure lead is used as the anode, being recovered in refined form on the cathode with a purity of 99.99 + per cent. The electrolyte is lead fluosilicate ($PbSiF_6$) or else a lead fluorin acid to which has been added a small amount of an organic agent such as glue, gelatin, etc. The current used is 10–20 amperes at a potential of 0.15–0.35 volt.—**Blair's process**, a process for the direct production of wrought-iron, introduced by Blair in 1873. The apparatus used in this process consists of a vertical reduction-chamber 40–50 feet high and 4 feet 6 inches in diameter, surrounded by and communicating with an outer heating-chamber. The mixture of ore, charcoal, and a little lime is introduced into the top of the reduction-chamber and heated by the hot gas passed into the heating-chamber from a gas-producer. The output of the furnace is about two tons of sponge a day. The Blair, like all other direct processes, is very little used.—**Bleiberg** or **Carinthian process**, a process of lead-smelting in reverberatory furnaces used at Bleiberg, Carinthia. The furnace has a long hearth sloping toward the door, so that the lead flows down into a receptacle placed at the door outside the furnace. The ore is first roasted at a low temperature and turned over at short intervals with a rake. After three or three and a half hours of roasting, the temperature is raised so as to effect the production of metallic lead by the mutual decomposition of its sulphid and the oxidized products of calcination. The slag from two successive charges is later reduced by the addition of charcoal and yields an inferior grade of lead. The fuel used in the Bleiberg process is mostly wood, but brown coal is sometimes employed instead. This process was abandoned in 1893.—**Boulton and Worthington process**, in *tile-manuf.*, a modification of Prosser's process for inlaying tiles with colored designs. See *Prosser's* ★*process.*—**Bower-Barff process**, a method of finishing metals to give them a permanent surface, named after its inventors, Bower and Barff. In this process the metal is treated by oxidizing gases at a high temperature, thus forming an oxid on the surface which is the same as the permanent surface of the mineral magnetite. The surface is first oxidized to a high oxid and then reduced till the desired stage is reached. See *Barff's process*, under *process.*—**Bradley's process.** See *aluminium* ★*processes.* —**Brin's process**, a process for manufacturing oxygen gas from atmospheric air by passing purified and compressed air over heated baryta, converting this into barium dioxid, from which oxygen is given off again on reduction of pressure.—**Carbonizing process.** See ★*carbonizing.* —**Carinthian process.** (*b*) See *Bleiberg* ★*process.*—**Castner process.** (*a*) A process, invented by Castner, for making at the same time caustic soda and chlorin by the electrolysis of common salt in solution in water. The apparatus consists of an iron melting-pot about a foot and a half wide and two feet high. The cathode is inserted through the bottom and is held in position by the solidified caustic alkali, which is put into the lower part of the melting-pot before the electrolysis is started. The anodes are suspended from the cover and immersed in the bath of caustic alkali, which is kept in fused condition by a gas-flame. The anodes are separated from the cathodes by a cylindrical diaphragm of wire mesh above which is placed the collecting-tube, which collects the metal and the hydrogen, while the oxygen escapes through an opening in the cover. The hydrogen also escapes from the collecting-tube, the lid of which is loose, and the liquid sodium is removed by a perforated ladle which, by reason of its high surface tension, retains the metal, while the caustic soda drains away through the perforations. (*b*) A method, also invented by Castner, of making metallic sodium by the electrolysis of fused caustic soda. Sodium hydroxid (caustic soda) is reduced by heating it with carbon, the carbon being in small grains which are loaded with iron so as not to float in the fused mass but to remain covered by it. The process does not require a very high temperature. By means of it sodium was produced at a small fraction of its previous cost, and metallic aluminium (which later was further cheapened by electric reduction) was reduced in price.—**Chloroplatinite process.** See ★*chloroplatinite.*—**Civil process**, a writ, order, or other direction issued in a civil action out of the court having jurisdiction thereof.—**Clark process**, a method of softening water, or diminishing its hardness, by adding enough lime-water or milk of lime to combine with and precipitate all carbonic acid present, thereby throwing down also calcium and magnesium carbonates previously held in solution by such carbonic acid. Calcium and magnesium present in the condition of sulphate or chlorid are not removed. In other words, the process gets rid of the so-called 'temporary hardness,' but does not affect the 'permanent hardness.' The precipitate may be allowed to settle, or may be removed by filtration. With certain improvements as to filtration introduced by Porter, the method is sometimes referred to as the *Porter-Clark process.*—**Claudet's process**, a process for the extraction of silver, which is found in the liquors resulting from the treatment of cuprous pyrites by the wet method of extraction. The liquor to be treated is first run into a vat where it is allowed to settle. It is then run into a vat of somewhat larger capacity than the first, into which at the same time an amount of some soluble iodide, sufficient to precipitate the silver, is run from a graduated tank, together with a quantity of water equal to about one tenth of the volume of the copper solution. While flowing into the second vat the liquor is constantly stirred and then allowed to settle during forty-eight hours. The supernatant liquor, after being assayed, is run off, and the tank is filled again. The precipitate, which is washed into a vessel about once a fortnight, consists chiefly of a mixture of lead sulphate, lead chlorid, silver iodide, and subsalts of copper. After the latter have been removed by washing with water acidulated with hydrochloric acid, the precipitate is decomposed by metallic zinc, which completely reduces the silver iodide and the lead chlorid. From this decomposition there is obtained a precipitate rich in silver and containing some gold, and zinc iodide, which latter is employed for further precipitation of silver.—**Combined process**, a process of manufacturing steel in which the Bessemer and the open-hearth processes are combined. The gray pig-iron is first treated in a converter and from there transferred to an open-hearth melting-furnace. In the Ural district the order is reversed, that is, the metal passes from the blast-furnace into the open-hearth furnace and when strongly heated is transferred to the converter.—**Contact process.** See ★*contact*1.—**Continuous process**, the Talbot process. See *calotype.*—**Cowles's process.** See *aluminium* ★*processes.*—**Cyanide process.** See ★*cyanide.*—**Damp-clay process.** Same as *Prosser's* ★*process.*—**Darby's recarburizing process**, a process of adding carbon to steel by introducing the carbon into the molten metal as it leaves the furnace. The carbon is placed in a perforated vessel suspended over the casting-ladle. The molten metal in passing through the perforated vessel on its way to the casting-ladle absorbs about 80 per cent. of the carbon and about 20 per cent. is consumed by combustion with air. The carbon must be dense and free from sulphur.—**Darwin's process.** Same as *Darwin's tubercle* (which see, under *tubercle*).—**Deacon's process**, a process patented by H. Deacon in England, and worked to some extent on an industrial scale, for producing chlorin by passing a mixture of hydrochloric-acid gas with air over a heated porous material, usually brick, impregnated with cupric sulphate.—**Deiters's process**, that one of several processes from a nerve-cell which forms the axis-cylinder.—**Dental processes.** Same as *alveolar processes* (which see, under *alveolar*).—**Deville and Caron's magnesium process**, a process founded on the reaction of sodium upon chlorid of magnesium at a red heat. It consists in mixing 150 parts of the anhydrous chlorid of magnesium, 120 parts of purified fluor-spar, and 56 parts of sodium, and placing the mixture in a red-hot clay crucible covered on the top and surrounded by incandescent coke. After the reaction the crucible contains a liquid mass through which are disseminated globules of magnesium. The liquid is stirred until the magnesium is collected in one large button, which, when the mass is cooled, is found in the upper portion of the saline scoriæ. —**Deville's aluminium process.** See *aluminium* ★*processes.*—**Deville's potassium process**, a process in which potassium is prepared from a mixture of charcoal and potassium carbonate, or from a mixture of 100 parts of potassium carbonate, 20 of carbon, and 14 of chalk. —**Diaphragm, diffusion process.** See ★*diaphragm*, ★*diffusion.*—**Direct process.** (*b*) Originally, line etching as distinguished from the half-tone process; now, half-tone work made directly from the object, without the intervention of a drawing or photograph.—**Dongola process**, a method of manufacturing leather by first subjecting the skins to the process of alum-tanning and afterward treating them with tannic acid in a solution of catechu or sumac.—**Dubrunfaut process.** See *Wilson* ★*process.*—**Dust process.** See *Prosser's* ★*process.*—**Eames's process**, a direct process of producing wrought-iron. The ground ore is mixed with a quarter of its weight of coke which has previously been washed with fire-clay and lime to render it less combustible and thereby to protect the metal from oxidation. This mixture is exposed to the flame of burning natural gas on the bed of a reverberatory furnace for about an hour and a half, when the iron may be balled up in the same manner as in the puddling-furnace.—**Electric steel process**, a process in the metallurgy of steel whereby the necessary heat for fusion and the required chemical action are secured by the intense heat of the electric arc passing between electrodes in a suitable crucible or furnace. The heating can be done without oxidizing effect under a cover of slag, and necessary fluxes can be added to purify or wash the metal bath completely, much less expensive material being used to start with and the final results being of a high grade.—**Extraction process.** Same as ★*carbonizing process.*—**Falciform process.** (*b*) A scythe-shaped process of the fascia lata entering into the formation of the femoral ring. (*c*) Fibers of the sacrosciatic ligament reflected on to the ramus of the ischium.—**Ferrier's albumin process**, in *photog.*, a process in which a clean glass plate of stereoscopic size is coated with iodized albumin which, when dry, is excited by immersion in a bath of silver aceto-nitrate, washed, and dried. The plate is exposed in a monocular camera, the right picture being taken on the left end of the plate and the left picture from a different station on the right end. The prints thus come right in the stereoscope. The development is accomplished by gallic acid and a few drops of silver aceto-nitrate applied hot (180° F.), any stains being rubbed off with cotton-wool. The picture is then fixed. *E. L. Wilson*, Cyclopædic Photog., p. 151.—**Fleitmann's process** for refining nickel, a process which consists in adding from 1/10 to 1/20 per cent. of magnesium to the coarse metal melted in a crucible. Magnesium acts as a deoxidizer and renders the metal ductile and capable of being welded to itself or to iron and steel.—**Flintshire process**, an English process of smelting galena in reverberatory furnaces. The furnace has a low inclined roof, and the hearth is separated from the grate by a fire-bridge. The bed slopes toward the well in front of the tap-hole. The galena is first roasted, so that it is partly converted into oxid of lead. When the charge is melted the separated metallic lead collects in the well, while the slag and undecomposed ore, stiffened with lime, is roasted for an hour and smelted. The lead is finally conducted into the outer basin, where it is stirred with a paddle to extract the metal from the rich scum on the surface of the molten lead. The whole operation lasts from five to six hours. —**Folian process**, the long process (processus gracilis) of the malleus in the middle ear.—**Gin process**, an electrothermic process for the production of steel. The furnace is of the resistance type, the hearth consisting of a long sinuous trough into which the fused cast-iron is introduced. The terminal connections through which the current is conveyed to the molten mass consist of large blocks of steel cooled by an internal current of water. When in operation the hearth, placed in a movable carriage-body, is put into an arched furnace in order to avoid the loss of heat by radiation. The current passed through the charge is sufficient to keep the mass in a fused state. In the 'dilution' method, or scrap process, a calculated amount of scrap-steel is added to the fused mass to assist the conversion process. In the 'ore' process some iron oxid is introduced to assist in the elimination of the impurities. The two processes may be used in combination. —**Goldschmidt process.** See ★*aluminothermics.*—**Grabau's process.** See *aluminium* ★*processes.*—**Grätzel's electrolytic magnesium process.** See ★*magnesium.*—**Gum-bichromate process,** in *photog.*, a method of printing in which paper coated with color (India ink, sienna, etc.) rubbed up with gum arabic and potassium bichromate is exposed under a negative, developed by washing with cold or warm water, and finally soaked in an alum bath and dried. *Wall*, Dict. of Photog., p. 366.—**Hall's process.** See *aluminium* ★*processes.*—**Hemal process.** See ★*hemal.*—**Hermite process,** a modern process for bleaching paper-pulp and cloth of vegetable origin by means of a 2.5 – 5.0 per cent. solution of magnesium, calcium, or aluminium chlorid submitted to electrolysis so as to produce a hypochlorite of the metal present.—**Héroult process.** (*a*) See *aluminium* ★*processes.* (*b*) An electrothermic process for the production of steel. The furnace used in this process is of the tilting open-hearth pattern, consisting of an iron casing lined with dolomite brick and magnesite brick around the openings. The electrodes are square prisms and are made of retort-coke containing some sulphur. They are introduced through the roof and are water-jacketed for a short distance above and below their passage through the roof. The charge consists of miscellaneous scrap and some iron ore and lime. The electrodes are suspended just above the slag line and the electric current passes from one electrode through the slag and the molten metal to the other electrode, its intensity being regulated by adjusting the width of the air-gap between the electrodes and the slag.—**Holland process,** a process, invented by Mr. Holland of Cincinnati, for uniting the smaller grains of the native alloy of iridium and osmium, producing practically fused iridium. The native alloy, or iridosmine, is brought to a high temperature in a Hessian crucible, and phosphorus is then added, which causes the material to fuse; after pouring it out so as to form flat sheets of small size, the phosphorus is removed from these by reheating them embedded in lime. The product is used for the points of gold writing-pens, fountain-pens, and drawing-pens, as also for the contact-points of telegraph-keys, the knife-edges of chemical balances, etc.—**Hübl process,** a method for distinguishing fats of the three types, stearin, olein, and linolein, by determining the amount of iodine absorbed under certain special conditions.—**Ives process.** See *color* ★*photography.*—**Jebb process,** a process for making starch from Indian corn, in which the germ as well as the husk of the seed is mechanically separated before grinding the remainder, thus avoiding the necessity for using an alkaline solution and saving the germ and husk in a condition which allows their use in feeding cattle.—**Joly-MacDonough process.** See *color* ★*photography.*—**Joubert's process,** in *photog.*, a process by which a print made on a suitable base, as glass, by the use of bichromated albumin is rubbed with an enamel color and the picture made permanent by firing.—**Jugal process.** (*a*) See *jugal.* (*b*) One of the two processes which by fusion form the jugum of the *Brachiopoda.*—**Kassner's process,** a method proposed for making oxygen gas on a commercial scale by heating calcium plumbate (Ca_2PbO_4) at a low temperature in an atmosphere of carbon dioxid, thus giving rise to calcium carbonate and lead dioxid; the mixture of these, on being more strongly heated, gives off oxygen and afterward carbon dioxid, and leaves a mixture of lime and a lower oxid of lead, from which calcium plumbate may be regenerated by heating in a current of air.—**Kjellin's process,** an electrothermic process for the production of steel. The furnace used in the process is of the induction type (see *electric* ★*furnace*), the contents in the hearth or crucible forming the secondary circuit of a transformer, while the first circuit is formed by a coil of thin insulated copper wire with a laminated core. The furnace is charged with white pig-iron, steel-scrap, and bar-scrap. The purity of the product depends on the composition of the charge, but as the molten metal is at no time during the operation exposed to gases, and as there are no electrodes to add any impurities, the Kjellin process yields a purer product than the crucible process.—**Krupp process,** in *metal.*: (*a*) A process for making pig-iron, practised at the Krupp works at Essen, Germany, which is carried on in a Pernot furnace and uses manganese and iron oxid. Also called *Bell-Krupp process.* (*b*) A cementation process for hardening the surface of steel plates similar to the Harvey process but with certain secret variations or additions.—**Krupp's dephosphorizing refinery process,** a process for reducing the phosphorus in pig-iron by running the molten metal from a cupola into an open-hearth furnace whose revolving hearth is lined with red ore. When the ore is raised to white heat, the molten iron is run from the cupola, and the hearth is rotated at a rate of about 10 revolutions a minute. The operation lasts from 5 to 10 minutes (according to the amount of phosphorus to be eliminated), after which the dephosphorized metal is transferred to an ordinary open-hearth furnace. The phosphorus is oxidized and some carbon is lost during the operation.—**Kurlbaum's process,** a method for producing an adherent deposit of platinum-black on the surface of the platinum foil of a bolometer strip. It consists in electrolyzing under definite conditions of current a solution of platinum chlorid to which has been added a minute quantity of lead acetate.—**Landore process.** See *ore* ★*process.*—**Lateral process.** Same as *parapophysis.*—**Lead-chamber process,** the process by which for more than a century sulphuric acid has been made on a great scale by the interaction of sulphur-dioxid gas, vapor of water, and atmospheric oxygen, aided by the presence of nitrogen dioxid and tetroxid, in large chambers of sheet-lead. See *sulphuric acid.* This process still remains the source of the greater part of the sulphuric acid of commerce, but its supremacy is threatened by the contact process which has been developed within the last few years.—**Le Sueur process,** one of several methods for electrolytically decomposing common salt in solution, so as to obtain from it on an industrial scale chlorin and caustic soda. A tank containing the brine is divided by a nearly horizontal diaphragm of asbestos, above which are the anodes of an iridium-platinum alloy, while below the cathode consists of a sheet of iron wire gauze.—**Lippmann process.** See *color* ★*photography.*—**Lister's process,** a process of preparing and spinning defective silk-cocoons and waste reeled silk, consisting in scouring the silk with soda and soap and then combing (or carding) and spinning it.—**Lost-wax process.** See *cire perdue.*—**Low-milling process,** the method of grinding wheat between millstones set very close together and afterward bolting the flour. In this way more of the bran is finely ground up and remains mixed with the flour than in the more modern high-milling or roller process.—**Lumière process.** See *color* ★*photography.*—**Lunge's process,** a modification of the common process for bleaching by means of chlorid of lime. A small quantity of acetic acid or some other weak organic acid is added to the bleach-liquor and serves to evolve free hypochlorous acid.—**MacArthur and Forrest's process.** Same as ★*cyanide process.*—**Maceration process,** a method formerly in use to some extent for obtaining a solution of sugar from beets. The roots, either in the fresh state rasped to a pulp, or cut into slices, dried, and ground to meal, were macerated in water, cold or warm, with or without the addition of a little milk of lime, and the sugar solution or 'juice' thus produced was separated from the residual solid fiber by expression. This method has been almost entirely abandoned in favor of the diffusion process.—**Mactear process,** one of several methods of recovering sulphur from the tank-waste of the Leblanc process for making carbonate of soda. It involves the blowing of air through the drainage-liquor from tank-waste heaps until enough calcium sulphid has been converted into calcium thiosulphate to react completely with the remaining sulphid, when hydrochloric acid is added, so that practically the whole of the sulphur is precipitated.—**Malignani's process,** a process of removing the air from the bulbs of glow-lamps in which the last traces of gas are brought into solid chemical combination with phosphorus and certain other substances.—**Malkin's process.** Same as *Boulton and Worthington* ★*process.*—**Manhes process,** a process for the desulphurization of copper matte in which a blast of air is passed through the metal as is done for iron in the Bessemer process: so called from its inventor, Pierre Manhes.—**Marginal process, sensation,** in *psychol.*, a mental process, sensation or other, which runs its course obscurely in the background of consciousness, that is, in the field of inattention: opposed to ★*focal idea* or *sensation.* *Amer. Jour. Psychol.*, XII. 252.—**Marsh-Berzelius process,** a modification of the original Marsh's test which was first proposed by Berzelius, consisting in carrying the arseniureted hydrogen gas through a hard glass tube of small diameter and heating this tube from without. The gas is decomposed by passing over the hot glass, and a deposit of metallic arsenic is formed inside the tube instead of being produced by burning the gas and placing over the flame a piece of porcelain. There are several advantages involved in this improved form of the process, especially for forensic purposes.—**Martin process.** (*b*) A method of making starch from wheat flour without fermentation, the flour being made into a dough with water and simply washed in a fine sieve under a stream of water, the starch depositing from the wash-water on standing.—**Martin's albumin negative process,** in *photog.*, a process in which plates are covered with a film of albumin containing ammonium iodide, milk-sugar, dextrine, and grape-sugar. When sensitized and exposed, gallic acid (with a few drops of a 4 per cent. nitrate solution) is used as a developer. *E. L. Wilson*, Cyclopædic Photog., p. 226.—**Massenez process,** a process preliminary to the manufacture of Bessemer steel, cast-iron from different blast-furnaces being mixed in the melted state and treated with ferromanganese in sufficient quantity to remove the sulphur present, so that a more uniform and purer material thus produced may be supplied to the converter.—**Mather-Thompson process,** a modern method of bleaching cotton cloth by means of chlorid of lime, from which hypochlorous acid is set free by exposure to an atmosphere of carbon-dioxid gas.—**Mayall's albumin-negative process,** in *photog.*, a process in which a plate for a negative is covered with a film of albumin to which potassium iodide, potassium bromide, and potassium hydrate are added. The dry plate is exposed to the vapor of iodine, as is done with a daguerreotype plate, sensitized in a bath of silver aceto-nitrate, and washed. Just before going to the camera it is again iodized. Gallic acid is used as a developer and hyposulphite of soda for fixing. For positive plates sodium chlorid is substituted for potassium bromide.—**Mège-Mouries process,** the original process, named from the inventor, for making artificial butter from the solid fat of domestic animals, as of the ox or horse. See *butterin*, *oleomargarin*, etc.—**Meinecke process,** a method of making common yellow soap in which crude turpentine is added to the contents of the boiler and, a still-head being placed over the latter, the spirits of turpentine given off in the boiling are collected and saved.—**Mercuric chlorid and ammonia process,** a method of intensifying photographic negatives, consisting in first bleaching the thoroughly washed negative with a solution of mercuric chlorid acidified with hydrochloric acid, and then blackening the image by the use of ammonium hydrate.—**Miller's process,** a process of refining gold by means of chlorin gas, introduced by F. B. Miller in 1876, and still used extensively in Australia. The gold is melted in an ordinary crucible-furnace, the chlorin gas being conveyed by a clay pipe entering the crucible through a hole in the bottom. The current of chlorin gas is started after the gold has been melted, and is kept up for about an hour and a half, when the gold is allowed to solidify, the silver chlorid floating on the top is poured off, and the small proportion of gold which it contains is subsequently recovered by remelting with sodium carbonate. The Miller process is especially adapted for gold containing small quantities of silver.—**Milly process,** in the manufacture of fatty acids for candle-making, a modified process of decomposition of the original fat by means of sulphuric acid. A very small quantity of sulphuric acid is used, and this acts for only a few minutes at 150° C., being followed by boiling with water. The greater part of the fatty acid product is thus obtained sufficiently white to be used for candles without being distilled.—**Minet's process.** See *aluminium* ★*processes.*—**Mond's process,** a method of recovering sulphur from the tank-waste of the Leblanc process for making carbonate of soda from common salt. It consists essentially in oxidizing the waste in tanks by means of a current of air supplied by a fan, leaching the oxidized material with water in the same tanks and precipitating sulphur from the solution by means of hydrochloric acid. These steps require to be repeated, and with special precautions as to details, to render the process commercially successful.—**Neural process,** an arch above the centrum of each vertebra through which the spinal cord runs.—**Niepce's process,** in *photog.*, a process which depends on the action of light on a thin layer of bitumen covering a metallic plate. The portions not rendered insoluble by the light are dissolved away, exposing the metal surface in part and obscuring it more or less at other portions. The metal can then be etched. It was devised by J. N. Niepce in 1829.—**Obuchow's steel process,** a process of producing steel by introducing molten white charcoal pig-iron of good quality into a crucible containing wrought-iron or steel-scrap together with magnetic iron ore, titaniferous black sand, and clay. When the contents have become perfectly liquid, niter and arsenious oxid are added, and the whole is well stirred.—**Oil process,** in *mining*, a method of ore concentration depending on the adhesion of certain oils to native metals and metallic sulphids. The adhering oil causes such grains to float in water, while the grains of gangue sink because the oil, unless added in excess, does not attach itself to non-metallic minerals.—**Ore process,** a method of conducting the open-hearth process for making steel from melted pig-iron, in which iron ore in the form of the oxids is introduced into the molten metal high in carbon resulting from the fusing of the pig-iron. The oxygen reacts upon the carbon of the bath, the carbon going off as CO_2: the reduced iron ore raises the weight of iron in the charge and therefore still further reduces the carbon percentage. The ore must be free from elements which would deteriorate the quality of the product. The method is known also as the *Landore process*, from the district in Wales where it was first successful.—**Orleans process,** the process of making vinegar from wine by fermentation in oaken casks to which air has free access, the wine being from time to time introduced in separate portions and the vinegar in like manner fractionally withdrawn.—**Orloff process,** a method of printing in colors introduced about 1900. Each color requires a separately engraved plate. The plates, arranged on separate cylinders, are successively impressed in proper position upon a transfer-sheet fastened to the impression-cylinder. This transfer-sheet, which contains all the colors, is then reimpressed upon the paper intended for the print. The advantages claimed for this process are accuracy of register and increased production.—**Osmose process,** a method of partly separating the mineral salts from beet-root molasses by osmosis, allowing of the recovery of more sugar from the molasses thus purified. See *osmogene.*—**Otto process,** a process for artificially purifying water for potable purposes, in which it is sterilized by treatment with ozone, which is an antiseptic.—**Otto-Stas process,** a general method of examination for alkaloidal poisons of mixed organic materials, such as the contents of the stomach, human tissues, etc., involving extraction with alcohol acidified with tartaric or oxalic acid, followed by other methods of purification.—**Oxland's process,** a process for the separation of tungsten from black tin. A charge of ore mixed with soda-ash is introduced into a reverberatory furnace with a cast-iron bed and remains there about three hours. It is then taken to lixiviation-vats where a part of the wolfram, now converted into tungstate of sodium, is dissolved. The oxids of iron and manganese are subsequently removed by washing on the dressing-floor.—**Papyrotint process,** in *photog.*, a photolithographic process in which a sensitized gelatin-coated paper, after exposure behind a negative, possesses the property, when developed, of causing a greasy ink to adhere to the parts affected by the light. The ink may be transferred to stone or zinc.—**Pasteur's process,** in *vinegar-making*, a method, devised by Pasteur, of cultivating, with the necessary conditions for growth, the acetic-ferment organism, *Mycoderma aceti*, and applying it to the fermentation of an alcoholic liquid.—**Pettenkofer's process,** in *chem.*, a method, frequently resorted to for determining the amount of carbon dioxid in air, consisting in agitation of a measured volume of the air to be examined with a determined and sufficient volume of an aqueous solution of barium hydroxid (so-called baryta-water), followed by a determination by means of a standard solution of oxalic acid of the amount of the surplus barium hydroxid left in solution. The quantity of barium hydroxid which had been precipitated as barium carbonate bears a constant relation to the quantity of carbon dioxid which precipitated it.—**Pig-and-ore process,** a process for making steel by melting together pig-iron and iron ore in such proportion as to give the correct amount of carbon. See *scrap* ★*process.*—**Porter-Clark process.** See *Clark* ★*process.*—**Powrie-Waner process.** See *color* ★*photography.*—**Processes of adjustment.** See ★*adjustment.* —**Prosser's process,** in *ceram.*, a process by which tiles, buttons, etc., are made with clay-dust subjected to great pressure. It was invented by Richard Prosser of England.—**Pseudomesial process.** Same as ★*pseudomesial.*—**Respiratory process,** in *entom.*, any one of various outgrowths, especially in aquatic larvæ, which function in respiration.—**Rhodin process,** one of the patented forms of the electrolytic process for making chlorin and caustic soda from a solution of common salt.—**Roller process,** a method of crushing rather than grinding wheat, which with special bolting machinery furnishes a whiter flour, freer from the material of the outer coats of the grain, than was produced by the older method of grinding between millstones.—**Rollet's refinery process,** a method of dephosphorizing pig-iron by melting it in a cupola with an addition of limestone and fluor-spar. It yields a very pure product, which is used for the production of the higher grades of steel in some works of France.—**Rose's process.** See *aluminium* ★*processes.*—**Running-down process,** a term applied to the process of refining cast-iron in an open-hearth furnace. *Phillips and Bauerman,* Elements of Metallurgy, p. 298.—**Sanger-Shepherd process,** in *photog.*, a process analogous to the Ives process in which three positives stained with the colors complementary to the taking screens are superimposed and viewed in transmitted light, producing an approximation to the natural colors.—**Scheibler's process,** in the manufacture of beet-root sugar, a method of obtaining crystallizable sugar from the molasses by treatment with strontium hydroxid. The details of the process were devised and worked out by Scheibler.—**Scrap process,** a form of the Siemens-Martin or open-hearth process for making steel in which a bath of pig-iron or other fusible iron high in carbon is first brought to fusion in an open-hearth furnace, and then scrap-steel or wrought-iron or other form of iron low in carbon is charged in. The melted bath fuses the scrap, and the percentage of carbon is lowered both by the increase of the element iron and the reactions with the melting flame and gases. Samples are taken at intervals, and more scrap is added until the desired properties are secured. Chromium, nickel, tungsten, or other alloying elements can also be added to the bath.—**Shoe-lifter process,** in certain extinct genera of brachiopods, a curved internal plate extending from the beak for half the length of the valve, attached by its edges to the bottom of the valve, but free at its outer extremity. This plate may occur only in the ventral valve (*Merista*) or in both valves (*Dicamara*).—**Soda process,** a process for making wood-pulp for paper in which caustic soda is used to disintegrate the bundles of fibers of the wood.—**Stas-Otto process.** See *Otto-Stas* ★*process.*—**Stassano process,** an electrothermic process of iron-smelting. The electric furnace used is of the arc type and consists of a cylindrical outer casing of iron surmounted by a conical roof and lined with magnesite brick. The cylindrical electrodes nearly meet in the center of the interior of the furnace, their number being determined by the capacity of the furnace. In Italy, where the furnace is in practical operation, it is used for the production of wrought-iron from ore of great purity.—**Strontia, strontium process.** Same as *Scheibler's* ★*process.*—**Sulphite process,** a process for making paper-pulp by the disintegration of wood, such as spruce or poplar, in the form of chips by heating in large digesters with an aqueous solution of calcium acid-sulphite.—**Surface combustion process,** a process for the manufacture of sulphuric acid. This new method of making sulphuric acid is based upon the fact, first observed by Phillips in 1831, that sulphur dioxid and oxygen gases carried in a state of mixture over a heated surface of platinum combine to form sulphur trioxid, which, on addition of water, is at once converted into sulphuric acid. The two reactions are represented by the formulæ $SO_2 + O = SO_3$ and $SO_3 + H_2O = H_2SO_4$. Numerous practical difficulties presented themselves in the way of utilizing these reactions on an industrial scale, but these have gradually been overcome, chiefly by researches carried on for years under the auspices of the Baden Aniline and Soda Works in Germany, and the conditions necessary to success have been determined, especially the freeing of the sulphur dioxid and air used from all suspended or gaseous impurities, the careful regulation of the temperature of the cylinders containing platinized asbestos, and the maintenance of the proper strength in sulphuric acid of the water used to absorb the sulphur trioxid. The process is now established on a commercial basis and many thousand tons of acid have been made by it. One great advantage which is presented by it is the production at the outset of acid of full strength, which can be transported at minimum freight rates and diluted, if necessary, by the consumer. In the manufacture by the lead-chamber process, hitherto in general use, the acid as it comes from the chambers contains only 62–70 per cent. of real H_2SO_4; this has to be concentrated by boiling off the remaining water, and if a product of full commercial strength is required the final concentration is commonly effected in costly platinum stills. The need for this disappears in the new process.—**Swansea process,** a method of copper-smelting long practised at Swansea in South Wales and now extensively used elsewhere. It is applied to various mixtures of ores, in which, however, copper pyrites, consisting of sulphur, copper, and iron, usually predominates. The main features of the process consist in partially roasting the ore with exposure to the air, so as to burn off a part of the sulphur, converting the iron to oxid, and strongly heating the residue with silica, so that two fused layers are formed, consisting of ferrous silicate and cuprous sulphid respectively. The cuprous sulphid is detached, re-roasted to such an extent as to convert a part of the copper to oxid, and again strongly heated in a melting-furnace, the oxygen being thus taken up and the remaining sulphur combining to form sulphur-dioxid gas, which escapes, while the copper melts down to form crude ingot-metal, afterward to be refined.—**Sweating process.** (*a*) A process for making joints with solder, brass, or other fusible metal or alloy, whereby the temperature of the two parts to be joined is raised to the fusing-point of the solder or metal or alloy, and the latter runs into the joint and solidifies in the spaces when cooled. (*b*) A process for making joints by bringing the two elements just to fusion at their contact-edges, so that they become one where they touch, without a solder or alloy.—**Sweeping process,** in *thermodynam.*, an irreversible process. A homogeneous substance not in a state of thermal equilibrium undergoes a sweeping process as the substance settles down to a state of thermal equilibrium. *Nichols and Franklin,* Elements of Physics, I. 217.—**Swell process,** a process in which a plate covered with a solution of bichromate of potash, or its equivalent in gelatin, is exposed under a photographic negative. Where the bichromatized gelatin has not been affected by light it absorbs water and swells up; a plaster cast of this surface is taken, and the operator is enabled to produce a relief printing-plate.—**Talbot process,** a continuous process for the manufacture of steel, in which a tilting open-hearth furnace with a basic lining is used. The furnace is charged either entirely with molten pig-iron or partly with scrap and partly with liquid pig-iron, and additions of oxids and limestone are made from time to time to hasten the operation. When the charge has been worked down, a portion of the metal is poured off, oxid of iron and lime are added to the slag, and molten pig-iron, equivalent in quantity to the steel tapped out, is run in. In the reaction which takes place between the impurities of the new charge and the oxidizing slag, the carbon, silicon, phosphorus, and manganese are oxidized, and equivalent amounts of iron are reduced from the oxid in the slag and pass into the metal bath. The slag, now almost deprived of its iron oxid, is partly run off, and the charge is worked down by fresh additions of oxid of iron and lime. About one third of the finished product is again poured off, and the operation is so repeated till the end of the week, when the furnace is emptied. As the hearth is never emptied during the operation it wears very slowly and the slag can be tapped off before it can seriously attack the lining. The rapidity of working depends on the composition of the pig-metal and the proportion of metal removed each time. A 200-ton furnace working on hematite iron yields a weekly output of about 1,400 tons.—**Taylor-White process,** a patented process for making a self-hardening tool-steel. The steel made by this process will continue to cut even after the edge of the tool is red-hot.—**Three-color process.** See ★*three-color.*—**Tortiniolite process,** a method of treatment applied to pig-iron in which the molten metal is run into chills heavily coated with a wash of impure graphite, it being assumed that some additional carbon is taken up by a kind of superficial cementation.—**Turkey-red process,** a process, of great antiquity in India and other parts of the East, for dyeing cotton cloth or yarn a brilliant and remarkably permanent red color by means of madder. A number of steps are required (some of which are repeated two or three times) which are varied in detail by different dyers; but the essential features of the process are the impregnation of the cloth with an alkaline emulsion of oil (Gallipoli oil and castor-oil which has been treated with sulphuric acid are commonly used), oxidation of the absorbed oil by exposure to heated and moist air, washing out unoxidized oil by means of alkaline solutions, mordanting with tannin (generally sumac or galls) and aluminium acetate, and finally dyeing in a bath prepared with madder, garancin, or artificial alizarin. Also known as *Adrianopla-red process.*—**Vandyke process,** a process of producing a zinc plate for printing, prepared by exposure under the actual drawing.—**Vat process,** in *dyeing* with indigo, any one of several methods of rendering indigo soluble by reducing it to hydrindigotin or indigo white, the cloth or yarn being then steeped in this solution and afterward exposed to atmospheric oxygen, by which the hydrindigotin is converted again into indigotin or indigo blue, which is insoluble and remains fixed upon the fiber. A vat process is distinguished from a process in which the indigo blue is, without reduction, rendered soluble as indigo-sulphonic acid.—**Volhard process,** in *anal. chem.*, a valuable method for the determination of silver in a solution of one of its salts, usually the nitrate. A few drops of a solution of ferric sulphate are added to the liquid, and then, from a graduated burette, a standardized solution of potassium thiocyanate. As long as any silver remains in solution a white precipitate of silver thiocyanate is produced, but as soon as the whole of the silver has been thrown down the next drop of the standardized reagent solution produces a red color in the liquid, due to the formation of ferric thiocyanate. The quantity of the reagent used is the measure of the quantity of silver present. The method can be applied in an acid solution, and in the presence of sundry other metals than silver, and can be indirectly used for the determination of chlorin, bromine, and iodine.—**Walloon forge** or **process,** a charcoal hearth (process) for refining cast-iron, used largely in Sweden (Swedish *Walloon*) and in Lancashire and South Wales (English *Walloon*). The charcoal hearths are usually low rectangular chambers with one or more twyers. The fuel is charcoal, and the wrought-iron produced by this process is superior to that produced by puddling, on account of its freedom from phosphorus. In Sweden the Walloon process is applied chiefly to the manufacturing of Dannemora iron.—**Water-reel process,** a process of softening the filaments of silk-cocoons for reeling.—**Wedgwood's process,** in *photog.*, a process, devised by Thomas Wedgwood and Sir Humphry Davy in 1802, whereby photographic pictures were made on glass, leather, or paper by the use of silver nitrate or chlorid. The pictures were not permanent.

> The very first scientific application of *Wedgwood's process* was made here by the illustrious Thomas Young, when he impressed Newton's rings on paper moistened with silver nitrate, as described in his Bakerian lecture to the Royal Society on November 24, 1803.
>
> *Smithsonian Rep.*, 1890, p. 380.

Weldon-Pechiney process, a process for obtaining chlorin from the waste-liquor of the recovery of ammonia in the Solvay process for making carbonate of soda from common salt. The liquor in question in its original form contains calcium chlorid, from which it is difficult to isolate chlorin economically. The Weldon-Pechiney process substitutes magnesia for lime as the means of recovering ammonia, so that the waste-liquor contains magnesium instead of calcium chlorid. This liquor, with the further addition of magnesium to form an oxychlorid, is evaporated to dryness, and the residue strongly heated, ultimately in a current of air. Hydrochloric acid and free chlorin are given off, saving altogether about 85 per cent. of the chlorin in the liquor.—**Weldon process,** a process for the recovery of manganese. It is an important improvement in the production of chlorin for making bleaching-powder, consisting in the treatment of the (previously waste) still-liquor with excess of slaked lime and a current of air forced through the liquid, with the result that oxygen is taken up from the air by the manganese in the liquid as hydroxid, and a black mud is produced, consisting largely of calcium acid-manganite, which can be used in place of fresh manganese dioxid to decompose more hydrochloric acid and furnish more chlorin.—**Welsh process of copper-smelting.** See *Welsh* ★*method of copper-smelting.*—**Wetherill process,** a process for manufacturing zinc white. Finely crushed zinc mixed with silicates, calamine, or roasted blende, is heated upon the bed of a muffle-furnace. The reduced zinc rises, together with the furnace-gases, and when these have somewhat cooled down, is re-oxidized. The zinc oxid, in the form of a fine white powder, is then filtered through coarse cotton cloth, through which the gaseous products of combustion escape.—**Wilson process,** a method of manufacturing fatty acids for candle-makers' use, by heating the original fat, especially palm-oil, with a small quantity of sulphuric acid, washing away any excess of this acid or other soluble matter, and distilling the residue with superheated steam. Also known as the *Wilson-Gwynne process* and the *Dubrunfaut process.*—**Wöhler's process.** See *aluminium* ★*processes.*—**Wohlwill process,** an electrolytic process of refining gold. The cathode-plates consist of electrodeposited fine gold rolled into thin sheets, and the electrolyte is a gold chlorid strongly impregnated with free hydrochloric acid. When the gold treated contains some lead, a mixture of hydrochloric and sulphuric acids is added to the gold chlorid solution. The process is used in several works in Germany and the United States.—**Woodbury's process.** Same as *woodburytype*, 1.

process, *v. t.* 3. In *leather-making*, to treat or soak in liquor. *Flemming,* Practical Tanning, p. 9.

process-block (pros′es-blok), *n.* A block having upon its face a metallic plate for printing obtained by a photomechanical process.

processing (pros′es-ing), *n.* The act or operation of putting something through a prescribed process.

> A three-filler cannery should have a width of at least 50 feet, and the length should correspond to the machines used in *processing*, giving ample room, so that the cans may go uninterruptedly throughout the whole length of the building.
>
> *Sci. Amer. Sup.*, March 21, 1903, p. 22751.

Processionary caterpillar, moth. See ★*caterpillar,* ★*moth*[1].

process-plate (pros′es-plāt), *n.* Same as ★*process-block.*

Processus vermiformis, a slender, hollow projection from the intestine opening near the cæcum, present in a typical form in the wombat. It differs from the vermiform appendage in being an independent structure, considered as representing the entire cæcum, while the appendix is a part of the cæcum. *Proc. Zool. Soc. London*, 1902, p. 19.

prochoresis (prō-kọ-rē′sis), *n.* [Gr. προχώρησις, a going forth, < προχωρεῖν, go forth.] Movement of the stomach in passing the chyme forward into the intestine.

prochromatin (prọ-krō′ma̤-tin), *n.* [Gr. πρό, before, + χρῶμα(τ-), color, + *-in*[2].] In *cytol.*, the substance of which the plasmosomes or true nucleoli consist; the 'paranuclein' of O. Hertwig. *Pfitzner*, 1883.

prochronize (prō′krọ-nīz), *v. t.*; pret. and pp. *prochronized*, ppr. *prochronizing*. [Gr. πρό, before, + χρόνος, time, + *-ize*.] To assign too early a date to; antedate.

Proclamation of rebellion, in *old Eng. law*, a writ, issued after a man had failed to appear on a subpœna or an attachment in chancery, declaring him a rebel unless he surrendered himself by a day named. The commission or writ of rebellion was a process of contempt.

proclinate (prọ-klī′nāt), *a.* [Gr. πρό, forward, + κλίνειν, bend, + *-ate*[1].] Inclined forward.

> Laterad the transfrontals are two *proclinate* orbitals in the usual position.
>
> *Kansas Univ. Quarterly*, July, 1900, p. 205.

proclivitous (prọ-kliv′i-tus), *a.* [L. *proclivitas*, declivity, + *-ous*.] Having a steep, precipitous slope; proclivous.

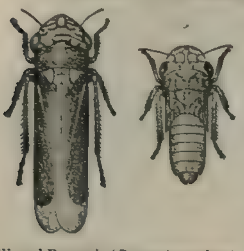
procnemial (prok-nē′mi-a̤l), *a.* and *n.* [Gr. πρό, in front of, + κνήμη, tibia.] **I.** *a.* Noting a crest or prominent ridge on the anterior surface of the tibia below the knee-joint. Oftener called the *cnemial crest.* See ★*crest.* *Smithsonian Rep.*, 1893, p. 465.—**Procnemial process,** a projection from the upper anterior part of the tibia remarkably developed in grebes and loons.

II. *n.* The procnemial crest.

Procniatidæ (prok-ni-at′i-dē), *n. pl.* [NL., < *Procnias*, generic name, + *-idæ*.] A family of birds comprising South American species of the genus *Procnias*. They have usually been placed with the tanagers, in spite of the swallow-like skull, but were made a distinct family by Lucas (1895) on account of structural peculiarities.

Procolophonia (prō″kọ-lo-fō′ni-ạ̈), *n. pl.* [NL.] An order of reptiles, established by Seeley, which contains extinct species of primitive structure, intermediate in this respect between the anomodonts and higher forms. Paired prevomers and ectopterygoids are present, as well as free epiotics. The vertebræ are amphicœlous and perforated by the notochord. The only known genus is *Procolophon*, from the Trias of South Africa.

Proconia (prọ-kō′ni-ạ̈), *n.* [NL. (Serville, 1832), < Gr. πρό, before, + κῶνος (?), cone.] 1. A genus of leaf-hoppers of the family *Jassidæ*, containing a number of wide-spread species.—2. [*l. c.*] An insect of this genus.—**Waved proconia**, an American tree-hopper, *Proconia undata*, which feeds on the leaves of the grape, cotton, and many trees and plants. Also called *sharp-shooter* by cotton-planters.



Waved Proconia (*Proconia undata*). Adult at left; nymph at right. (Sanderson, U. S. D. A.)

procoracoid (prọ̄-kor′ạ̈-koid), *n.* [Gr. πρό, forward, + E. *coracoid.*] A small bone, or center of ossification, which lies anterior to the coracoid and in contact with it and the scapula: present in monotremes, plesiosaurs, etc. In birds the procoracoid is represented by a process on the shaft of the coracoid just below the glenoid cavity. Same as the *precoracoid* of Huxley and others. *Amer. Nat.*, Feb., 1904, p. 105.

procoracoidal (prọ̄-kor-ạ̈-koi′dạ̈l), *a.* [*procoracoid* + *-al*¹.] Of or pertaining to the procoracoid; precoracoidal. *Trans. Zool. Soc. London*, Oct., 1899, p. 69.

procribrum (prọ̄-krib′rum), *n.*; pl. *procribra* (-rạ̈). [NL., < *pro-* + *cribrum.*] A sac-like development of the embryonic cribrum. It later gives rise to the sinus maxillaris. *Jour. Roy. Micros. Soc.*, Feb., 1905, p. 42.

procryptic (prọ̄-krip′tik), *a.* [Irreg. < L. *pro*, for, + E. *cryptic.*] Relating to resemblances in form and color between an animal and its surroundings by which it is concealed from its enemies.

> No doubt, however, it is an equally important *procryptic* factor, serving to protect the spider from various enemies. *Proc. Zool. Soc. London*, 1903, p. 48.

> The resemblance of a mollusc to the coral on which it lives, or an external parasite to the hair or skin of its host, would be *Procryptic*. *Encyc. Brit.*, XXVII. 149.

Procryptic coloring. See ★*coloring.*

procryptically (prọ̄-krip′ti-kạ̈l-i), *adv.* By means of or with reference to procryptic characters.

procteurynter (prok-tū-rin′tėr), *n.* [Gr. πρωκτός, anus, + *εὐρυντήρ, < εὐρύνειν, widen.] An instrument used in stretching the sphincter muscle of the anus.

proctocneme (prok′tok-nēm), *n.* [Gr. πρωκτός, the anus, + κνήμη, the tibia.] In anthozoans, one of the twelve primary mesenteries: contrasted with ★*metacneme.*

proctocnemic (prok-tok-nē′mik), *a.* [*proctocneme* + *-ic.*] Of or pertaining to a proctocneme; characterized by the presence of proctocnemes.

proctodæum, *n.* 2. The posterior division of the cloaca in such animals as birds, opening externally by the anus: correlated with ★*coprodæum* and ★*urodæum.*

proctologic, proctological (prok-tọ̄-loj′ik, -i-kạ̈l), *a.* [*proctolog(y)* + *-ic-al*¹.] Of or pertaining to proctology: as, the American *Proctologic* Society.

proctologist (prok-tol′ọ̄-jist), *n.* [*proctolog(y)* + *-ist.*] A medical practitioner who makes a specialty of diseases of the rectum and anus.

proctology (prok-tol′ọ̄-ji), *n.* [Gr. πρωκτός, anus, + *-ology.*] That medical specialty which deals with diseases of the anus and rectum.

proctoplegia (prok-tọ̄-plē′ji-ạ̈), *n.* [NL., < Gr. πρωκτός, anus, + πληγή, stroke.] Same as *proctoparalysis.*

proctoptosis (prok-top′tọ̄-sis), *n.* [NL., < Gr. πρωκτός, anus, + πτῶσις, falling.] Same as *proctocele.*

proctorrhaphy (prok-tor′ạ̈-fi), *n.* [Gr. πρωκτός, anus, + ῥαφή, sewing.] In *surg.*, operation for uniting the edges of the torn rectum and anus after rupture of the perineum.

proctoscirrhus (prok-tō-sir′, or skir′us), *n.*; pl. *proctoscirrhi* (-ī). [NL., < Gr. πρωκτός, anus, + σκίρρος, σκῖρος, a tumor. See *scirrhus.*] Cancer of the rectum and anus.

proctoscope (prok′tọ̄-skōp), *n.* [Gr. πρωκτός, anus, + σκοπεῖν, view.] An instrument used in the examination of the rectum; a rectal speculum.

> An examination with the *proctoscope* showed a large ulcerated area about two inches above the rectum. *Med. Record*, Aug. 1, 1903, p. 194.

proctostenosis (prok″tọ̄-stē-nō′sis), *n.* [NL., < Gr. πρωκτός, anus, + στένωσις, narrowing.] Stricture of the rectum.

proctotome (prok′tọ̄-tōm), *n.* [Gr. πρωκτός, anus, + -τομος, < ταμεῖν, cut.] A surgical knife used to incise the rectum, as for the relief of stricture.

proctotrypid (prok-tọ̄-trip′id), *n.* and *a.* I. *n.* One of the *Proctotrypidæ.*

II. *a.* Having the characters of or belonging to the hymenopterous family *Proctotrypidæ.*

procumbent, *a.* 3. In *anat.* and *zoöl.*, directed forward and slightly upward: contrasted with *decumbent.*

> In the lower jaw there is a single pair of *procumbent* incisors, followed by several small teeth. *Encyc. Brit.*, XXX. 506.

Procuratory of resignation, in *Scots law*, a process by which a vassal surrendered his fee or feud to his superior. The surrender of copyholds in England is by a kindred process.

procurrent (prọ̄-kur′ẹnt), *a.* [L. *procurrens*, ppr. of *procurrere*, run forward. See *procursive.*] Inserted progressively farther forward: said of the rays of a fish's fin. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 538.

procurvature (prọ̄-kėr′vạ̈-tụ̄r), *n.* [*pro-* + *curvature.*] Forward curvature. *Annals and Mag. Nat. Hist.*, Jan., 1903, p. 114.

> . . . I am disposed to think that they [Aganippæ] have had an origin independent of the Cystauchenii in Australia from the Nemesiæ, from which they differ practically only in the *procurvature* of the fovea—a feature which is known to have arisen more than once within the limits of the Mygalomorphæ. *Proc. Zool. Soc. London*, 1903, p. 349.

procurved (prọ̄-kėrvd′), *p. a.* [*pro-* + *curved.*] Bent forward: the opposite of *recurved* or *decurved.*

> The male . . . is a very fine specimen . . . but with a recurved instead of *procurved* thoracic fovea. *Proc. Zool. Soc. London*, 1902, p. 122.

prod, *n.* 5. A pyramidal or conical point which protrudes from the face of a loam-plate or a core-plate for the purpose of holding or retaining the loam. *Lockwood*, Dict. Mech. Eng. Terms.

prodeltidium (prō-del-tid′i-um), *n.*; pl. *prodeltidia* (-ạ̈). [NL., < Gr. πρό, before, in place of, + NL. *deltidium.*] A plate developed on the dorsal side of the pedicle-lobe in the cephalula stage of brachiopod embryos and which later becomes attached to the posterior margins of the ventral valve to form the deltidium of postembryonic stages. *J. M. Clarke.*

prodiæne (prō-dī′ēn), *n.* [Gr. πρό, forward, + δι-, two, + (τρί)αινα, trident.] A four-rayed sponge-spicule with two of the arms close together as if forked and the fourth atrophied. *Proc. Zool. Soc. London*, 1902, p. 219.

prodidomid (prọ̄-did′ọ̄-mid), *n.* and *a.* I. *n.* A member of the araneid family *Prodidomidæ.*

II. *a.* Having the characteristics of or belonging to the araneid family *Prodidomidæ.*

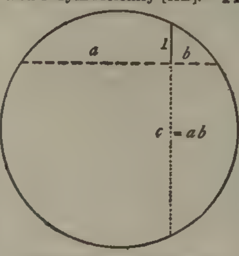
prodigal, *n.* 2. In *civil law*, a person of full age for whom, by judicial authority, a curator is appointed, by reason of his inability to attend to his obligations and estate.

prodissoconch (prọ̄-dis′ọ̄-kongk), *n.* [Gr. πρό, before, + δισσός, double, + κόγχη, shell.] The bivalve embryonic shell of a pelecypod, generally of a rounded form, equivalve, with straight, rather long hinge-line and smooth surface. It can often be distinguished at the apex of the beaks of young shells.

> It might perhaps be thought desirable to dignify this specialized type of protoconch by a distinct name, as has been done by Jackson in the case of the pelecypod protoconch ("*prodissoconch*"). If so, the name "prototeconch," suggested to me by the late Professor Hyatt, would be most applicable. *Amer. Nat.*, Dec., 1902, p. 918.

produce-car (prod′ūs-kär), *n.* In *car-building*, a refrigerator-car (which see) used to transport vegetables, fruit, etc.

product, *n.*—**Adaptation-product.** See ★*immunity*, 5.—**Geometric product.** Same as *outer* ★*product. B. de Saint-Venant.*—**Inner product,** in *geom.*, the combination $A_x B_x + A_y B_y + A_z B_z$ of the components of two vectors A, B on rectangular axes. It represents geometrically the product of the lengths of the two vectors and the cosine of their included angle. Grassmann, to whom the phrase is due, writes this symbolically [A | B].—**Inner product** of two coinitial sects *a*, *b*, making an angle *α*, the product *ab* cos *α* of one *a* and the projection *b* cos *α* of the other upon it.—**Intermediary product.** Same as ★*mid-product.*—**Outer product** of two vectors or directed sects, the parallelogram they determine considered as having area, posture (confinement to a particular parallel-axial pencil), and tour-sense. Grassmann, to whom the phrase is due, writes the outer product of A and B symbolically [AB].—**Product of two sects.** In *geom.*: (*a*) Their rectangle. (*b*) Set off from their intersection-point the unit sect on one of two perpendicular straights. On the other set off on one ray *a*, on the other *b*. The circle through the free end-points of 1, *a*, *b* determines on the fourth ray a sect, *c*, which is the product of the sect *a* by the sect *b*. Thus $c = ab$. (*c*) If the sects are taken as coplanar and confined to two straights, their product is the area of the parallelogram determined.—**Radical product** (*geom.*), the product of the sects from the radical center of three circles to two points on one of them.—**Relative product** of two relations, R S, the relation which holds between *x* and *z* whenever there is a term *y* to which *x* has the relation R and which has to *z* the relation S.—**Residual products,** those materials which, in the cultivation or manufacture of any given commodity, remain over either as waste-products, which have no value, or as by-products, which have some value of their own and thus insure a supplementary return to the industry that incidentally creates them.—**Solubility product,** in *phys. chem.*, a certain value of the product of the concentration of one of the ions of a salt by the concentration of the other ion, which determines how much of this salt can be held dissolved in a given solution. If, in a given solution, the product of the actual concentrations of the two ions exceeds this limiting value, solid salt will be precipitated; if the product of actual concentrations is less than this value, salt will be dissolved. Calcium sulphate is somewhat soluble in water, and the solubility product, which is the product of the concentration of calcium ions by the concentration of SO_4 ions, has a sensible value. If to this solution we add sulphuric acid, and so multiply the concentration of SO_4 ions by 10, the solubility product can be kept at its proper value only by reducing the concentration of calcium ions to one tenth the previous value, and calcium sulphate is precipitated. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. iii. 117.—**Stereometric product** of two sects taken as fixed in tridimensional point-space is the volume of the tetrahedron they determine.—**Vectorial product.** Same as *outer* ★*product.*

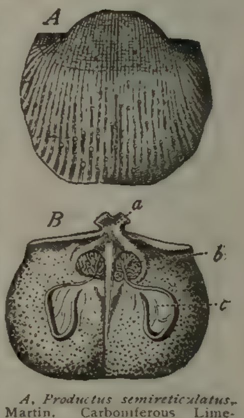


Product *ab* of sect *a* by sect *b*.

Productella (prō-duk-tel′ạ̈), *n.* [NL., < *Productus* + dim. *-ella.*] A genus of telotrematous straight-hinged brachiopods found in the Devonian formation. The shells resemble those of the allied genus *Productus* in general form, but differ in having the hinge characters normally developed.

product-theorem (prod′ukt-thē″ọ̄-rem), *n.* In the representation of complex numbers, the theorem that the absolute value of a product *ab* is the product of the absolute values of *a* and *b*, while the amplitude of *ab* is the sum of the amplitudes of *a* and *b*. $|ab| = |a|\,|b|$, while $\text{am}\,(ab) = \text{am}\,a + \text{am}\,b$.

Productus (prọ̄-duk′tus), *n.* [NL., < L. *productus*, produced. See *product.*] A genus of protrematous straight-hinged brachiopods found in Devonian, Carboniferous, and Permian formations, and especially abundant in and characteristic of the last two. The genus is represented by numerous species, many of which have world-wide distribution and all of which have convexo-concave shells of semicircular outline with thick prominent overarching beaks and spinose surfaces. The hinge-organs, with the exception of the strong cardinal process, are absent or vestigial.



A, *Productus semireticulatus*, Martin. Carboniferous Limestone; Visé, Belgium. Two thirds natural size; *B*, *Productus horridus*, Sow. Permian; Prussia and England, two thirds natural size, interior of dorsal valve; *a*, cardinal process; *b*, muscle-scars; *c*, brachial impressions. (From Zittel's "Palaeontology.")

proectoprocton (prọ̄-ek-tọ̄-prok′ton), *n.*; pl. *proectoprocta* (-tạ̈). [Gr. πρό, before, + ἐκτός, outside, + πρωκτός, anus.] Lankester's hypothetical ancestor of the ectoproctous polyzoans.

proedria (prō-ed′ri-ạ̈), *n.*; pl. *proedriæ* (-ē). [NL., < Gr. προεδρία, the privilege of the front seats.] In *Gr. antiq.*, the right to sit in front seats at the theater, the public games, etc.: granted by Greek cities as an honor to distinguished strangers.

> With strangers whom the city wished to honour with crowns or immunities or *proedriae*. *P. Gardner*, in Jour. Hellenic Studies, IX. 53.

proëmial, *a.* 2. In *paleon.*, pertaining to the vanguard of a migrating fossil fauna which gradually invades a new province, but is replaced after its first appearance by the previous tenant.

proencephalus (prō-en-sef′a̤-lus), *n.*; pl. *proencephali* (-lī). [NL., < Gr. *πρό*, before + *ἐγκέφαλος*, within the head. See *encephalon.*] A monster having a defect in the frontal region through which the brain projects.

proenzym (prọ̄-en′zim), *n.* [*pro-* + *enzym.*] The inactive form of a ferment in which it exists within the mother cell. Also *proferment* and *zymogen.*

Proëtidæ (prọ̄-et′i-dē), *n. pl.* [NL., < *Proëtus* + *-idæ.*] A family of medium-sized opisthoparian trilobites characterized by an oval, compact carapace, tumid cephalon, oval or ovate, tumid glabella with two basal lobes, thorax with 8–22 segments, and pygidium rounded and multisegmented. The family is represented by the genera *Proëtus, Phillipsia,* and *Arethusina,* which range from the Upper Silurian to the Permian system.

Proëtus (prọ̄-ē′tus), *n.* [NL.] A genus of opisthoparian trilobites of the family *Proëtidæ.* It is characterized by semicircular head-shields having thickened margin, rounded glabella usually with basal lobes, large crescentic, holochroal proximal eyes, 10 thoracic segments, semicircular marginate pygidium, and aspinous, smooth, or striated surface. Numerous small or medium-sized species range from the Lower Silurian to the Carboniferous and are specially abundant in the Silurian and Devonian formations.

profecy, *n.* An amended spelling of *prophecy.*

proferment (prọ̄-fėr′ment), *n.* [*pro-* + *ferment.*] Same as ★*proenzym.*

professor, *n.* **5.** The name of an artificial fly used in angling.

profest, *p. a.* An amended spelling of *professed.*

profesy, profet, profetic. Amended spellings of *prophesy,* etc.

profile, *n.* **2.** (*h*) In *theat.,* a wing having the outline of a tree. See *profile, v. t.,* 3.

> What is technically known as a "*profile,*" or tree form wing, was propped against the row of gas jets and left there for twenty minutes, with no other consequence than that the wood had been charred through, and broke on being handled. *Sci. Amer.,* July 2, 1904, p. 8.

Inboard profile, in *ship-building,* a plan which shows the internal arrangements of a vessel by a longitudinal vertical section at the centerline.—**Outboard profile,** in *naval arch.,* a plan which shows the general arrangement of the exterior of a vessel in longitudinal profile. See cut under ★*battle-ship.*

profiler (prō′fēl-ėr), *n.* A profiling-machine; a machine for cutting a profile on an edge by passing a rotating cutter along the edge while a former or guide compels the cutter to reproduce a predetermined outline on the work. *Elect. World and Engin.,* March 19, 1904, p. 58.

profilometer (prō-fi-lom′e-tėr), *n.* [*profile* + Gr. *μέτρον,* measure.] A craniometrical device for determining profiles. It has sliding rods which are adjustable to the contour of the head, and thus enable a tracing of the profile to be made.

profit, *n.*—**Rents and profits.** See ★*rent*^{2}.

profluvium (prọ̄-flū′vi-um), *n.*; *profluvia* (-ạ̈). [L., a flowing forth, < *profluere,* flow forth.] A morbid discharge or flux.

profylactic, *a.* and *n.* An amended spelling of *prophylactic.*

progamete (prọ̄-gam′ēt), *n.* [Gr. *πρό,* before, + *γαμέτης, γαμετή,* a spouse (see *gamete*).] A common name for the primary oöcytes of the female and the primary spermatocytes of the male animal.

> The cells of the reproductive glands are the germ cells (oögonia spermatogonia). They undergo division and give rise to the *progametes,* which in the case of the female are sometimes called oöcytes, in the case of the male spermatocytes. *Encyc. Brit.,* XXVIII. 139.

progamic (prọ̄-gam′ik), *a.* [Gr. *πρό,* before, + *γάμος,* marriage, + *-ic.*] Of or pertaining to a period in the development of the reproductive cells which antedates the phenomena of maturation (see ★*maturation,* 3) and fertilization: as, the *progamic* determination of sex; the *progamic* cell-divisions in oögenesis and spermatogenesis.

> *Progamic* divisions and reducing divisions, though sometimes coincident (as in Metazoa), are not necessarily associated, but may be widely divided in the life-cycle where there is "antithetic alternation of generations."
> *Jour. Roy. Micros. Soc.,* Oct., 1904, p. 508.

progamous (prog′a̤-mus), *a.* [Gr. *πρό,* before, +, *γάμος,* marriage, + *-ous.*] In *embryol.,* prior to fertilization of the ovum. *Buck,* Med. Handbook, VII. 146.

proganoid (prọ̄-gan′oid), *a.* and *n.* [Gr. *πρό,* before, + E. *ganoid.*] **1.** Noting a series or division of the order *Ganoidei,* of the class *Pisces,* proposed by Nicholson and Lydekker to include the suborders *Cephalaspidea, Placodermata,* and *Acanthodea.* It is no longer used. Some of these suborders have since been elevated to the rank of orders and others removed entirely from the class *Pisces* into the class *Agnatha.*—**2.** Any individual belonging to the proganoid series or subdivision of the order *Ganoidei,* as defined by Nicholson and Lydekker.

proganosaur (prọ̄-gan′ọ̄-sâr), *n.* [Gr. *πρό,* before, + *γάνος,* brightness (see *ganoid*), + *σαῦρος,* lizard.] A member of the *Proganosauria,* one of the suborders of the *Rhynchocephalia,* now called the *Proterosauria.* The members of this suborder are all extinct and comprise some of the most ancient and most primitive reptiles known. The *Proterosauria* Seeley (*Proganosauria* Baur) are characterized by the possession of small abdominal ribs arranged in several longitudinal series. The pubis and ischium are imperfectly fused. The fifth metatarsal is not dissimilar from the rest of the metatarsals. Marginal teeth are present in single uniform series. They are found in the Permian and Trias.

Proganosauria (prō-gan-ọ̄-sâ′ri-ạ̈), *n. pl.* [NL. See ★*proganosaur.*] A group of extinct reptiles, of small or moderate size and aquatic habits, distantly related to the existing *Hatteria.* The skull is long, the teeth are slender, the vertebræ are expanded above and perforated for the notochord, and the pectoral and pelvic girdles are plate-like. The known genera are *Mesosaurus* and *Stereosternum,* from the Permian.

progaster (prọ̄-gas′tėr), *n.* [NL., < Gr. *πρό,* before, + *γαστήρ,* belly.] **1.** The archenteron, or gastrocœle of an embryo in the gastrula stage.—**2.** In *entom.,* the anterior edge of the abdomen: a term used by acarologists. *Proc. Zool. Soc. London,* 1893, p. 266.

progeria (prọ̄-jē′ri-ạ̈), *n.* [NL., < Gr. *πρό,* before, + *γῆρας,* old age.] A state in which several of the characteristic physical marks both of infantilism and of senility exist in the same individual.

proglottidization (prọ̄-glot″ti-di-zā′shọn), *n.* [*proglottis* (*tid-*) + *-ization.*] The condition of being composed of proglottides; the arrangement of proglottides in a cestoid. See *proglottis.*

> The typical "*proglottidisation*" is not expressed externally. *E. R. Lankester,* Treatise on Zoology, IV. 118.

prognathi (prog′nạ̄-thī), *n. pl.* [NL., pl. of *prognathus*: see *prognathous.*] Prognathous individuals or types.

prognathite (prog′nạ̄-thīt), *n.* [*pro-* + *gnathite.*] In crustaceans, the sixth joint of a gnathite.

Prognathodes (prog-nath′ọ̄-dēz), *n.* [NL., < Gr. *πρό,* before, + *γνάθος,* jaw, + *εἶδος,* form.] A genus of chætodontoid fishes known from the West Indies.

prognose (prog′nōz), *v. t.* and *i.*; pret. and pp. *prognosed,* ppr. *prognosing.* [A back-formation from *prognosis.*] Same as *prognosticate.*

Prognurus (prog-nū′rus), *n.* [NL., < Gr. *Πρόγνη,* daughter of Pandion, transformed into a swallow, + *οὐρά,* tail.] A genus of deep-sea fishes, of the family *Liparididæ,* found off the Pacific coast of the United States.

progoneate (prọ̄-gō′nẹ̄-ạ̄t), *a.* [Gr. *πρό,* before, + *γονή,* generative organs, + *-ate*^{1}.] Having the genital opening at the base of the abdomen, as in pauropod and diplopod *Myriapoda.*

> It seems most probable that the Symphyla, though *progoneate,* are more recent forms than the *progoneate* myriopods, which have retained the primitive feature of double sexual outlets.
> *A. S. Packard,* Text-book of Entom., p. 22.

program, *n.* **5.** Same as *program music,* or the chain of thoughts or images that suggests and characterizes such music.

> In the realms of absolute music Goldmark is often dull. A "*programme*" seems essential to him. In opera he is most certainly at his best, and as an orchestral colourist he ranks among the very highest.
> *Encyc. Brit.,* XXIX. 22.

program (prō′gram), *v. t.*; pret. and pp. *programmed,* ppr. *programming.* [*program, n.*] To make a program of; enter consecutively in or as in a program.

progress, *n.* **5.** *pl.* In *astrol.,* the positions the moon forms in her advance, by allowing one synodical lunation for one year of the native's life.—**Dynamic progress,** adjustment to a new environment in distinction from static progress, or adjustment to a familiar environment. *Patten,* Theory of Social Forces, p. 15.—**Genetic progress,** progress due to unconscious evolutionary processes unaided by man's intention or conscious effort. *L. F. Ward,* Dynamic Sociol., I. 28.—**Static progress,** adjustment to one given environment in distinction from dynamic progress, or adjustment successively to different environments. *Patten,* Theory of Social Forces, p. 14.—**Teleological progress,** progress toward a given end, intelligently planned and achieved through the artificial adaptation of means to ends. *L. F. Ward,* Dynamic Sociol., I. 28.

progression, *n.* **3.** In *math.*: (*b*) A discrete series which has a first element but no last. *B. A. W. Russell.*—**4.** (*b*) The forward change of mutes from one order (surd, sonant, or aspirate) to another, according to Grimm's law.—**6.** In Stumpf's *psychol.,* one of the four immanent relations of sensation, the other three being number, similarity, and fusion. It is most clearly illustrated in the facts of sensation intensity. *E. B. Titchener,* Exper. Psychol., II. ii. cxxiii.—**7.** In *gambling,* any method of advancing the amount of a lost bet and reducing a bet won: a form of martingale, sometimes called "progress and pinch." Starting with 5 chips, if the first bet is lost 6 are wagered; if it is won, 4 only.—**8.** A mode of evolution of organisms by increase in size or number of differential additions. It is characteristic of the epacmic phylogeny of most races and is succeeded by retrogression in their acmic or paracmic history.—**Law of progression,** in *psychophys.,* the principle, laid down by Delbœuf, that $S = k \log \frac{R_e}{R_i}$, where S stands for intensity of sensation, R_e for the movement-process of external stimulation, R_i for the movement-process of internal stimulation, and k is a constant. *E. B. Titchener,* Exper. Psychol., II. ii. cxx.

Progressive games, manifold, multiplication, variation. See ★*game*^{1} etc.—**Progressive tenses,** tenses, or tense forms of a verb, used to indicate progressive action, or action that is going on at the time indicated, present, past, or future.

Proicene (prō′i-sēn), *n.* [Gr. *πρωί,* adv., early, + *καινός,* recent.] In *geol.,* a name proposed by Sir W. Dawson (1889) for the Upper Eocene or Vicksburg beds of the North American Tertiary: not generally accepted.

proil (proil), *n.* In *cribbage,* a corruption of *pair royal.* Also *prial.*

proiogony (prō-i-og′ọ̄-ni), *n.* [Gr. *πρώιος,* adj., early (< *πρωί,* adv., early), + *-γονια,* generation. The proper form would be **proigony.*] Reproduction by larvæ or immature animals, whether parthenogetically or sexually. [Rare.]

> Taschenberg . . . suggests the term *Proiogony* for all cases of sexually mature larvæ, so that the word Pædogenesis can be used in its original and proper meaning [*i.e.,* the parthenogenetic reproduction of larvæ or immature animals].
> *E. F. Phillips,* in Proc. Amer. Philos. Soc., Oct. 16, [1903, p. 292.

projaculate (prọ̄-jak′ụ̄-lāt), *v. t.*; pret. and pp. *projaculated,* ppr. *projaculating.* [L. *pro,* before, + *jaculari,* throw, dart.] To dart or throw forward; project. [Rare.]

> Perhaps no individual or race passes through all these stages in the phenomenology of love. . . . But long before this viaticum is open, the mind modulates over into the field of transcendence and *projaculates* gods, heavens, hells, and ideals, or, if more philosophical, hypostatizes ideas of goodness, truth, and beauty.
> *G. S. Hall,* Adolescence, II. 136.

project, *v. i.* **4.** To move about busily or curiously; pry. [Slang.]

> As we comes up, I observes the old Magdalena *projectin'* about the main door of the casa, stirrin' up some lazy peonies to their daily toil.
> *A. H. Lewis,* Wolfville Days, xiii.

project, *n.* **II**†. *a.* Projecting; sticking out.

> Had he encounter'd me with such proud slight,
> I would have put that *project* face of his
> To a more test than did her duchessship.
> *Chapman,* Bussy D'Ambois, ii. 1.

projectil, *a.* and *n.* A simplified spelling of *projectile.*

projectile, *n.*—**Armor-piercing projectile,** a projectile adapted, by its material and by special methods of hardening its point, to pierce modern armor-plate. A great advance in power of penetration has been secured by placing upon the point of the shell a soft metal cap which protects it from being broken by the hardened surface of the plate.

projection, *n.* **5.** (*d*) The foot of the perpendicular from a point to a straight line is the *projection* of the point upon the line.—**Axial projection,** projection from a fixed straight line, *m* (the projection-axis). Thus is obtained a new figure composed of planes all on the axis *m,* and called an axial eject of the original.—**Center of projection.** (*b*) See ★*center*^{1}.—**Eccentric projection,** in *psychol.*: (*a*) The localization of a sensation, aroused by stimulation of a nerve-tract, in the peripheral sense-organ: thus, a blow upon the ‘funny-bone’ arouses the sensation-complex of ‘pins and needles’ in the finger-tips; pain may be referred to the ‘foot’ after amputation of the leg; etc.

> By “*eccentric projection*” we understand the fact that a sensation produced by the stimulation of the nerve-trunk instead of the nerve-ends is regularly attributed to irritation of the peripheral ramifications of the nerve.
> *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 77.

(*b*) The localization of pressure sensation at the extremity of a pencil, cane, etc., held in the hand, rather than in the hand itself.

> The *eccentric projection* of touches is only a special case of their location, and follows the same general laws.
> *E. C. Sanford*, Exper. Psychol., p. 2.

Equidistant projection, a way of mapping a sphere in which the projection-vertex is half a chord of a quadrant of the sphere outside it.—**Equivalent projection,** an equal-surface projection; a projection which represents the whole of the earth's surface on a scale that is uniform throughout as regards areas and is therefore specially appropriate in certain meteorological researches. The principal equal-surface projections are those of Lambert and Mollweide.—**Linear projection,** the projecting from a fixed point M (the projection-vertex) a figure, the original, composed of points, B, C, D, etc., by constructing the projecting straights $\overline{MB}$, $\overline{MC}$, $\overline{MD}$, etc. Thus is obtained a new figure composed of straights all through M, and called an ‘eject’ of the original.—**Meridional projection,** a projection of a sphere, the plane of projection being parallel to the meridian.

projectional (prọ-jek′sho̤n-a̤l), *a.* [*projection* + *-al*¹.] 1. Of, pertaining to, or making use of, projection.—2. Pertaining to the act of throwing forth or projecting; relating to a projection center or system. *Philos. Trans. Roy. Soc.* (London), 1899, ser. B, p. 298.—**Projectional demonstration.** See ★*demonstration.*

projection-axis (prọ-jek′sho̤n-ak″sis), *n.* In *geom.*, the fixed straight line in axial projection.

projection-center (prọ-jek′sho̤n-sen″tėr), *n.* A center, as a nerve-center, from which impulses are thrown or projected outward. See ★*center of projection. G. Elliot Smith*, in Trans. Linn. Soc., Zool., 1899, p. 378.

projection-eyepiece (prọ-jek′sho̤n-ī″pēs), *n.* See ★*eyepiece.*

projection-vertex (prọ-jek′sho̤n-vėr″teks), *n.* Same as *center of projection.* See *projection*, 5 (*a*).

Projective coördinate of the point D, the cross-ratio [ȦBCD], where A, B, C are points costraight with D, whose coördinates are ∞, 0, 1.—**Projective metrics.** See ★*metrics*¹.—**Projective transformation.** See ★*transformation.*

projectively (prọ-jek′tiv-li), *adv.* In accordance with the principles of projective geometry; non-metrically.

projector, *n.* 5. In *projective geom.*: (*a*) A projecting straight. (*b*) A projecting plane. (*c*) An eject.—**Chronographic projector,** an apparatus which projects on a screen a series of photographs in rapid succession, giving the effect of motion; a cinematograph; a biograph.

projectoscope (prọ-jek′tọ-skōp), *n.* [L. *projectus*, pp. of *projicere*, project, + Gr. σκοπεῖν, view.] An apparatus similar to the magic lantern.

projicient (prọ-jish′i-e̤nt), *a.* [L. *projiciens*, ppr. of *projicere*, project. See *project.*] Projecting.

> In presence of the arcs of the great *projicient* receptors and the brain there can be few receptive points in the body the activities of which are totally indifferent one to another.
> *Nature*, Sept. 8, 1904, p. 465.

prolamin (prō-lam′in), *n.* [*proline* + *am*(*ide*) + *-in*².] See the extract.

> *Prolamins* form a unique and sharply differentiated group of proteins which occur in quantity in the seeds of cereals, but not in those of any other plant yet examined. These are soluble in all proportions in alcohol of 70–80 per cent., and are not affected by boiling their alcoholic solutions, even for a long time. They are practically insoluble in water and saline solutions, but are soluble in dilute solutions of acids and alkalies.
> *Science*, Oct. 2, 1908, p. 422.

Prolapsus ani. Same as *proctocele.*—**Prolapsus uteri,** falling of the womb.

prolatum (prọ-lā′tum), *n.*; pl. *prolata* (-tạ̈). [NL.] A prolate spheroid.

Prolecanites (prō-lē-ka-nī′tēz), *n.* [NL., ‹ Gr. πρό, before, + NL. *Lecanites.*] A genus of fossil ammonoid cephalopods, type of the family *Prolecanitidæ*, with smooth or costate, compressed, discoidal, and involute shells and broadly hastate or rounded lobes and saddles on the suture-lines. The species ranges from Middle Devonian to Lower Carboniferous in North America, Europe, and Asia.

prolectite (prọ-lek′tīt), *n.* [Gr. προλέγειν, foretell, + *-ite*².] A mineral which occurs very sparingly at Nordmark, Sweden. It belongs to the humite group and from its crystallization is inferred to be a member whose existence had been predicted, having the composition $Mg[Mg(F,OH)]SiO_4$. See ★*humite.*

proliferation, *n.* 3. Increase in size by reproduction of the primary elements.

> There is, however, another phenomenon associated with extensive invasion of the kidneys. These organs show over the entire surface a large number of minute grayish spots, already referred to. These minute spots represent foci of necrobiotic changes in the cortex, followed by marked cell *proliferation* in the same areas. The less advanced foci are largely made up of the tubular epithelium of the area which has become, as it were, fused into a mass on account of the obliteration of the lumina of the tubules.
> *Jour. Exper. Med.*, March 17, 1902, p. 313.

Band of proliferation, in sea-anemones, a band of cells from which the septa are developed. *Van Beneden*, 1897.

prolification, *n.* 3. Reproduction by division. *N. E. D.*

proline (prō′lin), *n.* Pyrrolidine carboxylic acid, $C_4H_8N.CO_2H$, a compound formed by the hydrolysis of the glycylanhydrid obtained by the tryptic digestion of gelatin. The active *a*-proline melts at 205° C. *Nature*, Oct. 24, 1907, p. 653.

prolixious, *a.* 2†. Elastic; easily stretched; apt to yield.

> Bil. Nay, the Leather is affable and apt to bee drawn to any generous disposition.
> Kin. Pray (faire Lady) does it not come on too stiffe?
> Tor. No sir very gently.
> Bil. Stiffe, as *prolixious* as you please.
> *Dekker*, Match mee in London, ii.

proloculum (prọ-lok′ụ̄-lum), *n.*; pl. *prolocula* (-lạ̈). [NL., ‹ L. *pro*, before, for, + *loculum* for *loculus.* See *loculus.*] In foraminifers, the initial chamber of the cell.

> A dissertation by Mr. J. A. Cushman on the developmental history of the shelled foraminifera of the group Lagenidæ. For the initial chamber of these lagenoids the author proposes the name “*proloculum*,” on the analogy of “protoconch” in the case of the gastropod shell.
> *Nature*, Sept. 21, 1905, p. 516.

prolocution (prō-lọ-kū′sho̤n), *n.* [LL. *prolocutio*(*n-*), ‹ L. *proloqui*, speak out, forth, speak before. See *prolocutor.*] A preamble; a preliminary remark.

> “Sir,” said I, “if I tell you my story, I must commit a friend's life to your discretion. Pass me your word it shall be sacred.” . . . He passed me his word very seriously. “But,” said he, “these are rather alarming *prolocutions*; and if there are in your story any little jostles to the law, I would beg you to bear in mind that I am a lawyer, and pass lightly.”
> *R. L. Stevenson*, Kidnapped, xxvii.

prolog, *n.* and *v.* A simplified spelling of *prologue.* See *prologue.*

prologist (prō′log-ist), *n.* [Gr. πρόλογος, prologue, + *-ist.*] The writer of a prologue; also, one who speaks a prologue.

prolong (prọ-lông′), *n.* [*prolong*, *v.*] A prolongation: used specifically of an extension or elongated mouthpiece or chamber on retorts for the manufacture of zinc products or for the handling of other oxids which are volatile at high temperatures.

> This product which is mainly formed in the first period of distillation is a by-product with the European smelters, who use sheet-iron “*prolongs*” on the condensers to collect it. *Electrochem. and Metal. Industry*, Jan., 1905, p. 9.

prom (prom), *n.* A colloquial shortening of *promenade.*

prom. An abbreviation of *promontory.*

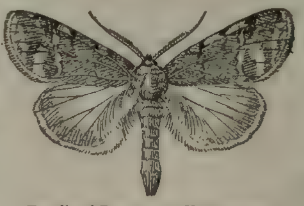
promenade-deck (prom-e-näd′dek), *n.* See ★*deck*, 2.

prometallide (prọ-met′a̤l-id), *n.* [Gr. πρό, before, + NL. *metallum*, metal, + *-ide*¹.] A name devised by Laurent, in connection with his nucleus theory, signifying a compound of a nucleus with an atom of hydrogen, as in the case of what is now called the radical ethyl, acting like an electropositive metal in the formation of salts.

Promicrops (prom′i-krops), *n.* [NL., so called in allusion to the shortness of the anterior part of the cranium; ‹ Gr. πρό, before, + μικρός, small, + ὤψ, face.] A genus of serranoid fishes found on both coasts of tropical America north to Florida and the Gulf of California. See *jewfish* (*a*), with cut.

prominence, *n.*—**Eruptive prominences,** solar prominences due to eruptions actually in progress below the chromosphere. They occur especially near active sun-spots, are characterized by rapid and violent changes of brightness and form, and usually show in their spectra the bright lines of invading metallic vapors in addition to those of hydrogen and helium; hence also called *metallic prominences.*—**Metallic prominences.** Same as *eruptive* ★*prominences.*

prominent, *n.*—**Two-lined prominent,** an American notodontid moth, *Heterocampa bilineata*, which occurs in the eastern United States. Its green or red yellow-striped larva feeds on the leaves of the elm, the oak, and the basswood.—**Unicorn prominent.** Same as *unicorn-moth.*



Two-lined Prominent (*Heterocampa bilineata*).
Natural size.

promis, *n.* and *v.* A simplified spelling of *promise.*

promittor (prọ-mit′o̤r), *n.* [NL., irreg. (for *promissor*) ‹ L. *promittere*, promise.] In *astrol.*, the planet which promises to produce a particular event upon forming a conjunction, or aspect, with the sun, moon, mid-heaven, or ascendant.

promnesia (prom-nē′zi̤ạ̈), *n.* [NL., ‹ Gr. πρό, before, + μιμνήσκειν, remember.] The illusory consciousness that an event, now happening for the first time, has been experienced before; paramnesia.

promonæne (prọ-mon′ēn), *n.* [Gr. πρό, forward, + μόνος, only, + (τρί)αινα, trident.] A sponge-spicule having the form of a bent rod, supposed to be of tetraxial type with two arms atrophied.

promote, *v. i.* 2. In *eccles. law*, to appeal to an ecclesiastical court, acting therein as informant and receiving compensation or fines exacted from the defendant. Such an informant is called a promoter and the court is said to be promoted. *Sir R. Phillimore*, Ecclesiastical Judgments.

promotion, *n.*—**Lineal promotion,** promotion of an officer by seniority in his branch of the service, as distinguished from regimental promotion.

Promyliobates (prọ-mil-i-ob′a̤-tēz), *n.* [NL., ‹ L. *pro*, for, + NL. *Myliobates*, a genus of fishes.] A genus of selachian fishes from the Upper Eocene of Monte Bolca, belonging to the family *Myliobatidæ*, the eagle-rays. They differ from the recent genus *Myliobates* in “apparently showing [the] pectoral fin less completely interrupted at [the] side of [the] head.” *Zittel* (trans.), Text-book of Palaeon., II. 44. In other respects it resembles *Myliobates.*

pronatoflexor (prọ-nā-tọ-flek′so̤r), *a.* Both pronator and flexor; including the pronator and the flexor muscles. *Buck*, Med. Handbook, III. 736.

pronephric (prō-nef′rik), *a.* [*pronephr*(*on*) + *-ic.*] Of or relating to the pronephros or head-kidney.

> The epiblastic origin of the *pronephric* duct is treated as an established fact, and the vertebrate kidney tubule compared to the nephridium of the annelids.
> *Nature*, Oct. 16, 1902, p. 604.

pronephridian (prō-nef-rid′i-a̤n), *a.* Same as ★*pronephric.*

pronephridiostome (prō-nef-rid′i-ọ-stōm), *n.* A flame-cell.

pronephridium (prō-nef-rid′i-um), *n.*; pl. *pronephridia* (-ạ̈). [NL., ‹ Gr. προ, before, + νεφρίδιον, dim. of νεφρός, kidney.] In annelids, one of the embryonic structures from which nephridia are developed. They consist of small cellular aggregations attached to the septa, one pair in each segment, except in front.

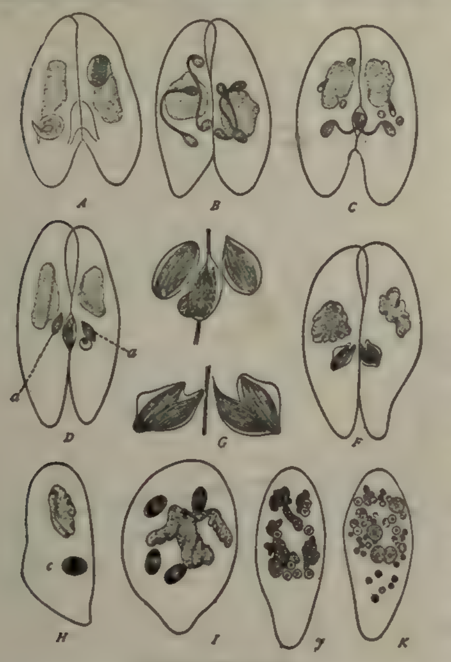
pronic (prō′nik), *a.* [? *prone* + *-ic.*] Consisting of a base or root or first power plus a higher power.—**Pronic number,** a number of the form $x + x^n$, where $n = 2$ or 3 or any greater integer, and x is called the *pronic root* or *basal number.*—**Pronic root.** See ★*pronic number* and ★*root*¹.

pronograde (prō′nọ-grād), *a.* [L. *pronus*, bent, leaning forward, + *gradi*, walk.] Carrying the body in a horizontal position, as do the majority of quadrupeds: opposed to ★*orthograde.*

> When discussing the extent to which the posterior vertebral segments of the body have been suppressed and transmuted during the evolution of man and the higher apes, Dr. A. Keith (Journal of Anatomy and Physiology, vol. xxx. p. 18) calls attention to the fact that naturalists are wrong in describing the larger apes as quadrupedal. They are so only when on the ground, which is not their proper habitat. When at home among the trees they carry the body upright, and may thus be called orthograde, in contradistinction to the lower Primates, which are *pronograde.*
> *Nature*, Oct. 30, 1902, p. 661.

Pronotogrammus (prọ-nō-tọ-gram′us), *n.* [NL., ‹ Gr. πρό, before, + νῶτος, back, + γραμμή, line.] A genus of serranoid fishes found on the Pacific coast of tropical America.

pronucleus, *n.*—**Stationary pronucleus**, the micronucleus which, in a conjugating infusorium, remains in the mother organism and unites with the active pronucleus or micronucleus coming from the other conjugating individual.



a, Stationary Pronucleus.

Conjugation of *Paramœcium caudatum*. (*A–C*, after R. Hertwig: *D K*, after Maupas.) (The macronuclei dotted in all the figures.)

A, micronuclei preparing for their first division; *B*, second division; *C*, third division; three polar bodies or "corpuscules de rebut," and one dividing germ-nucleus in each animal; *D*, exchange of the germ-nuclei (*a*, stationary pronucleus); *E*, the same enlarged; *F*, fusion of germ-nuclei; *G*, the same enlarged; *H*, cleavage-nucleus (*c*) preparing for the first division; *I*, the cleavage-nucleus has divided twice; *J*, after three divisions of the cleavage-nucleus; macronucleus breaking up; *K*, four of the nuclei enlarging to form new macronuclei; the first fission soon takes place.

(From Wilson's "The Cell.")

pronymph (prō′nimf), *n.* [Gr. *πρό*, before, + *νύμφη*, nymph (of insects).] A stage in the development of certain dipterous insects which immediately precedes the formation of the true nymph or pupa. In this pronymphal stage the insect consists simply of an envelop containing a formless creamy mass containing the results of histolysis and the centers for the regeneration of new organs. *Cambridge Nat. Hist.*, VI. 453.

pronymphal (prọ-nim′fa̤l), *a.* [*pronymph* + *-al*¹.] Of or pertaining to a pronymph.

prœstrous (prọ-es′trus), *a.* [*pro-* + *œstrous.*] Relating to the prœstrum or the period before the coming in heat of mammals.

> Ovulation can occur spontaneously at any œstrous (or *pro-œstrous*) period with Scottish black-faced sheep.
> *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 484.

prœstrum (prọ-es′trum), *n.* [NL., < *pro*, before, + *œstrum*. See *œstrum.*] The time just previous to the period of sexual desire, or the coming in heat, of mammals.

> The *prœstrum* is marked by a mucous or sanguineo-mucous flow. It is very rapidly succeeded by *œstrus* (the period of desire).
> *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 484.

proof, *n.* **7.** In alcoholic liquors, beside the proof-spirit of the British excise authorities there is a proof-spirit recognized by the United States internal revenue officers which is defined as "that alcoholic liquor which contains one-half its volume of alcohol of a specific gravity of .7939 at 60° Fahrenheit." *A. H. Allen* (Com. Org. Anal., 2d ed., I. 57) remarks upon this: "the specific gravity of such spirit is stated to be .93353 at 60° F., water at its maximum density being taken as unity. (This will correspond to a density of about .9341, if water at 60° F. be taken as unity, and to a content of 42.7 per cent. by weight of absolute alcohol.) Absolute alcohol would contain 200 per cent. of proof-spirit according to the United States excise, instead of 175½ per cent. as in the English system."
13. An assay of a bullion of known composition placed in the muffle with the other assays in order to determine the difference in weight due to the loss of silver by volatilization and absorption by the cupel.—**14.** In *photog.*, a trial print from a negative.—**Author's proof**, a clean proof, without typographical errors, supposed and intended to be a true reproduction of the author's manuscript or 'copy,' and therefore ready to be sent to him; also, the same proof after revision, with added markings by the author.—**Cosmological proof.** See ★*cosmological.*—**Lettered proof**, a finished proof of an engraving which contains the title of the engraving and the names of its designer, printer, etc.—**Pounded** or **beaten proof**, proof from a form which is too large for the small proof-press, proved by beating it on the form. See the extract.

> Letterpress forms, too large for the small proof-press, have to be proved by beating with the proof-planer after this manner: A sheet of sized paper, dampened on a clean stone by sponging it evenly on one side, is carefully laid upon the previously inked form of type. Then the stoneman takes the proof-planer in his left hand and lays it down squarely but quickly upon the inked form. Beginning at the nearest corner, with the end of the handle (not with mallet head) he strikes a quick blow usually in the center of the planer. From that page he moves the planer to other pages, renewing the striking until he sees the print of the types faintly indenting the moist sheet. *De Vinne*, Mod. Book Composition, p. 320.

Teleological proof, that proof of theism which is based upon the principle of final causation. Caldecott mentions three varieties of this proof: the first is from the teleological nature of biological organisms; the second is drawn from the adaptations of independent organisms and circumstances to one another; the third is drawn from the teleological unity of the whole universe, as showing one order throughout. The last argument may be put as an analogy or as a direct inference.

proof-bar (pröf′bä̤r), *n.* A steel bar which is placed in an oven or furnace in which steel is undergoing the process of cementation, and which is withdrawn from time to time by the attendant so that he may judge of the progress of the operation. *Lockwood*, Dict. Mech. Engin. Terms.

proof-charge (pröf′chärj), *n.* A charge of gunpowder used in the proof of a gun of any caliber. Proof consists in firing a specified number of charges which shall produce the maximum pressure which the gun is intended to withstand in service.

proofing (pröf′ing), *n.* In *hat-making*, a process for stiffening felt hats by immersing them in a bath composed largely of shellac, with other ingredients.

proof-load (pröf′lōd), *n.* In *mech.*, the load which strains a girder or beam to its elastic limit.

proof-strain (pröf′strān), *n.* In *mech.*, the strain corresponding to the elastic limit of the substance strained.

proof-stress (pröf′stres), *n.* In *mech.*, the stress which strains a beam or girder to the elastic limit.

proof-vinegar (pröf′vin″ẹ-gä̤r), *n.* As understood in England, vinegar containing 6 per cent. of acetic acid.

proötic, *n.* **2.** Specifically, in *ichth.*, a lateral bone in the cranium, articulating below with the parasphenoid, behind with the exoccipital and opisthotic, above with the pterotic and sphenotic, and anteriorly with the alisphenoid. It is usually perforated by the trigeminal nerve. From its inner surface a wing is often developed, which, meeting that from the opposite proötic in a median suture, forms the tube for the rectus muscles of the eye.

proöticum (prō-ot′i-kum), *n.*; pl. *proötica* (-kä̤). [NL.] In *ichth.*, same as ★*proötic*, 2. *Starks*, Synonymy of the Fish Skeleton, p. 512.

prop¹, *n.* **4.** An unexpected stop, as of a horse. *E. E. Morris.* [Australia.]

> The touchy mare gave so sudden a *prop*, accompanied by a desperate plunge, that he was thrown almost at the feet of the "Injun."
> *Rolf Boldrewood*, Old Melbourne Memories, xvi.

propaganda, *n.* **3.** Systematic effort to propagate or win support for a theory or method of action.

> Brand is the author of this new method, for which the writer has earnestly, and he is glad to note successfully, made *propaganda*.
> *Therapeutic Gazette*, Feb. 15, 1903, p. 85.

propagandistic (prop″a̤-gan-dis′tik), *a.* [*propagandist* + *-ic.*] Of the nature of or characterized by propagandism; devoted or pledged to a propaganda.

> The ["League of the Just"] now called itself "League of the Communists," and gave up its leanings towards conspiracy and became an educational and *propagandistic* body.
> *Encyc. Brit.*, XXX. 564.

propagational (prop-a̤-gā′shọn-a̤l), *a.* [*propagation* + *-al*¹.] Relating to or of the nature of propagation; propagative.

propalanin (prọ-pal′a̤-nin), *n.* [L. *prope*, near (?), + E. *alanin.*] A little used name for alanin.

propane (prō′pān), *n.* [*prop*(*ionic*) + *-ane.*] A gaseous hydrocarbon, C_3H_8, of the paraffin series, found in crude petroleum: made by reducing isopropyl iodide with zinc and hydrochloric acid, or by the action of hydriodic acid on acetone, glycerol, etc. It is liquid below — 17° C.

propargyl (prọ-pär′jil), *n.* The radical, $HC\vdots C.CH_2$—, of allylene. Also called *propinyl.*—**Propargyl alcohol**, an alcohol, $C_3H_3(OH)$, derived from allylene. It is a liquid with a pleasant odor and boils at 114–115° C. Also called *propinyl alcohol.*

propargylic (prō-pär-jil′ik), *a.* Same as *propiolic.*

Proparia (prō-pạ-rī′ạ), *n. pl.* [NL., < Gr. *πρό*, in front, + *παρειά*, the cheek.] In Beecher's classification, an order of trilobites distinguished by the fact that the free cheeks of the cephalon do not carry the genal angles. It comprises the families *Encrinuridæ*, *Calymenidæ*, *Cheiruridæ*, and *Phacopidæ*.

proparian (prọ-pā′ri-a̤n), *a.* and *n.* **I.** *a.* Pertaining to or having the characters of the *Proparia*.

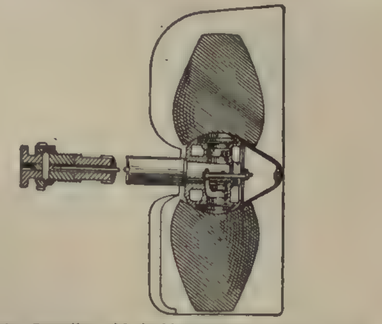
II. *n.* A trilobite of the order *Proparia*.

propatagium, *n.* **2.** In *zoöl.*, that part of the wing membrane of a bat which lies in advance of the arm; the præbrachium.

propathia (prọ-path′i-a̤), *n.* [Gr. *πρό*, before, + *πάθος*, disease.] Same as *prodrome*, 2. *Buck*, Med. Handbook, I. 573.

prop-cell (prop′sel), *n.* One of a number of cells arranged in five or six rows external to the outer hair-cells and cells of Deiter in the organ of Corti.

propeller, *n.* **4.** In *elect.*, in the tangential system of traction, the moving part of the system, corresponding to the rotor of an alternator, which is drawn along by the inductive action of the stator-coils between the track and thus affords motive power for the attached cars.—**Feathering propeller**, a form of screw-propeller for vessels in which the blades are not rigidly fastened to the hub of the wheel but are capable of being adjusted mechanically so as to have a varying angle of inclination to the plane through the axis of the shaft: used in vessels in which the mechanical propulsion is auxiliary to sails, that the blades may be turned into the plane of the shaft when sailing so as not to act as a drag when the shaft is not turning. When the blades are to drive they are given the desired pitch or angle with the shaft axis by levers and adjusting screws.—**Guide-blade propeller**, a type of screw-propeller, having broad blades and comparatively small diameter, placed in the axis of a fixed hollow cylinder at the stern of a shallow-draft vessel. Fixed in the interior of the cylinder abaft the propeller are a number of radial blades so arranged as to guide the streams of water thrown aft by the propeller and increase its propulsive efficiency. Also called a *screw-turbine.*—**Hydraulic propeller**, the combination used in jet-propulsion of vessels, in which a jet of water from a pump sent forcibly outward at the stern is intended to propel the vessel by reaction in the direction opposite to the motion of the jet.



Feathering Propeller, with the blades thrown parallel with the keel for sailing.

> The water-jet or *hydraulic propeller* cannot be regarded as a serious competitor with the screw or paddle-wheel, but it has attracted so much attention and been so strongly recommended that it cannot be left unnoticed.
> *White*, Manual of Naval Arch., p. 574.

Left-handed propeller, a screw-propeller which revolves from the starboard toward the port side of the ship during the upper part of its revolution while the engines are working ahead.

propeller-boom (prō-pel′ėr-böm), *n.* A small boom which can be rigged out on each side over the twin screws of a large steamer when in port to prevent small craft, coming alongside, from striking the propeller-blades.

propeller-bracket (prọ-pel′ėr-brak″et), *n.* Same as ★*shaft-bracket.*

propeller-frame (prọ-pel′ėr-frām), *n.* See ★*stern-frame.*

propeller-port (prọ-pel′ėr-pōrt), *n.* *Naut.*, an aperture in the after end of the quarter-deck, immediately over the propeller, covered with a small hatch, and found on vessels fitted with a hoisting propeller, the latter being lifted and lowered by means of a tackle after being disconnected from the shaft.

propene (prō′pēn), *n.* [*prop*(*yl*)*ene.*] Same as *propylene.*

propenylic (prop-e-nil′ik), *a.* [*propenyl* + *-ic.*] Of or pertaining to propenyl.

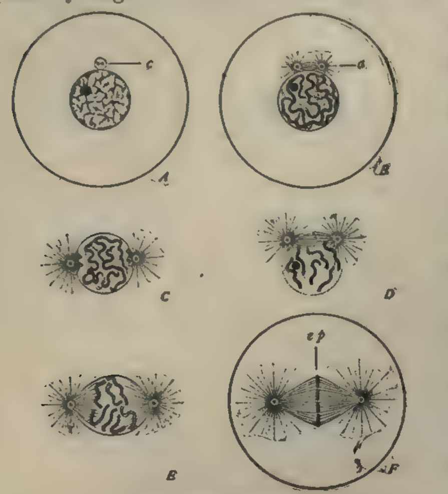
propepsin (prọ-pep′sin), *n.* [*pro*(*enzym*) + *pepsin.*] The proenzym of pepsin. Same as ★*pepsinogen.*

proper, *a.* **12.** In *geom.*, not figurative; not at infinity: as, *proper* points.

properitoneal (prọ-per″i-tọ-nē′ạl), *a.* [Gr. *πρό*, before, + *περιτόναιον*, peritoneum, + *-al*¹.] Situated in front of the peritoneum. *Buck*, Med. Handbook, I. 4.

property, *n.* **4.** Specifically, in *old Eng. law*, chattels as distinguished from 'estate' (lands).—**Dotal property**, in the civil law of Louisiana, the property brought upon marriage by a wife to her husband to assist in the expenses of the marriage establishment.—**Metric property.** See ★*metric*¹.

prophase (prō′fāz), *n.* [NL. *prophasis*, < Gr. *πρό*, before, + *φάσις*, phase.] In *cytol.*, a preparatory stage in mitotic cell-division. The prophase is characterized by a more intense staining of the chromatin, the resolution of the reticulum into a skein or spireme, the breaking up of the latter into chromosomes, the appearance of the achromatic spindle, and the disappearance of the nuclear wall. The prophase is succeeded by the metaphase.



Prophases of Mitosis.

A, resting-cell with reticular nucleus and true nucleolus; at *c* the attraction-sphere containing two centrosomes; *B*, early prophase, the chromatin forming a continuous spireme, nucleolus still present, above the amphiaster *a*; *C*, *D*, two different types of later prophases; *C*, disappearance of the primary spindle, divergence of the centrosomes to opposite poles of the nucleus (examples, some plant-cells, cleavage-stages of many eggs); *D*, persistence of the primary spindle (to form in some cases the "central spindle"), fading of the nuclear membrane, ingrowth of the astral rays, segmentation of the spireme-thread to form the chromosomes (examples, epidermal cells of salamander, formation of the polar bodies); *E*, later prophase of type *C*, fading of the nuclear membrane at the poles, formation of a new spindle inside the nucleus, precocious splitting of the chromosomes (the latter not characteristic of this type alone); *F*, the mitotic figure established, *ep* the equatorial plate of chromosomes.

(From Wilson's "The Cell.")

The first division in Salamandra is characterized by a long period of growth of the cell and nucleus during the *prophase*, the appearance of the reduced number of chromosomes and their double longitudinal splitting; the first longitudinal fission taking place during the *prophase* and the second during the metaphase or anaphase.
Bot. Gazette, April, 1903, p. 250.

prophasis, *n.* **2.** Same as ★*prophase.*

prophatnic (prọ-fat′nik), *a.* [Gr. *πρό*, before, + *φάτνιον*, socket of a tooth.] Characterized by alveolar prognathism. *Sergi.*

prophet, *n.*—**Evangelical Prophet**, an epithet of Isaiah, whose writings are supposed by many to be prophetic descriptions of the life and teachings of Christ.

prophetin (prof′e-tin), *n.* [*Prophet*(*arum*) (see def.) + *-in*².] A resinous glucoside, $C_{23}H_{36}O_7$, found in *Cucumis Prophetarum.*

prophylactic. **I.** *a.*—**Prophylactic rules**, in *evidence*, those rules and customs of courts which tend to insure the truth of testimony. They are the oath, the penalty for perjury, the custom of publicity, and the possible detention of witnesses. *Wigmore*, Evidence, § 1813.

II. *n.*—**Haffkine's prophylactic**, a preparation made by heating a culture of plague bacilli, used as a preventive of this disease; also, a similar preparation used as a preventive of cholera.

prophyll (prō′fil), *n.* Same as *prophyllum.*

First of all the '*prophylls*' occur right and left on the lateral bud.
K. E. Goebel (trans.), Organography of Plants, I. 95.

prophyllum, *n.* **2.** Same as *bracteole.*

The leaf-like structures upon the pedicels being spoken of as bracteoles or *prophylla.*
J. Percival, Agr. Bot., p. 89.

propine² (prō′pin), *n.* [*prop*(*ionic*) + *-ine*².] Same as ★*allylene.*

propinyl (prō′pi-nil), *n.* [*prop*(*ionic*) + *-in-* + *-yl.*] Same as ★*propargyl.*

propionamide (prō″pi-on-am′id), *n.* [*propi*(*one*) + *amide.*] The white crystalline amide of propionic acid, $C_2H_5.CONH_2$, made by distilling ammonium propionate. It melts at 79° C.

propione (prō′pi-ōn), *n.* [*propi*(*onic*) + *-one.*] A liquid, $(C_2H_5)_2CO$, or diethylketone, made by distilling barium propionate; also in other ways. It boils at 102.7° C.

proplasma (prō-plaz′mạ̈), *n.*; pl. *proplasmata* (-mạ-tạ̈). [Gr. *πρόπλασμα*, a model.] In *Gr. antiq.*, a model; in Greek sculpture, a cast or model from which a statue was worked out by points.

There is no doubt that in Roman times, and possibly occasionally earlier, puntelli from a finished model or "*proplasma*" were used just as they are in modern times.
E. A. Gardner, in Jour. Hellenic Studies, XI. 138.

propleurum (prō-plö′rum), *n.* [NL.] Same as *propleuron.*

propodeon (prọ-pō′dẹ-on), *n.* Same as *propodeum.* *Cambridge Nat. Hist.*, V. 491.

propodial, *n.* **2.** A general name for a bone lying between the humerus and carpals, and femur and tarsals: thus, the radius and ulna and tibia and fibula are propodials. Correlated with *mesopodial* and *metapodial.*

Marsh has also referred to the genus Diplosaurus a fragment of a *propodial* bone.
Amer. Jour. Geol., XIV. I. 8.

Propontic (prọ-pon′tik), *a.* [*Propont*(*is*) + *-ic.*] Of or relating to the Propontis, or Sea of Marmora.

Proporidæ (prọ-pō′ri-dē), *n. pl.* [NL. *Proporus*, the type genus, + *-idæ.*] A family of turbellarians, of the order *Acœla*, having one generative opening and no accessory female generative apparatus. It includes the genera *Proporus*, *Monoporus*, and *Haplodiscus.*

proportion, *n.*—**Law of constant proportion.** See ★*law*¹.—**Ordinate proportion**, a proportion whose terms are in regular order.—**Terms of a proportion**, its two antecedents and two consequents.

proportional, *n.*—**Third proportional**, the third of any three quantities in continued proportion.

Proporus (prọ-pō′rus), *n.* [NL.] The typical genus of the family *Proporidæ.* *O. Schmidt*, 1848.

proposal, *n.* **4.** In *solo whist*, a bid to take eight tricks with the assistance of a partner.—**Proposal and acceptance**, in *solo whist*, the proposal by one player for a partner and the acceptance of the offer by another.

propose, *v.* **I.** *trans.* **6.** In *systematic biol.*, to use (a new name) without complying with the technical requirements of publication. See ★*publication*, 5.

II. *intrans.* **4.** In *solo whist*, to offer to take eight tricks with the assistance of a partner.

proposition, *n.* **7.** Something to be done, accomplished, etc.; especially, something difficult or puzzling. [Slang.]

He could call a coyote or a fox, or even so fitful an' nervous a *prop'sition* as a antelope.
A. H. Lewis, Wolfville Nights, vii.

proposta (prō-pōs′tạ̈), *n.* [It., a proposition, < L. *proposita*, fem. of *propositus*, proposed. See *proposition.*] In *music*, the subject of a fugue or canon: opposed to *risposta.*

Proprietary articles. See ★*article.*

proprietas (prọ-prī′e-tas), *n.* [ML.: see *propriety.*] In *medieval music*, the state or use of a ligature with a short instead of a long note at the beginning.

Propristis (prọ-pris′tis), *n.* [NL., < L. *pro*, for, + NL. *Pristis*, a genus of fishes.] A genus of selachian fishes of the family *Pristidæ* or the saw-fishes, differing from the genus *Pristis* (which see) in not having the rostral teeth implanted in cartilage: from the Upper Eocene of Egypt.

props², *n.* **2.** *pl.* The stage-wardrobe of an actor.

Propterus (prop′tẹ-rus), *n.* [NL., < Gr. *πρό*, in front of, + *πτερόν*, a wing (fin).] A genus of ganoid fishes of the family *Macrosemiidæ*, characterized by an elongated deep body, rhomboidal or almost six-sided scales deeper than long, a long dorsal fin subdivided into a high anterior and lower posterior portion, massive pectoral and pelvic fins, and a short pointed snout. The vertebræ are ring-like. From the Upper Jurassic.

proptoma (prop-tō′mạ̈), *n.*; pl. *proptomata* (-mạ-tạ̈). [Gr. *πρόπτ*(*ωσις*), a falling forward, + *-ōma.*] The tumor formed by a prolapsed organ.

propugnator (prō-pug-nā′tọr), *n.* [L., < *propugnare*, fight for, defend. See *propugn.*] A defender; one who contends for or advocates.

Great changes had occurred in the interval of thirteen years. No longer was Chalmers the *propugnator* of establishments on either side of the Tweed.
S. H. Cox, Interviews, Chalmers, p. 78.

Propulsive coefficient. See ★*coefficient.*

propulsor (prọ-pul′sọr), *n.* [See *propulse*, *v. t.*] The trade-name of a form of explosion-engine for boats.

propyl (prō′pil), *n.* [*prop*(*ionic*) + *-yl.*] The hypothetical radical, C_3H_7, of propane.—**Propyl alcohol**, an alcohol, $C_3H_7(OH)$, derived from propane. *Normal* or *primary propyl alcohol*, $CH_3.CH_2.CH_2(OH)$, is found in fusel-oil and is also made synthetically. It is a liquid which boils at 97.4° C. and yields propionic acid when oxidized. *Secondary* or *isopropyl alcohol*, $CH_3.CH(OH).CH_3$, is a liquid which boils at 82.8° C. and yields acetone when oxidized. It is made by reducing aqueous acetone with sodium; also in other ways. See ★*isopropyl.*

propylamine (prō-pi-lam′in), *n.* [*propyl* + *amine.*] A ptomaïne, $C_3H_7.NH_2$, isomeric with trimethylamine.

propyl-glucosamin (prō″pil-glö-kọ-sam′in), *n.* A ptomaïne, $C_6H_{13}O_3N_2$.

propylic (prọ-pil′ik), *a.* [*propyl* + *-ic.*] Containing the radical propyl: as, *propylic* alcohol.

propylitization (prop″i-lit-i-zā′shọn), *n.* [*propylite* + *-ize* + *-ation.*] In *geol.*, the process which yields propylite, a more or less altered andesite. *Geikie*, Text-book of Geol., p. 772.

prorachidial (prō-rā-kid′i-ạl), *a.* [*prorachis* (*chid-*) + *-i-al*¹.] Relating or pertaining to the prorachis.

The stem represents a greatly enlarged and elongated mother zooid. It is divided longitudinally by a partition separating a so-called "ventral" or *prorachidial* canal from a so-called "dorsal" or metarachidial canal.
Encyc. Brit., XXV. 457.

prorachis (prō-rā′kis), *n.*; pl. *prorachides* (-ki-dēz). [NL., < Gr. *πρό*, before, + *ῥάχις*, spine.] In pennatulaceans, that face of the rachis which is sterile and coincides with the asulcar aspect of the terminal zoöid: contrasted with ★*metarachis* and ★*pararachis.*

Prorastomidæ (prō-ra-stom′i-dē), *n. pl.* [NL., < *Prorastomus*, generic name, + *-idæ*, family ending.] A family of extinct *Sirenia*, known from a few specimens from the Eocene of Europe and Miocene of America. These remains indicate animals resembling the manatee, but with a more complete dentition, there being $i\frac{3}{3}c\frac{1}{1}pm\frac{5}{5}m\frac{3}{3}$. *Cope*, 1889.

prorean (prō′rẹ-ạn), *a.* Noting a fissure in the brain of *Carnivora*, considered by G. Elliot Smith to have some relation to the coronal fissure in the lemurs. *Trans. Linn. Soc.*, Zool., 1903, p. 359.

prorennin (prō-ren′in), *n.* [*pro*(*enzym*) + *rennin.*] The proenzym of rennin: same as ★*chymosinogen* or ★*renninogen.*

Proreptilia (prō-rep-til′i-ạ̈), *n. pl.* [NL., < *pro*, before, + *Reptilia.*] In a general sense, the *Stegocephalia* considered as a distinct class apart from Amphibia; in a more restricted sense, the genera *Eryops* and *Cricotus*, with their allies, considered as forming a subclass: practically the *Temnospondyli* of Zittel.

By grouping them and their nearest allies together as *Proreptilia* it is intended to indicate that they are the lowest known Reptiles and that they probably link this class to the Amphibia.
H. Gadow, Amphibia and Reptiles, p. 285.

prorhinal (prọ-rī′nạl), *a.* [*pro-* + *rhinal.*] Lying in front of the nasal cavity.

proroca (prō-rō′kä), *n.* [Properly *piroroco*; Tupi.] The bore of the Amazon.

For comparison it may be interesting to note the following description of the Amazon's bore, or *proroca*, by La Condamine. *Pop. Sci. Mo.*, Feb., 1908, p. 109.

prorogation, *n.* **3.** In *astrol.*, the exercise of the office of prorogator. *J. M. Ashmand*, tr. of Ptolemy's Tetrabiblos, iii. 13.

prorogator (prọ-rog′ạ-tọr), *n.* [See *prorogation.*] In *astrol.*, the hyleg; the giver of life.

By night the moon is to be elected as *prorogator.*
J. M. Ashmand, tr. of Ptolemy's Tetrabiblos, iii. 13.

prorogatory (prọ-rog′ạ-tọ-ri), *a.* In *astrol.*, relating to the office of prorogator.

prorostrum (prō-ros′trum), *n.*; pl. *prorostra* (-trạ̈). [NL., < L. *pro*, before, + *rostrum*, beak.] In *entom.*, the anterior portion of the rostrum of a rhyncophorous insect. *Proc. Zool. Soc. London*, May–Dec., 1902, p. 279.

prosarium (prọ-zā′ri-um), *n.*; pl. *prosaria* (-ạ̈). [NL., in ML. *prosarius* (sc. *liber*, book), < *prosa*, prose.] A service-book containing proses or sequences. See *prosar* and *prose*, 3.

pros. att'y. An abbreviation of *prosecuting attorney.*

prosbul (pros-böl′), *n.* [Gr. πρὸς Βουλῇ, 'before the council.'] A rabbinical legal document concerning loans, providing against the biblical law of limitation by the sabbatical year, shemitta. (Deut. xv. 1–4.) The terms of the prosbul provided that the loan about to be made should not be considered void at the entrance of the sabbatical year.

Proscorpius (prō-skôr′pi-us), *n.* [NL., < Gr. πρό, before, + σκορπίος, scorpion.] A genus of fossil scorpions found in Silurian rocks.

prosecretin (prō-sẹ-krē′tin), *n.* [*pro-* + *secretin.*] The inactive form of secretin; it is converted into secretin by means of dilute acids. The prosecretin is formed in the mucous membrane of the intestinal tract.

It was then found that the active substance, which we call secretin, was produced by the action of acid from a precursor in the mucous membrane, probably in the epithelial cells themselves. Once formed by the action of acid, it could be boiled, neutralised, or made alkaline, without undergoing destruction. The precursor of the substance (*pro-secretin*) cannot be extracted by any means that we have tried from the mucous membrane.
Nature, May 19, 1904, p. 65.

prosectorium (prō-sek-tō′ri-um), *n.*; pl. *prosectoria* (-ạ̈). [NL., < L. *prosecare*, cut off. See *prosection.*] The anatomical or dissection room, as in a laboratory of natural science.

Mr. F. E. Beddard, F.R.S., exhibited preserved and injected brains of mammals prepared in the Society's *prosectorium.* *Nature*, June 11, 1903, p. 141.

prosecute, *v.*—**Prosecuting attorney.** See ★*attorney.* **Prosecuting witness.** See ★*witness.*

prosecutor, *n.*—**Crown prosecutor,** the title of the prosecutor of criminal actions in some of the British Colonies.—**Speaking with prosecutor,** in *Eng. law*, the practice of allowing a defendant convicted of a misdemeanor to confer with the prosecuting officer before sentence, so that if the prosecutor, being satisfied, will so certify to the court, a trivial punishment or suspension of sentence may follow.

prosencephal (pros-en-sef′al), *n.* Same as *prosencephalon.* *Buck*, Med. Handbook, II. 142.

proseries (prō-sē′rẹ̄z), *n.* [Gr. πρό, before, + L. *series*, series.] The ancestors of an organism or of a group of organisms considered collectively.

I consider as progenitors or as *proseries* of the cephalopods, the conularias, in which the body form and shell secretion of the orthoceratites was inaugurated and the formation of four gills, which it would be difficult to derive from the body form of the cephalopods, was established. *O. Jaekel*, in Amer. Geol., April, 1903, p. 201.

Prosobranchia (pros-ọ̄-brang′ki-ạ̈), *n. pl.* [NL., < Gr. πρόσω, forward, + βράγχια, gills.] In Cuvier's classification, a division of the gastropod *Mollusca* characterized by having the lungs or gills placed in front of the heart. Same as *Streptoneura* of Spengel.

prosobranchialism (pros-ọ̄-brang′ki-ạl-izm), *n.* Same as *prosobranchism.*

prosocline (pros′ọ̄-klīn), *a.* [Gr. πρόσω, forward, + κλίνειν, incline.] Directed forward.

The posterior primary lamellæ remained simple throughout the whole life, and no case is known in which secondary teeth originated from them; but whether originally or only subsequently, they are always anteriorly inclined (*prosocline*).
Annals and Mag. Nat. Hist., July, 1902, p. 74.

prosocœle (pros′ọ̄-sēl), *n.* [Gr. πρόσω, forward, + κοῖλος, hollow.] The foremost cavity of the brain; the fore ventricle; the cavity or ventricle of the secondary fore-brain, or prosencephalon. *Buck*, Med. Handbook, II. 167.

prosodemic (pros-ọ̄-dem′ik), *a.* [Gr. πρόσω, forward, + δῆμος, people, + *-ic.*] Noting an epidemic disease in which the infection passes from one person to another in individual ways, instead of reaching a large number at once through one channel, such as the water-supply.

They lay stress upon a distinction, vital to epidemiologists, which must be drawn between infection which reaches a number of persons at once through a single medium, as water or milk, and the slower, more complex process by which a disease passes from person to person; the path of the contagious material being different in each individual instance. The term '*prosodemic*' has been used to describe this form of infection.
Science, April 24, 1903, p. 665.

prosodetic (pros-ọ̄-det′ik), *a.* [Gr. πρόσω, forward, + δετός, bound, + *-ic.*] Of or pertaining to pelecypod shells which have opisthodetic ligaments in which a remnant of the area persists, in front of the beaks, as the lunule. Compare ★*opisthodetic* and ★*amphidetic.*

prosogyrate (pros-ọ̄-jī′rāt), *a.* [NL., < Gr. πρόσω, forward, + γῦρος, a turn, + *-ate*¹.] In *zoöl.*, curved forward, as the beaks of certain pelecypods.

prosogyre (pros′ọ̄-jīr), *a.* [Gr. πρόσω, forward, + γῦρος, a turn.] Same as ★*prosogyrate.*

prosogyrous (pros-ọ̄-jī′rus), *a.* Same as ★*prosogyrate.*

prosopial (pro-sō′pi-ạl), *a.* [*prosopi(um)* + *-al*¹.] Of or pertaining to the bony beak, or prosopium, of parrots. *Proc. Zool. Soc. London*, 1895, p. 369.

prosopium (pro-sō′pi-um), *n.*; pl. *prosopia* (-ạ̈). [NL., < Gr. προσωπεῖον, a mask.] A term applied by Mivart to the united bones which form the bony beak of parrots.

By this term [*prosopium*] I intend to denote the whole ossified mass in front of the cranio-facial articulation and the articulations of the zygomata and palatines.
Proc. Zool. Soc. London, 1895, p. 365, note.

prosoplax (pros′ọ̄-plaks), *n.* [NL., < Gr. πρόσω, forward, + πλάξ, something flat.] In *Pholas* and some related mollusks, the anterior one of the accessory valves developed on the dorsal side. Compare ★*mesoplax* and ★*metaplax.*

prosopometer (pros-ọ̄-pom′e-tėr), *n.* [Gr. πρόσωπον, face, + μέτρον, measure.] In *craniom.*, an instrument with which the area of the face may be measured.

Prosopon (pro-sō′pon), *n.* [NL., < Gr. πρόσωπον, face.] A genus of small crabs, among the earliest of the *Brachyura*, having an elongate, pentagonal, deeply furrowed carapace with granulate surface. Several species from Jurassic and Cretaceous formations are known.

prospect, *n.* **12.** In *organ-building*, the external front or façade of the instrument, including the case and the display-pipes.

prospectant (prọ-spek′tạnt), *a.* [See *prospect*, *v.*] Looking forward.—**Prospectant evidence,** testimony as to motive, character, habit, capacity from which the inference is that one did or did not do a given thing, as that if one usually carried a revolver, he had it on a given day. *Wigmore*, Evidence, § 51.

prosporoid (prō-spō′roid), *n.* A term suggested by Petri for the small protuberance on the hyphæ of an endotropic mycorrhiza. See ★*mycorrhiza.*

prosquamosal (prō-skwā-mō′sạl), *n.* [L. *pro*, for, + E. *squamosal.*] A bone present in the crania of some anomodont reptiles lying upon the jugal and connected with the squamosal, with which it may be fused. Also termed *supratemporal.*

In further contrast with the Synapsida, the squamosal is a relatively small element, frequently separate from the *prosquamosal*, and never entering into articulation with the lower jaw. *Amer. Nat.*, Feb., 1904, p. 106.

prostalia (prō-stā′li-ạ̈), *n. pl.* [NL., < Gr. πρό, before, + √στα-, stand, + L. *-alis*, E. *-al*¹.] In the morphology of the sponge-skeleton, those spicules of the *Hexactinellidæ* which project from the surface of the sponge-body. They comprise, according to position, *prostalia basalia*, which form the root tufts; *prostalia marginalia*, which form a circlet about the osculum; and *prostalia pleuralia*, which project from the lateral walls of the body.

prostas (prō′stas), *n.* [L. *prostas*, < Gr. προστάς, < προΐστασθαι, stand in front.] In a Greek dwelling-house, a vestibule leading to the women's apartments: apparently, any open lobby, as between two piers or antæ.

prostate, *n.* **2.** In platyhelminths and earthworms, a glandular body connected with the sperm-duct.

Prostatic catheter. See ★*catheter.*

prostatocele (pros-tat′ọ̄-sēl), *n.* [*prostate* + Gr. κήλη, a tumor.] A tumor of the prostate gland.

prostatoncus (pros-tạ-ton′kus), *n.* [*prostate* + Gr. ὄγκος, a mass.] Enlargement of the prostate gland.

prostatoscirrhus (pros″tạ-tọ-sir′us), *n.* [*prostate* + Gr. σκιρρος, a hard tumor.] The hardening of the prostate through increase of fibrous tissue.

prostatovesiculitis (pros″tạ-tọ-vẹ-sik″ụ-lī′tis), *n.* [NL., < *prostates*, prostate, + L. *vesicula*, vesicle, + *-itis.*] Inflammation of the prostate gland and seminal vesicles.

prostemmate (prō-stem′āt), *n.* [Gr. πρό, before, + στέμμα(τ-), a fillet.] One of the prostemmatic organs. See *prostemmate* ★*organ.*

prostemmatic (prō-ste-mat′ik), *a.* Pertaining to the prostemmate.

prosthesis, *n.*—**Dental prosthesis.** See ★*dental.*—**Paraffin prosthesis,** the subcutaneous injection of melted paraffin in order to restore the natural contour, as in cases of sunken bridge of the nose. *Science*, March 25, 1904, p. 502.

prosthetic, *a.* **2.** In *surg.*, relating to or concerned in the supplying of an artificial part in place of the natural one which is wanting.

The mechanical correction of palatal defects causing imperfection of deglutition and speech, which comes distinctly within the province of the *prosthetic* dentist.
Encyc. Brit., XXVII. 418.

prosthetics (pros-thet′iks), *n.* In *surg.*, the art of prosthesis or of the supplying of missing parts by artificial ones.

prosthetist (pros′the-tist), *n.* [*prosthesis* (*-thet-*) + *-ist.*] In *surg.*, one who practises prosthesis; one who supplies artificial substitutes for missing parts of the body; especially one who manufactures artificial limbs. *Buck*, Med. Handbook, V. 513.

prosthion (pros′thi-on), *n.*; pl. *prosthia* (-ạ̈). [NL., < Gr. πρόσθιον, neut. of πρόσθιος, foremost < πρόσθεν, before.] In *craniom.*, the point between the two upper middle incisors. Same as *alveolar point* (which see, under *alveolar*).

prosthionic (pros-thi-on′ik), *a.* [*prosthion* + *-ic.*] In *craniom.*, relating to the prosthion.—**Prosthionic index.** Same as *alveolar index.* See *craniometry.*

prostholytic (pros-thọ̄-lit′ik), *a.* [Gr. πρόσθεν, forward, + λυτός, < λύειν, loose, dissolve, + *-ic.*] Noting the evolutionary stage or condition of free interbreeding or symbasis, in which normal evolutionary progress is made, as in natural species. Compare ★*catalytic*, 2, ★*dialytic*, 4, and ★*hemilytic.* *O. F. Cook.*

The *prostholytic* or progressive stage of evolution is found in large species of wide distribution containing abundant individuals with free intercrossing of numerous lines of descent. There is unlimited diversity or inconstancy of individual characters, and variation is indefinite and continuous in the sense that endless fluctuations and intergradations are present. The requirements of symbasis are fully met; interbreeding is normal and reproductive fertility is high.
Pop. Sci. Mo., May, 1903, p. 20.

prostoma (pros′tọ̄-mạ̈), *n.*; pl. *prostomata* (pros-tō′ma-tạ̈). [Gr. πρό, before, + στόμα, mouth.] The blastopore or primitive mouth-opening of the embryo in the gastrula stage.

prostomal (pros′tọ̄-mạl), *a.* [*prostoma* + *-al*¹.] Of or pertaining to the prostoma.

prostomiad (prọ̄-stō′mi-ad), *adv.* [*prostomi(um)* + *-ad*³.] In a prostomial direction. [Rare.] *E. R. Lankester*, Nat. Sci., April, 1897, p. 265.

prostration, *n.*—**Electric prostration,** a condition marked by pigmentation of the skin, photophobia, and pains in the face and throat, caused by prolonged exposure to the light of a voltaic arc.

prosturgeon (prō-stėr′jọn), *n.* A term applied to ganoid fishes of extinct type, presumably ancestors of the sturgeons. [Rare.]

There are papers systematic on the fossil fishes of California, on new sticklebacks, sturgeon fishes, *prosturgeons*, conodonts. *Science*, Feb. 7, 1908, p. 201.

protagon, *n.* **2.** Same as *lecithin.*

protalbic (prō-tal′bik), *a.* [*protalb(umose)* + *-ic.*] Noting an acid, a cleavage product of egg-albumin which results on heating with dilute caustic alkali.

protalbumose (prō-tal′bụ-mōs), *n.* Same as ★*proto-albumose.*

Protalcyonacea (prọ̄-tal″si-ọ̄-nā′sẹ̄-ạ̈), *n. pl.* [NL., < Gr. πρῶτος, first, + NL. *Alcconacea.*] A group of alcyonarians in which the zoöids are solitary and do not form colonies by gemmation. It includes the single family *Haimeidæ.*

protalcyonacean (prọ̄-tal″si-ọ̄-nā′sẹ̄-ạn), *a.* and *n.* **I.** *a.* Relating to, or having the characters of, the *Protalcyonacea.*

II. *n.* Any member of the *Protalcyonacea.*

protamine (prō-tam′in), *n.* [Gr. πρῶτος, first, + E. *amine.*] A member of a group which comprises the simplest albumins known to occur in the animal body. According to Kossel, a protamine group also forms the essential nucleus of all the more complex albumins. This view is not generally held, however, and as a matter of fact a protamine radical has thus far been demonstrated in relatively few instances. Without exception the few members of the group have been met with in the mature testicles of certain animals; for example, salmine in the salmon, sturine in the sturgeon, clupein in the herring, etc.

Protamniota (prọ̄-tam-ni-ō′tạ̈), *n. pl.* [NL., < Gr. πρῶτος, first, + NL. *Amniota.*] The earliest forms of *Amniota*, as seen in the *Sauropsida.* See *protamnion.* *Buck*, Med. Handbook, I. 221.

protan (prō′tan), *n.* [Gr. πρῶτος, first, + *-an.*] The trade-name of a tannin nucleoproteid used in medicine as an intestinal astringent.

protandric, *a.* **2.** In *zoöl.*, of or pertaining to protandry, or the ripening of the spermatozoa before the ova in hermaphroditic organisms.

protandry, *n.* 2. In *zoöl.*, the condition of the reproductive organs in hermaphroditic animals, characterized by the production of ripe spermatozoa before the ova are mature or capable of being fertilized: an arrangement which insures cross-fertilization between different individuals, as in certain hermaphroditic worms, crustaceans, etc.

protanope (prō′ta̤-nōp), *n.* [*protanopia.*] In *physiol.* and *psychophys.*, one who is afflicted with the form of partial color-blindness known as protanopia.

protanopia (prō-ta-nō′pi-ạ̈), *n.* [NL., < Gr. πρῶτος, first, + NL. *anopia.*] In *physiol.* and *psychophys.*, a word introduced by von Kries to designate the form of red-green color-blindness termed by the Helmholtzian school 'red-blindness.' *Baldwin*, Dict. of Philos. and Psychol., II. 370.

protanthocyan (prọ-tan-thọ-sī′ạn), *n.* [Gr. πρῶτος, first, + E. *anthocyan.*] A yellowish coloring matter found in the petaloid calyxes of certain unopened flowers. It passes later into anthocyan. It appears to be a derivative of tannin.

protar (prō′tär), *a.* [Gr. πρῶτος, first, + *-ar* (?).] In *photog.*, an anastigmatic photographic objective, first computed by P. Rudolph in 1889. *Stand. Dict.*

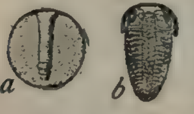
protargol (prō-tär′gol), *n.* [Gr. πρῶτος, first, + E. *argol.*] A trade-name for a salt of silver with proteid material, soluble in water, not coagulating albumen, less irritant than silver nitrate, and actively germicidal: used by surgeons in the treatment of gonorrhea.

protarsal (prō-tär′sa̤l), *a.* [*protars*(*us*) + *-al*¹.] In *entom.*, of or relating to the protarsus. *Proc. Zool. Soc. London*, 1902, p. 391.

protarsus, *n.* 2. The next to the last joint of a spider's leg, between the tibia and the tarsus.

> Tibiæ and *protarsi* mostly jet-black.
> *Proc. Zool. Soc. London*, 1903, p. 49.

protaspis (prō-tas′pis), *n.*; pl. *protaspides* (-pi-dēz). [NL., < Gr. πρῶτος, first, + ἀσπίς, shield.] The minute embryonic shell of the trilobites. It has a subcircular outline, large semicircular or crescentic cephalon with distinct axial furrows, no thorax, and a segmented abdominal lobe. The stage of development characterized by the growth of the protaspis has been divided into an early (*anaprotaspis*) substage, with minute pygidium; a middle (*metaprotaspis*), in which the anterior margin of the pygidium begins to show traces of annulations; and a late (*paraprotaspis*), with the pygidium large, well annulated, and provided with its full complement of appendages. Subsequent growth proceeds by successive molts during which the thoracic segments are introduced by repeated separation of the anterior segment of the pygidium.



Sao hirsuta, Barr. Cambrian.

a, protaspis, enlarged; *b*, adult, reduced. (From Zittel's "Paleontology.")

protaxis (prọ-tak′sis), *n.*; pl. *protaxes* (-sēz). [NL., < Gr. πρῶτος, first, + L. *axis*, axis.] In *geol.*, the belt of earliest deformation and uplift in a mountain system. *Dana*, Manual of Geol. (4th ed.), p. 24.

> Professor Darwin quotes the western coast of North America as inconsistent with his theory; but that coast is parallel to a line of primitive wrinkling, for there is an Archean *protaxis* to the coast ranges and Rocky Mountains. *J. W. Gregory*, in Smithsonian Rep., 1898, p. 269.

Proteales (prō-tẹ-ā′lēz), *n. pl.* [NL. (Lindley, 1833), < *Protea* + *-ales.*] An order of dicotyledonous, apetalous plants containing the single family *Proteaceæ* (which see).

Protean, *a.* 3. In the geology of New York, a name applied by the geologists of the first State Survey to the rocks now termed the Clinton beds of the Silurian system: in allusion to the variable character of the component stratigraphic elements.

proteane (prō′tẹ-ān), *n.* [*prote*(*in*) + *-ane.*] A term suggested by Osborne to designate certain insoluble modifications of albumins which result on prolonged exposure to water.

protease (prō′tẹ-ās), *n.* [*prote*(*in*) + *-ase.*] A generic term for proteolytic ferments.

proteate (prō′tẹ-āt), *n.* [*prote*(*in*) + *-ate*¹.] Same as *acid albumin.* See *albumin.*

protective, *a.*—**American Protective Association**, a secret order in the United States, founded in 1887. Its main aims are to preserve the non-sectarian character of the public schools, and to discourage the election of Catholics to office. Abbreviated *A. P. A.*—**Protective character.** See ★*character.*—**Protective coloring.** See *procryptic* ★*coloring.*

protegulum (prọ-teg′ụ̄-lum), *n.*; pl. *protegula* (-lạ̈). [NL., < L. *pro*, for, + *tegula*, a tile.] The minute bivalved shell characteristic of the phylembryonic stage of *Brachiopoda*, having a semicircular outline, straight or arcuate hinge-line, no articulation between the valves, no cardinal area, and a smooth or concentrically striated surface. This protegulum has been observed in genera representative of nearly all the principal families of brachiopods.

> The *protegulum* of this species is nearly circular, biconvex, with arcuate hinge.
> *Amer. Jour. Sci.*, April, 1904, p. 283.

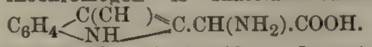
proteic (prō′tẹ-ik), *a.* [*prote*(*in*) + *-ic.*] Same as *proteinaceous.*

proteid¹, *n.*—**Coagulated proteid**, a proteid (albumin) which has been rendered insoluble in the usual solvents, by heat, mineral acids, alcohol, etc., and in some instances also by certain ferments (for example, chymosin, and the fibrin ferment).—**Defensive proteid**, an albuminous proteid, formed through cellular activity, which has antitoxic properties in the widest sense of the term.—**Proteid cell.** See ★*cell.*—**Serum proteid**, any albumin found in the blood-serum.

protein, *n.* 2. Collectively, the nitrogenous components of food, sometimes excluding and sometimes including certain gelatinoid and amidic substances which are without nutritive value or possess it in an inferior degree.—3. A trade-name for a dried preparation which consists essentially of the casein of milk: sold as a food material.—**Bacterial proteins**, albuminous substances obtained from bacteria.—**Coagulated protein**, a protein rendered insoluble through the action of heat or alcohol.—**Protein-crystals**, crystals of certain proteins (albumins), such as serum albumin, ovalbumin, edestin, etc.

proteinochrome (prō′tẹ̄-in-ọ̄-krōm″), *n.* [*protein* + Gr. χρῶμα, color.] The colored product which results from proteinochromogen (tryptophan) on treating with chlorin or bromine. Several such substances apparently exist.

proteinochromogen (prō″tẹ-in-ọ-krō′mọ-jen), *n.* [*protein* + *chromogen.*] A substance formed during proteolytic (notably tryptic) digestion. It is characterized by the readiness with which it combines with chlorin and bromine to form variously colored products. Of these, a bluish violet substance which contains 35 per cent. of bromine is especially characteristic. Chemically considered proteinochromogen is skatolaminoacetic acid,



$$C_6H_4\begin{matrix}\diagup C(CH\;)\\ \diagdown NH\end{matrix}\!\!=\!C.CH(NH_2).COOH.$$

proteinoid (prō′tẹ-in-oid), *a.* [*protein* + *-oid.*] Having the character of a protein (albumin).

protembryo, *n.* 2. A term applied to the ovum and its cleavage stages in the development of a polyzoan. *Cumings*, 1904.

proteolite (prō′tē-ọ-līt), *n.* [Gr. Πρωτεύς, *Proteus*, + λίθος, stone.] In *petrog.*, a name originally given by Boase to schist metamorphosed, by contact with granite, into a variety of cornubianite. Recently it has been applied by Bonney to a hornfels containing andalusite, an andalusite-hornfels.

proteolyze (prō′tẹ̄-ọ-līz), *v. t.*; pret. and pp. *proteolyzed*, ppr. *proteolyzing.* [*proteoly*(*sis*) + -(*i*)*ze.*] To cause the hydrolytic decomposition of albumins in (a substance), notably by means of ferments and mineral acids.

> In fresh milk, 2 or 3 cc. of a saturated solution of alum may be used in place of acetic acid, usually with little higher results. But when the milk-casein has been *proteolyzed* to any extent the use of alum is not permissible, since it precipitates caseoses in addition to casein.
> *Amer. Chem. Jour.*, Feb., 1903, p. 169.

proteose (prō′tẹ-ōs), *n.* [*prote*(*in*) + *-ose.*] An albumose which is derived from the albumins proper. See ★*albumose.*

Proteosoma (prō-tẹ̄-ọ-sō′mạ̈), *n.* [NL., < Gr. Πρωτεύς, Proteus, + σῶμα, body.] A genus of sporozoans, of the order *Hæmosporidia. P. grassii* is parasitic in the blood of many common birds, the intermediate host being a mosquito of the genus *Culex.*

proteosome (prō′tẹ-ọ-sōm), *n.* A sporozoan of the genus *Proteosoma.*

> The only bodies in the diseased cells that might be mistaken for bacteria were small proteid granules, resembling *proteosomes*, which stained with difficulty, swelled up, and lost their shape in 5 per cent potash.
> *U. S. Dep. Agr.*, Div. Veg. Physiol. and Pathol., Bulle-[tin 19, 1900, p. 14.

proteranope (prot′ẹ-ran-ōp), *n.* Same as ★*protanope. Baldwin*, Dict. Philos. Psychol., II. 787.

protergum (prọ-tėr′gum), *n.*; pl. *proterga* (-gạ̈). [NL., < Gr. πρό, before, + L. *tergum*, back.] In *entom.*, same as *pronotum.*

proterical (prọ-ter′i-ka̤l), *a.* [Gr. πρωτερική, precocious (sc. συκῆ, fig), < πρωί, early.] Denoting or characterizing an early-bearing or precocious fig-tree.

proteroglyphous (prot-ẹ̈-rog′li-fus), *a.* [NL. *Proteroglypha* + *-ous.*] 1. Having teeth in the front portion of the upper jaw grooved on the anterior face, as in *Elaps* and similar poisonous snakes.—2. Resembling or having the characteristics of the poisonous snakes known as *Proteroglypha.*

Proterotheriidæ (prot″ẹ̈-rọ-thẹ̄-rī′i-dē), *n. pl.* [NL., < *Proterotherium*, type genus, + *-idæ.*] A family of extinct ungulate mammals, belonging to the order *Litopterna* and typified by the genus *Proterotherium*, comprising animals resembling llamas in their general proportions. All known species are from the Miocene of South America.

proterotome (prot′ẹ̈-rọ-tōm), *a.* [Gr. πρότερος, fore, + -τομος, < ταμεῖν, cut.] Cutting by moving forward: said of the molar teeth of the lower jaw of certain mammals in mastication. *Cope.* [Rare.]

proterotype (prot′ẹ̈-rọ-tīp), *n.* [Gr. πρότερος, fore, + τύπος, type.] In the nomenclature of types in natural history, the material on which the original description is based.

Proterozoic (prot″ẹ-rọ-zō′ik), *a.* and *n.* [Gr. πρότερος, fore, + ζωή, life, + *-ic.*] I. *a.* Of or pertaining to the life existing before the time of the Cambrian or first fossils: a term originally proposed as a substitute for *Azoic*, *Eozoic*, *Archæan*, etc., in order to avoid the assertions contained in these words if taken literally. *Geikie*, Text-book of Geol., p. 861.

II. *n.* The time during which the simplest life-forms were developed: applied to the interval between the Archeozoic and Paleozoic as used by Chamberlin and Salisbury. It is assumed that life existed, but no determinable forms have yet been found. The subdivisions of the Proterozoic are Keweenawan, Animikean, and Huronian. *Chamberlin and Salisbury*, Geol., I. 17.

protest, *n.*—**Extension of protest**, in *marine law*, a statement giving the particulars of the voyage, the storms met with, as recorded in the log-book, and asserting that any damage that may have happened to ship or cargo was caused by the elements beyond the control of master and crew.

protestant, *n.*—**German Protestant**, a member of the German Evangelical Protestant Church, a body of scattered congregations in the United States having no synodical organization. The theology of the church is liberal and rationalistic. The German language is spoken in the church.

protetrad (prō-tet′rad), *a.* [Gr. πρό, before, + E. *tetrad.*] In *cytol.*, noting a stage in the formation of the chromosome preceding that of the tetrad (which see), or quadripartite chromosome.

> A. Labbe observes that in the state of synapsis the chromosomes unite two and two, and fuse their chromatin into a single or *protetrad* body.
> *Jour. Roy. Micros. Soc.*, Oct., 1904, p. 529.

Proteus, *n.* 5. In *bacteriol.*, an untenable generic name applied by some authors to certain bacteria, especially *Bacillus vulgaris* and other closely related putrefactive species.

protevangel (prōt-ẹ̄-van′jel), *n.* [See *protevangelium.*] A first or prior evangel or gospel; a protevangelium.

> *Protevangel* of James.—This title was first given in the 16th century to a writing which is referred to as The Book of James . . . by Origen (tom. xi. in Matt.).
> *Encyc. Brit.*, XXV. 497.

prothomo (prōt-hō′mō), *n.*; pl. *prothomines* (-hom′i-nēz). [NL., < Gr. πρῶτος, first, + L. *homo*, man.] The type of man which in the evolutionary scale first developed true human characteristics. *A. F. Chamberlain*, in Amer. Anthropologist, July–Sept., 1902, p. 527. [Rare.]

prothrombin (prō-throm′bin), *n.* [*pro*(*enzyme*) + *thrombin.*] The proenzym or inactive form of thrombin (the fibrin ferment, in the sense of A. Schmidt).

prothyalosome (prōt′hī-ạ̈-lọ-sōm), *n.* Same as *prothyalosoma.*

prothyrum (proth′i-rum), *n.*; pl. *prothyra* (-rạ̈). [L. *prothyrum* (used in the pl. *prothyra*), < Gr. πρόθυρον, < πρό, before, + θύρα, door.] In *Greco-Rom. archæol.*, the front door or the vestibule or porch of entrance to any building.

protic (prō′tik), *a.* [*prot*(*ein*) + *-ic.*] Noting an acid of doubtful composition, obtained from the albuminous constituents of fish muscle. *W. D. Halliburton*, Chemical Physiol. and Pathol., p. 422.

proto-albumose (prō″tō-al′bụ̄-mōs), *n.* [Gr. πρῶτος, first, + E. *albumose.*] One of the primary albumoses which are formed during peptic digestion. In its physical characteristics this is further removed from the original albumin from which it is derived than heteroalbumose. It is readily soluble in water and to a certain extent diffusible through animal membrane. It is essentially a hemibody in the sense of Kühne. See ★*albumin.*

proto-Aryan (prō-tō-är′yạn), *a.* Primitive Aryan: applied to the supposed Aryan race in its very first stage of existence. *G. S. Hall,* Adolescence, II. 657.

Protoascineæ (prō″tọ-as-sin′ẹ-ē), *n. pl.* [NL., < Gr. πρῶτος, first, + ἀσκός, a sac, + *-ineæ.*] A suborder of ascomycetous fungi including the family *Endomycetaceæ.*

Protobasidiomycetes (prō″tọ-bā-sid″i-ọ-mī-sē′tēz), *n. pl.* [NL., < Gr. πρῶτος, first, + NL. *Basidiomycetes.*] A subclass of the lower basidiomycetous fungi characterized by having protobasidia and including the three orders *Uredinales, Auriculariales,* and *Tremellales.*

protobasidium (prō″tō-bạ-sid′i-um), *n.*; pl. *protobasidia* (-ạ̈). [NL., < Gr. πρῶτος, first, + NL. *basidium.*] A form of basidium which is divided into four cells either transversely or longitudinally, each cell bearing either laterally or apically a basidiospore, as in *Auricularia, Tremella,* and other genera of the lower basidiomycetous fungi.

The union of the groups into one sub-class is based on the long recognised resemblances between the promycelium of Uredineæ and the *protobasidium* of Auricularieæ.
Encyc. Brit., XXVIII. 562.

protoblast (prō′tō-blȧst), *n.* [Gr. πρῶτος, first, + βλαστός, germ.] A primitive or embryonic cell, consisting of succulent granular cytoplasm and a nucleus.

The architecture of the embryo is fully outlined in the arrangement of the parent blastomeres, or *protoblasts.*
E. B. Wilson, Biol. Lectures, 1893, p. 10.

Protobranchiata (prō″tọ-brang-ki-ā′tạ̈), *n. pl.* [Gr. πρῶτος, first, + βράγχια, gills, + *-ata.*] An order of *Pelecypoda.* They have simple plate-like gill-filaments which are not reflected and the mantle-cavity is not divided into two parts. It includes the families *Nuculidæ* and *Solenomyidæ.*

protobranchiate (prō-tọ-brang′ki-āt), *a.* [Gr. πρῶτος, first, + βράγχια, gills, + *-ate*1.] Of, pertaining to, or resembling the foliate gills seen in *Nucula* and other archaic types of pelecypods in which the gill elements are plate-like and organically united only by their common stem; of or pertaining to the *Protobranchiata.*

protocarbohydrate (prō-tọ-kär-bọ-hī′drāt), *n.* [Gr. πρῶτος, first, + E. *carbohydrate.*] The unknown carbohydrate from which, it is believed, sugar, starch, cellulose, and other complex carbohydrates are built up in the plant-cell.

protocarinate (prō-tọ-kar′i-nāt), *a.* [Gr. πρῶτος, first, + E. *carinate.*] In *ornith.,* possessing a keeled breast-bone at an early period of time.

It is now generally admitted that the Palæognathæ must be the descendants of an Avian *proto-carinate* form capable of flight.
W. P. Pycraft, in Trans. Zool. Soc. London, Dec., 1900, [p. 260.

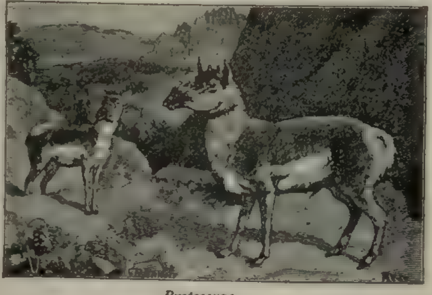
Protocaris (prọ-tok′ạ-ris), *n.* [NL., < Gr. πρῶτος, first, + καρίς, shrimp.] An obscure phyllopod crustacean supposed to be related to the modern genus *Apus* which it closely resembles, found in the Lower Cambrian rocks of Vermont.

protocaseose (prō-tọ-kā′sẹ-ōs), *n.* [Gr. πρῶτος, first, + E. *case(in)* + *-ose.*] The proto-albumose derived from casein.

protocatechuic (prō-tọ-kat-e-chö′ik), *a.* [Gr. πρῶτος, first, + E. *catechu* + *-ic.*] Derived from catechol.—**Protocatechuic acid,** a crystalline acid, $C_6H_3(OH)_2(COOH)$, or 3,4-dihydroxybenzoic acid, found in the fruit of *Illicium religiosum.* It is made by fusing piperic acid, clove oil, catechol, gum guaiacum, vanillin, and many other gums and resins with caustic potash.—**Protocatechuic aldehyde,** a crystalline compound, $C_6H_3(OH)_2.CHO$, or 3,4-dihydroxybenzoic aldehyde. It is made by heating piperonal, vanillin, or opianic acid with dilute hydrochloric acid, and in other ways.

protocephalopod (prō-tọ-sef′a-lō-pod), *n.* [Gr. πρῶτος, first, + E. *cephalopod.*] The hypothetical primitive ancestor of the *Cephalopoda.*

Protoceras (prọ-tos′e̤-ras), *n.* [NL., < Gr. πρῶτος, first, + κέρας, horn.] An extinct ruminant mammal belonging to the even-toed or artiodactyl division of the *Ungulata.* It is characterized by the presence of greatly developed bony protuberances from various parts of the skull in the male. The most prominent of these arise from the maxillæ, frontals, and parietals. All are faintly indicated in the skull of the female. The forefeet are tetradactyl and the hind feet functionally didactyl. Remains of these animals occur in the upper levels of the White River Oligocene (the so-called *Protoceras beds*) of North America.



Protoceras.
(From a skeleton in the Princeton Museum.)

Protoceratidæ (prō″tọ-sẹ-rat′i-dē), *n. pl.* [NL., < *Protoceras* (*-rat-*) + *-idæ.*] A family of ungulate mammals containing extinct forms from the Oligocene of North America, about the size of sheep and distantly related to existing chevrotains. The skull was long and narrow and in the males bore two pairs of horns, possibly three. The forefoot has four toes, the outer ones very slender; and the hind foot has also four toes, but the metatarsals of the second and fifth ones are reduced to vestiges at the upper end. *Marsh,* 1891.

protocerebron (prō-tō-ser′ẹ-bron), *n.*; pl. *protocerebra* (-brạ̈). [NL., < Gr. πρῶτος, first, + L. *cerebrum,* brain.] In Viallanes's system, the first of the three divisions of an insect's brain. *Cambridge Nat. Hist.,* V. 118.

protochlorophyll (prō-tọ-klō′rọ-fil), *n.* [Gr. πρῶτος, first, + E. *chlorophyll.*] A green coloring matter found in the leaves of plants which are kept in the dark. Under the influence of light it changes into chlorophyll. *Jour. Roy. Micros. Soc.,* Oct., 1903, p. 662.

Protochorda (prō-tọ-kôr′dạ̈), *n. pl.* [NL., < Gr. πρῶτος, first, + χορδή, chord.] The lancelets, tunicates, and hemichordates, considered together as forming a class of *Vertebrata.*

Protochordata (prō″tō-kôr-dā′tạ̈), *n. pl.* [*Protochorda.*] Same as ★*Protochorda.*

protochordate (prō-tọ-kôr′dāt), *a.* and *n.* [*Protochordata.*] **I.** *a.* Pertaining to, or having the characters of, the *Protochorda.* *Proc. Zool. Soc. London,* 1898, p. 346.

II. *n.* A member of the *Protochordata,* a group of animals closely related to the vertebrates, whose limits are variously defined by different authorities.

protochromosome (prō-tọ-krō′mọ-sōm), *n.* [Gr. πρῶτος, first, + E. *chromosome.*] A piece of the chromatin network or skein of the cell-nucleus which has not yet assumed the definite shape of a chromosome.

The number of chromosomes in the nucleus is invariably two, though in the basidium the first phases of division show a number of *protochromosomes* which later resolve themselves also into two chromosomes; the basidium in any species can give rise to two generations of spores on the same sterigma.
Jour. Roy. Micros. Soc., April, 1903, p. 211.

Protocimex (prō-tọ-sī′meks), *n.* [NL., < Gr. πρῶτος, first, + L. *cimex,* bed-bug (see *Cimex*).] The oldest known hemipterous insect, represented by a fragmentary wing from the graptolitic shales of the Lower Silurian of Sweden.

protocladus (prō-tọ-klā′dus), *n.*; pl. *protocladi* (-dī). [Gr. πρῶτος, first, + NL. *cladus.*] In sponge-spicules, one of the branches of the first order in a cladome. *Proc. Zool. Soc. London,* 1902, p. 218.

protoclastic (prō-tọ-klas′tik), *a.* [Gr. πρῶτος, first, + κλαστός, broken, + *-ic.*] In *petrog.,* a term applied by Brögger to a texture due to granulation or fragmentation of crystals in igneous rocks during the molten condition of the magma or matrix, previous to final solidification.

protocneme (prō′tok-nēm), *n.* [Gr. πρῶτος, first, + κνήμη, tibia.] In zoantharians, one of the twelve primary mesenteries. Compare ★*metacneme.* *Duerden.*

Protococcales (prō″tọ-ko-kā′lēz), *n. pl.* [NL., < *Protococcus* + *-ales.*] An order of the *Chlorophyceæ* or green algæ.

protocœlom (prō-tọ-sē′lom), *n.* Same as ★*protocœloma.*

It is probably multiple. Each *protocoelom* is in its nature a gonocoel, that is to say a coelomic pouch, the epithelial walls of which produce ova or sperm or both.
E. R. Lankester, Zoology, II. 35.

protocœloma (prō″tọ-sē-lō′mạ̈), *n.*; pl. *protocœlomata* (-mạ-tạ̈). [NL., < Gr. πρῶτος, first, + NL. *Cœloma.*] The primitive cœloma. Also *protocœlom.*

protocolar (prō′tō-kol-ạ̈r), *a.* [For **protocollar*; < *protocol* + *-ar*3.] Pertaining to or of the nature of a protocol or diplomatic agreement; hence, pertaining to diplomatic forms.

You may have noticed how the Japanese marine minister, in answering Admiral Togo's bulletin of victory, seizes the opportunity to remind him of the virtues of the Mikado. . . . To some extent it is *protocolar,* but one must not for that think it an empty form.
N. Y. Evening Post, July 15, 1905.

protoconch, *n.* **2.** The apical whorl of a gastropod shell.

The apical whorl of a gastropod shell has come to be generally known as the *protoconch,* though this term had been preoccupied for the corresponding apex of cephalopod shells. *Amer. Nat.,* Dec., 1902, p. 918.

protoconchial (prō-tọ-kong′ki-ạl), *a.* Same as *protoconchal.* *Amer. Nat.,* Oct., 1907, p. 624.

protocone (prō′tọ-kōn), *n.* [Gr. πρῶτος, first, + κῶνος, cone.] The anterior inner cusp in an upper molar, and the anterior outer cusp in an upper premolar, of many mammals, homologous to the single cusp assumed by the tritubercular theory of dental complication to be the primitive reptilian ancestral type from which by progressive complication the teeth of mammalians have been derived. The antero-external cusp in the lower molars and premolars has similar homologies, according to the tritubercular theory, and is termed, for distinction from the upper series, the *protoconid.*

According to the original theory of Cope as developed by Osborn, the homologue of the main reptilian cone or *protocone* is invariably situated on the antero-internal, or lingual side in the upper teeth.
H. F. Osborn, in Amer. Jour. Sci., April, 1904, p. 321.

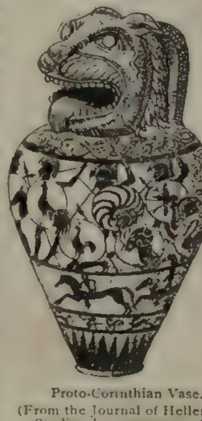
protoconid (prō-tọ-kon′id), *n.* [*protocone* + *-id*2.] That cusp in the lower premolars and molars which is homologous with the protocone in the corresponding teeth of the upper jaw. See ★*protocone.*

Again summing up this combined evidence, we find in the Jurassic period the superior molars of the only mammals known (excepting the Triconodonta and Multituberculata) to consist of a large conical internal cusp or protocone, which we have every reason to believe is homologous with the large external cusp or *protoconid* in the lower jaw.
H. F. Osborn, in Amer. Jour. Sci., April, 1904, p. 323.

protoconule (prō-tọ-kon′ūl), *n.* [Gr. πρῶτος, first, + κῶνος, cone, + L. dim. *-ulus,* E. *-ule.*] The anterior intermediate cusp in sextuberculate molars situated between the protocone and paracone. *Amer. Mus. Jour. Sup.,* Jan., 1903, Guide Leaflet No. 9, p. 20.

proto-Corinthian (prō″tọ-kọ-rin′thi-ạn), *a.* [Gr. πρῶτος, first, + E. *Corinthian.*] In the history of Greek pottery, a term applied to vases which resemble the so-called Corinthian, but appear to be older and more primitive.

The term *Protokorinthian* was invented for the class by Furtwaengler, as a provisional title, not because it is proved that the vases were made in Korinth, but because the class is, in general, older than the Korinthian ware and is closely bound up with it by numerous transitional stages.
Cecil Smith, in Jour. Hellenic Studies, XI. 173.



Proto-Corinthian Vase.
(From the Journal of Hellenic Studies, by permission of the Council.)

protocorm (prō′tọ-kôrm), *n.* [Gr. πρῶτος, first, + κορμός, trunk.] A tuber-like body provided with rhizoids produced in the place of a hypocotyl with roots, in the germination of some species of *Lycopodium.* This is regarded by Treub (the author of the term) as the rudiment of a leafy shoot, but by Goebel as an arrested hypocotylous segment. Analogous formations are found in the related genus *Phylloglossum* and in some orchids and dicotyledons.

protocoteine (prō-tọ-kō′tẹ-in), *n.* [Gr. πρῶτος, first, + (*para*)*coto* + *-e-* + *-ine*2.] A compound found in small quantity in paracoto bark.

protocranium (prō-tọ-krā'ni-um), *n.*; *pl. protocrania* (-a̤). [NL., < Gr. πρῶτος, first, + κρανίον, skull, cranium.] The posterior portion of the epicranium of an insect's head. It is sometimes separated from the epicranium proper by a transverse line. *Cambridge Nat. Hist.*, V. 92, 93.

Protodiscineæ (prō"tọ-di-sin'ẹ-ē), *n. pl.* [NL., < Gr. πρῶτος, first, + δίσκος, a disk, + *-ineæ.*] A suborder of ascomycetous fungi which includes the family *Exoascaceæ*.

protodont (prō'tọ-dont), *a.* [Gr. πρῶτος, first, + ὀδούς (ὀδοντ-), tooth.] 1. Noting a type of tooth which is rather high and conical, with two small tubercles developed on the anterior and the posterior face.—2. Pertaining to, or characteristic of, the group of mammals named *Protodonta*.

Protodonta (prō-tọ-don'ta̤), *n. pl.* [NL., < Gr. πρῶτος, first, + ὀδούς (ὀδοντ-), tooth.] Cope's term for a group of primitive mammals, largely hypothetical, which have the incisors reduced and molars with compressed, cutting crowns and simple roots. The *Dromatheriidæ* are assigned to this order.

protodynastic (prō"tọ-dī-nas'tik), *a.* [Gr. πρῶτος, first, + E. *dynast(y)* + *-ic.*] Existing or occurring during the first or earliest known dynasties (of Egypt).

> In a memoir, which will be published in a short time, he [Prof. Elliot Smith] intends to give a full account of the structure of the brain in the predynastic and *protodynastic* Egyptians. *Nature*, Nov. 6, 1902, p. 14.

protœcium (prō-tē'si-um), *n.*; pl. *protœcia* (-a̤). [NL., < Gr. πρῶτος, first, + NL. *œcium.* See *œcium.*] In bryozoans, the basal disk of the primary individual of the colony.

> It follows, therefore, that before the colony has reached a stage in which its genus or even its family is recognizable, the first zoœcium, which the author here proposes to designate as the *protœcium*, has become mature (ephebic).
> *E. R. Cumings*, in Amer. Jour. Sci., Jan., 1904, p. 50.

proto-Egyptian (prō"tọ-ẹ-jip'shạn), *a.* [Gr. πρῶτος, first, + E. *Egyptian.*] Noting the autochthonous race in Egypt which preceded the known historical race. Remains of such a people have been found in the Nile valley.

> We may provisionally apply the term 'Egypto-Libyan' or '*Proto-Egyptian*' to this early indigenous population of the Nile valley.
> *A. J. Evans*, in Jour. Hellenic Studies, XVII. 379.

proto-elastose (prō"tọ-ẹ-lȧs'tōs), *n.* [Gr. πρῶτος, first, + E. *elast(in)* + *-ose.*] The proto-albumose derived from elastin. *Simon*, Physiological Chem., p. 179.

proto-ephippium (prō-tọ-e-fip'i-um), *n.*; pl. *proto-ephippia* (-a̤). [NL., < Gr. πρῶτος, first, + NL. *ephippium.*] In some entomostracans, a sort of egg-case.

> The latter [resting eggs] in the Daphniidæ are enclosed in a modified part of the mother's shell, called the ephippium from its resemblance to a saddle in shape and position. In other families a less elaborate case has been observed, for which Mr. Scourfield has proposed the term *protoephippium*. *Encyc. Brit.*, XXVIII. 270.

proto-epiphyte (prō-tọ-ep'i-fīt), *n.* See ★*epiphyte*, 1.

proto-Etruscan (prō"tō-ẹ-trus'kạn), *a.* and *n.* [Gr. πρῶτος, first, + E. *Etruscan.*] Primitive Etruscan.

protogala (prō-tog'ạ-la̤), *n.* [Gr. πρῶτος, first, + γάλα, milk.] The colostrum or first milk secreted by the mother after childbirth.

protogasteropod (prō-tọ-gas'tẹ-rọ-pod), *n.* [Gr. πρῶτος, first, + E. *gasteropod.*] The hypothetical primitive gasteropod.

protogelatose (prō-tọ-jel'ạ-tōs), *n.* [Gr. πρῶτος, first, + E. *gelat(in)* + *-ose.*] The proto-albumose derived from gelatin.

protogenide (prọ-toj'e-nid), *n.* [*protogen(ic)* + *-ide*¹.] In *chem.*, a name used by Laurent, in connection with his nucleus theory, to denote a compound of a nucleus with two atoms of hydrogen or oxygen, or with 2, 4, or 6 atoms of a salt-radical, as of chlorin.

protogenist (prọ-toj'e-nist), *n.* [Gr. πρωτογενής, first-born, + *-ist.*] The 'first-born' of the race: used in the extract as 'first-born' (that is, one of the earliest) of those who indulge in (concetti). See *concetto.*

> Lucan came fairly by his style (a sort of Roman Cowley he), and I am glad I took up the book, since I bethought me for the first time that Lucan was the true *protogenist* of the concettisti. *Lowell*, Letters, II. 333.

protoglobulose (prō-tọ-glob'ū-lōs), *n.* [Gr. πρῶτος, first, + E. *globul(in)* + *-ose.*] The proto-albumose derived from globulin.

protogod (prō'tọ-god), *n.* [Gr. πρῶτος, first, + E. *god.*] The original god from which, by deification of qualities or of special manifestations, a number of other gods are derived.

protogonocyte (prō-tọ-gon'ọ-sīt), *n.* [Gr. πρῶτος, first, + E. *gonocyte.*] One of the two cells resulting from the division of the impregnated ovum, the first of the series terminating in the archigonocyte or primary germ-cell. *Buck*, Med. Handbook, VI. 864.

protogonoplasm (prō-tọ-gon'ọ-plazm), *n.* [Gr. πρῶτος, first, + E. *gonoplasm.*] A differentiated area in the substance of a protozoan from which later the gemmules develop.

> An early cytoplasmic stage.—This agrees in the main with that first described by Councilman, Magrath, and Brinckerhoff for human variola, but is more detailed. The smallest form (seven-tenths of a micron in diameter) is a minute homogeneous sphere which is all nucleus. One of the first indications of differentiation is central vacuolization, with the occasional appearance of a minute central dot, which stains with methylene blue. Differentiation in the peripheral portion is first shown by minute unstained spots, which, with growth, increase in size and stain green in Borrel preparations, while comparatively large masses stain red. This red material forms the substance of the later developing gemmules, and is called *protogonoplasm* by Calkins.
> *Jour. Med. Research*, Oct., 1904, p. 363.

protograph, *n.* 2. In the nomenclature of natural history, the original pictorial description of a species, genus, or higher group.

proto-Hellenic (prō"tọ-he-len'ik), *a.* [Gr. πρῶτος, first, + E. *Hellenic.*] Pertaining or belonging to that (hypothetical) people from which all the Greek or Hellenic tribes originated.

protohematoblast (prō-tọ-hem'ạ-tọ-blȧst), *n.* [Gr. πρῶτος, first, + E. *hematoblast.*] A nucleated spherical cell, derived from a bone-marrow cell, which later becomes a nucleated red blood-corpuscle.

> Malassez states that the nucleated red blood corpuscles are derived from the proper marrow cells by these giving rise first to spherical cells of large size which do not readily stain, contain little or no hæmoglobin, and possess a very diffuse nucleus. These cells are termed *protohæmatoblasts* by Malassez. *Buck*, Med. Handbook, II. 20.

protokosin (prō-tọ-kō'sin), *n.* A colorless, crystalline, physiologically inactive compound, $C_{29}H_{38}O_9$, obtained from cusso.

protolemur (prō-tọ-lē'mėr), *n.* [Gr. πρῶτος, first, + E. *lemur.*] Any one of a group of insectivorous mammals ancestral to the lemurs.

Protolenus (prō-tol'e-nus), *n.* [NL., < Gr. πρῶτος, first, + NL. *Olenus*, a genus of trilobites.] A genus of opisthoparian trilobites found in Lower Cambrian rocks of the Province of New Brunswick, Canada.

Protolepidoptera (prō-tō-lep-i-dop'tẹ-ra̤), *n. pl.* [NL., < Gr. πρῶτος, first, + NL. *Lepidoptera.*] A suborder of lepidopterous insects, erected by Packard, containing only the family *Eriocephalidæ*: distinguished from the ★*Palæolepidoptera* (the *Micropterygidæ* only) and the *Lepidoptera Haustellata* (all the other families).

Protolimulus (prō-tọ-lim'ụ-lus), *n.* [NL., < Gr. πρῶτος, first, + NL. *Limulus*, a genus of *Crustacea.*] A limuloid arthropod found in the Upper Devonian rocks of Pennsylvania.

protolithic (prō-tọ-lith'ik), *a.* [Gr. πρῶτος, first, + λίθος, stone, + *-ic.*] In *anthrop.*, denoting stone implements without designed modification in form, but selected according to fitness of form and gradually shaped by wear, without definite recognition of the shaping on the part of the operator. See ★*technolithic.* *W. J. McGee*, in 17th Rep. Bur. Amer. Ethnol. I, p. LXVI.

> The use of objects without the designed modification of them has been applied to Seri stone implements by Mr. McGee, when he calls such modified implements *protolithic*, while the modified stone implements he calls technolithic. The two phases are widely distinct, not only in type of object, but even more in the mental operations exemplified by the objects; for the *protolithic* objects represent undesigned adaptation and modification of cobbles picked up at random, while the others represent designed shaping in accordance with preconceived ideals. The coexistence of the incongruous types seemed puzzling at the outset. *Smithsonian Rep.*, 1898, p. 43.

protolithionite (prō-tọ-lith'i-ō-nīt), *n.* [Gr. πρῶτος, first, + NL. *lithium* (*lithion) + *-ite*².] An iron-lithium mica from the tourmalin-granite of Eibenstock, Saxony: it is closely related to zinnwaldite.

protolithoplasm (prō-tọ-lith'ọ-plȧzm), *n.* [Gr. πρῶτος, first, + λίθος, stone, + πλάσμα, thing formed or molded.] A word coined on the analogy of 'protoplasm' to describe the earliest beginnings of crystals which some observers believe they have seen with the highest powers of the microscope.

> Then are seen appearing in the network small obscure points called 'petroblasts,' which, when observed under high magnifying power, seem to be at the centre of a dark substance called 'deuterolithoplasm,' and on the periphery of another clearer substance named by Von Schrön '*protolithoplasm.*' The formation of the crystal results from these two substances.
> *Knowledge and Scientific News*, Aug., 1904, p. 183.

protolog (prō'tọ-log), *n.* [Gr. πρῶτος, first, + λόγος, account.] In the nomenclature of natural history, the original verbal description of a species, genus, or higher group. Also *protologue.*

protologic (prō-tọ-loj'ik), *a.* [*protolog(y)* + *-ic.*] Of or pertaining to protology.

protologue (prō'tọ-log), *n.* Same as ★*protolog.* *Science*, June 9, 1905, p. 889.

protology (prọ-tol'ọ-ji), *n.* [Gr. πρῶτος, first, + -λογια, < λέγειν, speak.] The science of the beginnings of things: used in reference to the mythology of primitive tribes. *J. N. B. Hewitt*, in An. Rep. Bur. Amer. Ethnol. 1899–1900, p. 138.

protoloph (prō'tọ-lof), *n.* [Gr. πρῶτος, first, + λόφος, crest.] The anterior cross-crest in such a tooth as that of a tapir or rhinoceros: correlated with ★*ectoloph* and ★*metaloph.* See cut under ★*tooth*, 1. *Amer. Mus. Jour. Sup.*, Jan., 1903, Guide Leaflet No. 9, p. 20.

protome (prō'tọ-mẹ), *n.* [Gr. προτομή, the foremost or upper part.] In *Gr. antiq.*, the front of anything, as the head of a horse or the prow of a ship.

> The horse's head, or *protomé*, as is well known, is introduced generally in a sunken square.
> *A. J. Evans*, in Jour. Hellenic Studies, VII. 14.

Protomorphic races. See ★*race*³.

protomycelium (prō"tọ-mī-sē'li-um), *n.* [NL., < Gr. πρῶτος, first, + NL. *mycelium.*] The transition stage of Eriksson's mycoplasma to the hyphal condition. See ★*mycoplasma.*

proto-Mycenæan (prō"to-mī-sẹ-nē'ạn), *a.* [Gr. πρῶτος, first, + E. *Mycenæan.*] Of or pertaining to the earliest or oldest portion of the Mycenæan age. See ★*Mycenæan.*

> Mr. Hogarth appends a description by Dr. Boyd-Dawkins of *proto-Mycenæan* dolichocephalic skulls found by him, which the distinguished craniologist pronounces to possess characters which "point unmistakably to the fact that the possessors of the skulls . . . led the artificial life of highly civilised peoples." . . .
> *Nature*, Aug. 21, 1902, p. 394.

protomyosinose (prō-tọ-mī'ọ-si-nōs), *n.* [Gr. πρῶτος, first, + E. *myosin* + *-ose.*] The proto-albumose derived from myosin.

proton (prō'ton), *n.*; pl. *prota* (-ta̤), *protons* (-tonz). [Gr. πρῶτον, neut. of πρῶτος, first, first state of a thing; a thing in its first state.] 1. The first inception or rudiment of a structure or organ in the embryo: a term suggested as an equivalent of the German *anlage.*

> The nematode embryo is elongate, or vermiform, and possesses a firm outer cuticular layer which is highly refractive and appears under the microscope as a clear structureless boundary. . . . A clear area near the center of the worm, consisting of one or a few large cells is the *proton* of the reproductive system.
> *Trans. Amer. Micros. Soc.*, June, 1902, p. 113.

2. A term designating certain products of tryptic digestion which are obtained from the protamins and which, supposedly, are intermediary between these and the end-products.

protonauplius (prō-tō-nâ'pli-us), *n.*; pl. *protonauplii* (-ī). [NL., < Gr. πρῶτος, first, + NL. *nauplius.*] The hypothetical embryonic nauplius stage of the hypothetical crustacean prototype, as yet unobserved but, by virtue of Beecher's researches on trilobite larvæ, supposed to have been similar to the protaspis stage of primitive trilobites. *Amer. Jour. Sci.*, June, 1904, p. 419.

protonegro (prō-tọ-nē'grō), *n.* [Gr. πρῶτος, first, + E. *negro.*] A negro of the primitive negro stock.

> These steatopygous Bushmen were perhaps *Protonegroes*, who may have branched off from the Nigritic stock when first that species reached the Mediterranean regions. *Sir Harry Johnston*, The Nile Quest, p. 2.

Protonemertini (prō"tọ-nē-mėr-tī'nī), *n. pl.* [Gr. πρῶτος, first, + NL. *Nemertes* + *-ini.*] An order of nemerteans. They have the cerebral ganglia and lateral nerves outside the dermal muscles, either in the ectoderm or beneath the dermis; the body-wall consisting of an ectoderm, a dermis, and an external circular and an internal longitudinal layer of muscles, usually with a diagonal layer between; the mouth behind the brain; no cæcum; and a proboscis without stylets. The order includes the families *Carinellidæ* and *Hubrechtidæ*. Compare ★*Mesonemertini*, ★*Metanemertini*, and ★*Heteronemertini.*

protonephridium (prō-tǫ-nef-rid′i-um), *n.*; pl. *protonephridia* (-ạ̈). [NL., ‹ Gr. πρῶτος, first, + NL. *nephridium.*] A nephridium that is devoid of an internal opening.

protonephrium (prō-tǫ-nef′ri-um), *n.*; pl. *protonephria* (-ạ̈). Same as *protonephron.*

protonic^2 (prǫ-ton′ik), *a.* [*proton* + *-ic.*] Of or pertaining to a proton or anlage. See ★*proton*, 1.

> And the second is the differentiation of this intestinal increment into hepatic structure. The differentiation has gradually extended posteriad from the *protonic* inception. *Trans. Amer. Micros. Soc.*, June, 1902, p. 59.

protonuclein (prō-tǫ-nū′klẹ-in), *n.* [Gr. πρῶτος, first, + E. *nuclein.*] A trade-name of a substance prepared from the lymphoid tissues of animals, with the addition of gum and milk-sugar: employed as a healing application to wounded and ulcerated surfaces. *Buck*, Med. Handbook, III. 541.

Protopauropus (prō-tǫ-pâ′rǫ-pus), *n.* [NL., ‹ Gr. πρῶτος, first, + NL. *Pauropus.*] A name proposed by Packard for the theoretical ancestral myriapod, since that form probably resembled the larva of the modern *Pauropus.*

protopelecypod (prō″tǫ-pe-les′i-pod), *n.* [Gr. πρῶτος, first, + E. *pelecypod.*] The hypothetical original ancestor of the *Pelecypoda*, supposed to have had small, thin, symmetrical, subcircular or oval shells, with edentulate hinge-line and smooth surface.

Protoperlidæ (prō-tǫ-pėr′li-dē), *n. pl.* [NL., ‹ Gr. πρῶτος, first, + NL. *Perlidæ.*] A family name proposed by Brongniart for certain fossil insects, related to the *Perlidæ*, found in the Carboniferous strata of Commentry, France.

protophyllin (prō-tǫ-fil′in), *n.* [Gr. πρῶτος, first, + φύλλον, leaf, + *-in*^{2}.] A hydrid of chlorophyl described by Gautier and Timirjazev. Colorless under ordinary conditions, it turns green on exposure to light.

protopine (prō′tǫ-pin), *n.* [Gr. πρῶτος, first, + ὀπ(ιον), opium, + *-ine*^{2}.] A crystalline alkaloid, $C_{20}H_{17}O_5N$, found in opium and in the roots of the celandine, *Chelidonium majus*, the bloodroot, *Sanguinaria Canadensis*, and *Macleya cordata.* It melts at 204° C. Also called *macleyine.*

protoplasm, *n.* 2. The invisible basis of living substance; the ultimate and true protoplasm as free from all non-living objects. See the extract.

> *Protoplasm* . . . is a morphological term but . . . the same word *protoplasm* is also frequently used to denote . . . "the real living substance." The word then embodies a physiological idea.
>
> *M. Foster*, Textbook of Physiol., p. 5.

Nervous protoplasm. Same as ★*neuroplasm.*—**Protoplasm derivate**, the intracellular substance of certain tissues supposed to be the product of the activity of cells that lie embedded in the ground substance.—**Structure of protoplasm.** (*a*) *Visible structure.* With the best optical aids living protoplasm is rarely found to be homogeneous, but contains droplets, granules, striations, fibrillæ, or plates that differ in different cells and in the same cell at different periods. In preserved protoplasm dyes or stains may make certain parts conspicuous, and upon this basis many important hypotheses of protoplasmic structure have been built up. Most of these assume some one or other universal structure in all protoplasm. Thus, the *granular hypothesis*, carried to extremes by Altmann, made granules the essential structure in all cells. The *filar hypothesis* of Flemming claimed separate threads as the essential structure. This gave place to the *network hypothesis* which recognized a framework or meshwork as the fundamental structure of protoplasm. Bütschli's *alveolar hypothesis* interprets most of the visible appearances in protoplasm as the expression of a universal honeycomb or froth structure. Strengthened by the experiments of Rhumbler and others this hypothesis has risen to the dignity of a theory explaining some of the fundamental activities of protoplasm in the lower animals. More recent views make protoplasm polymorphic, and of different structure at different times and places. A. Fischer claims that many of the above appearances are artificial products and thinks that similar structures in living protoplasm may be temporary precipitations of proteids. G. F. Andrews finds the above basic and many other kinds of structures in living protoplasm to be built up on a basis of relatively inert inclusions embedded in a plasma or continuous substance. A clear distinction is to be drawn between the diverse structural arrangements seen in most masses of protoplasm and the background of ultimate protoplasm the structure of which has not been seen. (*b*) *Chemical structure.* To chemical examination protoplasm yields large amounts of proteids and of water, as well as some fats, carbohydrates, and mineral substances. Of these the proteids are preëminent in some fundamental phenomena of protoplasm. Whether the ultimate protoplasm is one chemical substance or a mixture of substances is not known. Visible portions of protoplasm are complex and non-homogeneous in most cases and minute contiguous areas give different chemical reactions. (*c*) *Physical structure.* Protoplasm is essentially liquid in many of its active phases, with great differences of viscosity in different areas and in the same area at different times. It often looks like an emulsion and some of its properties are comparable with those of colloidal solutions. Assuming electrical charges in protoplasm, such fundamental activities as contraction of muscle and transmission by nerves have found formal explanations. (*d*) *Deduced biological structure.* To explain heredity and some other phenomena of living things, protoplasm has frequently been regarded as made up of units which are generally thought of as ultramicroscopic. Among such units of ultimate protoplasm are the 'physiological units' of Herbert Spencer, the 'gemmules' of Darwin, the 'pangens' of De Vries, the 'plastidules' of Haeckel, the 'biophores' of Weismann, the 'micellæ' of Nägeli, and the 'plasomes' of Wiesner. In some cases these units are held to have some of the fundamental attributes of living things. These conceptions afford only formal explanations of certain protoplasmic phenomena.

Protoplasmic continuity, segmentation. See ★*continuity*, ★*segmentation.*

protoproteose (prō-tǫ-prō′tē-ōs), *n.* [Gr. πρῶτος, first, + E. *proteose.*] Any proto-albumose derived from a native albumin.

protopsychic (prō-tǭ-sī′kik), *a.* [Gr. πρῶτος, first, + E. *psychic.*] In *psychol.*, pertaining to or characteristic of the first beginnings of mind; mentally rudimentary or ultimate.

> It is one thing to build up the identical consciousness that has just been dissected, and quite another to take the dissected bits of, say, the normal, adult consciousness and entrust them, as *protopsychic* units, to time for the creation of a mental phylogeny.
>
> *Amer. Jour. Psychol.*, XI. 406.

protopterygian (prō″top-tẹ-rij′i-ạn), *a.* [Gr. πρῶτος, first, + πτέρυξ, wing, fin, + *-ian.*] In *ichth.*, noting that stage of embryonic development in which the fin-rays first appear. *J. A. Ryder.*

proto-Renaissance (prō-tǫ-rė-nā-soṅs′), *n.* [Gr. πρῶτος, first, + F. *Renaissance.*] A revival movement in art and literature preceding the Renaissance proper, especially that which began in the reign of the Emperor Frederick II. (1194–1250), when a definite attempt was made to revive interest in ancient art. The finest monuments of this movement are certain medals of the emperor and the sculpture of Niccola Pisano.

Protorohippus (prō″tor-ǫ-hip′us), *n.* [NL., ‹ Gr. πρῶτος, first, + NL. *Orohippus.*] A primitive equine animal, from the Middle Eocene Wind River beds, characterized by the presence of four complete toes in the fore foot and three in the hind foot. *Protorohippus* stood 16 inches high at the withers.

Protorosauria (prō″tor-ǫ-sâ′ri-ạ̈), *n. pl.* [NL.] An order of reptiles established by Seeley to contain rather large reptiles from the Permian of Germany. The vertebræ are mostly biconcave; hypocentra are present; and the strong attachment of the pelvis indicates terrestrial habits. *Palæohatteria* also belong to this order.

proto-Semitic (prō″tǫ-sẹ-mit′ik), *a.* [Gr. πρῶτος, first, + E. *Semitic.*] Primitively Semitic: applied to a supposed primitive race from which all Semitic peoples were descended.

protosocial (prō-tǫ-sō′shạl), *a.* [Gr. πρῶτος, first, + E. *social.*] Containing possibilities of social evolution; especially, pertaining to the primitive horde and its undeveloped social capacities. *L. F. Ward*, Pure Sociol., p. 274.

Protospondyli (prō-tǭ-spon′di-lī), *n. pl.* [Gr. πρῶτος, first, + σπόνδυλος, a vertebra.] A suborder of fishes characterized by having a semiheterocercal tail, the bony supports of the dorsal and anal fins equal in number to the fin-rays, and more than five actinosts in the pectoral and none in the ventral fins. They are the characteristic forms of the Jurassic. The only living species is the North American *Amia.*

Protospongidæ (prō-tǫ-spon′ji-dē), *n. pl.* [NL., ‹ Gr. πρῶτος, first, + NL. *Spongidæ.*] A family of hexactinellid sponges represented by fragmentary, quadrately reticulate, spicular skeletons in Cambrian and Lower Silurian rocks.

Protostegidæ (prō-tǫ-stē′ji-dē), *n. pl.* [NL. *Protostega*, type genus, + *-idæ.*] A family of turtles, comprising species of large size and marine habits, characterized by having the carapace imperfectly developed, the plastron well developed, and the limbs modified for swimming. The type species is *Protostega gigas*, from the Cretaceous of Kansas.

protostomal (prǫ-tos′tǫ-mạl), *a.* [*protostoma* + *-al*^{1}.] Of or pertaining to a protostoma or blastopore. *Philos. Trans. Roy. Soc.* (London), 1900, ser. B, p. 323.—**Protostomal seam**, in *embryol.*, the suture or seam formed by the closure of the lips of the protostoma or blastopore at the close of the gastrulation of certain animals.

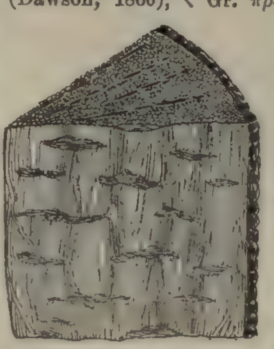
protostyle (prō′tǫ-stīl), *n.* [Gr. πρῶτος, first, + στῦλος, style.] A small cusp present in the upper premolars of many mammals and situated in front of the protocone on the margin of the tooth-crown.

protosulphate (prō-tǫ-sul′fāt), *n.* [Gr. πρῶτος, first, + E. *sulphate.*] A compound of a metal or an electropositive radical with one combining unit of the radical of sulphuric acid, or that member of a series of sulphates which contains the smallest proportion of the sulphuric acid radical: as, *protosulphate* of iron or ferrous sulphate ($FeSO_4$), commercially known as *green vitriol.*

protosulphid (prō-tō-sul′fid), *n.* [Gr. πρῶτος, first, + E. *sulphid.*] A compound of a metal or an electropositive radical with one atom of sulphur, or that member of a series of sulphids which contains the smallest proportion of sulphur.

protosulphuret (prō-tǫ-sul′fụ̄-ret), *n.* Same as ★*protosulphid.*

Prototaxites (prō″tǭ-tak-sī′tēz), *n.* [NL. (Dawson, 1860), ‹ Gr. πρῶτος, first, + NL. *Taxites.* See *Taxites.*] A genus of fossil algæ, occurring in Silurian and Devonian rocks, the trunks of which attained the dimensions of tree-trunks. It may have been a gigantic seaweed or kelp, but Dawson regarded it as a land plant and a true tree. It was subsequently renamed *Nematophycus* by Carruthers and *Nematophyton* by Dawson, but the original name must be adhered to although implying a relationship to the *Pinales.* See *Nematophycus.*



Prototaxites logani, reduced.
Section of trunk.

prototheca (prō-tǫ-thē′kạ̈), *n.*; pl. *prototheeæ* (-sē). [NL., ‹ Gr. πρῶτος, first, + θήκη, receptacle.] The cup, or calicle, of the first, or parent, polyp of a coral colony. See the extract under ★*protothecal.*

protothecal (prō-tǫ-thē′kạl), *a.* [*prototheca* + *-al*^{1}.] Of or pertaining to a prototheca.

> These conspicuous radial folds of the prototheca make it difficult to discern the exact character of the concentric foldings of the *protothecal* wall.
>
> *Annals and Mag. Nat. Hist.*, Jan., 1904, p. 29.

prototheme (prō′tǫ-thēm), *n.* [Gr. πρῶτος, first, + θέμα, theme.] The first constituent of a word or name.

> These *protothemes* in familiar intercourse, or even on more serious occasions, often received the termination -a, Seax, for instance, becoming Seaxa.
>
> *N. and Q.*, 10th ser., III. 176.

prototoxin (prō-tǫ-tok′sin), *n.* [Gr. πρῶτος, first, + E. *toxin.*] A derivative of a toxin which has a marked affinity for the corresponding antitoxin.

prototoxoid (prō-tǫ-tok′soid), *n.* [Gr. πρῶτος, first, + E. *toxoid.*] A toxoid which has a greater affinity for the corresponding antitoxin than the toxin proper.

prototroch (prō′tǭ-trōk), *n.* [Gr. πρῶτος, first, + τροχός, a wheel, a disk.] A locomotor organ in the trochophore larvæ of many marine annelids. It consists of a band of thickened cells encircling the body of the larva in front of the mouth and bearing strong motile cilia. See ★*preoral circlet.*

> The adult Sipunculid retains the retractor muscles and nephridia of the trochophore. The loss of the *prototroch*, the development of the cœlome, and the enormous elongation of the trunk, are the only fundamental changes which the trochophore undergoes in passing into the adult condition.
>
> *Jour. Roy. Micros. Soc.*, Feb., 1904, p. 64.

prototrochal (prō′tǫ-trō-kạl), *a.* [*prototroch* + *-al*^{1}.] Of or pertaining to a prototroch.

prototrophic (prō-tǫ-trof′ik), *a.* [Gr. πρῶτος, first, + τροφή, nourishment, + *-ic.*] Requiring for growth only simple inorganic substances, as carbon dioxid and ammonia or nitrous acid and a few mineral salts: a term used by A. Fischer to designate a group of nitrifying bacteria characterized by a very primitive metabolism. Compare ★*metatrophic* and ★*paratrophic.* *Encyc. Brit.*, XXVI. 55.

prototype, *n.*— **National prototypes**, one of two meters and one of two kilograms kept in the custody of the United States Bureau of Standards, by comparison with which weights and measures used in the United States are ultimately determined. The two kilograms are those designated as 4 and 20 by the International Commission of Weights and Measures, and consist of an alloy of 90 per cent. of platinum and 10 per cent. of iridium. They have been compared with great precision, both with the international prototype kilogram and with the kilograms issued by the Commission to the contributing governments. The two meters are those designated as 21 and 27. They consist of the same alloy, and have likewise been compared with the international prototype meter, and with the meters furnished to the other governments by the Commission. Kilogram 4 and meter 21 are used for actual comparisons with other weights or measures, while kilogram 20 and meter 27 are kept under seal for occasional use in verifying working kilogram 4 and working meter 21. In reference to the *mètre des Archives*, and the international prototype meter, and to the corresponding kilograms, these national standards are copies; but their formal adoption as the authoritative standards to which other standards in the United States are to be conformed has caused them to be called, perhaps with justice, the national prototype kilogram and the national prototype meter.

prototypic (prō-tọ-tip'ik), *a.* Same as *prototypal. Dana*, Manual of Geol. (4th ed.), p. 903.

protoveratridine (prō"tọ-vẹ-rā'tri-din), *n.* [*protoveratr*(*ine*) + *-id* + *-ine*^{2}.] A bitter non-poisonous alkaloid produced by decomposition of the protoveratrine of *Veratrum album.*

protoveratrine (prō"tọ-vẹ-rā'trin), *n.* [Gr. *πρῶτος*, first, + NL. *Veratr*(*um*) + *-ine*^{2}.] An intensely poisonous alkaloid obtained from the rhizomes of white hellebore, *Veratrum album.* It probably occurs also in *Veratrum viride.*

protoxidize (prọ-tok'si-dīz), *v. t.*; pret. and pp. *protoxidized*, ppr. *protoxidizing.* [Gr. *πρῶτος*, first, + E. *oxid* + *-ize.*] In *chem.*, to convert into a protoxid by union with a proper amount of oxygen.

protozoëa (prō"tọ-zọ-ē'ạ̈), *n.* pl.; *protozoëas* (-ạ̈z), *protozoëæ* (-ē). [NL., < Gr. *πρῶτος*, first, + NL. *zoëa.*] A copepod-like larval type which is found in a few of the higher *Crustacea.* It has a long, jointed abdomen without appendages, and it swims by means of the antennæ. *Euphausia*, *Penæus*, *Lucifer*, and *Sergestes* are known to pass through a free protozoëan stage, and *Porcellana* and *Pinnixa* hatch as protozoëas, but they escape from the protozoëan skin and become zoëas a few minutes after hatching.

protozoëan (prō"tọ-zọ-ē'ạn), *a.* [*protozoë*(*a*) + *-an.*] Of or pertaining to a protozoëa.

protozoölogist (prō"tọ-zọ-ol'ọ-jist), *n.* [*protozoölog*(*y*) + *-ist.*] A student of the *Protozoa*, especially of the parasitic forms. *Nature*, Nov. 29, 1906, p. 117.

protozoölogy (prō"tọ-zọ-ol'ọ-ji), *n.* [*protozo*(*on*) + *-ology.*] That branch of zoölogy which treats of the *Protozoa.*

Protozoology, a science that has only in most recent times attracted general attention, is nothing more or less than the study of a group of organisms which zoologists term protozoa. *Nature*, Nov. 29, 1906, p. 115.

protractor, *n.*— **Stereographic protractor**, in map projection, a plotting instrument or chart comprising graduated circular arcs and lines, used for the purpose of measuring geographical distances from maps plotted by stereographic projection. See *map-projection*, under *projection.*

The use of the *stereographic protractor* for measuring distances along great circles, of measuring spherical angles at a given point, together with various applications in navigation. *Nature*, April 24, 1902, p. 599.

Protremata (prō-trē'mạ-tạ̈), *n. pl.* [NL.] In Beecher's classification of the *Brachiopoda*, an order of articulated genera having the pedicle-opening restricted to the ventral valve throughout life and the prodeltidium originating on the dorsal side of the body-wall in the *Cephalata* stage and later ankylosed to the ventral shell, thus initiating the deltidium, which persists in all later growth stages. The brachia are unsupported by a calcareous ribbon. A few genera (*Thecidea*, *Lacazella*) still exist, but most of the genera of the order are extinct.

protreptic (prọ-trep'tik), *a.* Same as *protreptical.*

protrochal (prō-trō'kạl), *a.* [*pro-* + *trochal.*] Noting a larval stage in some mollusks, as *Dentalium* and *Nucula*, which is antecedent to the trochophore and characterized by the possession of recurrently ciliated zones. The term is applied also to a larva of certain polychætous worms.

This 'test' has also been seen in two species of Nucula, and pending fuller inquiry into the Myzomenian and a reinvestigation of Dentalium, I would suggest that this recurrently ciliated sac is representative of a larval stage antecedent to the trochophore, for which the term *protrochal* may suffice. This term has indeed been already applied to a larva of certain Polychæta, which might well represent a modification of that for which I am arguing; and quite recently it appears to have been observed near Ceylon for a species of the genus Marphysa. *Rep Brit. Ass'n Advancement of Sci.*, 1902, p. 630.

protrochula (prō-trō'kụ-lạ̈), *n.* [*pro-* + L. *trochus*, + dim. *-ula.*] A hypothetical organism represented by the stage in the development of the trochophore before the formation of the anus. *Hatschek.*

The *pro-trochula* — is, Hatschek holds, to be considered as the point of meeting of flat-worms and all higher invertebrates. If we go farther, and inquire what this *pro-trochula* may be and how it arose, Hatschek's reply would be that it is a hypothetical organism represented by the stage in the development of the trochophore before the formation of the anus. How it arose is not clear. *Encyc. Brit.*, XXXI. 794.

protrudent (prọ-trö'dẹnt), *a.* Projecting or protruding.

The mandibles are short but rather more *protrudent.* *Proc. Zool. Soc. London*, 1902, p. 128.

protrypsin (prọ-trip'sin), *n.* Same as *trypsinogen.*

protuberance, *n.*— **Red protuberance.** Same as *solar prominence* (which see, under *prominence*).

protuberance-spectroscope (prọ-tū'bẹ-rạns-spek"trọ-skōp), *n.* A spectroscopic attachment to an astronomical telescope especially designed with a view to the convenient observation of the spectra of solar protuberances.

protungulate (prọ-tung'gū-lāt), *n.* [Gr. *πρῶτος*, first, + E. *ungulate.*] The primitive ungulate or common ancestor of all ungulates or hoofed mammals.

protyle, *n.* 2. A hypothetical form of primal, undifferentiated matter from which, it has been imagined, by granulation or segregation of minute but definite masses may have been produced the atoms of the various chemical elements.

Prout's hypothesis. See ★*hypothesis.*

prov. An abbreviation (*f*) [*cap.*] of *Provence*; (*g*) [*cap.*] of *Proverbs*, a book of the Old Testament; (*h*) of *province.*

prove, *v. t.* 7. In homeopathic practice, to test the therapeutic action of (a drug) by observing the symptoms following its administration in appreciable amounts to persons in health.

proveliger (prō-vel'i-jėr), *n.* [L. *pro*, before, + NL. *veliger.*] In mollusks, a stage preceding the veliger or before the formation of the shell; also a hypothetical form of similar structure regarded by Verrill as the molluscan archetype.

Proventricular valvule, a circular fold in the wall of the proventriculus of certain insects. *A. S. Packard*, Text-book of Entom., p. 313.

prover, *n.* 3. In homeopathic medicine, one who submits himself to experimentation in order to determine the therapeutic indications for a drug. See ★*prove, v. t.*, 7.

The manifestations of drug action thus produced are carefully recorded, and this record of "drug-diseases," after being verified by repetition of many "*provers*," constitutes the distinguishing feature of the homœopathic materia medica. *Encyc. Brit.*, XXIX. 312.

4. In *old Eng. law*, one who gives state's evidence; an approver or probator.

provide, *v. t.*— **To cast loose and provide**, to get (a gun) ready for action, and to furnish (it) with ammunition.

province, *n.*— **Juvavian province.** See ★*Juvavian.* — **Mediterranean province**, a geographic designation applied by Austrian geologists to a marine basin which, during Triassic time, covered the eastern Alps, Tyrol, Lombardy, Carinthia, and extended eastward. Another contemporaneous Triassic basin extending over the Austrian Alps has been termed the *Juvavian province.*— **Petrographical province**, a term applied by Judd (1886) to a region in which the igneous rocks of a definite period possess characters which distinguish them from the igneous rocks of another region. The characters are chiefly chemical and mineralogical.

Provincial constitutions. See ★*constitution.*

provinculum (prō-ving'kụ-lum), *n.*; pl. *provincula* (-lạ̈). [L. *pro*, for, in place of, + *vinculum*, a bond.] The primitive hinge of certain young pelecypod shells, consisting of minute teeth on both sides of or behind the ligament, which are apparently independent of the permanent dentition of later stages.

proving, *n.* 3. The homeopathic test of the therapeutic value of a drug. See ★*prove, v. t.*, 7.

proving-box (prö'ving-boks), *n.* In *bread-making*, a large sheet-metal box having sliding doors and sheet-metal shelves, used to prove the rolls and loaves of dough before baking. It is sometimes mounted on wheels for convenience in moving the load to the oven, and is usually fitted with an inlet for live steam. The steam fills the box and condenses on the rolls, causing them to bake with a smooth hard crust.

proving-hole (prö'ving-hōl), *n.* In *mining*, an air-conduit in a mine.

Proviverridæ (prō-vī-ver'i-dē), *n. pl.* [NL., < *Proviverra*, the type genus, + *-idæ.*] A family of *Creodonta*, which contains species of rather small size, having the upper molars resembling those of the living marsupials of the genus *Dasyurus*, while the lower molars approach those of the true carnivore *Viverra*: from the Eocene of Europe and North America. *Schlosser*, 1886.

Provost cell. See ★*cell.*

proxene (prok'sēn), *n.* Same as *proxenus.*

proxeneta (prok-se-nē'tạ̈), *n.* [L. *proxeneta.* See *proxenet.*] A broker or agent, specifically, a marriage broker. A contract with such an agent is void under the common law, though the civil law tolerated them.

proxeny (prok'se-ni), *n.* [Gr. *προξενία*, < *πρόξενος*, a public guest or friend. See *proxenus.*] The office or duty of a proxenus.

The Delphian decree . . . conferring *proxeny* on the Athenian priestess Chrysis. . . . We have fullest information concerning the Athenian *proxeny.* *W. Smith*, Dict. Greek and Roman Antiquities, I. 979.

prozone (prō'zōn), *n.* [Gr. *πρό*, before, + *ζώνη*, a belt, zone.] The anterior of the three regions into which the pronotum of *Acrididæ*, *Locustidæ*, and *Gryllidæ* is divided.

Disk of pronotum tectiform, distinctly convex in longisection, the mid-carina very pronounced, the lateral carinae faintly indicated on the "*prozone*," obsolete on metazone. *Psyche* (Boston), Feb., 1904, p. 7.

prozymogen (prọ-zī'mọ-jen), *n.* [Gr. *πρό*, before, + E. *zymogen.*] A cytoplasmic substance in the gastric cells of *Amphibia.* It is supposed to arise from the chromatin of the nucleus and to pass into the cytoplasm where it becomes zymogen which is eventually discharged from the cell after the chromatin of the nucleus has been restored. *Science*, May 17, 1901, p. 769.

P. R. S. An abbreviation of *President of the Royal Society.*

P. R. S. A. An abbreviation of *President of the Royal Scottish Academy.*

prudentialism (prọ-den'shạl-izm), *n.* [*prudential* + *-ism.*] Prudential character; action or conduct governed by prudential motives.

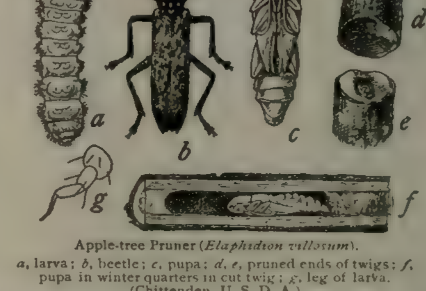
Prudhomme's black. See ★*black.*

prune-granite (prön'gran"it), *n.* See ★*granite.*

Prune-juice expectoration. See ★*expectoration.*

Prunella twill. See ★*twill*^{1}.

pruner, *n.* 2. Any one of many cerambycid beetles whose larvæ bore into the twigs of various trees, weakening them and causing them to fall off as if pruned.— **Apple-tree pruner**, a longicorn beetle, *Elaphidion villosum*, which lays its eggs in young twigs or small branches, whence the issuing larva burrows into the center of the twig or branch. On reaching full growth the larva nearly severs the branch, so that it is readily broken off by the wind. It affects, besides apple, other fruit-trees and shade and forest growth.



Apple-tree Pruner (*Elaphidion villosum*).
a, larva; *b*, beetle; *c*, pupa; *d*, *e*, pruned ends of twigs; *f*, pupa in winter quarters in cut twig; *g*, leg of larva.
(Chittenden, U. S. D. A.)

pruning, *n.* 1. The clearing of the stem of a tree through the death and fall of branches for want of light is known as *natural pruning*; when living branches are removed by cutting them close to the stem the operation is known as *green pruning*; when it is confined to dead branches it is known as *dry pruning.*

pruritic (prọ-rit'ik), *a.* [*prurit*(*us*) + *-ic.*] Affected with pruritus; itching.

Prus. An abbreviation (*a*) of *Prussia;* (*b*) of *Prussian.*

Prussak's fibers. See ★*fiber*1.

Prussian defense. See ★*defense.*

Prymnodesmia (prim-nọ̄-des′mi-ạ̈), *n. pl.* [NL., < Gr. πρυμνόν, lower part, + δέσμα, a bond.] A group of spatangoid echinoids or sea-urchins, founded by Lovén to contain genera with subanal fascioles.

Przibram schists. See ★*schist.*

P. S. An abbreviation (*c*) [*l. c.*] of *passed School of Instruction* (*of Officers*); (*d*) [*cap.*] of *Permanent Secretary;* (*e*) [*cap.*] of *Privy Seal.*

psalidodect (sạ̄-lid′ọ̄-dekt), *a.* [Gr. ψαλίς (ψαλιδ-), a pair of scissors, + δήκτης, a biter, < δάκνειν, bite.] Cutting by movement over the inner surface of another cutting-edge of the molar teeth of the lower jaw of certain mammals in mastication. *Cope.* [Rare.]

psalistoma (sa-lis′tọ̄-mạ̈), *n.*; pl. *psalistomata* (sal-is-tō′mạ-tạ̈). [Gr. ψαλίς, scissors, + στόμα, mouth.] In decapod crustaceans, the cutting-tooth or sharp margin of the mandible.

> Mandible with shortened cutting-tooth (*psalistoma*) and a three-jointed palp (synaphipod).
> *Trans. Linn. Soc.*, Zool., 1903, p. 440.

psallette (sä-let′), *n.* [F., irreg. < Gr. ψάλλειν, play on the harp, sing to the harp, + *-ette.*] Same as *maîtrise*, 1.

psaltery. 1. The term is loosely applied to a variety of stringed instruments, some of them lyres or harps, rather than zithers.

psammite, *n.*—**Condroz psammites,** in *geol.*, the sandy facies of the Famennian (Upper Devonian) in Belgium. It carries an abundant fauna. See ★*Condrusian.*

Psammobia (sa-mō′bi-ä), *n.* [NL., < Gr. ψάμμος, sand, + βίος, life.] The typical genus of the *Psammobiidæ.* *Lamarck.*

Psammobiidæ (sam-ọ̄-bī′i-dē), *n. pl.* [NL., < *Psammobia* + *-idæ.*] A family of bivalve mollusks, of the order *Eulamellibranchiata*, which have elongated separate siphons and a large tongue-shaped foot. It includes the genera *Psammobia* and *Sanguinolaria.*

Psammodus (sam′ọ̄-dus), *n.* [NL., < Gr. ψαμμος, sand, + ὀδούς, tooth.] A Lower Carboniferous genus of selachian fishes of the family *Psammodontidæ*, known only from the teeth, which are large and more or less quadrangular, with thick, smooth roots almost as large as the crown. The crown surface is porous and punctate or finely striated. The genus occurs in the Carboniferous of Europe and North America.

psammogenous (sa-moj′e-nus), *a.* [Gr. ψάμμος, sand, + γίγνεσθαι, become, + *-ous.*] In *phytogeog.*, of a more or less coarse-grained sandy consistency: said of soils. Thurmann, the author of the term (1849), further distinguished psammogenous soils into *perpsammic*, *hemipsammic*, and *oligopsammic*, and named transitional states *pelopsammic.* Compare ★*pelogenous.*

psammology (sa-mol′ọ̄-ji), *n.* [Gr. ψάμμος, sand, + -λογια, < λέγειν, speak.] The science which deals with the different forms assumed by sand.

> The study of *psammology.*
> *Geog. Jour.* (R. G. S.), IX. 570.

Psammoperca (sam-ọ̄-pėr′kạ̈), *n.* [NL., < Gr. ψάμμος, sand, + πέρκη, perch.] A genus of serranoid fishes, found from the Bay of Bengal and the China Sea to the north coast of Australia.

psammophile (sam′ọ̄-fil), *a.* [Gr. ψάμμος, sand, + φίλος, loving.] Same as ★*psammophilous.*

> The slender, wiry culms of this grass . . . render the species one of the most striking types of *psammophile* plants.
> *C. Mohr*, Plant Life of Alabama, p. 131.

psammophilous (sa-mof′i-lus), *a.* [Gr. ψάμμος, sand, + φίλος, loving, + *-ous.*] Living in or frequenting sandy places: said of plants or animals. Also *psammophile* and *ammophilous.* *Smithsonian Rep.* (Nat. Mus.), 1892, p. 508.

psammophyte (sam′ọ̄-fīt), *n.* [Gr. ψάμμος, sand, + φυτόν, plant.] In *phytogeog.*, a plant adapted to grow and habitually growing in sand, as on the seashore, on dunes, etc.

psammophytic (sam-ọ̄-fit′ik), *a.* [*psammophyte* + *-ic.*] Having the character of or pertaining to psammophytes; psammophilous.

psammosarcoma (sam″ọ̄-sär-kō′mạ̈), *n.*; pl. *psammosarcomata* (-mạ-tạ̈). [NL., < Gr. ψάμμος, sand, + σάρκωμα, sarcoma.] A sarcoma with calcareous deposit.

psammotherapy (sam-ọ̄-ther′ạ-pi), *n.* [Gr. ψάμμος, sand, + θεραπεία, medical treatment.] The employment of sand-baths in the treatment of disease.

psammous (sam′us), *a.* [Gr. ψάμμος, sand, + *-ous.*] Containing sand; sandy; gritty.

psaturose (sat′ụ̄-rōs), *n.* [F. *psaturose* (Beudant, 1832), prop. **psathyrose*, < Gr. ψαθυρός, friable, crumbling, + *-ose.*] Stephanite or brittle silver ore, an ore containing about 68.5 per cent. of silver.

P. S. C. An abbreviation of *Passed Staff College.*

pschutt (pshöt), *n.* [See the def.] The élite; the 'upper ten'; the highest of high life. The word is said to have originated in an expression of Daudet's in "Le nabab," where he represents the Marquis de Monpavon, a haughty and disdainful old beau, as expressing his profound scorn for the act of explaining himself or even making the slightest effort to help others to understand him. In his conversation with the Duke de Mora (Morny), a man of the same characteristics, he substituted "*ps*—" "*ps*—" for every word he was too indolent to say; and this "*ps*" is supposed to have given birth to *pschutt* as expressing the very cream of the aristocratic set. Afterward used attributively, in the sense of ultra-extravagant and -fashionable. *Larousse.* [Slang.]

Psednoblennius (sed-nọ̄-blen′i-us), *n.* [NL., < Gr. ψεδνός, thin, spare, scanty, + NL. *blennius*, blenny.] A genus of blennioid fishes found in the Gulf of California.

pselaphesia (sel-ạ-fē′shiạ̈), *n.* [NL., < Gr. ψηλάφησις, a feeling.] In *psychol.*, a term proposed by M. Dessoir in 1892 to include active touch and the 'muscle sense': opposed to *contact-sense.* *E. C. Sanford*, Exper. Psychol., p. 1.

pselaphesis (sẹ̄-laf′e-sis), *n.* [See ★*pselaphesia.*] 1. Same as a ★*pselaphesia.*—2. Same as *carphologia.*

Psenes (sē′nēz), *n.* [NL. (Cuvier and Valenciennes, 1833), origin uncertain. It is appar. a F. plural, and is given as from a Gr. "ψήνη, the osprey."] A genus of fishes of the family *Nomeidæ*, inhabiting warm seas and known chiefly from very young specimens found in the open ocean.

psephite (sē′fīt), *n.* [Gr. ψῆφος, a pebble, + *-ite*2.] In *petrog.*, a coarse conglomerate with argillaceous cement: extended by Naumann to all coarse fragmental rocks, conglomerates, and breccias. Distinguished from *psammite* and *pelite.* *Brongniart*, 1813.

psephitic (sẹ̄-fit′ik), *a.* [*psephite* + *-ic.*] In *petrog.*, resembling or composed of coarse sand or coarse fragments of rock or crystal.

Psephodus (sef′ọ̄-dus), *n.* [NL., < Gr. ψῆφος, a pebble, a counter, + ὀδούς (ὀδοντ-), tooth.] A selachian fish of the family *Cochliodontidæ*, known only from teeth which are rhombic or rhomboidal in shape, four- or five-cornered, slightly convex or more strongly arched with finely punctate crown surface and crenulated borders. It occurs in the Carboniferous of Europe, India, and North America.

Psettichthys (se-tik′this), *n.* [NL., < Gr. ψῆττα, flounder, + ἰχθύς, fish.] A genus of flounders found on the coast of California.

pseud. An abbreviation of *pseudonym.*

pseudaconin (sūd-ak′ọ̄-nin), *n.* [*pseudacon(it)in.*] A feebly poisonous, light yellow, amorphous alkaloid, $C_{25}H_{39}O_8N$, formed by hydrolyzing pseudaconitin with dilute mineral acids or alcoholic soda. It melts below 100° C.

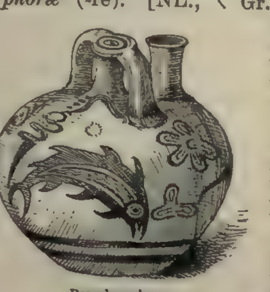
pseudacousma (sūd-a-kös′mạ̈), *n.* [NL., < Gr. ψευδής, false, + ἄκουσμα, thing heard.] Same as *pseudacusis.*

pseudallosematic (sūd″al-ọ̄-sẹ̄-mat′ik), *a.* [Gr. ψευδής, false, + E. *allosematic.*] Noting resemblances of an animal in form and color to some object associated with another species. *Poulton.*

pseudambulacra (sūd-am-bụ̄-lā′krä), *n. pl.* [NL., < Gr. ψευδής, false, + NL. *ambulacrum.*] A name given by Roemer to the ambulacral fields of blastoids.

pseudamnesia (sūd-am-nē′shiạ̈), *n.* [NL., < Gr. ψευδής, false, + μιμνήσκειν, remind.] A general term for the illusions of memory in which the subject appears to remember events that he has never experienced, including simple paramnesia (confusion of imagination with memory), identifying paramnesia (false familiarity or double memory), and suggestive or associative paramnesia (false recollections aroused by present impressions). *Baldwin*, Dict. of Philos. and Psychol., II. 374.

pseudamphora (sūd-am′fọ̄-rạ̈), *n.*; pl. *pseudamphoræ* (-rē). [NL., < Gr. ψευδής, false, + ἀμφορεύς, a jar.] A peculiar form of vase often found in the older classes of Greek pottery. It has two handles connected with a false neck, the actual opening being placed on one side.



Pseudamphora.

> The next style to consider is that of the false-necked vases, otherwise called bügelkannen, or '*pseudamphoræ.*'
> *W. M. Flinders Petrie*, in Jour. Hellenic Studies, XI. 274.

pseudamygdaloid (sūd-ạ-mig′dạ-loid), *n.* [Gr. ψευδής, false, + E. *amygdaloid.*] In *petrog.*, an igneous rock containing pseudamygdules.

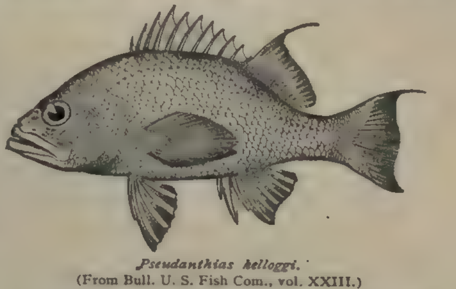
pseudamygdule (sūd-ạ-mig′dūl), *n.* [Gr. ψευδής, false, + E. *amygdule.*] In *petrog.*, a mineral aggregate or crystal replacing a primary mineral of an igneous rock in such a manner as to appear like a true amygdaloidal filling of a vesicular cavity.

pseudangina (sūd-an-jī′nạ̈), *n.* [NL., < Gr. ψευδής, false, + NL. *angina.*] An attack of pain resembling that of *angina pectoris*, but not due to disease of the heart or coronary arteries. Also written *pseudo-angina.* *Phil. Med. Jour.*, Jan. 31, 1903, p. 207.

pseud-annual (sūd′an″ụ̄-ạl), *n.* See ★*annual*, 3.

> When the plant reduces itself to a bulb at the approach of the dry or cold season, it thereby becomes a *pseud-annual*, but when it reduces itself to a seed it is strictly annual.
> *L. H. Bailey*, Survival of the Unlike, p. 294.

Pseudanthias (sū-dan′thi-as), *n.* [NL., < Gr. ψευδής, false, + NL. *Anthias.*] A genus of serranoid fishes, closely allied to *Anthias.* The species are numerous in the Pacific, *P. kelloggi* in Hawaii, *P. japonicus* in Japan.



Pseudanthias kelloggi.
(From Bull. U. S. Fish Com., vol. XXIII.)

pseudaposematic (sūd″ap-ọ̄-sẹ̄-mat′ik), *a.* [Gr. ψευδής, false, + E. *aposematic.*] Relating to the phenomenon of protective mimicry, as distinguished from protective resemblance, or cryptic defense. *E. B. Poulton.*—**Pseudaposematic character,** a character which, in one species, serves to warn away enemies, copied in another species. See ★*pseudepisematic character.*

pseudatoll (sūd-a-tol′), *n.* [Gr. ψευδής, false, + E. *atoll.*] 1. A nearly circular island simulating an atoll in form.—2. A small reef, simulating an atoll in form, but resulting from the growth of a single community of organisms.

pseudatropine (sūd-at′rọ̄-pin), *n.* Same as ★*oscine*2.

Pseudechis (sū-dek′is), *n.* [NL., < Gr. ψευδής, false, + ἔχις, a viper.] A genus of elapine snakes, comprising very deadly species. A typical member of the genus is *P. porphyriaceus*, the black snake of Australia, which reaches a length of five or six feet. The outer row of scales is red at the base and the ventral scales are red. The species feeds on small mammals, birds, and reptiles.

pseudencephalic (sūd-en-se-fal′ik), *a.* [*pseudencephal*(*us*) + *-ic.*] Relating to a pseudencephalus. *Buck*, Med. Handbook, II. 229.

pseudentoptic (sūd-en-top′tik), *a.* [Gr. ψευδής, false, + E. *entoptic.*] In *physiol.* and *psychophys.*, apparently but not really entoptic. See the extract.

> Notice . . . the horizontal bands that follow a slow dropping and raising of the upper lid. Such appearances as these, since their cause is not really in the eye but outside of it, have been called *pseudentoptic* by Laqueur.
> *E. C. Sanford*, Exper. Psychol., p. 98.

pseudepigraph (sūd-ep′i-gråf), *n.* A spurious writing. See *pseudepigrapha.*

> Wisdom of Solomon.—This *pseudepigraph* claims to have been written by King Solomon.
> *Encyc. Brit.*, XXV. 496.

pseudepigraphal (sūd-e-pig'rạ-fạl), *a.* [*pseudepigraph* + *-al*^{1}.] Having the character of a pseudepigraph or of the pseudepigrapha.

pseudepisematic (sūd″ep-i-sẹ̄-mat'ik), *a.* [Gr. ψευδής, false, + E. *episematic.*] In *biol.*, noting the mimicry or copying, in one species, of an episematic character of another species.

> It is commonly assumed that the purpose of this imitation is purely alluring or *pseudepisematic.*
> *Proc. Zool. Soc. London*, Jan.–April, 1903, p. 48.

Pseudepisematic character, an episematic character or recognition-mark of one species copied in another for the purpose of deception. *Encyc. Brit.*, XXVII. 149.

pseudholoptic (sūd-ho-lop'tik), *a.* See ★*pseudoholoptic.*

pseudidea (sūd-ī-dē'ạ̈), *n.* [Gr. ψευδής, false, + E. *idea.*] A false idea, notion, or theory; an idea which may be framed in words, but is intrinsically unthinkable; or, an idea perverted by automorphic interpretation.

> The proposition with which Kant's philosophy sets out, verbally intelligible though it is, cannot by any effort be rendered into thought—cannot be interpreted into an idea properly so called, but stands merely for a *pseudidea.* *H. Spencer*, First Principles, iii.

> It may be questioned whether this fundamental dictum of Herbert Spencer's philosophy is not itself a good example of those very "*pseud-ideas*" whose nature and frequency in human reasoning he has so clearly described.
> *L. F. Ward*, Dynamic Sociol., I. 160.

pseudinoma (sū-di-nō'mạ̈), *n.*; pl. *pseudinomata* (-mạ-tạ̈). [NL., < Gr. ψευδής, false, + (?) ἴς (ἰν-), muscle, + *-oma.*] 1. A scirrhous cancer.—2. A phantom tumor.

pseudisochromatic (sūd-ī″sọ̄-krọ̄-mat'ik), *a.* [Gr. ψευδής, false, + E. *isochromatic.*] In *psychophys.*, pretendedly or illusorily same-colored: said of certain test-cards, used for the diagnosis of color-blindness, in which patches of one color are variously distributed among patches of another color, with which the former may, by color-blind persons, be confused.

pseudisodomum, *n.* See *pseudisodomon.*

pseudo-acid (sū-dọ̄-as'id), *n.* An organic compound which, in the free state, has not the structure of an acid: in the presence of bases it gradually undergoes molecular rearrangement and forms salts. *Amer. Chem. Jour.*, Sept., 1903, p. 187.

pseudo-amœboid (sū″dọ̄-ạ-mē'boid), *a.* Simulating the amœboid form. *Buck*, Med. Handbook, I. 280.

pseudo-angina (sū″dọ̄-an-jī'nạ̈), *n.* Same as ★*pseudangina.*

pseudo-apoplectic (sū-dọ̄-ap-ọ̄-plek'tik), *a.* Simulating apoplexy. *Buck*, Med. Handbook, IV. 589.

pseudobacillus (sū″dọ̄-ba-sil'us), *n.*; pl. *pseudobacilli* (-ī). [NL.] One of the minute bodies found in sputum, which react to stains in the same manner as the tubercle bacillus, but are not living organisms. They are readily dissolved in ether or chloroform, and are probably fine particles of fat.

pseudobase (sū'dọ̄-bās), *n.* An organic compound which, in the free state, has not the structure of a base: in the presence of acids it gradually undergoes molecular rearrangement and forms salts.

pseudobeat (sū'dọ̄-bēt), *n.* In *phonet.*, a fluctuation of intensity occurring in the phonautographic curves of the letter *r.* See the extract.

> The curve of *r* was found to consist of small vibrations with rather regular fluctuations of amplitude having long periods; the resemblance to the familiar curves of two tones forming beats suggested the term '*pseudobeats*' for the fluctuations of intensity observed in the *r*-curves.
> *Scripture*, Exper. Phonetics, p. 19.

pseudocapitulum (sū″dọ̄-ka-pit'ụ̄-lum), *n.*; pl. *pseudocapitula* (-lạ̈). [NL., < Gr. ψευδής, false, + NL. *capitulum.*] In certain mites, a sclerite resembling the capitulum, but morphologically distinct. *Jour. Roy. Micros. Soc.*, Dec., 1904, p. 650.

pseudocardinal (sū-dọ̄-kär'di-nạl), *a.* [Gr. ψευδής, false, + E. *cardinal.*] Of or pertaining to those teeth in a schizodont pelecypod shell which are situated below the beaks. Same as *subumbonal.*

pseudocenter (sū-dọ̄-sen'tėr), *n.* [Gr. ψευδής, false, + κέντρον, center.] An organism or an organ which, while unspecialized or primitive, is actually the degenerate or simplified descendant of a more complicated ancestor.

pseudocentric (sū-dọ̄-sen'trik), *a.* [*pseudocenter* (*centr-*) + *-ic.*] Of or pertaining to a pseudocenter.

> A form of apocentricity extremely common and often perplexing may be termed *pseudocentric*; in such a condition there is an apparent simplicity that reveals its secondary nature by some small and apparently meaningless complexity. *Encyc. Brit.*, XXVIII. 343.

pseudocentricity (sū″dọ̄-sen-tris'ị-ti), *n.* [*pseudocentric* + *-ity.*] The character of being pseudocentric; the state or condition of being or of pertaining to a pseudocenter. *Trans. Linnean Soc.*, Zool., 1901, p. 265.

pseudocentrous (sū-dọ̄-sen'trus), *a.* [*pseudocenter* + *-ous.*] Having vertebræ without centra, but composed of a shell of bone surrounding the notochord, and consisting of two pairs of arcualia. The condition is found in some extinct amphibians.

> Order Urodela, Dumeril. *Pseudocentrous*, with the tail remaining throughout life.
> *H. Gadow*, Classification of Vertebrata, p. 12.

pseudocentrum (sū-dọ̄-sen'trum), *n.*; pl. *pseudocentra* (-trạ̈). [NL., < Gr. ψευδής, false, + κέντρον, center.] The body of a vertebra which is formed by the meeting and fusion of the two principal pairs of dorsal and ventral arcualia, or entirely by the chief dorsal arcualia. This condition obtains in the tailed amphibians. *Philos. Trans. Roy. Soc.* (London), 1896, ser. B, p. 21.

pseudocephalocele (sū-dọ̄-sef'ạ-lọ̄-sēl), *n.* [Gr. ψευδής, false, + E. *cephalocele.*] A non-congenital hernia of the brain, due to disease or subcutaneous fracture of the skull. *Buck*, Med. Handbook, II. 237.

Pseudoceratites (sū″dọ̄-ser-ạ-tī'tēz), *n. pl.* [NL., < Gr. ψευδής, false, + NL. *Ceratites.*] An artificial group of ammonoid cephalopod genera with ceratitoid sutures found in Cretaceous rocks, comprising the retrogressive descendants of earlier, more complex Jurassic and Cretaceous types. Among the American genera included in this group may be mentioned *Placenticeras, Sphenodiscus, Engonoceras*, and *Metengonoceras.*

pseudoceratophorous (sū″dọ̄-ser-ạ-tof'ọ̄-rus), *a.* [Gr. ψευδής, false, + κέρας (κερατ-), horn, + -φορος, < φέρειν, bear.] Having horns that are not outgrowths of the frontal bones, but, as in the giraffe, are developed from separate centers of ossification.

> The existence [in the Giraffe] of *pseudoceratophorous* epiphyses permanently invested by a hairy integument
> *Proc. Zool. Soc. London*, 1860, p. 105.

Pseudoceridæ (sū-dọ̄-ser'i-dē), *n. pl.* [NL., < *Pseudoceros* + *-idæ.*] A family of polyclads having an oval or elliptical body with fold-like marginal tentacles, the mouth in the middle of the anterior half of the body, and the eyes on the brain-areas and the tentacles. It includes the genera *Pseudoceros, Thysanozoon*, and *Yungia.*

Pseudoceros (sụ̄-dos'ẹ̄-ros), *n.* [NL., < Gr. ψευδής, false, + κηρός (?), bees-wax.] The typical genus of the *Pseudoceridæ. Lang*, 1884.

pseudochromæsthesia (sū-dọ̄-krōm-es-thē'shiạ̈), *n.* [NL., < Gr. ψευδής, false, + NL. *chromæsthesia.*]. In *psychol.*, the constant and uniform association of colors with uncolored visual impressions or with sensations of other modalities; especially, colored hearing, or the association of colors with sounds: the commonest form of synæsthesia.

> *Pseudo-chromesthesia* is that peculiar faculty of association of the sensorial perceptions, by means of which any primary sensation or even a purely psychical process can evoke, in the case of certain persons, a false visual sensation of color, constant in the case of the same stimulus with the same person. *Amer. Jour. Psychol.*, V. 20.

pseudochromatin (sū-dọ̄-krō'mạ-tin), *n.* [Gr. ψευδής, false, + E. *chromatin.*] Same as ★*prochromatin. Pfitzner*, 1886.

pseudochrome (sū'dọ̄-krōm), *n.* [Gr. ψευδής, false, + χρῶμα, color.] A large, spherical, extranuclear body composed of coiled filaments in the cell cytoplasm of the ovarian follicles of birds. It seems to be equivalent to the 'ergastoplasm' of Garnier and the 'mitochondria' of Benda. *Jour. Roy. Micros. Soc.*, Oct., 1903, p. 594.

pseudochrysolite (sū-dọ̄-kris'ọ̄-līt), *n.* [Gr. ψευδής, false, + E. *chrysolite.*] Same as ★*bottle-stone.*

pseudoclassic (sū-dọ̄-klȧs'ik), *a.* [Gr. ψευδής, false, + E. *classic.*] In the *fine arts*, having the form but not the spirit of classic art; sometimes, simply imitated from classic art.

pseudoclistogamous (sū″dọ̄-klīs-tog'ạ̈-mus), *a.* [See ★*pseudoclistogamy.*] Presenting the character of pseudoclistogamy. *Pound* and *Clements*, Plant Life of Nebraska.

pseudoclistogamy (sū″dọ̄-klīs-tog'ạ̈-mi), *n.* [Gr. ψευδής, false, + E. *clistogamy.*] The phenomenon of being clistogamous only as affected by special causes. For cases of pseudoclistogamy see ★*hydroclistogamy* and ★*photoclistogamy*, 2.

pseudocœle, *n.* **2.** A cavity of the brain, lying between the hemispheres and below the corpus callosum. The name is given because the cavity is not in the brain substance, but between the hemispheres. Same as *fifth ventricle. Science*, Feb. 17, 1905, p. 268.

pseudocœlian (sū-dọ̄-sē'li-ạ̈n), *a.* Same as *pseudocœlic.*

pseudocoloboma (sū″dọ̄-kol-ọ̄-bō'mạ̈), *n.*; pl. *pseudocolobomata* (-mạ-tạ̈). [NL., < Gr. ψευδής, false, + NL. *coloboma.*] A strongly pigmented or non-pigmented line on the iris, giving the appearance of a coloboma.

pseudocone (sū'dọ̄-kōn), *n.* [Gr. ψευδής, false, + κῶνος, cone.] A false or modified crystalline lens or cone occurring in the eyes of muscid flies. The cone is replaced by four cells filled with a transparent fluid, and a protoplasmic nucleated portion.—**Pseudocone eye.** See ★*eye*^{1}.

pseudoconglomerate (sū″dọ̄-kọn-glom'ẹ-rạ̄t), *n.* [Gr. ψευδής, false, + E. *conglomerate.*] In *petrog.*, a rock, resembling a conglomerate, formed by the crushing of a compact rock into larger and smaller fragments which have become more or less rounded in the process of crushing. *Geikie*, Text-book of Geol., p. 683.

pseudoconhydrine (sū″dọ̄-kọn-hī'drin), *n.* [Gr. ψευδής, false, + E. *conhydrine.*] An alkaloid extracted in small quantity from the less volatile portion of crude conine from *Conium maculatum.* It is isomeric with conhydrine, and differs from conine in containing in addition to the elements of this latter an atom of oxygen.

pseudocrystalline (sū-dọ̄-kris'ta-lin), *a.* [Gr. ψευδής, false, + E. *crystalline.*] In *petrog.*, noting a texture or rock which resembles one that is truly crystalline, being made up of detrital crystals or fragments little worn and cemented together by any kind of mineral cement.

pseudocubic (sū-dọ̄-kū'bik), *a.* [Gr. ψευδής, false, + E. *cubic.*] Cubic in outer form, but not isometric in internal structure or distribution of properties. *Geikie*, Text-book of Geol., p. 105.

pseudocumene (sū-dọ̄-kum'ēn), *n.* [Gr. ψευδής, false, + E. *cumene.*] A colorless oily hydrocarbon, 1,2,4-trimethylbenzene, $C_6H_3(CH_3)_3$, found in coal-tar and petroleum, and also made synthetically. It boils at 169.8° C.

pseudocumidine (sū″dọ̄-kum'i-din), *n.* [Gr. ψευδής, false, + E. *cumidine.*] Aminotrimethylbenzene, $C_6H_2(CH_3)_3NH_2$, a raw material of the color industry. Also called *ψ-cumidine.*

pseudocyphella (sū″dọ̄-sī-fel'ạ̈), *n.*; pl. *pseudocyphellæ* (-ē). [NL., < Gr. ψευδής, false, + NL. *cyphella.*] A small depression in the under surface of a lichen thallus, differing from a cyphella in being pulverulent or bearing soredia.

> They [Cyphellæ] are generally naked, but are often also pulverulent or sorediiferous, in which latter case they are called *pseudo-cyphellæ. Encyc. Brit.*, XIV. 554.

pseudocyst, *n.* 1. In *bot.*: (*b*) The vegetative cell of any of the blue-green algæ.—**2.** In some sporozoans, a structure which is formed from the residual protoplasm left after the sporoblasts are separated off and which by swelling causes the true cyst-wall to burst asunder, thus setting free the spores.

pseudodeltidium, *n.* It is a triangular cover over the delthyrium or pedicle-slit, developed by the union of the deltidial plates in telotrematous brachiopods.

pseudoderm (sū'dọ̄-dėrm), *n.* [Gr. ψευδής, false, + δέρμα, skin.] In sponges, a sort of outer covering or skin formed by outgrowths from the ascon tubes situated most peripherally.

pseudodiabase (sū-dọ̄-dī'ạ-bās), *n.* [Gr. ψευδής, false, + E. *diabase.*] In *petrog.*, a name given by Becker to certain altered diabases in California which were supposed to have been formed by metamorphism from sediments.

pseudodiorite (sū-dọ̄-dī'ọ̄-rīt), *n.* [Gr. ψευδής, false, + E. *diorite.*] In *petrog.*, same as ★*metadiorite.*

pseudodiphtheria (sū″dǭ-dif-thē′ri-ạ̈), *n.* [NL., < Gr. ψευδής, false, + NL. *diphtheria.*] An affection resembling diphtheria, but not marked by the presence of the bacillus of diphtheria. See *pseudodiphtheria* ★*bacilli. Buck*, Med. Handbook, III. 486.

pseudodiphtheritic (sū″dǭ-dif-thẹ-rit′ik), *a.* Relating to or of the nature of pseudodiphtheria.

pseudodoxy (sū′dǭ-dok-si), *n.* [Gr. ψευδοδοξία, < ψευδόδοξος, having a false opinion. See *pseudodox.*] The holding of erroneous opinions; incorrectness of opinion, especially in matters of theology: opposed to *orthodoxy.*

pseudo-emphysema (sū″dǭ-em-fi-sē′mạ̈), *n.* [NL., < Gr. ψευδής, false, + NL. *emphysema.*] A condition of the lungs, due to temporary blocking of the smaller bronchial tubes, which resembles in its symptoms and post-mortem appearances true emphysema. *Buck*, Med. Handbook, II. 493.

pseudo-encephalitis (sū″dǭ-en-sef-ạ-lī′tis), *n.* [NL., < Gr. ψευδής, false, + NL. *encephalitis.*] A condition in infants which resembles acute hydrocephalus: due to colliquative diarrhea.

pseudo-ephedrine (sū″dǭ-ef′ẹ-drin), *n.* [Gr. ψευδής, false, + E. *ephedrine.*] A colorless crystalline alkaloid, $C_{10}H_{15}ON$, isomeric with ephedrine, contained in *Ephedra vulgaris, E. helvetica*, and other species of *Ephedra*: similar to atropin.

pseudo-equality (sū″dǭ-ẹ-kwâl′i-ti), *n.* An apparent or false equivalence which disappears when subjected to adequate tests. *Nature*, Sept. 18, 1902, p. 497.

pseudo-erysipelas (sū″dǭ-er-i-sip′e-lạs), *n.* [Gr. ψευδής, false, + NL. *erysipelas.*] A diffuse inflammation of the skin that does not have all the characteristic features of erysipelas.

pseudofluctuation (sū″dǭ-fluk-tụ̄-ā′shọn), *n.* [Gr. ψευδής, false, + E. *fluctuation.*] In *pathol.*, an impulse transmitted through solid but soft tissue, such as muscle, giving the impression of a fluid sac. *Buck*, Med. Handbook, VI. 571.

pseudoform (sū′dǭ-fôrm), *n.* [Gr. ψευδής, false, + L. *forma*, form.] A false or simulating form; specifically, the labile form of a substance which undergoes tautomeric changes. See ★*pseudomerism.*

> The notion of the shifting hydrogen radical is but the hypothetical way of viewing the intervention of the intramolecular change by which the substance becomes its "*pseudoform.*" *Nature*, Sept. 18, 1902, p. 503.

pseudoganglion (sū-dǭ-gang′gli-ọn), *n.*; pl. *pseudoganglia* (-ạ̈). [NL., < Gr. ψευδής, false, + NL. *ganglion.*] A circumscribed thickening of the sheath of a nerve, resembling externally a ganglion.

pseudogaster (sū-dǭ-gas′tėr), *n.* [NL., < Gr. ψευδής, false, + γαστήρ, belly.] The cavity formed by the folding of a flabellate sponge into a cup-shaped or tubular form.

pseudoglacial (sū-dǭ-glā′shiạl), *a.* [Gr. ψευδής, false, + E. *glacial.*] Simulating glacial deposits or action. *J. Geikie*, The Great Ice Age, p. 697.

pseudoglioma (sū″dǭ-glī-ō′mạ̈), *n.*; pl. *pseudogliomata* (-mạ-tạ̈). [NL., < Gr. ψευδής, false, + NL. *glioma.*] A suppurative affection of the choroid resembling a glioma of the retina. *Med. Record*, July 11, 1903, p. 50.

pseudoglobulin (sū-dǭ-glob′ụ̄-lin), *n.* [Gr. ψευδής, false, + E. *globulin.*] One of two fractions (*pseudoglobulin* and *euglobulin*) of serum globulin. Of these the euglobulin is thrown down from its saline solution on dialysis, while the pseudoglobulin remains in solution.

pseudoglottis (sū-dǭ-glot′is), *n.* [NL., < Gr. ψευδής, false, + γλωττίς, glottis.] The aperture in the larynx formed by the ventricular bands or false vocal chords.

pseudogyne, *n.* **2.** A curious caste or form of ant occurring in the colonies of certain species, as *Formica sanguinea*, in which is combined the thorax of a female with the abdomen and size of a worker.

> In 1895 E. Wasmann, S. J., advanced the hypothesis that the so-called "*pseudogynes*" in the colonies of Formica sanguinea owe their existence and development to the rearing of the beetle Lomechusa strumosa F. *Entomological News*, XV. 339.

pseudogyny (sū-doj′i-ni), *n.* [*pseudogyne* + *-y*³.] The condition of being a pseudogyne.

> E. Wasmann returns with fresh light to a discussion of "*pseudogyny*" in Formica sanguinea, etc. A pseudogynous form exhibits a somewhat deformed combination of the thorax-structure of a female with the abdominal development and body size of a worker. *Jour. Roy. Micros. Soc.*, April, 1903, p. 172.

pseudohallucination (sū″dǭ-ha-lū-si-nā′shọn), *n.* In *mental pathol.*, an apperceptive or psychic hallucination; a hallucination which results from the exercise of memory and imagination without the interposition of a sensory stimulus.

> *Pseudohallucinations* . . . occur, as a rule, in chronic cases. The imagination plays an important part in their etiology. *S. Paton*, Psychiatry, p. 59.

pseudohalter (sū-dǭ-hal′tėr), *n.*; pl. *pseudohalteres* (-tẹ-rēz). [NL., < Gr. ψευδής, false, + NL. *halter.* See *halter*³.] One of the greatly reduced elytra of a stylopid beetle.

pseudohemoglobin (sū″dǭ-hem-ǭ-glō′bin), *n.* [Gr. ψευδής, false, + E. *hemoglobin.*] A reduction-product intermediate between oxyhemoglobin and hemoglobin, derived from the former on treating it with sodium hydrosulphite.

pseudoholoptic (sū″dǭ-ho-lop′tik), *a.* [Also *pseudholoptic*; < Gr. ψευδής, false, + E. *holoptic.*] Nearly holoptic. Pseudoholoptic eyes in the *Diptera* are intermediate between holoptic and dichoptic eyes, that is, they are not entirely separated, nor do they meet in a coadapted line of union.

Pseudohypertrophic dystrophy. Same as *pseudohypertrophic paralysis* (which see, under *paralysis*).

pseudo-ion (sū-dǭ-ī′ọn), *n.* A molecule whose motion, in a liquid undergoing electrolysis, somewhat resembles that of a true ion, but is produced by a different cause. *Jour. Phys. Chem.*, June, 1907, p. 446.

pseudoism (sū′dǭ-izm), *n.* [*pseudo-* + *-ism.*] The state or character of being inclined to falsehood; habitual disposition to be false in words and acts.

pseudo-isochromatic (sū″dǭ-ī″sǭ-krǭ-mat′ik), *a.* Same as *pseudisochromatic.*

pseudo-isometric (sū-dō-ī-sǭ-met′rik), *a.* See ★*pseudosymmetry.*

pseudojervine (sū-dǭ-jėr′vin), *n.* One of the alkaloids extracted from the rhizomes of white hellebore, *Veratrum album.*

Pseudojulis (sū-dǭ-jö′lis), *n.* [NL., < Gr. ψευδής, false, + NL. *Julis.*] A genus of labroid fishes, found about rocky islands of the Pacific.

pseudolaminated (sū-dǭ-lam′i-nā-ted), *a.* [Gr. ψευδής, false, + E. *laminated.*] In *geol.*, noting a bedded appearance not due to ordinary sedimentation. The term is applied by Geikie to a structure produced by shearing movement accompanying glacial deposition. *J. Geikie*, The Great Ice Age, p. 340.

pseudolatry (sū-dol′ạ-tri), *n.* [Gr. ψευδολατρεία, < ψευδής, false, + λατρεία, service, worship.] False worship: a term used by Cyril and other Christian writers to designate the polytheistic worship of the pagans. Also applied to false worship, idolatry, etc., within the Christian church.

Pseudoleucemia infantum, a form of anemia occurring in young children. Also called *Von Jaksch's disease.*

pseudoleucemic (sū″dō-lụ̄-sē′mik), *a.* [*pseudoleucemia* + *-ic.*] Relating to or affected with pseudoleucemia.

pseudolipoma (sū″dō-li-pō′mạ̈), *n.*; pl. *pseudolipomata* (-mạ-tạ̈). [NL., < Gr. ψευδής, false, + NL. *lipoma.*] A tumor or localized edema resembling a fatty tumor.

pseudolunule (sū-dǭ-lū′nūl), *n.* [Gr. ψευδής, false, + E. *lunule.*] A small area on each of the lateral slopes of the beaks in brachiopod shells of the genus *Porambonites.*

pseudo-lupus (sū-dǭ-lū′pus), *n.* An affection of the skin resembling lupus in appearance, but due to an infection with blastomycetes, or saccharomycetes. *Med. Record*, Oct. 5, 1907, p. 583.

pseudoluxation (sū″dǭ-luk-sā′shọn), *n.* [Gr. ψευδής, false, + E. *luxation.*] Partial dislocation of a bone: as *pseudoluxation* of the patella. *U. S. Dept. Agr., Rep. on Diseases of the Horse*, 1903, p. 338.

pseudomania (sū-dǭ-mā′ni-ạ̈), *n.* [NL., < Gr. ψευδής, false, + μανία, madness.] 1. A condition resembling mania. *G. S. Hall*, Adolescence, I. 352.—**2.** A mental disease characterized by self-accusation of crimes never committed.—**3.** An uncontrollable impulse to practise deceit.

pseudomartyr (sū-dǭ-mär′tėr), *n.* [Gr. ψευδής, false, + μάρτυρ, martyr.] A false or pretended martyr.

pseudomelanin (sū-dǭ-mel′ạ-nin), *n.* [Gr. ψευδής, false, + E. *melanin.*] A black pigment resulting, in cases of hemochromatosis, from the absorption of hydrogen sulphid from the intestinal tract, by organs in which hemosiderin has been deposited.

pseudomelanosis (sū-dǭ-mel-ạ-nō′sis), *n.* [NL., < Gr. ψευδής, false, + NL. *melanosis.*] The presence of dark or black patches in the tissues after death, due to the action of hydrogen sulphid from the intestine upon hemosiderin deposits. See ★*pseudomelanin. Buck*, Med. Handbook, III. 397.

pseudomeningocele (sū″dǭ-mẹ-ning′gǭ-sēl), *n.* [Gr. ψευδής, false, + E. *meningocele.*] A tumor beneath the scalp, caused by the extrusion of a portion of the cerebral membranes, filled with cerebrospinal fluid, through an opening in the skull caused by a fracture or by disease.

pseudomer (sū′dǭ-mėr), *n.* [Gr. ψευδής, false, + μέρος, part.] One of the pseudomeric compounds.

pseudomeric (sū-dǭ-mer′ik), *a.* [*pseudomer* + *-ic.*] Exhibiting or capable of pseudomerism.

pseudomerism (sū-dom′ẹ-rizm), *n.* [*pseudomer* + *-ism.*] The property by virtue of which a compound reacts as if its structure changed according to the reagent used. The variety of unstable structure, which does not exist ordinarily by itself, is known as the labile form or pseudoform.

pseudomery (sū-dom′ẹ-ri), *n.* Same as ★*pseudomerism.*

pseudomesial (sū-dǭ-mes′i-ạl), *a.* [Gr. ψευδής, false, + E. *mesial.*] Noting a process in the cranium of the sole, formed by the union of the sphenotic and the prefrontal. *Proc. Zool. Soc. London*, May 1, 1894, p. 443.

pseudomesoderm (sū-dǭ-mes′ǭ-dėrm), *n.* [Gr. ψευδής, false, + E. *mesoderm.*] A false mesoderm, as the layer between the ectoderm and the axial cell in *Orthonectida.*

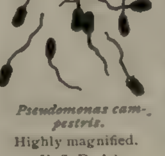
pseudometameric (sū-dǭ-met-ạ-mer′ik), *a.* [Gr. ψευδής, false, + E. *metameric.*] An apparent but not a real metamerism or division into segments; false metamerism. *Philos. Trans. Roy. Soc.* (London), 1890, ser. B, p. 163.

pseudometamerism (sū″dǭ-me-tam′ẹ-rizm), *n.* [Gr. ψευδής, false, + E. *metamerism.*] In *zoöl.*, the metameric arrangement of internal organs without external metamerism, as in *Gunda segmentata.*

pseudomitotic (sū″dǭ-mi-tot′ik), *a.* [Gr. ψευδής, false, + E. *mitotic.*] Noting that form of karyokinetic, or mitotic, division in which the chromosomes of the cell-nucleus are divided transversely, instead of longitudinally, as in true mitosis.

> For that method in which one of the chromosome divisions is transverse and the other longitudinal the term *pseudomitotic* is suggested, and this method is subdivided into a method of postreduction division in which the so-called reduction division succeeds the equation division and a method of præreduction division in which the reduction division is the first to occur. *Science*, June 5, 1903, p. 906.

Pseudomonas (sū-dǭ-mon′as), *n.* [NL. (Migula, 1896). < ψευδής, false, + E. *Monas* (see *Monas*, 2).] A genus of motile bacteria. The cells are short or long, sometimes forming filaments; the flagella polar, varying from 1 to 10. The species are numerous, occurring mostly in soil and water. A few are pathogenic. *P. campestris* is the cause of the black rot of cabbage and other closely related plants. *P. Hyacinthi* causes a rot of hyacinth bulbs.



Pseudomonas campestris.
Highly magnified.
(U. S. D. A.)

pseudomonoclinic (sū-dǭ-mon-ǭ-klin′ik), *a.* [Gr. ψευδής, false, + E. *monoclinic.*] Resembling the monoclinic forms, but not having monoclinic structure. See ★*pseudosymmetry. Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. v. 253.

pseudomonocyclic (sū-dǭ-mon-ǭ-sik′lik), *a.* [Gr. ψευδής, false, + E. *monocyclic.*] Presenting the false appearance of having a monocyclic arrangement of the basal plates, as *Apiocrinus*, a Jurassic crinoid.

pseudomonogonic (sū-dọ-mon-ọ-gon'ik), *a.* [Gr. ψευδής, false, + E. *monogonic.*] Apparently confined to one parent only: used with reference to the transmission of the characteristics of one parent only to the offspring in sexual reproduction.

> It is . . . not improbable that '*pseudo-monogonic*' heredity is sometimes due to this fact.
> *Weismann* (trans.), Germ-Plasm, p. 269.

pseudomorphose (sū-dọ-môr'fōz), *v. t.*; pret. and pp. *pseudomorphosed*, ppr. *pseudomorphosing.* [*pseudomorph*(*ism*) + *-ose*, as in *metamorphose.*] To change by pseudomorphism.

pseudomucin (sū-dọ-mū'sin), *n.* [Gr. ψευδής, false, + E. *mucin.*] An albuminous substance which belongs to the class of glucoproteids (gluco-albumins) and is found in the contents of ovarian cysts. It is identical with the metalbumin of Scherer.

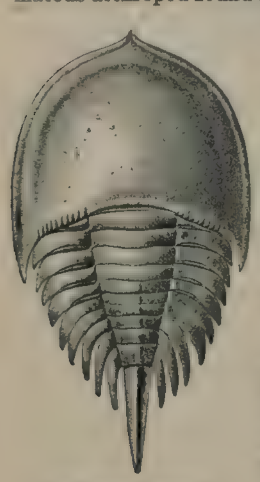
pseudomyxoma (sū″dọ-mik-sō'ma̤), *n.*; pl. *pseudomyxomata* (-mạ-ta̤). [NL., < Gr. ψευδής, false, + NL. *myxoma.*] The presence of mucoid substance due to the rupture of a colloid cyst, giving the appearance of a myxoma: found especially in the peritoneal cavity after escape of the colloid contents of an ovarian cyst.

pseudoneoplasm (sū-dọ-nē'ọ-plazm), *n.* [Gr. ψευδής, false, + E. *neoplasm.*] 1. A tumor-like formation of temporary character, due to inflammatory action.

> Ordinarily localized in the ileocæcal region, but likewise affecting other regions less frequently, the process effects a disease of long duration, the most conspicuous feature being the more or less extensive formation of fibrous and tuberculous granulation tissue in the implicated parts. This is often of such a character that the inflammatory hyperplasia or "*pseudo-neoplasm*" (Benoit) may easily be mistaken clinically for tumor-formation of the locality resembling carcinoma.
> *Jour. Exper. Med.*, Nov. 29, 1901, p. 24.

2. A phantom tumor.

Pseudoniscus, *n.* 2. A small fossil merostomatous arthropod found in the Silurian rocks of the Island of Ösel, Sweden, and in the Salina beds of New York State. The animal has a large horseshoe-shaped smooth head-shield, with genal spines and without eyes, a trilobitic abdomen of 10 segments, and a short, straight, terminal spine.



Pseudoniscus roosevelti.

pseudonuclein (sū-dọ-nū'klẹ-in), *n.* Same as ★*paranuclein.*

pseudo-orthorhombic (sū″dọ-ôr-thọ-rom'bik), *a.* See ★*pseudosymmetry.*

pseudopallium (sū-dọ-pal'i-um), *n.*; pl. *pseudopallia* (-a̤). [NL., < Gr. ψευδής, false, + NL. *pallium.*] In gastropods, a process of the cephalic integument which projects backward over the shell. *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 491.

pseudoparasitism (sū-dọ-par'ạ-sī-tizm), *n.* [Gr. ψευδής, false, + E. *parasitism.*] The temporary presence in the alimentary canal, tissues, or cavities of the body, of worms or worm-like organisms which are not normally parasites.

> Among the Myriopods about forty recorded cases of *pseudoparasitism* have been brought together and discussed by Blanchard. In the large majority the animal was taken from the nasal fossae, though in a smaller number it was actually obtained living from the alimentary canal where it undoubtedly can exist for a brief time in spite of the untoward environment. The ingestion of such forms is purely accidental, the symptoms those of helminthiasis in general and their stay at most very limited. They never show any evidence of adaptation to the new environment.
> *Trans. Amer. Micros. Soc.*, June, 1902, p. 131.

pseudoparthenogenesis, *n.* 2. The fertilization of eggs from a seminal receptacle subsequent to sexual union.

> The word *Pseudoparthenogenesis* has been applied by some writers to cases in which the eggs are fertilized from a seminal receptacle . . ., and in which copulation does not take place for each egg.
> *E. F. Phillips*, Proc. Amer. Philos. Soc., 1903, p. 292.

pseudopedicellaria (sū″dọ-ped″i-se-lā'ri-a̤), *n.*; pl. *pseudopedicellariæ* (-ē). [NL., < Gr. ψευδής, false, + NL. *pedicellaria.*] In some starfishes, one of the pairs of small sessile opposable spines.

pseudopedogenesis (sū-dọ-pē-dọ-jen'e-sis), *n.* [Gr. ψευδής, false, + E. *pedogenesis.*] A mode of reproduction which closely resembles pedogenesis. The reproduction of the *Stylopidæ* was supposed by Von Siebold to be pseudopedogenetic, but this view is opposed by Meinert and Sharp. *Cambridge Nat. Hist.*, VI. 303.

pseudopedogenetic (sū″dọ-pē″dọ-jẹ-net'ik), *a.* Pertaining to or of the nature of pseudopedogenesis.

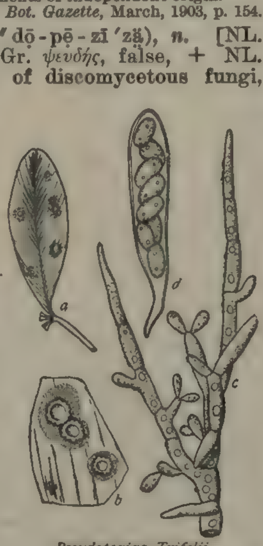
pseudopepsin (sū-dọ-pep'sin), *n.* [Gr. ψευδής, false, + E. *pepsin.*] A ferment similar to pepsin, supposedly secreted by the glands of the pyloric portion of the stomach, which is capable of acting not only in acid but also in feebly alkaline media, and yields tryptophan among the end-products of digestion to which it gives rise.

pseudopeptone (sū-dọ-pep'tōn), *n.* [Gr. ψευδής, false, + E. *peptone.*] An older term for ★*ovomucoid.*

pseudoperithecium (sū″dọ-per-i-thē'si-um), *n.*; pl. *pseudoperithecia* (-a̤). [NL., < Gr. ψευδής, false, + NL. *perithecium.*] A thin covering surrounding an ascocarp, such as occurs in some of the lower Ascomycetes.

> The head, which strongly suggests the *pseudoperithecium*, if it may so be termed, of the more highly differentiated species of Gymnoascus, is thus a remarkable combination of two elements of independent origin.
> *Bot. Gazette*, March, 1903, p. 154.

Pseudopeziza (sū″dọ-pẹ-zī'za̤), *n.* [NL. (Fückel, 1869), < Gr. ψευδής, false, + NL. *Peziza.*] A genus of discomycetous fungi, of the family *Mollisiaceæ*, having sessile, smooth, dark, waxy ascocarps and unicellular hyaline spores. Over 60 species have been described, some of which are parasitic. *P. Trifolii* is a common species which produces a leaf-spot disease of clover. *P. Medicaginis* causes leaf-spot of alfalfa.



Pseudopexiza Trifolii.

a, several ascocarps on a clover leaflet, natural size; *b*, three ascocarps, enlarged; *c*, a portion of a hypha, bearing conidia, slightly enlarged; *d*, an ascus with eight spores; enlarged.

(Drawn from Engler & Prantl's "Pflanzenfamilien.")

pseudophilosophical (sū″dọ-fil-ọ-sof'i-kạl), *a.* Pertaining to or characterized by pseudophilosophy.

pseudophilosophy (sū″dọ-fi-los'ọ-fi), *n.* [Gr. ψευδής, false, + E. *philosophy.*] False or pretended philosophy. *H. M. Cecil*, Pseudophilosophy at End of 19th Century, 1897.

pseudophotæsthesia (sū-dọ-fō-tes-thē'si-a̤), *n.* [NL., < Gr. ψευδής, false, + NL. *photæsthesia.*] In *psychol.*, false or illusory visual perception; especially, pseudochromæsthesia. *Amer. Jour. Psychol.*, V. 20.

pseudophototaxis (sū-dọ-fō-tọ-tak'sis), *n.* [NL., < Gr. ψευδής, false, + NL. *phototaxis.*] In *biol.*, the movement of organisms toward or away from a source of light when in relation to currents of water or to other factors and not in relation to the light; false phototaxis.

pseudophthisis (sū-dọ-thī'sis), *n.* [NL., < Gr. ψευδής, false, + E. *phthisis.*] Progressive emaciation without disease of the lungs.

pseudophysostigmine (sū-dọ-fī-sọ-stig'min), *n.* [Gr. ψευδής, false, + E. *physostigmine.*] An alkaloid extracted from the cali-nut or false Calabar bean.

pseudoplasm (sū'dọ-plazm), *n.* [Gr. ψευδής, false, + πλάσμα, anything formed.] 1. A cancer formed of heterologous tissue.—2. Same as ★*pseudoneoplasm.*

Pseudopleuronectes (sū-dọ-plö-rọ-nek'tēz), *n.* [NL., < Gr. ψευδής, false, + NL. *Pleuronectes.*] A genus of flounders found on both coasts of North America. See ★*mud-dab*, with cut.

pseudopod, *n.* 3. In *entom.*, any one of the structures which function as feet in many insect larvæ, as spines, thickenings, or other modifications of the integument.

pseudo-Pompeian (sū″dọ-pom-pē'an), *a.* [Gr. ψευδής, false, + E. *Pompeian.*] In the *fine arts*, imitated from Pompeian designs.

> In the beautiful *pseudo-pompeian* decoration which now belongs to the Duke de Rivoli.
> *Lady Dilke*, French Furniture and Decorations of [XVIII Cent., p. 67.

pseudopore (sū'dọ-pōr), *n.* [Gr. ψευδής, false, + E. *pore.*] In sponges, small orifices through the pseudoderm.

pseudoporphyritic (sū-dọ-pôr-fi-rit'ik), *a.* [Gr. ψευδής, false, + E. *porphyritic.*] In *petrog.*, noting a porphyritic rock in which the same minerals do not occur both as phenocrysts and as components of the ground-mass. *Harker*, 1897.

Pseudopriacanthus (sū-dọ-prī-ạ-kan'thus), *n.* [NL., < Gr. ψευδής, false, + NL. *Priacanthus.*] A genus of fishes of the family *Priacanthidæ*, rather widely distributed.

pseudoprimitive (sū-dọ-prim'i-tiv), *a.* [Gr. ψευδής, false, + E. *primitive.*] Having merely the appearance of being primitive: said of organs or structures which are secondary, but appear to be of a more generalized or primordial type. *Proc. Zool. Soc. London*, 1902, p. 219.

pseudopsychology (sū″dọ-sī-kol'ọ-ji), *n.* False or pretended psychology.

pseudoptics (sụ-dop'tiks), *n.* [Gr. ψευδής, false, + E. *optics.*] In *psychol.*: (*a*) The science of optical illusions. (*b*) A trade-name for a set of apparatus devised by H. Münsterberg for demonstrating, in simple form, some of the principal phenomena of visual sensation and perception. *E. B. Titchener*, Exper. Psychol., I. ii. 309.

pseudoreduction (sū'dọ-rẹ-duk'shọn), *n.* [Gr. ψευδής, false, + E. *reduction.*] In *cytol.*, a form of reduction in which the number of the chromosomes of the germ-nuclei is reduced without reducing the number of ids or chromatin granules: opposed to true reduction, in which the number of both chromosomes and granules is reduced to one half. Pseudoreduction occurs in the roundworm of the horse (*Ascaris megalocephala*). *Rückert.*

pseudoreversal (sū-dọ-rẹ-vėr'sạl), *n.* [Gr. ψευδής, false, + E. *reversal.*] In *spectroscopy*, an apparent reversal of a spectral line observed in photographs of the spectrum and due to solarization of the brightest portions of the image, and consequent conversion of a negative into a positive impression upon the plate.

pseudorganic (sūd-ôr-gan'ik), *a.* [Gr. ψευδής, false, + E. *organic.*] Noting the exhibition of a superficial or accidental resemblance to an organism or to the fossil remains of an organism.

pseudorhabdite (sū-dọ-rab'dīt), *n.* [Gr. ψευδής, false, + E. *rhabdite.*] In turbellarians, one of the finely granular block-like masses with uneven surface, found in certain cells of the integument; a false rhabdite.

pseudorheumatism (sū-dọ-rö'mạ-tizm), *n.* [Gr. ψευδής, false, + E. *rheumatism.*] A painful condition of the joints or muscles which simulates rheumatism, but is due to a different cause.

pseudorhombohedral (sū″dọ-rom-bọ-hē'drạl), *a.* See ★*pseudosymmetry.*

pseudoscience (sū-dọ-sī'ẹns), *n.* [Gr. ψευδής, false, + E. *science.*] False or pretended science; a pretended science.

> The march of progress let the muse explore
> In *pseudo-science*, and empiric lore.
> *J. G. Saxe*, Progress, A Satire, st. 8.

> We are but listening to the primitive emotionalism of earlier apologetics talking the cant of modern *pseudoscience.* *H. M. Cecil*, Pseudo-philosophy, p. 4.

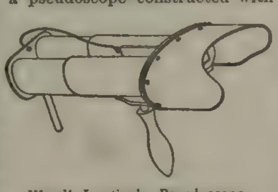
pseudoscientific (sū-dọ-sī-ẹn-tif'ik), *a.* Of the nature of pseudoscience; falsely scientific; quackish; charlatanical.

> Heterogeneous elements might be absorbed, but if they could not be reduced to the national type they should be eliminated. This was the *pseudo-scientific* note of the new anti-Semitism, the theory which differentiated it from the old religious Jew-hatred and sought to give it a rational place in modern thought.
> *Encyc. Brit.*, XXV. 472.

Pseudosciuridæ (sū″dọ-sī-ū'ri-dē), *n. pl.* [NL., < *Pseudosciurus*, type genus, + *-idæ.*] A family of extinct rodents, comprising species related to the squirrels. *Sciuridæ*, but having longer molar teeth. The type species, *Pseudosciurus*, is found in the Upper Eocene of Europe.

pseudoscolex (sū-dọ̄-skō′leks), *n.* [NL., < Gr. ψευδής, false, + NL. *scolex*.] In certain cestodes, as *Thysanocephalum crispum*, a growth formed by much-folded ridges of the neck of the scolex.

pseudoscope, *n.*—**Lenticular pseudoscope,** in *physiol.* and *psychophys.*, a pseudoscope constructed with lenses in place of prisms. R. W. Wood's lenticular pseudoscope consists of a Brewster stereoscope furnished with two extensible tubes closed at their farther ends by double convex lenses. The field is large and clear, but the pseudoscopic conversion implies inversion of the objects viewed.—**Total-reflection pseudoscope,** in *exper. psychol.*, the prism pseudoscope, devised independently by H. W. Dove in 1851 and by C. Wheatstone in 1852.


Wood's Lenticular Pseudoscope.

Pseudoscopelus (sū-dọ̄-skop′e-lus), *n.* [NL., < Gr. ψευδής, false, + NL. *Scopelus.*] A genus of deep-water fishes found in Old Bahama straits.

pseudosculum (sūd-os′kū-lum), *n.*; pl. *pseudoscula* (-lạ̈). [NL., < Gr. ψευδής, false, + L. *osculum.*] The terminal aperture of a pseudogaster.

pseudosematic (sū′dọ̄-sẹ̄-mat′ik), *a.* [Gr. ψευδής, false, + E. *sematic.*] Noting color-markings that either suggest something unpleasant to enemies, or are attractive to an animal's prey. They are usually accompanied by similarly useful modifications of form. *Poulton.*

> Mimicry, or *Pseudo-sematic* Colours.
> *Encyc. Brit.*, XXVII. 148.

pseudosensation (sū′dọ̄-sen-sā′shọn), *n.* [Gr. ψευδής, false, + E. *sensation.*] In *psychol.*, an illusory sensation, especially a sensation that is synesthetically aroused. *Amer. Jour. Psychol.*, V. 20.

pseudosessile (sū-dọ̄-ses′il), *a.* [Gr. ψευδής, false, + E. *sessile.*] Appearing sessile, although not really so, as the bees in which the non-sessile condition appears only when the abdomen is deflexed. *Annals and Mag. Nat. Hist.*, April, 1903, p. 399.

Pseudosirex (sū-dọ̄-sī′reks), *n.* [NL., < Gr. ψευδής, false, + NL. *Sirex.*] A supposed sphingoid moth found in the Jurassic lithographic shales of Solenhofen, Bavaria, and thought by some authors to be a wood-wasp, one of the *Uroceridæ.*

pseudoskeleton (sū-dọ̄-skel′e-tọn), *n.* [Gr. ψευδής, false, + E. *skeleton.*] A skeleton composed entirely of foreign bodies without any element secreted by the organism itself, found in certain forms, mostly from the deep sea, considered by Haeckel to be sponges. Compare ★*autoskeleton.*

pseudosocial (sū-dọ̄-sō′shal), *a.* [Gr. ψευδής, false, + E. *social.*] Pertaining to a social class, chiefly paupers, whose apparent social instincts and habits are not really social, in the technical sense. *Giddings*, Prin. of Sociol., p. 72.

pseudosolution (sū′dọ̄-sọ̄-lū′shọn), *n.* [Gr. ψευδής, false, + E. *solution.*] 1. A mixture which does not appear heterogeneous under the microscope, but which scatters and polarizes a beam of light that is passed through it.—2. The condition presented by certain colloid substances, as the casein of milk, when forming with water a permanent but not perfectly transparent mixture.

pseudosphere, *n.* **3.** The surface generated by the revolution of the tractrix about its asymptote.

pseudospherulite (sū-dọ̄-sfer′ọ̈-līt), *n.* [Gr. ψευδής, false, + E. *spherulite.*] In *petrog.*, a name given by Rosenbusch (1876) to a spherulite composed of more than one kind of mineral. Same as *spherulite*, 1.

pseudostereoscope (sū-dọ̄-ster′ẹ̄-ọ̄-skōp), *n.* [Gr. ψευδής, false, + E. *stereoscope.*] A binocular microscope which shows the object in an inverted or a transposed position.

pseudostereoscopic (sū-dọ̄-ster″ẹ̄-ọ̄-skop′ik), *a.* [*pseudostereoscope* + *-ic.*] Pertaining to or shown by a pseudostereoscope.

pseudostereoscopism (sū-dọ̄-ster-ẹ̄-os′kọ̄-pizm), *n.* [*pseudostereoscope* + *-ism.*] Pseudostereoscopic vision; the appearance of an object viewed through a pseudostereoscope.

pseudostromatism (sū-dọ̄-strō′mạ-tizm), *n.* [Gr. ψευδής, false, + στρῶμα(τ-), covering, layer, + *-ism.*] In *petrog.*, a rock-structure which resembles false bedding; a schistosity developed parallel to stratification by numerous minor thrust-fault planes. *Bonney*, 1886.

pseudostrophanthin (sū″dọ̄-strọ-fan′thin), *n.* [Gr. ψευδής, false, + E. *strophanthin.*] A very poisonous glucoside, $C_{40}H_{60}O_{16}.H_2O$, found in *Strophanthus hispidus.* It acts upon the heart, and has about twice the effect of strophanthin. Also written *pseudostrophantin.*

Pseudosuchia (sū-dọ̄-sū′ki-ạ̈), *n. pl.* [NL., < Gr. ψευδής, false, + σοῦχος, a crocodile.] An extinct suborder of the *Crocodilia*, characterized by reduced premaxillæ, large nasals, external nares paired and placed far forward, internal nares separate in about the middle of the palate, orbits large and laterally directed, paired parietals and frontals, conical teeth deeply socketed and confined to anterior half of jaws, and dorsal armor a paired series of oblong scutes. Its representatives occur in the Keuper of Europe and the Trias of New Mexico.

pseudosulphocyanogen (sū′dọ̄-sul″fọ̄-sī-an′ọ̄-jen), *n.* Same as ★*persulphocyanogen.*

pseudosylvian (sū-dō-sil′vi-ạn), *a.* [Gr. ψευδής, false, + E. *Sylvian.*] Used only in the following phrase.—**Pseudosylvian sulcus,** a fissure covered by the cerebral cortex which proceeds, from the posterior limb of the rhinal, vertically upward into the Sylvian fossa: noted by G. Elliot Smith in certain lemurs. *G. Elliot Smith*, in Trans. Linn. Soc., Zool., 1903, p. 333.

pseudosymmetric (sū″dọ̄-si-met′rik), *a.* [Gr. ψευδής, false, + E. *symmetric.*] Having the appearance of a higher degree of symmetry than is actually the case; deceptively symmetric; exhibiting pseudosymmetry.

pseudosymmetrical (sū-dọ̄-si-met′ri-kạl), *a.* Same as ★*pseudosymmetric.*

pseudosymmetry, *n.* A crystal exhibiting pseudosymmetry is often named according to the system of symmetry which it imitates (through twinning, distortion, etc.) as follows: *pseudisometric, pseudotetragonal, pseudohexagonal, pseudorhombohedral* or *pseudotrigonal, pseudo-orthorhombic, pseudomonoclinic*, etc.; for example, complex twins of phillipsite sometimes resemble isometric dodecahedrons and are hence said to be *pseudisometric*; also, isometric crystals (as of gold, silver, and copper) by symmetrical distortion, that is, by flattening or elongation in the direction of an octahedral (trigonal) axis, are often strikingly *pseudorhombohedral.*

pseudosynapticula (sū″dọ̄-sin-ap-tik′ū-lạ̈), *n.*; pl. *pseudosynapticulæ* (-lē). [NL., < Gr. ψευδής, false, + NL. *synapticula.*] In madreporarian corals, a false synapticula, that is, one formed by the joining together of contiguous granules and devoid of a center of calcification. *Philos. Trans. Roy. Soc.* (London), 1896, ser. B, p. 145.

pseudosynapticular (sū″dọ̄-sin-ap-tik′ụ-lạ̈r), *a.* [*pseudosynapticul(a)* + *-ar*³.] Of or pertaining to a pseudosynapticula.

pseudosyphilis (sū-dọ̄-sif′i-lis), *n.* [NL., < Gr. ψευδής, false, + NL. *syphilis.*] A condition marked by the formation of ulcers or by an eruption on the skin resembling a syphilide, which subsides spontaneously or yields readily to simple non-specific treatment.

pseudotabes (sū-dọ̄-tā′bēz), *n.* [NL., < Gr. ψευδής, false, + L. *tabes*, wasting, tabes.] 1. Any disease which simulates, especially in the ataxia, tabes dorsalis.—2. Any wasting disease of infancy and childhood which simulates tabes mesenterica. *Med. Record*, April 11, 1903, p. 587.

pseudotetanus (sū-dọ̄-tet′ạ-nus), *n.* [NL., < Gr. ψευδής, false, + τέτανος, tetanus.] Persistent muscular contractions, simulating tetanus, but not associated with the presence of the tetanus bacillus and never fatal.

pseudotetragonal (sū″dō-te-trag′ọ̄-nạl), *a.* [Gr. ψευδής, false, + E. *tetragonal.*] See ★*pseudosymmetry.*

pseudotetrameral (sū″dọ̄-te-tram′e-ral), *a.* [Gr. ψευδής, false, + E. *tetrameral.*] Having the characters of the *Pseudotetramera.*

pseudotheca (sū-dọ̄-thē′kạ̈), *n.*; pl. *pseudothecæ* (-sē). [NL., < Gr. ψευδής, false, + θήκη, a case.] In some corals, as in the family *Astræidæ*, a false wall formed in the absence of the eutheca by the union of projections developed on the septa, the projections being devoid of true centers of calcification.

pseudothecal (sū-dọ̄-thē′kạl), *a.* [*pseudothec(a)* + *-al*¹.] Of or pertaining to a pseudotheca. *Philos. Trans. Roy. Soc.* (London), 1896, ser. B, p. 163.

pseudothecalia (sū″dọ̄-thē-kā′li-ạ̈), *n. pl.* [NL., < Gr. ψευδής, false, + NL. *thecalis* (neut. pl. *thecalia*), thecal.] Apparent thecal walls formed by the fusion of laterally thickened peripheral edges of septa in certain *Anthozoa.*

pseudothyrum (sū-dọ̄-thī′rum), *n.*; pl. *pseudothyra* (-rạ̈). [L., < Roman Gr. ψευδόθυρον, < ψευδής, false, + θύρα, door.] In *class. archæol.*, a secret or private door, as distinguished from a main entrance.

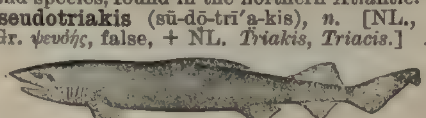
pseudotoxin (sū-dọ̄-tok′sin), *n.* [Gr. ψευδής, false, + E. *toxin.*] The poisonous extract of belladonna-leaves.

pseudotrachea (sū″dọ̄-trā′kẹ̄-ạ̈), *n.*; pl. *pseudotracheæ* (-ē). [NL., < Gr. ψευδής, false, + τραχεῖα, trachea.] One of the incomplete chitinous tubes which support the labella of many flies. They are cylindrical channels which open on the surface in zigzag slits, and their ends form the scraping teeth. *A. S. Packard*, Text-book of Entom., p. 446.

pseudotracheal (sū-dọ̄-trā′kẹ̄-ạl), *a.* Of or pertaining to a pseudotrachea; resembling tracheæ in structure, as the salivary ducts of certain nemocerous *Diptera.*

Pseudotriakidæ (sū″dọ̄-trī-ak′i-dē), *n. pl.* [NL., < *Pseudotriakis* + *-idæ.*] A family of sharks which contains a single known genus and species, found in the northern Atlantic.

Pseudotriakis (sū-dọ̄-trī′a-kis), *n.* [NL., < Gr. ψευδής, false, + NL. *Triakis, Triacis.*] A genus of sharks of the family *Pseudotriakidæ*, of the northern Atlantic.


Pseudotriakis microdon.
(From Bulletin 47, U. S. Nat. Museum.)

pseudotrichinosis (sū″dọ̄-trik-i-nō′sis), *n.* [NL., < Gr. ψευδής, false, + NL. *trichinosis.*] An acute inflammation of the general muscular system, which simulates an invasion of *Trichina spiralis*, but is not due to the presence of this parasite.

pseudotrigonal (sū-dọ̄-trig′ọ̄-nạl), *a.* [Gr. ψευδής, false, + E. *trigonal.*] See ★*pseudosymmetry. Nature*, Dec. 3, 1903, p. 100.

pseudotrimeral (sū-dọ̄-trim′ẹ-rạl), *a.* [*Pseudotrimer(a)* + *-al*¹.] Having the characters of the *Pseudotrimera*; pseudotrimerous.

pseudotropine (sū-dọ̄-trō′pin), *n.* [Gr. ψευδής, false, + E. *tropine.*] An alkaloid, isomeric with tropine, both being derived by decomposition from atropin, hyoscyamine, and belladonnine of deadly nightshade, *Atropa Belladonna.*

pseudotubercle (sū-dọ̄-tū′bėr-kl), *n.* [Gr. ψευδής, false, + E. *tubercle.*] A pathological lesion which simulates those of tuberculosis, but is not associated with the presence of the tubercle bacillus. *Buck*, Med. Handbook, III. 416.—**Pseudotubercle bacilli.** See ★*bacillus.*

pseudotuberculosis (sū″dọ̄-tụ̄-bėr″kụ̄-lō′sis), *n.* [NL., < Gr. ψευδής, false, + NL. *tuberculosis.*] A disease characterized by the presence of pseudotubercles.

pseudotumor (sū-dọ̄-tū′mọr), *n.* [Gr. ψευδής, false, + E. *tumor.*] A circumscribed swelling of uncertain character and duration; a phantom tumor. *Buck*, Med. Handbook, VI. 778.

pseudoturbinal (sū-dọ̄-tėr′bi-nạl), *n.* [Gr. ψευδής, false, + E. *turbinal.*] An incurved part of the bony nasal wall, such as is found in birds and reptiles.

pseudovarial (sūd-ọ̄-vā′ri-ạl), *a.* Same as *pseudovarian.*

pseudovariola (sū″dọ̄-vạ̄-rī′ọ̄-lạ̈), *n.* [NL., < Gr. ψευδής, false, + NL. *variola.*] Any affection which presents the symptoms of smallpox, such as the eruptive form of vaccinia, or chicken-pox with an unusually profuse eruption.

pseudovermicule (sū-dọ̄-vėr′mi-kūl), *n.* Same as ★*pseudovermiculus.*

pseudovermiculus (sū″dọ̄-vėr-mik′ụ̄-lus), *n.*; pl. *pseudovermiculi* (-lī). [NL., < Gr. ψευδής, false, + L. *vermiculus*, a little worm.] A stage in the development of the parasite, *Laverania malariæ*, of pernicious malaria. It is a gregarine-like body resulting from the union of a microgamete with a macrogamete and is actively motile, making its way into the wall of the intestine of its host, the mosquito (*Anopheles*), where it becomes encysted and later divides into a large number of minute sporozoites. Also *pseudovermicule*.

pseudovitellus (sū″dō-vi-tel′us), *n.*; pl. *pseudovitelli* (-ī). [NL., < Gr. ψευδής, false, + E. *vitellus*.] A peculiar internal structure of the *Aphididæ* which consists of a cellular double string, and may possibly replace the Malpighian tubes which are absent in these insects. *Cambridge Nat. Hist.*, VI. 588.

pseudoxanthin, *n.* **2.** A powdery compound, $C_5H_4N_4O_2$, made by heating uric acid with sulphuric acid.

Pseudoxiphophorus (sū″dọk-zi-fof′ọ-rus), *n.* [NL., < Gr. ψευδής, false, + NL. *Xiphophorus*.] A genus of fishes of the family *Pœciliidæ*, found in mountain streams of Mexico.

P. S. H. An abbreviation of *Petersburg*, or *St. Petersburg, standard hundred:* used in the lumber trade.

psilanthropia (sī-lan-thrō′pi-ạ̈), *n.* [NL.] Same as *psilanthropism*.

psiloceran (sī-los′ẹ-ran), *a.* Of or pertaining to the ammonoid genus *Psiloceras*.

psiloma (sī-lō′mạ̈), *n.* [NL., < Gr. ψιλός, smooth, + *-oma*.] Same as ★*psilosis*, 2.

psilosis (sī-lō′sis), *n.* [NL., < Gr. ψίλωσις, a making smooth or bare, < ψιλός, smooth, bare.] **1.** A disease, which occurs chiefly in the tropics, marked by fullness and pain in the abdomen, diarrhea, vomiting, a red tongue covered with whitish points, and emaciation. Also called *sprew* and *aphthæ tropicæ*.—**2.** Same as *alopecia*.

Psithyrus (sith′i-rus), *n.* [NL. (St. Fargeau, 1832), < Gr. ψίθυρος, whispering.] An important genus of guest-bees synonymous with *Apathus*, over which it has precedence. Its species live in the nests of bumblebees.

psittacism (sit′a-sizm), *n.* [Gr. ψιττακός, a parrot, + *-ism*.] A mechanical state of the mind in which reflective consciousness plays little or no part: alluding to the parrot which remembers and repeats words of which it does not know the sense.

> Then followed monographs on *psittacism* and symbolic thought, heredity, and laughter.
> *Amer. Jour. Relig. Psychol. and Education*, May, 1904, [p. 107.

psittacofulvin (sit″a-kō-ful′vin), *n.* [Gr. ψιττακός, a parrot, + L. *fulvus*, yellow, + *-in*².] A yellow pigment contained in the feathers of certain parrots and other birds.

psittacosis (sit-a-kō′sis), *n.* [NL., < Gr. ψιττακός, parrot, + *-osis*.] An infectious influenza-like disease of parrots, which may be transmitted to man in the form of disease of the lungs.

psocid (sos′id), *n.* and *a.* **I.** *n.* A member of the corrodentian family *Psocidæ*.

II. *a.* Having the characters of or belonging to the family *Psocidæ*. *Science*, Dec. 13, 1901, p. 941.

psomophagy (sọ-mof′ạ-ji), *n.* [Gr. ψωμός, a bit, morsel, + -φαγια, < φαγεῖν, eat.] The practice of simply breaking up the food with the teeth without thorough mastication.

psorenteria (sō-ren-tē′ri-ạ̈), *n.* [NL., < Gr. ψωρός, scabby, + ἐντερον, intestine.] A disease of the solitary glands of the intestine which causes them to appear, post-mortem, as small yellowish prominences on the mucous membrane.

psorenteritis (sō-ren-tẹ-rī′tis), *n.* Same as ★*psorenteria*.

psoriatic (sō-ri-at′ik), *a.* [*psoriasis* (*-iat-*) + *-ic*.] Relating to or affected with psoriasis. *Buck*, Med. Handbook, I. 457.

psoromic (sọ-rom′ik), *a.* [*Psoroma* + *-ic*.] Derived from *Psoroma*.—**Psoromic acid.** (*a*) A crystalline acid, $C_{20}H_{14}O_9$ (or $C_{20}H_{16}O_{10}$ (?)), found in species of *Psoroma* and *Rhizocarpon*. It melts with decomposition at 203–204° C. Probably identical with *parellic acid*. (*b*) Same as ★*parellic acid*.

Psorophora (sọ-rof′ọ-rạ̈), *n.* See *fringe-legged* ★*mosquito*, with cut.

Psoroptes (sọ-rop′tēz), *n.* [NL., < Gr. ψωρός, scabby, + πτήσσειν, hide, crouch.] An important genus of parasitic mites having piercing mandibles and a jointed pedicel to the suckers. *P. communis*, var. *ovis*, causes sheep-scab. —**Psoroptes equi,** a mite which attacks horses and causes a cutaneous disease known as psoroptic acariasis. Also called *Psoroptes communis equi*.—**Psoroptes longirostris Mégnin,** the mite which causes psoroptic acariasis in domesticated animals. Also called *Psoroptes communis*.

psoroptic (sọ-rop′tik), *a.* [*Psoropt*(*es*) + *-ic*.] Of, pertaining to, or produced by, *Psoroptes*. —**Psoroptic acariasis.** See ★*acariasis*.

psorosis (sọ-rō′sis), *n.* [NL., < Gr. ψωρός, scabby, + *-osis*.] A disease which affects orange-trees, causing injury to the bark, accompanied by a flow of gum. Also called *gum disease*.

> *Psorosis*, a disease known in Florida as "tears" or "gum disease," is often confounded with foot rot, but is unquestionably quite distinct. In appearance it is similar to foot rot, but with it the diseased spots occur on the limbs and occasionally on the trunk, but never on the roots so far as known. *Psorosis* does not kill the bark entirely, but extends only to the middle layer, the inner bark and cambium layer remaining healthy.
> *U. S. Dep. Agr.*, Div. of Veg. Physiol. and Pathol., [Bulletin 8, 1896, p. 31.

psorospermiasis (sō-rọ-spėr-mī′ạ-sis), *n.* [NL., < *psorosperm* + *-iasis*.] Infection with psorospermiæ. *Bowhill*, Manual of Bacteriological Technique, p. 29.

psorospermosis (sō″rọ-spėr-mō′sis), *n.* [NL., < *psorosperm* + *-osis*.] Infection with psorospermiæ; psorospermiasis. *Buck*, Med. Handbook, II. 678.

psorozoa (sō-rọ-zō′ạ̈), *n. pl.* [NL., < Gr. ψωρός, scabby, + ζῷον, animal.] Same as *psorospermiæ*.

psovie (sō′vē), *n.* The Russian wolfhound or borzoi dog. See ★*dog*.

psych. An abbreviation of *psychology*.

psychagogic (sī-kạ-goj′ik), *a.* [Gr. ψυχαγωγός, leading departed souls to the nether world, also summoning the dead, < ψυχή, life, soul, + ἀγωγός, < ἄγειν, lead.] Leading the soul; persuading or inducing the mind to assent or follow.

psychagogus (sī-kạ-gō′gus), *n.*; pl. *psychagogi* (-jī). [L., < Gr. ψυχαγωγός. See ★*psychagogic*.] In *Gr. myth.*, a leader of souls: an epithet of Hermes. See *psychopomp*.

psychanopsia (sī-kạ-nop′si-ạ̈), *n.* [NL., < Gr. ψυχή, soul, + ἀν- priv., + ὄψις, sight.] Hysterical blindness. *Alien. and Neurol.*, Aug., 1907, p. 389.

psychasthenia (sī-kas-thē′ni-ạ̈), *n.* [NL., < Gr. ψυχή, mind, + ἀσθένεια, weakness.] Weakness, through exhaustion, of the mental faculties; mental exhaustion.

> And that [danger] awaiting the exalted seclusive, the development into neurasthenic, hypochondriacal, and dementia præcox types; while hysteria, *psychasthenia*, and epilepsy appear on somewhat more independent ground.
> *Amer. Jour. Psychol.*, XIV. 363.

psychasthenic (sī-kas-then′ik), *a.* and *n.* [*psychasthenia* + *-ic*.] **I.** *a.* Suffering from exhaustion of the mental faculties, indicated by various morbid impulses, superstitious observances, abnormal fears, causeless anxieties, etc.

> The *psychasthenic*. This is a term lately applied by Janet to a group of psychopathic and neurotic conditions which comprehends obsessions, impulsions, manias, phobias, scruples, tics, states of anxiety, etc.
> *Amer. Jour. Psychol.*, XIV. 363.

II. *n.* One who suffers from psychasthenia.

Psychic cells, tic. See ★*cell*, ★*tic*¹.

Psychical blindness, center. See ★*blindness*, ★*center*1. —**Psychical compound,** in *psychol.*, a complex psychosis or mental process. The term implies that the complex process has been designated by a special name, or at least evinces a functional unitariness.

> All *psychical compounds* may be resolved into psychical elements, that is, into pure sensations and simple feelings. *W. Wundt* (trans.), Outlines of Psychol., p. 101.

psychid (sī′kid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Psychidæ*.

II. *a.* Having the characters of or belonging to the family *Psychidæ*.

psychism, *n.* **3.** The study or the theory of so-called psychic phenomena, that is, of telepathy, clairvoyance, spiritistic phenomena, mediumship, etc.

> For *psychism* must solve the question, "Do coming events cast their shadows before them?"
> *A. C. Halphide*, The Psychic and Psychism, p. 210.

psychobiological (sī″kọ-bī-ọ-loj′i-kạl), *a.* [*psychobiolog*(*y*) + *-ical*.] Pertaining to life and mind; relating both to psychology and to biology.

> The experiments must conform to the *psychobiological* character of an animal if sane results are to be obtained.
> *Amer. Jour. Psychol.*, XII. 206.

psychobiology (sī″kọ-bī-ol′ō-ji), *n.* [Gr. ψυχή, soul, mind, + E. *biology*.] That branch of biological science which treats of the interrelations or interactions between body and mind, or between states or changes in the body and states or changes in consciousness.

> No doubt this connexion of vegetal and animal functions remains one of the obscurest in all *psycho-biology*, though its teleological fitness is obvious enough.
> *Encyc. Brit.*, XXXII. 65.

psychochemistry (sī-kọ-kem″is-tri), *n.* [Gr. ψυχή, soul, mind, + E. *chemistry*.] **1.** In *psychophys.*, the chemistry of the mental life; the science of the chemical changes which accompany the appearance of definite types of consciousness in the psychophysical organism. *Amer. Jour. Psychol.*, XI. 600.—**2.** In *psychol.*, mental chemistry; the derivation of psychical resultants from elements which, considered alone, neither resemble nor give promise of these resultants, as the derivation of psychological space from non-spatial sensory elements.

psychocurative (sī-kọ-kū′rạ-tiv), *a.* [Gr. ψυχή, soul, mind, + E. *curative*.] Pertaining to or concerned with psychic or mental healing. See ★*psychotherapy*. *A. C. Halphide*, The Psychic and Psychism, p. 21. [Rare.]

psychodid (sī′kọ-did), *n.* and *a.* **I.** *n.* A member of the dipterous family *Psychodidæ*.

II. *a.* Having the characters of or belonging to the family *Psychodidæ*.

psychodyl (sī′kọ-dīl), *n.* [Also *psychodyle:* < Gr. ψυχή, soul, mind, + E. *odyl*.] The psychic force imagined to be operating in the physical phenomena of spiritistic séances.

psycho-educational (sī″kọ-ẹd-ụ-kā′shọn-ạl), *a.* Relating both to psychology and to education; concerned with the application of psychology to education.

> An evening session, held in the *psycho-educational* laboratory. *Science*, April 22, 1904, p. 659.

psychogenetic (sī″kọ-jẹ-net′ik), *a.* [Gr. ψυχή, soul, mind, + E. *genetic*.] Relating to the development of mind, or to the theory of this development; psychogenetical.

> Hume . . . had quite unwittingly furnished what from his own point of view should have been regarded as a logical deduction and justification—rather than the mere *psychogenetic* description, which it purported to be,—of the realistic belief.
> *Jour. Philos., Psychol. and Sci. Methods*, June 9, [1904, p. 328.

psychogeny, *n.*—**Biontic psychogeny,** individual psychogeny: same as *ontogenetic* ★*psychology*. *Haeckel* (trans.), Riddle of the Universe, p. 104.—**Phyletic psychogeny,** phylogenetic psychology; the science or the theory of the historical development of the human from the animal mind.

> It becomes one of the main tasks of the modern monistic psychology to trace the stages of the historical development of the soul of man from the soul of the brute. Our "phylogeny of the soul" seeks to attain this object; it may also . . . be called . . . in contradistinction to biontic (individual), *phyletic psychogeny*.
> *Haeckel* (trans.), Riddle of the Universe, p. 149.

psychogram (sī′kọ-gram), *n.* [Gr. ψυχή, soul, mind, + γράμμα, a writing.] A psychographic record; a tracing made by a psychograph, such as the planchette.

> He [Mr. W. Ingles Rogers] remained looking at the plate for forty-three minutes, and afterwards developed it, with the result that an outline of the coin was clearly shown upon it. The "*psychogram*" as the resulting picture is called, was sufficient to show that better results might confidently be expected.
> *Pop. Sci. News*, Feb., 1896, p. 42.

psychographist (sī-kog′rạ-fist), *n.* **1.** A 'spirit-writer'; one who is supposed to be able to transmit the thought of a disembodied spirit by means of automatic writing. See *psychography*, 2.

> It may also interest you to learn that of fifteen clairvoyants, palmists, . . . chromoscopists and "*psychographists*" whom I have called upon this week the majority have informed me that clergymen are their best customers among men. *Kansas City Daily Times*, July 12, 1904.

2. One who writes a descriptive psychology, or a natural history of the mind. [Rare.] See *psychography*, 1.

psychokinesia (sī″kọ-ki-nē′si-ạ̈), *n.* [NL., < Gr. ψυχή, soul, + κίνησις, movement.] A sudden explosive attack of temporary insanity.

> Even those otherwise unaccountable outbursts of *psychokinesia* or temporary insane displays, in some instances termed mania transitoria, kleptomania, emotional insanity, or epileptic unconscious automatisms or psychic epilepsias and morbid fulminations of passion and impulse, often require long antecedent or subsequent histories to prove or disprove their real morbid nature.
> *Alien. and Neurol.*, Aug., 1907, p. 358.

psychological, *a.*—**The psychological moment.** See ★*moment*.—**Psychological physics.** See ★*physics*.

psychology, *n.*—**Abnormal psychology,** or **psychology of the abnormal,** that branch of psychology which treats of the deviations or derangements, temporary or permanent, of mental functions. It covers, for example, the phenomena of dreaming; illusion and hallucination; hypnosis and related states; consciousness under the influence of drugs; mental defect (aphasia, etc.); epidemics of fright, religious excitement, etc.; and the various forms of insanity.—**Animal psychology,** the psychology of the lower animals. *W. Wundt* (trans.), Lectures on Human and *Animal Psychology* (title of book).—**Cellular psychology,** the psychology of the single cell, considered as the elementary organism of anatomy and physiology. *Haeckel* (trans.), Riddle of the Universe, p. 177.—**Differential psychology.** (*a*) Same as *individual* ★*psychology* (*a*). (*b*) The special psychology of any single group of living things: a common term for folk psychology, professional psychology, race psychology, ethnic psychology, psychology of peoples, etc.—**Dynamic psychology,** the psychology of mind in action: same as *functional* ★*psychology*. *E. L. Thorndike*, Elements of Psychol., p. 184.—**Elementary psychology.** Same as *cellular* ★*psychology*. *Haeckel* (trans.), Riddle of the Universe, p. 177.—**Ethnic psychology.** (*a*) The psychology of peoples; the differential psychology of national groups: same as *folk* ★*psychology* (2).

These mental traits, characteristics, differences between human groups are precisely the material which *ethnic psychology* takes as its material for investigation.
D. G. Brinton, Basis of Social Relations, p. x.

(*b*) The science of the products of the mental life in the human race at large; same as *folk* ★*psychology* (3). *W. Wundt* (trans.), Physiol. Psychol., I. 5.

Ethnic psychology is the psychology of a 'collective' mind, i.e., of the mental processes that are set up by the communion of individual minds; the psychology of a race or society or professional class, as distinguished from the psychology of the individual, child or man.
E. B. Titchener, Primer of Psychol., p. 292.

Experimental psychology. The phrase 'experimental psychology' was, apparently, first introduced by Wundt in 1862 to denote a psychology whose results, instead of being based upon speculation, philosophical prepossession, or casual self-observation, should be assured, like the results of physics or physiology, by the strict employment of an experimental method. At first, as was natural, the scope and contents of the discipline were ill-defined. Nevertheless its range was wider than is commonly recognized. Within a few years of the founding of the Leipzig laboratory in 1879, work was going on in several large departments. There was, naturally, a strong current of influence from Fechnerian psychophysics. There was great activity in the fields of sensation and perception, much of it continuing, as it had begun, in the physiological laboratories: even to-day the distinction between the physiology and the psychology of sense is far from clear in the minds of many investigators. There was especial interest in the study of the 'personal equation.' Wundt himself brought the problems of attention to the forefront of discussion. Time, no less than space, afforded material for experimental inquiry. Measurements were made of the rate of association of ideas, and the character of the ideas constituting a train of thought was also investigated. In a word, the five great departments of sensation, perception, association, attention, and action all fell, early in the eighties of the last century, under the domination of the experimental method. The later development of the science has proceeded along two principal lines: first, by the extension of experiment to processes and formations hitherto examined only by an unaided introspection, and secondly by the attainment of a clearer and more profound insight into the problem of psychology at large and its mode of solution. Under the former heading, it may be said that there is now no single type or form of conscious contents that is not, at any rate in principle, amenable to experimentation. Methods have been devised for the study of the affective processes, feeling and emotion, those most elusive of all our conscious experiences, as well as for that of memory, imagination, and the higher forms of intellectual life. Moreover, these methods exist in two variations, as qualitative and quantitative, the one supplementing and correcting the deficiencies of the other. If psychology as a system still presents a ragged and uneven front, and if there is still room for controversies about personal opinion, this is due simply to the youth of the science, to the inadequacy of material equipment (the psychological laboratory has hardly yet become a matter of course in collegiate institutions), to the great intrinsic difficulty of psychological analysis, and to the breadth and thoroughness of the preparation required for successful psychological work; the three latter causes all coöperating, of course, to keep down the numbers of those engaged in psychological research. Under the second heading, it may be said that the experimental method has not only brought to light a complexity in the mental life before undreamed of—has not only (that is) shown the significance and the necessity of psychological analysis—but has also set a standard to be followed in the fields of social and comparative psychology, and has thus materially assisted in the progress of these disciplines to their present status. It is often said that experimental psychology has not fulfilled the vast promises of its beginnings. Nothing, however, could be farther from the truth. Apart from the fact that psychologists themselves made no promises, large or small (these were made for them, by enthusiastic onlookers), the introduction of the experimental method has changed the whole face of psychology, from sensation to self-consciousness. Evidence may be found in Wundt's recent (1902) classification of the various divisions of psychology. Setting individual psychology, the study of the single mind, over against comparative psychology, he includes under the former the two departments of child psychology and of experimental psychology 'in the narrower sense,' and under the latter those of animal and of ethnic psychology. The whole psychology of the normal, adult human mind (the ordinary psychology of the textbooks) is thus made an experimental psychology, while the qualifying phrase indicates that the experimental method may be applied, though indirectly, to the study of children and of animals. It need hardly be explained that this indirectness of application results from the impossibility of introspective control. The experimental method came into psychology, not to oust introspection, but to fulfil it. See ★*psychophysics*.—**Faculty psychology,** a general name for those systems of psychology (characteristic of the eighteenth century) which sought to explain the phenomena of mind by referring them to one or more mental powers or faculties. These 'faculties' (reason, imagination, understanding, will, etc.) were in reality nothing more than classificatory concepts; but the faculty psychology looked upon them as actual forces or powers of the mind, by means of which the concrete ideas, impulses, etc., could be explained. C. von Wolff (1679–1754) is regarded as the typical faculty-psychologist; and the group includes men of such eminence as Bonnet, Tetens, and Kant. The fundamental error of the faculty theory was clearly exposed by Locke, in his discussion of the freedom of the will; but its principal and most successful opponent was Herbart. Even to-day the theory is current in popular psychology, while it has not wholly disappeared from certain academic systems.

The *faculty-psychology* considered these class-concepts as psychical forces or faculties, and referred psychical processes to their separate or united activity.
W. Wundt (trans.), Outlines of Psychol., p. 11.

Folk-psychology, a translation of the German term *Völkerpsychologie*. The word is variously employed, to denote (1) the science of the mental products of primitive peoples; (2) the differential psychology of national groups ('psychology of peoples'); (3) the science of the products of the mental life in the human race at large, and especially of language, mythology, religion, and custom.—**Functional psychology,** that division of psychology which treats of mind in action, or of mental dynamics; the psychology which looks upon mind as a system of organic functions: opposed to *structural* ★*psychology*, somewhat as physiology is opposed to anatomy.

There is, however, a *functional psychology*, over and above this psychology of structure. We may regard mind, on the one hand, as a complex of processes, shaped and moulded under the conditions of the physical organism. We may regard it, on the other hand, as the collective name for a system of functions of the psychophysical organism.
Philos. Rev., Sept., 1898, p. 451.

Generic psychology. Same as *comparative psychology*. *W. Wundt* (trans.), Physiol. Psychol., I. 16.—**Genetic psychology,** that division of psychology which deals with the development of mind in the individual and with its evolution in the race. The term is used broadly to cover the study of the development of the mind of the child (*infant* and *child psychology*) and of the adult (*adolescent* and *senile psychology*); that of the evolution of the human mind in the various forms of human society (*folk, social, comparative human psychology*); and that of the evolution of mind at large in the organic series (*race, animal, comparative psychology*). Theoretically, indeed, the genetic method is applicable wherever mind is found, just as it is applicable wherever life is found. Practically, the difficulty of application is very great; so that, in spite of continuous and fruitful work from the time of Spencer and Darwin, it is not as yet possible to systematize the results of genetic psychology with anything like the completeness attained in the sphere of normal human psychology.—**Individual psychology.** (*a*) The psychology of individual variations. Also *differential psychology*.

General Psychology studies the general properties of psychical processes, these, therefore, which are common to all individuals; *Individual Psychology*, on the contrary, studies those psychical processes which vary from one individual to another. *Amer. Jour. Psychol.*, X. 330.

(*b*) The psychology and psychogenesis of the human mind.

Child psychology and experimental psychology in the narrower sense may be bracketed together as *individual psychology*, while animal psychology and ethnic psychology form the two halves of a generic or comparative psychology. *W. Wundt* (trans.), Physiol. Psychol., I. 5.

Intellectualistic psychology, a psychology which regards ideation as the root-function of mind: opposed to *voluntaristic* ★*psychology*. See the quotation.

When the chief emphasis is laid on the objects of immediate experience, *intellectualistic psychology* results. This attempts to derive all psychical processes, especially the subjective feelings, impulses, and volitions, from ideas, or intellectual processes as they may be called on account of their importance for objective knowledge.
W. Wundt (trans.), Outlines of Psychol., p. 12.

Ontogenetic psychology, the genetic psychology of the individual. *Haeckel* (trans.), Riddle of the Universe, p. 389.—**Phylogenetic psychology.** Same as *phyletic* ★*psychogeny*.—**Physical psychology,** a phrase used by A. H. Lloyd for the branch of psychology "concerned with the substitutes or indirections for mind that appear in all the so-called physical sciences." *Science*, July 5, 1901, p. 18.—**Professional psychology,** the psychology of professional life; a form of individual or differential psychology.

The object of this memoir was to present the importance of those studies which had for their object a research into what the reporter called "*professional psychology*," or the psychology of professional life. He said the psychic functions of the individual were greatly influenced by the profession he chose to exercise among his fellows. *Smithsonian Rep.*, 1890, p. 683.

Race psychology. Same as *racial* ★*psychology* (*b*). *J. M. Baldwin*, Mental Development, p. 13.—**Racial psychology.** (*a*) The differential psychology of the races of mankind. The term is sometimes used as identical with *ethnic* ★*psychology*, sometimes (as in the accompanying extract) differentiated from it.

The unity not merely of present traits but of future aims, not merely of ideas but of ideals, is the true unity which constitutes the ethnic mind. This is the foundation fact which must be constantly present to the student, if his researches in ethnic psychology are to be profitable. In this it differs from *racial psychology*, for while doubtless each race has mental advantages and deficiencies which are its own and which largely decide the destiny of its members, these are not united in pursuit of one end. There is no unity of will and purpose.
D. A. Brinton, Basis of Social Relations, p. 35.

(*b*) Race psychology; the differential psychology of species and races, whether human or sub-human.—**Social psychology.** (*a*) Same as *folk*-★*psychology* (3).

Because of this dependence on the community, in particular the social community, this whole department of psychological investigation is designated as *social psychology*, and distinguished from individual or . . . experimental psychology.
W. Wundt (trans.), Outlines of Psychol., p. 23.

(*b*) The science of the individual mind as conditioned, in its functions and development, by other minds; the psychology of the social factor in its influence upon the individual mind. *Baldwin*, Dict. of Philos. and Psychol., II. 538.—**Structural psychology,** the psychology whose problem is the analysis and synthesis of mental processes for their own sake, and regarded merely as existent, without respect to their genesis or function.

It is unnecessary to pursue further our examination of *structural psychology*.
E. B. Titchener, in Philos. Rev., Sept., 1898, p. 462.

The new psychology, a name sometimes given, loosely, to the experimental psychology introduced by Wundt.

My aim in this book is to show just what *the new psychology* is. *Scripture*, New Psychol., p. ix.

Variational psychology, a term proposed by Baldwin and Stout for the psychology of mental variations, that is, for such psychological studies as are usually included under individual or differential psychology, professional psychology, the psychology of the criminal, etc., classes, and so on. *Baldwin*, Dict. of Philos. and Psychol., II. 759.—**Voluntaristic psychology,** a psychology in which the main emphasis is laid upon the subjective factor in immediate experience: opposed to *intellectualistic* ★*psychology*. See the extract.

If . . . the chief emphasis is laid on the way in which immediate experience arises in the subject, a variety of explanatory psychology results which attributes to those subjective activities not referred to external objects, a position as independent as that assigned to ideas. This variety has been called *voluntaristic psychology*, because of the importance that must be conceded to volitional processes in comparison with other subjective processes.
W. Wundt (trans.), Outlines of Psychol., p. 12.

psychomechanics (sī″kọ-mē-kan′iks), *n.* [Gr. ψυχή, mind, soul, + E. *mechanics*.] In *psychophys.*, a name given by C. Féré to his investigations into the interrelation of mental and physical work and fatigue; motor psychophysics. *Amer. Inventor*, July 15, 1904, p. 318.

psychometer (sī-kom′e-tėr), *n.* [Gr. ψυχή, soul, + μέτρον, measure.] In *exper. psychol.*, a recording device, invented in 1906 by C. G. Jung, for registering variations of the psychogalvanic reflex. A movable indicator slides upon the galvanometer scale, and is connected with a recording pen which writes upon a kymograph.

psychometrically (sī-kō-met′ri-kal-i), *adv.* 1. By way of the occult powers of psychometry; in the manner of a psychometrist. See *psychometry*, 1.—2. By way of quantitative psychological determination, especially by way of measurement of the time-relations of mental phenomena; chronoscopically or chronographically. See *psychometry*, 2.

psychometrist (sī-kom′e-trist), *n.* [*psychometr(y)* + *-ist*.] 1. One who is supposed to be endowed with the occult powers of psychometry. See *psychometry*, 1. *Kansas City Daily Times*, July 12, 1904.—2. A student of psychophysics or of quantitative psychology, especially a student of the time-relations of mental phenomena. See *psychometry*, 2. [Rare.]

psychomonism (sī-kọ-mon′izm), *n.* [Gr. ψυχή, soul, mind, + E. *monism*.] In *metaphys.*, Haeckel's term for the ultra-idealistic view that "one thing only exists, and that is my own mind." *Haeckel* (trans.), Riddle of the Universe, p. 226.

psychomoral (sī-kọ-mor′al), *a.* Pertaining both to mind and to conduct; pertaining to mind in its ethical features and aspects.

Dr. Semal advocated a *psycho-moral* examination of the delinquent in order to determine his condition, whether he was a confirmed criminal or only a criminal on occasion. *Smithsonian Rep.*, 1890, p. 663.

Psychomotor action. See ★*action*.

psychoneural (sī-kọ-nū′ral), *a.* [Gr. ψυχή, soul, mind, + νεῦρον, nerve, + *-al*[1].] Of or pertaining to the interaction between nervous organization and the organization of consciousness, or to the relation between psychology and neurology.

Psychoneural parallelism is no doubt a well-established generalization; nevertheless, concerning its exact range and its precise meaning there are differences of opinion. . . . In ascending any biological phylum, we find that the psychical and neural aspects differentiate and develop together. *Encyc. Brit.*, XXXII. 69.

psychoneurotic (sī″kō-nū-rot′ik), *a.* and *n.* [*psychoneurosis(-ot-)* + *-ic*.] I. *a.* Relating to or affected with a psychoneurosis. *Buck*, Med. Handbook, V. 28.

II. *n.* One who suffers from a psychoneurosis.

psychonomic (sī-kọ-nom′ik), *a.* [Gr. *ψυχή*, mind, soul, + *νόμος*, law, + *-ic.*] Regulative or directive of the mental life or of the development of mind.

> The flow of the psychic, we find, however, so soon as we go over to the objective or 'psychological' point of view, is conditioned upon physiological processes and functions — those of the brain and other organs. These latter condition — limit, further, direct, inhibit, in any way modify — the flow of the psychic changes. Such conditions are '*psychonomic.*' This term may be used to denote the entire sphere of phenomena which are in connection with the psychological, but which, nevertheless, are not intrinsic to the series of psychic changes as such.
> *J. M. Baldwin*, Development and Evolution, p. 8.

psychonomics (sī-kọ-nom′iks), *n.* [See ★*psychonomic.*] In *psychol.*, the science which deals with the relations of the individual mind, to its environment, more especially its social environment; in *sociol.*, the science which deals with the psychological factors and laws implied in social organization and development: suggested, in both uses, by Baldwin and Giddings, in *Baldwin*, Dict. of Philos. and Psychol., II. 391.

psychopathologic (sī″kọ-path-ọ-loj′ik), *a.* [Gr. *ψυχή*, soul, mind, + E. *pathologic.*] Pertaining to mental pathology, that is, to the graver forms of mental derangement.

> These researches should be made both upon the criminal and the insane, and one can thus see the links which form the *psycho-pathologic* chain of human life, at one end of which we may find insanity and at the other criminality.
> *Smithsonian Rep.*, 1890, p. 636.

psychopathological (sī″kọ-path-ọ-loj′i-ka̤l), *a.* Same as ★*psychopathologic.* *Amer. Anthropologist*, April–June, 1901, p. 366.

psychopathology (sī″kọ-pa̤-thol′ọ-ji), *n.* [Gr. *ψυχή*, mind, + E. *pathology.*] That branch of medical science which treats of diseases of the mind. *Amer. Anthropologist*, April–June, 1901, p. 366.— **Ethnic psychopathology**, the psychopathology of a nation, race, people, or analogous human group.

> In the history of the mental life of individuals and nations we find a striking parallelism to these physical processes, certain degenerations bringing with them compensations in the growth of higher faculties, others tending inevitably to the destruction of the individual or the group. The latter belongs to the domain of "*ethnic psycho-pathology.*"
> *D. G. Brinton*, Basis of Social Relations, p. 83.

psychopedagogic (sī″kọ-ped-a̤-goj′ik), *a.* [Gr. *ψυχή*, soul, mind, + E. *pedagogic.*] Relating to both psychology and pedagogy; concerned with the application of psychology to education; psycho-educational.

> As a *psycho-pedagogic* theory, a reversionary goal or term, . . . this conception [of nakedness and plainness of speech] is a precious element in man's spiritual idealization of his own life. *G. S. Hall*, Adolescence, II. 96.

psychopedagogical (sī″kọ-ped-a̤-goj′i-ka̤l), *a.* Same as ★*psychopedagogic.*

psychophore (sī′kọ-fōr), *n.* [Gr. *ψυχή*, soul, mind, + *-φορος*, < *φέρειν*, bear.] A term coined by G. S. Hall, on the analogy of Weismann's *biophore*, to denote the hypothetical vehicle of mental heredity.

> The feeling-instincts of whatever name are the *psychophores* or bearers of mental heredity in us, some of which persist below the threshold of consciousness throughout our lives, while others are made over as instincts or are transformed to habits into directions of the will more or less persistent. *G. S. Hall*, Adolescence, II. 61.

Psychophysical dualism, parallelism. See ★*dualism*, ★*parallelism.*

psychophysically (sī-kọ-fiz′i-ka̤l-i), *adv.* By psychophysical means; in a psychophysical manner.

psychophysics, *n.* Psychophysics was defined by Fechner in 1860 as "an exact science of the functional relations or relations of dependency between body and mind, or more generally between the bodily and mental, the physical and psychical world"; and Wundt, in 1902, declares in the same spirit that psychophysics is to be understood as "an investigation of the relations that may be shown empirically to obtain between the psychical and the physical aspects of vital processes." It may, however, be questioned whether a definition of this generality can be made useful for scientific purposes. It is, no doubt, implied in such phrases as 'the psychophysical organism,' by which we mean the correlated body-mind of actual experience, the ensouled body or the embodied mind, and 'psychophysical evolution,' by which we mean the evolution of this correlated body and mind. Nevertheless, a science cannot remain poised between two existing sciences; it must have a positive content of its own. In other words, psychophysics, viewed in this very general way, must soon show a tendency to fall either toward the side of psychology or toward that of biology, and to be subsumed under the one or the other of the sciences whose methods and results it is supposed to relate and combine. It was, perhaps, by an implicit recognition of this danger, reinforced by the desire to hold fast to all that might be tenable in the Fechnerian definition, that the meaning of psychophysics was, until quite recently, narrowed down to that special field of research in which Fechner had shown himself especially active—to the correlation of intensity of external stimulus with intensity of sensation. In this sense we speak of the four classical methods (least differences, right and wrong cases, average error, mean gradations) as 'the psychophysical methods,' and of Weber's Law as 'the psychophysical law.' It is needless to say that Fechner would never have assented to this restriction; that apart, however, the new definition is so obviously artificial, and the delimitation of subject-matter which it suggests is so obviously accidental, that it has neither logical standing nor prospect of survival. Indeed, it has at no time found acceptance among psychophysical workers: at the very least, the experiments made upon simple and compound reactions, and upon what is still known as the 'time sense,' have been also included under psychophysics. Of late years, the term has taken on a better and a broader meaning, a meaning which preserves the spirit if not the letter of Fechner's definition, and which promises to settle down into something like finality. Psychophysics may now be defined as that department of experimental psychology which aims, not at introspective analysis, but rather at the determination of the quantitative norms of the mental life. Thus, the reaction experiment is a psychological experiment if it is made with a view to the introspective analysis of the action-consciousness; it is a psychophysical experiment if its object is the determination of the time-values of certain typical organic reactions. In the former case, it can be performed only by trained students of psychology; in the latter, it may be made a means to the comparison of the capacities of children, the lower races of man, and even the higher animals. So the time-sense experiment is a psychological experiment, if our aim is the discovery of the conscious basis or vehicle of the time-consciousness; a psychophysical experiment, if we wish to establish the norms of temporal discrimination, or to institute comparative studies of the time-discrimination of different ages and races. Psychophysics has fallen to the one side —to the side of psychology: for the establishment of quantitative norms of the mental life must be intrusted to those who have made mind their special study. At the same time, when the norms have once been established, there is no further need of introspection; psychophysics becomes a matter of technique and of external observation; and, in so far, the Fechnerian view is retained. It may be added that the results of psychophysics, while they must be obtained by the experimental psychologist working, at any rate in the first instance, within the psychological laboratory, are of great importance both for anthropology and for medicine; and that the methods, once worked out, may be carried afield and thus applied under conditions widely remote from those of their first elaboration. See *experimental* ★*psychology.*— **Physical psychophysics**, a type of psychophysical doctrine which, so far as possible, assimilates psychophysical to physical work, making the limen, for instance, an error of observation, and rejecting the 'doubtful cases' of the method of right and wrong cases. *E. B. Titchener*, Exper. Psychol., II. ii. 185.

psychophysiologically (sī-kọ-fiz″i-ọ-loj′i-ka̤l-i), *adv.* In a psychophysiological manner; by psychophysiological means. *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 133.

psychopompous (sī-kọ-pom′pus), *a.* [*psychopomp* + *-ous.*] Of or pertaining to a psychopomp; having the functions of a psychopomp.

> The god of *psychopompous* function, round
> Circling the sun with fourfold force.
> *Bailey*, The Mystic, l. 78.

psychorhythmia (sī-kọ-rith′mi-ä), *n.* [NL., < Gr. *ψυχή*, mind, + *ῥυθμός*, rhythm.] A pathological condition in which the various mental actions repeat themselves involuntarily.

psychorragy (sī′kọ-rā-ji), *n.* [See *psychorrhagia.*] 1. Same as ★*psychorragia*, 1.— 2. Mind-division or mind-cleavage: a supposed condition of the mind in which "some psychical element of man's complex personality can leave him, for example, in dreams, and produce a phantasm at a distance." The term was introduced by *Myers and MacCulloch*, Religion, its Origin and Forms, p. 71.

psychorrhagia (sī-kọ-rā′ji-ä), *n.* [NL., < Gr. *ψυχορραγία*, < *ψυχορραγής*, letting the soul break loose, < *ψυχή*, soul, + *ῥηγνύναι*, break.] 1. The breaking away of the soul; the death-agony.— 2. Same as ★*psychorragy*, 2.

psychotechnical (sī-kọ-tek′ni-ka̤l), *a.* [*psycho(logy)* + *technical.*] Relating to psychology considered in its applications as a guide to practice; or, relating to an art which is based upon psychology as its science.

> In the first case the science of pedagogy is a *psychotechnical* discipline which makes education mechanical and deprives the teacher of the teleological attitude of inner understanding.
> *H. Münsterberg*, in Harvard Psychol. Stud., I. 654.

psychotheism, *n.* 2. A form or stage of theism, the gods of which represent certain aspects of the human mind, or impersonate certain mental characteristics of their worshipers.

> Certain of the gods of barbarians gradually become representatives of certain psychic characteristics, and we have the stage of *psychotheism*, and there is a god of War, a god of Love, a god of Hate, a god of Commerce, and many other major deities.
> *J. W. Powell*, Truth and Error, p. 388.

psychotherapeutics, *n.* 2. Same as ★*psychotherapy*, 2.

psychotherapy, *n.* 2. Treatment of functional disease by mental suggestion. *Med. Times*, Jan., 1908, p. 19.

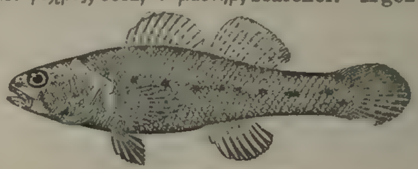
psychotic (sī-kot′ik), *a.* Of or relating to a psychosis.

psychozoic, *a.* 2. [*cap.*] A term used by some geologists to designate the later portion of Quaternary time marked by man's existence, which thus includes all of recent time and an indefinite portion of the Pleistocene period. See *Psychozoic* ★*era.*

II. *n.* The Psychozoic period.

Psychrolutes (sī-krọ-lū′tēz), *n.* [NL., < Gr. *ψυχρολούτης*, one who bathes in cold water, < *ψυχρός*, cold, + *λούειν*, bathe.] A genus of cottoid fishes found on the shores of the northern Pacific.

Psychromaster (sī-krọ-mȧs′tėr), *n.* [NL., < Gr. *ψυχρός*, cold, + *μαστήρ*, searcher.] A genus of fishes of the family *Percidæ*, found in spring brooks of the Tennessee River basin in northern Alabama.



Psychromaster tuscumbia.
(From Bulletin 47, U. S. Nat. Museum.)

psychrometer, *n.*—**Aspiration psychrometer**, an arrangement (devised by Belli in 1836 and improved later) for determining the true temperature and moisture of the air at any place and time. The bulbs of the psychrometer are inclosed in short tubes, and fresh air is drawn rapidly over them by a revolving fan without allowing it to cool by the expansion due to the suction.— **Assmann's aspiration psychrometer**, a modification of Belli's psychrometer: the standard to which all ordinary meteorological records should be referred. See *hygrometer.*— **Sling-psychrometer** or **whirled psychrometer**, a pair of thermometers, wet-bulb and dry-bulb respectively, suspended by a short chain from a short handle, and swung around rapidly like a sling. By the normal rate of revolution the thermometer-bulbs acquire a speed through the air of from six to ten yards per second, and are thereby quickly brought to the temperatures required for the determination of the humidity of the air. See *hygrometer.*

psychrophilic (sī-krọ-fil′ik), *a.* [Gr. *ψυχρός*, cold, + *φιλεῖν*, love, + *-ic.*] Having a liking for a low temperature: applied to a group of bacteria whose optimum temperature of growth lies between 15° and 20° C. See ★*bacterium.*

psychrotherapy (sī-krọ-ther′a̤-pi), *n.* [Gr. *ψυχρός*, cold, + *θεραπεία*, medical treatment.] The use of cold in the treatment of disease. *Lancet*, July 11, 1903, p. 104.

psyctic (sik′tik), *a.* [Gr. *ψυκτικός*, cooling, < *ψύχειν*, make cool or cold.] Cooling; refrigerant.

Psylla, *n.* 2. [*l. c.*] An insect of this genus. —**Pear psylla**, a homopterous insect of the family *Psyllidæ*, *Psylla pyri*, common to Europe and the United States. It frequently does great damage to the buds and leaves of the pear.

psyllid (sil′id), *n.* and *a.* I. *n.* A member of the homopterous family *Psyllidæ.*

II. *a.* Having the characters of or belonging to the family *Psyllidæ.*

pt. An abbreviation (*c*) of *payment;* (*d*) of *point;* (*e*) of *port.*

P. T. An abbreviation (*a*) [*l. c.* or *cap.*] of *post-town;* (*b*) of *pupil-teacher.*

ptarmic, *n.* II. *a.* Exciting sneezing.

ptarmigan, *n.*—**White-tailed ptarmigan**, *Lagopus leucurus*, an entirely white species, inhabiting the mountain ranges of western North America.

pteleiform (te-lē′i-fôrm), *a.* [Gr. *πτελέα*, elm, + L. *forma*, form.] In *anthrop.*, of the form of an elm-leaf: said of the apertura pyriformis of a skull. *Welcker; Allen.*

ptelein (tē′lẹ-in), *n.* [NL. *Ptelea* + *-in*^{2}.] A substance prepared from the root and bark of the wafer-ash, *Ptelea trifoliata.* It is sometimes used in medicine as a stimulant and tonic.

pteleorhine (te-lē′ọ-rin), *a.* [Gr. *πτελέα*, elm, + *ῥίς* (*ῥιν-*), nose.] Same as ★*pteleiform.*

Pteraclidæ (te-rak′li-dē), *n. pl.* [NL., < *Pteraclis* + *-idæ.*] A family of small pelagic fishes containing two genera and about five species.

Pteraclis (ter′a̤-klis), *n.* [NL., irreg. < Gr. *πτερόν*, wing (fin), + *κλείειν*, close (*κλείς*, a bolt, a key).] A genus of fishes of the family *Pteraclidæ*, pelagic and widely distributed.

Pteranodontes (te-ran-ọ-don′tēz), *n. pl.* [NL. See *Pteranodon.*] The large, toothless pterodactyls, considered as constituting a suborder of flying reptiles.

pterapophysial (te-rap-ọ̄-fiz'i-ạl), *a.* [Gr. *πτερόν*, feather, + E. *apophys(is)* + *-ial.*] Relating to or connected with the articulation of the pterygoid with some other bone. [Rare.]

> *Pterapophysial* facet on quadrate for articulation of pterygoid. *Proc. Zool. Soc. London*, 1899, p. 1027.

pteraspidian (ter-as-pid'i-ạn), *a.* [*Pteraspis* (*-aspid-*) + *-ian.*] Having the characters of or pertaining to the ostracoderm fishes of the genus *Pteraspis.*

ptereal (tē'rẹ̄-ạl), *n.* [Gr. *πτερόν*, wing, fin, + *-e-al*^{1}.] In fishes, a bone of the lateral inferior surface of the cranium just anterior to the exoccipital; the proötic. *Starks*, Synonymy of the Fish Skeleton, p. 512.

pterergate (ter-ėr'gāt), *n.* [Gr. *πτερόν*, wing, + *ἐργάτης*, worker.] A worker-ant with vestiges of wings. *Wheeler*, 1905.

Pteria^2 (tē'ri-ä̤), *n.* [NL., < Gr. *πτερόν*, feather.] A genus of schizodont prionodesmacean pelecypods characterized by aviculoid, bialate, inequivalve, oblique shells with alivincular ligament and radial ornamentation. Numerous species range from Devonian to recent formations.

Pteriacea (ter-i-ā'sẹ̄-ä̤), *n. pl.* [NL., < (?) Gr. *πτερίς*, a fern ? + *-acea.*] In Dall's classification, a superfamily of the prionodesmaceous pelecypod mollusks, with amphidetic area, filibranchiate or reticulate gills, free mantle-lobes without siphons, anterior adductor small or obsolete, and schizodont or edentulous hinge.

pterichthyoid (te-rik'thi-oid), *a.* and *n.* **I.** *a.* Having the characters of the genus *Pterichthys.*

II. *n.* A fish allied to the extinct genus *Pterichthys.*

pteridophytic (ter-i-dọ̄-fit'ik), *a.* [*pteridophyte* + *-ic.*] Having the character of a pteridophyte or representing such character.

> *Pteridophytic* types of embryogeny. *Bot. Gazette*, XXV. 305.

Pteridospermæ (ter″i-dọ̄-spėr'mē), *n. pl.* [NL. (Oliver and Scott, 1903), < Gr. *πτερίς* (*πτεριδ-*), a fern, + *σπέρμα*, a seed.] A class of fossil plants of the phylum *Pteridospermaphyta* (*Cycadofilices*), having the external aspect of ferns, but bearing true seeds. A considerable number of the most abundant Paleozoic plants formerly classed as ferns have already been found to be seed-bearing, including *Neuropteris, Odontopteris, Alethopteris*, and *Aneimites*; and others of this class are constantly being discovered.

Pteridospermaphyta (ter″i-dọ̄-spėr-ma-fī'tä̤), *n. pl.* [NL. (Ward, 1904), < Gr. *πτερίς* (*πτεριδ-*), a fern, + NL. *Spermaphyta.*] A great group or phylum of extinct plants, probably all Paleozoic, having the outward appearance of the *Pteridophyta*, but bearing seeds instead of macrospores, nearly equivalent to the *Cycadofilices*, but broader in its scope, including those resembling calamites and lepidophytes as well as ferns. It embraces three classes, the ★*Pteridospermæ*, the ★*Calamospermæ*, and the ★*Lepidospermæ* (which see).

pteridospermous (ter″i-dọ̄-spėr'mus), *a.* Belonging or relating to the class of plants *Pteridospermæ.*

Pterinea (te-rin'ẹ̄-ä̤), *n.* [NL., < Gr. *πτέρινος*, feathered, < *πτερόν*, feather.] A genus of primitive schizodont prionodesmacean pelecypods having two-winged, inequivalve, oblique shells, with obscure dentition, amphidetic external ligament, grooved area, and long straight hinge-line. The species range from Silurian to Carboniferous and are particularly abundant in Devonian formations.

pteritannic (ter-i-tan'ik), *a.* [Gr. *πτερίς*, fern, + E. *tannic.*] Noting a form of tannic acid supposed to exist in the male fern, *Dryopteris filix-mas.*

pterocarpin (ter-ọ̄-kär'pin), *n.* [*Pterocarp(us)* + *-in*^{2}.] A crystalline, neutral substance, $C_{20}H_{16}O_6$, found in red sandalwood, *Pterocarpus santalinus*, from which it is extracted with ether, after treatment with slaked lime.

Pterocarya (ter-ọ̄-kar'i-ä̤), *n.* [NL. (Kunth, 1824), < Gr. *πτερόν*, wing, + *καρύα*, walnut.] A genus of three or four species of ornamental deciduous trees of the family *Juglandaceæ.* They have large, alternate, odd-pinnate leaves, and small, greenish, monœcious flowers in pendulous catkins appearing with the leaves. They are trees of rapid growth and bear in summer and fall long drooping racemes of light-green fruits. Three species are known in cultivation, *P. fraxinifolia*, a native of Transcaucasia, *P. stenoptera* of China, and *P. rhoifolia* of Japan, an important forest tree.

Pterocera (te-ros'ẹ-rä̤), *n.* [NL., < Gr. *πτερόν*, wing, + *κέρας*, horn.] A genus of recent platypodous *Mollusca* with short spire, bent canal, and wing-like outer margin with tubular spinous processes.

Pterocerian (ter-ọ̄-sē'ri-ạn), *n.* [*Pterocera* + *-ian.*] In *geol.*, the basal substage of the Kimmeridgian stage of the Upper Jurassic system in France, characterized by the prevalent gastropod genus *Pterocera.*

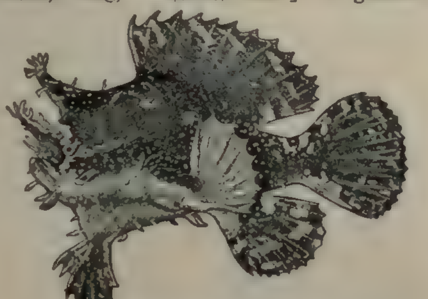
pteroglossal (ter-ọ̄-glos'ạl), *a.* [Gr. *πτερόν*, feather, + *γλῶσσα*, tongue, + *-al*^{1}.] Having a long, feathered tongue, as the toucans.

pteromorpha (ter-ọ̄-môr'fä̤), *n.*; pl. *pteromorphæ* (-fē). [NL., < Gr. *πτερόν*, wing, + *μορφή*, form.] One of the thin wing-like expansions of the skin in certain mites, as the *Oribatidæ.* *Nature*, Dec. 12, 1907, p. 142.

pterophorid (te-rof'ọ̄-rid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Pterophoridæ.*

II. *a.* Having the characters of or belonging to the family *Pterophoridæ.*

Pterophryne (ter-ọ̄-frī'nē), *n.* [NL., < Gr. *πτερόν*, wing, + *φρύνη*, toad.] A genus of fishes of the family *Antennariidæ*, found about the West Indies and in the Gulf Stream.



Sargassum-fish (*Pterophryne tunida*).
(From Jordan's "Guide to the Study of Fishes.")

pteropodal (te-rop'ọ̄-dạl), *a.* [*pteropod* + *-al*^{1}.] Of or pertaining to the *Pteropoda*; made up of remains of pteropods: as, *pteropodal* limestone, which contains abundant shells of those animals.

pteropod-ooze (ter'ọ̄-pod-öz″), *n.* See ★*ooze.*

pterospore (ter'ọ̄-spōr), *n.* [Gr. *πτερόν*, wing, + *σπορά*, seed.] In *phytogeog.*, a term proposed by Clements for a plant the distribution of whose fruit or seeds is expedited by a wing, margin, or flattened shape.

pterothorax (ter-ō-thō'raks), *n.* [NL., < Gr. *πτερόν*, wing, + *θώραξ*, thorax.] The combined meso- and metathorax of a thysanopterous insect; that portion of the thorax that bears the wings.

> *Pterothorax* approximately as wide as abdomen, nearly cylindrical, narrowing abruptly in front, gradually behind. *Entomological News*, Nov., 1904, p. 293.

pterotic, *n.* **2.** Specifically, in fishes, a posterolateral ossification of the cranium. It forms (sometimes with the assistance of the opisthotic) the parotic process. It articulates with the parietal and epiotic at the side; the frontal and sphenotic anteriorly; the proötic and opisthotic below; and the exoccipital beneath the opisthotic. It assists the sphenotic in suspending the hyomandibular from the cranium.

pterygial, *a.* **II.** *n.* One of the small bones forming the basal support of the pectoral fins of bony fishes, lying between the fin-rays and the hypo- and hypercoracoid; an actinost.

> The feature of the *pterygials* being attached to the scapula and coracoid either directly or synchondrosially is worth notice. *Proc. Zool. Soc. London*, 1902, II. 291.

pterygiate (te-rij'i-āt), *a.* [*pterygium* + *-ate*^{1}.] Furnished with wings or wing-like flaps or appendages. *Annals and Mag. Nat. Hist.*, Aug., 1904, p. 108.

pterygion (te-rij'i-ọn), *n.*; pl. *pterygia* (-ä̤). [NL., < Gr. *πτερύγιον*, a little wing. See *pterygium.*] In *craniom.*, either of the extreme points of the pterygoid process, called *medial* and *lateral pterygion*, respectively. *Von Török.*

pterygiophore (te-rij'i-ọ̄-fōr), *n.* [Gr. *πτερύγιον*, wing, fin, + *-φορος*, < *φέρειν*, bear.] In fishes, one of the nodules of bone or cartilage between the dorsal and anal rays and their respective interspinous bones.

> I have not met with cartilages of this kind in any [other] fish which has come under my notice. . . . I regard them as representing a second or distal series of radials or *pterygiophores*, the interspinous bones forming the proximal series. *T. J. Parker*, in Trans. Zool. Soc. London, XII. 24.

pterygium, *n.* **4.** An instrument employed in the operation for the removal of a pterygium from the cornea.—**5.** A forward growth of the eponychium over the nail-plate.

Pterygogenea (ter″i-gọ̄-jē'nẹ̄-ä̤), *n. pl.* [NL., < Gr. *πτέρυξ* (*πτερυγ-*), wing, + *γένος*, kind.] In Brauer's system, one of the two main divisions of insects, including all the winged forms.

Pterygoid condyle. See ★*condyle.*

pterygoidal (ter-i-goi'dạl), *a.* and *n.* [*pterygoid* + *-al*^{1}.] **I.** *a.* Same as *pterygoid.*

II. *n.* A pterygoid muscle. *Scripture*, Exper. Phonetics, p. 230.

pterygoideum (ter-i-goi'dẹ̄-um), *n.*; pl. *pterygoidea* (-ä̤). [NL.] Same as *pterygoid.*—**Pterygoideum externum**, a bone in the skull of fishes which connects the palatine with the quadrate; the pterygoid.—**Pterygoideum internum**, a bone in front of the metapterygoid in the skull of fishes; the mesopterygoid.—**Pterygoideum posterius**, a bone in the skull of fishes usually connecting the hyomandibular with the mesopterygoid; the metapterygoid.

pterygophore (ter'i-gọ̄-fōr), *n.* [Gr. *πτέρυξ* (*πτερυγ-*), wing, + *-φορος* < *φέρειν*, bear.] See the quotation.

> It is held that the most primitive form of limb is simply a lateral skin fold extending along the whole body, and that into this certain cartilaginous processes, or rays (actinophores of Ryder, *pterygophores* of Parker), extend. *Buck*, Med. Handbook, IV. 480.

pterygopodium (ter″i-gọ̄-pō'di-um), *n.*; pl. *pterygopodia* (-ä̤). [NL., < Gr. *πτέρυξ* (*πτερυγ-*), wing, + *πόδιον*, dim. of *πούς*, foot.] In *ichth.*, a clasper-part of a ventral fin modified as an intromittent organ, as in sharks and their allies. [Rare.]

pterylium (te-ril'i-um), *n.*; pl. *pterylia* (-ä̤). [NL.] Same as *pteryla.*

pterylological (ter-i-lọ̄-loj'i-kạl), *a.* [**pterylolog(y)* + *-ic-al*^{1}. See *pteryla.*] Relating to or connected with the arrangement of the feather-tracts.

Ptg. An abbreviation (*a*) of *Portugal*; (*b*) of *Portuguese.*

ptilinum (ti-lī'num), *n.*; pl. *ptilina* (-nä̤). [NL., < Gr. *πτίλον*, a feather, a wing, a wing-like membrane.] A bladder-like expansion of the head of nearly half of the dipterous insects when just emerged from the puparium. It is capable of great dilation and is probably of service in helping to rupture the puparium. It disappears after emergence, and its position is represented by the lunula.

Ptilota, *n. pl.* **2.** *sing.* A genus of the red algæ, common on both the Atlantic and the Pacific coast. Popularly known as *featherweed.* *C. Agardh*, 1823.

ptinid (tin'id), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Ptinidæ.*

II. *a.* Having the characters of or belonging to the family *Ptinidæ.*

ptomatin (tō'mạ-tin), *n.* [Gr. *πτῶμα(τ-)*, a corpse, + *-in*^{2}.] Same as *ptomaïne.*

ptomatropin (tō-mat'rọ̄-pin), *n.* [Gr. *πτῶμα*, corpse, + E. *atropin.*] A poisonous basic substance found in putrefying meat, resembling atropin in its effects upon the animal body. *Science*, Feb. 7, 1908, p. 222.

ptosic (tō'sik), *a.* Same as *ptotic.* *Med. Record*, Oct. 19, 1907, p. 640.

ptosis, *n.* **2.** A falling down or prolapse of any of the abdominal viscera. Also called *Glenard's disease* and *enteroptosis.* *Med. Record*, Oct. 10, 1903, p. 589.

ptyalinogen (tī-ạ-lin'ọ̄-jen), *n.* [*ptyal(in)* + *-o-* + *-gen.*] The proenzym of ptyalin.

ptyalose (tī'ạ-lōs), *n.* [*ptyal(in)* + *-ose.*] Maltose formed by the action of ptyalin on starch.

Ptychocheilus (tī-kọ̄-kī'lus), *n.* [NL., < Gr. *πτύξ* (*πτυχ-*), a fold, + *χεῖλος*, lip.] A genus of large fishes of the family *Cyprinidæ*, found in fresh waters of the western United States.

Ptycholepis (tī-kol'e-pis), *n.* [Gr. *πτύξ* (*πτυχ-*), a fold, + *λεπίς*, a scale.] An extinct genus of ganoid fishes of the family *Eugnathidæ*, having the head and opercular bones ornamented with ridges of ganoin, minute teeth, and thick scales, much longer than deep, grooved longitudinally on the outer side. It occurs in the Upper Lias of Europe and the Trias of Carinthia and of Connecticut.

Ptychoparia (tī-kọ̄-pā'ri-ä̤), *n.* [NL., < Gr. *πτύξ* (*πτυχ-*), a fold, + *παρειά*, cheek.] A genus of opisthoparian trilobites allied to *Olenus*, found in Cambrian formations.

ptychopterygial (tī″kop-te-rij'i-a̤l), *a.* [*ptychopterygi(um)* + *-al*^{1}.] Relating to or having the form of a ptychopterygium, or primitive type of fin. *Proc. Zool. Soc. London*, 1898, p. 347, note.

ptychopterygium (tī″kop-te-rij'i-um), *n.*; pl. *ptychopterygia* (-ä̤). [NL., ‹ Gr. *πτύξ* (*πτυχ-*), a fold, *πτερύγιον*, a little wing.] A primitive type of fin, formed by a fold of the skin, and having a triangular shape.

> In Cladoselache the fin is low, with a very long base, like a fold of skin (*ptychopterygium*), and composed of feeble rays.
> *D. S. Jordan*, Guide to Study of Fishes, I. 510.

ptychotis-seed (tī-kō'tis-sēd), *n.* The seed of *Ptychotis involucrata*, an umbelliferous plant, used in India by the natives as a condiment, and medicinally as a carminative.

Ptygmatis (tig'ma̤-tis), *n.* [NL., ‹ Gr. *πτύγμα(τ-)*, anything folded, ‹ *πτύσσειν*, fold.] A genus of fossil gastropods of the family *Nerineidæ*, having high, turreted, spiral shells with complicately ridged columellar and stomal surfaces: found in Jurassic and Cretaceous rocks.

ptyocrinous (tī-ok'ri-nus), *a.* [Gr. *πτύον*, a fan (for winnowing), + *κρίνειν*, separate, + *-ous.*] In *cytol.*, of or pertaining to gland-cells which accumulate their secretion in the cytoplasm in the form of droplets and then permit it to escape by breaking through the surface cytoplasm, as, for example, in the goblet-cells of the intestine: opposed to ⋆*diacrinous.*

puaiohi (pö″ī-ō'hē̤), *n.* [Hawaiian.] A thrush-like bird, *Phæornis palmeri*, of Kauai, Sandwich Islands.

puapua (pö″ä-pö'ä), *n.* [Native name.] In Samoa, *Guettarda speciosa*, a small littoral tree bearing axillary clusters of fragrant flowers. See ⋆*buabua, pigeonwood* (*c*), and *zebra-wood*, 2.

pub. An abbreviation (*d*) of *published*; (*e*) of *publication.*

pubertal (pū'bėr-ta̤l), *a.* [*pubert(y)* + *-al*^{1}.] Relating to, resulting from, or occurring simultaneously with puberty.

> There is perhaps a little increase at seven, and a certain and almost universal retardation, most marked about the tenth year, but extending over several years; this depression in the curve some have wrongly thought complemental to its elevation during the period of *pubertal* increase. *G. S. Hall*, Adolescence, I. 5.

puberulous (pu̇-ber'ọ̈-lus), *a.* [NL. **puberulus*, dim. of L. *puber*, downy.] Having very short, soft hairs; puberulent.

Pubic bones, pelvic bones; the bones which support the ventral fins of fishes.

publication, *n.* **5.** In *systematic biol.*, the distribution, in print, of the name of a species, genus, or other biological group, in accordance with certain technical requirements. To constitute publication of a species name, it is required that it shall be accompanied by a description or by a citation of a description. To constitute publication of a genus name, it is required in addition that it shall be associated with a species whose name is published at the same or at an earlier time. A writer who uses a new name without complying with the technical requirements of publication is said to *propose* the name. A subsequent writer may *adopt* such a name by citing it and completing its publication. In botany, by reason of the initial date for the application of the law of priority, genus and species names in works prior to 1753 are regarded as proposed but not published. See *law of priority*, under ⋆*law*^{1}.

publish, *v. t.* **6.** In *systematic biol.*, to give technical publication to. See ⋆*publication*, 5.

puca, *n.* [Ir. *pūca.* See *puck.*] Same as ⋆*pooka.*

Pucciniaceæ (puk-sin-i-ā'sē̤-ē), *n. pl.* [NL., ‹ *Puccinia* + *-aceæ.*] The largest family of the order *Uredinales*, commonly called rusts. The principal genera are *Gymnosporangium, Uromyces, Puccinia*, and *Phragmidium.* All its members are parasitic and many of the fungous diseases of cultivated plants are caused by them.

pucciniaceous (puk-sin-i-ā'shius), *a.* Belonging to the family *Pucciniaceæ*, or resembling fungi of that family.

puccoon, *n.*—**Indian puccoon**, the hoary puccoon, *Lithospermum canescens.* See *Indian* ⋆*paint.*

puce, *a.* **II.** *n.* A purple-brown or reddish-brown color.—**Alizarin puce**, a color obtained when alizarin is applied with a mixture of aluminium and iron mordants.

puce-lead (pūs'led), *n.* Lead dioxid or brown oxid of lead, PbO_2.

puceron (pös-roṅ'), *n.* [F.] A plant-louse; any member of the homopterous family *Aphididæ*: adopted into English to some extent.

puck, *n.* **4.** A disk of rubber used in place of a ball in hockey.

pucka, *a.* **II.** *n.* A coin: as, a *pucka* pice. It sometimes denotes a coin of double weight and sometimes one from the government mint.

pucker-struck (puk'ėr-struk), *a.* [*pucker*, a gather in a dress, a frill, + *struck.* Compare *stage-struck.*] Excessively fond of finery or adornment. *Sarah R. McL. Greene*, Flood-tide, xxxiii. [Coast of Maine.]

pudding, *n.* **4.** The joint of an electric cable inside a junction-box.—**Bird's-nest pudding**, a pudding consisting of apples oaked in milk to which eggs and flour have been added.—**Nesselrode pudding**, a rich frozen dessert containing chestnuts, sometimes almonds, and candied fruits finely divided: served with whipped cream or a wine sauce.

pudding (pu̇d'ing), *v. t.* To draw together and join inside in a junction-box, as an electric cable.

pudding-ball (pu̇d'ing-bâl), *n.* An Australian fish resembling a mullet. The name is a corruption of the aboriginal *puddinba*, by the law of hobson-jobson. *E. E. Morris*, Austral English.

pudding-granite (pu̇d'ing-gran″it), *n.* Same as *orbicular granite.* See ⋆*orbicular*, 5.

pudding-mat (pu̇d'ing-mat), *n.* *Naut.*, a round, bag-shaped fender of interwoven rope, filled with granulated cork, oakum, hemp or manila fiber, etc. It is used to protect a vessel's sides from a towboat or from the sides of a dock when entering a slip.

pudding-opium (pu̇d'ing-ō″pi-um), *n.* See ⋆*opium.*

puddle^1, *n.* **3.** A mixture of soil or mold and water forming thin mud, in which the roots of young trees are dipped to retard drying out during transplanting.

puddle^1, *v. t.* **4.** To dip (the roots of young trees) in puddle or thin mud.

puddler, *n.* **2.** A device or machine for stirring the fused metal in a puddling-furnace.

puddlers'-mine (pud'lėrz-mīn), *n.* A fettling mixture made by wetting up red hematite with water, which is used to smooth over the lining of puddling-furnaces.

puddle-wall (pud'l-wâl), *n.* See ⋆*hearting*, 2 (*b*).

puddling-train (pud'ling-trān), *n.* A set of two pairs of rolls in a rolling-mill. One pair, known as *puddling-rolls*, is used for consolidating the blooms after their removal from the hammer or the squeezer, and the second, known as *mill-rolls*, is used for rolling into bars the masses of iron as they come from the balling- or reheating-furnace, where they go from the puddling-rolls. See *forge-train. Phillips and Bauerman*, Elements of Metallurgy, p. 329.

Pudendal sac. See ⋆*sac*^{2}.

pudiano (pö-di-ä'nō), *n.* [Amer. Sp. *pudiano* (Marcgrave, 1648), a variant of *bodiano* = Pg. bodião (NL. *bodianus*), name of a fish; said to be connected with F. *boudin*, E. *pudding.* See *pudding.*] A name applied to certain fishes of the family *Labridæ*, as the ladyfish, *Bodianus rufus*, in Brazil, and the pudding-wife.

pueblan (pöeb'la̤n), *a.* [*puebl(o)* + *-an.*] Of or pertaining to a pueblo or the Pueblos: as *pueblan* architecture.

Pueblo pottery. See *American* ⋆*pottery.*

puebloan (pöeb'lọ̄-a̤n), *n.* [*pueblo* + *-an.*] Same as ⋆*pueblan.*

Puella (pu̇-el'ä̤), *n.* [NL., ‹ L. *puella*, a girl: a translation of the Bohem. *panenka*, by which the genus was designated by Barrande.] A genus of taxodont paleoconch pelecypods, found in the Devonian rocks.

pueo (pö-ā'ō), *n.* [Hawaiian.] A small owl, *Asio accipitrinus sandwichensis*, of the Sandwich Islands, a geographic race of the North American short-eared owl.

puer (pū'ėr), *n.* [Also *pure*: origin obscure.] **1.** The droppings of dogs. [Prov. Eng.]—**2.** In *tanning*, an infusion of the dung of dogs, fowls, or pigeons, used to soften the skins after liming and preparatory to tanning. Also known as *bate.* The soaking in such an infusion is called *puering* or *bating.*—**Puer run**, in *tanning*, an injury to the skin caused by the action of the puer. *C. T. Davis*, Manuf. of Leather, p. 155.

puer (pū'ėr), *v. t.* [*puer* , *n.*] In *tanning*, to cleanse with a bate of dog's dung.

Pueraria (pū-e̤-rā'ri-ä̤), *n.* [NL. (De Candolle, 1825), named in honor of Marc Nicolas *Puerari*, a correspondent of de Candolle.] A genus of climbing herbs or shrubs including about 15 species and belonging to the family *Fabaceæ.* They are characterized by the tumid nodes, 3-foliate leaves, and blue or purplish flowers with monadelphous stamens and beardless style, disposed in long, dense, sometimes compound racemes. The species are natives of tropical Asia, Japan, and New Guinea, and three have been introduced into cultivation for ornament. The roots of *P. Thunbergiana* are fleshy and yield a good quality of starch, and in Japan the tough fiber of the inner bark is manufactured into a fine and remarkably strong cloth. See *Ko* ⋆*hemp.*

Puerco group. See ⋆*group*^{1}.

pueril, *a.* A simplified spelling of *puerile.*

puering (pū'e̤-ring), *n.* [*puer* .] The process of treating skins by means of puer; bating. *Modern Amer. Tanning*, p. 45.

puerpera (pu̇-ėr'pe̤-rä̤), *n.* [L., ‹ *puer*, child, + *parere*, bring forth.] A lying-in woman.

puersman (pū'ėrz-ma̤n), *n.* [*puer* + *-s* + *man.*] One who attends to the puering or bating of skins. *Flemming*, Practical Tanning, p. 257.

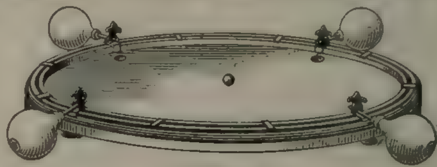
puf, *v.*, *n.*, and *interj.* A simplified spelling of *puff.*

puff, *v. i.* **5.** In *bot.*, to discharge suddenly a cloud of spores, as frequently occurs in certain fungi.

> Many of the Discomycetes have the peculiar habit of *puffing* if they are shaken or if the chamber in which they have been kept is opened.
> *De Bary* (trans.), Fungi, p. 89.

puff, *n.*—**Veiled puff**, a modification of cavernous respiration, heard on auscultation, in which one can imagine a sound as of a light cloth moving to and fro with the air in the lung-cavity.

puff-billiards (puf'bil″yä̤rdz), *n.* A game played on a circular board surrounded by a frame bearing metal brackets opposite the pockets. The players take positions at the brackets, and by means of rubber blowers seek to force a cork ball into their opponents' pockets. It is a game requiring considerable skill.



Puff-billiards.

> Mrs. . . . is said to have invented *puff-billiards*, but the great mind who is responsible for ping-pong has yet to be discovered. *Com. Advertiser*, May 11, 1901.

puffer, *n.*—**Sharp-nosed puffer**, a member of the family *Canthigasteridæ*, found in tropical seas.—**Southern puffer**, *Spheroides spengleri*, a fish common in the West Indies and on the coast of the southern United States.

puffin, *n.* **3.** A name wrongly applied to the Manx shearwater, *Puffinus anglorum.*—**Horned puffin**, *Fratercula corniculata*, a species having a small horny appendage on the upper eyelid, found on both sides of the northern Pacific.

puffinet (puf'i-net), *n.* [Dim. of *puffin.*] A local English name for the black guillemot, *Cepphus grylle.*

puffing-hole (puf'ing-hōl), *n.* Same as ⋆*blow-hole*, 5. *Geikie*, Text-book of Geol., p. 569.

puff-shark (puf'shärk), *n.* A shark, *Catulus uter*, belonging to the family *Scylliorhinidæ*, found on the coast of California.

> The curious *puff shark* uttered a deep grunt when it was taken from the water. I heard this sound one day while on the beach at Avalon, and although I recognized it, I could not see the fish. Finally after hearing it repeated a number of times I traced it to a hook near by where a fisherman had, with the usual indifference to the feelings of sharks, hung the fish by the gills.
> *Sci. Amer. Sup.*, Nov. 15, 1902, p. 20323.

Puget series. See ⋆*series.*

pugger (pug'ėr), *n.* [*pug*^{3}, *v.*, + *-er*^{1}.] A worker in a pug-mill; one who feeds a pug-mill with clay.

puggrie, *n.* See *pugree.*

puggy (pug'i), *a.* [*pug*^{1} + *-y*^{1}.] Like a monkey.

> Troth, . . . my affection for my king, God bless the *puggy* face of him, is under more control.
> *R. L. Stevenson*, Catriona, x.

pug-moth (pug'môth), *n.* Same as *pug*^{1}, 7.

pugua (pö'gwä), *n.* [Chamorro name.] In Guam, the betel-nut palm, *Areca Cathecu*, the nuts of which together with the leaves of the betel-pepper and a pinch of slaked lime, are used as a masticatory called *mamao*. See ★*bonga* and *areca-nut*.

Puiseux diagram. See ★*diagram*.

puja (pö'jä), *n.* [Also *pujah, pooja, poojah*; < Hind. *pūjā*, < Skt. *pūjā*, honor, respect, worship, < √ *pūj*, honor, respect.] A Hindu rite or ceremony of religion. *Yule and Burnell*, Hobson-Jobson.

pukeko (pö'kā-kō), *n.* [Maori.] The purple coot, or water-hen, *Porphyrio melanotus*, of New Zealand.

pukras, *n.* Same as *pucras*.

pul¹ (pöl), *n.* [F., < L. *pulsus*, a pushing.] In *phys.*, a proposed unit for the measurement, in the French system, of the time integral of forces; one dyne acting for one second.

pul², *v.* and *n.* A simplified spelling of *pull*.

Pulaski shales. See ★*shale*².

pulaskite (pū-las'kīt), *n.* [*Pulaski* county, Arkansas, + *-ite*².] In *petrog.*, a phaneric igneous rock composed of tabular soda-orthoclase (cryptoperthite) with subordinate amount of hornblende and biotite, and a little diopside, nephelite, sodalite, and accessory minerals. It is a syenite with trachytic texture, containing a little nephelite. *J. F. Williams*, 1890.

pulegone (pū'lẹ-gōn), *n.* [NL. *puleg*(*ium*) + *-one*.] An oily unsaturated ketone related to the terpenes, $(\mathrm{CH_3})_2\mathrm{C{:}C}\!<\!\begin{matrix}\mathrm{CO.CH_2}\\ \mathrm{CH_2.CH_2}\end{matrix}\!>\!\mathrm{CH.CH_3}$, found in the oils of Spanish and American pennyroyal (*Mentha Pulegium* and *Hedeoma pulegioides*), etc. It has an odor resembling peppermint.

pulgada (pöl-gä'dä), *n.* [Sp. *pulgada*, < *pulgar*, the thumb, < L. *pollicaris*, adj., < *pollex*, thumb.] A Spanish and Spanish-American measure of length, equal to the twelfth part of the pié, or to nearly one English inch.

pulicid (pụ-lis'id), *n.* and *a.* **I.** *n.* A member of the aphanipterous family *Pulicidæ*.

II. *a.* Having the characters of or belonging to the family *Pulicidæ*.

pull, *v. t.* **14.** In *cricket*, to hit (a short ball pitched on the wicket or on the off side), with a horizontal bat, so as to send (it) round to the on side. **To pull off**, to bring about or carry through; complete successfully. [Slang.]

> The national shoot will be conducted by the combined bodies, and it is believed that one of the most successful meets in the history of shooting can be *pulled off*.
> *Forest and Stream*, Jan. 24, 1903, p. 78.

To pull one's leg, to take in; fool; deceive by a plausible tale or statement. [Slang.]

> "B.-P." always says that the Polynesian traveller with the numerous wives and family to keep was the only man who ever really *pulled his leg!*
> *Julian Ralph*, in War's Brighter Side, xv.

To pull the ball, in *golf*, to play a ball with a curve toward the left with a right-handed player or toward the right with a left-handed player.

pull, *n.* **9.** In *cricket*, a stroke made with a horizontal bat, by which a short ball pitched on the wicket or to the off side is hit round to the on side. *Hutchinson*, Cricket, p. 53.—**10.** In *golf*, a stroke such that the ball describes a curve toward the left with a right-handed player, or toward the right with a left-handed player. See also ★*hook*, 10.—**Long pull**, in *printing*, the pull of the bar-handle of a hand-press against the side frame that develops the full power of the press. The pull that stops before the full power is developed is known as the *short pull*.

pull-boat (pu̇l'bōt), *n.* A flatboat used in logging cypress.

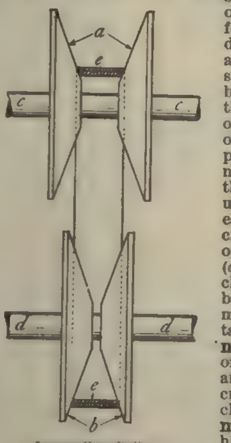
> In the cypress swamps of Louisiana there are employed what are known as *pull-boats*, an evolution from the plan of placing a hoisting engine upon a scow and snaking the logs out of the swamp. By this plan the logs, which are drawn in at the rate of 600 feet a minute, are capped with steel cones, which prevent them from imbedding in the soft ground or catching against obstructions. The endless-rope *pull-boat* engines have 44-inch winding drums, and each weighs 33,000 pounds.
> *Sci. Amer.*, Oct. 17, 1903, p. 276.

puller, *n.* **2.** In *turpentining*, a long-handled hack used for chipping faces too high to be reached with the ordinary hack.

puller-in (pu̇l'ėr-in″), *n.* One who is employed to induce passers-by to enter a shop and purchase.

pullery (pu̇l'ẹ-ri), *n.* [*pull* + *-ery*.] A room or factory where the hair or wool is removed from skins. *Flemming*, Practical Tanning, p. 1.

pulley, *n.*—**Antifriction pulley**, a pulley with an antifriction block (which see, under *antifriction*).—**Expanding pulley**, a mechanical device for varying the speed of a belt by running it on a larger or smaller circumference. There are many such devices, one of the best being a pair of steep cones on each shaft with the belt running between these, the edge of the belt touching each. As one pair of cones is closed the other pair is separated proportionately by a suitable mechanism. In other forms, the conical surfaces are made up of separate elements of each cone which interlace or cross each other between their opposing faces.—**Idle pulley.** (*a*) A pulley which merely changes the direction of the belt. (*b*) A pulley which merely tightens the belt but takes off no power.—**Magnetic pulley**, a chain-sheave or pulley inside of which is an electromagnet which increases the adhesion of the chain to the pulley.—**Segmental pulley.** (*a*) A pulley having an incomplete rim, or one which is only a segment of a circle, and which can make only a portion of a revolution. (*b*) A pulley built up of segments or sectors.—**Split pulley.** (*a*) A pulley made in two parts, which are bolted together for convenience in placing it on and removing it from the shaft. (*b*) A segmental pulley; a pulley made in two or more sectors for convenience in casting. **Spring pulley**, a pulley having a wrought-iron or steel rim which is cut through at one point, and a split hub, the openings being in line, to allow it to pass over enlarged portions of a shaft.—**Standing pulley**, the stationary pulley-block of a compound hoist; a fixed pulley.



Expanding Pulley.

a, pair of driving-cones; *b*, pair of driven cones; *c*, driving-shaft to which *a a* are keyed and on which they approach or separate; *d*, driven shaft on which *b b* are similarly attached; *e*, belt of lateral stiffness pressed sidewise as *a a* and *b b* are brought together reciprocally, so as to bear by frictional contact at surfaces nearer the axis of *c* or *d* or farther therefrom reciprocally.

pulley-cone (pu̇l'i-kōn), *n.* A grooved cone of wood or metal, constituting a series of pulleys of gradually increasing diameter. *Harvard Psychol. Studies*, I. 417.

pulley-lathe (pu̇l'i-lāᴛʜ), *n.* **1.** An engine-lathe having a large chuck for holding pulley castings while they are being bored and faced. —**2.** A lathe having a gap in the bed, used for turning and finishing pulleys; a wheel-lathe.

pulley-stile (pu̇l'i-stīl), *n.* In a window-frame or sliding sash, the upright member in which the pulley is fitted and upon which the sash slides up and down.

pull-foot (pu̇l'fu̇t), *v. i.* To run; hurry. [Slang.]

pulling-bar (pu̇l'ing-bär), *n.* A draw-bar; the bar to which the coupler is fastened. *J. G. A. Meyer*, Modern Locomotive Construction, p. 528.

pulling-hitch (pu̇l'ing-hich), *n.* *Naut.*, a slip-hitch which may easily bed is engaged; also, a certain hitch and number of turns made about a spar or cask, which will cause the latter to roll over and over when the hauling part of the rope is pulled upon.

pulling-roll (pu̇l'ing-rōl), *n.* A feeding-roll; a roll which pulls material into a machine. *Engin. Mag.*, June, 1904, p. 1.

Pullman (pu̇l'man), *n.* [Short for *Pullman car*, such cars being built and operated by a company bearing the same name, which is that of the original inventor or promoter.] In *car-building*, a parlor- or sleeping-car, specifically, and properly, one made by the Pullman Company.

pull-rod (pu̇l'rod), *n.* A rod which transmits a pull; a rod which is subjected only to tension; a link.

> The brake is operated by a lever and catch-rack through *pull rods* with levers below the body of the brougham, to a pair of pulley straps with friction on pulleys fixed to the motor shafts. *Hiscox*, Horseless Vehicles, p. 292.

pull-sensation (pu̇l'sen-sā″shọn), *n.* In *psychol.*, the sensation aroused by pull or traction upon the skin. It is not qualitatively different from the sensation aroused by adequate stimulation of a pressure-spot. *Baldwin*, Dict. of Philos. and Psychol., II. 397.

pullulative (pul'ụ-lạ-tiv), *a.* [*pullulate* + *-ive*.] Budding; causing to bud.

pulmobranch (pul'mọ-brangk), *n.* One of the *Pulmobranchiata*.

pulmonal (pul'mọ-nạl), *a.* [NL. **pulmonalis*, < L. *pulmo*(*n-*), lung.] Same as *pulmonary*. *Buck*, Med. Handbook, V. 607.

Pulmonary cavity, the cavity which contains the breathing-organ or 'lung' of a pulmonate mollusk or spider. Also called *pulmonary chamber* or *sac*.—**Pulmonary chamber.** See ★*pulmonary cavity*.—**Pulmonary docimasy.** See ★*docimasy*.—**Pulmonary heart.** Same as *right* ★*heart*.—**Pulmonary insufficiency.** See *valvular* ★*insufficiency*.—**Hypertrophic pulmonary osteoarthropathy.** See ★*osteoarthropathy*.—**Pulmonary pulse**, the second sound of the heart as heard over the pulmonary valve.—**Pulmonary sac.** (*b*) In *Mollusca*. See ★*pulmonary cavity*.

pulmonitis (pul-mọ-nī'tis), *n.* [NL., < L. *pulmo*(*n-*), lung, + *-itis*.] Inflammation of the lungs.

pulmotrachea (pul-mọ-trā'kẹ-ä), *n.*; pl. *pulmotracheæ* (-ē). [NL., < L. *pulmo*(*n-*), lung, + *trachea*.] A lung-sac of a spider.

pulmozym, pulmozyme (pul'mọ-zim), *n.* [L. *pulmo*, lung, + Gr. ζύμη, ferment.] A preparation of lung-tissue, suggested for therapeutic purposes. *Buck*, Med. Handbook, VI. 417.

pulp, *n.* (*g*) Fruit prepared to be made into marmalade.

> A jam factory is worked in conjunction with the fruit farm. *Pulp* is not made except when there is a glut of fruit. *Encyc. Brit.*, XXVIII. 532.

Pulp of the finger, the fleshy cushion at the tip of the finger.

pulpa (pul'pä), *n.* [L. *pulpa*, flesh, pulp.] The mass of connective-tissue cells, odontoblasts, nerve-cells, and blood-vessels lying within the cavity of a tooth or placoid selachian scale, from which the dentin of the tooth or scale is produced. Usually termed *pulp*. See *pulp* (*d*).

pulp-assay (pulp'ạ-sā″), *n.* In *metal.*, the assay of samples taken from the pulp after or during crushing.

pulp-beam (pulp'bēm), *n.* A device for ascertaining the percentage of weight of water in paper-pulp.

pulp-canal (pulp'kạ-nal″), *n.* See ★*canal*¹.

pulpifaction (pul-pi-fak'shọn), *n.* [L. *pulpa*, pulp, + *factio*(*n-*), a making, < *facere*, make.] Reduction to the condition of a pultaceous mass.

pulpification (pul″pi-fi-kā'shọn), *n.* [L. *pulpa*, pulp, + *-ficatio*(*n-*), < *-ficare*, < *facere*, make.] Same as ★*pulpifaction*. *Buck*, Med. Handbook, I. 17.

pulpit, *n.* **3.** In *mech.*: (*a*) The elevated platform or gallery from which the operation of a large central electrical station for power or lighting is supervised. [Slang.]

> Each of these is connected by shaft and gear under the floor with the gearing actuated by the rheostat wheel on the generator panel, so that the field current can be regulated either from the *pulpit* or from the switchboard.
> *Elect. World and Engin.*, Jan. 23, 1904, p. 166.

(*b*) A raised platform on which the operator of a machine stands so that he may oversee the machine as it works, or the process as it advances.

> The operator of the hoisting motor stands in a *pulpit* above the floor and by means of the large rheostat controller brings each skip in succession opposite the mouth of the hopper above the main crushing roll.
> *Elect. World and Engin.*, Dec. 26, 1903, p. 1051.

Pulpit spectacles. See ★*spectacle*.

pulpitis (pul-pī'tis), *n.* [NL., < L. *pulpa*, pulp, + *-itis*.] Inflammation of the dental pulp. *Sci. Amer.*, Dec. 20, 1902, p. 441.

pulp-mill, *n.* **2.** A mill or factory where wood-pulp is made for the manufacture of paper.

> With few exceptions, the *pulpmills* in making their returns, sent in their figures expressed in cords, as their purchases of timber are made that way, most of their logs being cut in lengths of four feet.
> *N. Y. State Forest, Fish and Game Commission*, [Seventh Rep., 1901, p. 24.

3. A paper-mill in which paper is made from wood-pulp.

pulpo (pöl'pọ̄), *n.* [Sp. *pulpo*, F. *poulpe*, < L. *polypus*, < Gr. πολύπους, polyp: see *polyp*, *polypus*.] The Spanish and Spanish-American name for the octopod.

pulp-stone (pulp'stōn), *n.* A stone used in grinding wood to a pulp for use in the manufacture of paper. A particular quality of sandstone capable of being operated in hot water is used. The best pulp-stones are made in Ohio, or are imported from Newcastle-upon-Tyne, England.

> *Pulpstones* differ from grindstones in having a much broader face (being much thicker). The stones are usually from 48 to 56 inches in diameter and 16 to 26 inches in thickness, weighing from 2,300 to 4,800 pounds.
> *J. H. Pratt*, in Mineral Resources of U. S., U. S. Geol. [Surv., 1900, p. 789.

pulp-wood (pulp′wůd), *n.* Wood from which pulp is to be made. It may be in large pieces as first cut, or in small pieces ready to be ground in the pulp-mill. Poplar is preferred for this purpose, but pine, fir, and beech are used.

pulsational (pul-sā′shọn-al), *a.* [*pulsation* + *-al*1.] Pertaining to or of the nature of pulsation; throbbing; characterized by pulsation. *Trans. Amer. Inst. of Elect. Engin.*, 1904, p. 420.

pulse1, *n.* 5. In *phys.*, a proposed unit for the measurement of the time-integral of forces.

> In the British system this is that of one poundal acting for one second and is called 1 *pulse*.
> *Jude*, Physics, Experimental and Theoretical, I. 41.

Anadicrotic pulse, a pulse in which the ascending limb of the tracing shows two notches.—**Bamberger's pulse,** a pulsation in the jugular vein.—**Capillary pulse,** alternate redness and pallor of an area of skin or of the bed of the finger-nails, observed sometimes in cases of aortic regurgitation.—**Catacrotic pulse,** a pulse in which the highest wave is not the last, the descending limb of the pulse-curve showing a notch.—**Catadicrotic pulse,** a pulse in which two notches occur in the descending limb of the tracing.—**Decurtate pulse,** a pulse which progressively diminishes in strength until it finally ceases.—**Kussmaul's pulse.** Same as *paradoxical* ★*pulse*.—**Paradoxical pulse,** a pulse that becomes faint during inspiration and is of full strength during expiration, although there is no variation in the strength of the heart's action.—**Quincke's pulse,** a deepening of the pink under the nails, occurring synchronously with the radial pulse.—**Running pulse,** a pulse with but small excursions, and those sometimes irregular and oscillating, as when the blood-stream is in insufficient volume to fill completely a relaxed artery.—**Stokesian pulses,** in *phys.*, ether-waves of extremely short length emanating from surfaces that are subjected to cathodic bombardment. X-rays have been thus designated by Crookes.—**Trembling** or **tremulous pulse.** Same as *running* ★*pulse*.—**Trigeminal pulse,** a sequence of three regular pulse-beats followed by an intermission.—**Water-hammer pulse.** Same as *Corrigan's pulse* (which see, under *pulse*1).

pulse-valve (puls′valv), *n.* A local name of a check-valve which takes up the pulsations of a pump. *H. M. Wilson*, Irrigation Engineering, p. 515.

pulse-wave, *n.* 2. In *hydrodynam.*, a wave of compression in a pipe containing liquid, caused by periodic interruptions or fluctuations in the flow.

pulsific, *a.* **II.** *n.* A medicinal agent which increases the pulse.

pulsilogium (pul-si-lō′ji-um), *n.*; pl. *pulsilogia* (-ạ̈). [L. *pulsus*, pulse, + Gr. *-λογιον*, < *λόγος*, reckoning.] Same as *pulsimeter*.

pulsilogy (pul-sil′ọ̄-ji), *n.* [NL. *pulsilogium*.] Same as *pulsimeter*.

Pulsion diverticulum. See ★*diverticulum*.

pulsus, *n.*—**Pulsus bisferiens,** a markedly dicrotic pulse in which the waves are of nearly equal height.—**Pulsus deficiens,** a pulse in which there is an occasional intermittence owing to failure of the ventricle to contract.—**Pulsus intercidens,** a pulse in which there is an intercurrent beat.—**Pulsus pseudointermittens,** a pulse in which there is an occasional intermittence due to a feeble contraction of the ventricle.—**Pulsus rarus,** slow pulse.

pulverin, *n.* 2. A yellow crystalline substance which occurs in the lichen *Pulveraria latabratum*.

pulverization, *n.* 2. The reduction of liquids in the form of spray and the projection of the latter with force upon the surface of the body.

> Various sprays and *pulverizations* for nasal and faucial troubles. *Buck*, Med. Handbook, I. 736.

pulverizing-mill, *n.* 2. In *candy-making*, a power-machine for reducing granulated sugar to the extremely fine flour of sugar used in sweetening chocolate. It is essentially a centrifugal mill with an air-blast for removing dust and discharging the finished flour into barrels.

pulvic (pul′vik), *a.* [Anagram of *vulpic* (acid).] Related to vulpic acid.—**Pulvic acid,** an orange powder or brown crystalline acid, $C_{18}H_{12}O_5$, made by boiling vulpic acid with milk of lime. It melts at 214–215° C., and at a higher temperature yields water and *pulvic anhydrid*, $C_{18}H_{10}O_4$, a light-yellow crystalline substance. It melts at 220–221° C.

pulvinar, *n.* 4. In *Greco-Roman arch.*, a pillow-shaped or cushion-shaped detail; especially, in an Ionic capital, the drooping curve which joins two volutes on the same side.

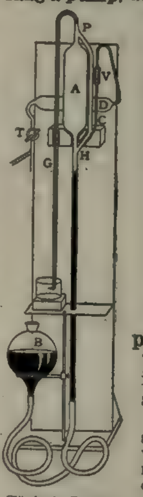
pulvis (pul′vis), *n.* [L.: see *powder*.] Powder.

puma, *n.* 1. Several species of puma have been recognized, besides local races or subspecies. The Florida form is *Felis coryi*, the large animal from Oregon and the northwest *F. oregonensis*, the eastern puma *F. cougar*, the term *concolor* being restricted to the species from Brazil and the adjoining region.

pumice, *n.*—**Artificial pumice,** a mixture of ground sandstone and clay, manufactured at Bietigheim, in Germany, as a substitute for natural pumice of volcanic origin: used in polishing metal, lithographic stones, wood, wax-cloth, and other materials.

pumiced (pum′isd or pū′misd), *a.* Noting a diseased condition or degeneration of the inside portions (laminæ) of the hoof and sole of horses' feet following founder, in which the laminæ become replaced by a soft, crumbly material. *U. S. Dept. Agri.*, Rep. on Diseases of the Horse, 1903, p. 372.

pump1, *n.*—**Air-pressure pump,** a water-lifting machine operated by the direct pressure of compressed air. A typical form employs an air-compressor and two air-tight tanks, placed near the water-supply, and a system of pipes and air- and water-valves. The two tanks are directly connected with the compressor by air-pipes, and each is connected with the water-supply and with a pipe through which the water is to be raised to the surface or to a tank above the water-supply, suitable valves controlling the movements of the air and water. The two air-pipes from the tanks to the compressor are also controlled by a valve which by its movement changes the air in each pipe from a pressure to a suction, and vice versa, alternately. When this valve is in one position, air, under suction by the compressor, draws the air out of the tank, the vacuum causing the tank to fill with water. At the same instant the compressor is delivering air under pressure to the other tank, which is already filled with water, and forcing the water out and into the uptake water-pipe. When all the water has thus been driven out of this tank, the valve is automatically reversed (either by an electric motor or by some mechanical device controlled by the compressor), and the process is reversed until the filled tank is emptied and the empty tank refilled. In this way the water-lifting (improperly called pumping) is continuous. Such a water-pressure lifting-machine may have a capacity of 15,000 gallons an hour.—**Baly's pump,** a mercury pump for the rapid production of high vacua in large vessels, where the collection of the gases is unnecessary.—**Bore-hole pump,** a pump designed to be lowered into the tube or casing of a drilled well, as an oil-well or artesian well.—**Conoidal pump,** a centrifugal pump having a conical sleeve on the shaft to guide the entering water to the root of the vanes with as little resistance as possible.—**Cornish pump.** See ★*Cornish*1.—**Cycloidal pump,** a rotary pump the impellers or revolving wheels of which are shaped to cycloidal curves.—**Deep-well pump,** a pump so constructed that it can be lowered into a well or bore, and be operated from the ground above, so as to have its valves and barrel less than thirty-two feet above the surface of the water or other liquid to be pumped.—**Displacement pump,** a water-lifting appliance which employs compressed air as a means of lifting water from wells and tanks; a direct air-pressure pump.—**Diving-bell pump,** a form of air-pump for supplying air to a diving-bell: usually a three-throw pump designed to produce continuous flow without pulsations.—**Double-cylinder pump** a pump which has two cylinders, usually side by side, within which pistons reciprocate alternately. In the form called the 'duplex pump' the piston of each cylinder pauses at the end of its stroke, allowing its valves to seat quietly, while the flow of water is not retarded, since the other piston is moving at its highest velocity.—**Double-piston pump,** a pump having two pistons in the bore of the cylinder which move in opposite directions and increase and diminish alternately the volume between them as well as the volume at each end.—**Driven-well pump,** a pump suitable for attachment to the tube or bore of a driven well. If the well should be deep and the water not rise in the tube to within thirty feet of the surface of the ground, the pump must be placed so far down in the bore that atmospheric pressure at that depth will always force water up into the barrel of the pump, and the water be forced upward by the pump the rest of the way.—**Duplex pump,** a pump having side by side two pumping-cylinders of the same size. See *double-cylinder* ★*pump*.—**Elastic-piston pump,** a pumping-apparatus in which the usual piston is replaced by a flexible diaphragm which is pushed forward and drawn back to vary the volume of the working-barrel.—**Fleuss pump,** a form of air-pump, with pistons running in oil, and having no mechanical valves, used instead of or in conjunction with a mercury pump in obtaining a high degree of exhaustion.—**Gaede pump,** a rotary air-pump containing mercury and used for the rapid production of high vacua.—**Geyser-pump,** an air-lift; a device for raising liquids by the use of compressed air which is carried downward by a pipe and discharged near the bottom of the rising main or column pipe of the water delivery. The upward motion and velocity of the air in the ascending column entrains the water and delivers it in a spurting discharge resembling the effect due to the action of steam in the natural geyser.—**Hot-water pump,** a pump for raising hot water. Such a pump must be so placed that the suction is always flooded to insure its working, and usually must have metallic valves, or valves not affected by heat.—**Hydraulic pump.** (*a*) A pump for supplying water under pressure to a hydraulic system. (*b*) A pump operated by hydraulic pressure to pump water at a higher or a lower pressure than that which operates the pump; a pressure-increaser or booster, or a pressure-reducer.—**Hydrostatic pump,** a pump for supplying a liquid under pressure for any purpose, as for operating a hydraulic press or producing an artificial head of water.—**Oil-line pump,** a pump used to force oil through a pipe-line.—**Pneumatic pump.** (*a*) An air-pump; a pump for compressing, exhausting, or moving air. (*b*) A pump for moving or raising a liquid by the pressure of air or by carrying the liquid along with the air; an air-lift.—**Riedler pump,** a steam- or air-pump having valves which are operated mechanically and positively by a valve-gear devised by Riedler of Berlin, Germany.—**Soap-pump,** a rotary, centrifugal pump without valves.—**String-pump,** in *mining*, a pump operated by power transmitted from a distant engine or water-wheel by means of stringers bolted together and mounted on levers so that they will oscillate easily.—**Three-throw pump,** a pump which has three cylinders set parallel side by side and the three pistons connected to three cranks on the same shaft. The cranks are usually 120° apart, thus giving a fairly constant discharge and requiring an approximately constant turning effort.—**To fang a pump.** See ★*fang*.—**Töpler's pump,** a mercury pump designed to remove a quantity of gas from a vessel and collect it without loss, and free from admixture with air.—**Unlimited pump,** a deep-well pump which is operated from the surface of the ground and lifts the water from the well to the required height above the ground.—**Volute-pump,** a centrifugal pump having blades the shape of which is derived from an involute curve.



Töpler's Pump.

A, pump-chamber; B, mercury-reservoir; C, entrance-tube for gas; D, drying-tube; G, capillary tube; T, tap; V, valve.

(From Travers's "Study of Gases.")

> The condensed steam is removed from the condenser by a Worthington *volute pump* directly connected to an induction motor. The operation of this pump is very interesting, since it requires neither valves nor floats and is not subject to vapor binding, as are reciprocating pumps.
> *Elect. Rev.*, Sept. 17, 1904, p. 453.

pump1, *v.* **I.** *intrans.* 2. To throb; beat.—3. To issue in intermittent jets, as blood from a wounded artery.

II. *trans.*—**Pumping by heads,** a system in use for pumping oil-wells which do not flow freely enough to make continuous pumping practicable or profitable. The oil is allowed to accumulate until it is up to a certain level, and the well is then pumped practically empty.

pump-cylinder (pump′sil″in-dėr), *n.* The barrel or body in which the piston of a pump works; the water-cylinder of a pumping-engine; the cylinder of a pump.

pump-drill (pump′dril), *n.* See ★*drill*1.

pump-handle, *n.* 2. A wooden or iron piece running back on both sides of a carriage-body to support it on the rear springs. It is usually made with an ornamented or scrolled end. Sometimes called a *brake*.

pumping (pum′ping), *n.* In *elect.* See ★*surging*, 2 (*b*).

pumpkin-seed, *n.* 2. (*b*) One of the common names of *Poronotus triacanthus*, a fish found on the Atlantic coast.

pump-lamp (pump′lamp), *n.* A lamp in which the fluid to be burned is pumped to the burner or wick: a moderator or Carcel type of lamp, in use when oil of high-ignition temperature is used, as in lighthouses.

pump-pipe (pump′pīp), *n.* In a locomotive, a supply-pipe or suction-pipe leading to the feed-pump or injector from the tank which carries the water.

pump-return (pump′rẹ̄-tėrn″), *a.* So arranged that a fluid will be returned by a pump to a tank or boiler, as opposed to a return by gravity.

pump-rod (pump′rod), *n.* 1. The piston-rod of a pump.—2. In *mining*, a vertical rod, often made up of sections, which reaches from an engine located at or near the surface to the pumps in the mine. These may be at the bottom or they may be arranged in a series so that the water is lifted in stages or in successive lifts. When this is done, the piston-rods of the series are driven from brackets off-setting them from the common pump-rod which drives them all.

pump-room, *n.* 2. The room of a waterworks where the pumps are located.

pump-sollar (pump′sol″ạ̈r), *n.* In *mining*, a platform or gallery on which to stand while cleaning or repairing the working parts of a lift or set of pumps.

pump-station (pump′stā″shọn), *n.* In *mining*, a chamber or recess at the side of a shaft, where a pump is located.

pump-tree (pump′trē), *n.* The barrel or cylinder of a wooden pump; the pump-stock.

pump-valve (pump′valv), *n.* A valve in a pump; a device to keep the fluid from flowing in an undesired direction.

pun3 (pun), *n.* [Also *punn*; Beng. *pun*, Hind. *paṇa*, < Skt. *pana*, a stake, wage, coin of a certain weight. Compare *fanam*.] A copper coin of Bengal, of the value of 80 cowries.

pun. An abbreviation of *puncheon*2.

puna, *n.* 2. Mountain-sickness.

> The effects of *puna* were very various. We found it affect us with intense headache at night-time. I had a terrible headache the first night I arrived at the 19,000-feet camp; and suffered from very severe pains in the lower limbs, such as I should describe as a sort of "growing pain." We also experienced extreme breathlessness and entire incapacity for doing any work.
> *S. M. Vines*, in Geog. Jour. (R. G. S.), XII. 487.

puna-goose (pö′nạ̈-gös), *n.* A handsome bird, *Bernicla melanoptera*, white with black wing-tips and yellow bill, common to the lakes and lagunes of the Peruvian Sierra and to Bolivia. It is easily domesticated. Commonly called in Peru *huachua*, and in Bolivia (Aymara) *hualata*.

puna-grass (pö′nä-gràs), *n.* The hard bunch-grass, *Stipa Ichu*, of the cold table-lands of Peru and Bolivia, the principal food of the llama and other ruminants of the genus *Auchenia:* used for covering Indian houses, and also eaten by mules, asses, horses, sheep, and cattle.

puñal (pön-yäl′), *n.* [Sp. *puñal* = Pg. *punhal* = It. *pugnale*, a dagger, prob. < ML. **pugionales*, neut. adj., < L. *pugio(n-)*, a dagger.] A poniard or dagger.

punaluan (pö-nä-lö′an), *a.* [Hawaiian *punalua*, a friend on equal terms with one, + *-an*.] Of or relating to a peculiar form of family, supposed by Morgan to have been a stage in the development of human marriage. Compare ★*group-marriage*. See the extract.

> The *Punaluan* Family. It was founded upon the intermarriage of several sisters, own and collateral, with each others' husbands, in a group; the joint husbands not being necessarily kinsmen of each other. Also, on the intermarriage of several brothers, own and collateral, with each others' wives, in a group; these wives not being necessarily kin to each other, although often the case in both instances. In each case the group of men were conjointly married to the group of women.
> *L. H. Morgan*, Ancient Society, p. 384.

punamu, *n.* Same as ★*pounamu*.

punch^1, *n.*—**Set-punch.** Same as *setting-punch*.

punch-box (punch′boks), *n.* A box with holes in its top plate to receive the punches of a Jacquard card-cutting machine.

puncher, *n.* **2.** A contraction of ★*cow-puncher;* a cow-boy. [Slang, Western U. S.]

punching (pun′ching), *n.* A piece of thin metal stamped from a plate by means of a die, such as the laminæ used in the cores of transformers and armatures.

> The four-pole pieces are made of laminated steel *punchings*, held between heavy end plates and secured by rivets.
> *Elect. World and Engin.*, March 28, 1903, p. 532.

punching-press (pun′ching-pres), *n.* A hand- or power press used for punching holes in sheet-metal or other material.

puncticulose (pungk-tik′ū-lōs), *a.* [NL. *punticulum*, dim. of L. *punctum*, point, + *-ose*.] Same as *puncticulate*.

punctograph (pungk′tọ-gràf), *n.* [G. *punktograph*, < L. *punctum*, a point, + Gr. *γράφειν*, write.] An instrument used in radiography to locate a foreign body embedded in the tissues. It consists of two rods, each having a metallic ring at one end. These are placed on opposite sides of the patient under examination. When the shadow of the foreign body appears, viewed with a fluorescent screen, in the center of each ring, marks are made on the person at these points. The position of the rods is then shifted and the operation is repeated several times. The intersection of all the imaginary lines connecting the several pairs of opposite points determines the position of the foreign body. *Encyc. Dict.*

puncture, *n.* **Diabetic puncture**, puncture of the floor of the fourth ventricle, which is followed, in animals, by glucosuria.—**Kronecker puncture**, in experimentation upon animals, puncture, with a long fine needle, of the inhibitory nerve-center for the heart. *Lancet*, Aug. 22, 1903, p. 523.—**Lumbar puncture**, puncture of the membranous sac of the spinal cord, in the lumbar region, with a hollow needle, and withdrawal of fluid for diagnostic purposes or to relieve pressure on the brain.—**Puncture culture.** Same as *stab* ★*culture*.—**Quincke's puncture.** Same as *lumbar* ★*puncture*.

pund^2 (pönd), *n.* [Dan. *pund* = E. *pound*^{2}.] The Danish and Swedish pound, equal to 1.1023 pounds avoirdupois.

Punfield beds. See ★*bed*^{1}.

punga-punga (pung′ạ̈-pung″ạ̈), *n.* [Maori.] **1.** The yellow pollen of the lesser cattail, or raupo, *Typha angustifolia*. The natives of New Zealand use it for food by mixing it with water into cakes and baking.—**2.** The bread so made. It is sweetish and light, somewhat resembling gingerbread. See ★*raupo* and *Typha*.

pungent, *a.* **1.** (*c*) In *ichth.*, stiff and sharp-pointed: as, a *pungent* spine. *Proc. Zool. Soc. London*, 1902, p. 337.

pungle (pung′gl), *v.*; pret. and pp. *pungled*, ppr. *pungling*. [Freq. of dial. *pung*, poke, push, pound, etc.] **I.** *trans.* To poke; push.

II. *intrans.* To take pains; labor assiduously with little progress. *Eng. Dial. Dict.* [Prov. Eng.]—**To pungle up**, to do something; 'get busy.' [Slang.]

> "Fuddleston," he said, "you can't make a sneak out of this game. *Pungle up*, or I 'll throw you out of the window!" It is recorded that Mr. Fuddleston at once *pungled up* to the extent of $5 for the first and only time in his religious career. *Chicago Tribune.*

Punicaceæ (pū-ni-kā′sẹ-ē), *n. pl.* [NL. (Horaninow, 1843), < *Punica* + *-aceæ*.] A family of dicotyledonous choripetalous plants of the order *Myrtales*, the pomegranate family, containing the single genus *Punica* (which see).

punicin (pū′ni-sin), *n.* [*Punic* (in def. 2 *Punica*) + *-in*^{2}.] **1.** The royal or Tyrian purple of the ancients, which is formed by exposing the colorless secretion of certain mollusks (*Purpura lapillus*, etc.) to the sun.—**2.** Same as *pelletierine*.

punk^2 (pungk), *v. t.* [Variant of *punch*^{1}, *v.*] To strike or pound with the closed fist. [Slang, U. S.]

punk^2 (pungk), *n.* [Variant of *punch*^{1}, *n.*] A punch or pound with the closed fist. [Slang, U. S.]

punt^1, *n.* **3.** A push or shove.

> Only practice enables one . . . to guide the raft by means of timely *punts* at the surrounding rocks with the pole with which one is armed.
> *H. Clifford*, in Geog. Jour. (R. G. S.), IX. 12.

punt^1, *v. i.*—**To punt out**, in *foot-ball*, to punt from behind the goal-line into the field: a play for a try at goal.

punt^3, *n.* **2.** In *glass-manuf.* Same as ★*milen*.

punt-gunner (punt′gun″ėr), *n.* One who shoots game from a punt. Also *punt-shooter*.

punt-gunning (punt′gun″ing), *n.* The practice of shooting game from a punt. Also *punt-shooting*.

punt-out (punt′out), *n.* In *foot-ball*, a punt made from behind the goal-line for a try at goal.

punt-shooter (punt′shö″tėr), *n.* Same as ★*punt-gunner*.

punt-shooting (punt′shö″ting), *n.* Same as ★*punt-gunning*.

pup, *n.* **2.** A local term current among the Klondike gold-miners for tributary streamlets of the second order. [Slang.]

> The principal streams [Klondike region] are known as creeks; the short steep tributaries which flow into them as 'gulches'; and the streamlets which feed these as '*pups*.' *Pop. Sci. Mo.*, July, 1902, p. 232.

pupa-case (pū′pạ̈-kās), *n.* In *entom.*: (*a*) The larval shelter of a caddis-worm, or other similar larval case. (*b*) The sheath in which an insect having a complete metamorphosis passes the pupa stage.

pupa-shell (pū′pạ̈-shel), *n.* Any shell of the family *Pupidæ*.

pupiferous (pụ-pif′ẹ-rus), *a.* [NL. *pupa*, pupa, + L. *ferre*, bear, + *-ous*.] Giving birth to the sexual generation: a term used by writers on *Aphididæ*. The pupiferous generation is composed usually of parthenogenetic return migrants which give birth to living young which develop into sexed individuals.

pupil^2, *n.*—**Hutchinson pupil**, marked dilatation of one pupil on the side of the lesion in cases of hemorrhage into the membranes of the brain.—**Pupil of entrance.** Same as ★*entrance-pupil*.—**Pupil of exit.** Same as ★*exit-pupil*.

pupillometry (pū-pi-lom′e-tri), *n.* [L. *pupilla*, pupil of the eye, + Gr. *μέτρον*, measure, + *-y*^{3}.] Measurement of the diameter of the pupil; the scientific use of the pupillometer.

pupilloscopy (pū-pi-los′kọ-pi), *n.* [L. *pupilla*, pupil, + Gr. *-σκοπια*, < *σκοπεῖν*, view.] **1.** Inspection of the pupil of the eye.—**2.** Same as *skiascopy*.

pupillostatometer (pū′pi-lọ-stạ-tom′e-tėr), *n.* [L. *pupilla*, pupil, + Gr. *στατός*, standing, fixed, + *μέτρον*, measure.] An instrument for measuring the distance between the two pupils.

Pupin cable. See ★*cable*.

puppy-foot (pup′i-fůt), *n.* The ace of clubs. [Slang.]

pupulo (pö-pö′lō), *n.* [Chamorro name.] On the island of Guam, the betel pepper, *Piper Betle*, the leaves of which together with the nuts of the betel palm (*Areca Cathecu*) and a little lime are used by the natives as a masticatory. See *betel*.

pupunha (pö-pö′nyä), *n.* [Tupi name.] The peach-palm, *Guilielma speciosa*.

pur, *v.* and *n.* A simplified spelling of *purr*.

Purbeckian (pėr-bek′i-ạn), *n.* [Isle of *Purbeck*, a peninsula in Dorset, England.] In *geol.*, the uppermost stage of the Upper Jurassic system of southern England. It comprises a lower series of marls and limestones, 100–150 feet thick; a middle series of limestones, 50–150 feet thick, some of which are valuable building-stones; and an upper series of clays; shales, and limestones, 50–60 feet thick. The fossil fauna of the Purbeckian shows an alternation of marine and fresh-water types, and is of great interest on account of the large numbers of terrestrial animals which it has afforded, including insects, fish, reptiles (dinosaurs, crocodiles, plesiosaurs, turtles), and multituberculate mammals.

purchase, *n.*—**Double purchase**, any device for doubling the intensity of a force; usually a hauling device which consists of two single blocks and a line or fall. The line is roved through one block, then through the second block, and brought back to the first block, to which it is fastened.—**Single purchase** (*naut.*), the same as *whip*, which consists of a rope rove through a single fixed block.—**Three-fold purchase** (*naut.*), two blocks having three sheaves each, through which the rope is rove to form the purchase.—**Two-fold purchase**, two blocks having two sheaves each, through which the rope is rove to form the purchase.

purdah (pėr′dạ̈), *v. t.* [*purdah*, *n.*] In India, to screen with a purdah.

purdonian (pėr-dō′ni-ạn), *n.* [Named after one *Purdon*, the designer of the shape of the box.] A coal-box intended for the drawing-room. *N.* and *Q.*, 7th ser., II. 455.

pure, *a.* **10.** In *biol.*, having germ-cells of only one kind and like those of a parent. See the extract.

> An organism can be defined as genetically *pure* if all its gametes when united with similar gametes reproduce the parent identically.
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., 1902, [I. 134.

Pure debt. See ★*debt*.—**Pure image.** See ★*image*.—**Pure number.** Same as *abstract* ★*number*.—**Pure sensation.** See ★*sensation*.

pure-blood (pūr′blud), *n.* In breeders' language, a pure-bred animal; an animal the ancestors of which have not been crossed with those of another breed.

> A quarter of a billion acres of grass, nurturing 10,000,000 head of cattle, to-day worth $200,000,000, alone by such agencies as yours can be doubled in value in a single decade, if only pure-blooded sires are used in all the cow herds during this time. Likewise fifty per cent. can be added to the value if *pure-bloods* only are used in the northern half of this territory.
> *Rep. Kansas State Board of Agr.*, 1901–02, p. 63.

pure-bred (pūr′bred), *a.* In breeders' language, noting an animal the ancestors of which are all of the same standard breed or race; not crossed with other breeds. *Biometrika*, Feb., 1903, p. 171.

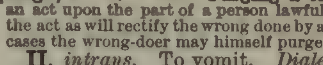
pure-breed (pūr′brēd), *v. t.* To breed from animals of one race or breed.

> Pure-bred mice usually are in-bred and von Guaita's unquestionably were; but this does not help us to decide whether the relative inability to transmit whiteness is due to in-breeding or *pure-breeding;* it only shows that it is not impossible that it may be due to in-breeding.
> *Biometrika*, Feb., 1903, p. 171.

purée, *n.* **2.** A dessert made of crushed fruit, sweetened and flavored with some cordial or orange- or lemon-juice.

purga (pör′gạ̈), *n.* [Russ. *purga*.] In Siberia and Labrador, a violent cold wind with drifting snow. See ★*burga*.

purgatin (pėr′gạ-tin), *n.* [*purgat(ive)* + *-in*^{2}.] A trade-name of a diacetylanthrapurpurin,



$C_6H_3(\overset{7}{O}H)\left\langle\begin{matrix}CO\\CO\end{matrix}\right\rangle C_6H_2(O\overset{1.}{C}\overset{2.}{O}CH_3)_2$: the relative positions of the two acetyl groups are not determined. It is a yellowish-brown powder and is used in medicine as an agreeable laxative.

purge, *v.* **I.** *trans.*—**Purging a tort**, in *law*, such an act upon the part of a person lawfully entitled to do the act as will rectify the wrong done by another. In some cases the wrong-doer may himself purge the tort.

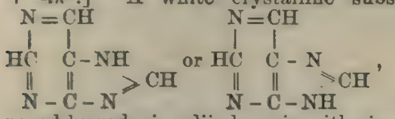
II. *intrans.* To vomit. *Dialect Notes*, III. iii. 225. [Dial., U. S.]

purge, *n.*—**Indian purge.** (*a*) The wild potato-vine, man-of-the-earth, or mecha-meck of the Indians, *Ipomœa pandurata*. (*b*) A plant of Virginia, probably *Triosteum perfoliatum*, the root of which was used as a purgative by the aborigines.

purification, *n.*—**Self-purification of streams**, the effect of sunlight, sedimentation, etc., upon running water, supposed by some to destroy the pathogenic bacteria and thus enable a stream to purify itself within the course of a few miles.

purifier, *n.* **3.** In the manufacture of coal-gas, the tank or chamber in which the gas is exposed to the action of slaked lime, or to a mixture of this with the oxyhydroxid of iron, in order to remove objectionable constituents, especially carbon dioxid and sulphureted hydrogen. *Sadtler*, Handbook of Indust. Chem., p. 364.—**4.** A device for cleansing water from injurious or undesirable impurities. *Elect. Rev.*, Sept. 24, 1904, p. 547.—**Feed-water purifier**, an apparatus for cleansing the feed-water for boilers by removing either solid matter in suspension, or precipitating out the soluble salts and subsequently removing them by filtration: much used where the water flows from or through limestone strata of rock.

purin (pū′rin), *n.* [Appar. ‹ L. *purus*, pure, + *-in*^{2}.] A white crystalline substance,



, prepared by reducing diiodopurin with zinc-dust. It dissolves in water and forms salts with both acids and bases. It melts at 216–217° C. Purin is the mother-substance of the uric-acid and xanthin group, some of the members of which are formed in the body by the decomposition of nucleic acids.—**Purin bases** or **bodies**, in the uric-acid group of bodies, various substances derived from purin, such as xanthin, guanine, adenin, and caffein.—**Purin group.** See ★*group*^{1}.—**Purin ring.** See *purin* ★*group.*

purity, *n.* (*g*) In *biol.*, the state or condition, with respect to reproduction, of an organism that is developed from a fertilized egg formed by the union of two identical germ-cells.

> Mendel generalised these statements as follows: In cases of complete dominance (parents differing in *n* ways), the number of different classes in the second generation will be 3^n, of which 2^n will be stable; the remainder will be hybrid, though indistinguishable from pure individuals, and the smallest number of individuals which, in the second hybrid generation, will allow of one pure individual to each visibly different class will be 4^n. This gave rise to a new conception of "*purity*": An animal or plant is pure if it produces gametes of only one sort, even though its grandparents may among themselves have possessed opposite characters.
> *Jour. Roy. Micros. Soc.*, Feb., 1904, p. 52.

Coefficient of purity. See ★*coefficient.*

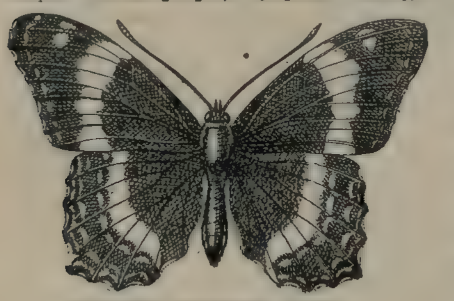
Purkinje effect, phenomenon. See *Purkinje* ★*phenomenon.*—**Purkinje's dizziness.** See ★*dizziness.*

purl^3, *n.* **6.** In *embroidered bookbinding*, a fine copper coil closely covered with colored silks. *C. Davenport*, in Burlington Mag., March, 1904, p. 268.

puromucous (pū-rọ̄-mū′kus), *a.* [L. *pus* (*pur-*), pus, + *mucus*, mucus, + *-ous.*] Same as *mucopurulent.*

puron (pū′ron), *n.* [Appar. *pur*(*in*) + *-on.*] A substance, $C_5H_8N_4O_2$, obtained from uric acid by electrolytic reduction.

purple. I. *n.*—**Aubergine purple,** in *ceram.*, a shade of purple like that of the fruit of the aubergine (*Solanum Melongena*), seen in Oriental porcelain. See ★*violet d'évêque.*—**Banded purple,** a nymphalid butterfly, *Basilarchia arthemis.* Also called the *arthemis butterfly.* See ★*arthemis.*—**Bishop's purple.** Same as ★*violet d'évêque.*—**Brilliant Hessian purple,** a direct cotton coal-tar color of the diazo type, derived from diaminostilbene-disulphonic acid. It dyes unmordanted cotton a bluish red from a soap bath.—**English purple, London purple** (*b*), **Paris purple** trade-names for insecticide materials made by boiling with lime the waste residue from the manufacture of aniline red or violet. Their essential constituent is arsenic, partly in the arsenious and partly in the arsenic condition, and present in varying quantity. *Purple poison* and *English purple poison* are other names of the same by-product.—**Hybrid purple,** an American nymphalid butterfly, *Basilarchia proserpina*, believed by some entomologists to be a hybrid between *B. astyanax* and *B. arthemis*, and by others to be a dimorphic form of *B. arthemis.*—**London purple.** (*b*) See *English* ★*purple.*—**Orseille purple,** a dye-stuff made by treating coloring-lichens with an aqueous solution of ammonia, precipitating the liquid with hydrochloric or sulphuric acid, redissolving the precipitate in aqueous ammonia, exposing this second solution to the air until a purple-violet color has developed, and a second time precipitating with a mineral acid.—**Paris purple.** See *English* ★*purple.*—**Red-spotted purple,** an American nymphalid butterfly, *Basilarchia astyanax*, which occurs throughout the eastern United States, except in northern New England and New York. Its larvæ feed on rosaceous plants.—**To be born to the purple,** to be born of a royal race. Compare *porphyrogenitus.*



Banded Purple (*Basilarchia arthemis*).

II. *a.*—**Purple bacteria,** the *Rhodobacteria. Sci. Amer. Supp.*, Nov. 23, 1907, p. 335.—**Purple madder.** (*b*) Same as ★*purple-black.*—**Purple patch,** a rhetorically elaborate or ornate passage; a bit of 'fine writing': translating the '*purpureus . . pannus*' of Horace. (*Ars Poetica*, l. 15.)

> Not quite my whole task [today] but I have a grand *purple patch* [The relief of Londonderry] and I must take time.
> *Macaulay*, Diary, Oct. 25, 1849.

> It is to Mr. Trevelyan's credit that there are no *purple patches.* We will not, therefore, do him the injustice of quoting from a poem which should be read and studied in its entirety.
> *Athenæum*, May 20, 1905, p. 620.

purple-black (pėr′pl-blak), *n.* A purple pigment prepared by precipitating alizarin in combination with a metallic oxid of aluminium and iron in the right proportion to give a purple. It is very permanent.

purple-grass, *n.* **2.** A slender, branching, rather low grass, *Pappophorum Wrightii*, with dense spike-like purple or lead-colored panicles, found in the southwestern United States and adjacent Mexico. It is reported to be fully as nutritious as grama or buffalo-grass and to be preferred by horses and mules.

purple-shell (pėr′pl-shel), *n. Murex trunculus*, so called because it was used by the ancients in the manufacture of purple dye; also a violet shell, one of the *Ianthinidæ.*

> An inscription of about 350 B.C. mentions the levying of tithes on the catch of fish and of *purple-shell.*
> *Science*, Dec. 4, 1903, p. 719.

purple-top (pėr′pl-top), *n.* **1.** The tall redtop, *Tricuspis seslerioides.*—**2.** See *bluejoint-* ★*grass.*

purple-veil (pėr′pl-vāl), *n.* The egg-mass of *Lophius piscatorius*, a fish, common on both sides of the North Atlantic, which belongs to the family *Lophiidæ* and is usually called *goose-fish* or *fishing-frog.* It consists of a thin sheet of a violet or purple color, which floats on the surface of the sea and is often over a hundred square feet in area. It has been estimated that a single egg-mass may contain as many as 1,000,000 eggs, the product of a single fish. *National Geog. Mag.*, July, 1905, p. 337.

purpose, *n.* **10.** In *biol.*, the result which a structure tends to secure, without any reference to an intelligent agent.

> When we speak of *Purpose* in the structure of a plant, we mean in fact nothing more than that the form or other characters of the organ are adapted to its conditions of life, which may be at once inferred from the very survival of the plant in the struggle for existence. The terms *Purpose*, Adaptation, and Metamorphosis express therefore the same thing, and may be used as synonymous.
> *Sachs* (trans.), Botany, p. 836.

purpura, *n.*—**Henoch's purpura,** a disease marked by intestinal disturbances and a purpuric eruption on the skin.—**Purpura fulminans.** Same as *Henoch's* ★*purpura.*—**Purpura pulicosa,** an eruption of purpura-like spots following the bites of parasitic insects.—**Purpura variolosa,** hemorrhagic smallpox.

purpurase (pėr′pụ̄-rās), *n.* [L. *purpura*, purple, + *-ase.*] A ferment found in the purple gland of *Murex brandaris*, which produces the color in the purple fluid of the animal by its action upon a substance which is termed *purpurin.*

purpurate^1, *n.*—**Ammonium purpurate.** Same as *murexide.*

purpurin, *n.*—**Brilliant purpurin R** and **5R,** direct cotton coal-tar colors of the diazo type, derived from toluidine. They both dye unmordanted cotton red from an alkaline salt bath.—**Delta purpurin 5B** and **7B,** direct cotton coal-tar colors of the diazo type, similar to the diamine reds.

purpurite (pėr′pū-rīt), *n.* [L. *purpura*, purple, + *-ite*^{2}.] A hydrous manganic ferric phosphate ($(Mn,Fe)_2O_3.P_2O_5.H_2O$) occurring in small irregular masses of a purple or dark red color: found in Gaston County, North Carolina, and also in San Diego County, California, and elsewhere.

purpurogenous (pėr-pụ̄-roj′e-nus), *a.* [L. *purpura*, purple, + Gr. *-γενης*, -producing, + *-ous.*] Producing a purple color: noting especially the layer of epithelium in the eye from which comes the visual purple.

purpuroxanthin (pėr″pụ̄-rok-san′thin), *n.* Same as ★*xanthopurpurin.*

purse, *n.*—**To make a purse,** to make a collection of money or to collect a certain sum of money as a gift and mark of gratitude, etc.

> The passengers . . . urged by the precedent in such matters, . . . "*made a purse*" for him, and a presentation address. *Cutcliffe Hyne*, A Master of Fortune, xii.

Purser's dip (*naut.*), a small candle; a kind of candle served out in the navy by the paymaster's assistant, clerk, or yeoman.—**Purser's name,** a name assumed by a sailor when enlisting, so that his right name may not be known.—**Purser's pound,** a weight once used in the British navy, which allowed the purser one eighth for the natural waste or loss of perishable food, so that the sailor received but seven eighths of the quantity supplied by government.

purse-rat (pėrs′rat), *n.* The pocket-gopher, or pouched rat; a rodent of the genus *Geomys* or some allied genus.

purse-web (pėrs′web), *n.* A tubular purse-like web made by several of the spiders of the genus *Atypus.*—**Purse-web spider,** a spider of the genus *Atypus* which makes a purse-like web.

purslane, *n.*—**Winter purslane,** *Claytonia perfoliata*, a plant native to western North America, often grown in Europe, and occasionally in the United States, as a pot-herb. It is a tufted annual, with fleshy basal leaves and a scape bearing a cluster of small white flowers with a leaf-like cup beneath. It occasionally grows wild in the eastern States.

purslane-bug (pėrs′lān-bug), *n.* An American lygæid bug, *Geocoris bullatus*, found in the western United States, where it damages sugar-beets.

purslane-moth (pėrs′lān-môth), *n.* The adult of the purslane-worm.

purslane-sphinx (pėrs′lān-sfingks), *n.* A common American moth, *Deilephila lineata.* Also called *white-lined morning-sphinx.* See *morning-sphinx*, under *sphinx*, with cut.

purusha (pö′rọ̈-shä), *n.* [Skt. *púrusha*, man, person, universal principle.] Original man or the highest personal principle or universal soul.

purveyor, *n.* **4.** Formerly, an officer of the medical department of the United States army, whose duty was to purchase supplies. The office was abolished in 1892.

push^1, *v. t.* **7.** In *cricket*, to guide or force (the ball) away from the wicket with the bat, usually to the 'on' side.

push^1, *n.* **7.** In *cricket*, a stroke by which the ball is guided or forced away from the wicket, usually to the 'on' side.—**8.** A gang; a set of hoodlums; in thieves' English, a set of men associated for a special robbery; hence, a clique; a party: the Government House *push*; to be in with the *push.* *E. E. Morris*, Austral English.

> The Premier, in consultation with the inspector-general of the police, has made arrangements to protect life and property against the misconduct of the lawless larrikin '*pushes*' now terrorising Sydney.
> *Argus*, July 1, 1893, p. 10.

> There was general instructions for an execution, but I never knew I had such a dependable *push* of mountebanks aboard, he says.
> *R. Kipling*, The Bonds of Discipline, Traffics and Discoveries, p. 65.

push-ball (push′bâl), *n.* A game played with a very large inflated ball, usually some 6 feet in diameter and stoutly constructed, which two sides of varying numbers of men endeavor to push toward opposite goals.

push-bar (push′bär), *n.* A strut; a bar which transmits a thrust or pushing force. See ★*push-block.*

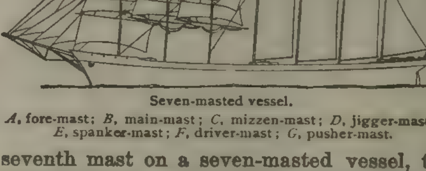
push-block (push′blok), *n.* In *car-building*, a metal plate fastened to the end-plate of a car at a corner. It has a recess in which the end of a push-bar may be inserted so that the car may be pushed by a locomotive on a parallel track: much used in switching and making up trains in railway-yards.

push-bolt (push′bōlt), *n.* A door-bolt that is moved by being pushed by hand instead of by a key.

push-cart (push′kärt), *n.* A light two-wheeled cart designed to be pushed by hand: used especially by street-venders of fruits and by other peddlers.

> It will be a misfortune if the discussion of the *pushcart* nuisance in New York is obscured by sentimental consideration for the people who elect to make their living in this way.
> *N. Y. Times*, July 25, 1903.

pusher, *n.* **4.** In *railroading*, an assisting locomotive placed behind a train to aid the train-engine in surmounting a steep grade. The use of a pusher over a short incline makes it possible to handle heavy trains with single engines over long levels above and below the incline.—**5.** A glove-like protection made of chamois-skin or soft leather to be slipped on over the toes and instep when wearing the shoes used in running and other athletic sports.—**6.** A small implement, usually of silver, used by a child, at table, to push its food upon a fork or spoon.—**7.** *Naut.*, the seventh mast on a seven-masted vessel, the masts being named in order as follows: fore-, main-, mizzen-, jigger-, spanker-, driver-, and pusher-mast.—**Pusher grade.** See ★*grade*^{1}.



Seven-masted vessel.

A, fore-mast; *B*, main-mast; *C*, mizzen-mast; *D*, jigger-mast; *E*, spanker-mast; *F*, driver-mast; *G*, pusher-mast.

pusher-mast (push′ėr-mȧst), *n.* On a seven-masted vessel, the seventh mast. See ★*pusher*, 7.

push-foot (pụsh′fụt), *n.* A foot, die, or anvil which is pushed upward or forward in a machine to meet the opposing punch, piston, or foot. Also used adjectively.

> The movement . . . was made by a *push-foot* connection from a three-throw crank shaft and the lifting and dropping of the feet by a smaller three-throw crank-shaft revolving in unison with the larger one.
> *Hiscox*, Horseless Vehicles, p. 37.

pushful (pụsh′ful), *a.* Full of push; active; energetic; enterprising: as, a *pushful* young man. [Colloq.]

pushing-bar (pụsh′ing-bär), *n.* Same as ★*push-bar.*

push-nipple (pụsh′nip″l), *n.* See ★*nipple.*

push-off (pụsh′ôf), *n.* In *push-ball*, the act of putting the ball into play by pushing it: analogous to the kick-off in foot-ball. The team having the push-off may either line up against the ball or, going back not more than 15 yards, make a flying rush at it.

push-pole (pụsh′pōl), *n.* A pole or rod used in pushing cars in a drill-yard. When used it is placed diagonally between a drill-engine on one track and a car on a parallel track.—**Push-pole car.** See ★*car*^{1}.—**Push-pole plate,** a casting on the corner of a car, which has a thimble for supporting the end of a push-pole. See ★*push-block.*

push-rod (pụsh′rod), *n.* In a freight-car air-brake, the rod which connects the piston-rod of the air-cylinder with the brake-setting mechanism.

push-up (pụsh′up), *n.* That part of a tile-press which raises the die to the plunger. See ★*tile-press.*

pussy-toes (pụs′i-tōz), *n.* Same as ★*dog-toes.*

pustulant (pus′tụ̄-lạnt), *a.* and *n.* [L. *pustulans*, ppr. of *pustulare*, blister. See *pustulate.*]
I. *a.* Causing the formation of pustules.
II. *n.* An irritant application causing pustulation. *Buck*, Med. Handbook, III. 304.

pustulated (pus′tụ̄-lā-ted), *p. a.* Covered with pustules.

pustule, *n.* **2.** (*b*) One of the swellings produced in the leaves and stems of plants by *Cystopus, Synchytrium,* and other fungi.

put^1, *v.* I. *trans.*—**Putting-out machine,** a machine for stretching skins. *C. T. Davis*, Manuf. of Leather, p. 356. See *to put out* (*c*), under *put*^{1}, *v. i.*—**To put in.** (*e*) To pass (as time).

> I heard her tell Bertha Dorset that she had six months *to put in* while her husband was taking the cure in the Engadine. *E. Wharton*, The House of Mirth, i. 4.

II. *intrans.*—**To put up.** (*e*) To develop or grow, as the antlers of a deer.

putcheky (puch′ẹ̄-ki), *a.* [Origin obscure.] Touchy; fussy; irritable. [Rare: New England.]

> An' I won't hev you answerin' so *putcheky*. You've been *putcheky* ever sence th' surprise party at th' Church last week. I guess surprise parties don't agree with you.
> *McClure's Mag.*, Feb., 1903, p. 385.

puthi (pö′tẹ̄), *n.* [Assamese?] An ancient manuscript or writing on bark preserved among certain tribes of India, such as the Ahoms of Assam. *Keane*, Man Past and Present, p. 200.

puting (pö′ting), *n.* [Chamorro *puting*, Philippine *botong*, Fijian *vutu*, Samoan *futu.*] On the island of Guam, a strand-tree, *Barringtonia speciosa*, having a four-cornered pyramidal fruit which is used as a fish-intoxicant. See ★*botong*, with cut.

put-out (pụt′out), *n.* The act of retiring the batsman or the runner in games like base-ball and cricket. Each put-out is credited in the score to the player who retires the man.

putresce (pụ̄-tres′), *v. i.*; pret. and pp. *putresced*, ppr. *putrescing.* [L. *putrescere.* See *putrescent.*] To begin to putrefy; exhibit putrescence.

putrescin (pụ̄-tres′in), *n.* [*putresc*(*ent*) + *-in*^{2}.] A ptomaine, tetramethylene diamine, $C_4H_{12}N_2$. It has been found in the urine in cases of cystinuria, where it is apparently formed in the tissues, and not as the result of bacterial activity. It is derived from ornithin, and thus from arginin. Originally found in putrefying cadavers.

putrilage (pū′tri-lạ̄j), *n.* [LL. *putrilago*, rottenness, decay, < *putris*, rotten.] The slough from an ulcer or ill-conditioned wound.

puttee (put′ẹ̄), *n.* [Also *putty*; Hind. *paṭṭī.*] A strip of woolen or other fabric, sometimes waterproofed, four inches wide and three yards long, with a tape at one end, designed to be wound spirally around the leg, from the ankle nearly to the knee. It forms an efficient protection to sportsmen and soldiers. See the extract.

> The British troops in Asia use *putties.* These are long bandages extending from the ankle to above the calf, applied as the ordinary spiral roller. The men soon learn to adjust them neatly and securely, so that they do not require re-arrangement on the march, and they seem to serve their nominal purpose much better than the leggings, and as additional articles of uniform they are more portable and are more easily cleaned. The mounted troops use them equally with the infantry.
> *Buck*, Med. Handbook, V. 796.

putting-cleek (put′ing-klēk), *n.* A club with an iron head, slightly lofted: used for putting.

putty^1, *n.* **6.** A composition golf-ball, no longer in use.

putty^2, *n.* Same as ★*puttee.*

putty-joint (put′i-joint), *n.* See ★*joint.*

putz (pöts), *n.* [G. *putz*, adornment, ornament, < *putzen*, earlier *butzen*, clean, scour, polish, decorate.] Among the Moravians, a Christmas decoration. Its essential is an evergreen tree, representing the tree of life. It is laden with nuts and fruit. See the extract.

> Only the chosen few can afford to have a really impressive "*putz*" which fills half a room, and represents a landscape in miniature, running brooks and ponds of real water, wild animals roaming on the hillsides, sawmills and railroad trains run by electricity, to show that the religion of Christ is for all men and all ages. This more elaborate "*putz*" requires not only money for its erection, but artistic handiwork. *N. Y. Times*, Dec. 14, 1902.

puy^2, *n.* **2.** In *geol.*, applied to a type of volcanic activity described by A. Geikie as occurring among the Carboniferous volcanics of Great Britain, and characterized by the ejection of small amounts of lava, usually of the basaltic type, and cinders from a single independent vent. Typical puys are seen in the ancient volcanic cones of central France.

puzzle, *n.*—**Indian puzzle,** a device which resembles a glove-finger, made of woven split-wicker. When it is passed over the finger it cannot be removed by pulling the tip, for this only tightens its grasp on the finger.

puzzle-box (puz′l-boks), *n.* In *comp. psychol.*, a box or pen in which animals are confined for experimental purposes, and from which they may release themselves by clawing a string, pressing a lever, etc.

> The dropping off of useless movements is further illustrated in those experiments where animals are required to work some kind of mechanism. This may be called briefly the *puzzle-box* method.
> *M. F. Washburn*, The Animal Mind, p. 232.

puzzle-mug (puz′l-mug), *n.* A drinking-vessel of pottery, with perforated sides and several hollow knobs or little spouts around the rim. A tube extends from one of these knobs to the bottom of the interior, and the liquid contents can be drunk without spilling only by drawing the liquid up through the open tube, after closing with the finger an air-hole in the under side of the handle.

Puzzle-mug. Pennsylvania-German Pottery, dated 1809.
(In the Pennsylvania Museum, Philadelphia.)

> Another of Mr. Haig's workmen makes a specialty of "*puzzle mugs,*" on the principle of those made at Brampton, England, in the last century, which are almost identical in form to some produced by John Wedgwood as early as 1691, of which an interesting example may be seen in the Museum of Practical Geology, London.
> *E. A. Barber*, Pottery and Porcelain of the U. S., p. 117.

p. v. [*l. c.* or *cap.*] An abbreviation of *post-village.*

pvt. A contraction of *private.*

P. W. D. An abbreviation of *Public Works Department.*

P. W. P. An abbreviation of *Past Worthy Patriarch.*

pwt. [*l. c.* or *cap.*] A contraction of *pennyweight.*

Pyanepsion (pī-ạ-nep′si-on), *n.* [Gr. Πυανεψιών, < Πυανέψια, a festival in honor of Apollo.] The fourth month of the Athenian calendar, corresponding to the last of October and the first of November. The feast of the Pyanepsia was held in this month.

pycnaster, *n.* **1.** It is a polyaxial ball-shaped element, with the rays represented by thorn-like processes on the surface.
2. [*cap.*] In the *Echinodermata*, a genus of phanerozoan starfishes found in the Upper Cretaceous formation of England.

pycnial (pik′ni-ạl), *a.* [*pycni*(*um*) + *-al*^{1}.] Of or pertaining to a pycnium.

pycniospore (pik′ni-ọ̄-spōr), *n.* [NL. *pycnium* + Gr. σπορά, seed (spore).] A spore borne in a pycnium.

pycnium (pik′ni-um), *n.*; pl. *pycnia* (-ạ̈). [NL., < Gr. πυκνός, dense, compact.] A term proposed by Arthur for the sorus of the spermogonial stage of uredineal fungi.

pycnogonid (pik-nọ̄-gon′id), *n.* Any one of the *Pycnogonida.*

pycnomorphic (pik-nọ̄-môr′fik), *a.* [Gr. πυκνός, dense, + μορφή, form, + *-ic.*] Containing much, or densely packed, deeply staining substance, such as chromatin: said of certain cells or cell-nuclei.

pycnomorphous (pik-nọ̄-môr′fus), *a.* Same as ★*pycnomorphic.*

> In some cells the chromatic elements are closely packed and the cell consequently takes a dense stain; these he [Nissl] describes as in the *pyknomorphous* condition.
> *Jour. Exper. Med.*, Oct. 1, 1901, p. 553.

pycnosis (pik-nō′sis), *n.* [NL., < Gr. πύκνωσις, condensation, < πυκνοῦν, condense, < πυκνός, dense.] **1.** A condition in which the nucleus of a cell stains more deeply than usual: usually a precursor of necrosis.—**2.** Thickening of a fluid or semisolid substance.

pycnotic (pik-not′ik), *a.* [Gr. πυκνωτικός, < *πυκνωτός, < πυκνοῦν, condense.] Same as ★*pycnomorphic. Vaughan and Novy*, Cellular Toxins, p. 143.

pyelonephrosis (pī″e-lọ̄-nef-rō′sis), *n.* [NL., < Gr. πύελος, trough, + νεφρός, kidney, + *-osis.*] Same as *surgical kidney* (which see, under *kidney*).

pyelotomy (pī-e-lot′ọ̄-mi), *n.* [Gr. πύελος, a trough, + -τομια, < ταμεῖν, cut.] In *surg.*, incision into the pelvis of the kidney.

pyemesis (pī-em′e-sis), *n.* [NL., < Gr. πύον, pus, + ἔμεσις, vomiting.] The vomiting of matter which contains pus.

pygarg, *n.* **3.** A book name of the European hen-harrier, *Circus pygargus*: an Englishing of the specific name.

pygomelian (pī-gọ̄-mē′li-an), *a.* and *n.* [*pygomel*(*us*) + *-ian.*] I. *a.* Relating to or resembling a pygomelus; having an extra leg, or extra legs, projecting from the rump between the other and normal pair.
II. *n.* A pygomelus. *W. Bateson*, Study of Variation, p. 379.

pygomelus (pī-gom′e-lus), *n.*; pl. *pygomeli* (-lī). [NL., < Gr. πυγή, rump, + μέλος, limb.] In *teratol.*, a monster having a supernumerary leg, or legs, projecting from the rump between the others. This abnormality occurs frequently among domesticated fowls.

pygopodine (pī-gop′ọ̄-din), *a.* [*pygopod* + *-ine*^{1}.] Pertaining to, or having the characters of, the *Pygopodes*, or diving birds. *Amer. Nat.*, Jan., 1904, p. 13.

pygostylous (pī-gọ̄-stī′lus), *a.* [*pygostyle* + *-ous.*] Resembling or pertaining to a pygostyle, the terminal portion of a bird's vertebral column. [Rare.]

> The last three or four elements of this part of the vertebral chain coössified together in the adult, forming a flat, horizontally compressed, *pygostylous* mass.
> *Amer. Nat.*, Jan., 1903, p. 61.

Pygurus (pī-gū′rus), *n.* [NL., < Gr. πυγή, rump, + οὐρά, tail.] A genus of spatangoid echinoids with rounded or cordate, convex dorsal surface, found in Upper Jurassic and Cretaceous rocks.

pyin (pī′in), *n.* [Gr. πύον, pus, + *-in*^{2}.] An albuminous mucin-like material found in pus: probably not a unity.

pyknomorphic, *a.* See ★*pycnomorphic.*

pyknosis, *n.* See ★*pycnosis.*

pyknotic, *a.* See ★*pycnotic.*

pyla, *n.* **2.** A perforation in the capsule membrane of a radiolarian.

pylocyte (pī′lọ̄-sīt), *n.* [Gr. πύλη, gate, + κύτος, a hollow, a vessel.] In some sponges, a porocyte in which the pore is situated at the inner end of a funnel-like depression.

Pyloric appendages. Same as *pyloric cæca* (*a*) (which see, under *pyloric*).—**Pyloric insufficiency.** See ★*insufficiency.*—**Pyloric valvule,** in *entom.*, an enlargement of the intestine which marks the boundary between the mid-intestine and the hind intestine.

pylorodiosis (pī-lō″rọ̄-dī-ō′sis), *n.* [NL., < Gr. πυλωρός, pylorus, + δίωσις, pushing asunder.] In *surg.*, an operation for dilatation of a contracted pylorus.

pyloroplasty (pī-lō'rọ-plas-ti), *n.* [Gr. *πυλωρός*, pylorus, + *πλαστος*, < *πλάσσειν*, form, + -*y*^{3}.] Plastic surgery in relation to the pylorus, with the object of repairing a defect of this opening or of enlarging it when contracted.

> With this idea in mind, Dr. Finney said he had devised an operation, known as *pyloroplasty*. He had been able to collect twenty-nine cases operated upon by this method, with a mortality of 6.8 per cent.
> *Med. Record*, March 7, 1903, p. 397.

pyloroptosis (pī″lō-rop-tō'sis), *n.* [NL., < Gr. *πυλωρός*, pylorus, + *πτῶσις*, falling.] Displacement of the pyloric extremity of the stomach.

> If the pyloric portion only [of the stomach] be displaced, the lesion is termed *pyloroptosis*.
> *Encyc. Brit.*, XXXI. 550.

pylorospasm (pī-lō'rọ-spazm), *n.* [NL. *pylorus* + E. *spasm*.] Spasmodic contraction of the pylorus. *Amer. Jour. Clin. Med.*, Oct., 1907, p. 1203.

pylorostenosis (pī-lō″rọ-stẹ-nō'sis), *n.* [NL., < Gr. *πυλωρος*, pylorus, + *στένωσις*, narrowing.] The more correct form of *pyloristenosis*.

pyococcus (pī-ọ-kok'us), *n.*; pl. *pyococci* (-sī). [Gr. *πύον*, pus, + *κόκκος*, berry, kernel.] Any of the pyogenic cocci.

> Undoubtedly the lesions are caused by microorganisms; there is the strongest evidence that these are the *pyococci*, and not, except rarely, the typhoid bacilli.
> *Med. Record*, July 25, 1903, p. 131.

pyocyanase (pī-ọ-sī'a̤-nās), *n.* [Gr. *πύον*, pus, + *κύανος*, blue, + -*ase*.] See the extract.

> The gratifying results obtained by von Emmerich in the treatment of diphtheria by means of *pyocyanase*, a product formed in cultures of the Bacillus pyocyaneus, have been corroborated by several other observers, who have stated that the local application of the agent to the diseased surfaces was followed by the disappearance of the membrane. *Med. Record*, April 25, 1908, p. 693.

pyocyanic (pī″ō-sī-an'ik), *a.* [Gr. *πύον*, pus, + *κύανος*, blue.] Producing blue pus.

> A virulent *pyocyanic* bacillus was isolated from the ice at the summit, and an exceedingly pure water taken near the Montanvert showed twelve colonies of a virulent Bacterium coli per cc. *Nature*, March 27, 1902, p. 504.

pyocyanin (pī-ọ-sī'a̤-nin), *n.* [NL. *pyocyaneus* (see def.) + -*in*^{2}.] A blue pigment produced by the *Bacillus pyocyaneus*. It is soluble in chloroform.

pyocyanolysin (pī″ọ-sī-a̤-nol'i-sin), *n.* [NL. *pyocyan*(*eus*) (see def.) + E. *lysin*.] A lysin directed against the *Bacillus pyocyaneus*.

pyocyte (pī'ọ-sīt), *n.* [Gr. *πύον*, pus, + *κύτος*, a hollow (a cell).] A pus-corpuscle; a body which resembles a lymphocyte or white blood-corpuscle, found in pus.

pyodermia (pī-ọ-dėr'mi-a̤), *n.* [NL., < Gr. *πύον*, pus, + *δέρμα*, skin.] Any disease of the skin which has suppurative lesions. *Buck*, Med. Handbook, III. 707.

pyodermic (pī-ọ-dėr'mik), *a.* [*pyodermia* + -*ic*.] Relating to or affected with pyodermia, or a suppurative skin-disease. *Buck*, Med. Handbook, III. 707.

pyogenin (pī-oj'e-nin), *n.* [Gr. *πύον*, pus, + -*γενης*, -producing, + -*in*^{2}.] A substance of the order of the cerebrosides, found in pus.

pyohæmia (pī-ọ-hē'mi-a̤), *n.* An improper form for *pyemia*.

pyoktanin (pī-ok'ta̤-nin), *n.* [Gr. *πύον*, pus, and -*κτανος*, < *κτείνειν*, kill.] A trade-name for each of two different substances used in the treatment of diseases of the eye, ear, nose, and throat, and as antiseptic and disinfectant applications to ulcers, burns, inflamed wounds, etc. *Blue pyoktanin* is the hydrochlorate of penta- and hexamethyl-pararosaniline, and is also used as a dyestuff under the names *methyl-violet*, *dahlia violet*, and *Paris violet*. *Yellow pyoktanin* is the hydrochlorate of imido-tetramethyl-diamido-diphenyl-methane, is less active than the other, and is known as *auramine* when used as a dye.

pyometritis (pī″ọ-mẹ-trī'tis), *n.* [NL., < Gr. *πύον*, pus, + NL. *metritis*.] Suppurative inflammation of the womb.

pyoperitoneum (pī-ọ-per″i-tọ-nē'um), *n.* [NL., < Gr. *πύον*, pus, + NL. *peritoneum*.] The presence of pus in the peritoneal cavity.

pyoplania (pī-ọ-plā'ni-a̤), *n.* [NL., < Gr. *πύον*, pus, + *πλάνος*, wandering.] Wandering of pus from one part of the body to another, as in the formation of a cold abscess.

pyopneumopericardium (pī-ọ-nū-mọ-per-i-kär'di-um), *n.* [NL., < Gr. *πύον*, pus, + *πνεῦμα*, air, + NL. *pericardium*.] The presence of pus and gas in the pericardial sac.

pyopoëtic (pī″ọ-pọ-et'ik), *a.* Same as ★*pyopoietic*.

pyopoietic (pī″ọ-poi-et'ik), *a.* [Gr. *πύον*, pus, + *ποιητικός*, < *ποιεῖν*, make.] Suppurating; pus-producing.

pyorrhagia (pī-ọ-rā'ji-a̤), *n.* [NL., < Gr. *πύον*, pus, + -*ραγια*, < *ῥηγνύναι*, break.] A sudden gush of pus from a confined space, as an abscess.

pyosepticemia (pī-ọ-sep-ti-sē'mi-a̤), *n.* [NL., < Gr. *πύον*, pus, + NL. *septicæmia*, septicemia.] Combined septicemia and pyemia.

pyosepticemic (pī-ọ-sep-ti-sē'mik), *a.* [*pyosepticem*(*ia*) + -*ic*.] Pertaining to or affected with pyosepticemia. *Buck*, Med. Handbook, VII. 123.

pyosin (pī'ọ-sin), *n.* [Gr. *πύον*, pus, + -*ose* + -*in*^{2}.] A substance, found in pus, which probably belongs to the so-called cerebrosides.

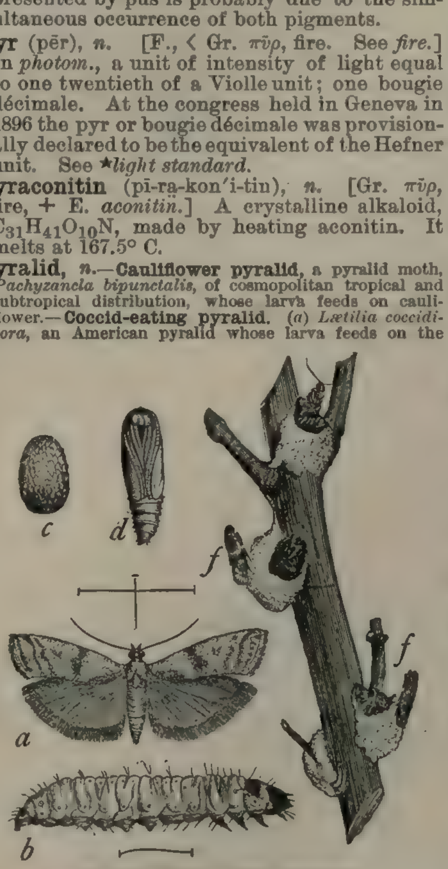
pyotoxinemia (pī-ọ-tok-si-nē'mi-a̤), *n.* [NL., < Gr. *πύον*, pus, + E. *toxin* + Gr. *αἷμα*, blood.] The presence in the blood of toxins formed by pus-producing microbes.

pyoxanthose (pī-ok-san'thōs), *n.* [Gr. *πύον*, pus, + *ξανθός*, yellow, + -*ose*.] A yellow pigment, producible from pyocyanin by exposure to light and air. The green color sometimes presented by pus is probably due to the simultaneous occurrence of both pigments.

pyr (pēr), *n.* [F., < Gr. *πῦρ*, fire. See *fire*.] In *photom.*, a unit of intensity of light equal to one twentieth of a Violle unit; one bougie décimale. At the congress held in Geneva in 1896 the pyr or bougie décimale was provisionally declared to be the equivalent of the Hefner unit. See ★*light standard*.

pyraconitin (pī-ra̤-kon'i-tin), *n.* [Gr. *πῦρ*, fire, + E. *aconitin*.] A crystalline alkaloid, $C_{31}H_{41}O_{10}N$, made by heating aconitin. It melts at 167.5° C.

pyralid, *n.*—**Cauliflower pyralid**, a pyralid moth, *Pachyzancla bipunctalis*, of cosmopolitan tropical and subtropical distribution, whose larva feeds on cauliflower.—**Coccid-eating pyralid.** (*a*) *Lætilia coccidivora*, an American pyralid whose larva feeds on the cottony maple-scale, *Pulvinaria innumerabilis*. (*b*) A European species, *Erastria scitula*, introduced into California, whose larva preys on the black scale, *Lecanium oleæ*.



Coccid-eating Pyralid (*Lætilia coccidivora*).
a, moth; *b*, larva; *c*, egg; *d*, pupa; *f*, *f*, moths, natural size, resting on egg-sacs of *Pulvinaria*. *a*, about twice natural size; *b*, *d*, more enlarged; *c*, highly magnified.
(Comstock, U. S. D. A.)

Pyrameis (pir-a̤-mē'is), *n.* [NL. (Huebner, 1816), appar. < Gr. *πυραμίς*, pyramid.] A large and wide-spread genus of butterflies of the family *Nymphalidæ*. It occurs in most parts of the world, and is represented in the United States by four species, of which *P. cardui* is a cosmopolitan form and is well known in England as the *painted-lady* (which see, with cut) and in the United States as the *thistle-butterfly*. Synonymous with *Vanessa*.

pyramid, *n.* **3.** In *crystal.*, limited by many authors to a form corresponding in shape to a pyramid as geometrically defined: thus a square pyramid (tetragonal system) would have but four triangular faces and similarly in other cases; the double pyramid is then called a *bipyramid*.

4. (*b*) One of the five large pieces in the dental apparatus of some echinoids.—**8.** A game of pool begun by arranging in a triangle 15 balls, which the various players in turn endeavor to pocket with a single cue-ball. Customarily each ball pocketed counts 1, and the player continues as long as he makes at each stroke and does not pocket the cue-ball.—**9.** A variety of checkers in which the pieces are arranged in the form of a pyramid.—**Apex of a pyramid**, the summit that is not on the base.—**Heronic pyramid**, a pyramid on a Heronic triangle, cyclic quadrilateral, or cyclic polygon as base, with rational lateral edges and volume. Such pyramids have a rational circumradius.—**Lateral edges of a pyramid**, those edges which meet at the apex.—**Lateral faces of a pyramid**, those faces which meet at the apex.—**Lateral surface of a pyramid**, the sum of the lateral faces.—**Pyramid of Lalouette**, the thyroid pyramid; an occasional conical lobe of the thyroid gland.—**Regular pyramid**, a pyramid whose base is a regular polygon and whose lateral faces are isosceles triangles.—**Seger's pyramids.** Same as *Seger's* ★*cones*.—**Truncated pyramid.** See *truncate*.

pyramid (pir'a̤-mid), *v. i.* In stock-dealings on margin, to speculate or continue to speculate on one's profits, that is, to use the profit made on one transaction as margin on a second and the profit on that (if any) as margin on a third, etc.

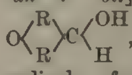
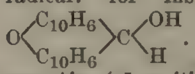
pyramidal, *a.* **3.** In *anat.*, noting a muscle whose fibers arise from a long base and converge to the point of their insertion: correlative with ★*prismatic*, 3, and ★*rhomboidal*, 2.—**Pyramidal cell.** See ★*cell*.—**Pyramidal class**, in *crystal.* See ★*symmetry*, 6.—**Pyramidal composition**, in the *fine arts*, a composition in which the central features or masses dominate the lateral in such a way as to bring the whole into resemblance to a pyramid.—**Pyramidal railroad.** See ★*railroad*.

pyramidize (pir'a̤-mid-īz), *v. t.*; pret. and pp. *pyramidized*, ppr. *pyramidizing*. [*pyramid* + -*ize*.] To make into a pyramid.

pyramidocephalic (pi-ram″i-dō-se-fal'ik), *a.* [Gr. *πυραμίς* (-*μιδ*-), pyramid, + *κεφαλή*, head, + -*ic*.] In *craniom.*, having a dolichocephalic skull, with carinated and pyramidal calvaria, and lozenge-shaped face, broadest below the orbits. *Aitken Meigs.*

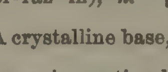
pyramidone (pi-ram'i-dōn), *n.* [(*anti*)*pyr*(*in*) + *amide* + -*one*.] The dimethylamino derivative of antipyrin, $C_{11}H_{11}ON_2.N(CH_3)_2$.

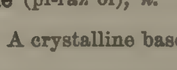
pyramid-spot (pir'a̤-mid-spot), *n.* In *Eng. pool*, a spot between the billiard or red-ball spot and the center spot; in American pool, the billiard spot itself. *W. Broadfoot*, Billiards, p. 74.

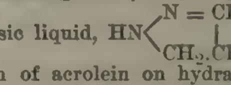
pyranol (pir'a̤-nol), *n.* [Gr. *πῦρ*, fire, + -*an* + -*ol*.] A compound of the type  $\mathrm{O}\langle\begin{smallmatrix}\mathrm{R}\\ \mathrm{R}\end{smallmatrix}\rangle\mathrm{C}\langle\begin{smallmatrix}\mathrm{OH}\\ \mathrm{H}\end{smallmatrix}$, where R indicates a bivalent radical: for instance, dinaphthopyranol,  $\mathrm{O}\langle\begin{smallmatrix}\mathrm{C_{10}H_6}\\ \mathrm{C_{10}H_6}\end{smallmatrix}\rangle\mathrm{C}\langle\begin{smallmatrix}\mathrm{OH}\\ \mathrm{H}\end{smallmatrix}$.

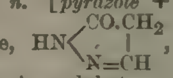
pyrantin (pī-ran'tin), *n.* Same as ★*phenosuccin*.

pyrarenyte (pī-rä'ren-īt), *n.* [Gr. *πῦρ*, fire, + L. *arena*, sand, + -*yte* (-*ite*).] A rock of the texture of sandstone, produced by igneous agencies and composed of coarse volcanic tuff. *Amer. Geol.*, April, 1904, p. 246.

pyrazin (pī-raz'in), *n.* [Gr. *πύρ*, fire, + E. *azin*.] A crystalline base,  $\begin{array}{c}\mathrm{CH{-}N{-}CH}\\ \|\quad|\quad\|\\ \mathrm{CH{-}N{-}CH}\end{array}$, made by distilling aminoacetic aldehyde with mercuric chlorid solution and in other ways. It has the odor of heliotrope and melts at 55° C. In general the name is applied to the substitution-products of pyrazin. Also called *piazin* and *paradiazin*. See ★*azin*.

pyrazole (pī-raz'ōl), *n.* [Gr. *πῦρ*, fire, + E. *azole*.] A crystalline base,  $\mathrm{HC}\langle\begin{array}{l}\mathrm{NH.N}\\ \qquad\ \|\\ \mathrm{CH.CH}\end{array}$, made by heating pyrazole di- or tricarbonic acid. It melts at 70° C.

pyrazoline (pī-raz'ọ-lin), *n.* [*pyrazole* + -*in*^{2}.] A basic liquid,  $\mathrm{HN}\langle\begin{array}{l}\mathrm{N=CH}\\ \qquad|\\ \mathrm{CH_2.CH_2}\end{array}$, made by the action of acrolein on hydrazine in ethereal solution. It boils at 144° C.

pyrazolone (pī-raz'ọ-lōn), *n.* [*pyrazole* + -*one*.] A crystalline base,  $\mathrm{HN}\langle\begin{array}{l}\mathrm{CO.CH_2}\\ \qquad|\\ \mathrm{N=CH}\end{array}$, made by the action of hydrazine sulphate on sodium-formyl-acetic ester. It melts at 165° C. Its most important derivative is antipyrin, which is 1-phenyl-2,3-dimethyl-pyrazolone.

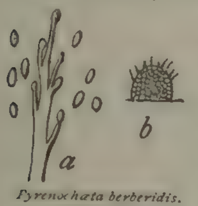
pyrenemia (pī-rẹ-nē'mi-a̤), *n.* [NL., < Gr. *πυρήν*, the stone of a fruit, + *αἷμα*, blood.] The presence of nucleated red corpuscles in the blood.

pyrenic (pī-ren'ik), *a.* [*pyrene* + -*ic*.] Derived from pyrene.—**Pyrenic acid**, a yellow crystalline acid, $C_{15}H_8O_3$, made by oxidizing pyrene with chromic acid. It turns black when heated above 250° C.

Pyrenidiaceæ (pī-rẹ-nid-i-ā´sẹ-ē), *n. pl.* [NL., < *Pyrenidium* + *-aceæ.*] A small family of pyrenolichens: so named from the genus *Pyrenidium.*

Pyrenidium (pī-rẹ-nid´i-um), *n.* [NL. (Nylander, 1865), < Gr. πυρήν, the stone of a fruit, + dim. -ιδιον.] A monotypic genus of lichens having a small crustaceous thallus bearing small perithecia with four-spored asci. The species, *P. actinellum,* occurs on chalk rocks in England.

Pyrenochæta (pī-rē-nọ-kē´tạ̈), *n.* [NL. (De Notaris, 1849), < Gr. πυρήν, the stone of a fruit, + χαίτη, mane (bristle).] A genus of sphæropsidaceous fungi. They have globose or pyriform black pycnidia provided with setæ about the upper part. The spores are simple and usually hyaline. About 30 species have been described. *P. Berberidis* is a common species on *Berberis* in Europe.



Pyrenochæta berberidis.
a, pycnidium strongly magnified; *b*, pycnidia slightly magnified.

pyrenoid, *n.* **2.** One of the colorless plastids, or leucoplasts, found in the chromatophores of algæ and constituting centers for the formation of starch. *Schmitz,* 1883.

pyrenolichen (pī-rē-nọ-lī´ken), *n.* [NL. *pyrenolichen* (singular).] A member of the *Pyrenolichenes* (which see).

pyrenoline (pī-ren´ọ-lin), *n.* [(*amino*)*pyrene* + *-ol* + *-ine*².] A golden-yellow crystalline base, $C_{19}H_{11}N$, made by heating a mixture of aminopyrene, glycerol, nitrobenzene, and concentrated sulphuric acid. It melts at 152–153° C. Its dilute solutions have a green fluorescence.

pyrenolysis (pī-rẹ-nol´i-sis), *n.* [Gr. πυρήν, the stone of a fruit, + λύσις, breaking up.] In *cytol.,* the breaking down, fragmentation, or pulverization of the nucleoli to form granules which may escape from the nucleus into the cytoplasm of the cell.

> L. Launoy describes in the mid-gut gland of Eupagurus bernhardus the division of the nucleolus without subsequent nuclear division; the pulverisation of one or more of the nucleoli; the passage into the karyoplasm of internucleolar granulations or the dissolution of these in the fundamental acidophilous substance of the nucleolus—a process which he sums up in the term *pyrenolysis.*
> *Jour. Roy. Micros. Soc.,* April, 1903, p. 178.

Pyrenomycetineæ (pī-rē-nọ-mī-sẹ-tin´ẹ-ē), *n. pl.* [NL., < *Pyrenomycetes* + *-ineæ.*] A name applied by some recent authors to the fungi of the suborder *Pyrenomycetes.*

pyrenosoma (pī-rē-nọ-sō´mạ̈), *n.*; pl. *pyrenosomata* (-mạ-tạ̈). [NL., < Gr. πυρήν, the stone of a fruit, + σῶμα, body.] Same as ⋆*plasmosome.*

pyrenosome (pī-rē´nọ-sōm), *n.* Same as ⋆*plasmosome.*

Pyrenula (pī-ren´ụ-lạ̈), *n.* [NL. (Acharius, 1810), < Gr. πυρήν, the stone of a fruit, + dim. *-ula.*] A genus of pyrenolichens which have a crustaceous thallus and simple black perithecia. The spores are usually ellipsoid, brown, and 2- to 6-celled. About 100 species are known, occurring on the bark of trees. *P. nitida* is a cosmopolitan species.

Pyrenulaceæ (pī-ren-ụ-lā´sẹ-ē), *n. pl.* [NL., < *Pyrenula* + *-aceæ.*] A family of pyrenolichens named from the genus ⋆*Pyrenula.*

pyrethric (pī-reth´rik), *a.* [*Pyrethr*(*um*) + *-ic.*] Noting an acid obtained by the hydrolysis of pyrethrin.

pyrethrin (pir´e-thrin), *n.* [*Pyrethr*(*um*) + *-in*².] A resinous compound found in pellitory resin from the root of *Anacyclus Pyrethrum.*

Pyrethrum camphor. Same as ⋆*pyrethrin.*

pyretogenetic (pir″e-tọ-jẹ-net´ik), *a.* Same as ⋆*pyretogenic.*

pyretogenic (pir″e-tọ-jen´ik), *a.* [Gr. πυρετός, fever, + -γενης, -producing, + *-ic.*] Causing fever.

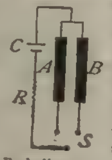
pyretogenous (pir-e-toj´e-nus), *a.* Same as ⋆*pyretogenic.*

pyretography (pir-e-tog´rạ-fi), *n.* [Gr. πυρετός, fever, + -γραφια, < γράφειν, write.] A description of or treatise on fevers.

pyrgoides (pėr-goi´dēz), *n.* [Gr. πυργοειδής, like a tower, < πύργος, a tower, + εἶδος, form.] In *anthrop.,* a cranium with high, steep occiput resembling the wall of a tower. *G. Sergi* (trans.), Var. of the Human Species, p. 56.

pyrgom (pėr´gom), *n.* [G. *pyrgom* (Breithaupt, 1830), < Gr. πύργωμα, a towered place, < πυργοῦν, fence with towers, < πύργος, a tower.] Same as *fassaite.*

pyrheliometer, *n.* In the earlier forms given to this instrument, such as that of Pouillet (see *pyrheliometer*), the heat of the sun's rays was determined by the rise of temperature of water or mercury contained in a vessel which exposed to sunlight a known area of surface. In modern practice electrical methods have been employed which are of far greater sensitiveness, accuracy, and convenience. The compensated pyrheliometer of Ångström, which belongs to the latter class of instruments, consists of two very thin metal strips (AB) of equal size, mounted a few millimeters apart. The strips are blackened on the face which is to be exposed to radiation. To the back of the strips are attached the two junctions of a thermo-element, in circuit with which is a delicate galvanometer by means of which their temperatures may be compared. If one of the strips, as A, is exposed to radiation while the other is screened, the rise in temperature of the former will produce an electric current in the circuit containing thermo-junctions and cause a deflection of the galvanometer. If, now, current from a battery, C, is sent through the shaded strip, this also will be heated and by adjustment of a variable resistance, R, the heating effect of the current in B may be made precisely to counterbalance the heating effect of radiation in A. When the current from the battery is just sufficient for this purpose the galvanometer deflection is reduced to zero. If *i* is the intensity current necessary to produce a balance, *r* the resistance of the strip through which it flows per centimeter of length, *b* its width, and *a* the absorbing power of the surface, the intensity of the radiation upon the exposed strip will be given by the equation



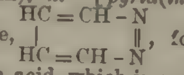
Pyrheliometer.

$$q = \frac{i^2 r}{4.19.ab.} \text{ cal. per sec. per } \overline{\text{cm}}^2.$$

The temperature of the two strips being the same, the losses by radiation, convection, and conductivity are equal and these troublesome corrections are avoided. Because of the small thermal capacity of the instrument its final temperature is reached in a few seconds. The metal of the strips is usually platinum, but manganin, for which the coefficient of resistance with temperature is very small, is to be preferred. The frame which carries the strips is mounted in a tube which likewise contains the screen for protecting the unexposed strip. This screen can be shifted so as to expose first one and then the other strip to the sun's rays. By means of the switch *S* the compensating current can be sent through either strip at will.

pyric (pī´rik), *a.* [*pyr*(*oxene*) + *-ic.*] In *petrog.,* in the quantitative system of classification of igneous rocks (see ⋆*rock*¹), having the characters of or containing normative pyroxene.

pyridazin (pir-i-daz´in), *n.* [*pyrid*(*ine*) + *-azin.*] An oily base,



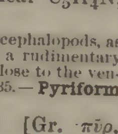
$$\begin{array}{l} HC = CH - N \\ | \qquad\qquad\quad \| \\ HC = CH - N \end{array}$$

formed from its tetracarbonic acid, which is made by oxidizing dibenzorthodiazin. It boils at 208° C. and has the odor of pyridine. Also called *orthodiazin.*

pyridyl (pir´i-dil), *n.* The radical C_5H_4N, which is derived from pyridine.

pyriform, *a.*—**Pyriform sac,** in some cephalopods, as *Nautilus,* a vestigial structure, probably a rudimentary seminal vesicle, situated on the left side close to the ventricle. *Parker and Haswell,* Zoology, I. 735.—**Pyriform sinus.** See ⋆*sinus.*

pyrimidine (pī-rim´i-din), *n.* [Gr. πῦρ, fire (?) + *imide* + *-ine*².] An organic compound, composed of carbon, hydrogen, and nitrogen, so arranged that the carbon and nitrogen atoms form a ring or chain, as shown in the formula



$$\begin{array}{ccc} & N - CH & \\ & \| \qquad \| & \\ HC & & CH. \\ & | \qquad | & \\ & N = CH & \end{array}$$

> Pyrimidine is the mother-substance of such bodies, occurring in the animal and vegetable organism, as cytosin, uracil, and thymin. Alloxan, which is an essential component of the purin group, is also a derivative of pyrimidine, and a close relationship thus exists between the purin and pyrimidine bodies.

pyrites, *n.*—**Auriferous pyrites,** any kind of pyrites which carries gold.—**Cupreous pyrites,** iron pyrites containing in admixture a small proportion of copper pyrites or chalcopyrite: found in great abundance in the north of Spain, and used to furnish sulphur for the manufacture of sulphuric acid, with metallic copper as a by-product.—**Pyrites smalls.** See ⋆*small.*—**Variegated pyrites,** bornite.—**Yellow pyrites,** chalcopyrite.

Pyritic smelting, a process for smelting copper ores (without any previous roasting) in water-jacket furnaces. Very little fuel is required, most of the necessary heat being produced by burning the sulphur in the pyrites. The matter obtained in the water-jacket furnace is run into a converter and subjected to an air-blast for from 80 to 100 minutes, copper of about 99.4 purity being produced.

> Some progress has been made towards smelting ores by the heat of combustion of their own elements, through what is known as *pyritic smelting.*
> *Encyc. Brit.,* XXVII. 234.

Pyritohedral class in *crystal.* See ⋆*symmetry,* 6.

pyritoid (pir´i-toid), *a.* and *n.* **I.** *a.* Same as *pyritohedral.*

II. *n.* Same as *pyritohedron.*

pyro. In *photog.,* an abbreviation of *pyrogallol.* [Colloq.]

pyro-arseniate (pī″rō-är-sē´ni-āt), *n.* [*pyro-arsen*(*ic*) + *-i-* + *-ate*¹.] A salt derived from or corresponding to pyro-arsenic acid, as sodium *pyro-arseniate,* $Na_4As_2O_7$.

pyro-arsenic (pī″rọ-är-sen´ik), *a.* [Gr. πῦρ, fire, + E. *arsenic, a.*] Noting an acid, $H_4As_2O_7$, obtained in crystalline form by heating orthoarsenic acid to 180° C., water being formed and given off as vapor.

pyro-aurite (pī-rọ-â´rīt), *n.* [Gr. πῦρ, fire, + L. *aurum,* gold, + *-ite*².] A hydrate of ferric iron and magnesium occurring in golden-yellow or silvery-white hexagonal scales.

pyrobitumen (pī″rọ-bi-tū´men), *n.* [Gr. πῦρ, fire, + L. *bitumen.*] A division of the solid bitumens including, according to the classification of Clifford Richardson, albertite, elaterite, and wurtzelite derived from petroleum, and anthracite, bituminous coal, lignite, and peat derived from direct metamorphosis of vegetable growth. *Science,* March 13, 1903, p. 419.

pyroborate (pī-rọ-bō´rāt), *n.* [*pyrobor*(*ic*) + *-ate*¹.] A salt derived from or corresponding to pyroboric acid, as sodium pyroborate ($Na_2B_4O_7$).

pyroboric (pī-rọ-bō´rik), *a.* [Gr. πῦρ, fire, + E. *boric.*] Noting an acid, $H_2B_4O_7$, obtained as a glass-like brittle mass by heating orthoboric or boracic acid for a long time to 140° C.

pyrocatechin (pī-rọ-kat´e-chin), *n.* [Gr. πῦρ, fire, + E. *catechin.*] Same as ⋆*pyrocatechol.*

pyrocatechinol (pī-rọ-kat´e-chi-nol), *n.* Same as ⋆*pyrocatechol.*

pyrocatechol (pī-rọ-kat´e-chol), *n.* [Gr. πῦρ, fire, + E. *catechu* + *-ol.*] A white crystalline substance, $C_6H_4(OH)_2$; orthodihydroxybenzene. It occurs in the urine of horses as pyrocatechol-sulphuric acid, and also in human urine and in some plants. It is made by fusing phenol, bromphenol, etc., with caustic potash and by the dry distillation of catechin and many tannins; it melts at 104° C. Also called *pyrocatechin, pyrocatechinol, oxyphenic acid;* and *catechol.*

pyrocatechuic (pī-rọ-kat-e-chö´ik), *a.* [Gr. πῦρ, fire, + E. *catechu* + *-ic.*] Noting an acid, once thought to be responsible for the peculiar reactions of alkapton urine.

pyrochemical (pī-rọ-kem´i-kal), *a.* [Gr. πῦρ, fire, + E. *chemical.*] Productive of chemical change at high temperatures, such as those of furnaces.

> Calcium is, at temperatures above a red heat, the strongest metallic base existing, and is therefore the most powerful *pyrochemical* reagent.
> *J. W. Richards,* in Science, June 17, 1904, p. 911.

pyrocholesteric (pī″rọ-kol-es-ter´ik), *a.* [Gr. πῦρ, fire, + E. *cholesteric.*] Noting an acid, $C_{11}H_{16}O_7$, an oxidation-product of cholalic acid.

pyrochromate (pī-rọ-krō´māt), *n.* [*pyrochrom*(*ic*) + *-ate*¹.] A salt derived from or corresponding to pyrochromic acid, as potassium pyrochromate ($K_2Cr_2O_7$). Also called *dichromate.*

pyrochromic (pī-rọ-krọ´mik), *a.* [Gr. πῦρ, fire, + χρῶμα, color, + *-ic.*] Same as *anhydrochromic acid.* (See ⋆*anhydrochromic.*) Also called *dichromic acid.*

pyroclastic, *a.* **II.** *n.* A pyroclastic rock.

> The gravels of Slate Creek contain representatives of all the rock types found in Miller Gulch, and in addition a certain proportion of material derived from the older quartzites, *pyroclastics,* and granitic intrusives occurring on the south side of its lower valley.
> *Contrib. to Econ. Geol.,* U. S. Geol. Surv., Bulletin 213, [1902, p. 73.

pyrocoll (pī´rọ-kol), *n.* [Gr. πῦρ, fire, + κόλλα, glue.] A yellowish crystalline compound, $C_{10}H_6O_2N_2$, made by the dry distillation of gelatin. It melts at 268–269° C.

pyrocomenic (pī″rọ-ko-men´ik), *a.* [Gr. πῦρ, fire, + E. *comenic.*] Made by heating comenic acid.—**Pyrocomenic acid.** Same as ⋆*pyromeconic acid.*

pyrocondensation (pī″rọ-kon-den-sā´shọn), *n.* [Gr. πῦρ, fire, + E. *condensation.*] A condensation effected by means of heat. It usually involves a loss of water.

pyrocresol (pī-rọ̄-krē′sol), *n.* [Gr. *πῦρ*, fire, + E. *cresol.*] One of three isomeric compounds, $C_{15}H_{14}O$, found in coal-tar and obtained as a by-product in the preparation of phenol and cresol. *Alpha-pyrocresol* forms white crystals which sublime very easily and melt at 195° C.; *β-pyrocresol* solidifies at 124° C.; and *γ-pyrocresol* crystallizes in needles which solidify at 104–105° C.

pyrocrystalline (pī-rọ̄-kris′ta-lin), *a.* [Gr. *πῦρ*, fire, + E. *crystalline.*] In *petrog.*, crystalline from a molten magma or highly heated solution.

pyro-electrolyte (pī″rọ̄-ẹ̄-lek′trọ̄-līt), *n.* [Gr. *πῦρ*, fire, + E. *electrolyte.*] A substance, such as glass or magnetite, which is non-conducting or of low conductivity at ordinary temperature, but which becomes conducting at higher temperatures, usually at incandescence. *Trans. Amer. Inst. Elect. Engin.*, Jan. 3, 1902, p. 77.

pyro-electrolytic (pī″rọ̄-ẹ̄-lek-trọ̄-lit′ik), *a.* Pertaining to or having the properties of a pyro-electrolyte.—**Pyro-electrolytic lamp.** Same as *Nernst* ★*lamp.*

pyrofuscin (pī-rọ̄-fus′in), *n.* [Gr. *πῦρ*, fire, + L. *fuscus*, dusky, + *-in*².] A peculiar kind of ulmin-like substance extracted from various kinds of bituminous coal by treating with alkaline solutions.

pyrogallol (pī-rọ̄-gal′ol), *n.* [Gr. *πῦρ*, fire, + E. *gall*(*ic*²) + *-ol.*] A white crystalline compound, $C_6H_3(OH)_3$, obtained by the distillation of gallic acid, whence the name: also made synthetically. It is used as a photographic developer. The alkaline solution is sometimes used in gas analysis to absorb oxygen. It has a bitter taste, is poisonous, and melts at 132.5–133.5° C. Also called *pyrogallic acid.*

pyrogas (pī′rọ̄-gas), *n.* [Gr. *πῦρ*, fire, + E. *gas.*] A trade-name of a gaseous mixture obtained by Tobianski, in Belgium, by burning garbage, rags, sawdust, waste paper, etc., in a specially constructed furnace with limited access of air, and carrying the smoke through a tower containing coke or some other porous absorbent soaked with naphtha or alcohol. It is proposed to use the product as a source of heat, light, and mechanical or electrical energy. *Sci. Amer. Sup.*, March 21, 1903, p. 22753.

pyrogen, *n.* **3.** A substance formed by the action of heat; specifically, a carbon compound formed in this way.

pyrogenic, *a.* **2.** In *geol.*, having an igneous origin; igneous.

> The first of these groups includes the well recognized igneous rocks, to which the term *pyrogenic* is applicable.
> *Amer. Geol.*, April, 1904, p. 230.

II. *n.* A rock or mineral produced by the cooling of igneous magmas.

pyrograph (pī′rọ̄-gråf), *n.* [Gr. *πῦρ*, fire, + *γράφειν*, write.] **1.** A design made by pyrography.—**2.** A railway danger-signal. The explosion of a torpedo on the track makes a blast of compressed air to pass through a tube and cause a toothed device to cut a disk from a card, thus showing a red signal.

pyrographic (pī-rọ̄-graf′ik), *a.* [*pyrograph* + *-ic.*] Pertaining to or made by pyrography.

> The temperature range is very great. The maximum is high enough for pyrography, the minimum affords a low heat for gilding. Where *pyrographic* heat is required, small recessed plates are heated very hot upon which tools of varying design are heated.
> *Elect. World and Engin.*, Jan. 9, 1904, p. 87.

pyrographitic (pī″rọ̄-grā-fit′ik), *a.* [Gr. *πῦρ*, fire, + E. *graphitic.*] Noting an oxid, a substance produced as a fine powder by heating graphitic acid, the latter being formed by the interaction of graphite with potassium chlorate and strong nitric acid. The production from it of pyrographitic oxid is attended with notable intumescence. *Roscoe and Schorlemmer*, Treatise on Chem., I. 730.

pyrography, *n.* **2.** The process of burning a design or inscription on wood, leather, or other substance by means of a heated point which is held or guided by the hand.

> Many examples of *pyrography* were shown, the most delicate being on soft white velvet photograph cases, handkerchief holders and such things, into which the designs were daintily burned.
> *N. Y. Tribune*, Dec. 27, 1898.

pyroguaiacine (pī-rọ̄-gwī′a-sin), *n.* [Gr. *πῦρ*, fire, + E. *guaiac*(*um*) + *-ine*².] A crystalline compound, $C_{18}H_{18}C_3$, formed toward the end of the distillation of guaiacum. When distilled with zinc-dust it yields the hydrocarbon guaiene.

pyrojapaconitine (pī″rọ̄-jap-a-kon′i-tin), *n.* [Gr. *πῦρ*, fire, + E. *japaconitine.*] An alkaloid, $C_{32}H_{45}O_9N$, formed when japaconitine is heated to 200–210° C. It crystallizes in needles which melt at 168° C.

pyrolic (pī-rol′ik), *a.* [*pyr*(*oxene*) + *ol*(*ivin*) + *-ic.*] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*¹), having equal or nearly equal amounts of normative pyroxene and normative olivin or akermanite.

Pyrolignite of iron, a trade-name for the black-liquor or iron-liquor prepared by acting on scrap-iron with crude pyroligneous acid, the impure acetic acid from destructive distillation of wood. It is used as a mordant in dyeing and calico-printing.

pyrolutite (pī-rọ̄-lū′tīt), *n.* [Gr. *πῦρ*, fire, + L. *lutum*, mud, + *-ite*².] In *petrog.*, a mud-rock derived from volcanic material, or from igneous rocks. *Grabau*, 1904.

pyrolysis (pī-rol′i-sis), *n.* [Gr. *πῦρ*, fire, + *λύσις*, breaking up, dissolution.] Chemical decomposition produced by exposure to a high temperature.

pyrolytic (pī-rọ̄-lit′ik), *a.* [*pyrolysis* (*-lyt-*) + *-ic.*] Related to or involving pyrolysis or chemical decomposition brought about by exposure to a high temperature.

pyromalic (pī-rọ̄-mā′lik), *a.* [Gr. *πῦρ*, fire, + E. *malic.*] Made by heating malic acid.—**Pyromalic acid,** a general name for maleic and fumaric acids.

pyromeconic (pī″rọ̄-mẹ̄-kon′ik), *a.* [Gr. *πῦρ*, fire, + E. *meconic.*] Made by heating meconic acid.—**Pyromeconic acid,** a crystalline acid, $C_5H_5O_2(OH)$, made by distilling comenic and meconic acids. It melts at 121° C. Also called *oxypyrone* and *pyrocomenic acid.*

pyromellitic (pī″rọ̄-me-lit′ik), *a.* [Gr. *πῦρ*, fire, + E. *mellitic.*] Made by heating mellitic acid.—**Pyromellitic acid,** a crystalline acid, $C_6H_2(COOH)_4 + 2H_2O$, or 1,2,4,5-benzene-tetracarboxylic acid, made by the dry distillation of mellitic acid. It melts at 264° C., yielding pyromellitic anhydrid, $C_6H_2(CO)_4O_2$, a crystalline substance which melts at 286° C.

pyromeride (pī-rom′ẹ-rid), *n.* [Gr. *πῦρ*, fire, + *μέρος*, part, + *-ide.*] In *petrog.*, a somewhat altered spherulitic quartz-porphyry or rhyolite (Monteiro). This name, first applied by Haüy to the orbicular diorite of Corsica (corsite or napoleonite), was given because it was thought that only a part of the minerals in the rock was fusible, quartz being at that time considered infusible.

pyrometer, *n.*—**Amagat pyrometer,** an instrument for measuring high temperatures by determining the heating effect upon a current of water of causing it to flow past the point of which the temperature is required, the quantity of water circulated and its initial temperature being known.—**Bake-oven pyrometer,** a heat-indicator applied to an oven. By its use bread, cake, and crackers can be baked more uniformly.—**Féry's absorption pyrometer.** See *optical* ★*pyrometry.*—**Holborn-Kurlbaum pyrometer.** See *optical* ★*pyrometry.*—**Le Chatelier's optical pyrometer.** See *optical* ★*pyrometry.*—**Optical pyrometer,** an instrument for the determination of the temperature of a glowing body by means of the visible radiation which it emits. See *optical* ★*pyrometry.*—**Wanner's pyrometer.** See *optical* ★*pyrometry.*

Pyrometric cones. Same as *Seger's* ★*cones.*—**Pyrometric effect.** Same as ★*calorific intensity.*—**Pyrometric telescope.** See ★*telescope.*

pyrometry, *n.*—**Optical pyrometry,** the determination of the temperature of glowing bodies by means of the visible radiation emitted by them. Optical pyrometers are based upon the law of the increase of visible radiation with the temperature. In most cases the intensity of a selected set of rays from the visible spectrum of the body whose temperature is to be measured is compared with the intensity of the corresponding rays in the spectrum of an incandescent source of known temperature. The rays employed are usually those of the red end of the spectrum, for the reason that at the lower temperatures of incandescence the red is the only part of the spectrum which is of sufficient brightness. This method is of great delicacy on account of the rapid increase of the intensity of light with rise of temperature. Red light from a glowing body, for example, increases over 2,000 times as the body rises in temperature from 1,000° C. to 2,000° C. Since the amount of light emitted by incandescent bodies at a given temperature depends not only on their temperature but likewise on the character of the radiating surface, optical pyrometry is rigorously applicable only to the case of solids the radiation from which approaches that of a black body. However, it may be extended to other bodies the radiating power of which in terms of that of a black body is definitely known. It has been shown by Stefan that the total radiation from a black body is proportional to the fourth power of its absolute temperature; but since the total radiation is not available in optical pyrometry, it is necessary to make use of the more complicated relation established by Wien, according to which the intensity of radiation of a given wave-length is a function of the wave-length and of the absolute temperature. See *laws of* ★*radiation.* *Le Chatelier's pyrometer.* In this instrument (Fig. 1) a gasolene flame, L, is used as a comparison source, and its light is reflected by means of a mirror, M, into the eyepiece, E, of the instrument, where it is viewed through a red glass. The light from the glowing body the temperature of which is to be measured enters the pyrometer through a tube mounted in a direction at right angles to the path of the rays of the comparison-lamp. The beam traverses the objective O, passing by the mirror M, the edge of which is in the focus of the eyepiece and bisects the field of view. The observer thus sees two contiguous fields, one illuminated by the comparison-lamp and the other from the source to be measured. The brightness of the latter is suitably reduced by the interposition of an absorbent glass, A, the transmitting power of which has been determined. Equality of the two fields of view is produced by opening and closing the iris diaphragm, D, and the size of the aperture of this diaphragm, read off upon a suitable scale, affords a measure of the intensity of the light and consequently of the temperature of the source from which it comes. The instrument is calibrated by making readings upon some source of known temperature. *Féry's optical pyrometer.* This instrument is similar in principle to Le Chatelier's pyrometer, but the reduction of the light from the source to be measured is attained by means of a pair of wedges of absorbent glass used in place of the iris diaphragm. *Wanner's pyrometer.* In this instrument (Fig. 2) monochromatic red light is obtained by the use of the direct-vision prisms *p,p.* Light from the glowing body whose temperature is to be measured enters the instrument through the slit s_1 and is dispersed by the prisms. Light from the comparison source enters at the other slit, s_2, and is similarly dispersed. The red rays of these two spectra, isolated by a screen, are doubly refracted by the Rochon prism R, and the combination of lens and biprism B serves to bring two of the red images thus formed into the field of view in the eyepiece. The brightness of these, which are polarized at right angles to each other, varies with the position of the Nicol prism N. The method of measurement consists in turning the latter until the two images are of equal brightness. The temperature of the glowing body is read off upon a circular scale suitably calibrated. *Morse's thermogage.* This instrument, which is a simple form of optical pyrometer, is designed for determining the temperature of heated metals and of furnaces. It depends upon the fact that the filament of an incandescent lamp, when interposed between the eye and the glowing surface the temperature of which is to be measured, can no longer be distinguished when the temperature of the lamp filament is the same as that of the glowing body. In circuit with the lamp are a rheostat and a milliammeter. The measurement of the temperatures is determined from the readings of the current, the instrument having been previously calibrated. *The Holborn-Kurlbaum pyrometer.* The principle of this instrument is the same as that of the Morse thermogage. It has an objective and eyepiece, between which the incandescent lamp is mounted, and absorbent mirrors for reducing the light from the glowing body. The measurement is made by noting the current necessary to bring the lamp to the same temperature as the source with which it is to be compared.

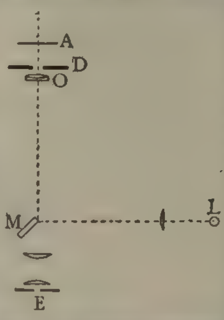


Fig. 1. Le Chatelier's Pyrometer.

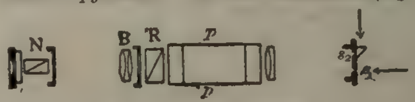


Fig. 2. Wanner's Pyrometer.

pyromucic (pī-rọ̄-mū′sik), *a.* [Gr. *πῦρ*, fire, + E. *mucic.*] Made by heating mucic acid.—**Pyromucic acid,** a crystalline acid, $C_5H_4O_3$, made by the dry distillation of mucic acid. It melts at 133–134° C. and sublimes at as low a temperature as 100° C.

pyrone (pī′rōn), *n.* [Gr. *πῦρ*, fire, + *-one.*] A crystalline ketonic compound, $C_5H_4O_2$, made by heating chelidonic acid. It melts at 32.5° C.

Pyronema (pī-rọ̄-nē′mä), *n.* [NL. (Carus, 1835), irreg. < Gr. *πῦρ*, fire, + *νέμειν*, inhabit.] A genus of discomycetous fungi, of the family *Pyronemaceæ*, having the ascomata sessile and fleshy, with a very slight peridium. The spores are simple and colorless. About 20 species are known. *P. omphalodes* is widely distributed in Europe and America, growing on ground where fire has been.

Pyronemaceæ, Pyronemataceæ (pī″rọ̄-nẹ̄-mā′sẹ̄-ē, pī-rọ̄-nē-ma-tā′sẹ̄-ē), *n. pl.* [NL., < *Pyronema* + *-aceæ.*] A small family of discomycetous fungi: so named from the principal genus, *Pyronema.*

pyronin (pī′rọ̄-nin), *n.* [*pyrone* + *-in*².] A basic aniline dye, of a red color, used in histological technique. Chemically it is the chlorid of tetramethyl- or tetraethyl-diaminodiphenyl-carbidtrioxid.

pyropen (pī′rọ̄-pen), *n.* [Gr. *πῦρ*, fire, + E. *pen*².] In *pyrography*, the heated pen or pointed instrument with which the designs are burned into the wood or other surface.

pyropentylene (pī-rọ̄-pen′ti-lēn), *n.* [Gr. πῦρ, fire, + πέντε, five, + *-yl* + *-ene.*] An unsaturated oily hydrocarbon, C_5H_6, found in illuminating-gas from petroleum. It boils at 42.5° C.

pyrophanite (pi-rof′ạ-nīt), *n.* [Gr. πῦρ, fire, + -φανης, < φαίνεσθαι, appear.] Manganese titanate, $MgTiO_3$, occurring in lustrous deep blood-red tabular rhombohedral crystals near ilmenite in form: found in Sweden.

pyrophile (pī′rọ̄-fil), *n.* [Gr. πῦρ, fire, + φιλεῖν, love.] A lover of fire; specifically, one who explains volcanoes by the natural internal heat of the earth, as opposed to electrical or other cause contributed from outside. [Rare.]

> This advice M. Tarquin holds to have been based on . . . false hypotheses. . . . The theory of the "*pyrophiles*" is dangerous to humanity.
> *Nature*, Nov. 27, 1902, p. 91.

pyrophorine (pī-rof′ọ̄-rin), *n.* [*Pyrophorus* + *-ine*^{2}.] A substance, found in the photogenic organs of beetles of the genus *Pyrophorus*, which is concerned in the production of light.

pyrophosphorite (pī-rọ̄-fos′fō-rīt), *n.* [Gr. πῦρ, fire, + NL. *phosphorus* + *-ite*^{2}.] A calcium-magnesium phosphate, perhaps essentially a pyrophosphate (hence the name), occurring in snow-white earthy masses: found in the West Indies.

pyrophosphoryl (pī-rọ̄-fos′fọ̄-ril), *n.* [Gr. πῦρ, fire, + E. *phosphoryl.*] The radical P_2O_3, which may be viewed as existing in pyrophosphoryl chlorid, $P_2O_3Cl_4$, related to pyrophosphoric acid as the result of the replacement of hydroxyl by chlorin.

pyrophotometer (pī″rọ̄-fọ̄-tom′e-tėr), *n.* [Gr. πῦρ, fire, + E. *photometer.*] A form of optical pyrometer. See *pyrometer* and ★*pyrometry.*

pyroplasmosis, *n.* See ★*piroplasmosis.*

Pyroracemic alcohol. Same as ★*acetol.*

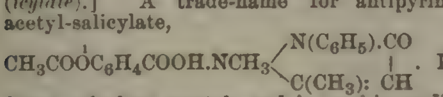
pyroradioactivity (pī″rọ̄-rā″di-ọ̄-ak-tiv′ị-ti), *n.* [Gr. πῦρ, fire, + E. *radioactivity.*] The emission of obscure rays, called 'pyro-rays,' by a wire heated to incandescence by the electric current. *Sci. Amer.*, July 23, 1904, p. 63.

pyro-ray (pī′rọ̄-rā), *n.* [Gr. πῦρ, fire, + E. *ray*^{1}.] One of the rays, other than ordinary light-rays, described by Tommasina as being given off from an incandescent wire. They are said to produce ionization of the air, to discharge an electroscope, and to be of three sorts, possibly corresponding to the *α-*, *β-*, and *γ*-rays from radium. *Sci. Amer.*, Jan. 7, 1905, p. 2.

pyroretin (pī-rọ̄-ret′in), *n.* [Gr. πῦρ, fire, + ῥητίνη, resin.] A brown resin obtained from a variety of Bohemian lignite.

pyrorudite (pī-rọ̄-rö′dīt), *n.* [Gr. πῦρ, fire, + L. *rudus*, rubble, + *-ite*^{2}.] In *petrog.*, a conglomerate or breccia of igneous rocks; a pyroclastic rock. *Grabau*, 1904.

pyrosal (pī′rọ̄-sal), *n.* [(*anti*)*pyr*(*in*) + *sal*(*icylate*).] A trade-name for antipyrin-acetyl-salicylate,



$$CH_3CO\overset{1}{O}C_6H_4COOH.NCH_3\left\langle\begin{array}{l}N(C_6H_5).CO\\ \qquad\qquad\;|\\ C(CH_3):\;CH\end{array}\right.$$

. It forms colorless crystals and is used in medicine as an antipyretic and analgesic.

pyrosine (pī′rọ̄-sin), *n.* [Gr. πῦρ, fire, + *-ose* + *-ine*^{2}.] Same as ★*erythrosin.* **Pyrosine B.** Same as ★*erythrosin.*— **Pyrosine J.** Same as ★*erythrosin G.*

Pyrosoma bigeminum, the sporozoan parasite of Texas fever in cattle. See ★*Piroplasma. Theobald Smith*, 1893.

pyrosphere (pī′rọ̄-sfēr), *n.* [Gr. πῦρ, fire, + σφαῖρα, sphere.] In *geol.*, the interior of the earth, believed to be highly heated, as contrasted with the relatively cold crust which is called the *lithosphere.*

> The hypothesis that within the solid lithosphere lies a *pyrosphere* of intensely high temperature, and successively in a plastic, fluid, and finally at the centre gaseous state.
> *Geog. Jour.* (R. G. S.), XV. 88.

pyrostat, *n.* **2.** An apparatus for maintaining constancy of temperature; a thermostat; specifically, a thermostat for high temperatures.

pyrosulphate (pī-rọ̄-sul′fāt), *n.* [Gr. πῦρ, fire, + E. *sulphate.*] A salt derived from or corresponding to pyrosulphuric acid, as sodium pyrosulphate, $Na_2S_2O_7$. Also known as *disulphate.*

pyrotartaric, *a.*— **Normal pyrotartaric acid.** Same as ★*glutaric acid.*

pyroterebic (pī″rọ̄-tē-reb′ik), *a.* [Gr. πῦρ, fire, + E. *terebic.*] Made by heating terebic acid.— **Pyroterebic acid**, an unsaturated oily acid, $(CH_3)_2C=CHCH_2CO_2H$, made by the dry distillation of terebic acid. It has a sharp odor.

Pyrotherium (pī-rọ̄-thē′ri-um), *n.* [Gr. πῦρ, fire, + θηρίον, a wild beast.] A large extinct animal from Patagonia made by its describer (Ameghino) the representative of a distinct family, *Pyrotheriidæ*, and suborder, *Pyrotheria.* It is characterized by 3 premolars and 3 molars above, and 2 premolars and 3 molars below. The molar crowns are composed of two transverse crests. There are two large tusks in the lower jaw, projecting anteriorly. The systematic position and affinities of this animal cannot be stated at present, owing to the incomplete material described. Its remains occur in strata below the Patagonian formation, probably of Oligocene Tertiary age (*Pyrotherium* beds).

pyrotoxin (pī-rọ̄-tok′sin), *n.* [Gr. πῦρ, fire, + E. *toxin.*] A toxin which is capable of producing elevation of temperature in the animal body.

pyrotritaric (pī″rọ̄-trī-tar′ik), *a.* [Gr. πῦρ, fire, + τρι-, three-, + E. (*tar*)*taric.*] Same as ★*uric.*

pyroxam (pī-rok′sạm), *n.* [Gr. πῦρ, fire, + *ox*(*ygen*) + *am*(*mönia*)(?).] Same as *xyloidine.*

pyroxenite (pī-rok′sẹ̄-nīt), *n.* [*pyroxene* + *-ite*^{2}.] In *petrog.*, a phaneric rock composed almost wholly of pyroxene of any kind. If without olivin it is pyroxenite in the sense advocated by G. H. Williams (1890). The name has been used in this sense by Coquand (1857) and Sterry Hunt; by French geologists for pyroxene-gneiss; and by some petrographers for lavas composed chiefly of pyroxene without olivin (augitite).

pyroxenolite (pī-rok-sen′ọ̄-līt), *n.* [*pyroxene* + Gr. λίθος, stone (see *-lite*).] In *petrog.*, a phaneric rock composed of pyroxene with little or no other minerals: used as equivalent to pyroxenite by G. H. Williams in 1890. *Lacroix*, 1895.

pyroxylin, *n.* This term is now usually applied to the less highly nitrated product of the interaction of cellulose and nitric acid, soluble in a mixture of ether and alcohol, not to the more highly nitrated insoluble guncotton used as an explosive.

pyrrharsenite (pi-rär′se-nīt), *n.* [Gr. πυρρός, reddish, + E. *arsenite.*] A variety of berzeliite containing a considerable amount of manganese and a small percentage of antimony. It has been called *manganberzeliite.*

pyrrhochrome (pir′ọ̄-krōm), *a.* [Gr. πυρρός, reddish, + χρῶμα, color.] Of a reddish or orange color; of the color of red hair.

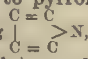
pyrrhocorid (pi-rok′ọ̄-rid), *n.* and *a.* **I.** *n.* One of the *Pyrrhocoridæ.*

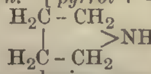
II. *a.* Having the characters of or belonging to the heteropterous family *Pyrrhocoridæ.*

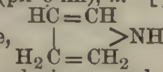
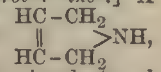
pyrrhotism (pir′ọ̄-tizm), *n.* [Gr. πυρρός, reddish, + *-t-* + *-ism.*] The fact or condition of being red or orange in color: specifically applied to the fact of having red hair.

> Finally, red hair is derived from dark hair by the conversion of more or less of the dark pigment into an equal amount of the orange. This last group for which he suggests the name *pyrrhotism* (pyrrhos=foxy-red) he considers to result from an easily occurring chemical modification of the melanochrome into pyrrhochrome pigments.
> *Nature*, July 2, 1908, p. 205.

pyrrol (pir′ol), *n.* [Gr. πυρρός, reddish, + *-ol.*] A secondary amine (C_4H_5N) of feebly basic character and heterocyclic structure. It is a colorless liquid of chloroform-like odor which boils at 131° C., and turns brown on exposure to the air. It occurs in coal-tar and in Dippel's animal oil or bone-oil. The name was given because of the fiery red color produced by this substance when brought in contact with a pine-shaving moistened with hydrochloric acid.

pyrrolic (pi-rol′ik), *a.* [*pyrrol* + *-ic.*] Derived from or related to pyrrol.— **Pyrrolic nucleus**, the atomic grouping  $\begin{array}{l}C=C\\ |\\ C=C\end{array}\!\!>N$, existing in pyrrol.

pyrrolidine (pi-rol′i-din), *n.* [*pyrrol* + *-id* + *-ine*^{2}.] A basic liquid,  $\begin{array}{l}H_2C-CH_2\\ \quad\;|\\ H_2C-CH_2\end{array}\!\!>NH$, or tetrahydropyrrol, made by reducing pyrroline with red phosphorus and hydriodic acid. It boils at 87.5–88.5° C. Also called *pentazane.*

pyrroline (pir′ọ̄-lin), *n.* [*pyrrol* + *-ine*^{2}.] A liquid base,  $\begin{array}{l}\;\;HC=CH\\ \quad\;|\\ H_2C=CH_2\end{array}\!\!>NH$ or  $\begin{array}{l}HC-CH_2\\ \;\;\|\\ HC-CH_2\end{array}\!\!>NH$, made by reducing pyrrol with zinc-dust and acetic acid. It boils at 90–91° C. Also called *dihydropyrrol.*

pyr-steradian (pēr-stẹ̄-rā′di-ạn), *n.* A unit of light-flux; the flux through a solid angle of one steradian when the source is one pyr or *bougie décimale*; one lumen. See ★*pyr.*

pyruvin (pī-rö′vin), *n.* [Gr. πῦρ, fire, + E. *uv*(*ic*) + *-in*^{2}.] The crystalline glycid ester of pyroracemic acid, $C_3H_3O_3.C_3H_5O$, made by heating glycerol with tartaric acid. It melts at 82° C.

Pythiaceæ (pith-i-ā′sẹ̄-ē), *n. pl.* [NL., < *Pythium* + *-aceæ.*] A small family of saprolegnious fungi named from the genus *Pythium.*

pythid (pith′id), *n.* and *a.* **I.** *n.* One of the *Pythidæ.*

II. *a.* Having the characters of or belonging to the coleopterous family *Pythidæ.*

Pythium (pith′i-um), *n.* [NL. (Nees von Esenbeck, 1823), irreg. < Gr. πύθειν, rot.] A genus of saprolegnious fungi, of the family *Pythiaceæ*, having more or less globose zoösporangia and conidia similar in size and shape. The oögonia are thick-walled. *P. De Baryanum* is a common species which attacks the seedlings of various plants and produces a disease sometimes called *damping-off.* See ★*damp*, 6.

> A plant may be diseased as a whole, because nearly all its tissues are in a morbid or pathological condition, owing to some Fungus pervading the whole—e.g., *Pythium* in seedlings.
> *Encyc. Brit.*, XXXI. 574.

Pythoctonos (pī-thok′to-nus), *n.* [Gr. Πυθοκτόνος, the python-slayer.] In *Gr. antiq.*, an epithet of Apollo as slayer of the python. On the coins of Rhegium he is represented as bending the bow, with the serpent and tripod.

pythogenesis, *n.* **2.** The origin of putrefaction.

pythogenous (pi-thoj′e-nus), *a.* Same as *pythogenic.*

python, *n.* **3.** Nine species of this genus are recognized, the rock-python or tiger-python, *P. molurus*, being the most common species and the largest. The West African python, *P. sebæ*, is almost as large, reaching a length of 23 feet. The Australian python, or diamond-snake, is a small serpent attaining a length of only six or seven feet.

Pythonichthys (pī-thọ̄-nik′this), *n.* [NL., < Gr. πύθων, python, + ἰχθύς, fish.] A genus of morays found in the West Indies, inhabiting rather deep water.

pyxie (pik′si), *n.* [*Pyxi*(*danthera*).] A local name of the dwarf evergreen *Pyxidanthera.*

pyxis, *n.* **10.** In old arms and armor, an engine-of-war: probably the same as *culverin*, the early form of cannon.

pyx-jury, *n.* See *pix-jury.*

Q 3. An abbreviation (*g*) in *electrotechnics*, of *quantity*; (*h*) [*l. c.*] of *quasi*; (*i*) [*l. c.*] of *quintal*; (*j*) of the Latin *Quirites*.—5. Same as *cue*^{1}, 3 (*a*): as, to give or take the *Q*.

> For the consequence of sentences, you must be sure that every clause do give the *Q.* one to the other, and be bespoken ere it come. *B. Jonson*, Discoveries, IX. 229. (Gifford.)

6. In *psychophys.*, the symbol for the Fechnerian space-error. *E. B. Titchener*, Exper. Psychol., II. i. 75.

qcm. An abbreviation of *square centimeter*.

q. d. An abbreviation (*b*) of the Latin *quasi dictum*, as if said; (*c*) of the Latin *quasi dixisset*, as if he had said.

q. e. s. system. A system of physical units elaborated by the British Association for the Advancement of Science, in which the unit of length is 1×10^{-11} times the quadrant of the earth measured from the equator to the north pole, the unit of mass is the gram, and the unit of time is the second. The name proposed for this system was the *quadrant-eleventh-gramme-second system*, hence the abbreviation *q. e. s.*

Q. H. P. An abbreviation of *Queen's Honorary Physician*.

Q. L. An abbreviation (*a*) in *psychophys.*, of *quotient limen*; (*b*) [*l. c.*] of the Latin *quantum libet*, as much as is required.

Q. M. L. In *psychophys.*, an abbreviation of *quotient mixture limen*.

q. p., q. pl. Abbreviations of the Latin *quantum placeat*, as much as seems good.

q. t. or **Q. T.** A contraction of *quiet*.—**On the strict q. t.**, with absolute secrecy; on the quiet. [Slang.]

> The subject was so sweet, and the moments were so fleet, that we talked for quite an hour *on the strict q. t.* *G. B. Shaw*, Irrational Knot, vi.

Qto. An abbreviation of *quarto*.

qu. An abbreviation (*c*) of *quarter*.

quack^1, *n.* 3. See ★*couac*.

quacky^1 (kwak'i), *a.* [*quack*^{1} + *-y*^{1}.] Having a flat, metallic quality, resembling the quack of a duck: said of the voice.

> Our women's voices are, on the whole, ungentle; . . . they are pitched unpleasantly high and hardened by throat contractions into an habitual "*quacky*" or metallic quality. *F. Osgood*, in The Forum, June, 1895, p. 502.

quacky^2 (kwak'i), *a.* [*quack*^{2} + *-y*^{1}.] Suited to a quack; quackish; using the methods of quackery.

> Who although a little *quacky* per se has . . . a whole legion of active quacks at his control. *Poe*, Criticism, Works, III. 23.

quad^5 (kwod), *n.* [*quad*(*ricycle*).] A bicycle for four riders. [Colloq.]

quad. An abbreviation (*a*) of *quadrant*, the unit of self-inductance; (*b*) of *quadrate*; (*c*) of *quadruplex* (telegraph).

quad-meter (kwod'mē''tėr), *n.* [*quad*(*rant*), 6, + *meter*.] An instrument for the measurement of inductance; a secohmmeter.

quadrain†, *n.* and *a.* See ★*quadran*.

quadral (kwod'ra̤l), *a.* [NL. **quadralis*, < L. *quadru-*, four- (LL. *quadrus*, four-cornered, L. *quadra*, a square).] Divided into four parts.

quadran†, *n.* and *a.* [Also *quadron*, *quadrain*, etc.: reduced from *quadrant*.] **I.** *n.* A square. **II.** *a.* Square.

quadrangle, *n.* 4. (*a*) A square block of buildings. (*b*) Any square block, as of stone.—5. A region measuring 15′ lat. by 15′ long. (or 30′ lat. by 30′ long., or 1° lat. by 1° long., according to the density of the population) as shown on an atlas sheet of the United States Geological Survey.

> The Philadelphia Special folio, embracing four fifteen-minute *quadrangles*. *Science*, Aug. 7, 1903, p. 187.

Equianharmonic quadrangle, any four quantities $z_1z_2z_3z_4$ such that $(z_1-z_3)(z_2-z_4) = -v^2(z_1-z_2)(z_3-z_4)$, where v is an imaginary or neomonic cube root of unity.—**Harmonic quadrangle**, any four quantities $z_1z_2z_3z_4$ such that $(z_1-z_2)(z_3-z_4) = (z_2-z_3)(z_1-z_4)$.—**Median quadrangle**, the quadrangle formed by the median eyes of a spider.—**Ocular quadrangle**, the quadrangle, on the cephalothorax of certain spiders, at the angles of which the eyes are placed.

quadrangled (kwod'rang-gld), *a.* 1. Quadrangular.—2. Containing a quadrangle.

quadrannulate (kwod-ran'ụ-lāt), *a.* [L. *quadr-* (*quattuor*, four) + *annulus* + *-ate*^{1}.] Composed of four annuli, as certain segments of the body of some earthworms. *Proc. Zool. Soc. London*, 1901, p. 202.

quadrant, *n.* 7. In *embryol.*, one of the four blastomeres or cleavage-cells in the four-cell stage of the ovum.—8†. A square or one of its sides.—9. An oscillating arm attached to a spinning-mule to give a proper rotation to the spindles during the winding of the yarn on the cop.—**Earth quadrant**, one quarter of a great circle passing through the poles of the earth. Its length was carefully computed by French scientists to serve as the basis for the metric unit, which was to be one ten-millionth of such a quadrant. The measurement was later proved to be erroneous, so that the actual meter is at present a purely arbitrary length. See *meter*^{3}. *Smithsonian Rep.*, 1899, p. 217.—**Legal quadrant**, one practical unit of inductance, or henry, as defined by the International Congress of 1893, and not in terms of the c. g. s. unit.—**Quadrant of safety**, the region toward which it is best for a person to run when he sees a tornado approaching. In the United States, if the tornado is west or southwest of him and moving eastward, he should go toward the southeast; if it is more directly south or north, it is probably passing by him, and he is already in the quadrant of safety and may remain quiet.

quadrantal, *a.* 3†. Square.—**Quadrantal deviation**, a compass error; the deviation which arises from the induction both of thwartships and fore-and-aft horizontal iron in the ship, this deviation being compensated by soft-iron balls, or lengths of soft-iron chain in boxes on the sides of the binnacle—these latter being known as *quadrantal correctors*.

quadrantile (kwod'ra̤n-til), *a.* [*quadrant* + *-ile*.] Same as *quadrantal*.

quadrantly† (kwod'ra̤nt-li), *adv.* In a way suggestive of the square: as, to multiply *quadrantly*, that is, to square.

quadrant-plate (kwod'ra̤nt-plāt), *n.* A metal plate at the end of a screw-cutting lathe headstock, which carries a stud on which one or more gears may be placed to connect the lead-screw to the spindle. The plate is hinged on the lead-screw and the stud for the intermediate gears is in a slot so that gears of almost any desired diameter can be used, thus making possible a great many changes in the speed of the lead-screw and providing for the cutting of different threads on the work.

quadrant-rack (kwod'ra̤nt-rak), *n.* The sector-gear of the quadrant of a spinning-mule, operated in conjunction with the spindle-carriage by means of a pinion and band.

quadrapartite (kwod-ra̤-pär'tīt), *a.* and *n.* Same as *quadripartite*.

quadrat, *n.* 4. In *exper. agri.*, a square area of convenient size laid off for the purpose of accurate planting.—5. In *phytogeog.*, a similar square laid off for close study of the relative abundance of species or of other questions.—**Corner quadrat**, a type for a blank space, made in the form of a right angle, to aid the proper joining of mitered brass rules at the corners of a page.

quadrate, *n.* 5†. A quarter; a quadrant.

quadratic, *n.*—**Incomplete quadratic**, the equation $ax^2+bx+c = 0$, if either b or c is zero.—**Pure quadratic**, an equation of the form $ax^2+bx+c = 0$, when $b = 0$.

quadratical (kwod-rat'i-ka̤l), *a.* [*quadratic* + *-al*^{1}.] Same as *quadratic*.

Quadratojugal fossa. See ★*fossa*^{1}.

quadratoquadrat† (kwod-rā-tọ-kwod'rat), *n.* In *alg.*, the fourth power.

quadrature, *n.* 5. In *elect.*, phase difference of 90°, or one quarter period.—**In quadrature**, in *elect.*, having a phase-difference of 90°: said of alternating currents, or of such a current and the electromotive force with which it is associated.—**Mechanical quadrature.** (*b*) Quadrature by a planimeter, or any mechanical contrivance.—**Quadrature field**, in *elect.*, a magnetic field having two components of magnetic flux at right angles to each other.

> In the monocyclic motor one of the two superimposed *quadrature fields* is excited by the primary energy circuit. *Steinmetz*, Elect. Engineering, p. 264.

Quadrature of the lune, the description, with ruler and compasses alone, of a lune and triangle equal to one another by Hippocrates of Chios (about 450 B.C.).

quadriad (kwod'ri-ad), *n.* [L. *quadri-*, four, + *-ad*^{2}.] A series of four; a group of four. [Rare.]

> The advent of the explosive and electric motors for vehicle propulsion, added other and powerful impulses in the agitation for good roads, and with the pressure from the vast bicycle interest the *quadriad* of forces has come together with a combined power that will, we hope, make road improvement a foregone conclusion. *Hiscox*, Horseless Vehicles, p. 15.

quadric, *n.*—**Oval quadric**, a quadric which cuts externally the sides of any principal triangle whose three vertexes lie within it.

quadriceptor (kwod-ri-sep'to̤r), *n.* [L. *quadri-*, four, + *-ceptor*, < *capere*, take.] In *immunology*, an intermediary body having four combining-groups. *Vaughan and Novy*, Cellular Toxins, p. 132.

quadricovariant (kwod''ri-kō-vā'ri-ant), *n.* [L. *quadri-*, four, + E. *covariant*.] In *math.*, a Hessian. *A. Cayley.*

quadricuspid (kwod-ri-kus'pid), *a.* [L. *quadri-*, four, + E. *cuspid*.] Same as *quadricuspidate*.

quadricuspidal, *n.* **II.** *a.* Having four cusps.

quadricycle, *n.* 2. A vehicle of the 'cycle' type, having four wheels and propelled by a small gasolene (or other) motor: usually constructed to carry one person.

> An improvement in placing the pivots in the central plane of rotation of the steering wheels has entirely removed the hand shock by the direct lever connection, and has given to the automobile *quadricycle* the bicycle facility for steerage. *Hiscox*, Horseless Vehicles, p. 26.

quadricycler (kwod'ri-sī-klėr), *n.* Same as ★*quadricyclist*.

quadricyclist (kwod'ri-sī-klist), *n.* [*quadricycle* + *-ist*.] One who propels or rides a quadricycle.

quadrifilar (kwod'ri-fi-la̤r), *a.* [L. *quadri-*, four, + *filum*, a thread, + *-ar*^{3}: see *file*^{3}.] Consisting of or characterized by four filaments: referring to a peculiar balance for extremely delicate weighings in which the beam is suspended by four threads or fibers so arranged that a very slight preponderance on either side will cause a wide azimuthal movement of the index. *Nature*, April 21, 1904, p. 599.

quadrifolium (kwod-ri-fō'li-um), *n.*; pl. *quadrifolia* (-a̤). [L. *quadri-*, four, + *folium*, leaf.] In *geom.*, the rose of four leaves. See ★*rose*^{1}, 18.

quadrifrontal (kwod-ri-frun'ta̤l), *a.* [L. *quadri-*, four-, + *frons* (*front-*), front, + *-al*^{1}.] Having four fronts or faces.

quadrigabled (kwod-ri-gā'bld), *a.* [L. *quadri-*, four, + E. *gabled*.] Four-gabled. *N. E. D.*

quadrigamist (kwod-rig'a̤-mist), *n.* [**quadrigam*(*y*) (L. *quadri-*, four, + Gr. γάμος, marriage) + *-ist*.] One who has four wives or husbands at the same time. *Blount*, Glossographia.

quadrigatus (kwod-ri-gā'tus), *n.*; pl. *quadrigati* (-tī). [L., marked with the figure of a quadriga, < *quadriga*, a chariot: see *quadriga*.] A Roman silver denarius with the representation of a four-horse chariot.

quadrijugal (kwod-ri-jö'ga̤l), *a.* [*quadrijug*(*ate*) + *-al*^{1}.] Having or drawn by four horses yoked abreast; having four yoked horses.

quadrilateral. **I.** *a.*—**Quadrilateral construction**, the construction of the fourth harmonic point to three given costraight points by means of a complete quadrilateral or tetrastigm. *G. von Staudt*, 1847.

II. *n.*—**Circumscriptible quadrilateral**, a quadrilateral in which a circle can be inscribed.—**Cyclic quadrilateral**, a quadrilateral whose four vertexes are concyclic.—**Heronic cyclic quadrilateral**, a cyclic quadrilateral whose sides, diagonals, and area are expressible by whole numbers.

quadrilingual (kwod-ri-ling′gwal), *a.* [L. *quadri-*, four, + *lingua*, tongue, language, + *-al*¹.] In or using four languages: as, a *quadrilingual* inscription; a *quadrilingual* interpreter.

quadrille, *n.* 6†. A small squadron; a cluster of richly caparisoned horsemen at a tournament or mounted fête. They were distinguished by different colors. *Meyrick*, Ancient Armour, III. Glossary.

quadrilled (kwod-rild′), *a.* Same as *quadrillé*.

quadrillion, *n.* **II.** *a.* The cardinal numeral obtained from a quadrillion: used like *hundred*. *Nicolas Chuquet*, 1484.

quadrillionth (kwod-ril′yonth), *a.* and *n.* [*quadrillion* + *-th*.] **I.** *a.* Being one of a quadrillion.

II. *n.* One of a quadrillion parts; the quotient of unity divided by a quadrillion.

quadrimolecular (kwod″ri-mō-lek′ū-lär), *a.* [L. *quadri-*, four, + NL. *molecula*, molecule, + *-ar*³.] Consisting of or concerning four molecules. *Nature*, Oct. 16, 1902, p. 613.

quadrinate (kwod′ri-nāt), *a.* [L. *quadrini*, four each, + *-ate*¹.] Quadruple; in *bot.*, having four leaflets to a petiole; quadrifoliate.

quadrinodal (kwod-ri-nō′dal), *a.* [L. *quadri-*, four, + *nodus*, node, + *-al*¹.] Having four nodes, as a vibrating string or organ-pipe, or the oscillating surface of a seiche.

> A trinodal seiche should have a period of about twenty-four minutes, and a *quadrinodal* seiche should oscillate in about eighteen minutes.
> *G. H. Darwin*, The Tides, p. 27.

quadripartite, *a.* 2. In *law*, having four parts, or parties: as, a *quadripartite* government; a *quadripartite* agreement, etc.

quadripinnate (kwod-ri-pin′āt), *a.* [NL. *quadripinnatus*, < L. *quadri-*, four, + *pinna*, wing: see *pinnate*.] In *bot.*, having four pinnæ or side leaflets. *N. E. D.*

quadripolar (kwod-ri-pō′lär), *a.* [L. *quadri-*, four, + *polus*, pole, + *-ar*³.] In *biol.*, having four poles: said of a cell.

quadriquadric, *a.* 2. In *geom.*, determined by the intersection of two quadric surfaces.

quadriradiate, *a.* **II.** *n.* A sponge-spicule which has four rays.

> Gastral *quadriradiates* can here and there be made out in spaces in the interior.
> *Proc. Zool. Soc. London*, 1900, p. 129.

quadriramose (kwod-ri-rā′mōs), *a.* [L. *quadri-*, four, + *ramus*, branch, + *-ose*.] Having four branches, as the antenna of an insect.

quadrisect (kwod′ri-sekt), *v. t.* [L. *quadri-*, four, + *sectus*, pp. of *secare*, cut.] To divide into four equal parts.

quadriserial, *a.* 2. In *bot.*, having the four regular series or whorls in the flower, that is, calyx, corolla, stamens, and pistils.

quadrituberculy (kwod″ri-tū-bėr′kū-li), *n.* [*quadritubercul(ar)* + *-y*³.] The fact or condition of having molars with four tubercles or cusps. [Rare.]

> Inferior molars evolved from quinque- to *quadrituberculy* by reduction of paraconid.
> *H. F. Osborn*, in Bull. Amer. Mus. Nat. Hist., June 28, [1902, p. 179.

quadri-unguiculate (kwod″ri-ung-gwik′ū-lāt), *a.* [L. *quadri-*, four, + E. *unguiculate*.] Bearing, or provided with, four claws or hooks.

> The dactylus in Iais was *quadriunguiculate*.
> *Proc. Zool. Soc. London*, 1900, p. 548.

quadriurate (kwod-ri-ū′rāt), *n.* [L. *quadri-*, four, + *urate*.] A salt of uric acid of which the constitution may be represented by the general formula $MH(C_5H_2N_4O_3).H_2(C_5H_2N_4O_3)$, M standing for a monad metal, such as potassium or sodium. It has been shown by Bence Jones and Sir William Roberts that such salts exist normally in the urine and form practically the whole of the solid matter in the urine of birds and reptiles. Sir William Roberts considers that all or nearly all the morbid phenomena in the body which are referable to uric acid depend upon secondary changes in the quadriurates.

quadrivalence (kwod-riv′a-lens), *n.* [*quadrivalen(t)* + *-ce*.] The quality of being quadrivalent.

quadrivalent, *a.* **II.** *n.* A quadrivalent atom or element.

quadrivium, *n.* 2. A place where four ways meet.

> In obedience to the law as it then stood, he [a suicide] was buried in the centre of a *quadrivium*, or conflux of four roads, . . . with a stake driven through his heart.
> *De Quincey*, Three Memorable Murders.

quadrivoltine, *n.* **II.** *a.* Having four crops of cocoons each year, and therefore having four generations annually: said of certain races of the silkworm of commerce.

quadront†, *n.* and *a.* See ★*quadran*.

quadroon, *a.* 2. Fourth in descent from a negro parent, one parent in each generation having been white. *N. E. D.*

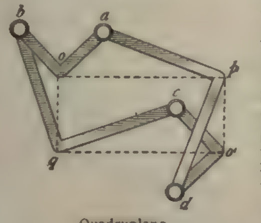
quadrule (kwod′röl), *n.* [LL. *quadrula*, a little square, dim. of *quadra*, a square.] Same as ★*mere*⁶.

quadrumanal (kwod-rö′ma-nal), *a.* [*quadrumane* + *-al*¹.] Having four hands or hand-like limbs; quadrumanous.

quadrupart† (kwod′rö-pärt), *a.* [L. *quadru-*, four, + *pars* (*part-*), part.] Quadripartite.

quadruplane, *n.* 2. A system of four plane links pivoted together so that the pivots are vertexes of a contraparallelogram. It is an extension by Sylvester and Kempe of what Sylvester called the plagiograph or skew-pantograph to Hart's contraparallelogram.

> This apparatus . . . is of course . . . formed of four plane links . . . on which the various points are taken. This explains the name given to it by Professor Sylvester, the "*Quadruplane*."
> *A. B. Kempe*, How to Draw a Straight Line, [p. 26.



Quadruplane.

a, b, c, d, vertexes of a contraparallelogram. If *o* is pivoted to *a* and *q* to *c* of the Peaucellier cell, then *p* describes a straight line inclined to *cc* at the angle the bars are bent through. (See *cell*.) *d*, fourth vertex of a parallelogram, determined by *opq*, of constant angles and constant area, so that the product of two consecutive sides is constant.

quadruplate† (kwod′rö-plāt), *v. t.* [*quadruple* + *-ate*².] To quadruple.

quadruplator (kwod′rö-plā-tōr), *n.*; pl. *quadruplatores* (kwod-rö-plā-tō′rēz). [L.] In *Roman law*, an informer who was entitled to a fourth part of confiscated property upon conviction and confiscation following an information given by him.

quadruple, *a.* 2. Consisting of four parts; completed in four separate or successive operations.

> All modern marine engines of high power have either triple or (in a few cases) *quadruple* expansion.
> *Encyc. Brit.*, XXXII. 542.

Quadruple alliance, an alliance of four powers; especially, the alliance of Great Britain, France, the Netherlands, and Austria in 1718, and that of Great Britain, France, Spain, and Portugal in 1834.—**Quadruple-expansion engine**, a compound engine in which the steam passes successively through four stages in four or more cylinders. There may be more than four cylinders in the engine, as the second intermediate and low-pressure cylinders are frequently divided into two cylinders each. The initial pressure of the steam is usually from 180 to 250 pounds per square inch, and it is expanded from 18 to nearly 30 times its original volume. See cut, next column.

quadruple-screw (kwod′rö-pl-skrö), *a.* Having four screws: said of turbine-propelled vessels, so equipped.

quadruplet, *n.* 3. A bicycle for four riders.—4. In *music*, same as *quartole*.

quadruplum (kwod′rö-plum), *n.*; pl. *quadrupla* (-plä). [L. *quadruplum*, a fourfold amount, neut. of *quadruplus*, fourfold: see *quadruple*.] In *medieval music*: (*a*) The fourth part in polyphonic composition, counting upward from the tenor as one, usually a part duplicating the latter. (*b*) A composition for four voices. Compare *triplum*.

quædam (kwē′dam), *n.* [L. *quædam*, fem. of *quidam*, a certain person. See *quidam*.] A woman; a female, unspecified. See *quidam*.

> A Sermon . . . very tart against the sinfulness of vain Attire; wherein wanton *Quædams* in those days came to that excess, that they delighted altogether in the Garb, and Habit, . . . of Men.
> *Bp. Hacket*, Life of Abp. Williams, i. 35.

quaf, *v.* and *n.* A simplified spelling of *quaff*.

quahog (kwa-hog′, or -hâg′), *v. i.*; pret. and pp. *quahogged*, ppr. *quahogging*. [Also *quahaug*: < *quahog*, *n.*] To dig or search for quahogs.

> "How 's the *quahaugin'* nowadays? Gittin' a fair price?" *J. C. Lincoln*, Partners of the Tide, iv.

quail³, *n.*—**Harlequin quail**, a name given by J. H. Gurney to the small African species, *Coturnix delgorguii*.—**New-Zealand quail**, a small game-bird, *Coturnix novæ-zealandiæ*, once common in New Zealand, but now extinct or nearly so.

> No specimen of the once very abundant *New Zealand quail* (Coturnix novæ zealandiæ) has been seen for a quarter of a century; of the celebrated Notornis mantelli only three perfect specimens have been obtained; it is probably extinct. *Pop. Sci. Mo.*, Jan., 1903, p. 223.

Painted quail. (*a*) See *painted*. (*b*) The mountain quail, *Oreortyx pictus*, of the western United States: so named from its bright marking of white and chestnut. (*c*) An Australian hemipod, or button-quail, *Turnix varius*.—**Snow-quail**, sometimes applied to the ptarmigan, *Lagopus leucurus*.—**Stubble-quail**, a true quail, *Coturnix pectoralis*, found in Australia: so called from frequenting fields after the grain has been harvested.—**Valley quail**, *Callipepla californica vallicola*, a geographic race or subspecies of *C. californica*, distinguished by paler coloration, found in the dry valleys and foothills from Cape St. Lucas to western Oregon.

> In some portions of California complaints have been made that the *valley quail* (Callipepla Californica vallicola) destroys wheat to a serious extent.
> *Yearbook U. S. Dept. Agr.*, 1897, p. 352.

White quail. Same as *snow-★quail*.

quail-dove, *n.* 2. See ★*partridge-dove*.

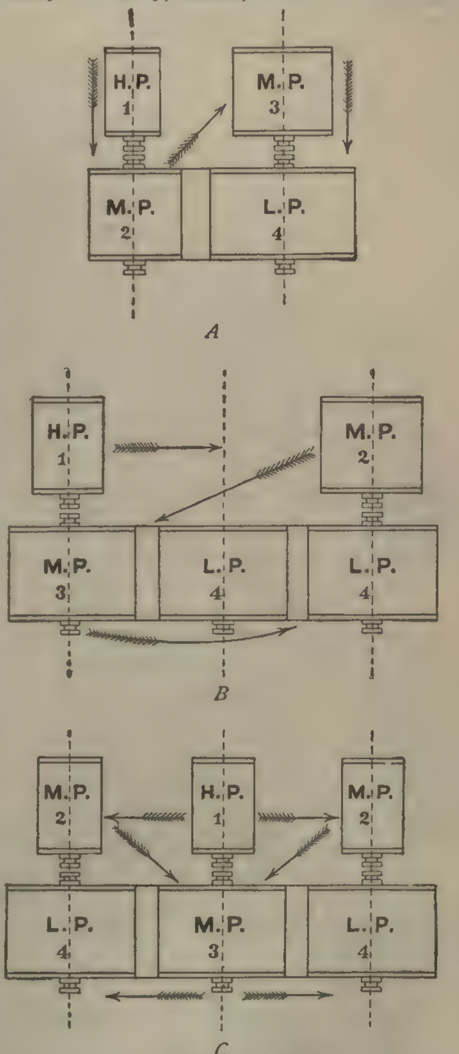
quailery (kwā′lėr-i), *n.* [*quail*² + *-ery*.] A place where quails are bred and fattened. *N. E. D.*

quail-hawk (kwāl′hâk), *n.* An Australian sparrow-hawk, *Hieracidea berigora*.

Quain's degeneration. See ★*degeneration*.

quake² (kwāk), *n.* [British Guiana.] A rather large basket with rounded bottom, made of open wickerwork, used for packing, storing provisions, etc.

Quaker, *n.* 5. A Philadelphian or Pennsylvanian: from the historical association of Quakers with that city and that State. [Colloq.]—**Free Quaker**, a name assumed by those Quakers who were disowned by the Society of Friends, at the time of the Revolutionary War, for actively supporting the cause of the colonists. They organized as a separate body, which ceased to exist after the death of its original members.—**Wet Quaker**, a hypocrite; a man who pretends to great piety and is a "dram-drinker on the sly." *N. and Q.*, 10th ser., II. 197.



Grouping of Cylinders in Quadruple-Expansion Engines.

H.P., high-pressure or first cylinder; M.P., mean-pressure cylinders, the numbers indicating the sequence of the expansion process, or the steps of such expansion, and the arrows the direction of flow; L.P., low-pressure or fourth stage, the number denoting in each case the fact that the expansion is final in the single largest cylinder or in the indicated pair of cylinders of equal volume.

quaker-ladies (kwā′kėr-lā″diz), *n. pl.* A name given to the delicate bluish-gray flowers of the *Houstonia cærulea*, from an idea that they suggest the pale colors of the dress adopted by 'Quaker ladies'; bluets. [U. S.]

> In their little grey-blue bonnets
> Chatting, brim to brim,
> Half a million *Quaker Ladies*,
> Straight and small and slim.
>
> *Sarah J. Day*, Houstonias, in From Mayflowers to Mistletoe.

Quakerly (kwā′kėr-li), *adv.* In the manner of a Quaker.

> "Do I write *quakerly* and simply, 't is my most Master Mathews' like intention to do it."
> *Lamb*, in Final Mem., viii. 288.

quaker-parrot (kwā′kėr-par″ọt), *n.* See ★*parrot.*

quale⁴, *n.* Specifically—**2.** In *psychol.*, in the phrases *spatial quale, quale of spatiality*, the irreducible element or attribute of spaciousness, bidimensional, tridimensional, or indefinite, posited by nativistic theories of space-perception for some or all sensations.

> So far, all we have established or sought to establish is the existence of the vague form or *quale* of spatiality as an inseparable element bound up with the other peculiarities of each and every one of our sensations.
> *W. James*, Prin. of Psychol., II. 145.

Quale theory, in *psychol.*: (*a*) The hypothesis that pain is not a specific sensation, but rather a tone or organic accompaniment of sensation—a secondary effect of the stimulus which primarily arouses sensation.

> The opposite doctrine, which has of late been called the *quale-theory*, is often maintained in an unsatisfactory form. *Ribot* (trans.), Psychol. of Emotions, p. 39.

(*b*) A nativistic theory of space perception. See ★*quale*⁴, 2.

qualification, *n.*—**Testimonial qualifications.** See ★*testimonial.*

qualified, *p. a.* **4.** Prefixed by a qualifying adjective; in a slang use, damned.

> Cranze said he refused to be chided by a *qualified* teetotaller, and mixed himself further king's pegs.
> *Cutcliffe Hyne*, A Master of Fortune, xi.
>
> Then he was marched out of the rain into the refreshment-room and told not to make a *qualified* fool of himself.
> *R. Kipling*, Arrest of Lt. Golightly, Plain Tales from the Hills, p. 342.

Qualitative mathematics. See ★*mathematics.*

quality, *n.* **12.** Specifically, in *acoustics*, that in a particular sound or tone which distinguishes it from other sounds or tones of the same pitch and loudness; timbre; tone-color: as, the *quality* of a violin tone. See *timbre*³.

> Of course, if clang could not be used, Prof. Tyndall's suggestion to translate Prof. Helmholtz's Klangfarbe by clangtint fell to the ground. I can find no valid reason for supplanting the time-honoured expression *quality* of tone.
> *A. J. Ellis*, in Helmholtz (trans.), Sensations of Tone, p. 36, note.

13. In the *fine arts*, especially *painting*, often used to designate body, richness, and depth of color, or similar attributes of style in modelling or of relief in architectural detail.—**14.** In *psychophys.*, one of the constituent attributes of the elementary mental process, sensation, or affection; that attribute which individualizes the element and from which it receives its name.

> Some sensations have four such aspects; every sensation has at least three. The four are *quality*, intensity, extent, and duration.
> *E. B. Titchener*, Outline of Psychol., p. 37.

quality (kwol′i-ti), *v. t.*; pret. and pp. *qualitied*, ppr. *qualitying.* [*quality, n.*] **1**†. To supply with qualities or a quality.—**2.** To estimate at a certain value.

> The warren contained 878 acres, much of which was *qualitied* at 9s. to 10s. per acre.
> *Batchelor*, Agr. Surv. Bedfordshire, p. 236. *N. E. D.*

qualtagh (kwăl′taċh), *n.* [Manx.] A Christmas or New Year's ceremony, in the Isle of Man; one who takes part in the ceremony. See the first extract.

> A company of young lads or men generally went in old times on what they termed the *Qualtagh*, at Christmas or New Year's Day, to the houses of their more wealthy neighbours; some one of the company repeating in an audible voice the following rhyme; 'Ollick ghennal erriu,' &c. . . . When this was repeated they were then invited in to partake of the best that the house could afford. *N. and Q.*, quoted in Eng. Dial. Dict.
>
> "Are you going to put the new year in anywhere, Philip?" said Kate. . . .
> "I should be the first-foot here, only I 'm no use as a *qualtagh*," said Philip.
> "Why not?"
> "I 'm a fair man, and would bring you no luck, you know." *Hall Caine*, The Manxman, ii. 2.

Quamasia (kwa-mas′i-ạ̈), *n.* [NL. (Rafinesque, 1818), < Amerindian *quamash* or *camass.*] A genus of North American plants of the family *Liliaceæ*, including camass and wild hyacinth. See *Camassia* and *camass.*

quandel (kwon′del), *n.* [Origin obscure.] A stake which charcoal-burners drive into the ground, and about which they pack the billets of wood to be charred, in the construction of a heap or mound in the open air, which is then covered with earth.

quandong (kwan′dong), *n.* Same as *quandang.* See also *Fusanus.*—**Brisbane quandong.** Same as *blue* ★*fig.*

quantifiable (kwon′ti-fī-ạ-bl), *a.* [*quantify* + *-able.*] That may be quantified; that can be measured as a quantity.

Quantitative rules, in *evidence*, those which call for a special kind of witness to certain facts, as an eye-witness; also those which require specific or complete rather than general or fragmentary evidence. *Wigmore*, Evidence, § 2030.

quantity, *n.* **9.** Specifically, same as *duration* or *time-value*: said of musical tones or notes.—**Phase of a complex quantity.** See ★*phase*¹.—**Vector quantity,** a quantity to which is attributed both magnitude and direction.

quantometer (kwan-tom′e-tėr), *n.* [*quant*(*ity*) + Gr. *μέτρον*, measure.] In *elect.*, an instrument with moving coil, for the measurement of induced currents in cases where an ordinary ballistic galvanometer is inapplicable on account of the gradual character of the effect to be observed.

> His "*quantometer*" is designed to take the place of the ballistic galvanometer and to do what it fails to do, i. e., to sum up in a single throw quantities conveyed by currents lasting an appreciable time.
> *Elect. World and Engin.*, Jan. 24, 1903, p. 166.

quantuplicity, *n.* **2.** Number-of-times-ness. *De Morgan*, 1836. [Rare.]

> Ratio is the relation of one magnitude to another with respect to *quantuplicity.*
> *Halsted*, Elem. of Geom., p. 177.

quaqua (kwä′kwä), *n.* [An imitative name, perhaps of African origin. Compare negro-Eng. of Guiana *kwakwa*, a duck (see Eng. *quack*¹).] A musical instrument of the southern negroes of the United States resembling a drum.

> He [the negro slave] . . . walks six or seven miles in the night . . . to a negroe dance, in which he performs with astonishing agility, . . . keeping time and cadence, most exactly, with the music of a banjor (a large hollow instrument with three strings), and a *quaqua* (somewhat resembling a drum), until he exhausts himself.
> *John F. D. Smyth*, Tour in the U. S. of Amer., 1784, I. 46.

quaquadrate† (kwā-kwod′rāt), *n.* [*qua*(*drate*) + *quadrate.*] In *math.*, the sixteenth power.

quaquaversal, *a.* **II.** *n.* **1.** A ridge between two adjoining watersheds which is worn down so that the basins connect and become the common origin of two systems of rivers. Usually this arrangement can be only temporary, and one river soon absorbs the entire drainage.—**2.** In *phys. geog.*, a domed structure with the strata dipping away in all directions from a center.

quar. An abbreviation (*a*) of *quarter*; (*b*) of *quarterly.*

quarantiner (kwor′ạn-tē-nėr), *n.* [*quarantine* + *-er*¹.] One who quarantines; also, one who is quarantined.

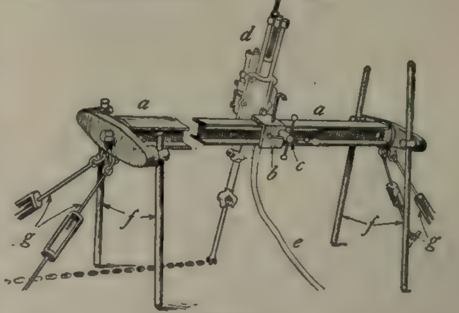
quardofelic (kwâr-dō-fel′ik), *a.* [*quar*(*tz*) + *do*(*minantly*) + *fel*(*dspar*) + *-ic.*] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*¹), having normative feldspars dominant over normative quartz, that is, within the proportion $\frac{Q}{F}\langle\frac{7}{1}\rangle\frac{5}{3}$.

quarfelic (kwâr-fel′ik), *a.* [*quar*(*tz*) + *fel*(*dspar*) + *-ic.*] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*¹), having equal, or nearly equal, normative quartz and feldspar, that is, within the ratio $\frac{Q}{F}\langle\frac{5}{3}\rangle\frac{3}{5}$.

quaric (kwâr′ik), *a.* [*quar*(*tz*) + *-ic.*] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*¹), pertaining to or characterized by the presence of normative quartz.

quarry¹ (kwor′i), *v. t.*; pret. and pp. *quarried*, ppr. *quarrying.* [*quarry, n.*] To pave with quarries. See *quarry*¹, 1 (*a*).

quarry-bar (kwor′i-bär), *n.* A strong rectangular steel bar, supported by iron legs at each end and stayed by guy-rods, used to support a rock-drill. The drill is movable along the bar, and may be fixed in a horizontal or vertical position for drilling a line of holes in a wall or upon a floor.



Quarry-bar.

a, quarry-bar (much longer than shown); *b*, carrier traversing bar and supporting rock-drill; *c*, set-screw fixing carrier to bar; *d*, rock-drill; *e*, air- or steam-hose; *f*, adjustable legs supporting bar; *g*, guy-rods with twin buckles.

quart¹, *n.* **6**†. A quarter of the horizon.

quart² (kärt), *v.* **I.** *intrans.* In *fencing*, to make a pass while holding the sword hand with the nails turned upward.—**To quart and tierce.** See *quart and tierce*, under *quart*².

II. *trans.*—**To quart the head,** to draw back the head and shoulders while using the position "quart."

> The *Quarting* of your *head* preserveth you from being hit in the face.
> *Sir W. Hope*, Fencing-Master, p. 31. *N. E. D.*

quart. An abbreviation (*a*) of *quarter*; (*b*) of *quarterly.*

quartane (kwâr′tān), *n.* [L. *quartus*, fourth, + *-ane.*] An obsolete name for ★*butane.*

quartenylic (kwâr-te-nil′ik), *a.* [L. *quartus*, fourth, + *-ene* + *-yl* + *-ic.*] Containing four atoms of carbon in the molecule.—**Quartenylic acid.** Same as ★*isocrotonic acid.*

quarter¹, *n.* **6.** Same as ★*peg*, 7. [Local, U. S.]—**Fifth quarter,** the hide, fat, and other less valuable parts of a slaughtered ox or sheep.—**Lee quarter,** the quarter of a vessel on the leeward side.

quarter¹, *v. i.* **6.** To enter into a new quarter, as the moon.

> They would have bad weather until the moon *quartered.* *G. Keate*, Pelew Island, p. 227. *N. E. D.*

quarter², *n.*—**To cry quarter,** to beg for quarter; to cry for mercy to a conquering foe.

quarter-bend, *n.* **2.** A long-radius elbow; a pipe-fitting curved to an arc of 90° for connecting two pipes at right angles to each other.

quarter-bleach (kwâr′tėr-blēch), *n.* A process of partial bleaching, especially of linen cloth, by which full whiteness is not obtained but risk of injury to the fiber is lessened.

quarter-box (kwâr′tėr-boks), *n.* In *mech.*, a box or journal made up of four parts, instead of two. The bottom and top parts can be adjusted vertically and the other two parts can be adjusted horizontally. Such bearings are used only for the crank-shaft boxes in large engines.

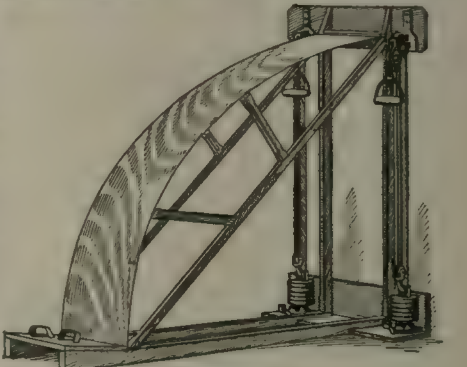
> Journals.—In the main bearings a four-part, or *quarter-box*, arrangement is used, the bearings being adjustable horizontally by wedges set up by bolts extending through the caps. *Elect. Rev.*, Sept. 24, 1904, p. 517.

quarter-breed (kwâr′tėr-brēd), *n.* A person having one fourth American Indian and three fourths white blood.

> Henry was a *quarter-breed*, quarter-back Cherokee, educated East in the idioms of football and West in contraband whiskey. *McClure's Mag.*, Feb., 1903, p. 428.

quarter-butt (kwâr′tėr-but), *n.* In *billiards*, a cue which is smaller than a half-butt.

quarter-circle (kwâr′tėr-sėr″kl), *n.* A piece of gymnasium apparatus consisting of a long strip of board bent into a quarter-circle, with



Quarter-circle.

straps for the feet at the bottom and pulleys for the hands at the top, designed for various exercises, particularly those calling upon the abdominal muscles.

quarter-crack (kwâr'tėr-krak), *n.* In *vet. surg.*, a fissure or crack in that portion of the wall of a horse's hoof between the toe and the heel which is known as the quarter.

quarter-crank (kwâr'tėr-krangk), *a.* Having two or more cranks at an angle of 90° to one another. *The Engineer* (London), July 24, 1903, p. 87.

quarter-davits (kwâr'tėr-dav"its), *n. pl.* The boat davits on the quarters of a vessel, that is, between the midships and stern.

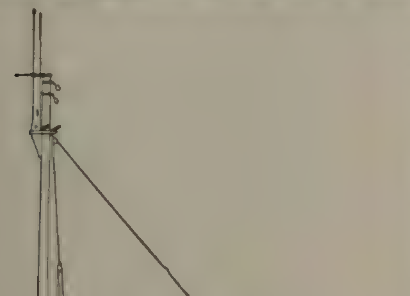
quarter-deck, *n.*—**Jack's quarter-deck** (*naut.*), the forecastle deck.

quarter-galley (kwâr'tėr-gal"i), *n.* A name given to a Barbary man-of-war.

quartering, *n.* 8. The change of the moon from one quarter to the next.

> Changes of weather . . . at the moon's *quarterings*.
> *L. Tomlinson*, tr. of Arago, Astronomy, p. 67. *N. E. D.*

quarter-lifts (kwâr'tėr-lifts), *n. pl. Naut.*, double boom-topping lifts which lead from the iron band on the after part of the main (or spanker) boom (about a quarter way in from the end) up to and through single blocks under the eyes of the rigging at the lower-masthead, and thence down on deck, and are designed to support the weight of the boom and for topping up that spar.



Quarter-lifts.

quarter-line, *n.* 3. In United States land surveys, either of two lines which divide a section into quarter-sections.—4. *Naut.*, a mooring rope or hawser, leading from the quarter of the vessel. Also called *quarter-fast*.

quarter-mat (kwâr'tėr-mat), *n.* A chafing-mat hung on a vessel's quarter, or over the side of a dock to protect the vessel.

quartern, *n.* 2. (*d*) A weighing of six pounds, or 1,536 drams, avoirdupois, employed in the woolen-yarn trade of Yorkshire, England, to indicate the counts of yarn. For example, if one skein, or 1,536 yards, weighs one quartern the count of that yarn is one; if it takes 20 skeins to weigh one quartern the count is 20's. *C. Vickerman*, Woolen Spinning, p. 342.

quarter-phase (kwâr'tėr-fāz), *a.* In *elect.*, pertaining to a system of electrical distribution in which two alternating currents are used which differ in phase by a quarter of a period, so that, at equal intervals of time, first the first current reverses its direction, then the other, then again the first, and so on.

quarter-saw (kwâr'tėr-sâ), *v. t.* To saw into quarters. See *quartered*, 4. *Yearbook U. S. Dept. Agr.*, 1896, p. 417.

quarter-shot (kwâr'tėr-shot"), *n.* In *golf*, a stroke shorter in distance than a half-shot: about equivalent to a wrist-stroke, although sometimes played with a stiff arm.

quarter-wave (kwâr'tėr-wāv"), *n.* In *phys.*, one fourth of a wave-length; the distance measured along the path of a wave-train which corresponds to a fourth of a period, or to a difference of phase of $\frac{\pi}{2}$.

quartet, *n.* 4. In *embryol.*, a group of four cleavage-cells considered as a unit, either because they arise at the same time, or because they have a similar origin or prospective function.

quartettino (kwär-tet-tē'nọ̄), *n.* [It. dim. of *quartetto*, quartet.] In *music*, a short or condensed quartet. See *quartet*, 1.

quartic. I. *a.*—**Weddle quartic surface.** See ★*surface.*

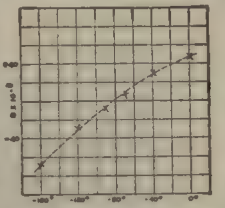
II. *n.* 2. In *geom.*, a curve or surface of the fourth degree or order.

> The singular surface of the general quadratic complex is the famous *quartic*, with sixteen nodes and sixteen singular tangent planes, first discovered by Kümmer.
> *Encyc. Brit.*, XXVIII. 662.

quartile, *n.* 2. That point on a frequency-curve above or below which one fourth of the total number of cases are found.

II. *a.* Involving an angular distance of 90°.

quartz, *n.*—**Hungry quartz**, unpromising quartz. [Australian mining term.]—**Quartz drift.** See ★*drift.*—**Quartz glass**, a material obtained by fusing clear quartz crystals in the oxy-hydrogen flame and allowing the molten mass to solidify in noncrystalline form. Quartz glass or fused quartz is a hard, transparent, and colorless solid which can be made into rods, tubes, beakers, flasks, and numerous other utensils for the construction of which glass is commonly used. Quartz glass has some remarkable properties that make it valuable in scientific and technical work. The coefficient of linear expansion is exceedingly small. At 0°C. it is less than 1/20 that of ordinary crown glass and diminishes rapidly with falling temperatures (see Fig. 1). At about −80°C. the coefficient becomes zero, and at lower temperatures is negative. Quartz glass may be heated to much higher temperatures than ordinary glass without softening, and on account of the small temperature coefficient a vessel of this material may be brought suddenly to a red heat and then plunged into water or even liquid air without fracture. The transparency of quartz glass for ultra-violet rays makes it invaluable in the construction of vacuum-tubes and other apparatus for the photographic study of the shorter wave-lengths of the spectrum. When fused, quartz may be drawn into fibers too fine to be visible to the naked eye and of very great tensile strength and elasticity. The use of such fibers, which are capable of sustaining a greater weight than any other known material of the same diameter, has made it possible to increase enormously the delicacy of many scientific instruments, such as the galvanometer, electrometer, radiometer, and torsion balance, and to measure accurately effects such as the force of gravitation between small masses, the heat from the stars, and the pressure due to light-waves, which were previously too small to be detected.—**Quartz spectrograph.** See ★*spectrograph.*—**Quartz thread.** Same as *quartz* ★*fiber*[1].—**Vein-quartz**, quartz deposited from solution in cracks or larger fissures, as contrasted with the variety which crystallizes as a component of the acidic igneous rocks, directly from fusion. Crystals of the former are bounded by the prism and rhombohedrons; those of the latter very rarely have other than rhombohedron faces. *Geikie*, Text-book of Geol., p. 196.



Curve showing the variation of the coefficient of expansion of quartz glass with temperature. (After measurements by Dorsey.)

quartz-battery (kwârts'bat"ėr-i), *n.* A quartz-mill; two or more stamps for pulverizing quartz, operated as one machine. *E. E. Morris.* [Australia.]

quartzen (kwârt'sen), *a.* [*quartz* + *-en*[2].] Made of quartz; quartz.

> First and foremost comes the stone money, which consists of *quartzen* wheels, varying from 6 to 8 inches to 12 feet in diameter. *Geog. Jour.* (R. G. S.), XIII. 129.

quartz-field (kwârts'fēld), *n.* A non-alluvial gold-field. *E. E. Morris*, Austral English.

quartzic (kwârt'sik), *a.* [*quartz* + *-ic.*] Same as *quartziferous*.

quartzine (kwârt'sin), *a.* and *n.* [*quartz* + *-ine*[1].] I. *a.* Composed of or resembling quartz.

II. *n.* Anhydrous silica having a fibrous structure but differing from normal quartz in having a slightly lower density and also in optical characters. See ★*lutecine.*

quartzite, *n.*—**Hartshill quartzite**, a division of the Cambrian formation in the Nuneaton district (including Hartshill) of Warwickshire, England. It lies at the base of the series and is overlain by the Stockingford shale.—**Ignacio quartzite.** Same as *Ignacio* ★*formation.*—**Malvern quartzite**, a division of the Cambrian rocks lying at the base of the series as exposed in the Malvern Hills of England.—**Parting quartzite**, a name first applied by S. F. Emmons (*Monograph XII.*, U. S. Geol. Survey) to a quartzite about 70 feet thick, which, at Leadville, Colorado, separates the Carboniferous Blue Limestone stratum carrying the ores from the lower-lying Silurian White Limestone, believed to be barren. The formation has since been traced in other parts of the State.—**Wrekin quartzite**, the lowest division of the Cambrian in the Wrekin district of England. It is from 100 to 200 feet thick, and carries no fossils except worm-burrows. It is overlain by the Comley or Hollybush sandstone.

quartz-mill, *n.*—**Huntington's quartz-mill**, a centrifugal-roller amalgamating quartz-mill in which the crushing is done by rolls revolving along the inner face of the ring which surrounds the pan. The pressure is supplied by the revolving disk which, by moving the spindles of the rolls outward, presses the rolls against the wall of the ring where they come in contact with the ore. The amalgam collects in the pan-bottom below the rolls.

quartz-mining (kwârts'mī"ning), *n.* 1. The process of taking gold-bearing quartz out of reefs.—2. Mining in the solid rock. [California.]

quartzophyre (kwârt'sọ̄-fīr), *n.* [*quartz* + (*por*)*phyr*(*y*).] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*[1]), any porphyry characterized by quartz phenocrysts.

quartzophyric (kwârt-sọ̄-fir'ik), *a.* [*quartzophyre* + *-ic.*] In *petrog.*, having the characters of or pertaining to quartzophyre or quartz-porphyry.

quartz-reefer (kwârts'rē"fėr), *n.* One who digs or mines at a reef of gold-bearing quartz. *E. E. Morris*, Austral English. [Australia.]

quartz-reefing (kwârts'rē"fing), *n.* The operation of mining for gold in a quartz-reef. *E. E. Morris*, Austral English.

quartzware (kwârts'wãr), *n.* Ware fashioned out of pure quartz which has been fused either by the aid of the heat of an oxy-hydrogen flame or by that of an electric furnace. It is adapted for chemical work at high temperatures and is very resistant against chemical reagents. See ★*quartz glass.*

quashy (kwosh'ı), *n.* [Also *quashee*; a generalized use of *Quashy, Quashee, Quassy, Quassi*, a frequent name of negroes (see *Quassia*). Compare ★*cuffy.*] A negro. [West Indies.]

quasi-affinity (kwā"sī-a-fin'i-ti), *n.* In *civil law*, the affinity which the law regards as established between two persons one of whom has been betrothed, but not yet married, to one of the kindred of the other.

quasi-crime (kwā sī-krīm"), *n.* In *law*: (*a*) An offense in the nature of a crime, not amounting to a crime or misdemeanor, which may be repressed or punished by a forfeiture or penalty. (*b*) An offense for which the master or director of the perpetrator is responsible.

quasi-deposit (kwā"sī-dẹ̄-poz'it), *n.* Involuntary lawful possession of another's property, as by finding.

quasi-derelict (kwā"sī-der e-likt), *n.* In *mar. law*, a vessel not abandoned, but in such condition that those on board are incapable of doing anything for its safety.

quasi-inversion (kwā'sī-in-vėr'shọn), *n.* In *math.*, the transformation of a plane figure by substituting for each of its points the symmetrical of its inverse, with regard to a symmetry-axis through the center of inversion.

quasi-partners (kwā"sī-pärt'nėrz), *n. pl.* A term used to denote persons who are part owners of lands or chattels but between whom the legal relation of partnership does not exist.

quasi-personalty (kwā-sī-pėr'sọn-ạl-ti), *n.* Property which by itself would be personal but by reason of its relation to realty is regarded in law as realty.

quasi-purchase (kwā-sī-pėr'chạ̄s), *n.* In *civil law*, a purchase which arises from the presumed consent of the owner of a thing: for example, A, having the property of B, consumes it without any agreement, but intending to pay B for it; the presumption is that B consented to sell, and the purchase is binding upon A.

quasky (kwas'ki), *n.* [Of like origin with *oquassa*.] The blue-back trout, *Salvelinus oquassa*, of the Rangeley Lakes, Maine. *Jordan and Evermann*, Fishes of North and Middle Amer., p. 514.

quassic (kwas'ik), *a.* [*quassia* + *-ic.*] Derived from quassin.—**Quassic acid**, a crystalline acid, $C_{30}H_{38}O_{10} + H_2O$, made by heating quassin with concentrated hydrochloric acid. It melts, with decomposition, at 244–245° C.

quasside (kwas'id), *n.* [*quassia* + *-ide.*] A bitter crystalline substance, $C_{32}H_{40}O_9$, made by heating quassin with dilute sulphuric acid. When boiled with weak alcohol it is changed into quassin. It melts at 192–194° C.

Quassiremus (kwas-i-rē'mus), *n.* [NL., < L. *quassus*, shattered, + *remus*, oar. The name alludes to the rudimentary pectoral fins.] A genus of ophichthyoid eels containing two known species of the eastern Pacific.

quater-centenary (kwā′tėr-sen″te-nạ̄-ri), *a.* and *n.* [L. *quater*, four times, + *centenarius*, pertaining to a hundred years.] **I.** *a.* Comprising four hundred years; including or relating to an interval of four hundred years.

II. *n.* The four hundredth anniversary of some event.

quaternary, *a.* **5.** Fourfold or tetragonal: said of the symmetry of crystals. See ★*symmetry*, 6. – **Quaternary number.** See ★*number.*

quaternio (kwạ̄-tėr′ni-ō), *n.* [NL.] Same as *quaternion.*

quaternion, *n.* **4.** In *book-making*, a set or 'gathering' of four sheets of paper or parchment folded in two. *Blount.*

quaternionic (kwạ̄-tėr-ni-on′ik), *a.* [*quaternion* + *-ic.*] Of or pertaining to or of the nature of quaternions.

> He . . . seemed more and more inclined, for practical purposes, to reject the *quaternionic* analysis, notwithstanding its beauty and logical completeness, in favor of a simpler and more direct treatment of the subject.
> *Amer. Jour. Sci.*, Sept., 1903, p. 193.

quaternity, *n.* **3.** [*cap.*] Especially, the union of four persons in one godhead. Compare *trinity*, 3.

> [The Marcosians] instead of a Trinity . . . held a *Quaternity* composed of Ineffability, of Silence, of the Father, and of the Truth.
> *Echard*, Eccles. Hist., p. 349. *N. E. D.*

quatre (kätr), *n.* [F., < L. *quattuor*, four.] The number four; the four in dice; the four-spot in cards or dominoes.

quatty (kwot′i), *n.*; pl. *quatties* (-iz). [Origin obscure.] A local name for English 1½-pence silver pieces in Jamaica.

quaw (kwä), *n.* [Also *qua, quaa*; short for *quawmire.*] **1.** A quagmire. [Scotch.]

> She had seen the lassie rinnin' afore her ower the quakkin *quas* and the green morasses o' the Silver Flow o' Buchan.
> *Crockett*, Raiders, xxiii.

2. A hole from which peat has been dug. [Scotch.]

quawmire (kwä′mīr), *n.* [Var. of *quavemire.*] A quagmire. See ★*quaw.* [Scotch.]

quaxilote (kwä-shē-lō′tā), *n.* See ★*cuajilote.*

quayage, *n.* **2.** Quays collectively; a system of quays; space covered by quays.

> An outer and an inner port, with a total length of *quayage* 3772 feet. *Encyc. Brit.*, XXVII. 443.

quebrachamine (ke-bräch′am-in), *n.* [*quebracho* + *amine.*] A bitter crystalline alkaloid found in small quantity in quebracho-bark, *Aspidosperma Quebracho.* It melts at 142° C.

quebrachine (ke-brä′chin), *n.* [*quebracho* + *-ine*¹.] A bitter alkaloid, $C_{21}H_{26}O_3N_2$, found in quebracho-bark. It melts, with decomposition, at 214–216° C. It is very poisonous.

quebrachite (ke-brä′chīt), *n.* [*quebracho* + *-ite*².] The methyl ether of levo-inosite, $C_6H_{11}O_5.OCH_3$. It is a crystalline substance found in quebracho-bark, *Aspidosperma Quebracho-blanco.* It melts at 186–187° C.

quebrachoform (ke-brä′chō-fôrm), *n.* [*quebracho* + *-form.*] A product of the same type as tannoform but made with the tannic acid of quebracho-bark. *Buck*, Med. Handbook, IV. 246.

quebrachol (ke-bräch′ol), *n.* [*quebracho* + *-ol.*] A crystalline alcohol, $C_{20}H_{34}O + xH_2O$, found in quebracho-bark, *Aspidosperma Quebracho-blanco*, from which it is extracted by ether, chloroform, or ligroin. It melts at 140° C.

queen¹, *n.* **5.** (*b*) Same as ★*queen-wasp.*—**9.** A female cat. In modern catteries the name is given only to female cats used for careful and scientific breeding. Also called *queen-cat.*

> The new cattery has a very necessary improvement in the shape of comfortable houses for the exclusive use of the *queens.* *The Animal World*, Aug., 1897, p. 301.

10. The female of a termite or white ant. See ★*king*¹, 6.—**Cross-mated queen,** a queen-bee which has been fertilized by a drone of another race.—**Hybrid queen,** a queen-bee which is the offspring of a queen of one race and a drone of another, or one which is mated with a drone of another race.—**Pure queen,** a queen-bee of pure blood mated with a drone of the same race.—**Queen's Bishop's Pawn's defense.** See ★*defense.*—**Queen's Knight's début.** Same as *Vienna opening.* See *opening*, 9.—**Queen's parade.** See ★*parade.*—**Queen's pipe,** a furnace formerly used in England for burning smuggled and damaged tobacco. *N. E. D.* Also called *queen's tobacco-pipe.*—**Queen's regulations.** See *king's* ★*regulations.*—**Queen's** (or **King's**) **shilling,** a shilling formerly given, in Great Britain, to a recruit on enlisting. If he accepted it, he was irrevocably bound, unless he was bought out.—**Tested queen,** a queen-bee whose worker progeny indicate that she is of a pure race and mated to a pure drone of the same race.—**Virgin queen,** a queen-bee not yet fertilized.

queen-bee (kwēn′bē), *n.* See *bee*¹.

queen-cage (kwēn′kāj), *n.* A small box with a wire-gauze-covered opening, constructed for transporting queen-bees by mail or otherwise.

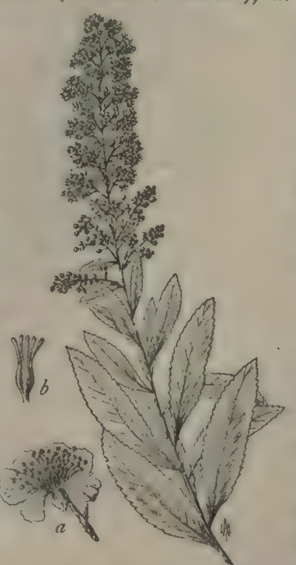
queen-cat (kwēn′kat), *n.* Same as ★*queen*¹, 9.

queen-of-orchids (kwēn″ọv-ôr′kidz), *n.* See ★*Grammatophyllum.*

queen's-conch (kwēnz′kongk), *n.* See *queen-conch*: a trade-name used by cameo-cutters.

queen-snake (kwēn′snāk), *n.* A water-snake, *Natrix leberis*, of the central and eastern United States. Its general color is chocolate brown, yellowish below, with black and yellow markings. *Smithsonian Rep.* (Nat. Mus.), 1900, p. 104.

queen's-needlework (kwēnz″nē′dl-wėrk), *n.* The American meadow-sweet, *Spiræa salicifolia.*



Queen's-needlework (*Spiræa salicifolia*). *a*, a flower; *b*, pistil.

queen-wasp (kwēn′wosp), *n.* A perfect female wasp. *N. E. D.*

> The *queen wasp* alone survives the winter, and deposits her first eggs in the ensuing spring.
> *E. Bevan*, Honey Bee, p. 17.

queen-wood (kwēn′wụd), *n.* **1.** A small Australian tree of the bean family, *Daviesia arborea*, or its wood, which may be obtained in logs from 6 to 12 inches in diameter. The wood is hard, close-grained, streaked with beautiful pink lines, and takes a high polish.—**2.** The wood of the angico, *Stachychrysum rigidum.* It is very hard, dark reddish-brown, often streaked with black, and may be obtained in the form of trimmed logs from 6 to 10 inches in diameter. See ★*angico* and *Piptadenia.*

queer¹, *v. t.* **3.** To put wrong (unexpectedly); throw out of its proper status or working; ruin the success of; render useless by interference or infelicitous aid. [Slang.]

> [He] will *queer* the whole thing. His appearance before the National Committee will recall . . . things that knocked Tammany out in 1901.
> *N. Y. Tribune*, Jan. 12, 1904, p. 2.

> Without having you come in and *queer* me right in the middle of it [my story].
> *J. L. Ford*, Bohemia Invaded, p. 91.

quel, *v.* and *n.* A simplified spelling of *quell.*

quell² (kwel), *v. i.* [G. *quellen*, OHG. *quellan*, well out.] To well or flow out. [Rare.]

> Out of a low cave of rock, at the foot of a limestone crag, the great fountain rose, *quelling*, and bubbling, and gurgling. *Kingsley*, Water-Babies, i. *N. E. D.*

quell² (kwel), *n.* [G. *quelle*, < *quellen*, well out.] A spring; a fountain; a source from which water wells out.

> He was still singing, and she was the goddess of his Muse,—the *quell* of living waters out of which he drew fresh strength for new lays.
> *G. Egerton*, Discords, p. 209. *N. E. D.*

quenastite (ken-as′tīt), *n.* [*Quenast*, Belgium, + *-ite*².] In *petrog.*, a variety of diorite composed of lime-soda feldspar and hornblende with quartz and sometimes orthoclase.

quench, *v. t.* **6.** To produce a series of crusts on (molten metal), each being taken off as soon as it is formed.

quench, *n.* **2.** A pit or cavity in which water can be thrown upon hot coke just manufactured in an oven, so as to cool it and leach out the soluble sulphur elements.

> From *quenches* 6 feet below ground 1,400 pounds of coke are delivered to the charging holes of the water-gas retort 40 feet above ground, the operation consuming but three minutes, though the effected points are 400 feet apart and two right angle curves intervene.
> *Jour. Franklin Inst.*, Oct., 1904, p. 286.

quercetagetin (kwėr-set-ạ̄-jē′tin), *n.* A yellow crystalline coloring matter, $C_{27}H_{22}O_{13}$, obtained from the flowers of the African marigold, *Tagetes erecta.*

quercic (kwėr′sik), *a.* [L. *quercus*, oak, + *-ic.*] Derived from the oak.—**Quercic acid.** Same as ★*quercin.*

querciform (kwėr′si-fôrm), *n.* [L. *quercus*, oak, + *-form.*] A product of the type of tannoform, made with oak-tannin. *Buck*, Med. Handbook, IV. 246.

quercimelin (kwėr-si-mel′in), *n.* [L. *quercus*, oak, + *mel*(*o*), melon, + *-in*².] Same as *quercitrin.*

quercimeric (kwėr-si-mer′ik), *a.* [L. *quercus*, oak, + Gr. *μέρος*, part, + *-ic.*] Derived from the oak.—**Quercimeric acid,** a crystalline acid, $C_8H_6O_5 + H_2O$, made by heating quercitrin with caustic potash.

quercin (kwėr′sin), *n.* [L. *quercus*, oak, + *-in*².] **1.** A crystalline monosaccharide, $C_6H_{12}O_6$, occurring in oak-bark. It is obtained from the mother-liquors of quercite. It is optically inactive and melts at 340° C.—**2.** A variety of tannic acid, $C_{15}H_{12}O_9 + 2H_2O$, found in oak-bark. It is a light-brown hygroscopic powder. Also called *quercic acid.*—**3.** A bitter crystalline compound found in oak-bark.

quercitan (kwėr′si-tan), *n.* [*quercite* + *-an.*] An alcohol, $C_6H_{10}O_4$, formed in small quantity when quercite is heated to 240–250° C. It does not crystallize.

Quercitannic acid, the kind of tannin or tannic acid which occurs in the bark of the various species of oak, giving value to such bark for the manufacture of leather. It is a powder of reddish-white color, the alcoholic solution of which produces a dark-blue color with ferric chlorid. The formulæ $C_{17}H_{16}O_9$ and $C_{19}H_{16}O_{10}$ have been attributed to it.

quercitric (kwėr-sit′rik), *n.* [*quercitr*(*on*) + *-ic.*] Derived from quercitron, the bark of the black oak, *Quercus velutina.*—**Quercitric acid.** Same as *quercitrin.*

Quercitron borer, an American cerambycid beetle, *Graphisurus fasciatus*, whose larvæ feed upon and destroy the quercitron-bark in newly felled trees. Also called *quercitron bark-borer.*

Quercy phosphorites. See ★*phosphorite.*

querent², *n.* **2.** In *horary astrol.*, the person who asks the question.

querflöte (kwãr′flė-te), *n.* [G.] The German name for the transverse or cross-flute.

Querimana (kwer-i-mä′nạ̈), *n.* [NL., < Pg. *queriman.*] A genus of little mullets found on the South Atlantic coast of the United States and the Pacific coast of tropical America.

querited (kwē′ri-ted), *p. a.* [Irreg. < L. *quærere* (pp. *quæsitus*), seek, ask, + *-ed.*] An erroneous form for ★*quesited.*

querulental† (kwer-ọ̈-len′tạ̈l), *a.* Same as *querulential.*

querulist† (kwer′ọ̈-list), *n.* [*querul*(*ous*) + *-ist.*] A dissatisfied, complaining person.

quesited (kwē-sī′ted), *a.* and *n.* [L. *quæsitus*, pp. of *quærere*, seek, ask. See *query, question.*] **I.** *a.* Sought for; inquired about.

> The remains are the Numbers *quesited.*
> *Jeake*, Arithmetic, p. 20. *N. E. D.*

II. *n.* In *astrol.*, the person or thing asked about.

> The future husband, or to speak in astrological parlance, the *quesited*, revealed himself.
> *The Churchman*, May 11, 1901, p. 594.

question, *n.* **12.** *pl.* The smaller catechism. Also called *question-book.* [Scotch.]

> 'The guilt of Adam's first sin, the want of original righteousness, and the corruption of my whole nature,' I said; for I judged from the look of the man he would think the better of me if I knew my *questions.*
> *R. L. Stevenson*, David Balfour, iii.

Social question, the labor question; the question of social reorganization or of socialism or anarchism.

> The Anglo-Saxon . . . has within his borders the emancipated but ostracized Negro, the English Poor Law, and the *Social Question.* *Kidd*, Social Evolution, p. 58.

questionary, *n.* **2.** A list of questions dealing with some topic, such as visualizing power, expression of emotion, mental habits, or other mental or psychophysical character easily accessible to observation, prepared for circulation among a large number of persons, the answers to which are intended to serve as the basis of a statistical treatment of the topic. The questionary was successfully employed by Darwin and F. Galton, and has been freely used of late years by G. S. Hall and his pupils.

> It is plain that the drawing-up of a *questionary* is no light task. *E. B. Titchener*, Exper. Psychol., I. ii. 388.

> There is a great discrepancy between my introspections and those of other trained observers. . . . on the one hand, and the mass-results of *questionaries*, on the other.
> *Jour. Philos., Psychol. and Sci. Methods*, Jan. 21, 1904, p. 39.

3. A questionist. *N. E. D.*

question-book (kwes′chọn-bůk), *n.* **1.** A school-book in which questions only are printed, the pupil supplying the answers, if he can, from recollection of previous instruction.—**2.** The shorter catechism. Also called *questions.* [Scotch.]

questionist, *n.* **3.** A professed questioner; specifically applied to Duns Scotus and other schoolmen. *N. E. D.*

question-mark (kwes′chọn-märk), *n.* In *printing,* an interrogation-point.

questionnaire (kes-tyo-nãr′), *n.* [F.] Same as ★*questionary,* 2.

> The answer is, as *questionnaire* returns plainly show, that it means very different things to different believers.
> *Amer. Jour. Relig. Psychol. and Education,* May, [1904, p. 50.

questorial (kwes-tō′ri-ạl), *a.* [L. *questor* + *-i-al*^{1}.] Of or relating to a questor, or his office.

quest-rope (kwest′rōp), *n.* [Altered, to suit a supposed etymology, from *guest-rope,* earlier *guess-rope.*] Same as *guess-rope.*

quet (ket or kwet), *n.* [*Quét(elet),* a noted Belgian statistician.] A proposed unit of consuming-power designed to reduce to a common basis the consuming-power of families which differ in sex- and age-composition. The consuming-power of an infant of less than one year is reckoned at unity, and one tenth is added for every year up to 20 for females and up to 25 for males.

> The object of such a table . . . is . . . to furnish an apparatus by which the expenditures of families of different composition may be reduced to some unit for comparison. Engel desired to give this unit the name of *Quet,* after the famous Belgian statistician Quetelet.
> *R. Mayo-Smith,* Statistics and Economics, p. 50.

Quételet's curve. See ★*curve.*

quetenite (ket′e-nīt), *n.* [*Quetena* (see def.) + *-ite*^{2}.] A hydrous sulphate of ferric iron and magnesium occurring in reddish-brown crystalline masses: found in Quetena, Chile.

queyou, queyu (kwā-ō′), *n.* [Also *kway;* Negro-Eng. (in D. spelling) *kwejoe,* < Arawak (in D. spelling) *kiwejoen.*] A small apron made of bark strings, worn by the Indians of Guiana. When the Indians are in contact with the whites, beaded strings are used in place of bark strings. [Guiana.]

quezal, *n.* Same as *quetzal.*

quia-quia (kē-ä-kē′ä), *n.* [Appar. a West Indian name.] Same as *scad*^{1}, 2.

quica (kē′kä), *n.* A small opossum, *Didelphys quica,* about the size of a rat, found in northern South America and Brazil.

Quichuan (kē′chö-ạn or kēch′wạn), *a.* and *n.* Of or pertaining to the Quichua, the principal native tribe of Peru; the Quichua language.

Quichuist (kē′chö-ist), *n.* [Sp. *Quichuista;* as *Quichua* + *-ist.*] One who is proficient in the Quichua language.

quick^{1}, *a.* **8.** Very elastic: as, a *quick* billiard cushion. *Recreation,* XIV. lxii. (advt.).

quick^{2} (kwik), *n.* In *mining,* an abbreviation of *quicksilver.* [U. S.]

quick-action (kwik′ak″shọn), *a.* Acting quickly or in the shortest possible time. —**Quick-action valve.** See ★*valve.*

quick-birth (kwik′bėrth), *n.* The birth of a living child; a birth in which the child is born alive. Same as ★*live-birth.*

quick-born (kwik′bôrn), *a.* Born alive; live-born.

> I saw your Romulus . . .
> Slay his own twin, *quick-born* of the same womb,
> Because he leapt a ditch.
> *Byron,* Deformed Transformed, i. 2.

quicken^{1}, *v. t.* **6.** In *nav. arch.,* to give a greater curve to.—**Quickening liquid,** a weak solution of one of the salts of mercury into which, preparatory to electroplating, metallic articles are dipped, in order to cleanse the surface and coat it with an extremely thin film of mercury, so that the silver afterward deposited may adhere firmly.

Quickening of mercury, a process of treating mercury whereby its effectiveness is restored. When, in the amalgamation process for extraction of the precious metals from their ores, mercury has become 'floured' or reduced to minute globules, coated with sulphid or oxid so that they will not run together or take up particles of gold or silver, the surface of the metal may be cleansed, and its effectiveness restored, by treatment with a solution of potassium cyanide or dilute nitric acid, or by addition of a little sodium amalgam.

quick-fire (kwik′fīr), *a.* Same as ★*rapid-fire.*

quick-flux (kwik′fluks), *n.* In *early chem.,* a mixture of three parts of niter, one of sulphur, and one of sawdust, which, pressed into a nutshell about a small silver coin and set on fire, burned fiercely and produced so high a temperature as to melt the coin.

quick-loader (kwik′lō″dėr), *n.* **1.** A piece of mechanism which effects the quick loading of a gun.—**2.** A quick-loading gun.

quickly, *adv.* **3**†. As if living; in a lifelike manner; to the life.

> Whereon stode a lybbard, crownyd with golde and stones,
> Terrible of countenaunce and passynge formydable,
> As *quikly* towchyd as it were flesshe and bones.
> *Skelton,* Garlande of Laurell, l. 592.

quicksand (kwik′sand), *v. t.* **1.** To catch in a quicksand.

> The animal and the cart became *quicksanded.*
> *Westminster Gazette,* May 20, 1899, p. 5. *N. E. D.*

2. To cover with quicksands: as, a *quicksanded* coast.

quick-saver (kwik′sā″vėr), *n.* *Naut.,* an old-fashioned device in the way of a span to prevent the courses (lowest sails) from bellying too much when the ship was off the wind.

quicksilver, *n.* **2.** A term popularly applied to the amalgam of mercury and tin on the back of a common mirror.

quick-stick (kwik′stik), *adv.* Quickly; without delay; shortly.

> This fellow has what must kill him inside. . . . If there it [the sword] is left, die he must, and *quick stick;* inflammation is set up already.
> *R. D. Blackmore,* Erema, lvi.

In quick-sticks, in short order.

quick-water (kwik′wâ″tėr), *n.* That part of a stream which has fall enough to create a decided current: opposed to ★*still-water.*

quidding (kwid′ing), *n.* [*quid*^{1} + *-ing*^{1}.] The forming, by an animal, of balls of well-chewed food which are dropped into the manger or on the floor of the stall instead of swallowed, on account of difficulty or painfulness of swallowing as a result of some disease of the mouth or throat. *U. S. Dept. Agr.,* Rep. on Diseases of the Horse, 1903, p. 22.

Quiescent ether. See ★*ether*^{1}.

quiet, *v. t.*—**To quiet title.** See ★*title.*

quietant (kwī′e-tạnt), *n.* [LL. *quietans,* ppr. of *quietare,* make quiet: see *quiet, v.*] That which quiets or tends to make quiet.

> A nocturnal *quietant* and hypnotic.
> *H. C. Wood,* Therapeutics, p. 340. *N. E. D.*

Quietula (kwī-et′ụ̄-lä), *n.* [NL., dim. of *quietus,* quiet. See *quiet, a.*] A genus of gobioid fishes found on the Pacific coast of North America.

quil, *n.* and *v.* A simplified spelling of *quill.*

quilers (kwī′lėrz), *n.* [Also *quoilers,* dial. variant of *coilers,* < *coil*^{1}, *v.*] The breeching-strap of a harness. *Eng. Dial. Dict.* [Prov. Eng. and U. S. (Pennsylvania).]

quill^{1}, *n.* **14.** In *mach.,* a hollow shaft; a cylinder; a pipe; specifically, in a turbine, the hollow shaft which carries the revolving blades or blade-wheels.

> The blade wheels are mounted on a large central *quill.*
> *Amer. Inventor,* June 1, 1904, p. 247.

Knight of the quill. See ★*knight.*

quill^{1}, *v. t.* **3.** To insert or adjust the quills of (a harpsichord or spinet).

quillaic (kē-lā′ik), *a.* [*quillai* + *-ic.*] Derived from quillai-bark.—**Quillaic acid,** an acid obtained from the extract of quillai-bark.

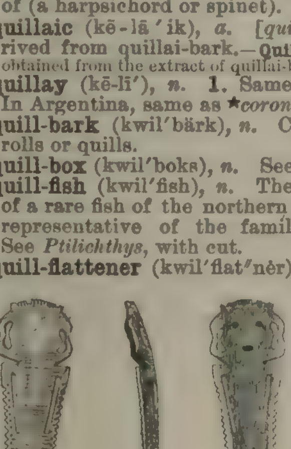
quillay (kē-lī′), *n.* **1.** Same as *quillai.*—**2.** In Argentina, same as ★*coronillo.*

quill-bark (kwil′bärk), *n.* Cinchona-bark in rolls or quills.

quill-box (kwil′boks), *n.* See ★*slip-cup.*

quill-fish (kwil′fish), *n.* The common name of a rare fish of the northern Pacific, the sole representative of the family *Ptilichthyidæ.* See *Ptilichthys,* with cut.

quill-flattener (kwil′flat″nėr), *n.* An implement used by the North American Indians to flatten porcupine quills to be used for embroidery. *Sci. Amer. Sup.,* July 23, 1904, p. 23878.



Quill-flattener of Antler: one eighth natural size. (In American Museum of Natural History, New York.)

quill-gnat (kwil′nat), *n.* A species of gnat; also an imitation of it, used as a lure in fishing.

quill-wheel (kwil′hwēl), *n.* A hand-wheel with spindle and driving-band for winding thread on a quill or tube for weaving. See *quill*^{1}, 8.

quilt^{1}, *n.* **4.** In *building,* a coarse, rough fabric used as a wall-lining in wooden houses.

quilt^{1}, *v. t.* **4.** To beat; thrash; 'lam.' [Slang or provincial.]

quilt^{2} (kwilt), *v. i.* and *t.* [Origin obscure.] To swallow; swallow (something). [Prov. Eng.]

quilt^{2} (kwilt), *n.* The point in the throat where swallowing begins.

quilting, *n.* **6.** *Naut.:* (*a*) A beating with a rope's end. (*b*) A coating for a water-vessel (such as an earthen monkey or jar), formed of sennit, rope-strands, etc.

quina^{2} (kē′nä), *n.* [West Indian?] Same as ★*boje.*

quinaldine (kwi-nal′din), *n.* [*quina* + *al-d(ehyde)* + *-ine*^{2}.] A base, *a*-methylquinoline, used in the preparation of certain artificial dyestuffs. Also *chinaldine.*

quinalgene (kwi-nal′jēn), *n.* [*quina* + *(an)-algene.*] Same as ★*analgene.*

quinalizarin (kwin″al-i-zä′rin), *n.* [*quin(a)* + *alizarin.*] A compound, $(OH)_2C_6H_2(CO)_2C_6H_2(OH)_2$ or 1,2,5,8-anthraquinonetetrol, made from alizarin and other anthraquinone derivatives; alizarin ★Bordeaux (which see). It crystallizes in deep-red needles with a green metallic luster, and is used as a dye.

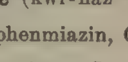
quinaphthol (kwi-naf′thol), *n.* [*qui(na)* + *naphthol.*] A trade-name of a product of the union of quinine and β-naphthol sulphonate, offered for medicinal use in typhoid fever, intestinal tuberculosis, dysentery, etc. Also *chinaphthol.*

quinary, *a.* **3.** Based upon five.

> Of the notations based on human anatomy, the *quinary* and vigesimal systems are frequent among the lower races.
> *F. Cajori,* Hist. Elementary Math., p. 3.

Quinary notation, in *arith.,* the system with radix five.

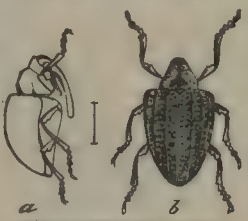
quinaseptol (kwin-a-sep′tol), *n.* [*quina* + *(anti)sept(ic)* + *-ol.*] A trade-name of a hydroxyquinoline-sulphonic acid. It is used as an antiseptic. Also called *diaphthol.*

quinazoline (kwi-naz′ọ̄-lin), *n.* The name given to phenmiazin,  $C_6H_4\!\left\langle\begin{matrix}CH = N\\ \mid\\ N = CH\end{matrix}\right.$, and to its derivatives. It crystallizes in leaflets which melt at 48° and it boils at 243° C.

quince^{1}, *n.*—**Black rot of quince.** See black ★*rot* (*c*). —**Native quince.** Same as ★*bitter-bark,* 1.—**Quince bag-worm.** See ★*bag-worm.*—**Quince leaf-spot.** See ★*leaf-spot.*

quince-borer (kwins′bōr″ėr), *n.* The round-headed apple-borer. See ★*apple-borer.*

quince-curculio (kwins′kėr-kū″li-ō), *n.* An American curculionid beetle, *Conotrachelus cratægi,* which injures quinces and crab-apples, ovipositing in the young fruit within which its larvæ subsequently feed.



Quince-curculio (*Conotrachelus cratægi*).

a, beetle in outline; *b*, dorsal view. Three times natural size.

quincentennial (kwin-sen-ten′i-ạl), *a.* and *n.* [L. *quin(que),* five, + NL. *centennium,* a hundred years, + *-al*^{1}.] **I.** *a.* Relating to a period of five hundred years; happening every five hundred years: as, a *quincentennial* celebration.

II. *n.* A five-hundredth anniversary.

quince-rust (kwins′rust), *n.* See ★*rust*^{1}.

quince-slug (kwins′slug), *n.* Same as *pear-slug.*

quincubital (kwin-kū′bi-tạl), *a.* [L. *quin(que),* five, + E. *cubital.*] In *ornith.,* possessing a fifth cubital remex or secondary quill.

> The swifts are *quincubital.*
> *Wray,* Proc. Zool. Soc., 1887, p. 348.

quincunx, *n.* **4.** A Roman brass coin of five unciæ.—**5.** A reliquary in the shape of a cross, the four parts of which can be folded over the central one. *Fallows.*

quincurion† (kwin-kū′ri-ọn), *n.* [*quincury* + *-on,* as in *centurion.*] A leader of five men. *N. E. D.* [Rare.]

quincury (kwin′kụ̄-ri), *n.* [L. *quinque,* five, + *-uria,* as in *centuria,* century.] A body of five men. *N. E. D.*

quindecad (kwin-dek′ad), *n.* [L. *quindec(im)*, fifteen, + *-ad*^{2} (after *decad*).] A set or series of fifteen.

quindecangle (kwin-dek′ang-gl), *n.* [L. *quindec(im)*, fifteen, + *angulus*, angle.] A quindecagon. *N. E. D.* [Rare.]

quindecennial (kwin-dẹ̄-sen′i-ạl), *a.* and *n.* [L. *quindecim*, fifteen, + *annus*, year, + *-i-al*^{1}.] **I.** *a.* Of or consisting of a period of fifteen years.

II. *n.* A fifteenth anniversary.

quindecylic (kwin-de-sil′ik), *a.* [L. *quindec(im)*, fifteen, + *-yl* + *-ic.*] Same as ★*pentadecylic.*—**Quindecylic acid.** Same as ★*pentadecylic acid* (*b*).

quindekagon, *n.* See *quindecagon.*

quinene (kwin′ēn), *n.* [*quina* + *-ene.*] A crystalline alkaloid, $C_{20}H_{22}ON_2$, made by boiling quinine chlorid with caustic potash dissolved in absolute alcohol. It melts at 81–82° C.

quinetum (kwi-nē′tum), *n.* [*quina* + *-etum*, a neut. participial ending.] A trade-name of a mixture of the alkaloids from *Cinchona succirubra*, used medicinally in the treatment of intermittent fever in malarial districts. Also *chinetum.*

quingentenary (kwin-gen′te-nạ̄-ri), *a.* and *n.* [L. *quingenti*, five hundred, + *-en-ary*, as in *centenary.*] Same as *quincentenary.* [Rare.]

quinhydrone (kwin-hī′drōn), *n.* [*quin(one)* + *hydr(oquin)one.*] A dark-green crystalline compound, $C_6H_4O_2.C_6H_4(OH)_2$, made by mixing solutions of quinone and hydroquinone, by the partial reduction of quinone, or by partly oxidizing hydroquinone by means of ferric chlorid. It breaks down into quinone and hydroquinone when boiled with water, and melts at 171° C.

quinine, *n.*—**Brandes's test for quinine.** See ★*test*^{1}.—**Florida quinine.** Same as *fever-tree*, 2.—**Wild quinine,** *Parthenium integrifolium*, a bitter weed of the southern United States, sometimes called *American feverfew.* See *Parthenium.*

quinine-bush (kwin′ēn-bu̇sh or kwī′nīn-bu̇sh), *n.* The bear-brush, *Garrya Fremontii:* so called because its leaves served pioneers in the place of quinine.

quinine-tree (kwin′ēn-trē or kwī′nīn-trē), *n.* **1.** The hop-tree, *Ptelea trifoliata.*—**2.** In Australia: (*a*) the horseradish-tree, *Gyrostemon cotinifolius;* (*b*) *Petalostigma quadriloculare.* See ★*bitter-bark*, 1.

quininic (kwi-nin′ik), *a.* [*quinine* + *-ic.*] Related to or derived from quinine.—**Quininic acid,** a crystalline compound, $C_{11}H_9NO_3$, made by oxidizing quinine by means of chromic anhydrid dissolved in dilute sulphuric acid. It melts, with decomposition, at about 280° C.

quininize (kwin′in-īz), *v. t.*; pret. and pp. *quininized*, ppr. *quininizing.* [*quinine* + *-ize.*] Same as *cinchonize.*

Quinisextine (kwin-i-seks′tin), *a.* Of or pertaining to the Quinisext Council, 692 A.D., the complement of the fifth and sixth ecumenical councils held at Constantinople. See *Constantinopolitan Council*, under *Constantinopolitan.*

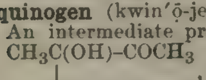
quinite (kwin′īt), *n.* [*quina* + *-ite*^{2}.] A bitter-sweet substance, $C_6H_{10}(OH)$ or 1,4-dihydroxyhexahydrobenzene, made by the action of sodium amalgam and carbon dioxid on diketohexamethylene. It melts at 144° C. Also called *quinitol.*

quinitol (kwin′i-tol), *n.* [*quinite* + *-ol.*] Same as ★*quinite.*

quinizarin (kwin-i-zä′rin), *n.* [*quina* + *(al)izarin.*] A red, or yellowish-red, crystalline substance, $C_6H_4(CO)_2C_6H_2(OH)_2$ or 1,4-dihydroxyanthraquinone, made by heating together phthalic anhydrid and hydroquinone; also in other ways. It gives blue solutions with alkalis. It melts at 192–193° C.

quinoform (kwin′ọ̄-fôrm), *n.* [*quina* + *form(aldehyde).*] A dry, bulky powder formed by precipitating an aqueous extract of cinchona to which formaldehyde has been added with hydrochloric acid: used as a dusting-powder in dermatology. Also *chinoform.*

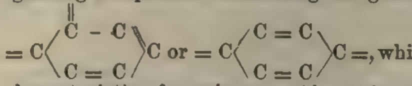
quinogen (kwin′ọ̄-jen), *n.* [*quina* + *-gen.*] An intermediate product, dimethylquinogen,



$$\begin{array}{l}CH_3C(OH){-}COCH_3\\ \quad|\\ \quad CH_2COCOCH_3\end{array}$$

, formed in the synthesis of p-xyloquinone from diacetyl; also, a similar product obtained in the synthesis of duroquinone.

quinoid (kwin′oid), *a.* [*quina* + *-oid.*] Designating compounds containing the grouping



which is characteristic of a quinone. Also *quinonoid.*

quinoidine (kwi-noi′din), *n.* [*quinoid* + *-ine*^{2}.] Same as *chinoidine.*

quinol (kwin′ol), *n.* [*quina* + *-ol.*] Same as *hydroquinone.*

quinolepidine (kwin-ọ̄-lep′i-din), *n.* [*quina* + *lepidine.*] Same as ★*lepidine*^{1}.

quinolic (kwi-nol′ik), *a.* [*quinol* + *-ic.*] Derived from quinoline.—**Quinolic acid,** a crystalline substance, $C_9H_6O_2N(NO_2)$ or nitrodihydroxyquinoline, made by oxidizing cinchonine with nitric acid. It forms salts with both acids and bases.

quinoline, *n.*—**Quinoline red,** an artificial dyestuff, a derivative of quinaldine: also used in the preparation of orthochromatic photographic plates.—**Quinoline yellow,** an artificial dyestuff, the sodium salt of quinoline-phthalon-sulphonic acid, applied to animal fabrics, wool, and silk.

quinolinic (kwin-ọ̄-lin′ik), *a.* [*quinoline* + *-ic.*] Derived from quinoline.—**Quinolinic acid.** (*a*) A crystalline acid, $C_5H_3N(COOH)_2$ or pyridine-dicarbonic acid, made by oxidizing quinoline from coal-tar or cinchonine by means of potassium permanganate. It begins to decompose at 190–195° C. and melts when heated to 231° C. (*b*) A crystalline acid made by oxidizing quinoline with potassium permanganate. It melts at 143° C.

Quinone dioxime, a crystalline substance, $C_6H_4(N.OH)_2$, which occurs as short colorless or long yellow needles which decompose at 240° C. It is made by treating quinone, hydroquinone, quinone monoxime, or paranitrosoaniline with hydroxylamine hydrochlorid.—**Quinone monoxime,** $C_6H_4(OH)(N.OH)$, a pale brownish-green crystalline substance made by boiling paranitrosodimethylaniline with dilute caustic soda, or by treating phenol with nitrous acid. It melts at 126° C. Also called *paranitrosophenol.*

quinonoid (kwin′ọ̄-noid), *a.* [*quinone* + *-oid.*] Same as ★*quinoid.*

quinophenol (kwin-ọ̄-fē′nol), *n.* [*quina* + *phenol.*] A colorless crystalline substance, $(OH)C_6H_3.C_3H_3N$ or 8-hydroxyquinoline, made synthetically. When cold it has the odor of saffron, but when heated it smells like phenol. It becomes yellow when dissolved in acids, alkalis, and dilute alcohol. It melts at 75–76° C.

quinopyrin (kwin-ọ̄-pī′rin), *n.* [*quina* + *(anti)pyrin.*] A trade-name of a solution of quinine hydrochlorate and antipyrin, for medicinal use as a febrifuge.

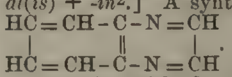
quinoral (kwi-nō′rạl), *n.* [*quin(ine)* + *(chl)oral.*] An oleaginous bitter liquid containing chloral and quinine: a hypnotic.

quinotannic (kwin-ọ̄-tan′ik), *a.* [*quina* + *tannic.*] Noting an acid, a very hygroscopic yellow glucoside found in cinchona-bark. When hydrolyzed with dilute acids it yields sugar and cinchona red. Also called *cinchonatannic acid.*

quinovic (kwi-nō′vik), *a.* [*quinov(in)* + *-ic.*] Derived from quinovin.—**Quinovic acid** a tasteless crystalline compound, $C_{32}H_{46}O_6$ or $C_{33}H_{52}O_7$ (?), occurring in tormentilla-root: also made by the hydrolysis of quinovin. It decomposes at 300° C.

quinovin (kwi-nō′vin), *n.* See ★*kinovin.*

quinoxalin (kwin-ok′sạ-lin), *n.* [*quina* + *oxal(is)* + *-in*^{2}.] A synthetic crystalline base,



. It may be regarded as quinoline with the CH group in the para position to nitrogen replaced by a second atom of nitrogen.

quinquagenary (kwin-kwaj′e-nạ̄-ri), *a.* and *n.* [L. *quinquagenarius*, consisting of fifty, < *quinquaginta*, fifty.] Same as *quinquagenarian.*

quinquagesimal (kwin-kwạ-jes′i-mạl), *a.* and *n.* [L. *quinquagesimus*, fiftieth (< *quinquaginta*, fifty), + *-al*^{1}.] **I.** *a.* Fiftieth; pertaining to the number fifty.

II. *n.* A fiftieth.

quinquangle†, (kwin′kwang-gl), *a.* and *n.* [L. *quinque*, five, + *angulus*, angle.] **I.** *a.* Having five angles.

II. *n.* A pentagon.

quinque-angle†, **quinque-angular**† (kwin-kwẹ̄-ang′gl, -ang′gụ̄-lạ̈r), *a.* [L. *quinque*, five, + E. *angle, angular.*] Pentagonal; quinquangular.

quinquecarinate (kwin-kwẹ̄-kar′i-nāt), *a.* [L. *quinque*, five, + E. *carinate.*] Having five ridges, like some of the scales on certain lizards, or the carapace of the lyre-turtle, *Dermochelys.* *Proc. Zool. Soc., London*, 1903, II. 70.

quinquecuspid (kwin-kwẹ̄-kus′pid), *a.* Same as ★*quinquecuspidate.*

quinquecuspidate (kwin-kwẹ̄-kus′pi-dāt), *a.* [L. *quinque*, five, + E. *cuspidate.*] Having five cusps or tubercles; quinquetubercular.

quinquelateral (kwin-kwẹ̄-lat′ẹ-rạl), *a.* [L. *quinque*, five, + *latus* (*later-*), side, + *-al*^{1}.] Five-sided.

quinqueloculine (kwin-kwẹ̄-lok′ụ̄-lin), *a.* [L. *quinque*, five, + *loculus*, a little place, a cell, + *-ine*^{1}.] Having five loculi or chambers, as the shells of some *Foraminifera;* quinquelocular.

quinquemolecular (kwin″kwẹ̄-mọ̄-lek′ụ̄-lạ̈r), *a.* [L. *quinque*, five, + E. *molecule* + *-ar*^{3}.] Consisting of, or relating to, five molecules.

> The velocity and mechanism of the reaction between potassium ferricyanide and potassium iodide in neutral aqueous solution. . . . The velocity of this reaction can be investigated by titration of the iodine liberated; the simplest interpretation shows that it is *quinquemolecular.*
> *Nature*, May 14, 1903, p. 46.

quinqueradial (kwin-kwẹ̄-rā′di-ạl), *a.* [L. *quinque*, five, + *radius*, ray, + *-al*^{1}.] Having five rays, as some echinoderms; pentameral; quinqueradiate. *E. R. Lankester*, Treatise on Zoölogy, III. 1.

quinquetuberculy (kwin″kwẹ̄-tụ̄-bėr′kụ̄-li), *n.* [*quinquetubercul(ar)* + *-y*^{3}.] The fact or condition of having molar teeth with five cusps or tubercles. *H. F. Osborn*, in Bull. Amer. Mus. Nat. Hist., June 28, 1902, p. 179.

quinquevalence (kwin-kwev′ạ-lẹns), *n.* [*quinquevalen(t)* + *-ce.*] The state of being quinquevalent; pentavalence.

quinquevalency (kwin-kwev′ạ-lẹn-si), *n.* Same as ★*quinquevalence.*

quinquevirate (kwin′kwẹ̄-vī-rāt), *n.* [L. *quinqueviratus*, < *quinquevir*, one of five men.] In *Rom. antiq.*, a temporary board of magistrates or commissioners consisting of five men. See *quinquevir.*

quinsied (kwin′zid), *a.* [*quinsy* + *-ed*^{2}.] Having quinsy; having been attacked by quinsy.

quint^1, *n.*—**Quint major,** the five highest cards in any suit.

quint^2 (kwint), *n.* An abbreviation of ★*quintet*, 2. [Colloq.]

> Betts was obliged to stop, the chain of his pacing *quint* having given way.
> *Daily News* (London), June 8, 1897, p. 9.

quintain^2 (kwin′tān), *n.* [L. *quintanus*, of the fifth. See *quintain*^{1}.] Same as ★*cinquain*, 2.

quintane (kwin′tān), *n.* Same as *pentane.*

quintant† (kwin′tạnt), *n.* [L. *quintus*, fifth, + *-ant.*] One fifth of a circle. *Wallis*, 1684.

quinternion (kwin-tėr′ni-ọn), *n.* [L. *quintus*, fifth, + E. *(quat)ernion.*] A set of five sheets of paper or parchment: a term in bookbinding. *N. E. D.*

quintet, *n.* **2.** A bicycle made to carry five.

> We would rather be spared the sight of two *quintets* racing neck and neck round a bend!
> *Westminster Gazette*, Oct. 28, 1896, p. 7. *N. E. D.*

quintillion, *n.* **II.** *a.* Noting a quintillion; the cardinal numeral corresponding to a quintillion: strictly a collective noun. See *hundred, a.*

quintocubital (kwin-tọ̄-kū′bi-tạl), *a.* The amended, but later, form of ★*quincubital.* *Pycraft*, 1899.

quintocubitalism (kwin-tọ̄-kū′bi-tạl-izm), *n.* [*quintocubital* + *-ism.*] In *ornith.*, the fact or condition of having the fifth secondary feather, with its coverts, present. *Trans. Linnean Soc.* (London), Oct., 1901, p. 221.

quinton (kaṅ-tôṅ′), *n.* [F., < L. *quintus*, five.] The French name of the obsolete treble viol with five strings. See *viola da braccio*, under *viola*^{1}.

quintuplet, *n.* **4.** A bicycle for five riders; a quintet.

quintuply (kwin′tụ̄-pli), *adv.* In a fivefold manner; with five times as much.

quint-viola (kwint′vē-ō″lạ̈), *n.* In *organ-building*, a stop of the gamba class, but yielding tones a twelfth above the pitch of the keys used.

quinua (kē′nöä), *n.* [Also *quinoa;* Quichua *quinua.*] A nutritive plant, *Chenopodium Quinoa*, of the Peruvian and Bolivian highlands, growing at altitudes of 12,000 feet and more. The white millet-like seeds of one of the varieties are one of the chief vegetable aliments of the Indians and are generally eaten by all classes. The name has been adopted generally in the Spanish language as the name of the plant.

quinzain, *n.* 1. (*b*) A period of fifteen days (in modern calculation fourteen, leaving out the day of the feast) after a church festival, on the principle of the octave of a feast: as, the *quinzain* of Easter.—3. Some event, social or other, which occurs every two weeks.

Aunt Sue intended to have *Quinzaines* (fortnightly soirees) this winter, if it had not been for the death of Tom O'Sullivan and Ellie's illness.
Mrs. Hawthorne, quoted in J. Hawthorne, Nathaniel [Hawthorne and his Wife, II. 85.

quire^2, *v. t.* 2. To nest within a once-folded outer sheet (one or more sheets of paper of the same size similarly folded); impose and print (separate pages of type) so that they can be properly outsetted or insetted in consecutive order.

Quirinal (kwir'i-nąl), *a.* and *n.* [L. *Quirinalis* (It. *Quirinale*), < *Quirinus*. See *Quirinalia.*] **I.** *a.* Relating to Quirinus or to the Quirinal Hill (one of the seven hills of Rome) or to the modern royal palace (a former summer palace of the popes) which is built upon it.

II. *n.* The palace of the Quirinal; hence, the Italian Court.

Quiritian (kwi-rish'ąn), *n.* [*Quirites* + *-ian.*] One of the Quirites; a Roman citizen.

Quirivelia (kwir-i-vē'li-ạ̈), *n.* [NL. (Poiret, 1804), from *kiriwael*, or *kirriwel*, the native Ceylonese name of *Q. frutescens*.] A genus of plants belonging to the family *Apocynaceæ*. There are 5 or 6 species, natives of India, the Malay Archipelago, and Australia. See *Ichnocarpus*.

quirlicue (kwėr'li-kū), *n.* Same as *curlicue*.

quirquincho (kēr-kēn'chọ̄), *n.* [Aymará of Bolivia.] A small species of armadillo indigenous to the elevated plateau of Bolivia; any armadillo.

quisby (kwis'bi), *n.* and *a.* [Origin obscure.] **I.** *n.* An idler; one who does not or will not work. [Slang.]—**Doing quisby**, idling; not working. [Slang.] *N. E. D.*

II. *a.* 1. Not quite the thing; queer. *N. E. D.*—2. Without money; 'hard up.' [Slang, in all uses.]

To say that a man is without money, or in poverty, some persons remark that he is down on his luck, . . . in Queer Street, . . . *quisby*, . . . sold up, in a fix.
Household Words, Sept. 24, 1853, p. 75.

quisqueite (kwis'kwẹ̄-īt), *n.* A carbonaceous mineral, resembling asphaltite, peculiar in containing a large amount of sulphur. It occurs in Peru with the vanadium sulphid called ★*patrinite*.

quisutsch (kē'such), *n.* The silver salmon, *Oncorhynchus milktschitsch* or *O. kisutch:* same as ★*kisutch*. See *salmon*, 2 (*d*).

quit^1, *a.*—**To cry quits**, to declare one's self even with another, in the matter of debts or demands of any kind. See *to be quits*, under *quit*^{1}, *a*.

quit^1 (kwit), *n.* [*quit*^{1}, *v.*] A term introduced by Professor H. A. Newton to denote the point on the celestial sphere from which the motion of a body is at any moment directed: thus, the earth's quit is always a point on the ecliptic about 90° east of the sun. The quit is opposite to the goal. See ★*goal*^{1}, 7.

quite^1, *adv.*—**Quite so.** (*b*) Quite right; quite in the right way; quite well. [Slang, New Eng.]

It was this way (you 're rowin' *quite so*, Harve), an' I tell you 'cause it 's right you orter know.
R. Kipling, Captains Courageous, iii.

quitted (kwit'ed), *p. a.* [pp. of *quit*^{1}, *v.*] In *whist* and *bridge*, said of a trick when it is turned down and the fingers have been removed from it.

quitter^1, *n.* 3. One who quits or gives up in the face of difficulties; one who has not the courage or determination to finish what he undertakes to do. [Colloq.]

Our plans have worked splendidly, yet here you are, right on the edge of Italy, crying like a *quitter* to give it up. *Bookman*, Jan., 1906, p. 512.

4. Specifically, a workman who has the habit of throwing up his job on slight pretenses. [Colloq.]—5. A young male fur-seal, old enough to enter the breeding-grounds toward the close of the season, but not strong enough and bold enough to hold his ground when disturbed: he therefore quits his place.

A *quitter*, however, is not a rookery bull until he is in possession of cows.
Alaskan Seal Fisheries, Senate Doc. 98, 59th Cong., 1st [Sess., p. 76.

quitter^2, *n.*—**Simple quitter**, a local inflammatory condition of the skin and underlying tissues immediately above the hoof, resulting in the formation of a slough with more or less pus.—**Skin quitter**, an extremely painful disease affecting the skin directly above the hoof and resulting in the formation of an ulcer.—**Subhorny quitter**, a local inflammation starting at the coronary band of the hoof and the adjacent skin, and spreading beneath the hoof to the sensitive tissue, which becomes degenerated with pus formation.—**Tendinous quitter**, a complication of simple quitter in which the disease has spread, involving the tendons of the leg and the ligaments of the joint. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 381.

quiverful (kwiv'ėr-fůl), *n.* As much or as many as will fill a quiver: generally used with allusion to Ps. cxxvii. 5: "Happy is the man that hath his *quiver full* of them [children]."

quiver-leaf (kwiv'ėr-lēf), *n.* The American aspen or quaking asp, *Populus tremuloides*.

quoin, *n.* 3. The solid angle of a crystal in which three or more faces meet. Also written *coign*.

quoit, *n.* 4. In *archæol.*, same as *dolmen*. [Local.]

quoiter (kwoi'tėr), *n.* One who plays quoits. *N. E. D.*

quomodo (kwō-mō'dō), *n.* [L. *quomodo*, *quo modo*, in what manner: *quo*, abl. of *quis*, who, what; *modo*, abl. of *modus*, manner.] The way; the manner.

Mr. Northerton was desirous of departing that evening, and nothing remained for him but to contrive the *quomodo*, which appeared to be a matter of some difficulty.
Fielding, Tom Jones, vii. 15.

quor. An abbreviation of the Latin *quorum*, of whom or of which.

quot., quotid. Abbreviations of the Latin *quotidie*, daily.

quotative (kwō'tạ-tiv), *a.* [*quote* + *-ative.*] Quoting; of the nature of quotation; noting quotation.

The past tense takes a suffix, -GAn or -GAni, and appears to be used precisely like our own. Before the *quotative*, wAnsū'ga, this suffix takes the form of -añ, unless, as is barely possible, the latter is the continuative.
Amer. Anthropologist, July–Sept., 1902, p. 398.

quote-mark (kwōt'märk), *n.* A quotation-mark. [Colloq.]

The apostrophe is never used [in German] for a *quote-mark*. *De Vinne*, Mod. Book Composition, p. 252.

quotennial (kwọ̄-ten'i-ąl), *a.* [L. *quotennis*, of how many years (< *quot*, how many, + *annus*, year), + *-al*^{1}.] Of how many years (implying a long time). [Rare.]

The disputes about tythes and boundaries were then usually settled by bands of armed men. . . Hugh Stucley was in this state of *quotennial* warfare with his cousin Sir Amyas Pawlet from the 17th to the 22nd of Elizabeth's reign. *R. Simpson*, School of Shakspere, I. 60.

quotient, *n.* 2. In *geom.*, if b and c are any two sects, there is always one and only one sect a such that $c = ab$: this sect a is designated by the notation $\frac{c}{b}$, and is called the *quotient* of c by b.—**Quotient hypothesis**, in *psychophys.* Same as *Plateau's* ★*theory*.—**Quotient limen**, in *psychophys.*, the ratio $\frac{r_o}{r}$ or $\frac{r}{r_u}$, where r is the standard stimulus, r_o is r plus the upper differential limen, and r_u is r minus the lower differential limen.—**Quotient mixture limen**, in *psychophys.*, the stimulus limen regarded in Fechnerian terms as the quotient limen of a preëxisting excitation of the sensorium.

R. 3. An abbreviation (*h*) of *Radical*; (*i*) of *railway*; (*j*) [*l. c.*] of *rare*; (*k*) [*l. c.* or *cap.*] of *read*; (*l*) of *Réaumur* (see *thermometer*); (*m*) of *rector*; (*n*) of *Republican*; (*o*) [*l. c.*] of *residence* and *resides*; (*p*) of *response*; (*q*) of the Latin *Respublica*, 'the Republic'; (*r*) [*l. c.* or *cap.*] of *retired*; (*s*) of *river*; (*t*) [*l. c.* or *cap.*] of *rod* or *rods*; (*u*) of *Roma*, Rome; (*v*) [*l. c.* or *cap.*] of *rood* or *roods*; (*w*) [*l. c.*] in *geom.*, of *radius* (of the incircle); r_1, r_2, r_3, denote the ex-radii beyond *a*, *b*, *c*, respectively; *R* denotes the radius of the circumcircle; (*x*) [*cap.*] in *psychophysics*, an abbreviation of G. *Reiz*, stimulus.—4. As a symbol: (*a*) In *chem.*, *R* has been used for *rhodium*: more generally, *Rh.* (*b*) In *elect.*, *R* or *r* denotes *resistance*. (*c*) In *electrotechnics*, *r* stands for *radius*.—**The fourth R**, reasoning. See *the three R's*, under *R*.

> Mr. Mosely agrees with Prof. Armstrong that it is *the fourth "R"* which makes all the difference between the educational results in the United States and in this country. American teachers are right in giving more attention to the teaching of how to reason in a scientific manner than is common in English schools.
> *Nature*, June 9, 1904, p. 140.

The R months, those months the names of which contain the letter R: the notion that oysters are in season only in these months is an old one. *The Nation*, Aug. 6, 1903, p. 115.

ρ. In *electrotechnics*, the symbol for *specific resistance*.

ra^2 (râ), *n.* [Sw. *rå* = Icel. *rā*, a boundary, a landmark.] A terminal moraine. *Geikie*, Text-book of Geol., p. 1332.

Ra. A chemical symbol of *radium*. *Rd* is more generally used.

R. A. An abbreviation (*e*) of *Rear-Admiral*; (*f*) of *Royal Arcanum*; (*g*) of *Royal Artillery* (also *R. Art.*).

raad^2 (räd), *n.* [D. *raad* = G. *rath*, counsel, council, = AS. *ræd*, counsel. See *read*^{1}, *n.*] A council; specifically, as an abbreviation of *volksraad*, a legislative assembly.

raadhuis (räd'hois), *n.* [D., < *raad*, council, + *huis*, house.] The assembly-house of a raad, or volksraad.

raadzaal (räd'zäl), *n.* [D., < *raad*, council, + *zaal* = G. *saal*, hall.] The assembly-house or -hall of a raad or volksraad.

rabat^2 (ra-bat'), *v. t.*; pret. and pp. *rabatted*, ppr. *rabatting*. [Also *rabatte*; < F. *rabattre*, beat down, bring down, etc. See *rabate*, *v.*] In *geom.*, to revolve about an axis in the horizontal or vertical plane of projection into that plane.

rabb. An abbreviation of *rabbinical*.

rabbet, *n.*—**Rabbet of the keel**, in *wood ship-building*, a triangular groove cut in a wood keel to receive the inner edge of the garboard-strake which can thus have a square corner at the joint with the keel to permit the seam to be readily calked. See cut under *keel*^{1}, *n.*, 2. The *rabbet of the stem* and the *rabbet of the stern-post* are similar grooves on those parts to receive the hood-ends of the outside planking. In iron ships there is no rabbet of the keel, but the stem and stern-posts are frequently recessed to receive the outside plating, or the armor-plates of a war-ship, and to make the exterior surface of the stem and stern-post flush with the exterior surface of the plating. Such recess is also called a *rabbet of the stem* or *stern-post*.—**Square and rabbet**, a square-edged flat molding, as a listel, separated by a rabbet from the surface.

rabbinitic (rab-i-nit'ik), *a.* [*rabbin* + *-ite*^{2} + *-ic*.] Of or pertaining to the rabbins or their teachings.

rabbinize (rab'in-īz), *v.*; pret. and pp. *rabbinized*, ppr. *rabbinizing*. [*rabbin* + *-ize*.] **I.** *trans.* To train in the learning of the rabbis; imbue with the spirit of rabbinism.

II. *intrans.* To conform to the teachings of the rabbis; become rabbinical.

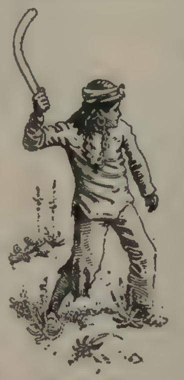
rabbit^1, *n.*—**Angora rabbit**, a domesticated breed having long, soft, silky fur, sometimes from three to five inches in length.—**Himalayan rabbit**, a domesticated breed having the body white, and ears, nose, feet, and tail dark brown; the hair is short and fine.—**White rabbit**, sometimes applied to the varying hare, *Lepus americanus*, in its white winter coat.

rabbit-bandicoot (rab'it-ban"di-kōt), *n.* The typical species of bandicoot, *Perameles lagotis*, so called from its long ears.

rabbit-fish, *n.* 4. A fish, *Promethichthys prometheus*, belonging to the family *Gempylidæ*, found in rather deep water about the tropical islands of the Atlantic.

rabbit-mouthed (rab'it-moutht), *a.* Having a rabbit-mouth; harelipped.

rabbit-stick (rab'it-stik), *n.* A throwing-stick, similar to the Australian boomerang, used by the Indians of the southwestern United States in hunting rabbits and other small game.



Rabbit-stick.

rabbit-weed (rab'it-wēd), *n.* See ★*Picradenia*.

rabble^3, *n.*—**Mechanical rabble**, a mechanical device for stirring and skimming iron in puddling.

rabble-arm (rab'l-ärm), *n.* An arm or rod by which a stirring or agitating action is produced in a bed or mass of ore under treatment in a furnace. In puddling by hand, the molten bath is stirred by the puddler's rabble; in roasting-furnaces where the metal is not in fusion, the mass can be mechanically kept from agglomerating, and every part be exposed to oxidation by a revolving arm or arms producing the action of a rabble. *Electrochem. and Metal. Industry*, May, 1905, p. 194.

rabbling-tool (rab'ling-tōl), *n.* Same as *rabble*^{3}.

Rabic tubercles. See ★*tubercle*.

rabies, *n.*—**Dumb rabies**, a form of rabies in which there is paralysis of the muscles of the jaw and of the legs.

rabiform (rā'bi-fôrm), *a.* [L. *rabies*, rabies, + *forma*, form.] Resembling rabies: noting the symptoms shown by animals which are affected with rabies (hydrophobia).

> The death of 18 cattle . . ., 7 out of one herd of 50, all showing *rabiform* symptoms.
> *Yearbook U. S. Dept. Agri.*, 1900, p. 214.

rabitic (rạ-bit'ik), *a.* [*rabies* + *-it-ic*.] Rabid; rabietic: as, *rabitic* dogs.

> *Rabitic* dogs generally take three days before they die.
> *Whitmarsh*, Pasteur Treatment, p. 33. *N. E. D.*

Rabula (rab'ụ-lạ̈), *n.* [NL., < L. *rabula*, a brawling advocate, a wrangler, < *rabere*, rave, be mad: see *rabies*.] A genus of eels of the family *Murænidæ*, found on both coasts of tropical America.

rabulistic (rab-ụ-lis'tik), *a.* [L. *rabula*, a brawling advocate, a wrangler, + *-ist* + *-ic*.] Of or pertaining to a wrangler or disputatious speaker; disputatious.

> It is unfortunate . . . to become prematurely interested in one side of any great open question, but perhaps the gravest evil is the danger of cultivating too great readiness in speech. This tends to superficiality, loose thinking, and *rabulistic* ratiocination.
> *G. S. Hall*, Adolescence, II. 437.

R. A. C. An abbreviation (*a*) of *Royal Agricultural College*; (*b*) of *Royal Arch Chapter*.

raccontando (rä-kon-tän'dọ), *adv.* [It., ppr. of *raccontare*, narrate. See *recount*^{1}.] In *music*, in the style of a narrator, as if reciting.

raccount (ra-kount'), *v. t.* [F. *raconter* (= It. *raccontar*), < *re-* + *-aconter*, account. See *account*, *v.*, and cf. *recount*^{1}.] To recount. [Obsolete or rare.]

> Meanwhile let me *raccount* this, which I heard just before I left Paris.
> *K. de Forest*, in Harper's Bazar, Sept. 2, 1899, p. 730.

race^1, *n.* 7. The circular path traversed by a horse in driving a machine by a horse-whim; a gin-ring or gin-race.—8. In *mech.*, an annular ring or groove in which the rollers of a roller-bearing, or the balls of a ball-bearing, travel; a ball-race; a roller-race. For a roller-bearing, the race is usually the frustum of a very flat cone, the rollers being frusta of the complementary cone.—9. A narrow passage, fenced with hurdles, for sheep; a lane. [New Zealand.]—**Dongola race**, a race in which a punt or the like is propelled by paddling, by three or four pairs (usually male and female). *N. E. D.*—**Open race**, a race in which any one may compete.—**Selling race**, a race run with the understanding that as soon as the winner is declared he shall be sold at auction.

> The *selling race* at a mile and forty yards, which Headlight II. at 12 to 1, cleverly ridden by Clawson, captured in 1:44 3-5. *Spirit of the Times*, Nov. 12, 1898, p. 417.

race^2, *n.*—**Tidal race**, a very swift current induced by the tide.

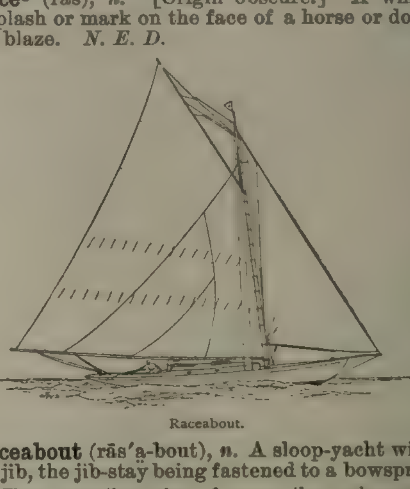
> At New York a high tide entering from the harbor reaches the rocky narrows of Hell Gate when a low tide arrives through Long Island sound; and six hours later a low tide from the harbor meets a high tide from the sound. Thus a rapid current is caused to flow back and forth in the narrow passage, which was dangerous to vessels until the channel was widened by blasting away its reefs. A current of this kind is sometimes called a *tidal race*. *W. M. Davis*, Elem. Phys. Geog., p. 122.

race^3, *n.* 5. (*c*) In *agri.* and *hort.*, a group of cultivated plants, having well-marked differentiating characters, which propagate true to seed except for slight individual variations. The various groups of peas, beans, radishes, wheat, oats, cotton, corn, etc., commonly referred to as varieties are, in a more restricted sense, races. Boone County White, Leaming, Reid's Yellow Dent, Hickory King, etc., are among the best-known races of field-corn; and Peterkin, Peerless, King, Truitt, etc., are among the best-known races of cotton. Compare ★*strain*^{2}, 1 (*b*). *H. J. Webber*, in Science, Oct. 16, 1903.—**Baumes-Chaudes race.** See *Cro-Magnon* ★*race*.—**Cephalic, chromatic race.** See ★*cephalic*, ★*chromatic*.—**Cro-Magnon race**, a prehistoric race of Europe, characteristic remains of which were found in the cave of Cro-Magnon near Les Eyziès, a hamlet on the Vézère in Dordogne. The remains belong to the mesolithic or early neolithic period, and the type is characterized by a very long head, low face and orbits, and tall stature. The skulls from the Baumes-Chaudes cave, Lozère, called by Hervé the *Baumes-Chaudes race*, are of the same age and of similar type.—**Ethnic race**, a group of closely related nationalities, speaking closely related languages, and having well-marked psychological characteristics in common. *Amer. Anthropologist*, April–June, 1902, p. 362.—**Glottic race**, a group of people speaking related languages. *Amer. Anthropologist*, April–June, 1902, p. 362.—**Laugerie-Chancelade race**, the type of man belonging to the Magdalenian period, characterized by dolichocephaly, high and broad forehead, absence of large superciliary ridges, and heavy cheek-bones. See ★*Laugerian*.—**Littoral race.** See ★*Atlanto-Mediterranean*.—**Metamorphic race**, one of the races which have originated by recent modification and intermixtures from the archimorphic races. *Stratz*.—**Natural race**, a people whose culture has not advanced far enough to free it from the bondage of natural environment.—**Protomorphic races**, in *anthrop.*, the fundamental races of man. *Stratz*.—**Race psychology.** See ★*psychology*.

race^5 (rās), *n.* [*race*^{5}, *v.*] The heart, liver, and lungs or lights of an animal, especially of a calf: same as *pluck*^{1}, 4.

race^6 (rās), *n.* Same as *rase*^{1}.

race^8 (rās), *n.* [Origin obscure.] A white splash or mark on the face of a horse or dog; a blaze. *N. E. D.*



Raceabout.

raceabout (rās'ạ-bout), *n.* A sloop-yacht with a jib, the jib-stay being fastened to a bowsprit.

There were other prizes, of course: the much-coveted silver cup, called "the Commodore's Cup," for knockabouts, pennants for the *raceabouts* and half-raters, and a first money prize of twenty-five dollars for the fishermen's sloops. *St. Nicholas*, Aug., 1905, p. 865.

race-bit (rās'bit), *n.* A light bridle-bit with large loose rein-rings. These rings are frequently three or more inches in diameter.

race-board (rās'bōrd), *n.* 1. The top of the lay or lathe in a loom on which the shuttle runs as it is thrown from one end to the other. *T. W. Fox*, Mechanism of Weaving, p. 267.—2. A gang-plank.

race-cut, *n.* See ★*rase-cut.*

race-end, *n.* See ★*rase-end.*

race-horse, *n.* 4. *pl.* A French gambling-game. See *petits chevaux* (under ★*cheval*).

racemamide (ras-ē-mam'id), *n.* [*racem*(*ic*) + *amide.*] The amide of racemic acid, $C_4H_7O_5N$. Also called *paratartramide.*

racemate (ras'ē-māt), *n.* [*racem*(*ic*) + *-ate*^{5}.] In *chem.*, the name of any compound obtained by replacing the basic hydrogen of racemic acid by a metal or other basic radical: see ★*racemic acid*, under *racemic.*

racemic, *a.* 2. In *chem.*, composed of two optically opposite isomeres. The typical case is that of racemic acid (see below), but racemic forms are of frequent occurrence among organic compounds. The racemic form does not act on polarized light.—**Racemic acid.** It is found occasionally in grape-juice and as a by-product in the manufacture of tartaric acid. It is made by heating tartaric acid with dilute acids or water, especially in the presence of alumina; also by crystallizing a mixture of equal parts of dextro- and levo-tartaric acids, and by the oxidation of many polyacid alcohols and carbohydrates, and in many other ways. It is optically inactive and may be separated into the two isomeric, active tartaric acids by crystallizing the sodium-ammonium salt at a low temperature, or by crystallizing the quinicine or cinchonicine salts. It melts at 203–204° C., or at 205–206° C. when anhydrous.—**Racemic compound**, in *phys. chem.*, a compound whose optical relations are analogous to those of racemic acid. *A. Findlay*, The Phase Rule, p. 214.

racemism (ras'ē-mizm), *n.* [*racem*(*ic*) + *-ism.*] In *chem.*: (*a*) The character of an optically inactive substance which is separable into two substances, each of which has the same chemical composition as the other and as the parent substance, but one of which is dextrorotatory and the other levorotatory in relation to polarized light, as racemic acid may be separated into dextro- and levotartaric acids. (*b*) Same as ★*racemization.*

> It is shown that in single ring nuclei, *racemism* is generally theoretically possible, and often observed. In the cases of some double nuclei (as the camphor group) *racemism* appears to be impossible owing to the peculiar molecular structure. *Science*, Aug. 5, 1904, p. 178.

racemization (ras″ē-mi-zā'shon), *n.* [*racem*(*ic*) + *-ize* + *-ation.*] The process of rendering racemic; the transformation of a single optically active (dextro- or levorotatory) compound into the racemic form. It involves the change of one half of the molecules of the substance into the isomeric form with opposite optical rotation.

> The Catalytic *Racemisation* of Amygdaline. *Nature*, Nov. 6, 1902, p. 24.

racemoid (ras'ē-moid), *a.* [*raceme* + *-oid.*] Same as ★*racemic*, 2.

Racemose vesicle. See ★*vesicle.*

racer, *n.* 9. Same as *race-plate.*—10. In the Southern States, applied to the corn-snake, *Callopeltis getulus*, a large harmless snake of a reddish-brown color with redder markings.

race-sense (rās'sens), *n.* The consciousness of a race that all its members are of a kind and different from other races.

race-tankard (rās'tang″kärd), *n.* A piece of plate in the shape of a tankard given as a prize to the winner of a race.

raceway, *n.* 3. In a composing-machine, a space into which type drops; a device for carrying type along.

> This machine will select the type, place them in a *raceway* and move them along until a line is set up; it then inserts the exact spaces required and conveys the justified line to the galley, either leaded or solid, and registers each line as set. *Inland Printer*, Nov., 1898, p. 178.

4. A protecting tube or other inclosure surrounding electric wires within a subway or conduit.

rachiagra (rā-ki-ag'rä), *n.* [Also *rhachiagra*; NL., < Gr. ῥάχις, spine, + ἄγρα, a catching. See *podagra.*] Gouty or rheumatic pain in the spine. Also *rachisagra.*

rachialgia, *n.* 2. Painters' colic.

rachialgitis (rā″ki-al-jī'tis), *n.* [Also *rhachialgitis*; NL., < Gr. ῥάχις, spine, + ἄλγος, pain, + *-itis.*] Myelitis.

rachiform (rā'ki-fôrm), *a.* [Also *rhachiform*; Gr. ῥάχις, spine, + L. *forma*, form.] Formed like a rachis.

rachigraph (rā'ki-gråf), *n.* [Also *rhachigraph*; Gr. ῥάχις, spine, + γράφειν, write.] An apparatus for recording the outlines of the spine and back.

> His [M. G. Demeny's] thoracometer, the profile inscriber, and *rachigraph* have been used in hospitals and large gymnastic establishments. . . . These apparatus give the form of the body by continuous tracings. *Sci. Amer. Sup.*, Oct. 31, 1903, p. 23272.

rachiocampsis (rā″ki-ō-kamp'sis), *n.* [Also *rhachiocampis*; NL., < Gr. ῥάχις, spine, + κάμψις, a bending.] A permanent abnormal curve of the spine.

rachiocyphosis (rā″ki-ō-sī-fō'sis), *n.* [Also *rhachiocyphosis*; NL., < Gr. ῥάχις, spine, + κύφωσις, humpbacked condition.] Same as *cyphosis.*

rachiokyphosis (rā″ki-ō-kī-fō'sis), *n.* [Also *rhachiokyphosis.*] Same as ★*rachiocyphosis.*

rachioparalysis (rā″ki-ō-pa-ral'i-sis), *n.* [Also *rhachioparalysis*; < Gr. ῥάχις, spine, + E. *paralysis.*] Paralysis of the spinal muscles.

rachioplegia (rā″ki-ō-plē'ji-ä), *n.* [Also *rhachioplegia*; NL., < Gr. ῥάχις, spine, + πληγή, stroke.] Paraplegia of spinal origin.

rachioscolioma (rā″ki-ō-skol″i-ō'mä), *n.* [Also *rhachioscolioma*; NL., < Gr. ῥάχις, spine, + σκολίωμα, a bend, curve.] Same as *scoliosis.*

rachioscoliosis (rā″ki-ō-skol″i-ō'sis), *n.* [Also *rhachioscoliosis*; NL., < Gr. ῥάχις, spine, + σκολίωσις, a bending.] Same as *scoliosis.*

rachiotome (rā'ki-ō-tōm), *n.* [Also *rhachiotome.*] The more correct form of *rachitome.*

rachiotomy (rā-ki-ot'ō-mi), *n.* [Also *rhachiotomy.*] The preferable spelling of *rhachiotomy.*

rachiphyma (rā-ki-fī'mä), *n.*; pl. *rachiphymata* (-ma-tä). [Also *rhachiphyma*; NL., < Gr. ῥάχις, spine, + φῦμα, a swelling.] A spinal tumor.

rachirrheuma (rā-ki-rö'mä), *n.* [Also *rhacirrheuma*; NL., < Gr. ῥάχις, spine, + ῥεῦμα, rheum.] Lumbago.

rachisagra (rā-kis-ag'rä), *n.* [Also *rhachisagra.*] Same as ★*rachiagra.*

rachischisis, *n.* The preferable spelling of *rhachischisis.*

rachitic, *a.* 3. Of or pertaining to a mountain ridge or range.

> Some details are given respecting the vegetation of the coast, which south of San Quintin suddenly becomes *rachitic.* *Geog. Jour.* (R. G. S.), XIII. 663.

Rachitic rosary. See ★*beaded ribs.*

rachitism (rā'ki-tizm), *n.* [Also *rhachitism*; *rachit*(*ic*) + *-ism.*] A rachitic tendency or disposition.

rachitomy (rā-kit'ō-mi), *n.* [Gr. ῥάχις, spine, + -τομια, < ταμεῖν, cut.] Same as ★*rachiotomy* (the more correct form).

Rachycentridæ (rā-ki-sen'tri-dē), *n. pl.* [Also *Rhachycentridæ*; NL., < *Rachycentron* + *-idæ.*] A family of fishes including a single species, *Rachycentron canadus*, a strong, voracious shore-fish, found in most warm seas.

Rachycentron (rā-ki-sen'tron), *n.* [Also *Rhachycentron*; NL. (prop. *Rachi-* or *Rachio-*), < Gr. ῥάχις, the lower part of the back, + κέντρον, a spine.] A genus of fishes. See ★*Rachycentridæ.*

racing-car (rā'sing-kär), *n.* A form of motor-car designed to secure the highest speed for racing purposes: made with multiple cylinders, and with the weight of the car and frame reduced as far as is consistent with safety. Such cars have run for considerable distances at speeds of over 100 miles an hour. See ★*automobile*, 2.

racing-cup (rā'sing-kup), *n.* Same as *race-cup.*

racing-line (rā'sing-līn), *n.* A circle, or one of a series of concentric circles, turned on the face of a flange, in which red-lead, flax, or metallic packing is placed to make a tight joint.

racing-plate (rā'sing-plāt), *n.* Same as *race-plate.*

rack^1, *v. t.* 13. To move by means of a rack and pinion.—**To rack down**, to tie down: said of balks and rails of a pontoon-bridge.

rack^1, *n.* 12. A screen composed of parallel narrow strips of plank or iron, occupying a vertical or slightly inclined position and placed across a canal, flume, or mill-race, for the purpose of preventing floating objects from entering the canal or flume.

> At the forebay on the hill above the power station the canal widens into an entrance chamber that is 60 ft. broad at the *racks.* These *racks* are about 20 ft. high and have a slope that amounts to 4 ft. in horizontal projection. *Elect. World and Engin.*, Feb. 13, 1904, p. 307.

13. *pl.* The sheet piling on the sides of a ferry-slip which serves as a buffer for the boats coming into the slip. [U. S.]

> Another Americanism we miss under *Racks*, the technical name for the side plankings or buffers of our ferry slips. *The Nation*, Aug. 6, 1903, p. 115.

14. A horse all skin and bone; a rackabones; also the bones of a dead horse used for various purposes by knackers.—**Stepped rack**, a rack which is divided longitudinally into two or more parts, one part being set ahead of the other and the pinion divided to match, thus giving a smoother motion than a single rack. It is also often arranged so that one part of the rack can be shifted ahead to take up the backlash or play in the teeth. *Nasmith*, Cotton Spinning, p. 360.

rack-board (rak'bōrd), *n.* Same as *pipe-rack.*

rack-deal (rak'dēl), *n.* Deal dried in a rack or frame which exposes it to the air. Also called *air-dried deal.*

racket^1, *n.* 6. Hustle; the quality of 'getting there.' [Slang.]

> He had . . . no progressiveness, and no "*racket.*" *Bret Harte*, Openings on the Trail, iii.

To stand the racket. (*a*) To stand the consequences. See *racket*1, *n.*, 4. (*b*) To stand the strain. [Slang in both uses.]

> Iver proposed to him to go to town and act as his representative [in an important business transaction]. . . . "Well," . . . [said] Bob, . . . "I like a quiet life, you see—with my horses, and my crops, and so on. Don't believe I could *stand the racket.*" *Anthony Hope*, Tristram of Blent, xix.

To tumble to the racket, to catch the idea; understand what is meant. [Slang.]

> 'Buy 'im?' says the missis, not *tumblin' to the racket* [not comprehending how or why a thief should want to pay for a dog]. *The Strand*, Sept., 1905, p. 347.

racketer^2 (rak'et-ėr), *n.* One who uses a racket, as in tennis-playing or snow-shoeing.

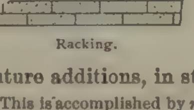
> These listless *racketers* rarely, if ever, hit the ball twice before it dropped. In very successful moments, one of the players would strike the ball, and the other would manage on its rebound to hit it again, but this was very unusual. *All the Year Round*, July 28, 1860, p. 366.

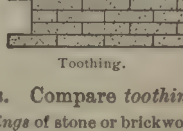
racketry (rak'et-ri), *n.* A prolonged rattling, clattering, or tumultuous noise.

> It seems to be the non-voters that constitute the muscle and sinew of the campaign *racketry*—a word made indispensable by political conventions. . . . All this *racketry* has been going on by the watch for seven minutes. *J. Bryce*, Amer. Commonwealth, II. App., note to ch. [LXX.

rack-feed (rak'fēd), *n.* 1. A racking-gear.—2. The feeding-motion imparted to a tool, or to the work in a machine, by a rack and pinion. The tool-carriage of most engine-lathes is moved lengthwise by a rack-feed.

racking^1, *n.* 4. In *masonry*, the act of leaving unfinished masonry, as prepared to receive future additions, in steps. Compare *toothing.*


Racking.


Toothing.

> This is accomplished by *rackings* of stone or brickwork, or steppings of concrete. *Encyc. Brit.*, XXVI. 437.

5. In *mech.*: (*a*) The act of operating or moving a slide-rest, or other feeding device, by a rack-and-pinion motion. (*b*) The act of running the hoisting-crab or trolley of a crane in or out, backward or forward, to place it in proper position.

racking-back (rak'ing-bak), *n.* In *brewing*, a vat in which beer, after the first or principal fermentation, is allowed to become clear by deposition of suspended matter before being drawn off into casks.

racking-bellows (rak'ing-bel″ōz), *n. sing.* or *pl.* A bellows used to hasten the drying of articles placed on a rack for that purpose.

racking-bit (rak'ing-bit), *n.* A bit having a port mouthpiece with long cheeks, the lower ends being from four to six times the length of the upper. The rein-rings are at the lower ends.

racking-gear (rak′ing-gēr), *n.* The device or mechanism, consisting essentially of a rack and pinion and turning apparatus, for moving a crane-carriage, tool-carriage, or other part of a machine.

rack-lashing (rak′lash″ing), *n.* *Milit.*, a lashing or fastening made somewhat on the principle of a tourniquet, the rope being twisted with a strong stick.

rackmaster (rak′mȧs-tėr), *n.* An official who had charge of the rack, in the days when that instrument of torture was used as a punishment or as a means of extorting confession.

> His [Thomas Norton's] punishment of the Catholics, as their official censor from 1581 onwards, led to his being nicknamed "*Rackmaster*-General."
> *Encyc. Brit.*, XXXI. 265.

rack-pillar (rak′pil″är), *n.* In *organ-building*, one of the small upright pieces of wood on which the rack-boards rest. Also called *rack-pin.*

rack-rental (rak′ren″tal), *n.* The amount obtained or possible to obtain at rack-rent. *Southey.*

raclage (ra-kläzh′), *n.* [F., < *racler*, scrape, rub.] In *surg.*, removal of softened tissue by rubbing.

> It [lupus exedens] is best treated by destructive cauterization and *raclage.* *Buck*, Med. Handbook, I. 396.

raconteuse (ra-kôṅ-tėz′), *n.* [F., fem. of *raconteur.*] A woman who has the gift of telling stories well.

racoon, *n.*—**Crab-eating racoon**, *Procyon cancrivorus*, a species found on, or near the coast, from French Guiana to southern Mexico.

racoon-bridge (ra-kön′brij), *n.* In some of the Southern States, a sapling thrown across a stream.

> We were obliged to carry every article of our effects, and this by no other bridge than a sapling felled across it, which is called a *racoon bridge*, and over this my Indian friehd would trip as quick and light as that quadruped.
> *W. Bartram*, Travels through North & South Carolina, [Georgia, East & West Florida, p. 445.

racoon-fox (ra-kön′foks), *n.* The cacomixl, *Bassariscus astutus*, so called from its black and white ringed tail.

> From the raccoon have been named the following: . . . *raccoon-fox*, or cacomixtli of Mexico.
> *Jour. Amer. Folk-lore*, Oct.-Dec., 1902, p. 256.

rad^{6} (rad), *n.* [L. *rad(ius)*, ray.] In *photom.*, a proposed unit of quantity of light equal to the amount of energy in luminous form obtained in one second from a light-flux of one lumen. The rad is $\frac{1}{3600}$ of a lumen-hour.

raddled (rad′ld), *a.* [Origin obscure.] Drunk; fuddled. *Motteux*, Rabelais, V. xxxix. *N. E. D.*

raddling (rad′ling), *n.* [*raddle*^{1} + *-ing.*] 1. The operation of wreathing brushwood. *Eng. Dial. Dict.* [Prov. Eng.]—2. *pl.* Wood cut into strips about four feet long for kindling, and tied in bundles. [Prov. U. S., in the form *rattlings.*]

räderflorin (rā′dėr-flō-rēn″), *n.* [G. *räder-*, pl. of *rad*, wheel, + *florin*, florin.] A German money of account at Cologne: 1½ räderflorins equal 1 rix-dollar.

räderschilling (rā′dėr-shil″ing), *n.* [G. See ★*räderflorin.*] A German shilling current in the diocese of Trèves in the sixteenth century.

radiability (rā″di-a̤-bil′i̤-ti), *n.* [*radiable* (*-bil-*) + *-ity.*] The property of transmitting cathode rays, X-rays, or allied forms of radiation.

radiable (rā′di-a̤-bl), *a.* [NL. **radiabilis*, < *radiare*, radiate. See *radiate, v.*] Pervious to cathode rays, X-rays, or similar forms of radiation.

> A square frame of non-*radiable* metal.
> *Elect. Rev.*, March 7, 1903, p. 332.

radial. I. *a.*—**Radial brick, canal, wheel.** See ★*brick*^{2}, ★*canal*^{1}, *wheel*^{1}.

II. *n.* (*e*) In *ichth.*, one of the cartilaginous rays supporting the median fins of elasmobranchs.

> The dorsal fin in this species is sustained by a great number of very elongate and closely set cartilaginous rays, or, as they may be for distinction termed, *radials.*
> *Trans. Zool. Soc. London*, 1879, p. 439.

Axillary radial. See ★*axillary, n.*, 2.

radian, *n.* 2. A unit of angular velocity equivalent, approximately, to 0·15916 revolutions per second, or, strictly, to $\frac{1}{2\pi}$ revolutions per second: in full, *radian per second.*

radianal (rā-di-ā′nal), *n.* [*radi(al)* + *anal.*] In the calyx of the *Crinoidea*, a plate which, when present, rests within the reëntrant angle of two adjoining basals, to the right of the true anal plate, and is the lower half of a bisected radial which in certain genera only assumes anal functions. *Nature*, Dec. 5, 1907, p. 117.

radiance, *n.*—**X-radiance**, the radiation emanating from an X-ray tube.

radiant. I. *a.*—**Radiant efficiency.** See ★*efficiency of a source of light.*

II. *n.* 3. In *geom.*, a ray conceived as revolving about its starting-point.—4. A substance that emits rays, specifically N-rays.

> M. Blondlot's latest discovery is that *radiants* which give out N-rays can communicate a similar variety of radioactivity to some neutral bodies upon which the N-rays fall.
> *Elect. World and Engin.*, Dec. 26, 1903, p. 1034.

radiate, *v.* **I.** *intrans.* 4. To be directed, as rays, toward a common center: as, "spokes *radiating* to an axle." *Rogers*, Agric. and Prices, I. 543. *N. E. D.* [Rare.]

II. *trans.*—**Radiating keyboard.** See ★*keyboard*, 1.

radiation, *n.* 1. Radiation is a form of energy consisting of transversal vibrations of the ether, a hypothetical medium supposed to fill all space and penetrate all bodies, these vibrations traveling with a velocity of 188,000 miles per second. A stream of such radiation is called a *ray.* It differs in character by the wave-length of the ray, or its frequency of vibration. Rays of wave-length between .0007 and .0004 of a millimeter are visible to the human eye as *light*, the longer one as red light, then, with increasing shortness of wave-length, as orange, yellow, green, blue, and violet light. Waves shorter than .0004 of a millimeter are not visible, but are observed by their chemical or photographic action, and by the fluorescence which they produce (see *fluorescence*), and are called *ultra-violet light* or *actinic* or *chemical rays.* Radiations of still very much shorter wave-length (of a wave-length comparable with the sizes of the molecules of matter) are the *X-rays*, occasionally called *Röntgen rays*, from their discoverer. X-rays are not reflected or refracted, but merely irregularly scattered and absorbed by solid matter as well as by air. They are able, however, to penetrate bodies which are opaque to ordinary light,—the more, the less the density of the body,—and are therefore used to determine and photograph the structure of opaque bodies, as, in surgery, the interior of the human body. They are observed by fluorescence of screens of platinum-barium cyanide or calcium tungstate, and by photography. Physiologically, long exposure to powerful X-rays and also to very short ultra-violet rays, as given by a mercury arc in a quartz tube, is harmful. Radiations of greater wave-length than .0007 of a millimeter are noticed by their heating effect, and are called *heat-radiating* or *ultra-red rays.* Waves of still very much greater length, from a few inches to many miles, are called *electromagnetic waves*, since they are produced by electric currents of the proper frequency or wave-length. They are used in wireless telegraphy. Substances which absorb or reflect the radiation are called *opaque*; those that permit the rays to pass through more or less completely are called *transparent.* Opacity or transparency of a substance largely depends upon the wave-length. For instance, glass is transparent for light waves and for electromagnetic waves, but opaque for ultra-violet rays of short wave-length, and nearly opaque for X-rays and for long heat-waves. Aluminium is fairly transparent for X-rays, but opaque for all other waves. Quartz and gypsum are transparent for ultra-violet and ultra-red rays. A body which sends out only or largely rays of particular wave-lengths, or range of wave-lengths, is said to have a *selective radiation*; a body which absorbs only certain wave-lengths is said to have a *selective absorption.* Luminous gases and vapors, as the mercury arc, have a selective radiation; colored glasses a selective absorption. The transversal vibration of the ether atoms may take place in all directions at right angles to the ray, or in one plane only, and in the latter case the ray is said to be *polarized.* Many substances, as radium, uranium, thorium, send out continuously rays which travel with high velocities. These rays, the α- and *β-rays*, are best explained by the hypothesis that the substance continuously throws off, in straight lines, material particles of extreme minuteness. The meaning of the term *radiation* is therefore usually extended to include these rays, together with a third type known as *γ-rays*, given by radioactive substances, and also the *cathode rays*, which are material particles propelled with high velocity from the negative electrode of a Crookes tube (a vacuum-tube with very high vacuum) and the *Lenard rays*, which are cathode rays which have penetrated outside of the vacuum-tube. Light and heat radiation is usually produced by heat, ultra-violet rays by electric arcs and sparks, X-rays by the impact of cathode rays in a vacuum-tube, and electromagnetic waves by high-frequency electric currents.

4. In *biol.*: (*a*) The divergent evolution of several different organisms from a single ancestral form: as, the *radiation* of the placental mammals.

> The arboreal "*radiation*" (to use a term now extensively employed by American zoologists) of marsupials differentiates them from the extinct creodonts, or primitive Carnivora, of the early Tertiary epoch, which appear to have been essentially terrestrial types.
> *Nature*, Jan. 21, 1904, p. 284.

(*b*) A group of organisms that is undergoing divergent modification.

> Appreciation of animal divergence, or of divergence in special structures and organs, naturally belongs to the evolutionary period of anatomical thought; a period beginning with the branching system of Lamarck and continued in the still clearer perception of divergence in the writings of Darwin. I have elsewhere proposed to employ the term 'adaptive radiation' for the general phenomenon of divergence as observed in a single group, distinguishing such a group in process of divergence as a '*radiation*,' either a 'continental *radiation*' where diverging on a large scale, or a 'local *radiation*' where diverging in a more restricted environment.
> *H. F. Osborn*, in Science, June 23, 1905, p. 961.

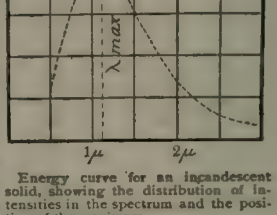
5. In *psychol.*, the extension of excitation within the nervous system to give rise to concomitant or secondary sensations.

> We shall do better therefore to avoid the expression "association" in connection with secondary sensation and make use of the term "*radiation.*" We are all aware that the pain caused by a carious tooth may often spread . . . until it finally attacks the entire half of the head.
> *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 252.

Adaptive radiation, in *biol.*, the dispersal of animals from a given point of origin, with accompanying modifications or changes in structure, presumably to adapt them to changed conditions.

> I have elsewhere proposed to employ the term '*adaptive radiation*' for the general phenomenon of divergence as observed in a single group, distinguishing such a group in process of divergence as a 'radiation,' either a 'continental radiation' where diverging on a large scale, or a 'local radiation' where diverging in a more restricted environment.
> *H. F. Osborn*, in Science, June 23, 1905, p. 961.

Atmospheric radiation, the loss of heat by the earth's atmosphere. Pure, dry air radiates and absorbs only a small percentage of the long heat-waves; but the ordinary moist and dusty atmosphere has a larger coefficient of radiation, which has been shown to be quite uniform throughout the whole globe. The radiating power of the visible surface of a cloud is very nearly proportional to the mass of the visible water-particles. The coefficient or unit of radiation is, properly speaking, the radiating power of a unit mass of air, but sometimes a unit volume of air is used instead. The best determination, that by Trabert, shows that a unit mass of average dusty, moist air radiates in one hour 0.036 gram-calories toward a surface whose temperature is lower by one degree centigrade.—**Continental radiation.** See the extract under *adaptive* ★*radiation.*—**Dark radiation**, radiation, usually of wave-lengths longer than those of the visible spectrum, which does not affect the retina.—**Gratiolet's radiations.** See *optic* ★*radiations.*—**Laws of radiation**, laws which express the relation between the character and intensity of the ether-waves which a radiating body emits and its temperature or its physical or chemical constitution. All bodies, whatever their nature, send out the ether-waves which constitute radiation, at all temperatures above the absolute zero. The amount of radiation emitted by a body at a given temperature depends upon the nature of the body, the law (*Kirchhoff's law*) being that bodies radiate only wave-lengths which they are capable of absorbing and in proportion to their absorbing power. A body which neither reflects nor transmits radiation, but absorbs all waves falling upon it, whatever their wave-length, will consequently have the highest power as a radiator: it will radiate waves of all possible wave-lengths and in the greatest possible amount. Such a body is called an *ideal black body* (See ★*black body.*) The ideal black body does not exist in nature, but certain bodies such as lampblack approximate closely to it in their properties. Radiation from the interior of a hollow body is identical in character with that from an ideal black body, and such radiation is termed in physics *black-body radiation.* The only exception to Kirchhoff's law occurs in the case of bodies whose radiation is due to luminescence. (See ★*luminescence.*) The wave-lengths of the known rays emitted by radiating bodies vary from 60. microns to .10 micron, but it is probable that both longer and shorter waves than these exist undetected. The ideal black body is capable of emitting all wave-lengths between these limits, forming a continuous spectrum. The spectrum of the waves emitted by solids is likewise continuous; but when, as is generally the case, the distribution of intensities in such spectra differs from that of the spectrum of a black body, the body is said to be a *selective radiator.* All bodies the absorption-spectra of which contain absorption-bands exhibit *selective radiation.* The radiation from a body, measured as energy, regardless of the wave-length, is termed the *total radiation.* The total radiation is a function of the temperature of the body, increasing in direct proportion to the fourth power of the absolute temperature (*Stefan's law*). The distribution of energy in the emission-spectrum of a radiating body is expressed by means of a curve, called the *energy curve* (see ★*curve of energy*), the abscissæ of which are wave-lengths, while the ordinates represent the intensity of each wave-length. The form of the energy curve depends upon the temperature of the body and upon the character of its surface. The energy curve for an incandescent black body is given in the figure. The curve has a maximum at a definite wave-length designated as λ_{max}, on either side of which the intensity of radiation falls off rapidly. As the temperature of the radiating body rises, the intensity of all the wave-lengths in its spectrum increases; but that of the shorter wave-lengths increases more rapidly than that of the long ones, so that the position of the wave-length of maximum intensity is a function of the temperature. It has been shown by Paschen that $\lambda_{max} T = \text{Const.}$ This relation is known as *Paschen's law* or the *displacement law.* By means of it the absolute temperature of a radiating body may be computed from its energy curve, or the position of the maximum of that curve may be calculated if the temperature is known. Since the intensity of each wave-length in the spectrum of a radiating body increases with rise of temperature,



Energy curve for an incandescent solid, showing the distribution of intensities in the spectrum and the position of the maximum.

the law of increase depending also upon the wave-length, it follows that the law of variation of intensity of any given wave-length is a function of both the temperature and the wave-length. Analytical expressions of this relation have been published by Planck, Thiesen, Lummer, Rayleigh, Wien, and others. Wien's equation,

$$I = C_1 \lambda^{-5} e^{-\frac{c_2}{\lambda T}},$$

in which I is the intensity of radiation of any wave-length λ, T is the absolute temperature of the radiating body, and C_1 and c_2 are constants, has been found to express very closely the experimental results obtained for wave-lengths lying between .7 micron and 9. microns. The relation given in this equation is known as *Wien's law.*—**Le Chatelier's law of radiation.** See ★*law*^{1}.—**Local radiation,** in *biol.*, the diversity that is exhibited by allied animals in areas that are separated by barriers, considered as an index of the rate at which species are modified. See the extract under *adaptive* ★*radiation.*—**Obscure radiation,** non-luminous radiation of the infra-red or ultra-violet regions of the spectrum; radiation incapable of stimulating the retina.—**Optic radiations,** nerve-fibers which pass from the pulvinar (thalamus) in a radiating direction toward the occipital cortex. These radiating fibers are continuous with others from the optic tract to the pulvinar. Also known as the *radiations of Gratiolet. Philos. Trans. Roy. Soc.* (London), 1898, ser. B, p. 2.—**Radiation constant.** See ★*constant.*—**Radiations of Gratiolet.** Same as *optic* ★*radiations.*—**Radiation spectrum.** Same as *emission* ★*spectrum.*—**Secondary X-radiation.** See *X*-★*radiator.*—**Selective radiation.** See *laws of* ★*radiation.*—**Total radiation.** See *laws of* ★*radiation.*—**X-radiation,** the obscure radiation obtained from an X-ray tube.

radiational (rā-di-ā′sho̤n-a̤l), *a.* [*radiation* + *-al*^{1}.] Of or pertaining to radiation.

This wider theory is founded upon Maxwell's theory of electromagnetic radiation, and may be accordingly termed the *radiational* theory. . . . The principal difficulties are concerning the various functions of wires. The fundamental *radiational* part is comparatively easy.
Encyc. Brit., XXXIII. 213.

radiation-fog (rā-di-ā′sho̤n-fog), *n.* A fog formed near the ground by the radiation of heat from moist air to the surface of the earth. Here the short heat-waves are lengthened, so that they pass back through the atmosphere with relatively slight absorption.

A class of fogs, termed by Herschel '*radiation fogs,*' are formed in valleys or over damp meadows in the evenings. The ground is cooled by radiation below the dew-point, and all the superfluous moisture in the lowest stratum of air is deposited in the form of dew, while the air close to the soil is left saturated, and at the same time colder than the strata above it. If . . . no mixture takes place, no fog will result, . . . but if there be the least difference of level, the colder air on the upper ground will flow down and produce a disturbance of the arrangement of the air-layers below, causing a mixture, which results in the condensation of a quantity of moisture in the form of fog.

. . . These fogs are produced by cold air flowing down into a warm and damp atmosphere, and they disappear after sunrise, as soon as the heat is sufficient to enable the air to take up all the moisture which has been condensed out of it. *R. H. Scott*, Elem. Meteorol., p. 121.

radiation-pressure (rā-di-ā′sho̤n-presh″ṳ̄r), *n.* See ★*pressure.*

radiation-weather (rā-di-ā′sho̤n-weᴛʜ″ėr), *n.* The weather that accompanies an area of high pressure, clear sky, and light winds, and that is largely controlled by radiation of heat from the ground through the clear air into space.

radiator, *n.* **3.** Same as ★*cooler*, 2 (*b*).

The *radiator* in the tonneau is of a cellular cooler type and in the light touring car a flanged pipe radiator entirely of aluminum is used.
Amer. Inventor, Feb. 15, 1904, p. 74.

4. In the transmission of electric waves, as in wireless telegraphy, an apparatus for the emission of electric oscillations; a form of oscillator.

The "aerial," or *radiator*; that was, the tall wire which corresponded to the tube of the siren, and sent electric waves off into the ether in the same way that the siren sent air waves into the atmosphere.
Sci. Amer. Sup., July 4, 1903, p. 23000.

The second patent embodies specifically a *radiator* or resonator system, . . . made in the form of a cone and having a large capacity. The cone may be made of sheet metal or formed of a network of wires. This horizontal metal cone serves to deflect the radiated waves and direct them along the surface of the earth. A horizontal conductor, the length of which is equal to the base of the cone, extends in the direction the waves are to be propagated and may include an inductance, as shown.
Elect. World and Engin., March 19, 1904, p. 570.

Perfect radiator, a body whose emissivity equals that of the ideal black body (which see, under *laws of* ★*radiation*).—**Secondary X-radiator.** See *X*-★*radiator.*—**Selective radiator,** a body, as a metallic oxid, which exhibits selective radiation. See *laws of* ★*radiation.*—**X-radiator,** a body that emits X-rays. Many substances when exposed to X-rays send out other X-rays differing more or less in quality from the exciting rays. These are called *secondary X-rays*, and the bodies emitting them *secondary X-radiators.*

radiature (rā′di-ā-tū̆r), *n.* [*radiate* + *-ure.*] The act of radiating; the rays emitted from a radiating body. *N. E. D.*

radical. I. *a.* **5.** In *astrol.*, belonging to the radix or original scheme of nativity; in *horary astrol.*, ripe and proper for judgment.—**Radical axis of three spheres,** the straight line common to the three radical planes of the pairs of spheres.—**Radical center of four spheres,** the cointersection point of the four radical axes of the four triads of spheres.—**Radical circle,** the locus of a point on a sphere such that the spherical tangents drawn from it to two given small circles are equal.—**Radical equation.** See ★*equation.*—**Radical product.** See ★*product.*

II. *n.* **6.** A minute vessel which unites with others to form a large branch or trunk. See *radicle*, 2.—**7.** In England, the name given to a white hat which was formerly somewhat worn by Radicals, owing to the fact that Henry Hunt [a radical English politician, 1773–1835] wore a white hat at various political gatherings in 1820. *N. E. D.*—**Salt radical,** the electronegative part of a salt which, in union with a metal or electropositive radical, constitutes the salt itself, or in union with hydrogen constitutes the corresponding acid.

radicicolous, *a.* **2.** In *bot.*, same as *rhizanthous.*

radicle, *n.* **5.** In the graptolites, the proximal extension of the virgula.

radiescent (rā-di-es′ẹnt), *a.* [*radi(ate)* + *-escent.*] Growing radiant; throwing out rays of gradually increasing intensity.

radiferous (rạ-dif′ẹ-rus), *a.* [NL. *radium* + L. *-fer*, -bearing, + *-ous.*] Containing radium as a constituent.

Mme. Curie, having obtained about a decigramme of pure radium chloride by fractional crystallization of *radiferous* barium chloride, has endeavored to determine the atomic weight of radium.
Sci. Amer., July 18, 1903, p. 43.

radioaction (rā″di-ọ-ak′sho̤n), *n.* [L. *radius*, ray, + E. *action.*] Same as ★*radioactivity.*

radioactivate (rā″di-ọ-ak′ti-vāt), *v. t.*; pret. and pp. *radioactivated*, ppr. *radioactivating.* [*radioactive* + *-ate*^{2}.] To render radioactive; impart radioactivity to. *Sci. Amer. Sup.*, Dec. 26, 1903, p. 23395.

radioactivating (rā″di-ọ-ak′ti-vā-ting), *p. a.* Rendering radioactive: said of the process by which surfaces commonly inactive are made capable of emitting obscure rays.

Radio-Activity near Waterfalls. . . . An account of the investigation of the *radio-activating* process at the foot of waterfalls.
Elect. World and Engin., March 28, 1903, p. 529.

radioactive (rā″di-ō-ak′tiv), *a.* [L. *radius*, ray, + E. *active.*] Exhibiting or pertaining to ★radioactivity (which see): as, *radioactive* substances.

The law of *radio-active* transformation can be very simply and aptly illustrated by an hydraulic analogy.
E. Rutherford, in Nature, March 5, 1908, p. 422.

Radioactive tellurium. See *Marckwald's* ★*rods.*

radioactivity (rā″di-ọ-ak-tiv′i̤-ti), *n.* [*radioactive* + *-ity.*] The property possessed by certain substances of spontaneously emitting obscure rays of a nature distinct from the ether-waves of ordinary radiation. The radiation from radioactive substances does not affect the retina directly, but it has the power of ionizing gases, of discharging electrified bodies, of affecting photographic plates, of exciting fluorescence and phosphorescence, and of producing certain chemical and physiological results. It is by means of these effects that the existence of this type of radiation has been discovered and that the properties of the obscure rays from radioactive substances have been investigated. Radioactivity appears to be a property common to the elements uranium, thorium, radium, polonium, and actinium, and to their compounds. It was first detected in 1896 by Becquerel who discovered that when compounds of uranium were placed in the neighborhood of a photographic plate, completely protected from the direct action of light, the plate was acted upon, and that the photographic action occurred even though a thin layer of metal was placed between the radioactive substances and the sensitive film. In the search for similar properties in other substances, Mme. Curie, and independently Schmidt, discovered that the element thorium and its compounds were radioactive, and it was further observed by Mme. Curie that certain minerals containing uranium possessed this property in a higher degree than uranium itself. The extraordinary activity of pitchblende led to the study of this mineral with a view to the separation of the substance to which this property was due, and to the discovery, by M. and Mme. Curie, of a new element, radium, the compounds of which are more than a million times as active as uranium. The most delicate method for the detection of radioactivity depends upon the power of the rays to render air a conductor of electricity and thus to discharge electrified bodies. By means of the rate of discharge, as measured by a sensitive electrometer, the radioactivity of different substances can quantitatively be compared and a degree of radioactivity $\frac{1}{100,000}$ as intense as that of uranium can be detected. By this means radium has been shown to be a widely distributed element, present in minute quantities in rocks, soils, and waters in various parts of the world. The rays from radium have been divided into three types, the α-, β-, and *γ-rays.* (See *obscure* ★*rays.*) The kinetic energy of the α-rays is very great, and since they are readily absorbed even by the surrounding air, there is a constant development of heat sufficient to cause the radioactive material to maintain itself at a temperature appreciably higher than that of its surroundings. The β-rays emitted by radium are capable of passing through thin layers of metal. They are strongly deflected from their path by the action of a magnet. The β-rays are supposed to consist of a stream of negatively charged particles or electrons. The γ-rays have an extraordinary penetrating power, being capable of passing through several centimeters of metal. Like the α- and β-rays, they produce photographic effects and also fluorescence and phosphorescence. They are not deflected from their course in the magnetic field. In addition to the emission of obscure rays, radioactive substances are autoluminescent (see ★*luminescence*) and shine in the dark with a faint fluorescent light, which, unlike the luminescence of other substances, is independent of external excitation. The phenomenon is observable, however, only in the case of compounds of considerable purity, in which the radioactivity is very intense. The radioactive elements possess the remarkable property of undergoing spontaneous disintegration. The first disintegration-product of radium is a radioactive gas termed the *emanation* (see ★*emanation*, 5), which possesses the property of imparting to surrounding objects a temporary radioactivity, due to the production and deposition of a series of further disintegration-products known as *radium A*, *radium B*, *radium C*, etc., which are solids. Thorium and actinium produce intensely radioactive non-volatile substances which have been designated by the terms *thorium X* and *actinium X*; and from these, emanations called *thorium emanation* and *actinium emanation* have their source. No gaseous emanation from uranium has as yet been discovered. The thorium emanation and the actinium emanation, however, like that of radium, are found to produce spontaneously a series of further active non-gaseous disintegration-products, *thorium A*, *B*, and *C*, and *actinium A*, *B*, and *C*. The rate at which these transformations take place appears to be an inherent property of the respective substances and incapable of being retarded, hastened, or in any way modified by external means, or effected by the state of chemical combination. The obscure rays from radioactive substances are also capable of producing certain chemical changes, such as the decomposition of water and the conversion of ordinary phosphorus into the red variety. The rays from radium appear to facilitate oxidation. The radiation from strong preparations of radium affects the skin, producing serious burns, and if such a radioactive compound is brought near the head a sensation of light is produced even though the eyes be closed. The temporary radioactivity produced on the surface of objects in contact with an emanation is variously called *excited radioactivity*, *induced radioactivity*, and *imparted radioactivity.*

[[1] On induced *radio-activity* and on the emanation from radium, by M. P. Curie. In a former note it was shown that the disappearance of the *radio-activity* induced by radium in a closed vessel and maintained at a constant temperature followed an exponential law with the time.
Nature, Feb. 5, 1903, p. 335.

radio-atom (rā′di-ō-at″o̤m), *n.* An atom possessed of or exhibiting radioactivity; a radioactive atom.

The theory that the phenomena of radio-activity are due to the disintegration of the *radio-atoms.*
Sci. Amer. Sup., Oct. 22, 1904, p. 24087.

radiobe (rā′di-ōb), *n.* [*radium* + Gr. *βίος*, life (compare *microbe*).] A structure observed by J. B. Burke in gelatin after protracted exposure of films of that substance to the action of radium salts and described by him as intermediate between a crystal and a microbe.

There appears to be a tendency amongst text-book writers to classify minute bodies which are not bacteria as crystals, but really without sufficient reason, and as these bodies cannot be identified with microbes, on the one hand, nor with crystals on the other, I have ventured, for convenience, in order to distinguish them from either of these, to give them a new name, *Radiobes*, which might, on the whole, be more appropriate as indicating their resemblance to microbes, as well as their distinct nature and origin.
J. B. Burke, in Nature, May 25, 1905, p. 79.

radiobismuth (rā″di-ọ-biz′muth), *n.* [L. *radius*, ray, + E. *bismuth.*] See ★*polonium.*

radiochemistry (rā″di-ọ-kem′is-tri), *n.* [L. *radius*, ray, + E. *chemistry.*] That part of chemistry which treats of radioactive bodies and of the phenomena produced by them.

Under chemical energetics we find the mass law relations for equilibrium and reaction velocity, thermochemistry, the phase rule, electrochemistry, photochemistry and *radiochemistry. Jour. Phys. Chem.*, Oct., 1904, p. 506.

radiochroism (rā″di-ok′rọ-izm), *n.* [L. *radius*, ray, + Gr. *χρόα*, color, + *-ism.*] That property of a body which renders it less opaque to certain varieties of X-rays than to others. Radiochroism is selective absorption in regard to X-rays. It is analogous to diathermancy and to color, which denote the same property in regard to the infra-red rays and the rays of the visible spectrum respectively.

Finally, I have observed that bodies possess a property which can be called their *radiochroism*, because it is comparable to the color of certain transparent substances in the light, and that in consequence the relation of the opacities of two substances changes with the mass traversed and with the quality of X-rays employed, the most rapid change being produced by the densest bodies.
L. Benoist, in Sci. Amer. Sup., May 4, 1901, p. 21196.

radioconductor (rā″di-ọ-kọn-duk′to̤r), *n.* [L. *radius*, ray, + E. *conductor.*] Any apparatus by which electric waves in the atmosphere are caught, detected, and recorded and measured so as to show the existence of a distant center of electric disturbance. The receiving instruments of the Marconi, Fessenden, Weather Bureau, De Forest, Arco, or other system of wireless telegraphy constitute radioconductors. The instruments for the study of thunder-storms as devised by Lephay, Odenbach, and Hoser are special forms of radioconductors for catching the natural currents attending every discharge of lightning.

Forecasting of storms by a process based upon the use of *radio-conductors*. [i. e. Natural signals caught by the apparatus used in wireless telegraphy.—Ed.]
U. S. Monthly Weather Rev., May, 1903, p. 235.

radiocondylar (rā″di-ọ-kon′di-lär), *a.* [L. *radius*, ray, + E. *condylar*.] Situated on the outer, or radial side of the condyle of the humerus; ectepicondylar.

radiodermatitis (rā″di-ọ-dėr″ma-tī′tis), *n.* [L. *radius*, ray, + NL. *dermatitis*.] Inflammation of the skin caused by X-rays or the radiations from radioactive substances.

The skin disease called *radio-dermatitis* is the consequence of excessive exposure of the skin to Röntgen or Becquerel rays. Its pathology and treatment are fully described by Dr. Oudin. It is a painful and troublesome malady which may last for eighteen months, and is difficult to cure. *Sci. Amer. Sup.*, Feb. 28, 1903, p. 22709.

radiodiagnostics (rā″di-ọ-dī″ag-nos′tiks), *n.* [L. *radius*, ray, + E. *diagnostics*.] The science of diagnosis by means of X-rays or the radiations from radioactive substances.

"A Contribution to the *Radio-Diagnostics* of Diseases of the Head and of the Brain," may be mentioned.
Elect. Rev., Sept. 17, 1904, p. 431.

radiodigital (rā″di-ọ-dij′i-tạl), *a.* [L. *radius*, forearm, + *digitus*, digit, + *-al*¹.] Belonging to the radius and the digits.

radio-element (rā′di-ọ-el″ẹ-mẹnt), *n.* [L. *radius*, ray, + E. *element*.] A radioactive element; an elementary chemical substance which undergoes spontaneous disintegration, with or without the emission of Becquerel rays, and which is either produced from or itself produces an element which is the source of such a radiation.

The rays from the three most studied *radio-elements*, uranium, thorium and radium, can be separated into three distinct types, known as the α, β, and γ rays.
E. Rutherford, in Pop. Sci. Mo., May, 1905, p. 6.

radio-energy (rā′di-ọ-en″ėr-ji), *n.* The energy of ether-waves; radiation.

With radium we have a direct transformation of the potential gravitational energy into *radio-energy*.
A. Heydweiller, in Science Abstracts, VI. Sec. A., 297.

radiogram (rā′di-ọ-gram), *n.* [L. *radius*, ray, + Gr. γράμμα, a writing.] A picture taken by means of the action of Röntgen rays, or of similar obscure rays such as those emitted by radium, upon a sensitized plate; a print from a radiographic negative.

radiograph, *n.* **2.** An impression produced on a sensitized plate by X-rays or the radiations from radioactive substances. See ⋆*ray*¹ and ⋆*radioactivity*.

As I was the first surgeon in Ireland (on March 23rd, 1896 . . .) to remove from a patient a foreign body, the presence of which was clearly shown in a *radiograph*, . . . the subject of radiography has always had an attraction for me, and I have used it very extensively for many purposes.
R. B. McCausland, in Brit. Med. Jour., May 7, 1898, [p. 1196.

X-radiograph, a term applied to a photographic picture obtained by the use of the X-rays.

radiograph (rā′di-ọ-gräf), *v. t.* [*radiograph*, *n.*] To produce an image of upon a sensitized plate by means of X-rays or the rays emitted from a radioactive substance. *Amer. X-Ray Jour.*, May, 1899, p. 572.

radiographer (rā-di-og′rạ-fėr), *n.* [*radiograph(y)* + *-er*¹.] One who makes pictures by means of X-rays or who studies the action of such rays by the photographic method.

The new apparatus enables *radiographers* to repeat any exposure under precisely the same conditions.
Elect. World and Engin., June 25, 1904, p. 1204.

radiographic (rā″di-ọ-graf′ik), *a.* [*radiograph* + *-ic*.] Of or pertaining to radiography; related to the production of images on a sensitized plate by means of X-rays or the rays from radioactive substances.

radiographically (rā″di-ọ-graf′i-kạl-i), *adv.* By means of radiography.

radiography (rā-di-og′rạ-fi), *n.* [L. *radius*, ray, + Gr. -γραφια, < γράφειν, write.] The production of images on sensitized plates by means of the X-rays or the rays from radioactive substances.

Radiography was practiced daily, with the tube at distances of from 13 to 20 centimeters from the skin, and with the tubes of great intensity.
Amer. X-ray Jour., May, 1899, p. 574.

Radiohumeral index. See ⋆*index*.

Radiolarian coprolites. See ⋆*coprolite*.

radiolead (rā′di-ọ-led), *n.* [L. *radius*, ray, + E. *lead*.] A substance formed by the disintegration of radium and the fourth of the series of radioactive disintegration-products following the emanation, for which reason it is known as *radium D*. It has not been found to emit a radiation, but slowly changes into other products, radium E, radium F, and radium G (polonium), which are always present unless the radiolead has been freshly prepared and are the source of both α- and β-rays. It is found associated with the lead obtained from uranium minerals and shows great similarity to lead in its chemical properties. It was first observed by Hofmann and Strauss in the lead sulphate separated from pitchblende.

radiolite, *n.* **3.** In *petrog.*, the name given by Bořicky (1882) to spherulites with radial arrangement of component crystals.

radiologic (rā″di-ọ-loj′ik), *a.* [*radiolog(y)* + *-ic*.] Of or pertaining to the theory, production, or application of X-rays or the rays from radioactive substances.

radiology (rā-di-ol′ọ-ji), *n.* [L. *radius*, ray, + Gr. -λογια, < λέγειν, speak.] The science and art of the production and therapeutic application of X-rays or the rays from radioactive substances. *Pop. Sci. Mo.*, May, 1900, p. 110.

radiometer, *n.* **3.** An instrument for the detection and measurement of small amounts of radiant energy. An adaptation of Crookes's form of radiometer to delicate heat-measurements has more recently been devised by E. F. Nichols. The Nichols radiometer has two vanes at the ends of a short cross-arm, suspended by a quartz fiber in vacuo. In order to protect the instrument from the effects of stray heat, the containing-vessel is usually of metal, with a window of transparent rock-salt or fluorite for the admission of the radiation to be measured, and a second window of glass through which the angular movement of a light mirror attached to the suspended parts may be observed. The construction of the radiometer varies considerably according to the work for which it is designed. The form of instrument constructed for the measurement of the heat of the fixed stars is shown in Fig. 1. The vanes *D*, *D* and the mirror *M*, the plane of which is perpendicular to that of the vanes, are mounted upon a fine rod of drawn glass, *AB*, the upper end of which is attached to a very fine quartz fiber, 32 millimeters long, *BC*. The vanes are disks of thin mica coated with lampblack and about 2 millimeters in diameter. The distance between the centers of the vanes is 4.5 millimeters. The mirror, which is 3 × 2 millimeters, consists of a silvered portion of thin microscope-cover glass. The apparatus is essentially a torsion balance, the mass (about 6 milligrams) and moment of inertia of which are exceedingly small. When radiation passing through the fluorite window *F* (Fig. 2) falls upon one of the vanes, the vane is repelled, and the balance revolves through an angle such that the torsional elasticity of the quartz fiber precisely counteracts the torque due to radiation. The deflection thus produced is measured by observing the angular movement of a beam of light reaching the mirror *M* through the window *W* (indicated in the diagram by the dotted circle). The sensitiveness of this form of radiometer and of the corresponding forms used in the exploration of the spectrum is greater than that of any other device known to the physicist. It was found possible, for example, to measure the heat received from Arcturus, which is approximately equal to the one hundred-millionth part of that from a candle at a distance of one meter, and even the heat from Vega, which is only half as bright as Arcturus. The sensitiveness of the radiometer varies with the pressure of the gas in which the vanes are suspended, reaching a maximum at a pressure of about .05 millimeters. It also depends upon the distance between the vanes and the fluorite window. The best effect is produced when this window is within two or three millimeters of the vanes, as shown in Fig. 2.

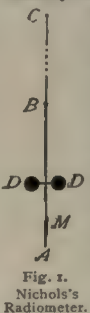


Fig. 1. Nichols's Radiometer.

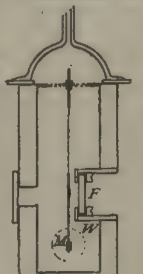


Fig. 2. Nichols's Radiometer.

radiometry (rā-di-om′e-tri), *n.* [L. *radius*, ray, + Gr. -μετρια, < μέτρον, measure.] The detection and measurement of radiant energy by means of the radiometer.

radio-oro (rā″di-ọ-ō′rō), *n.* [A Spanish-looking form, < Sp. *radio*, radium, + *oro*, gold.] So-called 'radium-gold,' a new alloy of a brilliant yellow color like that of gold. It is said not to tarnish and to be as elastic as steel and as ductile as gold. It is also said to coat well; but it is somewhat friable, and it contains neither radium nor gold.

radiopelvimetry (rā″di-ọ-pel-vim′e-tri), *n.* [L. *radius*, ray, + E. *pelvimetry*.] Estimation of the diameters of the pelvis by means of X-ray examination. *Encyc. Dict.*

Radiophonic sound, a sound produced in the receiver of a radiophone by the heating and cooling effect of the intermittent rays falling upon the diaphragm of that instrument.

radiopraxis (rā″di-ọ-prak′sis) *n.* [L. *radius*, ray, + Gr. πρᾶξις, doing.] Treatment of disease by any of the forms of radioactivity.

Radio-praxis (with Special Reference to the Ultra-violet Rays). *Med. Record*, March 7, 1903, p. 392.

radioscope (rā′di-ọ-skōp), *n.* [L. *radius*, ray, + Gr. σκοπεῖν, view.] **1.** An instrument for detecting, studying, or applying X-rays. It consists usually of a fluorescent screen and accessories to facilitate the viewing of the same.—**2.** A thin hammered-brass plate having an accurately bored smooth round hole, and so mounted that it can be adjusted to a camera to produce a pinhole camera. *Sci. Amer.*, July 16, 1904, p. 46.—**3.** A form of ⋆spinthariscope (which see).

radioscopic (rā″di-ọ-skop′ik), *a.* [*radioscope* + *-ic*.] Of or pertaining to the study of X-rays, specifically by means of the fluorescent screen.

radioscopy (rā-di-os′kọ-pi), *n.* [L. *radius*, ray, + Gr. -σκοπια, < σκοπεῖν, view.] **1.** The detection, study, or application of X-rays, specifically by observations with a fluorescent screen.—**2.** Examination of opaque objects by means of the X-rays or other form of radioactivity. *Sci. Amer. Sup.*, June 13, 1903, p. 22943.

radioserial (rā″di-ọ-sē′ri-ạl), *a.* [L. *radius*, ray, + E. *serial*.] Radially divergent; exhibiting divergent series. [Rare.]

First, in the study of organisms we are dealing with plastic substances showing definite gradations which can be arranged in their natural *radio-serial* divergent lines of classification. *A. Hyatt*, Biol. Lectures, 1899, p. 145.

radiotelegram (rā″di-ọ-tel′ẹ-gram), *n.* [L. *radius*, ray, + E. *telegram*.] A message transmitted by wireless telegraphy. *Sci. Amer. Sup.*, Nov. 15, 1902, p. 22474.

radiotelegraph (rā″di-ọ-tel′ẹ-gräf), *n.* [L. *radius*, ray, + E. *telegraph*.] A telegraph in which the transmission is by means of electric waves; a wireless telegraph.

A Reuter message from Rome states that the Marquis Luigi di Solari has submitted to Mr. Marconi, on behalf of the Italian Government, a convention for the establishment on the coast and on the islands off the Italian coast of a system of twelve Marconi *radio-telegraph* stations of an average range of 300 kilometres.
Nature, April 23, 1903, p. 590.

radiotelegraphic (rā″di-ọ-tel-ẹ-graf′ik), *a.* [*radiotelegraph(y)* + *-ic*.] Of or pertaining to wireless telegraphy.

A scheme has been proposed to the Italian Minister of Posts and Telegraphs by Mr. Marconi for the creation of a *radio-telegraphic* station communicating with the stations established or to be established by the Marconi companies in London and in America.
Nature, Sept. 25, 1902 p. 538.

radiotelegraphy (rā″di-ọ-tel′ẹ-graf-i, or -tẹ-leg′rạ-fi), *n.* [L. *radius*, ray, + E. *telegraphy*.] Telegraphy by means of electric waves; wireless telegraphy.

It is surprising yet none the less true that nearly every improvement in wireless telegraphy may be traced back to the original researches of Heinrich Hertz, on the action of electromagnetic waves in air. This is again strikingly illustrated in a new system of *radiotelegraphy* recently patented by Georg Friedrich Rudolph Blockmann, of Kiel, Germany.
Elect. World and Engin., Jan. 16, 1904, p. 132.

radiotelephone (rā″di-ọ-tel′ẹ-fōn), *n.* [L *radius*, ray, + E. *telephone*.] A telephonic instrument, invented by L. De Forest, used in wireless ⋆telephony (which see).

radiotelephony (rā″di-ọ-te-lef′ọ-ni), *n.* [*radiotelephone* + *-y*.] The use of the radiotelephone; in general, wireless telephony. See ⋆*telephony*.

radiotellurium (rā″di-ọ-te-lū′ri-um), *n* [L. *radius*, ray, + NL. *tellurium*.] A substance found by Marckwald in extremely minute quantity in bismuth from the pitchblende of Joachimsthal. It is identical with polonium

radiotherapeutics (rā″di-ọ-ther-ạ-pū′tiks), *n.* [L. *radius*, ray, + E. *therapeutics*.] Radiotherapy; the treatment of disease by exposure to light, the X-rays, or radium and other radioactive substances. *Med. Record*, Oct. 12, 1907, p. 620.

radiotherapy (rā″di-ọ-ther′ạ-pi), *n.* [L. *radius*, ray, + Gr. θεραπεία, medical treatment.] Treatment of disease by any of the forms of radioactivity. This term has been applied more particularly to methods of treatment in which the Rontgen rays are employed, but since the discovery of the Becquerel rays and of the possibility of their use in the treatment of disease, the term has been extended to include the therapeutic use of radioactive substances as well as X-rays. The value of the Rontgen rays has become firmly established for certain affections of the skin, such as epithelioma, rodent ulcer, mycosis fungoides, acne, keloid and hypertrophic scars, chronic eczema, obstinate ringworm of the scalp, etc. Radium and other radioactive substances have more recently been employed for the same purposes as the X-rays. Their effects seem to be practically the same, though they have not yet been used in therapeutics a sufficient length of time to determine their relative value as compared with the Röntgen rays. The fact that tubes of radium can be introduced into cavities where it is not practicable to employ the X-rays has enabled this substance to be used with benefit in certain cases of stricture of the esophagus or rectum. The cathode ray has been suggested as a substitute for radium, which, by reason of its great cost, is of very restricted application. The X-rays have also been employed in the treatment of leucemia, with apparent benefit in certain cases.

A Crookes bulb for *radiotherapy*, by M. Audin. A description of an X-ray tube specially adapted for the treatment of cancer of the mouth and throat.
Nature, Dec. 3, 1903, p. 120.

radiothorium (rā″di-ọ-thō′ri-um), *n.* [L *radius*, ray, + NL. *thorium.*] A radio-element produced by the disintegration of thorium and intermediate between mesothorium, of which it is a product, and thorium emanation, of which it is the parent. It closely resembles thorium in its chemical properties, and was discovered by Hahn in 1905.

A series of analogous considerations has been established for another radioactive substance—thorium. In this case thorium as a primary substance generates *radiothorium*, a substance recently discovered, which gives rise to the gaseous radioactive emanation of thorium and various products of radioactivity induced by this emanation. Actinium also gives place to a series of transformations similar to those of thorium, and it, like radium, produces helium. *Smithsonian Rep.*, 1906, p. 114.

radiotint (rā′di-ọ-tint), *n.* [L. *radius*, ray, + E. *tint.*] A picture obtained by taking a photograph upon a specially prepared dry plate, developing, washing, and drying in the usual manner, and treating the positive or print made from this negative with a special solution and the three dyes, blue, green, and red, in succession, the result being a colored picture.

radiotropic (rā″di-ọ-trop′ik), *a.* [L. *radius*, ray, + Gr. τρέπειν, turn.] In *biol.*, tending to turn or move toward (or away from) a source of radiation. *Science*, Feb. 28, 1908, p. 331.

radio-ulna (rā″di-ō-ul′nä̤), *n.*; pl. *radio-ulnæ* (-nē). The united radius and ulna, as found in such animals as the frog; the ulnoradius of Cope.

radish-tree (rad′ish-trē), *n.* An Australian timber tree, *Gyrostemon cotinifolius.* See ★*horseradish-tree*, 2.

radium (rā′di-um), *n.* [NL. *radium*, < L. *rad(ius)*, ray, + *-ium.*] A chemical element of very remarkable character, discovered in 1898 by Mme. Sklodowska Curie, working with her husband and M. Bémont. The element itself has not been isolated, and many writers incorrectly use the name radium when in reality a salt of the element, generally the chlorid or bromide, is meant. In following up the researches of Becquerel on the radioactivity of uranium and its compounds, Mme. Curie found that certain ores of uranium manifest this activity to a greater extent than can be accounted for by the uranium they contain. By patient and laborious examination of the constituents of pitchblende, a mineral containing a high proportion of uranium, she was able to separate a substance exhibiting radioactive properties greatly superior to those of uranium. This substance was found associated with the barium salts removed from the pitchblende and resembled barium so closely in its chemical properties that a separation of the two elements could be effected only by the repeated fractional recrystallization of the mixed chlorids, the radium chlorid becoming more concentrated in the less soluble portion. On further investigation it was found that the radium, present only in minute proportion in pitchblende, was retained and somewhat concentrated in certain residues obtained from pitchblende in the commercial extraction of uranium at the works in connection with the mines at Joachimsthal in Austria. These residues had accumulated for years under the supposition that they were valueless and a considerable quantity was placed at the disposal of M. and Mme. Curie for the continuation of their researches. The residues consist chiefly of the sulphates of lead and calcium together with the oxids of silicon, aluminium, and iron. They also contain greater or less quantities of nearly all the metals (copper, bismuth, zinc, cobalt, manganese, nickel, vanadium, antimony, thallium, the rare earths, niobium, tantalum, arsenic, barium, etc.). They were subjected to suitable chemical treatment by which the barium and radium were removed and obtained in the form of a mixed chlorid. The radium and barium chlorids were then separated from one another by fractional crystallization repeated many hundreds of times, and a pure chlorid of radium was obtained. In this way the Curies separated about one gram of fairly pure radium chlorid from eight tons of residues, representing nearly eighty tons of the original ore. Giesel has slightly modified the process, conducting the recrystallization with the bromides instead of the chlorids, which considerably facilitates the isolation of a pure radium salt. Pure radium chlorid or bromide resembles common salt in general appearance when freshly prepared, but quickly acquires a yellowish or brownish color. It gives a fine carmine-red color to flame, and affords characteristic flame and spark spectra. It is visibly luminous in a dark room. Radium belongs to the class of the alkaline-earth metals, calcium, strontium, and barium, and its compounds in general resemble theirs. Its atomic weight, as first determined by Mme. Curie, was 225 (O = 16); later she obtained the figures 226.5. The element occupies, in the periodical classification, the same position in the twelfth of Mendeléjeff's series as Ca, Sr, and Ba do in the fourth, sixth, and eighth. Its radioactivity is about one million times greater than that of uranium. It produces phosphorescent luminosity in the diamond, kunzite, and various other minerals, and on screens coated with barium platinocyanide, crystalline zinc sulphid, etc. Radium salts give off α-, β-, and γ-rays (see ★*radioactivity*). The nature of the α-particles has been closely investigated by Rutherford, who has shown that they are of atomic dimensions, have a mass equal to that of helium atoms, and are therefore in all probability the source of the helium continuously evolved by radium salts as demonstrated in the experiments of Ramsay and Soddy. In addition to helium, a radium salt produces also a highly radioactive gaseous substance known as the radium emanation, which accumulates in the solid salt and escapes when this is heated or dissolved in water. This emanation is a gas of the argon family, autoluminescent and giving a characteristic bright-line spectrum. It has an atomic weight (as determined from the diffusion rate and assuming the molecule to be monatomic) differing but little from that of radium and is condensed at a temperature of from −150 to −155° C. It gradually loses its radioactivity and is transformed, at a rate corresponding to a change of one.half the amount present in 3.8 days, into a series of successive, rapidly-changing, solid, radioactive products known as *radium A*, *radium B*, and *radium C*, which are deposited on the surface of any object in contact with the emanation and impart to this a temporary radioactivity. The continuous production of the emanation in radium salts is wholly independent of the chemical character of the salt and is directly proportional to the amount of radium contained in it. It has also been observed that radium salts evolve heat at the surprising rate of about 118 calories per hour for each gram of radium which they contain and are thus enabled under favorable conditions to maintain their temperature considerably above that of their surroundings. These and other considerations have led to the explanation of the behavior of radium and other radioactive elements by the so-called disintegration theory, first proposed by Rutherford and Soddy. According to this theory the radium atoms are unstable systems and a certain proportion of the total number present are constantly undergoing disintegration, being transformed into atoms of other elements having distinctive physical and chemical properties. Thus an atom of radium breaks up, expelling an α-particle constituting an atom of helium, and produces an atom of the gaseous emanation, the latter undergoing subsequent transformation into an atom of radium A, etc. The energy appearing in the course of these changes is assumed to be inherent in the original atom and to manifest itself only when this is altered or destroyed. On this assumption the behavior of radioactive substances is in no way contradictory to the doctrine of the conservation of energy. On the basis of this theory it is obvious that in any given quantity of a radium salt in the course of time the amount of radium present must gradually decrease, and it has been experimentally demonstrated that the time required for exactly one half of the radium to disappear would be about 2000 years. It can be shown that at this rate of disintegration the earth, if composed initially of pure radium, would, after the lapse of 100,000 years, contain a smaller proportion of radium than is now present in the common rocks and soil which constitute its surface. Since the age of the earth is certainly greater than 100,000 years, it is evident that the radium now in existence must have been renewed or formed in some manner. The origin of radium has therefore been the subject of careful investigation and the conclusion has been reached that radium is formed through the atomic disintegration of another radioactive element, uranium, which is much more abundant, and is widely distributed. Radium has been found present in the natural mineral substances containing uranium in a constant and unvarying proportion, three parts by weight of radium occurring associated with every one hundred million parts of uranium. It has been found that radium is not formed directly from uranium, and it has been shown by Boltwood that another radio-element, ionium, is first produced by the disintegration of the uranium atoms which after further change are converted into radium atoms. A continuation of the atomic transformation results in the successive production of a further series of radio-elements or products: radium emanation, radium A, radium B, radium C, radium D (radiolead), radium E, radium F, and radium G (polonium). As no further radioactive products have been detected in this series it is presumed that after radium G an unchanging, stable form of matter is attained. Although the evidence as to the nature of this final product is indirect and not wholly conclusive, there is reason for believing that it is ordinary lead. Radium has been found widely distributed in minute proportions in the rocks and minerals of the globe, in soils, in the waters of thermal springs, in sea-water, and in marine deposits. The chief source of the radium salts which have been prepared has been almost entirely the pitchblende residues from the Austrian factories, and owing to the comparative rarity of this material and the laborious and costly methods of treatment necessary for its extraction, radium salts have commanded extraordinarily high prices, being frequently sold in small quantities at a rate exceeding $150,000 per gram of radium. The radiation from radium salts, especially the β- and γ-rays, reduces sensitive silver salts and produces an image upon a photographic plate screened by black paper. It also brings about other chemical changes, converting oxygen into ozone and ordinary phosphorus into red phosphorus, and causing the decomposition of water (with an excess of hydrogen over oxygen in the gaseous product as collected). It produces darkening of color in diamonds, quartz, mica, and especially glass, some specimens of glass becoming brown and others, more commonly, acquiring a violet or purple tinge. Various other substances become more or less colored. Radium salts, even at some little distance from the human skin, produce reddening in a few hours, and after days give rise to painful sores, difficult to heal. They have been used with some degree of success in the treatment of lupus and other forms of disease of the superficial tissues. They exert a marked germicidal action on various micro-organisms.—**Radium A**, the first disintegration-product of the radium emanation, having the emanation as parent and being itself the parent of radium B. See above.—**Radium B**, the second disintegration-product of the radium emanation, having as parent radium A and being the parent of radium C. See above.—**Radium-barium bromide**, barium bromide containing an admixture of radium bromide in varying, usually very small, proportion.—**Radium bromide**, the compound of radium which probably admits best of separation from the accompanying barium bromide by fractional crystallization, and has hence been used for this purpose by Giesel. It is soluble in water, though less soluble than the corresponding salt of barium. Exposed to the air it loses bromine and acquires an alkaline reaction.—**Radium C**, the third disintegration-product of the radium emanation, having as parent radium B and being parent of radium D. See above.—**Radium D**, a product of the radium emanation, having as parent radium C.—**Radium electroscope.** See ★*electroscope.*—**Radium rays**, Becquerel rays emitted by the radioactive element radium or by its compounds. See *obscure* ★*rays*, ★*radium*, and ★*radioactivity.*

radius, *n.* 4. (*b*) One of the principal longitudinal veins in an insect's wing, between the subcosta and the præmedia. It is vein III of Comstock's system.—**Angular radius.** Same as *spherical* ★*radius.*—**Basal pectoral radius.** See ★*pectoral.*—**Focal radii**, sects from a point to the foci.—**Radius and cubitus.** See ★*cubitus.*—**Radius of an eccentric**, the distance from the center of the sheave to the axis of the shaft.—**Radius of convergence**, the radius of the circle of convergence of a power-series.—**Radius of inversion.** See ★*inversion.*—**Radius of symmetry.** Many animal forms are symmetrical in reference to a number of systems of radii, designated *perradii*, *interradii*, *adradii*, and *subradii*. In a quadrate jellyfish there are four perradii, four interradii, eight adradii, and sixteen subradii. Four of the eight marginal sense-organs of *Chrysaora* are perradial and four interradial; of its twenty-four tentacles eight are adradial and sixteen subradial.—**Radius of vision**, the tangent to the earth's surface drawn from the eye of an observer situated at any given height above the earth; the line from such a point of view to the horizon. At sea, or above a level plain, where the horizon is a circle, the radius of vision is the side of a cone whose apex is the point of view and whose base is the horizon.—**Spherical radius**, an arc of a great circle from a pole of a circle on a sphere to a point of the circle.

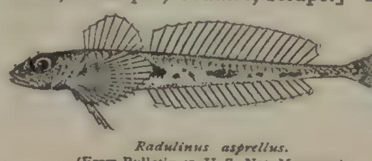
radius-bar, *n.* 2. A link or bar connected with the front truck of a locomotive so as to permit it to swing laterally enough to adjust itself to track-curves of varying radius without stress upon the frame.

radius-finder (rā′di-us-fīn″dėr), *n.* Same as ★*center-square.*

radius-rod (rā′di-us-rod), *n.* In a steam-engine, the rod in a Gooch link motion, which connects the link-block to the valve-stem.

radix, *n.* 6. In *astrol.*, the original figure of birth, the source of all judgments and predictions.—**Radix mesencephali**, the mesencephalic root of the trigeminus nerve.—**Radix of the scale.** Same as *base of the* ★*scale.*—**Radix trigemini**, the root of the trigeminus nerve.

Radulinus (rad-ụ-lī′nus), *n.* [NL., < L. *radula*, a scraper, < *radere*, scrape.] A genus of cottoid fishes which inhabit the Pacific coast in rather deep waters.



Radulinus asprellus.
(From Bulletin 47, U. S. Nat. Museum.)

raffinade (rä-fẹ-nä′de̤), *n.* [G. *raffinade*, < F. **raffinade*, < *raffiner*, refine.] A trade-name in Germany for the finest grade of white sugar made from beet-root.

raffinase (raf′i-nāz), *n.* [F. **raffinase*, < *raffiner*, refine, + *-ase.*] A ferment which causes the inversion of raffinose.

raffinosate (ra-fin′ọ-sāt), *n.* [*raffinose* + *-ate*^{2}.] A compound of raffinose with a base, as calcium raffinosate, $3CaO.C_{18}H_{31}O_{16} + 2H_2O$, a crystalline powder, by means of which raffinose can be separated from saccharose, because it is less soluble in alcohol than calcium saccharate. When treated with an acid it yields raffinose and the calcium salt of the acid.

raffinose (raf′i-nos), *n.* [F. **raffinose*, < *raffiner*, refine, + *-ose.*] A crystalline sugar, $C_{18}H_{32}O_{16} + 5H_2O$, found in Australian manna from different species of *Eucalyptus*, sugar-beets, cotton-seed, and barley. It has no sweet taste. When heated with dilute sulphuric acid it first yields fructose and melibiose, then the latter is broken down into glucose and galactose. It is dextrorotatory and ferments only partly with yeast. Also called *melitose*, *gossypose*, and *melitriose*. *Inactive raffinose* is found in sugar-cane and in beet-molasses. It does not crystallize.

rafflesiaceous (raf-lē-zi-ā′shius), *a.* Belonging to the *Rafflesiaceæ*, a family of parasitic plants; resembling the genus *Rafflesia*.

rafle (räf'l), *n.* [F.] A febrile eruptive disease observed in cattle of northern France. The eruption occurs after four or five days, on the inner side of the hind limbs and sometimes of the fore-legs, extending down to the hoof.

raft-body (råft'bod"i), *n.* In a war-ship, the part of the vessel above the protective deck in the vicinity of the water-line which is divided into a large number of watertight compartments. See ★*battle-ship*.

rafter¹, *n.*—**Auxiliary rafter**, an additional rafter used in a roof-truss to stiffen the principal rafter, often for a part of its length only.—**Dwarf rafter**, one of the short rafters which frame into a hip-rafter or angle-rafter, reaching from it to the plate.

rafter-dam (råf'tėr-dam"), *n.* A dam in which long timbers are set on the upper side at an angle to the stream of from 20 to 40 degrees. The pressure of the water against the timbers holds the dam solidly against the stream-bed.

rafting-spear (råf'ting-spēr), *n.* A thick iron-shod pole, used as a spear.

> Thus Mr. Tregear remarks:—"I have seen a Maori speared with a big *rafting-spear* (an iron-shod pole thicker than the wrist), the point driven through the breast, just under the collar-bone, and coming out at the back. *H. H. Ellis*, The Criminal, p. 114.

raft-spider (råft' spī"dėr), *n.* A European lycosid spider, *Dolomedes fimbriatus*, which spins together floating leaves, using them as a raft on which it lives while capturing aquatic insects.

rag¹, *n.* **3.** In *bot.*: (*d*) The pithy axis and the membranes separating the sections of the orange and other citrus fruits.

> The fruit resulting [from organic manures] is . . . inclined to be large and rough, with a thick rind and abundant *rag*. *Yearbook U. S. Dept. Agri.*, 1894, p. 196.

12. A coat; a tunic: army slang in India in the last century; still used. Also ★*raggie* (which see).

> Are you going to sport the blue *rag* or the red one? [The Navy or the Army.]
> *Quoted in N. and Q.*, 9th ser., XII. 513.

Hard rags, rags from felted cloth, such as broadcloth, kersey, beaver, etc.—**Soft rags**, rags from loosely woven or unfelted cloth.—**To chew the rag**, to work oneself up over a grievance; complain; scold; talk violently. [Slang.]

> "There are a few sore-heads," one man remarked to me, "who *chew the rag* about corruption an' the way the town 's run, but they don't represent you an' me an' the citizens. They 're sore 'cause they ain't got any offices, that 's what 's troublin' them." *McClure's Mag.*, April, 1901, p. 576.

> A pardon if too much I *chew the rag*
> But say, it 's getting rubbed in good and deep.
> *Wallace Irwin*, Love Sonnets of a Hoodlum, xix.

II. *a.*—**Rag fallow.** See ★*fallow*².

rag² (rag), *n.* [*rag*², *v.*] In Oxford University, a noisy, disorderly outbreak, in violation of established regulations: originally peculiar to English university life.

> The College is preparing for a good old *rag* tonight.
> *Isis*, 1892, No. xiii, p. 88. *N. E. D.*

raga (rä'gä), *n.* [Skt. *rāga* (Hind. *rāg*), coloring, passion, loveliness, beauty (of voice or song), a musical mode, < √*raj*, be colored, be red, be pleased, etc.] In *Hindu music*, a scale or similar recognized series of tones.

rag-bag (rag'bag), *n.* A bag to contain rags or heterogeneous clippings of cloth; hence, a receptacle for any collection of odds and ends.

> The Convention was a *rag-bag* of dissent, made up of bits so various in hue and texture that the managers must have been . . . puzzled to arrange them in any kind of harmonious pattern. *Lowell*, Works, V. 156.

rag-boiler (rag'boi"lėr), *n.* A closed vessel in which rags are boiled under a slight pressure in the paper-making process.

rag-book (rag'bůk), *n.* An 'indestructible' picture-book for children, printed on heavy linen with a brilliant, glossy surface.

> The improvements recently made in the productions called *rag-books* are strikingly exemplified . . . [they are] absolutely untearable, even washable.
> *Athenæum*, Dec. 16, 1905, p. 833.

rag-box (rag'boks), *n.* **1.** A box in which clothes are kept (see *rag*¹, *n.*, 12). [Slang.] —**2.** The mouth: as, to shut the *rag-box*, to hold the tongue. [Slang.]

> You shut up your *rag-box* an' 'ark to my lay.
> *R. Kipling*, The Young British Soldier, st. 2.

rag-burning (rag'bėr"ning), *n.* The process of calcining or roasting tin-witts or tin-ore that has been dressed but contains pyrites or other impurities. [Cornwall, Eng.]

rag-duster (rag'dus"tėr), *n.* In *paper-making*, a duster which employs an endless apron or wire cloth, on which the stock is thrown, after it has been torn apart or opened by revolving cutters, and the dust has been beaten out.

rag-fair, *n.* **2.** The kit inspection of a company of soldiers. [Slang.] *Grose.*

rag-fish (rag'fish), *n.* A fish of the genus *Icosteus*, found on the shores of California, remarkable for its flat, flabby body.

Ragged fallow, jacket. See ★*fallow*², etc.

ragged-robert (rag'ed-rob'ėrt), *n.* The herb-robert, *Geranium Robertianum*.

raggedy (rag'e-di), *a.* [*ragged* + *-y*³.] Having a ragged appearance; ragged. Also *raggety*.

> A *raggedy* colt makes a good horse. *Old Irish Saying.*

> There were a great many cattle, some limping wearily on. . . . Then fore and aft of the herd there were *raggety* boys holding the beasts in check and playing pranks among themselves. *Crockett*, Raiders, xxiii.

> O The *Raggedy* Man! He works fer Pa;
> An' he 's the goodest man ever you saw!
> He comes to our house every day,
> An' waters the horses, an' feeds 'em hay. . . .
> Ain't he a' awful good *Raggedy* Man?
> *Raggedy! Raggedy! Raggedy* Man!
> *J. W. Riley*, The Raggedy Man, in Rhymes of Child-[hood, p. 217.

raggety, *a.* Same as *raggedy*.

raggie (rag'i), *n.* Diminutive of ★*rag*¹, 12 (which see).

> As for myself in my scarlet *raggie*, . . . black waist-belt and regulation sword, in my own opinion I looked quite the god of war.
> *Capt. F. J. Bellew*, Memoirs of a Griffin, ix.

ragging¹, *n.* **3.** In *mech.*, the rough-dressing of a grindstone; the operation of taking imperfections out of the working-face of a grindstone.

ragging² (rag'ing), *n.* [*rag*², *v.*, + *-ing*.] A scolding; a tongue-lashing.

ragging-hammer (rag'ing-ham"ėr), *n.* In *mining*, a hammer which is used for breaking off the worthless part of the ore in the first separation.

ragging-table (rag'ing-tā"bl), *n.* See *racking-table*.

raggle, *n.* **2.** A groove cut in a stone, especially in the upper stones of a wall, to hold the edge of a roof.

rag-house (rag'hous), *n.* A tent. [Slang.]

ragout (ra-gö'), *v. t.* [*ragout*, *n.*] To make a ragout of; to make a spicy mixture of; hence figuratively, to give spiciness or piquancy to, as speech or literary style.

> There would have been some grand officer of the household, . . . taking upon himself to allow beef to be *ragouted* in small kitchens, and in pans of peculiar size.
> *Westminster Rev.*, Jan., 1833, p. 33.

Rag-pickers' disease. (*b*) A form of pneumonoconiosis occurring in rag-pickers.

Rag-sorters' disease. Same as *rag-pickers' disease* (*a*) and (*b*).

ragstone, *n.* **3.** The weathered first bed or upper layer of a quarry in England. Also *raggstone*.

> The Ragg of the Quarry: It is the very Strata of Stone that makes the Roof of the Subterraneous Quarries.
> *M. A. Green*, Eighteenth Century Architecture of Bath, [p. 94.

rag-time (rag'tīm), *n.* and *a.* [*rag* for *ragged* (?) + *time*.] In *music*, a rhythm or movement that has many irregular accents and jerky inversions of emphasis, similar to those described under *Scotch catch* or *snap*. The term appears to have been first used (as an adjective) of negro melodies of the southern United States, but it has been extended indiscriminately to all sorts of popular songs, often of a vulgar character. [Colloq.]

> An Italian band played Chinese *ragtime* with German thoroughness and a French finish as the guests of the State piled into carriages for a drive to the Fifth Avenue Hotel. *N. Y. Press*, Feb. 2, 1906.

Rag-time music, music characterized by rag-time, especially songs or dances imitated or caricatured from negro melodies.

> The sound of *ragtime music* came from the two music halls across the way. *M. E. Seawell*, Papa Bouchard, i.

rag-trade (rag'trād), *n.* **1.** Trade in rags which are sold to the paper-mills.—**2.** The buying of false bank-notes which are palmed off on victims who give good money in exchange. [Slang.]—**3.** The tailoring trade. *Barrère and Leland*, Slang Dict.

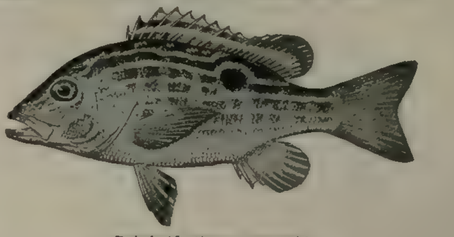
ragweed, *n.*—**Giant ragweed, tall ragweed**, the great ragweed, *Ambrosia trifida*.

ragweed-fever (rag'wēd-fē"vėr), *n.* Same as *hay-fever*.

rah (rä), *interj.* and *n.* A shortened form of *hurrah*: usually repeated.

> Around her raved the cheers of thousands, but the rocketing "*rahs*" for Yale sounded in her ears like some barbaric funeral chant. *Scribner's Mag.*, July, 1905, p. 18.

raiado (rä-i-ä'dō), *n.* [Sp. *rayado*, striped.] *Lutianus synagris*, one of the snappers, known from Florida to Brazil.



Raiado (*Lutianus synagris*).
(From Bulletin 47, U. S. Nat. Museum.)

Raibl beds. See ★*bed*¹.

raiiform (rā'i-fôrm), *a.* [NL. *raia*, ray, + L. *forma*, form.] In *ichth.*, of the shape of the ray.

Raiküll beds. See ★*bed*¹.

rail¹, *n.*—**Adhesion-rail.** See ★*adhesion-rail*.—**Barlow rail**, a saddleback rail; an old form of metal rail having sides which curve rapidly downward and outward so as to form a broad base, thus allowing the rail to be laid directly on the ballast and avoiding the necessity for sleepers or wooden ties.—**Base-rail**, a railroad rail, invented about 1831, which had side projections about every two feet to give it a bearing surface on the road-bed.—**Bull-headed rail.** See ★*bull-headed*.—**Duplex rail.** Same as *compound rail* (which see, under *rail*¹).—**Service-rail.** Same as ★*adhesion-rail*.—**Slot-rail**, one of a pair of rails which form a slot, or between which is an opening in which a trolley or a cable-grip or plow runs. This slot is usually midway between the rails on which the car runs, and for street-car service, the top of the slot being flush with the street surface. *Elect. World and Engin.*, Feb. 27, 1904, p. 406.—**Stock-rail.** Same as ★*adhesion-rail*.—**Third rail**, a supplementary, insulated rail laid beside the track of an electric line, to carry the current used by the motor-cars. It is usually placed near one rail, outside the track, in convenient reach of a shoe that slides upon it, and takes the current from it to the motor. In street roads two light insulated rails in a tunnel under the track take the place of the third rail. See cut under *electric* ★*conduit*.—**Vignolles rail**, a railroad-rail of the same shape as the T-rail. [Eng.]

rail⁴, *n.*—**Pectoral rail**, in Australia, *Rallus philippensis*. *Austral Eng.*

railage (rā'lāj), *n.* Charge for transportation by rail; also the transportation itself.

> Labour, cartage and *railage*.
> *Auckland Star, N. Z.*, Oct. 1, 1891, p. 4. *N. E. D.*

rail-bird² (rāl'bėrd), *n.* One who perches on or hangs over the rail or fence at a race-course, or a fair, not having a reserved seat. [Slang.]

> Pity the poor judges when thirty bull calves romp out before them; pity the "*railbirds*" who pass judgment on the judges. *Rep. Kansas State Board Agr.*, 1901–2, p. 203.

> Along the fence where in the forenoon the "*rail birds*" had perched, muffled and humped, talking sagely of "Himyar hoses," "St. Blaise hocks," "iron legs," and "selling skates." *Munsey's Mag.*, Sept., 1902, p. 916.

rail-bond (rāl'bond), *n.* An electric conductor used to unite the adjacent ends of two railroad-rails so as to form a good electrical contact. It is usually composed of one or more copper wires the ends of which are given good metallic contact with the rails by soldering them in plugs fitted in holes in the foot. *Jour. Franklin Inst.*, Feb., 1904, p. 114.

rail-car (rāl'kär), *n.* A contraction of *railway-car*. [Local, U. S.]

rail-clamp, *n.* **2.** A rail-drill; a frame or clamp for holding a drill while drilling holes in the web of a rail.

rail-clip (rāl'klip), *n.* A tie-piece attached to a balance-crane, or a crane mounted on a car, for the purpose of securing the crane to its iron rails, thus preventing its overturning when lifting a heavy load.

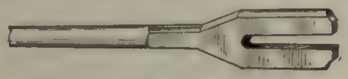
rail-drill (rāl'dril), *n.* A rail-drilling machine; a portable device for drilling holes in the web of a rail for the bolts required at the joints. *Jour. Franklin Inst.*, Feb., 1904, p. 112.

rail-drop (rāl'drop), *n.* The fall of potential between the rails of an electric railway, where these are used for the return circuit, and the grounded terminal of the generator.

> Now if, as the result of plant installation such as is represented in the lecturer's diagram, voltages existed such as therein graphically shown, such voltages would have to be diagrammatically illustrated somewhat as shown in Fig. 7; in which, ZZ' being the zero line and A the voltage of the low-voltage pole of the generator, CC' would represent the voltage at different points of the rail-return (*rail-drop*) and EE' the voltage at different points of the accidental auxiliary returns (earth-drop, pipe-drop, etc.). *Elect. Rev.*, Oct. 8, 1904, p. 569.

rail-feeder (rāl′fē″dėr), *n.* A generator or battery used to regulate the distribution of voltage through the rails or earth return-circuit of an electric road.

rail-fork (rāl′fôrk), *n.* A track-layers' bar having two parallel blunt arms at the end the space between which is designed to fit the web of the rail. It is used in lifting the end of a rail.


Rail-fork.

rail-gage (rāl′gāj), *n.* A bar, either of iron or wood, having a projection near each end at right angles to it. The distance apart of the outer faces of the projections is the distance required between the heads of the rails. See *railway-★gage.*

rail-head (rāl′hed), *n.* 1. The upper portion of a rail; that part of a rail with which the wheels of the vehicles of a railway come in contact in passing.

> All of the lines run on the public highway, and as the *railheads* are flush with the street, wagon traffic suffers no interference. The rails are laid on a foundation made up of large stones covered by rubble.
> *Elect. World and Engin.*, March 19, 1904, p. 554.

2. The terminus of railway transportation; the farthest point to which transportation by rail is open.

> *Rail-head* having arrived at the requisite point in the summer of last year, our party, consisting of six Europeans, left Marseilles on June 10.
> *Geog. Jour.* (R. G. S.), XV. 454.

rail-ingot (rāl′ing″gọt), *n.* A steel ingot from which rails are to be rolled. Bessemer or open-hearth steel is commonly used for this purpose.

rail-jack (rāl′jak), *n.* A screw, ratchet, or hydraulic jack having a foot or bracket at the bottom of the movable ram for lifting a rail or anything close to the ground.

rail-joint (rāl′joint), *n.* See *joint*, 1 (*d*).

rail-jointer (rāl′join″tėr), *n.* An artisan employed to make the electrical connections or bonding of the rails of an electric road.

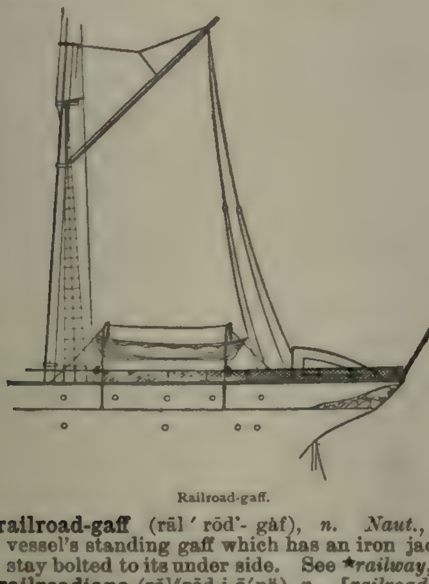
rail-lock (rāl′lok), *n.* In *railroading*, a lock for controlling the ends of the track-rails at the edge of a drawbridge, where the rail-ends must be raised before the draw can be opened. It locks the rails in their raised position and at the same time locks all train-signals against the bridge until the bridge is closed and the rails are lowered.

rail-mill (rāl′mil), *n.* A rolling-mill in which rails are rolled. *Uhland*, Corliss-Engines, p. 43.

railroad, *n.*—**Funicular, industrial, light, mountain, pyramidal, scenic railroad.** See *funicular ★railway*, etc.

railroad, *v. t.* 2. To build railroads through (a country).—3. To carry by railroads.—4. In *printing*, to mark with parallel lines.

II. *v. i.* 1. To work on railroads; to be in the railroad business.—2. In *printing*, to overrun: indicated in proof-reading by parallel lines.


Railroad-gaff.

railroad-gaff (rāl′rōd′-gȧf), *n.* *Naut.*, a vessel's standing gaff which has an iron jackstay bolted to its under side. See ★*railway*, 3.

railroadiana (rāl″rōd-i-ā′nạ̈), *n.* [*railroad* + *-i-* + *-ana.*] Scraps of information or gossip about railroads; railroad literature. [Rare.]

railroad-iron (rāl′rōd-ī″ėrn), *n.* 1. Wrought-iron suitable for making articles for railroad use, as coupling-links, pins, etc.—2. Iron or steel pieces used in railroad construction or operation, as rails, wheels, couplers, etc.—3. Steel rails: the first rails having been of iron, the term has been carried over to the newer practice.

railroad-plow (rāl′rōd-plou″), *n.* 1. An excavating plow or scraper drawn by a locomotive and used for ditching or grading beside a track.—2. A snow-plow pushed by a locomotive for removing snow from a track.

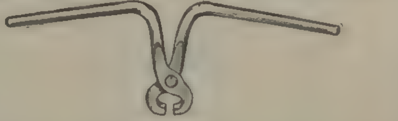
rail-saw, *n.* 2. A saw for cutting off the crop-ends of rails after they leave the rolls and for cutting the rails to lengths.

rail-sickness (rāl′sik″nes), *n.* Physiological disturbances caused by the motion of railway-cars, similar in origin and effects to those of sea-sickness; car-sickness. The rapid motion of objects through the visual angle of the eye; the swaying of the car-body as the direction of motion is changed at curves; the lurching due to centrifugal force on curves when the outer rail cannot be adequately elevated by reason of other traffic at less speeds; and, in general, the disturbances incident to travel, affect the nerve-centers and produce headache, nausea, faintness, and other phenomena which vary with the subject.

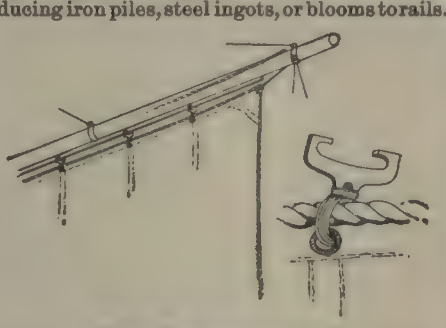
> In running over its mountain division the . . . flyer, if it is to be on time, will have to negotiate the curves at a speed for which no amount of super-elevation of the outer rail can fully compensate, and "*rail-sickness*" may claim its victims.
> *Sci. Amer.*, June 17, 1905, p. 478.

rail-tester (rāl′tes″tėr), *n.* An instrument for testing the bonding of rails on an electric road. It usually consists of a millivoltmeter the terminals of which are attached to two steel points with which contact on either side of the joint to be tested may readily be made.

rail-tongs (rāl′tôngz), *n. pl.* Track-layers' tongs for lifting rails. They have short jaws designed to clasp the rail head and two long handles bent at a right angle.


Rail-tongs.

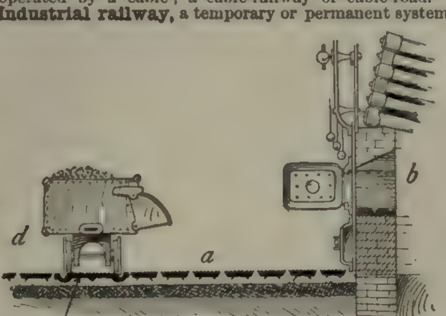
rail-train (rāl′trān), *n.* A train of rolls for reducing iron piles, steel ingots, or blooms to rails.


Railway, with single traveler in detail.

railway, *n.* 3. *pl.* *Naut.*, iron jackstays bolted on the under side of standing gaffs which carry fore-and-aft sails, with or without booms. Small grooved iron shapes called "travelers" are sewed to the head of the sail, and slide along the railway, so that the canvas may be spread along the gaff by means of a whip or outhaul.—**Funicular railway**, a railway operated by a cable; a cable-railway or cable-road.—**Industrial railway**, a temporary or permanent system of narrow-gage tracks laid in a mine or quarry, on a plantation, about a blast-furnace, or in a shipyard, lumber-yard, sawmill, factory, shop, or other industrial plant, for the transportation of raw material or finished products. The most simple track is made in rail-length sections, consisting of light T-rails bolted to steel ties, at a gage of twenty-four inches. The sections are joined by fish-plates and are laid on the ground or on wooden or cement floors. For contractors' use, wooden ties and heavier rails are used. Another type of track is composed of sections of T-rails riveted to steel ties, and of 21½-inch gage, outside measurement. Another is composed of cast-iron plates having the rails cast at the edge on each side. The figure shows a section of a cast-plate track bedded in the floor of a boiler-room, the floor being composed of cast-iron plates resting on concrete. On such a track the flanges are on the outside of the wheels and run in the grooves at the sides, the space between the rails being roughened to form a foothold. Heavy cast plates of this pattern are also used for street roads and are bedded in concrete. Such plate tracks are also laid on wooden floors, with side strips, to allow for the easy crossing of trucks; and in boiler-rooms are laid in concrete, with plain floor-plates. Simple forms of crossovers and switches are used in all forms of industrial roads, and in shops, where abrupt turns must be made, small, ball-bearing turn-tables are used in place of curves and switches, as shown in the figure. Hand transfer-cars are also used. The car-loads on such roads are often very light and the cars are moved about and the turn-tables operated by hand. For heavy loads and trains of cars electric motors are in almost universal use. A great variety of shop, mill, quarry, and other cars are used on industrial roads, such as cane-, coke-, sugar-, ash-, slag-, and logging-cars, and the tracks are often laid on elevated structures and on bridges between buildings. In some instances the body of the car is suspended below the car-trucks, under the elevated tracks. See *dumping-car* and *dumper.*—**Light railway.** (*a*) A railway built with light rails and using light rolling-stock. (*b*) A railway built under enactments to secure light charges for transportation.

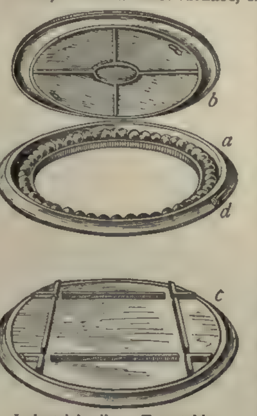
> Such *railways* are not "*light*" in the technical sense of having been made under enactments intended to secure permanent lowness of cost as compared with standard lines.
> *Encyc. Brit.*, XXXII. 166.

Mountain-railway, a railway having grades steeper than 3 feet in 100 feet. Such railways are sometimes provided with a rack or a cable so that the tractive force of the locomotive may not depend entirely on the adhesion of the wheels to the track.—**Pyramidal railway**, a mono-rail road; a railroad having a single central rail supported on short posts and straddled by the cars. There are guide-rails on the sides of the posts, at the bottom.—**Railway gage.** See ★*gage*2.—**Railway head.** See ★*head* and ★*rail-head.*—**Railway-jack.** Same as ★*rail-jack.*—**Railway kiln.** See ★*kiln.*—**Scenic railway.** (*a*) A railway line which passes through a region notable for the beauty of its scenery. (*b*) A short track upon which cars are run, generally by gravity, and which passes through artificial scenery intended to be beautiful or weird: a source of amusement at pleasure-resorts.—**Tube-railway**, a railway constructed in a tube or tunnel; an underground railway; a subway.



Industrial Railway.

a, cast-iron plates, bedded in concrete for boiler-room floor; *b*, section of boiler; *c*, cast-iron track; *d*, charging-car with outside-flange wheels.



Industrial-railway Turn-table.

a, circular base with channel for ball-bearing, showing ring of balls; *b*, under side of table; *c*, table in position, showing cross-tracks; *d*, latch for cover. A car is run by hand on the turn-table, the table turned one quarter of the way round, and the car run off on a track at right angles to the first track.

railway-beetle (rāl′wā-bē″tl), *n.* A South American lampyrid, probably a larviform female, luminous in patches along the sides, thus resembling a miniature railway-train at night.

railway-crane (rāl′wā-krān), *n.* See ★*crane*2.

railway-grease (rāl′wā-grēs), *n.* The lubricant used in the axle-boxes of railway rolling-stock. It varies in composition, but is very commonly a sort of imperfect soap, made by melting together tallow and palm-oil and stirring in a solution of carbonate of soda until a uniform mixture is produced.

rain1, *n.* 2. (*a*) Red or brown dust is sometimes carried by violent winds into the upper atmosphere and many miles from its source. If afterward precipitated with rain, it imparts to the latter a red color.—**Agricultural rains**, rains which occur during the growing season; specifically, rains which occur during that portion of the year in which the average daily temperature of the air is above 40° F. or 5° C.—**Artificial rain**, a rain caused to fall by human agency. Efforts to produce rain by special human intervention have been made from time immemorial, by the ringing of bells, the firing of cannon, the upward discharge of vapors and gases, and possibly other devices, but in no instance has it been shown satisfactorily that rain is thus produced.—**Belt of rains**, the region between the northeast trades of the northern hemisphere and the southeast trades of the southern hemisphere which approximately surrounds the globe in the neighborhood of the equator. It is characterized by frequent rains throughout the year. It moves northward and southward through a range of about five degrees annually and is generally spoken of as the *equatorial rain-belt*, being in the center of a rather broader region called the *equatorial cloud-belt.*—**Black rain**, rain-water discolored by the fine dust from a black soil or by soot washed down out of the atmosphere. Probably the fine particles are carried very high up and form the nuclei of condensation for the raindrops.—**Coast rain**, a rain peculiar to the coastal regions of a continent or island: almost invariably the special result of uprising currents due to winds blowing from the water to the land.—**Dynamic theory of the formation of rain**, the theory developed by Espy, Ferrel, Hann, and later meteorologists according to which the formation of clouds, rain, hail, and snow is a process of thermodynamics. The work done by the expansion of air under pressure is done at the expense of the heat contained in the air and vapor and soon reduces the temperature of the vapor to its dew-point. The further cooling and the consequent condensation give rise to an evolution of the latent heat of the vapor so that the process of cooling is retarded in proportion as the rate of condensation is increased. The total quantity of heat represented by the falling rain, hail, or snow is left in the cloud and promotes further rise and overflow, but is eventually lost by radiation. So long as the cloud or air retains this excess of heat it is more buoyant than neighboring air and promotes the formation of winds and storms.—**Luminous rain**, a rain in which occur luminous electric discharges or sparks between the drops and the ground as they approach it. *Encyc. Brit.*, XXIII. 329.—**Red rain.** See *blood-rain*, under *rain*^{1}, 2 (*a*).

rain-area (rān'ā″rē-ạ̈), *n.* 1. The region over which rain has fallen, shown on a daily weather-map.—2. Any area over which rain is falling at any time.—3. That quadrant of an extended cyclonic storm in which the most rain usually falls. It is the southeast quadrant in the storms of the United States, but the southwest quadrant in Europe, and a northerly quadrant in the storms of the southern hemisphere.—4. That portion of the storm-area over which rain is falling, as distinguished from the portion over which snow is falling.

rain-belt (rān'-belt), *n.* A region in which rains occur with frequency, as contrasted with a contiguous arid or relatively arid region. —**Equatorial rain-belt.** See *belt of* ★*rains.*

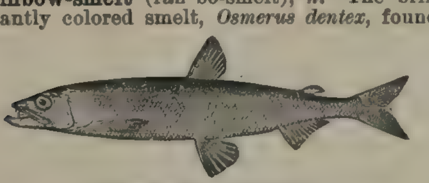
rainbelter (rān'bel-tėr), *n.* A farmer, in the western part of the United States, who settles on the semi-arid plains during a wet season, relying upon a continuance of sufficient rainfall.

> Just now there is a fever of speculation in farm lands in the Northwest and the tide of immigration has set in strongly toward a region heretofore considered valuable only for grazing. There is again an influx of the "*rainbelters*," a venturesome and foolhardy class of settlers, who, disregarding or without knowledge of the experience of the pioneers of the early eighties, are crossing the meridian beyond which the rainfall is scanty and uncertain. It is impossible to fix the exact boundaries of the region known as "Semi-arid America," but it is generally considered to include that territory between the 97th and the 101st meridian. The difficulty in definitely bounding this region is due to the fact that for a succession of years the high plains of which it is largely composed receive more than the average rainfall.
> *N. Y. Tribune*, Sept. 30, 1902.

rainbow (rān'bō), *v. t.* To color like a rainbow, or so brightly as to suggest the rainbow; curve over or surround, as with a rainbow.

rainbow-fish, *n.* (*c*) A new Zealand fish, *Heteroscarus castelnaui.* *E. E. Morris*, Austral English.

rainbow-smelt (rān'bō-smelt), *n.* The brilliantly colored smelt, *Osmerus dentex*, found on the coast of Alaska. It forms an important part of the food of the natives. Also called *Alaska smelt.*



Rainbow-smelt (*Osmerus dentex*).
(From Bulletin 47, U. S. Nat. Museum.)

rainbow-trout, *n.*—**McCloud River rainbow-trout**, a trout, *Salmo irideus shasta*, found in the Sierra Nevada mountains from Mount Shasta southward.

rainbow-tub (rān'bō-tub), *n.* In *calico-printing*, a tub used to print rainbow colors. *N. E. D.*

rainbow-weed (rān'bō-wēd), *n.* The purple loosestrife, *Lythrum Salicoria.*

rain-breed† (rān'brēd), *a.* Producing rain.

> Hee chaunts: . . .
> How floods be engendred, so how fire, celestial Arcture,
> Theē *rainebreede* seunstars, with both the Trionical orders.
> Why the sun at westward so tymely in wynter is housed.
> *Stanyhurst*, tr. of First Four Books of the Æneis, i. 754.

rain-breeder (rān'brē″dėr), *n.* Same as *weather-breeder.*

rain-channel (rān'chan″el), *n.* In *geol.*, a furrow excavated by the rain: especially pronounced upon surfaces of loose sand or soft rocks.

rain-char (rān'chär), *n.* A salmonoid fish, *Salvelinus pluvius*, found in abundance in the mountain streams and lakes of Hondo and Hokkaido, Japan. It is a beautiful fish, reaching a weight of two or three pounds.

rainer (rā'nėr), *n.* One who produces the rain. [Nonce-word.]

> The human mind is so made . . . that it must think . . . a *rainer* behind the rain.
> *Max Müller*, Nat. Religion, xv. 404.

Rainey's corpuscle. Same as *Miescher's* ★*corpuscle.*

rainfall, *n.*—**Zone of maximum rainfall.** See ★*zone.*

rain-gage, *n.*—**Symon's rain-gage**, a glass receiver inclosed in a metal jacket, with openings for observation. It is graduated in cubic centimeters.

rain-maker, *n.* 2. One who pretends to be able to cause rain by some physical process. The ringing of bells, the explosion of gunpowder or dynamite (Dyrenforth's method), the mixing of chemicals producing various vapors (Melbourne's method), the burning of piles of brushwood (Espy's method), are among the methods that have been tried.

> There is abundant evidence that many are deceived and much money wasted by the so-called *rain-makers* and others. . . . In Italy, Austria, and France a widespread delusion prevails as to the possibility of preventing hail by the bombardment of the clouds, analogous to the short-lived delusion promoted by Dyrenforth in the United States, to the effect that rain could be brought down by bombarding the clouds.
> *Encyc. Brit.*, XXX. 714.

rain-making (rān'mā″king), *n.* The attempt to produce rainfall by some mechanical or other means. See ★*rain-maker*, 2. The planting of forests or the formation of ponds, lakes, and swamps by irrigation so as to increase the rainfall is one of the methods used.

rain-pit (rān'pit), *n.* An indentation in the ground made by a drop of rain.

> The easiest way of comprehending the preservation of them is to suppose dry sand . . . to have swept over and filled up the foot-prints, *rain-pits*, and hollows of every kind.
> *Penny Cyc.*, XIX.-XX. 270.

rain-quail, *n.* 2. In India, one of the small painted quails, *Excalfactoria chinensis*; also a species of *Microperdix.*

rain-stone (rān'stōn), *n.* A stone which under certain conditions (for example, when placed in water) is imagined to be able to cause rain. *Ratzel* (trans.), The History of Mankind, III. 39.

rain-warp (rān'wârp), *n.* A loam, found beneath the vegetable soil in southern England, consisting of the accumulated fine materials washed out of heavier stony deposits by the action of rain. See *warp*, 4. *J. Geikie*, The Great Ice Age, p. 394.

Rain-water head. See ★*head.*

rainwater-fish (rān'wâ″tėr-fish), *n.* A small fish, *Lucania parva*, of the family *Pœciliidæ*, found in Florida.

rain-wind (rān'wind), *n.* A wind blowing from the point from which the principal rains come. The rain-wind is usually one that blows from an ocean, from the equator, or up a mountain-slope.

rain-worm (rān'wėrm), *n.* The earthworm; the angleworm. *N. E. D.*

rainy-day (rā'ni-dā″), *a.* Pertaining to or suitable for a rainy day: as, the *Rainy-day* Club.

> She . . . was really a vision to see,
> For she wore—the flirt!—a *rainy-day* skirt, of a kind
> that was bound to allure.
> *N. Y. Times*, Sept. 28, 1902.

raise^1, *v. t.* 23. In *poker*, to increase (the amount bet by any preceding player).—**Heave and raise the dead!** An order given to the men at the windlass to break the anchor away from the bottom—from its mud grave.—**To raise a mouse** (*naut.*), to make a mouse (see *mouse*, 6) on a stay, etc.—**To raise steam**, to get up steam; produce steam, as in a boiler; produce or generate steam at a required pressure, starting with water which is not hot enough to give off such steam.—**To raise upon**, in *nav. arch.*, to heighten the upper works of (a vessel).

raise^1, *n.* 5. In *mining*, a rise; a riser; an opening at the back of a level to connect it to the level above.

raisin, *n.*—**Wild raisin**, the sheepberry, *Viburnun Lentago.*

raising, *n.* 1. (*e*) The production of a nap or pile on fabrics by means of a napper, gig, or similar machine. *Georgievics*, Chem. Technol. of Textile Fibres, p. 290.

raising-machine (rā'zing-ma-shēn″), *n.* A machine, as a napper or gig, for raising a nap or pile on fabrics. *Georgievics*, Chem. Technol. of Textile Fibres, p. 290.

rake^1, *n.* 3. A lean, meager person.

> Let us revenge this with our pikes, ere we become *rakes.*
> *Shak.*, Coriolanus, i. 1.

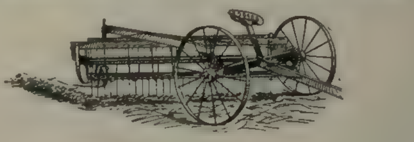
4. A local miners' term in Derbyshire, England, for veins of galena in joints in limestone, as contrasted with fault-fissures. The joints are often enlarged by the solution and removal of the walls, but they may be and usually are limited or cut off sharply by an underlying stratum. Also written *rake-vein.* Compare *gash-vein.*

> One of those upward fissures that the miners of the country call "*rakes*"; it is from 18 to 30 feet wide, and inclines from 75° to 80° towards the horizon. It is an unfinished abyss; that is to say, it is a crack that erosion has not enlarged up to the surface of the earth, for its orifice has not been found above.
> *Geog. Jour.* (R. G. S.), X. 507.

As lean or **as thin as a rake**, very lean or thin.

> *As lene* was his hors *as is a rake*,
> And he nas nat right fat, I undertake.
> *Chaucer*, Gen. Prol. to C. T., l. 287.

Side-delivery rake, a horse-rake in which the rake is suspended between the axle of the pair of wheels and a third or caster-wheel trailing at the end of the rake, and placed in a position diagonal to the direction in which the machine moves. By means of suitable mechanism, operated through gearing on the axle, the hay, as fast as it is gathered, is delivered at the side of the rake and deposited on the ground in the form of a windrow.



Side-delivery Rake.

rake^1, *v. t.* 7. In *turpentining*, to clear combustible material away from (the base of a tree), as a precaution against fire.—8. In *salt-making*, to remove the salt from (the evaporating-pans) to the draining-table.

> After a sufficient amount of salt has collected in the first section of the front pan, it is removed to the "drip" for drainage. This is called drawing or *raking* the pans.
> *Sci. Amer. Sup.*, Oct. 3, 1903, p. 23198.

rake-hook (rāk'hůk), *n.* A set of hooks fixed on a bar which is dragged along the bottom of a river or lake so as to catch fish by the body. *N. E. D.*

rake-off (rāk'ôf), *n.* 1. In gambling games, the amount or percentage taken by the house or the banker. Hence—2. An amount or percentage of money taken by a party to a contract or enterprise as his share of the spoils; specifically, a share of money illegally taken in a public enterprise.

raker, *n.* 3. Something superlative of its kind, as a heavy bet (a 'plunge'), or a fast rate of speed. [Slang.]

rake-teeth (rāk'tēth), *n. pl.* A condition in which the teeth do not touch, but are separated one from the other by a more or less considerable interval.

raking-bar (rā'king-bär), *n.* A long wrought-iron rod bent at the end for cleaning out a foundry cupola or melting-furnace after dropping the bottom.

Raku pottery. See ★*pottery.*

râle, *n.*—**Mucous râles.** Same as *moist râles* (which see, under *râle*).—**Râle redux**, returning râle; a crepitant râle heard at the termination of the stage of consolidation in pneumonia.

Ralli-car, -cart (ral'i-kär, -kärt), *n.* [*Ralli*, proper name.] A light two-wheeled driving-trap for four persons, named after the first purchaser (1885). *N. E. D.* [Eng.]

> Of two-wheeled vehicles the Polo-cart and *Ralli-cart* are most in favour.
> *Encyc. Brit.*, XXVI. 607.

rallié (räl-yā'), *n.* [F., pp., of *rallier*, come together, rally. See *rally*^{1}, *v.*] In recent French politics, a member of a group of Catholics, holding monarchical views, who, by advice of the Church authorities, acquiesced in the support of the Republic.

> Leo XIII. published in February 1892 an encyclical, bidding French Catholics accept the Republic as the firmly-established form of government. The papal injunction produced a new political group called the "*Ralliés*," the majority of its members being Monarchists who rallied to the Republic in obedience to the Vatican.
> *Encyc. Brit.*, XXVIII. 487.

rally^1, *v.* I. *trans.* 3. In *boxing*, to attack vigorously.

> Molineux *rallied* him with quickness.
> *Sporting Mag.*, XXXIX. 139. *N. E. D.*

4. In *sporting*, to parry.

> While the others *rallied* his covers.
> *Col. Hawkes*, Diary, I. 12. *N. E. D.*

rally^{1}, *n.* **5.** In *electioneering*, a mass-meeting of a political party: as, a Republican *rally* was held in the town hall.

At the last Presidential Election, at a great Republican *Rally*, there were two speeches made, significant and worthy of note. *N. Y. Tribune*, Dec. 21, 1904.

6. The military signal for rallying: as, to sound the *rally*.

ram^{2}, *n.* **1.** (*g*) In *mech.*, the reciprocating bar or slider which carries the tool-head of a shaper or slotter. (*h*) The plunger of a hydraulic elevator.

R. A. M. An abbreviation (*a*) of *Royal Academy of Music*; (*b*) of *Royal Arch Mason*.

ramada (rä-mä′dä), *n.* [Sp. *ramada*, usually *enramada*, < *enramar*, cover with branches, < *en-* + *ramo*, branch, < L. *ramus*, branch.] In Spanish-speaking countries, a shelter made of branches; a bower of branches.

Each and all of these examples of the Renaissance style of architecture, as it found expression in the valley of the Gila, was provided with a "*ramada*" in front, which at a small expenditure of labor in erecting a few additional upright saplings and cross-pieces, and a covering of cottonwood foliage, secured a modicum of shelter from the fierce shafts of a sun which shone not to warm and enlighten, but to enervate and kill.
Bourke, On the Border with Crook, i.

ramarama (rä″mä-rä′mä), *n.* [Maori.] In New Zealand, *Myrtus bullata*, a shrub belonging to the myrtle family, having opposite, broadly-ovate leaves, pale-pink flowers, and black berries. The name is often corrupted into *grama*. It is sometimes cultivated in greenhouses.

ramate (rā′māt), *a.* [L. *ramus*, branch, + *-ate*^{1}.] In the trophi of rotifers, having the rami crossed by two or three teeth, the fulcrum rudimentary and the manubria absent.

rambler, *n.* **2.** A variety of rose, which clambers freely: as, the crimson *rambler*.

ram-block (ram′blok), *n.* *Naut.*, an obsolete name for a deadeye.

rambunctious, *a.* **2.** Violent but satisfactory; goluptious. Also *rambunkshus*. [Slang.]

"What happens if he upsets?"
"The petrol will light up and the boiler may blow up."
"How *rambunkshus*! And —" Pyecroft blew a slow cloud.
R. Kipling, Steam Tactics, in Traffics and Discoveries, [p. 166.

R. A. M. C. An abbreviation of *Royal Army Medical Corps*.

ramdown (ram′doun), *n.* A steep declivity in a logging-road, upon which boughs (or hay) are placed, in winter, to check the movements of the loaded sleds. [Maine.]

Dolefully and silently they traversed wastes of splintered devastation, blocked *ram-downs*, choked twitch-roads, and hideous snarls of cross-piled timber.
Holman Day, King Spruce, p. 197.

rame (rām), *n.* [F. *rame*, < L. *ramus*, branch.] A branch. *Bannister*, Hist. Man, viii. 109. *N. E. D.*

The foles, languescent, pend from arid *rames*.
O. W. Holmes, Æstivation.

ramekin, *n.* **2.** The case or mold in which a ramekin is baked and served: also *ramekin-mold* or *-case*.

First buy a dozen *ramekins* to bake your Parmesan in.
Dainty Luncheon Dishes, p. 28.

ramental (rạ-men′ta̤l), *a.* [NL. *ramentum* + *-al*^{1}.] Of or pertaining to ramentum: specifically, in *paleobot.*, characterizing the copious flattened hairs or elongated scales which constitute most of the armor of silicified cycadean trunks. See ★*armor*, 5. The term is applied to the scales of ferns and other plants whether living or fossil.

ramentiferous (rā-men-tif′e̤-rus), *a.* Of the nature of or producing ramenta.

Rameseum (ram-e-sē′um), *n.*; pl. *Ramesea* (-ạ̈). [Also *Ramesseum*; NL. *Rameseum*, < *Rameses* + *-eum*.] In *Egypt. antiq.*, a monument to a king of the Rameside dynasty, especially that to Rameses II. at Thebes in Egypt.

rameta (ra-mē′tạ̈), *n.* [Marathi *ramita*.] A small tree of southern India and Ceylon, *Gnidia eriocephala*, belonging to the family *Daphnaceæ*. The acrid, poisonous bark yields a fiber used for cordage.

ramiferous (rạ-mif′e̤-rus), *a.* [L. *ramus*, branch, + *-ferous*.] Bearing branches.

ramigerous (rạ-mij′e̤-rus), *a.* Same as ★*ramiferous*.

ramming-blocks (ram′ing-bloks″), *n. pl.* Plaster or metal molds used as master-molds from which the casting-molds are made, instead of employing a loose pattern.

ramon (rä-mōn′), *n.* [Sp. *ramon*, a branch-tip, < *ramo*, branch.] In Porto Rico, *Trophis racemosa*, a low milky tree belonging to the *Moraceæ*. Its bark, sold in the drug markets of the island, is taken in the form of a decoction by women to stop lactation.

ramoncillo (rä-mōn-thēl′yō), *n.* [Sp. *ramoncillo*, dim. of *ramon*, a branch-tip.] In Porto Rico, a name of *Trophis racemosa*. Also called ★*ramon* (which see).

ramp, *v.* **I.** *intrans.* **5.** In *arch.*, to ascend or descend from one level to another: said of a wall.—**6.** To be greedy, and noisy; to rampage.

They 're [recruits] crammed wid bull-mate till they fairly *ramps* wid good livin'.
R. Kipling, The Taking of Lungtungpen, in Indian [Tales, p. 601.

II. *trans.* **3.** *Mil.*, to make ramps on, as a bank or wall; furnish with ramps.

ramp, *n.* **9.** An inclined traveling platform or carrier for transferring freight from a boat to a dock or warehouse. It is essentially a hinged landing-bridge, in which one portion of the surface of the bridge is covered by a fixed flooring, while the rest is formed by the upper surface of an apron-conveyer covered with wooden slats. The men and trucks are carried upward on the conveyer and the men walk down the fixed floor with the empty trucks. In loading from the dock to an upper deck of the boat, or at high tide, the motion of the conveyer is reversed. The inshore end of the ramp is pivoted and the outboard end is suspended by chains (assisted by counterweights) from the dock-structure to allow for adjustment to the changes in tide level. See ★*conveyer*, 4, with cut.

rampager (ram-pā′jėr), *n.* One who rampages; a violent, riotous, boisterous person.

ramper^{3} (ram′pėr), *n.* [Probably a corruption of *lamprey*.] The lamprey. Also *ramper-eel*. *N. E. D.*

ramper-eel (ram′pėr-ēl), *n.* See ★*ramper*^{3}.

rampick, rampike, *n.* **2.** A tree broken off by wind, with a splintered end on the portion left standing.

rampion, *n.*—**German rampion,** the evening primrose, *Œnothera biennis*.

ram-pump (ram′pump), *n.* **1.** A plunger pump.—**2.** A water-ram.

Ram-Ram (räm′räm′). [Hind. *Rām, Rām*, the name repeated as an exclamation or salutation, of *Rām*, Skt. *Rāma*, a Hindu deity.] A common salutation between Hindus, equivalent to 'good morning' or the like: originally an invocation of Rama.

ram-reel (ram′rēl), *n.* A stag-dance on shipboard. [Nautical slang.]

rams, rammes (rämz), *n.* Same as ★*ramsch*.

ramsch (rämsh), *n.* [G. *Ramsch*, a miscellaneous heap of goods, a job lot (*im Ramsch*, in the lump, in bulk), also a game, < F. *ramas*, a confused heap, < *ramasser*, heap up, < *re-* + *amasser*, heap up. See *amass*.] A card game, a mixture of euchre, spoil-five, and division loo. Also *rams* or *rammes*.

The German game *Ramsch* differs from Rounce in the following particulars: 1st. The game is played with a pack of thirty-two cards, the same as Euchre. 2nd. A player is not compelled to lead trumps if he has already done so twice. 3rd. If a player holds no trumps, and elects to play his hand, trusting to make a trick in good cards of other suits, he may, in his proper turn, lead his poorest card, face down, which card represents a trump, and such a lead calls for a trump from every player who holds one. In all other particulars *Ramsch* is identical with the American game of Rounce. *Amer. Hoyle*, p. 325.

Ramsden disk. Same as *interfusion* ★*disk*.

ram's-horn, *n.* **4.** A form of double hook used on cranes which do light and speedy work. It enables a chain sling to be easily and quickly caught, but is not so strong as the single hook, since the stress does not come into line with the hoisting-chain without side-strain. [Eng.]

ramular (ram′ū-lär), *a.* [L. *ramulus*, a small branch, + *-ar*^{3}.] Pertaining to branches.

Jeffrey considers the spaces between the internodal strands as gaps in an originally continuous cylinder, comparable to the large foliar gaps found in the cylindrical stele of the ferns, or the *ramular* gaps, occurring where branches are given off, in the lycopods.
Amer. Nat., May, 1905, p. 281.

Ramularia (ram-ū-lā′ri-ạ̈), *n.* [NL.; so called in allusion to the tubes of the lateral line, < L. *ramulus*, a little branch. See *ramulus*.] A genus of flounders found in rather deep water, in the Gulf of California.—**2.** A genus of hyphomycetous fungi having simple or sparingly branched conidiophores arising from the stomata of the host-plant and bearing septate light-colored conidia at the tips. Over 200 species have been described. All are parasitic and some attack cultivated plants, causing leaf-blight. *R. rufomaculans* causes leaf-blight of buckwheat.

ramus, *n.*—**Rami communicantes,** branches of communication between the sympathetic and spinal nerves.—**Ramus horizontalis,** the posterior part of the Sylvian fissure in the brain.—**Ramus hyomandibularis,** the hyomandibular branch of the seventh cranial nerve, supplying in *Chimæra monstrosa* the hyomandibular canal.—**Ramus mandibulæ,** each half or side of the mandible.—**Ramus ophthalmicus profundus,** the deep ophthalmic branch of the fifth cranial nerve.—**Ramus ophthalmicus superficialis,** the superficial ophthalmic branch of the seventh cranial nerve.

ranal (rā′na̤l), *a.* [*Ranal(es)*.] Of, pertaining to, or belonging to the *Ranales*, an order of dicotyledonous plants. See *Ranales*.

This, however, does not entitle us to assume the origin of Monocotyledones from Dicotyledones, although there is manifestly a temptation to connect helobic forms of the former with *ranal* ones of the latter.
Encyc. Brit., XXV. 440.

ranch^{2}, *n.* **1.** Also, a permanent Indian village.
3. A small hut or house in the country, not necessarily a cattle-breeding establishment. [U. S.]

rancho, *n.* **2.** A hut or cluster of huts where travelers can be accommodated, like the Dak bungalows of India.

The *Rancho* represents the "Traveller's Bungalow," lacking, however, cot, chair, and table, Thugs and Dacoits.
R. F. Burton, Highlands of Brazil, I. 102.

rancidity, *n.* The chief cause of rancidity in fats is hydrolysis of the glycerides, the elements of water being taken up and the free fatty acids and glycerin being formed. The favoring conditions of the change are the presence of moisture and atmospheric oxygen, exposure to light, and contact with albuminoid and mucilaginous impurities.

Rancocas formation. See ★*formation*.

Rancooria (ran-kö′ri-ạ̈), *n.* [NL. (Wight, 1906), from *rancooran*, one of the native names in Australia.] A genus of trees of the family *Meliaceæ*. See *Owenia*, 1.

randem (ran′dem), *adv.* [*random*, on the analogy of *tandem*.] With three horses harnessed tandem. Also *randem-tandem*. *N. E. D.*

His fellow-students . . . who drove tandem and *random* in great perfection, and were connoisseurs in good inns, had taught him to drink deep ere he departed.
Peacock, Nightmare Abbey, i.

randem (ran′dem), *n.* [*randem, adv.*] A turnout driven randem. Also used attributively. See the extract.

'A *randem* team.' That *randems* should be uncommon is natural enough.
Ill. Sport. and Dram. News, Feb. 10, 1883, p. 542. [*N. E. D.*

randing (ran′ding), *n.* A method of weaving basketwork for gabions.

Randlord (rand′lôrd), *n.* [*Rand*^{2} + *lord*: in allusion to *landlord*.] A landlord or landowner in the Rand (in full, Witwaters rand) in the Transvaal Colony, South Africa. [Colloq.]

Even were the reverse the case one thing is certain. If the *Randlords* are unable to exercise proper supervision over their labourers so that they menace the white population, they will have to go. The pockets of the *Randlords* might suffer from their exclusion, but the rest of South Africa could stand that. *Newspaper*.

random^{2}, *n.* (*c*) In *mining*, the direction of a rake-vein.

Random group. See ★*group*^{1}.

rang^{2}, *n.* **2.** In *petrog.*, in the quantitative system of classification, a division of igneous rocks lower than the 'order,' based on the character of the chemical bases in the preponderating group of standard minerals in each class. See ★*rock*^{1}.

So far, the possible minerals have given a position to the rock. We may, however, consider the "general character of the bases in the minerals of the preponderant group in each class," which enables us to assign a "*rang*" to the same rock. *Nature*, April 23, 1903, p. 579.

rangatira (ran-gä-tē′rä), *n.* [Maori.] In New Zealand, a chief; a master or mistress; hence, a gentleman or lady; an aristocrat. *E. E. Morris*, Austral English.

range, *v.* **I.** *trans.* **7.** *Naut.*, to sail parallel to: as, to *range* the coast.

II. *intrans. v.* **6.** (*b*) To find the range; determine the range.

For harbour defence, . . . an accurate range-finder is of first importance. This is largely the case because "*ranging*" cannot be resorted to in the same manner as in the field, where the targets are comparatively motionless. *Encyc. Brit.*, XXXII. 177.

range, *n.*—**Conic range,** in *geom.*, the range formed by the crosses of correlated straights of two coplanar non-copunctal flat pencils, projective but not perspective.—**Cottage range,** a special size and pattern of stove, usually having two ovens and a horizontal flue between.—**Harmonic range,** in *geom.* See ★*harmonic*.—**Perspective ranges** (*geom.*), ranges which are cuts of the same flat pencil.—**Range of conics,** in *geom.*, the assemblage of conics on which are the sides *a, b, c, d* of a given tetragram.—**Range of stability.** See ★*stability*.—**Range of the first degree,** a point row.— **Range of the second degree,** a conic range.— **Range-transmitter and -indicator** (*naval*), instruments connected mechanically or by electric wiring to transmit the range of the object to be fired at from the transmitter in a central position to the indicators in the vicinity of the guns. See ★*indicator*, 1 (*j*) (1).— **Sphere range.** See ★*sphere*.— **To pass over the range,** to die. [Western U. S.]

range-board (rānj'bōrd), *n.* A board which gives distances from a battery to prominent objects in the vicinity.

range-bred (rānj'bred), *a.* Raised on a range: applied to horses so raised, as well as to cattle.

range-finder, *n.*— **Depression range-finder,** an instrument used at sea-coast forts to determine the distance of an object. The height of the instrument above the water being known and the angle at the object subtended by this height being measured, the corresponding range is read from the instrument.— **Horizontal base range-finder,** an instrument used, at one end of a horizontal base-line, to make observations which, together with those made by the companion instrument, may be used to determine the distance of an object.

range-grass (rānj'gràs), *n.* See ★*grass*.

range-horse (rānj'hôrs), *n.* A horse which has been brought up on a stock-range.

> However we may look upon the *range-horse* personally, we must admit that the foundation is there for a very excellent horse stock. *Market Classes of Horses*, p. 31.

range-indicator (rānj'in''di-kā-tọr), *n.* See ★*indicator*, 1 (*j*) (1).

range-pole (rānj'pōl), *n.* In *surveying*, one of two or three slender rods or staffs (prominently painted or marked, and usually sharpened at one end or provided with a pointed shoe or with a tripod by which it may be placed firmly in or on the ground in a vertical position) used for the purpose of prolonging a straight line by setting the third pole or locating a point in the straight line through the other two prolonged.

> It seemed best to depend upon the sextant for this work. It was believed that greater accuracy could be secured than with the compass, and that it would be more practicable and less expensive than the *range-pole* method. *Science*, Jan. 10, 1902, p. 57.

Range-pole method. (*a*) In *hydrographic surveying*, the method of locating or marking a point offshore by establishing two ranges, each located by two range-poles or range-marks, in such position and direction that the two ranges intersect at the offshore point to be marked. (*b*) In *rough surveying*, a method by which one may place himself on a straight line between two distant visible points, by moving two range-poles into successive positions until the straight line through the two poles passes through the two distant points simultaneously.

ranger, *n.* **9.** In some parts of the United States, a county officer who takes charge of stray animals. See the extract.

> In Mississippi the coroner is also the county *ranger*, and performs the duties of that office. (It is the duty of the county *ranger* to take charge of stray horses, mules, jacks, cattle, sheep, or hogs.) Buck, Med. Handbook, III. 205.

10. A steer or horse raised on a cattle-range.

> The best *rangers* I ever saw on the Chicago market were high-grade Short-horns from Montana.
> 13th Bien. Rep't. Kan. State Board of Agri., 1901–2, [p. 15.

Rangoon rubber. See ★*rubber*.

rangy, *a.* **1.** (*b*) Said of an animal, especially a cow, which has a long and small barrel or body and narrow hind quarters, with unusual space between the front and hind legs. A rangy cow may be good for beef, but is poor for dairy purposes.— **3.** Mountainous. *E. E. Morris*, Austral English.

Ranikot beds. See ★*bed*^{1}.

rank^1, *a.* **13.** Unmanageable: said of a race-horse on the track. [Colloq.]

rank^2, *n.*— **Lineal rank,** the rank of an army officer in his branch of the service: as, the *lineal rank* of the officers of cavalry.— **Open ranks** (*milit.*), a line of two ranks with a distance of three paces between ranks.— **Rank of a determinant or matrix or system** of pq quantities. a_{ik} ($i = 1, 2 \ldots p$; $k = 1, 2 \ldots q$) is r if r is the greatest number for which not all determinants made from r rows and r columns of a_{ik} vanish.— **Relative rank.** (*a*) See *rank*^{2}, 4 (*a*). (*b*) Specifically, rank in the United States army according to date of last commission.

rank^2, *v. t.* **7.** In *logging*, to haul and pile regularly: as, to *rank* bark or cord-wood.

rank^3 (rangk), *n.* A name proposed by Perry for the thermodynamic quantity, $\int \frac{dH}{\theta}$.

> The name *Rank* is used by many English speaking people for the British unit of entropy, and it even appears sometimes in examination papers; it is most appropriate. *Nature*, April 14, 1904, p. 562.

ranked (rangkt), *a.* Arranged in ranks; having ranks: used in composition: as, a *four-ranked* galley, a galley having four ranks of oars.

ranker, *n.* **3.** A man in the ranks.

> I knew by the turn av his spache whin he was not takin' care to talk rough that he was a gentleman *ranker*.
> *R. Kipling*, 'Love-o'-women,' in Many Inventions, p. 298.

Gentleman ranker, a gentleman serving as an enlisted man in the army.

> A gentleman of England cleanly bred, machinely
> crammed,
> And a trooper of the Empress, if you please.
>
> . . . .
>
> *Gentlemen-rankers* out on the spree,
> Damned from hell to Eternity,
> God ha' mercy on such as we.
>
> *R. Kipling*, Gentlemen-Rankers, in Departmental [Ditties and Ballads and Barrack-Room Ballads, I. 13.

ranket (rang'ket), *n.* Same as *racket*^{2}, 7.

rank-rider† (rangk'rī''dėr), *n.* A highwayman; one who rides recklessly and furiously; also a jockey.

> There are those *rank-riders* of art, that have so spurgalled your lusty-winged Pegasus, that now . . . even only for provender's sake, is glad to shew tricks like Bankes his curtail. *Dekker*, Wonderful Year, Pref.

ranovin (ran'ọ-vin), *n.* [L. *rana*, frog, + *ovum*, egg, + *-in*^{2}.] An albuminous material extracted from frogs' eggs.

rantankerous (ran-tang'kẹ-rus), *a.* [A variant of *cantankerous*.] Cantankerous. [U. S.]

> Senator —— has had one [Christmas gift] coming to him. His "*rantankerous*" friend . . . has been getting it ready for him. *N. Y. Tribune*, Dec. 19, 1905.

Ranula lapidea, a salivary calculus.— **Ranula pancreatica,** a small cyst of the pancreas due to obstruction in one of the excretory ducts.

rapakiwi (rä-pä-kē'vẹ), *n.* [Finnish *rapakiwi*, self-weathering stone, < *rapa*, dregs, grounds, grouts, + *kiwi*, stone.] In *petrog.*, a variety of porphyritic granite, composed of flesh-colored orthoclase, with some oligoclase, smoky quartz, and a little biotite and hornblende. It has large phenocrysts of feldspar, often with circular zones of inclusions. It is used for monumental and building purposes in northern Russia, but falls to pieces upon weathering, hence the Finnish name.

rape-dust (rāp'dust), *n.* A powder made of ground rape-seed, used for manure. *N. E. D.*

raphania (rạ-fā'ni-ä), *n.* [NL., < Gr. ῥαφανίς, radish.] A convulsive disease, resembling ergotism, believed to be due to the eating of the seeds of the wild radish (*Raphanus Raphanistrum*).

raphanol (raf'a-nol), *n.* [Gr. ῥαφανίς, radish, + *-ol*.] A crystalline compound, $C_{29}H_{58}O_4$ (?), found in the black radish, *Raphanus sativus*, and in other crucifers. It melts at 62° C.

raphe, *n.* **3.** In *ornith.*, the groove along the under side of the rachis of a feather. *N. E. D.*

raphis, *n.* **2.** In sponges, a fine needle-shaped spicule having about the same diameter throughout its length.

> A few long slender toxa and one or two sigmata, together with some slender *raphides*, are present.
> *Proc. Zool. Soc. London*, 1900, p. 137.

rapic (rā'pik), *a.* [*rape*^{4} + *-ic*.] Derived from rape-oil.— **Rapic acid,** an acid, $C_{18}H_{34}O_2$, obtained from the oil of rape-seed. It is a liquid.

rapid, *a.* **5.** In *photog.*, said of plates, lenses, and subjects which require short exposure or print rapidly.

> A *rapid* plate is absolutely necessary with such . . . a subject. *The Amateur*, 1902, p. 180.

Rapid transit. See ★*transit*.

rapid-fire (rap'id-fīr), *a.* **1.** Constructed so as to discharge projectiles with rapidity; quick-firing; quick-fire.— **2.** Figuratively, marked by rapid movement of question and answer.— **Rapid-fire gun,** in *ordnance*, a gun having a quick-acting breech-mechanism which can be operated by a single continuous motion of the hand, loaded with fixed ammunition or a metallic cartridge-case, and supported on a gun-mount permitting its easy and rapid manipulation. An *automatic rapid-fire gun* is one in which the firing of the first shot automatically operates the breech mechanism to reload the gun and to fire it automatically as long as ammunition is fed to it. A *semi-automatic rapid-fire gun* is one in which the loading is partly automatic and partly by hand. The largest rapid-fire guns properly so called are of about 5-inch caliber, beyond which size metallic cartridge-cases are not convenient. A larger gun is properly a *quick-fire gun*, though the distinction is not always observed.

Rapier's method. In *nav.*, a system for drawing the great-circle track on a Mercator's chart by noting the maximum separation in latitude and then drawing through this point a line parallel to the rhumb-line between the two places. Having these three points, the track may be freely drawn by hand.

rapist (rā'pist), *n.* [*rape*^{2} + *-ist*.] One who is guilty of rape. [U. S.] *N. E. D.*

rappage (rap'āj), *n.* In *founding*, excess in the size of a casting over the size of the pattern, due to the fact that the pattern has been rapped too hard when drawing it from the sand, so that the hole it left in the mold was larger than the pattern itself.

Rappahannock series. See ★*series*.

rapper-dandies (rap'ėr-dan''diz), *n. pl.* **1.** The American wintergreen, *Gaultheria procumbens*. —**2.** The bearberry, *Arctostaphylos Uva-ursi*.

rapping, *n.* **2.** The striking of a foundry pattern while withdrawing it from the mold, to release the grip of the sand and prevent the sand from sticking to it. The blows are struck on an iron bar which is inserted in the pattern for that purpose.

rapping-bar (rap'ing-bär), *n.* A loosening-bar; a bar, one end of which is inserted in a foundry pattern, to jar the pattern while withdrawing it. See ★*rapping*, *n.*, 2.

rapping-hole (rap'ing-hōl), *n.* A hole in which to insert the rapping-bar in a foundry pattern.

rapping-mallet (rap'ing-mal''et), *n.* In *founding*, a light, round-faced wooden mallet used for striking patterns to loosen them from the sand during their withdrawal from the mold.

rapping-plate (rap'ing-plāt), *n.* An iron or brass plate set in the face of a foundry pattern and provided with a hole in which to insert the rapping-bar. If a hole for the lifting-rod is also provided, the plate is called a *rapping-and-lifting plate*.

rappist^2 (rap'ist), *n.* [*rap*^{1}, *v.*, + *-ist*.] **1.** One who is a believer in the rapping of spirits. *N. E. D.*—**2.** The spirit who is believed to rap. *N. E. D.*

rapport, *n.*— **Rapport à succession,** in *French law* (Louisiana), the giving back to the estate of a decedent of all property which may have been previously given by him to any of his heirs, in order that there may be an equal division among all the heirs.

rapt^3, *n.* **3.** A carrying off; an abduction.

> In the sixteenth and seventeenth centuries it [maiden-stealing] is more common than ever, and in the first half of the nineteenth century it was more in vogue still. The author remembers two *rapts* in his own childhood, in 1878 and in 1879.
> *M. V. Smiljanic*, in Amer. Anthropologist, Oct.–Dec., [1902, p. 777.

raptatorial, *a.* **2.** Specifically, in *ichth.*, hooked inward at the tips: said of the teeth of minnows, etc. *Jordan and Evermann*, Amer. Food and Game Fishes, p. xxxvii.

rapture (rap'ṭūr), *v. t.*; pret. and pp. *raptured*, ppr. *rapturing*. To enrapture.

rapturize (rap'ṭūr-īz), *v. i.*; pret. and pp. *rapturized*, ppr. *rapturizing*. To feel or speak ecstatically. [Rare.] *N. E. D.*

> I will not *rapturise* again but I give myself great credit in not being crazy out of pure delight . . . the conviction that I am walking in the New World is even yet marvellous in my own eyes.
> *Darwin*, in Life and Letters, I. 232.

Rapuntium (rạ-pun'ti-um), *n.* [NL. (Miller, 1759, adopted from Tournefort, 1700), apparently < *Rapunculus*, a related genus of Tournefort (now known as *Phyteuma*), a diminutive of *Rapa*, an early botanical name of the turnip, < Gr. ῥάπυς, the turnip.] A genus of plants of the family *Campanulaceæ*. See *Lobelia*, 2.

Rare earth. See ★*earth*^{1}.— **Rare-earth metals.** See ★*earth*^{1}.

rarefactional (rar-ẹ̄-fak'shọn-ạl), *a.* [*rarefaction* + *-al*^{1}.] Of or pertaining to rarefaction; pertaining to the density and pressure of a gaseous medium and to the resulting changes in its properties.

rariora (rā-ri-ō'rạ̈), *n. pl.* [L. *rariora*, pl. of *rarius*, neut. of *rarior*, compar. of *rarus*, rare.] Books, coins, objects of art, and the like, which are rather rare, or unusually rare. *Athenæum*, Dec. 17, 1904, p. 829 (advt.).

Raritan clay, formation, group. See ★*clay*, etc.

R. Art. An abbreviation of *Royal Artillery*.

R. A. S. An abbreviation (*a*) of *Royal Agricultural Society*; (*b*) of *Royal Asiatic Society*; (*c*) of *Royal Astronomical Society*.

rascacio (räs-kä'sẹ̄-ọ̄), *n.* [Sp. *rascacio*, otherwise *rescaza*.] A scorpion-fish, *Scorpæna Plumieri*, of Florida and the West Indies. The name is also applied to other species of *Scorpæna*. *Jordan and Evermann*, Fishes of North and Middle Amer., p. 1848.

rascalry (ràs'kạl-ri), *n.* [*rascal* + *-ry*.] **1.** A rascally action.—**2.** Rascals collectively.

> The writer who "stood back among the *rascalry*," looks on with grim pleasantry.
> *N. and Q.*, 9th ser., VII. 192.

rasciera (rä-sē-ā'rä), *n.* [See *rasher*^{2}.] A scorpænoid fish, *Sebastodes miniatus*, of the coast of California.

rase¹, *n.* 2. An imperfection in velveteen or other pile fabric after the pile is cut.

rase-cut (rās′kut), *n.* [*rase*¹, *v.*, + *cut.*] A certain cut of the pile in velveteen or other pile fabric. Also *race-cut.*

rase-end (rās′end), *n.* [*rase*¹, *v.*, + *end.*] Same as ★*rase*¹, *n.*, 2. Also *race-end.*

rash¹, *a.* 5. Quick, brisk, hot; causing too quick a result: as, a *rash* fire. [Colloq.]

rash⁵, *n.*— **Flannel rash**, a reddish, sometimes miliary, eruption on the body, due to irritation by the underclothing.— **Medicinal rash**, an eruption on the skin occasionally following the ingestion of certain drugs. Also called *drug eruption.*

rash⁷ (rash), *n.* [Imitative.] A crisp rustle; a crackle. [Rare.]

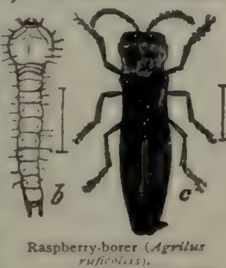
> I tell thee Jack, the whisking of a Silk-Gown, and the *rash* of a Tabby-Petticoat, are as comfortable sounds to one of these rich citizens as the chink of their Pieces of Eight. *Dryden*, An Evening's Love, i. 1.

raspador (räs-pä-dōr′), *n.* [Sp., a rasp, < *raspar*, rasp, *v.*] A machine for extracting the fiber of Sisal hemp leaves. It is a 54-inch wheel, with a capacity of 500 pounds of dry fiber a day of 10 hours.

raspatorium (ras-pa̤-tō′ri-um), *n.*; pl. *raspatoria* (-ä̤). [NL.] Same as *raspatory.*

raspberry, *n.*— **Cane-blight of raspberry.** See ★*cane-blight.*— **Native raspberry.** See *wild* ★*raspberry* below.— **Raspberry bud-beetle.** See ★*bud-beetle.* — **Raspberry bud-worm**, the larva of the raspberry bud-beetle (which see, under ★*bud-beetle*).— **Raspberry cane-borer.** See ★*cane-borer.*— **Raspberry fruit-worm.** See ★*fruit-worm.*— **Raspberry geometer.** See ★*geometer.*— **Raspberry leaf-roller.** Same as *neat strawberry leaf-roller* (which see, under ★*leaf-roller*).— **Raspberry plume-moth.** See ★*plume-moth.*— **Raspberry saw-fly.** See ★*saw-fly.*— **Wild raspberry.** (*a*) In Australia, a large-fruited raspberry, *Rubus rosæfolius*, found also in Asia and Africa. It is called also *Himalayan raspberry.* (*b*) In Tasmania, a native species, *Rubus Gunnianus*, peculiar to the country.

raspberry-borer, *n.* (*b*) The larva of a sesiid moth, *Bembecia rubi*, which channels the lower part of the cane to the root. (*c*) The red-necked *Agrilus*, a buprestid beetle, *Agrilus ruficollis*, whose larvæ, boring in the canes, form the so-called 'gouty galls.'



Raspberry-borer (*Agrilus ruficollis*).
b, larva; *c*, beetle. Magnified.

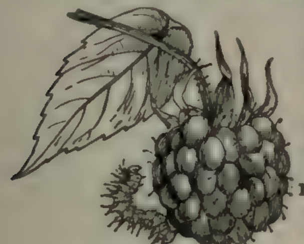
raspberry-bug (räz′ber-i-bug), *n.* The flea-like negro-bug. See *negro-bug* and ★*strawberry-bug*, 2.

raspberrying (räz′ber-i-ing), *n.* In *billiards*, playing the spot-stroke: so called because it engages the red ball only. [Slang.]

raspberry-rust (räz′ber-i-rust″), *n.* See ★*rust*¹.

raspberry-slug (räz′ber-i-slug″), *n.* The larva of the raspberry saw-fly.

raspberry-spanworm (räz′ber-i-span″wėrm), *n.* The larva of an American geometrid moth, *Synchlora ærata*, whose larvæ feed at first on the tender leaves, and later on the fruit, of the raspberry and the blackberry.



Raspberry-spanworm (*Synchlora ærata*), natural size.

raspite (räs′pīt), *n.* [Named after Mr. *Rasp*, who discovered the Broken Hill mines.] Lead tungstate ($PbWO_4$), like stolzite in composition but monoclinic in crystallization: found at the Broken Hill mines, New South Wales.

rasta (räs-tä′), *n.* and *a.* [An abbreviation of F. *rastacouère*, which see.] **I.** *n.* A rastacouère. [Slang.]

> You were a gentleman, not a *rasta*, like the others. *G. W. Carryl*, Transgression of Andrew Vane, xv.

II. *a.* Underbred; showy; parvenu. See ★*rastacouère.* [Slang.]

> A horrid, glossy creature, in a dress suit, with a top hat that was much too shiny, and a huge waxed moustache; . . . an undersized, dark, Hebraic-featured man, screamingly *rasta.* *H. Harland*, Comedies and Errors, p. 157.

rastacouère (räs-tä-kwãr′), *n.* [Also *rastaquouère*; F. for **rastracouère*, < Am. Sp. *rastracuero*, lit. 'drag-leather,' applied to a parvenu who has made a fortune in the leather business. *Hatzfeld and Darmesteter.*] One, especially a foreigner, who lives extravagantly and dresses showily, and whose social antecedents and actual financial status are unknown. [French Slang.]

> This is the rowdy, reactionary Paris, ever on view, which disapproves of the pope, and would assuredly array itself in garments of gaiety if M. Loubet were assassinated. This is the Paris which sneers at *rasta-quouères*, and is ever on the lookout for American heiresses for its needy titled sons. *H. Lynch*, French Life in Town and Country, ii.

rastellum (ras-tel′um), *n.*; pl. *rastella* (-ä̤). [NL., neut. (L. *rastellus*, masc.), dim. of L. *rastrum*, a rake.] A minute rake-like arrangement of spines on the mandibles of certain spiders. *Proc. Zool. Soc. London*, 1898, p. 506.

Rastrinus (ras-trī′nus), *n.* [NL., < L. *rastrum*, a rake.] A genus of deep-water cottoid fishes, found in the North Pacific.

rat¹, *n.* 7. *pl.* An exclamation used to indicate incredulity or ironical disagreement with a statement; humbug. [Slang.]

> "My cousin has lessons along with the younger children."
> "*Rats!*" declared Vic, smiling broadly; "she sees that they do theirs — that 's more like it." *Crockett*, Cinderella, xxvii.

Forest rat, a New Zealand name of the black rat, *Mus rattus*, which was introduced there at a very early date.

ratafia, *n.* 3. A flavoring essence of which the principal ingredient is benzoic aldehyde or oil of bitter almonds.

ratal (rā′ta̤l), *n.* [*rate*² + *-al*².] The ratio at which rates are assessed; also, the amount of rates assessed.

> The owner would also be placed in the unfortunate position that whereas by avoiding smoke he had conferred as much benefit upon all his neighbours as upon himself, he would have to pay the whole fine of increased *ratal* himself, and would still have all the disadvantages of his neighbours' smoke. *Nature*, Oct. 30, 1902, p. 670.

ratanhia-red (rä-tän′yä̤-red), *n.* [NL. *ratanhia*, prop. **ratania*, Braz. Pg. *ratanhia*, prop. *ratanha*, Sp. *ratañia*, < Peruv. *ratañia*, the name of a plant. See *ratany.*] A reddish-brown amorphous powder, $C_{26}H_{22}O_{11}$ or $C_{20}H_{18}O_8$, formed by treating ratanhia-tannic acid with dilute sulphuric acid.

ratanhia-tannic (rä-tän′yä-tan″ik), *a.* Derived from ratanhia-root or ratany.— **Ratanhia-tannic acid**, a red amorphous glucoside, $C_{20}H_{20}O_9$, found in ratanhia-root, *Krameria triandra.* Dilute sulphuric acid converts it into ratanhia-red.

ratch¹, *v. t.* 3. To cut; to hack; to notch.

> One of these screws, which was intended for *ratching* or cutting the teeth, was notched across the threads, so that the screw, when pressed against the edge of the wheel and turned round, cut in the manner of a saw. *Smithsonian Rep.*, 1890, p. 733.

ratchet, *n.* 2. In *printing*, a notched straight blade of brass which rotates the pinions attached to the movable clamps of an electrotype plate mounted upon a block.

ratchet-bar (rach′et-bär), *n.* A straight or slightly curved bar having sloping teeth along one side against which a dog or pawl acts, thus permitting motion in one direction and not in the other.

ratchet-crank (rach′et-krangk), *n.* A crank fitted with a pawl or dog which works on a ratchet, so that the shaft to which it is attached may be turned by an intermittent or oscillating motion of the crank.

ratchet-feed (rach′et-fēd), *n.* 1. A feeding motion derived by the motion of a pawl and ratchet.—2. A feeding device or feed-gear consisting essentially of a ratchet and pawl.

ratchet-gear (rach′et-gēr), *n.* A gear having ratchet-teeth with which a pawl engages; any gear used as a ratchet, or operated by a pawl.

ratchet-pawl (rach′et-pâl), *n.* A catch, click, dog, or detent used to engage the teeth of a ratchet-wheel.

ratchet-screw (rach′et-skrö), *n.* A screw having a buttress thread, or one whose section is that of the tooth of a ratchet-wheel.

ratchet-teeth (rach′et-tēth), *n. pl.* Teeth having one side radial, or nearly so, and the other side much inclined. A pawl, dog, or detent can slip over the inclined side but will catch on the radial side, thus permitting the wheel having such teeth to revolve in one direction only.

ratchet-toothed (rach′et-töțht), *a.* Having teeth which are not symmetrical on their front and back faces, but are adapted to receive and be constrained by a pawl or dog which falls into the spaces between them, so as to permit the wheel to turn in one direction, but not in the other. The front face is nearly radial and straight, while the backs are curved or inclined at an acute angle from the tangent to the wheel at the point of the tooth.

Ratchet-wheel burner. See ★*burner.*

rate†¹ (rāt), *n.* [*rate*¹, *v.*] A reproof; specifically, in *hunting*, a reproof to a dog.

> As long as they will stop at a *rate*, they are not chastised. *P. Beckford*, Hunting, p. 95. *N. E. D.*

rate², *n.*— **At that** (or **this**) **rate**, under these circumstances; if this goes on; etc. [Colloq.]

> *At this rate* overspeculation will be followed by declines, but there is a vast difference between a speculative reaction and a panic. *Boston Transcript*, Nov. 27, 1903.

Ground rate, a special local rate of fare or freight on a railway. *Stand. Dict.*— **Traveling rate.** See the extract.

> Thanks to the chronometer watches which were kindly lent me by the Royal Geographical Society, and to "*travelling rates*," having been several times ascertained, good chronometric values for longitude were obtained. By "*travelling rates*" I mean rates while travelling between places, the difference in longitude of which was determined trigometrically as we went on. This method of obtaining *travelling rates* has, I believe, never been used by explorers in unknown and unsurveyed country. *Geog. Jour.* (R. G. S.), XVI. 154.

rate², *v. t.* 5. (*a*) To fix at a rate of transportation: as, freight was *rated* as low as possible. (*b*) To convey or transport at a given rate.

> Large quantities of freight have been *rated* through to New York . . . by other lines. *Chicago Times*, Mar. 12, 1881. *N. E. D.*

raté (rä-tā′), *a.* and *n.* [Fem. *ratée*; F. pp. of *rater*, miss fire, fail to hit, < *rat*, rat.] **I.** *a.* Having missed fire, literally or figuratively; having failed.

> A dress-rehearsal to empty benches is a demonstration *raté*, because the third side of the triangle is wanting; author and actors alike are aiming their blows at a dark and dismal nothingness. *Bookman*, Sept., 1902, p. 45.

II. *n.* One who has failed; a person who is a failure.

> The unappreciated talent of the decayed actor, her father, . . . one of those *ratés* who furnish the mark for the keenest shafts of irony in [Daudet's] "Jack" . . . and . . . the mean spirit of D'Argenton, the poet, who, with his attendant group of *ratés*, the failures of literature and art, forms a sort of mutual admiration club, envious only of recognized talent. *B. W. Wills*, Modern French Lit., p. 476–77.

rateau (rä-tō′), *n.* [F., < L. *rastellus*, a rake. See ★*rastellum.*] Same as ★*rastellum.* *Proc. Zool. Soc. London*, 1896, p. 735.

ratel² (rä′tel), *n.* See *rotl.*

rate-limit (rāt′lim″it), *n.* In the *postal service*, the limit of weight allowed for any single rate of postage: as, the *rate-limit* for first-class mail-matter (sealed letters) is one ounce for two cents.

rat-fall (rat′fâl), *n.* A trap into which rats fall and are caught or killed. See the extract.

> A most excellent "*rat-fall*" may be made of a strong barrel, about half full of water. The cover should be placed on a pivot and well baited. Hundreds of rats may be caught with this device. *Yearbook U. S. Dept. Agr.*, 1896, p. 164.

rat-flea (rat′flē), *n.* Any one of several species of *Pulicidæ* found on rats. The following species occur on the Norway rat: *Ceratophyllus fasciatus*, *Ctenophthalmus bidentatiformis*, *Ctenopsyllus musculi*, and *Pulex brasiliensis.* The following are found on the roof-rat or black rat, *Mus rattus*: *Ctenopsyllus mexicanus*, *C. musculi*, and *Pulex brasiliensis.* They are specifically mentioned on account of their importance in the conveyance of the bubonic plague.

> The best article on "The Spread of Plague from Rat to Rat, and from Rat to Man by the *Rat-flea.*" *Nature*, Aug. 21, 1902, p. 397.

Rathbunella (rath-bu-nel′ä̤), *n.* [NL., named after Richard *Rathbun*, at one time connected with the U. S. Fish Commission.] A genus of fishes of the family *Bathymasteridæ*, found in rather deep water on the California coast.

rathite (rä′tīt), *n.* [Named after Professor G. vom *Rath* of Bonn, a German mineralogist.] A sulpharsenite of lead, analogous in composition to jamesonite, from the dolomite of the Binnenthal, Switzerland.

rathskeller, ratskeller (räts′kel-ėr), *n.* [G., < *rath*, a council, + *keller*, cellar.] The cellar of a town hall; a public wine-cellar; hence, a room, or rooms, below the level of the street, in which wine and beer are sold.

Ratibida (ra̤-tib′i-dä̤), *n.* [NL. (Rafinesque, 1818), of unknown significance.] A small genus of American composite herbs, two or three of which are garden-plants. It is closely allied to *Rudbeckia.* *Ratibida columnaris* is the leading cultivated species, particularly the variety *pulcherrima* (*Obeliscaria pulcherrima* of former seed-lists), native to prairies of the midcontinental region. This plant is two to three feet tall, with narrowly divided leaves, and yellow or purple rays on the terminal long-receptacled heads.

ratification, *n.*—**Judicial ratification,** in *Scots law,* an acknowledgment by a married woman before a judicial officer that a disposition or conveyance of her heritable property has been made of her own free will and without fear or coercion.

rating-badge (rā'ting-baj), *n.* A badge worn by a petty officer, sewed on the outside of the right or left sleeve (according as he belongs to the starboard or port watch) midway between the elbow and shoulder. It serves to indicate his rank and the particular specialty to which he is assigned, as master-at-arms, quartermaster, electrician, machinist, etc. [U. S.]

ratio, *n.*—**At a geometrical ratio,** in geometrical progression.—**Capacity ratio.** See ★*capacity.*—**Cross ratio,** anharmonic ratio. See *anharmonic.*—**Double ratio,** cross ratio; anharmonic ratio. See *anharmonic.*—**Exponent of a ratio.** See ★*exponent.*—**Geometrical ratio,** ordinary ratio; the relation between two quantities expressed by dividing one by the other.—**Mendelian ratio,** the ratio of 1:3 exhibited by the grandchildren of a cross between two parent races of pure blood which differ from each other with respect to some one characteristic. See *ancestral* ★*inheritance.*—**Metius's ratio** (for π), $355/113 = 3.1415929$: given in 1585 by Adriaan Anthoniszoon, father of Adrian Metius.—**Nutritive ratio,** in *stock-feeding,* the ratio between the digestible protein and the digestible fats and carbohydrates in a balanced ration. The former is always a moderate fraction of the latter, for example, for a dairy cow, about one fifth.—**Poisson's ratio,** in *elasticity,* the ratio of the lateral contraction to the elongation of a solid subjected to longitudinal stress.—**Ratio of transformation,** the ratio of the difference of potential between the terminals of the secondary windings of a transformer or induction-coil to that between the terminals of the primary windings.—**Trigonometric ratios,** sin a, cos a, tan a, cot a, sec a, cosec a.—**Ultimate ratio,** the limit of the ratio of two variables as they approach their limits.—**Velocity ratio,** in *elect.,* the ratio of the electrostatic to the electromagnetic units, numerically equal to the velocity of light.

ratiocinator (rash-i-os'i-nā-tor), *n.* [L., < *ratiocinari.* See *ratiocinate.*] One who ratiocinates; a reasoner.

ratiometer (rā-shi-om'e-tėr), *n.* [*ratio* + Gr. *μέτρον,* measure.] See the extract.

A mechanical device for obtaining rapidly any required set of numbers having the same ratio among themselves as any other given set of numbers. The instrument is known as the "*ratiometer,*" and was designed by Mr. A. E. Munby. It . . . consists of two graduated rules, which can be set at any angle, which with one edge of a T-square form a right-angled triangle. By means of a tongue and groove the base of the triangle slides along the stock of the T-square. *Nature,* Mar. 5, 1903, p. 424.

ration, *n.* 3. In *stock-feeding,* the sum of food regularly supplied to an animal, usually the amount per day. A scientific ration contains in due proportion and amount the essential food ingredients, namely, fats and carbohydrates, which supply heat and working-energy (heat-producers); and protein (nitrogenous substances), which provides for the upbuilding and repair of tissues (flesh-producers). The absolute and relative amounts required are learned from experience and vary with the animal and its occupation. See ★*feeding standard, nutritive* ★*ratio,* and phrases below. A ration is governed not by the actual amount of the ingredients, but by the amount digestible (often much less than the whole), this being determined by experiments the results of which are published in tables. Feeding standards are not now much used for precise calculation.—**Balanced ration,** a ration which embodies a right proportion of digestible protein, fat, and carbohydrates. See ★*ration,* 3.—**Complete ration,** a ration which contains a sufficiency of each essential ingredient. See ★*ration,* 3.—**Narrow ration,** in *stock-raising,* a ration in which there is a large proportion of protein.

Where the percentage of digestible crude protein is large in comparison with that of the other digestible constituents, it is spoken of as a *narrow ration.*
Yearbook U. S. Dept. Agr., 1897, p. 489.

Spirit ration (*naval*), a half pint of distilled spirits (rum or whisky) per day formerly allowed as part of the daily rations. The spirit ration in the United States navy was abolished in 1862.—**Wide ration,** in *stock-raising,* one in which the proportion of fats and carbohydrates is large.

rational. I. *a.*—**Rational curve.** Same as *unicursal curve* (which see, under *unicursal*).—**Rational geometry, mechanics** (*b*), **point, surface, symptoms.** See ★*geometry,* etc.

II. *n.* 3. In *math.,* a rational number.—4. One who is a believer in so-called 'rational' reforms, as in dress or food.

As a '*rational,*' . . . she thought that members should be free to adopt any costume that they liked.
Westminster Gazette, Nov. 28, 1896, p. 3. *N. E. D.*

rationality, *n.* 4. In *math.,* the state of corresponding to or being producible by a rational transformation or operation.

It is then clear enough that the resolvent equation, being irreducible and such that any solution is expressible rationally, with p parameters in terms of the solution ω, enables us to define a linear homogeneous group of transformations of $y, \ldots y_n$ depending on p parameters; and every operation of this (continuous) group corresponds to a rational transformation of the solution of the resolvent equation. This is the group called the *rationality* group, or the group of transformations of the original homogeneous linear differential equation.
Encyc. Brit., XXVII. 457.

rationally, *adv.* 2. In *math.,* as a rational function. *Encyc. Brit.,* XXVII. 457.—3. According to ratios or proportions.

Some of the refractory clays from the Carboniferous in the vicinity of Borowitschi have been *rationally* analyzed.
Rep. U. S. Geol. Surv., 1897–98, vi. p. 453.

ratlings, *n. pl.* See ★*rattlings.*

ratoon, *v.* II. *trans.* 1. To induce the growth of young shoots by cutting back (old plants); raise another crop from (the old stools): as, to *ratoon* sugar-cane. *U. S. Agri. Rep.,* 1879, p. 594.—2. In the West Indies, to continue the growth of (plants) after the close of the dry season and after seed has been sown for the new crop: as, to *ratoon* cotton. *Agricultural News,* IV. p. 84.

Rato pottery. See ★*pottery.*

ratsbane, *n.*—**Yellow ratsbane,** impure orpiment which, as commercially prepared, contains much arsenious oxid along with the yellow sulphid.

rattery, *n.* 2. A place where rats are kept or that is suitable for such use. *N. E. D.*

rattish, *a.* 2. Having the qualities of a political rat.

Small thought had I
My Sonnets should salute thee with a cheer.
Trimming, no doubt, and *rattish* thy career:
But be that now forgotten.
Fraser's Mag., XXII. 636.

rattle^1, *n.*—**Watchman's rattle.** See *rattle*1, 3.

rattle^2, *v. t.*—**To rattle down** (*naut.*), to seize and clove-hitch the ratlines across (the shrouds). These ratlines are usually separated about 14 inches, are parallel with the sheer-pole, and extend from the shroud next abaft the swifter (the forward shroud of its set) to the aftermast shroud; but every fifth ratline is seized to the swifter, and is known both as a catch-ratline and a sheer-ratline.—**To rattle up** (*naut.*), to rattle the rigging up from the sheer-pole, instead of down from the eyes of the shrouds.

rattle-nut (rat'l-nut), *n.* The water chinkapin, *Nelumbo lutea:* so called because the seeds rattle in the dried receptacle.

rattler, *n.* 6. A tumbling-box used to test the cohesive strength of bricks. A number of bricks are placed with a quantity of cast-iron balls in the box and the box is revolved at a fixed speed. The amount of wear shown by the bricks is a test of their power to resist abrasion: essentially a *ball-mill.* See *ball-grinder* and *tumbling-box.*

The tests made were abrasion in *rattler,* absorption, and transverse strength. The latter is expressed in terms of the modulus of rupture. The *rattler* used was polygonal in form, 29 inches in diameter, and 48 inches long.
Rep. U. S. Geol. Surv., 1897–98, vi. p. 474.

7. Something that is very good of its kind, as a horse. [Slang.]

If he can only jump . . . and get pretty quick over his fences, he ought to be a *rattler.*
W. Melville, Market Harborough, p. 127. *N. E. D.*

8. A hard, brittle coal, like jet, which generally lies on top of seams. *Gresley.*—**Flue-rattler,** in *mech.,* a device for cleaning the flues or tubes of locomotive-boilers from scale deposited from the water. In its usual form, it is simply a long tumbling-barrel in which the tubes are placed and rolled over one another by the revolution of the barrel, breaking off and disintegrating the hard, crystalline deposit. *Elect. World and Engin.,* July 30, 1904, p. 170.

rattle-root (rat'l-röt), *n.* The bugbane or black-snakeroot, *Cimicifuga racemosa.* Also *rattle-top.*

rattler-tree (rat'lėr-trē), *n.* The white poplar, *Populus alba.*

rattles (rat'lz), *n.* A disease of the grape in which the berries fall off just as they are ripening. It is attributed to defective nutrition, but may also be influenced by fungi and insects. Also called *shelling* and *shanking.*

rattlesnake, *n.*—**Pacific rattlesnake,** *Crotalus lucifer,* a species marked with rounded cross patches: found in the western United States.—**Red-diamond rattlesnake,** *Crotalus atrox ruber,* a subspecies of the Texan rattlesnake, found in southern California on the Pacific slope: of a red color, with dark red spots.—**Tiger rattlesnake,** *Crotalus tigris,* a rare species of the Southwest, named from its tawny color and dark cross stripes.—**White rattlesnake,** *Crotalus mitchelli,* a pale desert species found from the Colorado Desert to Cape St. Lucas.

rattlesnake-grass, *n.* 2. See ★*slough-grass.*

rattle-top (rat'l-top), *n.* Same as ★*rattle-root.*

rattling^1 (rat'ling), *adv.* Extremely; 'stunning': as, a *rattling* good speech. [Colloq.]

There is one thing about it . . . it does show it was a *rattling* good dam anyhow.
E. Nesbit, The Wouldbegoods, p. 158.

rattlings (rat'lingz), *n. pl.* [A variant of *raddlings.*] Wood cut into strips (about four feet long), for kindling, and tied up in bundles. [Prov., U. S.] See ★*raddling,* 2.

rat-trap, *n.* 2. A rat-trap pedal.

ratty (rat'i), *a.* [*rat*^{1} + *-y*^{1}.] 1. Looking like a rat; smelling like a rat; hence, dirty. [Slang.]

The king got out an old *ratty* deck of cards after breakfast, and him and the duke played seven-up awhile, five cents a game. *The Century,* Feb., 1885, p. 548.

2. Miserable; wretched; poor. [Slang.]

Mr. . . . had a good one in the ring, the bay gelding Clonmel, but the noble beast was handicapped by a "*ratty*" driver. *Rider and Driver,* March 30, 1901, p. 7.

3. Full of rats: as, a *ratty* cellar.

ratwood (rat'wůd), *n.* [Name in the Bahamas.] Same as *eboe-light.*

rauning (râ'ning), *n.* [Australian native name?] A name used in Australia for a species of lizard fish, *Laurida tumbil.*

raupenleim (rou'pen-līm), *n.* [G., < *raupe,* caterpillar, + *leim,* lime.] An adopted German name for a preparation from crude petroleum, of dark brown color and viscid consistence: used on the bark of trees to protect them from caterpillars and beetles.

From what has been said of the nature of the food of these beetles, it is evident that any method by which the entrance to their galleries in the bark can be closed will effectually put an end to the progress of their colonies. Perhaps the best means of accomplishing this is by coating the trunks with dendroline or *raupenleim.*
Yearbook U. S. Dept. Agri. 1896, p. 430.

raupo (rou'pọ̄), *n.* [Maori.] In New Zealand, the lesser cattail, *Typha angustifolia,* the leaves of which are used for thatching. The roots of the plant were formerly eaten and the pollen collected and made into bread. See ★*punga-punga, Typha,* and *reed-mace.*

rauque (râk), *a.* [See *raucous.*] Raucous; hoarse; harsh sounding. [Rare.]

The *rauque* bellow of the hippopotamus.
R. F. Burton, in Jour. Geog. Soc., XXIX. 214. *N. E. D.*

Rauracian (râ-rā'shian), *a.* and *n.* [L. *Rauracum,* a city of the *Rauraci,* a people of Gaul, dwelling near the Helvetians.] In *geol.,* noting a division of the Jurassic system in France and the Jura constituting the lower substage of the Sequanian which is equivalent to the upper half of the English Corallian series.

ravalement (rä-väl-moṅ'), *n.* [F., < *ravaler,* to swallow again, lower.] The finishing process of carving and tooling to which masonry is subjected after being completed in the rough; also the cleaning and scraping of discolored and weathered masonry.

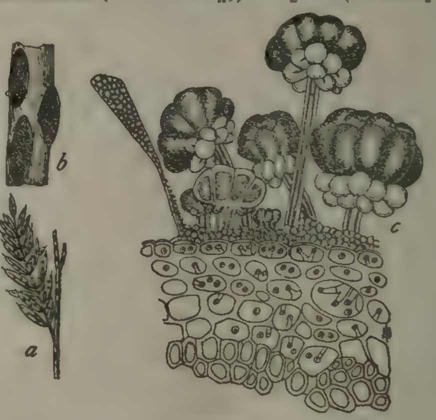
ravanastron (rav-a̤-nas'tron), *n.* A rude form of viol, common in India. Usually it has a cylindrical body of bamboo, about two inches in diameter and five inches long, the ends being covered with parchment or snake-skin. Through this from side to side is inserted a long stick to serve as the neck and head, the shape of the whole being like a mallet or gavel. One or two strings (occasionally four) are stretched from the lower end of this stick over one end of the body to tuning-pins at the upper end of the stick. Similar instruments are found in several countries where Buddhism has penetrated. Occasionally the name is loosely applied to other forms of Hindu viols, as to the *sarinda* or *serinda.*

ravel^1, *n.* 4. A snarl; a complication.

Nowadays the man who says that he knows the *ravel* of the inter-tribal complications across the Border is of . . . use.
R. Kipling, Wressley of the Foreign Office, in Indian [Tales, p. 671.

raven^1, *n.* 1. (*b*) Applied in Australia to one of the larger crows, *Corvus coronoides.*

Ravenelia (ra-ve-nē'li-ä̤), *n.* [NL. (Berkeley, 1853), < Henry W. *Ravenel,* an American mycologist.] A genus of rust-fungi of the order



Ravenelia.

a, stem of *Cassia nictitans* with teleutospores on the stem and uredospores on the leaves; *b,* stem and teleutospores enlarged; *c,* section showing the teleutospores.

Uredinales, having æcidia, uredospores, and teleutospores. The teleutospores are united into cushion-like bodies with a group of sterile cells or cysts beneath and are borne at the apex of a stem consisting of several separate or united hyphæ. About 50 species have been described. They are mostly parasitic on leguminous plants in subtropical regions. *R. cassiicola* occurs on *Cassia nictitans* in the southern United States.

ravier (räv-yā′), *n.* [F., < *rave*, a radish.] A radish-plate, usually of pottery or porcelain.

ravigote (räv-ẹ-gōt′), *n.* [F. *ravigote*, < *ravigoter*, revive, strengthen, appar. for OF. *ravigorer*, < L. *re-* + *ad* + *vigorare*, strengthen, < *vigor*, strength, vigor.] A piquant sauce made of civet, burnet, and tarragon pounded together. See ★*sauce*.

ravison (rav′i-son), *n.* [Appar. based on F. *rave*, turnip. See *rape*^{4}.] A trade-name of an inferior kind of colza or rape-seed, from an uncultivated plant.

> The cultivation of sunflower seed, rape seed, colza, poppy seed, sesamum, *ravison*, mustard seed, and many other exclusively oil-yielding seeds is a factor of considerable importance in the rural economy of many foreign countries. *Yearbook U. S. Dept. Agr.*, 1903, p. 412.

raw^1, *n.* **4.** An untrained mustang or cow-pony. [Slang.]

> The animals are mostly from the Texan and New Mexican mustang herds. They pay for a '*raw*' on an average fifty dollars, and find about one out of five useful.
> *Outing*, Aug., 1895, p. 389.

ray^1, *n.* **4.** In *geom.*: (*b*) The aggregate of all points of the straight *a* situated on one and the same side of a point O of *a*. (*c*) One of the two parts of a straightest (great circle) determined by a point of it O with its opposite O′.—**10.** See *obscure* ★*rays*, ★*radiation*, and ★*radioactivity*.—**11.** *pl.* Emblems of light and glory embroidered around monograms of the holy name and sacred personages.—**Actinic ray,** any ray capable of causing chemical reactions and of thus affecting a photographic plate. The violet and ultra-violet rays of the spectrum are of relatively high chemical activity and it is to them that the term *actinic rays* is commonly applied.—**Actinium rays.** See *obscure* ★*rays*.—**Alpha-rays.** See *obscure* ★*rays*.—**Anodic rays.** See ★*anodic*.—**Astral ray,** one of the many rays or fibrils of achromatic substance which form the astrosphere of the dividing cell.—**Becquerel rays.** See *obscure* ★*rays* and ★*radioactivity*.—**Beta-rays.** See *obscure* ★*rays*.—**Blondlot rays.** See *obscure* ★*rays*.—**Buddha's rays,** the streamers emanating from the sun when near the horizon, evidently formed by the shadows of distant mountains or clouds. They are compared to the artistic 'glory' in representations of Buddha, or the sun-god, or the symbol of the sun.—**Canal rays.** See *obscure* ★*rays*.—**Cathode rays,** in *elect.*, rays issuing from the cathode or negative terminal of a vacuum-tube having a very high vacuum (much higher than a Geissler tube), when excited by a high electric pressure or voltage. The cathode rays issue in straight lines from the negative terminal, irrespective of the positive terminal, and are supposed to consist of electrically charged particles moving from the cathode at extremely high velocities. Cathode rays produce fluorescence (see *fluorescence*) and X-rays where they strike an obstruction (see *X-*★*rays*). **Caudal ray.** See ★*caudal*.—**Chemical ray.** Same as *actinic* ★*ray*.—**Cold rays,** in *astron.* and *phys.*, interruptions or cooler interspaces in the infra-red, invisible portion of the solar spectrum observed by the bolometer. They correspond to the dark lines (missing rays) in the visible spectrum.—**Delta-rays,** rays of low penetrative power emitted by radium, polonium, uranium, and probably by other radioactive substances. They are easily deflected by a magnet. J. J. Thomson considers the δ-rays as consisting of a stream of negatively charged particles moving with relatively low velocities.—**Finsen ray,** ultra-violet light as applied to the cure of diseases, especially of the skin: named from Dr. Finsen of Denmark, who introduced the method. See *Finsen* ★*light treatment*.—**Gamma-rays.** See *obscure* ★*rays*.—**Goldstein rays.** See *obscure* ★*rays*.—**Hard rays,** in *elect.*, the X-rays of great penetrating power, such as are obtained from tubes of high vacuum.

> The "*hard*" *rays* correspond to thin pulses, the "soft" ones to thick ones.
> *J. J. Thomson*, Electricity and Matter, p. 69.

Infra-red rays. See ★*radiation*.—**Hittorf rays.** See *obscure* ★*rays*.—**Lavender rays,** in *photog.*, the faintly luminous rays at the extreme violet end of the spectrum.—**Lenard rays.** See *obscure* ★*rays*.—**Magneto-cathode rays,** a variety of cathode rays produced by a smaller potential difference within the vacuum-tube than that at which cathode rays of the usual type occur.—**Marconi rays.** Same as *Marconi* ★*waves*.—**N-rays.** See *obscure* ★*rays*.—**Obscure rays.** (*a*) See *obscure* and *spectrum*. (*b*) The cathode rays, the X- or Rontgen rays, and the various types of radiation discovered in the study of the electric discharge in gases (see *cathode* ★*rays*) and of radioactivity. See ★*radioactivity*. Obscure rays are detected by their action on the photographic plate, their heating effect, their power of exciting luminescence or of producing other rays, and their electrical effects. Owing to the recent and very rapid development of this branch of physics the nomenclature of obscure radiation is somewhat confused. The term *Hittorf rays* is applied indiscriminately to all rays observed when the electric discharge passes through a tube with two terminals, a Hittorf tube, at high vacuum. When in a vacuum-tube the cathode is perforated, or consists of a tube, portions of the stream of positively charged ions from the anode pass through the opening. These form rays which enter the tube behind the cathode and which are known as *canal rays* or, after their discoverer, as *Goldstein rays*. They differ from cathode rays in having smaller velocity, and greater mass of the moving particles, in bearing a positive electric charge, and in being deflected in the opposite direction by a magnetic or electrostatic field. If cathode rays are allowed to fall upon a window of aluminium that forms part of the wall of the vacuum-tube within which they are produced, those which penetrate the metal and enter the outer air are called *Lenard rays*. Lenard showed that such rays suffer diffusion in passing through the air, like light in a turbid medium, and that, like the cathode rays within the tube, they are deflected by a magnet. In 1896 Becquerel discovered the spontaneous emission of obscure rays of the corpuscular type in substances containing uranium, and the name *Becquerel rays* is now applied to such rays from any radioactive material. These rays are also called *uranium*, *thorium*, *radium*, *polonium*, or *actinium rays* respectively, according to the radioactive element to which they are due. See ★*radium*, ★*uranium*. It was later shown by Rutherford that there are at least three distinct types of such radiation which may be distinguished from each other by their power of penetrating layers of metal and by their behavior in the magnetic field. The first of these, *α-rays*, have the least power of penetration. They are capable of ionizing gases and thus imparting to them the power of conducting electricity. They are deflected by the magnetic and electrostatic fields, but in the opposite direction from cathode rays, and are supposed to consist of a stream of positively charged particles of comparatively large mass traveling with a speed of about one tenth as great as the velocity of light. The α-rays affect the photographic plate and are capable of producing fluorescence and phosphorescence. The second, the β-rays, have somewhat greater penetrating power and intense photographic action. They are deflected by the magnetic field in the same sense as cathode rays and are supposed to consist of a stream of negatively charged particles having a mass equal to $\frac{1}{1000}$ of an atom of hydrogen with velocities comparable to that of light. β-rays produce fluorescence and phosphorescence, ionize gases, and may be detected by their electrical action. The third type of rays discovered by Villard, the *γ-rays*, have extraordinary penetrating power, being able to pass through several centimeters of lead. They are not affected by the magnetic field, in which respect they resemble ordinary X-rays. The γ-rays are regarded as electromagnetic disturbances produced by the action of the β-rays, just as the X-rays are produced by the action of cathode rays. Like the other types they produce ionization of gases and fluorescence and phosphorescence. See ★*radioactivity*. When X-rays meet an obstacle, as a metal surface, reflection in the ordinary sense of the word does not occur, but rays differing in certain respects from the incident rays are diffusely emitted from the surfaces upon which the X-rays impinge. These rays were termed *secondary rays* by Sagnac, who investigated their properties. They are also occasionally called *Sagnac rays*, after their discoverer. In the same manner, bodies upon which secondary rays, or *S-rays*, fall emit a further modified type of radiation known as *tertiary rays*. Aside from the ordinary radiation from wires heated to incandescence by the electric current, rays similar to those emitted by radioactive bodies have been described. Tommasina claims to have distinguished three distinct types of rays, α-, β-, and γ-rays, having different powers of penetration and producing different effects upon a charged body. It is claimed that these so-called *pyro-rays* produce ionization of gases and excite fluorescence. In 1903, Blondlot announced the discovery of a new type of radiation originally obtained by filtering the rays from an X-ray tube through aluminium or black paper. These rays, which Blondlot terms *N-rays* (from Nancy, in France, where he discovered them), differ from X-rays in exhibiting the phenomena of polarization, refraction, and reflection. They were subsequently detected in various sources of light, properly screened, such as the Welsbach burner, an ordinary gas flame, a piece of metal heated to incandescence, and even sunlight. The N-rays are said to pass readily through wood, paper, and metal, but to be absorbed by rock-salt, fluorite, and glass, to increase the luminescence of fluorescent substances previously excited, but to be without effect on photographic plates. Their wave-length, according to Sagnac, is about 0.2 millimeters. In spite of the detailed description of the methods of obtaining N-rays and the definite reports concerning their properties, many physicists have failed altogether to reproduce Blondlot's results and the existence of the Blondlot rays is no longer credited.—**Optical length of a ray.** See ★*length*.—**Polar ray,** one of the streamers in the solar corona which radiate from the polar regions of the sun. Similar rays occur elsewhere but are veiled by the diffuse luminosity which is wanting near the poles.—**Polonium rays,** Becquerel rays emitted by the radioactive element polonium. See *obscure* ★*rays*, ★*polonium*, and ★*radium*.—**Pyro-rays.** See *obscure* ★*rays*.—**Ray telegraphy.** See ★*telegraphy*.—**Residual rays,** in *optics*, rays nearly monochromatic as to wave-length, which have been separated out from the remainder of the spectrum by multiple reflection from the surfaces of substances having strong selective reflection. The term is a translation of the German *Reststrahlen*, the name by which such rays were designated by the inventors of the method, Rubens and Nichols.—**Röntgen rays.** See *X-*★*rays*.—**Sagnac, secondary rays.** See *obscure* ★*rays*.—**Soft rays,** in *elect.*, rays of slight penetration, such as emanate from a tube of low vacuum.—**S-rays.** See *obscure* ★*rays*.—**Tertiary rays.** See *obscure* ★*rays*.—**Thorium rays.** See *obscure* ★*rays* and ★*thorium*. **Ultra-violet rays.** See ★*radiation*.—**Uranium rays.** See *obscure* ★*rays* and ★*uranium*.—**X-rays,** or **Röntgen rays,** a form of radiation having characteristic and distinctive properties, discovered by Professor Wilhelm Konrad Röntgen, of Würzburg (announced by him in December, 1895). He showed that the discharge of a large Ruhmkorff coil through a vacuum-tube produces a form of radiation external to the latter, which has the property of causing various substances to fluoresce; of affecting the ordinary photographic plate like light (though itself invisible); and of penetrating opaque bodies in various degrees, according to their density and relative thickness, platinum, lead, and silver being quite opaque, while aluminium, wood, and paper are quite transparent. He also found that these rays are not refracted by prisms of carbon disulphid; that powdered substances, opaque to white light, are quite as transparent to these rays as solid bodies of equal mass; and that bodies having rough surfaces act like those whose surfaces are polished. These facts forced him to conclude that refraction and regular reflection do not exist, but that such bodies behave to X-rays as turbid media to light. Other conclusions were that these rays pass through all substances at the same speed; that air absorbs a very much smaller part of them than of cathode rays; that they are not deflected by a magnet; that the spot on the wall of the tube which fluoresces most decidedly is to be regarded as the principal point of their radiation; that when the cathode rays are deflected within the tube, the spot is changed, thus producing a new source of radiation; that, therefore, cathode rays and X-rays are not identical; that X-rays are rectilinearly propagated; that no interference phenomena of X-rays were found to exist; that the above facts tend to show that they have properties not hitherto known in connection with ultra-violet, visible, and infra-red light. The source of X-rays has been shown to be the surface upon which the cathode rays first strike, whether that surface be the wall of the tube or an object placed within the tube: when this object within the tube is the anode itself, the radiations are most powerful. It has also been found that X-rays have the property, in common with ultra-violet light, of dispersing negative charges on insulated surfaces and the power of positively electrifying such surfaces. X-rays produce ionization in gases which they traverse and thus impart to them the power of conducting electricity. Hertz had previously shown that cathode rays penetrate opaque bodies, and Lenard that such rays may pass through aluminium forming a part of the wall of the tube and affect the photographic plate, but that their absorption is excessive beyond a few millimeters from the aluminium window.—**X-ray dermatitis.** Same as *Röntgen-light* ★*dermatitis*.—**X-ray tube.** Same as *Röntgen* ★*tube*.

X-ray photograph of a foot in a shoe.

ray^2, *n.*—**Electric ray,** any one of several species of elasmobranchiate fishes of the family *Narcobatidæ*, having an electric organ composed of many hexagonal tubes situated in the fleshy base of the pectoral fin. They inhabit most warm seas.—**Shovel-nosed ray.** Same as ★*horn-ray*.—**Thick-tailed ray,** any ray of the order *Sarcura*.—**Whip-tailed ray,** any ray of the order *Masticura*.

rayé (rä-yā′), *a.* [F.] Striped: said of textiles. *Dry Goods Economist*, June 13, 1908.

ray-filter (rā′fil″tėr), *n.* In *photog.*, a screen having selective absorption by means of which the character and intensity of the light reaching the sensitive film is regulated. See *bichromate ray* ★*filter*.

rayfiltergraph (rā′fil″tėr-gråf), *n.* A photograph taken through a ray-filter placed before the lens. It possesses true color value.

ray-fungus (rā′fung″gus), *n.* See *actinomyces*.

ray-hair (rā′hãr), *n.* One of the slender filaments that appear in the fin-fold of an embryo fish, and are the prototypes of the fin-rays: an Englishing of Ryder's term *actinotrichium*.

raying (rā′ing), *n.* [*ray*^{2} + *-ing*^{1}.] Exposure to the action of the Röntgen rays or other form of radioactivity.

> If the *raying* is supplemented by further measures which have for their object the elimination of the microbe and a general purification of the tainted tissues, the progress of the case will be more rapid.
> *Amer. X-Ray Jour.*, July, 1903, p. 200.

Rayless change. See ★*change*.

rayometer (rạ-om′e-tẹr), *n.* [*ray*^{2} + Gr. *μέτρον*, measure.] In *photog.*, a kind of actinometer used for testing sensitiveness to X-rays: usually a screen of aluminium of graduated thickness. *Wall*, Dict. of Photography, p. 550.

rayon, *n.* **2.** The radius of area of action (of a fort, a ship, an army, or a fleet).

> A fort is generally useless outside the *rayon* of its fire, and it may easily become a trap from which escape can be prevented. *Encyc. Brit.*, XXVIII. 453.

ray-path (rā′påth), *n.* The line of propagation of a wave-motion, normal, in isotropic media, to the wave-front; in the case of rays of the cathode-ray type, the line of propagation of the projected particles.

ray-pod (rā′pod), *n.* Same as *star-fruit*.

ray-point (rā′point), *n.* The point of convergence or divergence of a pencil of rays.

ray-print (rā′print), *n.* A photograph made by means of X-rays or other form of radioactivity; a radiograph.

ray-screen (rā′skrēn), *n.* A color-screen such as is used in orthochromatic photography. *Photo-miniature*, Dec., 1903, p. 413.

ray-spider (rā′spī″dėr), *n.* An epeirid spider, *Theridiosoma radiosum*, which spins a rayed orb-web furnished with a trap-line.

razor (rā′zọr), *v. t.* [*razor*, *n.*] To shave with a razor, as the face or chin; remove with a razor, as a beard.

razor-edge (rā′zọr-ej), *n.* A keen, razor-like edge; hence, any situation which is precarious and close to the verge of destruction: as, to stand on the *razor-edge* or razor's edge.

razor-grinder, *n.* 2. A name given in the British West Indies and Guiana to any cicada. —3. An Australian flycatcher, *Seisura inquieta*, so called from its peculiar whirring note: known also as the *dishwasher*.

razzle-dazzle (raz″l-daz′l), *v. t.* [A varied reduplication of *dazzle*.] To dazzle and confuse; daze in a sudden or humorous way; bewilder; intoxicate. [Colloq.]

razzle-dazzle (raz″l-daz′l), *n.* [*razzle-dazzle*, *v.*] 1. A state of dazed confusion or dizziness, as in intoxication. [Colloq.]—2. A revolving platform, with a swift, irregular, swerving motion, on which passengers are carried, for their amusement, at fairs and pleasure-resorts.

razzle-dazzler (raz″l-daz′lėr), *n.* One who or that which razzle-dazzles; something which astonishes with its glaring incongruities. [Colloq.]

R. B. An abbreviation of *Rifle Brigade*.

R. C. An abbreviation (*b*) of *Red Cross*; (*c*) [*l. c.*] of *right center*.

R. C. A. An abbreviation of *Reformed Church in America*.

R. Cath., Rom. Cath. Abbreviations of *Roman Catholic*.

R. C. P. An abbreviation of *Royal College of Physicians*.

rcpt., recpt., rec't., rect. Abbreviations of *receipt*.

R. C. S. An abbreviation of *Royal College of Surgeons*.

Rd. The chemical symbol of *radium*.

R. D. (*c*) In *electrotherap.*, an abbreviation of *reaction of degeneration*.

R. D. d. In *electrotherap.*, an abbreviation of *reaction of degeneration at a distance*.

R. E. An abbreviation (*c*) of *Reformed Episcopal*; (*d*) of *Right Excellent*; (*e*) [*l. c.*] of *right eye*.

r. 1 e., r. 2 e. Abbreviations of *right first entrance* and *right second entrance*.

rea (rā′ä̤), *n.* [Tahitian.] The turmeric, *Curcuma longa*. See *turmeric*, 1, and *Curcuma*, 2.

reacher, *n.* 3. One who reaches warp-threads to another (the drawer-in), to be drawn through the heddles and reed, in making ready for the loom. *R. Marsden*, Cotton Weaving, p. 428.

reaching (rē′ching), *n.* *Naut.*, sailing to windward; working to windward on alternate tacks; sailing on the wind.

reachless, *a.* 2. Having no reach: applied to a vehicle from which are omitted the tension-members under the body which keep the front and rear axles at a fixed distance from each other. In most large motor-cars the frame replaces the reaches used in constructing the horse-drawn vehicle with the body less solidly united with the springs and their suspension.

It is built on the popular *reachless* style, with bent angle steel frame, supported on four three-quarter elliptic springs 38 inches long, and is equipped with ball bearing artillery wood wheels fitted with 3-inch tires.
Automobile, April 11, 1903, p. 420.

reach-rod (rēch′rod), *n.* In a locomotive, a rod which connects the reverse-lever in the cab to the bell-crank on the reverse-shaft of the valve-gear. See cut under *passenger-engine*.

reactance (rẹ̄-ak′tans), *n.* In *elect.*, the apparent resistance of an alternating-current circuit due to self-induction, which consumes no power; the ratio of the wattless component of the alternating electromotive force divided by the current. See ★*impedance*.

Since sparking is due chiefly to the counter E.M.F. of inductance in the coil undergoing commutation, or more properly the *reactance* E.M.F. of the coil, good commutation depends primarily upon the strength of the field in the commutating zone near the tip of a field magnet pole. *Jour. Franklin Inst.*, Nov., 1903, p. 365.

Magnetic reactance, in an alternating-current circuit, the electromotive force in volts per ampere developed or consumed by the inductance of the circuit.—**Reactance factor**, in *elect.*, the ratio between the reactance of a conductor and its resistance.—**Reactance voltage**, the electromotive force of self-induction in the short-circuited coil of the armature of a generator or motor.—**Synchronous reactance**, in synchronous machines, as alternaters and motors, an effective or virtual reactance representing the joint or resultant effect of armature-reaction and self-induction.

reactance-regulator (rẹ̄-ak′tans-reg″ū-lā-tọr), *n.* In *wireless teleg.*, a choke-coil placed in the transmitting circuit to prevent the formation of an arc. *Sci. Amer.*, Jan. 16, 1904, p. 40.

reaction, *n.* 5. In *pathol.*, the response of a nerve or muscle to an applied stimulus.—6. In *serumtherapy*, the occurrence of an interaction between two substances, as between an agglutinin and an agglutinable substance, or between toxin and antitoxin.

The blood gave a feeble serum *reaction*. The heart blood contained colon bacilli, and that from the spleen and a mesenteric gland gave colon and typhoid bacilli.
Med. Record, Feb. 14, 1903, p. 264.

Abbreviated reaction, in *psychol.*, the motor or muscular form of the simple reaction, in which attention is directed upon the movement to be made. *E. B. Titchener*, Exper. Psychol., I. i. p. 123.—**Adamkiewicz's reaction**, a chemical reaction for the detection of proteid substances. Strong sulphuric acid is added to a solution of the substance in glacial acetic acid, producing a violet color if proteids are present. It has been shown that the effect depends upon the presence of glyoxylic acid, which usually occurs in traces in the acetic acid.—**Agglutinative reaction.** Same as ★*agglutination*, 4.—**Associative reaction**, in *psychophys.*, a form of reaction in which the movement of response is withheld until the presented stimulus has suggested an associated idea.

In the *associative reaction* he [the reactor] does not react to the given stimulus at all; he makes the movement of reaction only after the stimulus has suggested something else, has aroused in consciousness some associated idea. It is this associated idea to which the movement is the response.
E. B. Titchener, Exper. Psychol., II. i. p. 192.

Baumann-Schotten reaction, a reaction by which an acyl derivative is prepared from a hydroxyl or amino compound by shaking it with a solution of sodium hydroxid and benzoyl chlorid, acetic anhydrid, or some similar compound. The resulting compounds are often crystalline and well suited for purposes of identification.—**Beckmann's reaction**, a reaction by which ketoximes are changed into acid amides, or substituted acid amides, by the action of hydrochloric-acid gas dissolved in glacial acetic acid, or phosphorus pentachlorid dissolved in ether. Thus, benzophenone oxime, $C_6H_5.C:N(OH)C_6H_5$, yields benzanilide, $C_6H_5.CO.NH.C_6H_5$.—**Box reaction**, an application of powdered aluminium and Fe_2O_3, intimately mixed, and in atomic proportions, placed in the top part of a steel or iron casting.

Another application of the so-called "*box reaction*" is important for steel castings, and especially for casting large steel ingots, to prevent the familiar phenomenon of piping. In the heads of such blocks hollow spaces are found which mostly cause 30 to 40 per cent. of loss.
Jour. Franklin Inst., April, 1904, p. 253.

Central reaction, natural reaction, in *psychophys.*, a form of the simple reaction in which the reactor is allowed to divide his attention as he will between stimulus and responsive movement.—**Choice reaction.** See ★*choice-reaction*.—**Cognitive reaction**, in *psychophys.*, a form of reaction in which the movement of response is made upon the presentation of one of a number of possible stimuli, the character of which is known to the reactor only in general terms.

In the *cognitive reaction*, the stimuli are known only in a very general way. The observer is told, *e.g.*, that he will be shown a simple visual impression, a colour or a brightness; and he is not to react until he has 'cognised,' identified, apprehended the particular quality of the stimulus.
E. B. Titchener, Exper. Psychol., II. i. p. 187.

Complete reaction. See ★*complete*.—**Compound reaction**, in *psychophys.*, a form of reaction in which some complicating process or processes (such as discrimination, cognition, successive association) are introduced between the presentation of stimulus and the execution of the responsive movement, while the movement itself may be left simple, or selected from a prearranged group of movements, or performed or inhibited in obedience to instructions given beforehand: opposed to *simple* ★*reaction*.

'*Compound reactions*,' as they are termed, were first made by the Dutch oculist F. C. Donders (1818–1889) and his pupils, and have since been studied under very various forms.
E. B. Titchener, Exper. Psychol., II. i. p. 185.

Contact reaction. See ★*contact*1.—**Discriminative reaction**, in *psychophys.*, a form of reaction in which the movement of response is made upon the presentation of one or another of several known stimuli, and which therefore implies the discrimination of the presented stimulus (as regards quality, intensity, etc.) from the other possible stimuli.

In the *discriminative reaction*, the stimuli employed are always known beforehand to the observer; the colours are shown, the sounds presented, before the reactions are taken. *E. B. Titchener*, Exper. Psychol., II. i. p. 187.

Elastic reaction, the diminution in the volume of the bulb of a thermometer which proceeds gradually, in proportion to the lapse of time after it has been enlarged by heating. The bulb grows smaller and the thermometric indications higher as time elapses. In meteorology the standard size of the bulb and, therefore, the standard value of the scale-readings are those attained after the lapse of a long interval of time, when the changes proceed so slowly as to be inappreciable. In ordinary physical work this change, due to elastic reaction, is promptly and entirely annulled by exposing the thermometer-bulb to the standard freezing temperature immediately after observing the temperature that one desires to measure: in this way a purely thermal reaction is substituted for the elastic reaction.—**Flame-reaction.** Same as *flame-*★*test*.—**Gmelin's reaction**, a test for bile-pigment based upon the oxidation of bilirubin to biliverdin by nitric acid, with a coincident color play.—**Grignard's reaction**, a reaction much used in organic synthesis. When a solution of an organomagnesium halide is prepared by allowing an organic halide in ethereal solution to act upon magnesium this solution forms addition-products with alcohols, aldehydes, ketones, esters, metal halides, oxygen, sulphur, carbon dioxid, etc. When the addition-product is decomposed by dilute acids new compounds are obtained. Among them are saturated and unsaturated hydrocarbons; primary, secondary, and tertiary alcohols; glycols; acids; hydroxy acids; aldehydes; organometallic compounds; etc. *Nature*, Jan. 21, 1904, p. 287.—**Gruber-Widal reaction**, the application of the agglutination reaction to diagnostic purposes. See *serum* ★*diagnosis*.—**Method of reactions.** See ★*method*.—**Millon's reaction**, a color-reaction which is common to all those albuminous substances which on hydrolytic digestion yield tyrosin.—**Molisch reaction**, a test for carbohydrates by shaking the solution under examination with a little 10–20 per cent. solution of α-naphthol in alcohol or chloroform and adding an equal volume of concentrated sulphuric acid. The liquid should become violet.—**Motor reaction**, reflex movement in response to a stimulus of any kind. *Biol. Bulletin*, June, 1904, p. 29.—**Muscular reaction**, in *psychophys.*, the abbreviated or incomplete form of the simple reaction, in which attention is directed mainly or exclusively upon the reaction movement.

When, on the other hand, the preparatory expectation is directed toward the act to be executed in response to the motive, we have the so-called *muscular reaction*.
W. Wundt (trans.), Outlines of Psychol., p. 198.

Myotonic reaction, a condition in which the muscular contraction caused by an electric current persists for some time after the withdrawal of the stimulus.—**Natural reaction**, in *psychophysics*, the form of the simple reaction which is natural or normal to the untrained reactor; a reaction whose time lies, for the most part, between the times of the sensorial and the muscular reactions; the central reaction.—**Neutral reaction**, the absence of either acid or alkaline reaction.—**Pfeiffer-Bordet reaction**, bacteriolysis brought about by the action of immune serum.—**Pine slip reaction**, a reaction used in testing for indol and skatol.—**Reaction apparatus**, in *psychol.*, apparatus employed in the reaction experiment. Many forms of apparatus have been used: the classical arrangement is that of the Hipp chronoscope, telegraph reaction-key, and stimulator (sound-hammer, light-pendulum, etc.).—**Reaction breakwater**, a form of breakwater or jetty placed across the bar at the mouth of a navigable river or tidal estuary to aid the stream in eroding and maintaining a navigable channel across the bar. The jetty is placed on the side of the channel from which the prevailing winds and the littoral drift come, and, starting at the shore end nearly parallel with the natural channel, gently curves toward the channel side. The tidal ebb, including the fresh-water flow of the river, is forced by the centrifugal component of its inertia to follow the concave curve formed by the jetty and thus to erode and scour the bottom. The centrifugal pressure against the jetty also causes, as in streams flowing generally in curved lines, a downward motion of the water immediately in contact with the curved jetty or bank and a resulting reactionary or centripetal motion of the water at the bottom of the channel. As it is this bottom layer which contains the larger proportion of the eroded silt this material is thus removed from the channel into the shallow area on the side opposite the jetty. The jetty thus erodes a channel through the bar and at the same time protects this channel from encroachment by the littoral drift from the windward side.—**Reaction consciousness.** See ★*consciousness*.—**Reaction engine.** See ★*engine*.—**Reaction experiment**, in *psychophys.*, an experiment in which a movement is made in response, direct or indirect, to a prearranged stimulus, with the view (1) of securing an analysis of the various types of action-consciousness and (2) of measuring the rate of certain psychical and psychophysical processes.

We must limit ourselves to the observation of certain processes which can be easily influenced through external means and which terminate in external acts. The experiments which serve this purpose are the so-called *reaction-experiments*. They may be described in their essentials as follows. A simple or complex volitional process is incited by an external sense-stimulus and then, after the occurrence of certain psychical processes which serve in part as motives, the volition is brought to an end by a motor reaction.
W. Wundt (trans.), Outlines of Psychol., p. 197.

Recognition reaction, in *psychophys.*, same as *cognitive* ★*reaction*. *Baldwin*, Dict. of Philos. and Psychol., II. 418.—**Schotten-Baumann reaction.** Same as *Baumann-Schotten* ★*reaction*.—**Selective reaction**, in *psychophys.*, a form of compound reaction in which various movements of response are arbitrarily correlated with various sensory stimuli, all known beforehand to the reactor, any one of which may be presented by the experimenter (discriminative type); or in which various movements of response, such as those of articulate speech, are naturally correlated with the various members of a group of stimuli, known beforehand to the reactor only in a general way, any one of which may be presented by the experimenter (cognitive type). *E. B. Titchener*, Exper. Psychol., II. i. 188.—**Sensorial reaction**, in *psychophys.*, the complete form of the simple reaction; the form of reaction in which the preparatory attention of the reactor is directed, exclusively or predominantly, upon the coming sensory stimulus: opposed to *central* ★*reaction*, *muscular* ★*reaction*.

When the expectation is directed toward the stimulus.

which is to serve as the motive, the form of *reaction* known as *sensorial* results.

W. Wundt (trans.), Outlines of Psychol., p. 198.

Serum reaction. Same as ★*agglutination*, 4. See ★*agglutination test* and *serum* ★*diagnosis*.—**Simple reaction,** in *psychophys.*, a reaction in which the movement of response follows directly upon the presentation of the stimulus, without the interpolation of any complicating process (discrimination, association, etc.).

When the subject responds by a simple movement, such as lowering the jaw, blowing, or pressing the lips, the action is closely like that of a response with the finger; all these forms are termed '*simple reactions*.'

Scripture, Exper. Phonetics, p. 207.

Vocal reaction, in *psychophys.*, a reaction in which the movement of response consists of a vocal utterance (spoken word, syllable, vowel, etc.), while the stimulus reacted to may or may not be of the same kind.

When the subject responds . . . by a speech movement such as that of a vowel or a consonant, the action may be distinguished as a '*semi-vocal reaction*.' A '*complete vocal reaction*' may be measured with two voice keys.

Scripture, Exper. Phonetics, p. 208.

Volitional reaction, in *psychophys.*, a form of compound reaction in which the experimenter presents any one of a number of stimuli, known beforehand to the reactor, and the latter executes the movement of reaction in response to certain members of the group, allowing the rest to pass unregarded (discriminative type); or in which the experimenter presents any one of a number of stimuli, known to the reactor only in a general way, and the latter in certain cases executes, in certain others suppresses, the responsive movements naturally correlated with the stimuli (cognitive type). *E. B. Titchener*. Exper. Psychol., II. i. 190.—**Widal reaction** or **test,** the agglutination and arrest of motility of typhoid bacilli brought about by the action of agglutinins in the blood-serum of typhoid-fever patients. The reaction is extensively utilized in the diagnosis of typhoid fever. See ★*agglutination test* and *serum* ★*diagnosis*.—**Xanthoproteic reaction,** a color-reaction obtained with all true albumins by means of nitric acid, and supposedly dependent upon the presence in the albuminous molecule of a phenol or phenyl group.

reactional (rẹ̄-ak′shọn-al), *a.* [*reaction* + *-al*¹.] Of, pertaining to, or of the nature of, reaction.

reaction-key (rẹ̄-ak′shọn-kē), *n.* In *physiol.* and *psychophys.*, an instrument by means of which the movement of response in the reaction experiment is executed and the moment of this reaction marked upon the recording apparatus (chronograph or chronoscope). The reaction-keys in common use are so constructed that the movement of reaction (pressure or lift of a finger) makes or breaks an electric circuit. Other keys are arranged for air-transmission, or for direct mechanical transmission by means of levers. The electrical keys are also made for a large variety of responsive movements, as lip-keys, speech-keys, voice-keys, eyelid-keys, etc.

The *reaction-key* used in these measurements of the time of reaction to electric stimuli consisted of a frame for the support of an easily sliding rod, one end of which carried a cork disk and the other a platinum point by which the circuit was completed. The movement of the medusa against the disk when a stimulus was given, caused the rod to slip upward, thus breaking the chronoscope circuit. *Biol. Bulletin*, Jan., 1904, p. 85.

Telegraph reaction-key, a finger-key, modeled upon the ordinary telegraph-key, much used in reaction experiments with the Hipp chronoscope.

reactionless (rẹ̄-ak′shọn-les), *a.* Without reaction: said of certain alternating-current machines which are so designed that the armature currents neither strengthen nor weaken the magnetic circuit.

reaction-product (rẹ̄-ak′shọn-prod″ukt), *n.* Same as ★*adaptation-product*.

reaction-rim (rẹ̄-ak′shọn-rim), *n.* In *petrog.*, a shell surrounding any mineral in a rock formed of secondary minerals which have resulted from the chemical reaction of the surrounding minerals. Olivin in gabbro is sometimes surrounded by a zone of amphibole. The term is also applied to marginal zones in phenocrysts in porphyritic rocks which were produced by the action of the molten magma upon the crystal before the solidification of the rock. Porphyritic hornblende is often surrounded by a border of magnetite and pyroxene. *Kemp*, Handbook of Rocks, p. 160.

reaction-substance (rẹ̄-ak′shọn-sub″stạns), *n.* Same as ★*adaptation-product*.

reaction-telephone (rẹ̄-ak′shọn-tel″ẹ̄-fōn), *n.* See ★*telephone*.

reactivate (rẹ̄-ak′ti-vāt), *v. t.*; pret. and pp. *reactivated*, ppr. *reactivating*. [*re-* + *activate*.] To render active again: used specifically of the process of restoring the activity of an immune serum after the destruction of its complement. See ★*reactivation*.

The serum can be *reactivated* by a little fresh serum not only from a normal rabbit, but from the goat and the rat. *Med. Record*, Feb. 14, 1903, p. 251.

reactivation (rẹ̄-ak-ti-vā′shọn), *n.* [*reactivate* + *-ion*.] The act or process of reactivating; specifically, in *immunology*, the process of rendering an immune serum active again after its complement has been destroyed by age or by heating to 55° C. The amboceptor then remains, but is in itself inactive. If now some fresh blood-serum, from a suitable animal, which contains the necessary complement, is added, the activity of the serum is restored; it has been reactivated. *Med. Record*, Feb. 14, 1903, p. 251.

reactive, *a.* 2. In alternating-current circuits, same as ★*wattless*.—**Reactive circuit,** in *elect.*, a circuit the impedance of which is in part or wholly due to inductance or capacity or to both.—**Reactive coil,** in *elect.*, a wire coil, frequently with an iron core, used to produce *reactance*. See ★*reactance*.—**Reactive drop,** the fall of potential in a circuit due to reactance as opposed to ohmic drop, which is due to resistance.

II. *n.* A reagent. [Rare.]

Letter large
Label and label, then with solemn charge,
Reviewing learnedly the list complete
Of chemical *reactives*, from thy feet
Push down the same to me.

Browning, Parleyings with Charles Avison, ix.

reactor (rẹ̄-ak′tọr), *n.* One who or that which reacts; specifically: (*a*) In *elect.*, a reactive coil. (*b*) In *exper. psychol.*, the observer in a reaction experiment; the person who executes a movement in response to a prearranged sensory stimulus.

Such a modification may, indeed, be introduced even in the simple form of the experiment just described, by varying the way in which the *reactor* prepares, before the appearance of the stimulus, for the execution of the act. *W. Wundt* (trans.), Outlines of Psychol., p. 198.

'Observer' should be the general term for the person on whom an experiment is tried. 'Subject' should be used where this person is abnormal, and '*reactor*' where some movement is required.

Jour. Philos., Psychol. Sci. Methods, April 28, 1904, p. [239.

Reading beds. See ★*bed*¹.

reading-lens (rē′ding-lenz), *n.* A reading-glass.

reading-microscope (rē′ding-mī″krọ̄-skōp), *n.* A form of microscope used in instruments of precision to magnify the divisions of a scale: an accessory of a vernier.

reading-telescope (rē′ding-tel″e-skōp), *n.* 1. A telescope used in reading a scale placed at a distance or reflected in a mirror.—2. Specifically, a simple form of cathetometer. It consists of a telescope which has an object-lens and a negative eyepiece containing a spider-line or cross-wire. A level is attached to the top of the telescope, which may stand on a tripod or be movable about and up and down a vertical standard. *M. W. Travers*, Exper. Study of Gases, p. 57.

ready, *v. t.*—**To ready up,** to make ready or prepare for a special (generally underhand) purpose; 'fix.' [Australian.]

If you '*ready up*' a racehorse, you'are preparing to lose, or if you '*ready up*' a pack of cards, you prepare it for dealing certain suits.

The Age, Nov. 25, 1893, p. 13, quoted in E. E. Morris, [Austral English.

reagent, *n.* 4. In *exper. psychol.*: (*a*) The observer in any form of psychological experiment: opposed to *experimenter*. (*b*) Same as ★*reactor*.

The experimenter exposed, in irregular order, the stimuli that he had been using as comparisons, and asked each *reagent* to designate each shade as it was exposed.

F. Angell, in Philos. Studien, XIX. 14.

Barfoed's reagent, an 0.5–.4 per cent. solution of cupric acetate which contains 1 per cent. of acetic acid: used in testing for certain sugars. Dextrose reduces the reagent, maltose does not.—**Baudouin reagent,** in *chem.*, hydrochloric acid with a little cane-sugar, used to detect, by the appearance of a rose color, sesame-oil as an adulterant of olive-oil: a test of doubtful value.—**Erdmann's reagent,** a mixture of dilute nitric acid and concentrated sulphuric acid: a reagent for alkaloids.—**Fehling's reagent,** a mixed solution which contains in proper proportions cupric sulphate, an alkaline tartrate (usually Rochelle salt), and caustic soda. In the presence of certain kinds of sugar, especially the glucoses, this reagent gives, on heating, a precipitate of cuprous oxid, which exhibits a yellow, orange, or brick-red color as it varies in quantity and state of subdivision. The amount of precipitate obtained, or of the reagent solution of standard strength which has been decomposed to produce it, may be used to determine quantitatively the sugar present.—**Fröhde's reagent,** a solution of sodium molybdate or molybdic anhydrid in concentrated sulphuric acid which gives characteristic colors with alkaloids, glucosides, and proteins.—**Günzburg's reagent.** See *Günzburg's* ★*test*.—**Ilasvay's reagent,** a reagent employed in testing for nitrites.—**Millon's reagent,** in *chem.*, a solution made by dissolving one part of mercury in one part of nitric acid of specific gravity 1.42, diluting with twice its bulk of water, and filtering after 24 hours. It is used for the detection of proteid and albuminoid substances, which it colors red, as in distinguishing animal fibers from those of vegetable origin.—**Scheibler's reagent,** in *chem.*, phosphotungstic acid, obtained by mixing solutions of sodium tungstate and sodium phosphate with a little nitric acid: used to detect alkaloids, which it precipitates.—**Schultze's reagent,** in *chem.*, a saturated solution in water of sodium phosphate to which antimony pentachlorid has been added: used to detect alkaloids, which are precipitated by it.—**Schweitzer's reagent,** in *chem.*, a solution of cupric hydroxid in aqueous ammonia, forming a dark-blue liquid: used to detect and remove cellulose, which it dissolves, as in the examination of mixed fabrics in which cotton or linen may be present.—**Sonnenschein's reagent,** in *chem.*, a solution of phosphomolybdic acid, with addition of a little nitric acid; used to detect alkaloids, with which it gives yellow precipitates.—**Uffelmann's reagent,** three drops of a saturated aqueous solution of ferric chlorid mixed with three drops of a concentrated solution of pure carbolic acid, the whole diluted with water until a bright amethyst-blue color develops. The reagent is used in testing for lactic acid, which changes the blue color to a bright yellow.

real¹. **I.** *a.* 7. In *math.*, involving no unit for number but the primitive unit, 1.—8. In *geom.*, appearing in a finite figure. For instance, any two coplanar circles ⊙C(*r*) and ⊙A(*a*) are said to intersect, but their intersection-points are real only if $AC \leqq (r + a)$.—9. In *optics*, opposed to *virtual*: as, a *real* image, one formed by the actual convergence of waves brought to a focus by an optical system, as distinguished from the virtual image formed where the geometrical extensions of a group of rays meet.—**Real number.** See ★*number*.—**Real servitude, statutes, substitution, treaty.** See ★*servitude*, etc.—**The real thing,** the actual thing itself; the genuine article. [Colloq.]

Mr. . . . has *the real thing* in him, the stuff of which literature is fashioned. *Athenæum*, May 20, 1905, p. 619.

II. *n.* 3. In *math.*, a real number.—**Axis of reals,** in *geom.*, the axes of abscissas in the graphic representation of the complex variable $x + iy$.

real³, *n.*—**Real fuerte,** the Spanish silver real, equal to 12½ cents, as distinguished from the *real de vellon*, which is worth only five cents.

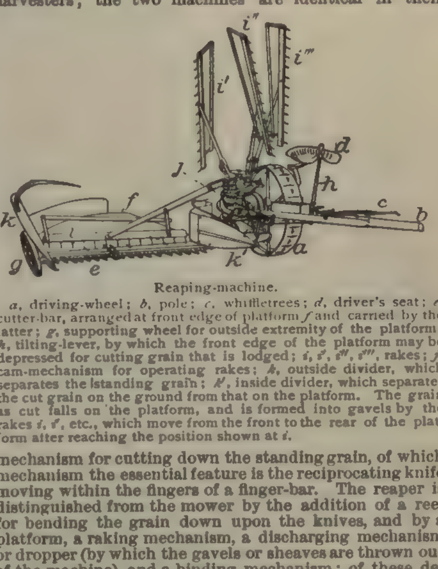
realize, *v. t.*—**A realizing sense,** an intuition of the exact meaning or character of a thing or person. [Colloq. U. S.]

Since he had no "*realising sense*" of men, how could he hold men? *H. Harland*, Comedies and Errors, p. 87.

realm, *n.*—**Holarctic realm.** See *Holarctic* ★*region*.

reamputation (rē-am-pū-tā′shọn), *n.* [*re-* + *amputation*.] Amputation performed a second time on a limb a part of which has previously been removed. *Buck*, Med. Handbook, I. 246.

reaping-machine (rē′ping-mạ-shēn″), *n.* A harvesting-machine for grain-crops; a mechanical reaper drawn over a field of standing grain by horses. The reaping-machine is a modified mowing-machine or mower, both mower and reaper being harvesters; the two machines are identical in their mechanism for cutting down the standing grain, of which mechanism the essential feature is the reciprocating knife moving within the fingers of a finger-bar. The reaper is distinguished from the mower by the addition of a reel for bending the grain down upon the knives, and by a platform, a raking mechanism, a discharging mechanism or dropper (by which the gavels or sheaves are thrown out of the machine), and a binding mechanism; of these devices any or all may be present in one machine. Reaping-machines are often distinguished according to their attachments: thus, a *dropper* is a reaping-machine that automatically throws out the cut grain at intervals; a *self-raker* or a *self-binder*, sometimes called a *harvester and binder*, is one with a raking or a binding attachment. The discharging mechanism or dropper is a device for causing the platform upon which the grain falls when cut to throw off its load. The raking attachment consists of a series of rakes moving over the platform to gather the grain into gavels and sweep it off upon the ground. The binding attachment consists essentially of an endless-belt elevator for lifting the cut grain, and a pair of curved arms for gathering and compressing it into a bundle and holding it while the binding mechanism proper draws wire or twine around it, twists the wire or loops and knots the twine, cuts the bundle from the wire or twine, and discharges the bound sheaf.



Reaping-machine.

a, driving-wheel; *b*, pole; *c*, whiffletrees; *d*, driver's seat; *e*, cutter-bar, arranged at front edge of platform *f* and carried by the latter; *g*, supporting wheel for outside extremity of the platform; *h*, tilting-lever, by which the front edge of the platform may be depressed for cutting grain that is lodged; *i*, *i′*, *i″*, *i‴*, rakes; *j*, cam-mechanism for operating rakes; *k*, outside divider, which separates the standing grain; *k′*, inside divider, which separates the cut grain on the ground from that on the platform. The grain as cut falls on the platform, and is formed into gavels by the rakes *i*, *i′*, etc., which move from the front to the rear of the platform after reaching the position shown at *i*.

rear³, *n.* 4. The up-stream end of a drive. The logs may be either stranded or floating: in the former case they are termed *dry rear*; in the latter *floating rear*.

Rear-Adm. An abbreviation of *Rear-admiral.*

rear-cut (rēr′kut), *a.* Having, as a mower, the cutting bar in the rear of the carriage. *Knight*, 1884.

rear-driven (rēr′driv″n), *a.* Driven by applying the power to the rear axle: said of motor-driven vehicles.

rearhorse, *n.*—**False rearhorse,** any member of the neuropterous family *Mantispidæ.* See *Mantispa* and *Mantispidæ.*

rearing-pond (rēr′ing-pond), *n.* A pond, connected with a fish-hatchery, in which the young are reared.

rear-man (rēr′man), *n.* 1. *Naut.*, see the extract.

The two men whose numbers place them farthest from the ship's side [in working a gun] are to be termed right and left *rear-men.* *F. A. Griffiths*, Artilleryman, p. 227.

2. *Mil.*, a rear-rank man.

reascensional (rē-a-sen′shon-al), *a.* [*reascension* + *-al*^{1}.] Pertaining to, or of the nature of, reascension; specifically, descriptive of or relating to the union of processes by which the coherence, the crystalline condition, and, in some measure, the complexity characteristic of original igneous rocks are restored in sediments and other clastics. The reascensional process is contrasted with the ★*descensional* process of disintegration, and includes all the phases of reconstructional work as applied to rocks. *Chamberlin and Salisbury*, Geol., I. 412.

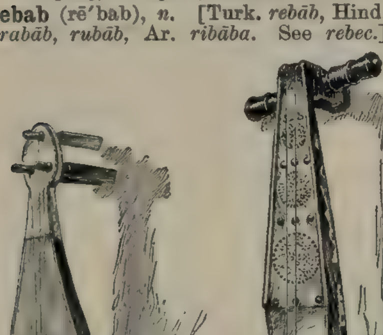
reassociate (rē-a-sō′shi-āt), *v. t.*; pret. and pp. *reassociated*, ppr. *reassociating.* [*re-* + *associate.*] To join or bring into association again.

reassort (rē-a-sôrt′), *v. t.* To assort again; to assort repeatedly. *Encyc. Brit.*, XXVIII. 395.

Reb. An abbreviation of *Rebel*, applied especially by the Unionists to the Confederates in the Civil War in the United States: often personified as *Johnnie Reb.*

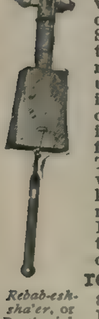
Then we got into the Colony [Orange-Free State], and the *rebs*—ministers mostly and schoolmasters—came round the cars with fruit and sympathy and texts.
R. Kipling, The Captive, in Traffics and Discoveries, p. 29.

rebab (rē′bab), *n.* [Turk. *rebāb*, Hind. Pers. *rabāb*, *rubāb*, Ar. *ribāba.* See *rebec.*] Any one of several varieties of viol common in Mohammedan countries, from which it is supposed that the European rebec was derived.



Forms of Rebab.
(Originals in the Stearns Collection, University of Michigan.)

Normally the rebab has a narrow oval body, shaped somewhat like a boat, slightly expanded at the lower and contracted at the upper end, which in some cases passes into a slightly definite neck with various devices for holding the tuning-pegs. The body is usually made of a solid piece of wood in which more or less of a resonance-cavity is scooped; its back is rounded. Sometimes slight indentations are made in the front edges of the body to facilitate reaching the strings with a bow. There are usually either two or three strings. In playing, the instrument is held vertically in front of the body by the left hand. The name *rebab* is loosely applied also to many instruments for which *kamanja* would be more suitable. The *rebab-esh-sha'er*, or poet's-viol, is a viol with one or two strings, a body shaped like a key-stone and flat in front and behind, a long neck of turned wood, and a long iron foot. It is rested on the ground in playing, while the player sits or squats behind it, as in the case of the kamanja, which it resembles.



Rebab-esh-sha'er, or Poet's-viol.

rebabbitt (rē-bab′it), *v. t.* To line again with babbitt a bearing which has been previously lined with the same material; to babbitt again.

rebat (re-bä′), *n.* [Local F., < *rebattre*, beat back, beat again: see *rebate*, *v.*] The day-wind or lake-breeze on Lake Geneva, Switzerland. It begins on the open lake about 10 A.M., spreads outward toward both shores, and ceases about 4 P.M. It is not quite as strong as the morget, or land-wind, of the night-time.

The lake breeze, le *rebat*, blows during the day from 10 A.M. till 4 P.M., but with less velocity than the morget. This lake breeze begins over the open surface of the lake, and advances toward the shore. The morget and the *rebat* are true land and lake breezes, according to Forel, and are not mountain winds.
J. Hann (trans.), Handbook of Climatol., p. 161.

rebellion, *n.*—**Proclamation of rebellion.** See ★*proclamation.*

rebellious, *a.* 4. Specifically, in *metal.*, difficult to reduce; requiring extra manipulation or extreme heat: said of ores from which it is difficult to separate the metal.

reblock (rē-blok′), *v. t.* To provide with a new block, or other suitable support, as a specimen in a museum collection. *Smithsonian Rep.* (Nat. Mus.), 1896, p. 83.

reboantic (reb-ō-an′tik), *a.* [L. *reboans*(*t-*), ppr. *reboare*, bellow back, re-echo, + *-ic.*] Resounding; reboant. [Rare.]

The Conchimarian horns
Of the *reboantic* Norns
Usher gentlemen and ladies
With new lights on Heaven and Hades.
R. Kipling, The Files, l. 74.

rebolting-machine (rē-bōl′ting-ma-shēn″), *n.* A sawing-machine for making cuts in a bolt or block which nearly, but not quite, cuts it into pieces. In this condition the bolt can easily be handled and can readily be broken by hand as it is desired to use the pieces.

rebunker (rē-bung′kėr), *v. i.* and *t.* [*re-* + *bunker.*] To refill the bunkers with coal; coal again.

But wood, as compared with coal, is bulky stuff to carry, and as the stowage capacity of these stern wheelers is small, they had to make frequent calls to *rebunker.*
Cutcliffe Hyne, A Master of Fortune, iii.

Rec. An abbreviation (*a*) of *recipe*; (*b*) of *record*, *recorded*, or *recorder.*

recalescence, *n.* Steel in cooling from a temperature of, say, 1,000° C. may exhibit recalescence or evolution of heat at three points, namely, at about 850°, 750°, and 650°. At the last of these the phenomenon is most marked.

recalescent (rē-ka-les′ent), *a.* [L. *recalescens* (*t-*), ppr. of *recalescere*, grow hot again.] Of or pertaining to recalescence.

The *recalescent* points of steel and copper.
Elect. World and Engin., April 18, 1903, p. 666.

recalibrate (rē-kal′i-brāt), *v. t.* and *i.*; pret. and pp. *recalibrated*, ppr. *recalibrating.* To calibrate anew.

recandescence (rē-kan-des′ens), *n.* [L. *recandescere.* See *candescence.*] A gradual process of growing brighter; renewed candescence.

recapitalize (rē-kap′i-tal-īz), *v. t.*; pret. and pp. *recapitalized*, ppr. *recapitalizing.* To capitalize anew; enlarge or otherwise modify the capitalization of.

But since that time the American steel industry has been *recapitalized* on an immensely expanded scale, and it was plain to every one that reversion to prices prevalent in the nineties would put an end to dividends.
The Forum, Jan.–March, 1904, p. 361.

recapitulate, *v. i.* 2. In *biol.*, to repeat ancestral evolutionary stages: said of young animals in their early development.

recapitulation, *n.* 3. In *biol.*, the appearance in a developing organism of stages that are considered to recapitulate, or repeat in brief stages, the life-history of ancestors, or to resemble adult ancestors. See ★*recapitulation doctrine.*

That no general doctrine of *recapitulation* could be maintained was perceived by Sir John Lubbock as early as 1873, but vertebrate embryologists did not permit their zeal to be dampened by even the most obvious facts of entomology. Indeed, one of our prominent investigators, finding that *recapitulation* is elusive by microscopical methods, now proposes to test it by breeding experiments, the results of which may be available in a future geologic epoch.
O. F. Cook, in Pop. Sci. Mo., July, 1903, p. 219.

4. In *music*, the third division of a movement in sonata form, in which the subjects are taken up afresh and both in the original key. Also called *reprise.*—**Law of recapitulation.** See ★*recapitulation*, 3.—**Meckel's law of recapitulation.** See ★*recapitulation*, 3.—**Recapitulation doctrine** or **theory,** the doctrine or opinion that the life-history of an individual modern organism recapitulates, as it were, the life-history of the race to which it belongs in such a way as to enable the naturalist who studies its systematic affinities, and uses evidences from other sources, to reconstruct an outline of its ancestral history. This outline, however, while it may be valuable and instructive, must be vague and incomplete. It must be remembered, in considering the value of a conclusion of this sort, that a vague or indefinite opinion may be fundamentally certain and true. Most naturalists regard the recapitulation theory as one of the most valuable results of modern biology, and one of the greatest stimulants to research.

No candid morphologist can deny that the responsibility for the present degradation of pure morphology . . . is the result of too exclusive and undiscriminating a faith in the . . . *recapitulation theory.*
E. B. Wilson, Biol. Lectures, 1895, p. 104.

recapitulationist (rē-ka-pit-ū-lā′shon-ist), *n.* In *biol.*, one who holds the recapitulation doctrine or theory (which see, under ★*recapitulation*).

If I had time to discuss the recapitulation theory, I should begin by granting much that the *recapitulationist* demands—for instance, that certain facts in the development of animals have an historical significance, and can not be explained by mere adaptation to present circumstances; further, that adaptations tend to be inherited at corresponding phases both in the ontogeny and the phylogeny. *L. C. Miall*, in Smithsonian Rep., 1897, p. 504.

recapitulative, *a.* 2. Of or pertaining to the biological doctrine of recapitulation. See ★*recapitulation doctrine.*

recapper (rē-kap′ėr), *n.* [*re-* + *cap*^{1}, *v.*, + *-er*^{1}.] A device for fixing new primers in the primer-seat of a cartridge-case.

recarbon (rē-kär′bon), *v. t.* To supply with new carbons, as an arc-lamp.

Open arc lamps are usually only able to work 8, 16, or 32 hours without *recarboning*, even when fitted with double carbons. *Encyc. Brit.*, XXVIII. 86.

recarburizer (rē-kär′bū-rī-zėr), *n.* In the manufacture of steel by the Bessemer process, a material rich in carbon (usually spiegeleisen) which is added to the still molten product from blowing air through fused cast-iron, in order to remove any traces of oxygen which the iron itself may have taken up. The result of this addition is practically not only the removal of oxygen but the reintroduction of a little carbon, producing the so-called mild steel, which differs little from wrought-iron rendered homogeneous by fusion. *Engin. Mag.*, XVI. 181.

rec'd, recd. Abbreviations of *received.*

recedent (rē-sē′dent), *a.* Retrograde; receding; specifically in *med.*, relapsing; retrocedent: as, "*recedent* gout."

receit, *n.* and *v. t.* A simplified spelling of *receipt.*

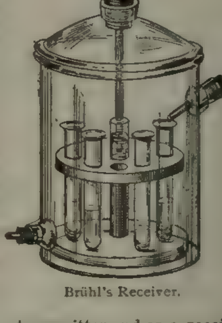
receiv, *v.* A simplified and former spelling of *receive.*

receival (rē-sē′val), *n.* [*receive* + *-al*^{1}.] Reception.

On the *receival* of the dispatches.
Southey, Hist. Penn. War, I. 152. *N. E. D.*

receive, *v. t.*—**Received text.** See *Textus Receptus.*

receiver, *n.* 7. In *mech.*: (*a*) A chamber in a compound engine into which the exhaust from one cylinder passes on its way to the next cylinder. (*b*) A chamber in a steam-line, close to the engine, in which water carried along by the steam is given a chance to separate from it before the steam enters the cylinder.—**Brühl's receiver,** a glass vessel which contains a revolving tray supporting cylinders and connected on the one side with a distilling apparatus and on the other with a vacuum-pump. It serves to collect the fractions of a distillation in vacuo.—**Double-pole receiver,** a telephone with an elongated horseshoe magnet instead of the straight-bar magnet sometimes used. In front of the two poles, which are close together, the diaphragm is mounted.—**Hot-wire receiver,** in *wireless teleg.*, a form of receiving instrument for electric waves, devised by R. A. Fessenden.—**Recording receiver,** in *teleg.*, any receiving instrument that registers in permanent form the signals transmitted to it.—**Transmitter-receiver,** in *teleg.* or *teleph.*, any device which is used both as a transmitter and as a receiving instrument.—**Wheatstone receiver,** the receiving instrument of a Wheatstone telegraph; a mechanical recording device, operated by reversals of the signaling current.



Brühl's Receiver.

receiving-box (rē-sē′ving-boks), *n.* In the pneumatic transmission of packages, a compartment or box at the receiving end of the pneumatic tube, arranged for the reception of the parcels. *Science Abstracts*, VI. sec. B, 192.

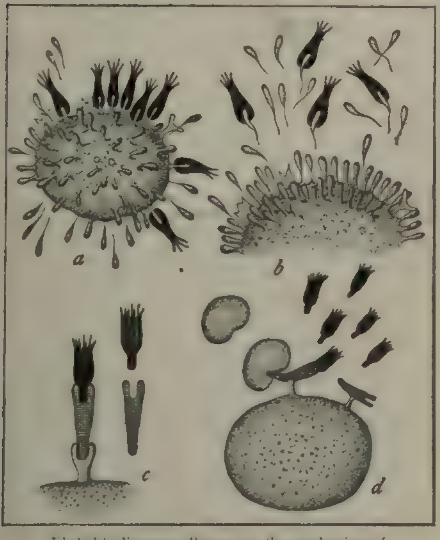
receiving-tank (rẹ̄-sē′ving-tangk), *n.* 1. A tank into which a pump discharges.—2. A drip-tank; a tank arranged to receive the water condensed in a line of steam-pipe.

receiving-yard (rẹ̄-sē′ving-yärd), *n.* See ★*drill-yard.*

receptacle, *n.*—**Salivary receptacle,** in *entom.*, an elongate thin-walled sac connected with each of the salivary glands of the cockroach and other insects.

receptaculum, *n.*—**Receptaculum ovorum,** in oligochætous worms, as the earthworm, one of the pair of sacs which communicate with the oviduct. *Proc. Zool. Soc. London*, 1897, p. 349.—**Receptaculum vitelli,** in platyhelminths, a reservoir for the vitelline matter or yolk. *Parker and Haswell*, Zoology, I. 255.

receptor (rẹ̄-sep′to̤r), *n.* [NL., < L. *receptor*, a receiver, < *recipere*, receive.] 1. A molecular complex of a cell through the union with which alien cell-products or cell-constituents can produce their specific effects upon the cell. These same receptors, owing to the presence of which the cell is open to attack, when cast off from the cell constitute its most effective defenses. Also called *side-chain.* See ★*immunity*, 5.



Ehrlich's diagrams illustrating the mechanism of immunity and cytolysis.

The figures in black indicate substances with toxic action. *a* and *b* illustrate the excessive production of receptors in response to the action of toxins, and their escape from the cells; in *b* they are seen to combine with toxin outside the cell, preventing its union with the cell; *c* shows the structure of the complement and intermediary body of bacteriolytic and cytolytic sera; *d* shows the amboceptor, while attached to the cell, uniting the complement to a large molecule.

(From Buck's Med. Handbook, App.)

Ehrlich's hypothesis to explain such facts is usually spoken of as the side-chain theory of immunity. He considers that the toxins are capable of uniting with the protoplasm of living cells by possessing groups of atoms like those by which nutritive proteids are united to cells during normal assimilation. He terms these haptophor groups, and the groups to which these are attached in the cells he terms *receptor* groups. The introduction of a toxin stimulates an excessive production of *receptors*, which are finally thrown out into the circulation, and constitute the antitoxin.
Rep. Brit. Ass'n Advancement of Sci., 1902, p. 778.

2. In *wireless teleg.*, a receiver.

It is easy to see that the reception depends upon the energy received by the antennæ; this is evident for thermic or other analogous receptors which integrate the energy received in unity of time, but is equally true for *receptors* of the coherer type, which are sensitive to electric shock received upon the arrival of each train of waves.
Elect. World and Engin., Jan. 2, 1904, p. 42.

3. The terminal expansion in skin or mucous membranes of a sensory nerve.

Thus, it [the animal body] has organs stimulated by the radiant energy of light and heat, others by chemical particles drifting from odorous objects, others mechanically by objects touching the skin, and so on. These organs specially adapted to environmental stimuli, are called *receptors.* Attached to them are nerves.
Nature, April 16, 1908, p. 570.

recess, *n.*—**Iliac recess,** a pocket-like cavity in the posterior portion of the ilium of many birds, particularly well marked in the owl and turkey. Also *iliac pocket.*—**Tympanic recess,** in *ornith.*, the rather irregular depression, or cavity, leading to the internal ear; the tympanic cavity.

recession[1], *n.*—**Angle of recession,** the angle at which the side of a recess cuts into a figure; the angle between the side of a recess and the line of that face of the figure which is cut by the recess.

recessive, *a.* 2. In *biol.*, opposed to ★*dominant*, 2. See ★*recessive*, *n.*

Cuénot experimented by making reciprocal crosses between albino, pink-eyed, fancy mice, and wild grey mice (M. musculus). He was careful to use wild mice in order to be sure that his coloured form was pure. As a result he obtained always and without exception grey mice. In Mendelian terms, grey is therefore dominant over albinism, which is called by contrast *recessive.*
Proc. Zool. Soc. London, 1903, p. 75.

Recessive character, one of the antagonistic or mutually incompatible characters of a cross-bred organism which, while it is not visibly manifested by the cross-bred organism, is transmitted to and manifested by some of its descendants. See *ancestral* ★*inheritance.*

II. *n.* In *biol.*, an organism that manifests and transmits to descendants the character which is antagonistic to a dominant, or a character which is antagonistic to a dominant character. See ★*dominant*, 2.

Mendel discovered that in this generation the numerical proportion of dominants to *reccssives* is on an average of cases approximately constant, being in fact as three to one. With very considerable regularity these numbers were approached in the case of each of his pairs of characters. *Bateson*, Mendel's Prin. of Heredity, p. 9.

Extracted recessive, a recessive of pure blood; one that does not transmit the antagonistic dominant character. See ★*dominant*, 2.

Recessus parietalis, one of the cavities of the cœloma from which are developed the pleural and part of the peritoneal cavities.—**Recessus subpinealis.** Same as *recessus infrapinealis.*—**Recessus vestibuli,** a chamber formed from a fold in the wall of the auditory vesicle from which the vestibule of the ear is developed.

recidivation, *n.* 2. Specifically, in *criminol.*, the relapse of a criminal into crime.

recidivism (rẹ̄-sid′i-vizm), *n.* [*recidiv*(*ous*) + *-ism.*] Relapse into crime; the conduct or condition of a recidivist.

The gravest feature of modern penology "is the vitality of '*recidivism*,'" a phrase [in Major Arthur Griffiths's Prison Discipline] the significance of which was anticipated in the once current phrase "Qui a bu boira."
N. and Q., 9th ser., XI. 78.

recidivity (rẹ̄-si-div′i-ti), *n.* Same as ★*recidivism.*

reciprocal. I. *a.* 4. In *geom.*, definitely dual, so that the dual of each element is fixed and constructible.—**Law of reciprocal action.** See ★*law*[1].—**Reciprocal crossing.** See ★*crossing.*—**Reciprocal curves.** Same as *reciprocal polars* (which see, under *reciprocal*).—**Reciprocal figures,** in *geom.*: (*b*) Dual figures.—**Reciprocal integration.** See ★*integration.*—**Reciprocal spiral,** $\rho\theta = a$. Same as *hyperbolic spiral.* See *spiral*, 1.

II. *n.* 3. In *geom.*, the dual.—**Polar reciprocal of a surface,** the envelop of the polar planes of all the points of the surface.

reciprocate, *v. t.* 4. In *math.*, to take the reciprocal of.

By *reciprocating* this theorem deduce the following.
J. Mulcahy, Modern Geom., p. 291.

reciprocation, *n.* 4. The process of taking the reciprocal (of a curve, proposition, or quantity).—5. In *geom.*, the correlation of two reciprocal figures. See ★*reciprocal*, *a.*, 4.

reciprocator (rẹ̄-sip′rọ-kā-to̤r), *n.* In *mech.*, a reciprocating engine, or one whose principal parts travel back and forth, as the piston in a cylinder.

reciprocitarian (res-i-pros-i-tā′ri-an), *a.* Of or pertaining to reciprocity; specifically, pertaining to or growing out of a reciprocity of commercial privileges between two governments.

To these he appeals on *reciprocitarian* lines by offering a reduction of our wine duties in return for a partial abolition of the French *surtaxe d'entrepôt.* No British Government will ever make so limited a proposal.
Athenæum, Feb. 3, 1906, p. 134.

recipro-unit, *n.* An abbreviation of *reciprocating unit*, that is, an electric generator driven by a reciprocating engine. [Rare.]

recirculation (rẹ̄-sėr-kụ-lā′sho̤n), *n.* [*re-* + *circulation.*] A new or renewed circulation.

recitalist (rẹ̄-sī′ta̤l-ist), *n.* [*recital* + *-ist.*] A musician, singer or player, who gives recitals.

recitando (rā-chẹ̄-tän′dō), *a.* [It., ppr. of *recitare*, recite.] In *music*, reciting; half spoken or declaimed, after the manner of a recitative.

recitative, *n.*—**Simple recitative,** in *music*, same as *recitativo secco.* See *recitative.*

reciting-tone (rẹ̄-sī′ting-tōn), *n.* Same as *reciting-note.*

reckoning, *n.*—**Prince's reckoning,** in *archery*, the method of scoring now commonly used, in which hits in the five concentric rings of the target count 9, 7, 5, 3, and 1 respectively. See ★*target*, 2.—**Reckoning method.** See ★*method.*

Reclamation law, the name given to an act of the United States Congress, passed in 1902, by which a fund was created for the purpose of providing for the irrigation of the desert lands in the western part of the United States.—**Reclamation Service.** See ★*service*[1].

réclame (rā-kläm′), *n.* [F. *réclamer*, entreat, call upon for aid. See *reclaim*, *v.* and *n.*] 1. The seeking or attaining of notoriety, as by advertising; method or means of attaining notoriety; notoriety.

Mr. J. —— owed his *réclame* to the divorce proceedings which ensued, as well as to his acting.
The Week (in *The Transcript*), Dec. 21, 1900.

2. The act of protesting; remonstrance; a protest. [Erroneous use.]

Such a *reclame* arose against the measure that it was quietly dropped. *Evening Telegram*, June 26, 1903.

recleaner (rē-klē′nėr), *n.* [*re-* + *clean*, *v.*, + *-er*[1].] A shaking- or screening-attachment to a bean-thresher or pea-huller for the final cleaning of the beans or peas before they are delivered to the bagger or bagging-machine. See ★*bean-thresher* and ★*pea-huller.*

recognition[1], *n.*—**Mediate recognition,** in *psychol.*, the recognition of an object, not by means of its own attributes, but by means of some accompanying mark or character which stands in accidental connection with it.

As a special form of this kind of process we have the phenomenon called *mediate recognition.* . . . As, for example, when a person is recognized because of his companion.
W. Wundt (trans.), Outlines of Psychol., p. 239.

Recognition color, a color displayed on an animal supposed to be of use to others of its species as a means of recognition.

For numerous examples of *recognition-colours* in birds, see Darwinism, pp. 217–226.
A. R. Wallace, Tropical Nature, p. 367, note. *N. E. D.*

Recognition reaction. See ★*reaction.*—**Recognition service,** a service held for the purpose of introducing a new pastor to his congregation. *N. E. D.*

The Baptist Church . . . where his *recognition service* was held last night.
Westminster Gazette, Nov. 9, 1897, p. 9.

Recognition time, in *psychophys.*: (*a*) The total time required for the process of recognition, that is, for the recognition reaction or cognitive reaction. (*b*) This time minus the time required for the simple reaction. *Amer. Jour. Psychol.*, XIII. 258.

recognitional (rek-o̤g-nish′o̤n-a̤l), *a.* [*recognition*[1] + *-al*[1].] Pertaining to, or of the nature of, recognition.

So many of our judgments are *recognitional* instead of being cognitional, that judgments usually appear to be instantaneous. *J. W. Powell*, Truth and Error, p. 281.

recognition-mark (rek-o̤g-nish′o̤n-märk), *n.* A mark which serves as a means of recognition or identification; specifically, a characteristic of animals which, when displayed, serves for the guidance of other individuals of the species; an episematic character. See ★*episematic.*

recoherence (rē-kọ-hēr′e̤ns), *n.* The spontaneous reduction in the resistance of a coherer without the application of the electric oscillations to which coherence is normally due.

On applying a small measured force the cohered surfaces separate. On bringing them in contact again at the same places, coherence will follow, but not always without the incidence of electric radiation. This can be repeated two or three times, but the power to cohere spontaneously soon vanishes. This spontaneous coherence is called *re-coherence.*
Elect. World and Engin., July 9, 1904, p. 72.

recoil-cylinder (rẹ̄-koil′sil″in-dėr), *n.* In *ordnance*, a cylinder fitted with a piston and piston-rod so arranged that when the gun recoils after firing the piston is forced through the length of the cylinder. A *hydraulic recoil-cylinder* contains a liquid which is forced to flow from one side of the piston to the other through small orifices in the piston or grooves in the walls of the cylinder, thus causing resistance to the recoil and bringing the gun to rest without shock. A *pneumatic recoil-cylinder* contains air under pressure which is further compressed by the recoil. A *spring recoil-cylinder* contains heavy coiled springs which are compressed by the recoil. See also ★*gun-mount.*

recoil-spring (rẹ̄-koil′spring), *n.* A spring used to check or stop a piece which recoils.

récolement (rā-kōl-moṅ′), *n.* [F., < *récoler*, reëxamine, < L. *recolare*, strain again, < *re-*, again, + *colare*, strain. See *colander.*] In *French law*, a reëxamination by a witness of a deposition made by him, and his confirmation of the same, with such alterations as his better recollection may lead him to make.

recollection, *n.*—**Testimonial recollection.** See ★*testimonial.*

recompose, *v. t.* 3. Specifically, in *optics*, to recombine, as the dispersed or scattered constituents of a complex beam of light.

recomposition, *n.* 2. Specifically, in *optics*, the reassembling or gathering together of the dispersed or scattered constituents of a complex beam of light, as in the formation of white light by the bringing together of the various rays of the spectrum.

reconcentrado (re-kon-sen-trä′dō, Sp. rā-kọn-thān-trä′dō), *n.* [Sp., < *reconcentrar*, concentrate.] In the Cuban rebellion of 1895–98, one of the Cubans who were forced by the Spanish military authorities to abandon their homes in the country and concentrate in the towns.

They were penned in like cattle, and were compelled to subsist under conditions which no cattle could have endured. Deprived of their homes and with little clothing, they lay upon the earth, with foul air, foul water and foul food, until, emaciated and diseased, they died like flies. In all, there were some 400,000 of these *reconcentrados*, and their condition excited at once the pity and the indignation of the world.
Bookman, Jan., 1906, p. 477.

reconcentrado (re-kon-sen-trä'dō, Sp. pron. rā-kọn-thān-trä'dō), *v. t.* [See *reconcentrado*, *n.*] To treat as a reconcentrado; make reconcentrados of. [Rare.]

When we came to a village like Modder River, where the Boers had been entertained and assisted in bridge-destroying and trench-digging, did we *reconcentrado* the little population?
Julian Ralph, War's Brighter Side, xix.

reconcentrate (rē-kọn-sen'trāt), *v. t.*; pret. and pp. *reconcentrated*, ppr. *reconcentrating*. 1. To concentrate; in military usage, bring forces together at some specified point.—2. To concentrate a second time; specifically, to further concentrate (ore, or matte) which has passed through one concentrating process.

The resulting matte runs 25 per cent. This is *reconcentrated* raw in hot-blast cupolas to 55 per cent., and blown directly into copper in converters.
Encyc. Brit., XXVII. 236.

3. To treat (people) as reconcentrados, by shutting (them) up in fortified towns. See ★*reconcentrado, n.*

reconcentration (rē-kon-sen-trā'shọn), *n.* The act of concentrating again; concentration; specifically, the concentrating of the Cuban insurgents in the towns. See ★*reconcentrado, n.*

The census also showed that the mortality due to the insurrection and the *reconcentration* had been less than had been ascribed. *Encyc. Brit.*, XXVII. 312.

The starvation and disease attributed to General Weyler's *reconcentration* policy caused the death of scores if not hundreds. *Rev. of Rev.*, XXI. 391.

Reconcilable circuits, in *math.*, circuits on the same surface, one of which can be converted into the other by continuous changes without leaving the surface.

reconnaissance, *n.*—**Topographic reconnaissance**, a preliminary hasty examination of the topography of a region, usually made without instruments, except those for rapid approximate measurements or observations.

reconquista (rā-kọn-kēs'tä), *n.* [Sp.] A reconquest; specifically, the regaining of Spain by the Spaniards from the Moors in the fifteenth century. See the extract.

When the "*Reconquista*" culminated in the conquest of Granada, the last Moorish kingdom in the Peninsula, by the Catholic sovereigns Ferdinand of Aragon and Isabella of Castille, the unity of Spain was realized at last, and her sovereigns, rid of foreign preoccupations, were able to turn their attention to the work of centralizing and consolidating all the powers of the State in their own hands. *Encyc. Brit.*, XXXII. 749.

reconstituent, *a.* 2. In *therap.*, building up; causing the formation of new tissue.

II. *n.* A drug or remedy that reconstitutes or rebuilds what has been wasted by disease.

As a *reconstituent*, cod-liver oil is a very useful remedy in certain chronic affections of the brain.
Bartholow, Mat. Med., p. 94. *N. E. D.*

reconstructor (rē-kọn-struk'tọr), *n.* One who constructs anew; one who restores again.

recooper (rē-kö'pėr), *v. t.* [*re-* + *cooper*, *v.*] To repair (a case, box, crate, barrel, or the like).

record, *v. t.*—**Recording galvanometer**, a galvanometer the deflections of which are registered, usually by photography, upon a revolving drum or moving strip.

record, *n.* 8. A cylinder or disk which bears a series of indentations originally made in wax, foil, or other plastic material by the vibrating stylus of a phonograph or similar instrument and which may be used in the reproduction of the original sounds. The name is applied both to the original impression in wax or other plastic material and to any cast or copy of this original in non-plastic material.—9. Also used attributively (*a*) in the sense of definition 6: as, "a *record* subscription list"; "a *record* output in steel," etc., meaning the largest on record.

A "*record* passage" for the season.
Geog. Jour. (R. G. S.), X. 50.

(*b*) In the sense of having a published record; being on record as having accomplished some particular feat. In fanciers' language a 'record homer' is a homing pigeon with an established record of having flown a certain distance within a specified time.—**Geological record**, the accessible solid part of the globe; the crust within reach of man; the whole series of rock formations which contain the data upon which geologic history is based. *Geikie*, Textbook of Geol., p. 3.—**Master record**, a principal or controlling record; an original or standard record to which all others must conform, or from which others are made, as in supplying 'records' for the graphophone, or for mechanical piano-players.

Should a sufficient demand arise, however, permanent *master records* could be provided.
Science, June 24, 1904, p. 961.

To make of record, to put on record; make a matter of record. *Smithsonian Rep.*, 1890, p. xv.

recordative (rẹ-kôr'dạ-tiv), *a.* [L. **recordativus*. See *recordation*.] Serving to record or keep in remembrance; commemorative.

recordatory (rẹ-kôr'dạ-tō-ri), *a.* [*record* + *-atory*.] Pertaining to the keeping of records.

How can we explain the use of this imperfect and difficult *recordatory* system?
Amer. Anthropologist, Oct.–Dec., 1900, p. 727.

record-breaker (rek'ọrd-brā"kėr), *n.* One who or that which breaks the record in any sense of that phrase. [Colloq.]

record-breaking (rek'ọrd-brā"king), *a.* Breaking the record; surpassing any recorded performance or production of its kind. [Colloq.]

Additional furnaces are getting ready to blow in, and there is a prospect of a *record-breaking* production [of Bessemer steel] in April and May.
N. Y. Com. Advertiser, April 11, 1901.

recorder, *n.*—**Atmospheric recorder**, an apparatus for recording atmospheric changes.—**Autograph recorder.** See ★*autograph*.—**Hensen recorder**, in *physiol.*, a recording device consisting of a diaphragm of gold-beaters' skin of conical shape, with a stylus which acts over a fulcrum and writes on a thinly smoked plate of glass. *Harvard Psychol. Stud.*, I. 434.

recording-drum (rẹ-kôr'ding-drum), *n.* In any electrical or mechanical recording-machine, such as a recording thermometer, wind- or steam-pressure gage, the moving drum which supports the ribbon or blank paper on which the stylus marks the variations of temperature, pressure, or other phenomena to be recorded.

recover², *v. t.* 11. In *manuf.*, to save; keep what had formerly been thrown away: as, to *recover* the by-products in a gas-plant.—**Recovered rubber, soda.** See ★*rubber*, ★*soda*.

recovery, *n.*—**Spheroidal recovery**, in *geol.*, the tendency of the earth to revert to a spheroidal shape after deformation, which is believed by some to develop periodically.

Geological history affords evidence of the alternation of periods of tetrahedral collapse and *spheroidal recovery*.
Geog. Jour. (R. G. S.), XIII. 249.

recpt. An abbreviation of *receipt*.

recrescence (rẹ-kres'ẹns), *n.* [*re-* + *crescence*.] Regrowth; specifically, the regeneration or replacement of lost parts by an organism.

Recrescence is, in fact, nothing but the effect of the same causes which condition growth in definite directions. *Eimer*, Organic Evol., p. 389.

recrudescence, *n.* 5. Figuratively, a return; a re-appearance: as "The *Recrudescence* of Imray," the original title of a story by Rudyard Kipling in "Mine Own People."

recrystallization (rẹ-kris"tạ-li-zā'shọn), *n.* Repeated crystallization of the same substance. This process, with separation at each repetition of the mother-liquor and re-solution of the crystals, is frequently resorted to by chemists as a valuable means of purifying the substance. *Van Hise*, U. S. Geol. Surv., Monographs, XLVII. 202.

recrystallize (rẹ-kris'tạ-līz), *v. t.*; pret. and pp. *recrystallized*, ppr. *recrystallizing*. [*re-* + *crystallize*.] To subject (a substance) to repeated crystallization. *Buck*, Med. Handbook, III. 844.

rect. An abbreviation (*c*) of *receipt*.

Rectal glands (*b*), **reflex, valves.** See ★*gland*, etc.

rectangle, *n.* 4†. A right-angled triangle.

rectangular, *a.* 2. Shaped like a rectangle; that is, having four sides and four right angles.—**Rectangular axes**, coördinate axes at right angles.—**Rectangular cone.** Same as *right cone*. See *cone*, 1 (*a*).—**Rectangular cylinder**, a cylinder whose elements are perpendicular to its bases.

rectangulate (rek-tang'gụ-lāt), *a.* [NL. *rectangulus*, rectangled, + *-ate*¹.] Rectangular.

rectangulate (rek-tang'gụ-lāt), *v. i.*; pret. and pp. *rectangulated*, ppr. *rectangulating*. To diverge in a rectangular net.

rectangulometer (rek-tang-gụ-lom'e-tėr), *n.* [NL. *rectangulus*, rectangle, + Gr. *μέτρον*, measure.] A cuboid for testing the inclination of planes; also, a turner's trial-bar.

recte e retro (rek'tē ē rē'trō). [L.] 'Right backward': in *music*, marking passages to be repeated backward. See *retrograde imitation*.

rectification, *n.* (*b*) In its specific use in relation to the increase of strength of alcoholic liquors by distillation, *rectification* signifies repeated fractional evaporation of the mixed liquid, *dephlegmation* repeated fractional condensation of the mixed vapor. Both words are simultaneously applied in the improved forms of still. (*d*) In *astrol.*, the ascertainment of the true time of birth by comparison of the directions deduced from the estimated time with the dates of events in the native's life.—**Mechanical rectification**, the operation of obtaining the length of a curve by the use of any mechanical contrivance.

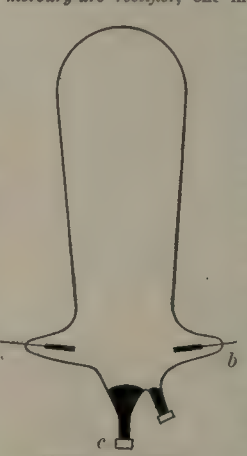
rectificative (rek'ti-fi-kā-tiv), *a.* Rectifying; serving to straighten out.

rectificator (rek"ti-fi-kā'tọr), *n.* [NL. *rectificator*, < ML. *rectificare*, rectify.] The part or parts of a modern still for alcoholic liquors in which rectification takes place. See ★*rectification* (*b*).

rectificatory† (rek'ti-fi-kạ-tọ-ri), *n.*; pl. *rectificatories* (-riz). [NL. **rectificatorium*, < ML. *rectificare*, rectify.] A mathematical instrument employed in the making of dials.

Rectified vitriol. See ★*vitriol*.

rectifier, *n.* (*e*) In *elect.*, an apparatus for changing an alternating electric current into a direct current directly, that is, without intermediary transformation of energy. The most common forms of rectifier are: (1) The *mechanical rectifier*, which consists of a synchronous motor (that is, a motor which keeps step with the alternations of the alternating current) driving a rectifying commutator which reverses the direction of successive impulses of current so as to send them in the same direction into the direct-current circuit. The main objection to this form is the destructive sparking of the commutator-brushes when rectifying large amounts of power. (2) The *electrolytic rectifier* which is based on the property of aluminium, in some salt or acid solutions, of passing current only when negative: a property due, probably, to the formation of a non-conducting film of oxid or basic salt on the aluminium by the oxygen produced on the aluminium when it is the positive terminal. Such a rectifier usually consists of an aluminium and a carbon or metal plate in a solution of some suitable salt. A combination of this sort passes only one half-wave of alternating current, from the carbon to the aluminium, but partly suppresses the reverse half-wave; and by using two such rectifiers, one half-wave of current is passed over the one, the other over the other rectifier, and then recombined and sent into the direct-current circuit. The disadvantage of the electrolytic rectifier is its low efficiency. (3) *Arc-rectifiers*, which are based on the property of arcs to be conducting in one direction, but not in the opposite. In the *mercury-arc rectifier*, one mercury and two graphite terminals are inclosed in the same glass tube, the two graphite terminals being connected to the terminal of the alternating-current supply, while the direct-current circuit connects between the mercury terminal of the rectifier and a neutral or midway point of the alternating-current circuit, derived from a three-wire transformer or compensator, or by reactances. One impulse of the alternating current then passes from one graphite electrode, the other from the other graphite electrode; but both issue, in the same direction, from the mercury electrode into the direct-current circuit. The mercury-arc rectifier has a very high efficiency, but is so far limited in the amount of current which it can rectify. It is used for charging storage batteries and for arc-lighting.—**Mercury-vapor rectifier**, a device for converting an alternating into a direct current which depends for its action upon the fact that a mercury arc is a good conductor in one direction and almost a non-conductor in the other. See *mercury-arc rectifier*, under ★*rectifier* (*e*).



Mercury-arc Rectifier.

a and *b*, terminals of a vacuum-tube connected to an alternating-current circuit; current will flow freely from *a* to *c* or from *b* to *c*, but not in the reverse direction; the current in an outside circuit attached to *c* will therefore always have the same direction.

rectify, *v. t.* 6. In *elect.*, to change (an alternating electric current) into a direct current by redirecting the successively opposite impulses of the alternating current so as to flow in the same direction. See ★*rectifier* (*e*). *Elect. World and Engin.*, Jan. 23, 1904, p. 181.—**Rectifying transformer.** See ★*transformer*.

rectigraph (rek'ti-gråf), *n.* [L. *rectus*, right, + Gr. *γράφειν*, write.] A device, such as the symmetrical doublet of lenses of a terrestrial eyepiece, introduced into the optical system of a telescope to give an erect instead of an inverted image. *M. W. Travers*, Exper. Study of Gases, p. 57.

Rectilinear vibration. See ★*vibration*.

rectophobia (rek-tọ-fō'bi-ạ), *n.* [NL., < NL. *rectum*, rectum, + Gr. *-φοβια*, < *φοβεῖν*, fear.] Causeless fear experienced occasionally by the subjects of disease of the rectum.

rector, *n.*—**Lord Rector**, the honorary title of the chief of a Scottish university, usually a prominent man, elected by the students of the university: as, the *Lord Rector* of St. Andrews.

rectorite (rek'tọr-īt), *n.* [Named after E. W. *Rector* of Hot Springs, Arkansas.] A hydrous aluminium silicate related to kaolinite, occurring in soft, flexible folia resembling mountain-leather: found in Garland county, Arkansas.

rectotome (rek'tọ̄-tōm), *n.* [NL. *rectum*, rectum, + Gr. *-τομος*, ‹ *ταμεῖν*, cut.] A cutting instrument employed in rectotomy.

recua (rā'köä), *n.* [Sp. *recua*, a train of pack-animals.] A mule-train or pack-train: generally used in Spanish America, also, for any loaded train or drove of animals. It was used by the early Spanish chroniclers, to designate the trains of indigenous dogs used by the prairie Indians of North America.

recuperative, *a.* **2.** In gas-burners, regenerative; having more than the common lighting power; having a heated air-supply.

recurrent, *a.* **5.** In *paleon.*, reappearing without essential change in organic composition: used of faunas which reappear after their first disappearance from a given geological section, or of a species which thus returns after departure. The conception of recurrent faunas implies the fact of migration and temporary absence from a given geographical province with subsequent return thereto.—**Recurrent series.** See *series.*

II. *n.* **2†.** A recurrent verse.

recurrer (rẹ̄-kėr'ėr), *n.* That which recurs; specifically, a recurring decimal. [Rare.]

Recurring curve, a curve which returns upon itself.

recurvirostrine (rẹ̄-kėr-vi-ros'trin), *a.* [*Recurvirostrinæ.*] Of or belonging to the *Recurvirostrinæ;* having the bill turned or bent upward; recurvirostral.

recuse (rē-kūz'), *n.* [*recuse, v.*] In *numis.*, a coin which, owing to the shifting of the die or dies, has been struck twice and thus bears a double impression.

recuver, *v.* and *n.* An amended spelling of *recover.*

red[1]. **I.** *a.*—**Red Book.** (*c*) A book of Welsh medieval tales, more fully known as "The Red Book of Hergest" (which see, in the Century Cyclopedia of Names). (*d*) A semi-official publication issued quarterly in China, and there called the "Complete Book of the Girdle-wearers,' containing lists of all the officials and gentry of the country, together with details of place of birth, etc.—**Red clay, disease.** See ★*clay*, etc.—**Red light district,** a portion of a city (especially of New York) in which low resorts, particularly houses of ill-fame, indicate their character to the public by a red light (or a light shining through a red pane of glass) over the door. [U. S.]

> Inspector . . . was placed in charge of the First Inspection District, which embraces the "*Red Light*" district east of the Bowery. *N. Y. Tribune*, May 5, 1901.

Red scale. See ★*scale*1.—**Red tongue fever.** Same as *typhoid fever.*

II. *n.* **7.** In *archery:* (*a*) The second and next to the innermost circle of the target, which is colored red. (*b*) An arrow which hits this circle; a hit in the red. Such a hit counts 7 by the present method of scoring. In old archery the innermost circle was sometimes colored red.—**Acid red.** See ★*acid-red.*—**Acridine red,** a basic dyestuff, prepared by the oxidation of pyronin, belonging to the xanthene group of coloring-matters. It is of no value for wool-dyeing, but dyes silk and tannin-mordanted cotton a rose-red.—**Alizarin red.** (*b*) The bright red produced by combining alizarin with an aluminium mordant: same as *Turkey red* and *madder-red.* See *alizarin.*—**Alizarin red S.** Same as *alizarin* ★*carmine.*—**Alkali fast red,** an acid dyestuff which dyes wool a bluish red. It is fast to alkalis.—**Alkali red,** a direct cotton color of the diazo type, related to benzidine.—**Alpha-naphthylamine red,** an ingrain color of the insoluble azo type. It is a dark-bluish red or claret color, and is largely used in the printing and dyeing of cotton goods. The cloth is first prepared with sodium β-naphtholate, and is then passed through or printed with a cold diazotized α-naphthylamine solution. Also known as *carminaph garnet, scarlet 2R,* and *naphthylamine Bordeaux.*—**Anisol red.** Same as *anisidine* ★*scarlet.*—**Anthracene red,** a mordant acid color, of the diazo-salicylic-acid type, which gives a comparatively fast red when combined with a chromium mordant. It is used in dyeing wool.—**Anthraquinone red,** a name by which alizarin red is sometimes designated.—**Apollo red,** an acid dyestuff of the monoazo type made by combining diazo-paranitraniline with α-naphthylamine-disulphonic acid. Also known as *archil substitute* and *naphthion red.*—**Atlas red,** a direct cotton color of the monoazo type prepared by combining diazotized primulin with meta-toluylene diamine. It dyes unmordanted cotton a terra-cotta red in an alkaline bath. The same red may be produced on the fiber as an ingrain color by first dyeing with primulin, diazotizing, and developing with meta-phenylene-diamine.—**Azo-benzene red.** Same as ★*ponceau 3RB.* See ★*ponceau B.*—**Azophor red,** a diazoparanitraniline chlorid sold in the form of a brownish-yellow powder. Its alkaline solution in water readily unites with β-naphthol to form paranitraniline red.—**Benzidine red,** a direct cotton coal-tar color similar to benzopurpurin. [Obsolete.]—**Brilliant red.** Same as *fast red.*—**Carmine red,** a dark-purplish amorphous substance, $C_{11}H_{12}O_7$, obtained when a solution of carminic acid is boiled with a dilute mineral acid. It forms color-lakes with different metals.—**Cerasin red.** Same as ★*Sudan III.*—**Cinchona red.** (*a*) A reddish-brown powder, $C_{28}H_{22}O_{14}$, obtained by the hydrolysis of quinotannic acid. It is a dibasic acid. Perhaps identical with the phlobaphene from the bark of the pine. (*b*) A chocolate-colored compound, $C_{12}H_{14}O_7$, found in cinchona-bark, and also formed when an ammoniacal solution of quinotannic acid stands exposed to the air.—**Clayton cloth red,** an acid coal-tar color of the monoazo type. It dyes wool and silk red in an acid bath.—**Cloth red B, 3B, 3G, O,** and **R,** names applied to a number of mordant-acid coal-tar colors of the diazo type derived from amido-azo-toluene. In an acid bath they dye wool various hues of red, which are rendered faster when after-chromed. They are also dyed upon chromium-mordanted wool.—**Cloth red G.** (*a*) Same as *cloth* ★*red B, 3B,* etc. (*b*) Same as ★*azococcine,* 1.—**Cochineal red A,** an acid coal-tar color of the monoazo type derived from naphthionic acid. In an acid bath it dyes wool a red which resembles cochineal. Also called *brilliant scarlet, new coccine,* and *crocein scarlet 4BX.*—**Cocoa red.** See ★*cocoa-red.*—**Columbia red,** a direct cotton coal-tar color which dyes unmordanted cotton bright-bluish red in a salt bath. It is well suited for the dyeing of cotton-and-wool union material.—**Cresol red,** an acid coal-tar color of the monoazo type prepared by combining diazotized amidocresol with β-naphthol-disulphonic acid. It dyes wool red in an acid bath.—**Cumidine red.** Same as *cumidine* ★*ponceau.*—**Diamine fast red,** a direct cotton coal-tar color of the diazo type derived from benzidine. It dyes unmordanted cotton red in an alkaline bath. An after-treatment with chromium fluoride renders the color faster. It dyes wool directly, and if after-treated with potassium bichromate or chromium fluoride the color becomes extremely fast to light.—**Diamine red B, 3B,** and **NO,** direct cotton coal-tar colors of the diazo type related to benzidine or toluidine. They dye unmordanted cotton red in an acid salt bath.—**Dianol red,** a direct cotton coal-tar color of the diazo type derived from dichlorbenzidine. It dyes unmordanted cotton red in a salt bath.—**Direct red,** a direct cotton coal-tar color of the diazo type derived from diamido-phenyl-tolyl. It dyes unmordanted cotton red in a salt bath.—**Eclipse red.** Same as *benzo* ★*purpurin 4B.*—**Emin red,** an acid coal-tar color of the monoazo type derived from thio-metaxylidine. It dyes wool crimson red in an acid bath, and is rendered faster when treated with chromium fluoride.—**Fast red.** (*b*) One of several acid dyestuffs produced by combining diazotized naphthionic acid with α- or β-naphthol. Also applied to two red acid dyestuffs produced by combining diazotized α-naphthylamine with β-naphthol-mono- or disulphonic acid. The fast reds all dye wool red from an acid bath.—**Fast red A, C, D, E,** and **EB,** acid coal-tar colors of the monoazo type produced by combining diazotized naphthionic acid with naphthol or one of its sulphonic acids. They all dye wool red from an acid bath.—**Fast red B** and **BT,** acid coal-tar colors of the monoazo type prepared by combining diazotized α-naphthylamine with one of the naphthol-sulphonic acids. Both dye wool from an acid bath.—**Fast red 7B,** an acid coal-tar color of the diazo type prepared by combining diazotized amidoazobenzene with α-naphthol-sulphonic acid. It dyes wool red from an acid bath.—**Filix red,** a brownish amorphous compound, $C_{26}H_{18}O_{12}$, which results from the breaking up of filitannic acid by means of dilute acids.—**Glycin red,** a direct cotton coal-tar color of the diazo type derived from benzidine. It dyes unmordanted cotton red in a soap bath.—**Guinea-red,** an acid coal-tar color. It dyes wool and silk bright red in an acid bath.—**Imperial red.** Same as *benzo* ★*purpurin 4B.*—**Janus red,** a Janus coal-tar color. It dyes tannin-mordanted cotton in a neutral bath and unmordanted cotton in an acid bath.—**Kresol red.** Same as *cresol* ★*red.*—**Mars red.** (*b*) An acid coal-tar color. It dyes wool red in an acid bath.—**Milling red,** a mordant-acid coal-tar color. It may be dyed upon unmordanted wool in an acid bath and then after-chromed, or it may be dyed upon chromium-mordanted wool.—**Naphthion red.** See *Apollo* ★*red.*—**Naphthol red.** Same as ★*amaranth,* 5.—**Naphthylamine red.** Same as *magdala red.*—**Naphthylene red,** a direct cotton coal-tar color of the diazo type, prepared by combining diazotized diamino naphthalene with two molecules of naphthionic acid.—**Neutral red,** a basic coal-tar color of the azin type, prepared by the action of nitroso-dimethyl aniline upon meta-tolylene-diamine. It dyes tannin-mordanted cotton a bluish red.—**New red.** (*b*) A direct cotton coal-tar color of the diazo type derived from benzidine. It dyes unmordanted cotton and chromium-mordanted wool. (*c*) Same as ★*ponceau 3RB.*—**Nitrosamine red,** a yellowish paste which gives diazotized paranitraniline when treated with hydrochloric acid. It is used in the production of para reds.—**Oak-bark red** (Oser's), the third anhydrid of quercitannic acid, with the formula $C_{34}H_{26}O_{15}$. Löwe's oak-bark red is the fourth anhydrid of the same acid, with the formula $C_{34}H_{24}O_{14}$. Both are constituents of oak-bark as used in tanning.—**Orchil red,** an acid dyestuff of the diazo-sulphonic-acid type.—**Oxamine red,** a direct cotton coal-tar color. It dyes unmordanted cotton red in a salt bath.—**Palatine red.** Same as ★*naphthorubin.*—**Para red,** a shortened name for *paranitraniline* ★*red.*—**Paranitraniline red,** an ingrain color of the insoluble azo type. It is of a bright red color, possesses excellent fastness, and resembles Turkey red, which it has largely replaced. It is formed when cotton material, prepared with sodium β-naphtholate, is passed through a cold solution of diazotized paranitraniline.—**Red technique,** in Greek vases, the painting of red figures on a black ground. See *red-figured.*—**St. Denis red.** Same as ★*dianthine.*—**Sudan red.** Same as *naphthalene red.*—**Sultan red 4B.** Same as *benzo* ★*purpurin 4B.*—**Toluylene red.** Same as *neutral* ★*red.*—**Trona red.** Same as ★*dianthine.*—**Turkey-red process.** See ★*process.*

redactional (rẹ̄-dak'shọn-ạl), *a.* [*redaction* + *-al*1.] Relating to or of the nature of a redaction.

redan, *n.*—**Double redan,** a redan having a reëntrant angle at its point.

red-and-black (red"ạnd-blak'), *n.* A banking game in which the cards are placed in a faro-box, face down, and the players bet on each card as drawn being red or black.

red-bass, *n.* **2.** A fish of Moreton Bay, *Lutianus superbus*, of the family *Lutianidæ. E. E. Morris*, Austral English.

red-betty (red'bet"i), *n.* The cardinal-flower, *Rapuntium cardinale.*

red-blind (red'blīnd), *a.* Unable to distinguish the color red. See ★*color-blindness. Stud. Yale Psychol. Lab.*, VIII. 1.

red-blindness (red'blīnd-nes), *n.* The state of being red-blind; a form of color-blindness in which there is inability to distinguish the color red. See ★*color-blindness.*

red-bream (red'brēm), *n.* A name given to the schnapper when one year old. See ★*schnapper. E. E. Morris*, Austral English.

red-brush (red'brush), *n.* Either the silky cornel, *Cornus Amomum*, or the red-osier dogwood, *C. stolonifera.*

red-bug, *n.* **2.** A larval mite of the spurious genus *Leptus*, *L. irritans*, found commonly in the southern United States: same as *jigger*2, 2.

Red-cap (red'kap), *n.* See the extract.

> Mr. Candler descants upon the splendid physique and martial qualities of the Bhutanese, but we do not find any mention of the fact that the ruling and military classes in this mountain territory are the descendants of the *Red Caps*, or old military caste of Lhasa, who were expelled from Tibet in the earlier part of the seventeenth century by the lamas. *Athenæum*, Feb. 4, 1905, p. 147.

red-cat (red'kat), *n.* A local English name for *Nereis cultrifera.*

redcoat, *n.* **2.** The bedbug. [Local, U. S.]

> Cimex lectularius, bedbug, known in different localities as chinches, chintzes, *redcoats*, mahogany flats, etc.
> *Buck*, Med. Handbook, V. 156.

reddle, *n.* **2.** A name applied by workmen to red-lead with oil when used to smear a surface which is being scraped to a fit. [Colloq.]

red-dog, *n.* **2.** A colloquial term for private bank-note currency in the United States about 1837. The name is said to be due to the bills with red edges put out by Jacob Barker in New York.

redemption, *n.* (*d*) See the extract.

> The only source of revenue left to the Cutlers themselves appears to have been derived from "*redemptions*," i.e., money paid for the right of entering the trade, or, again, money paid for some special privilege.
> *Athenæum*, Dec. 30, 1905, p. 888.

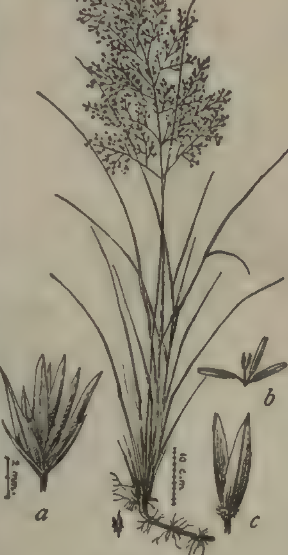
Order of African Redemption. See ★*order.*

redemptional (rẹ̄-demp'shọn-ạl), *a.* [*redemption* + *-al*1.] Pertaining to or of the nature of redemption.

Redesdale limestone. See ★*limestone.*

redeye, *n.* **6.** The blue-green sunfish, *Apomotio cyanellus.*—**7.** A species of European chubb, *Scardinius erythrophthalmus.*—**Little redeye.** Same as *redeye*, 2.

Redfieldia (red-fēl'di-ä), *n.* [NL. (Vasey, 1887), named in honor of John H. *Redfield* (1815–95), a botanist of Philadelphia.] A genus of grasses somewhat related to *Festuca*. It contains the single species *Redfieldia flexuosa*, one of the 'blow-out' grasses, found on sandy lands, chiefly sand-hills, in Nebraska, Kansas, and Colorado. It is a tall and striking grass with a diffusely spreading panicle and widely extended rootstocks which bind loose sands where sometimes it is almost the only grass. Often called *Redfield's grass.*



Redfieldia flexuosa.
a, spikelet; *b*, flower; *c*, glumes.

redfin, *n.* **5.** A cyprinoid fish, *Notropis umbratilis*, found in fresh waters of the eastern United States.—**6.** Same as ★*redfish*, 6.

redfish, *n.* **6.** An Australian holothurian, *Actinopyga obesa.*

—**Bull-redfish.** Same as *red-drum.*—**California redfish,** a name applied to *Pimelometopon pulcher*, a labroid found on the coast of southern California.—**Little redfish.** Same as *blue-back salmon.* See *salmon*, 2 (*e*).

red-hearted (red'här"ted), *a.* Having the heart-wood of a dark reddish-brown color, as in timber of conifers which is attacked by the fungus *Trametes Pini.*

The wood at first turns dark red-brown, and trees in this stage are known to the lumberman as "*red-hearted*" timber. *Yearbook U. S. Dept. Agr.*, 1900, p. 206.

red-horse, *n.*—**Short-headed red-horse,** a sucker, *Moxostoma breviceps*, abundant in the Great Lakes and the Ohio valley.—**Texas red-horse,** a sucker, *Moxostoma congestum*, which inhabits the streams of Texas.

redif (re-dẹ̄f'), *n.* [Turk.] In the Turkish army, the second line, corresponding to the German Landwehr. The soldier remains in it for nine years. It follows the first line, or active army (the *nizam*), service in which is for nine years, and is followed by the *mustafiz*, service in which is for two years.

red-Indians (red'in"di-ạnz), *n.* The scarlet painted-cup, *Castilleja coccinea.*

redintegrative (re-din'tẹ-grā-tiv), *a.* Pertaining to, or of the nature of, redintegration.

redintegrator (re-din'tẹ-grā-tọr), *n.* One who, or that which, redintegrates.

redislocation (rẹ̄-dis-lọ̄-kā'shọn), *n.* [*re-* + *dislocation.*] Repeated dislocation; in *surg.*, dislocation recurring after reduction. *Buck*, Med. Handbook, I. 63.

redistillate (rē-dis-til'āt), *n.* The condensed product of a second or repeated distillation.

redistillation (rē-dis-ti-lā'shọn), *n.* The process of distillation repeated with the previously condensed product. *Buck*, Med. Handbook, II. 656.

redistributive (rē-dis-trib'ụ̄-tiv), *a.* Distributing again; characterized by or of the nature of redistribution.

redistributory (rē-dis-trib'ụ̄-tō-ri), *a.* Same as ⋆*redistributive.*

red-leg (rẹd'leg), *n.* An infectious disease of frogs, usually prevalent in the fall, characterized by hemorrhagic congestion of the legs and abdomen: caused by the bacillus *Hydrophilus fuscus. Jour. Exper. Med.*, Feb. 25, 1905, p. 32.

redneck (red'nek), *n.* An uncouth countryman: as, the hill-billies come from the hills, and the *rednecks* from the swamps. The expression *rednecked hill-billy* also occurs. *Dialect Notes*, II. vi. [Local, U. S.]

redo^{2} (rē'dō), *n.* A trade-name for crystalline calcium hyposulphite (formerly called hydrosulphite), CaS_2O_4, used, along with calcium hydroxid, in sugar-refining.

Redonda phosphate. See ⋆*phosphate.*

redouble, *v. t.* 4. In *bridge*, to double again. After the dealer's side has declared, if either adversary doubles, the maker of the trump or his partner can redouble. See ⋆*bridge*^{2}.

redoublement (rē-dub'l-mẹnt), *n.* A redoubling: as, "a *redoublement* of agitation." *Auger.*

redout, *n.* A simplified and former spelling of *redoubt.*

redoutable, *a.* A simplified and former spelling of *redoubtable.*

redoute (rẹ-döt'), *n.* [F.: see *redoubt, ridotto.*] Same as *ridotto.*

redouted, *a.* A simplified spelling of *redoubted.*

redpoll, *n.* 3. *pl.* A modern breed of hornless cattle, originating in Norfolk and Suffolk, of good size, round, smooth, and small-boned. They are more highly prized as beef cattle than for dairy purposes. As indicated by the name the general color is red, but the bushy part of the tail and parts of the udder may be white. See *red-polled* ⋆*cattle.*

Red-polled cattle. See ⋆*cattle.*

redroot, *n.* 5. The bloodroot, *Sanguinaria Canadensis.*—6. The field-gromwell, *Lithospermum arvense.*—**Indian redroot.** Same as *redroot*, 2.

redshire, *v. i.* Same as *red-sear.* See also *red-short.*

red-spider, *n.* 2. Any one of several species of tetranychid mites common in greenhouses.—**Two-spotted red-spider,** *Tetranychus bimaculatus*, a mite closely allied to the common so-called 'red-spider' of greenhouses and having similar habits.

red-string (red'string), *n.* See the extract.

Instances of the vascular strings of the sugar-cane being coloured a deep red from the presence of a red gum in the large vessels have been recorded in connection with certain diseases, such as sereh, the sugar-cane disease of Massee, the pine-apple disease of the cane, and red smut (red rot), in all of which it has been denied that bacteria produce the gum. The cases of *red string* investigated by the author occurred in apparently healthy plants, and also in canes affected with gummosis. The gum was produced by Bacillus pseudarabinus, n. sp., and the crimson colour was imparted to it by a mould. The co-existence of the two is essential for the production of the colour in the vessels of the sugar-cane. *Nature*, Aug. 18, 1904, p. 392.

red-stripe (red'strīp), *n.* A diseased condition of timber due to an early stage in the development of the dry-rot fungus *Merulius lacrymans.*

redtop, *n.*—**Wild redtop.** Same as *switch-grass.*

reduce, *v. t.* 16. Same as ⋆*puer*^{2}.—**Reduced black.** See ⋆*black.*—**Reduced indigo.** Same as *indigo white* (which see, under *indigo*).—**Reducing agent,** a substance which takes away oxygen or other electronegative element or radical, or adds hydrogen or other electropositive radical. See ⋆*agent.* According to the electrolytic dissociation theory, such a body, when in solution, tends to take on new positive ionic charges. When silver bromide in a photographic plate is developed with ferrous oxalate, the developer contains (disregarding potassium oxalate) ions from the oxalic acid, each having two negative charges, and iron ions, each having two positive charges. The latter ions have a strong tendency each to assume one more positive ionic charge; but this can be done only with the concurrent formation of as many new negative ionic charges, for the sum of the positive ionic charges in a given volume must be numerically equal to the sum of the negative ionic charges. The bromine atoms of the exposed silver bromide are therefore solicited to assume the ionic condition. If a thousand ions of iron each take a third positive charge, a thousand ions of bromine must be formed, and they will leave a thousand atoms of silver in the metallic condition.—**To reduce an equation,** to make one or more of the coefficients in its general form zero.

reducend (rẹ̄-dū'send), *n.* [L. *reducendus*, gerundive of *reducere*, reduce.] In *arith.*, a number that is to be reduced.

reducer, *n.* 3. In *arith.*, a multiplier used to reduce to another denomination.—4. A device used in electric power-stations for lowering the voltage. It usually consists in alternating-current circuits of a step-down transformer and in direct-current circuits of a motor-generator.

reducing-furnace (rẹ̄-dū'sing-fėr"nās), *n.* A furnace in which ores are reduced from oxids or the metal is separated from other substances by a non-oxidizing heat or flame: usually a shaft-furnace.

reductase (rẹ̄-duk'tās), *n.* [*reduct*(*ion*) + *-ase.*] A reducing ferment.

reducteur (rā-duk-tėr'), *n.* [F.] In *elect.*, a coil placed in series with a galvanometer or voltmeter and serving to reduce its sensitiveness, and thus the value of its scale reading, by a predetermined amount depending on the ratio of the resistance of the coil to that of the instrument; a reducing-coil. [Rare.]

reduction, *n.* (*q*) In *linguistics*, the shortening of a word by apocope. (*r*) In *cytol.*, the halving of the number of somatic chromosomes during spermatogenesis and oögenesis.

While Mottier sees in the fusion of sexual nuclei the blending of two lines of descent, Miss Ferguson's researches lead her to believe that no fusion-nucleus, combining the paternal and maternal hereditary substances, is formed. Rather the processes of mitosis allow these to be kept apart during the life of the offspring, and the "*reduction*" or qualitative division occurring some time during the life-cycle secures that the gametes shall be "pure." *Nature*, Jan. 5, 1905, p. 218.

Cupric reduction. See ⋆*cupric.*—**Double reduction,** a term applied to the driving-gear of street-car wheels or wheels of motor-vehicles when an intermediate shaft with two gears is introduced whereby a greater reduction of speed is made by the use of the two steps between the motor and the driven axle.—**Reduction crucible.** See ⋆*crucible.*—**Reduction division,** in *cytol.*, the karyokinetic division by means of which the number of chromosomes in the primitive sex-cells (oögonia or spermatogonia) is reduced by one half.—**Reduction factor,** a numerical constant by which the results of physical measurements, or similar values, are multiplied to reduce them to some desired scale or to express them in terms of some unit or system. *Encyc. Brit.*, XXVI. 501.—**Single reduction,** a term applied to the driving-gear of street-car wheels or wheels of motor-vehicles, where the small pinion on the revolving armature shaft at high speed drives a large pinion directly on the driven axle, or without additional wheels in the train.

reductional (rẹ̄-duk'shọn-ạl), *a.* [*reduction* + *-al*^{1}.] Pertaining to or of the nature of reduction, in any sense.

There were two longitudinal splits of the chromosomes and hence two equational divisions, or a longitudinal split and a transverse split, hence an equational and a *reductional* division. *Biol. Bulletin*, Dec., 1904, p. 14.

reductionist (rẹ̄-duk'shọn-ist), *n.* [*reduction* + *-ist.*] One who advocates reduction; specifically, in England, one who advocates a reduction of the number of licenses of public-houses. *N. E. D.*

reduction-machine (rẹ̄-duk'shọn-mạ-shēn"), *n.* A machine for cutting a die or figure from a larger die or model; a pantograph-machine.

reduction-tube (rẹ̄-duk'shọn-tūb), *n.* A small tube of difficultly fusible glass, closed and expanded to a bulb at one end, in which, by heating with suitable reagents, such substances as mercury and arsenic may be reduced to the metallic state, volatilized, and condensed upon the surface of the colder part of the tube. The name is also applied to a hard glass tube open at both ends and having one or more bulbs blown in the middle of the length, in which oxid of copper, of iron, or other metal may be reduced to the metallic state by heating in a current of hydrogen carried through the tube.

reduction-valve (rẹ̄-duk'shọn-valv), *n.* A valve for diminishing the pressure of a liquid or gas so that without preventing circulation the pressure in the pipe in which the valve is placed is greater on the side from which the flow comes; a reducing-valve.

In the operation of the car, the air leaving the storage tank on the car passes through a *reduction valve*, where the pressure is reduced from 2,000 pounds to a working pressure of 150 pounds. *Sci. Amer.*, Dec. 13, 1902, p. 408.

reduction-works, *n. sing.* and *pl.* 2. A crematory for the disposal of the garbage and refuse of a city.

reductor (rẹ̄-duk'tọr), *n.* [L. *reductor*, one who brings back, < *reducere*, bring back.] An apparatus for the reduction of ferric to ferrous sulphate by means of zinc: used in the analysis of iron and steel.

redundant, *a.* 4. Noting a condition of the wing membrane in bats when it extends well down on the leg, and on the arm embraces the thumb beyond the first phalanx. *Harrison Allen*, Bats of North America, p. 5.

reduplication, *n.* 6. In *pathol.*, the repetition of the sequence of symptoms in a case of intermittent malarial fever of double type.—7. In *mech.*, the principle, in a cord-and-pulley, that the greater the number of turns of the rope in the pulleys, the greater the load that can be lifted by a given pull on the hauling-rope.

reduplicatory (rẹ̄-dū'pli-kạ̄-tō-ri), *a.* Reduplicating; reduplicative; effecting repetition.

Another instance of the *reduplicatory* emphasis in the Hebrew language. *M. Madan*, Thelyphthosa, II. 242. *N. E. D.*

reduvid (red'ụ̄-vid), *n.* and *a.* Same as ⋆*reduviid.*

reduviid (rẹ̄-dū'vi-id), *n.* and *a.* I. *n.* A member of the heteropterous family *Reduviidæ.*

II. *a.* Having the characters of or belonging to the family *Reduviidæ.*

redward (red'wärd), *adv.* [*red*^{1} + *-ward.*] In *spectroscopy*, toward the red end of the spectrum: said of a movement or displacement of spectral lines.

All showed a much smaller displacement *redward* than the dark lines. *A. M. Clerke*, Problems in Astrophysics, p. 234.

redwater, *n.*—**Rhodesian redwater, South African redwater.** Same as *African Coast* ⋆*fever.*

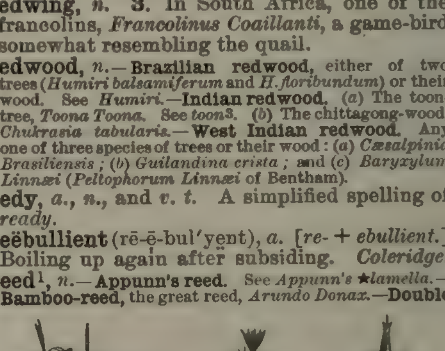
redwing, *n.* 3. In South Africa, one of the francolins, *Francolinus Coaillanti*, a game-bird somewhat resembling the quail.

redwood, *n.*—**Brazilian redwood,** either of two trees (*Humiri balsamiferum* and *H. floribundum*) or their wood. See *Humiri.*—**Indian redwood.** (*a*) The toon-tree, *Toona Toona.* See *toon*^{3}. (*b*) The chittagong-wood, *Chukrasia tabularis.*—**West Indian redwood.** Any one of three species of trees or their wood: (*a*) *Cæsalpinia Brasiliensis*; (*b*) *Guilandina crista*; and (*c*) *Baryxylum Linnæi* (*Peltophorum Linnæi* of Bentham).

redy, *a.*, *n.*, and *v. t.* A simplified spelling of *ready.*

reëbullient (rē-ẹ̄-bul'yẹnt), *a.* [*re-* + *ebullient.*] Boiling up again after subsiding. *Coleridge.*

reed^{1}, *n.*—**Appunn's reed.** See *Appunn's* ⋆*lamella.*—**Bamboo-reed,** the great reed, *Arundo Donax.*—**Double reed,** the mouthpiece of a musical instrument of the oboe class, consisting of two slips of cane in contact.



Bamboo-reed (*Arundo donax*).
a, panicle; *b*, flowering scale, clothed with silky hairs; *c*, spikelet.

reed^{1}, *v. t.* 3. To draw (warp-threads) through the reed of a loom. *T. W. Fox*, Mechanism of Weaving, p. 16.—4. To furnish with reeds, as an organ.—**Reeded top,** in *furniture*, a form of roll-top for a desk, made of narrow strips of different woods, as (alternately) satinwood and mahogany. *K. W. Clouston*, Chippendale Period in Eng. Furniture, p. 171.

reed-back (rēd'bak), *n.* The wooden rods of a loom reed.

reed-bent (rēd'bent), *n.* [Shortened from *reed bent-grass.*] 1. See *bent*^{2}.—2. Same as ★*reed-grass*, 4.—3. A stout perennial grass, *Arctagrostis arundinacea*, of northern North America and northeastern Asia.

reed-box (rēd'boks), *n.* In *exper. psychol.*, a wind-chest suitable for attachment to a bellows table, furnished with a set of metallic reeds for the demonstration of sensible discrimination, overtones, the musical intervals, etc. Appunn's tonometers are typical instruments of this sort. *Amer. Jour. Psychol.*, XI. 255.

reed-flute (rēd'flöt), *n.* In *organ-building*, a flute-stop having pipes closed with a stopper perforated by a hole. It is made in several pitches.

reed-grass, *n.* 3. See *Indian* ★*grass* (*a*).—4. Any grass of the genus *Calamagrostis*: often with a qualifier, as *Langsdorff's reed-grass.* See *bluejoint-*★*grass*, ★*sand-grass*, 4, and ★*yellow-top*, 2. Compare ★*reed-bent*, 2.—5. See ★*canary-grass.*

reed-hook (rēd'hůk), *n.* A small instrument for drawing warp-threads through the splits or dents of a reed.

reëdition (rē-ē-dish'on), *n.* [*re-* + *edition.*] A reëditing of a book; a second edition.

reed-marked (rēd'märkt), *a.* In *weaving*, noting warp-threads which run in pairs or are separated unequally. *T. W. Fox*, Mechanism of Weaving, p. 39.

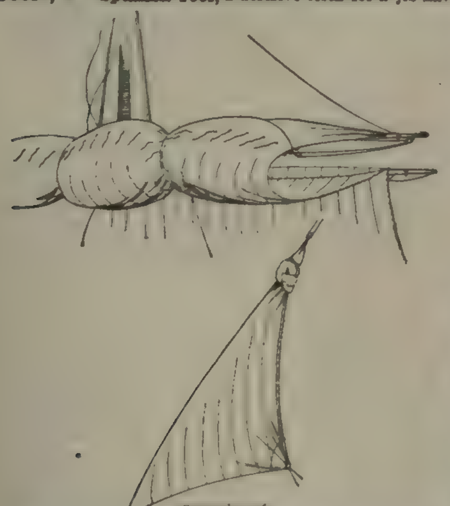
reed-wire (rēd'wīr), *n.* A flattened kind of wire used in musical instruments, as in the fastening of the mouthpieces of reeds.

Reedy nail. See ★*nail.*

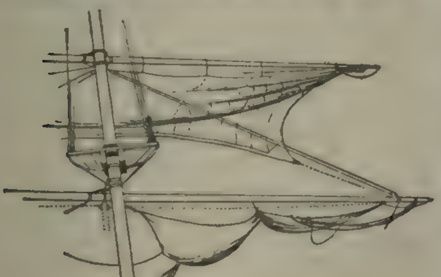
reef^1, *n.* 5. In the Tyrolese Alps, and especially in the region of the dolomites, "massive unstratified limestones and dolomites rising amid strikingly contrasted sediments." *Nature*, May 19, 1904, p. 50.—**Floating reef**, a name among the gold-miners of Victoria for displaced fragments of a reef found among the loose material of the surface. Compare the American term ★*float*, 16.—**Saddle reef**, a quartz-reef in which occur one or more humps; a reef in which the vein slopes downward both ways from a crest.

reef^1 (rēf), *v. i.* In *Australian mining*, to work at a reef. *E. E. Morris*, Austral English.

reef^2, *n.*—**Spanish reef**, a derisive term for a jib having a knot tied in its head, or for one of the square-sails whose yard has been lowered and left on the cap.



Spanish reef.



Monkey-reef.

reef^2, *v. t.*—**Monkey reefed**, said of a sail when the yard is on the cap and the reef-tackles are hauled out.

reef-eel (rēf'ēl), *n.* A murænoid eel, *Gymnothorax favagineus*, found in Australian waters.

reefer^1, *n.* 2. In *mining*, one who reefs; one who takes out ore-rock; a quartz-reefer.

reef-heron (rēf'her″on), *n.* One of the smaller herons of the genus *Demiegretta*, especially the Australian *D. jugularis.* These birds are among the herons having two distinct color phases when adult, being either white or gray.

reefing^1 (rē'fing), *n.* [Verbal n. of ★*reef*^{1}, *v.*] In *mining*, the process of taking out ore-rock.

reef-knoll (rēf'nōl), *n.* In *geol.*, a mound-like aggregation of limestone occurring intercalated in rock strata and known to be the result of organic growth on coral or coralline reefs. Such accumulations are found in many formations, in the Upper Silurian of Sweden (where they are known as Klinte), in rocks of the same age in New York, in the Carboniferous limestone of England, and in the Jurassic rocks of France and the Jura. *Rep. Brit. Ass'n Advancement of Sci.*, 1889, p. 600.

reef-knot (rēf'not), *v. t.* To tie in a reef-knot, as a line.

reefous (rē'fus), *a.* [*reef*^{1} + *-ous.*] Same as ★*reefy.* *N. E. D.*

reef-platform (rēf'plat″fôrm), *n.* That portion of the sea-bottom which extends outward from a coral reef. Near the reef it is covered by the coarse rubble of coral-rock broken off by the waves; farther out it has an even surface because the debris is finer. Everywhere it is covered by a growth of sedentary organisms. *Nature*, Feb. 18, 1904, p. 371.

reefy (rē'fi), *a.* Marked by reefs or rocks, as the entrance to a harbor; characterized by reefs, as a coast.

reek^1, *v.* I. *intrans.* 2. To emit an unpleasant or unhealthy smell; stink.

II. *trans.* 2. To cause to reek or smell offensively.

> The slaughter of lambs in offering *reeked* the forecourts of the Temple. *Lew Wallace*, Ben Hur, viii. 5.

reel^1, *n.*—**Automatic reel**, an angling reel having a coiled spring the expansion of which automatically reels in the line.—**Off the reel.** (*b*) As if reeled off; without any pause; spontaneously; unhesitatingly; without prompting. [Colloq.]

reel-brake (rēl'brāk), *n.* Same as *reel-check.*

reëlevate (rē-el'ẹ-vāt), *v. t.* [*re-* + *elevate.*] To elevate after a period of time on a lower level. *Worcester.*

reëlevation (rē-el-ẹ-vā'shọn), *n.* Elevation after a subsidence.

reel-foot (rēl'fůt), *n.* See ★*foot.*

reëmbody (rē-em-bod'i), *v. t.* and *i.*; pret. and pp. *reëmbodied*, ppr. *reëmbodying.* [*re-* + *embody.*] To embody again.

reëmbrace (rē-em-brās'), *v. t.* [*re-* + *embrace.*] To embrace again. *Florio.*

> Once again his love grown chill,
>   Mine may strive:
> Bitterly we *re-embrace*,
>   Single still.
>
> *Browning*, In a Year, st. 1.

reëmerge (rē-ẹ-mėrj'), *v. i.* [*re-* + *emerge.*] To emerge again.

reëmergence (rē-ẹ-mėr'jẹns), *n.* [*re-* + *emergence.*] The act or fact of emerging after being submerged or covered.

reëmergent (rē-ẹ-mėr'jẹnt), *a.* [*re-* + *emergent.*] Reëmerging.

reënaction (rē-e-nak'shọn), *n.* Same as *reënactment.*

reëncourage (rē-en-kur'ạj), *v. t.* [*re-* + *encourage.*] To encourage again.

reëncouragement (rē-en-kur'ạj-mẹnt), *n.* The act of reëncouraging.

reënergize (rē-en'ėr-jīz), *v. t.* [*re-* + *energize.*] To energize again; give new energy to.

rëengine (rē-en'jin), *v. t.* [*re-* + *engine.*] To provide with other engines.

reëngrave (rē-en-grāv'), *v. t.* [*re-* + *engrave.*] To engrave a second time.

reënjoy (rē-en-joi'), *v. t.* [*re-* + *enjoy.*] To enjoy a second time.

reënjoyment (rē-en-joi'mẹnt), *n.* The act of reënjoying.

reënkindle (rē-en-kin'dl), *n.* [*re-* + *enkindle.*] To enkindle again; rekindle.

reënlist (rē-en-list'), *v. t.* and *i.* [*re-* + *enlist.*] To enlist again or for an additional term.

reënlistment (rē-en-list'mẹnt), *n.* The act or fact of reënlisting.

reëntrancy (rē-en'tran-si), *n.* [*reëntran*(*t*) + *-cy.*] The property of returning upon itself, as in the case of the winding of a closed-coil armature.

> A few writers . . . take the *re-entrancy* as being the number of times we must go around the armature in tracing up the whole winding.
>
> *Robertson*, in Brit. Inst. of Elect. Engineers, 1901–02, [p. 933.

reëntrant, *a.* 2. In *elect.*, designating a form of armature-winding of dynamo-electric machines, consisting of two or more spirals arranged so that the end of the first spiral leads into the beginning of the second, etc., and the end of the last into the beginning of the first. *Jour. Brit. Inst. Elect. Engin.*, 1902–03, p. 450.

II. *n.* 1. A reëntering angle or part.—2. In *phys. geog.*, a concave or retreating surface or outline.

> The mountains and the plateau show two very different types of relief, the former being marked by knife-edged salients and angular *re-entrants.*
>
> *Geog. Jour.* (R. G. S.), XVI. 355.

reëntry, *n.*—**Card of reëntry.** See ★*card*^{1}.

ree-raw (rē-râ'), *a.* and *n.* [Appar. of imitative origin.] I. *a.* Noisy; turbulent; riotous. *N. E. D.*

II. *n.* A noisy time at romping or drinking. *N. E. D.*

reeve^3, *v. t.* 2. To run (a ship) through narrow channels in a shoal or through openings in an ice-pack, after the fashion of a rope through the hole in a block, etc.

reëxcitation (rē-ek-si-tā'shọn), *n.* [*re-* + *excitation.*] The act of reëxciting.

reëxcite (rē-ek-sīt'), *v. t.*; pret. and pp. *reëxcited*, ppr. *reëxciting.* [*re-* + *excite.*] To excite or rouse to action again.

reëxist (rē-eg-zist'), *v. i.* [*re-* + *exist.*] To exist again; revive; exist for the second time.

reëxistence (rē-eg-zis'tẹns), *n.* Second or restored existence.

reëxpand (rē-eks-pand'), *v. i.* and *t.* [*re-* + *expand.*] To expand again after contraction.

reëxpansion (rē-eks-pan'shọn), *n.* The act of reëxpanding.

ref. An abbreviation (*c*) of *referred*; (*d*) of *reflection* or *reflective*; (*e*) of *reflex*, *reflexive*, or *reflexively*; (*f*) [*cap.*] of *Reformation*; (*g*) of *reformer.*

reface (rē-fās'), *v. t.*; pret. and pp. *refaced*, ppr. *refacing.* [*re-* + *face.*] 1. To renew the face, façade, or front of, as of a building; resurface: as, to *reface* a cut stone.—2. To recolor (tea) for the market. See *facing*, 3.—3. In *dressmaking*, to put a new facing in (a garment).

Ref. Ch. An abbreviation of *Reformed Church.*

refdanskite (ref'dans-kīt), *n.* [*Refdansk* (see def.) + *-ite*^{2}.] A grayish-green earthy mineral from Refdansk in the Urals. It is an impure hydrous silicate of iron, nickel, and magnesium.

refectorial (rē-fek-tō'ri-al), *a.* [*refectory* + *-al*^{1}.] Pertaining to refection; used for refection.

refectorian (rē-fek-tō'ri-ạn), *n.* [*refectory* + *-an.*] Same as *refectioner.*

referee, *n.*—**Court of referees.** See ★*court.*—**Referee's hold.** See ★*hold*^{1}.

reference, *n.*—**Analytical reference.** See ★*analytical.*—**Planes of reference.** See ★*plane*^{1}.

reference (ref'ėr-ẹns), *v.*; pret. and pp. *referenced*, ppr. *referencing.* I. *trans.* 1†. To refer a thing to (something).—2. To assign proper references to, as to a phrase; look up and find by reference.—3. To schedule (property) to be taken for a proposed railway extension. *N. E. D.*

II. *intrans.* To make out a return of the number of people to be displaced by proposed railway extension. *N. E. D.*

referendary, *n.* II. *a.* Pertaining to or of the nature of a referendum.

> Direct Legislation consists of two things [the Referendum, and the Initiative]. . . . The Referendum alone is negative, preventative; the Initiative, with the *referendary* voting, is positive, constructive.
>
> *Outlook*, Feb. 16, 1895, p. 267.

referendaryship (ref-ẹ-ren'dạ-ri-ship), *n.* The office of referendary.

referent (ref'e-rent), *a.* and *n.* [L. *referens* (*-ent-*), ppr. of *referre*, refer: see *refer.*] I. *a.* Referring; containing a reference; noting one of two terms which have a certain relation to each other. The referent is the term from which the relation proceeds.

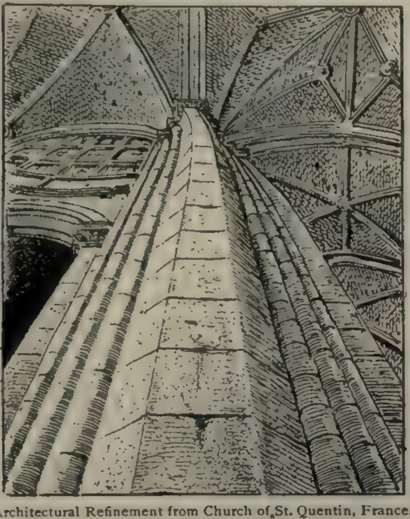
II. *n.* 1. One who is referred to; a referee.—2. A word which refers to another.

refill (rē-fil′), *n.* [*refill*, *v.*] Something used to refill a thing or place that has been emptied.

refined, *p. a.* **2.** Very exact or precise; perfect or correct in details.

One of the most *refined* estimations of longitude that have yet been attempted, is the series undertaken by the "K. K. topographische-militär Institut" of Vienna.
Geog. Jour. (R. G. S.), XIII. 242.

refinement, *n.*—**Architectural refinements**, deviations from the geometrical accuracy of purely structural lines, which have been found widely distributed in architecture before the most modern era. Peculiarities of this sort were first discovered in the Parthenon at Athens by Pennethorne in 1837. The Parthenon refinements were published tentatively by Hoffer in the "Allgemeine Bauzeitung" for 1838, and more elaborately by Penrose in "Principles of Athenian Architecture" in 1851. These investigations were taken up in 1870 by Professor W. H. Goodyear, Curator of Fine Arts in the Brooklyn Museum, and applied not only to classical architecture but to medieval and Renaissance architecture as well. The result has been a vast accumulation of data showing irregularities in structural lines which are undoubtedly intentional and the expression of artistic feeling working by free and unmechanical methods.


Architectural Refinement from Church of St. Quentin, France.
(From Catalogue of the Edinburgh Architectural Association.)

refire (rē-fīr′), *v.* [< *re-*, again, + *fire*, *v.*] To fire again; of tea, subject to a final drying.

It would not be practicable to *refire* all Ceylon teas.
Kingsford and Bamber, Report on Tea Industries of [Java, Formosa, and Japan.

Reflecting anemometer. See *Aimé's* ★*nephoscope.*

reflecting-slit (rẹ-flek′ting-slit″), *n.* A spectroscope slit in which the plates which form its jaws are highly polished and slightly inclined, so that the observer can see by the reflection whether the star-image falls exactly on the slit. *A. M. Clerke*, Problems in Astrophysics, p. 264.

reflection, *n.*—**Coefficient of diffuse reflection.** Same as ★*coefficient of diffusion.*—**Diffuse reflection**, reflection from a rough surface the elements of which are at every possible angle with the incident rays, so that the reflected light is sent out in every direction. Surfaces from which the diffusion is uniform are said to be *matte.* The reflection from such surfaces follows Lambert's law of cosines.—**Irregular reflection**, reflection from a broken or rough surface that scatters the light instead of reflecting it all in a single direction. See *diffuse* ★*reflection.*—**Metallic reflection.** See ★*optical properties of metals.*—**Reflection equations.** See ★*equation.*—**Regular reflection**, reflection from a smooth or polished surface the normal to which has everywhere the same direction, as in a plane mirror, or which varies gradually and continuously according to some simple law, as in convex or concave mirrors.—**Scattering reflection**, reflection from a rough surface the reflected light from which is sent in various directions: same as *irregular* ★*reflection.*—**Selective reflection**, optical reflection in which the incident and reflected rays differ in composition. Transparency and reflecting power are definitely related, opaque bodies such as the metals reflecting light much more strongly than such substances as glass or quartz. Many otherwise transparent bodies, however, have absorption-bands in their spectra, that is, there are certain groups of waves in the spectrum to which they are opaque. Waves to which the body is opaque are more freely reflected than others. The spectrum of the reflected light therefore has a bright region or so-called reflection-band corresponding in position to the absorption-band and the body is said to show *selective reflection.* Calcite, for example, is quite transparent to all the rays of the visible spectrum, but in the infra-red, just beyond 11 μ, it suddenly becomes opaque and in that region its reflecting power equals that of silver. Similar properties have been observed in the case of many other substances.—**Specular reflection**, regular reflection from the surface of a mirror, specifically from a polished metallic surface.

reflectional (rẹ-flek′shọn-ạl), *a.* [*reflection* + *-al*¹.] Pertaining to or of the nature of reflection, in any sense; due to reflection.

Things that have been and things to be are emblazoned on the panorama of *reflectional* concept.
J. W. Powell, Truth and Error, p. 126.

reflective, *a.* **6.** Produced by reflection.—**Reflective surface.** See ★*surface.*—**Reflective sympathy.** See ★*sympathy.*

reflectivity (rē-flek-tiv′ị-ti), *n.* [*reflective* + *-ity.*] Reflectiveness.

reflectometer (rē-flek-tom′e-tėr), *n.* [*reflect(ion)* + Gr. *μέτρον*, measure.] An instrument for the measurement of the reflecting power of surfaces.—**Total reflectometer**, an instrument for the measurement of the critical angle of total reflection. See *refractometer.*

Wollaston's original method has been embodied very skilfully by Pulfrich in his *total-reflectometer.*
Encyc. Brit., XXX. 240.

reflectometry (rē-flek-tom′e-tri), *n.* [*reflectometer* + *-y*³.] The measurement of angles of reflection or of the intensity of reflected light.

reflector, *n.*—**Crossley reflector**, a particular form of reflecting telescope.—**Perfect reflector**, in *optics*, an ideal substance which neither transmits nor absorbs any portion of the radiation which falls upon its surface, but reflects it all.

reflectoscope (rẹ-flek′tọ-skōp), *n.* [Irreg. < L. *reflectere*, reflect, + Gr. *σκοπεῖν*, view.] See *projecting-*★*lantern.*

reflex, *a.*—**Reflex arc.** See ★*arc*¹.—**Reflex tonus.** See ★*tonus.*

reflex, *n.*—**Babinski reflex.** Same as *Babinski* ★*phenomenon (a).*—**Cardiac reflex**, reduction in size of the area of percussion-dullness of the heart, caused by stimulation (as by friction) of the skin of the precordial region.—**Choked reflex**, in *sciascopy*, the absence of movement of the retinal illumination when the point of reversal is reached.—**Conjunctival reflex**, closure of the eyelids when the conjunctiva is touched.—**Crossed reflexes**, a condition in which a stimulus applied to one extremity excites a reflex in the limb on the opposite side.—**Motor reflex**, in *physiol.*, a reflex effect produced by peripheral stimulation upon the muscular mechanism: opposed to *vascular* ★*reflex.*—**Nasal reflex**, a functional disease in some more or less remote organ or part caused by a morbid condition in the nasal cavities.—**Palmar reflex**, flexion of the fingers when the skin of the palm is tickled.—**Rectal reflex**, stimulation to contraction of the muscles concerned in defecation, excited by the presence of feces in the rectum.—**Short spinal reflex**, a reflex path involving only one of the five essential divisions of the spinal cord, namely, those controlling the tail, the pelvic limb, the trunk, the brachial limb, and the neck.—**Triceps reflex**, extension of the forearm when the triceps tendon at the elbow is tapped while the arm rests over the back of a chair and the forearm hangs limp at right angles to it.—**Urinary reflex**, the impulse to urinate arising when the pressure of the accumulated urine in the bladder has reached a certain point.—**Vascular reflex**, in *physiol.*, arterial constriction reflexly set up by peripheral stimulation. *T. Ribot* (trans.), Psychol. of Emotions, p. 84.—**Visceral reflex**, a reflex in which both the afferent and efferent paths are along sympathetic nerve-fibers.

reflexal (rẹ-flek′sạl), *a.* [*reflexa* (see def.) + *-al*¹.] Of or pertaining to the decidua reflexa.

reflexivity (rē-flek-siv′ị-ti), *n.* [*reflexive* + *-ity.*] Same as *reflexiveness.*

reflex-multiplicator (rē″fleks-mul′ti-pli-kā-tọr), *n.* An instrument for recording a reflex, especially the patellar tendon reflex, and its attendant circumstances, such as the force of the blow, the time and force of the response, etc.

reflexness (rē′fleks-nes), *n.* The state or condition of being reflex.

When both forms have reached a high degree of *reflexness*, the motor form is probably somewhat faster.
Psychol. Rev., May, 1896, p. 251.

reflexogenous (re-flek-soj′e-nus), *a.* Same as *reflexogenic. N. E. D.*

reflexograph (rẹ-flek′sọ-gråf), *n.* [L. *reflexus*, reflex, + Gr. *γράφειν*, write.] An instrument similar in design to the reflex-multiplicator.

refloat (rē-flōt′), *v. t.* [*re-* + *float.*] To float again, in any sense.

refloatation (rē-flọ-tā′shọn), *n.* The act of refloating: as, the *refloatation* of loans.

reflorescent (rē-flọ-res′ẹnt), *a.* [L. *reflorescens* (*-ent-*), ppr. of *reflorescere*, flower again, < *re-*, again, + *florescere*, flower. See *flourish.*] Reflowering; coming into bloom again.

Reflux condenser. See ★*condenser.*

refocus (rē-fō′kus), *v. t.*; pret. and pp. *refocused* or *refocussed*, ppr. *refocusing* or *refocussing.* To focus again.

reformational (ref-ọr-mā′shọn-ạl), *a.* [*reformation* + *-al*¹.] Of or pertaining to reformation; productive of reform or of reforming; specifically, relating to the Reformation.

reformationary (ref-ọr-mā′shọn-ā-ri), *a.* [*reformation* + *-ary.*] Same as ★*reformational.*

reformed, *p. a.*—**Alliance of the Reformed Churches.** Same as ★*Presbyterian Alliance.*—**Christian Reformed Church.** See ★*Christian.*—**Reformed Church of France, Reformed German Church.** See ★*church.*—**Reformed Methodist Church.** See ★*church.*

reformulate (rē-fôr′mụ̄-lāt), *v. t.*; pret. and pp. *reformulated*, ppr. *reformulating.* [*re-* + *formulate.*] To formulate anew or differently.

reformulation (rē-fôr-mụ̄-lā′shọn), *n.* The act or result of reformulating; a putting into another form or shape.

refortification (rē-fôr″ti-fi-kā′shọn), *n.* The act or result of refortifying.

refracted, *a.* **2.** Bent sharply backward from the base, as the spines of some animals.

refracter (rẹ-frak′tėr), *n.* See *refractor.*

refractile (rẹ-frak′til), *a.* [*refract* + *-ile.*] Exhibiting the phenomenon of refraction; refractive.

refractility (rē-frak-til′ị-ti), *n.* [*refractile* + *-ity.*] The character of being refractile.

refraction, *n.*—**Anomalous double refraction**, double refraction due to local internal strains in substances, such as glass or the diamond, which are normally isotropic.—**Differential refraction**, the difference, caused by atmospheric refraction, between the true and apparent relative position of two bodies.—**Extraordinary index of refraction.** See ★*index.*—**Gradient of refraction.** See ★*gradient.*—**Mean refraction**, the refraction for various altitudes calculated for the barometer standing at 30 inches and the thermometer at 50° F.—**Molecular refraction**, the product of the molecular weight of a body and its specific refractivity (which see, under ★*refractivity*).—**Vental refraction**, in *acoustics*, the action of the wind in deflecting sound-waves downward when going with the wind but upward when going against the wind. *Smithsonian Rep.*, 1875, pp. 210, 212.

refractional (rẹ-frak′shọn-ạl), *a.* [*refraction* + *-al*¹.] Of or pertaining to refraction; of the nature of refraction.

refractionation (rē-frak-shọ-nā′shọn), *n.* [*re-* + *fractionation.*] Fractionation performed more than once.

This, by *refractionation*, gave 2 grams of isoamylbenzene, boiling at 190° to 195° (mostly at 193°).
Amer. Chem. Jour., June, 1903, p. 592.

refraction-circle (rẹ-frak′shọn-sėr″kl), *n.* An instrument with a graduated circle for determining indexes of refraction.

refractionist (rẹ-frak′shọn-ist), *n.* [*refraction* + *-ist.*] One who diagnoses and treats errors of refraction in the eye.

It may be well to mention that if the *refractionist* has an error of refraction in his own eye, so that his own visual acuity is impaired, he should wear his correction in using the retinoscope, otherwise he may fail to recognize what he sees. *Optical Jour.*, June, 1903, p. 726.

refractive, *a.* **2.** Capable of being refracted: as, the *refractive* violet rays.—**Molecular refractive power**, the quantity $\frac{n-1}{p} \times$ molecular weight, where n is the index of refraction of an organic substance and p is its density.

refractivity, *n.*—**Achromatic refractivity**, the quantity $(\mu_D - 1)\,(\mu_F - \mu_C)$, where μ_F, μ_D, and μ_C are the indexes of refraction of the substance whose achromatic refractivity is required for the Fraunhofer lines F, D, and C respectively.—**Molecular refractivity.** Same as *molecular* ★*refractive power.*—**Specific refractivity**, the quantity $\frac{n-1}{d}$, where n is the index of refraction of a substance and d is its density.

refractometer, *n.* In the case of transparent solids which can be had in the form of a prism of known angle, the index of refraction may be determined by the deviation of a ray of light passing through the prism, and the index of refraction of transparent liquids may be determined by placing the same within a hollow prism of glass, measurements in both cases being made with an ordinary spectrometer. Where this direct method is impracticable or inconvenient, refractometers based upon other optical principles are employed. For the determination of the index of refraction of transparent solids, with plane and parallel faces, or of liquids contained in a vessel with such faces, the interferometer is sometimes employed. One of the earliest forms of interferometer, known as *Jamin's refractometer*, was devised by that physicist for this purpose. (See ★*interferometer.*) Other refractometers are based upon the principle that the limiting angle of total reflection at the interface between two media depends upon the ratio of their indexes. In *Abbe's refractometer*, an instrument of this type which is used for the determination of the index of liquids, two right-angled prisms of glass, *ABC* and *DEF* (Fig. 1), are mounted with the faces *AC* and *EF* parallel. If a layer of liquid the index of refraction of which is less than that of the glass is placed between these surfaces, a beam of light from below will be totally reflected at the face *EF*, provided the angle *i* is less than the limiting angle. If *i* exceeds that value, the ray passes on through the liquid and the upper prism. The angle at which this change from transmission to total reflection occurs depends upon the ratio of the indexes of the glass and the liquid, and thus affords a measure of the index of refraction of the latter. Instruments similar in principle have

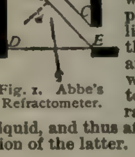


Fig. 1. Abbe's Refractometer.

been devised by Wiedemann, Terquem, Kohlrausch, Pulfrich, and others. For the measurement of the refracting power of crystals the method of total reflection is likewise employed. In *Czapski's refractometer*, a rim of glass is mounted upon the polished end of a cylinder of the same substance, and the specimen *S* (Fig. 2) is placed in a liquid of higher index, with its lower face parallel to the end of the cylinder. The limiting angle of total reflection at the interface between the crystal and the liquid is determined by observing the angle, *i*, at which a beam of light, *ac*, which reaches the face of the crystal at grazing incidence, emerges from the side of the cylinder below. In a similar instrument designed by Abbe for the determination of the indexes of refraction of crystals, the crystal is placed upon the horizontal plane face of a hemisphere of glass, *G* (Fig. 3), with an intervening layer of liquid the index of refraction of which equals or exceeds that of the glass. The beam of light *a* is totally reflected downward at the lower face of the crystal *C*, and its direction is determined by means of the position of a reading telescope which moves around a vertical circle (not shown in the diagram). By turning the specimen about a vertical axis its indexes in various azimuths may be determined.—**Interferential refractometer.** See ★*interferometer.*—**Jamin's refractometer.** See ★*interferometer.*—**Pulfrich refractometer,** an instrument for determining the refractive index of liquids: much used in the examination of oils.

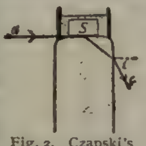


Fig. 2. Czapski's Refractometer.

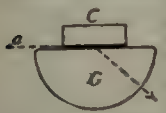


Fig. 3. Refractometer.

refractometric (rẹ̄-frak-tọ̄-met′rik), *a.* Involving the measurement of refractive indexes or the use of the refractometer.

A simple thermostat for use in connection with the *refractometric* examination of oils and fats.
Nature, Feb. 4, 1904, p. 334.

refractometry (rē-frak-tom′e-tri), *n.* In *optics*, the measurement of indexes of refraction; the use of the refractometer.

Refractometry by total reflection.
Encyc. Brit., XXX. 239.

refracture (rē-frak′tụ̄r), *v. t.*; pret. and pp. *refractured*, ppr. *refracturing*. [*re-* + *fracture.*] To fracture again (a badly set bone) in order to secure union in a better position.

refrangent (rẹ̄-fran′jẹnt), *a.* [See *refrangible.*] 1. Refracting.—2. Breaking again; rebreaking.

Refreshment car. See ★*car*¹.

refrigerant, *n.* 3. A refrigerating agent; a refrigerator.

refrigerate, *v.* II. *intrans.* To grow cold; become cold; freeze.

The lavas . . . either overflow the land above the sea, and *refrigerate* there, or . . . they *refrigerate* again within the volcanos.
Sullivan, View Nat., II. 142. *N. E. D.*

refrigerator, *n.* 2. (*a*) A feed-water heater, formerly used on ships, in which the boiler-feed was heated by the water or brine blown out of the boiler. (*b*) In heat-engines, a device or substance for absorbing the heat generated during the compression stage of the cycle. (*c*) In steam-engines, an obsolete device which was used for cooling the injection water for a marine condensing engine by cold sea-water. The surface-condenser renders this unnecessary.—3. A machine for cooling air or fluids, in which the fluid or gas is compressed, cooled, and then allowed to expand, lowering its temperature in this last stage, and withdrawing heat from objects warmer than itself.

refringence (rẹ̄-frin′jẹns), *n.* [*refringen*(*t*) + *-ce.*] Same as *refringency.*

refuge¹, *n.* 4. Same as ★*isle of safety.*

refugee, *n.* 4. A unionist in the southern United States who, during the civil war, fled to the Northern States.

refugee (ref-ụ̄-jē′), *v. i.*; pret. and pp. *refugeed*, ppr. *refugeeing.* [*refugee, n.*] To become a refugee; take refuge in another country; specifically, during the civil war in the United States, to take refuge in the Northern States: said of unionists in the Southern States.

refurnishment (rē-fėr′nish-mẹnt), *n.* [*refurnish* + *-ment.*] The act of refurnishing or the state of being refurnished.

refusal, *n.* 4. In *mech.*, the limiting resistance of a female screw or nut to further turning upon the male screw or bolt, and conversely.

refuse, *v. i.* 2. In *chess*, same as ★*decline*, 10. [Obsolete.]

refusive (rẹ̄-fū′siv), *a.* Refusing; not tolerant of.

Isolated spots *refusive* of carmine, the results of faulty preservation, have been supposed to indicate degeneration during life. *Lancet*, Feb. 2, 1901, p. 299.

refuzal, *n.* An amended spelling of *refusal.*

refuze, *v.* and *n.* An amended spelling of *refuse*¹.

reg. An abbreviation (*f*) of *regiment*; (*g*) of *registry.*

regalist (rē′gạl-ist), *n.* 1. A royalist.—2. An advocate of the principles of regalism.

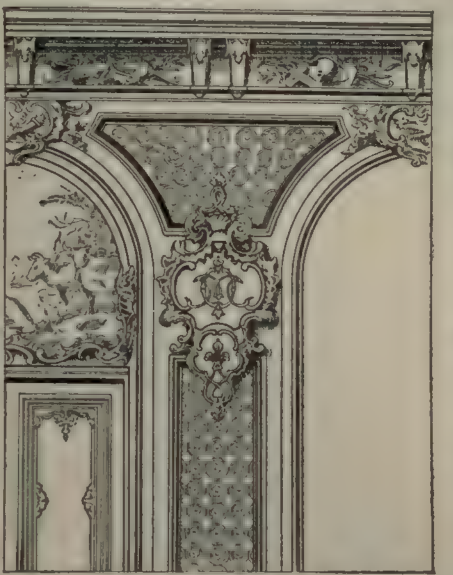
regarding (rẹ̄-gär′ding), *a.* In *her.*, same as *respectant.*

regather, *v.* I. *trans.* 2. To gather (a garment) again.

II. *intrans.* To meet again.

regatta-twill (rẹ̄-gat′ạ̈-twil), *n.* A three-harness twill. Also called *llama-twill.*

Regency style, in the history of the fine arts in France, a name given to work which corresponds to the Regency (1715–23) of Philip of Orléans during the minority of Louis XV.



Regency Style; motive from Hôtel Soubise, Paris.

The admirable "*Style Régence*," for example, owes much of its high quality to the fine constructive lines inherited from the preceding reign.
Lady Dilke, French Furniture and Decoration of the [XVIII Century, p. 2.

regenerate, *v.* II. *intrans.* To be formed again; come into existence again; be generated again.

That limbs may *regenerate* from a peripheral wound was shown by Herrick for the tips of the claws [of a crayfish] and by Morgan for large parts of the limb [of a crab].
Biol. Bulletin, Jan., 1904, p. 83.

regeneration, *n.* 3. In *biol.*: (*b*) The reproduction of a whole organism or of a part of an organism from a separated portion of the body of an organism. See the extract.

The word "*regeneration*" has come to mean, in general usage, not only the replacement of a lost part, but also the development of a new, whole organism, or even a part of an organism, from a piece of an adult, or of an embryo, or of an egg. *T. H. Morgan*, Regeneration, p. 23.

4. In *forestry*, same as ★*reproduction*, 6.—**Accidental regeneration,** the replacement or regeneration of a lost part in an organism that has been mutilated by accident, as contrasted with the replacement of parts that are lost in the course of normal life.—**Cœnogenetic regeneration,** the replacement of a lost part by a method which is different from that in which it was formed originally. See the quotation under *palingenetic* ★*regeneration.*—**Facultative regeneration,** the restoration of a complete organism from a part removed from the body.

We can understand why *facultative regeneration* only occurs in relatively simple organisms.
Weismann (trans.), Germ-Plasm, p. 130.

Palingenetic regeneration, the regeneration of a lost part by a series of changes like those by which the part was formed originally.

That form of *regeneration* which has been considered above may be described as *palingenetic*, for it pursues the course taken by the primary or embryonic development; but as soon as it leaves this course and takes a shorter one, it may be distinguished as cœnogenetic.
Weismann (trans.), Germ-Plasm, p. 108.

Pathologic regeneration, the regeneration or replacement of an organism from a portion which has become detached; restorative regeneration.—**Physiological regeneration,** the renewal or replacement of parts that have been lost in the course of normal life.

The term "*physiological regeneration*" I shall use in the ordinary sense to include such changes as the moulting and replacement of the feathers of birds, the replacement of teeth, etc.,—changes that are part of the life-cycle of the individual. *T. H. Morgan*, Regeneration, p. 25.

Polygenetic regeneration. Same as *facultative* ★*regeneration.*—**Regular regeneration.** Same as *physiological* ★*regeneration.*—**Restorative regeneration,** pathologic or accidental regeneration.

For what is known as pathological or accidental regeneration, I propose the term "*restorative regeneration.*"
T. H. Morgan, Regeneration, p. 25.

Regenerative accumulator. See ★*accumulator*, 3 (*c*).—**Regenerative cell,** in *elect.*, a voltaic cell the difference of potential of which can be restored or built up by the action of an electric current; a storage-cell or secondary battery. [Rare.]—**Regenerative kiln.** See ★*kiln.*

regenerator, *n.* 3. A lamp which generates formaldehyde by the oxidation of methyl alcohol. *Buck*, Med. Handbook, III. 502.

regeneratress (rẹ̄-jen′ẹ-rạ̄-tres), *n.* A woman who regenerates; a female regenerator.

There is only this one cardinal point of difference between such patients and the *regeneratress* of France.
E. M. Clerke, in Dublin Rev., Oct., 1894, p. 307.

regeneratrix (rẹ̄-jen′ẹ-rạ̄-triks), *n.* Same as ★*regeneratress.*

regent (rē′jẹnt), *v.* [*regent, n.*] I. *trans.* 1. To teach or superintend as a regent.—2. To direct or control (a person) as a regent.

II. *intrans.* To act as a regent of a university.

regianin (rē′ji-ạ-nin), *n.* Same as ★*juglone.*

régie (rā-zhē′), *n.* [F. *régie*, the administration of goods for the account of another, the direct collection of taxes, the revenue or excise department of the state, < *régir*, < L. *regere*, rule. See *regent.*] A revenue department, as in France and other countries, which controls, among other things, the purchase and sale of tobacco.

régime, *n.* 3. In *med.*, same as *regimen*, 2.—4. In *phys. geog.*, the dominant or controlling behavior of a river with respect to current, floods, etc.; by analogy, the controlling behavior of ocean currents, meteorological phenomena, etc.

The *régime* of the great northern river is strikingly unlike that of its still greater southern analogue on account of its course being from a warmer to a colder climate: hence ice-dams, obstructed discharge, and overflows.
Encyc. Brit., XXV. 361.

Régime of status, the stage of social evolution in which the social place of each person, family, and class is fixed by custom or by law. *L. F. Ward*, Outlines of Sociol., p. 134.

regimen, *n.* 5. In *phys. geog.*, the physical characteristics of a river, especially of a graded river; also, the condition of a river or current when it does not actively build up or wear down its course; in general, grade. See the extract.

The angle of the slope of the ridge of a shingle beach depends primarily on the materials of which it is chiefly composed, on their size, shape, and specific gravity. *Regimen* is attained when the assistance which gravity gives to transport with the back-wash makes the seaward equal to the shoreward transport. An individual pebble of equal size to those of which the beach is mainly composed, but of twice the specific gravity, if brought on to the *regimen* slope of such a beach will work its way down to the bottom, for its extra resistance to the back-wash is mainly that of greater inertia, whilst it resists the on-wash by diminished buoyancy also.
Geog. Jour. (R. G. S.), XI. 634.

regiment, *n.*—**Linked regiments,** regiments of the British army brigaded together. Also called *linked battalions.*

regimentally (rej-i-men′tạl-i), *adv.* Separately by or for each regiment. [Rare.]

Open terraces for use of horses in temperate weather are often built *regimentally.* *Encyc. Brit.*, XXVI. 157.

regimentary (rej-i-men′tạ̄-ri), *a.* Same as *regimental.*

reginal (rẹ̄-jī′nạl), *a.* [NL. **reginalis*, < *regina*, a queen, fem. of *rex* (*reg-*), king.] 1. Relating to a queen; resembling a queen; queenly.—2. Upholding or advocating the power and prerogatives of a queen. *N. E. D.*

region, *n.* 2. (*b*) In the plan of excavations at Pompeii, one of the primary divisions introduced by Fiorelli about 1860. The arrangement is based on a misconception but has nevertheless been retained. Each region contains several blocks or insulæ.—3. In *phytogeog.*: (*a*) A mountain belt marked by peculiar floral types; an altitudinal zone. Thus used by Humboldt, who for the equatorial district of the Andes distinguished nine such regions. Schimper also prefers this term to *zone* in treating of mountain belts. He distinguishes, on purely œcological grounds, *basal*, *montane*, and *alpine* mountain regions. (*b*) A comprehensive territorial unit with sufficient uniformity of conditions to secure uniformity in vegetation. A region will include several formations and will itself be included in some larger unit, as a *realm.* (*c*) For a special use, see *life* ★*zone.*—**Austral region.** See *life* ★*zone.*—**Boreal region.** See *life* ★*zone.*—**Extrapolar region,** in *electrotherapy*, all that part of the body which lies outside the polar region.—**Holarctic region,** or **realm,** a zoogeographical division which comprises North America (except portions of Mexico and Florida), Europe, northern Africa, and Asia (except southern Arabia and that portion which is bounded by a line drawn through the Himalayas and thence, with a northerly curve, eastward to the coast): the Arctogæal Realm of Lydekker. The North American portion is the Nearctic region or subregion; the rest constitutes the Palearctic region or subregion. The name was given by Professor Newton and is accepted as a substitute for the *Triarctic* of Heilprin.—**Motor region.** Same as *motor* ★*zone. T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 84.—**Peri-intestinal region.** See ★*peri-intestinal.*—**Region of convergence** of a power-series, the points within the circle of convergence supplemented by those points of the circle at which the series is convergent.—**Rolandic region,** the motor area of the brain, including the gyri on each side of the fissure of Rolando.—**Schumann's region,** in *optics*, that portion of the ultra-violet spectrum, lying between .1800 μ and .1000 μ, for which the air is opaque: so called from Victor Schumann, a German physicist who first detected the existence of these extremely short waves.—**Silent regions.** Same as *association* ★*areas.*—**Sonoran region,** a zoogeographical division of North America. As defined by Cope it included parts of Nevada, New Mexico, Arizona, and Sonora in Mexico; extended by Merriam to include the warmer portions of the United States, and nearly all of Mexico save the coastal plains and divided into Upper and Lower Sonoran.—**Tropical region.** See *life* ★*zone.*

regional, *a.* 3. Specifically, in *geol.*, descriptive of, pertaining to, or affecting an area of considerable extent, that is, a region: used in contrast with *local* and other terms of similar comparative significance.

> This may be termed *regional* metamorphism. The same sort of recrystallization has taken place in the lime rock along the copper-bearing veins, and we may term it vein metamorphism. *Science*, Nov. 22, 1901, p. 797.

regionalism (rē′jọn-ạl-izm), *n.* [*regional* + *-ism.*] Localism.

> That spirit of local individualism—in politics somewhat inharmoniously dubbed '*regionalism*'—has its roots deep in the traditional prejudices of the people.
> *Edinburgh Rev.*, Jan., 1887, p. 107.

Regionary catalogues, the name commonly given to two compilations of travelers' notes, the Notitia and Curiosum, which were made in the fourth century A.D. and have been preserved in several codices. They give detailed descriptions and statistics of the *regiones* or wards of the city of Rome.

register^1, *n.* 12. A float or buoy attached to a submarine cable while it is being paid out, to diminish the tension on the cable and the liability to injury from that cause.—**Register of writs,** in *Eng. law*, a book formerly kept in the Court of Chancery in which all the various forms of original writs were entered.—**Tidal register,** in *hydrog.*, a self-recording tide-gage; a marigraph; a limnometer.

register^1, *v. t.* 4. To enter (a letter) at a post-office as a registered letter (which see, under *letter*^{3}).

registering-beam (rej′is-tėr-ing-bēm″), *n.* A balance-beam, in weighing-scales of any type, fitted with a recording or registering device. The most common form is a simple printing attachment that prints upon a card or slip the weight of the coal, grain, or other material weighed upon the scale. Some scales give also the computed price of the thing weighed. Such scales are *computing-scales.* See ★*computing-scale.*

register-plate, *n.* 2. (*a*) A plate from which sectors have been cut out at intervals; a plate used as the valve for a register so that the sectors close openings in the plate behind the sectored one, when the latter is rotated through a small angle. (*b*) A valve formed like a gridiron with essentially rectangular openings which are closed by sliding a slotted plate over a similar one behind it.

register-tonnage (rej′is-tėr-tun″ạj), *n.* In common usage, the same as *net registered tonnage.* When the gross registered tonnage is referred to, it is always qualified by the word 'gross.' See ★*tonnage.*

registral (rej′is-trạl), *a.* [ML. *registrum*, register, + *-al*^{1}.] Preserved in, copied from, and authenticated by a register.

registrant (rej′is-trant), *n.* [ML. *registrans* (*-ant-*), ppr. of *registrare*, register.] One who registers; especially, in *patent law*, one who registers a trade-mark or patent.

regolith (reg′ō-lith), *n.* [Gr. ῥῆγος, a rug, a blanket, + λίθος, stone.] 'Blanket-rock': in *petrog.*, a term applied by Merrill (1897) to the covering of loose material resting upon the solid rocks of the globe. It is derived from the decay of rocks, accumulations of vegetation, talus, debris, and sediments of all kinds. *Science*, Feb. 6, 1903, p. 234.

Reg. Prof. An abbreviation of *Regius Professor.* Also *R. P.*

regradation (rē-grạ-dā′shọn), *n.* The process of adjustment of a land surface to a new level under the control of a newly established equilibrium between the degradational and aggradational forces of a stream.

regrass (rẹ-gràs′), *v. t.* [*re-* + *grass.*] To cause to produce grass again; bring back to the condition of good pasture-land.

> In order to obtain some information as to the possibility of restoring these overstocked lands, experiments in *regrassing* were undertaken at Tucson, Ariz.
> *Yearbook U. S. Dept. Agr.*, 1901, p. 30.

regression, *n.* 4. In *math.*, a discrete series which has a last element but no first.—5. In *statistics*, the tendency of one variable phenomenon that is correlated with another to revert to the general type and not to equal the amount of deviation of the particular phenomenon with which it is correlated. This tendency is measured by the coefficient of regression. An example of regression is furnished by the sons of a series of fathers having a certain stature which deviates from the typical stature of the people to which the fathers and sons belong. Then the statures of the sons will vary not around the stature of their fathers, but around another value which is nearer the typical stature of the people to which the series belongs. The proportion between the average deviation of the sons and the deviation of the fathers is the index of regression. In the same way an index of regression may be established between sizes of correlated parts of the same organism, or between any two correlated variables. See ★*correlation*, 5.

> Taking the boys, for example, with cephalic indices between 74 and 75, these boys had 78 brothers who were distributed according to the arrangement in the column headed 74 to 75. Brothers are not alike in cephalic index, but distributed with a considerable range of variation. We now take in the usual way the arithmetic mean of this array of brothers, and find it to be 77·45. The average brother of a boy with cephalic index = 74·5 has an index of 77·45. This is the phenomenon of *regression* towards the general population mean (78·9) as discovered by Francis Galton.
> *K. Pearson*, in Biometrika, March–July, 1904, p. 137.

6. In *breeding*, the decline toward mediocrity of offspring from the mean of the two parents. Sometimes called *filial regression.*

> Therefore the average *Regression* from the Parental to the Mid-Filial Stature must be the one half of two-thirds, or one-third. *Francis Galton*, Natural Inheritance, p. 98.

Coefficient of regression. See ★*correlation*, 5.—**Fraternal regression.** See ★*regression*, 5.—**Ratio of regression.** Same as *coefficient of regression.* See ★*correlation*, 5.

regressionist (rẹ-gresh′ọn-ist), *n.* [*regression* + *-ist.*] One who advocates a policy of regression or of returning to former conditions. [Rare.]

regression-line (rẹ-gresh′ọn-līn), *n.* A plotted line or diagram which expresses the average statistical regression of a mean second brother from a first brother, as regards any measured quality. See ★*regression*, 5. *K. Pearson*, in Biometrika, March–July, 1904, p. 139.

Regressive multiplication. See ★*multiplication.*

regressivity (rē-gre-siv′ị-ti), *n.* [*regressive* + *-ity.*] The quality of being regressive; a retrograde tendency or policy.

> Retarded development of an organ, . . . is an indication of *regressivity*, and many writers have collected cases showing that abbreviation and retardation of the different organs of a creature which is their bearer are ontogenetic processes that are constantly operative.
> *G. S. Hall*, Adolescence, I. 55.

Regular group, sequence, series, socket. See ★*group*^{1}, etc.

regularity, *n.*—**Law of regularity.** See ★*law*^{1}.

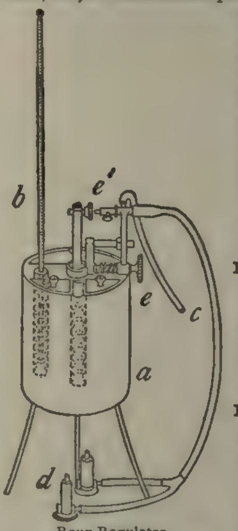
regulation, *n.* 4. In *biol.*, readjustment which restores the completeness of the whole in a part that has been removed from the body of an organism or in an organism that has lost part of its body. [Rare.]—**King's** or **Queen's regulations,** the regulations issued by the sovereign for the government of the British army.

regulationist (reg-ụ̄-lā′shọn-ist), *n.* [*regulation* + *-ist.*] One who favors regulation in a particular matter. Also used attributively.

regulator, *n.* 2. (*a*) (7) In *Cornish engines*, a cataract. (*e*) In *hydraulic* and *irrigation engin.*, a gate or a series of gates placed in a storage reservoir or dam, by opening or closing which the quantity of water discharged from the reservoir or dam can be regulated to meet any desired requirements.

> As the object of the Asyut barrage is to throw a higher level of water into the Ibrahimiyah canal, and as the latter enters the Nile just south of the dam, a new *regulator* and lock has been rendered necessary at the head of the canal, to control the supply entering therein, especially in years of high flood, and to insure the safety of its works in case of an accident. The work comprises a *regulator* pierced with nine openings each 16.4 feet wide, and a lock 27.8 feet wide. The *regulator* is made by means of two gates, one upper and one lower, each 11.5 feet in height. *Sci. Amer.*, Feb. 28, 1903, p. 152.

Roux regulator, an instrument for keeping a vessel of water, etc., at a constant temperature by automatic regulation of the height of a gas-flame which serves as the source of heat. The regulator is set for a certain temperature: if the flame becomes too high, the orifice through which the gas is supplied narrows, and the supply is correspondingly lessened; if the flame becomes too feeble, the orifice widens, and the gas-supply is correspondingly increased. *Amer. Jour. Psychol.*, XI. 260.



Roux Regulator.

a, copper vessel containing water; *b*, thermometer; *c*, tube to gas supply; *d*, gas-burners; *e*, *e′*, regulator.

régule (rā-gül′), *n.* [F.: see *regulus.*] A copper regulus from which most of the impurities have been removed by *liquation.*

regulus, *n.* 2. (*a*) The early alchemistic use of this term for a button or rounded mass of one of the inferior metals, obtained by fusion (involving an allusion to gold as rex or the king of metals), has been extended in a loose way in modern times so as to include such a button or fused globular mass if it is of metallic appearance, though carbon, silicon, or other non-metallic elements may be present in union with one or more metals. (*b*) In *metal.*: (1) The metallic mass which sinks to the bottom of a furnace or crucible, separating itself from the slag by gravity. (2) An intermediate product obtained in smelting ores, especially those of copper, lead, silver, and nickel, and consisting chiefly of metallic sulphids.—4. (*b*) One set of generators of a quadric surface; the system of straights that meet three non-incident straights.

> The joins of corresponding points on two non-intersecting lines form one set of generators of a quadric, that is, a *Regulus.*
> *C. M. Jessop*, A Treatise on the Line Complex, p. 6.

(*c*) A configuration of lines which satisfy three conditions, and therefore depend on only one parameter.—**Complementary regulus,** in *math.* One set of generators of a quadric surface being a regulus, the other set of generators is called, in reference to it, the *complementary regulus.*—**Director regulus.** Either of two complementary reguli is the *director regulus* of the other.—**Regulus of the second order,** one set of generators of a quadric surface.

regurgitating-stick (rẹ-gėr′ji-tā-ting-stik), *n.* A curved slender stick or twig used for bringing about vomiting by being inserted in the throat: used by primitive tribes that practise vomiting as part of religious purification. *Sci. Amer. Sup.*, June 25, 1904, p. 23813.

reh, *n.* II. *a.* Containing the mixture of sodium salts called *reh*: applied to land in the Northwest Provinces of India on the surface of which these salts appear as an efflorescence.

rehandling-plant (rē-han′dling-plant), *n.* An ore-storage and -rehandling plant: a trade-term applied to any large ore- and coal-storage plant in which the materials are transferred, by means of cranes, hoists, conveyers, reloaders, or other machinery, more than once, as from cars to bins and from bins to a storage-yard or to other cars or to furnaces. Such plants are also used to rehandle pig-iron. See ★*coal-storage* and ★*reloader.*

reharmonize (rē-här′mọ̄-nīz), *v. t.*; pret. and pp. *reharmonized*, ppr. *reharmonizing.* [*re-* + *harmonize.*] 1. In *music*, to provide (a melody or theme or passage) with a new harmony; rearrange harmonically.—2. To bring back into harmony or agreement.

rehearsal, *n.*—**Dress rehearsal,** in *theat.*, a full rehearsal of a play in which the costumes and properties are used which will be used in the public performance of the play.

rehearser, *n.* 2. A conductor of rehearsals; one who rehearses a choir, a chorus, etc.

reheater, *n.* (*b*) A heater for raising the temperature of steam which has been used once and is to be used again, as in the low-pressure cylinder of a compound engine, or which has been cooled by traveling a long distance. Reheating dries and possibly superheats the steam and so lessens the cylinder losses.

reherse, *v.* A simplified and former spelling of *rehearse*.

rehypothecator (rē-hī-poth′ẹ̄-kā-tọr), *n.* One who rehypothecates securities, etc.

Reichert's cartilage. See ★*cartilage.*

Reichmann's disease. See ★*disease.*

reichsland (rīchs′länt), *n.* [G., < *reichs*, gen. of *reich*, kingdom, empire, + *land*, land.] In Germany, a domain belonging to the crown; specifically, Alsace-Lorraine.

reichsmark (rīchs′märk), *n.* [G., < *reichs*, gen. of *reich*, kingdom, empire, + *mark*, mark.] The mark, current throughout the German empire.

reidentification (rē-ī-den″ti-fi-kā′shọn), *n.* [*re-* + *identification.*] A second identification.

reillume (rē-i-lūm′), *v. t.*; pret. and pp. *reillumed*, ppr. *reilluming.* [*re-* + *illume.*] To illumine again.

reincarnationist (rē-in-kär-nā′shọn-ist), *n.* [*reincarnation* + *-ist.*] A believer in reincarnation.

reincorporate (rē-in-kôr′pọ̄-rāt), *v. t.*; pret. and pp. *reincorporated*, ppr. *reincorporating.* [*re-* + *incorporate.*] To incorporate again.

reincorporation (rē-in-kôr-pọ̄-rā′shọn), *n.* The act of reincorporating; a renewed incorporation.

Reinforced concrete. See ★*concrete.*

reinforcement, *n.* **4.** Splints of rigid material built into a compound or sinew-backed bow.

Reinhardtius (rīn-här′ti-us), *n.* [NL., named after Professor Johann *Reinhardt*, who investigated the fishes of Greenland.] A genus of flounders found in the arctic parts of the Atlantic Ocean.

reintubation (rē″in-tū-bā′shọn), *n.* [*re-* + *intubation.*] Intubation of the larynx performed a second time owing to a return of the obstruction. *Med. Record*, Aug. 1, 1903, p. 161.

reinversion (rē-in-vėr′shọn), *n.* [*re-* + *inversion.*] Replacement of an inverted organ, especially the uterus.

Reinwardtia (rīn-wärt′i-ạ̈), *n.* [NL. (Dumortier, 1822), named in honor of Kaspar G. K. *Reinwardt* (1773–1854), a Dutch botanist.] A genus of plants of the family *Linaceæ*, sometimes referred to *Linum*, but distinguished from that genus by the yellow flowers, 3 or 4 styles, and glands unequal or wanting. *Reinwardtia trigyna*, the East Indian flax, the only species, is in cultivation as a greenhouse subshrub. A four-styled form is sometimes cultivated.

reis², *n.*—**Reis effendi**, the former title of the chancellor and minister of foreign affairs of the Turkish Empire.

Reischauer's bottle. See ★*bottle*².

reisner (rīs′nėr), *n.* [The name of a German artist in wood, of the time of Louis XIV.] A method of inlaying in wood of different colors: in full, reisner-work. *N. E. D.*

reitbok (rīt′bok), *n.* [D.] Same as *reedbuck.*

reject (rē′jekt), *n.* That which is rejected or thrown out; a cull; specifically, in *prehistoric archæol.*, an unfinished stone implement, spoiled or broken in the process of manufacture.

> Excavations into the quarry sites and workshops of the district have shown that the class of archæologic objects from this vicinity, which have hitherto been assumed to be palæolithic and to represent the rude implements of primitive man, are in fact nothing but the "*rejects*" of much more recent times. *Smithsonian Rep.* 1890, p. 42.

rejection, *n.* **2.** *pl.* Objects or parts rejected from a collection, as the coarse and least desirable fibers of a fiber-plant.

> "Cuttings" are the woody ends of the jute plant, and the fibres of the lowest class are known as "*rejections.*" *Hannan*, Textile Fibres of Commerce, p. 28.

rejuvenate, *v. t.* **2.** (*a*) Of a stream, to increase its gradient, and with this, its velocity and erosive power, so that its effectiveness and apparent youth are renewed. This result is produced by the uplifting of a region which has been notably reduced by the erosion of the streams which continue to occupy it. (*b*) Of a region, to again impress the characters of youthful topography upon (it) when it is well advanced in its erosion cycle. This effect is dependent upon rejuvenation of the streams. *Chamberlin and Salisbury*, Geol., I. 153.

rejuvenescence, *n.* **2.** (*b*) The renewal of vitality, which has been exhausted through repeated cell-division, by the sexual union of two cells into a cell of compound origin.

> A number of writers . . . have looked at the process of sexual reproduction as sort of renewal of youth, or *rejuvenescence* of the individuals. *T. H. Morgan*, Evolution and Adaptation, p. 414.

rel. An abbreviation (*a*) of *relative*; (*b*) of *relatively*; (*c*) of *religion*; (*d*) of *religious*; (*e*) of the Latin *reliquæ*, 'remains' or 'relics.'

relation, *n.*—**Converse of a relation**, the relation which must hold between *y* and *x* when the given relation holds between *x* and *y*.—**Definite relation.** (*b*) A character of an individual (especially an indesignate individual) object relatively to another object (or objects), in so far as it differs from any character of the same individual relative to any third individual. Thus, imagine a square. Its four corners are indesignate individual objects. Each of them has a relation to the corner diagonally opposite to it which is different from its relation to either of the adjacent corners. This is a definite relation. On the other hand, the four vertices of a tetrahedron are without definite relation to any vertices, though each is in a definite relation to the opposite face. A definite relation will not, in general, be an elementary relation, since all the corners of a square are in the same relation to their opposite corners; but it is, in the terminology of Peirce, an *infinitesimal relation.* An infinitesimal relation need not be definite.—**Faculty of relations**, in Hamilton's *psychol.*, the faculty of comparison, or of thought proper.

> [There is] a higher faculty which operates upon these materials, and which we may call the Elaborative or Discursive Faculty. This faculty has only one operation, it only compares,—it is Comparison,—the *faculty of Relations.* *Sir W. Hamilton*, Lect. on Metaphysics, II. 14.

Metric relation. See ★*metric*1.

relation (rẹ̄-lā′shọn), *v. t.* To relate; bring into relation. [Rare.]

> Thinking being *relationing*, no thought can ever express more than relations. *H. Spencer*, First Princ., iv.

relationship, *n.*—**Clang relationship.** See ★*clang affinity.*

Relative addition, adverb, number, product, velocity. See ★*addition*, etc.—**Relative threshold of difference**, in *psychophys.*, relative differential limen. *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 52. See ★*difference limen.*

relativism (rel′ạ-tiv-izm), *n.* [*relative* + *-ism.*] The philosophical doctrine of the relativity of knowledge. See *relativity.*

relativity, *n.*—**Emotion of relativity**, in *psychol.*, an emotion whose objective cause is a purely relative circumstance. See the extract.

> To the rise of this emotion [of Wonder], it is not merely requisite that the mind should have been previously in a routine commonplace frame; it is further requisite that there should be some startling deviation from use and wont in the world without. . . . Hence to such states, we may apply, as a specific designation, the name, '*Emotions of Relativity.*' The chief examples are Novelty, Wonder, Power and Liberty. *A. Bain*, Emotions and Will, p. 83.

Principle of sensational relativity, in *psychol.*, the doctrine that our apprehension of a sensible quality or intensity is determined by the relations in which it stands to other intensities or qualities present in the consciousness of the time. See ★*law of relativity.* *W. Wundt* (trans.), Human and Animal Psychol., p. 118.

relaves (rā-lä′vās), *n. pl.* [Sp. *relave*, second washing of metals, in pl. washings or sweepings of a silversmith's or goldsmith's shop (see also def.), < *relavar*, lave, or purify, again.] The heavy constituents of the amalgam heap (torta) remaining at the bottom of the tanks and washed in bateas (which see). They are subsequently reground in arrastras and yield a certain amount of auriferous amalgam. See *patio process*, under *process.* *Phillips and Bauerman*, Elements of Metallurgy, p. 745.

relaxant, *n.* **II.** *a.* Relaxing; relieving tension.

Relaxation distance, the distance through which an electromagnetic disturbance must travel before its amplitude is reduced to $\frac{e}{}$ of its original amplitude, where e is the Naperian base.—**Relaxation time**, the time required for a quantity, the decadence of which is logarithmic, to diminish in the ratio of e (the Naperian base) to unity.

relay¹, *n.* **5.** In *teleg.*, the circuit operated by a relay.—**Differential relay**, in *teleg.*, a relay with differentially wound magnet-coils. Such relays are used on certain duplex and quadruplex circuits.—**Electrostatic relay**, a device for use in condenser circuits in which a continuous charge is be maintained.

> It is often necessary in experimental work to maintain a condenser continuously charged at a constant high potential for a considerable length of time, and various methods, none of them altogether satisfactory, have been proposed. An "*electrostatic relay*" suitable for this purpose is described by M. V. Crémieu in the Journal de Physique for September. *Nature*, Oct. 2, 1902, p. 556.

Neutral relay, in *teleg.*, a relay the armature of which is not permanently magnetized and the action of which is therefore independent of the direction of the current in the magnet-coils.—**Pilot-relay**, in *teleph.*, a relay controlling a group of circuits. *Elect. Rev.*, Aug. 27, 1904, p. 303.—**Telephonic relay**, an instrument having the same function in a telephone circuit as has the ordinary relay in telegraphy, namely, that of reproducing in one circuit a message received over another; a repeater.—**Time-element relay**, in *elect.*, a relay arranged so as to release clockwork which in turn opens or closes a circuit or performs some other operation, after the lapse of a predetermined time. Such relays are sometimes employed in the operation of circuit-breakers in a power-station.—**Tripping-relay**, in *elect.*, a relay arranged for the automatic release of a circuit-breaker or switch.

relay¹ (rē-lā′), *v. t.* and *i.* To transmit by means of a telegraphic or telephonic relay; make use of a relay.

> Have the telegraphone record his message and repeat it over another wire to St. Louis where another machine *relays* it to Denver. . . . The steel belt machine [telegraphone] will transmit a record over any number of wires simultaneously, and by *relaying*, to great distances. *The Marconigram*, June, 1904, p. 16.

relay-race (rẹ̄-lā′rās), *n.* A race in which the contestants run in turns, a number of them making up a team, and each running only a portion of the distance, when a comrade takes up the running, and so on till the completion of the full distance. As each runner completes his portion, he touches with his hand his mate who is about to take up the race.

relay-switch (rẹ̄-lā′swich), *n.* A switch operating an electric relay.

> All these *relay switches* operate electrically the real switches on the power-house floor. *H. W. Buck*, in Trans. Amer. Inst. Elect. Engin., 1902, [p. 540.

release¹, *n.* **7.** See ★*combination button.*

release-arm (rẹ̄-lēs′ärm), *n.* The arm that carries the releasing-cam on a Corliss valve-gear.

release-cock (rẹ̄-lēs′kok), *n.* A valve by which the brakes of a continuous train-brake may be released. In early forms the brakes were let off by releasing pressure in the train-pipe. In automatic brakes the pressure must be let off the brake-cylinder and the triple valve be thrown, or else the brakes go on again. See ★*air-brake* and *triple* ★*valve.*

release-nut (rẹ̄-lēs′nut), *n.* A split-nut; in a lathe, the nut which clasps the lead-screw. It can be thrown out of gear when desired, so as to release the screw from the work and wear of driving the carriage, or when hand operation of the feed-mechanism is preferred.

release-point (rẹ̄-lēs′point), *n.* In a steam-engine, the point of release; the place, in the stroke of the piston at which the exhaust-valve opens, releasing the steam which has been confined behind the piston to drive it for its working stroke.

releasing-bracket (rẹ̄-lēs′ing-brak″et), *n.* A device on a spinning-mule for releasing the counter-faller and restoring it to a position at which to recommence the operation of spinning. *Nasmith*, Cotton Spinning, p. 312.

relgharry, relgarry (rel′gar-i), *n.* [Anglo-Indian, < E. *rail*(*way*) + Hind. *gārī*, a cart, a carriage. See *gharry.*] A railway carriage.

relict, *a.* **2.** In *phytogeog.*, persisting in a limited area only: said of an endemic plant which at an earlier period had a much wider range.—**3.** In *phys. geog.*, left as a result of erosion; residual: said of mountains the form of which is due to the erosion of neighboring valleys, as mountains of circumdenudation, and especially isolated residual mountains or monadnocks.

> Two great divisions [of mountains] are recognized: (*a*) Original or tectonic mountains, . . . and (*b*) Subsequent or *relict* mountains. *Geog. Jour.* (R. G. S.), XIII. 308.

relief, *n.* **9.** (*b*) A portion that is elevated above the general surface; a ridge, hill, or mountain.

> In Volume XXXIV. of the "Smithsonian Contributions to Knowledge," Professor Shaler, of Harvard University, treats of the lunar features from the point of view of a geologist. He divides them into the broad classes of maria, vulcanoids (in which apt term he includes all cup-like formations from the greatest ring plains to the smallest crater bed), *reliefs* (mountains or ridges), valleys and rills, and rays. *Knowledge*, Jan., 1905, p. 13.

16. In *mineral.*, the character of the surface of a thin section of a mineral as shown under a microscope, depending on its refractive power relative to that of the substance in which it is embedded.—**Gelatin relief**, in *photog.*, an image composed of gelatin in relief. This may be a print on paper, in which case sensitized gelatin charged with pigment, such as lampblack, is exposed behind a negative. The soluble portions are next washed away, leaving a print which is treated with alum to harden it. Or, a film of sensitized gelatin is exposed behind a negative and then washed. The relief picture then serves to print from, as in some one of the photomechanical processes. *Woodbury*, Encyc. Dict. of Photog., p. 220.—**Relief photo-engraving.** See ★*photo-engraving.*

relief-plate (rẹ̄-lēf′plāt), *n.* **1.** A cover-plate; a plate that covers all or a part of a valve to relieve it of pressure, thus enabling it to be more easily moved. See ★*pressure-plate.*—**2.**

A cover-plate so arranged that if the pressure from underneath the valve exceeds the normal or desired limit, the plate will lift, thus relieving the excess pressure.

relief-ship (rẹ-lēf′ship), *n.* A ship that brings relief or aid, as to an expedition for arctic exploration; specifically, a government cutter or a large ship which periodically makes the rounds of lighthouses, light-ships, and other government stations with provisions, etc.

reliev, *v.* A simplified spelling of *relieve*.

reliever, *n.* 4. In *mech.*: (*a*) A release; a device for releasing some part of a mechanism at a certain time or position. (*b*) A device, such as a spring or elastic substance, for preventing shocks on a machine or part.

religate (rel′i-gāt), *v. t.*; pret. and pp. *religated*, ppr. *religating*. [L. *religat*(*um*), pp. of *religare*, bind up.] To bind up or together; unite; constrain. [Rare.]

> The religion of "the sufficiency of life"; with a debased worship appended to it for the ignorant, but with no *religating*, no binding power, between the educated man on the one side, and anything beyond the framework of the visible world on the other.
> *Gladstone*, Gleanings of Past Years, III. 130.

religiose (rẹ-lij′i-ōs), *a.* [L. *religiosus*, religious.] Excessively religious; unduly or morbidly occupied with religious ideas and emotions.

> Some of my companions are too much in the *religiose* vein to be always quite wholesome company.
> *Clough*, Let. in Poems, I. 196.

Religious association or **corporation law**, statutory enactments by which religious bodies may become incorporated without special application to the legislature.

reliquary^1, *n.* **II.** *a.* **1.** Of or pertaining to a reliquary. [Rare.]—**2.** Residual. [Rare.]

> The nucleus of the now full-grown parasite [coccidium] undergoes multiple division, the protoplasm arranges itself in individual masses about the many daughter nuclei, and there results a stage in which a rosette of young forms . . . encircles a central portion of protoplasm, known as the *reliquary* body or residual mass.
> *Buck*, Med. Handbook, VIII. 537.

reliquefy (rē-lik′wẹ-fī), *v.*; pret. and pp. *reliquefied*, ppr. *reliquefying*. **I.** *trans.* To render liquid again, as by fusion, after solidification has taken place. *Jour. Soc. Chem. Industry*, XII. 31.

II. *intrans.* To become liquid again, as by fusion or by absorption of moisture from the air, after solidification has taken place.

relish^1, *n.*—**Single relish**, in *music*, same as ★*cadent*.

Rellyan (rel′i-an), *a.* Of or pertaining to the teaching or the followers of James Relly, who organized a society of Universalists in London in 1750.

Rellyanism (rel′i-an-izm), *n.* The doctrine of James Relly, for a time a preacher in Whitefield's communion and later the founder of a Universalist society in London in 1750. His main tenets were a mystical union between Christ and human beings whereby their acts are made Christ's and Christ's theirs, thus working out a complete salvation; a spiritual baptism, an immersion of the mind in truth; and literal resurrection of the body.

relm, *n.* A simplified spelling of *realm*.

reloader (rē-lō′dėr), *n.* In *transportation*, a self-loading conveyer used to collect and transport coal from a coal-storage yard or pocket and to deliver it to railroad-cars or vessels or to place it in other near-by storage-places. In one form the conveyer is loaded by means of a self-filling bucket; in another a horizontal bucket-conveyer, supported by a swinging arm pivoted at one end, travels in a circle along the edge of a coal-heap, sweeping up and taking away the coal as fast as it slides down. See ★*coal-storage*.

reloading-tool (rē-lō′ding-töl), *n.* A combination tool for reloading cartridge-cases. It generally measures the proper powder-charge and inserts the bullet in its proper position.

relocator (rē-lō′kā-tọr), *n.* A device, used at sea-coast forts, by which the range and direction of an object, determined by instruments safely placed at a distance, may be converted into corresponding data for the gun itself.

rel. pron. An abbreviation of *relative pronoun*.

reluctance, *n.* **2.** In *elect.*, the resistance to magnetic flux: the reciprocal of permeance. The unit of reluctance is the oersted, which is the reluctance of a magnetic circuit in which a unit of magnetomotive force will produce unit flux.—**Unit magnetic reluctance**, the resistance offered to magnetic flux by a circuit of unit length and cross-section, and unit permeability.

reluctantism (rẹ-luk′tan-tizm), *n.* [*reluctant* + *-ism*.] The mental state of shrinking or withdrawal; 'drawing into one's shell'; a temporary incapacity or paralysis of the mental powers.

> The incisive coldness of Miss Lamb's demeanor . . . was sufficient to chill . . . her youthful admirers into a state of objectified *reluctantism*.
> *Cent. Mag.*, Feb., 1906, p. 552.

reluctivity (rē-luk-tiv′i-ti), *n.* [*reluct* + *-iv*(*e*) + *-ity*.] In *elect.*, the specific reluctance of a substance; the ratio of the reluctance of a magnetic substance to that of air: the reciprocal of permeability. *H. Du Bois*, The Magnetic Circuit, p. 20.

reluxation (rē-luk-sā′shọn), *n.* [*re-* + *luxation*.] Same as ★*redislocation*. *Buck*, Med. Handbook, I. 62.

rem. An abbreviation of *remark* or *remarks*.

remainder, *n.* **5.** The right to succeed to a title or position on the decease of the holder; especially the right of succession to a peerage expressly assigned to a certain person or line of descent in default of male issue in the direct line. *N. E. D.* [Great Britain.]—**Negative remainder**, what a dividend lacks to make a too great quotient exact: as, 4 goes into 5 twice, with the *negative remainder* 3.—**Positive remainder**, so much of a dividend as prevents a too small quotient from being exact: thus 4 goes into 11 twice with the *positive remainder* 3.

> What are the two *remainders*, *positive* and negative, which result from dividing the higher number, 74, by the lower number 40? Our English way of stating it is to say that 40 goes into 74 once and leaves a (*positive*) *remainder* of 34 over. *Smithsonian Rep.*, 1890, p. 340.

remancipate (rẹ-man′si-pāt), *v. t.*; pret. and pp. *remancipated*, ppr. *remancipating*. [L. *remancipat*(*um*), pp. of *remancipare*, remancipate. See *mancipate*.] In *Rom. law*, to transfer back again.

remancipation (rẹ-man-si-pā′shọn), *n.* [*remancipate*.] In *Rom. law*, the act of remancipating or retransferring. See *mancipation*.

remanence, *n.* **3.** Residual magnetism; the flux density remaining in a magnetic circuit after the magnetizing force has ceased.

> There are three properties desirable in material for permanent magnets. First, to minimize bulk, the material should have a high permeability in order that it may accept a large amount of magnetism. Second, after magnetization the material should retain as large a proportion of the flux created as possible. The quality of magnetic retentiveness, or the ability of a substance to retain and keep the flux impressed upon it, is termed *remanence*. *Elect. World and Engin.*, July 11, 1903, p. 63.

Remanent flux, residual magnetic flux.—**Remanent polarization.** See ★*polarization*.

remanié, *a.* **2.** Recemented, as a glacier formed by the falling of fragments of ice.

II. *n.* A characteristic portion of one formation occurring in another younger one; especially, a fossil found in a bed of more recent origin than that in which it was first buried. *J. Geikie*, The Great Ice Age, p. 160.

remanit (rem′a-nit), *n.* A trade-name of carbonized silk rags (in which any admixture of cotton or wool has been chemically destroyed) bound together with metal threads into the form of a small rope, braid, or mat, and used for insulating purposes, as for covering steam-pipes, etc. (Decision No. 5854, United States Board of General Appraisers.)

remark-book (rẹ-märk′bůk), *n.* A note-book kept by the navigating officer of a vessel, which contains his memoranda of hydrographical matters.

remex, *n.*—**Addigital remex.** See ★*addigital*.

remicle (rem′i-kl), *n.* [Dim. of *remex*.] The outermost predigital of a bird's wing; the outermost feather attached to the second phalanx of the middle finger.

> The distal predigital is always small, and is designated the *remicle*. *Proc. Zool. Soc. London*, 1887, p. 344.

remigiid (rẹ-mij′i-id), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Remigiidæ*.

II. *a.* Having the characters of or belonging to the family *Remigiidæ*.

remigrant (rem′i-grant), *n.* [L. *remigrans*, ppr. of *remigrare*, go back, ‹ *re-*, back, + *migrare*, travel, go.] A parthenogenetic insect which, while born upon a different kind of plant from that upon which its parent was born, afterward returns to a plant of the kind that was the home of its parent. See ★*emigrant*, 2.

> These alienocolæ in the following spring produce parthenogenetic winged females, . . . *remigrants* or sexupara, which return to Abies.
> *E. F. Phillips*, in Proc. Amer. Philos. Soc., Oct. 16, [1903, p. 298.

Remilegia (rem-i-lē′ji-ä), *n.* [NL., said to be a metathesis of L. *remeligo*, a delayer.] A genus of fishes of the family *Echeneididæ*, found in tropical seas.

reminisce (rem-i-nis′), *v. i.*; pret. and pp. *reminisced*, ppr. *reminiscing*. To indulge in reminiscences; relate past events; recollect. [Colloq.]

> He *reminisced* gently all through the long summer afternoon. *Back Country Letters*, July 8, 1853.

reminiscence, *n.* **4.** In *biol.*, the retention by a modern organism, during its development, of traces of the effect of past ancestral history.

> Similarities in development are here not only clear and striking, but obviously have some palingenetic meaning, since they give irresistible evidence of ancestral *reminiscence*. *E. B. Wilson*, Biol. Lect., 1895, p. 106.

Reminiscence Sunday. See ★*Sunday*.

remise, *n.* **4.** A carriage-house in which a remise is kept.

remissio (rẹ-mis̱′i-ō), *n.* [L.: see *remission*.] In *anc. music*, a passing from a higher to a lower pitch: opposed to *intentio*.

remittance-man (rẹ-mit′ans-man), *n.* An idle, and frequently dissolute, man who lives on remittances from his home. *E. E. Morris*, Austral English.

> *Remittance men*, as we call them here, are not so rare in my experience; and in such cases I act upon a system.
> *R. L. Stevenson*, The Wrecker, xxii.

remitter^1, *n.* **2.** In *postal service*, the person who fills out the application-blank for a money-order; the sender of such an order.

remittitur (rē-mit′i-tėr), *n.* [L., 'it is sent back' or remitted.] In *law*: (*a*) Relinquishment of a part of the damages found by a jury. (*b*) The return of a record from the court of review to the lower court for proceedings as specified, as for execution or a new trial. *Anderson*, Dict. of Law.

remnant, *n.* **3.** In *geol.*, an outlier.

> This belt is of very unequal width. Southeast of it Pensauken *remnants* again become more abundant, and still further in this direction the formation becomes continuous, and probably underlies the whole of the southeastern part of the State.
> *R. D. Salisbury*, in Geol. Surv. of New Jersey, 1895, [p. 10.

remnantal (rem-nan′tal), *a.* [*remnant* + *-al*^{1}.] Pertaining to, or of the nature of, a remnant.

> The elevated plain, southwest of Socorro, also appears to belong to the same class. Farther south at Paraje, at old Fort Selden and at El Paso, the same *remnantal* levels are noted. *Amer. Jour. Sci.*, Dec., 1907, p. 470.

remolade, *n.* See ★*rémoulade*.

remolino (rem-ō-lē′nō), *n.* [It. Sp. *remolino*, a whirlwind (cf. *remolo*, a whirlpool, vortex), ‹ It. *remolinare* = Sp. *remolinar* = OF. *remouliner*, ‹ ML. **remolinare*, grind as in a mill, ‹ *re-*, again, ‹ *molinare*, grind, ‹ *molina*, a mill: see *mill*^{1}, *n.*] In Italian use, a whirlwind, especially the smaller whirls such as the waterspout at sea and the sandspout or dust-whirl on land; figuratively, the spirit, witch, or demon imagined as animating the whirl.

remontado (rā-mon-tä′dō), *n.* [Sp., prop. pp. of *remontar* (reflex., flee to the hills, as slaves), elevate, etc. See *remount*.] A Christian native of the Philippine Islands who has left his village and lives in the mountains.

Remopleurides (rem-ọ-plö′ri-dēz), *n.* [NL., ‹ L. *remus*, an oar, + Gr. πλευρά, a rib.] A genus of opisthoparian trilobites having an expanded glabella, a wide axis, eleven to thirteen thoracic segments, and a small flat and elongated pygidium. It occurs in the early Silurian rocks.

remote, *a.* **2.** (*h*) Specifically (2) in *mycol.*, separated by a space, as the gills of certain fungi which do not extend quite to the stem.

rémoulade (rā-mọ̈-läd′), *n.* [F., also a veterinary medicine: ‹ It. *remolata*, of obscure origin.] A salad-dressing: a French dressing with the addition of hard-boiled eggs and mustard. Also *rémolade*.

rencontre (roṅ-kôṅtr′), *n.* [F., a meeting. See *rencounter*.] In *billiards*, that kiss-shot, so called, in which the cue-ball drives the first object-ball against the second and meets the latter on its return from cushion. *W. Broadfoot*, Billiards, p. 230.

rendement (rôṅd-moṅ′), *n.* [F., that which is rendered or produced, ‹ *rendre*, render.] The proportion of a valuable substance obtainable from a particular crude material, as of pure crystallizable sugar from a raw sugar.

rendition, *n.*—**Interstate rendition**, in *criminal law*, the act of delivering up a criminal, or a person charged with crime, by the executive of one state upon the requisition of the executive of another.

R. Eng. An abbreviation of *Royal Engineers*.

Rengeso clover. See ★*clover*.

rennet^{1}, *n.*—**Vegetable rennet.** Same as *cheese-maker.* See also *Withania.*

rennet-pepsin (ren′et-pep″sin), *n.* Pepsin obtained from the stomach of the calf.

rennet-stomach (ren′et-stum″ạk), *n.* The fourth stomach, or abomasum, of a ruminant.

rennin (ren′in), *n.* [*renn*(*et*) + *-in*^{2}.] Same as ★*chymosin.*

renninogen (re-nin′ọ-jen), *n.* Same as ★*chymosinogen.*

renominee (rē-nom-i-nē′), *n.* One who is renominated.

renommist (rā-no-mist′), *n.* [G., ‹ *renommee*, ‹ F. *renommée*, renown. See *renown, n.*] In German use, a boaster; a braggart; a swaggerer: applied in German universities to a leader in riotous drinking and fighting. See *renowner*, 2.

> There is a certain *Renommist*—as we call such roysterers—oh, a *Renommist* of the first water! . . . From him we have a new . . . beer ceremonial, also . . . a cunning sabre throw. He is the king of drinkers and a reckless duellist.
> *Egerton Castle*, The Renommist.

renovate, *v.* **I.** *trans.*—**Renovating crop.** See ★*crop.*

II. *intrans.* To revive; recover. [Rare.]

> O magic sleep! O comfortable bird,
> That broodest o'er the troubled sea of the mind
> Till it is hush'd and smooth! . . .
> who upfurl'd
> Beneath thy drowsy wing a triple hour,
> But *renovates* and lives?
> *Keats*, Endymion, Bk. i.

Rensselaeria (ren-se-lā′ri-ạ̈), *n.* [NL., ‹ Stephan Van *Rensselaer* (1765-1839).] A genus of telotrematous terebratuloid brachiopods, often of large size and elongate form, and having the branches of the loop united in front in an elongate triangular plate. It is characteristic of the Lower Devonian formations.

rent^{2}, *n.*—**Barren rent.** Same as *rent-seck.* See *rent*2, 2 (*c*).—**Competition rent.** See ★*competition.*—**Consumer's rent**, in recent *polit. econ.*, the net gain in personal satisfaction secured by a consumer through the acquisition of a commodity; the surplus over that amount of satisfaction which is just sufficient to compensate the sacrifice of acquisition. Thus, if one secures for a dollar a commodity that yields an amount of satisfaction for which he would have given two dollars, if that had been necessary, a consumer's rent valued at one dollar may be said to arise. The term is derived from a superficial resemblance of this form of surplus to the rent of land, both being capable of differential measurement.—**Cottier rent.** See ★*cottier.*—**Economic rent**, that part of the product of industry which is attributable to the land and which, under conditions of perfect competition, would be received by the owner of the land as contract rent.—**Fair rent**, a reasonable compensation for the use of land, as distinguished from rack-rent. See *rack-rent.*—**Fee and life-rent.** See ★*fee*2.—**Outstroke rent.** See ★*outstroke.*—**Rents and profits**, a legal phrase denoting, according to context, the gross or net income or the entire proceeds from land, including its sale.—**Sleeping rent**, a fixed rental, as distinguished from a rental that is proportioned to the amount of profit or of mineral mined.

rentability (ren-tạ-bil′ị-ti), *n.* [*rentable* (*-bil-*) + *-ity.*] **1.** The quality of being rentable. Specifically—**2.** The capacity of a piece of property to produce a net income, or surplus above cost of replacement and of up-keep.

renter^{1}, *n.* **3.** One who collects rents. [Eng.]

> As "*Renter*" for collecting the rents of the lands, he remained a resident within the hospital precincts, and was intimately acquainted with all details of the foundation and management of the house.
> *Athenæum*, June 17, 1905, p. 751.

4. A shareholder in a theater.—**5.** In *teleph.*, a subscriber.

renunciant (rē-nun′ṣiant), *n.* [L. *renuntiare*, renounce. See *renunciance.*] One who renounces, especially one who renounces the world.

> The *renunciant's* vow is accepted by these great souls.
> *Dowden*, Studies in Literature, p. 262.

renunciate (rē-nun′ṣi-āt), *v. t.*; pret. and pp. *renunciated*, ppr. *renunciating.* [See *renounce.*] To renounce.

renunciative (rẹ-nun′ṣi-ạ̄-tiv), *a.* [*renunciat*(*e*) + *-ive.*] Marked by renunciation; renunciatory.

reoxidation (rē-ok-si-dā′shọn), *n.* [*re-* + *oxidation.*] The taking up again of, or a second time combining with, oxygen: as in the case of the hemoglobin of the blood when, in passing through the pulmonary circulation, it renews the supply of oxygen from the air to be used up in combining with the carbon and hydrogen of the tissues of the body at large.

rep^{3} (rep), *n.* [Origin obscure.] **1.** A man or woman of loose character; a rip.—**2.** An inferior or worthless article. *N. E. D.*

rep^{4} (rep), *n.* In English school slang, an abbreviation of *repetition.*

rep. An abbreviation (*b*) of *report*; (*c*) of *reporter*; (*d*) [*cap.*] of *Representative*; (*e*) of *representing*; (*f*) of *republic*; (*g*) [*cap.*] of *Republican.*

repaint (rē-pānt′), *v. t.* **1.** To paint over (an already painted surface).

> It was necessary to *repaint* the pigeon-house once a year.
> *The Columbarium*, i.

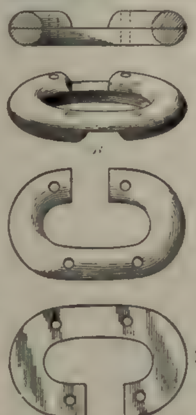
2. To paint again, as a picture or a part of a picture.

> The end of the long tasseled sleeve has been *repainted* over and over, . . . and the result is a patch where the light strikes across the picture.
> *Nineteenth Century*, July, 1888, p. 60.

repaint (rē-pānt′), *n.* [*repaint, v.*] In the *fine arts*, a portion of a picture which has been painted over or repainted; a patch.

> Unfortunately, his perception of quality was not so acute as that of Charles I., who could detect *repaints* and alterations with a professional eye.
> *Athenæum*, Dec. 2, 1905, p. 768.

repair-link (rẹ-pãr′lingk), *n.* In *mech.*, a chain-link so constructed that it can readily be substituted for a broken link. In round-link chains it is usually made of half-sections of a link formed by a plane which passes through its long and short axes, the link being open on the long side for a length equal to the thickness of the iron of which the links are made. These two halves are hooked to the adjoining links so that the opening of each half comes against the continuous side of the other, and when in place the two halves are riveted together. In flat or roller-chains, the two pins are riveted to one side or cheek, and the other cheek is held in position after the repair-link is in place by cotters or spring loops of wire.



Repair-link for round-link chain.

A, section by a meridian plane; *B*, perspective elevation showing the completed link with both halves in place; *C*, top view of one half-section; *D*, top view of the other half-section, showing the break of the joint. The interrupted side is open wide enough to pass the stock of the solid link adjacent to the repair-link on either side.

reparation, *n.* **4.** In *biol.*, the regeneration of a lost part out of the old tissue as contrasted with regeneration through the formation of new tissue. [Rare.]

reparatory (rẹ-par′ạ-tọ-ri), *a.* Same as *reparative.*

repeat, *v. i.* (*c*) In *faro*, to win or lose with a card in one deal in exactly the same way that it won or lost in the previous deal. (*d*) To regurgitate; be belched up: said of the taste of a food or drug which has been taken into the stomach but is not speedily digested or passed on into the intestine.

> Its [thiocol] taste is not disagreeable, it is unirritating to the stomach, and it does not "*repeat*" after ingestion.
> *Buck*, Med. Handbook, VII. 741.

repeater, *n.* **9.** In *teleph.*, an instrument for reproducing in one circuit a message received over another circuit and of so enhancing its intensity as to enable its transmission to a greater distance than would otherwise be practicable.

> A successful telephone *repeater* is the great need in telephony, and its inventor would be abundantly rewarded materially, which undoubtedly accounts for the scores of patents that have been issued on "telephone *repeaters*"; yet of all these we do not know of one that has been put to public test on a circuit of sufficient length to demonstrate its capabilities.
> *Elect. World and Engin.*, March 26, 1904, p. 593.

repeat-sign (rẹ-pēt′sīn), *n.* See *repeat, n.*, 3.

repeller, *n.* **2.** Specifically, in *obstet.*, an instrument used in difficult labor of animals to repel the fetus until the head and limbs can be made to present themselves normally for delivery. *U. S. Dept. Agri.*, Rep. on Diseases of the Horse, 1903, p. 177.

repercussion, *n.* **3.** In *obstet.*, the impinging of the fetus upon the examining finger in the test for pregnancy known as ballottement.—**4.** In *surg.*, the force causing a contrafissure.—**5.** In *med.*, the disappearance of an eruption or of a tumor as a result of an external application.

repetition, *n.*—**Law of repetition.** See ★*law*1.

rephlogisticate (rē-flọ-jis′ti-kāt), *v. t.*; pret. and pp. *rephlogisticated*, ppr. *rephlogisticating.* [*re-* + *phlogisticate.*] In the chemistry of the eighteenth century, to add again the imaginary essence of combustibility, phlogiston, to a substance which was supposed to have lost it by burning.

> Other substances, such as phosphorus and sulphur, gave solids or acid liquids to which phlogiston was not so easy to add; but even they could be *rephlogisticated.*
> *W. Ramsay*, in Smithsonian Rep., 1900, p. 234.

repkie (rep′ki), *n.* [Alaskan.] A kind of sea-urchin eaten by the Alaska Indians.

replacement, *n.*—**Wave of replacement.** See ★*wave*1.

replaning (rē-plā′ning), *n.* The process of planing a surface which has been previously planed; the process of planing over again.

replete, *a.* **II.** *n.* One who or that which is replete or full; specifically, a worker-ant which stores such large quantities of honey-dew or other liquid food in its crop that its gaster is greatly distended and assumes a spherical or subspherical form; also *plerergate.*

> In most cases, as McCook has shown, it is the major workers that most readily tend to become *repletes*, but this is not an invariable rule . . . Thoroughly hardened workers of the ordinary form, according to my observations, are no longer able to become *repletes.* It is probable, therefore, that McCook's failure to secure *repletes* from isolated major workers was due to his using individuals that were too old.
> *W. M. Wheeler*, in Bull. Amer. Mus. Nat. Hist., XXIV, 1908, p. 379.

repliant (rep′li-ạ̈nt), *n.* [AF. *repliant*, ppr. of *replier*, reply: see *reply, v.*] A pleader in a suit who files or makes a replication.

replica, *n.*—**Wallace-Thorpe replica**, a reproduction of a Rowland grating made with gelatin. *Science*, March 25, 1904, p. 483.

replicatory (rep′li-kạ̄-tō-ri), *a.* [*replicat*(*e*) + *-ory.*] Of the nature of replication; replying. [Rare.]

replot (rē-plot′), *v. t.* or *i.* [*re-* + *plot*^{1}, *v.*] To plot again; make use of the ★replotter (which see).

> A *replotting* arm for attachment to the Lewis position-finder.
> *Board of Ordnance and Fortification Rep.*, 1896, p. 18.

replotter (rē-plot′ėr), *n.* An attachment to the table of a position-finder by means of which the observer may quickly convert the measured range and direction into corresponding range and direction for a gun.

> A complete automatic *replotter* is carried on the table of each instrument [range-finders], by the use of which the observer can instantly convert the range and direction of the target as read from the instrument into the corresponding range and direction from the gun itself.
> *Encyc. Brit.*, XXXI. 367.

report, *v. i.* **4.** Specifically, in *music*, to answer and echo, as voices in a madrigal.

> One bird *reports* unto another
> In the fall of silver showers,
> Whilst the earth (our common mother)
> Hath her bosom deckt with flowers.
> *Sylvester*, Song of Spring.

report, *n.*—**Crop report.** See ★*crop.*

reportorially (rē-pọr-tō′ri-ạ̈l-i), *adv.* In a reporter's or a journalistic style; by the use or work of reporters. [Colloq.]

> But, unfortunately, the weather will not let the newspaper alone, and so, through government forecast and actual incident and accident, the newspaper must keep pegging away at it, editorially and '*reportorially*,' until the present anomalous state of things is developed, for which there is no excuse in the nature of science or in the intelligence of those who 'get out' the modern newspaper.
> *Pop. Sci. Mo.*, Feb., 1901, p. 382.

repose, *n.*—**Grade of repose.** See ★*grade*1.

repost, *n.* An Anglicized form of *riposte.*

reprecipitable (rē-prē-sip′i-tạ-bl), *a.* [*reprecipit*(*ate*) + *-able.*] Capable of being again thrown down in solid form from a solution, having previously undergone the same treatment and been redissolved.

reprecipitate (rē-prẹ-sip′i-tāt), *v. t.*; pret. and pp. *reprecipitated*, ppr. *reprecipitating.* [*re-* + *precipitate.*] To throw down again in solid form from a solution a substance which has previously undergone the same treatment and been redissolved. *Buck*, Med. Handbook, V. 209.

reprecipitation (rē-prẹ-sip-i-tā′shọn), *n.* The act or process of reprecipitating a substance. Partial or fractional reprecipitation is sometimes resorted to in order to purify a substance. *Buck*, Med. Handbook, IV. 128.

representation, *n.*—**Conform** or **conformal representation**, a representation which is isogonal, angle-true, and orthomorphic, so that an infinitesimal triangle is represented by one similar to it to within infinitesimals of a higher order.

representativity (rep-rẹ-zen-tạ-tiv′i-ti), *n.* Representativeness. *W. D. Howells*, in N. A. Review, April, 1901, p. 632. [Rare.]

repressment (rẹ-pres′mẹnt), *n.* [*repress, v.*, + *-ment.*] Repression; suppression. [Rare.]

> The Division of Botany, therefore, made a special effort to systematically collect information as to this newly arrived emigrant weed and to provide methods for its speedy *repressment* and eradication.
> *Yearbook U. S. Dept. Agr.*, 1894, p. 44.

reprisal, *n.*—**Extraordinary reprisal,** in *Eng. law,* a reprisal directing that satisfaction be taken from the offending state, not, as in ordinary reprisal, from its citizens. Such reprisals are under the Great Seal.—**General reprisal,** a reprisal in which officers and citizens of an aggrieved state are commissioned to take the persons and property of the offending state wherever found.—**Negative reprisal,** a reprisal which is accomplished by the refusal of an aggrieved state to perform an obligation to the offending state, or to permit the offending state to enjoy a right to which it is justly entitled.—**Special reprisal,** one in which an aggrieved citizen is commissioned by letters of marque to seize property belonging to an offending state or its citizens. This form of reprisal is a thing of the past, and the general reprisal, to be executed by the officer of the state, only tolerated.

reprise, *n.* 5. (*b*) It is especially used of the third section of a movement in sonata form.

reproduction, *n.* 6. In *forestry:* (*a*) The process by which a forest is renewed, whether natural or artificial. (*b*) Seedlings or saplings from sprouts or from self-sown seed.—**Method of multiple reproduction, method of single reproduction.** See ★*method.*

Reproductive selection. See ★*selection.*

rept. An abbreviation of the Latin *repetatur,* let it be repeated.

reptary (rep′tạ-ri), *a.* [Irreg. < L. *reptare,* creep.] Creeping; reptant; reptatory; repent.

Reptigrada (rep-tig′rạ-dä), *n. pl.* [NL., < L. *reptare,* crawl, creep, + *gradi,* walk.] A division, having the grade of a superfamily, of *Pinnipedia,* containing the earless seals: the seals in which the hind legs cannot be turned forward and used for locomotion. Contrasted with ★*Gressigrada.*

reptigrade (rep′ti-grād), *a.* [*Reptigrada.*] Adapted for locomotion by creeping without the aid of the hind limbs: specifically applied to the earless seals.

reptil, *a.* and *n.* A simplified spelling of *reptile.*

reptility (rep-til′i-ti), *n.* [*reptil(e), a.,* + *-ity.*] The character of being reptile; creeping habit; reptilian character.

repub. An abbreviation (*a*) of *republic;* (*b*) [*cap.*] of *Republican.*

republic, *n.*—**International Bureau of the American Republics.** See ★*bureau.*

republicism (rẹ-pub′lik-izm), *n.* [Also, as first coined, *republickism,* < *republic* + *-ism.*] A form of the state and a representative method of government: same as republicanism without partizan connotation. [Rare.]

> When national government is established on a territorial basis, democracy is overthrown and kingship with aristocracy takes its place, and monarchical society is organized. Monarchical society, in turn, gives place to a fourth stage, which we call *republickism.* We use the term in no partisan sense and select a new form of the word in order to avoid partisan implications.
>
> *J. W. Powell,* in An. Rep. Bur. Amer. Ethnol., 1898–99, [p. cxviii.

Repugnatorial foramen. Same as *repugnatorial pore.* See *repugnatorial pores.*—**Repugnatorial glands.** See *defensive* ★*glands.*

repullulative (rẹ-pul′ụ-lā-tiv), *a.* [*repullulat(e)* + *-ive.*] Having the property of sprouting or budding again.

repulsion, *n.* 3. In *biol.,* conspicuous unlikeness in the color or markings of allied species which inhabit the same locality.

repulsion-motor (rẹ-pul′shọn-mō″tọr), *n.* An alternating-current motor, for use on single-phase circuits, in which the stationary field is similar to that of a single-phase induction-motor and the armature is like that of an ordinary direct-current machine with commutator and brushes. The armature is short-circuited through the brushes and, after starting, the motor is commonly converted automatically into a single-phase induction-motor by some mechanical device that connects all the commutator-bars together.

reputative (rẹ-pū′tạ-tiv), *a.* Same as *putative.*

request, *n.*—**Court of requests.** (*c*) In India, a small-debt court composed of military officers, held in districts which are outside the jurisdiction of any ordinary court of this kind. *N. E. D.*—**General request.** See *special* ★*request.*—**Request to charge,** in *law,* an application made by either party to a suit, at the trial, that the court instruct the jury as to the law applicable to the case or to a certain phase of the case, in order that their verdict may be in accord with the law, for example, as to measure of damages. It may also include instructions as to facts in evidence.—**Special request,** in *law,* a request actually made at a stated time and place, and so set forth in a complaint: used in contradistinction to a *general request,* which does not necessarily state the time when and place where made.

Requienia (rek-wi-ē′ni-ạ̈), *n.* [NL.] A genus of teleodesmaceous *Pelecypoda,* belonging to the *Chamacea* and characterized by spirally twisted gastropod-like shells, the left valve being large and the right small and operculiform. It occurs in the Lower Cretaceous rocks.

Requisitions of title, in the *law of conveyancing,* formal inquiries on behalf of the proposed purchaser of real property as to the title. These the vendor is to satisfy.

rere² (rā′rā), *n.* [Polynesian *rere.*] Bast-fiber obtained from *Cypholophos macrocephalus,* a shrub or small tree of the nettle family growing without cultivation on many islands of the Pacific ocean. From it are made fine mats highly prized by the natives. In Samoa called *fau pata.*

reroll (rē-rōl′), *v. t.* [*re-* + *roll.*] To roll again; roll up what has been unrolled; roll backward.

reroll (rē-rōl′), *n.* In mechanical piano-players and similar machines, a device, usually controlled by a stop or lever, whereby the music-roll, after having been used, is automatically rewound so as to be ready for use again.

Res integra, a matter not yet acted on, or a point of law not yet adjudicated.—**Res inter alios,** ‘transactions between others,’ that is, third parties, or strangers to a proceeding: a phrase used, in the law of evidence, to denote matters not relevant to the case.—**Res ipsa loquitur,** ‘the thing itself speaks’: a phrase used, in the law of evidence, to denote the principle that, under certain circumstances, a presumption of negligence arises from the mere happening of an event.—**Res nullius,** ‘no one's property’: in *law,* a phrase denoting property without an assignable owner.—**Res publicæ,** ‘public property’: in *law,* designating any property public in its nature, as harbors and rivers.—**Res universitatis,** ‘things of the community’: in *law,* designating things of common access, as the churches, theaters, and parks of a city.

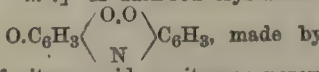
Res. An abbreviation (*a*) of *resigned;* (*b*) of *reserve.*

resaldol (rẹ-sal′dol), *n.* [*re(sorcinol)* + *sal(icylic)* + *-d-* + *-ol.*] A trade-name of a light-brown pulverulent compound of salicylic acid and resorcinol. It is used in medicine as an intestinal antiseptic and astringent.

resalgin (rẹ-sal′jin), *n.* [*re(sorcinol)* + *sal(icylic)* + *-g-* + *-in*².] The β-resorcylate of antipyrin, $C_{11}H_{12}ON_2.C_6H_3(OH)_2COOH$.

resaw (rē-sâ′), *n.* A resawing-machine using circular or band-saws; also, any circular saw used in a resawing-machine of this kind.

resazoin (rẹ-saz′ọ-in), *n.* [*res(orcinol)* + *azo-* + *-in*².] Same as ★*resazurin.*

resazurin (rẹ-sazh′ụ̈-rin), *n.* [*res(orcinol)* + *azure* + *-in*².] A dark-red crystalline substance,  $O.C_6H_3\left\langle\begin{matrix}O.O\\N\end{matrix}\right\rangle C_6H_3$, made by the action of nitrous acid or nitrogen peroxid on resorcinol. It decomposes when melted. Also called *resazoin.*

research-observatory (rẹ-sėrch′ọb-zėr″vạ-tọ̄-ri), *n.* An observatory or laboratory devoted to researches for the increase of knowledge, as distinguished from a mere observing station or an educational laboratory. The Mount Weather Research Observatory is maintained by the U. S. Weather Bureau for scientific research. Also *research-laboratory.*

research-school (rē-sėrch′sköl), *n.* A school in which the pupils are trained in original scientific research.

réseau, *n.* 2. A network of small squares formed by two sets of fine, parallel, equidistant lines, some millimeters apart, crossing each other at right angles, accurately ruled upon a glass plate. This is interposed in a photographic telescope immediately in front of the sensitive plate, so that its lines are impressed upon the negative and furnish reference-points from which the positions of star-images can be measured. Its use is not without some drawbacks, but presents some great advantages, and, on the whole, is favorable to accuracy.

> Prof. Turner showed specimens of photographic reproductions of *réseaux* for stellar photography made by M. H. Bourget. *Athenæum,* Jan. 27, 1906, p. 111.

3. A diffraction grating. See *grating*², 2 (*b*). *Amer. Jour. Sci.,* July, 1904, p. 85.—**Pentagonal réseau,** imaginary lines forming the edges of the pentagonal dodecahedron used by Élie de Beaumont in explaining the position and distribution of mountain-ranges.

> Prof. Suess dismisses all geometrical plans of the earth, such as Élie de Beaumont's famous *Pentagonal réseau,* as misleading Wills-o'-the-wisp.
>
> *Nature,* June 29, 1905, p. 193.

Réseau photosphérique [F., ‘photospheric network.’], a sort of network of regions alternately distinct and blurred, covering the sun's surface, according to the earlier photographs of Janssen made with wet plates. Later results, however, seem to indicate that the phenomenon was not solar but purely photographic.

> Super-eminent among them are the long series due to M. Janssen's skill; yet after twenty years the *réseau photosphérique,* a phenomenon of “blurring” manifested by their means, continues enigmatic as to its nature, and open to doubt even as to its solar origin.
>
> *F. M. Clerke,* Problems in Astrophysics, p. 17.

resedaceous (res-ẹ̄-dā′shius), *a.* Relating or pertaining to the *Resedaceæ.*

resegmentation (rē″seg-men-tā′shọn), *n.* [*re-* + *segmentation.*] Continued or repeated division into segments; division of segments into smaller segments.

resemblance, *n.*—**Cryptic resemblance,** in *biol.,* the resemblance of an organism to another or to an inorganic object for the purpose of concealment. *Encyc. Brit.,* XXVII. 149.—**General resemblance,** in *biol.,* any resemblance of an organism to its environment which is independent of its form and color-pattern, such as the whiteness of arctic animals and the transparency of pelagic ones. *Encyc. Brit.,* XXVII. 146.—**Mimetic resemblance,** in *biol.,* the copying, in one species, of a useful deceptive characteristic of another species, for the purpose of giving to its possessor the same advantage. *Encyc. Brit.,* XXVII. 149.—**Protective resemblance,** in *biol.,* any resemblance in color, markings, or form, which an animal or plant bears to other animals or plants or to the inorganic environment, for the purpose of hiding its possessor from enemies.—**Pseudallosematic, pseudaposematic, pseudepisematic, pseudosematic resemblance.** See ★*pseudallosematic,* etc.—**Special resemblance,** in *biol.,* the resemblance of an organism to some specific object, animate or inanimate, in its normal environment, as a means of concealment from enemies or of preventing its prey from discovering its presence. *Encyc. Brit.,* XXVII. 146.—**Synaposematic resemblance,** in *biol.,* the resemblance of a species to allied species in respect to aposematic or warning characters. *Encyc. Brit.,* XXVII. 148.—**Syncryptic resemblance,** in *biol.,* the resemblance between organisms that are concealed in the same way. *Encyc. Brit.,* XXVII. 147.—**Syntechnic resemblance,** in *biol.,* the sort of likeness between organisms that is due to functional similarity. *Encyc. Brit.,* XXVII. 147.

resequent (rẹ-sē′kwẹnt), *a.* [*re-* + *sequent.*] In *phys. geog.,* again following a consequent course: said of a stream which has spontaneously resumed a course similar to that of the initial consequent stream of the district. *W. M. Davis.*

reserv, *v. t.* and *n.* A simplified spelling of *reserve.*

reserve, *v. t.* 4. In *eccles.,* to retain or preserve (a portion of the consecrated elements) for certain purposes. *N. E. D.*

> A portion of the eucharist, under one kind alone, was always *reserved* in the church, from each mass to the other. *Rock,* Church of the Fathers, III. 41. *N. E. D.*

reserve, *n.* 12. In *postal service,* a fixed amount of cash retained at a money-order station to meet orders payable at that station.—**Federal forest reserve.** See *national forest* ★*reserve.*—**Gold reserve,** the gold held by the United States treasury for the redemption of United States notes. This fund was first accumulated for the resumption of specie payments, and at that date (Jan. 1, 1879) amounted to over $114,000,000. By the provisions of the act of July 12, 1882, it was practically fixed at $100,000,000. In April, 1893, it first fell below this sum as a result of the policy of the treasury (under the “parity” clause of the act of July 14, 1890) in paying the treasury notes of 1890, on demand, in gold; and by January, 1894, fell to $65,650,000. To replenish the fund the government sold bonds—$50,000,000 of 5 per cent. bonds in January, 1894; $50,000,000 of 5 per cent. bonds in November, 1894; about $62,000,000 of 4 per cent. bonds in February, 1895; and $100,000,000 of 4 per cent. bonds in January, 1896.—**Irrespective reserve,** in *postal service,* a maximum reserve allowed over and above the total reserve held against unpaid money-orders.—**National forest reserve,** a tract of land set apart from the public domain by proclamation of the President of the United States, under section 24 of the act of March 3, 1891, or created by special act of Congress, and administered under laws of the United States passed for that purpose, in order “to improve and protect the forest within the reservation or for the purpose of securing favorable conditions of waterflows and to furnish a continuous supply of timber for the use and necessities of citizens of the United States.” Also called *federal forest reserve.*—**Naval reserve,** an auxiliary naval force of officers and men under the direct control of the national government; in the United States, a body of State seamen, on the same legal footing as the State troops. The former class are now designated as *naval militia,* and are auxiliary to the regular naval forces of the nation.—**Reserve of buoyancy.** See ★*buoyancy.*—**Reserve pattern.** See ★*pattern.*—**Reserve seed method.** See ★*seed.*—**Reserve sprout forest.** See ★*forest.*—**Reserve style.** Same as *resist style* (which see, under *resist*).—**Water reserve,** a district, reserved from occupation, from which water drains into the various streams forming the water-supply of a district. [Australia.]

reservery (rẹ-zėr′vẹ̈-ri), *n.* [*reserve* + *-y*³.] The status of a reservist; service in the reserves. [Rare.]

> “*Reservery,*” said he, “seems a pretty mean way to spend one's autumn holiday.”
>
> *R. L. Stevenson,* Inland Voyage, p. 101. *N. E. D.*

reservoir, *n.* 5. In *organ-building,* same as *storage-bellows.* See ★*bellows,* 3, and *organ*¹, 6.—**Storage reservoir,** a reservoir for the purpose of storing or impounding water, as for the purpose of water-supply, water-power, or irrigation.

reset¹, *n.* 3. The act or practice of receiving stolen goods. *N. E. D.*

resetting-pin (rẹ-set′ing-pin), *n.* In computing-machines, a pin which acts in combination with other mechanism in bringing the figure-wheels simultaneously to the zero position before beginning an operation. *H. Goldman*, The Arithmachinist, p. 57.

resetting-wheel (rē-set'ing-hwēl), *n.* In an arithmometer, a small outside nurled wheel which is turned by the operator's fingers to bring the numeral-wheels to the zero position before performing an operation. *H. Goldman*, The Arithmachinist, p. 63.

resh³ (rāsh), *n.* [Heb. *rēsh*, connected with Heb. *rōsh*, Aram. *rēsh*, head.] The twentieth letter (ר) of the Hebrew alphabet, corresponding to the English *r*. Its numerical value is 200.

residence, *n.*—**Legal residence.** See *residence*, 5 (*b*).

residential, *a.* **2.** Of or belonging to a resident. *N. E. D.*

residual. I. *a.*—**Residual products.** See ★*product.*
II. *n.* **4.** In *math.*, the difference between a variate and the mean of the set or series.

residuary, *a.* **2.** In *geol.*, noting the insoluble portion of a series of rocks which have been long exposed to weathering. The soluble portion having been leached away, only the residuum remains, as, for example, clays from limestone.

residuum, *n.* **3.** In *geol.*, the insoluble remainder left behind during processes of rock-weathering by the removal of the soluble portion.

Resignation bond. See ★*bond*¹.

resile, *v. i.* **2.** To shrink, recoil, or retreat from something.—**3.** To recoil or rebound; return to its original form or position, as an elastic body.

resilifer (rē-sil'i-fėr), *n.* [NL. *resili*(*um*) + *-fer*.] In the pelecypod mollusks, a shelly spoon-shaped process within the beaks of the valves on which the resilium rests and to which it is attached by its ends; the chondrophore.

resiliometer (rē-sil-i-om'e-tėr), *n.* [Irreg. < *resili*(*ence*) + *-o-meter*.] An instrument for testing resilience.

resilium (rē-sil'i-um), *n.*; pl. *resilia* (-ä). [NL., < *resilire*, spring back. See *resile*.] In the pelecypod mollusks, an internal part of the ligament, lamellar in structure and composed of horny fibers, with a considerable intermixture of lime which may aggregate and form an accessory shelly plate (*ossiculum* or *lithodesma*). The resilium acts as a plug against which the valves, when closed, are brought into opposition, and its tendency therefore is to push the valves asunder.

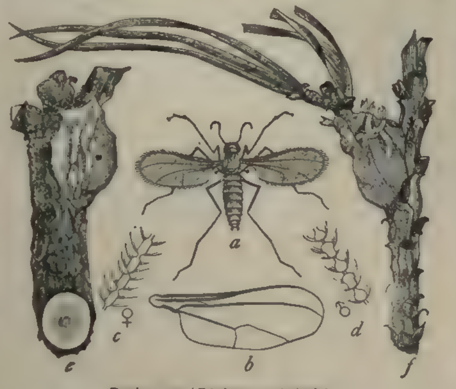
> Separation between ligament and *resilium*.
> *Science*, Nov. 27, 1896, p. 771.

resin, *n.*—**Agaric resin.** See ★*agaric.*—**Alpha-resin.** Same as ★*guaiaconic acid.*—**Angico resin,** a Brazilian gum obtained from *Acacia Angico*, and soluble in alcohol and in proof-spirit. It is used in chest complaints.—**Betula resin,** a resinous body contained in the outer corky layers of the white birch (*Betula alba*). **Boloretin resin,** a resin derived from the fossil fir-wood found in Danish peat-bogs. It is soluble in ether, but not in cold alcohol. It melts at 75-79° C.—**Bucurumanga resin,** a light-yellow, transparent resin found in auriferous alluvium near Bucurumanga, New Granada.—**Calaba resin.** Same as *Maynas* ★*resin.*—**Capsicum resin,** a resin found in *Capsicum fastigiatum* and *Capsicum annuum*, or Cayenne pepper. The acrid properties of the pepper were formerly ascribed to it.—**Galba resin.** Same as *Maynas* ★*resin.*—**Gomard resin,** an oleoresin from the West Indies exuded by *Bursera gummifera*. It has an odor somewhat resembling elemi and turpentine.—**Hemlock-spruce resin,** a reddish-brown resin, closely allied to Burgundy pitch, obtained from hemlock-spruce (*Pinus Canadensis*); Canada pitch. It is used medicinally.—**Hyawa resin.** Same as *Hyawa gum* (which see, under *gum*²).—**Incense-tree resin.** Same as *hyawa gum* (which see, under *gum*²).—**Indian-hemp resin,** a brown, amorphous, highly narcotic compound obtained from the common hemp (*Cannabis sativa*) when it is grown in India; cannabin. It is used as a nerve-sedative.—**Kamila resin,** a resinous, dark-red coloring-matter from kamila, which contains about 75 per cent. of it. The resin consists of several chemical compounds.—**Koussein resin.** Same as ★*kosin.*—**Luban mati resin,** an oleoresin derived from birdwood (*Boswellia Frereana*); elemi. It is white externally, amber-colored inside, and has an odor of lemon and turpentine and a mild terebinthinous taste. It was used in medicine until the seventeenth century. Also called *luban meqeti*. **Masopin resin.** Same as ★*masopin.*—**Maynas resin,** a resin, $C_{14}H_{18}O_4(?)$, obtained by incision from the tree *Calophyllum Calaba*, in the plains of San Martino and the Orinoco.—**Mezereon resin,** the acrid constituent of mezereon bark, from *Daphne Mezereon*, found in middle and southern Europe. It is used in cases of rheumatism and scrofula as an alterative and sometimes as a vesicant.—**Palisander resin,** a black, brittle resin, $C_{21}H_{21}O_6(?)$, which is contained in palisander wood. It melts at 95° C.—**Palm resin.** Same as ★*cerosiline.*—**Pellitory resin.** Same as ★*pyrethrin.*—**Pepper resin,** a resin found in pepper, and said to be the cause of its pungent taste.—**Resin of birch.** Same as *betulin.*—**Val d'Arno Superiore resin,** a fossil resin closely resembling the Weissenfels resin.—**Weissenfels lignite resin,** a mixture of resins obtained from the distillation-products of lignite found at Weissenfels.

resin-cyst (rez'in-sist), *n.* A cyst or sac, in wood, containing resin.

resineone (re-zin'ē-ōn), *n.* [*resin* + *-e-* + *-one*.] A compound, $C_{30}H_{48}O(?)$, formed by distilling colophony with lime.

resin-gnat (rez'in-nat), *n.* An American cecidomyiid fly, *Diplosis resinicola*, whose larvæ live in exuding lumps of resin on pine-trees and feed on the abraded bark. *Comstock*, Manual of Insects, p. 447.



Resin-gnat (*Diplosis resinicola*).

a, adult female; *b*, wing of same; *c*, cross-section of antenna of female; *d*, same of male; *e*, section of pine twig showing work of larvæ; *f*, same showing extruded pupa-cases: *a*, *e*, *f*, enlarged; *b*, *c*, *d*, still more enlarged. (After Comstock, U. S. D. A.)

resinic (re-zin'ik), *a.* [*resin* + *-ic*.] Pertaining to or resembling resin.

resinite (rez'in-īt), *n.* [*resin* + *-ite*.] Same as ★*retinasphalt*.

resin-oil (rez'in-oil), *n.* Same as *rosin-oil*.

resinone (rez'in-ōn), *n.* [*resin* + *-one*.] A compound, $C_{10}H_{18}O(?)$, formed by distilling colophony with lime.

resinosis (rez-i-nō'sis), *n.* [*resin* + *-osis*, denoting disease.] An abnormal outflow of resin from a coniferous tree. In some cases it is attributed to the fungus *Armillaria mellea*, while in others the cause is unknown.

> Outflows of resin — *Resinosis* — also come under this general heading [flux] but although some resin-fluxes are traced to the destructive action of Agaricus [Armillaria] melleus in Conifers, others, as well as certain forms of Gummosis, are still in need of explanation.
> *Encyc. Brit.*, XXXI. 578.

resinous, *a.* **2.** Noting the peculiar luster of certain glassy rocks, as the pitchstones, which gives to fractured surfaces the appearance of resin. *Geikie*, Text-book of Geol., p. 131.

resin-spirit (rez'in-spir"it), *n.* Same as ★*pinoline*.

resin-wash (rez'in-wosh), *n.* A standard insecticide mixture for use against scale-insects and plant-lice. One of the formulas is: resin, 20 pounds; caustic soda, 5 pounds; fish-oil, 2½ pints; water to make 100 gallons. *Yearbook U. S. Dept. Agr.*, 1900, p. 261.

resistance, *n.* **4.** In *naval arch.*, the reaction which a vessel opposes to an extraneous force by which it is dragged or driven through the water, and particularly to motion forward in the direction of the length of the vessel. Modern investigation and experimentation in model-basins have led to the division of this resistance into three principal parts. The whole resistance of the vessel as distinguished from its parts is called the *total resistance*. *Frictional resistance* is that part due to the fluid friction of the water flowing past the wetted surface of the vessel (see also ★*coefficient of friction* (*b*)). The *eddy-making resistance* is that part due to the formation of eddies in the water flowing past the vessel, particularly where the streams unite at the stern and around projections or abrupt breaks in the under-water surface or at the bows in very bluff-bowed vessels. In well-formed ships the eddy-making resistance is a very small part of the total resistance. The *wave-making resistance* is that part of the resistance caused by the absorption of energy in the formation and maintenance of the systems of waves accompanying a vessel in motion. This part of the resistance is small at low speeds, but at speeds in knots equal to or greater than the square root of the length of the vessel in feet usually forms the greater part of the total resistance. That part of the total resistance remaining after subtraction of the frictional resistance is called the *residuary resistance*. (See also *Froude's* ★*law*.)—**Apparent resistance,** in *elect.*, the resistance of a circuit, including not only the true or ohmic resistance of the conductors but also the false resistance due to counter-electromotive forces or to reactance. In circuits having reactance the apparent resistance is the same as the impedance.—**Asymmetrical resistance,** in *elect.*, a resistance greater to a flow of current in one direction than in another. *Houston*, Dict. Elect.—**Ballast resistance,** resistance placed in series with a Nernst lamp, arc-lamp, or mercury-lamp for the purpose of equalizing the flow of current in the circuit. See *Nernst* ★*lamp*. *Elect. World and Engin.*, March 28, 1903, p. 528.—**Bolstering resistance,** the compensating resistance or ballast of a Nernst lamp, arc-lamp, or mercury-lamp. See *Nernst* ★*lamp*. [Eng.] *Elect. World and Engin.*, March 28, 1903, p. 528.—**Center of lateral resistance,** in *naval arch.*, the resultant center of the water-pressures which oppose motion sidewise or to the lee of a vessel from pressure of the wind on the sails. The point is usually taken as the center of gravity of the immersed portion of the central longitudinal section of the vessel.—**Coefficient of direct resistance.** See ★*coefficient.*—**Coefficient of frictional resistance.** Same as ★*coefficient of friction* (*b*).—**Coefficient of resistance.** See ★*coefficient.*—**Contact resistance.** (*a*) See *contact*¹. (*b*) Resistance to the flow of current which occurs at the surface between conductors in contact, as in the coherer, or between the liquid and the terminal of an electrolytic cell, or between the heated gas in the electric arc and the carbon.—**Curve of resistance.** See ★*curve.*—**Curve resistance,** in *railroading*, the resistance to or retardation of the motion of a train encountered when traversing a curve in the road. It is caused by the combined slipping of the two rigidly joined wheels in each pair in the train, resulting from the unequal length of the two rails composing the curve, and the friction of the flanges of the forward outer wheels of each truck in guiding the train through the curve. Curve resistance implies increased power in the engine at this point because it must be added to the normal train resistance while passing the curve. See *train* ★*resistance.*—**Dielectric resistance.** (*a*) The power of a dielectric to resist the stresses to which it is subjected in an electrostatic field, as measured by the difference of potential necessary to produce a disruptive discharge through the medium. (*b*) The resistance offered by a dielectric to the passage of an electric current; the ohmic resistance of an insulating substance.—**Effective resistance,** in alternating-current circuits, the energy component of impedance, defined as the energy component of the alternating electromotive force divided by the current.—**Elastic resistance,** the resistance offered by any material, solid or liquid, to a change of form or size up to the point at which it would receive a permanent deformation from the stress.—**Equivalent resistance,** in *elect.*, a resistance the value of which is such that it may be substituted for another resistance or set of resistances (such as the various resistances of a complex or divided circuit) without affecting the intensity of the current.—**Essential resistance,** in *elect.*, the internal resistance of an electrolytic cell or of a generator or motor.—**External secondary resistance,** that part of the electric resistance of an electrolyte (specifically of animal or vegetable tissue) which is due to cataphoric action.—**Extraordinary resistance,** in *elect.*, the external resistance of a circuit containing a generator, motor, or battery.—**False resistance,** in *elect.*, that part of the apparent resistance of a circuit which is due to the presence of counter-electromotive force.—**Grade resistance,** in *railroading*, the resistance caused by the weight of a train moving upon an upgrade, where the weight tends to pull the train backward down the grade. A one per cent. grade offers a grade resistance that requires an extra tractive force in the locomotive (in excess of the tractive force required on a level track) that is estimated at 20 pounds per ton of train weight. Grades that exceed five per cent. require a cable to haul the train up the grade or a locomotive having geared wheels and a rack, as in a mountain road. See *cable-railroad*, *geared locomotive* (under *locomotive*), and *train* ★*resistance.*—**Inductionless resistance,** the resistance of a circuit devoid of inductance.—**Insulation resistance,** in *elect.*, the resistance which the insulation of a conductor, such as a cable, offers to the flow of current from the conductor to the earth or to any other conductor from which it is insulated.—**Jacobi's unit of resistance,** a practical unit of resistance equal to the resistance of a copper wire one millimeter in diameter and one meter in length.—**Lateral resistance,** in *naval arch.*, the resistance of a vessel to motion sideways through the water, or resistance to making leeway under sail.—**Matthiesen's unit of resistance,** a practical unit of electrical resistance equal to the resistance at 60° F. of a copper wire $^1/_{16}$ of an inch in diameter and one statute mile in length.—**Modulus of resistance.** See ★*modulus.*—**Molecular resistance,** in *phys. chem.*, the specific resistance of a dissolved electrolyte multiplied by the concentration: it is the same as the resistance of one gram-molecule of the electrolyte when dissolved and contained between two large electrodes one centimeter apart.—**Non-inductive resistance,** in *elect.*, resistance of a circuit which has no reactance and which, owing to the absence of inductance and capacity, has the same resistance for an alternating as for a direct current.—**Ohmic resistance,** in *elect.*, that portion of the apparent resistance or impedance of a circuit which depends only upon the dimensions of the conductors, their temperature, and the materials of which they are composed.—**Primary resistance.** See ★*primary.*—**Resistance factor,** in *phys.*, the coefficient or numerical factor which expresses the resistance due to friction, or to similar causes, in the movement of a projectile or of a revolving or oscillating body.—**Resistance rhythm.** See ★*rhythm.*—**Rotational resistance,** resistance to rotation due to journal friction or other influences.—**Selenium resistance,** in *elect.*, a resistance consisting of a strip, plate, or bar of vitreous selenium. Its characteristic feature is the reduction of resistance by exposure to light.—**Skin resistance,** in *elect.*, resistance of a conductor to oscillatory currents of very high frequency, as contrasted with its resistance to a steady current. In the former case only the layers nearest the surface conduct, whereas the resistance to a steady current is inversely as the cross-section of the conductor.

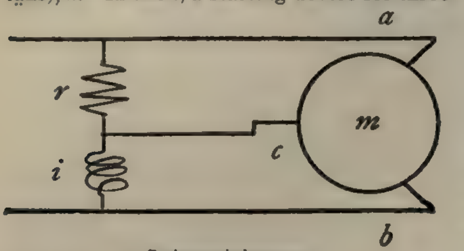
> The so-called third rail is also welded by these means. The *skin resistance* of copper bonds increases with time, and frequent repairs are necessitated thereby.
> *Jour. Franklin Inst.*, April, 1904, p. 248.

Slide resistance, a rheostat with sliding contacts. See ★*slide-wire.*—**Spurious resistance,** false resistance as distinguished from the true ohmic resistance of the conductors of a circuit. See *false* ★*resistance.*—**Thermal resistance,** resistance to the passage of heat: the reverse of thermal conductivity.—**Traction resistance,** the resistance due to friction, which must be overcome in drawing a load along a track or road.—**Train resistance,** in *railroading,* the sum of all the forces that tend to retard and stop a train when it is in motion. It is measured in terms of the power of the engine spent in starting the train and keeping it in motion on a level track. Engines for fast passenger-trains are usually capable of quickly overcoming the train resistance at starting, when the resistance is greatest, and maintaining the speed at the most economic rate when the resistance is least. The chief force in train resistance is friction of the wheels and flanges on the rails. Added to this are the friction of the journals and moving parts of the engine, the resistance of the air, the force and direction of the wind, the temperature and the weather, and the speed of the train. Sometimes called *rolling resistance.* See *grade* ★*resistance* and *curve* ★*resistance.*—**Transition resistance.** (*b*) In *elect.*, the resistance, to the passage of an electric current, which exists at the boundary between two media, as when a current flows from a solid into a liquid or gas, or vice versa.—**True resistance,** in *elect.*, the ohmic resistance of a conductor; that part of the impedance of a conductor which depends only on its material, size, and temperature.—**Varley's unit of resistance,** a practical unit of electrical resistance proposed by Varley and defined as equal to twenty-five Siemens's units. Varley's unit was approximately 23.5 ohms. Matthiesen's unit is also sometimes spoken of as Varley's unit. See *Matthiesen's unit of* ★*resistance.*

resistance-furnace (rẹ̄-zis′tans-fėr″nās), *n.* Same as *electric* ★*furnace.* *Elect. World and Engin.*, Jan. 23, 1904, p. 176.

resistance-head (rẹ̄-zis′tans-hed), *n.* The resistance offered by the air at the front of a moving train.

resistance-inductance (rẹ̄-zis′tans-in-duk″-tans), *n.* In *elect.*, a starting device for three-phase induction-motors. It consists of a resistance-coil *r* and a coil having suitable inductance *i* connected in series across the mains. The mains *a* and *b* are connected to two of the three terminals of the motor *m*, and the third terminal *c* is connected to a point between the two coils. *Steinmetz,* Elect. Engineering, p. 293.



Resistance-inductance.

resistance-tube (rẹ̄-zis′tans-tūb), *n.* A rheostat consisting of a tube of insulating material containing powdered carbon, the resistance of which is varied by means of pressure.

resistant, *a.* **2.** In *bot.*, able to resist the attacks of parasites: applied to those plants which, because of some inherent property, are able to resist the attack of those parasites to which they are usually subject.

> The advisability of renewed efforts in the introduction and cultivation of varieties of Vitis vinifera on *resistant* stocks in that region.
> *Yearbook U. S. Dept. Agr.*, 1898, p. 57.

resister, *n.* **2.** Specifically, in *elect.*, a body which offers resistance to the flow of current: said of the substances which transmit current within an electric furnace and become heated because of their resistance.

> The resistance medium or "*resistor*," when solid, usually consists of a core of carbon, coke, or graphite.
> *Sci. Amer. Sup.*, May 27, 1905, p. 24586.

resistive, *a.* **II.** *n.* In *elect.*, a resistance; that which offers resistance.

> A non-inductive *resistive* in the shape of a barrel of water was connected between the common bus-bar and ground. *Elect. World and Engin.*, April 11, 1903, p. 607.

resistiveness (rẹ̄-zis′tiv-nes), *n.* Power of resistance.

resistivity, *n.* **2.** In *elect.*, specific resistance; the resistance of a unit quantity of a substance, or of a sample of unit cross-section and unit length.

> Electric *Resistivity* may be defined as a quality of a substance in virtue of which a difference of potential can exist between different portions of the body when these are in contact with some constant source of electromotive force, in such a manner as to form part of an electric circuit. *Encyc. Brit.*, XXVIII. 4.

Magnetic resistivity, specific magnetic resistance; the reluctivity or opposition to magnetic flux of a material as compared to that of air.—**Mass resistivity,** in *elect.*, specific resistance expressed in terms of length and weight of the substance; the resistance in ohms of a wire one meter long and weighing one gram.

> We may express the resistivity [of a metal] by stating the resistance in ohms offered by a wire of the material of uniform cross-section, one metre in length, and one gramme in weight. This numerical measure of the resistivity is called the *Mass-Resistivity*.
> *Encyc. Brit.*, XXVIII. 5.

Volume resistivity, in *elect.*, specific resistance; a cubic centimeter is the unit of size.

resizer (rē-sī′zėr), *n.* [**resize* + *-er*¹.] A die for restoring a fired cartridge-case to its proper size: it is used before reloading in order that the cartridge-case may certainly fit the chamber of the gun.

resolute, *n.* **3.** In *math.*, the specifically directed component of a vector.

resolution, *n.* **13.** In *optics*: (*a*) The separation by means of an optical instrument, such as a telescope or spectroscope, of close-lying bodies such as the components of a double star or of a multiple line in the spectrum. (*b*) The rendition by means of a microscope of the minute details of structure of a substance. —**Resolution of a vector,** the determination, by the principle of the parallelogram or other method, of the components of a force or of any other vector quantity.

Resolutioner, *n.* **2.** [*l. c.*] One who joins in or subscribes to a resolution. *N. E. D.*

resolv, *v.* and *n.* A simplified spelling of *resolve.*

resolve, *v. t.* **18.** In *optics*, to make distinguishable, by means of an optical instrument, the details of structure of a body, or to separate by such means close-lying bodies, such as the stars in a cluster.

resonance, *n.* **4.** In *elect.*, the condition of an alternating electric circuit in which the capacity reactance equals or approximately equals the inductive reactance. These two reactances therefore neutralize each other more or less completely, and the current is limited by the resistance only, so that very large values of currents, with correspondingly high voltages, may appear in the circuit. The condition of resonance depends on the frequency of the alternating current; and, inversely, in any circuit containing capacity and self-inductance, a certain frequency exists where resonance occurs.

5. In *psychol.*: (*a*) A term applied, in the James-Lange theory of emotion, to the complex of bodily changes reflexly aroused by the object which excites emotion. "The changes are so indefinitely numerous and subtle that the entire organism may be called a sounding-board." *James.* Also termed *bodily reverberation.*

> That the corporeal *resonance* does form an essential ingredient in emotion is abundantly proved by a variety of facts. *J. Sully,* Human Mind, II. 58.

(*b*) By extension of meaning, the sympathetic arousal in oneself, as if by echo, of a state of feeling whose manifestations one is observing in another, or the course of which one is tracing in imagination, but of which one has had no direct and first-hand experience.

> Only genius, in which the highest powers of imagination are developed, is able, with little or no experience with woe, to feel what a recent writer makes its [sympathy's] chief characteristic,—the pathos of *resonance*.
> *Amer. Jour. Relig. Psychol. and Education*, May, 1904, [p. 34.

Electrical resonance, the property by virtue of which oscillations are set up in an electric circuit in response to oscillations in another circuit at a distance. The conditions are analogous to those of acoustic resonance in that the natural frequency of oscillation of the two circuits must be the same or one the multiple of the other. See also def. ★4.—**Helmholtz's resonance hypothesis,** in *physiol.* and *psychol.*, Helmholtz's theory of audition, according to which the fibers of the basilar membrane, with the structures resting upon them, form a delicately graduated series of minute resonators.—**Magnetic resonance,** electric resonance.

> The main problem of Tesla transformers is that of establishing *magnetic resonance* between a coil of a few turns attached to a capacity with a coil of many turns without terminal capacity.
> *Sci. Amer. Sup.*, March 14, 1903, p. 22745.

Multiple resonance, electromagnetic resonance simultaneously produced in resonators of various frequencies by waves from a single vibrator. It has been shown by Poincaré and by Hertz that this is possible when the amplitude of the exciting waves diminishes rapidly.—**Optical resonance,** the vibration of a particle of matter brought about by the action of ether-waves having a frequency approximating to the frequency of free vibration of the particle.—**Resonance transformer.** See ★*transformer.*

resonance-bottle (rez′ọ̄-nans-bot″l), *n.* A bottle or tube employed as a resonance-chamber. Also *resonance-tube.* See *resonance-box.*

> For the *Resonance Bottle* . . . any bottle may be used, and can be tuned to the right pitch by pouring in water, which raises the pitch; or, if the mouth is wide, by partially covering it with a card, which lowers the pitch.
> *E. C. Sanford,* Exper. Psychol., I. 383.

resonance-tone (rez′ọ̄-nans-tōn), *n.* In *phonetics*, the tone of one of the resonance cavities of the vocal apparatus (trachea, larynx, pharynx, mouth, nose): opposed to *chord-tone.* *E. W. Scripture,* Exper. Phonetics, p. 19.

resonance-tube (rez′ọ̄-nans-tūb), *n.* See ★*resonance-bottle.*

resonant, *a.* **3.** In *elect.*, capable of responding to electric oscillations of a given frequency on account of its capacity, inductance, and dimensions: said of an electrically tuned circuit.—**4.** In the *graphic arts*, noting brilliancy and power in technique or quality. [Rare.]

> His painting has ever become slighter, higher in tone and less full and *resonant* in color.
> *W. Armstrong,* in Portfolio, XVIII. 233.

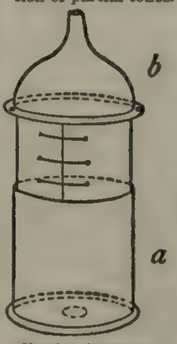
resonate, *v. i.* **2.** In *elect.*, to respond to electric oscillations of a given frequency. Used transitively in the extract.

> Having the radiating aërial *resonating* the primary circuit, it is now necessary to have a second primary circuit in tune with the first.
> *Physical Rev.*, April, 1904, p. 231.

resonator, *n.* **2.** In *elect.*: (*b*) A circuit the dimensions, inductance, and capacity of which are such that it is in syntonism with some similar circuit. Electric oscillations in the one will then set up oscillations of the same frequency in the other, even at a distance.—**3.** In *anat.*, the parts above the larynx which act as a resonance-box in voice-production.—**4.** A general name for such musical instruments as consist essentially of a hollow body or globe, the confined air of which is thrown into vibration by blowing upon the edge of a hole in its side, while the pitch is controlled by other holes stopped by the fingers, such as the clay whistles and ocarinas found in various parts of the world.—**Helmholtz resonators,** in *physiol.* and *psychophys.*, a series of spherical resonators of brass or glass, used for the intensification and detection of partial tones.—**Kœnig's resonator,** in *acoustics*, a cylindrical resonator of brass, capable of adjustment to a series of different pitches: introduced by R. Kœnig to replace the spherical or cylindrical resonator of Helmholtz.—**Resonator grating,** in *elect.*, an apparatus for the study of electric waves consisting of a series of parallel wires or metallic strips. Such a grating completely reflects electric waves when the distance between the wires is less than $\frac{1}{20}$ of a wave-length and transmits without loss by reflection when the spacing exceeds ½ of a wave-length.

> As Garbasso first showed, the *resonator gratings* here used possess selective properties for electric waves.
> *C. Schaefer,* in Phys. Rev., XXIV. [421.

Resonator system, the electrically tuned receiving-circuit of a wireless telegraph station.



Kœnig's Resonator.

a, outer cylinder, whose orifice is turned toward the source of sound; *b*, adjustable inner cylinder, held in the opening of the ear. The horizontal lines upon the inner cylinder indicate the setting of the resonator for determinate pitches.

resonatory (rez′ọ̄-nā-tō-ri), *a.* [*resonate* + *-ory.*] Resonating; resonant; producing resonance. *Sayce,* Science of Lang., I. 231. *N. E. D.*

resopyrin (rē-sọ̄-pī′rin), *n.* [*reso(rcinol-anti)pyrin.*] Same as ★*resorcinol-antipyrin.*

resorbence (rẹ̄-sôr′bens), *n.* [See *resorb.*] Reabsorption. [Rare.]

resorbin (rẹ̄-sôr′bin), *n.* A readily absorbable ointment base composed of expressed oil of almond, yellow wax, soap, gelatin, lanolin, and water.

resorcinol (rẹ̄-sôr′si-nol), *n.* [*resorcin* + *-ol.*] Same as *resorcin.*

resorcinol-antipyrin (rẹ̄-sôr′si-nol-an-ti-pī″-rin), *n.* A crystalline product, $C_6H_6O_2 + C_{11}H_{12}ON_2$, formed by intimately mixing resorcinol and antipyrin. It melts at 103–104° C. Also called *resopyrin.*

resorcylic (rẹ̄-sôr-sil′ik), *a.* [*resorc(inol)* + *-yl* + *-ic.*] Derived from resorcinol.—**Resorcylic acid,** a dihydroxybenzoic acid, $C_6H_3(OH)_2COOH$, in which the two hydroxyl groups are in the meta position to each other. Alpha-resorcylic acid, or 3,5-dihydroxybenzoic acid, is a crystalline acid, $C_6H_3(OH)_2COOH + 1\frac{1}{2}H_2O$. It is made synthetically, and melts at 232–233° C. Beta-resorcylic acid, or 2,4-dihydroxybenzoic acid, is made synthetically. It contains from one half to three molecules of water of crystallization, according to the conditions. The anhydrous acid melts at 204–206° C., yielding resorcinol and carbon dioxid.—**Resorcylic aldehyde,** a yellow crystalline compound, $C_6H_3(OH)_2$-CHO, or 2,4-dihydroxybenzoic aldehyde. It is formed when resorcinol is warmed with water, sodium hydroxid, and chloroform. It melts at 134–135° C.

resorption, *n.* **3.** In *petrog.*, the melting of a phenocryst in a porphyritic rock and its recrystallization in situ as other minerals. This results in the formation of a *resorption border* in many cases about the more or less resorbed phenocryst, as when hornblende is surrounded by a black border composed of pyroxene and magnetite.

resorufin (rē-sọ̄-rö′fin), *n.* [*res(azurin)* + L. *rufus*, red, + *-in*².] A dark-red crystalline substance, $C_{12}H_7NO_3$, formed by warming resazurin with concentrated sulphuric acid, or by treating it, in ammoniacal solution, with zinc-dust or sodium-acid sulphite. It forms carmine solutions in alkalis and is insoluble in water.

respiration, *n.*—**Anal respiration**, aquatic respiration by the rhythmical pulsations of a muscular rectum which takes in and expels the water, as in *Cyclops*. *Parker and Haswell*, Zoology, I. 550.—**Biot's respiration**, rapid and shallow breathing, occasionally interrupted.—**External respiration**, the absorption of oxygen by the blood from the inspired air and the giving out, at the same time, of carbon dioxid.—**Internal respiration**, the giving out by the blood to the tissues of oxygen and the absorption, at the same time, from them of carbon dioxid.—**Respiration calorimeter.** See ★*calorimeter*.

Respiratory blood, in annelids, the pseudohemal fluid.—**Respiratory food, heart, pigment, trumpet, tubule.** See ★*food*^{1}, ★*heart*, etc.—**Respiratory tube.** Specifically, a blind tube connected with the gill pouches and forming part of the respiratory apparatus of the lamprey.

respit, *n.* and *v. t.* A simplified spelling of *respite*.

respite, *n.*—**Forced respite**, in *civil law*, an act by which those creditors who refuse to accept a debtor's proposal for settlement are legally compelled to join with the other creditors who have accepted the proposal.—**Voluntary respite**, in *civil law*, an act by which all the creditors accept a debtor's proposal of settlement of claims.

respond, *v. i.* 5. In *biol.*, to react under a stimulus in such a way as to prepare for or escape from an event of which, in course of nature, the stimulus is the sign, signal, or constant antecedent; answer back to a stimulus by an action that commends itself to the human observer as prudent and judicious. See ★*response*, 3.

respondeat superior (rẹ̄-spon′dẹ̄-at sū-pē′ri-ộr). [L.] 'Let the principal answer': in *law*, a phrase used to express the doctrine that the principal is responsible for the acts of his agents or servants when done within the scope of their employment.

respondent, *n.* 4. A defendant in a lawsuit, now specifically in a divorce case. *N. E. D.*

responder (rẹ̄-spon′dėr), *n.* 1. One who or that which responds.—2. An electrolytic detector or receiver for wireless telegraphy.

> The principle of this receiver, or "*responder*," is based upon the fact that the Hertzian oscillations produce sudden electrolytic action in a cell containing certain electrodes and solutions. *Elect. Rev.*, Sept. 3, 1904, p. 330.

response, *n.* 3. In *biol.*, the reaction of a living being to a stimulus by a change that is brought about by its organic machinery and is fitted to prepare it for or protect it from some external change of which the stimulus is the sign, signal, or constant antecedent in that order of events which has prevailed in the ordinary or average environment of its species; the reaction of a living being to a stimulus by a change that, so far as we understand it, commends itself to our reason as prudent and judicious. Winking when a blow is threatened, considered as a means for protecting the eyeball from threatened danger, and the growth of the radicle of the germinating seedling toward moisture and soluble food under the stimulus of gravity, while the plumule grows toward the sunlight and the air under the same stimulus, are illustrations of response as an answer, as contrasted with 'reaction' in the ordinary meaning of the latter word. While a response may commend itself to the reason, it is not essential that it be understood by the being that exhibits it. The chick runs to its mother for protection from threatened danger when its auditory machinery is stimulated by her warning cry, although it may not know the source of danger nor even what danger and protection are. Since the stimulus that leads to a responsive act is a signal which may be misinterpreted, any living being may make blunders or be misled, as we may ourselves be deceived when we think we know more than the facts warrant. The study of the physical properties of stimuli and the study of the structure and functional activity of organisms are valuable aids in the study of response, but its essential characteristic—that which makes it an answer, its meaning—is not to be found in the living body. Its existence is in the relation between the living being or its ancestors and the average environment of the species.

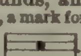
4. In *physiol.*, the reaction of a living body or an organ or part of such a body to a stimulus, considered apart from any biological meaning that it may or may not have.—**Book of responses.** See ★*book*.—**Response movement**, in *physiol.*, an automatic movement. See the quotation.

> Those motor reactions that are not the invariable result of a definite stimulus, . . . but that are modified while in progress by the action of new intercurrent stimuli, we shall call automatic acts. . . . Goltz has termed the automatic movements *response-movements*.
> *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 13.

responsivity (rē-spon-siv′i-ti), *n.* [*responsive*.] The character of being responsive; specifically, in *anthrop.*, mental responsiveness; that attribute of mind in virtue of which there is a relation of correspondence between modes of thought and physical surroundings, so that the human mind, for example, even in its more complex operations, reflects environment with striking fidelity.

> The cardinal principles of science may be reckoned as five: the indestructibility of matter . . . ; the persistence of motion . . . ; the development of species . . . ; the uniformity of nature . . . ; and the *responsivity* of mind.
> *Proc. Wash. Acad. Sci.*, II. 11.

> The general relation between thought and surroundings . . . finds most definite expression in the current scientific teaching that knowledge arises in experience, and it seemed desirable to formulate the relation as a principle of knowledge which may appropriately be styled the *responsivity* of mind. *Smithsonian Rep.*, 1900, p. 68.

rest^1, *n.* 10. (*b*) Any fixed period during which interest accrues and at the end of which a balance is struck, interest accruing from thence on the balance struck, thus giving the benefit of compound interest: a term in common use in computing interest on mortgages, trust funds, and the like.—**Breve rest**, in *musical notation*, a mark for a pause or silence equal in duration to a breve, —**Continued rest**, in *music*, a rest that includes several measures, the number being indicated by a numeral over the sign. See *rest*^{1}, 8, and *abbreviation*, 4.—**Weighted rest**, in *mech.*, a form of tool-carriage used on engine-lathes which is held to the inverted T-shaped rails on the ways by a heavy weight suspended beneath the carriage: used only for light machines at any time and now practically obsolete.—**Whole rest.** Same as *whole-note rest*. See *rest*^{1}, 8.

rest^2, *n.* 4. In *anat.*, a minute accessory suprarenal gland embedded in the kidney or the liver. *Buck*, Med. Handbook, I. 129.—**Adrenal rests.** See *Marchand's* ★*adrenals*.

restart (rē-stärt′), *v. i.* To start again after a stop or pause: specifically used of injectors for feeding-boilers, which adjust themselves to varying pressures of the steam, and, after breaking the continuous flow of water, will pick it up again without readjustment by hand; also of motors for vehicles, which, after being stopped, will start up again without the necessity of compressing and igniting the charge by turning the motor-shaft by hand.

rest-atom (rest′at″ọm), *n.* [*rest*^{2} + *atom*.] That portion, containing the positive ion, which remains when the negative ion is removed.

resterilize (rē-ster′il-īz), *v. t.*; pret. and pp. *resterilized*, ppr. *resterilizing*. [*re-* + *sterilize*.] To submit a second time to the process of sterilization. *Buck*, Med. Handbook, I. 568.

restiaceous (res-ti-ā′shius), *a.* Belonging to or resembling the *Baloskionaceæ*, a family of plants formerly called *Restiaceæ* and *Restionaceæ*. See *Restiaceæ* and ★*Baloskionaceæ*.

resting-bud (res′ting-bud), *n.* A bud in a resting or inactive state. See *resting-state*. *Nature*, Nov. 24, 1904, p. 76.

restis (res′tis), *n.* [NL., < L. *restis*, a cord, a rope.] Same as *restiform body* (which see, under *restiform*). *Buck*, Med. Handbook, II. 154.

restitution, *n.* 6. In *biol.*, the replacement of a lost tissue or organ, or the substitution for it of a different one: a term applied especially to the processes set up by a plant or other organism owing to the loss of a tissue or organ.

> *Restitution* . . . may include the replacement of the lost members by the development of new ones on adjacent parts of the body, or on the injured surface; the substitution of an organ of a different character arising on the injured surface, or the substitution of an organ of a different character on adjacent portions of the plant.
> *Science*, June 5, 1903, p. 905.

Residual restitution, in *mech.*, the gradual return from a state of strain after release from stress, observed in bodies that show elastic fatigue.

restiv, *a.* A simplified spelling of *restive*.

restock (rē-stok′), *v. t.* and *i.* [*re-* + *stock*.] To stock again; specifically, in *ichth.*, to furnish, by artificial means, with a species which is becoming exhausted.

> The important industry of artificial fertilization and the transportation of fish eggs, which has enabled man to *restock* exhausted localities and to stock new ones.
> *J. J. Stevenson*, in Smithsonian Rep., 1897, p. 331.

restoring-coil (rẹ̄-stōr′ing-koil), *n.* In *telephony*, the coil, in an annunciator or indicator, the attraction of whose core serves to restore to position the drop-shutter after a call has been answered.

restrainer, *n.* 2. Specifically, in *elect.*, a substance used in the manufacture of the electrodes of magnetite arc-lamps the function of which is to reduce the rate at which the terminals are consumed.

> A much better method of producing electrodes was found by not reducing the material, but adding a *restrainer*; that is, a substance which added to the electrode material in small quantities reduces the rate of consumption. *Elect. World and Engin.*, May 21, 1904, p. 975.

Restraining order. Same as *temporary injunction* (which see, under *injunction*).—**Restraining powers.** See ★*power*^{1}.—**Restraining statute.** See ★*statute*.

restraint, *n.*—**Chemical restraint.** See ★*chemical*.—**Law of restraint.** See ★*law*^{1}.—**Restraint of marriage.** See ★*marriage*.—**Restraint of princes and rulers**, a phrase used in bills of lading to denote a limitation upon the liability of a ship-owner when the ship carrying the cargo is detained by governmental authority against the will of the ship-owner.—**Restraint of trade**, in *law*, a term commonly applied to contracts held to be illegal and void by reason of their effect in preventing competition and encouraging monopolies.

restrike, *v.* II. *intrans.* To strike again: said of an electric arc which, after the current has momentarily ceased, forms again with metallic connection between the terminals.

restrike (rē-strīk′), *n.* [*re-* + *strike*.] In *numis.*, a modern, or at least more recent, impression from the original die. *W. C. Hazlitt*.

Resultant acceleration, force, vector, velocity. See *resultant* ★*vector*.

resultantometer (rẹ̄-zul-tạn-tom′e̤-tėr), *n.* [*resultant* + *-o-* + Gr. μέτρον, measure.] An apparatus for determining the general resultant direction of the atmospheric currents in any particular locality, for a definite space of time.

> The method adopted has been to work out, for each region of the earth's surface, the direction of the average monthly drift of the atmosphere at various heights with a "*resultantometer*" devised by Mr. Sandström. The results are set out in tables and diagrams, and in what follows attention will be directed to some of the most important points. *Nature*, Feb. 2, 1905, p. 330.

resumption, *n.* 3. In *Welsh prosody*, the practice of beginning every verse with the same letter, which is sustained throughout. *J. Williams*.

resuperheat (rē″sū-pėr-hēt′), *v. t.* [*re-* + *superheat*.] To superheat again. After steam has once been superheated and has cooled in doing mechanical work, it can be regenerated in a receiver between the cylinders of a multiple-cylinder engine, and the moisture removed if any has appeared.

resurface (rē-sėr′fās), *v. t.*; pret. and pp. *resurfaced*, ppr. *resurfacing*. To put a new surface on; renew the surface of.

> Subsequently, when the road was *resurfaced* with limestone, which was much softer than the trap, it became excellent. *Yearbook U. S. Dept. Agr.*, 1900, p. 352.

resurge, *v. i.* 2. To surge back; swing back or rebound: said specifically of that portion of an oscillation in which the movement is away from the position of maximum displacement and toward equilibrium.

> When a body which is capable of transmitting a disturbance, as a pulse, is disturbed at any part, a pulse is transmitted to the boundaries of the body, whence it *resurges*. The pulsation continues for a time, but ultimately dies out. If the disturbance be repeated at a short interval of time the second pulsation encounters the *resurging* of the first, and if this repetition of disturbance be kept up at regular intervals, the body presently attains a condition of persistent rhythmical vibration, being parcelled out into vibrating segments, whose boundaries are nodes.
> *Geog. Jour.* (R. G. S.), XI. 640.

resurgence, *n.* 2. The act of resurging or surging back, as a wave. See ★*resurge*, 2.

resurrectional (rez-u-rek′shọn-ạl), *a.* [*resurrection* + *-al*^{1}.] Of or pertaining to resurrection; of the nature of resurrection.

resurrectioner (rez-u-rek′shọn-ėr), *n.* [*resurrection* + *-er*.] A resurrectionist.

resurrection-fern (rez-u-rek′shọn-fėrn), *n.* See ★*fern*^{1}.

resurrection-flower (rez-u-rek′shọn-flou″ėr), *n.* Same as *resurrection-plant*.

resurrectionism (rez-u-rek′shọn-izm), *n.* The practices of the resurrectionists; body-snatching.

resurrection-pie (rez-u-rek′shọn-pī″), *n.* A pie made with the remnants of previous meals. *Stand. Dict.* [Slang.]

resurrective (rez-u-rek′tiv), *a.* [*resurrect* + *-ive*.] Causing resurrection; bringing the dead to life. [Rare.]

ret^1 (ret), *n.* [*ret*^{1}, *v.*] The process of retting; retting.

> If the stem then breaks freely, and the fibre leaves it easily, it will have got a good *ret*, as it is called.
> *Jour. Roy. Agr. Soc.*, X. 178.

Retaining valve. See ★*valve*.

retake, *v. t.* 3. In *chess*, to take (a hostile piece that has captured something). *Morphy*, Games of Chess, p. 443.

retaliation, *n.*—**Law of retaliation.** Same as *lex talionis* (which see, under *lex*).

retaliator (rẹ-tal′i-ạ-tọr), *n.* One who retaliates.

retama, *n.* 2. In Spanish America, a name applied to several leguminous plants more or less closely resembling plants of the genera *Spartium, Genista,* and *Cytisus:* in Porto Rico, *Cassia biflora* and *C. portoricensis;* in southern Mexico, *Cassia tomentosa;* in northern Mexico, *Parkinsonia aculeata* and *Cercidium texanum.*

retard, *v. t.*—**Retarding force.** See ★*accelerative force.*

retardance (rẹ-tär′dạns), *n.* [*retard* + *-ance.*] A numerical constant, proportional to the capacity and resistance of a telephone-line, which gives the maximum distance over which speech may be successfully transmitted.

retardation, *n.*—**Magnetic retardation,** the magnetic lag of a circuit containing iron in which magnetic flux is induced.

retardative, *a.* 2. Serving to express retardation: applied to certain verb-forms in some agglutinative languages. Compare the extract under ★*accelerative,* 2.

retarder, *n.* 2. An obstruction, usually in the form of a twisted piece of sheet-metal, placed in a boiler-flue to retard the hot gases and make them give up their heat to the water in the boiler.

> The water tube boilers could be kept clean and perfectly efficient, as they need only be used for driving the ship at high speeds, when economy of coal relatively is not so important. The cylindrical boilers should be fitted with *retarders* in the tubes and with special means for circulating the water while raising steam.
> *Sci. Amer. Sup.*, Jan. 24, 1903, p. 22625.

3. A device, such as a dash-pot, for checking the too rapid motion of any mechanism.

retardive (rẹ-tär′div), *a.* Same as *retardative.*

retching (rech′ing), *n.* [*retch*², *v. i.*] 1. An effort to vomit.—2†. Hawking, or clearing of the throat. *N. E. D.*

retd. A contraction of *returned.*

rete, *n.* 2. In certain astrolabes, a movable skeleton framework cut out of a circular sheet of metal, and lying between the planisphere and the diopter or alidade. It carries one or two pointers, also an eccentric ring marked with the signs of the zodiac, and several curved arms indicating the place of the pole of the ecliptic and of certain stars.

> Above the planisphere lies the neatly cut out and decorated "*rete*" carrying upon its circular interior the constellations of the ecliptic. The pole of the ecliptic and the positions of some of the stars are also given.
> *C. A. Brassler,* in Sci. Amer., Aug. 12, 1905, p. 127.

retene (ret′ēn), *n.* [Gr. ῥητ(ίνη), resin, + *-ene.*] A crystalline hydrocarbon, $C_{18}H_{18}$, found in resinous woods and certain fossil gums and resins: also made by distilling rosin-oil with sulphur. It is 8-methyl-5-isopropylphenanthrene. It melts at 98.5° C. and boils at 390° C.

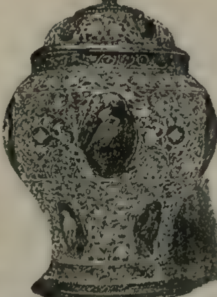
retention, *n.*—**Special retention,** in *Scots law,* a right to hold the property of another for a particular debt due from the owner by reason of money or labor expended on the property held.

rethe† (rēth), *a.* [Also *retht, reithe, reythe,* etc.; AS. *ređe.*] 1. Fierce, cruel, stern, zealous: said of persons.—2. Terrible; dreadful: said of things.

retheness (rēth′nes), *n.* [*rethe* + *-ness.*] The character of being rethe; fierceness; roughness; harshness; sternness. [Obs. or Scotch.]

retiarian (rē-shi-ā′ri-ạn), *a.* and *n.* [*retiari(us)* + *-an.*] Pertaining to or composed of retiarii; a retiarius.

reticulated, *p. a.* 2. In *ceram.*, perforated: noting a style of decoration in which the outer wall of a vase, cup, or other vessel is honeycombed or pierced in patterns, while the inner wall is solid and forms the vessel proper. It originated with the Chinese potters and was later imitated at some of the European potteries, particularly at Worcester, Berlin, Vienna, and Sèvres.—**Reticulated cirrus.** See ★*cirrus.*


Reticulated Vase, Royal Worcester, Modern. (In the Pennsylvania Museum, Philadelphia.)

reticulate-punctate (rẹ-tik′ụ-lāt-pungk″tāt), *a.* Having a reticulate punctation, as the elytra of certain beetles.

reticule, *n.* 4. [*cap.*] In *astron.*, same as *reticulum,* 6.—**Reticule wire,** a fine filament placed in an astronomical instrument at the common focus of object-glass and eyepiece. It may be fixed or movable, and observations consist in noting the time when star-images cross the wire, or the reading of micrometer and circles when the wire is made to bisect the image. The wires are usually spider-threads, but fine lines ruled on glass are also used. See *reticule,* 2.

reticulin (rẹ-tik′ụ-lin), *n.* [L. *reticul(um),* net, + *-in*².] An albuminoid, closely related to gelatin, found in the reticulated tissue which constitutes the fibrous framework of the lymph-glands and other structures.

reticulum, *n.* 5. In *bot.*: (*b*) The structure formed by the anastomosing strands of plasmodia which collect and fuse as in the genus *Fuligo* of the slime-molds.

> The strands of this *reticulum* anastomose in every direction with one another.
> *De Bary* (trans.), Fungi, p. 431.

7. The supporting network of glandular organs or soft tissues, such as the brain.

> Mall . . . has also proved that the interstitial tissue of many glands and organs has no connection with the connective-tissue cells, but consists of an interlacement of branching fibrils. This substance he calls *reticulum.*
> *Buck,* Med. Handbook, I. 128.

8. In the hexactinellid sponges, the supporting skeleton composed of reticulating or intersecting bundles of thread-like spicules.—9. The network of bone which more or less completely fills some of the long bones, such as the femur of the ostrich and elephant.

retina, *n.*—**Detachment of the retina,** a separation of the retina from the choroid, which causes loss of vision in the detached portion.—**Ganglion of the retina.** See ★*ganglion.*—**Lower retina,** the lower half of the retina.—**Nasal retina,** the nasal half of the retina.—**Temporal retina,** the outer half of the retina.—**Upper retina,** the upper half of the retina.

retinacular (ret-i-nak′ụ-lär), *a.* [*retinaculum* + *-ar*³.] Of or pertaining to a retinaculum.

retinaculum, *n.* 3. In *entom.*: (*b*) An arrangement of hooks, or of hooks and bristles, whereby the fore and hind wings of insects are interlocked when in flight. *N. E. D.*

retinaphtha (ret-i-naf′thạ̈), *n.* [Gr. ῥητί(νη), resin, + NL. *naphtha.*] A name at one time given to toluene, as obtained by destructive distillation from the resin of *Pinus maritima.*

retinasphalt (ret-in-as′falt), *n.* [Gr. ῥητίνη, resin, + ἄσφαλτος, asphalt.] A light-brown, yellow, or reddish mineral resin found in the Tertiary coal of Bovey, Devonshire. Alcohol separates from it a compound which has the composition $C_{21}H_{28}O_3$, to which the name *retinellite* has been given.

retinellite (ret-i-nel′īt), *n.* [Gr. ῥητίνη, resin, + L. dim. *-ellus* + *-ite*².] See ★*retinasphalt.*

retineum (rẹ-tin′ẹ̄-um), *n.*; pl. *retinea* (-ạ̈). [NL., < *retina.*] In invertebrates, the part of the eye that functions as a retina.

retinic (rē-tin′ik), *a.* [Gr. ῥητίνη, resin, + *-ic.*] Derived from retinellite.

retinite, *n.* 3. Same as ★*retinellite.*

Retinitis apoplectica, inflammation attended with extravasation of blood into the retina.—**Retinitis proliferans,** retinitis marked by projections of fibrous tissue into the vitreous.

retinocerebral (ret″i-nọ-ser′ẹ̄-brạl), *a.* Pertaining to or involving both the retina and the brain.

> It is a question . . . whether impromptu speaking and spontaneous writing are not essentially such processes as occur in reading or copying from a book before the eyes, except that the copy is mental (cerebro-cerebral) instead of what we call physical (*retino-cerebral*).
> *Psychol. Rev. Mon. Sup.*, III. xiv. 24.

retinochoroidal (ret″i-nọ-kō′roi-dạl), *a.* [NL. *retina,* retina, + *choroides,* choroid, + *-al*¹.] Relating to both the retina and the choroid. *Buck,* Med. Handbook, III. 64.

retinol (ret′i-nol), *n.* [Gr. ῥητίνη, resin, + *-ol.*] A liquid diterpene, $C_{20}H_{32}$, which is found in copaiba and is also formed by the distillation of rosin. It is occasionally used as a solvent in pharmacy, and as an ointment or liniment.

retinophoral (ret-i-nof′ọ-rạl), *a.* [*retinophora* + *-al*¹.] Pertaining to a retinophora.

retinoscope (ret′i-nọ-skōp), *n.* [NL. *retina,* retina, + Gr. σκοπεῖν, view.] An instrument employed in retinoscopy.

retinoscopic (ret″i-nọ-skop′ik), *a.* [*retinoscope* + *-ic.*] Of or pertaining to retinoscopy.

retinoscopist (ret-i-nos′kọ-pist), *n.* [*retinoscop(y)* + *-ist.*] One who practises retinoscopy.

> No matter what the defect, hyperopia, myopia, astigmatism, simple, compound or mixed, all give up the secrets to the skilled *retinoscopist;* whether willingly or not, all must yield to this method.
> *Optical Jour.*, June 2, 1904, p. 938.

retinulate (rẹ-tin′ụ-lāt), *a.* [NL. *retinula* + *-ate*¹.] Provided with, or characterized by the presence of, retinulæ.

Retiolites (rē-ti-ọ-lī′tēz), *n.* [NL., < **retiolum,* dim. of L. *rete* or *retium,* net, + *-ites,* E. *-ite*².] A genus of graptolites having a complicated polypary with two virgulas, one on each side of the peridermal network, one straight and the other zigzagged. It occurs in the Silurian rocks.

Retioloidea (rē″ti-ọ-loi′dẹ-ạ̈), *n. pl.* [NL., < **retiolum* (dim. of L. *rete* or *retium,* a net) + *-oidea.*] A suborder of the *Graptoloidea* or graptolites, characterized by a latticed periderm which consists of a network of chitinous filaments. They extend from the middle Lower Silurian to the middle Upper Silurian. The most typical genus is *Retiograptus.*

retire, *v. t.* 7. In the *law of negotiable instruments:* (*a*) To take up (a bill or note) from a prior transferee and thereafter hold (it) with all remedies intact: said of an indorser. (*b*) To retire (a bill or note) by taking (it) up at maturity, with all remedies on it extinguished: said of an acceptor.—**Retiring board,** a board of officers which ascertains and reports on the cause and degree of the physical incapacity of an officer preparatory to his retirement.

retistene (rē-tis′tēn), *n.* The name of a hydrocarbon, $C_{16}H_{14}$, from which the compound formerly called retistenequinone but now known to be retenequinone, $C_{18}H_{16}O_2$, was supposed to be derived.

retitrate (rē-tit′rāt), *v. t.*; pret. and pp. *retitrated,* ppr. *retitrating.* [*re-* + *titrate.*] In *chem.*, to titrate (a solution) again after it has undergone, or may be supposed to have undergone, some change, as in the case of a solution which may have altered in strength by exposure to the air.

retonation (rē-tọ-nā′shọn), *n.* [*re-* + *(de)tonation* (?).] Backward impulse of an explosion. See ★*retonation-wave.*

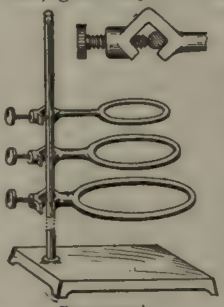
retonation-wave (rē-tọ-nā′shọn-wāv), *n.* A backward wave of compression observed when an explosive mixture of gases is ignited within a glass tube.

retorted² (rẹ-tôr′ted), *p. a.* [*retort*², *v.*] Refined or purified in a retort. *N. E. D.*

retorter² (rẹ-tôr′tėr), *n.* [*retort*², *v.*, + *-er.*] One who retorts metals. *Raymond,* Statistics of Mines and Mining, p. 415. *N. E. D.*

retort-scurf (rẹ-tôrt′skėrf), *n.* Same as *gas-carbon* (which see, under *carbon*).

retort-stand (rẹ-tôrt′stand), *n.* A vertical rod, generally of iron, with a heavy metallic foot, and a number of metallic rings, of different sizes, each at the end of a horizontal arm and capable of sliding up and down the rod and of being fixed at any desired height by a pinch-screw: the whole serves to support a retort or other vessel, properly adjusted as to height, over a lamp-flame. Also known as *retort-holder* or *retort-support.*


Retort-stand.

retouching-varnish (rē-tuch′ing-vär″nish), *n.* Alcohol-shellac varnish, used in retouching oil-paintings.

retour (re-tör′), *v.* [*retour, n.*] I†. *intrans.* 1. To revert (to a person).—2. To return (to a place).

II. *trans.* 1. To return (a person) as heir. *N. E. D.*—2. To make a return to Chancery of or relative to (lands, etc.); state the value of, in a retour. *N. E. D.*—3. To return or send in (the breve or verdict, etc.) to Chancery. [Scotch, in all uses.] *N. E. D.*

retractation, *n.* 2. *pl.* [*cap.*] The title of a work by St. Augustine containing corrections and other modifications of his earlier writings; hence, some similar book.

Retractile disk. See ★*disk.*

Retraction ring, a ring-like constriction of the uterus just above the internal os, observed during labor. Also called *Bandl's ring.* *Lancet,* June 18, 1904, p. 1719.

retradition (rē-trạ-dish′ọn), *n.* [From L. *retradere,* give back.] The act of giving or handing back. *Poste,* Gaius, III. 384. *N. E. D.*

retrally (rē′trạl-i), *adv.* In a retral manner; posteriorly.

retreat^1, *n.*—**To beat a retreat.** See ★*beat*^{1}, *v. t.*

retreat^1, *v. t.* **2.** In *chess*, to move (a piece) backward.

> Black would have simply *retreated* Q to K's 2nd.
> *Morphy*, Games of Chess, p. 49.

retreatal (rẹ-trē'ta̤l), *a.* and *n.* [*retreat* + *-al*^{1}.] **I.** *a.* Of or relating to retreat; in *geol.*, relating to something that has retreated; recessional: applied particularly to moraines deposited during the halts of a retreating glacier.

II. *n.* The act of retreating; a retreat.

retreatant (rẹ-trē'ta̤nt), *n.* [*retreat*^{1}, *v.*] One who retreats; specifically, one who takes part in a religious retreat.

> The *retreatants* were all cared for in the ample building of St. Agnes' School. *Outlook*, Sept. 25, 1897, p. 244.

retreating (rẹ-trē'ting), *n.* **1.** The act denoted by the verb *retreat*^{1}.—**2.** Specifically, in *mining*, a process by which a vein is untouched until after all the gangways, etc., are driven, when the mineral extraction begins at the boundary and progresses toward the shaft. *Coal and Metal Miners' Pocket-Book.*

retriev, *v.* A simplified spelling of *retrieve.*

retro (rē'trō), *adv.* [L.] Backward.

retrobronchial (rē-trọ-brong'ki-a̤l), *a.* [L. *retro*, back, behind, + NL. *bronchia* + *-al*^{1}.] Situated or occurring behind the bronchi. *Buck*, Med. Handbook, VII. 750.

retrocæcal (rē-trọ-sē'ka̤l), *a.* [L. *retro*, back, behind, + NL. *cæcum* + *-al*^{1}.] Situated or occurring behind the cæcum. *Med. Record*, June 27, 1903, p. 1056.

retrocalcarine (rē-trọ-kal'ka̤-rin), *a.* [L. *retro*, back, behind, + E. *calcarine.*] See ★*calcarine complex.*

retrocardiac (rē-trọ-kär'di-ak), *a.* [L. *retro*, back, behind, + Gr. *καρδία*, heart, + *-ac.*] Situated behind the heart.

retrocentral (rē-trọ-sen'tra̤l), *a.* [L. *retro*, back, behind, + *centrum*, center, + *-al*^{1}.] Situated behind the center. *Amer. Anthropologist*, July-Sept., 1901, p. 469.—**Retrocentral sulcus.** See ★*sulcus.*

retrocervical (rē-trọ-sėr'vi-ka̤l), *a.* [L. *retro*, back, behind, + *cervix* (*cervic-*), neck, + *-al*^{1}.] Situated behind a cervix, especially the cervix uteri. *Buck*, Med. Handbook, VIII. 96.

retrocession, *n.* **4.** (*b*) In *civil law*, a reconveyance of heritable rights to the original grantor.

retrocessive (rē-trọ-ses'iv), *a.* [L. *retrocessus*, pp. of *retrocedere*, go backward, + *-ive.*] **1.** Moving backward; retrograde.—**2.** Of the nature of, or marked by, retrocession, as of territory.

retroclavicular (rē"trọ-kla-vik'ū-lä̤r), *a.* [L. *retro*, back, behind, + NL. *clavicula*, clavicle, + *-ar*^{3}.] Situated or occurring behind the clavicle. *Buck*, Med. Handbook, VII. 542.

retrocognition (rē-trọ-kog-nish'ọn), *n.* [L. *retro*, back, behind, + E. *cognition.*] A supposed supernormal faculty, the possessors of which are able to describe past events, actions, etc., without having recourse to any of the ordinary means of information.

> Our *retrocognitions* seem often a recovery of isolated fragments of thought and feeling.
> *Myers*, Human Personality, I. 31. *N. E. D.*

retrocoient (rē-trọ-kō'i-e̤nt), *a.* [L. *retro*, backward, + *coiens*(*t-*), ppr. of *coire*, copulate.] Same as *retrocopulant.*

retrocolic (rē-trọ-kol'ik), *a.* [L. *retro*, back, behind, + NL. *colon*, colon, + *-ic.*] Situated or occurring behind the colon.

retrodeflect (rē"trọ-dẹ-flekt'), *v. t.* To bend or twist downward and backward.

retrodisplaced (rē"trō-dis-plāst'), *a.* [L. *retro*, back, behind, + E. *displaced.*] Displaced backward. *Med. Record*, Oct. 19, 1907, p. 658.

retrodisplacement (rē"trọ-dis-plās'me̤nt), *n.* Displacement backward: referring, in pathology, chiefly to a malposition of the uterus. *Med. Record*, June 27, 1903, p. 1059.

retrodural (rē-trọ-dū'ra̤l), *a.* [L. *retro*, back, behind, + NL. *dura* + *-al*^{1}.] Situated or occurring behind the dura mater. *Buck*, Med. Handbook, VII. 352.

retroesophageal (rē-trō-ē-sọ-faj'ẹ-a̤l), *a.* [L. *retro*, back, behind, + NL. *œsophagus* + *-e-al*^{1}.] Situated behind the esophagus. *Buck*, Med. Handbook, IV. 384.

retroflect (rē'trọ-flekt), *v. t.* [L. *retro*, back, behind, + *flectere*, bend.] To place in a position of retroflexion: said of a manipulation of the uterus.

retroflex (rē'trọ-fleks), *v. t.* Same as ★*retroflect.*

retrograde, *a.* **II.** *n.* In *billiards*, the pull-back, draw, or recoil. *W. Broadfoot*, Billiards, p. 196.

retrogress (rē'trọ-gress), *v. i.* [L. *retrogress*(*us*), pp. of *retrogradi*, go backward.] To move backward; retrograde.

Retrogressive variation. See ★*variation.*

retromalleolar (rē-trọ-mal'ẹ-ō-lä̤r), *a.* [L. *retro*, back, behind, + NL. *malleolus* + *-ar*^{3}.] Situated behind a malleolus: noting a fossa on either side of the tendo Achillis.

retromote (rē'trọ-mōt), *v. t.* [L. *retro*, back, + *movere*, move. Cf. *promote.*] To move backward or downward, as to a lower grade or rank. [Rare.]

retronasal (rē-trọ-nā'za̤l), *a.* [L. *retro*, back, behind, + *nasus*, nose, + *-al*^{1}.] Relating to the posterior nares.

> The nasal and *retro-nasal* secretion of the mucous membrane. *Buck*, Med. Handbook, II. 480.

retroposed (rē'trọ-pōzd), *a.* [L. *retro*, back, behind, + E. *pose*^{2} + *-ed*^{2}.] Displaced backward.

retropulsion, *n.* **3.** Transference of an external disease to some internal part or organ. *N. E. D.*

retrorectal (rē-trō-rek'ta̤l), *a.* [L. *retro*, back, behind, + NL. *rectum* + *-al*^{1}.] Situated behind the rectum.

retrorsion (rẹ-trôr'shọn), *n.* [A nominal contraction of *retroversion*, after *retrorse.*] A turning or twisting back; the state or condition of being turned or twisted backward.

retrosection (rē-trọ-sek'shọn), *n.* [L. *retro*, back, behind, + *sectio*(*n-*), cutting.] Same as ★*loop-cut.*

retrospectant (ret-rọ- or rē-trọ-spek'ta̤nt), *a.* Same as *retrospective.*—**Retrospectant evidence**, the testimony as to a present fact from which a past fact is inferred, as that the possession of stolen goods argues the possessor guilty. *Wigmore*, Evidence, § 148.

retrosymphyseal (rē"trọ-sim-fiz'ẹ-a̤l), *a.* [L. *retro*, back, behind, + NL. *symphysis* + *-e-al*^{1}.] Situated behind a symphysis. *Buck*, Med. Handbook, I. 784.

retrotensive (rē-trọ-ten'siv), *a.* [L. *retro*, back, behind, + E. *tensive.*] Pulling or stretching backward.

retrotensively (rē-trọ-ten'siv-li), *adv.* In a manner which exerts tension backward.

> At each point on it [academic life] we can see and feel both ways—protensively toward the future and *retrotensively* toward the past—as at no other stage of life.
> *G. S. Hall*, Adolescence, II. 402.

retroverse (rē'trọ-vėrs), *a.* [L. *retroversus.* See *retroversion.*] Turned backward; reversed in action or direction.

retroverted (rē-trọ-vėr'ted), *a.* In *bot.*, turned back or inverted.

retrusible (rẹ-trö'si-bl), *a.* [L. *retrusus*, pp. of *retrudere*, thrust back, + *-ible.* See *retrude.*] Capable of being retracted.

> The Cydippidea are generally spherical or ovoid, with two long *retrusible* pinnate tentacles.
> *Encyc. Brit.*, XXVII. 301.

retting, *n.*—**Hot-water retting**, a method of retting flax by treating it with hot water in a closed chamber at a temperature of 300° F. and then exposing it to the action of dry steam of the same temperature.—**Mixed retting**, a method of retting flax in which the fermentation is begun in water and completed on grass.—**Steam retting.** See *hot-water* ★*retting.*—**Warm-water retting**, an artificial process of retting flax, similar to ordinary water-retting, except that it is carried on in tanks with the water heated by steam to about 95° F.

retuch, *v. t.* and *n.* A simplified spelling of *retouch.*

return^1, *n.* **10.** In *elect.*, a wire or conductor which completes an electric circuit so that the current may be returned to the generator.

> The word *returns* is sometimes used in a system of distribution by parallel circuits, to distinguish between the conductor by which the current goes back or returns from the receptive devices to the dynamo, and the conductor that leads it to the receptive devices. The term leads is, however, often applied to both conductors.
> *Houston*, Dict. Elect.

11. A return-bend; a pipe-fitting for connecting two parallel pipes; a 180° elbow.—**Ground return**, in *elect.*, a return circuit for electric currents through the earth: opposed to *metallic* ★*return.* *Elect. World and Engin.*, March 28, 1903, p. 525.—**Law of diminishing returns**, in *polit. econ.*, the principle that, when distinguishable forms of economic agency coöperate in the production of a commodity or service, an increase in one of the forms without a corresponding increase in the others will result in an increase in product less than proportionate with the increase in the varying form. Thus, if a certain number of units of land, labor, and capital coöperate in the production of a commodity, an increase in the number of units of labor alone will result in less than a proportionate increase in production. Likewise, an increase in the number of units of land, capital and labor remaining stationary, would result in less than a proportionate increase in production. The same principle holds of an increase in skilled labor, if unskilled labor, etc., remains stationary, or of one form of capital, other forms not varying in quantity. The validity of the principle rests upon the assumption that the original combination of the various forms of economic agency was rational and effective. Labor and capital may conceivably be applied to land in such minute quantities as to produce practically nothing, and in this case an increase in those agents might result in more than a proportionate return. Such a condition is excluded by the assumption that the original combination was rationally made. Furthermore, the principle requires for its validity the assumption that no technical change alters the proportions in which the forms of economic agency are normally combined. The principle was first discovered in a study of the effects of increase of labor and capital in the cultivation of a field or the exploitation of a mine; hence the extractive industries are often, though improperly, distinguished from manufactures, etc., as industries operating under the law of diminishing returns.—**Law of increasing return**, in *polit. econ.*, the principle that, through the improvement in organization and the elimination of waste made possible by large-scale industry, an increase in the size of a business unit increases the efficiency of the labor and capital employed.

> While the part which Nature plays in production conforms to the law of diminishing return, the part which man plays conforms to the *Law of Increasing Return.*
> *Alfred Marshall*, Principles of Economics (3d ed.), I. 397.

Metallic return, in *elect.*, a return circuit for electric currents consisting of metallic conductors usually insulated from the ground.—**Sale or return**, in *law*, a contract whereby a sale is perfected only after a reasonable time has elapsed without the return of the goods.

return-crank (rẹ-tėrn'krangk), *n.* **1.** An opposed crank; a crank which makes an angle of 180° with an adjacent crank.—**2.** A crank formed by bending a shaft to form the crank and then bending it back to its former line.

return-screw (rẹ-tėrn'skrö), *n.* A screw used to bring back, or return to its original position, a piece which has been moved.

return-stroke (rẹ-tėrn'strōk), *n.* A term sometimes applied to the induction effects of lightning. Since lightning is frequently oscillatory, violent surgings of current are induced in conductors near the path of the discharge.

> As there are no signs whatever on the fence of the direct effect of lightning, it must be supposed that the cows killed fell victims to the so-called *return stroke.*
> *Sci. Amer.*, Feb. 7, 1903, p. 98.

return-tube (rẹ-tėrn'tūb), *n.* **1.** A tube or flue used to return a fluid to the source from which it was taken.—**2.** A tube or flue used to convey the hot gases from the back end of a boiler to the front end.

retzian (ret'si-a̤n), *n.* [Named (1895) after A. J. *Retzius.*] A basic arseniate of manganese, calcium, and some undetermined rare metals, found at Nordmark, Sweden.

reuniol (rẹ-ū'ni-ōl), *n.* [*Réunion*, the name of an island, + *-ol.* So called as occurring in geranium-oil from Réunion.] Same as ★*citronellol.*

reussin (roi'sin), *n.* [*Reuss*, name of its describer, + *-ite*^{2}.] Native Glauber salt (mirabilite) which occurs as a deposit about the mineral springs of Saidschitz and Sedlitz.

rev. An abbreviation (*h*) of *revise;* (*i*) of *revision.*

revaccinate (rē-vak'si-nāt), *v. t.*; pret. and pp. *revaccinated*, ppr. *revaccinating.* [*re-* + *vaccinate.*] To vaccinate (one already vaccinated).

revaccination (rē-vak-si-nā'shọn), *n.* The practice of vaccinating again, after the lapse of a number of years, those in whom the first vaccination was successful.

revegetate (rē-vej'ẹ-tāt), *v. i.*; pret. and pp. *revegetated*, ppr. *revegetating.* To become green again. [Rare.]

revegetation (rē-vej-ẹ-tā'shọn), *n.* [*revegetate* + *-ion.*] The process of again becoming green and covered with vegetation.

> A series of photographs beginning just in front of the ice-mass and extending some hundreds of yards down the valley of the Illicillewaet shows at a glance how *revegetation* has proceeded, as the glacier has slowly and regularly retreated. *Pop. Sci. Mo.*, Jan., 1902, p. 197.

revelant (rev'ẹ-la̤nt), *a.* [L. *revelans*(*t-*), ppr. of *revelare*, reveal.] Revealing; capable of being clearly understood. [Rare.]

> Why not avoid, if we can, those loose habits of reasoning, those looser habits of expression, which so easily do beset us? Let us learn *revelant*, clear-cut, and well-ordered expression.
> *N. Y. Times*, Sat. Rev., July 15, 1905, p. 471.

revelationist, *n.* **2.** One who makes a revelation; especially, the author of the Apocalypse. *N. E. D.*

revelative (rev'ẹ-lā-tiv), *a.* [*revelate* + *-ive.*] Conveying a revelation. *N. E. D*

revelator, *n.* 2. In *photog.*, a developing agent for dry plates. *Stand. Dict.*

revellent, *a.* II. *n.* Something which causes revulsion.

reverberation, *n.* 5. In *psychol.*, same as ★*resonance*, 5 (*a*). *W. James*, Prin. of Psychol., II. 450.—**Bodily reverberation.** See ★*resonance*, 5 (*a*).

reverberator, *n.* 2. A reverberating or reverberatory furnace.

reverberatory, *a.* II. *n.* A reverberating or reverberatory furnace; a reverberator in which the heat and flame is reflected from a curved roof downward upon the material to be heated on the furnace bottom.

reverie, *n.*—**Induced reverie**, a state of hypnosis induced by fixation of attention. [Obsolete.]

> *Induced Reverie*, or Electro-Biology. . . . This state may be superinduced in certain susceptible or "sensitive" individuals, upon the ordinary waking state, without a previous passage through the stage of insensibility; it being often sufficient for its induction, that the attention should be fixed for a few minutes, or even for a few seconds, upon any object whatever.
> *W. B. Carpenter*, Prin. Mental Physiol., p. 548.

reversal, *n.* 5. In *international law:* (*a*) A promise by a sovereign power that a certain order, or certain conditions, promulgated or established, will be observed, notwithstanding changes that may occur to cause deviation therefrom. For instance, when France recognized Russia as an imperial government, a reversal was required that Russia would not cause any derogation from the rank which France had held toward her. (*b*) A declaration by a sovereign that by a given act he means no prejudice to another power.—6. In *elect.*, the process of changing the direction of the current in a circuit. In *telegraphy* the term is applied to the sending of signals over the line by means of rapidly reversed or alternating currents.—**Double reversal**, in *spectroscopy*, the return of a portion of a reversed line in the spectrum to its original condition, that of a bright line. The phenomenon is most frequently observed in the spectrum of the electric arc.—**Multiple reversal**, in *spectroscopy*, the simultaneous reversal of various parts of a bright line of the spectrum. Multiple reversal occurs chiefly in the spectrum of the electric arc, and it is to the abrupt variations of pressure and temperature in the arc that the phenomenon is ascribed.—**Reversal by solarization.** See ★*solarization.*

reverse, *n.* 8. Same as *reverse* ★*twist.*

Reversed variety. See ★*variety.*

reversing-cell (rẹ-vėr'sing-sel), *n.* A voltaic cell in which the form of the vessel containing the electrolyte is such that the terminals can be immersed or removed from the liquid, respectively, by tipping or inverting the cell.

reversing-cylinder, *n.* 2. A small cylinder connected to the head of the steam-cylinder of the air-compressor for an air-brake system.—3. A cylinder to aid in the reversing of the bed of a printing-press. A piston attached to the bed compresses air in the reversing-cylinder near the end of the stroke. This assists in stopping the bed and the force of the compressed air helps to start it in the other direction.

reversing-layer, *n.* The existence of any thin absorbing stratum of the solar atmosphere was vigorously denied by many authorities until, at the total eclipse of 1896, the photograph of Shackelton brought out the beautiful flash-spectrum, from the visual observation of which in 1870 its existence had been inferred. The photographs made at the eclipses of 1898, 1900, and 1901 all concur in confirmation. See ★*flash-spectrum.*

reversing-link (rẹ-vėr'sing-lingk), *n.* The link or guides in which the link-block of a reversing-valve gear slides.

reversing-rolls (rẹ-vėr'sing-rōlz), *n. pl.* The rolls of a rolling-mill which can be run in either direction to allow the billet or stock which is being rolled to be passed through the rolls from either side.

reversing-switch (rē-vėr'sing-swich), *n.* In *elect.*, a switch for changing the direction of the current flowing in a circuit. *Jour. Brit. Inst. Elect. Engin.*, 1899–1900, p. 410.

reversion, *n.*—**Pithecoid reversion**, the occurrence in a human being of some trait of difference from ordinary men which is also a trait of resemblance to apes, considered as reversion to or inheritance from an apelike ancestor.

> Heredity is believed to present itself in another aspect, which has excited much attention. I refer to that form of it called "atavism" or "ancestral reversion," or "retrogression," in which a child "takes after," not his immediate parents, but some remote ancestor; even, as has been often claimed, so remote as beyond the limits of our own species. Such traits have been called "*pithecoid*" (ape-like) *reversions*, as they are alleged to be derived from some four-footed precursor of man, an ape, or even a lemur. *Brinton*, Basis of Social Relations, p. 151.

reversional (rẹ-vėr'shọn-a̤l), *a.* [*reversion* + *-al*^{1}.] Pertaining to, or of the nature of, reversion; reversionary: specifically, relating to the appearance in any organism, plant or animal, of some character shown by its progenitors or presumably possessed by the ancestral form from which it is descended.

> A curious *reversional* condition is seen in many high bred domestic dogs in which a functionless hallux is present without skeletal connection with the rest of the pes. *Amer. Nat.*, Jan., 1904, p. 3.

reversor, *n.* 2. In *Scots law*, a debtor to whom the right of reversion is given upon his making a wadset, that is, giving a mortgage.

reverter, *n.* 3. An automatic by-pass, used in a self-intensifying burner, which has heavy valves. It permits gas from the mains to flow to the Bunsen burner until the heat generated operates the intensifying contrivance.

revertose (rē-vėr'tōs), *n.* [*revert* + *-ose.*] A biose formed synthetically from glucose by an extract of certain yeast: said to be different from all known sugars.

revet-crag (rē-vet'krag), *n.* In *geol.*, tilted strata which form the foot-hills or outliers of a mountain and suggest revetment in engineering structures.

revindication, *n.* 2. Specifically, the recovery by the seller of goods sold and delivered but not paid for. They must be unchanged and separable from the buyer's stock. This was a right under Roman law and in continental Europe, though now modified.

Revinian (rẹ-vin'i-a̤n), *a.* Of or pertaining to Revin, a town of France, in the department of Ardennes: in *geol.*, a term introduced by Dumont (*Système Revinien*) to designate the second division of the Terrain Ardennais in France and Belgium. This consists of quartzites and black slates with *Dictyonema flabelliforme*, which in other regions is an index fossil of the Upper Cambrian.

Revival of contracts, the act or agreement by virtue of which the obligation of contracts, which has ceased to exist by reason of the statute of limitations or other causes, is renewed and made of legal force again.

revivalist, *n.* 2. In general, one who revives anything, as an old custom, trade, or word.

> The medal is also popular in Switzerland. Here Bovy is the leader of the French tradition, and Hans Frei of a more national sentiment. The last-named, however, is more remarkable as a *revivalist* than as an original artist.
> *Encyc. Brit.*, XXXI. 294.

revivatory (rẹ-vī'va̤-tọ-ri), *a.* Serving to revive, refresh, or bring back the use of something; reviving.

> The sensation was not unpleasant, for I had reached a stage when *revivatory* methods were desirable.
> *Daily Chronicle*, Aug. 30, 1900.

revive, *v. t.* 9. In *phys. geog.*, to rejuvenate; give renewed erosive action to by regional uplift: said of streams and rivers.

revivification, *n.* 4. The restoration to an effective condition (in which it can again be used to decolorize syrup in sugar-refining) of spent animal charcoal by reheating it in char-kilns, or by washing with hydrochloric acid, submitting to a kind of fermentation, and finally heating in the char-kiln.

> Char is the great sugar refiner and much care is bestowed on its manipulation. With repeated *revivification*, even in the best kilns, it gradually losses its decolorizing power, and after a year or two's use has to be turned out. The cost of renewing it is a serious item in the upkeep of a refinery.
> *Sci. Amer. Sup.*, Feb. 28, 1903, p. 22707.

revize, *v. t.* and *n.* An amended spelling of *revise.*

revolute, *a.* II. *n.* The solid geometrical figure generated by the revolution of a plane figure about a straight line in its plane as axis.

revolution, *n.* 10. In *astrol.*, the annual return of the sun to the place he occupied at one's birth, from which, according as he may be aspected, an augury is derived regarding the complexion of the ensuing year of life.—**Diurnal revolution**, the revolution of the earth or any celestial body about its axis; its axial rotation.—**Spheroid of revolution**, a spheroid generated by the revolution of an ellipse about its major or minor axis.

revolv, *v.* A simplified spelling of *revolve.*

revolver, *n.*—**Astronomical revolver**, an apparatus devised by Janssen in the hope of securing greater accuracy in the determination of the moment of contact at the transit of Venus in 1874. It consisted of a circular sensitized plate made to revolve in the focal plane of a telescope, and exposed for an instant, at short regular intervals, by electric connection with a chronometer, thus furnishing a series of photographs at known instants.

> Janssen's *astronomical revolver*, invented by that astronomer in 1873 in order to show successive positions of the planet Venus near the limb of the sun at her transits.
> *J. Marey* (trans.), in Smithsonian Rep., 1901, p. 317.

Revolving-flat card. See ★*card*^{2}.—**Revolving furnace.** (*b*) Same as *rotary* ★*furnace.*—**Revolving mirror.** See ★*mirror.*

revolving-box (rẹ-vol'ving-boks), *n.* Same as *circular* ★*box.*

revulsant (rẹ-vul'sa̤nt), *a.* and *n.* Same as *revulsent.*

revulsor, *n.* 2. A disk set with needles for producing counter-irritation.

reward-claim (rẹ-wârd'klām″), *n.* In Australia, a large area granted to the miner who first discovers gold in remunerative quantities in an unworked district and reports it to the authorities. *E. E. Morris*, Austral English.

rewarewa (rā-wä-rā'wä), *n.* [Polynesian *rewa*, *lewa*, or *levaleva*, to float.] In New Zealand, a name applied to *Rymandra excelsa*, a tree belonging to the *Proteaceæ*. It has boat-like seed-pods, and yields a handsome wood, mottled red and brown, highly prized for cabinet-work and furniture. In other island groups names of the same origin are applied to other trees having seeds which float on the water.

rezai (re-zī'), *n.* [Urdu *razai.*] A coverlet quilted with cotton. *Yule and Burnell.* Also *resai*, *rezy.* [Anglo-Indian.]

rez-de-chaussée (rā-dẹ-shō-sā'), *n.* [F., 'level of the street.'] The ground floor of a building; the floor in which are the principal entrances, even if it is two or three feet above the level of the site.

r. f. An abbreviation (*a*) of *rapid fire*; (*b*) in *mineral.*, of *reducing flame*; (*c*) [*cap.*] of *République Française*, French Republic; (*d*) [*cap.*] of *Rex Francorum*, King of the Franks (French).

R. F. A. An abbreviation of *Royal Field Artillery.*

R. G. A. An abbreviation of *Royal Garrison Artillery.*

R. G. G. An abbreviation of *Royal Grenadier Guards.*

R. G. S. An abbreviation of *Royal Geographical Society.*

r. h. An abbreviation (*a*) of *right hand*; (*b*) [*cap.*] of *Royal Highness.*

R. H. A. An abbreviation of *Royal Horse Artillery.*

rhab (rab), *n.* A false form of *rhabd.*

rhabdal (rab'da̤l), *a.* [*rhabdus* + *-al*^{1}.] Pertaining to, or of the nature of, a rhabdus.

rhabditiform (rab-dit'i-fôrm), *a.* [*Rhabditis* + *-form.*] Having the shape of or resembling *Rhabditis.*

> In the same year Grassi (1883) emphasized the interesting fact that filariform larvæ, identical with those into which the primarily rhabditiform embryos of the free living generation develop, may arise by direct transformation from the *rhabditiform* embryos of the parasitic mother worm, namely, the embryos found ordinarily in the dejecta.
> *Jour. Exper. Med.*, Nov. 29, 1901, p. 81.

Rhabditis form, a free-swimming sexual stage in the development of certain parasitic nematodes, as *Ascaris nigrovenosa.*

rhabdoclon (rab'dọ-klōn), *n.* [Gr. ῥάβδος, a rod, + κλών, a twig.] In the spicules of sponges, an element of relatively large size having an irregularly curved rhabd or main rod with numerous irregular branches.

rhabdocœlian (rab-dọ-sē'li-a̤n), *a.* Same as *rhabdocœlous.*

rhabdocyst (rab'dọ-sist), *n.* [Gr. ῥάβδος, a rod, + κύστις, bag.] A rod-like cell. *N. E. D.*

rhabdodrax (rab'dọ-draks), *n.* [Gr. ῥάβδος, a rod, + δράξ, a small measure, a handful.] In the spicules of sponges, a bundle of minute rod-shaped spicules (rhabds or rhaphids).

rhabdomyochondroma (rab″dọ-mī″ọ-kon-drō'mä), *n.*; pl. *rhabdomyochondromata* (-ma̤-tä̤). [NL., < *rhabdomyo*(*ma*) + *chondroma.*] A mixed chondroma and rhabdomyoma.

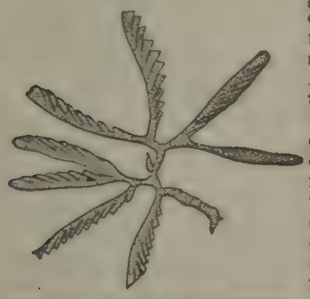
rhabdomyomyxoma (rab″dọ-mī″ọ-mik-sō'mä̤), *n.*; pl. *rhabdomyomyxomata* (-ma̤-tä̤). [NL., < *rhabdomyo*(*ma*) + *myxoma.*] A mixed rhabdomyoma and myxoma.

rhabdomyosarcoma (rab″dọ-mī″ọ-sär-kō'mä̤), *n.*; pl. *rhabdomyosarcomata* (ma̤-tä̤). [NL., < *rhabdomyo*(*ma*) + *sarcoma.*] A tumor having the characteristics of a sarcoma and of a rhabdomyoma.

rhabdophanite (rab-dof'a̤-nīt), *n.* [*rhabdophane* + *-ite*^{2}.] Same as *rhabdophane.*

rhabdopod (rab'dọ-pod), *n.* [Gr. ῥάβδος, a rod, + πούς (ποδ-), foot.] One of the genital claspers of certain insects.

rhabdosome (rab′dō-sōm), *n.* [Gr. *ῥάβδος*, a rod, + *σῶμα*, body.] The colonial stock of a graptolite produced by gemmation from a sicula. In the *Dendroidea* and the axonolipous *Graptoloidea* each colony consists of one rhabdosome; in the axonophorous *Graptoloidea* and the *Retioloidea* many rhabdosomes are united into a colony of a higher order.



Rhabdosome (*Dichograptus octobrachiatus*, Hall, sp.).
Young rhabdosome with sicula: twice natural size.

rhachi-, rhachio-. For words so beginning, see compounds under **rachi-*, **rachio-*.

rhachis, *n.* See *rachis.*

Rhacochilus (rak-ọ-kī′lus), *n.* [NL., < Gr. *ῥάκος*, rag, + *χεῖλος*, lip.] A genus of fishes, of the family *Embiotocidæ*, containing a single species: found on the coast of California. See *alfiona*, with cut.

rhæbocrania (rē-bọ-krā′ni-ä), *n.* [NL., < Gr. *ῥαιβόκρανος*, with crooked head, < *ῥαιβός*, crooked, + *κραν-*, head, in *κρανίον*, skull.] Torticollis.

rhæbosis, rhebosis (rē-bō′sis), *n.* [NL., < Gr. *ῥαίβωσις*, < *ῥαιβοῦν*, make crooked, < *ῥαιβός*, crooked.] In *pathol.*, crookedness of a normally straight part.

rhamnal (ram′nal), *a.* [NL. *Rhamnal(es)*.] Belonging or pertaining to the *Rhamnales*, an order of dicotyledonous plants. See **Rhamnales.*

Rhamnales (ram-nā′lēz), *n. pl.* [NL. (Lindley, 1833), < *Rhamn(us)* + *-ales*.] An order of dicotyledonous choripetalous plants, now restricted to the two families *Rhamnaceæ* and *Vitaceæ*. So limited, it is chiefly characterized by having the stamens of the same number as the petals and opposite to them.

rhamnase (ram′nās), *n.* [L. *rhamnus*, buckthorn, + *-ase*.] A ferment found in the Avignon berry, *Rhamnus infectoria*, which causes the cleavage of xanthorhamnin (a glucoside) into dextrose and rhamnin.

rhamnazin (ram-naz′in), *n.* [L. *rhamnus*, buckthorn, + E. *azin*.] A yellow crystalline glucoside, $C_{17}H_{14}O_7$, found in yellow berries. It is the dimethyl ether of quercitin. It melts at 214–215° C.

rhamneous (ram′nē-us), *a.* [*Rhamn(us)* + *-eous*.] Of or belonging to the genus *Rhamnus* (including the buckthorn).

rhamnite (ram′nīt), *n.* [*rhamn(in)* + *-ite*².] A crystalline pentacid alcohol, $CH_3(CH.OH)_4.CH_2(OH)$, formed by reducing rhamnose with sodium amalgam. It melts at 121° C.

rhamnonic (ram-non′ik), *a.* [*rhamn(ose)* + *-on-* + *-ic*.] Derived from rhamnose.—**Rhamnonic acid**, an acid, $C_6H_{12}O_6$, which is known only by its salts and anhydrid. It is formed by the action of bromine and water on rhamnose (or isodulcite).—**Rhamnonic anhydrid**, the anhydrid, $C_6H_{10}O_5$, of rhamnonic acid. It is formed as soon as the acid is set free from its salts. It is finely crystalline and melts at 150–151° C.

rhamnose (ram′nōs), *n.* [*rhamn(in)* + *-ose*.] A crystalline substance, $CH_3(CH.OH)_4.CHO + H_2O$, made by boiling quercitin, etc., with dilute sulphuric acid. It melts at 92–93° C. Also called *isodulcite*.

rhamnoside (ram′nọ-sid), *n.* [*rhamnose* + *-ide*.] A compound analogous to a glucoside, but containing rhamnose instead of glucose.

Rhamphus, *n.* **2.** [*l. c.*] A curved beak.

rhaphid (raf′id), *n.* [Gr. *ῥαφίς* (*ῥαφιδ-*), a needle, < *ῥάπτειν*, sew.] In the spicules of sponges, a diminutive rhabd or rod-like spicule.

rhaponticin (rā-pon′ti-sin), *n.* [*rhapontic* + *-in*².] Same as *chrysophanic acid*.

rhapsodical, *a.* **2.** Repeated at intervals of greater or less regularity: said of volcanic eruptions, as at Vesuvius. *Geikie*, Text-book of Geol., p. 33.

rhatania-tannic, *a.* A misspelling of **ratanhia-tannic.*

rhax (raks), *n.* [Gr. *ῥάξ*, a grape, a berry.] In the nomenclature of the sponge-spicules, an element in which the numerous rays have fused together, making a spherical or bean-shaped form.

rhea², *n.*—**Ban rhea,** a small tree or large bush of the nettle family, *Villebrunea integrifolia*, native to India and yielding a very strong fiber resembling ramie.—**Wild rhea.** Same as *ban* **rhea*.

Rhegnopteri (reg-nop′tẹ-rī), *n. pl.* [NL., irreg. < Gr. *ῥηγνύναι*, break, + *πτερόν*, wing, fin.] A suborder of fishes including the single family *Polynemidæ*. They have the pectoral fin divided into two parts, the lower part consisting of several filiform appendages free from each other.

rheim, *n.* Same as *riem.*

rhematology (rē-mạ-tol′ọ-ji), *n.* [Gr. *ῥῆμα* (*-τ-*), a saying, + *-ology*.] The science of rhemes. See **rheme*. [Rare.]

> Prof. Postgate's preface and his inaugural lecture on what he proposes to call '*rhematology*,' i.e., the department of 'semantics' or 'semasiology' concerned with the study of separate rhemes, are full of interest, and actually amusing here and there. *Athenæum*, Feb. 16, 1901, p. 203.

rheme (rēm), *n.* [Gr. *ῥῆμα*, a saying.] See the extract.

> A "*rheme*" is "the expression of a single idea or notion," and we may "distinguish the expressions or qualifications and connections of such *rhemes* by calling them epirhemes, though, as a general term, *rhemes* may serve for both."
> *Athenæum*, Feb. 16, 1901, p. 203.

Rhenan beds. See **bed*¹.

Rhenish furnace. Same as *Belgian-Silesian* **furnace.*

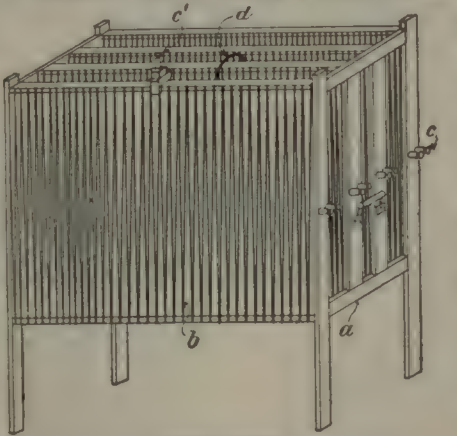
rheograph (rē′ọ-graf), *n.* [Gr. *ῥεῖν*, flow, + *γράφειν*, write.] A type of instrument for the study of rapidly fluctuating currents. It is distinguished from the oscillograph and from other vibration-galvanometers by its large moment of inertia and slow natural period of oscillation. *Jour. Brit. Inst. Elect. Engin.*, 1903–04, p. 75.

rheometer, *n.* **3.** In *elect.*, a resistance-box with bridge-coils; a combined Wheatstone bridge and rheostat.

rheonome (rē′ọ-nōm), *n.* [Gr. *ῥέος*, a stream (< *ῥεῖν*, flow), + *νόμος*, law.] An apparatus, resembling a rheochord, used in physiological experiments to determine the mode of electrical stimulation of a nerve.

rheoscope, *n.*—**Physiological rheoscope.** Same as *rheoscopic limb.*

rheostat, *n.*—**Liquid rheostat,** a rheostat in which the resistance is that of a column of water or of some other liquid electrolyte.—**Multiple rheostat,** a rheostat the parts of which may be grouped in parallel or multiple circuit.—**Multiple-series rheostat,** a rheostat so constructed that its parts may be used either in multiple or multiple-series circuit, or in series.—**Nichols rheostat,** in *physics*, a cheap rheostat constructed from sheets of tinned iron cut into zigzag strips: useful for the distribution of current in laboratories, for use with the projection-lantern, etc.



Nichols Rheostat.

a, wooden frame; *b*, tinned iron strip; *c*, stationary, and *c′*, movable binding-posts; *d*, copper strip for short-circuiting.

rheostat-indicator (rē′ọ-stat-in″di-kā-tọr), *n.* A device for indicating the portion of the resistance of a rheostat that is in circuit and the portion that is cut out. Sometimes it takes the form of a pointer moving around a divided circle.

rheostat-solenoid (rē′ọ-stat-sō-lē″noid), *n.* In *elect.*, a resistance-coil or set of coils, with sliding contacts, used as a rheostat. *Elect. World and Engin.*, June 18, 1904, p. 1167.

rheotactic (rē-ọ-tak′tik), *a.* [*rheotaxis* (*-tact-*) + *-ic*.] Of or pertaining to the movements of organisms in relation to currents of liquid; exhibiting *rheotaxis*. *Science*, April 3, 1903, p. 531.

rheotan (rē′ọ-tan), *n.* An alloy composed of 84 per cent. of copper, 4 per cent. of zinc, and 12 per cent. of manganese. It is used for electric resistances. *Jour. Brit. Inst. Elect. Engin.*, 1902–03, p. 384.

rheotaxis (rē-ọ-tak′sis), *n.* [NL., < *ῥέος*, a stream (< *ῥεῖν*, flow), + *τάξις*, disposition.] The locomotion of a cell or of an organism in respect to currents of water: applied both to the movements of a myxomycete upon filter-paper over which water is flowing and to the movements of fish stemming a current. *Amer. Nat.*, March, 1903, p. 201.

rhesis (rē′sis), *n.* [NL., < Gr. *ῥῆσις*, a saying, a passage in a literary work.] **1.** A saying; a speech; a passage in a play, poem, or book.

> Both were probably inspired by a *rhesis* of Euripides.
> *T. Ely*, in Jour. Hellenic Studies, XVI. 152.

2. A set speech or discourse. *N. E. D.*

> Any who could speak
> A chorus to the end, or prologize,
> Roll out a *rhesis*, wield some golden length
> Stiffened by wisdom out into a line.
> *Browning*, Balaustion's Adventure, l. 167.

rhet. An abbreviation of *rhetoric.*

rhetoric (rẹ-tor′ik), *a.* [F. *rhétorique*, < L. *rhetori(cus)*, rhetorical. See *rhetoric*, *n.*] Rhetorical; formerly, eloquent.

rhetorical, *a.* **II.** *n. pl.* In some colleges in the United States, rhetorical exercises (declamations, etc.) held publicly before all the students of the college.

rheumatic, *a.* **7**†. Pathetic; affecting; bringing a flow of tears from the eyes.

> Perhaps you have heard
> The *rheumatic* story of some loving chandler now,
> Or some such melting fellow, that you talk
> So prodigal of men's kindness.
> *Beau. and Fl.*, The Nice Valour, ii. 1.

rheumatism-weed (rö′mạ-tizm-wēd), *n.* **1.** Either the spreading dogbane, *Apocynum androsæmifolium*, or the Indian hemp, *A. cannabinum*.—**2.** The pipsissewa or prince's-pine, *Chimaphila umbellata.*

rhexis (rek′sis), *n.* [NL., < Gr. *ῥῆξις*, breaking, rupture, < *ῥηγνύναι*, break.] In *pathol.*, rupture of a blood-vessel or of any organ.

> It is difficult to determine whether the hemorrhages result from diapedesis or from *rhexis*.
> *Buck*, Med. Handbook, II. 93.

R. H. G. An abbreviation of *Royal Horse Guards.*

rhinacanthin (rī-na-kan′thin), *n.* [*Rhinacanthus* (see def.) + *-in*².] A tasteless viscous resin, $C_{14}H_{18}O_4$, found in the root of *Rhinacanthus communis.*

rhinanthin (rī-nan′thin), *n.* [*Rhinanthus* (see def.) + *-in*².] A bitter-sweet crystalline glucoside, $C_{29}H_{52}O_{20}$, found in the seeds of *Rhinanthus major*. It is easily hydrolyzed to rhinanthogen and a sugar.

rhinanthogen (rī-nan′thọ-jen), *n.* [*rhinanth(in)* + *-gen*.] A brown amorphous substance formed by the hydrolysis of rhinanthin.

rhinarium, *n.* **2.** The area of bare skin around the nostrils of ruminants; the muffle.

rhinhuka (rē-nyö′kä), *n.* [S. Amer. (Chilean).] The name given in Chile to a predatory bug, probably of the family *Reduviidæ*, which enters human dwellings and is greatly feared.

> Many species in this family [*Belostomatidæ*] occur in tropical America and frequently prove troublesome, among them a species related to the "wheel-bug," which occurs in Chili and is called the "winhuka" or "*rhinhuka*." It is said to be greatly feared, and, if numerous, to drive people for a time from their dwellings.
> *Buck*, Med. Handbook, V. 162.

rhinion (rin′i-on), *n.*; pl. *rhinia* (-ạ̈). [NL., < Gr. *ῥινίον*, nostril, dim. of *ῥίς* (*ῥιν-*), nose.] In *craniom.*, the lowest point of the suture between the nasal bones on their facial side. *Von Török.*

rhinitis, *n.*—**Atrophic rhinitis,** chronic inflammation resulting in atrophy of the nasal mucous membrane.—**Hypertrophic rhinitis,** inflammation with swelling of the mucous membrane of the nasal cavities, usually followed by the atrophic form.

rhino² (rī′nọ), *n.* An abbreviation of *rhinoceros*. *Geog. Jour.* (R. G. S.), XI. 393.

rhinocarcinoma (rī-nọ-kär-si-nō′mạ̈), *n.*; pl. *rhinocarcinomata* (-mạ-tạ̈). [NL., < Gr. *ῥίς* (*ῥιν-*), nose, + *καρκίνωμα*, cancer.] Cancer of the nose.

Rhinocaris (rī-nok′a-ris), *n.* [NL., < Gr. *ῥίς* (*ῥιν-*), nose, + *καρίς*, shrimp.] A genus of Devonian phyllocarid *Crustacea* with a bivalved carapace, the parts of which interlock at a single point only. They have accessory rostral and median plates, the abdomen protrudes from the carapace, and the tail is three-spined.

rhinoceros, *n.*—**Square-mouthed rhinoceros.** See *kobaoba.* **White rhinoceros.** See *kobaoba.*

rhinocœlian (rī-nọ̄-sē′li-ạn), *a.* [*rhinocœlia* + *-an.*] Of or pertaining to the rhinocœlia, or cavity of the rhinencephalon.

rhinocœlic (rī-nọ̄-sē′lik), *a.* Same as ★*rhinocœlian.*

rhinogenous (rī-noj′e-nus), *a.* [Gr. ῥίς (ῥιν-), nose, + *-gen* + *-ous.*] Of nasal origin.

> The existence of cerebral disease of *rhinogenous* origin has received scant or no attention from writers on general medicine and surgery. *Med. Record*, Nov. 9, 1907, p. 767.

rhinolaryngology (rī-nọ̄-lar-ing-gol′ọ̄-ji), *n.* [Gr. ῥίς (ῥιν-), nose, + λάρυγξ (λαρυγγ-), larynx, + -λογια, < λέγειν, speak.] The medical specialty dealing with diseases of the nose and larynx. *Med. Record*, Jan. 24, 1903, p. 153.

Rhinoliparis (rī-nō-lip′a-ris), *n.* [NL., < Gr. ῥίς (ῥιν-), nose, + NL. *Liparis.*] A genus of deep-sea fishes, of the family *Liparididæ*, found in northern seas.

rhinolithic (rī-nọ̄-lith′ik), *a.* [*rhinolith* + *-ic.*] Pertaining to, or of the nature of, a rhinolith.

rhinomacerid (rī-nọ̄-mas′ẹ-rid), *n.* and *a.* **I.** *n.* A member of the family *Rhinomaceridæ.*

II. *a.* Having the characters of or belonging to the coleopterous family *Rhinomaceridæ.*

rhinonecrosis (rī″nọ̄-nek-rō′sis), *n.* [NL., < Gr. ῥίς (ῥιν-), nose, + νέκρωσις, deadness. See *necrosis.*] Necrosis of the nasal bones or cartilages.

rhinopharyngeal (rī″nọ̄-fạ̄-rin′jẹ̄-ạl), *a.* [Gr. ῥίς (ῥιν-), nose, + E. *pharyngeal.*] Of or pertaining to the nose and the pharynx.

rhinopharynx (rī-nọ̄-far′ingks), *n.* [NL., < Gr. ῥίς (ῥιν-), nose, + φάρυγξ, pharynx.] Same as *nasopharynx.*

rhinophymatous (rī-nō-fī′mạ-tus), *a.* [*rhinophyma(t-)* + *-ous.*] Relating to or affected with rhinophyma.

rhinorrhaphy (rī-nor′ạ-fi), *n.* [Gr. ῥίς (ῥιν-), nose, + -ραφια, < ῥαφή, sewing.] A surgical operation for the removal of an epicanthis.

Rhinoscopelus (rī-nọ̄-skop′e-lus), *n.* [NL., < Gr. ῥίς (ῥιν-), nose, + NL. *Scopelus.*] A genus of deep-sea fishes of the family *Myctophidæ.* Most of the species are found in the Atlantic.

rhinosphenal (rī-nọ̄-sfē′nạl), *n.* [Gr. ῥίς (ῥιν-), nose, + σφήν, wedge, + *-al*[1].] The anterior unpaired bone of the lower surface of the cranium in fishes. It often bears teeth. See *vomer*, 1. *Starks*, Synonymy of the Fish Skeleton, p. 509.

Rhinotriacis (rī-nō-trī′ạ-sis), *n.* [NL., < Gr. ῥίς (ῥιν-), nose, + NL. *Triacis, Triakis*, a related genus.] A genus of sharks known from the coast of California and belonging to the family *Galeidæ.*

rhipicerid (rī-pis′ẹ-rid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Rhipiceridæ.*

II. *a.* Having the characters of or belonging to the family *Rhipiceridæ.*

rhipidoglossal (rip″i-dọ̄-glos′ạl), *a.* Same as *rhipidoglossate.*

rhipiphorid (rī-pif′ọ̄-rid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Rhipiphoridæ.*

II. *a.* Having the characters of or belonging to the family *Rhipiphoridæ.*

rhizina, *n.* **2.** [*cap.*] [NL. (Fries, 1815).] A genus of discomycetous fungi having fleshy, flat, spreading ascocarps frequently becoming irregular and provided with cylindrical root-like strands of mycelium below. The spores are unicellular and colorless. Eight species have been described. *R. inflata* occurs on burned places in woods and is suspected of being the cause of certain root diseases of forest trees, especially pines. It is widely distributed in Europe, Asia, and North America.

Rhizinaceæ (rī-zi-nā′sẹ-ē), *n. pl.* [NL., < *Rhizina* (see ★*rhizina*, 2) + *-aceæ.*] A small family of discomycetous fungi, so named from the genus *Rhizina.*

rhizobia (rī-zō′bi-ạ̈), *n. pl.* [NL., < Gr. ῥίζα, root, + βίος, life.] Same as *nodule-bacteria* (which see, under ★*bacterium*).

rhizobic (rī-zō′bik), *a.* Of or pertaining to the rhizobia, or nodule-forming bacteria.

rhizoclon (rī′zọ̄-klōn), *n.* [Gr. ῥίζα, a root, + κλών, a twig.] In the spicular elements of the sponges, a delicate curved and irregularly branched spicule.

Rhizoctonia (rī-zok-tō′ni-ạ̈), *n.* [NL. (De Candolle, 1815), < Gr. ῥίζα, root, + κτείνειν, kill.] A genus of fungi consisting of sterile mycelia which produce root-rot in various plants. The hyphæ are rather stout and dark-colored. *R. violacea* attacks the roots of clover and alfalfa, producing a violet coating at first and later black sclerotia. *R. Solani* attacks potatoes. *Corticium vagum Solani* is said to be the fruiting condition of this species.

rhizodontropy (rī-zọ̄-don′trọ̄-pi), *n.* [Gr. ῥίζα, root, + ὀδούς (ὀδοντ-), tooth, + -τροπια, < τρέπειν, turn.] The joining of an artificial crown to the root of a tooth by means of pegs.

rhizodontrypy (rī-zọ̄-don′tri-pi), *n.* [Gr. ῥίζα, root, + ὀδούς (ὀδοντ-), tooth, + τρυπᾶν, bore, + *-y*[3].] The operation of boring into the root of a tooth to let out retained morbid matter.

rhizomatic (rī-zọ̄-mat′ik), *a.* [Gr. ῥίζωμα(τ-). See *rhizome.*] Pertaining to rhizomes; having the nature or appearance of a rhizome; rhizomalous.

rhizomatous (rī-zō′mạ-tus), *a.* [Gr. ῥίζωμα(τ-), root, + *-ous.* See *rhizome.*] Pertaining to, or of the nature of, a rhizome; having rhizomes; rhizomatic.

> It is interesting to note further how the monocotylous type has developed so largely upon restricted lines in the way of short *rhizomatous*, often tuberous, growth.
> *I. B. Balfour*, in Rep. Brit. Ass'n Advancement of Sci., [1901, p. 828.

rhizomic (rī-zom′ik), *a.* [*rhizome* + *-ic.*] Belonging to or consisting of rhizomes.

> The examination of *rhizomic* material of the unique fern Matonia pectinata collected by Mr. Tansley on Mount Ophir forms the subject of some notes by Miss G. Wigglesworth. *Nature*, Aug. 21, 1902, p. 399.

rhizomorin (rī-zọ̄-mō′rin), *n.* [See ★*Rhizomorina.*] In the spicular skeletons of the lithistid sponges, one of the small radiciform branching elements.

Rhizomorina (rī″zō-mō-rī′nạ̈), *n. pl.* [NL., < Gr. ῥίζα, root, + *μόρος for μέρος, a part, + *-ina*[2].] A suborder of the lithistid sponges in which the skeletal elements are small, constituted of four or three principal rays, and of a great variety of irregular forms. The species are chiefly Jurassic, Cretaceous, and recent.

rhizophilous (rī-zof′i-lus), *a.* [Gr. ῥίζα, root, + φιλεῖν, love.] Root-loving; growing or parasitic upon roots.

rhizophoraceous (rī″zọ̄-fọ̄-rā′shius), *a.* Belonging to or resembling the *Rhizophoraceæ*, or mangrove family of plants.

rhizopodist (rī-zop′ọ̄-dist), *n.* [*rhizopod* + *-ist.*] A student of the *Rhizopoda.*

> This handsome species was for a long time . . . almost unknown to *rhizopodists.*
> *Proc. Zool. Soc. London*, 1902, p. 231.

Rhizopogon (rī-zop′ọ̄-gon), *n.* [NL. (Fries, 1818), < Gr. ῥίζα, root, + πώγων, a beard: in allusion to the beard-like strands of mycelium arising from the peridium.] A genus of subterranean gasteromycetous fungi. The plants are tuber-like and have a membranous or somewhat leathery peridium not easily separable from the gleba, which is compact and divided into small irregular chambers. About 15 species are known. *R. rubescens* is a widely distributed species growing just beneath the surface of soil in old pine woods and sometimes reaching the size of a walnut.

Rhizopus (rī′zọ̄-pus), *n.* [NL. (Ehrenburg, 1821), < Gr. ῥίζα, root, + πούς, foot.] A genus of zygomycetous fungi having conidial sporophores arising from rhizoids developed at the ends of aërial hyphæ. *R. stolonifer* is a very common mold, occurring on decaying fruits and vegetables.

rhizotic (rī-zot′ik), *a.* Same as *rhizote.*

rhizotomist (rī-zot′ọ̄-mist), *n.* [Gr. ῥιζοτόμος, cutting roots, + *-ist.*] A collector of roots for medicinal purposes. *N. E. D.*

rho (rō), *n.* [Gr. ῥῶ, from the Phen. form cognate with Heb. *rōsh*, head, *rēsh*, name of the letter.] The Greek letter ρ, corresponding to the English *r.*

rhodalite (rō′dạ-līt), *n.* [Gr. ῥοδαλός, of roses (< ῥόδον, rose), + *-ite*[2].] A soft earthy mineral of a rose-red color occurring in the amygdaloid of Antrim, Ireland. It is allied to the clays.

rhodamine (rō-dam′in), *n.* [Gr. ῥόδον, rose, + E. *amine.*] A phthalein formed from metaminophenol or one of its derivatives. The simplest rhodamine, $C_{20}H_{13}O_3(NH_2)_2$, is formed from metaminophenol and phthalic anhydrid. The rhodamines, especially those which are alkylated, are strongly colored. They are usually red, and in solution show greenish fluorescence.—**Rhodamine S**, an artificial dyestuff, a condensation-product of diethyl-meta-amidophenol with succinic instead of phthalic anhydrid. It gives about the same effects in dyeing as rhodamine itself.—**Rhodamine 3 B.** See ★*anisoline.*

rhodan (rō′dan), *n.* [Gr. ῥόδον, rose, + *-an.*] Same as ★*thiocyanogen.*

rhodanate (rō′dạ-nāt), *n.* [*rhodan* + *-ate.*] Same as ★*thiocyanate.* Also called *rhodanide.*

Rhodanian (rọ̄-dā′ni-ạn), *n.* [L. *Rhodanus*, the river Rhone, + *-ian.*] In *geol.*, a term employed by the French geologists as practically equivalent to *Urgonian* (which see).

rhodanide (rō′dạ-nid), *n.* [*rhodan* + *-ide*[1].] Same as ★*thiocyanate.* Also called *rhodanate.*

rhodate (rō′dāt), *n.* [*rhod(ic)* + *-ate*[1].] The salt of a hypothetical rhodic acid. Potassium rhodate perhaps exists in a blue-violet liquid obtained by passing chlorin into an alkaline solution of the rhodium hydroxid, $Rh_2(HO)_6$.

Rhode Island bent. See ★*bent*[2].

Rhodesian (rọ̄-dē′ziạn), *a.* and *n.* **I.** *a.* Of or pertaining to Rhodesia.

> In November 1897 the *Rhodesian* Railway, forming a continuation of the Cape trunk line to Vryburg, in Bechuanaland, had reached Bulawayo.
> *Encyc. Brit.*, XXXII. 232.

Rhodesian fever. See ★*fever*[1].—**Rhodesian red-water.** Same as *African Coast* ★*fever.*—**Rhodesian tick-fever.** Same as *African Coast* ★*fever.*

II. *n.* **1.** A native or an inhabitant of Rhodesia of European ancestry.

> No one could fail to be impressed by the magnificence of the mighty river, much less a *Rhodesian*, used to a country in which, during the greater portion of the year, running water is the exception.
> *Geog. Jour.* (R. G. S.), XVIII. 64.

2. One of the 'Rhodes Scholars' entered at Oxford University under the terms of the will of Cecil Rhodes, who died in South Africa in 1903.

> The 79 Rhodes Scholars who remain to us from last year have been reinforced by another 67. This brings the number in residence to something like 30 short of the total for whom provision is made under the terms of the will. . . . The *Rhodesians* are well spread out amongst the Colleges. Of the present year Christ Church takes 7; Balliol and Oriel, 5; Exeter, St. John's, Queen's and Magdalen, 4; and the other Colleges 3 or less.
> *Athenæum*, Dec. 16, 1905, p. 837.

rhodic (rō′dik), *a.* In *chem.*, noting rhodic acid. See ★*rhodate.*—**Rhodic oxid** and **rhodic salt**, compounds of rhodium with oxygen and with an acid radical respectively, in which rhodium presents apparently triad valence.

rhodiene (rō′di-ēn), *n.* [Gr. ῥόδον, rose, + *-i-* + *-ene.*] A sesquiterpene, $C_{15}H_{24}$, obtained from the oil of rosewood.

rhodinal (rō′di-nạl), *n.* [*rhodin-ol* + *-al*[3].] An unsaturated aldehyde, $(CH_3)_2C:CHCH_2CH_2CH(CH_3)CH_2CHO$, prepared by the oxidation of rhodinol. Also called 2,6-*dimethyloctene-2-al*-8.

rhodinol (rō′di-nol), *n.* [Gr. ῥόδινος, of roses, + *-ol.*] An alcohol, $(CH_3)_2C:CHCH_2CH_2CH(CH_3)CH_2OH$, having the odor of roses. It is found in Turkish rose-oil and in geranium- and pelargonium-oils. It boils at 211–212° C. The name rhodinol has also been given sometimes to geraniol and to mixtures consisting chiefly of geraniol.

rhodite (rō′dīt), *n.* [Gr. ῥόδον, rose, + *-ite*[2].] Rhodium-gold.

rhodium-platinum (rō′di-um-plat″i-num), *n.* An alloy of rhodium and platinum, generally made with 10 per cent. of rhodium and 90 per cent. of platinum. A thermo-electric couple of this alloy and pure platinum is often used in the measurement of high temperatures.

rhodizonic (rō-di-zon′ik), *a.* Noting an acid, a substance formed from inosite when Scherer's test is applied.

Rhodobacteria (rō″dọ̄-bak-tē′ri-ạ̈), *n. pl.* [NL., < Gr. ῥόδον, rose, + NL. *bacteria*, pl. of *bacterium.*] A group of bacteria, of wide distribution, remarkable for having the cell-contents usually colored various shades of red or purple by the presence of bacteriopurpurin. *Nature*, Nov. 21, 1907, p. 53.

Rhodobacteriaceæ (rō″dọ̄-bak-tē″ri-ā′sẹ̄-ē), *n. pl.* [NL., < Gr. ῥόδον, rose (red), + NL. *bacterium* + *-aceæ.*] A family of bacteria in which the cell-contents are colored red or violet and contain sulphur granules. Many species have been described by Winogradsky, most of which are little known at present.

rhodochroisite (rō-dọ-krō'i-sīt), *n.* Same as *rhodochrosite.*

rhodocyte (rō'dọ-sīt), *n.* [Gr. ῥόδον, rose, + κύτος, a hollow (a cell).] A red blood-corpuscle.

rhodolite (rō'dọ-līt), *n.* [Gr. ῥόδον, rose, + λίθος, stone.] A variety of garnet of rose-red color and brilliant luster, sometimes used as a gem: found in Macon county, North Carolina.

Rhodophyceæ (rō-dọ-fī'sē̤-ē), *n. pl.* [NL., < Gr. ῥόδον, rose (red), + φῦκος, seaweed, + *-eæ.*] One of the principal classes of the algæ. It contains most of those forms that are red in color, practically all of which are marine.

rhodophyceous (rō-dọ-fī'shius), *a.* Of or pertaining to the red algæ or *Rhodophyceæ.*

rhodoplast (rō'dọ-plȧst), *n.* [Gr. ῥόδον, rose (red), + πλαστός, formed.] In *cytol.*, one of the chromatophores which bear the red coloring matter in the cells of the red algæ (*Rhodophyceæ*).

rhodospermous (rō-dọ-spėr'mus), *a.* Of or belonging to the *Rhodospermeæ* or red algæ.

Rhodotypos (rō-dọ-tī'pos), *n.* [NL. (Siebold and Zuccarini, 1835), < Gr. ῥόδον, the rose, + τύπος, type, pattern, because this genus elucidates the morphology of the rosaceous flower.] A monotypic genus of plants of the family *Rosaceæ*, allied to *Kerria. R. kerrioides*, from Japan, is a handsome and hardy shrub, with ovate-acuminate leaves, pure white flowers more than an inch across, and attractive shining black persistent drupelets.

rhodusite (rō'dus-īt), *n.* [Irreg. < L. *Rhodus*, Rhodes, + *-ite*².] A variety of glaucophane of a lavender-blue color which resembles asbestos in structure: found on the island of Rhodes.

rhombed (rombd), *a.* [*rhomb* + *-ed.*] Rhomboid.

rhombencephalon (rom-ben-sef'a̤-lon), *n.* [NL., < Gr. ῥόμβος, rhomb, + ἐγκέφαλος, brain.] The area of brain-substance which surrounds the fourth ventricle.

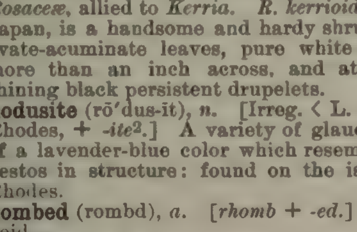
Rhombohedral class. See ★*symmetry*, 6.

rhomboid, *n.* 4. In *anthrop.*, a cranium the norma verticalis of which has a rhomboid form. *S. Sergi* (trans.), Var. of the Human Species, p. 30.—**Sacral rhomboid,** a flattened area of irregular rhomboidal shape just above and between the diverging masses of the nates.

rhomboidal, *a.* 2. Specifically, in *anat.*, said of muscles whose fibers run obliquely from the point of origin to the point of insertion, as in the so-called 'penniform muscles' in which a large number of fibers are attached to a long tendon-like barrel on the side of a feather. Correlative with ★*pyramidal*, 3, or *triangular*, and ★*prismatic*, 3.

rhomboid-ovate (rom-boid-ō'vāt), *a.* Resembling a rhomboid and an oval.

Rhomboplites (rom-bop-lī'tēz), *n.* [NL., < Gr. ῥόμβος, rhomb, + ὁπλίτης, armed.] A genus of lutianoid fishes found in the West Indies.



Rhomboplites aurorubens.
(From Bulletin 47, U. S. Nat. Museum.)

Rhombopteria (rom-bop-tē'ri-ä̤), *n.* [NL., < Gr. ῥόμβος, rhomb, + πτερόν, wing.] A primitive genus of prionodesmaceous pelecypods allied to *Pterinea* and presenting the earliest expression of the hinge-structure peculiar to the *Pterineidæ.* It occurs in the Upper Silurian rocks.

rhopalium (rọ-pā'li-um), *n.*; pl. *rhopalia* (-ä̤). [NL., < Gr. ῥοπάλιον, dim. of ῥόπαλον, a club, a stick.] A kind of sense-organ, or marginal body, as in *Scyphomedusæ.*

> Sense organs when present are modified tentacles, variously designated as tentaculocysts, *rhopalia*, etc.
> *Amer. Nat.*, May, 1903, p. 331.

rhopography (rọ-pog'ra̤-fi), *n.* [Gr. ῥωπογραφία, < ῥῶπος, small wares, + γράφειν, write.] Painting in still life. *N. E. D.* [Rare.]

Rhotomagian, *n.* See ★*Rotomagian.*

rhubarb-curculio (rö''bärb-kėr-kū'li-ō), *n.* An American curculionid beetle, *Lixus concavus*, which lays its eggs in the stems of rhubarb, in which its larvæ subsequently develop.

rhumb-track (rumb'trak), *n.* Same as *rhumb-line.*

> The *rhumb track*, the great circle, and the polar track.
> *Encyc. Brit.*, XXXI. 110.

rhyacophilid (rī-a̤-kof'i-lid), *n.* and *a.* **I.** *n.* A member of the trichopterous family *Rhyacophilidæ.*

II. *a.* Having the characters of or belonging to the family *Rhyacophilidæ.*

Rhynchias (ring'ki-as), *n.* [NL., < Gr. ῥύγχος, a snout, muzzle.] A genus of fishes known only from an old description. No specimens of it are in the collections. It is supposed to be related to *Ammodytes.*

rhynchitid (ring'ki-tid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Rhynchitidæ.*

II. *a.* Having the characters of or belonging to the family *Rhynchitidæ.*

rhynchocephalic (ring''kō-se-fal'ik), *a.* Same as *rhynchocephalian. Proc. Zool. Soc. London*, 1901, p. 97.

rhynchocephaloid (rin-kō-sef'a̤-loid), *a.* [*Rhynchocephali(a)* + *-oid.*] Pertaining to, having the characters of, or resembling, the reptiles of the order *Rhynchocephalia.* Applied to various extinct reptiles.

rhynchocœle, *a.* **II.** *n.* In nemerteans, a closed tubular cavity with muscular walls lying above the enteron and containing a corpusculated fluid; a proboscis-sheath. When in a state of introversion the proboscis is inclosed in this cavity. Also *rhynchocœl. Encyc. Brit.*, XXXI. 121.

rhynchocœlic (ring-kọ-sē'lik), *a.* [*rhynchocœle* + *-ic.*] Of or pertaining to a rhynchocœle. *Encyc. Brit.*, XXXI. 121.

rhynchocœlom (ring-kọ-sē'lom), *n.* [Gr. ῥύγχος, snout, + NL. *cœlom(a).*] Same as *rhynchocœlum*, *rhynchocœle. Proc. Zool. Soc. London*, 1901, p. 93.

rhynchocœlomic (ring-kọ-sẹ-lom'ik), *a.* [*rhynchocœlom* + *-ic.*] Same as *rhynchocœlic.*

rhynchocœlum (ring-kọ-sē'lum), *n.*; pl. *rhynchocœla* (-lä̤). [Gr. ῥύγχος, snout, + κοῖλον, cavity.] See the extract and ★*rhynchocœle.*

> The cavity into which the proboscis is retracted [in *Nemertina*], the *rhynchocœlum*, is formed by a split which appears in the mesoblast surrounding the epiblastic pit, which is the forerunner of the proboscis.
> *Encyc. Brit.*, XXXI. 121.

rhynchodæum (ring-kō-dē'um), *n.*; pl. *rhynchodæa* (-ä̤). [NL., < Gr. ῥύγχος, snout, + ὁδός, path.] In nemerteans, a cavity in the precerebral region extending from the rhynchocœle to the rhynchostome.

> The alimentary canal [in nemerteans] presents no peculiar features. . . . The œsophagus opens into the *rhynchodæum* about halfway between the tip of the snout and the commencement of the brain.
> *Proc. Zool. Soc. London*, 1901, p. 92.

Rhynchosauria (ring-kọ-sâ'ri-ä̤), *n. pl.* [NL., < Gr. ῥύγχος, snout, + σαῦρος, lizard.] A group of extinct reptiles, regarded as an order or suborder, of small or moderate size, having toothless jaws and palatines furnished with small pavement-teeth. The skull is short and broad in some genera, long and narrow in others. The vertebræ are biconcave (amphicœlous) and not perforated by the notochord. Some of the species bear a superficial resemblance to the living *Hatteria.*

rhynchosporous (ring-kos'pọ-rus), *a.* [*Rhynchospor(a)* + *-ous.*] Having a beaked fruit or seed.

rhynchostome (ring'kọ-stōm), *n.* [Gr. ῥύγχος, snout, + στόμα, mouth.] In nemerteans, the proboscis-pore.

rhynchotal (ring-kō'ta̤l), *a.* [*Rhynchot(a)* + *-al*¹.] Same as *rhynchotous. Nature*, Oct. 23, 1903, p. 616.

rhynchote, *a.* **II.** *n.* A member of the *Rhynchota.*

Rhynsburger (rīnz'bėr-gėr), *n.* Same as *Collegiant*, which see: so called from the name of the city where the sect held its meeting, Rhynsburg (Rijnsburg), near Leyden, Holland.

rhyocrystal (rī-ọ-kris'ta̤l), *n.* [Irreg., < Gr. ῥύαξ, a stream, + E. *crystal.*] A phenocryst which grows in a molten magma while floating in the moving current during an eruption. *Amer. Geol.*, Feb., 1905, p. 70.

Rhyolitic structure. Same as *fluidal structure.*

rhyparia (rī-pā'ri-ä̤), *n.* [NL., < Gr. ῥυπαρία, filthiness, < ῥυπαρός, filthy, dirty, < ῥύπος, filth, dirt.] Sordes; rupia.

rhyparographer (rip-a̤-rog'ra̤-fėr), *n.* [See *rhyparography.*] One who practises rhyparography or the painting of mean, low, or trivial subjects.

rhyparographist (rip-a̤-rog'ra̤-fist), *n.* Same as ★*rhyparographer.*

rhyphid (rī'fid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Rhyphidæ.*

II. *a.* Having the characters of or belonging to the family *Rhyphidæ.*

rhypography (rī-pog'ra̤-fi), *n.* Same as *rhyparography.*

rhypophagy (rī-pof'a̤-ji), *n.* [Gr. ῥυπαρός, foul, filthy, + -φαγια, < φάγειν, eat.] The eating of filth.

rhyssodid (ri-sod'id), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Rhyssodidæ.*

II. *a.* Having the characters of or belonging to the family *Rhyssodidæ.*

rhythm, *n.*—**Cantering rhythm,** a disturbance of the normal rhythm of the heart-sounds in which a third is interjected between the two normal sounds.—**Cheyne-Stokes rhythm.** Same as *Cheyne-Stokes respiration* (which see, under *respiration*).—**Coupled rhythm,** a disturbance of the normal relation of pulse- and heart-beats in which every second pulsation of the heart is so feeble that it produces no pulse at the wrist. *Lancet*, Aug. 22, 1903, p. 523.—**Gallop rhythm.** See ★*gallop.*—**Intensity-rhythm,** a rhythm which depends wholly upon differences of intensity in the recurrent stimuli; a rhythm in which the quality and duration of the stimuli are the same throughout. *Scripture*, Exper. Phonetics, p. 517.—**Motor rhythm,** in *psychol.*, rhythmic action; a rhythm couched in motor or kinesthetic terms: opposed to *auditory rhythm. Scripture*, Exper. Phonetics, p. 523.—**Organic rhythm,** in *psychol.*, a rhythm based upon the periodic recurrence of sensation-complexes or of motor adjustments in the organism.

> The effect of this accent of attention can be increased (*a*) by *organic rhythms*, sensations vibrating in unison with the attention rhythm; (*b*) by a rhythm in the affective tone.
> *C. R. Squire*, in Amer. Jour. Psychol., XII. 560.

Primary rhythm, an objectively conditioned rhythm, simple in character, which forms the basis of the perception of rhythm and the material for the development of more definite and complex secondary rhythms. See the extract.

> If equal or simply-proportionate intervals of time be marked off to any of our senses by any recurrent series of similar events, we may be said to perceive a *primary rhythm* through that sense.
> *S. Lanier*, Sci. of Eng. Verse, p. 62.

Quality rhythm, in *psychol.* and *phonet.*: (*a*) A rhythm produced by alternation of pitches—in the simplest case, by tones alike in all attributes save that of pitch. (*b*) A rhythm produced by alternations of clang-tint—in the simplest case, by compound tones alike in duration, pitch, and energy, but different in tint (as proceeding from different instruments, or sung by different voices). *Scripture*, Exper. Phonetics, p. 517.—**Resistance rhythm,** in *psychol.*, a subjective rhythm produced by the attempt to inhibit the involuntary movements accompanying the perception of an objectively rhythmical series. *C. R. Squire*, in Amer. Jour. Psychol., XII. 560.—**Rhythm consciousness,** in *psychol.*, the group of mental processes constituting the perception and the feeling of rhythm, and forming by their nature and disposition a specific consciousness. *E. B. Titchener*, Exper. Psychol., I. i. 177.—**Septuple rhythm** or **time,** in *music*, a rhythm with seven beats to the measure.—**Simple rhythm** or **time.** (*a*) See *simple time.* (*b*) In *music*: (1) Same as *duple rhythm.* (2) A rhythm with only two or three beats to the measure: opposed to *compound rhythm* or *time.* See *compound measure.*—**Waltz rhythm.** Same as *triple rhythm.* See *rhythm*, 2 (*b*).

Rhythmical pattern. Same as *rhythm*, 2 (*b*). See also ★*metric pattern.*—**Rhythmical accent.** See ★*accent.*

rhythmicity (rith-mis'i̤-ti), *n.* Rhythmical character; rhythmicality.

> Ordinarily the pulse rate presents more or less regular and extensive variations in the course of a day, which are sometimes designated "diurnal." They are hardly the expression of an inherent *rhythmicity*, . . . but rather the result of the complex and ever-changing activities which characterize the successive periods of a complete day.
> *Buck*, Med. Handbook, III. 109.

rhythmizable (rith'mī-za̤-bl), *a.* Capable of being rhythmically treated. [Rare.] *Yale Psychol. Studies*, 1901, p. 70.

rhythmization (rith-mi-zā'sho̤n), *n.* [*rhythmize* + *-ation.*] The throwing or bringing of successive impressions into rhythmical form; or, the taking on of the rhythmical form by such a succession.

> We have now to differentiate our series of clicks, and so to study the various objective factors in *rhythmisation.*
> *E. B. Titchener*, Exper. Psychol., I. i. 176.

rhytidosis (rī-ti-dō'sis), *n.* [NL., < ῥυτίς (ῥυτιδ-), a wrinkle, pucker, + *-osis.*] Wrinkling, especially a wrinkling and collapse of the cornea.

Rhytisma (rī-tis'mä̤), *n.* [NL. (Fries, 1823), < Gr. ῥυτίς, a wrinkle: from the wrinkled appearance of the surface of the fungus.] A genus of parasitic discomycetous fungi having black ascocarps formed beneath the epidermis of the host. The pycnidial condition has been called

Melasmia. The ascospores develop after the leaves have fallen. The spores are long, slender, and hyaline. Many species have been described. *R. Acerinum* is frequently found on maple-leaves forming black elevated wrinkled blotches. *R. Salicinum* is common on willow-leaves.

ri, *n.* 2. A Japanese unit of area, equal to 15.5 square kilometers.

R. I. An abbreviation of *Rhode Island.*

ria (rē'ä), *n.* [Sp. *ria*, the mouth of a river, < *rio*, < L. *rivus*, a river.] In *phys. geog.*, a drowned valley: distinguished from a fiord by the absence of all forms due to glacial erosion. Also written *rias.*

The opposite form, an inlet of the sea, is known when wide as a gulf, bay, or bight, according to size and degree of inflexion, or as a fjord or *ria* when long and narrow.
Encyc. Brit., XXVIII. 622.

R. I. A. An abbreviation of *Royal Irish Academy.*

ria-coast (rē'ä-kōst), *n.* In *phys. geog.*, a coast the bays and headlands of which result from the partial submergence or drowning of a normally sculptured land-surface. See ★*ria.*

A further subdivision depends on the character of the interrelation of land and sea along the shore producing such types as a fjord-coast, *ria-coast*, or lagoon-coast.
Encyc. Brit., XXVIII. 623.

rib^1, *n.* 6. In *ceram.*, a small piece of wood, leather, or calabash with a straight or curved profile, and usually having a hole in the center for the thumb and finger, used to smooth the surface of a vessel while it is revolving on the wheel. Also called *profile* or *smoother.*

R. I. B. A. An abbreviation of *Royal Institute of British Architects.*

rib-band, *n.*—**Floor rib-band**, in *ship-building*, a rib-band supporting the outer end of the floors while the frames are being erected on the building-slip. See cut under *harping*, 2. Also called *floor-ribbon.*

ribber (rib'ėr), *n.* A mechanism applied to a knitting-machine for producing ribbed knit goods.

ribbon, *n.* 15. The banding in slates due to the preservation of the original bedding, which may be related to the cleavage at any angle.

The normal product of roofing slates is called No. 1 stock, and this is entirely free from *ribbons.* In addition to the first quality there is a small proportion of the product manufactured into No. 1 *Ribbon* and No. 2 *Ribbon*, the former containing *ribbons* near one end only, so that when laid on the roof the exposed parts are free from them. *Rep. U. S. Geol. Surv.*, 1897–98, vi. 257.

Blue ribbon. (*e*) The mark of the first prize at horse, cattle, or dog shows, etc.—**Lustering ribbon**, a plain glossy silk ribbon used for binding and trimming.—**Picot ribbon**, a ribbon with an ornamental edging of purls or small loops.—**Taffeta ribbon**, a plain or very finely corded silk ribbon.

ribbon, *v.* II. *intrans.* To stretch into long strips like ribbons: sometimes with *out*, as soap at one stage of its manufacture.

ribbon-back (rib'ọn-bak), *n.* In furniture, especially chairs, a back decorated in a ribbon design carved in wood.

ribboner (rib'ọn-ėr), *n.* [*ribbon* + *-er^2*.] One who wears a ribbon as a badge: usually qualified.—**Blue ribboner**, a member of a society pledged to total abstinence from intoxicating drink.—**White ribboner**, a member of a society which is pledged to promote social and personal purity of life.

American Medicine pokes some fun at the *White Ribboners* for their inconsistencies in the matter of alcohol.
Amer. Physician, Jan., 1903, p. 35.

ribbon-fern (rib'ọn-fėrn), *n.* See ★*fern^1.*

ribbon-fish, *n.* 2. A fish of the genus *Eques*, especially *E. lanceolatus.*

ribbon-gum (rib'ọn-gum), *n.* See ★*gum^2.*

ribbon-lapper (rib'ọn-lap"ėr), *n.* Same as ★*ribbon-machine.*

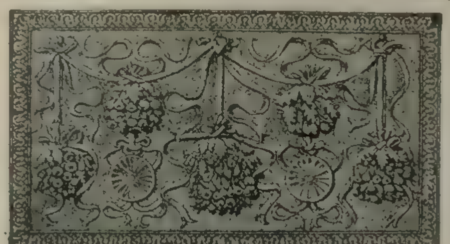
ribbon-machine (rib'ọn-ma-shēn"), *n.* A machine for preparing cotton, in the form of laps, for the Heilmann cotton-combing machine. Also called *ribbon-lapper* and *lap-machine.*

ribbon-movement (rib'ọn-möv"mẹnt), *n.* In a type-writer, the mechanism employed to feed the inking-ribbon under the carriage from side to side of the machine in such a way that a fresh surface of the ribbon shall be placed at the point where the next letter is to be stamped on the paper. This feeding mechanism varies greatly in different machines, the aim in all being to wind the ribbon from one ribbon-reel to the other, to change its direction when the reel is full, and to change its lateral motion at each traverse of the ribbon. When the ribbon is charged with two inks of different colors, there is also a feed mechanism to bring either half of the bichrome ribbon to the printing point on the cylinder at the will of the operator.

ribbon-rock (rib'ọn-rok), *n.* In *mining*, vein-quartz or any form of rock which occurs in veins.

ribbonry (rib'ọn-ri), *n.* Ribbons or decorations collectively.

ribbon-work (rib'ọn-wėrk), *n.* In decorative design, a motive largely composed of ribbons, tied in knots, festooned or flowing, often used in the Italian Renaissance.



Ribbon-work.

rib-faced, *a.* Specifically, noting a deer, the muntjac, *Cervulus aureus*, so called from the two raised ridges running down the front of the head, one from the base of each antler.

ribonic (ri-bon'ik), *a.* Related to ribose.—**Ribonic acid**, a liquid, $CH_2(OH)(CH.OH)_3.COOH$, formed from the stereo-isomeric arabonic acid by heating with pyridine and water. It yields ribose when reduced with sodium amalgam.

ribose (rī'bōs), *n.* A syrupy pentose, $C_5H_{10}O_5$, formed by reducing ribonic acid with sodium amalgam and very dilute sulphuric acid.

rib-plowing (rib'plou"ing), *n.* Same as *ribbing*, 2.

rib-roast, *n.*—**Chuck rib-roast.** See *prime* ★*rib-roast.*—**Prime rib-roast**, a butchers' term for the large rib-piece cut from the fore quarter. It contains the six prime ribs and the three chuck ribs; also a single piece, including one or two of the prime ribs, cut for roasting. A roasting-piece cut from the chuck ribs is called a *chuck rib-roast.* Both cuts are called *prime beef.*

rib-twist (rib'twist), *n.* In glassware, a twist formed by cutting a stem and then twisting it so as to form spiral grooves.

rib-twisted (rib'twis-ted), *a.* Formed with a ★rib-twist (which see).

The incised or *rib-twisted* stem is a feature seldom noticed. *W. Penny*, in Burlington Mag., III. 60.

Ricardianism (ri-kär'di-ạn-izm), *n.* The economic doctrines or methods of David Ricardo.

rice^1, *n.* 2. Since 1884 rice-growing in the United States has made up in the west what it had lost on the Atlantic coast. Settlers upon the extensive plains of southwestern Louisiana and southeastern Texas applied successfully the machinery and methods employed in wheat farming on the northern prairies, securing irrigation water at first by storing the rainfall (see *providence* ★*rice*), and later by pumping from the inexhaustible supply in the gravelly substratum of the region. Extensive systems of canals fed from this source have been constructed. At the same time a better variety of rice has been introduced by the United States government. See *Japan* ★*rice.*—**American rice**, the Indian rice, *Zizania aquatica.* Also locally called *marsh rice, prolific rice*, and by many other names. *An. Rep. Bur. Amer. Ethnol.*, 1897–98, p. 1022.—**Brewers' rice**, the lowest grade of milled rice, consisting of that which is most finely broken up: so called because it is sold to brewers.—**French rice**, the amel-corn or emmer wheat, *Triticum dicoccum.*—**Gold-seed rice**, the variety chiefly grown in the Atlantic United States, thus named from the yellowish color of the ripe husk. It is esteemed among the best rices of the world in quality and yield. It has two subvarieties, a 'long-grain' and a 'short-grain.' It has mostly superseded 'white ★rice' (which see, below).—**Grains of rice.** See ★*grain^1.*—**Head rice, straight-head rice**, milled rice which has escaped breaking, hence forming the highest commercial grade, though not of a greater nutritive value than broken rice. See *Japan* ★*rice.*—**Honduras rice**, a variety much grown in the Louisiana-Texas area. It is very prolific and has a large grain, but does not bear milling as well as the Japan ★rice (which see).—**Hottentot rice**, African termites which formerly were eaten greedily, both boiled and raw, by the Hottentots.—**Japan rice, Kiusiu rice**, a type of rice introduced by the United States government from the Island of Kiusiu in Japan, where the best Japanese rice is grown. The grain is short and thick, smaller than that of Honduras rice. It excels especially by its resistance to breakage, which results in an unusually high percentage of head rice, and in its thin cuticle, and high percentage of fats, while it is also extremely prolific.—**Jungle rice**, an annual grass, *Echinochloa colona*, widely distributed in the warmer parts of the Old World, introduced in wet places southward in the United States. It has erect or ascending stems from one to two feet high, with a panicle of from five to ten densely flowered one-sided spreading spikes. It has been successfully tested as a hay grass in Texas. In India its seeds form a minor commercial cereal. Also called *millet-rice, rice-grass*, and *Shama millet.*—**Marsh rice.** See *American* ★*rice.*—**Prolific rice.** See *American* ★*rice.*—**Providence rice**, a sobriquet for rice irrigated with the unreliable surface water as opposed to water obtained by pumping from subterranean sources. See ★*rice^1*, 2. [Louisiana, Texas.]—**Red rice**, a natural variety, *rufipogon*, of *Oryza sativa*, the common rice. Either the whole or part of the substance of the grain or only the cuticle may be reddened. This is a strong-growing variety and a great pest in rice-fields, as the presence of its seeds in the crop reduces or destroys its market value.—**Rice stalk-borer.** See ★*stalk-borer.*—**Tuscarora rice.** Same as *Indian rice* (*a*) (which see, under *rice^1*).—**White rice**, a variety with the mature husk white, formerly much grown on the Atlantic coast, still used in late seedings on account of its quick maturity.—**Wild rice.** (*b*) Same as *jungle* ★*rice.*

rice^3 (rīs), *n.* [Prob. a particular use of *rice^2* = *rise^2*, a branch, a stick, etc.] A collapsible hexagonal reel upon which a hank of yarn is placed for winding on a bobbin. *R. Marsden*, Cotton Weaving, p. 272.

rice-bird, *n.* 3. In Texas, the crow-blackbird, *Quiscalus quiscula*; in the Sandwich Islands, a subspecies of the Mexican purple finch, *Carpodacus mexicanus obscurus.*

rice-blight (rīs'blīt), *n.* See ★*blight.*

rice-bran (rīs'bran), *n.* The removed cuticle of the rice grain. See ★*rice-milling.*

rice-chaff (rīs'chåf), *n.* The debris of the husks of rice. See ★*rice-milling.*

rice-creel (rīs'krēl), *n.* [*rice^3* + *creel.*] On a hank-winding machine, a frame for the very light reels called *rices*, for holding hanks of yarn. *R. Marsden*, Cotton Weaving, p. 272.

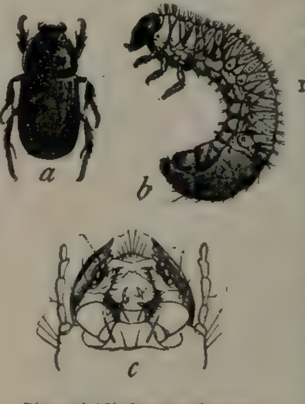
rice-eel (rīs'ēl), *n.* Same as *symbranchoid* ★*eel.*

rice-flour, *n.* 2. The layer of the rice kernel next the cuticle, rubbed off as a powder in the processes of hulling and polishing. Its food-value is many times greater than that of the polished grain, since it includes nearly all the fats. Not being by itself palatable the flour is used only as stock food. Also called *rice-meal* and *rice-dust.*

Rice-grain decoration. See *rice^1.*

rice-grass (rīs'gràs), *n.* A rough grass, *Homalocenchrus hexandrus*, growing spontaneously along watercourses in many warm countries. In the Philippine Islands it is cultivated like rice, under the name of *zacate*, for forage. It is much relished by animals. An allied species, *H. oryzoides*, is sometimes called *rice cut-grass* (which see, under *cut-grass*).

rice-grub (rīs'grub), *n.* The larva of a scarabæid beetle, *Chalepus trachypygus.* It damages the roots of upland rice in the southern United States.



Rice-grub (*Chalepus trachypygus*).
a, beetle; *b*, larva, natural size; *c*, under side of larva with head details enlarged.
(Riley, U. S. D. A.)

rice-milling (rīs'mil"ing), *n.* The operation of removing the hard, rough, and brittle husk which incloses the rice grain, and the cuticle immediately investing the kernel. This is accomplished primitively by pounding and winnowing, or in improved practice by passing the rough rice between millstones and the separated grain through a special machine called a 'huller.' The grain thus treated is said to be *cleaned.*

rice-polish (rīs'pol"ish), *n.* Rice-flour so far as produced by the polishing process.

rice-polishing (rīs'pol"ish-ing), *n.* The operation by which the pearly luster is given to commercial rice. It consists in rubbing the cleaned grain with soft moose-hide or sheepskin within a wire-gauze cylinder and giving it at the same time a thin coating of paraffin by inclosing with it lumps of that substance. See ★*rice-flour*, 2.

rice-sapper (rīs'sap"ėr), *n.* An East Indian capsid bug, *Leptocorisa acuta*, which punctures the ripening kernels of autumn rice.

rice-shell, *n.* 2. In Australia, any one of various species of *Truncatella*, a small marine mollusk. The shell is used for necklaces and derives its name from its resemblance to grains of rice. *E. E. Morris*, Austral English.

rice-smut (rīs'smut), *n.* See ★*smut.*

rice-weevil, *n.* 2. Same as *water-weevil.*

Richardson's actinometer. See ★*actinometer.*

Richelieu sauce. See ★*sauce.*

rich-leaf (rich'lēf), *n.* Same as *richweed*, 1.

richmondite (rich'mọnd-īt), *n.* [*Richmond* (see def.) + *-ite^2*.] A sulphantimonite of lead, copper, iron, and zinc occurring in black metallic masses at Richmond Hill, New Zealand.

Richmond stage. See ★*stage.*

Richthofenia (richt-hō-fē′ni-ä), *n.* [NL., named after Von *Richthofen.*] A genus of protrematous brachiopods from the Permo-Carboniferous rocks of India. It has the essential characters of the *Strophomenacea*, but these are veiled by the superabundant growth of cellular shell-tissue which gives it a form and structure similar to that of the cyathophylloid corals or that of rudistid pelecypods, such as *Radiolites* and *Hippurites.*

richweed, *n.* **3.** The great ragweed, *Ambrosia trifida;* also, less properly, the common ragweed or hogweed, *A. artemisiæfolia.*—**4.** The white snakeroot or white sanicle, *Eupatorium ageratoides.*

ricin (rī′sin), *n.* [*Ric*(*inus*) + *-in*².] An albuminoid substance of poisonous character obtained in small quantity from the seeds of the castor-oil plant, *Ricinus communis.*

ricinic (ri-sin′ik), *a.* [*Ricin*(*us*) + *-ic.*] Derived from ricinolic acid.—**Ricinic acid,** a crystalline acid, $C_{18}H_{34}O_3$, made by heating barium ricinoleate in a vacuum. It melts at 81° C.

ricinine (ris′i-nin), *n.* [*Ricin*(*us*) + *-ine*².] A crystalline alkaloid, $C_{16}H_{16}O_4N_4$, found in castor beans. It crystallizes in prisms which melt at 193° C.

ricininic (ri-si-nin′ik), *a.* [*ricinine* + *-ic.*] Derived from ricinine.—**Ricininic acid,** an acid, $C_6H_5N_2.COOH$(?), which is formed from ricinine by saponification. It appears to be carboximinomethyl-pyridine.

ricinoleate (ris-i-nō′lẹ̄-āt), *n.* [*ricinol*(*eic*) + *-ate*².] A salt of ricinolic acid.

rick¹, *n.* **1.** In parts of the United States, applied only to an oblong-shaped pile.

> Farmers often, instead of making conical stacks, put the entire crop into a long roof-shaped *rick.*
> *J. B. Killebrew*, Grasses of Tennessee, p. 283.

2. A pile of brushwood used in the concentration of weak brine from salt-wells, the brine being allowed to trickle over the pile with free exposure to the air. *Dialect Notes*, II. vi.—**3.** Along the coast from New England to Delaware, a mass of salt-marsh hay supported upon piles.

rickardite (rik′ärd-īt), *n.* [Named after T. A. *Rickard*, editor of a mining journal.] A copper telluride, Cu_4Te_3, occurring in small masses of metallic luster and bright purple color: found in Colorado.

rickey (rik′i), *n.* [Named after a Colonel *Rickey.*] A cooling drink consisting of spirits, usually gin, a wineglassful of which is put in a glass with cracked ice, a lime, and club soda.

Rictus palpebrarum, the space between the eyelids when they are widely open.

riddle², *n.* **5.** In *minting.* See the extract.

> The next process is to put the blanks through a bath of sulphuric acid, after which they are washed and dried in a barrel-shaped revolving machine, known as a "*riddle.*" They are then taken to the coining press.
> *Sci. Amer.*, Nov. 5, 1904, p. 313.

riddle-seal (rid′l-sēl), *n.* See ★*seal*².

riddling-machine (rid′ling-mạ-shēn″), *n.* See ★*sand-crusher*, 2.

ride, *v.* **I.** *intrans.*—**To ride hawse-full,** said of a vessel when it pitches bows under while at anchor. **To ride to hawse,** said of a vessel when both bow anchors are down.

II. *trans.* **7.** In *lawn-bowls*, to roll (the ball) with great force.—**To ride herd** or **to ride herd on,** in the western United States, to guard cattle by riding on the outer edge of the herd of feeding animals, keeping them from straying and also keeping off wild animals: also used, by extension, of guarding or protecting anything.

> Blacknell was *riding herd on* a small bunch of calves who with heels mostly in the air were making life a burden to him and to his wiry cow-pony.
> *J. Bronson*, The Lost River, i.
>
> Which I see a gent as was *riding herd on* them two big boxes all the afternoon, an' I ain't allowin' for accidents neither. *Western World*, II. 230.
>
> I 'm romancin' leisurely along the street when I encounters a party who 's *ridin' herd on* one of these yere telescopes. *A. H. Lewis*, Wolfville Nights, xviii.

To ride the goat, to be initiated into a secret society by riding a goat as part of the ceremony, as is jocularly asserted. [Slang.]

ride, *n.* **7.** See ★*compartment line.*—**8.** The side of a log upon which it rests when being dragged.—**Major ride, minor ride.** See ★*compartment line.*—**To give a free ride,** in *poker*, to put up for all the others in a jack-pot, usually as a penalty for drawing to false openers. Sometimes the kitty gives the players a free ride.

rider, *n.* **10.** (*b*) A gold coin of Henry VI. of England, of the value of four shillings.—**Despatch rider,** one who carries despatches on horseback.

> There was no option, the telegrams must be sent through Kimberley and by *despatch riders* . . . to ride a hundred miles across the veldt against time.
> *P. Landon*, in War's Brighter Side, vi.

ridered, *a.* **2.** In *mining*, said of the rock in a vein when it is impregnated by vein-materials in strings or narrow strata.

rider-pipe (rī′dėr-pīp), *n.* An auxiliary pipe; specifically, a pipe used for distributing any fluid to consumers along a pipe-line to lessen the number of connections to the main and to permit of shutting off the fluid while repairs are being made.

rider-plate (rī′dėr-plāt), *n.* In *naval arch.*, a heavy horizontal plate which is fitted on the upper angles of the middle line keelson in order to give it additional strength.

ridge, *n.*—**Barometric ridge,** the high pressure between two areas of low pressure; the summit of a barometric wave.—**Gastrocnemial ridge,** a ridge on the posterior face of the femur to which the gastrocnemius is attached.—**Hemal ridge,** one of the paired cartilaginous ridges which in embryo fishes extend out from either side of the perichordal tube into the lateral musculature of the trunk and unite in the midventral line in the caudal region to inclose the hemal canal.—**Lambdoid ridge** or **crest,** a ridge or crest arising at the junction of the parietal and supraoccipital bones and forming the boundary of the upper posterior part of the cranium: named from the lambdoid suture in man, which has something the shape of the Greek letter lambda (Λ). The lambdoid crest develops with age, and is particularly prominent in old anthropoid apes.—**Subatrial ridge,** a ridge which develops on the mesial surface of one of the metapleural folds in the larval *Amphioxus* and eventually fuses with its fellow of the opposite side to form the floor of the atrial cavity.—**Supraforaminal ridge,** in *ornith.*, the ridge on the back of the cranium just above the foramen magnum, often or usually forking ventrally like an inverted Y.—**Supra-orbital ridge.** Same as *superciliary ridge.*—**Tentorial ridge,** the ridge on the superior inner surface of the cranium, marking the attachment of the tentorium, or division between the cerebrum and cerebellum. *Proc. Zool. Soc. London*, 1903, p. 265.—**Wolffian ridge,** the longitudinal welt or fold on either side of the body in certain vertebrate embryos, like the chick, from which the rudiments of the fore and hind limbs arise.

ridge-band, *n.* **2.** In *weaving*, a band for keeping the heddle loops in a loom in their proper positions: an old contrivance that greatly facilitated weaving. *T. W. Fox*, Mechanism of Weaving, p. 5.

ridge-line (rij′līn), *n.* The crest-line of a ridge of any kind.

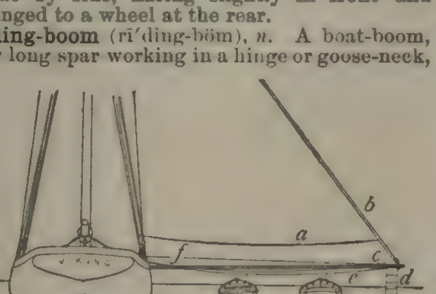
> Another magnetic *ridge-line* runs from near Reading and enters the Channel near Chichester.
> *Geog. Jour.* (R. G. S.), XI. 527.

ridge-myrtle (rij′mėr″tl), *n.* See ★*myrtle.*

ridge-planting (rij′plan″ting), *n.* Same as ★*mound-planting.*

ridger, *n.* **3.** In *agri.*, a tool, drawn by a horse, for gathering and heaping up the loose soil against young plants planted in rows. It consists essentially of two mold-boards placed side by side, flaring slightly in front and hinged to a wheel at the rear.

riding-boom (rī′ding-böm), *n.* A boat-boom, or long spar working in a hinge or goose-neck, designed to be lowered from abreast the fore-rigging to a horizontal position at right angles with the keel of the vessel. To this boom, which is supported by halyards and maintained in position by fore-and-aft guys, the small boats make fast when the vessel is at anchor.



Riding-boom.

a, life-line; *b*, lift; *c*, riding-boom; *d*, rope ladder; *e*, outhaul; *f*, after-boom guy.

riding-mask (rī′ding-mȧsk), *n.* A mask used by ladies to protect the face in riding.

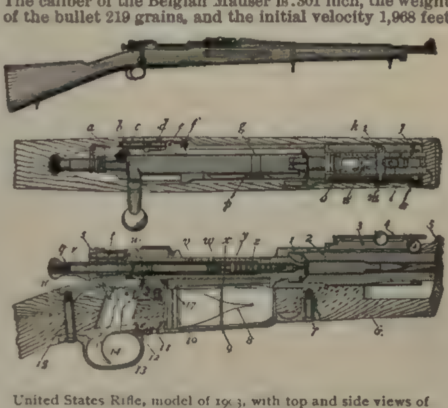
Riemannian (rē-män′i-ạn), *a.* Pertaining to Georg Friedrich Bernhard Riemann (1826–66), a noted German mathematician. Also written *Riemannean.*—**Riemannian geometry, space.** See ★*geometry*, ★*space.*

Riemann's measure of curvature. See ★*measure.*

riffle², *n.*—**To make the riffle,** to overcome circumstances, as if fording a riffle in a stream when the current is strong. [Colloq.]

riffle³ (rif′l), *v. i.*; pret. and pp. *riffled*, ppr. *riffling.* [Perhaps < *riffle*¹, *n.*] To shuffle a pack of cards by butting the two parts of the pack into each other and then bending them so that they slip together.

rifle², *n.*—**Berthier rifle,** a rifle (carbine) invented by M. Berthier, adopted for the French cavalry in 1890. It is a bolt-gun with a box-magazine, capable of containing three cartridges, which is filled by means of clips or chargers, which are then thrown away. The caliber of the carbine is 8 millimeters (.315 inch), the weight of the bullet 208 grains, and the muzzle velocity about 2,000 feet per second.—**Krag-Jorgensen rifle,** the military arm used by Denmark and Norway and, in an improved form, by the United States up to 1904. See *United States* ★*rifle* (of 1903).—**Lebel rifle,** the rifle adopted for the French infantry in 1886. It is a bolt-gun with a tubular magazine holding eight cartridges under the barrel. The caliber is 8 millimeters (.315 inch), the weight of the bullet 208 grains, and the initial velocity 2,073 feet per second. The ammunition supply for each man is 120 rounds.—**Lee-Metford rifle,** the magazine-gun adopted in 1889 for use in the English army. It is also known as the Lee-Speed, and is nearly identical with the Remington-Lee. It is a bolt-gun, and has a detachable box-magazine, which, however, is not entirely separated from the gun, but when withdrawn from its seat is secured to the guard-swivel by a short chain. The magazine has a cut-off, so that the gun may be used as a single-loader and the magazine held in reserve. The magazine of the Mark I gun holds eight cartridges, and that of the Mark II ten cartridges. The caliber of the Lee-Metford is .303 inch, the weight of the bullet 216 grains, and the muzzle velocity 2,100 feet per second.—**Lee straight-pull rifle.** See *United States navy* ★*rifle.*—**Match-rifle,** a fine, well-made arm used for match-shooting.—**Mauser rifle,** a military rifle adopted first by Belgium and later by Spain, Germany, and the Argentine Republic. It is a bolt-gun, and the magazine-box, having a capacity of five cartridges, is underneath the receiver and in front of the trigger-guard. The magazine is of the fixed type, but so arranged that it can readily be removed for cleaning. It can be charged through the receiver with single cartridges, or the five can be stripped at once from a metal clip. The clip is pushed out to the right as the bolt is closed, and does not form any part of the magazine mechanism. The gun has no cut-off, but a single-loading fire can be maintained, retaining four cartridges in the magazine, by replacing the top cartridge after each discharge. The caliber of the Belgian Mauser is .301 inch, the weight of the bullet 219 grains, and the initial velocity 1,968 feet per second.—**United States rifle,** model of 1903, chambered for model of 1906 ammunition, the rifle of the United States army. It is a compromise between the old rifle and the carbine. The total length is 43.212 inches and the barrel, which is incased in wood to within a short distance of the muzzle, is 24.006 inches long. The operating parts consist principally of the bolt and magazine mechanisms. The bolt mechanism is similar to that of the model 1892 rifle but strengthened against the bore pressure by additional lugs. The magazine mechanism consists of the floor plate, magazine spring, follower, and cut-off. The magazine is of the fixed type underneath the receiver and in front of the trigger-guard; it is filled from a clip holding five cartridges; when empty the follower holds the bolt open and calls the attention of the soldier to the necessity of refilling; it may be cut off if desired and the rifle used as a single-loader, in which case any cartridges in the magazine are held in reserve. The caliber is .30 of an inch, the weight of the bullet 150 grains, the weight of the powder charge 50 grains, and the muzzle velocity 2,700 feet per second. Twenty-five aimed shots may be fired in one minute. The maximum range is about 5,465 yards, for which the time of flight is 31.359 seconds. The penetration in white pine at 500 yards is about 24 inches and a low steel plate .3843 of an inch thick is penetrated at 100 yards. The point-blank danger



United States Rifle, model of 1903, with top and side views of the operating parts.

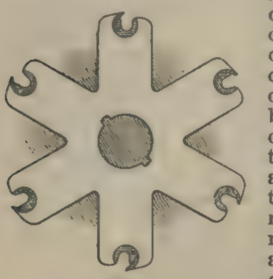
a, sleeve-lock spring; *b*, cut-off spindle; *c*, sleeve-lock; *d*, cut-off; *e*, ejector-pin; *f*, ejector; *g*, extractor-collar; *h*, slide and slide-cap; *i*, slide-cap screw; *j*, windage-screw; *k*, windage-screw knob; *l*, windage-screw bushing; *m*, slide screw; *n*, drift-slide; *o*, fixed base; *p*, extractor; *q*, cocking-piece; *r*, firing-pin; *s*, safety-lock thumb-piece; *t*, safety-lock spindle; *u*, sleeve; *v*, mainspring; *w*, firing-pin sleeve; *x*, follower; *y*, bolt; *z*, striker; 1, receiver; 2, barrel; 3, movable base; 4, leaf; 5, hand-guard; 6, stock; 7, front guard-screw; 8, magazine-spring; 9, floor-plate; 10, sear-spring; 11, floor-plate catch; 12, floor-plate catch-spring; 13, guard; 14, trigger; 15, guard-screw bushing; 16, rear guard-screw; 17, bolt-stop spring.

space is about 650 yards. The rifle is furnished with a long knife bayonet and the total weight is about 10 pounds. —**United States navy rifle**, the rifle adopted for the United States navy in 1895, but later abandoned: also known as the *Lee straight-pull rifle*. It was a bolt-gun with the peculiarity that the bolt was drawn directly to the rear in loading without being turned. The magazine was of the fixed type, and was placed in front of the guard under the receiver. The magazine was charged from a clip holding five cartridges, and there was no cut-off. The gun was therefore rather a repeating than a magazine arm. If the magazine was not charged the gun could be used as a single-loader. The caliber of the rifle was 6 millimeters (.236 inch), the weight of the bullet 135 grains, and the velocity at 60 feet from the muzzle 2,460 feet per second.

rifleite (rī′fl-īt), *n.* [*rifle* + *-ite*2.] A trade-name for an explosive, a kind of smokeless powder for use in the Lee-Metford rifle.

rifraf, *n.* A simplified spelling of *riffraff*.

rift1, *n.* 3. In *wood-working*, a saw in which the cutting-teeth are placed at the ends of radial arms instead of upon the rim of a disk.—4. In *geol.*, one of the principal cleavages or planes of weakness in building-stone, as quarried, of which the quarrymen take advantage. The two others, commonly occurring at right angles with it and with one another, are called the *cut-off* and the *lift*.


Rift.

In gneisses the parallel arrangement of the minerals usually coincides with a direction of easy cleavage, known to quarrymen as the "*rift*." *Encyc. Brit.*, XXXII. 102.

rift-sawed (rift′sâd), *a.* Sawed in such a way that the surfaces of the boards are nearly those which would come from natural splitting or riving. Compare *quarter-sawed* and *silver-grain*.

rift-system (rift′sis″tem), *n.* A series of related or neighboring fault-valleys constituting a system.

The East African *Rift-system.*—Dr. Carl Uhlig, whose researches in East Africa have been frequently referred to in the Journal, has summed up the results of his observations regarding the East African rift-valley and associated fault-scarps, in the Geographische Zeitschrift for September, 1907.
Geog. Jour. (R. G. S.), Feb., 1908, p. 217.

rift-valley (rift′val″i), *n.* A valley formed by the down-faulting of its floor; a graben.

The author speaks of the valleys, not as due to rifts, but as themselves rifts, which seems to imply a much smaller width in proportion to the height of the sides than is found in the African *rift-valleys*.
Geog. Jour. (R. G. S.), XVIII. 212, note.

rig2, *n.* 5. The apparatus in a cultivator which carries the shovels; a cultivator gang. —**Fore-and-aft rig.** See *fore-and-aft sails.*—**Goose-neck rig**, a rig with the bars to which the shovels are attached curved over like a hook.

Riga's disease. See ★*disease*.

rigging2, *n.*—**Fore-topgallant rigging**, the shrouds, etc., of the fore-topgallant-mast.—**To man the rigging**, to 'stand in' the shrouds, or to command the men to mount the rigging on and above the sheer-poles.

rigging-mat (rig′ing-mat), *n.* *Naut.*, a rope mat which is seized to the standing rigging to prevent chafe. Small chafing-mats are made of thrumb-work.

rigging-sled (rig′ing-sled), *n.* In *lumbering*, a sled used to haul hooks and blocks on a skid road. Also called *dog-boat* and *pig*.

rigging-slinger (rig′ing-sling″ėr), *n.* In *lumbering*: (*a*) A member of a yarding-crew whose chief duty is to place chokers or grabs on logs. (*b*) One who attaches the rigging to trees in steam-skidding.

rigging-stopper (rig′ing-stop″ėr), *n.* *Naut.*, a short length of rope made fast near a piece of running-gear so that the latter's motion may be arrested by taking turns about it with this stopper.

right. I. *a.*—**Right by file.** See ★*file*3.

II. *n.*—**Confusion of rights**, in *law*, the union in one person of the qualities of debtor and creditor.—**Miner's right**, in Australia, the license to dig or mine for gold.

A *miner's right*, a wonderful document, printed and written on parchment.
Rolf Boldrewood, The Miner's Right, p. 1, quoted in E.
[E. Morris, Austral English.

Right of visitation and search, in *international law*, the right of an armed vessel of a nation at war to visit merchant vessels of neutral nations for the purpose of ascertaining that they are such and to search them for contraband goods which may be confiscated, in some cases absolutely, sometimes with payment, if intended for the enemy.—**Substantial right**, in *law*, a right existing in favor of a party to an action the denial of which by a trial court will, irrespective of technicalities, cause a reversal by an appellate court of any judgment or order obtained in proceedings in which the right was denied.—**Water right**, in *U. S. law*, the right to use water from a canal or other stream or body of water for irrigating purposes, either in definite quantities or upon a certain area. Water rights are recognized by State and federal laws, in some localities as real property, in others as personal. The term also has the meaning of *riparian rights* (which see).

right, *adv.*—**Stage right** or **left.** See ★*stage-positions*.

right-and-left (rīt-and-left′), *a.* 1. Made in pairs one member of which is adapted to the right and the other to the left side, as boots, shoes, gloves, etc.—2. Symmetrical with regard to a central plane: as, *right-and-left* engines.—3. Having both a right-hand and a left-hand thread: said of screws. Bolts and screws for certain purposes are sometimes made with both threads cut on one piece.

right-eared (rīt′ērd), *a.* Using (as a habit) the right ear more than the left in hearing. *G. M. Gould*, in Science, Nov. 1, 1907, p. 594.

right-eyed (rīt′īd), *a.* Using (as a habit) the right eye more than the left in seeing. *G. M. Gould*, in Science, Nov. 1, 1907, p. 594.

right-footed (rīt′fu̇t″ed), *a.* Using the right foot as the guide and base of action, as in beginning to march, in spading, etc. *G. M. Gould*, in Science, Nov. 1, 1907, p. 594.

right-hand, *a.* 4. Noting an engine in which the shaft that carries the fly-wheel is at the right hand of the observer as he stands at the head end of the cylinder looking toward the shaft: the reverse of *left-hand*. Also, one in which the observer, looking along the axis of the shaft from the crank end, finds the cylinder and its mechanism on his right.

righting-moment (rī′ting-mō″ment), *n.* In *naval arch.*, the moment of the righting couple which tends to restore a vessel to the upright position when it has been inclined from that position. *White*, Manual of Naval Arch., p. 127.

right-sailing (rīt′sā″ling), *n.* In *navigation*, the running of a course due east or west, or north or south; the confining of the course to a meridian or a parallel, so that the vessel makes all latitude or all longitude.

right-sidedness (rīt′sī″ded-nes), *n.* The condition, normal in the majority of persons, in which the parts on the right side (upper and lower extremities, eye, and ear) are more naturally employed for most purposes than those on the left side.

Rigi beds. Same as ★*Ligurian*, 2.

rigidity, *n.*—**Coefficient of rigidity.** See ★*coefficient*.—**Molecular rigidity**, the resistance of the molecules of a substance to translational or rotational displacement.

rigodon, *n.* See *rigadoon*.

rigor, *n.*—**Heat rigor**, rigidity of the muscles, referable to coagulation of the myosin, induced by heat: analogous to rigor mortis.

rigoroso (rig-ō-rō′sō), *a.* [It. = E. *rigorous*.] In *music*, in strict or exact time or rhythm.

rigsbank-skilling (rēgz′bängk-skil″ing), *n.* A 'royal bank shilling': a subsidiary coin of Denmark, one ninety-sixth of a rigsdaler, equivalent to fifty-six hundredths of a United States cent.

Riksdag (riks′däg), *n.* [Dan., = G. *reichstag*, 'parliament of the kingdom.'] The Swedish parliament, consisting of two elected houses.

riksdaler, *n.* See *rix-dollar*.

ril, *n.* and *v. i.* A simplified spelling of *rill*.

rillettes (rē-yet′), *n. pl.* [F., prob. dim. of OF. *rille*, a piece cut off.] A potted delicacy made of minced chicken, ham, truffles, etc., used in sandwiches or with a salad.

rill-mark, *n.* 2. Specifically, in *geol.*, one of the marks left by the rills formed by the retreating waters of a wave which breaks against a shore. Such rills often cut furrows in the sand which, if the sand hardens into rock, may be preserved with great fidelity.

rill-pit (ril′pit), *n.* One of the fissures which cut the moon's surface and which often taper toward either end but not downward. They often have flat bottoms. *G. K. Gilbert*, in Bulletin Philos. Soc. Washington, XII. 283.

rily (rī′li), *a.* Same as *roily*. [Dialectal.]

Water looks *rily*. . . . Goin' to be a change o' weather.
L. E. Richards, Mrs. Tree, vi.

rim1, *n.* 3. The pawl-race or ratchet-ring of a capstan.

R. I. M. An abbreviation of *Royal Indian Marine*.

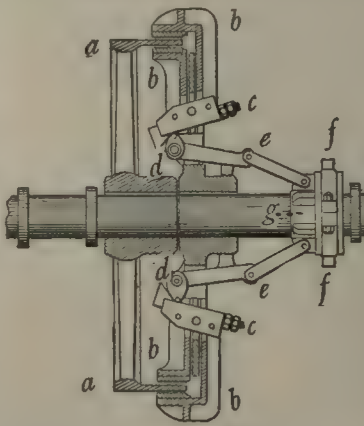
Rima palpebrarum, the cleft between the eyelids.

rimal (rī′mal), *a.* [*rima* + *-al*1.] Of or pertaining to a rima, in any sense. *Buck*, Med. Handbook, II. 174.

rimation (rī-mā′shon), *n.* [L. *rima* + *-ation*.] A narrow, fissure-like opening or cleft. Practically the same as *rima*.

rim-band (rim′band), *n.* Any band used on the rim of a pulley or wheel; a belt; a transmission-rope. *Nasmith*, Cotton Spinning, p. 253.

rim-clutch (rim′kluch), *n.* A form of friction-clutch in which one of the elements is fitted with a ring or cylindrical surface and on the other are segments of two similar rings which are brought by levers, wedges, or screws to grip the solid ring on the other.



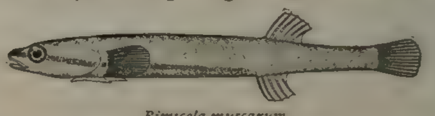
Rim-clutch.

a a, rim; *b b b b*, clutching segments, movable radially by the levers *c c*; *d d*, cams throwing and locking the levers *c c*, *e e*, toggle levers throwing cams *d d*; *f f*, fork of lever moving the collar *g* lengthwise on shaft to operate the clutch. (From Scientific American Supplement.)

rime1, *n.*—**Double rime, triple rime**, a rime extending to two or three syllables.

rime-cloud (rīm′kloud), *n.* A cloud composed of frozen particles of water which adhere to objects when the cloud passes over them, or to a balloon when it enters into such a cloud.

Rimicola (rī-mik′ō-lạ̈), *n.* [L. *rima*, a chink, + *colere*, inhabit.] A genus of fishes of the family *Gobiesocidæ*, found on the Pacific coast of North America.


Rimicola muscarum.
(From Bulletin 47, U. S. Nat. Museum.)

Rimini pottery. See ★*pottery*.

rim-machine (rim′ma-shēn″), *n.* In *sheet-metal work*, a hand-power machine for rolling strips of tin into rims for tinware.

rim-shaft (rim′shȧft) *n.* A drum-shaft; a shaft large enough to serve as a pulley: usually made hollow. *Nasmith*, Cotton Spinning, p. 247.

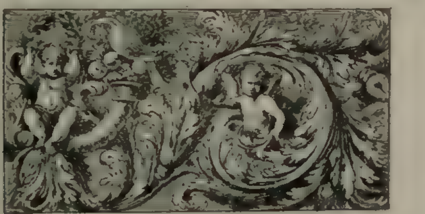
rim-speed (rim′spēd), *n.* The linear velocity of a point on the rim or outer circumference of a rotating body; the speed in linear dimensions, per unit of time, of a point on the rim of a rotating body

rimuic (rim′ö-ik), *a.* [*rimu* + *-ic*.] Found in the rimu-tree, *Dacridium cupressinum*.—**Rimuic acid**, a crystalline acid, $C_{16}H_{20}O_3$, which is the chief constituent of rimu resin. It melts at 192-193° C.

Rimula, *n.* 2. [*l. c.*] A small rima or fissure, especially of the spinal cord or brain. *Buck*, Med. Handbook, II. 162.

Rinascimento (rē-nä-shē-men′tō), *n.* [It., revival, new birth. See *Renaissance*.] In general, the beginnings of modern civilization in Italy in the fourteenth and fifteenth centuries; more especially, this commencement as influenced by the revival of interest in classic literature and art. In the fine arts (painting, sculpture, architecture), *Rinascimento* means definitely the reappearance of classic motives and methods. It does not include the art of the primitives, which is still medieval, or the fully developed classicism of the sixteenth century. The French derived word, *Renaissance*, is much broader in its application, and the German and English usages are still more comprehensive. See *Renaissance.*

rinceau (rań-sō′), *n.*; pl. *rinceaux* (-sō′). [F.] A running ornament based on a continuous scroll which is usually elaborated with acanthus-leaves. It is a distinctly classic type, but has passed over into Byzantine and Gothic decoration.


Rinceau (from Jean Lepautre).

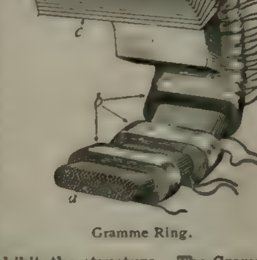
rincon (rin-kōn′), *n.*; pl. *rincones* (-kō′nāz). [Sp. *rincón*, OSp. *rencon, rancon*, Cat. *racó*, a reëntrant corner.] In *phys. geog.*, a reëntrant corner in an escarpment; an alcove. [Southwestern U. S.]

rind¹, *n.* **4.** A strip of cloth placed under the leather on the handle of a golf-club to thicken the grip.

rinderpest, *n.*—**Parrots' rinderpest.** See *parrots'* ★*plague.*

rind-fungus (rīnd′fung″gus), *n.* A disease of sugar-cane due to *Trichosphæria sacchari.*

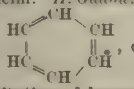
ring¹, *n.* **14.** In *salt-making*, a fire-brick arch of varying length, placed under the evaporating-pans to temper the heat and so prevent the salt from being burned.—**15.** A circular device, with a lip or flange upon which an elliptical clip called a *traveler* runs, for twisting and winding the yarn on a bobbin, on a ring-spinning machine.—**16.** A section of tan-bark, usually 4 feet long.—**17.** In *cricket*, the boundary; the limits of the field of play: so called because in some cases the cricket-field is oval or round. *Hutchinson*, Cricket, p. 67.—**18.** In *chem.*, same as *closed* ★*chain.*—**Adamson ring,** a ring for stiffening a tube or flue which is subjected to external pressure which tends to make it collapse. It is of rectangular cross-section and is riveted between two flanges on adjacent sections of the flue. *Engin. Mag.*, May, 1904, p. 238.—**Alliance ring,** a ring made of two parts so joined together as to have no point of juncture visible. When the two parts are laid together they fit perfectly, making a complete ring. Inscriptions are engraved on the inner sides of the two parts and are invisible when the ring is closed.—**Bandl's ring.** Same as ★*retraction-ring.*—**Benzene ring.** See ★*benzene.*—**Bishop's ring** (*b*) or **Bishop's circle,** a ring of light about the sun from 12 to 18 degrees in radius, first observed by the Rev. Sereno Bishop daily in September, 1883, at Honolulu, Sandwich Islands, and afterward explained as a diffraction-ring caused by the same vapor or dust from the eruption of Krakatoa that also caused the red sunset skies a few months later. *Nature*, Oct. 29, 1903, p. 623.—**Cut-off ring.** See ★*cut-off.*—**De la Rive's ring,** an apparatus for demonstrating the action of magnets upon currents. It consists of plates of zinc and copper inserted in dilute sulphuric acid contained in a glass vessel weighted with mercury to keep it upright while floating freely on water. The plates can be connected with circular or rectangular wires, coils, or solenoids. These are then traversed by a current, and can be subjected to the action either of magnets or of currents.—**Engagement ring,** a ring given, as the sign of betrothal, by either of the betrothed to the other.—**False ring,** the layer of wood which is formed whenever the diameter growth of a tree is interrupted and begins again during the same growing season.—**Galvanic ring,** a name formerly given to a voltaic circuit.—**Gauze ring,** the semitransparent ring of Saturn, lying between the planet and its first bright ring. Sometimes called *crape-ring.*—**Genital ring,** in echinoids, a circular canal that appears to be connected with a series of hemal vessels or lacunæ which surround the dorsal organ.—**Gramme ring,** an early form of armature-winding for direct-current generators invented by Gramme in 1870 and forming the characteristic feature of the Gramme dynamo-machine. The core consists of a ring made up of a bundle (*a*) of soft iron wires. About this a series of coils (*b*) of insulated copper wire is wound. The end of each coil is joined to the beginning of the one lying next to it, and each of these junctions is attached to one of the bars of the commutator (*c*). The figure shows a Gramme ring in process of construction, a portion of the core being cut away to exhibit the structure. The Gramme ring is a development or modification, independently rediscovered, of the Pacinotti ring constructed in Florence in 1860.

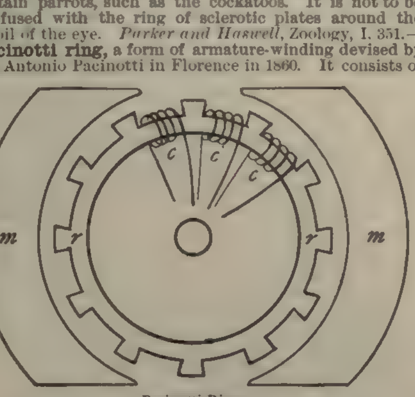


Gramme Ring.

—**Harlequin ring,** a ring in which various colored stones are set around the band or arranged in the ring.—**Idiophanic rings,** rings observed when pleochroitic crystals cut normal to an optic axis are placed in convergent light and viewed by means of the polariscope.

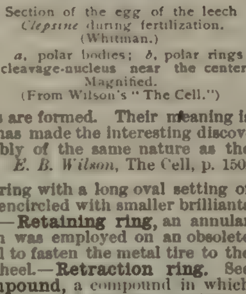
> The *idiophanic rings* are most distinct when the plane of incident polarisation is parallel to one of the directions of polarisation. *Science Abstracts*, VI., Sec. A, p. 73.

Intravertebral ring, the ring of tissue surrounding a vertebra in young amphibia; the vertebral cartilage of Wiedersheim. *H. Gadow.*—**Kekule ring,** the structural formula, , devised by Kekule to express the constitution of benzene and those of its derivatives which contain an aromatic nucleus.—**Marquise ring,** a finger-ring having either one gem (as a diamond, ruby, emerald, sapphire, etc.) or a number of stones placed in a long, pointed setting.—**Oral ring,** in echinoderms, the ring which surrounds the mouth-opening.—**Oral ring-vessel,** in some echinoderms, as starfishes, a vessel surrounding the mouth-opening and divided into two by a septum, the inner division communicating with the cœloma and the outer with the axial sinus.—**Orbital ring,** in *ornith.*, the bony ring surrounding the eye, which is formed by the frontal above and the union of the prefrontal and postfrontal below. This condition is found in certain parrots, such as the cockatoos. It is not to be confused with the ring of sclerotic plates around the pupil of the eye. *Parker and Haswell*, Zoology, I. 351.—**Pacinotti ring,** a form of armature-winding devised by Dr. Antonio Pacinotti in Florence in 1860. It consists of a toothed ring of iron, *rr*, the successive segments of which are wound with coils of wire, *ccc*. The ends of these coils, of which only three are shown in the diagram, are joined together and attached to commutator-bars at the center. The ring thus wound was mounted between the pole-pieces, *mm*, of an electromagnet as shown diagrammatically in the figure and served as the armature of a direct-current generator. Pacinotti's invention, a model of which exists in the cabinet of physical apparatus at the University of Pisa, was entirely overlooked by electrical engineers and it reappeared in modified form as an independent discovery in the ring-armature of Gramme (1870). It is now recognized as the earliest type of armature for the production of the direct current.



Pacinotti Ring.

—**Polar ring,** in *embryol.*, a ring-shaped accumulation of differentiated cytoplasmic substance at the animal and vegetative poles of certain ova.



Section of the egg of the leech *Clepsine* during fertilization. (Whitman.)

a, polar bodies; *b*, polar rings; cleavage-nucleus near the center. Magnified.

(From Wilson's "The Cell.")

> A remarkable phenomenon, described by Whitman in the leech ('78), and later by Foot in the earthworm ('94), is the formation of the "*polar rings,*" a process which follows the entrance of the spermatozoön and accompanies the formation of the polar bodies. These are two ring-shaped cytoplasmic masses which form at the periphery of the egg near either pole and advance thence towards the poles, the upper one surrounding the point at which the polar bodies are formed. Their meaning is unknown, but Foot ('96) has made the interesting discovery that they are probably of the same nature as the yolk-nuclei. *E. B. Wilson*, The Cell, p. 150.

Princess ring, a finger-ring with a long oval setting of three, four, or five gems encircled with smaller brilliants worn across the fingers.—**Retaining ring,** an annular wrought-iron ring, which was employed on an obsolete form of railway car-wheel to fasten the metal tire to the wooden body of the wheel.—**Retraction ring.** See ★*retraction.*—**Ring compound,** a compound in which several atoms are united in such a manner as to form a ring. Also called *cyclic compound* and *closed-chain compound.*—**Ring connection, ring current.** See ★*polyphase.*—**Ring discharge,** a form of electric discharge observed in vacuum-tubes without electrodes when the conditions are such that the path of the induced currents is circular and an annular portion of the gas is rendered luminous. *J. J. Thomson*, Discharge of Elect. through Gases, p. 174.—**Ring method,** in *elect.*, a method of testing the permeability of iron or steel in which the sample has the form of a ring. About the ring two coils are wound, the primary or magnetizing coil and the secondary or exploring coil. The ring is magnetized step by step by increasing currents in the primary coil and the corresponding throws of a ballistic galvanometer connected with the secondary coil are noted.—**Ring micrometer.** See ★*micrometer.*—**Tendinous ring of Arnold.** Same as *annulus tendinosus.*—**To run rings round,** to beat, in any contest, so easily as to reach the goal first, though running round and round the competitors. See ★*ring*¹, *v. t.*, 7.—**Vocal ring,** a chitinous ring supporting a vibrating membrane in the thoracic spiracles of certain dipterous insects.—**Waldeyer's tonsillar ring,** an incomplete circle of adenoid tissue, in the throat, formed by the lingual, the pharyngeal, and the faucial tonsils.

ring¹, *v.* **I.** *trans.* **7.** To circle around (the game) in order to catch the scent: said of a field-dog.

> Any dog that "*rings*" game, or from any cause breaks his point to take up another, may be trained to report.
> *Forest and Stream*, Jan. 24, 1903, p. 63.

8. In *printing*, to draw a ring around, as an unmarked change in type, on a proof.

II. *intrans.* **3.** To make the best score in shearing sheep. See ★*ringer*¹, 3. [Australia.]

ring², *v. t.*—**To ring the changes,** a method by which counterfeit coin is uttered, the counterfeiter pretending to test a coin paid him, and handing back a false coin demanding a good one in its place.

ring-ampere (ring′am-pãr″), *n.* In *elect.*, a coil of wire the current through which causes attraction or repulsion of other circuits carrying current, as in Ampère's experiment or in electric balances for the measurement of currents.

ring-around (ring′a-round″), *n.* **1.** Same as ★*run-around.*—**2.** A girdle of dead tissue formed about the stem of a grape-cluster by the anthracnose, *Sphaceloma Ampelinum.*

> But one peculiarity of anthracnose is that it generally attacks the veins of the leaves, as well as the leaf-stems, and so its identification is not always difficult. The stems of the clusters are also injured, and it frequently occurs that a part is completely girdled, causing a "*ring-around,*" as it is commonly called. The berries below the ring do not ripen, but remain green, and gradually shrivel. *E. G. Lodeman*, The Spraying of Plants, p. 295.

ring-bone, *n.*—**False ring-bone,** a bony enlargement on the long pastern of the horse which does not involve the joint and produces no lameness.

ring-bottle (ring′bot″l), *n.* A bottle or jug of earthenware made in the form of a hollow ring, to be filled with water or cider and carried on the arm of a laborer in the harvest-field.

ring-burner (ring′bėr″nėr), *n.* **1.** In a gas or oil lamp, a burner giving an annular flame or having a tubular wick, as in the Argand or any other lamp where air is supplied to the center of a ring-like flame.—**2.** A gas chandelier formed of a ring of burners placed side by side and suspended from the ceiling.

ring-clamp (ring′klamp), *n.* A clamp for holding a ring in position in order to facilitate working. It consists of two pieces of wood hinged together at the middle, the ring being secured between two ends by a wedge placed between the other ends. Also *ring-clasp.*

ring-clutch (ring′kluch), *n.* A form of clutch used in some arc-lamps for lifting the positive carbon when the arc is struck and for holding the carbon in position so long as the proper current flows through the feeding-coil. It consists of a metal ring through which the carbon slips freely so long as the axes of ring and carbon coincide but which, when tilted into an oblique position, clutches the carbon.

ringer¹, *n.* **2.** (*a*) In *athletics*, one who competes in some way under deception, concealing his identity, ability, or standing. (*b*) In *racing*, a horse entered in a race with intent to deceive.

> "We have reason to believe that the Lukens horse is a '*ringer,*' Mr. Carleton," he began. "We have been a trifle suspicious that this was the case, all along, though superficial evidence that the animal is the gray racer, Wraith, which was seen on the Western tracks last season, was not altogether lacking."
> *C. S. Pearson*, Romance of the Race Course, iv.

3. In *sheep-shearing*, one who rings or tops the score. See ★*ring*¹. [Australia.]

> They call him the *ringer* of the shed. That means the fastest shearer,—the man who runs rings round the rest, eh? *E. W. Hornung*, Boss of Taroomba, p. 101.

4. In general, one who excels others, as if able to run rings around his competitors and still keep ahead. See ★*ring*¹. [Australia.]

> Another favorite [school] phrase is a 'regular *ringer.*' Great excellence is implied by this expression.
> *Geelong Grammar School Quarterly*, April, 1894, p. 26: [quoted in E. E. Morris, Austral English.

ringer², *n.* **4.** A supplementary enthusiastic cheer. [Slang.]

> When the result had been announced the air was rent with cheers. Auctioneer Judy called for a tiger for Mr.

Joseph, and then a *ringer* for . . . who had sold the highest-priced beef steer in the world.
Rep. Kansas State Board Agr., 1901–02, p. 360.

5. In *telephony*, an electric call-bell.—**Polarized ringer**, in *telephony*, a call-bell with permanent magnets. *G. W. Wilder*, Telephone Prin. and Practice, p. 155.

ringer-magnet (ring′ėr-mag″net), *n.* One of the field-magnets of a call-bell used in telephony.

ringing-key (ring′ing-kē), *n.* In *telephony*, a switching device by which the current for ringing call-bells is put into circuit.

ring-jointer (ring′join″tėr), *n.* A tool used by jewelers for cutting finger-rings which are to be enlarged or reduced.

ring-kiln (ring′kil), *n.* A kiln of the Hoffman type, which is built in a circle around a central stack. The burning-chamber thus forms an annular tunnel. It belongs to a comparatively numerous group of continuous-burning kilns, and is used for burning bricks and other varieties of clay ware, and even lime and cement.

ring-lead (ring′lēd), *v. t.* To lead in some special enterprise; especially, lead a ring or group of others in some mischievous or illegal enterprise. [Rare.]

ring-machine (ring′ma̤-shēn″), *n.* A bench machine, operated by hand- or foot-power, for forming wire into small rings. It straightens, cuts to measure, and shapes the wire into rings or segments of rings.

ring-main (ring′mān), *n.* A main-pipe in which the two ends are brought around and connected together into a ring or closed loop, so that any two points on the line of pipe may have direct connection with each other by two independent routes which occupy a different part of the closed loop.

The four batteries of boilers constituting each section of the boiler plant are interconnected by a 10-in. main and a 4-in. auxiliary line, both in the form of a *ring main.* No pipe bends are used except on this *ring main*, the necessary flexibility of the piping system being secured partly by this means and partly by the method of support.
Elect. World and Engin., Feb. 27, 1904, p. 396.

ring-mountain (ring′moun″ta̤n), *n.* 1. As much of a volcano as remains after the formation of a caldera, whose rim is like a ring. *W. M. Davis*, Elem. Phys. Geography.—2. One of the large crater-like formations on the moon, inferior in size to the bulwark plains.

ringneck, *n.* 3. In Australia, a jackaroo. The name is given in allusion to the white collar which the new arrival is apt to wear, until home training has been supplanted by bush customs. *E. E. Morris*, Austral English.—**Ringneck snake**, same as *ring-snake*; also applied to the East Indian cobra, and to one of the South African vipers, *Sepedon hæmachates*.

ring-off (ring′ôf), *n.* In *telephony*, the signal for the close of communication over a line.

When the conversation is finished a ring upon the call-bell ("*ring off*") causes the drop to fall and the operator thus notified of the fact removes the plugs and discontinues the connexion. *Encyc. Brit.*, XXXIII. 237.

ring-oiler (ring′oi″lėr), *n.* An oiling device consisting of a ring which rests on a bearing with its lower edge dipping into a reservoir of oil. As the shaft turns it drives the ring which carries oil to the top of the shaft, whence the oil flows through the bearing.

ring-oiling (ring′oi″ling), *a.* Having a ring to carry oil for continuous lubrication. The ring has an internal diameter larger than the journal and rests upon its upper element. The lower part of the ring dips into an oil-well or -reservoir below the bearing. As the journal revolves the ring turns with it, and the lower elements are continually brought to the top, bringing oil as the ring turns and leaving some of it on the bearing.

The journal bearings are of the *ring-oiling*, self-aligning type, of such proportions as to ensure cool running, and the shaft is of a special grade of hammered steel of great tensile strength and wear-resisting qualities.
Elect. Rev., Sept. 10, 1904, p. 410.

ring-pigeon (ring′pij″o̤n), *n.* Same as *ring-dove*.

ring-plate (ring′plāt), *n.* In steam-boilers, a plate from which a ring is made; a plate forming a zone or belt and thus making a part of the cylindrical shell of a steam-boiler.

ring-rail (ring′rāl), *n.* An oscillating bar on a ring-spinning machine which holds the rings. See ★*ring*¹, 15.

ring-scale (ring′skāl), *n.* Same as ★*dry-rot*, 1, as applied to pine.

rings-giving (ringz′giv″ing), *n.* A former custom in accordance with which gold rings were given by a newly created sergeant-at-law to every person of rank at court. They were given to all, from the princes of the blood down to the lowest clerk, to each according to his dignity.

ring-shake (ring′shāk), *n.* A crack in timber, usually produced primarily by frost, the extremes of contraction and expansion tearing apart the annular growth-rings. Such checks are afterward kept open by the action of the wind upon the tree.

The defect known as cupshake, *ringshake*, . . . is frequently met with in many kinds of wood. It consists in a partial or entire separation of two consecutive annual rings, and appears on a cross section as one or more splits running concentrically around the log.
Sci. Amer. Sup., March 25, 1905, p. 24433.

ringsider (ring′sī″dėr), *n.* A rail-bird; one who leans over the fence or railing of the ring and watches the judging, as at a fair. [Colloq.]

In a large ring there are sure to be several different types of cattle. Sometimes it is not a hard matter to place them right; other times there may be a "topper" of each type in the class, each having many friends among the *ringsiders* for premier honors.
Rep. Kansas State Board Agr., 1901–02, p. 173.

ring-spinning (ring′spin″ing), *n.* A system of continuous spinning in which a fixed ring (concentric with the spindle) and a traveling-guide for the yarn are the chief features. *Webb*, Indust. Democracy, I. 424.

ring-splice (ring′splīs), *n.* See *splice*.

ring-spot (ring′spot), *n.* A spot in the shape of a ring such as is frequently seen on lepidopterous larvæ. *W. Bateson*, Study of Variation, p. 305.

ring-stream (ring′strēm), *n.* A stream of fluid in the form of a ring; a stream from a nozle formed of an annular ring. *The Engineer* (London), Dec. 25, 1903, p. 611.

ring-taw (ring′tâ), *n.* Same as *taw*³, 1.

ringworm, *n.*—**Giant ringworm**, an extensive and intractable form of ringworm encountered sometimes in the tropics.—**Tokelau ringworm**, tinea imbricata.

ring-yarn (ring′yärn), *n.* Cotton yarn spun on a ring-spinning machine. *Nasmith*, Cotton Spinning, p. 348.

rink², *n.* 6. In *lawn-bowls*, a division of the green, about 20 feet in width, the center of which is marked on the bank at each end by a pin or other device.—7. A side in a match. In curling, a rink consists of 4 players (called the *leader*, *second player*, *third player*, and *skip* or *driver*), each playing 2 bowls.

rinking (ring′king), *n.* The act of skating in a rink. [Rare.]

Why should we not go mad for china? It is as sensible as going mad over *rinking*.
Besant and Rice, Golden Butterfly, xvi.

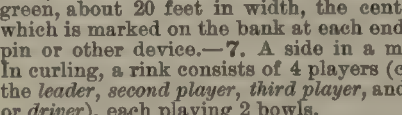
Riolan's bones. See ★*bone*¹.

riolite (rē′ō̤-līt), *n.* [Named after a Mexican mineralogist, A. M. del *Rio*.] A supposed sulphoselenide of mercury from Culebra, Mexico.

riot, *n.*—**To read the Riot Act.** See *Riot Act*, under *riot*. Hence, to reprove sharply. [Humorous.]—**Nika riots**, a great popular insurrection (originating in a quarrel in the amphitheater between the Green and the Blue factions) which occurred in Constantinople in 532 A.D., the fifth year of the reign of Justinian. It endangered the stability of the Eastern Empire and destroyed the imperial quarter of the city.

rip-cord (rip′kôrd), *n.* A lace or cord fastened in the bag of a balloon in such a way that a sharp pull upon it will rip the bag and let the gas escape.

Ripon cart. A village-cart.



Ripon Cart.

riposte (ri-pōst′), *v. i.*; pret. and pp. *riposted*, ppr. *riposting*. [*riposte*, *n.*] To make a quick, smart reply or repartee.

ripper¹, *n.* 1. (*d*) A rip-saw. 4. A double-ripper.

ripping (rip′ing), *a.* [*rip*¹, *v.*] Splendid; very good; 'stunning': also used adverbially. [Slang.]

She did look *ripping* in that white frock.
Anthony Hope, Dolly Dialogues, ix.

Winifred made a dash at . . . [the rope], but it slipped through her fingers and vanished. . . . "You made a *ripping* good try," said Bobby.
A. R. Conder, Seal of Silence, xi.

rippingly (rip′ing-li), *adv.* Splendidly; 'stunningly.' [Slang.]

"You dance *rippingly*," declared her cousin.
E. W. Hornung, Peccavi, xxiv.

ripple³, *n.* 3. In *math.*, a wave whose length is less than that for which the velocity of propagation is a minimum.

Sir W. Thomson proposes to distinguish by the name of *ripples* those waves whose length is less than the above critical value of n (Phil. Mag. (4) xlii.). *Amer. Jour. Math.*, IX. 67.

Ripple drift. See ★*drift*.

rippling-comb (rip′ling-kōm), *n.* A group or series of rows of long iron pins fixed in a wooden frame or plank for rippling flax.

riprapping (rip′rap-ing), *n.* Same as *riprap*.

riproaring (rip′rōr-ing), *a.* Lively; uproarious; boisterous; slam bang. [Slang.]

riproarious (rip-rōr′i-us), *a.* Riproaring; uproarious. [Slang.]

risco (rēs′kō), *n.* [Sp. *risco*, a steep rock. See *risk*¹, *n.*] A sharp and precipitous rock; amorphous quartz found in veins or outcrops. *Coal and Metal Miners' Pocketbook.*

rise¹, *n.* 17. In *base-ball*, a peculiar delivery of the ball which makes it rise so that the tendency of the batsman is to strike under it.—**18.** The difference in diameter, or taper, between two points in a log.

riser, *n.* (*g*) A riser pipe; any pipe which conveys a supply of hot or cold water, steam, gas, etc., from the source of supply upward, as through a building to bathrooms, radiators, or gas-fixtures. (*h*) In *bee-keeping*, a portion of a hive inserted under another hive to make more room. (*i*) In *elect.*, a wire connecting the various floors of a building and serving for the transmission of currents for electric lighting or power.

The grouping of *risers* has been made, however, so that the average current demand on each pair of lighting bars will be about equal. *Engin. Record*, XXXVIII. 566.

rising, *n.*—**Rising of the lights**, extreme shortness of breath. [Slang.]

rising-box (rī′zing-boks), *n.* A movable shuttle-box at one end of a loom. Also called *drop-box*. *C. Vickerman*, Woollen Spinning, p. 12.

risk¹, *n.*—**Port risk**, in *marine insurance*, a risk upon a vessel while in port.—**Risk note.** See ★*note*¹.—**Superstandard risk**, insurance on the life of one whose habits or heredity or the state of whose health increases his expectancy of life.

Risorgimento (rē̤-sōr-ji-men′tō), *n.* Same as ★*Rinascimento*.

risotto (rē̤-sot′tō), *n.* [It., < *riso*, rice. See *rice*¹.] An Italian dish of rice and cheese.

risqué (ris-kā′), *a.* [Fem. *risquée*: F., pp. of *risquer*, risk, hazard.] Audacious; on the edge of indecency; of doubtful morality; intentionally suggestive of impropriety.

Rissola (ris′ō̤-lä̤), *n.* [NL.] A genus of ophidioid fishes found chiefly in the Mediterranean Sea.

rit., ritard. Abbreviations of *ritardando*.

rite, *n.*—**Scotch**, or **Scottish, rite**, in *freemasonry*, the ceremonial of the Scotch freemasons; masonry as governed by Scottish customs.—**York rite**, masonic ceremonial as originally practised at York, England.

riten. An abbreviation of *ritenuto*.

Ritschlian (rich′li-a̤n), *a.* and *n.* **I.** *a.* Of or pertaining to the doctrines of Ritschl and his school.

II. *n.* A follower of Ritschl. See ★*Ritschlianism*. *Athenæum*, Feb. 6, 1904.

Ritschlianism (rich′li-a̤n-izm), *n.* The system of doctrine taught by Albrecht Ritschl (1822–89) and his school. Ritschl was professor of theology in the universities of Bonn and Göttingen. He reconstructed theology on the basis of his definition of Christianity, which is given in the extract.

Christianity is the monotheistic, completely spiritual and ethical religion, which, based on the life of its author as Redeemer and as founder of the kingdom of God, consists in the freedom of the children of God, involves the impulse to conduct from the motive of love, aims at the moral organization of mankind, and grounds blessedness on the relation of sonship to God, as well as on the kingdom of God. *Athenæum*, Feb. 6, 1904.

ritualize (rit̬′ṳ̄-a̤l-īz), *v. t.*; pret. and pp. *ritualized*, ppr. *ritualizing*. To arrange and supply a ritual for; hamper with external forms and ceremonies; harden and deaden by ritual.

He adds that the 'Tribe' in France has completely lost its ancient traditions since the pernicious Concordat which tended to *ritualise* and catholicise the synagogue.
Daily Chronicle, May 29, 1901.

Riv. An abbreviation of *river*.

rivalry, *n.*—**Binocular rivalry, retinal rivalry,** in *psychophys.*, the alternation of sensations or perceptions which occurs when disparate impressions are presented simultaneously to the two eyes.

> If corresponding points of the retinae are separately stimulated with two incongruous fields, the phenomenon of *binocular rivalry* appears.
> *B. B. Breese*, On Inhibition, p. 18.

Monocular rivalry, in *psychol. optics*, a rivalry or alternation of the colors or boundary-lines of diverse stimuli applied to the same area of the same retina. *Psychol. Rev. Mon. Sup.*, xi. 42.

river², *n.*—**Adolescent river,** a river which is in the second stage of its threefold development, when it has destroyed the greater number of obstructions to its course, has reached a comparatively uniform gradient, and has well-adjusted tributaries.—**Beheaded river.** See ★*behead.*—**Lost river,** a river which sinks into a cavern and proceeds by a subterranean course often inaccessible to an explorer. *J. D. Dana*, Manual of Geol. (4th ed.), p. 207.—**River drift, terrace.** See ★*drift*, ★*terrace*¹.—**Mature river,** a river that has reached its stage of maximum development as to extent of its system, effectiveness in its work, variety of its activities, and attendant phenomena. A mature river is associated with maximum topographic relief.—**Senile river,** a river that has long passed its maximum stage of development and work. It is characterized by a graded bed, a comparatively slow and uniform current, a meandering course, a tendency to aggrade its channel, a broad uniform valley or flood plain, and a tributary country reduced to very low relief by its own work. See *young* ★*river* and *mature* ★*river.*—**Superposed rivers.** See *inherited* ★*drainage.*—**Young river,** a river that has not reached its maximum development in areal extent, and has not yet produced its maximum relief. The name comes from the conception of a river as having a life history, from its inception on a structural plain to the completion of its erosional activity. Its history may then be divided into the stages of youth, maturity, and old age. The young river is more particularly characterized by narrow gorges, V-shaped valleys, occasional rapids or waterfalls (if the geologic structure varies), ungraded channel, and a tendency to extend farther its own drainage-system.

river-basin (riv′ėr-bā″sn), *n.* The area drained by a river and its branches.

river-boss (riv′ėr-bos), *n.* In *lumbering*, the foreman in charge of a drive.

river-capture (riv′ėr-kap″tūr), *n.* In *phys. geog.*, the process by which a stream, lengthening its valley by headward erosion and thus encroaching upon a neighboring drainage-basin of greater altitude, eventually taps another stream or river, the upper waters of which are thus diverted and its lower waters beheaded.

> On examples taken from various parts of Italy of alteration in the direction of valleys due to *river-capture*, etc.
> *Geog. Jour.* (R. G. S.), XVIII. 227.

river-cow (riv′ėr-kou), *n.* The manatee, *Trichecus americanus.*

river-gage (riv′ėr-gāj), *n.* A gage or scale so arranged that the height of the surface of a river may be read from it. The zero of the scale is usually at some arbitrary distance below the lowest water. Self-registering river-gages have been devised, operated either mechanically or electrically. The registering apparatus may be at any distance from the gage proper, since all such gages are very liable to get out of order. The preference is given to plain divided scales fastened vertically to piers or slanting along the slope of the river-bank, especially in rivers which are subject to great fluctuations and carry down much debris. See ★*limnometer*, *marigraph*, and ★*tide-register.*

river-grass (riv′ėr-gràs), *n.* Same as *Texas* ★*millet.*

river-gravel (riv′ėr-grav″el), *n.* Gravel deposited by a river. The term is useful in the interpretation of this type of gravel as contrasted with the shingle of a beach or a glacial moraine.

river-hog, *n.* 3. A sailors' name for the sturgeon because of its habit of rooting at the bottom of rivers.

river-man, *n.* 2. In Guiana, a peasant; especially, a negro or half-caste employed along the rivers below the timber-lands.

river-mangrove (riv′ėr-man″grōv), *n.* See ★*mangrove.*

river-maple (riv′ėr-mā″pl), *n.* See ★*maple*¹.

River-perch of New York, a percoid fish, *Morone americana*, found in rivers of the Atlantic coast of the United States.

river-portion (riv′ėr-pôr″shon), *n.* The older or lower portion of a river valley characterized by U-shape and flood ground. The term as used by Dana is in contrast to ★*torrent-portion*, which is characterized by V-shaped section. *J. D. Dana*, Manual of Geol. (4th ed.), p. 181.

river-prophet (riv′ėr-prof″et), *n.* One who has acquired local celebrity by prophesying the occurrence of high or low water in a river.

river-rat (riv′ėr-rat), *n.* A log-driver whose work is chiefly on rivers: contrasted with ★*laker*¹, 4.

riverscape (riv′ėr-skāp), *n.* [Cf. *landscape.*] A scene on a river, or a picture representing such a scene. [Rare.]

> *Riverscapes* more alluring, and a ruined château said to be of Queen Blanche, mother of St. Louis.
> *C. S. Smith*, Barbizon Days, p. 17.

river-valley (riv′ėr-val-i), *n.* A valley eroded or followed by a river: used especially in contrast to *tectonic valley*, a valley produced by deformation, such as a synclinal fold or a rift-valley.

rivet¹, *n.*—**Pan-head rivet,** a rivet having a head shaped like the frustum of a cone or an inverted pan.

rivet-bar (riv′et-bär), *n.* A round bar of wrought-iron or steel from which to make rivets. *D. K. Clark*, Steam Engine, II. 657.

riveter, *n.* 2. Specifically, a machine for driving rivets.—**Hydraulic riveter,** a riveting-machine in which the rivet is headed by squeezing, the necessary force being applied by hydraulic pressure; a riveter worked by hydraulic power.—**Mud-ring riveter,** a machine for driving the rivets of the mud-ring for a locomotive boiler. *Encyc. Brit.*, XXXI. 803.

rivet-forge (riv′et-fōrj), *n.* Same as *riveting-forge.*

rivet-hole (riv′et-hōl), *n.* The drilled, punched, or reamed hole in a metal plate in which a rivet is to be inserted. Since rivets are usually driven while hot, the rivet-hole is made $\frac{1}{16}$ of an inch larger in diameter than the rivet. The rivet is upset in driving and hence fills the hole.

riveting, *n.*—**Chain-riveting.** See ★*chain-riveting.*—**Cross-riveting,** riveting in which a rivet in one row is placed across or behind the opening between two rivets in the adjacent row; staggered riveting.—**Double riveting,** riveting in which two rows of rivets are used to connect a plate to the adjacent plate or strap: hence, in a butt-joint having double riveting, four rows of rivets are required. See ★*double-riveted.*—**Lap-riveting.** See ★*lap-riveting.*—**Single riveting,** riveting in which only one row of rivets is used to fasten two adjacent plates or a plate and strap. A butt-joint in which single-riveting is used requires two rows of rivets.—**Staggered riveting,** such an arrangement of the two or more rows of rivets parallel to the edge of the plate, in a double or multiple riveted joint, that the rivet in each even row is in line with the space between the rivets on the odd rows. When there are two rows only, the passage from hole to hole is oblique, or as though the holes had been laid out by one who staggered as he walked. The line of least resistance in the plate is lengthened for any length of the joint as a whole by staggering the rivets, but where the riveted joint is to be tight against internal pressure, as in boilers, the rivets do not come near enough to each other and chain-riveting is more usual.—**Triple riveting,** riveting in which three rows of rivets connect a plate to an adjacent plate or strap.—**Zigzag riveting,** riveting in which the rivets are not behind one another but are in zigzag lines; staggered riveting; cross-riveting.

riveting-die (riv′et-ing-dī), *n.* A rivet-set; a dolly; a set swage or die for forming heads of uniform size and shape on rivets; a cup-set; a snap.

riveting-pot (riv′et-ing-pot), *n.* A riveting-forge; a pot or bucket in which there is a fire for heating rivets. The fire is blown by a blast from a bellows or fan.

riveting-tower (riv′et-ing-tou″ėr), *n.* A high shed or shop-roof built over a riveting-machine to give vertical head-room for lifting boiler-shells and -flues over the jaws of the riveting-machine.

rivet-rod (riv′et-rod), *n.* A metal rod from which rivets (larger than wire sizes) are made.

rivet-set (riv′et-set), *n.* Same as *riveting-set.*

rivet-steel (riv′et-stēl), *n.* 1. Steel of a soft and tough grade particularly adapted for making rivets.—2. Steel in the form of round rods from which rivets can be made.

rivet-tongs (riv′et-tongz), *n. pl.* Tongs having long, narrow jaws for handling red-hot rivets and inserting them in the holes they are to fill. The jaws are so shaped as to hold the rivet at their end.

rivet-wire (riv′et-wīr), *n.* Metal wire suitable for making small rivets.

Rivinian fissure. Same as *notch of Rivini.*

rivotite (riv′ō-tīt), *n.* [Named after Prof. *Rivot*, of the School of Mines in Paris.] A mineral substance from the province of Lérida, Spain, containing the oxid of antimony and copper with carbon dioxid, but of doubtful homogeneity.

rivulation (riv-ū-lā′shon), *n.* [L. *rivulus*, a rivulet, + *-ation.*] In certain fishes, as *Cirrhites rivulatus*, a color-marking which separates patches of a different color.

Rivulus (riv′ū-lus), *n.* [NL.] A genus of fishes, of the family *Pœciliidæ*, found in brooks of tropical America.

rix-dollar, *n.* 2. An English colonial coin and money of account, derived from the Dutch, in Ceylon, Cape Colony, and Malacca.—**Rix-dollar banco,** a Swedish silver coin, of the value of 1s. 8d.

rize, *v.* and *n.* An amended and former spelling of *rise.*

rizn, *pp.* of *rize.* A simplified spelling of *risen.*

rm. An abbreviation of *ream.*

R. M. A. An abbreviation (*a*) of *Royal Marine Artillery*; (*b*) of *Royal Military Academy* (Woolwich, England); (*c*) of *Royal Military* (or *Marine*) *Asylum.*

R. M. C. An abbreviation of *Royal Military College* (Sandhurst, England).

R. M. L. I. An abbreviation of *Royal Marine Light Infantry.*

R. M. S. An abbreviation (*a*) of *Royal Mail Service*; (*b*) of *Royal Mail Steamer*; (*c*) of *Royal Microscopical Society.*

R. N. A. V. An abbreviation of *Royal Naval Artillery Volunteers.*

R. N. R. An abbreviation of *Royal Naval Reserve.*

R. O. An abbreviation of *Receiving Office.*

roa (rō′ä), *n.* [Maori.] The Maori name for the large apteryx or kiwi, *Apteryx mantelli*, of the North Island, New Zealand. Also *roa-roa.*

roach¹, *n.* 3. The redfin, *Rutilus rutilus*, a common European shiner or minnow of the family *Cyprinidæ.*

roach², *n.* 3. In England, a shell limestone occurring at the top of the Portland Stone or Portlandian on the Isle of Portland.

roachback (rōch′bak), *n.* [See *roach-backed.*] The grizzly bear of the Bitter Root mountains and vicinity.

> The *roachbacks*, as the Bitter Root grizzlies are called, are a cunning and desperate race.
> *E. Thompson Seton*, The Biography of a Grizzly, p. 135.

road, *n.* 6. The tour or route of a theatrical company. See *on the road.*

> A comedian who has seen so much of the unlovely side of "*road*" life that he might well be the writer of tragedies.
> *N. Y. Times*, Dec. 28, 1902.

Fore-and-aft road, in *lumbering*, a skid-road made of logs placed parallel to its direction, making the road resemble a chute.—**Go-back road,** a road upon which unloaded logging-sleds can return to the skidways for reloading without meeting the loaded sleds on the way to the landing.—**Short road.** Same as *go-back* ★*road.*—**Skid-road.** (*a*) A road or trail which leads from the stump to the skidway or landing. (*b*) A road over which logs are dragged, having heavy transverse skids, partially sunk in the ground, usually at intervals of about five feet.—**Steel road.** Same as *steel* ★*roadway.*—**To brush a road,** in *lumbering*, to cover with brush the mud-holes and swampy places in a logging-road to make it solid.—**Township road.** See ★*township.*

road-gage (rōd′gāj), *n.* In *mech.*, a device attached to a vehicle to show the grade of the road over which the vehicle is traveling.

road-goose (rōd′gös), *n.* See ★*goose.*

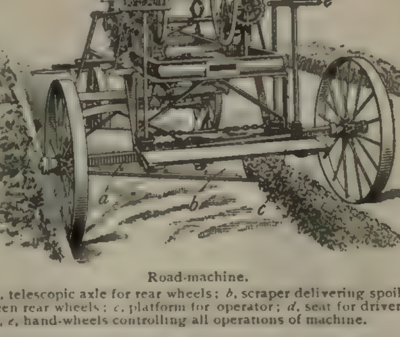
road-grader (rōd′grā″dėr), *n.* Same as *road-leveler* and ★*road-machine.*

road-horse (rōd′hôrs), *n.* A horse used for driving, in distinction from one used for drawing loads; a roadster.

road-house (rōd′hous), *n.* An inn or tavern on the roadside, used as a place of refreshment by those driving along the road.

> The revival of road coaching as a popular amusement, . . . the habit of well-known persons to make use of the better class of *road houses* and now Col. . . .'s decision to erect a suburban inn on a much-used boulevard seem to point to the revival of a spring season.
> *N. Y. Com. Advertiser*, May 11, 1901.

road-machine, *n.* (*b*) Specifically, a large steel frame mounted on four wheels and carrying a large steel scraper beneath, between the two pairs of wheels. By means of



Road-machine.

a, telescopic axle for rear wheels; *b*, scraper delivering spoil between rear wheels; *c*, platform for operator; *d*, seat for driver; *e*, *e*, *e*, *e*, hand-wheels controlling all operations of machine.

various appliances, under the control of the operator, the scraper can be used as a plow in breaking up a road-bed, or as a scraper, evener, or grader. It can also be turned in any direction and presented to the work at any angle or any level to trim the road-bed to any required slope. The rear axle of the machine is telescopic and can be extended in either direction to bring the scraper outside the line of the forward wheels in cutting the outside of the road-bed and turning the material toward the crown of the road. All the changes in the position and duty of the tool can be made while the machine is in motion.

road-monkey (rōd′mung″ki), *n.* See ★*monkey.*

road-pen (rōd′pen), *n.* A steel pen having two points, used in making two parallel lines to represent a road in map-making.

roadster, *n.* **1.** The typical roadster stands from 15.1 to 15.3 hands high, and weighs from 950 to 1150 pounds. It should stand high on the legs, be deep of chest, but lack the heavy form of a draft horse.

road-wagon (rōd′wag″o̤n), *n.* A top-wagon swung on side-bars.

roadway, *n.*—**Steel roadway,** a road or highway in which parallel lines of steel plates or channels, supported on proper foundations, are provided as wheel tracks, for the purpose of diminishing the tractive power necessary to move vehicles.

Roanoke-bell (rō-a̤-nōk′bel″), *n.* The Virginian cowslip or lungwort, *Mertensia Virginica.*

roarer, *n.* **2.** Same as *bull-roarer.*

> At night, when the tribe dances in glee, this mortar or tub for soaking skins becomes a drum. A wild gourd holding pebbles becomes a timbrel. A staff cut with notches is played upon with another and smaller one with rhythmic rasping thrum, and becomes a viol. A reed, or a section of bark, or the hollow bone of a bird, makes a flute. A tablet two fingers wide and a span in length, suspended from a staff with sinew, becomes a *roarer* which is whipped through the air—the first trumpet of primitive man.
>
> *An. Rep. Bur. Amer. Ethnol.*, 1897–98, p. lxxiii.

3. A gas-well from which a large quantity of gas flows noisily. *Dialect Notes,* II. vi.

roast, *v. t.* **6.** In *agri.*, in the process of bare-fallowing, to subject (the soil) to the full force of the sun in order to kill the weeds.

> Besides, the great object in working a fallow is the "*roasting*" of the weeds by means of the midsummer sun. *J. Wrightson,* Farm Crops, p. 31.

roaster, *n.* **4.** A muffle or furnace used for roasting ore, usually of the reverberatory type; specifically, the furnace in which blister-copper is produced. *Phillips and Bauerman,* Elements of Metallurgy, p. 460.—**Roaster acid,** in the manufacture of carbonate of soda by the Leblanc process, the aqueous hydrochloric acid obtained by condensation in water of roaster gas.

roasting (rōs′ting), *n.* The act denoted by the verb *roast.*—**Sweet roasting,** in *metal.*, roasting carried on until sulphurous and arsenious fumes cease to be given off. Also known as *good* or *dead roasting.*

roasting-dish (rōs′ting-dish), *n.* In *assaying,* a round shallow dish of fire-clay ware, about 2–6 inches in diameter, used to roast a sample of pulverized ore (burning off sulphur, etc.) preparatory to assaying.

roasting-tray (rōs′ting-trā), *n.* A shallow basket used by some American Indian tribes to roast or parch corn or seeds by shaking them with hot stones or coals.

rob^1, *v. t.* **8.** In spoil-five, when the trump card turned up is an ace, the dealer may rob it by discarding a card from his own hand in its place. If the trump card is not an ace, any player holding the ace of trumps may, when it is his turn to play to the first trick, pass a card to the dealer and receive the turned trump in its place.

robber, *n.* **2.** In *bee-keeping,* a bee which takes honey from a strange hive.

robber-frog (rob′ėr-frog), *n.* A rather large frog, *Lithodytes latrans,* found in Texas among the rocks on the borders of rivers. It has a cry which suggests the bark of a dog.

robin^1, *n.* **3.** The name is given locally by English colonists to a number of very different birds, which are reddish or chestnut below: in Jamaica to one of the todies, *Todus viridis;* in South Africa to a coly, *Pressinornis phœnicurus;* in India to a warbler, *Thamnobia fulicata;* and in Australia to a flycatcher, *Erythrodryas,* and more commonly to *Petrœca.*—**New-Zealand robin,** a small bird of the genus *Miro* which bears little resemblance to the robin of England.

robin^4 (rō′bin), *n.* [*Rob*(*inia*) + *-in*^{2}.] A toxin obtained from the *Robinia Pseudacacia,* a locust-tree of North America.

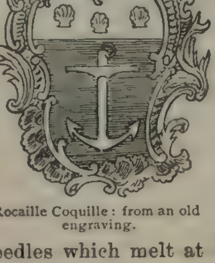
robinin (rō′bi-nin), *n.* [*robin* + *-in*^{2}.] A yellow crystalline glucoside, $C_{33}H_{44}O_{20} + 8H_2O$ (?), found in the flowers of the locust-tree, *Robinia Pseudacacia.* It yields quercitin and a sugar, probably isodulcite, when hydrolyzed. It melts at 195° C.

roburite (rō′bėr-īt), *n.* [L. *robur,* strength, + *-ite*^{2}.] A trade-name for an explosive, consisting essentially of ammonium nitrate and chlordinitrobenzene, varied sometimes by the substitution or addition of other ingredients. It is claimed that this material is safer in use than many other explosives, and particularly well adapted to coal-mining and quarrying; but the deliquescent character of ammonium nitrate requires protection from contact with the air.

rocaille, *n.* **2.** In *gardening,* rockwork; especially rockwork that does not attempt to imitate the natural formation of rocks, but combines pebbles, shells, etc., into conventional figures of sea-gods, dolphins, or marine and rustic ornaments for the decoration of grottoes, fountains, etc.

> Of all the groves with their delicate trellis-work, their *cabinets de verdure* of clipped trees, and elaborate fountains in basins decorated with frail work in *rocaille,* but two remain in anything like their old completeness and elegance. *Scribner's Mag.,* July, 1905, p. 49.

Rocaille coquille, book-plate ornamentation in varying forms of the scallop-shell upon rockwork.



Rocaille Coquille: from an old engraving.

Roccellaceæ (rok-se-lā′sẹ-ē), *n. pl.* [NL., < *Roccella* + *-aceæ.*] A family of gymnocarpous lichens named from the genus *Roccella.*

roccellinin (rok-sel′i-nin), *n.* [*Roccella* + *-in* + *-in*^{2}.] A crystalline substance, $C_{18}H_{16}O_7$, found in the lichen *Roccella tinctoria.* It crystallizes in needles which melt at 182° C.

Rochester shale. See ★*shale*^{2}.

rochet^1 (roch′et), *v. t.*; pret. and pp. *rocheted,* ppr. *rocheting.* To invest with a rochet.

> What, still at work so gray and obsolete?
> Still *rocheted* and mitered more or less?
> Don't you feel all that out of fashion now?
> I find out when the day of things is done!
>
> *Browning,* Ring and Book, vi. l. 1243.

rock^1, *n.*—**Complementary rocks.** See ★*complementary.*—**Copper rock.** See ★*copper*^{1}.—**Coral rock,** rock composed of fossil corals, the comminuted parts of corals, or of coral sand which has undergone, by the process of diagenesis, an alteration to a dolomite or magnesian limestone.—**Crystalline rocks,** in *geol.*, a term commonly employed to describe both metamorphic and igneous rocks, in contrast to sedimentary or clastic rocks.—**Effusive rock,** igneous rock erupted upon the surface of the earth. See *the* ★*effusive period.*—**Flour of rocks.** See ★*rock-flour,* 2.—**Gluing rock,** a seam of clay so tightly adherent to a coal-seam that the two must be mined together. [Colloq.]—**Hybrid rocks,** according to the theory of Durocher (1857), igneous rocks of intermediate composition, as syenites, trachytes, and (?) andesites, formed by the mixture of a persilicic and a subsilicic magma; according to Harker (1904), igneous rocks formed by the mixture of any two magmas.—**Igneous rocks,** those rocks which have cooled and consolidated from a state of fusion. They are set off from the sedimentary and æolian on the one side, and the metamorphic on the other. They appear as dikes, surface-flows, intruded sheets, laccoliths, stocks, necks, and batholiths. According to their relations to the surface at the time of consolidation they have been subdivided into the deep-seated or plutonic, and the surface-flows or volcanic. *Intrusive* is a synonym of the former and *extrusive* or *effusive* of the latter. The texture varies from glassy through felsitic and porphyritic to granitoid, as we pass from the surface to interior conditions of consolidation.—**Intermediate rocks,** igneous rocks intermediate in composition between those that are high (persilicic) and those that are low in silica (subsilicic), as diorites and syenites.—**Live rock,** rock that is unaltered, or as yet undisturbed by mining.

> Deposits of this sort, which occur invariably inclosed in undecomposed or "*live*" *rock,* are regarded as original ores.
>
> *Contrib. to Econ. Geol.,* U. S. Geol. Surv., Bulletin 213, [1902, p. 160.

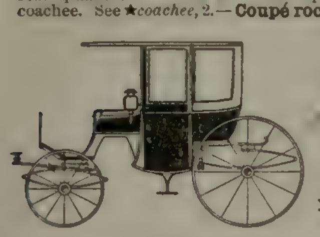
Melbourn rock, in *Eng. geol.,* a name given to a band of hard yellow and white nodular chalk 8 or 10 feet thick, locally known in Cambridgeshire as 'rag.' It lies at the base of the Middle Chalk or Turonian, near the middle of the Upper Cretaceous.—**Moor rock,** in *geol.*, a local name given to the millstone-grit in Lanarkshire.—**Perched rock,** in *geol.*, an erratic, usually large rock, left perched upon a ledge or other conspicuous place.—**Rock dammar.** See ★*dammar.*—**Rock scarlet.** Same as ★*dianthine.*—**The quantitative system of classification of igneous rocks,** a system of classification suggested by Cross, Iddings, Pirsson, and Washington in 1902. It classifies rocks primarily on the basis of their chemical composition and secondarily on that of their mineral composition and texture. Igneous rocks that are chemically alike are grouped together. The chemical composition is expressed in terms of standard minerals which may crystallize from any given molten magma. All pyrogenetic minerals are arranged in three groups, two of which are chosen as standard minerals. The first group contains the distinctly aluminous minerals—feldspars, leucite, nephelite, sodalites, and corundum, together with quartz and zircon. For this group the term *salic* (mnemonic of *s*ilica and *al*umina) is used. The second group contains all other pyrogenetic minerals which are free from alumina—orthorhombic pyroxenes and diopside, wollastonite, acmite, olivin, akermanite (representing melilite), magnetite, ilmenite, titanite, apatite, etc. This group is called *femic* (mnemonic of *fe*rro*m*agnesian, the predominant character of the group). The third group contains aluminous ferromagnesian minerals—augites, amphiboles, micas, garnets, etc., and is called *alferric* (mnemonic of *al*umina and *ferric* oxid). The salic and femic minerals are the standard minerals, and it is possible to express the chemical composition of all igneous rocks in terms of these minerals, without taking into account the possible alferric minerals. The composition of an igneous rock expressed quantitatively in terms of standard minerals is called its *norm.* The actual mineral composition of the rock expressed quantitatively is called its *mode.* The system of subdivision of the classification is dichotomous, successive pairs of factors (groups of standard minerals or of chemical constituents) being compared quantitatively. The same proportional limits are employed in each set of divisions based on a pair of factors. Thus the possible mixtures of A and B are divided into 5 parts: (1) $A / B > 7 / 1$, A is extreme; (2) $A / B < 7 / 1 > 5 / 3$, A dominates over B; (3) $A / B < 5 / 3 > 3 / 5$, A and B are equal or nearly equal; (4) $A / B < 3 / 5 > 1 / 7$, B dominates over A; (5) $A / B < 1 / 7$, B is extreme. Names or terms applicable to (1) and (5) are formed with the prefix *per-*; those applicable to (2) and (4) are formed with the prefix *do*(*m*)-; terms applied to (3) combine two syllables mnemonic of the two factors compared. All igneous rocks fall into five classes, according to the proportions of the salic and femic groups of standard minerals expressing their chemical composition, that is, according to the proportions of the salic and femic minerals in their norms. These minerals are calculated from a chemical analysis of the rock, which may have been obtained by the usual chemical methods, or by calculation from the mineral composition of the rock determined by optical methods. The five classes are: (1) *persalane,* extremely salic, including rocks high in quartz, feldspar or feldspathoids, corundum or zircon; (2) *dosalane,* dominantly salic, including rocks in which the minerals just mentioned dominate over the femic minerals; (3) *salfemane,* equally, or nearly equally, salic and femic; (4) *dofemane,* dominantly femic; (5) *perfemane,* extremely femic, including such rocks as peridotites and pyroxenites. Each class is divided into five subclasses on the proportions of two subgroups of the predominant group of standard minerals. For salic minerals the subgroups are: (1) quartz, feldspars, feldspathoids; (2) corundum, zircon. For femic minerals the subgroups are: (1) pyroxenes, olivin, akermanite, magnetite, hematite, titanite, ilmenite, perofskite, rutile; (2) apatite, fluorite, pyrite, etc. Almost all igneous rocks belong to the first subclass in each class. Few are rich in corundum, or zircon, or apatite. *Orders* are based on the proportions of mineral subdivisions of the preponderant subgroup making a subclass. Thus of the first subgroup of salic minerals, quartz and feldspars are compared with each other, and feldspars and feldspathoids, yielding nine orders in classes 1, 2, 3, as: (1) *perquaric,* (2) *doquaric,* etc. The orders are further divided into sections by comparing the proportions of normative pyroxene with olivin and akermanite, and the proportions of normative minerals having ferric iron with those containing titanium oxid. *Rangs* are formed on the character of the chemical basis in the groups of standard minerals forming orders. Thus in the first three classes the five rangs are based on the proportions of $K_2O + Na_2O$ to CaO in the salic minerals, making: (1) *peralkalic,* (2) *domalkalic,* (3) *alkalicalcic,* (4) *docalcic,* (5) *percalcic.* In the last two classes the rangs are based on the proportions of $CaO + MgO + FeO$ to $K_2O + Na_2O$ in the femic minerals, giving: (1) *permirlic,* (2) *domirlic,* (3) *alkalimirlic,* (4) *domalkalic,* (5) *peralkalic.* *Subrangs* are based on the proportions of the chemical components within the dominant group of oxids. Thus when the alkalis are dominant the subrangs are: (1) *perpotassic,* (2) *dopotassic,* (3) *sodipotassic,* (4) *dosodic,* (5) *persodic.* In rangs in which $CaO + MgO + FeO$ dominate sections of rangs are based on the proportions of $MgO + FeO$ compared with CaO, giving: (1) *permiric,* (2) *domiric,* (3) *calcimiric,* (4) *docalcic,* (5) *percalcic.* Subrangs of these are based on the proportions of MgO and FeO, and are: (1) *permagnesic,* (2) *domagnesic,* (3) *magnesiferrous,* (4) *doferrous,* (5) *perferrous.* *Grads,* the next taxonomic divisions, are based on the proportions of subdivisions of the subordinate group of standard minerals in a manner analogous to the formation of orders; *subgrads* are based on the chemical characters of these minerals in a manner similar to that followed in forming rangs. The names of other divisions of the system are constructed from geographical names with suffixes peculiar to the different ranks of the system as follows: *-ane,* class; *-one,* subclass; *-are,* order; *-ore,* suborder; *-ase,* rang; *-ose,* subrang; *-ate,* grad; *-ote,* subgrad. The termination for the name of a section of any of these is formed by inserting *i* before the proper suffix.—**Transition rocks,** in *geol.*, Werner's name for the old and more or less metamorphosed sediments, which rest upon the primitive gneiss, and which are now chiefly placed in the early Paleozoic.

rock^2, *v. t.*—**To rock in,** in *forestry,* to plant, as young trees, in openings in the ground made by prying or rocking a spade back and forth.

rockallite (rok′âl-īt), *n.* [*Rockall,* a small reef in the North Atlantic, 240 miles northwest of Ireland, + *-ite*^{2}.] In *petrog.*, a phaneric igneous rock, with granular texture, composed of quartz and ægirite in equal proportions and about 23 per cent. of albite: only known to occur at Rockall, in the North Atlantic. *Judd,* 1899.

rock-asphalt (rok′as″falt), *n.* Same as *asphalt stone, asphalt rock.*

rockaway, *n.*—**Coachee rockaway,** a rockaway the rear quarters of which are made up like those of the coachee. See ★*coachee*, 2.—**Coupé rockaway,** a carriage combining in its design features of the coupé and the rockaway.—**Curtain rockaway,** a rockaway like the coupé rockaway, except that curtains are substituted for the glass windows.


Coupé Rockaway.

rock-beauty, *n.* 2. A name of *Holacanthus tricolor*, a fish of the family *Chætodontidæ*, found in the West Indies and southward to Brazil. See ★*Holacanthus*, with cut.

rock-bottom (rok′bot″um), *n.* A stratum of rock which forms a bottom, as for a well or a foundation: also used attributively, and colloquially, in a figurative sense: as, *rock-bottom* figures, or a *rock-bottom* price.

rock-builder (rok′bil″dėr), *n.* One of the invertebrate organisms whose skeletons essentially contribute to the formation of rock masses. Many classes of the invertebrates have at one time or another acted as rock-builders on account of the profusion of their exuviæ. Chief among them are the *Foraminifera*, *Radiolaria*, corals, and corallines; less prominent are sponges, crinoids, brachiopods, and pelecypods.

rock-channeler (rok′chan″el-ėr), *n.* A machine used in mining and quarrying, to cut channels or seams in the rock so that large pieces may be taken out. A *bar-channeler* is one in which the cutters are attached to a bar or carriage.

rock-city (rok′sit″i), *n.* A name applied in southwestern New York to groups of rock bluffs and walls divided along joint-planes into quadrangular forms and separated by intersecting passages of considerable depth and width. These rock-cities lie in conglomerates (Cattaraugus beds) of Cattaraugus and Allegany counties, and those near Panama are especially striking. They appear to be the result of tension upon a very rigid rock produced by upfolding into low anticlinals: the blocks are separated by a continuation of the process of elevation after the separation along the joint-planes has been completed.

rock-cod, *n.* 2. In California, any scorpænoid fish of the genera *Sebastodes* and *Sebastichthys*; also, occasionally applied, there or elsewhere, to fishes of similar form; in New Zealand, a pteropsaroid fish, *Parapercis colias.*—**Black rock-cod.** (*a*) See *cod*2. (*b*) An Australian fish, *Epinephelus dæmeli*, of the family *Serranidæ*: chiefly of New South Wales.—**Red rock-cod.** (*a*) In New South Wales, the fish *Scorpæna cardinalis*, of the family *Scorpænidæ*, marine fishes resembling the sea-perches. *S. cardinalis* is of a beautiful scarlet color. *E. E. Morris*, Austral English. (*b*) In California, *Sebastichthys ruberrimus* and other related species, bright red in color.

rockcraft (rok′kråft), *n.* In mountain-climbing, skill in climbing rocks and cliffs.

> *Rock-craft* consists in the intelligent selection of a line of route and in gymnastic skill to follow the line chosen.
> *Encyc. Brit.*, XXXI. 23.

rock-cut (rok′kut), *a.* Excavated in solid rock, as many cave-tombs in Egypt, Asia Minor, and India. See ★*cave-tomb* and *rock-temple.*

rock-dwelling (rok′dwel″ing), *n.* A dwelling or abode in the hollows of rocks or cliffs: usually applied to those which have been artificially excavated in the solid rock, such as are frequently found in western Asia.

rocker2, *n.* (*n*) In *pianoforte-making*, the piece screwed to a key-tail to which the action-extension is fastened. (*o*) A tanning-vat in which the hides are rocked at intervals to facilitate tanning. *Davis*, Manuf. of Leather, p. 382.—**Brush-rocker,** an attachment to an electric generator or motor by means of which the position of the brushes upon the commutator may be adjusted or shifted.

rocker-arm (rok′ėr-ärm), *n.* An arm or lever attached to a rock-shaft so that it may receive or give a reciprocating angular motion. *Elect. World and Engin.*, Dec. 12, 1903, p. 970.

rocker-bar (rok′ėr-bär), *n.* A bar or lever mounted on a shaft which has an oscillating motion; a rocking-bar; a rocking-beam.

rocker-box (rok′ėr-boks), *n.* The box or bearing for a rock-shaft. *J. G. A. Meyer*, Modern Locomotive Construction, p. 199.

rocket1, *n.* 3. Same as ★*water-rocket*, 3.

> All waterfalls tend to break up into conical masses called water-rockets, and in rare cases a fall may be seen which consists of a slow procession of well-separated "*rockets*" ranged in roughly horizontal lines. A case is described in which this beautiful appearance was due to the formation of roll-waves above the fall.
> *Nature*, April 18, 1907, p. 597.

rocket2, *n.*—**False rocket.** Same as *purple* ★*rocket.*—**Purple rocket,** a handsome cruciferous plant, *Iodanthus pinnatifidus*, of the eastern and southern United States. It is an erect perennial herb with deeply toothed leaves, the lower ones lyrate-pinnatifid, and purple, violet, or white flowers in terminal and axial panicled racemes.—**Scrambling rocket,** the hedge-mustard, *Sisymbrium officinale.*

rocket-boat (rok′et-bōt), *n.* A strongly designed flat-bottomed boat from which Congreve rockets were formerly discharged during a naval bombardment.

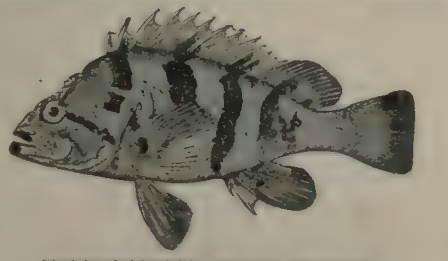
rocket-bomb (rok′et-bom), *n.* In *whaling*, a rocket intended to be projected from the deck of a vessel, and carrying with it a harpoon and bomb-lance combined.

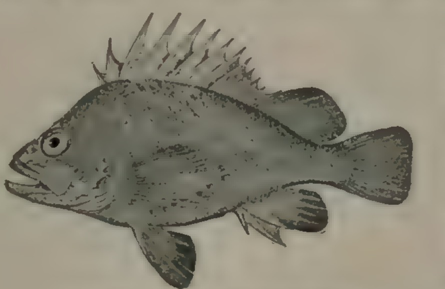
rocket-gun (rok′et-gun), *n.* In *whaling*, the gun from which a whaling-rocket is discharged.

rocket-lightning (rok′et-līt″ning), *n.* See ★*lightning*1.

rock-fever, *n.* 2. Same as *Malta* ★*fever.*

rockfish, *n.*—**Black-and-yellow rockfish,** a scorpænoid fish, *Sebastodes chrysomelas*, found on the Pacific coast of America, from Puget Sound to San Diego Bay.—**Black-banded rockfish,** a scorpænoid fish, *Sebastodes nigrocinctus*, found in rather deep water from Monterey to Vancouver Island.—**Brown rockfish,** *Sebastodes auriculatus*, found off the Pacific coast of America.—**Flesh-colored rockfish,** *Sebastodes carnatus*, from the coast of California.—**Grassy-ground rockfish,** a serranoid fish, *Dules dispilurus*, of the West Indian fauna.—**Marbled rockfish,** a serranoid fish, *Mycteraperca bonaci*, known from Florida to Brazil.—**Red rockfish.** (*b*) Any one of the several red species of *Sebastodes*: usually taken at greater depths and more highly prized for food than the other species of black and dull colors.—**Spotted rockfish,** *Sebastodes constellatus*, from the coast of California.—**Yellow-backed rockfish,** *Sebastodes maliger*, of the Pacific coast of America.—**Yellow-spotted rockfish,** *Sebastodes nebulosus*, found from Vancouver Island to Punta Concepcion.


Black-banded Rockfish (*Sebastodes nigrocinctus*).
(From Bulletin 47, U. S. Nat. Museum.)


Yellow-backed Rockfish (*Sebastodes maliger*).
(From Bulletin 47, U. S. Nat. Museum.)

rock-flour, *n.* 2. The finest powder produced in the rubbing of rocks together. This flour-like matter is a constant product of glacial action and is carried away by the waters of the melting ice to be deposited as a clay-like silicious mud. Compare ★*rock-meal*, 2.

> The water [from a glacier] is usually whitened by fine "*rock flour*," ground beneath the ice.
> *W. M. Davis*, Phys. Geog., p. 329.

rock-froth (rok′frôth), *n.* A vesicular, scoriaceous lava, produced by the inflation of molten material with bubbles of escaping gas.

> Completely fused lava, when cooled rapidly, forms volcanic slag or volcanic glass (obsidian). . . . If it is full of gas-bubbles (*rock-froth*), and hardens in this condition, it forms vesicular or scoriaceous lava.
> *Le Conte*, Elements of Geol., p. 84.

rock-hewn (rok′hūn), *a.* Same as ★*rock-cut.*

rock-house (rok′hous), *n.* 1. A shelter formed, in deep gorges in northern Alabama, by the wearing away of softer strata under one of resistant sandstone. Several delicate ferns and a few other plants are found in them. *C. Mohr*, Plant Life of Alabama, p. 17.—2. In *mining*, a shed or store-house for ore which is to go to the stamp-mill.

rock-ice (rok′is), *n.* Same as *fossil* ★*glacier.*

rocking-bar, *n.* 2. A rocking device to the shedding-motion of a loom dobby.

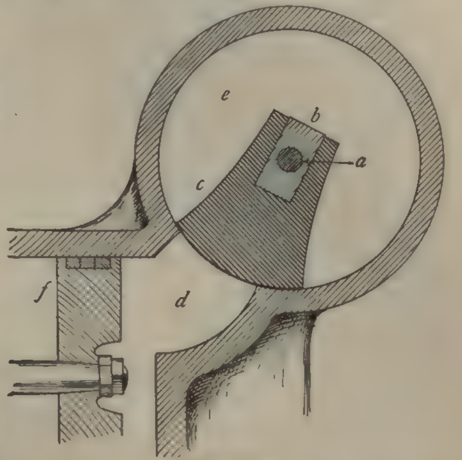
rocking-grate (rok′ing-grāt), *n.* A grate in which the bars roll or rock from side to side to break up the cinder and ashes and allow them to drop out.

Rockingham ware. See ★*ware*2.

rocking-lever (rok′ing-lev-ėr), *n.* 1. A lever or bar used to operate a rocking-grate or similar device.—2. An equalizer or equalizing-bar.—3. A lever or arm moving about a center through an angle of less than 360° and returning to its first position; an oscillating lever.

rocking-link (rok′ing-lingk), *n.* A rocking-lever; a link or lever hung by a point on the link so that the ends oscillate. *D. K. Clark*, Steam Engine, III. 280.

rocking-valve (rok′ing-valv), *n.* A valve of cylindrical or other shape which is a surface of revolution, and which is opened and closed by being rotated through an angle around the axis of its figure with a motion which resembles the swinging of a rocking-chair.



Rocking-valve.

a, cylindrical axis or stem of valve; *b*, rectangular guiding and driving surfaces of spindle; *c*, rocking-valve; *d*, port supplied with steam from chest *e*; *e*, steam-chest around rocking-valve; *f*, piston to be actuated by steam from *e* when *c* opens port *d*.

rock-jasmine (rok′jas″min), *n.* See ★*Androsace.*

rockling, *n.* 2. *Genypterus australis*, of the family *Ophidiidæ.*—**Four-bearded rockling,** a gadoid fish of the genus *Enchelyopus*, of the North Atlantic.—**Three-bearded rockling,** a gadoid fish of the genus *Gaidropsarus*, found in northern seas.

rockman (rok′man), *n.* In excavating for building, one of the men who clear the ground of rocks or ledges by blasting, etc.

> The strike committee appointed by the *Rockmen* and Excavators' Union two weeks ago to order a strike against the 150 members of the Contractors' Protective Association . . . began work yesterday.
> *N. Y. Times*, May 12, 1905.

rock-marking (rok′mär″king), *n.* See the extract.

> M. Georges Courty, whose researches into *rock-markings* in the Department of Seine-et-Oise were mentioned in The Athenæum, No. 4001, has since pursued them in the same Department at Étampes and Milly. In some exposed places, mixed up with modern figures, letters, and other penknife scratchings, he found some marks of the Neolithic type. At the Roche de la Briche he was more fortunate. Removing a natural growth of vegetation from some of the rock surface, he came upon a number of untouched petroglyphs.
> *Athenæum*, April 15, 1905, p. 468.

rock-meal, *n.* 2. A fine mechanical sediment resulting from the grinding together of minerals and rocks. The term is used especially to designate the constituents of the till which resemble ordinary clays in fineness of grain but differ from them in degree of oxidation. *J. Geikie*, The Great Ice Age, p. 72.

rock-medlar (rok′med″lär), *n.* See ★*medlar.*

rock-native (rok′nā″tiv), *n.* See ★*native*, 7.

rock-oak (rok′ōk), *n.* See ★*oak.*

rock-oyster, *n.* 3. *Ostrea glomerata*, of eastern Australia.

rock-perch (rok′pėrch), *n.* An Australian fish, *Glyphisodon victoriæ*, of the family *Pomacentridæ.*

rock-rose, *n.*—**Cretan rock-rose,** *Cistus Creticus.* See *Cistus*, 2 (with cut).

rock-rubble (rok′rub″l), *n.* 1. The crushed rock of a fault-zone.—2. A confused mass of broken rock originating through the disintegrating action of the atmospheric agents. See *rubble-★drift*. *J. Geikie*, The Great Ice Age, p. 392.

rock-scoring (rok'skōr'ing), *n.* In *geol.*, the erosive action of glaciers on rock, or the results of such action. Various kinds of scoring are noted, as: striæ or striations, fine linear scratches, nearly parallel; grooves or furrows, broader depressions, usually straight, sometimes curved, a few inches (rarely a foot or more) deep; gouges, irregular excavations; and crescentic gouges or furrows, broken excavations, transverse to the striæ, with concave side 'up-stream.'

rock-shaft^2 (rok'shȧft), *n.* In *mining*, a shaft constructed for sending down rock for filling stopes which have been worked out. It is usually provided with a valve or trap at the bottom so that rock may be thrown into it at any time and taken out as it is wanted.

rock-shelter (rok'shel"tėr), *n.* A natural cave used as a temporary or permanent dwelling.

The Prehistoric *Rock-shelter* at Schweizersbild, near Schaffhausen. *Geog. Jour.* (R. G. S.), XI. 89.

rocks-man (roks'man̤), *n.* One whose occupation it is to climb and descend cliffs to secure the birds which nest in them or to gather their eggs.

The dexterity of these *rocksmen* is truly astonishing . . . they will creep on hands and knees, though cumbered with a load of birds, along a narrow ledge, seemingly without concern for their personal safety. *Macgillivray*, Hist. British Birds, v. 435.

rock-tomb (rok'töm), *n.* A tomb hollowed out of the solid rock.

rock-trout, *n.*—**Red rock-trout**, a fish, *Hexagrammos superciliosus*, in no way related to or resembling a trout, found from Bering Island to Monterey Bay.

rock-wallaby (rok'wol"a̤-bi), *n.* A marsupial of the genus *Petrogale* (which see). [Australia.]

rock-waste (rok'wāst), *n.* In *phys. geog.*, detritus derived by the superficial disintegration of rock-masses and in process of removal by transporting agencies.

rock-whiting (rok'hwī"ting), *n.* See ★*whiting*^{2}.

rock-wool (rok'wůl), *n.* A white fibrous material made by blowing a stream of air or steam through molten slag as it comes from the blast-furnace or other metallurgical process. Usually known as *mineral wool*.

rock-worm (rok'wėrm), *n.* A local name in the Channel Islands for *Marphysa sanguinea*, a large bronze worm with bright red gills.

rocky^2, *a.* 2. In a shaky, precarious condition. [Slang.]

Old Mosey? He's pretty *rocky*. I'm afraid he won't pull through. *The Century*, June, 1901, p. 227.

The place reeks of fever, and as your present state of health is distinctly *rocky*, you 'll catch it, and be dead and out of the way inside a week easily. *Cutcliffe Hyne*, A Master of Fortune, xi.

Rocky Mountain spotted fever. See ★*tick-fever*.

rod^1, *n.* 8. The central cone or peg in a gustatory cup on an insect's epipharynx.

The structure and armature of the epipharyngeal surface even besides the taste-pits, taste-cups and *rods*, is very varied, the setæ assuming very different shapes. *A. S. Packard*, Text-book of Entom., p. 45.

9. Any gorgonian with long, cylindrical branches.—**Bus-rod**, one of the heavy conductors to which the terminals of the generators in an electric power-house or central station are connected; a bus-bar.—**Maddox rods**, a series of glass rods used in testing for inequality of the visual axes.

Test for exophoria, esophoria and hyperphoria with light about twenty feet, using single prism or *Maddox rod* and red glass; or, preferably, a phorometer of the Stevens or similar pattern, where the testing prisms are held accurately. *Optical Jour.*, April 28, 1904, p. 740.

Marckwald's rods, rods of metallic bismuth upon which polonium has been deposited from a solution of a bismuth salt extracted from pitchblende residues. This deposit is highly radioactive, and was believed by Marckwald to be, or to be closely related to, tellurium: he named it *radioactive tellurium*. It has been suggested that the rod so coated might be used to distinguish a genuine diamond from paste, the former phosphorescing when brought near the rod.—**Wheatstone's rod**, a slender rod fastened at one end and vibrating through a large amplitude when the free end is displaced and then released. The frequencies of vibration in two planes at right angles to each other are adjusted to some simple ratio, as 1:2, 2:3, or 3:4, by suitable shaping of the rod, and the free end consequently describes the corresponding Lissajous's figure, thus affording a simple and elegant demonstration of the composition of simple harmonic motions.

roda (rō'dä̤), *n.* [Pg. *roda*, a wheel, < L. *rota*, a wheel: see *rote*^{1}.] A tin coin of the Portuguese possessions in India, equal to 2¼ bazaruccos or 2 reis.

rodding (rod'ing), *n.* [*rod*^{1} + *-ing*^{1}.] Rods collectively: as, 'a line of *rodding*.' *Encyc. Brit.*, XXXII. 144.

Rodent cancer. Same as *rodent* ★*ulcer*.

rodeo, *n.* 2. The inclosure in which cattle are collected for counting or branding.

rodex (rō'deks), *n.* [Origin obscure.] A state of good repair. [Cornwall.]—**Out of rodex**, out of repair or adjustment. [Cornwall.]

rodinal (rō'di-na̤l), *n.* [A trade-name.] A commercially prepared solution of para-aminophenol hydrochlorid with alkali and a preservative: used as a photographic developer.

roding (rō'ding), *n.* [See *rode*^{5}, *n.*] A rope attached to the anchor of a dory or small fishing-boat. [Bay of Fundy.]

rodite (rō'dīt), *n.* See ★*meteorite*.

rod-mill (rod'mil), *n.* The set of roll-trains in which a billet is rolled to a rod.

The *rod mill*, which has been erected on a site adjoining the steel-making plant, is equipped with machinery for the rolling of rods and drawing of wire, as well as the manufacture of barbed and plain wire fencing, nails, and other staples. *Sci. Amer. Sup.*, July 23, 1904, p. 23870.

rodney (rod'ni), *n.* [Origin obscure.] In Australia, a vagrant. [Slang.]

In a police trial reported in the local [Australian] papers a dock constable declared that the defendant was a "*rodney*"; and when the magistrate asked what is a "*rodney*," the constable answered, "A man who works one day and is idle six months, and yet lives!" The man was sentenced as a vagrant, and this must be accepted as the definition. It is borrowed doubtless from the native dialect. *N. Y. Jour. Commerce*, Nov. 10, 1886.

rod-white (rod'hwīt), *n.* The sensation of dim, misty whiteness produced by the action upon the retina of light so feeble that the rods only and not the cones are stimulated, or of light falling upon portions of the retina devoid of cones.

But at a still higher temperature (up to 700° C. and above) the rods enter into vigorous competition with the cones, and the light red colour seen in gazing at the platinum plate changes in indirect vision into a peculiar colourless white, the "*rod-white*," while at the same time the brightness of the platinum plate increases considerably. *Nature*, Feb. 18, 1904, p. 379.

roeblingite (rėb'ling-īt), *n.* [Named after W. A. *Roebling*.] A mineral regarded as consisting of calcium silicate with calcium-lead sulphite, which occurs in white, massive form at Franklin Furnace, New Jersey.

Rœboides (rē-boi'dēz), *n.* [NL., an error for **Rhæboides*, < Gr. ῥαιβοειδής, crooked-looking, < ῥαιβός, crooked, + εἶδος, form.] A characinoid genus of fishes found in fresh waters of South America.

Roentgenize, Roentgenography, etc. See ★*Röntgenize*, etc.

Rœstelia (res-tē'li-ạ̈), *n.* [NL. (Rebentisch, 1804), < *Roestel*, a German apothecary and amateur botanist.] A form-genus of rust-fungi including the æcidial forms of species of *Gymnosporangium*. This stage occurs on the apple, quince, and other rosaceous plants, while the teleutospores are found on juniper and other closely related conifers.

roger, *n.*—**Jolly roger** (*naut.*), a pirate flag which shows a white skull and cross-bones on a black field.

rogerium (rọ-jē'ri-um), *n.* [NL.] The name of a supposed new chemical element announced in 1879, by J. Lawrence Smith, as present in the mineral samarskite. There has been no confirmation of its existence.

Roger's blast. A sudden, short, and violent motion of air in the nature of a whirlwind. It is mentioned in old nautical works, but its origin is obscure. Its name and character suggest an allusion to pirates.

rogue, *n.* 7. A bait, used in the sardine fishery, consisting of an oily dough made of the roe and entrails of codfish. *Sci. Amer. Sup.*, Feb. 28, 1903, p. 22715.

Roiro lacquer. See ★*lacquer*.

roker, *n.* 2. A rockling.

Rolandic area. Same as *motor* ★*area*.—**Rolandic angle.** See ★*angle*^{3}.

roll, *v. t.* 13. In *bookbinding*, to decorate, as the edges or the sides of the cover of a bound book, with a wheel-shaped tool which constantly repeats the design on its rim.—**To dry-roll**, in *lumbering*, in sacking the rear, to roll stranded logs into the bed of the stream from which the water has been cut off preparatory to flooding.

roll, *n.* 10. (*b*) A miners' term for a fold exhibited in underground workings. (*c*) A dome-like structure in a stratum; especially a mass of barren matter of this form occurring in a coal-seam.—11. The cross-bar of a logging-sled into which the tongue is set.—**Cornish rolls.** See ★*Cornish*.—**Lee roll.** Same as *lee lurch*, which see, under *lurch*^{1}.—**Midshipman's roll** (*naut.*), a manner of rolling up a hammock transversely, or crosswise, and lashing it around with one clue, so as to make a thick, short bundle, instead of a long, narrow one in which both clues are lashed inside.—**On the rolls**, in *Eng. law*, said of those who are regularly admitted to practise law.—**Plate-bending rolls**, in *iron ship-building*, a machine for bending plates into the forms required to fit the curved surfaces of a vessel. The machine consists of two horizontal parallel lower rolls slightly separated from each other but geared together so as to rotate in the same direction, which can be turned by a steam-engine or electric motor. Suspended above and midway between the lower rolls is an upper roll, which rotates freely, each end of which can be moved up or down independently so as to press the plate passing through the machine down in the space between the two lower rolls to a greater or less extent, thus giving it a greater or less curvature at either end as desired.—**Plate straightening rolls**, in *iron ship-building*, a machine to flatten out plates which, as received from the rolling-mills, are usually more or less twisted, bent, and buckled. It consists of a series of three parallel lower rolls, geared together so that all rotate in the same direction, and driven by steam or electric power. A series of parallel upper rolls, one more in number than the lower rolls, rotating freely, is so placed that the upper rolls are above the intervals between the lower rolls. The plate is passed between the two series of rolls and by depressing sufficiently the upper rolls, the plate is grasped between them and the lower rolls, and as it passes through, is stretched and flattened so that, when it leaves the rolls, it is quite flat. Also called *mangle*.—**Roll culture.** See ★*culture*.—**Star roll**, a roll with short, radiating projections, used in textile and other machinery.—**Three-high rolls**, a rolling-mill having three rolls one over the other. This arrangement allows the material to be rolled to be passed one way between the lower pair and the reverse way between the upper pair; hence, the rolls need not be reversed.—**To strike off the roll**, in *law*, to disbar (an attorney) and remove (his name) from the list of members of a court.

roll-boil (rōl'boil), *v. t.* To subject (woolen cloth wound on long rollers) to the action of boiling water to give it a luster.

roll-cloud (rōl'kloud), *n.* A roll-shaped cloud among the cirro-cumulus clouds, resembling a wave or breaker. Larger roll-clouds occur amid the stratus and cumulo-stratus and are often tapering or cigar-shaped. See ★*cloud*^{1}, 1.

roller, *n.* 11. Same as ★*sand-roller*.—**Casting hall roller**, in *glass-manuf.*, same as *running-roll* (which see).—**Nipping-rollers**, a pair of cylindrical rollers used in bleaching-works and dye-works to squeeze cloth which is to be uniformly impregnated with a liquid. Also known as *squeezing-rollers*.—**Roller process.** See ★*process*.—**Squeezing-rollers.** Same as *nipping-*★*rollers*.—**Stepped roller**, a conical roller with steps: part of a warp-shedding mechanism in a loom for keeping the heddle-strap at tension. *T. W. Fox*, Mechanism of Weaving, p. 45.

roller-beam (rō'lėr-bēm), *n.* The beam that supports the drafting-rolls of a sliver-drawing machine in a cotton-mill. *Nasmith*, Cotton Spinning, p. 222.

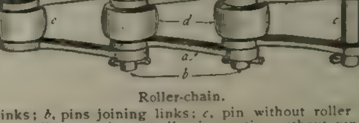
roller-bearing, *n.*—**Straight roller-bearing**, a roller-bearing in which simple, straight rollers are used in the line of pressure parallel to the axis of the shaft without provision in the design for variations in alinement or parallelism of the shaft and the rollers. *Sci. Amer. Sup.*, Feb. 21, 1903, p. 22688.—**Taper roller-bearing**, roller-bearing in which races or tracks are formed in which the rollers revolve and travel, the axes of the latter converging so as to intersect the axis of the shaft. This makes the races conical surfaces, and tapering instead of being straight or cylindrical, and the rollers are also tapering. *Sci. Amer. Sup.*, Feb. 21, 1903, p. 22689.

roller-bitt (rō'lėr-bit), *n.* *Naut.*, a bitt in which one of the upright cylinders or shanks is free to turn on an axis or shaft, thus distributing the strain on the rope or hawser made fast to the bitt.

roller-boat (rō'lėr-bōt), *n.* A cigar-shaped, steam-propelled vessel, the screw of which consists of a cylinder about half the length of the hull which is situated at the center of the hull, and passes around it. The cylinder has fins which run diagonally around it, and their rotation contributes motion to the hull, while the keel is connected at both ends to the hull and hangs below the revolving cylinder.

roller-box, *n.* 2. A series of drawing-rolls in a cotton-combing machine for attenuating the sliver. *Thornley*, Cotton-Combing Machines, p. 85.

roller-chain (rō'lėr-chān), *n.* A pin-chain of the link-belt type having a loose roller on each pin that joins the links. The roller serves to give a rolling contact with the sprocket-wheel



Roller-chain.

a, links; *b*, pins joining links; *c*, pin without roller or next links; *d*, rollers on pin; *e*, roller in position without pin; *f*, slot and key holding links.

of a conveyer and as a bearing to support the chain when it is drawn over an uneven surface, as in a car-haul.

roller-chock (rō′lėr-chok), *n.* See ⋆*chock*4.

roller-cleat (rō′lėr-klēt), *n.* *Naut.*, a roller-chock; a cleat having a roller at the end to distribute the strain on a rope fastened to it.

roller-clutch (rō′lėr-kluch), *n.* A clutch for fastening together two parts of a machine, as a shaft and wheel, so that one will drive the other. It consists of a cage carrying a set of rollers and surrounding the shaft, the hub of the wheel surrounding the cage. When it is desired to connect the two the rollers are wedged between them; at other times they rest in grooves in the stationary part. *Nasmith*, Cotton Spinning, p. 396.

roller-core (rō′lėr-kōr), *n.* In *printing*, the central round bar of iron (sometimes thinly covered with wood) that gives stiffness and security to the inking-roller.

roller-lap (rō′lėr-lap), *n.* In *cotton-manuf.*, the collection of short fibers (or fly) about a clearer-roll that rests on the drafting-rollers of a sliver-drawing machine. *Nasmith*, Cotton Spinning, p. 245.

roller-mill, *n.* **2.** The standard type of roller-mill consists of a strong iron case inclosing four steel corrugated rolls arranged in pairs in a horizontal position. The wheat is led to a feed-box at the top of the machine, and then falls upon a shaking table which distributes it evenly to the two pairs of rolls. The wheat is not ground, but is cracked, the grains falling between the rolls with the least possible injury and being then conveyed away to the bolting-machine and purifier. Roller-mills are made in many styles and sizes, a small machine affixed to a post being called a *post-roll*. They are sometimes arranged in groups or batteries, and in corn-mills have three pairs of rolls placed one over the other. Roller-mills have almost completely superseded grinding-mills.

4. A horizontal tumbling-barrel resting on four rollers. Two are drivers and two idlers, supporting the barrel and enabling it to roll with very little friction.

roller-polo (rō′lėr-pō″lō), *n.* A game somewhat similar to ice-hockey, played in roller-skating rinks. The players are mounted on roller-skates and endeavor, with sticks shaped somewhat like shinny-sticks, to drive the ball into the goals at either end of the rink. These goals are open at the front, but are caged with netting at the back.

roller-race (rō′lėr-rās), *n.* A channel or track on which the rollers of a roller-bearing run.

> The rollers are made to fit the inner and outer treads of the *roller race*, so that each roller is in continuous line of contact with the inner and outer treads of its race, and it has therefore a free rolling tread over its entire length. *Sci. Amer. Sup.*, Feb. 21, 1903, p. 22689.

roller-table (rō′lėr-tā″bl), *n.* A table behind and in front of the train of rolls in which metal pieces are reduced in size. These tables contain a series of rollers which may run loose in bearings (dead rollers) or which may be revolved by mechanical means (live rollers). On these rollers the piece is received and handled during the various passes of the rolling operation. *Elect. World and Engin.*, April 9, 1904, p. 702.

roller-wheel (rō′lėr-hwēl), *n.* A small wheel or hollow roller which turns on a pin or stud: used on the end of a lever which is moved by a cam; a cam-roller.

roller-worm (rō′lėr-wėrm), *n.* See *long-tailed* ⋆*skipper*.

roll-housing (rōl′hou″zing), *n.* The standard or upright which carries the bearings for the journals of the rolls in a rolling-mill.

> Visiting the famous Homestead steel works, some years ago, the gentleman who was taking me through the mills pointed out a strong, good-looking and evidently masterful man standing on the top of a set of heavy *roll-housings* in the armor-plate mills and remarked, 'That man is paid more than your college president.'
> *Pop. Sci. Mo.*, Feb., 1902, p. 352.

rolling, *n.* **6.** In tea manufacture, in China and elsewhere, the operation of pressing the withered leaf, by an arduous manipulation (in modernized practice by machinery). The object is to burst the cells to promote oxidation (in black tea: see under ⋆*tea*1) and to render the extractive matter subject to infusion. The curling or twisting of the leaf results incidentally.—**Direct rolling**, in *kinematics*, the rolling of one body upon another where the instantaneous axis of rotation of the rolling body is in the plane tangent to the point of contact between the two surfaces and at right angles to the path which the rolling body traces upon the surface on which it rolls.

rolling, *p. a.*—**Rolling circle.** (*b*) A describing circle; a circle used to roll along the pitch-circle of a gear to generate the epicycloidal or hypocycloidal curve for the gear tooth; also, the circle used to roll along the pitch-line of a rack to generate the cycloidal curves for the rack teeth. When an epicycloid is to work with a hypocycloid or a cycloid they must be described by the same rolling circle.

rolling-board (rō′ling-bōrd), *n.* Same as ⋆*bread-board*, 1.

rolling-chair (rō′ling-chãr), *n.* A wheeled chair; especially, in the United States, one intended for outdoor use. Such chairs are of various designs and for one or two persons, and are either propelled by the occupant or pushed by an attendant. They are much lighter and more comfortable than their original, the Bath chair.

> When these other portions of the walk are completed, it is probable that a section will be set aside on the lower end of the plank walk which will be devoted to the use of the electric and bicycle *rolling chairs*.
> *N. Y. Evening Mail*, Feb. 10, 1906.

rolling-chamber (rō′ling-chām″bėr), *n.* In *ship-building*, a long, athwartship, water-tight compartment fitted in the interior of a few war-ships and special vessels. When the compartment is partly filled with water the drag of the water in the chamber following the ship as it rolls tends to diminish the amount of the rolling.

> The ship has a *rolling chamber* to keep her steady, and a lifting crow's nest, which affords facilities for directing her through the ice. *Geog. Jour.* (R. G. S.), XV. 34.

rolling-furnace (rō′ling-fėr″nạs), *n.* Same as ⋆*tilting-furnace*.

rolling-grass (rō′ling-gràs), *n.* A grass of the genus *Spinifex*, so named from the fact that the seeds are borne in globular heads which fall at maturity and are driven by the wind over the sands, shedding their seeds, or are carried by the waves and deposited upon newly formed sand-bars. *S. hirsutus*, the spiny rolling-grass, is regarded in New South Wales as extremely valuable for fixing shifting sands, but is of no value for forage.

rolling-mill, *n.* **5.** That part of a powder-manufacturing plant in which the ingredients of the powder are crushed and commingled.

rolling-pin, *n.* **2.** A wooden implement used by potters for rolling out thin sheets of clay for making pie-plates. It is often made in two parts, the handles being attached to the ends of a wooden rod which passes through the hollow body of the roller. *E. A. Barber*, Tulip Ware, p. 51.

rolling-plant, *n.* **2.** A rolling-mill; a manufacturing establishment the principal machinery of which is for rolling.

rolling-press, *n.* **4.** In *letterpress printing*, a printing mechanism in which a cylinder rolls to and fro over the type to be printed, as in the ordinary galley-proof press.

roll-scale (rōl′skāl), *n.* Flakes of oxid of iron which fall from the bloom, ingot, or bar while it is being rolled. *Phillips and Bauerman*, Elements of Metallurgy, p. 148.

roll-up, *n.* **3.** In Australia, a meeting; a gathering of people. [Slang.]

> Making as much noise as if you'd hired the bell-man for a *roll-up*.
> *Rolf Boldrewood*, Miner's Right, xxxv, quoted in E.
> [E. Morris, Austral English.

roll-wave (rōl′wāv), *n.* See the extract.

> In certain rivers, however, of small depth (therefore propagating a wave slowly) and subject to sudden accessions from swollen tributaries the "first rise" of water on the lower reaches frequently takes the form of a steep-fronted wave, or bore, travelling down-stream. On the Tees the phenomenon is called a *roll-wave*.
> *V. Cornish*, in Geog. Jour. (R. G. S.), Jan., 1907, p. 28.

rollway, *n.* **3.** Same as *landing*, 9.—**Fly rollway**, a skidway or landing on a steep slope from which the logs are released at once by removing the brace which holds them.

Roman, *a.*—**Roman-lamp shell.** See ⋆*shell*.—**Roman willow.** See ⋆*willow*1.

Romanic, *a.* **3.** Printed in roman type. *Encyc. Dict.*

romanically (rō-man′i-kal-i), *adv.* In ordinary roman print (and with ordinary spelling).

Romano-British (rō′man-ō-brit′ish), *a.* Of or pertaining to the Romano-Britains. *Smithsonian Rep.*, 1890, p. 531.—**Romano-British pottery.** See ⋆*pottery*.

Romano-Briton (rō′man-ō-brit′on), *n.* An inhabitant of Britain under the Roman occupation. *Keane*, Ethnology, p. 398.

romanticize (rọ-man′ti-sīz), *v. i.* To behave in a romantic or sentimental way. *Encyc. Dict.*

> Enlivened by champagne and some grotesque *romanticising* on the part of the amorous Duchess.
> *The Speaker*, April 15, 1899, p. 424.

Rom. Cath. An abbreviation of *Roman Catholic.*

romeite (rō′mẹ-īt), *n.* Same as *romeine.*

römer (rė′mer), *n.* [G.] See *rummer.*

romerillo2 (rō-mā-rēl′yō), *n.* [Sp. *romerillo*, diminutive of *romero*, rosemary.] **1.** In Mexico, a name applied to several composites with an agreeable aromatic odor, especially to *Chrysactinia Mexicana*, *Porophyllum scoparium*, and *Pectis stenophylla*, all of which are used medicinally. The last species has a strong odor of lemon, and together with several of its congeners is sometimes called *limoncillo*. See ⋆*limoncillo*, 2.—**2.** One of the Mexican milkweeds, *Asclepias Linaria;* also called *romerillo loco.*—**3.** A plant belonging to the family *Chenopodiaceæ*, *Dondia multiflora*, the fleshy leaves of which are used in Mexico during the Lenten season as a pot-herb.—**4.** In Chile, *Tricondylus ferrugineus*, a shrub belonging to the family *Proteaceæ.*—**Romerillo cimarron**, in northern Mexico, *Cowania Mexicana*, a narrow-leaved shrub or small tree of the rose family. It has a fibrous bark, which was formerly used by the Indians for making mats and sandals.

Romneya (rom′nẹ-ä), *n.* [NL. (Harvey, 1845), named in honor of John Thomas *Romney* Robinson (1792–1882), an Irish astronomer.] A genus of plants of the family *Papaveraceæ*, occurring in southern California and Mexico. From other papaveraceous genera it is distinguished by the stigmas being united at the base into a ring but free at the top. *R. Coulteri*, the only species, is the California tree-poppy, or matilija poppy, a tall, somewhat shrubby plant bearing very large white hollyhock-like flowers.

romp, *v. i.* **2.** In *racing*, to run easily, as if in a frolic; run without effort; hence, to accomplish something with apparently little effort. [Slang.]

> Water Color had no trouble in *romping* home an easy winner in the first race of the day, with King Pepper, a long shot, a bad second. *N. Y. Tribune*, May 5, 1901.

romp, *n.* **3.** In *racing*, an easy, unforced pace. [Slang.]

> One said to me, as he pointed at Maghersfontain Kopje, "Set a brewery up on top of that and my regiment will take the place in a *romp*." *War's Brighter Side*, p. 283.

roncadina (rōn-kä-dē′nä), *n.* Same as *croaker*, 4 (*b*).

roncador, *n.*—**Roncador raiado**, a fish, *Hæmulon steindachneri*, of the family *Hæmulidæ*, found on both coasts of tropical America.

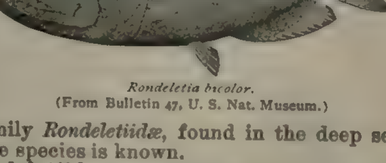
ronco (rōn′kō), *n.* [Amer. Sp. *ronco* (NL. *ronchus*), another use of Sp. *ronco*, a grunt, a snore, < *roncar*, grunt, snore.] Any one of several species of the genus *Hæmulon*, fishes found in warm seas.—**Ronco amarillo**, the yellow grunt, *Hæmulon sciurus.*—**Ronco arará**, the common grunt, *Hæmulon plumieri.*—**Ronco blanco**, *Hæmulon parra.*—**Ronco carbonero**, a fish, *Hæmulon carbonarium*, of the family *Hæmulidæ*, known from the West Indies to Brazil.—**Ronco condenado**, the French grunt, *Hæmulon flavolineatum.*—**Ronco ronco**, the black or common grunt, *Hæmulon plumieri.*

rondanin (ron′da-nin), *n.* [Origin unknown.] The pomfret, *Brama raii.*

rondeau, *n.* **3.** A game in which nine small balls are placed in front of a stick and propelled diagonally across a billiard-table. At least one ball must fall into the corner pocket and at least one must remain on the table. The players bet on whether the number will be odd or even, the bank taking ten per cent. of all the wagers.

ronde-bosse (rond-bos′), *n.* [F.] In *sculp.*, the character of being worked all round: as, sculpture in *ronde-bosse*, sculpture in the round.

Rondeletia, *n.* **2.** A genus of fishes of the family *Rondeletiidæ*, found in the deep seas. One species is known.



Rondeletia bicolor.
(From Bulletin 47, U. S. Nat. Museum.)

Rondeletiidæ (ron″de-le-tī′i-dē), *n.* [NL., < *Rondeletia* + *-idæ.*] A family of fishes which contains only the genus *Rondeletia*.

rondelle, *n.* **4.** A disk of colored glass, used as a decoration in stained-glass windows. Compare *bull's-eye*, 8.

rondellus (ron-del′us), *n.*; pl. *rondelli* (-ī). [ML. : see *rondel.*] In *medieval music*, a very early species of composition in strict imitation, apparently a kind of double counterpoint.

rondino (ron-dē′nō), *n.* [It., dim. of *rondo.*] In *music*, a short rondo.

Ronquilus (ron-kwī′lus), *n.* [NL., < Sp. **ronquil*, given as a Spanish name, appar. < *ronco*, name of a fish. See ★*ronco.*] A genus of fishes of the family *Bathymasteridæ*, found on the north Pacific coast of North America.

Röntgen rays. See *X-rays*, under ★*ray*^{1}.

Röntgenization (rėnt″gen-i-zā′shon), *n.* The act or process of Röntgenizing, or subjecting to the action of the Röntgen rays. *Med. Record*, Nov. 9, 1907, p. 760.

Röntgenize (rėnt′gen-īz), *v. t.*; pret. and pp. *Röntgenized*, ppr. *Röntgenizing.* [Wilhelm Konrad *Röntgen* + *-ize.*] To produce chemical or structural changes in (a substance) by the action of the Röntgen or X-rays; subject to the action of the Röntgen rays. *J. J. Thomson*, Discharge of Elect. through Gases, p. 55.—**Röntgenized air,** air which has been ionized by the passage through it of the so-called Röntgen or X-rays.

Röntgenogram (rėnt′gen-ō-gram), *n.* [Wilhelm Konrad *Röntgen* + Gr. *γράμμα*, a writing.] A picture taken by means of the X-rays; a radiograph. *Med. Record*, Aug. 10, 1907, p. 246

Röntgenograph (rėnt′gen-ō-gråf), *n.* [Wilhelm Konrad *Röntgen* + Gr. *γράφειν*, write.] A radiograph; a Röntgenogram.

Röntgenography (rėnt-gen-og′ra-fi), *n.* [Irreg. < Wilhelm Konrad *Röntgen* + Gr. *-γραφια*, < *γράφειν*, write, record. This formation and others of the group are irregular, undescriptive, and intractable.] The art or process of producing photographic impressions by means of the Röntgen or X-rays. *Nature*, July 27, 1905, p. 301.

Röntgenology (rėnt-gen-ol′ō-ji), *n.* [Wilhelm Konrad *Röntgen* + *-ology.*] The scientific study of the Röntgen or X-rays. *Nature*, July 27, 1905, p. 301.

Röntgenoscopy (rėnt-gen-os′kō-pi), *n.* [Wilhelm Konrad *Röntgen* + Gr. *σκοπεῖν*, view.] The art or process of examining opaque bodies by means of the Röntgen or X-rays. *Nature*, July 27, 1905, p. 301.

Röntgenotherapy (rėnt″gen-ō-ther′a-pi), *n.* [Wilhelm Konrad *Röntgen* + Gr. *θεραπεία*, medical treatment. See *therapeutic.*] Treatment of disease by means of exposure to the Röntgen rays. *Med. Record*, Jan. 31, 1903, p. 168.

Röntgram (rėnt′gram), *n.* Same as ★*Röntgenogram. Houston*, Dict. Elect. [Rare.]

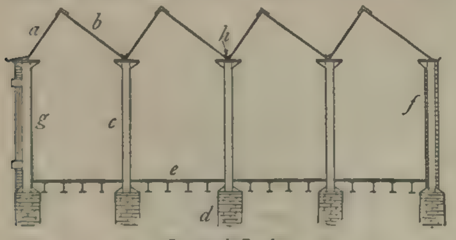
Röntgraph (rėnt′gråf), *n.* Same as ★*Röntgenograph. Houston*, Dict. Elect. [Rare.]

Röntgraphy (rėnt′gra-fi), *n.* [*Röntgraph* + *-y*^{3}.] Same as ★*Röntgenography. Houston*, Dict. Elect. [Rare.]

Röntography (rėn-tog′ra-fi), *n.* Same as ★*Röntgenography. Encyc. Dict.* [Rare.]

rood-stair (röd′stãr), *n.* In *ch. arch.*, a stair leading to the top of the rood-screen or choir-screen, that is, to the jube or rood-loft.

roof^1, *n.*—**Dutch roof.** Same as *gambrel-roof.*—**Fan roof,** a roof built according to fan-vaulting, whether actually in stone or in plaster or wood in imitation of fan-vaulting.—**Gravel roof,** a roof covered with clean gravel, held in place by an adhesive substance.—**High roof,** a steep roof: in *Goth. arch.*, any roof which has a slope greater than an angle of perhaps 50° with the horizon.—**Roof of the world,** the Pamir in Asia: so called because it is the highest inhabited area of the globe. It is from 9,000 to 25,000 feet above sea-level.—**Saw-tooth roof,** a roof consisting, in effect, of a series of roofs in each of which the rafters of one side are longer and of lower pitch than those of the other: the series thus resembling, when seen from the end, the series of teeth in a saw. The roofs are supported by interior columns. By this system very large one-story buildings can be erected. The advantages are a solid floor for heavy machinery and a good light in all parts of the building.—**Split roof,** a roof, as of a logging-camp, made by laying strips split from straight-grained timber, which run from the ridge-pole to the eaves, and breaking the joints with other strips, as in a shingle roof.—**Tilt-roof.** See ★*tilt-roof.*—**Trough roof,** a roof on a logging-camp or barn, made of small logs split lengthwise, hollowed into troughs, and laid from ridge-pole to eaves. The joints of the lower tier are covered by inverted troughs.—**Valley roof,** a roof with valleys down which the water may run. See *valley*, 3.



Saw-tooth Roof.

a, glass roof; *b*, iron and slate roof; *c*, columns; *d*, foundations; *e*, floor; *f*, wall; *g*, wall with window; *h*, gutter.

roofage (rö′fāj), *n.* [*roof*^{1} + *-age.*] The material prepared for building roofs or covering them; generally the covering material only, as sheathing, shingles, slates, and the like.

roof-apron (röf′ā″prun), *n.* In *car-building*, a screen or weather-board hanging from the platform hood of a passenger-car and designed to keep dust and rain out of the car door.

roof-garden (röf′gär″dn), *n.* A place open to the sky on the roof of a building, ornamented with trees, shrubbery, and flowers. In the cities of southern France such pleasure-resorts are arranged on the roofs of private houses, and in the larger cities of the United States they have been introduced to some extent in theaters and hotels.

roofing-canvas (rö′fing-kan″vas), *n.* See ★*canvas.*

roofing-duck (rö′fing-duk), *n.* A light grade of roofing-canvas used in lining the ceilings of passenger-cars.

roofing-seamer (rö′fing-sē-mėr), *n.* A tool for forming seams in a sheet-metal roof.—**Double roofing-seamer,** a hand-tool for making the seams between the sheets of a tin roof. The tool resembles in appearance a tin-roofer's tongs. It is placed over the edges of adjoining plates laid on the roof. One movement of the handles bends the edges, and a second makes a second bend, forming a lock or double seam.

roofing-tile (rö′fing-tīl), *n.* A tile for use in roofing. The name is generally confined to those made of earthenware, which are of two principal kinds, 'flat' and 'ridge-and-furrow.' See *tile*^{1}.

roof-plate, *n.* **2.** In steam-boilers, a crown-sheet; the plate forming the top of the fire-box in a locomotive boiler or other internally fired boiler.

rooinek (rō-i-nek′), *n.* [Cape D. *rooinek*, 'a red-neck' (in allusion to the florid or 'tanned' appearance of new-comers), < D. *rood*, red, + *nek*, neck. In like manner the English language is called the *rooitaal.*] **1.** In Cape Dutch use: (*a*) A contemptuous name for an Englishman. (*b*) An Englishman just out from home, a new-comer to the colony.

> Those of us [war correspondents] therefore, . . . come as mere *rooineks*, or "new chums" to use the Australian equivalent. . . . There is this to be said, however, in extenuation of our greenness to the business, that our early training . . . ought to make for efficiency.
>
> *F. Wilkinson*, in War's Brighter Side, v.

rook^2, *n.*—**To double rooks.** See ★*double.*

rookie, rooky^3 (rủk′i), *n.* A recruit. [British army slang.]

> So 'ark an' 'eed you rookies, which is always grumblin' sore,
> There's worser things than marchin' from Umballa to Cawnpore.
>
> *R. Kipling*, Route Marchin', st. 6.

room^1, *n.* **11.** (*b*) In *coal-mining*, a breast; a chamber.

> Off from the main or side headings of a hard-coal mine "breasts" or "chambers" are opened. In bituminous fields these are known as "*rooms.*" A tunnel or neck forty to sixty feet long may connect the *room* proper with the main passageway. Beyond the neck the chamber may broaden out to a width of thirty or more feet, continuing indefinitely. The coal between the *rooms* forms what is known as a "rib" or "pillar."
>
> *Sci. Amer.*, May 23, 1903, p. 392.

12. In *salt-making*, one of the large stationary pans in which the brine from a salt-well is placed to allow the water to evaporate. The brine goes first to a deep-room, about 12 to 14 inches deep; from that to a lime-room, about 6 inches deep; and from that to a salt-room, about 6 inches deep, from which it is harvested. These rooms are covered over by movable covers during rainy weather. *Sci. Amer. Sup.*, Oct. 3, 1903, p. 23198.

13. In *wood ship-building*, the empty space between two adjacent frames of a wooden ship.—**Room trader.** See *trader.*—**The room,** specifically, in New York, the stock-exchange: as, curb brokers are not allowed to trade in *the room.*—**Timber and room,** in *wood ship-building*, same as *room and space* (which see, under *room*^{1}).

room-work (röm′wėrk), *n.* In *coal-mining*, work in a room or breast. See ★*room*^{1}, *n.*, 11 (*b*).

roost-cock, *n.* **2.** A member of a legislative body who proposes a bill for the benefit of the legislators alone; also, the bill so proposed. [Colloq., U. S.]

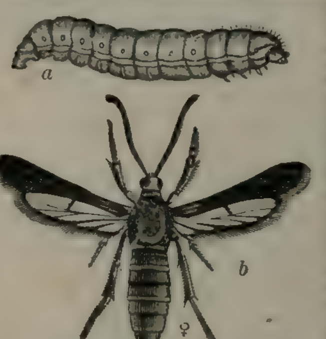
rooster, *n.* **3.** In *lumbering*, same as ★*gooseneck*, 4 (*a*).

rooster-fight (rös′tėr-fīt), *n.* A boys' sport in which the players slip a short bar just under the knees, and then, putting the arms under the bar, clasp the hands in front of the shins and hop about in this position, endeavoring to shoulder one another over.

root^1, *n.* **2.** (*l*) In *mech.*, the part of a gear-tooth where it joins the rim of the wheel; the base of a tooth.—**Absorbing root,** an aërial root which descends from the stem of some tropical root-climbers to the ground. Compare *anchoring* ★*root.*—**Aërating roots.** See ★*aërate.*—**Anchoring root,** an adventitious root on the stem of a root-climber, the office of which is merely to hold to the support. Compare *absorbing* ★*root.*—**Brace root,** one of the roots emitted in verticils from the lower nodes of the stalk of maize above the surface. Such roots often enter the soil and render some aid in holding the plant upright as well as in nutrition.—**Brinton root,** the black-root or Culver's-physic, *Leptandra Virginica.*—**Canada root.** Same as *pleurisy-root.*—**Coronal root,** one of the permanent subterranean roots of wheat, maize, and other monocotyledonous plants, thrown out in verticils from the basal nodes of the stem.—**Derris root,** the cortex of the root of *Deguelia elliptica*, used in the East Indies for killing fish in streams. See *Malayan* ★*fish-poison.*—**Double root.** (*b*) In *alg.*, either of two equal roots.—**Extraneous root,** in *alg.*, one which does not properly belong to the given equation.—**Multiple root,** in *alg.*, either of several equal roots.—**Permanent root,** specifically, one of the ordinary coronal roots of monocotyledons as opposed to their temporary roots.—**Pronic root,** in *math.*, a value for x in a pronic number.—**Residual root,** in *alg.*, the root of a residual quantity, as $(a-b)^{\frac{1}{2}}$.—**Root circle.** See ★*circle.*—**Root fallow.** See ★*fallow*^{2}.—**Root of a function,** in *math.*, the root of an equation obtained by equating that function to zero.—**Roots of unity,** roots of the equation $x^n = 1$.—**Root tone.** See ★*tone*^{1}.—**Root web-worm.** See ★*web-worm.*—**Seminal root.** Same as *temporary* ★*root.*—**Sweet root.** (*a*) See *sweetroot.* (*b*) The sweet-flag.—**Temporary root,** one of a small number of roots (in the wheat plant) put forth by monocotyledons in germination which disappear when the plant is established.—**Triple root,** in *alg.*, either of three equal roots.—**Vandal root,** the officinal valerian, *Valeriana officinalis.*

root^5 (röt or rủt), *v. i.* [Supposed to be a slang use of *root*^{2}, *v. i.*] To work hard for the success of some person or thing: as, to *root* for one's party (at an election); specifically, in *base-ball*, etc., to exert oneself for the success of one's side, usually by uproarious applause intended partly to disconcert the other side. [Slang.]

root-borer, *n.*—**Blackberry root-borer,** one of the giant root-borers, *Prionus laticollis*, a large, prionine, cerambycid beetle whose larva occasionally bores into the roots of blackberry. It also infests the roots of grape, cherry, oak, apple, and chestnut.—**Grape-vine root-borer,** the larva of an American sessiid moth, *Memthyrus polistiformis*. It lives exclusively underground and eats the bark and sap-wood of grape-roots.—**Oak root-borer,** the larva of an American cerambycid beetle, *Mallodon melanopus*, which bores the roots of live oaks in Florida and the Gulf States.—**Sweet-potato root-borer,** a brenthid beetle, *Cylas formicarius*, whose larvæ bore into the tubers of the sweet-potato plant. It has a tropical distribution, but occurs also in Louisiana and Texas.

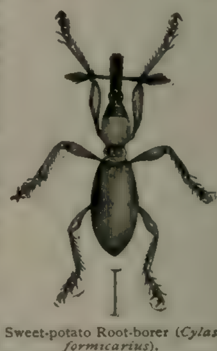


Grape-vine Root-borer (*Memthyrus polistiformis*). *a*, larva; *b*, female moth.

root-canal (röt′ka-nal″), *n.* A passage through the root of a tooth through which nerves and vessels pass to the pulp of the tooth.

root-circle (röt′sėr″kl), *n.* See ★*circle.*

root-climber (röt′klī″mėr), *n.* A liana which ascends by means of aërial roots or rootlets fixed to a support. See *absorbing* ★*root* and *anchoring* ★*root.*



Sweet-potato Root-borer (*Cylas formicarius*).

root-collar (röt′kol″är), *n.* That place at the base of a tree where the swelling, which is the direct result of the ramifications of the roots begins.

root-cutter (röt'kut″ėr), *n.* A modification of the feed-cutter, used to slice potatoes, carrots, and other roots intended as food for animals.

root-disease (röt'di-zēz″), *n.* A disease of the roots.—**Mulberry root-disease.** See ★*disease.*

root-disk (röt'disk), *n.* The radicle plate at the end of a crinoid column.

rooter^{3} (rö'tėr or rụ̈t'ėr), *n.* [*root*^{5}, *v.*, + *-er*^{1}.] One who roots for the success of his patron or his side; specifically, in *base-ball* and other outdoor contests, one who gives aid and encouragement to his side by applause and by shouting advice. [Slang.]

For the answer to this question, 20,000 *rooters* were on hand to bear the shocks of joy and pain promised by the importance of the occasion. *N. Y. Globe*, Oct. 14, 1905.

root-excretion (röt'eks-krē-shọn), *n.* Any substance given off by the root-hairs of growing plants, as carbon dioxid.

That these *root-excretions*, and particularly the acids, may be of service in dissolving and rendering more available various constituents of the soil is an obvious suggestion, and is borne out by Sachs' discovery of the corrosion of marble, and by Molisch's observations that living roots slowly corrode ivory if continuously kept in contact with it. *M. Ward*, Disease in Plants, p. 46.

rootey (rö'ti), *n.* Bread. [Slang.]

Fill mine! Mine too! (Smells like a bloomin' drain) . . .
Bully beef and *rooty*, and something 's give me a pain.
"*Mark Thyme*," in War's Brighter Side, p. 362.

And the 'umble loaf of "*rooty*" costs a tanner, or a bob.
R. Kipling, Prices in Bloomfontein.

root-facer (röt'fā″sėr), *n.* An instrument for smoothing off the surface of the root after the removal of the crown of a tooth.

root-filler (röt'fil″ėr), *n.* An instrument used for the insertion of a filling into a cavity in the root of a tooth.

root-fungus (röt'fung″gus), *n.* Any form of mycorrhiza growing in symbiotic association with the roots of plants.

In general, it may be said that all species devoid of root hairs, such as the orchids, the adder's tongue family, and saprophytes, possess such *root-fungi* (*mycorrhiza*). But the pines, and heaths, and very many others are more or less dependent on these fungi. *Plant World*, July, 1903, p. 154.

root-gall (röt'gâl), *n.* Same as *root-knot.*

root-louse, *n.* **Corn root-louse.** See ★*corn*^{1}.—**Root-louse syrphus-fly.** See ★*syrphus-fly.*—**Strawberry root-louse,** an American aphidid, *Aphis forbesi*, which frequently causes severe injury to the roots of strawberry-plants.

root-maggot (röt'mag″ọt), *n.* Any one of several species of dipterous larvæ which affect the roots of vegetables and other plants. Nearly all belong to the family *Anthomyiidæ.*

root-neck (röt'nek), *n.* The line of union of the root and stem of a plant.

root-nodule (röt'nod″ụ̄l), *n.* See ★*nodule.*

root-pole (röt'pōl), *n.* See ★*polarity*, 5 (*c*).

root-pruned (röt'prönd), *a.* Having been subjected to the operation of ★root-pruning (which see).

root-pruning (röt'prö″ning), *n.* In *hort.*, the pruning of the roots of a tree or shrub; in *agri.*, the cutting of the lateral roots of corn, cotton, etc., by the use of a knife or by close and deep cultivation when the crop is well established, on the theory that the growth is thereby thrown into the useful part. Such treatment has proved in general injurious to corn, but, in the far South, apparently benefits cotton by checking the growth of weeds.

root-rot (röt'rot), *n.* A disease which affects the roots of plants, causing decay and death. Fungi or bacteria are either the primary or the secondary cause of the disease. Unfavorable conditions of soil make plants more susceptible to it.

Root-rot is a common disease in damp, sour clay soils after a continuance of wet weather. *M. Ward*, Disease in Plants, p. 230.

Conifer root-rot, a disease which affects the pine, the fir, and other conifers in Europe: attributed to *Fomes annosus.* The root-rot of conifers in the United States is attributed to *Polyporus Schweinitzii.*—**Ozonium root-rot,** a disease which affects alfalfa, cotton, and a large number of cultivated and wild plants in the southwestern United States: attributed to the sterile fungus *Ozonium.*—**Root-rot of the beet,** a disease due to either *Rhizoctonia Betæ* or *Phoma Betæ.*—**Root-rot of the grape,** a disease due to either *Armillaria mellea* or *Dematophora necatrix.*—**Root-rot of tobacco, root-rot of the violet,** a disease due to *Thielaria basicola.*—**Southern root-rot.** Same as *Ozonium* ★*root-rot.*

root-sheath, *n.* **2.** In *bot.*, a spongy transformation of the many-layered epidermis of the aërial roots of many orchids and various aroids; the velamen radicum. *Strasburger*, Text-book of Bot., p. 113.

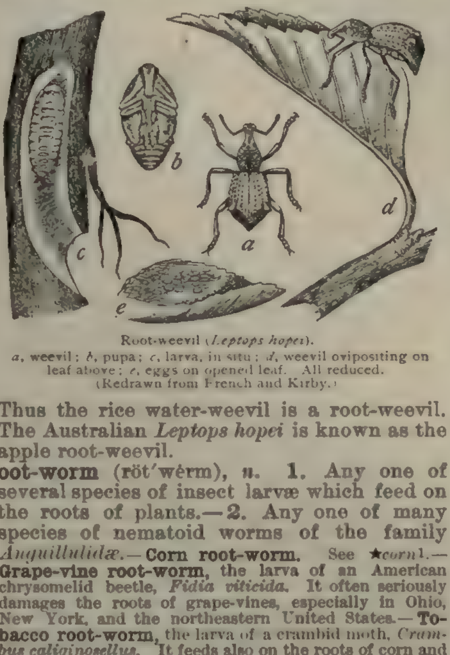
root-sucker (röt'suk″ėr), *n.* Same as *sprout*, 1 (*b*).

root-symbiosis (röt'sim-bi-ō″sis), *n.* The intimate and mutually beneficial relation existing between certain bacteria and fungi and the roots of the higher plants.

root-tubercle (röt'tū″bėr-kl), *n.* A small tuber-like growth produced upon the roots of certain plants, especially legumes, by bacteria which live in a symbiotic relation with the plants and enable them to assimilate free nitrogen.

Hiltner, after a series of experiments, states that first-year alders without tubercles do not thrive in soil free from nitrogen, nor do they take up nitrogen from the atmosphere; when, however, provided with *root-tubercles* they assimilate nitrogen. *Tubeuf*, Diseases of Plants, p. 101.

root-weevil (röt'wē″vl), *n.* Any curculionid beetle whose larvæ live at the roots of plants.



Root-weevil (*Leptops hopei*).
a, weevil; *b*, pupa; *c*, larva, in situ; *d*, weevil ovipositing on leaf above; *e*, eggs on opened leaf. All reduced.
(Redrawn from French and Kirby.)

Thus the rice water-weevil is a root-weevil. The Australian *Leptops hopei* is known as the apple root-weevil.

root-worm (röt'wėrm), *n.* **1.** Any one of several species of insect larvæ which feed on the roots of plants.—**2.** Any one of many species of nematoid worms of the family *Anguillulidæ.*—**Corn root-worm.** See ★*corn*^{1}.—**Grape-vine root-worm,** the larva of an American chrysomelid beetle, *Fidia viticida.* It often seriously damages the roots of grape-vines, especially in Ohio, New York, and the northeastern United States.—**Tobacco root-worm,** the larva of a crambid moth, *Crambus caliginosellus.* It feeds also on the roots of corn and other grain. Same as ★*stalk-worm.*

ropable, ropeable (rō'pa-bl), *a.* **1.** In Australia, uncontrollable; wild; untamable unless roped or lassoed: said of cattle and sometimes of horses. Also used figuratively.

The service has shown itself so '*ropeable*' heretofore that one experiences now a kind of chastened satisfaction in seeing it roped and dragged captive at Sir Frederick's saddle-bow. *The Argus*, Oct. 10, 1891, p. 13, quoted in E. E. Morris, [Austral English.

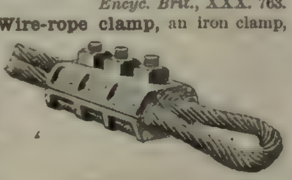
2. Intractable; obstinate; out of temper. [Australian slang.]

rope^{1}, *n.* **5.** The basal anchoring tuft of glassy fibers which occurs in the hexactinellid sponges.—**Driving-rope,** a rope used as a belt to transmit power from one pulley to another; specifically, the tight side of the rope or that part in which the tension is the greater.—**Endless-rope system,** any hauling or driving device in which a continuous or endless rope is the transmitting element; specifically: (*a*) A rope-drive, in which a continuous rope runs in grooves in the faces of the driver and the driven wheel, making a number of traverses across the space between the two wheels, and being kept at uniform tension by a straining pulley at the end of the slack bights, held to its work by weights. (*b*) In mine- or plane-haulage, a continuous rope, usually of wire (driven from a conveniently placed drum) to which, by special grip appliances, the cars to be moved can be attached without stopping the motion of the rope.—**Grapnel-rope,** a rope fastened to a grapnel- or grappling-iron; a grappling-line.—**Locked-coil rope.** Same as *locked-wire rope.*—**Outside the ropes,** said of one who is in the position of an outsider, or is ignorant of the matter in hand. [Slang.]—**Over-rope haulage,** in *mining*, endless-rope haulage in which the rope travels above the mine-cars.

rope-boring (rōp'bōr″ing), *n.* A method of well-drilling in which the drill, suspended on a rope, is drawn up a short distance and then allowed to drop back, thus striking a blow.

In Europe rods, either of iron or wood, seem to be preferred, though *rope boring* is by no means unknown. *Encyc. Brit.*, XXX. 763.

rope-clamp, *n.*—**Wire-rope clamp,** an iron clamp, held together by bolts and nuts, used to hold the end of a wire rope to form a loop or ring. It is used to secure ends of derrick guy-ropes and wire standing rigging.



Wire-rope Clamp.

rope-knife (rōp'nīf), *n.* A tool used by the drillers of oil-wells to cut the rope when the tool at the lower end becomes fast in the well.

rope-machine, *n.* **4.** A machine for twisting hay-rope used in a foundry.

roper, *n.* **5.** One who decoys, inveigles, or 'ropes' people in; a barker. [U. S.]

The *ropers* for gambling-houses—one of the curses of New Orleans—haunt each conspicuous corner. *Edward King*, Great South, p. 61.

rope-race (rōp'rās), *n.* **1.** The groove or track in which a rope runs in passing through a pulley-block or similar device.—**2.** The passageway through which the ropes of a rope-drive pass. *Nasmith*, Cotton Spinning, p. 400.

rope-reel (rōp'rēl), *n.* A frame on which a rope can be wound: usually mounted on a shaft.

rope-rider (rōp'rī″dėr), *n.* In *mining*, a man who has charge of a cable-train for bringing coal from a mine: so called because he frequently rides on the ring connecting the cable to the train.

In soft-coal mines the man in charge of the cable train is called a "*rope rider.*" In bringing his cars out of the mine he sits upon the ring which connects the cable with the train. *Sci. Amer.*, May 23, 1903, p. 392.

rope-spear (rōp'spēr), *n.* A tool used by the drillers of oil-wells to catch the loose end of the rope when it has parted in the well.

rope-stratus (rōp'strā″tus), *n.*; pl. *rope-strati* (-tī). A narrow belt of alto-stratus having striæ which suggest a twisted rope. Such a rope-stratus sometimes surrounds the greater portion of the cumulus cloud, being formed by the twisted currents of air flowing from the cloud below and toward the cloud above.

rope-wheel (rōp'hwēl), *n.* **1.** A pulley-sheave; a sheave or grooved wheel placed to guide a rope.—**2.** A grooved wheel used as a pulley when a rope is used in place of a leather belt.

rope-wire (rōp'wīr), *n.* Wire, usually of iron or soft steel, galvanized for twisting or braiding into rope.

rope-work, *n.* **2.** A netting or fringe made of strands of manila rope or cotton cords.

roping-pole (rō'ping-pōl), *n.* A long pole used by cattlemen in Australia for casting a rope over an animal's head. *E. E. Morris*, Austral English.

roque (rōk), *n.* [An arbitrary reduction of (*c*)*roque*(*t*).] An American game, a modification of croquet. It differs in many details from the parent game; principally, however, in the more perfect surface upon which it is played, the addition of a boundary used somewhat as a cushion in billiards, more perfect balls and clubs, and a more correct setting as well as a narrowing of the wickets.

At a meeting of the National Croquet Association, at Norwich, Conn., in August, 1899, this entire question, through a wisely selected and efficient committee, was brought to a focus and the name of this game as modernly played, with its beautiful courts, its responsive timber borders, its narrow steel arches and solid rubber balls, was changed simply by dropping off the initial and the final letter of the old word, leaving *Roque*, a word of one syllable, to be the name for the improved game. *Spalding*, Roque Guide, p. 6.

rorarii (rō-rā'ri-ī), *n. pl.* [L., appar. pl. of **rorarius*, adj., 'of the dew,' < *ros* (*ror-*), dew. The name was explained as meaning those who engaged in battle before the main fighters came on, as dew precedes the rain.] In *Rom. antiq.*, the lowest property class in the Roman legion, armed only with dart and sling.

Rorate Sunday. See ★*Sunday.*

rosa Americana (rō'zạ̈ ạ-mer-i-kā'nạ̈). [NL., 'American rose.'] A copper coinage of three denominations, 2*d.*, 1*d.*, and $\frac{1}{2}$*d.*, struck by William Wood for the American colonies, 1717–33.

rosace (rọ̄-zäs'), *n.* [F., < NL. *rosaceus*, of the nature of a rose. See *rosaceous.*] Any ornamental circular member of a building, especially of a highly decorative character, as a rondel filled with sculpture.

rosacea (rọ̄-zā'sẹ̄-ạ̈), *n.* Same as *acne rosacea.* See *acne.*

rosacic (rọ̄-zā'sik), *a.* [NL. *rosac*(*eus*), rosaceous, + *-ic.*] Red-colored.—**Rosacic acid,** the name given by Proust to a bright red substance obtained from the latericeous sediment deposited from the urine of fever patients.

rosa-del-monte (rō″sạ̈-del-mon'tā), *n.* [Sp., rose of the mountain.] In the West Indies, a small, leguminous tree, *Brownæa Rosa-del-monte*, often cultivated for its handsome foliage and clusters of showy, crimson flowers. In northern South America the name is applied to other species of the genus, especially to *Brownæa grandiceps*.

> Now turn homewards, past the *Rosa-del-monte* bush, . . . covered with crimson roses, full of long silky crimson stamens. *Kingsley*, At Last, v.

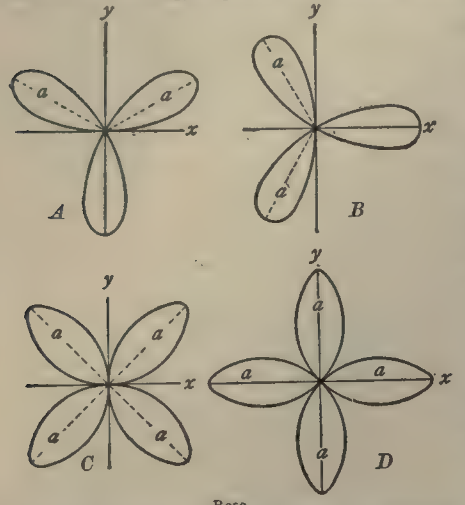
rosalgar (rō-sal′gär), *n.* Realgar; arsenic disulphid.

rosalia, *n.* 4. Scarlet fever.

rosary, *n.*—**Lesser rosary,** five decads of the fifteen composing the entire rosary.—**Rachitic rosary.** See ★*beaded ribs.*

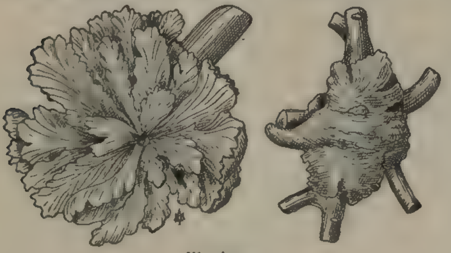
rosary-shell, *n.* 2. The small black shell of a marine mollusk, *Nerita atrata,* used for necklaces, bracelets, and rosaries. [Australia.]

rose¹. **I.** *n.* 18. In *geom.*, certain transcendental curves having, in polar coördinates, equations of the form $\rho = a \cos b\theta$.—**Andes rose,** any one of several species of the genus *Befaria* found in the Andes of Peru and Ecuador.—**Aniline rose,** an old name for safranine.—**Antwerp rose.** Same as *Brabant rose.* See *rose*1, 16.—**Australian rose,** a shrub of the rue family, *Boronia serrulata,* having bright green leaves and very fragrant rose-colored flowers.—**Carolina rose,** the swamp-rose, *Rosa Carolina.*—**Diamine rose.** Same as *diamine* ★*pink.*—**Honey of rose,** clarified honey containing 12 per cent. of fluid extract of rose; mel rosæ.—**Leaf-blotch of rose.** See ★*leaf-blotch.*—**Naphthalene rose.** Same as *magdala red* (which see, under *red*1).—**Native rose.** Same as ★*Bauera,* 2.—**Rose bud-worm.** See ★*bud-worm.*—**Rose carné.** [F.] Same as *rose Pompadour.*—**Rose leaf-beetle.** See ★*leaf-beetle.*—**Rose leaf-hopper.** See ★*leaf-hopper.*—**Rose leaf-spot.** See ★*leaf-spot.*—**Rose of Crete,** the Cretan rock-rose, *Cistus Creticus.* See ★*rock-rose* and also *Cistus,* 1.—**Rose Sunday.** See ★*Sunday.*—**Sensitive rose,** the sensitive brier, *Leptoglottis uncinata.* See *Schrankia.*—**Siberian rose.** See *snow-*★*rose.*—**Snow-rose,** *Rhododendron chrysanthum,* a plant of the arctic regions about a foot high with golden-yellow flowers, and leaves having narcotic and diuretic properties. Also called *Siberian rose.*—**Syrup of rose.** See ★*syrup.*—**Wood-rose,** a remarkable vegetable excrescence, resembling a flower with radiating corrugated petals carved from wood, caused by the union of the saucer-shaped placenta-like base of certain parasitic plants of the mistletoe family with the foster-branch of the host and its persistence after the death of the plant. In Mexico called *rosa de palo,* or *rosa de madera.*



Rose.

A, three-leaved rose of equation $\rho = a \sin 3\theta$; *B*, three-leaved rose of equation $\rho = a \cos 3\theta$; *C*, four-leaved rose of equation $\rho = a \sin 2\theta$; *D*, four-leaved rose of equation $\rho = a \cos 2\theta$. In all, x is horizontal axis, y vertical axis, a radius-vector whose length is the parameter a in the equations.



Wood-rose.

II. *a.*—**Rose vitriol.** Same as *bieberite.*

rose-apple. 2. In Australia, the sweet plum, *Rancooria cerasifera.* See *Owenia,* 1.

rose-bay, *n.*—**East Indian rose-bay,** the crape jasmine, *Tabernæmontana coronaria.* See ★*jasmine.*

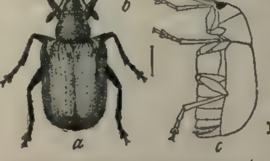
ose-bowl (rōz′bōl), *n.* A globular or bowl-shaped vessel of pottery or glass designed to old cut roses or other flowers.

se-box² (rōz′boks), *n.* A perforated plate or x which is fitted over the end of a suction-pipe in order to prevent solid matter from being drawn into a ship's pump; or an attachment by which a stream of water is converted into spray.

rose-bush. 2. In Australia, a small tree of the anona family, *Eupomatia laurina,* yielding a soft, coarse-grained, yellowish-brown wood.

rose-chestnut (rōz′ches″nut), *n.* A tree of the gamboge family, *Mesua ferrea.* See *Mesua* and *nagkassar.* Also called *Indian rose-chestnut.*

rose-curculio (rōz′kėr-kū″li-ō), *n.* An American curculionid beetle, *Rhynchites bicolor,* which punctures the flower-buds of the rose as well as the bud-stalks and the ripe fruit of the raspberry and blackberry. It is found from New York to California.



Rose-curculio (*Rhynchites bicolor*).

a, beetle; *c*, same in profile: *b*, claw; *a*, *c*, enlarged; *b*, more enlarged. (Chittenden, U. S. D. A.)

rose-end (rōz′end), *n.* A rose (see *rose*1, 10); a strainer; a foot-valve.

rose-gall, *n.*—**Mossy rose-gall,** a polythalamous cynipid gall formed on the stems of sweetbrier. The mass of cells is covered with reddish or green filaments, making it appear mossy.

Rose-geranium oil. See *geranium-*★*oil.*

rose-head (rōz′hed), *n.* 1. A sprinkler nozle; a nozle having many small openings for making a spray; a rose.—2. A head, on a nail or spike, having corrugations or facets; an enlarged end on a mill, or milling-cutter.—3. A nail, etc., having a head with facets or cuts; a rose-nail.

roseine, *n.*—**Acid-roseine.** Same as *acid-magenta.*

roseite (róz′īt), *n.* [Named after its finder, Dr. *Rose.*] An altered mica from Chester county, Pennsylvania. It is soft like talc, and of a pearly luster and brownish-yellow color.

rose-jet (rōz′jet), *n.* 1. A spray; the water-jet from a rose-head.—2. A rose-head; a rose.

rose-laurel (rōz′lâ″rel), *n.* See ★*laurel.*

Rosellinia (rō-ze-lin′i-ä), *n.* [NL. (De Notaris, 1844), < Dr. Ferdinando Pio *Rosellini,* an Italian scientist.] A large genus of pyrenomycetous fungi having mostly carbonaceous superficial perithecia, usually growing upon a subiculum of dark-colored hyphæ. The spores are unicellular and dark brown. About 175 species have been described. They occur chiefly on decaying wood. *R. aquila,* a common cosmopolitan species, is the type of the genus.

rosemary, *n.* 2. In Australia, any one of several species of the genus *Westringia,* belonging to the mint family, especially *W. Dampieri,* whose resemblance to the rosemary of Europe led Dampier to give its name to Rosemary Island in the Dampier archipelago.—**Golden rosemary,** in Tasmania, a plant of the bean family, *Callistachys elliptica.*—**Sand-hill rosemary,** *Ceratiola ericoides,* of the crowberry family, a small, erect, heath-like evergreen shrub of dry pinelands in the southeastern United States from South Carolina to Florida and Alabama. It bears whorls of narrow revolute and almost tubular leaves and reddish diœcious flowers sessile and whorled in the axils.—**Victorian rosemary,** *Westringia rosmariniformis.* See *Westringia.*—**Wild rosemary,** in Queensland, a slender shrub, *Cassinia lævis,* of the aster family.

rose-mildew (rōz′mil″dū), *n.* See ★*mildew.*

rose-moss (rōz′môs), *n.* Same as *Kentucky* ★*moss.*

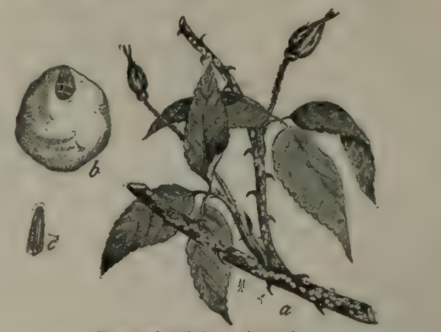
Rosenbergia (rō-zen-bėr′gi-ä), *n.* [NL. (Oersted, 1856), named in honor of Caroline *Rosenberg* (1810–1902), a native of Schleswig-Holstein and a student of the Danish flora.] A genus of plants of the family *Polemoniaceæ.* See *Cobæa.* The best known species is *R. scandens* (*Cobæa scandens* of Cavanilles), a tender perennial climbing by tendrils, usually treated in gardens as an annual. It is one of the popular climbers, being a rapid grower and bearing large bell-shaped violet or greenish-purple flowers.

roseo-. In *chem.*, a prefix used to distinguish a certain class of cobalt-ammine salts, which possess a characteristic rose-red color.

rose-reamer (rōz′rē″mėr), *n.* A mill, or revolving cutter, which has an enlarged, or rose, end, and cuts on its face.

rose-rust (rōz′rust), *n.* See ★*rust*1.

rose-scale (rōz′skāl), *n.* A diaspine scale-insect, *Aulacaspis rosæ,* of cosmopolitan distribution, occurring abundantly on the canes of the rose, raspberry, and blackberry, and also found on the strawberry, myrtle, pear, ailantus, cycas, mango, and other plants.



Rose-scale (*Aulacaspis rosæ*).

a, infested branch, reduced; *b*, female; *c*, male: both enlarged. (Comstock, U. S. D. A.)

rosette, *n.* 2. (*d*) (2) A contagious disease of peach-trees, of unknown cause, characterized by a dwarfing of the foliage and shoots and the formation of them into compact tufts. (*e*) In *phytogeog.*, same as ★*rosette-plant.* 8. In *elect.*: (*a*) A cluster of glow-lamps or of sockets arranged for the mounting of such lamps. *Elect. World and Engin.*, May 7, 1904, p. 887. (*b*) An electrical fixture used when a branch is to be taken from the main wires. It consists, usually, of a porcelain base, which is fastened to a ceiling or other support, and a porcelain cover through a hole in which the branch wires run. Removing the cover disconnects the branch wires from the mains.—**Leaf rosette,** a cluster of usually radical leaves spread out upon or near the ground in the form of a rosette. It generally consists of several contracted whorls of leaves having the same phyllotaxy as those of the stem.

rosette-form (rọ-zet′fôrm), *n.* See ★*rosette-plant.*

rosette-machine (rọ-zet′mạ-shēn″), *n.* 1. A machine for carving rosettes in wooden moldings, etc.—2. In *ceramics,* a press fitted for molding the porcelain for rosettes.

rosette-plant (rọ-zet′plant), *n.* In *phytogeog.*, a plant of a vegetation-form characterized by the clustering of the leaves (of all or of many) at the surface of the ground or at the summit of a caudex. Rosette-plants are most often perennials and are either acaulescent (dandelion, many violets), then having all or most of their leaves in the rosette; or caulescent (many saxifrages, erigerons, thistles, etc.), then sending up a leafy stem, the basal rosette serving the plant early in the season, or often the previous autumn, and perishing as the plant matures. The rosette-form is strongly developed in alpine regions, the tap-root here becoming very strong, but is common also at low altitudes. Rosettes are distinguished by F. E. Clements as *close* (the leaves with short petioles and dense) or *open* (the leaves longer-petioled, the cluster thus loose and less regular).

Rose-water dish. (*c*) In English silver, a shallow platter in which rose-water was poured.

rose-winged (rōz′wingd), *a.* Having a number of white-tipped feathers near the bend of the wing, the markings being arranged in a somewhat circular shape: used in describing pigeons.

rosewood, *n.* 4. In Australia, the timber of any one of four species of trees: (*a*) *Acacia glaucescens,* called also *rosewood acacia, kaareewan,* and *myall;* (*b*) *Stenochilus Mitchelli* (*Eremophila Mitchelli* of Bentham), belonging to the family *Myoporaceæ* and often called sandalwood on account of its very fragrant wood; (*c*) *Dysoxylum Fraseranum* of the family *Meliaceæ;* and (*d*) *Synoum glandulosum,* the fresh wood of which is of a deep red color and emits an odor like that of the common rose.—**Guiana rosewood,** the pinkwood, *Dicypellium caryophyllatum.* See *pinkwood* and *clove cassia* (under *cassia*).—**Polynesian rosewood.** See ★*banago,* ★*bulakan,* and ★*milo.*

Rosh hodesh (rōsh ċhō′desh), *n.* [Heb. *rōsh,* head, beginning, + *ḥōdesh,* new (moon), a month.] The first day of the Jewish month which begins with the new moon. On the first day (some times two days) of the month the ritual is distinguished by additional prayers including *hallel* (which see). See also *Jewish* ★*festivals.*

rosindol (rọ-zin′dol), *n.* [*rose*1 + *indol.*] In *organic chem.*, the general name given to a class of red dyes prepared by the action of benzoyl chlorid on compounds of the indol series.

rosindone (rọ-zin′dōn), *n.* [*rosind*(*ol*) + *-one.*] A red crystalline dyestuff, $C_{22}H_{14}ON_2$, made by heating rosinduline to 178° C. with concentrated hydrochloric acid. By oxidation it yields rosindonic acid. It melts at 261–262° C. Also called *rosindulone.*

rosindonic (rō-zin-don′ik), *a.* [*rosindon*(*e*) + *-ic.*] Derived from rosindone.—**Rosindonic acid,** a crystalline acid, $C_{22}H_{14}O_3N_2$, made by oxidizing rosindone with chromic anhydrid dissolved in glacial acetic acid. It melts at 209° C.

rosinduline (rọ̄-zin′dụ̄-lin), *n.* [*rosind*(*ol*) + *-ule* + *-ine*².] A reddish-brown crystalline base, $C_{22}H_{15}N_3$, made synthetically. When heated to 170° C. with concentrated hydrochloric acid it yields ammonia and rosindone. It absorbs carbon dioxid readily and melts at 198–199° C.

rosindulone (rọ̄-zin′dụ̄-lōn), *n.* [*rosind*(*ol*) + *-ule* + *-one.*] Same as ★*rosindone.*

rosin-grease (roz′in-grēs), *n.* A trade-name of the product obtained by mixing rosin-oil with milk of lime. It is a sticky, pasty material, used as a cheap lubricant and in the manufacture of printers' ink.

rosite¹ (rō′zīt), *n.* [In def. 1, Sw. *rosit* (Svanberg, 1840), < L. *rosa*, rose, + *-ites*, E. *-ite*².] 1. A silicious mineral related to amphibole, perhaps an altered pargasite.—2. A rose-red coloring material extracted from the sediment of new red wines. In the sediment of old wines it is replaced by pourprite.

rosite² (rō′zīt), *n.* [F. *rosite* (Huot, 1841), named after Professor G. *Rose*, who analyzed it.] A sulphid of antimony and copper, now known as *chalcostibite.*

rosocyanin (rō-zọ̄-sī′ạ-nin), *n.* [L. *rosa*, rose (red), + E. *cyanin.*] A red coloring-matter, $C_{10}H_{14}O_4$, formed by the action of boric and sulphuric acids on curcumin. It is a monobasic acid isomeric with curcumin.

rosolite (rō′zọ̄-līt), *n.* [L. *rosa*, rose, + Gr. *λίθος*, stone.] A name given by Kunz to the rose-colored variety of grossular garnet found at Xaloxtoc, Mexico.

rosophenine (rō-zọ̄-fē′nin), *n.* Same as ★*dianthine.*

rosse (ros), *a.* [F., adj. use of *rosse*, a (good-for-nothing) horse, < G. *ross*, a horse.] Characterized by a brutal or cynical disregard of conventionalities or propriety. [French literary slang.]

> The aristocratic salon has dwindled into a tradition. The young men . . . have not the leisure their elders had for the arts and graces of life. The *rosse* literature has spoiled the traditions of the Faubourg for us. . . . The salon is all very well, so are the songs of Montmartre, the Théâtre *Rosse*, but there is just one little point on which the Frenchman is in no mood to blaguer and that is his wife's fidelity.
>
> *Hannah Lynch*, French Life in Town and Country, x.

rosser (ros′ėr), *n.* [*ross*¹ + *-er*¹.] In *lumbering*, one who barks and smooths the side of a log, in order that it may slide more easily. Also called *log-fixer, scalpẹr, slipper.*

rosserie (ros-rē′), *n.* [F. See ★*rosse.*] Cynical disregard of conventionalities and propriety. See the extract and ★*rosse.* [French literary slang.]

> But since no movement ever stops half-way, but continues naturally until it reaches its extreme limit, this tendency [idealism] went farther than M. Renan's idealism, and passed on into mysticism; though this movement, as we look at it now, seems to be split up into singularly various elements, for together with the existence of symbolism and mysticism, incredulity and sensualism have survived, and a brutally cynical element has appeared which has been christened "*rosserie.*"
>
> *Encyc. Brit.*, XXVIII. 496.

rösslerite, *n.* See *roesslerite.*

rostellum, *n.* 2. (*b*) The combined mouth-parts of the true lice, of the family *Pediculidæ.*

rosthornite (ros′tôr-nīt), *n.* [G. **rosthornit*, < *rost* = E. *rust*, + *horn* = E. *horn* + *-it* = E. *-ite*².] A brown mineral resin, $C_{24}H_{40}O$, occurring in lenticular masses in coal in Carinthia.

rostral, *a.*—**Rostral plate.** See ★*plate.*

II. *n.* A scale covering the end of the nose in reptiles; the rostral shield. *Proc. Zool. Soc. London*, 1903, p. 125.

rostrolateralia (ros-trọ̄-lat-ẹ-rā′li-ạ̈), *n. pl.* [NL., < *rostrum* + *laterale*, pl. *lateralia.*] In the structure of the capitulum of the *Balanidæ* or acorn-barnacles, the accessory plates inserted between the lateralia near the rostrum. See ★*lateralia.*

Rosy dryocampa, an American ceratocampid moth, *Anisota rubicunda* (formerly placed in *Dryocampa*), whose wings are yellowish, marked and suffused with a rose-pink. Its larva, known as the green-striped maple-worm, feeds on the foliage of the maple. See *Anisota*, with cut.

rot, *v.* I. *intrans.* 5. To 'make fun'; fool; talk nonsense. [Slang.]

> Oh, all right; go ahead! I thought you were only *rotting.*
>
> *E. Nesbit*, the Wouldbegoods, p. 182.

6. To fail successively at batting: said of a cricket eleven. [Slang.]

II. *trans.* 3. To chaff; make fun of. [Slang.]

> "He behaves like a sulky child and ought to be *rotted* most unmercifully," she apologises.
>
> *Barry Pain*, The One Before, v.

rot, *n.* 4. In *cricket*, the failure of several batsmen on a side. [Slang.]—**Barcoo rot.** Same as *Barcoo* ★*disease.*—**Black rot.** (*a*) See *rot*, 2. (*b*) See ★*black.* (*c*) A name of certain plant-diseases of a bacterial or fungous origin, characterized by decay and blackening of the tissues. The following are the most important: *black rot of the apple*, caused by *Sphæropsis Malorum*; *black rot of the cabbage*, due to *Pseudomonas campestris*; *black rot of the grape*, caused by *Guignardia Bidwellii*; *black rot of the pear* and *quince*, caused by *Sphæropsis Malorum*; *black rot of the sweet-potato*, caused by *Ceratocystis fimbriata* (also called *black-shank*); and *black rot of the tomato*, caused by *Macrosporium Tomato.*—**Brown rot,** a fungous disease of fruits, especially apple, peach, plum, and cherry, caused by *Monilia fructigena* and *M. cinerea.*—**Brown rot of the cabbage.** Same as *black rot of the cabbage.* See *black* ★*rot* (*c*).—**Brown rot of the potato.** Same as ★*bacteriosis of the potato.*—**Brown rot of the spruce,** a decay of the wood of spruce caused by *Polyporus sulphureus.*—**Brown rot of the turnip.** Same as *black rot of the cabbage.* See *black* ★*rot* (*c*).—**Carrot-rot,** a decay of carrots attributed to the fungus *Phoma sanguinolenta.*—**Cocoanut-palm rot,** a disease of the cocoanut-palm, probably due to bacteria, which attacks the terminal bud of the tree.—**Collar-rot,** a disease of undetermined cause attacking fruit-trees near the surface of the soil. *Rural New Yorker*, Feb. 7, 1903, p. 94.—**Cotton-boll rot,** a decay of cotton-bolls which has been attributed to *Bacillus gossypinus.* Also called *boll-rot.*—**Dry rot,** a decay of conifers, especially of hemlock, larch, pine, and spruce, caused by the fungus *Trametes Pini.* Also called *red rot.* The dry rot which affects pear-trees is attributed to the fungus *Thelephora pedicellata*, that of the potato to *Fusarium Solani*, of the sweet-potato to *Phoma Batatæ*, and of the turnip to *Phoma Brassicæ.* See also ★*dry-rot*, 1.—**Egg-plant rot,** a decay of the fruit of the egg-plant attributed to *Penicillium.*—**Foot-rot.** See ★*foot-rot.*—**Fruit-rot,** a decay of fruit, especially of the peach, caused by the fungus *Sclerotinia fructigena.* See *fruit-*★*mold* and *peach-blight.*—**Potters' rot.** Same as ★*potters' asthma.*—**Red rot.** See *dry* ★*rot.*—**Red rot of oak,** a fungous disease, produced by *Polyporus sulphureus*, which causes the rot of oaks as well as of a considerable number of other trees.—**Ripe rot,** a decay of fruits, especially of the apple, grape, and quince, caused by the fungus *Glœosporium fructigenum.* Also, in the case of the apple and quince, called *anthracnose* and *bitter rot.*—**Salsify-rot,** a bacterial decay of salsify.—**Seedling rot,** a disease which attacks the stems of young egg-plants: due to the fungus *Phoma Solani.*—**Stem rot.** See ★*stem-rot.*—**Tomato-rot.** Same as *black* ★*rot of tomato.*—**White rot.** (*b*) A fungous disease affecting the trunks of ash, juniper, oak, and other trees; also a disease of the grape. The white rot of ash is due to *Polyporus Fraxinophilus*, that of juniper to *Polyporus Juniperinus*, and that of oak to *Polyporus igniarius.* See *white* ★*rot of oak.*—**White rot of oak,** a disease, produced by *Polyporus igniarius*, which attacks the oak, hickory, willow, and other trees.

rot (rot), *exclam.* [*rot*, *n.*] Humbug! Nonsense! Stuff! [Slang.]

> "Harold 's asleep," I said; "it seems rather a shame—"
> "Oh, *rot!*" said my brother; "he 's the youngest, and he 's got to do as he 's told!"
>
> *K. Grahame*, Golden Age, p. 94.

rotameter (rọ̄-tam′e-tėr), *n.* [L. *rota*, a wheel, + Gr. *μέτρον*, measure.] A measuring-device consisting of a small measuring-wheel partially inclosed in a case resembling that of a watch and having a dial with hands for indicating in feet and inches the distance traversed by the wheel. It measures up to twenty-five feet. It can also be used, in connection with a watch, to measure the speed of moving surfaces, as in a metal-planer or other machine. A similar measure, for use in measuring plans, drawings, and irregular surfaces, is called a *pocket rotary measure.*

rotary, *a.*—**Rotary converter.** See ★*converter*, 3.—**Rotary field.** See ★*field.*—**Rotary oven.** (*b*) See ★*oven.*—**Rotary planer, shaper, speed, stripper, transformer.** See ★*planer*, etc.

II. *n.* In *elect.*, a rotary converter.

> A three-phase 120-cycle alternator driven by an inverted *rotary* used as a motor and itself capable of giving a three-phase 60-cycle current. *Science*, June 24, 1904, p. 945.

rotation, *n.* 4. In *forestry*, the period represented by the age of a forest, or a part of a forest, at the time when it is cut, or intended to be cut.—**Carrington's law of solar rotation.** See ★*law*¹. **Financial rotation,** in *forestry*, that rotation under which a forest yields the highest net interest on its capital value, calculating at compound interest.—**Income rotation,** in *forestry*, that rotation under which a forest yields the highest net return, calculating without interest.—**Left-handed rotation,** rotation in the opposite direction to that of a right-handed screw or to that of the hands of a clock when viewed from in front; levogyral rotation.—**Moment of rotation.** See ★*moment.*—**Period of rotation,** the time of rotation of a heavenly body around its axis.—**Right-handed rotation,** rotation in the direction of a right-handed screw; clockwise rotation; dextrogyral rotation.—**Simple rotation,** the motion of a body which revolves about a fixed axis; a pure rotation without any translational component.—**Specific rotation,** in *optics*, the angle through which the plane of polarization of light is rotated by a column of liquid 10 centimeters long, when each cubic centimeter of the liquid contains in solution one gram of the optically active substance the specific rotation of which is to be measured.—**Technical rotation,** in *forestry*, that rotation under which a forest yields the material most suitable for a certain purpose.—**Volume rotation,** in *forestry*, that rotation under which a forest yields the greatest quantity of material.

rotational, *a.* 2. In *hydrodynam.*: (*a*) Having vortex motion. (*b*) Having rotation in the sense of curl.—**Rotational coefficient,** the rotatory power, a constant in the expression of the transverse electromotive force in the Hall effect.—**Rotational elasticity.** See ★*elasticity.*—**Rotational resistance.** See ★*resistance.*

rotation-center (rọ̄-tā′shọn-sen″tėr), *n.* The point about which a rotation gives the same result as any given sliding of a polygon in a plane.

rotation-chair (rọ̄-tā′shọn-chãr), *n.* In *exper. psychol.*, a chair so constructed that the subject, seated in it, can be rotated at various rates of speed without appreciable noise or jar. The chair is sometimes made in such a way that it can be extended; back, seat, and front then lie in one plane, and the apparatus forms a ★rotation-table (which see). Further, the seat may be so hung that chair or table can be tilted back and forth, as well as rotated; the apparatus then becomes a combination rotation-chair, tilt-chair, rotation-table, and tilt-table. In all these forms it is employed for the study of the kinesthetic and static senses.

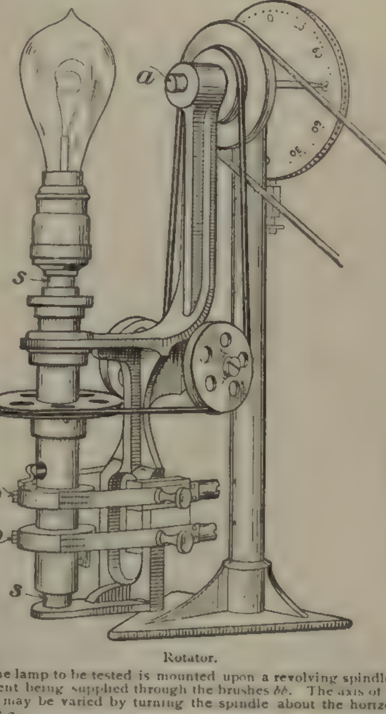
rotation-speed (rọ̄-tā′shọn-spēd), *n.* The speed of a revolving body, as a wheel, expressed in terms of the number of turns in a unit of time.

rotation-table (rọ̄-tā′shọn-tā″bl), *n.* In *exper. psychol.*, a long table so constructed that the subject, extended at full length, can be rotated at varying rates of speed without appreciable noise or jar: used in the study of the kinesthetic and static senses. *E. C. Sanford*, Exper. Psychol., I. 368.

rotativism (rō-tā′tiv-izm), *n.* [*rotative* + *-ism.*] Rotation; the state of being rotative: specifically, in Portuguese politics. See the extract.

> The history of the crisis which ended in the tragedy dates back to last May, when King Carlos dissolved the Chamber and conferred dictatorial powers on Premier Franco. This step was taken by the King as parliamentary government had come to a deadlock and the political parties were mainly interested in securing official spoils. Each party held office by arrangement alternately. The arrangement was known as *rotativism.*
>
> *N. Y. Sun*, Feb. 3, 1908.

rotator, *n.* 4. In *photometry*, a mounting for an incandescent lamp so constructed that the lamp may be given a rapid rotation about its polar axis. By means of such a device the mean horizontal intensity of the lamp may be determined from a single photometric setting.—5. In *math.*, a quantity having magnitude, direction, and position; a rotor.—**Rotatores capitis,** in *Coleoptera*, two flat muscles, one having its origin on the side of the antefurca and the other on the posterior jugular plate. They are inserted on the lateral



Rotator.

The lamp to be tested is mounted upon a revolving spindle, *ss*, current being supplied through the brushes *bb*. The axis of rotation may be varied by turning the spindle about the horizontal shaft *a*.

margin of the occipital foramen.—**Rotatores prothoracis**, in *Coleoptera*, two large muscles having their origin on the posterior part of the pronotum and inserted on the integument between the prothorax and mesothorax and also on the anterior part of the mesothorax.

Rotatory coefficient, tic. See ★*coefficient*, ★*tic*¹.

rotiferon (rō-tif′e̤-ron), *n.*; pl. *rotifera* (-rä̤). [NL. See *Rotifer*.] A rotifer.

Rotomagian (rō-tō̤-mā′ji-a̤n), *n.* [L. *Rotomagi*, a people of ancient Gaul, whose name survives in that of *Rouen*.] In *geol.*, a substage of the Cenomanian Cretaceous rocks in France and Belgium. Also used attributively.

rotometer (rō̤-tom′e-tėr), *n.* [L. *rot*(*atio*), rotation, + Gr. *μέτρον*, measure.] A cyclometer; a device for measuring distances by counting the revolutions of a wheel which rolls through the distance to be measured.

rotor, *n.* 2. In *elect.*, the revolving element of an electric machine.—3. The revolving part of a steam-turbine. It consists of the shaft and the disks carrying the buckets on which the steam pressure acts.

> Each piston is of such diameter as to exactly balance the axial thrust of the steam against its corresponding stage of blades. The *rotor* also carries a series of thrust bearing rings whose sole duty is to maintain an exact relationship between the *rotor* and stator parts.
> *Elect. World and Engin.*, May 14, 1904, p. 925.

Squirrel-cage rotor, in *elect.*, an armature or rotating field the winding of which is of the squirrel-cage type.

rot-steep (rot′stēp), *v. t.* Formerly, to steep, as cotton cloth, in water, to get rid of surface impurities, such as grease, oil, and dirt, prior to bleaching.

rotten¹, *a.* 7. Good for nothing; trashy; mean; detestable. [Slang.]

> "*Rotten* things, misunderstandings," resumed Bobby, after a pause. *A. R. Conder*, Seal of Silence, xxii.

Rotten row (*naval*), a place in a navy-yard where condemned vessels are moored pending their sale or breaking up. [Colloq.]

rotter (rot′ėr), *n.* [*rot*, *n.*, + *-er*².] One who talks or writes 'rot'; a humbug. [Slang.]

> The snake . . . reared up out of the water, exactly like Kaa in the Jungle Book—so we know Kipling is a true author and no *rotter*.
> *E. Nesbit*, The Wouldbegoods, p. 88.

> 'How can you be so uncivil to that man?' . . . 'A *rotter*,' said Merton, 'he has just got that stuff by heart.' *A. Lang*, Disentanglers, p. 338.

rottle (rot′l), *n.* Same as *rotl*.

rottlerin (rot′lėr-in), *n.* [*Rottlera* + *-in*².] A flesh-colored or yellow crystalline dyestuff, $(C_{11}H_{10}O_3)_3$, obtained from *Echinus Philippinensis*. It is the active constituent of the vermifuge kamila. Also called *mallotoxin*.

rotulian (rō̤-tū′li-a̤n), *a.* [*rotula* + *-ian*.] Same as *patellar*.

rouge, *n.* 2. (*b*) A finely powdered red oxid of iron, or hematite (which see), generally mixed with a paste or glue and sold in sticks or in the form of powder.—3. In *roulette*, a bet that the color of the number will be red.—**Rouge de fer** [F., 'iron red'], in *ceram.*, a red color obtained from iron peroxid. Compare ★*rouge d'or*.—**Rouge d'or** [F., 'red of gold'], in *ceram.*, a red color of Oriental glaze obtained from gold precipitate.—**Rouge flambé** [F., 'fired red'], an iridescent glaze of a red color.

> Even the long-sought secret of the Chinese sang de bœuf and *rouge flambé* glazes has been worked out in Europe.
> *Encyc. Brit.*, XXXI. 875.

rougeot (rö-zhō′), *n.* [F. *rouge*, red, + *-ot* (augm.).] A disease of doubtful origin affecting grape-leaves and causing them to turn red and die. Also spelled *rougeau*.

> The term Spanish measles is here used in California for a disease resembling *Rougeot*, so far as the description goes.
> *U. S. Dept. Agr.*, Div. Veg. Physiol. and Pathol., Bulletin 2, 1892, p. 173.

rough¹, *a.*—**Rough dimensions.** See ★*dimension*.

rough¹, *v. t.* 3. In *hat-manuf.*, to compact (the felt) by moisture, heat, and pressure.—4. To expose to winter weather, as cattle; permit to run at large during the winter. [Western U. S.]

> They were great grazing cattle, fattening rapidly on grass, and, when "*roughed*" through our sometimes severe Nebraska winters, their thick coats of hair protected them so thoroughly that they invariably wintered well coming out in the spring in better flesh than did our cattle of any other breed.
> *Rep. Kansas State Board Agr.*, 1901–02, p. 268.

roughage, *n.* 2. In *stock-feeding*, the coarser portion of a ration, as hay, corn silage, etc., containing relatively little nutritive matter, as opposed to the concentrated part or grain feed.

rough-coat (ruf′kōt), *v. t.* In *plastering*, to apply the first coat to (masonry walls or lath).

rough-cut (ruf′kut), *a.* and *n.* **I.** *a.* Having coarse or rough teeth, as a file designed for rough work.

II. *n.* 1. A coarse file.—2. A roughing-cut; the first cut taken on a piece of work by a machine-tool; a coarse or heavy cut to remove superfluous metal.

rougher, *n.* 4. A board filled with long iron teeth for hackling flax by hand.

rough-house (ruf′hous), *n.* In *sports*, rough play; hence, rough play in general; horse-play; rowdy conduct. [Recent slang, U. S., chiefly among boys at school or college.]

rough-housing (ruf′hou-sing), *n.* Same as ★*rough-house*.

roughing (ruf′ing), *a.* Approximate; not finished.

roughing-down (ruf′ing-doun), *n.* The process of cutting to very nearly the required size, including the removing of any skin or hard scale. See *roughing-rolls*.

roughing-filter (ruf′ing-fil″tėr), *n.* A filter which separates coarse impurities from the liquid. *Nature*, Sept. 24, 1903, p. 509.

roughing-mill, *n.* 2. The roll-train in which the ingot receives its first, or roughing, treatment.

> The most easterly division will contain the open-hearth furnaces, which are in line with three sets of heavy *roughing mills* delivering to other mills making finished plates and structural shapes.
> *Elect. World and Engin.*, Jan. 2, 1904, p. 18.

roughing-out (ruf′ing-out), *n.* and *a.* **I.** *n.* 1. Roughing-down; particularly, the approximate shaping of a piece from commercial sizes of material.—2. The rough-forging of a piece, including the welding and swaging of the original stock, but not the finishing with the fullering- and flatting-tools, dies, etc.

II. *n.* Suitable or designed for use in making rough-cuts: as, a *roughing-out* drill. *Jour. Brit. Inst. Elect. Engin.*, 1901–02, p. 312.

roughing-tool (ruf′ing-töl), *n.* The tool used for taking off the outside skin of a piece of metal or wood and cutting the piece to approximately the correct size. It is generally a round-nosed tool, but varies with the material to be cut and the amount of material to be removed.

roughneck (ruf′nek), *n.* See the extract. [Slang.]

> His stated income amounts to union wages from his union of *roughnecks*, as the iron-workers call themselves, as walking delegate.
> *N. Y. Evening Post*, Aug. 17, 1903.

rough-pointed (ruf′poin″ted), *a.* In *stone-cutting*, dressed roughly with the point: said of the first preparation of the surface of a stone. See *point*¹, 2 (*e*).

rough-ride (ruf′rīd), *v. t.*; pret. and pp. *rough-ridden*, ppr. *rough-riding*. To ride as a rough-rider. [Rare.]

> "Hould on, faith an' patience, the other elephints are comin'." . . .
> "Glory!" I sez, "will I *rough-ride* the whole stud?"
> *R. Kipling*, My Lord the Elephant, in Many Inventions, p. 63.

rough-rider (ruf′rī″dėr), *n.* 1. One who breaks young or wild horses to the saddle; in the British army, a non-commissioned cavalry or artillery officer detailed to assist the riding-master, one being allowed to each troop or battery.—2. A horseman accustomed to rough or hard riding, such as cow-boys or frontiersmen: applied specifically, in the late Spanish-American war, to the members of a volunteer regiment of cavalry, recruited partly from Western cow-boys.

> Regiments of cavalry recruited from dwellers on grassy plains are famous as "*rough-riders*," whether they are Russian Cossacks or American cowboys; their skill and endurance as horsemen are a natural result of habits developed in an open country of large distances, where riding is as appropriate a means of going about as walking is in a mountainous district.
> *W. M. Davis*, Elem. Phys. Geog., p. 369.

rough-turn (ruf′tėrn), *v. t.* To turn roughly, in a lathe; turn nearly to size; turn so that the surface is not finely finished. *The Engineer* (London), Aug. 1, 1902, p. 103.

rouille (rö-ēl′), *n.* [F.] A yellowish-brown ferric hydroxid precipitated on calico by the action of sodium hydroxid on ferrous sulphate. Also called *chamois*. *Thorpe*, Dict. of Applied Chem., III. 356.

roulade, *n.* 2. Slices of beef rolled with bacon and then steamed.

roulade (rö-läd′), *v. i.*; pret. and pp. *rouladed*, ppr. *roulading*. [*roulade*, *n.*] In *music*, to sing roulades or divisions.

roulette, *n.* 4. All bets are placed in the various parts of the lay-out, one of which is at each side of the wheel. The five following pay even money: *impair*, that the number will be odd; *pair*, that the number will be even; *manque*, that it will be from 1 to 18; *passe*, that it will be from 19 to 36; *rouge*, or *noir*, that the color will be red or black. In addition to these, *en plein*, flat on any number, pays 35 for 1; *à cheval*, on the line between two numbers, 17 for 1; *un carré*, on a cross-line, taking in four numbers, 8 for 1; *transversale*, any horizontal line of three numbers, 11 for 1; *transversale six*, on the line between two horizontals, taking in six numbers, 5 for 1; *bas*, at the bottom of a vertical column, 2 for 1, and between two columns, ½ for 1. *Premier*, *milieu*, and *dernier* are upon the first, middle, and last 12 numbers respectively, that is, from 1 to 12, 13 to 24, 25 to 36, and pay 2 for 1. These are the payments at Monte Carlo, where the wheels have 36 numbers and only one zero. Wheels in other parts of Europe have two zeros, and in the United States many wheels have two zeros and an eagle besides. The numbers in many American wheels run to 27, 30, and 33 only, the payments being scaled down accordingly.

		0		
Passe	1 4 7 10	2 [illegible] 8 11	3 6 9 12	Manque
Pair	13 16 19 22	14 17 20 23	15 18 21 24	Impair
Noir	25 28 31 34	26 29 32 35	27 30 33 36	Rouge
P M D 12 12 12				P M D 12 12 12

roulette (rö-let′), *v. t.*; pret. and pp. *rouletted*, ppr. *rouletting*. [*roulette*, *n.*] 1. To mark with dotted lines with a roulette.—2. To perforate with a roulette or similar instrument, as in preparing blank checks, for ease and convenience in removal from a stub, or sheets of printed postage-stamps for the separation of the stamps, the one from the other, when needed.

roulette-wheel (rö-let′hwēl), *n.* The paraphernalia of the game of roulette.

> As he was in town on a visit recently he received a letter from a club . . . asking him to . . . purchase a *roulette wheel* for their rooms.
> *N. Y. Com. Advertiser*, May 11, 1905.

Roum. An abbreviation of *Roumanian*.

rounce, *n.*—**Domino rounce**, the card game of ramsch played with dominoes.

round. **I.** *a.* 16. In *phonology*, uttered with contraction of the lips such as to render the opening between them more or less 'round'; uttered with the lip-position characteristic of *o*, *u*, and similar vowels; rounded.—**Round iron**, iron which has been rolled into round rods.—**Round timber.** See ★*timber*¹.—**Round turn.** (*b*) A completed speculative transaction, as in stocks, grain, or the like.—**Round vowels.** See ★*vowel*.

II. *n.* 5. (*b*) *pl.* In *milit.*: (1) The act of visiting the sentries of a guard. The officer of the day is required to make his rounds between midnight and reveille. *Manual of Guard Duty.* (2) A party consisting of the officer of the day and an armed escort making the rounds. Also called *grand rounds*.—7. (*g*) A round game in which there are no partnerships. (*h*) In *poker*, a round of jacks, sometimes called a 'whangdoodle,' in which each player deals off a jack-pot. (*i*) In *archery*, a specified number of arrows shot at specified distances. The York round is 72 arrows at 100 yards, 48 at 80, and 24 at 60; the National round, 48 at 60 and 24 at 50; the American round, 30 arrows each at 60, 50, and 40 yards; the Potomac round, 24 each at 80, 70, and 60; the Ohio round, 96 at 60; the Columbia round, 24 each at 50, 40, and 30. The National and Columbia rounds are ordinarily shot by women. (*j*) In *skat* and other games, each player having dealt once completes a round.

12. In *ship-building*, the arching or camber of a deck-beam considered quantitatively; usually followed by *up*.

> Detailed directions are given for dealing with unusual conditions of sheer of deck, *round* of beam, trim, etc., and with extreme proportions of length to depth, as well as with deck erections and superstructures.
> *White*, Manual of Naval Arch., p. 14.

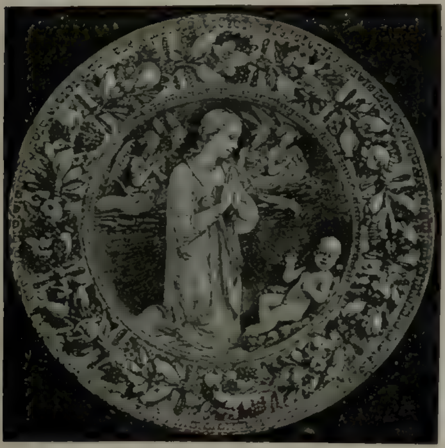
13. In *geodesy* and in *topographical surveying*, a series of horizontal angles between lines to distant stations or points to be observed, mea-

sured with a theodolite, and comprising the entire horizon around the observing station. For the purpose of securing greater accuracy in the observed values of the several angles, they are not individually observed directly, but the angular directions of the lines to the several observed points are observed in a progressive series closing the horizon and forming a round of angles.

> *Rounds* of angles were taken from Pegi hill, the hill on Kaweri island, a rock near Msara, the hill west of Naiko hill, and a rock near Ngo.
> *Geog. Jour.* (R. G. S.), XIII. 411.

Grand rounds. Same as ★*round*1, 5 (*b*) (2).—**To change the rounds.** See ★*change*.

round1, *v. t.* 6. In *tanning*, to trim (a hide) after it has been cleansed and limed, separating the heavier part or butt from the thinner belly and shoulder portions and cutting away ragged scraps from round the more valuable parts.—7. In *phonol.*, to utter with the lips in the contracted (and more or less projecting) position characteristic of *o*, *u*, and similar vowels.



Roundel by Luca della Robbia.

roundel, *n.* 4. In the *fine arts*, a composition or design contained within a circle, a type much favored by the painters and sculptors of the quattrocento in Italy: found also in excavations at Cnosus in Crete; also a wooden platter painted. See *tondo*.

> The enamelled *roundels* of the Throne-Room, which present a close parallelism with those of Tell-el-Yehûdiyeh bring us down on the other hand to the beginning of the thirteenth century.
> *A. J. Evans*, An. Brit. School at Athens, VI. 66.

rounder, *n.* 1. (*b*) Specifically—(1) A tool used by bookbinders for shaping the back of a book. (2) A round-tool. (3) A gage for laying out round work. (4) A machine for making round corners, moldings, etc. (5) A rounding-plane or rounding-jack.

Roundhead, *n.* 3. [*l. c.*] *pl.* Same as *brachycephali*.

> Mr. W. K. Moorehead, one of the best authorities on this subject, recognises two distinct mound-building races, the old long-headed, the later round-headed intruders . . . the chief seat of the long-heads was the Muskingum valley, from Marietta upwards to East Ohio, where the mounds, differing in type from those of the *round-heads*, have yielded pottery, . . . and other ornaments.
> *Keane*, Ethnology, p. 106.

round-headed, *a.* 3. In *arch.*, topped with a semicircular arch, as a window or doorway.

round-heart (round′härt), *n.* The purple meadow-parsnip or alexanders, *Thaspium trifoliatum*.

Rounding-and-channeling machine. See ★*channeling-machine*.

rounding-gage (roun′ding-gāj), *n.* An instrument for cutting hat-brims to a standard measure.

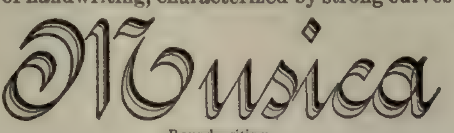
rounding-jack (roun′ding-jak), *n.* A support for holding a hat while it is trimmed into shape.

round-ringing (round′ring″ing), *n.* Same as *change-ringing*.

roundtail (round′tāl), *n.* A cyprinoid fish, *Gila robusta*, of the Colorado river basin.

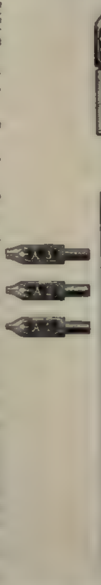
round-tree (round′trē), *n.* [Corruption of *rowan-tree*.] The American mountain-ash, *Sorbus Americana*.

round-wood (round′wůd), *n.* Same as ★*round-tree*.



Round-writing.

round-writing (round′rī″ting), *n.* A method of handwriting, characterized by strong curves with exaggerated shading, used in lettering, ornamental engrossing, and card-writing. Special pens, with one, two, or three points may be used.—**Round-writing instrument,** a penholder carrying three interchangeable pens. With an assortment of nine pens 144 different styles of double lines or 504 styles of triple lines can be written in ink on paper.—**Round-writing pen,** a pen having one, two, or three points of different degrees of fineness.



Round-writing Instrument, with round-writing pens.

roup2, *n.*—**Articles of roup.** See ★*article*.

Ro-urushi lacquer. See ★*lacquer*.

rouse1, *v. t.* 8. To blow air through (the wort of beer) in order to aid in the development of the yeast.

rouseabout (rouz′ạ-bout), *n.* [Eng. dial., also *rousabout*. See *roustabout*.] In Australia, a station-hand put on to any work; a Jack of all work; an 'odd man'; a roustabout. *E. E. Morris*, Austral English.

> The "*rouseabouts*" are another class of men engaged in shearing time, whose work is to draft the sheep, fill the pens for the shearers, and do the branding. . . . The shearers hold themselves as the aristocrats of the shed: and never associate with the *rouseabouts*.
> *The Argus*, Sept. 20, 1890, p. 13.

Rousseau's figure or **diagram.** See ★*figure*.

roustabout, *n.* 2. See ★*rouseabout*.

rout2, *v. t.* 3. To extricate from (other things); hunt up; dig (out); with *out*. [Colloq.]

> It 's just an old suit I *routed* out.
> *Anthony Hope*, Dolly Dialogues, xvi.

rout-chair (rout′chãr), *n.* [*rout*3 + *chair*.] A light chair supplied for private entertainments by caterers. [Eng.]

route1, *n.* 3. An order for a route march.

route1 (röt or rout), *v. t.*; pret. and pp. *routed*, ppr. *routeing* or *routing*. To determine the route or line of transportation or travel of (goods, immigrants, etc.).

> The . . . Company . . . issued to its agents along its line instructions as to manifesting and *routeing* property to eastern points by which it was prescribed that property forwarded by all rail to New York should be forwarded by [certain lines].
> *Newport News and Mississippi Valley versus Baltimore and Ohio R. R.*, Rep. Interstate Commerce Com., Nov. [13, 1889, p. 7.

> The facility which such combination [connecting roads] lends to through *routing* of cars, the convenience of exchanging power and rolling stock and the more liberal system of transfers which becomes feasible; all these things tend to give new life to the united enterprise and to pave the way for even greater improvements.
> *Elect. World and Engineer*, May 23, 1903, p. 856.

route-marching (röt′ mar-ching), *n.* *Mil.*, the act of marching from one station to another to relieve a garrison. It is conducted in open order; keeping step and silence are not required. See *to get the route* and *route-step*.

> We 're marchin' on relief over Injia's sunny plains,
> A little front o' Christmas time an' just be'ind the Rains.
>
> . . . .
>
> Oh, then it 's open order, an' we lights our pipes an' sings,
> An' we talks about our rations an' a lot of other things.
> *R. Kipling*, Route Marchin'.

routing-cutter (rou′ting-kut″ėr), *n.* A routing-tool.

routing-machine, *n.*—**String-routing machine,** a stair-router. See illustration under *routing-machine*.

rove2, *v. t.* 3. In *mech.*, to turn; make round: said particularly of turning stone: as, to *rove* a millstone.

roveling (rōv′ling), *n.* [Appar. an alteration of *roving*2 by conformity with *raveling*, *n.*] Same as *roving*2, 2.

rover, *n.*—**Jolly rover** (*naut.*), a pirate or his vessel.

rovetto (rō-vet′ō), *n.* Same as ★*escolar*.

roving-Jenny (rō′ving-jen″i), *n.* The strawberry-geranium, *Saxifraga sarmentosa*. Also called *wandering Jew*.

row2, *n.*—**Rotten row.** See ★*rotten*1.

row3, *n.*—**What 's the row?** What is the matter? [Slang.]

> Kitty [looking for her sister] . . . walks into the schoolroom as a last chance and looks anxiously around her; . . . and Brandy who is smoking a cigar against all rules . . . asks inelegantly, "*What's the row?*"
> *M. Hungerford*, Beauty's Daughters, ii.

rowing-machine (rō′ing-mạ-shēn″), *n.* A gymnasium apparatus of various forms, designed for exercising the muscles used in rowing. It usually combines a sliding seat, stretchers, and oar-handles, with weights or springs so arranged as to provide sufficient resistance.

Rowland effect. See ★*effect*.

rowlandite (rō′lạnd-īt), *n.* [Named after Professor Henry A. *Rowland* (1848–1901) of Baltimore.] A massive yttrium silicate of a pale drab-green color. It occurs with gadolinite and other related species in Llano county, Texas.

rowlock, *n.*—**Becket rowlock,** a rope becket secured to the gunwale, in which the oar works, instead of in a thole-pin or regular rowlock.

II. *a.* In *arch.*, characterized by having its voussoirs in concentric rings, one closely adjusted to another. The rowlock arch of brick is one in which each ring of brick voussoirs is only the width of the brick, or about four inches, in depth.

row-planting (rō′plan″ting), *n.* In *forestry*, a method of planting in which the young trees are placed in rows, the distance between the rows being greater than the distance between the young trees in the rows. In planting seeds or seedlings in the forest nursery this method is known as *drill-planting*.

roxamine (rok-sam′in), *n.* An artificial red dyestuff, the sodium salt of dioxyazonaphthalene-sulphonic acid: used in wool dyeing. *S. P. Sadtler*, Handbook of Indust. Chem., p. 417.

Roy. An abbreviation of *Royal*.

royal, *n.*—**Camp royal.** See ★*camp*2.—**Royal chapel.** Same as *chapel royal*.—**Royal moth.** See ★*moth*1.—**Royal Saxon porcelain.** Same as *Dresden porcelain* (which see, under *porcelain*1).—**Royal wing.** See ★*wing*.

R. P. An abbreviation (*a*) of *Reformed Presbyterian*; (*b*) of *Regius Professor*; (*c*) of the Latin *Respublica*, republic.

R. P. D. An abbreviation (*a*) of the Latin *Rerum Politicarum Doctor*, Doctor of Political Science; (*b*) of *Royal Purple Degree*.

R. P. E. An abbreviation (*a*) of *Reformed Protestant Episcopal*; (*b*) of *Royal Society of Painter-Etchers*.

r. p. m. In *mech.*, an abbreviation of *revolutions per minute*.

rpt. An abbreviation of *report*.

R. R. An abbreviation of *railroad*.

rs. An abbreviation of *rupees*.

R. S. An abbreviation (*a*) of *Recording Secretary*; (*b*) of *Revised Statutes*; (*c*) [*l. c.*] of *right side*; (*d*) of *Royal Society of London*.

R. S. A. An abbreviation (*a*) of *Royal Scottish Academician*; (*b*) of *Royal Scottish Academy*; (*c*) of *Royal Society of Antiquaries*.

R. S. D. An abbreviation of *Royal Society of Dublin*.

R. S. E. An abbreviation of *Royal Society of Edinburgh*.

R. S. L. An abbreviation (*a*) of *Royal Society of Literature*; (*b*) of *Royal Society of London*.

R. S. N. A. An abbreviation of *Royal Society of Northern Antiquaries*.

R. S. O. An abbreviation of *Railway Sub-Office*.

R. S. P. C. A. An abbreviation of *Royal Society for the Prevention of Cruelty to Animals*.

R. S. S. An abbreviation of the Latin *Regiæ Societatis Socius*, Fellow of the Royal Society.

rt. An abbreviation of *right*.

Rt. Wpful. An abbreviation of *Right Worshipful*.

Ru. 2. An abbreviation (*a*) of *Rumanian*; (*b*) of *runic*.

rua (rö′ä̤), *n.* [Maori.] A pit or cave for storing root-crops. *E. E. Morris*, Austral English.

rub, *v. t.* 7. In *needle-making*, to straighten (a wire or needle) by rolling (it) while hot.—

rub, *n.*—**Rub of the green,** in *golf*, something that happens to a ball in motion, such as its being deflected or stopped by any agency outside the match, or by the forecaddie. In the case of such a rub the ball must be played from where it lies.

rubái (rö-bä′i), *n.*; pl. *rubáiyát* (rö-bäi′yät). [Ar. Pers. *rubā'ī*, pl. *rubā'iyāt*.] A quatrain.

> The original *Rubáiyát* (as, missing an Arabic Guttural, these Tetrastichs are more musically called) are inde-

pendent Stanzas, consisting each of four Lines of equal, though varied, Prosody; sometimes all rhyming, but oftener (as here imitated) the third line a blank.
Fitzgerald, Introd. to Rubáiyát of Omar Khayyam [(1st ed.).

rubber^1, *n.* **2.** (*l*) In the amalgamation process for the extraction of gold, a vessel in which the finely pulverized rock is triturated between surfaces of iron in the presence of mercury in order that the latter metal may take up and dissolve the fine particles of gold. (*m*) In *engraving*, an instrument for pressing paper upon a plate or block. Impressions may be taken in this way instead of on a press.

The designs are printed in pale ink by means of a *rubber*. *G. E. Woodberry*, Hist. of Wood-engraving, p. 35.

3. Crude rubber comes into commerce under a great variety of names, which usually designate the geographical region in which the substance is produced. Each one of these kinds of rubber may be the product of one or several plants, is prepared in a certain way, and has one or more distinctive forms which are given special designations. The most important of these are as follows: *Balls*, which come in all sizes, from a half inch to four inches in diameter; *bottles*, pieces formed on a wooden paddle which is afterward removed by splitting the piece of rubber along one side; *buttons*, rubber that has been cut by machinery into small pieces; *biscuits*, thick, oblong pieces; *clusters*, small balls sticking together in blocks or grape-like bunches; *lumps*, pieces of irregular shape; *marbles*, small balls; *negroheads*, large balls made up of residues scraped from the vessels in which the milky juice is collected or from latex which has coagulated before it could be smoked; *niggers*, kneaded balls of masses of stringy rubber; *paste*, soft, irregular masses almost fluid; *sausages*, finger- or sausage-shaped pieces; *scraps*, the drippings of milky juice which adhere to the bark of the tapped tree and which are peeled off when dry; *sheets*, thin pieces of rubber formed by coagulating the latex on a large leaf; *slabs*, pieces of rubber an inch or two thick formed by pressing several sheets together; *strips*, long, narrow sheets or lump-rubber that has been sliced by machinery; *thimbles*, pieces cut into cubes of an inch or less; *tongues*, long, narrow tongue-shaped pieces; *twists*, balls of stringy rubber which are made up like a ball of cord. The principal commercial varieties of rubber are given below.

8. See the extract.

A second kind, and one much used in London for fronts, is a large, light-red brick, so soft as to be readily scratched by the knife. These are called "*rubbers*."
Rep. U. S. Geol. Surv., 1897–98, vi. 407.

Accra, or **Akkra, rubber**, a trade-name of a kind of rubber, in lumps and strips, brought from the Gold Coast of Africa.—**African rubber**, a rubber obtained principally from giant creepers of the genus *Pacouria*, as well as from several trees the most important of which are *Kibatalia elastica* (*Kickxia elastica* of Preuss), *Kibatalia Africana* (*Kickxia Africana* of Bentham), and several species of the genus *Ficus*.—**Antimony rubber.** Same as *red* ★*rubber*.—**Assam rubber**, the product of the india-rubber tree, *Ficus elastica*.—**Banqui rubber**, a kind of crude rubber, in balls, brought from the Kongo State.—**Borneo rubber**, the product of several vines belonging to the dogbane family, the most important of which are *Chavannesia elastica* and *Ancylocladus edulis*. See ★*Chavannesia* and *Willughbeia*.—**Bumba rubber**, a trade-name for a kind of rubber brought from the Kongo State in balls of various sizes, often viscid and of disagreeable smell.—**Bussira rubber**, a kind of crude rubber, brought from the Kongo State in balls.—**Ceara rubber**, a rubber obtained from *Manihot Glaziovii*, a large tree growing on dry, stony soil and native to the state of Ceara in Brazil. The latex drips from wounds in the trunk and coagulates in the form of tears which are gathered into scraps and balls. Ceara rubber is deficient in elasticity and is hard to vulcanize. The rubber obtained from several other species of *Manihot* growing in the adjoining state of Bahia is also marketed under this name. See *manisoba* ★*rubber*.—**Central American rubber**, the product of several species of the genus *Castilla*, especially *C. elastica*. The term in a commercial sense includes all the forms of rubber which are produced in Mexico, Central America, and that part of South America lying north of the Amazon valley. See ★*caucho* and *Colombia* ★*rubber*.—**Ceylon rubber**, rubber produced in Ceylon from *Hevea Brasiliensis*, the principal species from which Para rubber is obtained. The tree is extensively cultivated in Ceylon. Its mode of preparation is very different from that of Para rubber in that the latex is never smoked but is coagulated by means of acetic acid. Formerly *Manihot Glaziovii* yielded most of the rubber which was exported from Ceylon.—**Colombia rubber**, the product of several species of trees belonging to the genus *Sapium*, especially *S. biglandulosum*.—**Colorado rubber**, a substance very much like rubber obtained from the rabbit-weed, *Picradenia floribunda*. See ★*Picradenia*.—**Enameled rubber**, cotton or linen cloth covered on one side with vulcanized rubber, and afterward passed between rollers which give an enameled appearance to the rubber.—**Equateur rubber**, a trade-name of a valuable kind of crude rubber in small balls, brought from the Kongo State in Africa.—**Fenton rubber**, a material used to some extent as a substitute for, or an adulterant of, rubber, obtained by the prolonged action of diluted nitric acid on oxidizable vegetable oils, with addition of tar, creosote, etc., followed by roasting with exposure to air. The mass produced is said to be elastic, like genuine rubber, and capable of being vulcanized.—**Gaboon rubber**, a trade-name for crude rubber, the product of several species of *Pacouria*, brought in balls and strips from Gaboon, the French Kongo region in Africa.—**Gambia rubber**, a trade-name for crude African rubber, brought, in slender strips wound into balls, from Gambia, Sénégal, and Portuguese Guinea.—**Grand Bassam rubber**, a trade-name for a kind of crude rubber in cakes, strips, or irregular lumps, brought from the Gold Coast of Africa.—**Guayaquil rubber**, the product of *Castilla elastica*. See *Central American* ★*rubber*.—**Guayule rubber**, a rubber-like substance extracted from the stems and roots of *Parthenium argentatum*, a shrub of the family *Asteraceæ* native to Texas and Northern Mexico. See ★*hule*, 3.—**Ire rubber.** Same as *silk* ★*rubber*.—**Jamaica rubber**, a woody vine belonging to the dogbane family, *Forsteronia floribunda*.—**Jequie rubber**, the product of several species of trees of the genus *Manihot*, especially *M. dichotoma*. See *manisoba* ★*rubber*.—**Kassai rubber**, a trade-name of a crude rubber brought from the Kongo State. There are two grades: red Kassai, in small mahogany-colored balls, considered the best rubber from the Kongo region, and black Kassai, in small black lumps or tongues, which is less highly valued.—**Kongo rubber**, crude rubber from the Kongo State in Africa obtained principally from giant creepers of the genus *Pacouria*. It comes into commerce under several trade-names which denote the region of production; the following being the most important: *Banqui*, *Bumba*, *Bussia*, *Equateur*, *Kassai*, *Mongala*, *Ruki*, *Sankuru*, *Welle*, and *Yakoma*.—**Lagos rubber**, the product of any one of several species of large trees belonging to the genera *Kibatalia* and *Ficus*, especially *Kibatalia Africana* and *Ficus Vogelii*. See *silk* ★*rubber*.—**Madagascar rubber**, a rubber obtained from a number of species of vines and trees belonging to several genera, especially *Pacouria*, *Mascarenhasia*, and *Euphorbia*.— —**Mangabeira rubber**, the product of *Hancornia speciosa*, a small tree native to southern Brazil. It is prepared in the form of sheets which resemble slices of liver. See *Hancornia*.—**Manisoba rubber**, the product of several species of trees belonging to the genus *Manihot* native to the states of Ceara and Bahia in Brazil, especially *M. Glaziovii* and *M. dichotoma*. The rubber of the first-named species is more commonly known as *Ceara* ★*rubber* (which see).—**Matto Grosso virgin rubber**, a trade-name of a good grade of crude rubber, in flat pieces of light color, from the state of Matto Grosso in Brazil. —**Mineral rubber**, a name sometimes applied to a kind of asphalt or bitumen.

This murkiness may be prevented by dissolving in the paraffin before the rubber is added enough "*mineral rubber*" (asphalt) to give the paraffin a light amber colour. This paraffin-asphalt solution is more transparent than simple paraffin, and so facilitates orientation of the object. *Jour. Roy. Micros. Soc.*, Dec., 1904, p. 719.

Mongala rubber, a trade-name of a kind of crude rubber in balls of varying size brought from the Kongo State.—**Mozambique rubber**, a rubber obtained from several species of vines of the genus *Pacouria*, especially *P. Kirkii* and *P. Petersiana*. See ★*Pacouria* and *Landolphia*.—**New Caledonia rubber**, the product of any one of several species of trees, especially *Ficus prolixa*.—**Padang rubber**, a trade-name of crude rubber, brought in large reddish masses from Java and Padang.—**Panama rubber.** Same as *Central American* ★*rubber*.—**Para rubber.** (*a*) The substance obtained by the coagulation and smoking of the latex of several species of trees native to the humid forests of the Amazon valley, especially *Hevea Brasiliensis*, *H. Guianensis*, and one or more species of the genus *Sapium*. It reaches commerce by way of the Amazon river and the port of Para, whence the name. (*b*) The substance obtained by the coagulation of the latex of *Hevea Brasiliensis*, wherever grown. This is known commercially as cultivated Para. See *Ceylon* ★*rubber*.—**Penang rubber**, a trade-name of crude rubber from the Sunda Islands, the product of *Ancylocladus firmus*, *Leuconoti eugenifolius*, and *Parameria barbata*, in balls, rolls, and slabs, of varying value.—**Pernambuco rubber.** Same as *mangabeira* ★*rubber*.—**Peruvian rubber.** Same as ★*caucho*.—**Potato-ball rubber.** Same as ★*almeidina*.—**Rangoon rubber**, a trade-name of crude rubber from Burma and Annam, marketed in large balls and flat slabs, similar in appearance to Assam rubber, but of rather better quality.—**Reclaimed rubber**, the rubber obtained by mechanical and chemical processes from waste manufactured articles containing rubber, such as old hose, tires, boots, shoes, etc.—**Recovered rubber.** Same as *reclaimed* ★*rubber*.—**Red rubber**, a trade-name of vulcanized rubber colored by the addition of antimony-pentasulphid. It is produced both as soft and hard rubber.—**Root rubber**, the name applied to rubber obtained from the underground stems of several plants of western Africa belonging to the dogbane family, especially *Carpodinus lanceolata*, *Clitandra Henriquesiana*, and *Pacouria Thollonii* (*Landolphia Thollonii* of Dewevre).—**Rubber drug**, a trade-name of any inorganic material added to or compounded with vulcanized rubber, chiefly to increase its bulk and weight, and to cheapen it.—**Rubber shoddy.** See the extract.

Scrap rubber, or *rubber "shoddy"* as it is called, is made up principally of worn-out boots and shoes, but includes every conceivable form of worn-out or disused rubber, ranging from old hose (the poorest grade) to the inner tubes of bicycle and automobile tires, which may be as high as 95 per cent pure rubber. The material is first ground very fine. It is then treated by what is known as the "mechanical" process for removing all foreign substances. This process consists of a series of magnets, sieves, and blowers, through which the material passes until every particle of metal and foreign matter is removed. *Sci. Amer.*, Oct. 5, 1907, p. 240.

Rubber substitute. Very many materials have been proposed for use as substitutes for or diluents of rubber, though all of them are inferior in value to the natural product. The best of these substitutes are made from drying or semi-drying oils (such as those of linseed, colza, or cotton-seed) by treatment with sulphur or sulphur chlorid, in the latter case hydrochloric acid being afterward removed by means of milk of lime. Resins, pitch, asphalt, ozocerite, and residues from the stearic acid and petroleum industries have also been used to substitute or dilute *hard-vulcanized* rubber (vulcanite) for electrical insulators.—**Ruki rubber**, a trade-name of one of the varieties of crude rubber imported from the Kongo State.—**Saukuru rubber**, a trade-name of one of the varieties of crude rubber imported in balls from the Kongo State.—**Scrap rubber.** (*a*) The drippings of milky juice which adhere to the bark of the tapped tree and the coagulated latex remaining in the wound, which are peeled off when dry.

Large yields of *scrap rubber* are sometimes reported from wild trees, but the tapping to which they are subjected is very severe, and the removal of the rubber from the wounds delays healing and exposes the tree to the attacks of insects, so that the cultural production of *scrap rubber* is not likely to be profitable.
Science, Oct. 2, 1903, p. 437.

(*b*) See ★*rubber shoddy*.—**Silk rubber**, the product of either of two species of large trees of West Africa belonging to the dogbane family, *Kibatalia elastica* (*Kickxia elastica* of Preuss) and *Kibatalia Africana* (*Kickxia Africana* of Bentham): so called from the long, silky fibers attached to the seeds.

The Lagos "*silk rubber*" plant, *Funtumia elastica*, continues to be in demand, as the points in its favour are suitability to the climate, easy coagulation, and good rubber-yield at an early age.
Nature, Aug. 27, 1903, p. 395.

Unwashed rubber, crude rubber as imported, before it has been purified by boiling in water and passing repeatedly between fluted rollers under a stream of water, soluble impurities, sand, fragments of woody fiber, and other foreign substances being thereby removed.—**Upper Kongo rubber**, a trade-name of crude rubber, in dark brown balls, the product of *Landolphia Petersiana*, brought from the upper region of the Kongo river in Africa.—**Welle rubber**, the trade-name for a kind of crude rubber, of unknown botanical origin, brought from the Kongo State, Africa, in large slabs of from 10 to 20 pounds each, dark on the outside and white within.—**Yakoma rubber**, the trade-name of a variety of crude rubber in balls brought from the Kongo State, Africa.

rubber^2 (rub′ėr), *n.* [Short for *rubber-neck*.] One who turns around to see something; one who gazes or looks out eagerly: often used as an exclamation in mockery of one who turns to look at something. [Slang, U. S.]

rubber^2 (rub′ėr), *v. i.* [*rubber*^{2}, *n.*] **1.** To turn around to see something; to look out or about in an eager or awkward manner; in general, to look about. [Slang, U. S.]

If they 're [Police Commissioners] any good they prob'ly *rubber* around on their own hook an' they must see these joints . . . everybody *rubbers* in this town [Boston].
Josiah Flynt, in McClure's Mag., June, 1901, p. 117.

2. To listen when others are talking through the telephone (on party lines). [Recent slang, U. S.]

rubber-neck (rub′ėr-nek), *n.* [A humorous term, meaning literally 'one who has, as it were, a long, flexible neck,' which turns easily.] One who turns his head to look or gaze at something or some person he has passed, or at anything that attracts attention; one who gazes eagerly or awkwardly at the sights of the town. [Slang, U. S.]

In the West we have long used the term '*rubberneck*,' just now so popular with you here in the East. Its meaning there differs slightly from the interpretation you put on it. A '*rubberneck*' West is one who snoops around and tries to get into business deals and like things. Now the term is countrywide and attracts but little attention, but formerly, when confined to the West, it always caused inquiry from the Eastern visitor.
N. Y. Tribune, April 14, 1901.

Rubber-neck wagon, a vehicle with cross-seats used for conveying parties of tourists or other persons about the streets of a city, under the direction of a guide, equipped with a megaphone, who calls attention to and describes the various 'sights.' [Recent slang, U. S.]

rubber-neck (rub′ėr-nek), *v. i.* To stare like a rubber-neck; go about staring at or prying into things; rubber. [Slang, U. S.]

Still joy is *rubbernecking* on the street . . .
Still does the masher march around the block.
Wallace Irwin, Love Sonnets of a Hoodlum, xxii.

rubber-stone (rub′ėr-stōn), *n.* A rubbing-stone.

rubbing, *n.* **3.** In *needle-making*, a process for straightening wire, in which the wires are heated and rolled back and forth on a smooth surface under the pressure of a curved tool.

rubbing-bed, *n.* (*b*) A circular revolving table on which slabs, tiles, etc., of marble are placed, to be rubbed down, with sand and water, to a true surface or brought to a square or beveled edge. Such tables are supported on a pivot resting on a steel step and turned by gearing (either below the table or by a central shaft above the table), and are fitted with various appliances for holding the slabs, tiles, etc., in position on the table. Such revolving beds are from four to fourteen feet in diameter.

rubbing-plate (rub′ing-plāt), *n.* See ★*keel*^{1}, 2.

rubbing-strip (rub′ing-strip), *n.* See ★*keel*^{1}, 2.

rubbishry (rub′ish-ri), *n.* Rubbish; worthless trifles. [Rare.]

In port (we used no cargo-steam) I 'd daunder down the streets,

. . . .

Fillin' my bunk wi' *rubbishry* the Chief put overside.
R. Kipling, McAndrews' Hymn, l. 58.

rubble-ballast (rub′l-bal″ast), *n.* Ballast consisting of stones and pebbles.

Instead of having to incur delays and considerable expense in shipping and discharging *rubble-ballast*, the

commander of a ship fitted for water-ballast can readily admit or discharge such ballast.
White, Manual of Naval Arch., p. 35.

rubble-drift (rub'l-drift), *n.* See ★*drift.*

rubbly, *a.* **2.** Of the nature of rubble, or coarse irregular masonry.

rube (röb), *n.* [A generalized use of *Rube*, a rustic abbreviation of *Reuben*, taken, like Joshua, as a type of a homely country name.] **1.** An awkward, unsophisticated countryman; a 'hayseed'; a 'jay.'—**2.** A stage countryman; one who plays on the stage the rôle of an awkward countryman. [Theatrical slang, U. S.]

rubiacic (rö-bi-as'ik), *a.* [*rubiac(in)* + *-ic.*] Derived from rubiacin.—**Rubiacic acid**, an amorphous yellow compound, formed by boiling rubiacin or rubiafin with ferric chlorid.

rubiadin (rö'bi-a̤-din), *n.* [*rubia(cin)* + *-d-* + *-in*².] A yellow crystalline quinone, $C_6H_4(CO)_2C_6H(CH_3)(OH)_2$, or 2,4-dihydroxymethyl-anthraquinone. It is obtained by hydrolysis of rubiadin glucoside. It can be sublimed and melts at about 290° C.—**Rubiadin glucoside.** Same as *rubian.*

rubiadipin (rö-bi-ad'i-pin), *n.* [L. *rubia*, madder, + *adeps* (*adip-*), fat, + *-in*².] A yellowish-brown soft substance formed by the fermentation of rubian.

rubiafin (rö'bi-a̤-fin), *n.* A red or reddish-yellow crystalline product of the fermentation of rubian.

rubial (rö-bẹ-äl'), *n.* [Sp. *espino rubial*, < *espino*; thorn, *rubial, adj.*, < *rubia*, madder.] In Porto Rico, a name applied to several trees of the family *Rutaceæ* from which dyes are prepared, especially *Fagara Martinicensis* and *Fagara monophylla.*

rubicon (rö'bi-kon), *v. t.* [*Rubicon*, the ancient name of a small river in Italy.] To lurch. (See *lurch*³, *v. t.*) In rubicon piquet, when the loser's score does not reach 100 it is added to the winner's. In rubicon bezique, see the extract.

> If the loser fail to score a thousand, he is *rubiconed.* The winner, whether his score reach a thousand or not, adds the score of the loser to his own (excluding fractions of a hundred), and the sum, with thirteen hundred added for the game, is the number of points won.
> *American Hoyle*, p. 200.

To cross the Rubicon, to take the decisive and irrevocable step: in allusion to the crossing of the Rubicon by Cæsar at the beginning of the civil war with Pompey.

rubidia (rọ̈-bid'i-ä̤), *n.* [NL.] In *chem.*, properly rubidium hydroxid: sometimes used to designate rubidium oxid.

rubidin, *n.* **2.** A red crystalline coloring matter found in watermelons and Paradise apples.

rubine², *n.*—**Acid rubine.** See ★*acid-rubine.*—**Azo rubine**, an acid color, one of the fast reds.

rubino (rö-bē'nō), *a.* [It. *rubino*, ruby.] A ruby-colored metallic luster found on some of the old Moorish and majolica wares.

rubio (rö'bi-ō), *n.* [Sp. *rubio*, red.] A local name for an iron ore consisting of concretionary limonite, from Bilbao, Spain.

rubor (rö'bôr), *n.* [L., redness, < *rubere*, be red, connected with *ruber*, red.] Redness of the skin.

rubreserine (rö-bres'ẹ̈-rin), *n.* [L. *ruber*, red, + E. *eserine*, an old name of physostigmine.] A red coloring matter produced by the action of barium hydroxid on physostigmine.

rubrific (rö-brif'ik), *a.* [L. *ruber* (*rubr-*) + *-i-* + *-fic.*] Reddening; tending to make red.

> The homogeneal Light and Rays which appear red, or rather make Objects appear so, I call *Rubrific* or Red-making.
> *Newton*, Opticks (3d ed.), p. 108.

rubrite (rö'brīt), *n.* [L. *ruber*, red, + *-ite*².] A hydrated ferric sulphate occurring in indistinct lamellar crystals of a deep-red color, found in Chile.

rubstone, *n.*—**Kitchen rubstone**, a very soft grade of rubstone for giving quickly a rough edge to a knife.—**Shoemakers' rubstone**, a very hard whetstone.

ruby. **I.** *n.*—**Adelaide ruby**, a rich red variety of garnet found in Australia.—**Ancona ruby.** Same as *rubasse.*—**Artificial ruby.** See the extract.

> In 1887, M. Frémy, with the aid of his *preparateur*, M. Verneuil, undertook new experiments on the crystallization of alumina, and had the satisfaction of obtaining very beautiful *artificial rubies.* Now M. Verneuil, today professor at the Museum, has discovered the method of producing the ruby artificially by melting a mixture of alumina and oxide of chrome at a constant temperature of several thousands of degrees, and in layers superposed from the outside to the inside, in order to prevent the production of cracks in the crystalline mass. This eminent chemist has succeeded in creating a magnificent ruby, weighing about 2,500 grams, and having a commercial value of about 3,000 francs. . . .
>
> The ruby of M. Verneuil has admirable fluorescence, on account of its great purity. It possesses all the physical properties of the natural ruby, and, like the natural ruby, can be cut and receive a very beautiful polish.
> *Jour. Franklin Inst.*, June, 1904, p. 463.

Brazilian ruby. (*a*) See *ruby*, 1. (*b*) The deepest red topaz which owes its color to heating, to the right degree, of the yellow Brazilian topaz. Further heating turns it pink, and still continued heating renders it colorless. See *topaz.*—**Mont Blanc ruby**, a reddish variety of rock-crystal which owes its color to the presence of iron oxid, sometimes artificially introduced.

II. *a.*—**Ruby arsenic**, artificially prepared realgar; ruby sulphur.

rubythroat (rö'bi-thrōt), *n.* An Asiatic warbler of the genus *Calliope* belonging to the thrush family.

ruby-wasp (rö'bi-wosp), *n.* Same as *ruby-tail.*

ruby-zinc (rö'bi-zingk), *n.* Same as *ruby-blende*, 1.

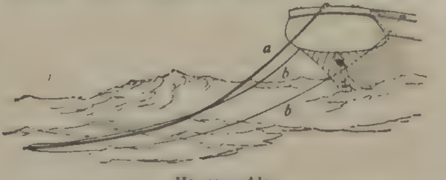
ruche, *n.* **3.** In *zoöl.*, a reticulated folding of the skin found in the hemipenes of some snakes.

ruched (röshd), *p. a.* Provided with a ruche, as a snake.

> In a broad way we may distinguish as leading types the following: The smooth; the plicate or flounced; the calyculate, or *ruched.*
> *Cope*, in Smithsonian Rep. (Nat. Mus.), 1898, p. 703.

rudaceous (rö-dā'shius), *a.* [L. *rudus*, rubble, + *-aceous.*] Rubbly: a descriptive term, suggested by A. W. Grabau, for the coarse texture of those clastic rocks the components of which are larger in size than grains of sand. *Amer. Geol.*, April, 1904, p. 242.

rudder¹, *n.*—**Generous rudder.** A wheelsman is said to use a 'generous rudder' when he is prodigal of the turns given to the steering wheel, or the amount of angle he makes with the tiller, in sailing.—**Hawser-rudder**, a style of emergency rudder, consisting of a long hawser run out over the stern of the vessel, with guys from its extreme end leading to each quarter of the ship. By hauling on one of these guys with a tackle, a bight or bend will be made in the hawser, and this curve will, as the vessel moves ahead, pull the ship's stern one way or the other, and naturally cant her head in the opposite direction. Thus, by hauling in and slacking away on the respective tackles, the ship may be steered.—**Horizontal rudder** (*naval*), a rudder with its axis horizontal, used to control the depth of immersion of submarine boats and automobile torpedoes and to cause them to dive.



Hawser-rudder.
a, hawser; *bb*, hauling-lines, leading through chocks on each quarter.

> It is obvious that a change in depth can be effected in the least time and by the least expenditure of energy, if the vessel be moved in the direction of least resistance; in other words, if she is steered up and down inclines by altering the angle of her longitudinal axis to the horizon. In order to be effective the turning moment used must be of considerable magnitude and under the most sensitive control, conditions best met by *horizontal rudders*, which have also the advantages of simplicity and economy of space, weight and power.
> *Sci. Amer. Sup.*, Feb. 7, 1903, p. 22658.

Small rudder. A wheelsman is said to use a 'small rudder' when he employs but few spokes of the steering wheel, or makes but a small angle with the tiller, in steering.

rudder-fish, *n.* **4.** A fish, belonging to the family *Centrolophidæ*, found in the open sea.

rudder-horn (rud'ėr-hôrn), *n.* *Naut.*, an arm secured to the after edge of a rudder which projects to the rear above water, with eyes on the outer end to which the rudder-chains are fastened.

rudder-indicator (rud'ėr-in"di-kā-to̤r), *n.* See ★*indicator*, 1 (*j*) (2).

rudder-telltale (rud'ėr-tel"tāl), *n.* Same as ★*helm-indicator.*

rudiment, *n.*—**Thoraco-abdominal rudiment**, in *embryol.*, two centers of cell proliferation in the blastoderm of decapod crustaceans which give rise to the thorax and abdomen of the adult animal.

rudistid (rọ̈-dis'tid), *a.* and *n.* **I.** *a.* Having the characters of the *Rudistæ.*

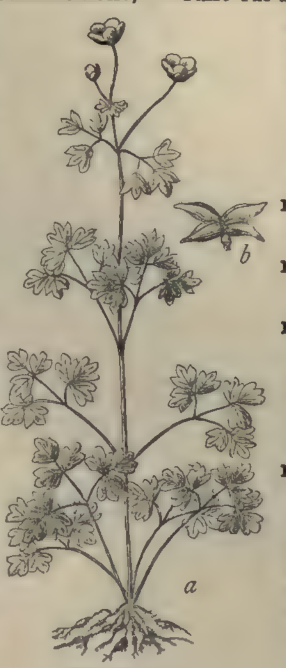
II. *n.* A mollusk of the family *Rudistæ.*

Rudolphi's dilution law. See *Ostwald's* ★*dilution law.*

rudyte (rö'dīt), *n.* [L. *rud*(*us*), rubble, + *-yte*, for *-ite.*] A rudaceous clastic rock. See ★*rudaceous.* *Amer. Geol.*, April, 1904, p. 240.

r. u. e. An abbreviation of *right upper entrance.*

rue-anemone, *n.*—**False rue-anemone**, *Isopyrum biternatum*, a graceful, early blooming ranunculaceous plant of eastern North America with trifoliolate leaves, the leaflets trilobate, and terminal and axillary apetalous flowers, the sepals being white and petal-like.



False Rue-anemone
(*Isopyrum biternatum*).
a, plant, less than one third natural size; *b*, fruit.

ruf¹, *a.*, *n.*, and *v.* An amended spelling of *rough.*

ruf², *a.*, *n.*, and *v. t.* A simplified spelling of *ruff.*

ruff¹, *n.* **2.** (*e*) A large integumental fold surrounding the base of the foot of *Haliotis*, the ear-shell.

ruff³, *n.* **2.** A Victorian fish, *Arripis georgianus*, of the family *Percidæ.* *A. salar* is the Australian fish called *salmon* or *salmon-trout.* See *salmon*, 3 (*c*).—**Bidyan ruff**, a percoid fish, *Therapon richardsoni*, found in fresh waters of southeastern Australia. *E. E. Morris*, Austral English.—**Black ruff.** Same as *blackfish* (*e*).

Ruffini corpuscles. See ★*corpuscle.*

Ruffled lemur. Same as *ruffed lemur.*

rufigallic (rö-fi-gal'ik), *a.* [L. *rufus*, red, + E. *gallic*².] Red, and derived from gallic acid.—**Rufigallic acid**, a red, or yellowish-red, crystalline compound, $(OH)_3C_6H(CO)_2C_6H(OH)_3 + 2H_2O$, or 1,2,3,5,6,7-hexahydroxyanthraquinone, formed by heating gallic acid or its ethyl ester with concentrated sulphuric acid. With alkalis it yields blue or violet salts. Also called *rufigallol.*

rufigallol (rö-fi-gal'ol), *n.* [*rufigall-ic* + *-ol.*] Same as ★*rufigallic acid.*

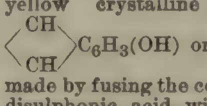
rufimoric (rö-fi-mor'ik), *a.* [L. *rufus*, red, + NL. *Morus* + *-ic.*] Red, and derived from yellow-wood, *Chlorophora tinctoria* (or *Toxylon pomiferum*).—**Rufimoric acid**, a dark-red amorphous compound, $C_{16}H_{14}O_9$ (?), made by allowing a solution of maclurin in concentrated sulphuric acid to stand, or by boiling maclurin with dilute hydrochloric acid. By boiling with barium hydroxid it is partly changed back into maclurin.

rufin (rö'fin), *n.* [L. *rufus*, red, + *-in*².] A dark-red amorphous substance, $C_{21}H_{20}O_8$, made by heating phlorizin to 200–275° C.

rufiopin (rö-fi-ō'pin), *n.* [L. *rufus*, red, + *op*(*ianic*) + *-in*².] A yellowish-red crystalline substance, $(OH)_2C_6H_2(CO)_2C_6H_2(OH)_2$, or tetrahydroxyanthraquinone, made by heating opianic acid to 180° C. with concentrated sulphuric acid: used as a dyestuff.

rufo-fulvous (rö"fọ̄-ful'vus), *a.* Dull reddish-fulvous.

> The mesopleura closely punctured and thickly covered with *rufo-fulvous* pubescence.
> *Annals and Mag. Nat. Hist.*, April, 1904, p. 298.

rufol (rö'fol), *n.* [L. *rufus*, red, + *-ol.*] A yellow crystalline substance,  $(OH)C_6H_3{-}\left\langle\begin{matrix}CH\\ \\ CH\end{matrix}\right\rangle C_6H_3(OH)$ or β-dihydroxyanthracene, made by fusing the corresponding anthracenedisulphonic acid with caustic potash. The solutions in alkalis have a strong blue fluorescence.

rufo-piceous (rö"fọ̄-pish'ius), *a.* [L. *rufus*, red, + *piceus*, pitchy.] Dull reddish-piceous. *Annals and Mag. Nat. Hist.*, June, 1903, p. 602.

rufo-testaceous (rö"fō-tes-tā'shius), *a.* Dull reddish-testaceous. *Proc. Zool. Soc. London*, 1901, p. 28.

Rugbeian (rug'bẹ-a̤n), *a.* and *n.* **I.** *a.* Of or pertaining to Rugby in England or, especially, to the famous public school at Rugby.

II. *n.* One who has been educated at Rugby; an old Rugby boy.

> Old *Rugbeians* are said to cherish the memory of their school with more than usual pertinacity.
> *N. and Q.*, 10th ser., III. 58.

rugose-punctate (rö″gōs-pungk′tāt), *a.* Having a rugose punctation, as the integument of a beetle.

Thorax at least three times broader than long, . . . the sides strongly *rugose-punctate.*
Proc. Zool. Soc. London, 1903, p. 33.

Ruhmer cell. See ★*cell.*

R. U. I. An abbreviation of *Royal University of Ireland.*

ruke (rök), *n.* [A transposed contraction of *recruit.*] A recruit. Also *rooky.* [Slang.]

Last is the poor "regular Regular" who . . . is not a hero, just a soldier, doing his duty like a man, without a murmur or complaint, going where sent and having life made miserable by having to drill a new bunch of recruits every day; teaching them the first principles of a soldier when they are discharged, and another bunch of *rukes* come. *Army and Navy Jour.*, Aug. 19, 1899, p. 1209.

rukh^2 (rök), *n.* [Hind. *rūkh*, tree.] In India, a forest. Forests are cared for by the Department of Woods and Forests, in whose hands is the reforesting of all India.

Gisbourne['s] . . . bungalow, a thatched white-walled cottage of two rooms, was set at one end of the great *rukh* and overlooking it. . . . He made no pretense at keeping a garden, for the *rukh* swept up to his door, curled over in a thicket of bamboo, and he rode from his veranda into its heart.
R. Kipling, In the Rukh, in Many Inventions, p. 224.

rukus (rö′kus), *n.* [Origin obscure.] A violent altercation or personal encounter; a rumpus; a ruction. *Dialect Notes*, III. iii. 226. [Local, U. S. (Arkansas).]

rule^1, *n.* 2. (*e*) *pl.* In *ship-building*, a book of one of the marine registration societies containing a systematic scheme of scantlings and rules for the construction of all types and sizes of vessels. The most important of these are ★Lloyd's rules (which see). Rules involving somewhat different systems are published by other societies, as the British Corporation rules, Bureau Veritas rules (French), Record of American and Foreign Shipping rules (United States), German Lloyd rules, etc. —**Ampère's rule**, a fanciful but convenient rule for determining the deflecting action of the electric current upon a magnetic needle. It may be stated as follows: imagine yourself swimming with the current and facing the needle: then the north-seeking pole will be deflected to your left hand.—**Archibald's rule**, in *meteor.*, the empirical formula for the rate of diminution of wind-velocity with altitude, deduced by E. D. Archibald from observations with anemometers raised in the air by means of kites. For altitudes up to 2,000 feet Archibald finds $V = v \times 4 \times \sqrt{H \div h}$, where V and v are the velocities at the altitudes H and h.—**Baer's rule.** See *Baer's* ★*law* (*b*).—**Board rule**, a graduated stick for determining the contents of boards. The number of board feet in boards of given widths and lengths is shown upon the stick.—**Bouguer's rule**, a rule established by Bouguer, as the result of his measurements made in the Andes in 1737, for computing the value of gravity at various heights in terms of the value at sea-level. The rule is embodied in the formula: $g_h = g_s\left(1 - \frac{2h}{r} + \frac{3}{2}\frac{h}{r}\frac{\delta}{\Delta}\right)$, in which h is the height above sea-level, r the radius of the earth, δ the density of the strata underlying the upper station, and Δ the mean density of the earth.—**Broun's rule**, in *meteor.*, the rule established by J. Allan Broun, in 1845, from observations of the clouds at Makerston, Scotland, to the effect that the lower cumulus scud moves in a direction differing from that of the lowest surface winds by about 14° to the right, and that the clouds above it differ still more to the right, the deviation amounting to 30° for cirrus clouds. The figures differ in different parts of the globe. Similar laws for England and America were announced independently in 1872 by Ley and Abbe respectively. The analogous deviation to the left for the southern hemisphere is probable, but has not yet been demonstrated.—**Buchan's rule**, in *meteor.*, the rule announced by A. Buchan in 1865: "Stand with your left hand toward the center of low barometer and your right hand toward the high, then, in the northern hemisphere, the wind will be on your back." This is frequently but mistakenly called *Buys Ballot's* ★*law* (which see).—**Buys Ballot's rule.** See *Buys Ballot's* ★*law.*—**Carpenter's rule of three-four-five.** (*a*) The rule that a triangle with sides as 3:4:5 in length must be right-angled. This is the simplest case of three whole numbers such that the sum of the squares of two is the square of the third. For finding such numbers we have the *rule of Pythagoras:* Take n any odd number, then $(n^2-1)/2$ = the second number, and $(n^2+1)/2$ = the third number. (*b*) A carpenter's folding foot-rule, made in sections so arranged that it can be quickly adjusted for use as a yardstick (three feet) or as a four-foot rule or five-foot rule. Sometimes called a *two-four rule*, according to arrangement of sections. Rules of this type are sometimes called *zigzag rules.*—**Consent rule.** See ★*consent.*—**Eötvos rule**, the statement that in the case of many liquids the effect of temperature is such that the quantity $d(Tv^{2/3})/dt$ (where T is the surface-tension, v the molecular volume, and t the temperature) is a constant and independent of the nature of the liquid. The fact that for certain liquids, such as water, this relation does not hold, is supposed to indicate that their molecular volumes vary with the temperature. —**Espy's rule**, in *meteor.*, the rather crude approximation, adopted by Espy about 1834, that the height, in feet, above the observer of the base of cumulus cloud is 300 times the depression of the dew-point in Fahrenheit degrees at the observer's locality.—**Faye's rule**, the rule, in computing the value of gravity in elevated localities, that only the attraction of the excess of matter under the station, above the average level of the near neighborhood, should be taken into account. —**Galton's anticyclonic rule.** See *Galton's anticyclonic* ★*law.*—**Lesbian rule**, a flexible measuring-rule, made of lead and consequently easily bent, formerly used to measure curved and irregular lines.—**Make-up rule**, a thin blade of metal with projections at each end or above the middle, used by compositors in handling or making up composed types in pages or columns.—**Meldrum's rules**, a set of rules for the guidance of navigators when beset by a hurricane in the Indian Ocean, prepared by C. Meldrum, of Mauritius, as an improvement on the older rules of the circular theory. They were still further elaborated by Blanford in 1888, and both are now generalized in the general instructions to navigators on pilot-charts.—**Nernst-Thomson rule**, in *phys. chem.*, the rule that the degrees of dissociation of an electrolyte when dissolved in different solvents are proportional to the dielectric constants of the different solvents.—**Peremptory rule**, in *law*, an absolute rule; a rule without exception or condition.—**Rule absolute**, in *law*, a peremptory rule or order granted upon the hearing of a motion brought on by a rule nisi, and giving the relief sought.—**Rule boxwood.** See ★*boxwood.*—**Rule nisi**, or **rule to show cause**, in *law*, a rule or order, granted upon an ex-parte application, requiring the party against whom it is directed to show cause why the relief demanded should not be granted.—**Rule of Ceres**, the designation by which Euler and his contemporaries knew the process of obtaining the solutions of the equations

$$ax + by + cz + \ldots + lw = m$$
$$a'x + b'y + c'z + \ldots + l'w = m'$$

in the bipartite case in the analytical theory of multipartite denumeration, or the enumeration of the partitions of multipartite numbers in combinatory analysis.—**Rule of consistency.** See ★*consistency.*—**Rule of fifty moves**, in *chess*, the rule that a player may, at any stage of the game, demand that his adversary shall bring about a mate within fifty moves or be satisfied with a draw. A capture nullifies the notice, which must be renewed (if desired) and the count of moves begun again.—**Rule of inversion.** See ★*inversion.*—**Rule of the war of 1756**, in *international law*, a rule, established in 1756, that a belligerent could not give its colonial trade, during war, to a neutral nation without that nation's vessels engaged in the trade being subject to capture. Later an unsuccessful attempt was made in the **Rule of the war of 1793** to enlarge the rule to include all neutral ships trading with colonial ports theretofore monopolized by one of the belligerents, but in war thrown open to general commerce.—**Rule to plead.** See ★*plead.*—**Simplicative rule.** See ★*simplicative.*—**Simpson's rules**, approximate rules for obtaining the area included between a graphic curve and its base-line, largely used in calculations in ship-building. In these rules arcs of parabolas passing through the extremities of equally-spaced ordinates replace the actual curve. In *Simpson's first rule* the number of ordinates is odd; the first and last ordinates are multiplied by the factor 1, other odd numbered ordinates by 2, and even-numbered ordinates by 4; the sum of all the products is multiplied by one third the common interval between ordinates and the product is the approximate area. *Simpson's second rule.* In this rule the area is divided into groups of three intervals. Then the sum of the end ordinates, twice the ordinates dividing groups, and three times the two intermediate ordinates of each group, is multiplied by three eighths the common interval, the product being the approximate area. *Simpson's 5-8 rule* is used for obtaining the area of a curve between the first pair of three equally-spaced ordinates as follows: To five times the first ordinate add eight times the second and subtract the third from the sum; multiply the remainder by one twelfth the common interval. The product is the area between the first and the second ordinate. *Trapezoidal rule.* In this rule, straight lines between the tops of equally-spaced ordinates replace the curve, and the area is the sum of the intermediate ordinates and half each end ordinate multiplied by the common interval between ordinates. *Tchebycheff's rule* is a complicated rule with unequally-spaced ordinates and is not often used.—**Stevenson's rule**, in *meteor.*, a rule, determined by observations at Edinburgh, according to which the velocity of the wind over plain fields increases with altitude above ground in accordance with the formula $V = v\sqrt{(H + 72) \div (h + 72)}$, in which V, v are the velocities at the upper and lower altitudes, and H, h are the altitudes in feet. For heights less than 200 feet Stevenson recommends $V = v\sqrt{H \div h}$.—**Tchebycheff's rule.** See *Simpson's* ★*rules.*—**Thomson's rule.** Same as *Thomson's* ★*law.*—**Trapezoidal rule.** See *Simpson's* ★*rules.*—**Weddle's rule** for finding the content between the first and seventh of equidistant sections: to five times the sum of the even sections add the middle section and all the odd sections; multiply this sum by three tenths of the common distance between the sections. Formula: $\xi = \frac{3}{10} h\,[5\,(y_2 + y_4 + y_6) + y_4 + y_1 + y_3 + y_5 + y_7]$.—**Zigzag rule.** See *carpenter's* ★*rule of three-four-five* (*b*).

rule^1, *v. t.*—**Ruled cubic.** See ★*cubic.*

ruler, *n.*—**Ruler of the synagogue.** See ★*parnes.*

rule-staff (röl′ståf), *n.* In *ship-building*, a lath about four inches in width which is employed for laying off curves.

ruling, *p. a.*—**Ruling case.** Same as *leading* ★*case.*

ruling-machine, *n.* 3. A machine used by lithographers for cutting lines on stone to be printed on paper to take the place of ruled lines in lithographed bill-heads and other blanks.

ruller (rul′ėr), *n.* In *mining*, a laborer who transports rock and ore in a wheelbarrow underground. [Cornwall, Eng.]

rumenotomy (rö-men-ot′ǭ-mi), *n.* [L. *rumen*, rumen, + Gr. -*τομια*, < *ταμεῖν*, cut.] In *vet. surg.*, the operation of cutting through the hide into the rumen or first stomach of a ruminating animal to permit the evacuation of gases, impacted food, and foreign bodies.

rumicin (rö′mi-sin), *n.* [L. *rumex* (*rumic-*), sorrel, + -*in*^{2}.] Same as *chrysophanic acid.*

Rummage sale. (*b*) A sale of garments that have been worn and of cast off furnishings of any description, at very low prices, usually held in connection with church work for the benefit of the poor.

rummy^1, *a.* **II.** *n.* A drunkard; also one who favors the liquor traffic. *Dialect Notes*, III. iii. 198. [Local slang, U. S.]

rumpfite (römpf′īt), *n.* [Named after J. *Rumpf* of Gratz.] A basic silicate of aluminium and magnesium which occurs in greenish-white massive form with granular, scaly structure: found in Upper Styria.

rump-patch (rump′pach), *n.* An area of color, differing from the general color of the body, on the rump of a quadruped or bird. *Nature*, Aug. 14, 1902, p. 375.

rum-sucker (rum′suk″ėr), *n.* One who drinks alcoholic liquors incessantly; a "soaker." *Bartlett.* [Slang.]

One of the best things that can be applied to a rocky pasture infested with bushes, briars, or weeds, is salt. Salt them every week while wet with rain or dew, and let the stock look to that source alone for a supply of that luxury, which they run after with an acquired appetite as strong as that of the *rum-sucker.*
N. Y. Tribune, June 9, 1858.

rumule (rö′mūl), *n.* [NL. **rumula*, dim. of L. *ruma*, a teat.] A mammilla-like tubercle such as is often seen on lepidopterous larvæ.

run^1, *v.* 1. *intrans.* 8. (*b*) To form a paste when rained upon: said of some soils.

If wheat land is plowed during rain, it at once *runs* on the surface, forming a sort of slippery glaze.
W. H. Malden, Tillage and Implements, p. 42.

To run away, to lose its strength or quality; putrefy: said of an indigo dye-vat when an excess of fermentation takes place.

II. *trans.* 1. (*i*) In *varnish-making*, to fuse (a resin, such as copal) in an open pot until frothing ceases, in order to render (it) soluble in linseed-oil and turpentine.—**To run a ball up**, in *golf*, so to play a ball as to cause it to move along the ground rather than to rise into the air, in approaching.—**To run down a meridian** (*naut.*), to sail north or south.—**To run down a parallel**, in *nav.*, to sail east or west.—**To run down a port.** See ★*port*^{1}.—**To run latitude down**, in *nav.*, to sail north or south until the latitude of the place is reached.—**To run longitude down**, in *nav.*, to sail east or west until the longitude of the place is reached.—**To run out.** (*e*) In *cricket*, to get (the batsman) out, by striking his wicket down with the ball after it has touched a fielder, when the batsman is running, or when at any other time he is out of his ground. *Hutchinson*, Cricket, p. 126.—**To run out a cable**, to buoy and let slip the anchor-chain, so that it will all go overboard.—**To run the guard**, to cross the line of sentries without authority.—**To run up.** (*e*) In *golf*, to send (the ball) low and close to the ground in approaching the hole. *Encyc. Brit.*, XXIX. 25.

run^1, *n.* 24. In *golf*, the movement of a ball along the ground after it alights.—25. In *card-playing*, same as *sequence.* In cribbage, *a run of three* is a sequence of three cards.—26. In the manufacture of starch, a long plane or table on which the starch deposits from suspension in water.—27. In *founding*, a run-out; a leak of metal from a mold.—28. In *billiards* or *pool*, continuous scoring by one player when more than one shot in an inning is allowed.—29. In *organ-building*, same as *running*, 6.—**All-round run.** Same as *all-round* ★*break.*—**Club run**, in *bicycling, hare and hounds*, and other sports, a run in which a number of members of a club take part.—**Endurance run**, a trial of the endurance of the various parts of a motor-car, or the like. Speed is not so much considered as the length of time the machine will run without giving out in any part.

Mr. A. . . . drove it [automobile] in the Boston *endurance run* of 1902 and made various touring trips with it. He rode through Cuba and Porto Rico, made several trips between New York and Syracuse and frequently drove to Saratoga and Ogdensburg. On one or two occasions the car was in races on the ice course on the St. Lawrence River. Altogether it has probably been driven from 50,000 to 60,000 miles.
N. Y. Eve. Mail, Feb. 10, 1906.

Forced run, in *base-ball*, a run accorded to a runner when he is forced off third base by the fault of his opponents.—**Pipe-line run.** See the extract.

Usually the terms "production" and "*pipe-line runs*" are considered as synonymous, but production is always slightly in excess of runs. The expression "*pipe-line runs*" means the amount of oil the pipe lines have received from the wells, and as the pipe lines do not run all the oil in the tanks at the wells, it would be remarkable if the same amount remained in the tanks at the wells at the close of each year.
Rep. U. S. Geol. Surv., 1897–98, vi. 29.

Run of one's teeth, one's meals; access to food without charge. [Slang.]

And it suits to a T
To receive as your fee
The run of your teeth
And five guineas a day.
A New Song, quoted in N. and Q., 10th ser., I. 478.

Run of the kiln, bricks of all kinds and qualities just as they happen to come from the kiln.—**Run of the mine,** coal just as it comes from the mine, large and small sizes and all qualities together.—**To get a run for one's money,** to be repaid for making an effort to see or do something. [Sporting slang.]

> Once upon a time Dr. Watson and we, the eager readers, were able to follow him [Sherlock Holmes] step by step to the final unravelling. Now he is inclined to toss the solution at us and Dr. Watson, without letting us have any of the fun. We do not *get the* proper *run for our money,* if we may put it in sporting lingo.
> *Athenæum,* April 1, 1905, p. 397.

runabout, *n.* **3.** A small, light-weight, open motor-car, or one fitted with a buggy-top, designed to carry two persons, and intended to operate in towns or cities or within short distances; also a small motor-boat.

> Of course, you do not need a 30-horse-power motor in a *runabout,* but in any kind of a car you do want a reasonable surplus of power beyond what you ordinarily have to use. *Automobile Topics,* May 27, 1905, p. 495.

4. One of a herd of cattle left to run about and graze at will. [Australia.]

runabout-yard (run′a̤-bout-yärd″), *n.* In Australia, a yard where "runabouts" are fed and protected from the weather. See ★*runabout,* 4. *E. E. Morris,* Austral English.

> "Open that gate, Piambook," said Ernest gravely, pointing to the one which led into the '*run-about*' *yard.*
> *Rolf Boldrewood,* Colonial Reformer, xviii.

runaround (run′a-round), *n.* **1.** A new or artificial channel by which the whole or a portion of the water of a stream is diverted from its usual channel and flows around an obstacle, such as a dam or ice-gorge, and returns again to its normal channel below the obstruction.

> A few hundred feet below the main dam the bed of the *run-around* again joins the river. To prevent the escape of water by way of this *run-around,* save when the river is nearly up to the top of the main dam, a weir dam has been thrown across the lower end of the *run-around.*
> *Elect. World and Engin.,* Feb. 13, 1904, p. 305.

2. In *med.,* paronychia; whitlow.

Runaway star. See ★*star*¹.

rune-tree (rön′trē), *n.* A pine board or piece of birch-bark inscribed with figures, and consulted by the shamans of the Lapps in their incantations. *Keane,* Man, Past and Present, p. 341.

runic, *a.*—**Runic staff.** Same as *clog-almanac.*

II. *n.* A distinctive style of printing-type.

These types are of RUNIC face.

runiform (rö′ni-fôrm), *a.* [*rune*¹ + *-i-form.*] Having the appearance of runes. [Rare.]

> It must not be forgotten that many of these monuments date from the historic epoch and belong, as proved by the *runiform* inscriptions of Mongolia discovered by Yadrintsef and deciphered by Thomson, to the seventh and eighth centuries of the Christian era.
> *Deniker,* Races of Man, p. 363.

run-money (run′mun″i), *n.* *Naut.,* the award for apprehending a deserter.

runnel, *n.* **2.** An open channel for a small stream of water or other liquid.

> This *runnel* is made to follow the steps in a succession of descending curves, and is led by a crooked channel to a settling basin, on its way to a tank below.
> *A. J. Evans,* in Jour. Roy. Inst. of Brit. Architects, [X. 104.

runner, *n.* **1.** (*l*) (2) Same as *leather-jacket* (*c*). (3) The common jurel or hardtail, *Carangus chrysos.* (*m*) A newsboy. [London.]

> How can a busy man whenever he hears a "*runner*" be expected to leave his work, rush down stairs, keep one eye on the "*runner,*" and look for a policeman with the other? . . . What is wanted is for the police to have power forthwith to arrest any newsmonger who shouts.
> *Lancet,* April 4, 1903, p. 983.

(*n*) In *hunting,* see the extract.

> An individual belonging to that race of intelligent and remarkable persons to be found amongst the retinue of most hunts, entitled "*runners*" or "man with the terriers." *Eyre Hussey,* Miss Badsworth, M. F. H., xxvii.

15. A wheel for decorating pottery. See ★*coggle*⁴. Also called *decorating-wheel.*

> Incised ornamentation is sometimes added by the use of a small wheel, bearing an engraved device on the edge, called the "*runner,*" which is held in a frame.
> *E. A. Barber,* Pottery and Porcelain of the U. S., p. 9.

16. *pl.* The fibers that fray off the warp-yarn and collect behind the loom-reed in the process of weaving.

runner-chain (run′ėr-chān), *n.* A chain bound loosely around the forward end of the runners of a logging-sled, as a brake.

runner-dog (run′ėr-dog), *n.* A curved iron attached to a runner of the hind sled of a logging-sled, which holds the loaded sled on steep hills by being forced into the bed of the road by any backward movement.

runner-frame (run′ėr-frām), *n.* In *glass-manuf.,* an iron-shod frame used for grinding the surface of plate-glass on the grinding-table.

runner-up (run′ėr-up″), *n.* In *tennis, golf,* and similar games, the player next to the winner.

> Gwynne is only good on a heavy track, so that Charles Estes and Robert Metcalf ought to be the *runners-up.* Neither of them are sprinters, but the others are not much, and I will take them for second and third as they are named. Sweepstakes is also better on a heavy track.
> *N. Y. Com. Advertiser,* April 11, 1901.

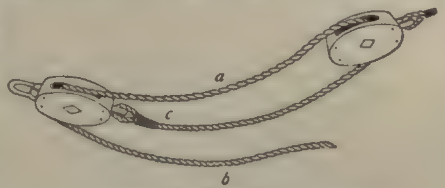
running, *n.*—**First runnings,** in the distillation of coal-tar, the mixture of ammoniacal liquor and light oils which first distils over before the temperature has come to exceed 110° C. *Sadtler.*

running, *p. a.* **8.** In *mach.,* moving; not held tightly; not fixed. A running fit is one where two surfaces in contact fit so loosely that one can move freely past the other.—**Running ground,** in *mining,* earth or rock which slides or caves in.—**Running survey.** See ★*survey.*

running-board (run′ing-bōrd), *n.* In *elect.,* a mounting for reels of wire by means of which, in the construction of overhead lines, several wires can be run off the reels simultaneously and fastened to the cross-arms of the poles. *Houston,* Dict. Elect.

running-frame (run′ing-frām), *n.* In a motor vehicle, the chassis; the frame carrying the running-parts and supporting the motor, in a motor-car.

running-part (run′ing-pärt), *n.* *Naut.,* that part of a rope which is hauled upon is called the hauling-part, the part between the blocks is the running-part, and the part which is made fast is referred to as the standing-part.



Running-part.
a, running-part; *b,* hauling-part; *c,* standing-part.

runo (rö′nō), *n.* [Finn. *runo.*] In Finnish use, a song, ballad, poem, or air.

run-off (run′ôf), *n.* The portion of rainfall which is not evaporated or absorbed by the soil, but flows off in streams or is available for storage. See the extract.

> The total *run off* of a stream depends very largely on the *run off* of the storage period. Usually about 0.75 to 0.85 of the total rainfall of this period runs off in the stream. *Nature,* July 28, 1904, p. 300.

> The true index to the amount of precipitation available for irrigation is not the actual recorded precipitation, but the percentage of this which flows off into the streams and which is known as "*run-off.*" . . . A glance at a *run-off* map of the United States shows in the darker shade of color that portion in which the *run-off* exceeds 20 inches in depth.
> *H. M. Wilson,* in Bulletin Amer. Geog. Soc., XXX. 5.

Coefficient of run-off. See ★*coefficient.*

runt¹, *n.*—**Welsh runt,** a breed of large, long-horned Welsh cattle whose prevailing color is black.

> As graziers' beasts Welsh cattle are well known in the midland counties of England, where, under the name of *Welsh runts,* large herds of bullocks are fattened upon the pastures, or "topped up" in the yards in winter.
> *Encyc. Brit.,* XXV. 191.

Runula (rö′nụ̈-lạ̈), *n.* [NL., dim. of *runa,* a dart, a javelin.] A genus of blennioid fishes found in the eastern tropical Pacific.

runway, *n.* (*g*) The trough by the side of a bowling-alley along which the balls are rolled back from the end. (*h*) The swinging platform leading down to a boat-house float.

rupee, *n.* **2.** A current silver coin of Ceylon, equal to 16 annas or 32.47 United States cents.—**Arcot rupee,** a silver coin struck in Madras from 1788 (?) to 1835, weighing from 176.4 to 180.7 grains.—**Company's rupee** or **government rupee,** a new rupee struck in 1835 by the East India Company, weighing 180 grains eleven twelfths fine: the standard rupee from 1835 of all British India.—**Sicca rupee.** See *sicca.*—**Sonaut rupee,** a name given to the sicca rupee in Bengal. The name (Hind. Ar. *sanwāt,* years) refers to the year of the reign which appears upon these coins.—**Zodiac rupee,** a silver coin of the Mogul emperor Jahangir (1605–27 A.D.) of India, bearing one of the signs of the zodiac. Zodiac mohurs were also coined.

rupestrian (rọ̈-pes′tri-a̤n), *a.* Same as *rupestrine.*—**Rupestrian inscription,** a rock inscription; a petroglyph.

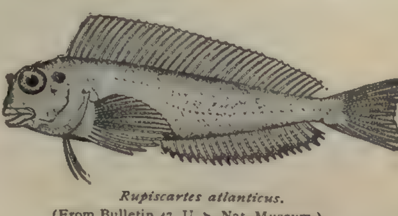
> The carvings on the dolmen des marchands, Brittany, are almost identical with those of the so-called "*rupestrian inscriptions*" of Tunisia and South Algeria.
> *Keane,* Ethnology, p. 137.

rupia² (rö-pē′ä), *n.* [Pg., < Hind. *rūpīya,* rupee.] A current silver coin of Portuguese India, the same as the rupee, and equivalent to 32.47 United States cents.

rupie² (rö′pẹ̄-ẹ), *n.* [G. See *rupee.*] A current silver coin of German East Africa, equal to 64 pesas or 32.47 United States cents.

rupioid (rö′pi-oid), *a.* [*rupia* + *-oid.*] Resembling rupia. *Buck,* Med. Handbook, VII. 611.

Rupiscartes (rö-pi-skär′tēz), *n.* [NL., < L. *rupes,* rock, + Gr. σκάρτης, springing, nimble.] A genus of blennioid fishes found on both coasts of tropical America.



Rupiscartes atlanticus.
(From Bulletin 47, U. S. Nat. Museum.)

rupophobia (rö-pọ̄-fō′bi-ạ̈), *n.* [Prop. **rhypophobia,* < Gr. ῥύπος, dirt, filth, + -φοβια, < φοβεῖν, fear.] A morbid dread of uncleanliness.

rupture, *n.* **4.** In *mech.*: (*a*) The splitting or tearing of a boiler or tank from internal pressure or stress, as distinguished from an explosion in which it flies into pieces. (*b*) A breakage or tearing apart by tensile stress in excess of the resisting capacity of the piece.—**Generative rupture,** a rupture by which a moving object begins to take on one or more additional dimensions, as when a particle during its motion suddenly begins to spread into a pellicule, so that from generating a line, it begins to generate a solid.—**Modulus of rupture.** See ★*modulus.*—**Rupture length.** See ★*length.*—**Tension rupture,** in *geol.,* a break in rocks produced by a tension strain. *Geikie,* Text-book of Geol., p. 684.

rupture, *v. t.* **4.** To tear apart; open along a line or at one point, without destroying the whole structure: said of boilers or tanks, as distinguished from *explode.*

ruptured (rup′tụ̈rd), *p. a.* [Pp. of *rupture, v.*] Having a rupture (specifically, a hernia).

Rural engineering, free delivery, free-delivery route. See ★*engineering* and ★*delivery.*

rurales² (rö-rä′lās), *n. pl.* [Sp. *guardias rurales,* rural guards.] A body of mounted police or gendarmerie in Mexico, established by President Diaz, composed largely of members of the revolutionary and criminal classes, but effective in the maintenance of order.

rush¹, *n.*—**Hard rush,** *Juncus glaucus.* See extract under *soft* ★*rush.*—**Soft rush.** See the extract.

> *Soft Rush* (Juncus effusus, Juncaceæ).—The common *Soft rush* has been used for platting into mats and chair bottoms, and the pith has been utilised for the wicks of candles. The Hard rush, Juncus glaucus, has been utilised in the making of brooms and whisks. The leaves are not nearly so smooth as those of Juncus effusus; they are less pliable, fluted, and crack more readily. The hard rush generally grows in dry situations; its brittle character renders it unfit to be utilised for some purposes. *Hannan,* Textile Fibres of Commerce, p. 64.

rush², *v.* **I.** *intrans.* **5.** In *rowing,* to come forward too fast; to rush the slide.

II. *trans.* **5.** To surround with many attentions and entertain often: as, to *rush* a girl; to *rush* a man for a fraternity. [College slang, U. S.]—**Rush it** (in the imperative), hurry it; get it done quickly. [Slang.]—**To rush the growler,** to go or send many times for beer to be brought in a 'growler' (a pitcher or pail). [Slang.]

rush², *n.* **11.** In *gold-mining,* a place where gold is found in quantities: so called from the rush of miners to mark out claims. [Australia.]

> It is a common practice for them to mark out one or more claims in each new *rush,* so as to make sure if it turn out well.
> *W. Howitt,* Land Labour and Gold, I. 184, quoted in E. [E. Morris, Austral English.

II. *a.* Characterized by haste; requiring haste. [Colloq.]—**Rush order,** in trade, an order which is to be filled in the shortest possible time. [Colloq.]

rush-cart (rush′kärt), *n.* In Lancashire and the West Riding, the cart in which the rushes are carried in procession to decorate the church at its rush-bearing (which see).

rusher², *n.* **4.** A miner who rushes into a newly opened gold region, with a determination to get ahead of others. [Australia.]

Ruskinian (rus-kin′i-an), *a.* Of, pertaining to, resembling, or having, the characteristics of John Ruskin, the noted English writer.

> The appearance of justifying some foregone conclusion as to what a writer or a book "ought" in the *Ruskinian* sense to be.
> *H. James*, Jr., Introd. Kipling, Mine Own People.

ruspo (rös′pō), *n.* [It. *ruspo*, a coin so named, a sequin, < *ruspo*, adj., rough, new, new-coined.] A Tuscan gold coin, the sequin. Same as ★*gigliato*, 2.

ruspone (rös-pō′ne), *n.* [It., aug. of *ruspo*, a coin so named.] A Tuscan gold coin, the triple sequin, of the value of 40 gold lire or 60 paoli.

Russelia (ru-sel′i-ạ̈), *n.* [NL. (Jacquin, 1760), named in honor of Alexander *Russell* (1714–1768), a Scotch physician and naturalist.] A genus of plants of the family *Scrophulariaceæ*, comprising about a dozen shrubs, natives of tropical America, chiefly of Mexico. Two or three species are in cultivation in greenhouses, the commonest one being *R. juncea*, a slender plant with angular spreading or drooping rush-like nearly leafless branches and racemes of small, slender, bright red, tubular flowers.

Russian backgammon, bast, brome-grass, catarrh, tea. See ★*backgammon*, etc.—**Russian cactus.** Same as *Russian* ★*thistle.*—**Russian cat.** Same as *Opelousas* ★*cat.*—**Russian green.** Same as *dark* ★*green.*—**Russian red clover.** See ★*clover.*—**Russian saltwort.** See *Russian* ★*thistle.*—**Russian thistle.** See ★*thistle.*—**Russian tula.** Same as ★*niello-silver.*

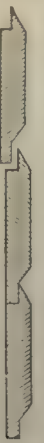
Russianization (rush″ạn-i-zā′shọn), *n.* [*Russianize* + *-ation.*] The process of rendering Russian in character or government; incorporation in the Russian Empire.

> Such topics as the *Russianization* of Finland, the coal strike, and the Arbitration Commission are handled without fear or favor. *The Nation*, June 18, 1903.

russium (rus′i-um), *n.* [NL., < *Russia.*] A supposed new chemical element announced by Chroustschoff, in 1889, as probably present along with thorium in monazite. No additional or complete investigation has been published.

rust^1, *n.* **1.** Rust formed on iron by exposure to air and water often approaches pretty closely in composition the mineral limonite, a ferric oxyhydroxid (Fe$_4$O$_3$(HO)$_6$). It also frequently contains some ferrous or ferrosoferric oxid and hydroxid, and is more or less perceptibly magnetic.—**Apple-rust,** a rust of apple-leaves, the æcidial stage of species of *Gymnosporangium* which attack the leaves.—**Asparagus-rust.** See ★*asparagus-rust.*—**Barley-rust,** a rust caused by either *Puccinia graminis* or *P. rubigo-vera*, both of which attack barley.—**Bean-rust,** a rust of the bean due to *Uromyces appendiculatus.*—**Beet-rust** a rust caused by *Uromyces Betæ*, which attacks beet-leaves.—**Blackberry-rust,** a rust-fungus, *Puccinia interstitialis*, which attacks blackberry-leaves.—**Brown rust,** a fungous disease of grains and grasses, especially *Triticum* and *Bromus*, caused by *Puccinia dispersa* and its varieties. The name is also incorrectly applied to various diseased conditions of foliage of uncertain causation, accompanied by brown spots, as the so-called brown rust of the tobacco-plant.—**Carnation-rust,** a rust due to *Uromyces caryophyllinus*, which attacks the leaves and stems of the carnation.—**Celery-rust,** a rust due to *Puccinia bullata*, which attacks celery-leaves.—**Cherry-rust,** a rust caused by *Puccinia Pruni*, which attacks the leaves of the cherry.—**Chrysanthemum-rust,** *Puccinia Chrysanthemi*, which attacks the chrysanthemum.—**Clover-rust.** See ★*clover-rust.*—**Corn-rust,** *Puccinia Sorghi*, which attacks Indian corn; also applied to the wheat-rust, *P. graminis*, in England.—**Cotton-rust,** *Uredo Gossypii*, which attacks cotton-leaves; also applied to a disease of cotton characterized by brown spots and dying of the leaves, supposed to be due to imperfect nutrition.—**Crown-rust,** a rust, *Puccinia coronata*, which attacks oats.—**Flax-rust,** a rust-fungus, *Melampsora Lini*, which attacks the leaves of flax.—**Golden rust,** *Puccinia glumarum*, which attacks wheat, barley, and other grasses. *Tubeuf.*—**Gooseberry-rust,** *Æcidium Grossulariæ*, which attacks the leaves of the gooseberry.—**Hollyhock-rust,** either of two species, *Puccinia malvacearum* or *P. heterogenea*, both of which attack the hollyhock.—**Leaf rust of orange, pine.** See ★*leaf-rust.*—**Oat-rust,** either *Puccinia coronata* or *P. graminis*, both of which attack oats.—**Peach-rust,** *Puccinia Pruni*, which attacks peach-leaves.—**Pear-rust,** the æcidial stage of *Gymnosporangium globosum*, which sometimes attacks pear-leaves.—**Pink rust,** *Puccinia Arenariæ*, which attacks the pink.—**Plum-rust,** *Puccinia Pruni*, which attacks the leaves of the plum, as well as those of peach and cherry.—**Poplar-rust,** *Melampsora populina*, which attacks the leaves of several species of *Populus.*—**Quince-rust,** the æcidial stage of species of *Gymnosporangium*, attacking the leaves and sometimes the fruit of the quince.—**Raspberry-rust,** *Puccinia interstitialis*, which attacks the leaves of raspberries.—**Rose-rust,** *Phragmidium subcorticium*, which attacks rose-leaves. See ★*Phragmidium.*—**Rye-rust,** either *Puccinia graminis* or *P. rubigo-vera*, both of which attack rye.—**White rust,** any one of several species of the genus *Albugo.* They form white blister-like patches on the host which burst and set free the white, powdery conidia. The white rust of the beet is *Albugo Bliti*; that of the cabbage, radish, and turnip, *A. candida*; that of salsify, *A. Tragopogonis*; and that of the sweet potato, *A. Ipomϫ-panduranæ.*

rust-fly (rust′flī), *n.* See the following phrase.—**Carrot rust-fly,** *Psila rosæ*, a cosmopolitan fly of the family *Psilidæ.*

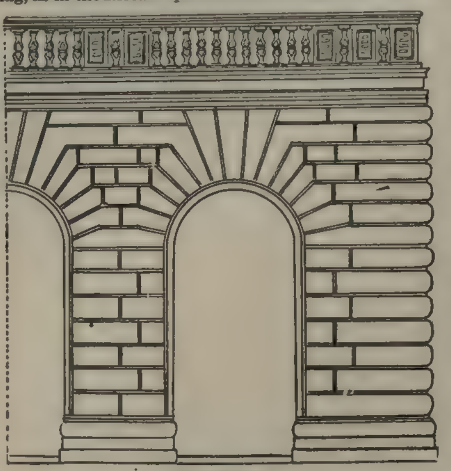


Rustic.

rustic. I. *a.* **5.** Noting a peculiar form or style of lumber with lapping edges, much used in place of clapboards for covering the exteriors of buildings and also used to some extent as a material for the ceilings and interior walls of frame houses. The commonest form consists of a board, usually about six inches in width, which is finished with a beveled edge so constructed as to lap over the lower edge of the board just above. The lower edge is finished with a bevel also, beyond which projects a short tongue, over which the upper bevel of the next lower board is to lap. [Western U. S.]—**Rustic order,** a columnar order in which the shaft has rusticated bands. Compare *banded column* (under *column*) and ★*rustication*, 2.

II. *n.*—**Checkered rustic,** an American noctuid moth, *Paragrotis tessellata.*

rustication, *n.* **2.** Rustication was first treated systematically by the architects of the Renaissance in Tuscany, especially in Florence. The type was probably suggested by the heavy Etruscan masonry still to be seen in Cortona and Fiesole. The fortress palaces of Florence furnished excellent opportunity for its exploitation. As architecture improved rustication was treated with various degrees of refinement, sometimes varying in the same building, as in the Riccardi palace where the rustication is used with less and less boldness in succeeding stories. Rustication has become an accepted motive in the classic scheme.



Rustication.
(From the Palazzo dell' Uguccioni, Florence.)

rusticness (rus′tik-nes), *n.* Rusticity. [Rare.]

> The natural *rusticness* of . . . John Knox.
> *Carlyle*, Lectures on European Literature and Culture, [p. 145.

rustle, *v. i.* **4.** To steal cattle, as a "rustler"; hence to steal, in general. See ★*rustler*, 3. [Western U. S.]

> Then the cowpuncher who had used to go out and "*rustle*" mavericks for his employer became on his own account a "rustler." *F. McElrath*, The Rustler, xii.

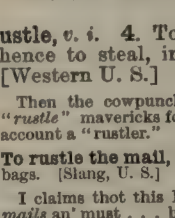
To rustle the mail, to steal from the government mail-bags. [Slang, U. S.]

> I claims thot this Bowlaig b'ar is guilty of *rustlin' the mails* an' must . . . be hanged.
> *A. H. Lewis*, Wolfville Nights, xv.

rustler, *n.* **3.** A cowman who procures his stock by capturing the cattle of other owners and branding them as his own; a cattle-thief. [Western U. S.]

> "What 's a *rustler?*" inquired Hazel. "A fellow who takes other folks' calves to be mavericks and puts his own brand on them," answered Jim.
> *F. McElrath*, The Rustler, iii.

Rust-mite of cotton, an American tetranychid mite, *Tetranychus gloveri*, which sometimes does considerable damage to cotton-leaves.



Rust-mite of Cotton (*Tetranychus gloveri*).
Adult, much enlarged.
(Banks, U. S. D. A.)

rusty^3, *a.* **2**†. Uncivil; surly.

> Cankard Jacke Hare, loke thou be
> not *rusty*,
> For thou shall well knowe I am
> nother durty nor dusty.
> *Skelton*, Magnyfycence, l. 758.

ruthenate (rö′thẹ-nāt), *n.* [*ruthen(ic)* + *-ate.*] A salt which corresponds to the hypothetical ruthenic acid, as potassium ruthenate (K$_2$RuO$_4$); also formerly used for what is now called a perruthenate, as potassium perruthenate (KRuO$_4$). Sometimes written *rutheniate.*

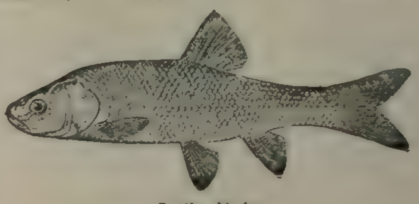
rutheniate (rọ-thē′ni-āt), *n.* [*rutheni(um)* + *-ate*^{1}.] Same as ★*ruthenate.*

ruthenite (rö′thẹ-nīt), *n.* [*ruthen(ic)* + *-ite.*] A name formerly given to a salt which is now called a *ruthenate.* See ★*ruthenate.*

rutherfordine (ruᴛʜ′ėr-fōrd-in), *n.* [Named after Professor Ernest *Rutherford.*] A uranyl carbonate, UO$_2$.CO$_2$, occurring as a yellow alteration crust on pitchblende. It is highly radioactive. Also written *rutherfordite.*

rutidosis (rö-ti-dō′sis), *n.* An irregular form for ★*rhytidosis.*

Rutilus (rö′ti-lus), *n.* [NL., < L. *rutilus*, red.] A genus of cyprinoid fishes found in fresh waters of Europe, Asia, and America.



Rutilus bicolor.
(From Bulletin 47, U. S. Nat. Museum.)

rutinic (rọ-tin′ik), *a.* [L. *ruta*, rue, + *-in*^{2} + *-ic.*] Same as *rutic.*

rutter^4 (rut′ėr), *n.* A form of plow for cutting ruts in a logging-road for the runners of the sleds to run in.

rutylene (rö′ti-lēn), *n.* An oily, unsaturated hydrocarbon, C$_{10}$H$_{18}$, of the acetylene series. It is made synthetically and boils at 150° C.

Ruvettus (rọ-vet′us), *n.* [NL., < It. *ruvetto*, *rovetto*, said to be a name of *Ruvettus pretiosus.*] A genus of fishes belonging to the family *Gempylidæ*, found in deep water in tropical parts of the Atlantic.

rux (ruks), *v. t.* To bother; fret; work (oneself) up. [Slang.]

> Too busy to *rux* 'isself about p'raids.
> *R. Kipling*, The Three Musqueteers in Plain Tales [from the Hills, p. 65.

R. V. An abbreviation (*b*) of *Rifle Volunteers.*

R. W. An abbreviation (*c*) of *railway.* Also Rw.

R. W. D. G. M. An abbreviation of *Right Worshipful Deputy Grand Master.*

R. W. G. M. An abbreviation of *Right Worshipful Grand Master.*

R. W. G. R. An abbreviation of *Right Worthy Grand Representative.*

R. W. G. S. An abbreviation of *Right Worthy Grand Secretary.*

R. W. G. T. An abbreviation (*a*) of *Right Worshipful Grand Templar*; (*b*) of *Right Worthy Grand Treasurer.*

R. W. G. W. An abbreviation of *Right Worthy Grand Warden.*

rye^1, *n.*—**Rock and rye,** rye whisky in which rock-candy has been dissolved.

rye-grass, *n.*—**French rye-grass,** the tall oat-grass, *Arrhenatherum elatius.* See *oat-grass*, 2, and *onion-couch.*—**Giant rye-grass,** the largest of the native rye- and lyme-grasses, *Elymus condensatus*, growing to the height of from 5 to 10 feet. It is common in the Rocky Mountain region and on the Pacific slope, usually growing along streams and protecting their banks by its rootstocks. Cut when young, it makes good hay, and if left standing affords considerable winter fodder. The seeds are used for food by the Indians.—**Macoun's rye-grass,** *Elymus Macounii*, a valuable perennial hay-grass of the northern Rocky Mountains.—**Perennial rye-grass,** *Lolium perenne*, a species indigenous in Europe, northern Africa, and western Asia, distinguished from Italian rye-grass by its smaller size and the absence of awns from the spikelets. It was one of the first of grasses to be agriculturally cultivated, and in Europe is highly prized for hay and preëminently as a grass of permanent pastures, while the Italian rye-grass is sown to be cut for soiling or for hay. Though introduced into America, it is less well adapted to American conditions.—**Western rye-grass.** Same as *giant* ★*rye-grass.*

rye-rust (rī′rust), *n.* See ★*rust*^{1}.

rye-smut (rī′smut), *n.* See ★*smut.*

Rymandra (rī-man′drạ̈), *n.* [NL. (Salisbury, 1809), < Gr. ῥυμός, the pole of a carriage, + ἀνήρ (ἀνδρ-), male (stamen). The name alludes to the long, slender anthers.] A genus of dicotyledonous plants belonging to the family *Proteaceæ.* See *Knightia.*

R. Y. S. An abbreviation of *Royal Yacht Squadron.*

rytidosis, *n.* An irregular form for ★*rhytidosis.*

S 4. An abbreviation (*i*) (2) of *sinister*; (*l*) of *Sabbath*, *Saint* or *Saints*, *series*, *Signor*, *Socialist*, *Spanish*; (*m*) [*l. c.* or *cap.*] of *section*, *see*, *sets* (in almanacs), *sign*, *singular*, *solo*, *son*, *soprano*, *stern*, *succeeded*, *sun*; (*n*) of the Latin *signa*, mark or label; (*o*) in *electrotechnics*, of *south pole*; (*p*) *naut.*, of *summer load-line*. See **free-board*²; (*q*) in *psychophys.*, of *sensation*.

Sa. 1. An abbreviation of *Saturday*.—2. A chemical symbol for *samarium*: but *Sm* is more usual.

S. A. An abbreviation (*b*) of *South Africa*; (*c*) of *South America*; (*d*) of *South Australia*.

saalband (zäl'bänd), *n.* [G. *saalband*, *sahlband*, selvage.] In a dike of igneous rock, the narrow outer border which has a finely crystalline or glassy texture produced by the chilling effect of the walls upon the originally molten mass. *Amer. Geol.*, Feb., 1905, p. 66.

Saarbrücken beds. See **bed*¹.

Sab. An abbreviation of *Sabbath*.

sabadilline (sab-ạ-dil'in), *n.* [*sabadilla* + *-ine*².] A crystalline alkaloid, $C_{20}H_{26}O_5N_2$, found in the seeds of hellebore, *Veratrum viride* and *V. album*, and in sabadilla seeds. It melts at 200° C.

sabadine (sab'a̤-din), *n.* [*sabad(illa)* + *-ine*².] A crystalline alkaloid, $C_{29}H_{51}O_8N$, found in sabadilla seeds. It melts with decomposition at 282–284° C.

sabadinine (sab-ạ-din'in), *n.* [*sabad(illa)* + *-in* + *-ine*².] A crystalline alkaloid, $C_{27}H_{45}O_8N$ (?), found in sabadilla seeds.

Sabalaceæ (sā-bạ-lā'sẹ̄-ē), *n. pl.* [NL. (Schimper, 1871), < *Sabal* + *-aceæ*.] See *Palmæ*².

sabatka (sa-bat'kä̤), *n.* A fish, *Alepisaurus æsculapius*, of the family *Alepisauridæ*, found in deep water from Alaska to California.

Sabayon sauce. See **sauce*.

Sabazia (sa-bā'zi-ä̤), *n. pl.* [L., < Gr. Σαβάζια (sc. *μυστήρια*, mysteries), neut. pl. of Σαβάζιος, adj., < Σαβάζιος, said to be a Phrygian name.] In *Gr. antiq.*, the orgiastic rites of Sabazius, a Phrygian deity identified with Dionysus.

Sabbatical, *a.*—**Sabbatical year.** (*b*) In certain American universities, a year, one in seven or more, granted to a professor for travel and study (commonly with half pay), with entire freedom from teaching. *Science*, Aug. 7, 1903, p. 191.

II. *n.* A contraction of *Sabbatical year*. *Amer. Geol.*, Aug., 1903, p. 131.

sabeca (sa-bē'kä̤), *n.* A musical instrument mentioned in Dan. iii., perhaps the same as *sambuca* or *sambuke*, but certainly not a 'sackbut,' as the English Bible renders it.

sabelliform (sạ-bel'i-fôrm), *a.* [NL. *Sabella* + *-form*.] Having the form of *Sabella*, an annelid; having the prestomium hidden by the forward extension of the peristomium, small tentacles, large, vascular palps, no cirri or setæ on the peristomium, and the parapodia small.

saber-leg (sā'bėr-leg), *n.* See **saber-legged*.

saber-legged (sā'bėr-legd), *a.* Said of horses in which there is a congenital malformation of the hind legs, such that the hind feet stand well under the body, the angle of the hock being more acute than is normal and taking somewhat the appearance of a saber. See **sickle-hammed*. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 349.

Sabine², *n.* 2. The language of the Sabines, one of the Old Italic languages, related to Latin, Oscan, etc.

sabina, sabino (sä-bē'nă, -nō), *n.* [Sp. *sabina*, the savin tree (*Juniperus sabina*).] 1. In Mexico, any one of several species of juniper, especially *Juniperus mexicana*, a cypress-like tree yielding a pale yellow resin somewhat like sandarach.—2. The Mexican ahuehuetl, or swamp-cypress, *Taxodium Mexicanum*, magnificent specimens of which grow at Chapultepec, near the city of Mexico.—3. In Texas, the bald cypress, *Taxodium distichum*. See *Taxodium*.—4. In Porto Rico, *Magnolia splendens*, also called *laurel sabino* (probably on account of its aromatic fragrance), a beautiful tree resembling *Talauma Plumieri*, with odorous white flowers and laurel-like leaves used by the natives in flavoring food.

sabino-tree (sạ-bī'nọ-trē), *n.* The bald cypress, *Taxodium distichum*.

sable² (sä'blạ), *n.* [Sp. *sable*, a saber: see *saber*.] A Spanish name of the cutlas-fish.

sabo (sä'bō), *n.* [Native name.] In Jamaica, the antidote cacoon, *Fevillea cordifolia*. See *antidote cacoon*, under *cacoon*.

saboi (sä'boi), *n.* [*saba*, *baboi*, native names in Bengal.] A grass, *Ischæmum angustifolium*, largely used in India for making paper. See *bhabur grass*, under **grass*.

sabuga (sä-bö'gä̤), *n.* [Ar. *ṣabūgha*, smoked fish.] A fish, *Alosa finta*, found in the Nile; the feint shad.

Saburral colic. See **colic*.

sabz (subz), *n.* [Hind., < Pers. *sabz*, green.] A peculiar shade of green used in the decoration of East Indian pottery.

sac², *n.*—**Coxal sacs.** See **coxal*.—**Crystalline-style sac,** in certain mollusks, the sac in which the crystalline style is formed.—**Eversible sacs.** See *defensive* **glands*.—**Olfactory sac,** the organ of smell of the lampreys, consisting of a sort of pocket at the end of the short nostril and in front of the brain. The Schneiderian membrane is spread over ridges at the end of this sac. *Parker and Haswell*, Zoology, II. 124.—**Ovarian sac,** in some annelids, as *Polytoreutus*, one of the lateral sacs containing an ovary and communicating with the oviduct and the spermathecal sac. *Proc. Zool. Soc. London*, 1902.—**Pudendal sac,** a cyst-like structure, containing chiefly fat, in each labium majus.—**Pulmonary sac.** (*b*) See **pulmonary*.—**Serous sac,** the sac formed by the pleura, pericardium, or peritoneum.—**Setigerous sac,** in annelids, as *Nereis*, an invagination of the epidermis lodging a bundle of setæ. *Parker and Haswell*, Zoology, I. 405.—**Spermatophoral sac,** in cephalopods, same as *Needham's sac* or *pouch*. *Parker and Haswell*, Zoology, I. 723.—**Tracheal sac,** one of the many sac-like enlargements of the tracheæ of a flying insect, which afford a greater breathing-capacity. They are largest in the bees, dragon-flies, flies, and moths, which are swift fliers, and are absent in wingless insects and larvæ.—**Vocal sac,** a pouch or sac, lying on the under side of the throat and opening in the mouth cavity, present in the males of many species of frogs and toads. There may be one sac, or a pair, according to the species, which may be distended with air and whose office is to intensify the sound of the voice. *Proc. Zool. Soc. London*, Feb., 1899, p. 167.—**Wing-sac,** a small pouch in the wing of any animal; specifically, a pouch in the antebrachial membrane of a bat of the genus *Saccopteryx*.

> The *wing-sac* is developed only in the male; it is quite rudimentary, or absent in females.
>
> *Dobson*, Cat. of Chiroptera in Brit. Mus., p. 367.

sacaline (sak'a-lin), *n.* [*Sakhalin*, *Saghalin*, the island from which the plant comes.] A coarse species of knotweed or jointweed, *Polygonum Sachalinense*, from the Russo-Japanese island of Saghalin, recently introduced into the United States as a forage-plant, but used chiefly for planting as a screen or cover in rough and waste places. It sends up shoots several feet high, bearing very large ovate-oblong leaves and axillary clusters of small greenish flowers.

sacate, *n.* See **zacate*.

sacaton, *n.* See **zacaton*.

Saccammina (sak-ạ-mī'nä̤), *n.* [NL., < Gr. *σάκκος*, a sack, + *ἅμμα*, a link, + dim. *-ina*.] A genus of *Foraminifera* in which the test is composed of agglutinated sandy particles (*Agglutinantia*) forming spherical or pear-shaped bodies with tubular prolongations at the ends and sometimes united in chains. On the interior the structure is labyrinthiform without septa. These bodies occur in the Silurian and Devonian, and in the Carboniferous at times compose entire strata, as at Elfhills in Northumberland.

saccharascope (sak'a̤-rạ-skōp), *n.* [For **saccharoscope*, < Gr. *σάκχαρον*, sugar, + *σκοπεῖν*, view.] A small glass apparatus intended to indicate the presence and amount of glucose in a sample of abnormal urine by the volume of carbon dioxid given off by fermentation after the addition of a tablet of compressed yeast. See *fermentation saccharimeter*, under *saccharimeter*.

saccharimeter, *n.* 2. A hydrometer for testing saccharine solutions, used by brewers; a saccharometer.

saccharobiose (sak″a̤-rọ-bī'ōz), *n.* [Gr. *σάκχαρον*, sugar, + E. *biose*.] A sugar having the formula $C_{12}H_{22}O_{11}$: so named because such sugars can be hydrolyzed with the formation of two molecules of the same or different monoses, $C_6H_{12}O_6$.

saccharobutyric (sak″ạ-rọ-bū-tir'ik), *a.* [Gr. *σάκχαρον*, sugar, + E. *butyric*.] Relating to a type of intestinal putrefaction in which the bacillus *Aërogenes capsulatus* is the predominating organism. Carbohydrate fermentation and formation of butyric acid stand prominently in the foreground. *Med. Record*, Aug. 3, 1907, p. 173.

saccharolactonic (sak″a-rō-lak-ton'ik), *a.* [Gr. *σάκχαρον*, sugar, + E. *lactonic*.] Noting an acid, a derivative of saccharic acid. *Simon*, Physiol. Chem., p. 55.

saccharolytic (sak″a̤-rọ-lit'ik), *a.* [Gr. *σάκχαρον*, sugar, + *λύσις*, a loosing.] Having the power of chemically splitting sugar.

> It was found that the sugar after forty-eight hours remained the same as after twenty-four hours; in other words, that Bacillus coli showed but a weak sugar-splitting power, the *saccharolytic* action ceasing after twenty-four and sometimes after eighteen hours.
>
> *Jour. Med. Research*, March, 1908, p. 86.

saccharometer, *n.*—**Einhorn's saccharometer,** a form of fermentation saccharometer. The urine to be tested for glucose is mixed with a little compressed yeast and then put in the instrument so as to fill completely the graduated portion. When warmed, fermentation sets in, if sugar is present, and carbon-dioxid gas collects. The arbitrary scale indicates the percentage of sugar corresponding to the volume of gas evolved.—**Fermentation saccharometer,** a bent graduated tube, closed at one end, designed to indicate the amount of sugar in urine by means of the gas collected at the closed end when yeast is added to the urine.

Saccharomycetales (sak″a̤-rọ-mī-sẹ-tā'lēz), *n. pl.* [NL., < *Saccharomyces* (*-cet-*) + *-ales*.] An order of fungi (so named from the genus *Saccharomyces*) including the yeasts, *Saccharomycetaceæ*, and the *Endomycetaceæ*.

saccharomycosis (sak″a̤-rọ-mī-kō'sis), *n.* [Gr. *σάκχαρον*, sugar, + NL. *mycosis*.] A morbid state induced by the presence of saccharomyces.

saccharone (sak'a-rōn), *n.* [Gr. *σάκχαρον*, sugar, + *-one*.] The crystalline lactone, $C_6H_{10}O_5 + H_2O$, of saccharonic acid, from which it is formed when a solution is evaporated by heat or in a desiccator. It melts at 145–146° C.

saccharonic (sak-a̤-ron'ik), *a.* [*saccharone* + *-ic*.] Derived from saccharin. See *saccharin*, 1.—**Saccharonic acid,** a dibasic acid, $C_6H_{10}O_7$, made by heating saccharin ($C_6H_{10}O_5$) with nitric acid. It is known only by its salts and its lactone, saccharone.

saccharorrhea (sak″a̤-rọ-rē'ä̤), *n.* [Gr. *σάκχαρον*, sugar, + *ῥοία*, flowing.] Presence of sugar in some form in the fluid excretions.

saccharose, *n.* 3. A trade-name of the sodium salt of saccharin. See *saccharin*, 2.

saccharumic (sak-a̤-rö'mik), *a.* Noting an acid, $C_{14}H_{18}O_{11}$, which is formed on heating dextrose with an alkali.

sacchulmic, *a.* See **sacculmic*.

Saccocoma (sa-kok'ọ-mä̤), *n.* [NL., < Gr. *σάκκος*, a sack, + *κόμη*, hair.] A genus of articulate crinoids constituting the only known genus of the *Saccocomidæ*. They are stemless, the calyx being composed of radial plates with an extremely small single basal, the arm-plates carrying wing-like expansions on each side of the ambulacral furrows, and the entire skeleton having a reticulated surface. They occur in the Jurassic limestone of Solnhofen, Bavaria.

saccos, *n.* 2. In *Gr. antiq.*, a coarse haircloth sieve; a form of head-dress resembling a bag, used instead of a net.—3. In *Gr. costume*, a coarse cloth, or haircloth; a garment made of such material; in the Byzantine period, a tight-fitting undergarment worn by high dignitaries.

saccospore (sak′ọ̄-spōr), *n.* [Gr. *σάκκος*, sack, + *σπορά*, seed.] In *phytogeog.*, a plant the distribution of which is facilitated by a membranous envelop or air-confining pericarp about the seed, adapting it to transportation by water or wind. *F. E. Clements.*

sacculation, *n.* 2. A small sac or cystic formation.

Six centimetres above the tip of the appendix, on the side opposite the mesentery, is a *sacculation* measuring 12 x 11 mm., with a somewhat constricted base. *Jour. Exper. Med.*, Jan. 15, 1901, p. 341.

sacculmic (sa-kul′mik), *a.* [Also *sacchulmic*; ‹ *sacc*(*harose*) + *ulmic*.] Derived from saccharose and related to ulmin.—**Sacculmic acid**, a black, glistening substance, $(C_{11}H_{10}O_4)_x$, made from saccharose by boiling it with dilute sulphuric acid.

sacculmin (sa-kul′min), *n.* Also *sacchulmin*; ‹ *sacculm*(*ic*) + *-in*^{2}.] A humin-like compound, $C_{44}H_{38}O_{15}$, formed together with sacculmic acid when saccharose is boiled with dilute sulphuric acid.

sachem, *n.* 3. An American hesperiid butterfly, *Hylephila campestris*, which occurs throughout the eastern two thirds of the United States. Its larvæ feed on grasses. It was formerly known under the specific name of *huron*, which probably gave rise to the popular name of *sachem*.

Sach's curvature. See ★*curvature.*

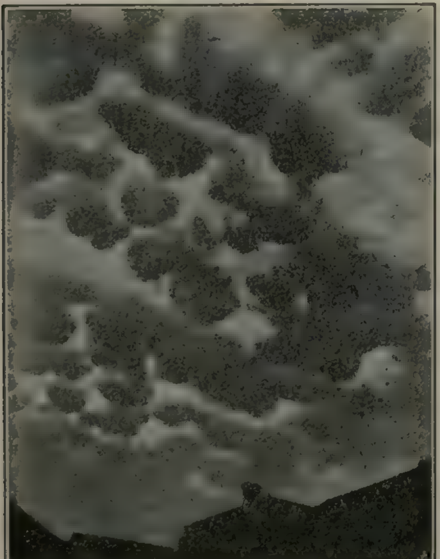
sack^1, *n.*—**Brethren of the sack.** See ★*brother.*

sack^1, *v. t.*—**To sack the rear,** in *lumbering*, to follow a drive and roll in logs which have lodged or grounded. Also *to pick the rear.*—**To sack the slide,** in *lumbering*, to return to a slide logs which have jumped out.

sack-bearer, *n.*—**Melsheimer's sack-bearer,** an American lacosomid moth, *Cicinnus melsheimeri*, reddish gray in color, sprinkled with black dots, and with a narrow blackish line crossing both wings. Its larvæ feed on oak-leaves, protecting themselves in a case made of leaves.

sackcloth, *n.*—**In sackcloth and ashes.** See ★*ash*^{2}.

sack-cloud (sak′kloud), *n.* A form of mammato-cumulus in which the pocket hanging from the cloud becomes so deep as to resemble a sack or bag, sometimes seeming to reach to the ground. The sack-like appearance is due to the descent of the heavier particles of the cloud, which, however, eventually evaporate into the air without reaching the ground as rain or mist.



Sack-cloud (*mammato-cumulus*).

Sacral escutcheon. See ★*escutcheon.*

sacrament-cloth (sak′rạ-mẹnt-klôth), *n.* The veil or cloth which covers the pyx or vessel containing the reserved eucharist.

sacrament-house (sak′rạ-mẹnt-hous), *n.* A medieval term for the tabernacle for the reserved eucharist.

Sacramento cat. See ★*cat*^{1}.—**Sacramento sturgeon,** the white sturgeon. See *sturgeon.*

sacrarial (sạ̄-krā′ri-ạl), *a.* [NL. *sacrari*(*um*) + *-al*^{1}. See *sacrarium*^{2}.] Pertaining to, or forming part of, the sacrarium, or series of vertebræ forming the sacrum, sacral mass, or synsacrum of birds.

Sacred disease. See ★*disease.*

sacred-bark (sā′kred-bärk), *n.* Same as *cascara sagrada bark*, which see, under *bark*^{2}.

sacrifice, *v. i.* 2. In *base-ball*, to make a fair hit, so as to advance a base-runner, while giving the opportunity to put out the batter.

sacring-tablet (sā′kring-tab″let), *n.* An altar-card on which is inscribed the canon of the mass for the use of the celebrant.

sacring-time (sā′kring-tīm), *n.* The time during which the sacring bell is rung at the consecration in the service of the mass.

sacro-anterior (sā″krō-an-tē′ri-ọr), *a.* [L. *sacrum*, sacrum, + *anterior*, before.] Having the sacrum anterior: noting the position of the fetus in utero when its back is directed toward the anterior abdominal wall of the mother.

sacrococcyx (sā-krō-kok′siks), *n.* [NL., ‹ *sacrum* + *coccyx*.] The sacrum and coccyx regarded as one bone. *Buck*, Med. Handbook, II. 638.

sacrocoxalgia (sā″krō-kok-sal′ji-ä), *n.* [NL., ‹ L. *sacrum*, sacrum, + *coxa*, thigh, + Gr. *ἄλγος*, pain.] Pain in the sacro-iliac articulation.

sacrocoxitis (sā″krō-kok-sī′tis), *n.* [NL., ‹ L. *sacrum*, sacrum, + *coxa*, thigh, + *-itis*.] Inflammation of the sacro-iliac articulation.

sacrodorsal (sā-krō-dôr′sạl), *a.* [L. *sacrum*, sacrum, + *dorsum*, back, + *-al*^{1}.] In the synsacrum of certain reptiles, those vertebral elements which have been derived from the dorsal series, as contrasted with those which constitute the distal part of the synsacrum, pertain to the caudal series, and are designated urosacrals.

Sacro-iliac disease. See ★*disease.*

sacroperineal (sā″krō-per-i-nē′ạl), *a.* [L. *sacrum*, sacrum, + NL. *perinæum*, perineum, + *-al*^{1}.] Relating to both sacrum and perineum. *Buck*, Med. Handbook, I. 353.

sacroposterior (sā″krō-pos-tē′ri-ọr), *a.* [L. *sacrum*, sacrum, + *posterior*, behind.] Having the sacrum directed posteriorly: noting the position of the fetus in utero when its back is turned toward the back of the mother.

sacrum, *n.*—**Lateral masses of the sacrum,** the portion of the sacrum on either side of the foramina.

sactosalpinx (sak-tọ̄-sal′pingks), *n.* [NL., ‹ Gr. *σακτός*, crammed, + *σάλπιγξ*, trumpet.] A cystic state of a Fallopian tube due to inflammatory closure of each extremity.

sadd (sad), *n.* [A variant of *sudd*.] A water-tight dam inclosing an area in the bed of a river or other body of water, from the interior of which the water may be removed by pumping in order to permit work to be carried on without interruption from the river, as in making subaqueous excavations or in constructing subaqueous foundations; a coffer-dam.

The modus operandi of the builders was to inclose the area, upon which it was intended to work during the season, by temporary dams or "*sadds*" in November, then to pump the water from the inclosure, and, keeping it down by means of centrifugal pumps, push forward with the work so as to build it above summer level; then, when the river [Nile] was in flood, the force of the water swept away the *sadds*. *Sci. Amer.*, Feb. 28, 1903, p. 152.

sadd (sad), *v. i.* and *t.* [*sadd*, *n.*] **I.** *intrans.* To construct a sadd or coffer-dam.

II. *trans.* To carry on excavation or construction in (a body of water) by excluding the water by means of a sadd or coffer-dam.

The construction of the necessary sadds to inclose the site was commenced on January 28. Even this task in itself was of no small magnitude, for the first inclosure, near the middle of the river, covered no less than 6¾ acres. The centrifugal pumps to remove the water from this *sadded* area were set at work on March 4, and then the troubles began. *Sci. Amer.*, Feb. 28, 1903, p. 152.

saddle, *n.* **3.** (*a*) (2) In *phys. geog.*, a rounded ridge between hills or mountains; a col; a round-crested pass. (*c*) (2) A part of the slide-rest of a lathe below the tool-post or upper carriage, which forms the base for it, and rests upon the inverted V's of the bed. Sometimes this saddle has been held down by a weight in light lathes. (3) The traversing carriage on the arm of the radial drill-press, which carries the spindle, the feed-mechanism, and the driving-gear. (4) The seating for the front end of the locomotive boiler, carrying the steam-passages from the dry pipe to the cylinders and from the exhaust passages to the nozle, and spanning the space between the frames. The cylinders are cast in one piece with half the saddle, right and left. (5) The forging which straddles the leaves of the spring of a locomotive, and transmits the load from and to the frames. (6) A metal plate which slides on the cross-rail of a planer or vertical boring-mill and carries the tool-head. It is usually hooked over the cross-rail, and some device is provided for making it travel back and forth on the rail. (*k*) In *lumbering*, the depression cut in a transverse skid in a skid-road, to guide the logs which pass over it.

saddleback, *n.* 7. A coping with a double slope.—**8.** *Creadion carunculatus*, a passerine bird of New Zealand: so named on account of the chestnut mark on its back.—**9.** A pigeon having a broad mark across the upper part of the back, suggestive of a saddle.

II. *a.* Characterized by having a rather steep double slope. Thus, a *saddleback* roof on a tower is one which has two slopes with a ridge between them and which is bounded at either end by the gable wall. The term is not often applied to the roofs of large masses of buildings.

saddle-bag (sad′l-bag), *v. i.* In *lumbering*, to catch on an obstruction and double around it: applied to a boom.

saddle-check (sad′l-chek), *n.* In old English furniture, a high-topped easy-chair, sometimes called *forty-wink chair*.

saddle-money (sad′l-mun″i), *n.* Chinese copper money, coined from the seventh to the fourth century B.C., of curious shape, and bearing its weight-value and the name of the place of issue.

saddle-nose (sad′l-nōz), *n.* A deformity caused by a sinking in of the bridge of the nose due to fracture or erosion of the septum. *Buck*, Med. Handbook, VI. 124.

saddle-pin (sad′l-pin), *n.* In locomotive-construction, the pin which permits a forging shaped like a capital U, either direct or inverted, to rock or adjust itself to the direction of the stress: particularly the pin of the spring-saddles. See ★*saddle*, 3 (*c*) (5).

saddle-plant (sad′l-plant), *n.* Same as *side-saddle-flower*.

saddler, *n.* 3. A horse used for riding; a saddle-horse.

A horse intended for draft purposes may be marketed somewhat sooner than a harness horse or *saddler*. *Market Classes of Horses*, p. 15.

saddle-reef (sad′l-rēf), *n.* A deposit of ore formed in the saddle-shaped cavities produced parallel with the bedding by the gaping and buckling of strata in a sharp anticline. It contains the saddle proper and the two legs. The type was first recognized in the Bendigo district in Australia, but has since been found in the Nova Scotia gold-mines and elsewhere. *T. A. Rickard*, in Trans. Amer. Inst. Min. Engin., 1891, p. 480.

saddle-seal (sad′l-sēl), *n.* The Greenland seal, *Phoca grœnlandica*, which has an irregular black mark on its back. More commonly called *saddleback* and *saddler*.

saddle-shaped, *a.* 2. In *geol.*, a technical term descriptive of an unbroken symmetrical anticline.

saddle-tank (sad′l-tangk), *n.* A form of water-tank, resembling a saddle in shape, placed on top of the boiler in small switching-engines, to give greater weight on the drivers, with consequent adhesion to the rail and greater tractive power, and to avoid the use of a water-tank on the tender.

saddle-weight (sad′l-wāt), *n.* A weight, usually made of metallic wire, which is placed astride the beam of a balance and can be moved to different points on the length of the beam, so as to be in equilibrium with different weights in the pan hung from the extremity of the other side of the beam; a rider.

Sadduceeist (sad′ụ̄-sē-ist), *n.* [*Sadducee* + *-ist*.] Same as *Sadducee*.

sadh (säd), *n.* [Hind. *sādh*, *sādhu*, pious, holy, ‹ Skt. *sādhú*, straight, right, good, virtuous, ‹ √*sādh*, reach one's goal, make straight, direct to its goal, guide aright, etc. Compare *Puritan*.] A member of a small Hindu monotheistic sect.

sadism (säd′izm), *n.* [From Comte de *Sade* (1740–1814), infamous for the licentiousness of his life and writings.] A form of sexual perversion marked by extreme cruelty.

sadist (säd′ist), *n.* [*sad*(*ism*) + *-ist*.] One who practises sadism.

sadistic (sä-dis′tik), *a.* Relating to sadism or to one who practises it. *G. S. Hall*, Adolescence, II. 112.

Sadymia (sạ̄-dim′i-ạ̈), *n.* [NL. (Grisebach, 1859), an imperfect anagram of *Samyda.*] A genus of plants of the family *Flacourtiaceæ.*

sæter, *n.* See ⋆*seter.*

safari (sä-fä′rẹ̄), *n.* [Swahili *safari*, a journey or voyage.] A caravan.

> Two days later we crossed to Ujiji and, after a few days of the lavish hospitality of Hauptmann Bethe and his colleagues, we collected our *safari* of one hundred and thirty Manyema carriers and started up the lake by land.
>
> *E. S. Grogan*, in Smithsonian Rep., 1900, p. 433.

Safe hit. See ⋆*hit*1.

safe-conduct, *n.* **1.** It may allow personal safety in travel, or it may permit the removal of goods, or it may protect one in residence. If the last, it is usually called a *safeguard* (which see); and it may be a writing given to a hostile resident, or a guard of soldiers to protect him and his property, or it may be a notice affixed to property or buildings (as churches, museums, or libraries).

2. The document issued to the master of a vessel in the merchant service of a neutral or hostile power, insuring immunity.

safe-keeper (sāf′kē″pėr), *n.* One who or that which preserves or guards (something) in safety. [Rare.]

> The written leaf, if it be, as some few are, a *safe-keeper* and conductor of celestial fire, is secure.
>
> *Lowell*, Among My Books, 1st ser., p. 298.

safe-lock (sāf′lok), *n.* A lock used on the door of a safe. It may be a combination-lock or a time-lock, or it may be operated by a key. See *safe*, *n.*

safety, *n.* **8.** Defensive strategy at billiards. In America, since 1879, deliberate resort to misses has been restricted by limiting such misses to three in succession, and contingently to two. *W. Broadfoot*, Billiards, p. 284.—**9.** In *base-ball*, a safe hit.—**Isle** or **island of safety.** See ⋆*isle*1.—**Margin of safety.** Same as ⋆*factor of safety.*—**Safety funnel-tube.** See ⋆*funnel-tube.*

safety-angle (sāf′ti-ang″gl), *n.* The angle, reckoned in degrees, which marks the limit of safety in the rolling of a vessel. If the ship rolls in excess of this limit it is likely to capsize. The safety angle varies according to the vessel. An instrument known as the 'clinometer' records the amount of roll either by a pendulum or a bubble working in a curved tube filled with glycerin. The term 'safety-angle' is sometimes applied to the horizontal and vertical danger angles.

safety-boiler (sāf′ti-boi″lėr), *n.* A boiler the construction or design of which is such that a failure of any part by weakness or overstrain shall not cause a disastrous explosion from too rapid liberation of the stored energy. The sectional boilers are usually safety-boilers.

safety-bridle, *n.*—**Marvin safety-bridle.** See ⋆*bridle*, 10.

safety-cap (sāf′ti-kap), *n.* **1.** A cup-shaped piece placed on the top of the upper bearing-boxes of a roll-train, weaker than the weakest part of the roll itself, and designed to yield by breaking if too severe a stress comes upon the roll from a piece too cool to be compressed in the pass.—**2.** A cap for an engine or working-beam bearing designed to break if excess water in the cylinder endangers the transmission mechanism through inability to escape from the cylinder as the mechanism nears its dead-points.

safety-chain, *n.* **2.** A short chain placed between a car-body and the truck to prevent the latter from swinging at right angles to the body in case it leaves the rails while the car is moving; a check-chain.—**3.** A light chain designed to be attached to a key-ring or watch to prevent it from being stolen from the wearer's pocket.

safety-ladle (sāf′ti-lā″dl), *n.* See ⋆*ladle.*

safety-latch (sāf′ti-lach), *n.* **1.** Any latch having a stop or other device to prevent it from being accidentally opened.—**2.** A latch for an upper berth in a sleeping-car, designed to hold the berth down and prevent it from closing in case of an accident to the car.

safety-nut (sāf′ti-nut), *n.* Same as *jam-nut.*

safety-rope (sāf′ti-rōp), *n.* **1.** A second rope added to the main hoisting-rope on inclined planes or elevators, as a precaution in case of breakage of the main rope.—**2.** A rope attached to a brake, valve, or other stopping-device, by which the motion of the car can be stopped in case of accident on railways or inclines.

safety-stop, *n.* **5.** In a factory or mill, an apparatus by which the power can be shut off at the prime mover in case of accident in any department. In steam-plants the throttle may be closed by the fall of a weight, the weight being normally held up by a detent or catch which can be released by an electromagnet when a push-button or switch is thrown in any department. A brake may also be applied at the engine to shorten the time of the stop.—**6.** A device to shut off power from the engine in case the governing mechanism should fail or break and the engine start to run at excessive speed.—**7.** In *sheet-metal work*, an attachment to a press designed to arrest its motion by throwing the clutch, through which it receives power, out of gear in case the hand of the operator, in feeding the shells or blanks to the press, comes too near the dies for safety, or in case a shell chokes or jams the feed-motion or is wrongly presented to the dies. Safety-stops are also used in presses to prevent the descent of the plungers while the dies are being changed. Compare ⋆*dial-feed.*

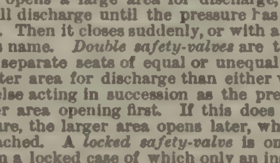
safety-valve, *n.* To be a true safety-valve the area opened by the lift of the valve should be sufficient to carry off all the steam that the boiler can make at that pressure, with the fire at its best and all other outlets closed. It rarely is so ample as this, but the blowing of the safety-valve serves as an alarm, and the pressure rarely rises much above the blowing-off point, because steps are taken at once by the fireman to retard the rapid formation of steam and accumulation of pressure. The force which balances the interior pressure upon the area of the valve may be a weight or a spring. The effort of weight or spring to hold the valve shut may be exerted directly on the back of the valve, or indirectly by means of a lever. The levers should act with knife-edge fulcrums to lessen friction and prevent jamming by side-thrust. With high pressures and large areas of valve the direct-weight system becomes inconvenient. It is still used in England for low pressures, but is little used in the United States. The *spring pop safety-valve* is the most widely used. The pop-valve was first worked out by Richardson of Troy, New York. The pressure comes on a given area when the valve is shut, and tends to lift it. When the pressure overbalances the weight or spring, and the valve rises from its seat, annular grooves in valve and seat are filled with escaping steam, and, by their reaction upon the larger annular area outside the first area of contact, tend to lift the valve higher and to hold it up from its seat until the pressure has fallen below that at which the valve opened—usually five pounds. Hence the valve opens a large area for discharge, and keeps open in full discharge until the pressure has gone down somewhat. Then it closes suddenly, or with a pop, which gives it its name. *Double safety-valves* are those which have two separate seats of equal or unequal area, opening a greater area for discharge than either would open alone, or else acting in succession as the pressure rises, the smaller area opening first. If this does not relieve the pressure, the larger area opens later, when the balance is reached. A *locked safety-valve* is one which is inclosed in a locked case of which only an inspector has the key, or one in which the adjusting device is locked with lock and key, so that when once set to a determined pressure only the possessor of the key can change it.—**Dead-load safety-valve,** a Cowburn valve; a form of safety-valve for steam-boilers, or other pressure-vessels, in which the force necessary to hold the valve on its seat is secured by placing weights directly upon the back of the valve. These are usually annular, and are kept in place by a vertical spindle. The weights may also be hung inside from the spindle on the bottom side of the valve.—**Pop safety-valve.** See above.

saffire, *n.* and *a.* An amended spelling of *sapphire.*

safflower-yellow (saf′lou-ėr-yel″ō), *n.* A yellow dyestuff, $C_{24}H_{30}O_{15}$, extracted from safflower, or false saffron, *Carthamus tinctorius.*

saffranine (saf′ra-nin), *n.* [G. *safran*, E. *saffron*, + *-ine*2.] One of a class of dyes made by oxidizing a mixture of a paraphenylenediamine derivative and a monamine. The saffranines form metallic-green crystals and dye fabrics orange, red, or violet. The simplest, *phenosaffranine*, $C_{18}H_{15}N_4Cl$, is made from paraphenylenediamine and aniline. *Tolusaffranine*, $C_{21}H_{21}N_4Cl$, is made from paratoluylenediamine and toluidine. Also *safranine.*—**Saffranine MN.** Same as *methylene* ⋆*violet.*

saffranol (saf′ra-nol), *n.* [G. *safran*, E. *saffron*, + *-ol.*] A basic compound,



$$\begin{array}{ccccccc}
\mathrm{CH} & \mathrm{:CH-} & \mathrm{C} & \mathrm{:N-} & \mathrm{C} & \mathrm{-CH:} & \mathrm{CH} \\
| & & | & & \| & & | \\
\mathrm{C} & \mathrm{-CH:} & \mathrm{C} & \mathrm{-N-} & \mathrm{C} & \mathrm{-CH:} & \mathrm{COH,} \\
\| & & & | & & & \\
\mathrm{O} & & & \mathrm{C_6H_5} & & &
\end{array}$$

made by boiling phenosaffranine with barium or potassium hydroxid. It forms crystals the color of brass and gives violet solutions with alkalis.

saffron, *n.*—**Antimonial saffron,** in early *chem.*, a yellow material consisting essentially of antimony oxysulphid.—**Indian saffron,** the turmeric plant, *Curcuma longa.*—**Meadow saffron.** (*b*) The hemlock water-dropwort, *Œnanthe crocata.*—**Saffron bronze.** See ⋆*bronze.*—**Saffron substitute.** Same as ⋆*yellow*, 1 (*b*).—**Spanish saffron,** the common saffron, *Crocus sativus.*—**Thistle saffron.** Same as *safflower.*

saffronine (saf′rọ-nin), *n.* See ⋆*saffranine.*

saffronism (saf′rọn-izm), *n.* [*saffron* + *-ism.*] The quality of being like saffron; hence, yellowness: in the extract, an allusion to 'yellow' journalism. [Rare.]

> All the news information concerning the case that could have been printed was fit to be printed—and you gave all the news that we ourselves possessed. Unfortunately, some of your neighbors, deep dyed in journalistic *saffronism*, indulged in cruel fancy, created a tissue of indecent fabrications, and made our already heavy hearts heavier with indignation and renewed sorrow.
>
> *N. Y. Times*, Jan. 22, 1906.

saffron-sugar (saf′rọn-shůg″ạ̈r), *n.* Same as ⋆*crocose.*

saffron-tree (saf′rọn-trē), *n.* In the Bahamas, a small tree of the sapota family, *Chrysophyllum monopyrenum*, the leaves of which are golden-yellow on the under side.

safranol (saf′ra̤-nol), *n.* A compound, $C_{18}H_{12}O_2N_2$, obtained by warming the hydrochlorid of phenosafranine with alcoholic potash. It crystallizes in yellow needles which melt above 330° C.

safrene (saf′rēn), *n.* [G. *safr*(*an*), saffron, + *-ene.*] An oily terpene, $C_{10}H_{16}$, found in the oil of sassafras-root. It boils at 155–157° C.

safrifa (sä-frē′fạ̈), *n.* A plumbaginaceous plant of Morocco, *Limonium mucronatum.* It is a root nervine.

safrosin (saf′rō-sin), *n.* [G. *safr*(*an*), saffron, + *-ose* + *-in*2.] See ⋆*coccin.*

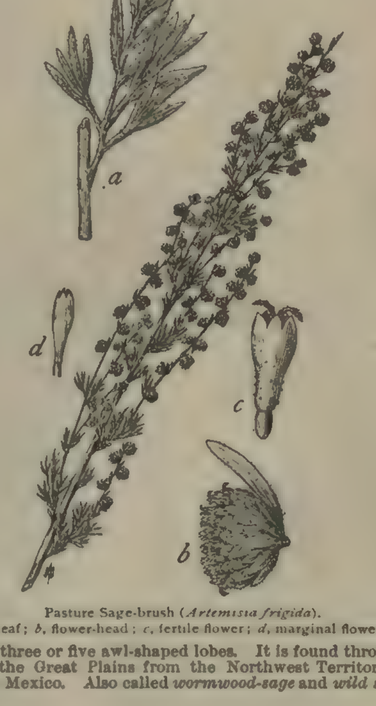
sag, *n.* (*d*) In *railroad construction*, a depression in the grade of a road; the meeting of a down grade with an up grade. An abrupt sag is objectionable, owing to the varying strains upon the cars of a train passing it, the cars on the up grade being pulled apart and those on the down grade being pressed together, the strains being reversed as each car passes the lowest point of the sag. (*e*) A depression in a crest-line or divide.

> In the Fort Benton folio of the Geologic Atlas of the United States, an ancient channel, called the Shonkin *sag*, eroded by the waters thus pouring along the ice border, has been traced by Weed about fifty miles, passing across the low watersheds. *Amer. Geol.*, Sept., 1904, p. 156.

sagakomi (sa̤-gak′ọ̄-mē), *n.* [Also *saccacommis* (Lewis and Clarke); < Canadian F. *saccacomi*, < Ojibwa *sagakomin*, lit. 'smoking berry,' < *sakao* (*sakaw*, Clapin), to smoke (*sakaipwagane*, to smoke a pipe—Clapin), + *min*, berry.] A plant, the bearberry-bush, *Arctostaphylos Uva-ursi*, the leaves and bark of which were formerly smoked (like tobacco) by the Canadian Indians, and are still so used by many of the French Canadians; also, a mixture of this kind for smoking. Compare *kinnikinick. Jour. Amer. Folk-lore*, Oct.-Dec., 1902, p. 256.

sage2, *n.*—**Jerusalem sage,** either of two south European species of *Phlomis*, *P. fruticosa* and *P. tuberosa*, the latter of which is naturalized in the United States.—**Sage camphor.** See ⋆*camphor.*—**Spring sage.** Same as ⋆*bud-brush.*—**Western sage,** *Artemisia gnaphalodes* and *A. Ludoviciana*, two very similar species commonly confused (abundant on the prairies and plains of western North America), more or less white-tomentose and sage-like in appearance. Also called *Western mugwort.*—**Wild sage.** (*d*) See *pasture* ⋆*sage-brush.*—**Wormwood sage,** either of two narrow-leaved species of *Artemisia*, *A. filifolia* and *A. frigida*, of the dry plains of western North America, having a sage-like aspect. The former is also called *silvery wormwood* and the latter, *pasture* ⋆*sage-brush.*

sage-brush, *n.*—**Pasture sage-brush,** *Artemisia frigida*, a low perennial species with short leaves divided into three or five awl-shaped lobes. It is found throughout the Great Plains from the Northwest Territory to New Mexico. Also called *wormwood-sage* and *wild sage.*



Pasture Sage-brush (*Artemisia frigida*).
a, leaf; *b*, flower-head; *c*, fertile flower; *d*, marginal flower.

Sagenichthys (saj-ẹ̄-nik′this), *n.* [NL., translating its Sp. name in Uruguay, *pescadillo del red*, 'fish of the net': < Gr. σαγήνη, net, seine, + ἰχθύς, fish.] A genus of sciænoid fishes found on both shores of tropical America.

sage-of-Bethlehem (sāj″ọv-beth′lẹ̄-ẹm), *n.* 1. The spearmint, *Mentha spicata.*—2. The lungwort, *Pulmonaria officinalis.*

saggar, *n.* 2. The cast-iron box in which white iron castings are packed with an oxid of iron, such as hematite ore, to be exposed to the heat of the reverberatory furnace in the process of rendering them malleable.

saggart (sag′ạ̈rt), *n.* [Also *saggyrt, soggarth, sogarth*, < Ir. Gael. *sagart*, Manx *saggyrt*, OIr. *sacart, sacardd*, = AS. *sacerd*, < L. *sacerdos*, a priest. See *sacerdotal.*] A priest. [Anglo-Irish.] *Eng. Dial. Dict.*

> It is a farmer I should have been, like my brother Denis, had not my uncle Phelim, the thief! tould my father to send me to school, to learn Greek letters, that I might be made a *saggart* of and sent to Paris and Salmanca.
> And you would rather be a farmer than a priest?
> *Borrow*, Lavengro, x.

saggarting (sag′ạ̈r-ting), *n.* [*saggart* + *-ing*¹.] The practice of the priesthood; being a priest. *Borrow*, Lavengro, x.

sagger, *n.* and *v.* Another spelling of *saggar*.

Sagittal gyrus. See ★*gyrus.*—**Sagittal sulcus.** See *coronal* ★*sulcus.*

sago-tree (sā′gō-trē), *n.* In the West Indies, one of several cycads which yield sago, especially *Zamia furfuracea* and *Zamia integrifolia.* See *Zamia.*

saguara (sä-gwä′rä), *n.* Same as *saguaro*, which see.

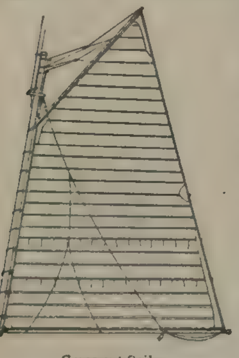
sagvandite (sag′van-dīt), *n.* [*Sagvand* Lake, Norway, + *-ite*².] In *petrog.*, a crystalline rock composed of bronzite and magnesite, with a little chromite, mica, and pyrite. It occurs in the crystalline schists. *Petersen*, 1883.

Sahidic (sä-hid′ik), *a.* and *n.* [*Sahid* or *Saïd* (see def.), Ar. *Ṣa'īd* or *Ṣi'īd*, Upper Egypt, < *ṣa'ad*, rise, ascend.] **I.** *a.* Of or pertaining to Sahid or Said, the Arabic name of Upper Egypt (the Thebaid); Thebaic: used especially with reference to a dialect of Coptic there spoken.

II. *n.* An important dialect of Coptic, spoken in the Thebaid and formerly called Theban. *Encyc. Brit.*, XXVII. 727.

sahuaro (sä-hwä′rō, sä-wä′rō), *n.* Same as *saguaro*, which see.

saibling, *n.*—**American saibling.** Same as *Sunapee* ★*trout.*


Cross-cut Sail.

sail¹, *n.*—**Cross-cut-sail**, a sail in which the canvas seams run fore-and-aft instead of up and down; in other words, a sail having the breadths of canvas running horizontally instead of perpendicularly.—**Crowd of sail.** See ★*crowd*¹. — **Cyclone-boat sail.** See ★*umbrella-boat.* — **Flying sail**, a sail which is not permanently confined to a yard, or mast, or gaff, but is set from the deck like the jib of a cutter yacht, a sprit or club topsail, etc.—**In sail**, the order to reduce the spread of canvas.—**Plain sail**, one of the regular working sails of a vessel, and not one of those which are set flying, such as studding-sails (stun sails), balloon sails, etc.—**Shadow-sail**, a sail designed to take the place of the regular jib-headed spinnaker, the idea being to make a square-headed spinnaker by setting the head of the sail on a gaff secured to the mast under the hounds by a goose-neck, and to spread the foot of the sail on the swinging-boom. When the shadow-gaff was not in use it hung down the mast and was so secured. The head of the shadow traveled on its gaff by hoops, and was hauled out and in respectively by means of an outhaul and brails.—**Sheer sail**, a sail that is used as a drag.—**To mend sail**, to skin the sails afresh after a poor furl; furl the sails in a neater manner.—**Under low sail**, said of a square-rigged vessel when the exposed canvas is limited to a close-reefed topsail, to that and a course, or to a course alone. A fore-and-aft vessel is under low sail when its gaff-sails are close-reefed.—**Under plain sail**, said of a vessel when it is carrying only its working sails, which are permanently confined to yards, booms, gaffs, etc.

sail¹, *v. i.* 8. In *lawn-tennis*, to rise after crossing the net: said of a ball.—**To sail by and large**, to sail alternately close to the wind and off the wind.—**To sail by the wind**, to sail close, so that the sails are kept only well filled, while to allow the vessel's head to fall off generously from the point of *by* is to sail large.—**To sail large.** See *to* ★*sail by the wind.*

sail-hoist (sāl′hoist), *n.* Same as ★*railway*, 3.

sailing, *n.*—**Meridian sailing**, sailing due north or south; sailing on a meridian.

sail-looser (sāl′lö″sėr), *n.* One of the members of a crew who are detailed to lay aloft for the purpose of loosing the sails preparatory to the setting of them, or of breaking out the canvas after a rain so that the sails may dry.

Sailmaker's splice. See ★*splice.*

sail-model (sāl′mod″el), *n.* A miniature representation of a vessel's spars, rigging, and sails, according to scale.

sail-netting (sāl′net″ing), *n.* A rope or canvas netting which acts as a receptacle for certain staysails, such as the main-topmast staysail.

sailor, *n.*—**Climbing sailor, roving sailor**, the Kenilworth ivy, *Cymbalaria Cymbalaria.* Also called *wandering sailor.*

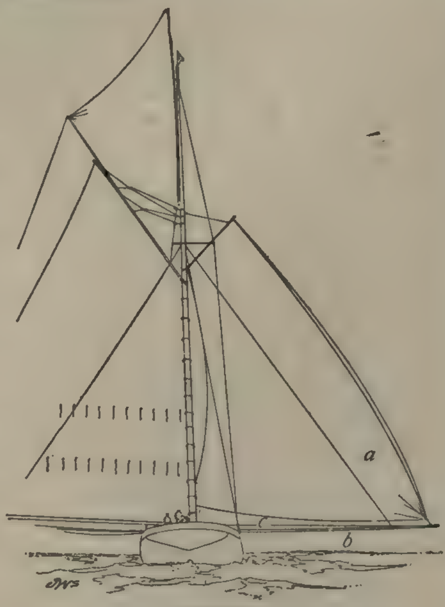
sailoring (sā′lọr-ing), *n.* The act of sailing a ship; doing the work or following the trade of a sailor. [Rare.]

> I'll be wanting a helping-hand myself. It's a rotten, undependable trade, this *sailoring.*
> *Cutcliffe Hyne*, A Master of Fortune, vii.

sailor's-choice, *n.* 3. A West Indian fish, *Hæmulon parra;* also, other fishes related to it. Also called *ronco prieto.*

sailor's-knot (sā′lọrz-not″), *n.* The herb-robert, *Geranium Robertianum.*

sailor's-pocket (sā′lọrz-pok″et), *n.* See *sailor's-purse.*



Shadow-sail.
a, shadow-sail; *b*, boom; *c*, after-boom guy.

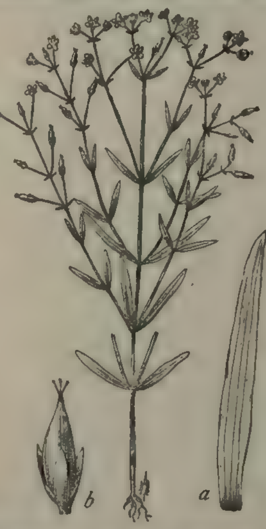
sailors'-skin (sā′lọrz-skin), *n.* A bluish-red discoloration of the skin with thickening of the epidermis and the occurrence of warty elevations, constituting a form of cancerous growth. *Buck*, Med. Handbook, II. 681.

sailor's-tobacco (sā′lọrz-tọ̄-bak″ō), *n.* The common mugwort, *Artemisia vulgaris.*

sail-plan (sāl′plan), *n.* In *naval arch.*, a plan showing the masts, spars, sails, and rigging of a vessel in longitudinal elevation. The cut under *ship* is a sail-plan except that the running rigging is not usually shown on such a plan.

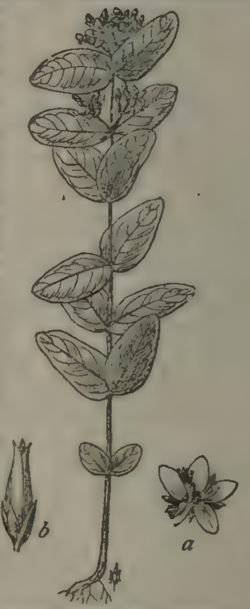
sainete (sä-ẹ̄-nā′tạ̄), *n.* [Sp., relish, flavor, an interlude or farce, dim. of *saín*, grease, fat, ML. **sagimen*, for L. *sagina*, cramming, stuffing, food.] In Spanish dramas, an interlude or intermezzo with music and dancing, usually of a humorous character.

saint¹, *n.*—**St. Andrew**, a gold coin of Scotland.—**St. Bernard**, a breed of large dogs, 28 to 30 inches high at the shoulder, having a large, square, massive head: named from the hospice of St. Bernard in the Alps. The original strain was exterminated by distemper. There are two varieties, the long- and the short-coated; the former is bred by dog fanciers, the latter is that preferred for actual work. The color is tawny, orange and white, or red and white.—**St. Denis red.** See ★*red.*—**St. Erth beds.** See ★*bed*¹.—**St. Guy's dance**, chorea.—**St. James's-weed**, the shepherd's-purse, *Bursa Bursa-pastoris.*—**St. John's dance**, chorea.—**St. John's day.** See ★*day*¹.—**St. John's eve**, midsummer eve. See *midsummer.*—**St. John the Baptist**, a Genoese silver coin.—**St. Mark**, a Venetian silver coin, the crociato or scudo.—**St. Mary's River series.** See ★*series.*—**St. Mary's seed**, the sow-thistle, *Sonchus oleraceus*, also *S. asper.*—**St. Maurice sands.** See ★*sand*¹.—**St. Peter's Chains**, a feast-day in the Roman Catholic Church on August 1, commemorative of the imprisonment of St. Peter.—**St. Stephen**, a Portuguese gold coin of the value of 30*s.*; the milreis.



Canadian St.-John's-wort (*Hypericum Canadense*).
a, leaf; *b*, seed-capsule.

St.-John's-wort (sānt-jonz′wėrt), *n.* See *Hypericum.*—**Bedstraw St.-John's-wort**, *Hypericum galioides*, a plant with whorls of linear leaves resembling those of the bedstraw, found in low ground from Delaware to Florida and west to Tennessee and Louisiana.—**Bushy St.-John's-wort**, *Hypericum densiflorum*, of the eastern and southern United States, with a shrubby and leafy habit, short obtuse leaves, and dense many-flowered cymes.—**Canadian St.-John's-wort**, two similar species, *Hypericum Canadense* and *H. majus*, of eastern North America, ranging well northward. They agree in having lanceolate leaves and mostly terminal few-flowered cymes.—**Creeping St.-John's-wort**, *Hypericum adpressum*, of low grounds from Nantucket to Georgia and west to Missouri and Louisiana. It is somewhat decumbent or creeping at the base, becoming erect, and has rather showy, several-flowered cymes.—**False St.-John's-wort**, the orange-grass or pine-weed, *Sarothra gentianoides.*—**Giant St.-John's-wort**, the great St.-John's-wort. See *Hypericum.*—**Marsh St.-John's-wort**, a plant of the genus *Triadenum*, native of eastern North America, especially *T. Virginicum.* *T. petiolatum* is called *larger marsh St.-John's-wort.* They are marsh herbs of the St.-John's-wort family with opposite, entire leaves mostly sessile or clasping, and pink or purplish flowers in axial and terminal cymes.—**St.-John's-wort family**, the plant family *Hypericaceæ* (which see).—**Shrubby St.-John's-wort**, *Hypericum prolificum*, which is really a shrub with a very leafy stem and a large compound cyme of showy yellow flowers. It grows in sandy and rocky soil from New Jersey to Georgia, and is found at high altitudes in the Blue Ridge and Alleghany Mountains.—**Spotted St.-John's-wort**, *Hypericum maculatum*, of eastern North America, the leaves, sepals, and petals of which are conspicuously black-dotted.



Marsh St.-John's-wort (*Triadenum Virginicum*).
a, flower; *b*, seed-capsule.

Saintpaulia (sānt-pâ′li-ạ̈), *n.* [NL. (Wendland, 1893), named in honor of the German court marshal *St. Paul*-Illaire, and his son, the military governor of Usambara, in German East Africa.] An East African genus of plants of the family *Gesneriaceæ*, comprising 3 species. One of them, *S. ionantha*, a recent acquisition to greenhouses, is a small herbaceous plant bearing a profusion of sky-blue flowers somewhat resembling a violet, whence the name 'African violet.' The leaves are all radical, ovate, or ovate-oblong; the flowers are nodding, one inch across, in few-flowered clusters, with a subrotate two-lipped corolla.

sais (sīs), *n.* An Anglo-Indian variation of *sice*, a groom.

> He became one of the leading players at knuckle-bones which all jhampánis and many *saises* play while they are waiting outside the Government-House . . . of nights. . . He . . . deserved a V. C. if it were only for putting on a *sais's* blanket.
> *R. Kipling*, Miss Youghal's *Sais*, in Plain Tales from the [Hills, p. 31.

sake⁴ (sāk), *n.* [A dial. variant of *seak*, a leak, a place where water oozes forth. See *sike*¹.] 1. A land-spring; a wet spot where the water oozes forth.— 2. The magma or pulpy coagulum deposited from the waste liquors of wool-washing after addition of sulphuric acid. It is pressed cold to remove water; then, with hot pressing, it yields a dark-colored, sticky grease, known as Yorkshire grease, and a residual 'seed-cake' used as a fertilizer.

sakkos, *n.* See ★*saccos.*

sal^1, *n.*—**Sal acetosellæ,** in early *chem.*, same as *salt of sorrel.*—**Sal alkali minerale,** in early *chem.*, sodium carbonate.—**Sal alkali vegetabile,** in early *chem.*, potassium carbonate, obtained from the ashes of plants.—**Sal amarum,** in early *chem.*, magnesium sulphate, of bitter taste.—**Sal ammoniacum fixum,** in early *chem.*, crystallized calcium chlorid.—**Sal ammoniacum secretum Glauberi,** in early *chem.*, ammonium sulphate.—**Sal anglicum,** in early *chem.*, magnesium sulphate, first obtained from the water of the mineral spring at Epsom in England, and hence called *Epsom salts*, and on the continent of Europe *English salt.*—**Sal aperitivum Friederici,** in early *chem.*, sodium sulphate or Glauber's salt.—**Sal auri philosophicum,** in early *chem.*, acid potassium sulphate.—**Sal catharticum,** magnesium sulphate. Also known as *Epsom salts* or *bitter-salt.*—**Sal cornu cervi,** ammonium carbonate.—**Sal culinare,** in early *chem.*, sodium chlorid or common salt, as used in cooking and with food.—**Sal Cyrenaicum,** in early *chem.*, ammonium chlorid.—**Sal digestivum Sylvii,** in early *chem.*, potassium chlorid.—**Sal essentiale tartari,** in early *chem.*, tartaric acid.—**Sal febrifugum Sylvii,** in early *chem.*, potassium chlorid.—**Sal fusibile,** in early *chem.*, sodium-ammonium phosphate.—**Sal Jovis,** in early *chem.*, stannous chlorid.—**Sal marinum,** in early *chem.*, sodium chlorid or common salt, obtained from sea-water.—**Sal Martis,** in early *chem.*, ferrous sulphate or green vitriol.—**Sal microcosmicum,** in early *chem.*, sodium-ammonium phosphate. The term *microcosmic salt* is still in use.—**Sal mirabile perlatum,** in early *chem.*, disodium phosphate or common phosphate of soda.—**Sal narcoticum vitrioli,** in early *chem.*, boracic acid.—**Sal plumbi,** in early *chem.*, lead acetate or sugar of lead.—**Sal polychrestum Glaseri, sal Lamerianum, sal Parisiense,** in early *chem.*, potassium sulphate, made by deflagrating sulphur with saltpeter.—**Sal polychrestum Seignetti,** in early *chem.*, potassium-sodium tartrate or Rochelle salt.—**Sal Saturni,** in early *chem.*, lead acetate or sugar of lead.—**Sal secretum Glauberi,** in early *chem.*, ammonium sulphate.—**Sal sedativum Hombergii,** in early *chem.*, boracic acid.—**Sal soda.** See *sal-soda.*—**Sal succini,** an obsolete name for *succinic acid.* Also called *flos succini.*—**Sal tartari.** See *salt of tartar*, under *salt*^{1}.—**Sal urinæ fusibile,** in early *chem.*, sodium-ammonium phosphate.—**Sal urinæ nativum,** in early *chem.*, sodium-ammonium phosphate.—**Sal vegetabile,** in early *chem.*, normal potassium tartrate, prepared by treating the tartar of wine-casks with water and neutralizing with potassium carbonate.—**Sal vitrioli.** See *salt of vitriol*, under *salt*^{1}.

salacetol (sal-as'e-tol), *n.* [L. *sal*, salt, + E. *acet(ic)* + *-ol.*] A bitter crystalline compound, $C_6H_4(OH).CO_2CH_2.COCH_3$, made by heating monochloracetone with sodium salicylate. It is an antiseptic and antirheumatic, used for diarrhea, gout, rheumatism, etc. It melts at 71° C.

salacot (sä-lä-kōt'), *n.* [Philippine Sp. *salacot*, *salacó*, < Tagalog (whence Bisaya) *salacót* = Bisaya *sadóc.*] In the Philippine Islands, a rather large umbrella-shaped hat or sombrero made of palm-leaves of palm, nito, bejuco, etc.: used in the central (Bisayan) islands chiefly by the women.

salad^1, *n.*—**Salad cucumber.** See ★*cucumber.*

salad-tree (sal'ad-trē), *n.* The red-bud or American Judas-tree, *Cercis Canadensis.*

salai-gugal (sa"lī-gö'gal), *n.* [Hind.] Same as *gugal.*

salai-tree (sa'lī-trē), *n.* [Anglo-Ind.] See *Boswellia* and *gugal.*

salamander, *n.* 9. A wire basket in which waste paper or other combustible refuse can be gathered by street-cleaners, and in which such waste can be burned.—10. A mass of solidified and infusible material in an iron blast- or other smelting-furnace hearth. It usually consists of wrought-iron.—**Salamander's hair.** See ★*hair*^{1}.—**To drink a salamander to one,** in German students' slang, to drink one's health in Bavarian beer, emptying the glass in three draughts, and finally bumping it on the table. *Muret-Sanders.*

salamanderite (sal-a-man'dėr-īt), *n.* [*salamander* + *-ite*^{2}.] A trade-name of a fire-proof plastic material, of which asbestos is the principal ingredient, molded and colored to imitate wood, tiling, etc., in house-construction.

salamandrine, *n.* 2. An alkaloid which has been obtained from the acid cutaneous secretion of the spotted salamander, *Salamandra maculosa.* Also *salamandarine.*

salamangue (sä-lä-män'gā), *n.* [W. African?] A large characinoid fish, *Hydrocyon goliath*, which attains a length of four feet. It is found in the Kongo river and is very destructive to other fish.

salanders, *n.* See *sellanders.*

salantol (sal'an-tol), *n.* [*sal(acetol)* + *-ant-* + *-ol.*] A trade-name of salacetol prepared from acetone and salicylic acid. It forms scales or acicular crystals and resembles salol in physiological action.

Salariichthys (sa-lā-ri-ik'this), *n.* [NL., < L. *Salarias* + Gr. ἰχθύς, fish.] A genus of blennioid fishes found from the West Indies to Brazil.

sälbling (zelb'ling), *n.* [G.] The European char. See *char*^{4}.

salcilla (säl-sēl'yä), *n.* [Sp. *zarcilla*, dim. of *zarza*, bramble.] In Porto Rico, *Schrankia leptocarpa*, a trailing or climbing leguminous shrub armed with recurved prickles. See *Schrankia.*

salcional (sal'si-ō-nal), *n.* Same as *salicional.*

saldid (sal'did), *n.* and *a.* I. *n.* A member of the heteropterous family *Saldidæ.*

II. *a.* Having the characters of or belonging to the family *Saldidæ.*

sale^1, *n.*—**Sale or return.** See ★*return*^{1}.—**Sheriff's sale,** the public sale by a sheriff or deputy of property seized in execution of the mandate of legal process.

salema (sa-lē'mä), *n.* [NL. *salema* (Marcgrave); appar. Braz.] A name applied to *Archosargus unimaculatus*, a sparoid fish, and to *Kyphosus analogus*, a fish of the family *Kyphosidæ.*

salenixon (sal-e-nik'son), *n.* [A corruption of NL. *sal enixum.* Other forms are *salonix* and *sally.*] A manufacturers' name for sodium acid-sulphate, or niter-cake, left as residue from heating sodium nitrate with surplus sulphuric acid in the manufacture of nitric acid.

saleratus, *n.*—**Soda saleratus,** sodium acid-carbonate, or bicarbonate of soda of commerce, as distinguished from the corresponding potassium compound. See *saleratus.*

salfemane (sal-fem'ān), *n.* [*sal*, a syllable mnemonic of *s(ilica)* and *al(umina)*, + *fem*, a syllable mnemonic of *fe(rro)m(agnesian)*, + *-ane*, a termination given to names of classes.] In *petrog.*, in the quantitative system of classification, the name of the third class of igneous rocks, which contain equal or nearly equal amounts of salic minerals (normative quartz, feldspars, feldspathoids, corundum, or zircon) and femic minerals (normative ferromagnesian and other minerals), that is, within the ratio $< \frac{5}{3} > \frac{3}{5}$. See ★*rock*^{1}.

salfemic (sal-fem'ik), *a.* [*sal*, a syllable mnemonic of *s(ilica)* and *al(umina)*, + *fem*, a syllable mnemonic of *f(erro)m(agnesian)*, + *-ic.*] In *petrog.*, in the quantitative system of classification, having salic and femic minerals in equal or nearly equal proportions, that is, within the ratio $< \frac{5}{3} > \frac{3}{5}$. See ★*rock*^{1}.

salfern (sal'fėrn), *n.* [A corruption of *saffron?*] The corn-gromwell, *Lithospermum arvense.*

salic^2 (sal'ik), *a.* [*sal*, a syllable mnemonic of *s(ilica)* and *al(umina)* + *-ic.*] In *petrog.*, in the quantitative system of classification, having the characters of or belonging to the first group of standard minerals, that is, those characterized chiefly by silica (quartz) or alumina (the normative feldspathic minerals). The salic minerals are normative quartz, feldspars, leucite, nephelite, sodalites, corundum, and zircon. See ★*rock*^{1}.

Salicales (sā-li-kā'lēz), *n. pl.* [NL. (Lindley, 1836), < *Salix* (*salic-*) + *-ales.*] An order of dicotyledonous apetalous (mostly achlamydeous) plants containing only the family *Salicaceæ* (which see).

salictum (sa-lik'tum), *n.* [L. *salictum*, a plantation of willows, < *salix*, willow.] A willow holt; a plantation of willows for basket-making. *Encyc. Brit.*, III. 422.

Salicyl hydrid. Same as *salicylic aldehyde.*

salicylage (sal'i-sil-āj), *n.* [*salicyl* + *-age.*] The adding of salicylic acid to food in order to preserve it.

salicylal (sal'i-sil-al), *n.* [*sali(cyl)* + *-al*^{3}.] Same as *salicylic aldehyde.*

salicylaldehyde (sal"i-sil-al'dẹ̄-hīd), *a.* Same as *salicylic aldehyde.*

salicylamide (sal"i-sil-am'id), *n.* The yellowish crystalline amide, $C_6H_4(OH).CONH_2$, of salicylic acid. It is made by treating oil of wintergreen with concentrated ammonia. It has an acid reaction, is easily hydrolyzed to salicylic acid and ammonia, and melts at 139.9° C.

salicylide (sal'i-sil-īd), *n.* [*salicyl* + *-ide*^{1}.] Same as ★*tetrasalicylide.* See also ★*polysalicylide.*

salicylous (sal-i-sil'us), *a.* [*salicyl* + *-ous.*] Containing less oxygen than salicylic acid.—**Salicylous acid.** Same as *salicylic aldehyde.* An undesirable name. *Buck*, Med. Handbook, VII. 9.

salicylsulphonic (sal"i-sil-sul-fon'ik), *a.* Same as ★*sulphosalicylic.*

salicyluric (sal"i-si-lū'rik), *a.* [*salicyl* + *uric.*] Derived from salicylic acid and found in urine.—**Salicyluric acid,** a crystalline acid, $(OH)C_6H_4CO.NHCH_2COOH$, or salicylglycocoll. It is the form in which salicylic acid is excreted in the urine when taken internally. It melts at 160° C.

salifebrin (sal-i-feb'rin), *n.* [*sali(cylic)* + L. *febris*, fever, + *-in*^{2}.] A trade-name of a proprietary compound of acetanilide and salicylic acid. It is sometimes used in medicine as a febrifuge.

saliferous, *a.* 2. Bearing or containing salt: said of plants that grow in saline soil.

saliformin (sal-i-fôr'min), *n.* [*sali(cylic)* + *form(aldehyde)* + *-in*^{2}.] A trade-name of hexamethylenetetramine salicylate. It is used in medicine.

saligallol (sal-i-gal'ol), *n.* A resinous solid consisting of pyrogallol-disalicylate, $C_6H_3(OH)(C_7H_5O_3)_2$, marketed in acetone solution: used as a skin varnish for applying antiseptics.

saligenin (sa-lij'e-nin), *n.* [*sali(cyl)* + *-gen* + *-in*^{2}.] A crystalline phenol-alcohol, $C_6H_4(OH).CH_2(OH)$, or orthohydroxybenzyl alcohol, which is formed when salicin is hydrolyzed by emulsin or by dilute acids; also made by reducing salicylic aldehyde with sodium amalgam. It melts at 86° C.

saligenol (sa-lij'e-nol), *n.* Same as ★*saligenin.*

Salina beds. See ★*bed*^{1}.

salinaphthol (sal-i-naf'thol), *n.* [*sali(cylic)* + *naphthol.*] Same as ★*betol.*

saline, *a.* 3. Same as *halophilous.*

> This curious feature of the Tibetan flora [plants which may be found growing on the sea-coasts of Northern Europe] may be attributed to the immigration of the *saline* types of the Caspian.
>
> *Geog. Jour.* (R. G. S.), XV. 245.

saline, *n.* 2. One of the mineral salts, such as sodium or magnesium sulphate, used medicinally.

salinelle (sal-i-nel'), *n.* A mud-volcano which yields a saline product. *Geikie*, Text-book of Geol., p. 318.

salipyrin (sal-i-pī'rin), *n.* [*sali(cylic)* + *(anti)pyrin.*] A trade-name of salicylate of antipyrin, $C_{18}H_{18}O_4N_2$, a bitter-sweet substance used as a remedy for rheumatism, sciatica, pleurisy, etc. It melts at 92° C.

saliretin (sal-i-ret'in), *n.* [*sali(cylic)* + Gr. ῥητίνη, resin.] A yellowish powder, $(OH).C_6H_4,CH_2.OC_6H_4.CH_2(OH)$, formed by the action of dilute acids on saligenin. Other varieties of saliretin have had ascribed to them the formulas $C_{28}H_{26}O_5$ and $C_{56}H_{50}O_9$.

salitannol (sal-i-tan'ol), *n.* [*sali(cylic)* + *tann(ic)* + *-ol.*] A trade-name of a compound of salicylic and gallic acids, $C_{14}H_{10}O_7$. It is a colorless amorphous powder and is used in surgery as an antiseptic.

saliter (sa-lē'tėr), *n.* [Sp. *salitre*, *salitro* = Cat. *salnitre* = It. *salnitro*, < ML. *sal nitrum*, saltpeter: see *sal*, *nitrum*, and *niter.*] An Anglicized form of the Spanish name (*salitre*) for sodium nitrate which has undergone a single crystallization at the site of its natural occurrence in the district of Tarapacá, Chile.

salithymol (sal-i-thī'mol), *n.* [*sali(cylic)* + *thymol.*] Thymol salicylate, $C_6H_4(OH).CO-OC_6H_3.CH_3.C_3H_7$, a white crystalline powder made by dissolving thymol and salicylic acid in alcohol.

saliva, *n.* 2. In *entom.*, a neutral alkaline fluid secreted by the salivary glands when these are present, and, in their absence, by the epithelial lining of the esophagus. It has the same property as the saliva of vertebrates in transforming starchy foods into glucose.—**Ganglionic saliva,** saliva secreted when the submaxillary ganglion is irritated.—**Sympathetic saliva,** saliva secreted in consequence of stimulation of the sympathetic nerve.

Salivary receptacle. See ★*receptacle.*

sallee (sal'ē), *n.* [Australian.] An aboriginal name applied to many species of *Acacia.* Compare *sallow*^{1} and *sally*^{1}, believed by some to be corruptions of the aboriginal word.

sallet^1, *n.* 2. Lettuce, *Lactuca sativa.*

sally[1], *n.* 2. Also applied to several species of trees belonging to the genus *Eucalyptus.* [Austral Eng.]—**Black sally,** in New South Wales, either of two trees: (*a*) *Eucalyptus stellulata*; (*b*) *Acacia melanoxylon.* See *blackwood*, 2.—**White sally,** in Australia, either of two trees: (*a*) *Acacia longifolia*, and (*b*) *Eucryphia Moorei.* See ★*plum*1, 7.

sally[4] (sal′i), *n.* See ★*salenixon.*

sally-bloom (sal′i-blöm), *n.* The great willow-herb, *Chamænerion angustifolium.*

sally-nixon (sal″i-nik′son), *n.* See ★*salenixon.* *G. Lunge*, Sulphuric Acid, I. 96.

salm[2] (säm), *n.* [It. *salma*: see ★*salma.*] A name sometimes used in Great Britain for one fourth of a ton, five hundredweight, or 560 pounds.

salma (säl′mä), *n.*; pl. *salme* (-mā). [It. *salma*, a load, = Sp. *salma*, a pack-saddle, < ML. *sagma*, < Gr. *σάγμα*, a pack-saddle: see *seam*2.] **1.** A unit of capacity formerly used in Sicily and Malta, varying from 9⅘ to 12 cubic feet. *C. Hering*, Conversion Tables, p. 55.—**2.** A unit of land-measure used in Malta, equal to nearly 4.5 acres.

Salmian (sal′mi-an), *n.* In *geol.*, the Système Salmien, which constitutes the uppermost division of the Cambrian in the Ardennes Mountains of Belgium.

salmine (sal′min), *n.* [L. *salmo*, salmon, + *-ine*2.] A protamine, $C_{16}H_{31}O_3N_9$, found in the testes of the salmon. It is a gummy substance with an alkaline reaction.

salmon, *n.*—**Chinook salmon.** Same as *quinnat.*—**Coho salmon,** the silver salmon. See *salmon*, 2 (*d*).—**Columbia salmon.** Same as *quinnat.*—**Fraser River salmon,** the blue-back salmon. See *salmon*, 2 (*e*).—**Hokkaido salmon,** *Oncorhynchus yessoensis*, a salmon found in Japanese waters.—**Hoopid salmon,** the silver salmon. See *salmon*, 2 (*d*).—**Kennerly's salmon,** the blue-back salmon. See *salmon*, 2 (*e*).—**Lekai salmon,** the dog-salmon. See *salmon*, 2 (*b*).—**Lost salmon,** a name used along the Sacramento river for the hump-backed salmon, *Oncorhynchus gorbuscha.*—**Namaycush salmon.** Same as *great lake-trout* (which see, under *trout*1).—**Red salmon,** the blue-back salmon. See *salmon*, 2 (*e*).—**Sacramento salmon.** Same as *quinnat.*—**Sauqui (sawqui, saukeye, etc.) salmon.** See ★*sauqui.*—**Schoodic salmon.** Same as *land-locked salmon.*—**Sebago salmon.** Same as *land-locked salmon.*—**Sockeye salmon.** Same as *sauqui* ★*salmon.*—**Tyee salmon.** Same as *quinnat.*

salmon-cloud (sam′un-kloud), *n.* A band of cirro-stratus clouds stretching almost entirely across the sky and tapering at each end, by reason of perspective, so that it resembles the outline of a salmon. Sometimes it has tessellations like the scales of a fish.

salmon-club (sam′un-klub), *n.* A club used by the Indians of the North Pacific coast to kill salmon that are caught with the hook or in the net.

salmon-disease, *n.* This disease of the salmon was formerly attributed to *Saprolegnia*, but recent experiments seem to demonstrate that it is primarily due to *Bacillus Salmonis-pestis.*

salmonete (säl-mọ-nā′tạ), *n.* [Sp., < *salmon*, salmon.] Same as *goat-fish*, 2.—**Salmonete amarilla,** the yellow goat-fish, *Upeneus martinicus.*

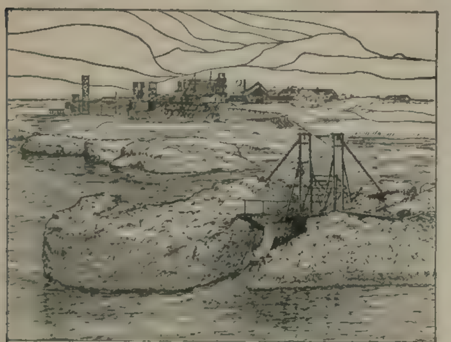
salmon-hook (sam′un-hůk), *n.* A hook attached to a long shaft, used by the Indians of the North Pacific coast for gaffing salmon.

salmonoidean (sal-mọ-noi′dẹ-ạn), *a.* Resembling a salmon.

salmon-patch (sam′un-pach), *n.* A salmon-colored spot on the cornea which occurs in certain cases of syphilitic inflammation of that structure.

salmon-trout, *n.*—**Kamchatka salmon-trout,** *Salmo mykiss* of Kamchatka.

salmon-wheel (sam′un-hwēl), *n.* A large wheel fitted for taking salmon, used in the Dalles of the Columbia river. It is adjusted so that salmon running up narrow swift channels are seized by its flanges and thrown into a receptacle on shore. Commonly called a *fish-wheel.*



Salmon-wheel on the Columbia River.

Salmopercæ (sal-mọ-pėr′sē), *n. pl.* [NL., < L. *salmo*, salmon, + *perca*, perch.] A small suborder of fishes which contains only two genera: a singular archaic group which has fin-spines, ctenoid scales, and the teeth only on the premaxillary, like the *Acanthopteri*, and adipose fin, naked head, and abdominal ventrals, like the *Isospondyli.*

salocoll (sal′ọ-kol), *n.* Phenocoll salicylate.

Salol camphor. See ★*camphor.*

salon, *n.* 2. Specifically, a periodical social gathering of men and women representative of the wit, fashion, literature, art, or politics of the time. The salon flourished principally in France during the eighteenth century.

salonix (sal′ọ-niks), *n.* See ★*salenixon.*

saloon-deck (sạ-lön′dek), *n.* See ★*deck*, 2 (*c*).

Salop. An abbreviation of ML. or NL. *Salopia*, Shropshire.

salophen (sal′ọ-fen), *n.* [*sal*(*icylic*) + *phen*(*yl*).] A trade-name of acetyl-paramido-phenyl salicylate, used medicinally as an antiseptic, antipyretic, and analgesic remedy.

Salopian porcelain. See ★*porcelain*1.

salpingion (sal-pin′ji-on), *n.* [NL., < Gr. *σαλπίγγιον*, dim. of *σάλπιγξ*, a tube: see *salpinx.*] In *craniom.*, the upper lateral terminus of the ostium tympanicum of the pars ossea tubæ Eustachii. *Von Török.*

salpingo-oöphoritis (sal-ping″gọ-ō″ọ-fọ-rī′-tis), *n.* [NL., < Gr. *σάλπιγξ*, tube, + E. *oöphore* + *-itis.*] Inflammation of both the ovary and the Fallopian tube.

salpingostomy (sal-ping-gos′tọ-mi), *n.* [NL., < Gr. *σαλπιγξ*, tube, + *στόμα*, mouth, + *-y*3.] The operative formation of a fistula communicating with the Fallopian or Eustachian tube.

salpinx, *n.* 4. An ancient Greek military trumpet of metal having a straight, flaring tube. It was used for signals. Compare the Roman *tuba* (★*tuba*1, 4).

salseparin (sal-sep′ạ-rin), *n.* Same as ★*parillin.*

salseparisin (sal-sẹ-par′i-sin), *n.* Same as ★*parillin.*

salsify-rot (sal′si-fi-rot), *n.* See ★*rot.*

salt[1], *n.* 14. *pl.* In *glass-manuf.*, same as *glass-gall.* See *anatron*, 1.—15. *pl.* A name given to mixed saline masses obtained by evaporating the water of mineral springs, or by artificially mixing the saline constituents of such springs in the proportions indicated by analysis of the water: as, Karlsbad *salts*, Vichy *salts*, etc.—**Alkaline salt.** (*a*) A salt of one of the alkaline metals, as potassium or sodium. (*b*) A salt which exhibits alkaline reaction or changes the red color of moist litmus-paper to blue, as does disodium orthophosphate.—**Aniline salt.** See ★*aniline.*—**Bile salt.** See ★*bile*2.—**Bitter salts.** Same as *Epsom salts.*—**Black salt.** (*a*) The crude solid product obtained, in the Leblanc process for making carbonate of soda from common salt, by boiling down the liquor furnished by leaching black-ash. It consists chiefly of monohydrated sodium carbonate. (*b*) An impure common salt from India, colored by admixture with tannate of iron. See *bitnoben.*—**Blood-lye salt,** ferrocyanide of potassium, or yellow prussiate of potash: so called because blood from slaughter-houses is one of the forms of animal matter used to furnish carbon and nitrogen in its manufacture.—**Covenant of salt.** See ★*covenant.*—**English salt.** See ★*sal anglicum.*—**Fishery salt,** common salt of moderately coarse grain, obtained by rather slow evaporation of brine, used in curing fish.—**Fishing salt.** Same as *fishery* ★*salt.*—**Glaziers' salt,** in old *chem.*, potassium sulphate.—**Green salt of magnus,** the first-discovered of the numerous ammoniacal platinum compounds. It is a compound of tetrammine-platinous chlorid with platinous chlorid, $(NH_3)_4PtCl_2.PtCl_2$.—**Hexammine salt,** one of a class of salts of cobalt, obtained by exposure to the air of dilute solutions of ordinary cobaltous salts to which ammonium chlorid and ammonia have been freely added. Also called *luteocobaltic salt.*—**Hopper salt,** coarse-grained common salt, in cubical crystals with hopper-like depressions on the faces, produced by slow evaporation of brine with addition of a little alum to the contents of the pan.—**Killed spirits of salt,** a workmen's name for a solution of zinc chlorid made by adding scraps of zinc to 'spirits of salt' (hydrochloric acid) until the smell of the free acid has been destroyed: used by tinsmiths and others to facilitate soldering by cleansing of oxid the metallic surfaces to be united.—**Lime, sulphur, and salt wash.** See ★*wash.*—**Luteocobaltic salt.** Same as *hexammine* ★*salt.*—**Marine salt,** sodium chlorid or common salt obtained from sea-water by evaporation.—**Metallic salt,** a salt of which the basic or electropositive component is a metal, as cupric sulphate or silver nitrate.—**Preparing salts.** See ★*sodium stannate.*—**Primary salt,** a salt in which one only out of a larger number of hydrogen atoms in the corresponding acid is replaced by a metal or electropositive radical, as monosodic orthophosphate (NaH_2PO_4).—**Provision salt,** a trade-name for common salt of the degree of coarseness of grain commonly used for preserving meat.—**Salt acid,** hydrochloric acid as obtained from common salt by heating with sulphuric acid.—**Salt of amber,** an obsolete name for succinic acid.—**Salt of urine,** ammonium carbonate.—**Salt of Venus,** copper sulphate or blue vitriol.—**Seignette salt,** sodium potassium dextrotartrate ($NaKC_4H_4O_6.4H_2O$); also the corresponding sodium-ammonium salt.—**Stassfurt salts,** the mixed salts, chiefly of potassium and magnesium, which occur in large quantity overlying a great bed of rock-salt in the neighborhood of Stassfurt in Prussian Saxony. They are of great value, particularly as the source of potassium compounds for industrial and agricultural use.—**Syracuse salt.** See *Salina* ★*beds.*—**Vacuum-pan salt,** sodium chlorid or common salt obtained by evaporation of brine in a vacuum-pan or under reduced atmospheric pressure.

salt[1], *v. t.* 7. To enrich (a natural deposit) by artificial means, usually for the purpose of deceiving prospective purchasers. Thus a gold-mine is salted when powdered gold is shot into the rock with a gun; a sample is salted when metal, or rich ore, is mixed with it; a mineral spring is salted by the addition of salts; an oil-well by the addition of rich oils, etc.—**Salting of boilers,** in older marine practice, in which natural sea-water was used in the boilers, a name given to the accumulation of scale on the heating surfaces when sea-water was evaporated. Such scale protected the iron from the action of free hydrochloric acid, but the deposit on the plate and the concentration of the solution in the boiler made it necessary to burn more coal. After twice the normal amount of salt had accumulated in the water, or the proportion exceeded 2 in 33 (8 to 10 ounces of salt to the gallon), the boiler was blown down somewhat and new salt water from without was pumped in. Every boiler-room carried salinometers to determine the degree of concentration and indicate the point at which blowing down should be done. In modern practice no salt water is introduced, but, if necessary to supply the waste from leakage and use of whistles and sirens, water from the distillers is pumped in.—**To salt out.** (*b*) In *soap-making*, to separate (the soap) as curd from the original solution by the addition of common salt.

salta (sal′tạ̈), *n.* [Irreg. < L. *saltare*, leap. Compare ★*halma*, which is from the related Gr. verb.] A game which resembles halma, its object being to move one's men, which are set up like checkers, to a similar position on the opposite side of the board before the adversary can get all his men arranged on one's own side. This is usually accomplished by skilfully forcing the opponent to jump over certain men.

saltation, *n.* 1. Specifically, in *biol.*, a wide fluctuation or mutation. See the extract.

> The name '*saltation*,' or in recent years 'mutation, has been applied to extreme fluctuation, the immediate cause of which is unknown. The experiments of Dr. Hugo de Vries on the saltations of the descendants of an American form of evening primrose (Œnothera lamarckiana) have recently drawn general attention again to the possibility that *saltation* has had a large part in the process of formation of species.
>
> [Foot-note.] The name *saltation* has been long used for wide fluctuations without recognizable cause. The more recent name mutation chosen by de Vries has been in use for years for the slow changes appearing in geological time. *Pop. Sci. Monthly*, June, 1906, p. 485.

saltatoric (sal-tạ-tor′ik), *a.* Same as *saltatory.*

Saltatory chorea. See ★*chorea.*—**Saltatory spasm.** Same as *saltatorial spasm* (which see, under *spasm*).

salt-bottom (sâlt′bot″um), *n.* A nearly level plain on which are deposits of salts.

salt-box, *n.* 3. An English naval term for a receptacle in which a temporary supply of gun-cartridges is kept on deck.

saltery (sâl′tėr-i), *n.*; pl. *salteries* (-iz). [*salt*1 + *-ery.*] A factory in which salted fish is prepared and put up for market.

> During 1900 there was but one *saltery* operated solely as such in this district. It is situated on the Nushagak and had an output of 7,186 barrels of redfish and 536 barrels of king salmon for the season.
> *Sci. Amer. Sup.*, March 21, 1903, p. 22751.

salt-grape (sâlt′grāp), *n.* See ★*grape*1.

salt-grass, *n.* The principal American salt-grass is *Distichlis spicata*, less properly called *alkali-grass.* This grass endures the salt of the sea-shore and the alkali of the interior, chiefly in moist ground. It serves as a sand-binder, and is eaten by stock where nothing better can be had. Also called *sand-grass.*—**Bunch salt-grass,** *Spartina junciformis*, a grass of the Gulf coast growing on the landward side of salt-marshes. It forms great tufts from 3 to 6 feet across and from 1 to 4 feet high. The evergreen spiny-pointed leaves are resinous and will burn at any season. Though too bunchy for mowing, it is of great value for grazing, but is said not to produce fat on cattle.—**Fine-top salt-grass.** (*a*) A rush-grass, *Sporobolus airoides*, growing in tussocks in more or less alkaline or saline sandy soils along streams from Montana to Texas and California, and yielding a coarse fodder. Its panicle has slender, widely spreading branches. Also called *alkali zacaton.* (*b*) Same as *rough-leafed* ★*salt-grass.*—**Mexican salt-grass,** *Eragrostis obtusiflora*, a rigid species with sharp-pointed leaves, resembling *Distichlis* in habit, found in sandy alkali soil in Arizona.—**Rough-leafed salt-grass,** *Sporobolus asperifolius*, a low, somewhat creeping species, like *Distichlis* often forming a dense continuous turf. It is found on alkaline plains from Texas to British Columbia, and, as tolerant of alkali, may be worthy of propagation. It has an expanded panicle with capillary branches.

saltiered (sal′tērd), *a.* In *her.*, having a saltier.

salt-money, *n.* 2. Cakes of salt used as a medium of exchange.

salt-mouth (sâlt′mouth), *n.* A wide-mouthed bottle suitable for holding solid chemicals.

saltpeter, *n.* 2. In the tobacco industry, a white saline efflorescence on the midvein and lateral ribs of the curing leaf, consisting usually of a mixture of several salts, sometimes with only a trace of saltpeter. It is thought to be developed by dry weather during the first stages of curing. *U. S. Dept. of Agri.*, Rept. 65, p. 43.—**Soda saltpeter.** Same as *Chile saltpeter.*

salt-tree, *n.* 2. In India, a species of tamarisk, *Tamarix orientalis*, the twigs of which are frequently covered with a slight efflorescence of salt which is used by the poorer natives. See *tamarisk.*

salt-well (sâlt′wel), *n.* A well sunk, usually by boring, in order to procure salt-brine.

salt-yard (sâlt′yärd), *n.* An inclosure in which rock-salt is deposited as it comes from the mine, prior to crushing and screening.

> Since the gathered salt consists of crystals of various sizes, many manufacturers pass it, as it comes from the *salt yard* (the name given to these works) into the storehouse, over a wire screen with 2½ meshes to the square inch, kept in motion by hand or steam power.
> *Sci. Amer. Sup.*, Oct. 3, 1903, p. 23198.

salubrol (sạ̄-lū′brol), *n.* [L. *salubris*, healthy, + *-ol.*] A trade-name of tetrabromomethylene diantipyrin prepared by the action of bromine on methylantipyrin. It has no odor, and is used in surgery instead of iodoform as an antiseptic dusting-powder.

salumin (sal′ū-min), *n.* [*sal*(*icylic*) + (*al*)*umin*(*ium*).] A trade-name for *aluminium salicylate.* It is a reddish-white powder used as an antiseptic.

salung (sa-lung′), *n.* [Siamese *salung.*] A current Siamese silver coin, one fourth of a tical, equivalent to 7 United States cents.

salv, *n.* and *v.* A simplified spelling of *salve.*

salvadoraceous (sal″vạ-dọ̄-rā′shius), *a.* Belonging to the plant family *Salvadoraceæ.*

salvadorite (sal′va-dōr-īt), *n.* [*Salvador* (see def.) + *-ite*^{2}.] A hydrous sulphate of copper and iron ($((\mathrm{Cu,Fe})\,\mathrm{SO_4}+7\mathrm{H_2O})$) analogous to pisanite, but differing in crystallization and optical characters: found at the Salvador mine, Quetena, Chile.

salve^1, *n.*—**Blistering-salve,** an ointment containing cantharides.

salverform (sal′vėr-fôrm), *a.* [*salver*^{3} + *-form.*] Same as *salver-shaped.*

> The two species of Quamoclit have scarlet, *salverform* corollas adapted to humming-birds.
> *Amer. Nat.*, June, 1903, p. 374.

salviniaceous (sal-vin-i-ā′shius), *a.* Belonging to or resembling the *Salviniaceæ*, a family of cryptogamous plants.

Salvio-Cochrane gambit. See ★*gambit.*

salylic (sa-lil′ik), *a.* [*sal*(*ic*)*ylic.*] Obtained from salicylic acid.—**Salylic acid,** a supposed isomer of benzoic acid, $\mathrm{C_6H_5COOH}$, made by successive treatment of salicylic acid with phosphorus pentachlorid and sodium amalgam.

Salzburg black, vitriol. See ★*black*, ★*vitriol.*

sam^1, *v. t.* 3. In *tanning*, to pile up (the hides) after removal from the tan-pits, covering the heap and allowing it to stand for some time in order to soften the leather by equal distribution of moisture and slight fermentative heating.

Sam^3 (sam), *n.* A familiar abbreviation of *Samuel.*—**Shasta Sam,** a variety of California jack in which the remainder of the pack is placed on the table face down.

Sam., Saml. Abbreviations of *Samuel*, a book of the Old Testament.

S. Am. An abbreviation of *South America* or *South American.*

samaderin (sam-a-dē′rin), *n.* [*Samadera* + *-in*^{2}.] A crystalline glucoside found in seeds of *Samadera Indica.* See *karinghota.*

samadh (sa-mäd′), *n.* [Hind. *samādh*, tomb, < Skt. *samādhi*, deep meditation, profound devotion, lit. union, joining, < *sam*, together, + *ā*, to, + √*dhā*, put.] A place of immolation or burial, especially the tomb of a Hindu yogi (originally of one who submitted to be buried alive), supposed to be lying in a state of trance.

samaria (sạ-mar′i-ạ̈), *n.* [NL., < *samarium.*] Samarium oxid.

Samaritan version, a translation of the Samaritan Pentateuch into the Samaritan dialect (a variety of western Aramaic), committed to writing about the fourth century A.D. The manuscript was brought to Europe in 1616 and was first printed in the Paris polyglot in 1632.

samarium, *n.* This metal belongs to the cerium group. The oxid is white, the salts yellow, and characteristic absorption and spark spectra have been obtained. Like so many other members of the cerium and yttrium groups, samarium is of uncertain individual identity. There seems now but little doubt that in its oxid as originally described there is present at least one other element, the europium of Demarçay, Urbain, and Lacombe.

sambhar, *n.* Same as *sambur.*

sambo, *n.* 2. The offspring of a negro and an Indian.

sambucist (sam-bū′sist), *n.* [Gr. *σαμβυκιστής* (fem. *σαμβυκίστρια*), < *σαμβύκη*, sambuka.] One who plays upon a sambuca.

Samek (sä′meċh), *n.* [Heb. *sāmek, sāmekh.*] The fifteenth letter (ס) of the Hebrew alphabet, corresponding to the English *s.* Its numerical value is LX.

samfire, *n.* An amended spelling of *samphire.*

sammy, *v. t.* 2. To season (skins) to a uniform temper. *C. T. Davis*, Manuf. of Leather, p. 386.

samphire, *n.*—**Marsh samphire,** the common glasswort, *Salicornia herbacea.*

sampire (sam′pīr), *n.* In the Bahamas, *Lithophila vermicularis*, a creeping herb of the amaranth family, common on sandy shores. *Memoir Torrey Bot. Club*, XII. 35.

Sample area. See ★*valuation area*, ★*experiment area.*

sampler, *n.* 4. A kind of shovel divided into several parallel rectangular compartments, used in taking uniform and similar samples from a heap of pulverized ore or other material to be assayed.

sample-shovel (sam′pl-shuv″l), *n.* Same as ★*sampler*, 4.

sample-tree (sam′pl-trē), *n.* In *forestry*, a tree which in diameter, height, and volume is representative of a tree class. A *class sample-tree* is one which in diameter, height, and volume represents the average of several tree classes. Also called *arithmetical mean sample-tree.*

samson (sam′sọn), *n.* [Also *sampson;* so named in allusion to *Samson*, the strong man (Judges xiv.–xvi.). See *samson-post.*] 1. An appliance for loosening frozen logs by horse-power, consisting of a strong, heavy timber and a chain terminating in a heavy swamp-hook. The timber is placed upright beside the log to be loosened, the chain fastened around it, and the hook inserted low down on the opposite side of the log. Leverage is then applied by a team hitched to the upper end of the upright timber.—2. A form of brace or stay, used in long and otherwise flexible machines to secure strength and rigidity under the stress of operation at high speed. Particularly used in such textile-machinery as roving-frames.

> The most rigid, and strongest frame [roving-frame] built, having an abundance of *samsons*, which are connected with a rail running the whole length of frame at the back, and, in addition, girths running from this rail, connecting with the spindle rail, and holding bearings for our lifting shaft. *Trade-catalogue.*

samson (sam′sọn), *v. t.* [*samson*, *n.*] In *lumbering*, to direct the fall of (a tree) by means of a lever and pole.

samson-fish (sam′sọn-fish), *n.* 1. In Sydney, a fish, *Seriola hippos*, of the family *Carangidæ.* —2. In Melbourne, the young of a fish, *Arripis salar*, of the family *Percidæ.* See *salmon*, 3 (*c*).

Samyda, *n.* 2. A genus of plants of the family *Meliaceæ.* They are trees or shrubs, with abruptly pinnate leaves, entire leaflets, and hermaphrodite flowers in panicles or raceme-like or spike-like clusters borne either in the axils of the leaves or on defoliated branches. There are about 80 species, chiefly natives of tropical America, but 3 are West African. *Samyda Guidonia* (also known by its later name *Guarea trichilioides*) is the *guara-guao* or *muskwood* of the West Indies. See ★*guaraguao.*

Sana whiting. See ★*whiting*^{2}.

sand^1, *n.*—**Ashdown sand,** in the Wealden formation of Sussex and Kent, England, the lowest stratigraphic division constituting, with the Fairlight clays, the basal member of the Hastings sand. They are 400–500 feet thick, and lie at the bottom of the Cretaceous system in England.—**Barking sands.** See *singing* ★*sands.*—**Black sand,** dark minerals, mainly magnetic iron-sand, found with alluvial sand.—**Blown sand,** sand drifted by the wind; the dune sand of coast regions or the shifting sands of deserts.—**Campinian sands.** See ★*Campinian.*—**Dinotherium sand,** the lower division of the Pliocene Tertiary in the vicinity of Mainz, Germany, characterized by the presence of remains of *Dinotherium giganteum, Mastodon, Rhinoceros,* and various other mammals.—**Foraminiferal sand,** a sand or sandy rock largely constituted of the broken and comminuted remains of *Foraminifera.*—**Glass sand,** quartz sand of a quality suitable for use in making glass. It should consist of silica as free as possible from admixture with foreign substances, especially from oxid of iron if colorless glass is to be made, and as finely and uniformly divided as possible. In 1903, 823,044 short tons of glass sand were produced in the United States.

> The *glass sands* about South Vineland are believed to belong to this formation, being referable to its upper horizons.
> *R. D. Salisbury*, in Geol. Surv. of New Jersey, 1895, p. 5.

Graining-sand, a sharp-edged sand used by lithographers to roughen the surface of a stone and prepare it for the use of a crayon.—**Hastings sands.** The Hastings sand group (according to Geikie) in Sussex and Kent comprises the following subdivisions in descending order: Tunbridge Wells sand (with Grinstead clay); Wadhurst clay; and Ashdown sand (with Fairlight clays). The total thickness is about 1,000 feet. These deposits are regarded as of delta origin, and their abundant organic remains are chiefly fluviatile and terrestrial, comprising plants, fishes, the remains of dinosaurian reptiles, pterodactyls, and turtles. The deltoid formation in which these remains occur extends in an east-and-west direction for at least 200 and from north to south for perhaps 100 miles. Hence the delta may have been nearly 20,000 square miles in area. It has been compared with that of the Quorra. In reality, however, its extent must have been greater than its present visible area, for it has suffered from denudation and is to a large extent concealed under more recent formations. The river probably descended from the northwest, draining a wide area, of which the existing mountain groups of Britain are perhaps mere fragments. *Geikie*, Text-book of Geol., p. 118.—**Headon Hill sands,** the uppermost division of the Eocene Tertiary in the Hampshire basin in England: equivalent to the Barton sands.—**Laekenian sands,** a division of the Middle Eocene Tertiary series in Belgium, lying between the Bruxellian and the Wemmelian sands. —**Midford sands,** passage-beds from the Lias into the Lower Oölite, in the southwestern counties in England, which consist of yellow sands with some limestones in which ammonites and other cephalopods are extremely abundant.—**Monazite sand,** a sand from which monazite may be washed: chiefly applied to certain sands in North Carolina, where this mineral is commercially produced.—**Musical sands.** Same as *singing* ★*sands.*—**Neudorf sands,** a division of the Miocene Tertiary in the Vienna basin, lying below the Leitha limestone, which is near the top of the Mediterranean or marine stage.—**Northampton sands,** a subdivision of the Jurassic system lying at the base of the Lower Oölites in England. They are regarded as of estuarine origin, and carry fresh-water fossils of the genera *Cyrena* and *Unio* and brackish-water forms such as *Ostrea* and *Modiola.*—**Orange sand.** Same as *Lafayette* ★*group.*—**Paluxy sands,** a subdivision of the Lower Cretaceous system in Texas, constituting the uppermost member of the Trinity formation which lies at the base of the series. They rest on the Glen Rose limestone and clays, and the fauna has a marked resemblance to that of the Lower Cretaceous of Portugal. —**Portland sand,** the lowest division of the Portlandian stage of the Jurassic system in England. See *Portland stone*, under *stone.*—**Pötzleinsdorf sands,** a series of fine yellow sands containing marine shells which forms a local facies of the Mediterranean stage of the Miocene Tertiary in the Vienna basin of Austria.—**St. Maurice sands,** in *geol.*, a division of the marine Pleistocene deposits in eastern Canada.—**Saxicava sand,** the uppermost member of the Pleistocene deposits in eastern Canada, laid down during a depression of the land when marine waters entered the present valley of the St. Lawrence, and containing the mollusk *Saxicava rugosa*, bones of whales, etc.—**Sea sand,** a sand which consists, in the main, of fragments of quartz; but on some coasts coral sand is found widely distributed, consisting of small fragments and grains of calcareous corals.—**Singing sands,** a variety of sand, sometimes found upon sea-beaches or in deserts, which gives out a musical note under a footfall. It is a moot point whether the note is due to the expulsion of air confined between the grains, or to their rubbing upon one another, the grains possessing varying hardness, or to some cause not yet discovered. —**Sorel sands,** a division of the Pleistocene marine deposits in Canada between the St. Lawrence river and Lake Champlain.—**Strong sand,** a sand which contains clay or organic matter in admixture.—**Sugar-sand.** See ★*sugar-sand.*—**Thanet sand.** See *Thanet beds.*—**To give her sand,** in *railroading*, to allow a stream of sand to fall on the rails just in advance of the driving-wheels of a locomotive, to secure a better adhesion when the track is smooth or slippery from rain; also, to allow sand to fall on the rails from an electric car for the same purpose, or to prevent the wheels from skidding or sliding on a down grade or wet track when the brakes are applied. Also, in general, to check or delay anything, as a process, while in operation. [Colloq.]—**Trent sand,** a trade-name for silicious sand from the beds of the Trent, Severn, and some other English rivers, used as a polishing material.—**Volcanic sand** or **ash,** the finer detritus erupted from volcanic craters, consisting of angular or rounded fragments of rock or lava up to about the size of a pea.—**Weak sand,** a foundry term, used in England, for molding-sand in which no element is present to furnish gas from its carbonization.

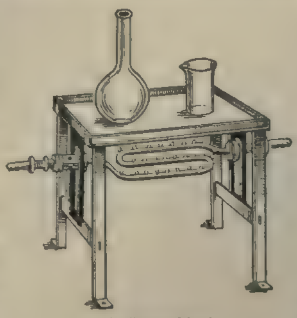
sandalwood, *n.*—**Bastard sandalwood.** (*b*) See ★*dummele.*—**False sandalwood,** the yellow wood of a small tree, *Ximenia Americana*, which when powdered is often substituted for the true sandalwood.—**Fragrant sandalwood,** in Australia, *Mida spicata.* See *Fusanus.* —**Native sandalwood.** (*a*) In Tasmania, a straggling seaside shrub of the dogbane family, *Gynopogon buxifolius,* yielding a fine, close-grained wood smelling strongly of coumarin. (*b*) In Australia, a small tree, *Mida persicaria.*—**Sandalwood camphor.** See ★*camphor.*—**Scrub sandalwood,** a small tree of Australasia, *Exocarpus latifolia,* belonging to the sandalwood family and yielding an excellent cabinet wood.

sandaracolic (san″da̤-ra̤-kol′ik), *a.* Derived from sandarac.—**Sandaracolic acid,** an acid obtained from sandarac. It was probably inactive pimaric acid.

sandat (soṅ-dä′), *n.* [F. *sandat.*] The European pike-perch, *Sandrus lucioperca.*

sand-bar (sand′bär), *n.* A bar of sand formed in the bottom or at the mouth of a river.

sand-bath, *n.*—**Ruedorf's sand-bath,** a simple form of sand-bath in which the temperature can be regulated by raising or lowering an S-shaped burner.



Ruedorf's Sand-bath.

sand-belt (sand′belt), *n.* See ★*sandpapering-machine.*

sand-bin (sand′bin), *n.* A pocket or bin in a shed in or adjacent to a foundry in which molding-sand is received and stored ready for use.

sand-binder (sand′bīn″dėr), *n.* A plant which serves to bind or fix shifting sands: commonly a grass. Sand-binding grasses are either stout and coarse, with deeply burred root-stocks sending up scattered tufts resistant to waves and wind (see ★*cumaphyte*), such as the maram, *Ammophila arenaria;* or low and creeping over the surface, emitting fibrous roots at intervals, and forming close leafy mats, as the St. Augustine grass, *Stenotaphrum secundatum.* The species of sand-binding grasses are very numerous. See *blow-out grass,* under ★*blow-out.*

sand-blast (sand′blȧst), *v. t.* To act upon by the sand-blast, or a current of air or steam carrying dry sand-particles at the high velocity of the jet: used to remove paint or oxid of iron from structures, and for general cleansing of metal surfaces, as well as for decoration of glass and other hard surfaces.

> A simple method is to *sand-blast* the exterior of the bulb, whereby it acquires an appearance similar to that of ground glass. *Encyc. Brit.,* XXVIII. 88.

sand-box, *n.* 4. A box to hold a small quantity of foundry-sand for molders' use, placed near the flask or the molding-machine. In use the sand-box is often above the molding-machine, so that the sand may be delivered by gravity as required.—5. In a street-car, a box or other receptacle for holding sand used in sprinkling the rails to obtain a better adhesion for the wheels. It is usually fitted with a delivery-pipe and valve controlled by the motorman.

sand-breast (sand′brest), *n.* A dam or front in an iron-smelting furnace, made of sand and fire-clay with iron backing, so as to be easily replaced as it is eroded by heat and chemical action. The construction of molded fire-brick with water-cooling in the iron back is the more modern design. The cooling prevents both softening and chemical combination.

sand-bur, *n.* 2. The bur-grass, *Cenchrus tribuloides.* (See *bur-grass,* 1, with cut.) The sand-bur is widely distributed in sandy soils in North America, and is also found in Mexico and South America. It is an annual weed, very noxious on account of its spiny, adhesive fruits. Also one of several other species of *Cenchrus,* as *C. macrocephalus,* the large sand-bur. Compare *hedgehog-grass.*

sand-cherry, *n.*—**Western sand-cherry,** *Prunus Besseyi,* a low shrub of the prairies of western North America, ranging from Minnesota to Manitoba and south to Kansas and Utah. It is similar to the dwarf cherry or sand-cherry, *P. pumila,* but has a larger and sweeter fruit.

sand-cone (sand′kōn), *n.* A conical projection of glacial ice the rapid melting of which is prevented by a covering of sand.

sand-crusher, *n.* 2. A revolving pan fitted with heavy crushing-rolls for crushing sand preparatory to using it in casting metals.

sand-dab, *n.* 2. A common name for a flounder, *Hippoglossoides platessoides,* found on both sides of the North Atlantic.

sand-devil (sand′dev″l), *n.* A small whirlwind carrying sand, leaves, etc.

> On still days even it was rare not to be visited [camp at Modder river] by a number of small whirlwinds, called "*sand-devils,*" which would pass slowly along sucking up quantities of sand and any light articles such as pieces of paper, carrying them to an astonishing height in the air and depositing them broadcast.
> *Lancet,* March 16, 1901, p. 771.

sand-diver, *n.* 2. A fish, *Synodus intermedius,* found from the coast of southern Florida to Brazil, and common in the West Indies.

sand-draw (sand′drâ), *n.* In *geol.,* a band of pure sand, dry on the surface, marking the channel of a subterranean percolating stream which in some cases is sunken to a depth of five meters. Sand-draws abound in western Nebraska, South Dakota, and eastern Wyoming, and have a characteristic flora. *P. A. Rydberg.* [Local, U. S.]—**Sand-draw formation,** a sparse vegetation occupying a sand-draw. In Nebraska it consists typically of *Polanisia trachysperma* and *Cristatella Jamesii,* either together or separate, with scattering grasses. These prepare the way for other species, and later may themselves be crowded out, the sand-draw losing its character. *Pound and Clements.*

sandek (sän′dek), *n.* [Also *sandik,* < Talmudic Heb. *sandek* or *sandik,* usually referred to Gr. *σύνδικος,* an advocate. See *syndic.*] In Jewish usage, one who holds the infant during the ceremony of circumcision and acts the part of a godfather.

sander² (san′dėr), *n.* 1. A sandpapering-machine: as, a disk-*sander* (one employing a revolving disk covered with sandpaper), a belt-*sander,* a blind-*sander,* a *sander* and polisher.—2. A device on a locomotive or an electric car for sanding the track.

> Each section of the locomotive is equipped with one bell, one whistle, two locomotive headlights, approved air-brake mechanism, including two engineer's valves and air gauges, necessary brake cylinders, foundation brake, air reservoirs, couplers and draw heads; also . . . pneumatic track *sanders.*
> *Elect. World and Engin.,* Aug. 22, 1903, p. 312.

Belt-, disk-, drum-sander. See ★*sandpapering-machine.*

sand-feeder (sand′fē″dėr), *n.* A marine organism which passes sand through the alimentary canal so as to extract for food such organic matter as it may contain.

> Boring organisms enter on its central part [of the coral reef] and cause the rock to decay. *Sand-feeders* follow and triturate up the fragments, throwing a constant stream of fine mud into suspension in the water to be removed by the tidal and other currents.
> *Nature,* Feb. 18, 1904, p. 372.

sand-fish, *n.* 2. A silvery scaleless fish of the North Pacific, *Trichodon trichodon.*

sand-fly, *n.* 1. (*b*) Any one of several chironomid flies of the genus *Ceratopogon.*—**Sand-fly bush.** Same as *stinkwood* (*b*). [Australia.]

sand-gate (sand′gāt), *n.* A mechanical device, placed in an irrigating-canal or -ditch, by means of which the accumulated sand or sediment may be flushed out of the canal by suitable gates or valves. *H. M. Wilson,* Irrigation Engineering, p. 245.

Sandgate beds. See ★*bed*¹.

sand-glacier (sand′glā″shiėr), *n.* A dune or sheet of sand which advances slowly under prevalent wind action and thus imitates a true glacier. [Rare.]

> Wind blowing outwards from a deep sand tract forms a horizontal plateau terminated by a talus as steep as the sand can rest. Under these conditions the encroachment of sand recalls the manner of advance of a glacier, and to this formation I restrict the term "*sand glacier.*"
> *V. Cornish,* in Geog. Jour. (R. G. S.), IX. 286.

sand-grass, *n.* 3. Specifically, *Calamovilfa longifolia,* a stout long-leafed grass of sands or sandy soil, found in the Great Lake region and from the upper Missouri to Kansas. Its strong and far-extended rootstocks make it very valuable as a sand-binder. More fully, *big* or *long-leafed sand-grass.*—4. The bluejoint grass, *Calamagrostis Canadensis,* and other species of the genus, as *C. Montanensis, Montana sand-grass,* and *C. hyperborea Americana,* also called *yellow-top.*—5. The salt-grass, *Distichlis spicata.*—6. The Indian millet, *Eriocoma cuspidata.*—**Colorado sand-grass,** one of the beard-grasses, *Andropogon Hallii,* found in the sandy regions of the western United States. It resembles big blue-stem, *A. furcatus,* and is likely to be of considerable value for hay. Called also *turkey-foot.*—**Douglass's sand-grass,** a low and slender tufted spear-grass, *Poa Douglassii* of the sands of the Pacific coast: of some value as a sand-binder.

sand-hog (sand′hog), *n.* A man who works in a caisson or in foundation-work, under air-pressure under water or elsewhere, digging in the sand or silt of river- or harbor-bottoms. Also called *ground-hog.* [Slang, U. S.]

sandia (sän-dē′ä), *n.* [Sp., a watermelon, < Ar. *sindīya,* a kind of melon, < *Sind,* India.] In *phys. geog.,* a mountain or ridge which, when seen in profile, resembles half a watermelon. [Southwestern U. S.]

sandillion (san-dil′yo̤n), *n.* [*sand* + (*m*)*illion.*] The number of the sands on the sea-shore. [Nonce-word.]

> Centillions multiplied beyond the vocabulary of numeration, and ascending to ψαμμακόσια; which word having been coined by a certain Alexis (perhaps no otherwise remembered) and latinized arenaginta by Erasmus, is now Anglicised *sandillions* by me.
> *Southey,* Doctor, Interchap. vi.

sanding-lathe (san′ding-lāᴛʜ), *n.* See ★*sanding-machine.*

sanding-machine (san′ding-ma̤-shēn″), *n.* In *barrel-making,* a sandpapering-machine for surfacing and finishing slack barrels before the hoops are put on: circular clamps hold the assembled package of staves forming the barrel and cause it slowly to revolve in front of a vertical belt-sander, running at a high speed in the opposite direction. The machine performs the shaving up or finishing work formerly done by hand and automatically releases and discharges the barrel when finished. A similar machine for finishing barrels and kegs by the use of hand-tools is called a *barrel-turning* and *-smoothing* (or *-sanding*) *lathe.*

sand-iron (sand′ī″ėrn), *n.* In *golf,* an iron used in playing the ball out of sand.

sand-jack, *n.* 2. A device for lowering heavy weights by having them supported on sand which can be allowed to run out as desired. This device is used to lower bridge-spans into place by having the span mounted on wooden plungers which, in turn, rest on columns of sand in boxes. The bridge is moved over the piers on which it is to rest, and the sand is allowed to run out through a series of openings in the side of each box, thus allowing the bridge to drop as slowly or as rapidly as is desired. In launching ships, the last keel-blocks to be taken out are often supported on bags of sand. A single blow from an ax suffices to let the sand run out so that the keel-block can be removed.

sand-leaf (sand′lēf), *n.* One of the lowest poor leaves of the tobacco-plant: so named as collecting sand on its surface. Also *sand-lug.*

Sandling beds. See ★*bed*¹.

sand-lucerne (sand′lụ-sėrn″), *n.* See ★*lucerne.*

sand-lug (sand′lug), *n.* Same as ★*sand-leaf.*

sand-mixer (sand′mik″sėr), *n.* A machine for blending, disintegrating, and cleaning old and new foundry-sand: essentially a centrifugal screening-machine. A horizontal disk armed with pins projecting upward is inclosed in a casing and rotated at high speed. The sand, old cores, etc., are fed at the top of the casing, and, falling on the disk, are rapidly cleaned and mixed together. Its capacity is five tons of sand an hour. Another type, which has vertical disks, is called a *disintegrator.* Still another type employs paddles on a horizontal shaft revolving in a horizontal box or cylinder. It is sometimes called a *dry-mixer.*

sand-mullet (sand′mul″et), *n.* Same as ★*tallygalone.*

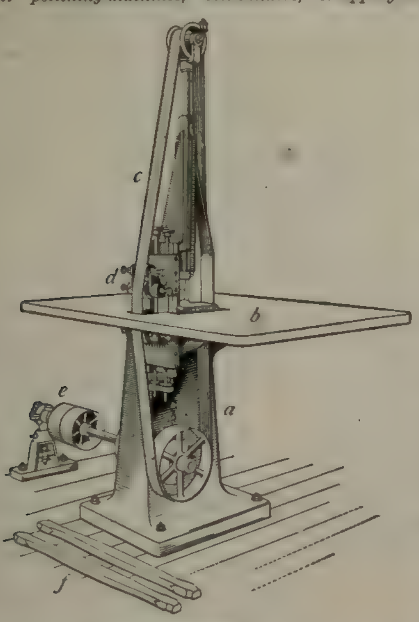
sand-nettle (sand′net″l), *n.* The spurge-nettle, *Cnidoscolus stimulosus.*

sand-oat (sand′ōt), *n.* See ★*oat.*

sand-painting (sand′pān″ting), *n.* A design made by allowing sand of different colors to fall from the hand over a surface, the colored sands forming the desired design. The sand-painting is, therefore, rather a sand-mosaic. Sand-paintings are used in the rituals of Indians of the southwestern territories, but they occur also among the Indians of the plains.

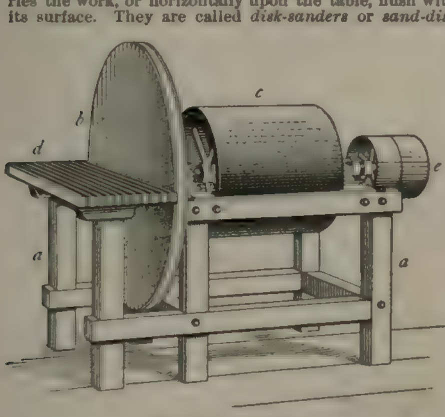
> In passing, attention may be called to the ceremonial *sand painting* of the Hopi and Navajo, where the most beautiful effects are secured by allowing sand in slender streams of different colors to fall from the hand guiding it over the surface to form designs. The blending of the colored sands is soft and harmonious, and the result is a sand mosaic. *Smithsonian Rep.* (*Nat. Mus.*), 1900, p. 467.

sandpapering-machine (sand′pā-pėr-ing-ma̤-shēn″), *n.* See *sandpaper, v. t.* Under this general term is now included a large class of wood-polishing, surfacing, and finishing machines employing paper or woven fabrics coated with sand or other abradant materials. Five types of machines are in use. In one the abradant is spread upon belts or endless bands which vary in width from a few inches to two feet. The bands run horizontally or vertically over pulleys and through openings in a table or under it, a portion of the band being exposed through a slot in the table. In some machines the pulleys are supported by a horizontal adjustable arm to enable the operator to bring the sand-belt to the work in any position. Such belt-machines are called *sand-belts*, *belt polishing-machines*, *belt-sanders*, *strapping-machines*, and *belt-machines*. Another type, for polishing doors and other flat surfaces, employs small horizontal disks covered with sandpaper and supported at the end of jointed adjustable swinging arms. They are called *sash-and-door sandpapering-machines*. A third type employs large disks of wood covered with sandpaper and placed in a vertical position at the side of the table which carries the work, or horizontally upon the table, flush with its surface. They are called *disk-sanders* or *sand-disk machines*. In a fourth, cylinders or drums of sandpaper are suspended under the table, a small section of the surface appearing through a slot in the table. They are called *drum-sanders*. A fifth employs a small vertical spindle covered with sandpaper, and is called a *spindle-sander*. In all sandpapering-machines the work is fed to the rapidly moving sandpaper either by hand or by means of various appliances for holding it in position while it is being polished.—**Sash-and-door sandpapering-machine.** See above.



Belt-sander.

a, standard, supporting machine : *b*, work-table : *c*, fabric coated with sand, in the form of a continuous belt ; *d*, tension-controlling mechanism : *e*, power connection ; *f*, samples of finished work.



Disk- and Drum-sander.

a a, frame of machine ; *b*, vertical disk coated with sand ; *c*, horizontal revolving drum coated with sand ; *d*, work-table for presenting work to disk ; *e*, power connection.

sandpiper, *n.*—**Pectoral sandpiper**, *Tringa maculata*, a species widely distributed through America, Europe, and Asia. The name is given in allusion to the habit of inflating the throat so that it hangs upon the breast. The names actually used are *grass-snipe* and *jack-snipe*.

sand-plain (sand′plān), *n.* In *geol.*, a lobate delta-plain of sand and gravel washed from a glacier into a body of standing water and remaining after the glacier and the water have disappeared.

> Near the ice margin, at its various stands, deposits must have been rather extensively made near the mouths of the sub-glacial rivers. . . . In New England they are found quite commonly, especially near the coast, where they are called *sandplains*.
> *R. S. Tarr*, in Bull. Amer. Geog. Soc., XXX. 207.

sand-plate (sand′plāt), *n.* **1.** A revolving disk of cast-iron, copper, or some other soft metal on which articles of stone or glass are ground or polished with the use of sand or other abrasive material.—**2.** One of a series of plates fitted to the main wheels of the transporting carriage of a life-boat to make an extremely wide tire, thus enabling the carriage to be easily hauled over soft sand.

> The transporting-carriage of to-day is, however, an improvement on that used in 1881, and has been rendered particularly useful at places where the beach is soft, sandy, or shingly, by the introduction in 1888 of Tipping's *sand-plates*. These . . . are composed of an endless plateway or jointed wheel tyre fitted to the main wheels of the carriage, thereby enabling the boat to be transferred with rapidity . . . over beach and soft sand.
> *Encyc. Brit.*, XXX. 232.

sand-plum (sand′plum), *n.* See ★*plum*1.

sand-puncher (sand′pun″chėr), *n.* See ★*sand-rat*, 2.

sandr (sändr), *n.*; pl. *sandar* (sän′där). [Icel.,= E. *sand*, *n.*] In *phys. geog.*, a sandy or gravelly flood-plain or delta formed by glacial streams in Iceland and Greenland: often equivalent to *glacial sand-plain*.

> Here they [glacial streams] cover vast areas with gravelly or sandy deposits, the equivalent of the "*sandr*" of Iceland. *Geog. Jour.* (R. G. S.), XIII. 299.

sand-rammer (sand′ram″ėr), *n.* **1.** (*a*) A wooden tool, used by hand in the making of sand-molds in a foundry, by which the sand is compacted in the flask around the pattern. Large ones are used with two hands and smaller ones with one. (*b*) A mechanical apparatus used for the same purpose, operated by compressed air, particularly in connection with power molding-machines.

> The range of application of pneumatic hammers is almost as wide as that of a hand hammer; they have even been used under water by divers working on wrecks. A recent application of the same principle is to be seen in the [pneumatic] *sand-rammers* employed in making foundry moulds. *Encyc. Brit.*, XXXI. 802.

2. A combination of power-rammers used to produce a uniform pressure all over a flask by pneumatic pressure brought upon all at once, with equalizing levers to prevent concentration of pressure at any point.—**Pneumatic sand-rammer**, a pneumatic hammer which has a rammer attached to the piston-rod, used in ramming sand.

sand-rat, *n.* **2.** A molder in an iron-foundry. Also called *sand-puncher*. [Slang, Eng.]

sand-reef (sand′rēf), *n.* A strip of low, sandy land, or barrier beach, built by wave-action on a shallow sea-floor not far from the coast and inclosing a narrow lagoon.

sand-ripple (sand′rip″l), *n.* Alternate ridge and hollow formed in sand through the influence of waves, wind, or currents.

> The uniformity of the wind-ripple pattern is at all times remarkable. In water-formed *sand-ripples* no such uniformity has been recorded.
> *Geog. Jour.* (R. G. S.), IX. 279.

sand-river (sand′riv″ėr), *n.* A stream carrying a large amount of land-waste in comparison with the volume of water. *Geikie*, Text-book of Geol., p. 494.

sandrock, *n.*—**Calciferous sandrock**, a name introduced by Eaton and adopted by the early geologists of New York State, in the modified form *Calciferous sandstone*, for the lowest division of the Silurian strata, which consists of a somewhat silicious magnesian limestone: now known as *Beekmantown* ★*limestone* (which see).

sand-rocket (sand′rok″et), *n.* See ★*cross-weed*.

sand-roller (sand′rō″lėr), *n.* **1.** Any fish of the family *Percopsidæ*, especially *Percopsis guttatus*, of the eastern and middle United States.—**2.** A wave heavily charged with sediment: specially applied to those of the San Juan river.

> As the San Juan rises, the waves get higher. The river carries more sand and mud than any other stream in the country. It has never been satisfactorily explained how the "*sand rollers*" start in this singular stream, but we know, from personal experience, that sometimes they reach a height of three or four feet.
> *W. K. Moorehead*, in Amer. Inventor, Jan. 15, 1904, p. 33.

Sandrus (san′drus), *n.* [NL., < E. *sander* (?): compare ★*sandat*.] The European genus of pike-perches, closely allied to the American genus, *Stizostedion*: commonly called *Lucioperca*. The common species is the sander, *Sandrus lucioperca*.

sand-shark, *n.* **2.** Same as *blind* ★*shark*.

sand-shell (sand′shel), *n.* A yellow river-mussel, *Lampsilis anodontoides*, or a black mussel, *L. rectus*, found in the Mississippi river and used in the manufacture of pearl buttons.

sand-sifter, *n.* **2.** A machine for screening and cleaning foundry-sand. The simplest form is a horizontal screen or riddle. More complicated forms have a cylindrical rotary tapering screen. Another type consists of a flat screen supported on a tripod and fitted with an automatic device for vibrating or jarring the screen to prevent clogging. Such a device is called a *pneumatic screen-shaker*. Sand-sifters are also called *riddling-machines*.—**Pneumatic sand-sifter**, a screen or riddle mounted on a tripod and fitted with a pneumatic reciprocating motor. The screen is directly connected with a piston-rod which by its motion shakes the screen and causes it to break up the lumps of sand and to sift out bits of slag or other hard materials.

sand-slue, sand-slew (sand′slö), *n.* A small barren area of sand, usually slightly depressed.

> Among other characteristic features of the earthquake was the opening of immense cracks, often several feet across and many feet in depth, and the formation of craterlets, through both of which large amounts of lignite-bearing sands were ejected, probably giving rise to the broad areas known as *sand-slews* where the surface, even today, is in places a barren, sandy, timberless waste, upon which only weeds will grow.
> *Science*, March 3, 1905, p. 349.

sandspit (sand′spit), *n.* A low point of land projecting into a lake or sea and composed of sand and formed by the interaction of waves and currents.

> Professor Branner chose as the subject of his presidential address, 'Geological and Geographical Studies on the Northeast Coast of Brazil,' and illustrated his paper by means of numerous photographs and charts. The most peculiar feature of this coast is the series of hardened *sandspits* occurring at the mouths of most of the rivers.
> *Science*, Feb. 10, 1905, p. 216.

sand-star, *n.* **3.** The sea-sedge, *Carex arenaria*.

sandstone, *n.*—**Aux Vases sandstone**, a subdivision of the Subcarboniferous of Missouri. It was originally termed the *ferruginous sandstone*, and is regarded by Missouri geologists as equivalent to the base of the Kaskaskia group. It is underlain by the Ste. Genevieve limestone and overlain by the Kaskaskia limestone.—**Bukowka sandstone**, a division of the Lower Silurian in Russian Poland.—**Cape Girardeau sandstone**, a division of the upper part of the Lower Silurian in Missouri, regarded by western geologists as equivalent to a part of the Cincinnatian group.—**Carpathian sandstone**, a calcareous sandstone of considerable extent in the eastern Alps. It forms a part of the uppermost Cretaceous system of that region.—**Chilhowee sandstone**, a division of the Lower Cambrian series in Tennessee.—**Comley sandstone**, a division of the Lower Cambrian in western England.—**Connecticut River sandstone**, the sandstone-beds of Jura-Trias age, extending along the Connecticut valley through Massachusetts and Connecticut. They are regarded as equivalent to the Newark sandstone, and attain a thickness of more than 4,000 feet, and rest upon crystalline and Paleozoic rocks. They are characterized by abundant tracks or footprints of amphibians and dinosaurs and occasional bones of the latter (*Anchisaurus*).—**Conoquenessing sandstone**, a local subdivision of the coal-measures in eastern Pennsylvania.—**Deister sandstone**, a division of the Lower Cretaceous or Neocomian series in Germany.—**Desert sandstone.** See ★*desert*1.—**Downton Castle sandstone**, in the Silurian formation of Wales and the adjoining counties of England, a division of the Ludlow group lying above the Ledbury shales and below the tilestones. Some writers regard the latter as essentially transitional to the Devonian or Old Red Sandstone, thus construing the Downton Castle sandstone as the uppermost member of the Silurian system.—**Elgin sandstone**, a name of the sandstones in the district of Elgin, in the north of Scotland, which were formerly referred to the Upper Old Red Sandstone, but are now considered as of Triassic age. They are noted for their empty casts of reptiles representing new forms of anomodonts resembling those found in the South African Karoo beds.—**Ereré sandstone**, a division of the Middle Devonian formation in the lower Amazonas region of Brazil, containing fossils very similar to those of the Hamilton shales of New York.—**Fell sandstone**, one of the lower divisions of the Carboniferous series in the Northumberland district of England.—**Fontainebleau sandstone.** Same as *Fontainebleau limestone* (which see, under *limestone*).—**Gröden sandstone**, a subdivision of the Permian system in the eastern Alps, consisting of red sandstone, underlain by the verrucano conglomerate and overlain by the Bellerophon limestone.—**Harding sandstone**, a division in Colorado regarded by Walcott as of Lower Silurian age and containing the remains of placoderm fishes. Other paleontologists who have studied the fishes think that they have very close affinities with those of Devonian age.—**Hillsboro sandstone**, the uppermost member of the Niagara group of Silurian rocks in Ohio. *E. Orton*, in Geol. Surv. of Ohio, VI. 14.—**Hollybush sandstone**, a division of the Cambrian system in the Malvern Hills in England, lying below the white-leaved-oak shales and above the Malvern quartzite.—**Huamampampa sandstone**, a subdivision of the Devonian system in Bolivia. It is underlain by the Icla shales and correlated with the Hamilton or Middle Devonian of New York.—**Idzumi sandstones**, a division of the Cretaceous system in Japan.—**Lunz sandstones**, a subdivision of the Triassic system in the Alpine basin in Upper and Lower Austria. These sandstones are underlain by the Partnach beds and overlain by the Opponitz limestone, and correlated by Austrian geologists with the Raibl beds. They are characterized by plant remains, especially species of *Pterophyllum* and forms of *Equisetites*, *Calamites*, *Neuropteris*, *Alethopteris*, etc.—**Mahoning sandstone**, a subdivision of the lower barren coal-measures in Ohio and western Pennsylvania, lying at the base of the series and above the lower productive measures.—**May Hill sandstone**, the higher member of the lowest or Llandovery division of the Upper Silurian in England, essentially equivalent in its fossils to the Clinton formation of New York. Its marine fauna is profuse.—**Mentor sandstone**, the uppermost subdivision of the Lower Cretaceous formations in Kansas.—**Montebello sandstone**, a local subdivision of the Middle Devonian in central Pennsylvania.—**Mottled sandstone**, in *geol.*, the English equivalent of the German *Buntersandstein*, the lowest of the three divisions of the Triassic strata.—**Nubian sandstone**, a term applied to a Cretaceous formation widely developed in northeastern Africa and extending into Syria and the Libanos. It probably represents several distinct horizons in the Cretaceous series.—**Oneida sandstone**, a Silurian sandstone or grit occurring in the eastern United States.

—**Oneonta sandstone**, an estuarine deposit of sandstone of early Upper Devonian age, confined to eastern New York, lying below the Catskill sandstone and equivalent in age to the marine beds of the Upper Ithaca group farther west. It contains terrestrial plant remains and a unio-like mollusk, *Amnigenia catskillensis*.—**Parma sandstone**, a white sandstone at the bottom of the coal-measure series of the lower peninsula of Michigan. It has a thickness of 100 feet in the vicinity of East Saginaw, and is an important source of artesian water. Its fossil fauna shows it to be a sandy phase of the Maxville limestone of late Mississippian age.—**Perry sandstone**, a series of plant-bearing sandstones and shales of Devonian age in the State of Maine, United States, and the province of New Brunswick, Canada.—**Saccharoidal sandstone**, a very pure sandstone, much prized as a glass sand, occurring at Crystal City, south of St. Louis, and elsewhere in Missouri. It has a sugary texture and belongs to the Ordovician period. *Amer. Geol.*, Aug., 1904, p. 105.—**Sandstone dike.** See ★*dike*.—**Sherburne sandstone**, a division of the Upper Devonian in central New York, equivalent to the lower part of the Portage group farther west.—**Sillery sandstone**, a term introduced by Sir W. Logan for a division of the rocks near Quebec, regarded as lying at the top of the Quebec group, which taken as a whole was considered as of the age of the Calciferous and Chazy groups. Later investigations have shown that the Sillery formation is probably of Cambrian age.—**Spilsby sandstone**, a deposit in Lincolnshire, England, forming the base of the Neocomian series and resting on the Upper Kimmeridge shales.—**Starucca sandstone**, a division of the Upper Devonian strata in eastern Pennsylvania.—**Torridon sandstone**, the upper member of the pre-Cambrian rocks of northwestern Scotland, so named by Nicol from Loch Torridon.—**Vienna sandstone.** See *flysch*.

sand-strake† (sand′strāk), *n.* A garboard strake.

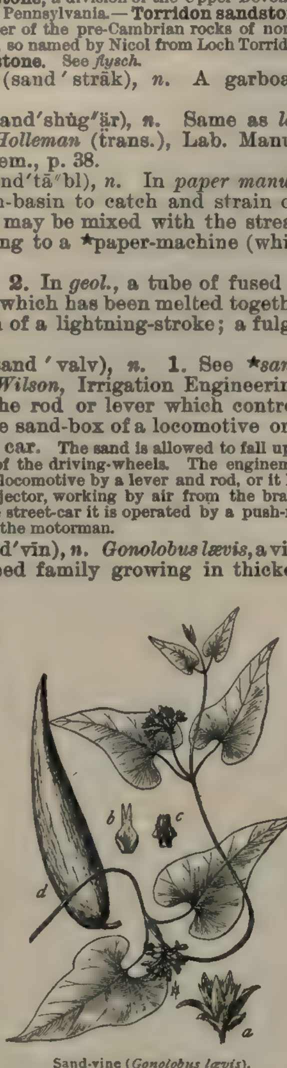
sand-sugar (sand′shůg″ä̤r), *n.* Same as *lactose*. *A. F. Holleman* (trans.), Lab. Manual of Organic Chem., p. 38.

sand-table (sand′tā″bl), *n.* In *paper manuf.*, a box or catch-basin to catch and strain out any sand that may be mixed with the stream of stock flowing to a ★paper-machine (which see).

sand-tube, *n.* **2.** In *geol.*, a tube of fused or sintered sand which has been melted together along the path of a lightning-stroke; a fulgurite in sand.

sand-valve (sand′valv), *n.* **1.** See ★*sand-gate*. *H. M. Wilson*, Irrigation Engineering, p. 248.—**2.** The rod or lever which controls the sand in the sand-box of a locomotive or a street-railway car. The sand is allowed to fall upon the rail in front of the driving-wheels. The engineman controls it in the locomotive by a lever and rod, or it has the form of an ejector, working by air from the brake-reservoir. In the street-car it is operated by a push-rod under the foot of the motorman.

sand-vine (sand′vīn), *n.* *Gonolobus lævis*, a vine of the milkweed family growing in thickets from Pennsylvania to Florida and west to Kansas and Texas. It has deeply cordate, ovate leaves, small whitish flowers in axillary cymes, and large follicles.



Sand-vine (*Gonolobus lævis*).
a, flower; *b*, crown-lobe tipped by a 2-cleft awn; *c*, stamen-tube; *d*, follicle or seed-pod.

sandware (sand′wãr), *n.* A coarse pottery or stoneware, composed largely of sand, used for crucibles in which metal is melted.

> The *sandware* crucibles used in melting the alloy, and the molds in which the bar is cast.
> *Sci. Amer. Sup.*, June 25, 1904, p. 23816.

sand-warped (sand′wârpt), *a.* Said of a vessel when it is left on a sand-bar by the ebbing tide.

sand-wash (sand′wosh), *n.* A sloping surface of sand spread out by an intermittent stream or flood. [Southwestern U. S.]

> From this point the party worked down the *sandwash* of Rio San Ignacio (or Rio Altar) to the coast of the Gulf of California, where the Tepoka Indians lived until recently. *Science*, Jan. 4, 1901, p. 38.

sand-wave (sand′wāv), *n.* In *phys. geog.*, a low ridge of sand formed by waves or currents of water.

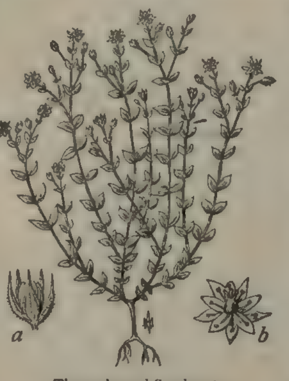
> The water-wave was really controlled by a submerged *sand-wave*, the up-stream flank of which was exposed to a heavy shower of sand from the turbid water.
> *Geog. Jour.* (R. G. S.), XIII. 625.

sand-wheel (sand′hwēl), *n.* A wheel of large diameter fitted with buckets on its periphery by which the water and sand from stamp-mills or ore-dressing works are elevated and then, by launders or flumes on a sufficient incline, conveyed away to points of disposal.

sandwich, *n.*—**Club sandwich**, slices of bread or toast with thin layers of cooked bacon and cold roast chicken with Mayonnaise dressing and sometimes lettuce between them.—**Spanish sandwich**, Graham bread in thin slices spread with mustard, with a layer of cottage cheese and one of chopped olives mixed with Mayonnaise dressing.

sandwich-girder (sand′wich-gėr″dėr), *n.* See ★*girder*¹.

sandwort, *n.*—**Arctic sandwort**, *Arenaria biflora*, which ranges from Greenland and Labrador to Quebec and west to Alaska; also south in the mountains to Arizona.—**Blunt-leaved sandwort**, *Mœhringia lateriflora*, a widely diffused North American plant closely related to *Arenaria* and formerly united with it.—**Large-leaved sandwort**, *Mœhringia macrophylla*, a species with larger leaves, ranging from the Great Lakes to British Columbia and south to California.—**Pine-barren sandwort**, *Arenaria Caroliniana*, a native of the pine-barrens of New Jersey and extending south near the coast to Florida.—**Rock sandwort**, *Arenaria Michauxii*, which grows in rocky places throughout most of eastern North America and has whorls of rigid subulate leaves.—**Sea-beach sandwort**, the sea sandwort, *Honkenya peploides*.—**Seaside sandwort**, the salt-marsh sand-spurry, *Tissa marina*.—**Texas sandwort**, *Arenaria Texana*, of dry rocky soil in Texas and northward to Kansas and Missouri. It closely resembles the rock sandwort.—**Thyme-leaved sandwort**, *Arenaria serpyllifolia*, an old-world species thoroughly naturalized in America as a weed. It has very short opposite leaves.



Thyme-leaved Sandwort (*Arenaria serpyllifolia*).
a, capsule surrounded by the scarious calyx; *b*, expanded flower.

sandy¹, *a.*—**Sandy-ground bug.** See ★*bug*².

sandy³ (san′di), *n.* [Prob. < *sandy*¹, *a.*] A Tasmanian fish, *Uphritis urvillii*. Also called the *fresh-water flathead*.

sandy-blight (san′di-blīt), *n.* A form of conjunctivitis common in some parts of Australia. *E. E. Morris*, Austral English.

sang³, *n.* **2.** Same as *malignant anthrax* (F. *sang de rate*).

sang⁴ (sang), *n.* A reduction of *ginseng*. Also *seng*. [Rural, U. S.]

> The average "*sang*" digger has very little conscience.
> *M. G. Kains*, Ginseng, p. 31.

sang⁴ (sang), *v. i.* [*sang*⁴, *n.*] To gather ginseng for the market. [Rural, U. S.]

sangar (sang′gä̤r), *n.* In South Africa, a low stone wall or screen built to protect a firing party; a trench. See *trench*. Also *sungar*.

> We ran round an' about, an' all we got was shootin' into the camp at night, an' rushin' empty *sungars* wid the long bradawl, an' bein' hit from behind rocks, till we was wore out.
> *R. Kipling*, 'Love-o'-Women,' in Many Inventions, p. [303.
>
> Here and there dotted in all directions were little stone walls or forts, to all appearance lifeless, except when someone showed to change his position, or move from one wall to another. Instantly the opposing *sangars* would blaze with musketry.
> *United Service Mag.*, April, 1901, p. 70.

sängerbund (seng′ėr-bönt), *n.* [G., < *sänger*, singer, + *bund*, union.] A German male singing society or chorus.

sängerfest (seng′ėr-fest), *n.* [G., < *sänger*, singer, + *fest*, festival.] A song-festival; a social gathering of German choral societies for competition.

> It is thought that the event will attract several hundred shooters from all over the United States, as the *Saengerfest* will be in progress here the week of the shoot. Resolutions were adopted that the officers of the *Saengerfest* be tendered an invitation to the shoot.
> *Forest and Stream*, Jan. 24, 1903, p. 78.

Sanghara-nut, *n.* Same as *Singhara nut* (which see, under *nut*).

sangley (säng-lā′), *n.* [Philippine Sp., given as from "Chinese *hiang lay*, a traveling merchant" (Blumentritt, Vocab.), meaning perhaps Chinese *hing*, go, + *lai*, come.] A Chinese trader or merchant. [Philippine Is.]

sanglot (soṅ-glō′), *n.* [F. *sanglot*, OF. *sanglout*, *senglout*, < L. *singultus*, a sobbing. See *singult*.] In *singing*, an embellishment consisting of an aspirated sob-like grace-note added to the penultimate tone in certain skips: used mostly with interjections of sorrow or despair.

sangree-root (sang′grē-röt), *n.* Same as ★*sangrel*.

sangrel (sang′grel), *n.* The Virginia snakeroot, *Aristolochia Serpentaria*. Also *snagrel* and *sangree-root*.

sanguifacient (sang-gwi-fā′shient), *a.* [L. *sanguis*, blood, + *faciens*(-*ent*-), making.] Blood-forming.

sanguimotor (sang-gwi-mō′tọr), *a.* [L. *sanguis*, blood, + *motor*, mover.] Relating to the circulation of the blood.

sanguimotory (sang-gwi-mō′tọ̄-ri), *a.* Same as ★*sanguimotor*.

sanguinarin, *n.* This acrid alkaloid, $C_{20}H_{15}O_4N + H_2O$, is used in medicine as an expectorant, purgative, and emetic.

sanguineoserous (sang-gwin″ẹ̄-ọ̄-sē′rus), *a.* [L. *sanguineus*, bloody, + E. *serous*.] Same as serosanguinolent.

sanguinite (sang′gwi-nīt), *n.* [L. *sanguis* (*sanguin*-), blood, + -*ite*².] A sulpharsenite of silver occurring in hexagonal scales which are of a deep-red color by transmitted light: found at Chañarcillo, Chile.

sanguisuction (sang-gwi-suk′shọn), *n.* [L. *sanguis*, blood, + NL. *suctio*(*n*-), suction.] The sucking of blood.

san-hien (sän-hē-en′), *n.* [Chin.] A Chinese three-stringed lute or banjo similar to the Hindu ravanastron. Compare ★*ur-hien*.

sanicle, *n.*—**Black sanicle.** (*a*) The great black masterwort, *Astrantia major*. (*b*) *Sanicula Marilandica*. Also called *black snakeroot*.—**False sanicle**, the bishop's-cap, *Mitella diphylla*.—**Yorkshire sanicle**, the butterwort or marsh violet, *Pinguicula vulgaris*.

sanidinite (san′i-di-nīt), *n.* [*sanidine* + -*ite*².] In *petrog.*, phaneric masses occurring like segregations in trachytic and phonolitic volcanic lavas and sometimes ejected as bombs: composed chiefly of orthoclase feldspar with subordinate amounts of other minerals. It has been proposed by Weed and Pirsson (1895) to apply the name *sanidinite* to syenitic rocks composed almost wholly of orthoclase.

sanification (san-i-fi-kā′shọn), *n.* The process of sanifying or rendering sanitary; the putting and keeping (something) in a sanitary condition.

> The educational ideal is now to develop capacities in as many directions as possible, to indulge caprice and velleity a little, to delay consistency for a time, and let the diverse prepotencies struggle with each other. Now everything psychic tends in its turn to be intense to the point of illusion or positive obsession, but nature's rhythm, if allowed to have its due course, prevents stagnation and hebetude, and the passion to change keeps all powers fluent and plastic, gives elasticity and develops power of *sanification*. Sometimes there seem almost to be dual or multiplex personalities.
> *G. S. Hall*, Adolescence, II. 89.

saniopurulent (sā″ni-ọ̄-pū′rọ̈-lẹnt), *a.* [L. *sanies*, sanies, + *purulentus*, purulent.] Partly sanious and partly purulent. *Buck*, Med. Handbook, VII. 52.

sanioserous (sā″ni-ọ̄-sē′rus), *a.* [L. *sanies*, sanies, + NL. *serosus*, serous.] Partly sanious and partly serous. *Buck*, Med. Handbook, VII. 52.

sanitary, *a.*—**Sanitary chemistry, survey.** See ★*chemistry*, ★*survey*.

II. *n.* A public water-closet, urinal, and lavatory.

Sannoisian stage. See ★*stage*.

sanoform (san′ọ̄-fôrm), *n.* [L. *sanus*, sound, + E. *form*(*aldehyde*).] A trade-name of methyl diiodosalicylate, $HO\overset{2}{C}_6H_2I_2\overset{1}{C}OOCH_3$, prepared by the action of iodine on oil of wintergreen. It is a colorless, odorless, tasteless crystalline powder, and is used in surgery as a substitute for iodoform.

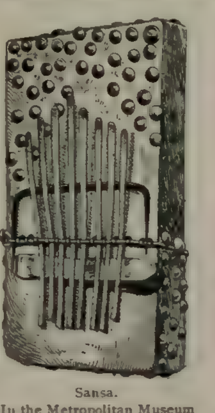
sanose (san′ōs), *n.* [L. *sanus*, sound, + -*ose*.] A commercial product, essentially a mixture of albumoses.

san-pedrito (sän″pe-drē′tō), *n.* [Sp., 'little Saint Peter.'] Same as ★*mariposa*, 2.

Sans nombre, in *law*, without number, unlimited; also, uncertain in number.—**Sans recours**, in *law*, without recourse. These words added to an indorsement render the indorsee not liable. See *indorsement*, 4.

Sans. An abbreviation of *Sanskrit*.

sansa² (san′sạ̈), *n.* [Also *sansi*; African.] An African musical instrument which consists of a sounding-board of some hard wood with strips of iron, or occasionally bamboo, fastened to it so as to leave one end free to vibrate. The instrument is usually played by holding it in both hands and with the thumbs pressing down and releasing the keys, of which there are sometimes forty or more. Also called *zimba*.



Sansa.
(In the Metropolitan Museum of Art, New York.)

san-sam (san-sam′), *n.* [Korean *san sam*, 'mountain ginseng.'] The wild ginseng of Manchuria and Korea, apparently including the 'imperial.' Its roots are sometimes a foot long and an inch in diameter.

> The extreme rarity of *san-sam* augments the superstitious repute in which it is held.
> *G. C. Foulk*, Foreign Relations of the U. S., 1885, [p. 329.

Sansc. An abbreviation of *Sanscrit* (Sanskrit).

sanse, *n.* See *zanze*.

sansi (san′si), *n.* Same as ★*sansa*².

Sansk. An abbreviation of *Sanskrit*.

Sanskritize (san′skrit-īz), *v. t.*; pret. and pp. *Sanskritized*, ppr. *Sanskritizing*. [*Sanskrit* + *-ize*.] To render similar to Sanskrit; modify by Sanskritic influences.

> Dr. Grierson is of opinion that Assamese is fortunate in not having been *Sanskritized* like its sister, Bengali.
> *Athenæum*, Aug. 13, 1904, p. 199.

sant² (sänt), *n.* Same as *sunt*.

Santa Cruz formation. See ★*formation*.

santal, *n.* **II.** *a.* Same as *santalaceous*; also, belonging to the order *Santalales*. See ★*Santalales*.

Santalales (san-tạ-lā′lēz), *n. pl.* [NL. (Lindley, 1836), < *Santalum* + *-ales*.] An order of dicotyledonous archichlamydeous (mostly apetalous) plants, characterized chiefly by diœcious or hermaphrodite flowers with the ovary inferior and one-celled. It embraces seven families, of which the most important are the *Santalaceæ*, *Loranthaceæ*, *Balanophoraceæ*, and *Olacaceæ*.

santalol (san′ta-lol), *n.* [*Santalum* + *-ol*.] An ethereal oil, $C_{15}H_{26}O$, found in sandalwood-oil. It yields water and a sesquiterpene, $C_{15}H_{24}$, when treated with phosphorus pentoxid. It boils at 310° C.

santapee (san-tạ-pē′), *n.* [Fr. Creole pron. of *centipede*.] In British Guiana, a hooligan.

> The "centipede" has been defined as a youth (say) under thirty years of age who "pursues the occupation of idleness with an interminable industry." A gang of "centipedes" for a consideration will waylay and assault and beat anyone. There is a street ditty which says that
>
> Man *santapee* bad,
>
> but
>
> Oman *santapee* wussa bad,
>
> i.e., the female "centipede" is worse than the male.
> *J. Platt, Jr.*, in N. and Q., 10th ser., X. 264.

santol (sän-tōl′), *n.* [Philippine name.] An evergreen tree, *Sandoricum Indicum*, belonging to the *Meliaceæ*, having trifoliolate leaves and axillary panicles of small sweet-scented flowers. Its fruit, which is about the size of an orange, contains 5 one-seeded nuts surrounded by a fleshy acid pulp of a peculiar odor but edible. It is eaten either raw or in the form of preserves, and is sold on the streets of Manila.

Santo Martino (sän′tō mär-tē′nō). [It.] A seventeenth-century silver coin of Lucca, equal to 15 soldi: so named from the saint a likeness of whose head is stamped on the reverse.

santone (san′tōn), *n.* [*sant*(*onica*) + *-one*.] An unsaturated liquid hydrocarbon, $C_{15}H_{26}$, obtained by reducing santonic acid with hydriodic acid. It boils at 235–245° C.

Santonic acid, a yellow crystalline acid, $C_{15}H_{20}O_4$, made by boiling santonin with barium hydroxid. It is isomeric with santoninic acid and melts at 163.6° C.

santonide (san′tō-nid), *n.* [*santon*(*ica*) + *-ide*¹.] A crystalline compound, $C_{15}H_{18}O_3$, made by boiling santonic acid with glacial acetic acid and heating the residue to 180° C. It melts at 127° C.

santoninic (san-tọ-nin′ik), *a.* [*santonin* + *-ic*.] Derived from santonin.—**Santoninic acid**, a colorless crystalline acid, $C_{15}H_{20}O_4$, made by heating santonin with caustic potash or soda solution. When heated to 120° C. it yields santonin and water. The sodium salt is used as an anthelmintic.

Santorin earth. See ★*earth*¹.

Santorini's duct. Same as *Bernard's canal* (which see, under *canal*¹).

santorinite (san′tọ-ri-nīt), *n.* [*Santorini* + *-ite*².] In *petrog.*, a name proposed by Washington (1897) for those andesites which contain labradorite and anorthite with pyroxene, such as the pyroxene-andesites of Santorini.

sanza (san′zạ̈), *n.* The marc or residual cake from ripe olives, crushed and pressed at common temperature to produce olive-oil. Also known as *nocciulo*.

Sao (sā′ō), *n.* [NL., < Gr. Σαώ, a Nereid.] A genus of opisthoparian trilobites with distinctly lobed glabella, seventeen thoracic segments, and extremely small pygidium. *Sao hirsuta* is a well-known form, abundant in the Cambrian rocks of Bohemia, whose ontogeny has been fully described by Barrande.

são-felipe (souṅ-fā-lē′pạ̄), *n.* [Pg., 'Saint Philip.'] A silver coin of Philip III. of Portugal (1621–40).

são-joão (souṅ-zhō-ouṅ′), *n.* [Pg., 'Saint John.'] A silver coin of Johan IV. of Portugal (1640–56).

sap¹, *n.* **4.** In *archery*, the light-colored portion of a bowstaff composed of the sap-wood. This portion forms the back of a self-bow.—**5.** A quarryman's name for rock which is partially decayed and which exhibits this quality by iron stains and other discolorations. It is usually thrown away.

> Some of the Cape Ann granite is iron stained, and on casual inspection might be taken for *sap*. However, it is not such, but a very tough, durable stone, which is well adapted for use in paving blocks or retaining walls. There is, of course, as at all quarries, plenty of *sap*, but it is not identical with the iron-stained rock to which reference has just been made. *Sap* is not only stained from exposure, but shows signs of weakness and disintegration which render it unfit for construction work.
> *Rep. U. S. Geol. Surv.*, 1897–98, VI. 232.

Nuclear sap, the thin liquid contents of the cell-nucleus; the karyolymph or karyenchyma, as distinguished from the cell-sap or cytolymph.

sapanin (sap′ạ-nin), *n.* [*sapan* + *-in*².] A crystalline compound, $C_{12}H_6(OH)_4 + 2H_2O$, formed, together with resorcinol and pyrocatechol, when the extract of sapan-wood is melted with caustic soda. It is probably tetrahydroxydiphenyl.

sap-chafer (sap′chā″fėr), *n.* A beetle that feeds on the sap of trees.—**Melancholy sap-chafer**, an American cetoniid beetle of somber colors, *Euphoria melancholica*, which frequents flowers for nectar and feeds on the exuding sap of trees.

sapek (sä′pek), *n.* [Also *sepek*, *sepeck*; < Annamese *sapek*.] A brass coin of Annam.

saphir d'eau (sa-fēr′ dō). [F., 'water sapphire.'] A clear deep-blue variety of iolite used in jewelry.

sapindal (sap′in-dạl), *a.* Same as *sapindaceous*; also, belonging to the order *Sapindales* (which see).

sapo¹, *n.* **2.** Soap prepared from sodium hydroxid and olive oil; castile soap. *U. S. Pharmacopœia*.

sapocarbol (sā-pọ-kär′bol), *n.* [L. *sapo*, soap, + E. *carbol*(*ic*).] A solution of crude cresols in potash soap. It is antiseptic. *Buck*, Med. Handbook, VII. 30.

sapocrinin (sạ-pok′ri-nin), *n.* [L. *sapo*, soap, + E. *crinin*.] A crinin, said to be different from secretin, obtained by the action of alkali soaps upon the mucous membrane of the duodenum or jejunum.

sapodermin (sā-pọ-dėr′min), *n.* [L. *sapo*, soap, + Gr. δέρμα, skin, + *-in*².] A neutral antiseptic soap containing .2 per cent. of mercury in the form of albuminate or caseinate: a bactericide for external use. *Buck*, Med. Handbook, VII. 30.

Sapodilla family, the plant family *Sapotaceæ* (which see).

sapogenin (sạ-poj′e-nin), *n.* [L. *sapo*, soap, + *-gen* + *-in*².] A crystalline compound, $C_{14}H_{22}O_2$, obtained by saponifying saponin. It melts at 257–260° C.

sapokrinin, *n.* Same as ★*sapocrinin*.

sapolan (sap′ọ-lan), *n.* [L. *sapo*, soap, + E. *lan*(*olin*).] A non-irritating brownish ointment base consisting of crude naphtha, lanolin, and dry soap: used as an external application for eczema and skin diseases generally.

saponaretin (sap-ọ-nar′e-tin), *n.* A crystalline compound formed by the hydrolysis of saponarin.

saponarin (sạ-pon′ạ-rin), *n.* [*Saponaria* + *-in*².] A crystalline glucoside, $C_{19}H_{22}O_{11}$, or $C_{21}H_{24}O_{12}$, found in *Saponaria officinalis*. It melts at 231° C. and gives a blue color with sodium.

saponary, *a.* **II.** *n.* The soapwort, *Saponaria officinalis*.

Saponification equivalent, saponification number or **value.** See ★*equivalent*, ★*value*.

saponifier, *n.*—**Natrona saponifier**, a trade-name of sodium aluminate, which is manufactured from Greenland cryolite at Natrona, Pennsylvania, and is sold for use in soap-making.

saponin, *n.* **2.** A general name applied to glucosides similar to saponin (see def. 1) which yield a foam or lather when the aqueous solution is shaken. Smilacin is a saponin. The poisonous saponins are called *sapotoxins*.

saporetin (sạ-por′e-tin), *n.* An amorphous substance, $C_{17}H_{32}O_{10}$, obtained when sapotin is hydrolyzed by dilute sulphuric acid.

sapota, *n.* **2.** (*b*) Same as ★*zapote*.—**White sapota.** Same as ★*cochilsapote*.

sapote (sä-pō′tạ̄), *n.* Same as ★*zapote*, which see.

sapotin (sạ-pō′tin), *n.* [*Sapota* + *-in*².] A bitter crystalline glucoside, $C_{29}H_{52}O_{20}$, found in the seeds of the sapodilla-plum, or *Sapota Zapotilla*. When hydrolyzed by dilute sulphuric acid it yields glucose and saporetin. It melts at 240° C., has a burning taste, and attacks the eyes and nose strongly.

sapotoxin (sap-ọ-tok′sin), *n.* [L. *sapo*, soap, + E. *toxin*.] A glucoside, $C_{17}H_{26}O_{10}$, found in Levantine soaproot from *Gypsophila Arrostii* or *G. paniculata*. It is a white powder which gives a foam in aqueous solutions. It has a burning taste, and attacks the mucous membranes strongly. Kobert has proposed to use the name *sapotoxin* also for those varieties of the saponin glucosides which are poisonous.

sapper¹, *n.* **2.** Any insect which sucks the sap of plants, as the rice-sapper.

sapphire, *n.*—**Brazilian sapphire**, the blue indicolite variety of tourmalin found in Brazil.

II. *a.*—**Sapphire humming-bird**, one of the hummers of the genus *Hylocharis*, which have brilliant blue reflections on the under side of the throat.

sapphire-quartz (saf′īr-kwârts), *n.* A dark-blue variety of quartz.

sapphist (saf′ist), *n.* [*sapph*(*ism*) + *-ist*.] One who practises sapphism.

sapping, *n.* **2.** The undermining of a river's bank, especially if it is a cliff, by the moving water and its suspended grit. *Chamberlin and Salisbury*, Geol. I. 127.

saprine (sap′rin), *n.* [Gr. σαπρός, rotten, + *-ine*².] A non-poisonous ptomaïne, $C_5H_{14}N_2$, isomeric with and very similar to cadaverin. It occurs in decaying meat.

saprobiosis (sap″rọ-bī-ō′sis), *n.* [NL., < Gr. σαπρός, rotten, + βίωσις, living.] The doctrine or opinion that living beings are generated, or may be generated, from decomposing organic matter: contrasted with the doctrine of spontaneous generation from inorganic matter. [Rare.]

saprodontia (sap-rọ-don′ṭi-ạ̈), *n.* [Gr. σαπρός, rotten, + ὀδούς (ὀδοντ-), tooth.] Dental caries.

saprol (sap′rol), *n.* [Gr. σαπρός, rotten, + *-ol*.] A commercial name of a mixture of crude cresol and high-boiling hydrocarbons. It is used as a disinfectant.

saprolegniaceous (sap-rọ-leg-ni-ā′shius), *a.* Pertaining or belonging to *Saprolegnia* or the *Saprolegniaceæ*.

Saprolegniales (sap-rọ-leg-ni-ā′lēz), *n. pl.* [NL., < *Saprolegnia* + *-ales*.] An order of phycomycetous fungi named from the genus *Saprolegnia* and including the so-called water-molds.

saprolegnious (sap-rọ-leg′ni-us), *a.* [*Saprolegnia* + *-ous*.] Of the class of fungi which includes *Saprolegnia*.

saprolite (sap′rọ-līt), *n.* [Gr. σαπρός, rotten, + λίθος, stone.] In *petrog.*, a term applied by Becker (1894) to disintegrated and more or less decomposed rock which remains in place, that is, has not been transported.

> Becker suggested the use of the term "*saprolite*" for material such as this, which is the product of rock decay in place. Unfortunately "*saprolite*" has, in the Dahlonega district, been adopted by the miners and used in a sense entirely different from that intended by Becker. For this reason the term will not be used in the present discussion.
> *Contrib. to Econ. Geol.*, U. S. Geol. Surv., Bulletin 213, [1902, p. 60, note.

saprolitic (sap-rǫ-lit′ik), *a.* Of the nature of saprolite. *M. Bauer* (trans.), Precious Stones, p. 361.

sapromyzid (sap-rǫ-mī′zid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Sapromyzidæ*.

II. *a.* Having the characters of or belonging to the family *Sapromyzidæ*.

saprophile (sap′rǭ-fil), *n.* [Gr. *σαπρός*, rotten, + *φιλεῖν*, love.] A bacterium which is incapable of producing the profound changes caused by zymogenic and saprogenic organisms, but which requires that the substances upon which it grows be previously decomposed.

sap-spile (sap′spīl), *n.* Same as *spile*^{1}, 2.

sap-stain (sap′stān), *n.* Discoloration of the sap-wood of a tree.

sapwort (sap′wėrt), *n.* The dog's-mercury, *Mercurialis perennis*.

sapygid (sap′i-jid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Sapygidæ*.

II. *a.* Having the characters of or belonging to the *Sapygidæ*.

saquebute†, *n.* See *sackbut*.

sar^3 (sär), *n.* [*s*(*ulphur*) + *a*(*lkali*) + *r*(*esin*).] A trade-name of a fungicide preparation which consists chiefly of sodium sulphid. It is made from sulphur, alkali, and resin. *Nature*, April 3, 1902, p. 518.

Sar. An abbreviation (*a*) of *Sardinia*; (*b*) of *Sardinian*.

S. A. R. An abbreviation (*a*) of the French *Son Altesse Royale*, His Royal Highness; (*b*) of *Sons of the American Revolution*.

Saracenic pottery. See ★*pottery*.

sarai, *n.* See *serai*.

sarape, *n.* Same as *serape*.

Saratoga (sar-ạ-tō′gä̤), *a.* and *n.* **I.** *a.* Pertaining to Saratoga Springs, a watering-place in the State of New York: as, *Saratoga* waters; a *Saratoga* trunk.

II. *n.* A contraction of *Saratoga trunk*; a large trunk originally intended to carry a woman's dresses, etc.

Saratogan (sar-ạ-tō′gan), *a.* Of or pertaining to Saratoga in New York; specifically, in the geology of New York, noting the uppermost division of the Cambrian system, embracing the Schaghticoke shale, Potsdam sandstone, and Greenfield limestone.

sarbican (sär-bi-kän′), *n.* [G. *sarbacane*.] The blow-gun of the Guiana Indians. It is made of the lower part of the stem of a tall grass, *Arthrostylidium Schomburgkii*. See *blow-pipe* ★*bamboo*, *sarbacane*.

sarcidium (sär-sid′i-um), *n.*; pl. *sarcidia* (-ä̤). [NL., < Gr. *σαρκίδιον*, a bit of flesh, dim. of *σάρξ* (*σαρκ-*), flesh.] A caruncle.

sarcin (sär′sin), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *-in*^{2}.] Same as *hypoxanthine*.

sarcle (sär′kl), *n.* [L. *sarculum*, a hoe, < *sarrire*, hoe.] A weeding-hoe or similar tool.

sarcocarcinoma (sär″kǫ-kär-si-nō′mä̤), *n.*; pl. *sarcocarcinomata* (-mạ-tä̤). [NL., < Gr. *σάρξ* (*σαρκ-*), flesh, + *καρκίνωμα*, cancer.] A tumor which has both sarcomatous and carcinomatous elements. *Buck*, Med. Handbook, VII. 724.

sarcocoptes (sär-kǫ-kop′tēz), *n.* [NL., < Gr. *σάρξ* (*σαρκ-*), flesh, + *κόπτειν*, cut, cut up.] The itch.

sarcocyte (sär′kǫ-sīt), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *κύτος*, a hollow (cell).] In gregarines, a clear layer of cytoplasm immediately underneath the cuticle. Compare ★*myocyte*, 2.

sarcodictyum (sär-kǭ-dik′ti-um), *n.*; pl. *sarcodictya* (-ä̤). [NL., < Gr. *σάρξ* (*σαρκ-*), flesh, + *δίκτυον*, a net.] The network of protoplasm on the surface of the calymna of a radiolarian.

sarcoepiplocele (sär″kǭ-e-pip′lǭ-sēl), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + NL. *epiplocele*.] Epiplocele and sarcocele combined.

sarcogenic (sär-kǭ-jen′ik), *a.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *-γενης*, -producing, + *-ic*.] Flesh-forming.

sarcolin, sarcoline (sär′kǫ-lin), *n.* Same as *sarcolite*.

sarcolyte (sär′kǭ-līt), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *λυτικός*, that looses.] A giant cell containing many nuclei, occurring in degenerating muscular tissue. *Buck*, Med. Handbook, VI. 27.

sarcoma, *n.*—**Mammary sarcoma**, a malignant growth which has the texture and appearance of a mammary gland.

sarcomatrix (sär-kǭ-mā′triks), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + L. *matrix*, matrix.] The layer of protoplasm on the capsule of a radiolarian.

sarcomelanin (sär-kǫ-mel′ạ-nin), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *μέλας* (*μελαν-*), black, + *-in*^{2}.] The dark pigment found in melanosarcomata.

sarcomere (sär′kǫ-mēr), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *μέρος*, part.] **1.** A segment of a muscular fibril inclosed between two Krause's membranes. *Buck*, Med. Handbook, III. 270.—**2.** One of the segments or pieces of a sarcostyle.

sarcomphalocele (sär-kom′fạ-lǫ-sēl), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *ὀμφαλός*, navel, + *κήλη*, tumor.] A fleshy tumor of the umbilicus.

Sarcomphalus, *n.* **2.** [*l. c.*] Same as ★*sarcomphalocele*.

sarcomyces (sär-kǫ-mī′sēz), *n.* [NL., < Gr. *σάρξ* (*σαρκ-*), flesh, + *μύκης*, a fungus.] A fleshy fungous growth.

sarcoplasm (sär′kǫ-plazm), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *πλάσμα*, anything formed.] In *histol.*, the clear protoplasmic substance which separates the fibrillæ, or sarcostyles, in a striated muscle-fiber.

The chemical condition of the *sarcoplasm* of the cardiac muscle itself. *Encyc. Brit.*, XXXI. 732.

sarcoplasmic (sär-kǫ-plaz′mik), *a.* [*sarcoplasm* + *-ic*.] Relating to or of the nature of sarcoplasm.

The muscle-cells of the ventricles are thicker, less *sarcoplasmic*, and more clearly striated than the auricular muscle. *Encyc. Brit.*, XXXI. 733.

sarcoplast (sär′kǭ-plast), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *πλαστός*, formed.] In *embryol.*, a substance found in developing muscles and supposed to produce the striated portion of the fibers.

sarcoplastic (sär-kǫ-plas′tik), *a.* [*sarcoplast* + *-ic*.] Of or pertaining to a sarcoplast.

sarcopoietic (sär″kǫ-poi-et′ik), *a.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *ποιητικός*, < *ποιεῖν*, make.] Flesh-forming.

Sarcoptic acariasis. See ★*acariasis*.

sarcosine (sär′kǫ-sin), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *-ose* + *-ine*^{2}.] Methylaminoacetic acid, a sweetish crystalline substance, $NH(CH_3).CH_2COOH$, made by boiling caffein or creatine with barium hydroxid; also by the action of monochloracetic acid on methylamine. It melts at 210–215° C. Also called *methylglycine*.

sarcosoma (sär-kō-sō′mä̤), *n.* See ★*sarcosome*.

sarcosome (sär′kǫ-sōm), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *σῶμα*, body.] **1.** The fleshy part of a coral.—**2.** The darker and actively contractile portion of a muscle fibril. *Buck*, Med. Handbook, III. 270.

sarcospongus (sär-kǫ-spong′gus), *n.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *σπόγγος*, sponge.] Same as ★*sarcomyces*.

Sarcosporidia (sär″kō-spǭ-rid′i-ä̤), *n. pl.* [NL., < Gr. *σάρξ* (*σαρκ-*), flesh, + *σπορά*, seed (spore), + dim. *-ίδιον*.] An order of *Sporozoa*. The trophozoite is an elongated motionless body found almost exclusively in the striped muscle-fibers of birds and mammals, where it is known as a *Miescher's tube*. Spores are produced in great numbers, usually in the form of minute sickle-shaped or spindle-shaped bodies with a very delicate envelop. Infection with these organisms may cause the death of the host, but the natural method of dissemination of the parasites and the reinfection of new hosts has not been determined.

Since the discovery of sporozoan parasites belonging to the order now known as *Sarcosporidia* in the muscle fibers of the house mouse by Miescher in 1843, many other mammals and not a few birds have been found to harbor them. *Jour. Exper. Med.*, Nov. 29, 1901, p. 1.

sarcosporidiosis (sär″kǫ-spǭ-rid″i-ō′sis), *n.* [NL., < *Sarcosporidia* + *-osis*.] Infection with sarcosporidia.

The record of *sarcosporidiosis* in man is meagre and in part uncertain in value. Only two cases—one described by Kartulis and one by Baraban and Saint-Remy—seem to be genuine. In those of Lindemann and Rosenberg the diagnosis must remain doubtful. The case of Kartulis was that of a Sudanese. An abscess had formed in the liver and had extended to the abdominal wall. The sarcosporidia cysts were found in considerable numbers both in the liver and the muscular tissue forming the periphery of the abscess. *Jour. Exper. Med.*, Nov. 29, 1901, p. 1.

sarcostosis (sär-kos-tō′sis), *n.* [NL., < Gr. *σάρξ* (*σαρκ-*), flesh, + *ὀστέον*, bone, + *-osis*.] An osseous tumor developing in muscular tissue; osteosarcoma.

sarcostyle, *n.* **2.** One of the delicate fibrillæ which make up the fiber of a striated muscle.

sarcothlasia (sär-koth-lā′ziä̤), *n.* [NL., < Gr. *σάρξ* (*σαρκ-*), flesh, + *θλάσις*, bruising.] A bruise of the muscles.

sarcothlasis (sär-koth′lạ-sis), *n.* [NL.] Same as ★*sarcothlasia*.

Sarcura (sär-kū′rä̤), *n. pl.* [NL., < Gr. *σάρξ* (*σαρκ-*), flesh, + *οὐρά*, tail.] A suborder of rays, the thick-tailed rays, which have two dorsal fins and a caudal fin.

sarcylic (sär-sil′ik), *a.* [Gr. *σάρξ* (*σαρκ-*), flesh, + *-yl* + *-ic*.] Noting a hypothetical nucleinic acid in which hypoxanthine (sarcine) is the only xanthine base that is represented.

sardina (sär-dē′nä̤), *n.* [Sp., anchovy, sardine. See *sardine*.] A sardine; an anchovy.——**Sardina blanca** ('white sardine'), *Curimata magdalenæ*, a characinoid fish found in the Rio Mamoni, Panama.—**Sardina bocona** ('big-mouth sardine'), *Anchovia macrolepidota*, a fish found from the Gulf of California to Panama.—**Sardina de España** ('Spanish sardine'), *Clupanodon pseudohispanicus*, one of the sardines found in the Gulf of Mexico.—**Sardina escamuda** ('scaled sardine'), *Sardinella humeralis*, found in the West Indies and the Gulf of Mexico.

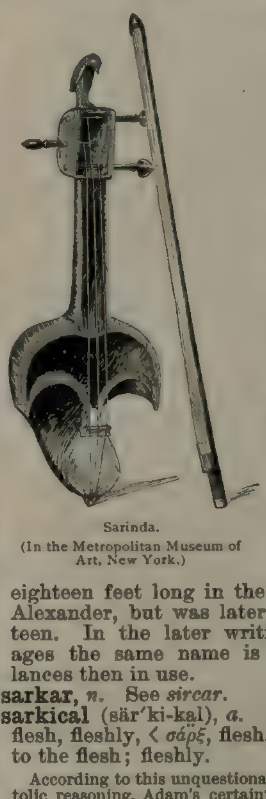
sardine^1, *n.* **7.** A fresh-water fish, *Conosirus erebi*, of the herring tribe, which occurs in rivers of western and northwestern Australia and Queensland: so called in the Brisbane river region. It is the *bony-bream* of the New South Wales rivers and the *Perth herring* of Western Australia. *E. E. Morris*, Austral English.—**Japanese sardine-oil.** See ★*oil*.—**Scaled sardines**, species of fishes belonging to the genus *Sardinella*.—**True sardines**, members of the genus *Clupanodon*, found in temperate seas of America and Europe.

Sargasso crab. See ★*crab*^{1}.

sargasso-fish (sär-gas′ō-fish), *n.* See ★*sargassum-fish*.

sargassum-fish (sär-gas′um-fish), *n.* Any fish of the family *Antennariidæ*, especially *Pterophryne histrio*, found in tropical parts of the Atlantic, often among floating masses of sargassum.

sarinda (sä-rin′dä̤), *n.* [E. Indian.] A Hindu viol, which has a body made of a single wooden block, elliptical in general contour, flat in front and arched at the back, which is hollowed out to a shell, but with the lower part of the cavity thus formed covered with a stretched skin and with deep lunes in the sides to facilitate bowing. It usually has three strings, and the head is often carved in imitation of a bird or other object. Also *serinda*.



Sarinda.

(In the Metropolitan Museum of Art, New York.)

sarissa (sạ-ris′ä̤), *n.* [ML. *sarissa*, **sarisa*, < Gr. *σάρισα*, less prop. *σάρισσα*, in MGr. *σάριττα*, a long lance.] The long lance used by the Macedonian phalanx. It was eighteen feet long in the time of Philip and Alexander, but was later shortened to fourteen. In the later writings of the middle ages the same name is given to the long lances then in use.

sarkar, *n.* See *sircar*.

sarkical (sär′ki-kạl), *a.* [Gr. *σαρκικός*, of the flesh, fleshly, < *σάρξ*, flesh.] Of or pertaining to the flesh; fleshly.

According to this unquestionable purport of the apostolic reasoning, Adam's certainty of *ἁμαρτία* and subjection to Death were provided for ab initio in his *sarkical* constitution, and were only evinced, not caused by his trespass.
J. Martineau, Seat of Authority in Religion, p. 387.

Sarmatian, *n.* **2.** In *geol.*, the uppermost stage of the Miocene Tertiary in the Vienna basin.

sarmentiferous (sär-men-tif′ẹ-rus), *a.* Same as *sarmentose*.

sarraceniaceous (sar-ạ-sē-ni-ā′shius), *a.* Belonging to or resembling the *Sarraceniaceæ* or pitcher-plant family.

sarracenial (sar-ạ-sē′ni-ạl), *a.* [*Sarracenial*(*es*).] Belonging or relating to the order *Sarraceniales*. See ★*Sarraceniales*.

Sarraceniales (sar-ạ-sẹ-ni-ā′lēz), *n. pl.* [NL. (Engler, 1892), < *Sarracenia* + *-ales*.] An order of dicotyledonous choripetalous plants, characterized by scapose flowers and basal leaves which secrete a viscid liquor and are often greatly modified for the entrapping of insects. It embraces the three families *Sarraceniaceæ*, *Nepenthaceæ*, and *Droseraceæ*, to which most insectivorous plants belong.

sarrie (sar'i), *n.* [Appar. an English factory use of *sari.*] A fanciful and intricate colored weft-heading, 15 or 20 inches long, at the end of a piece of cotton cloth: a style used chiefly in goods for the East Indian trade.

Sarritor (sa-rī'tor), *n.* [NL., < L. *sarritor*, a hoer, a weeder, < *sarrire*, hoe.] A genus of agonoid fishes, found in rather deep water in the northern Pacific.

sarsaparilla, *n.*—**American sarsaparilla**, the wild sarsaparilla, *Aralia nudicaulis.*—**Australian sarsaparilla.** Same as *native* ★*sarsaparilla.*—**Big sarsaparilla**, the Dutchman's-pipe, *Aristolochia macrophylla.*—**False sarsaparilla**, the wild sarsaparilla.—**Native sarsaparilla**, in Australia, either of two climbing plants: (*a*) *Smilax glycyphylla.* See *Smilax.* (*b*) *Hardenbergia monophylla.* See *Hardenbergia.*—**Rough sarsaparilla**, the bristly sarsaparilla.—**Yellow sarsaparilla**, the Canada moonseed, *Menispermum Canadense.*

sarsaparillin (sär"sa-pa-ril'in), *n.* [*sarsaparilla* + *-in*².] Same as ★*parillin.*

sarsar (sär'sär), *n.* [Ar. *sarsar*, a cold wind; Hind. *sursurā*, a piercing or biting wind; Hindi *sarsar*, *sursur*, rustling: prob. imitative like *susurrus*, whisper.] A cold wind of Persia, otherwise called *shamsir* ('a sword'); an icy-cold, death-dealing blast.

> The flight and the pursuit seemed to go on for ever and ever. Frost gathering frost, some *Sarsar* wind of death, seemed to repel me; some mighty relation between God and death dimly struggled to evolve itself from the dreadful antagonism between them.
>
> *De Quincy.* Works (ed. Masson), I. 42.

sarsasapogenin (sär-sa-sa-poj'e-nin), *n.* [*sarsasapo(nin)* + *-gen* + *-in*².] A cleavage-product, $C_{28}H_{46}O_4$, of sarsasaponin.

sarsasaponin (sär-sa-sap'ō-nin), *n.* [*sarsa(parilla)* + L. *sapo(n-)*, soap, + *-in*².] A crystalline glucoside, $(C_{22}H_{36}O_{10})_{12}$, found in the roots of various species of *Smilax.*

Sart² (särt), *n.* [Turki *Sárt.*] A name applied by the nomads of Turkestan (Kirghiz, Kazaks, etc.) to dwellers in settled habitations.

sartoriad (sär-tō'ri-ad), *n.* [L. *sartor*, a tailor. Cf. *Iliad.*] An epic on the model of the Dunciad, with a tailor as the theme.

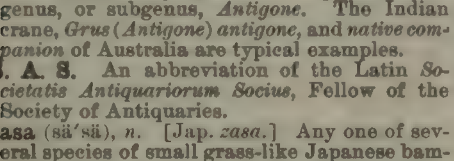
> "Material enough for a *sartoriad*," said Drummond to Lady Jocelyn.
>
> "Excellent. Pray write it forthwith, Drummond," replied her ladyship.
>
> *G. Meredith*, Evan Harrington, p. 258.

Sarus crane. [Hind. *sāras.*] A name given to two or three species of cranes placed in the genus, or subgenus, *Antigone.* The Indian crane, *Grus* (*Antigone*) *antigone*, and *native companion* of Australia are typical examples.

S. A. S. An abbreviation of the Latin *Societatis Antiquariorum Socius*, Fellow of the Society of Antiquaries.

sasa (sä'sä), *n.* [Jap. *zasa.*] Any one of several species of small grass-like Japanese bamboos belonging to the genus *Bambusa* and having very slender stems from one to six feet in height.

sash-chain (sash'chān), *n.* A chain of peculiar make used to replace a sash-cord when the sash is very heavy. It passes over a pulley in the circumference of which is a flat groove, and is so made that it will keep its place in such a groove. Its construction consists of two plates pierced at each end and alternating with a single plate of the same character, the plates being free to move around pins by which they are fastened, as in a chain of eye-bars.



Sash-chain.

sash-cord (sash'kôrd), *n.* The small rope which connects a sliding sash with the weight which serves as a counterpoise. The cord passes over a pulley which has a deep groove in its circumference.

sash-fastener, *n.* **2.** A device for holding in place a sliding sash, either shut or open. The term is generally applied to a kind of rotary bolt so placed as to hold the meeting rails together and prevent the opening of either the outer or the inner sash.

sash-lift (sash'lift), *n.* An ornamental casting designed to be screwed to and sometimes mortised into a window or shutter to furnish a hand-hold for raising it; a shutter-lift.

sash-line, *n.* **2.** A rope employed in raising telegraph-poles to the vertical position.

sash-lock (sash'lok), *n.* A lock or catch for fastening a window-sash.

sash-pocket (sash'pok"et), *n.* The hollow upright or box of a window-frame prepared for the weights of a counterpoised window-sash.

sash-pull (sash'pụl), *n.* A hook fastened to the end of a pole, used to open and close a high window from the top.

sash-tool, *n.* **2.** A cutter used in forming the moldings in window-sashes.—**3.** Any tool or plane-iron used in the making of sashes.

sash-weight (sash'wāt), *n.* A long and slender casting of some cheap metal hung by a sash-cord in the casing of a window-frame and used to counterbalance the weight of the sash.

saskatoon (sas-ka-tön'), *n.* [Blackfoot Indian.] The service-berry or June-berry, *Amelanchier Canadensis*, probably also the shad-bush, *A. Botryapium*, and perhaps the western service-tree, *A. alnifolia*, all of which are likely to be more or less confused by the Indians.

> *Saskatóon.* The name in the Canadian Northwest, for a species of berry and the bush upon which it grows. The word is of Blackfoot origin.
>
> *Jour. Amer. Folk-lore*, Oct.-Dec., 1902, p. 257.

sassafras, *n.*—**Black sassafras**, in Australia, a large tree of the laurel family, *Cryptocarya glaucescens*, yielding a soft wood, not durable, but used for staves and interior finishing of houses. Called also *white laurel.*—**California sassafras**, the California laurel, *Umbellularia Californica.*—**Gray sassafras**, the Moreton Bay laurel, *Cryptocarya australis*, yielding a light, easily worked wood, offensive to insects on account of its odor.—**New Zealand sassafras.** Same as *New Zealand* ★*laurel.*—**Queensland sassafras.** (*a*) A large, handsome tree of the laurel family, *Beilschmiedia obtusifolia.* (*b*) A smaller related tree, *Daphnandra micrantha*, of the family *Monimiaceæ.*

sassafras-laurel (sas'a-fras-lâ"rel), *n.* See ★*laurel.*

sassafrid (sas'a-frid), *n.* [*sassafr(as)* + *-id*¹.] A yellowish-brown granular compound formed spontaneously from the tannin peculiar to fresh sassafras-bark.

sastrugi (sas-trö'gi), *n. pl.* A term current in Siberia for flutings or little ridges of wind-blown snow, running parallel with the direction of the air-currents, and now sometimes quoted in English. See *zastruga.* *Rep. Brit. Ass'n Advancement of Sci.*, 1900, p. 817.

satan-monkey (sā'tan-mung"ki), *n.* See ★*monkey.*

Satanoperca (sā"tan-ō-pėr'ka), *n.* A genus of pomacentroid fishes found in the fresh waters of Brazil and Peru.

satellite, *n.* **2.** The following is a list of the satellites of the solar system thus far discovered:

PRIMARY	SATELLITE.	DISTANCE FROM ITS PRIMARY, in miles.	PERIOD, days.	hr.	min.	DIAMETER, in miles.	DISCOVERY.
Earth	Moon	238,840	27	7	43.2	2,162	
Mars	Phobos	5,850		7	[illegible]	35 ?	A. Hall, 1877
	Deimos	14,650		30	17.9	10 ?	A. Hall, 1877
Jupiter	(1) Io	1,167,000	16	16	32.2	2,960	Galileo, 1610
	(2) Europa	261,000	1	18	27.6	2,500	Galileo, 1610
	(3) Ganymede	415,000	3	13	13.7	2,100	Galileo, 1610
	(4) Callisto	664,000	7	3	42.6	3,550	Galileo, 1610
	(5) Nameless	112,500		11	57.38	100 ?	Barnard, 1892
	(6) "	7,185,000	253.4			100 ?	Perrine, 1905
	(7) "	7,403,000	260			40 ?	Perrine, 1905
	(8) " [1]	17,300,000 (?)	931 (?)			[illegible]	Melotte, 1908
Saturn	Mimas	117,000		22	37.1	600 ?	W. Herschel, 1789
	Enceladus	157,000	1	8	53.1	800 ?	W. Herschel, 1789
	Tethys	186,000	1	21	18.4	1,200 ?	J. D. Cassini, 1684
	Dione	238,000	2	17	41.2	1,100 ?	J. D. Cassini, 1684
	Rhea	332,000	4	12	25.2	1,500 ?	J. D. Cassini, 1672
	Titan	771,000	15	22	41.4	3,500 ?	Huygens, 1655
	Hyperion	934,000	21	6	39.5	500 ?	G. P. Bond, 1848
	Iapetus	2,225,000	79	7	54.3	2,000 ?	J. D. Cassini, 1671
	Phœbe[1]	8,000,000	546	12		200 ?	W. H. Pickering, 1898
	Themis	906,000 (?)	20	20	(?)	30 ?	W. H. Pickering, 1905
Uranus	Ariel[2]	120,000	2	12	29.4	500 ?	Lassell, 1851
	Umbriel[2]	167,000	4	8	27.6	400 ?	Lassell, 1851
	Titania[2]	273,000	8	16	56.5	1,000 ?	W. Herschel, 1787
	Oberon[2]	365,000	13	11	7.1	800 ?	W. Herschel, 1787
Neptune	Nameless[2]	221,500	5	21	2.7	2,000 ?	Lassell, 1846

[1] The motion appears to be retrograde.

[2] The motion is retrograde.

There are thus 26 satellites of 6 planets, of which 25 have been discovered in modern times (since 1610) by 9 observers (Galileo 4, Cassini 4, W. Herschel 4, Lassell 3, Hall 2, Perrine 2, Pickering 2, others 1 each).

3. (*b*) The point of intersection with a cubic curve of a tangent at a given point of the curve is this given point's *satellite.*—**5.** A vein accompanying an artery.—**6.** One of the smaller pathological formations which are associated with the primary larger one.—**7.** In gregarines, any member except the first in a chain-like association. Compare ★*primite.*

satellitium, *n.* **2.** In *astrol.*, an assemblage of four or more planets in the same sign of the zodiac or house of heaven. Strictly speaking, they should be in attendance upon the sun or moon, but the term is now used more generally.

sathrophilous (sa-throf'i-lus), *a.* [Gr. σαθρός, rotten, + φιλεῖν, love.] In *phytogeog.*, growing upon decaying organic matter, offal, etc.: applied to certain fungi. *Pound and Clements.*

satin. **I.** *n.* **2.** A yellow mixture applied to the flesh side of a hide or skin to get a yellow back. *Modern Amer. Tanning*, p. 116.

II. *a.*—**Satin leather, white.** See ★*leather*, ★*white*¹.

satinette (sat-i-net'), *n.* [See *satinet.*] A breed of small, short-billed, domesticated pigeons related to the 'owls.' The body is white, 7 to 10 flight-feathers white; the shoulders tricolored, the ground color being pinkish-white, shading into white, the coverts marked with black. The tail is purplish blue with a white spot at the end of each feather, this being the most important marking. The bird may or may not be crested.

satin-flower, *n.* **2.** The chickweed, *Alsine media.*

satin-grass (sat'in-gràs), *n.* Any grass of the genus *Muhlenbergia*; sometimes specifically *M. racemosa*, the wild timothy. The name refers to the slightly glistening leaves. For other species, see *nimble-Will*, ★*blow-out grass*, *knot-root* ★*grass*, *bearded* ★*zacaton*, and *black* ★*grama* (*c*).

satin-moth, *n.* **2.** A British collectors' name for a European and Asiatic liparid moth, *Stilpnotia salicis*, whose larvæ feed on the willow and poplar.

satin-pod (sat'in-pod), *n.* Either of the two species of *Lunaria* called satin-flower, especially *L. rediviva.* See *Lunaria*, 1.

satin-walnut (sat'in-wâl"nut), *n.* The sweet-gum, *Liquidambar Styraciflua.*

Satisfaction of record, the record of a satisfaction piece. In England this is called the entry of satisfaction on the roll.

sativic (sa-tiv'ik), *a.* [L. *sativa* (see def.) + *-ic.*] Derived from hemp-seed, *Cannabis sativa.*—**Sativic acid**, a crystalline acid, $C_{17}H_{31}(OH)_4COOH$, or tetrahydroxystearic acid, made by oxidizing linoleic acid with potassium permanganate. It melts at 173° C.

sato-imo (sä-tō-ē'mō), *n.* [Jap. *sato*, village, + *imo*, potato.] In Japan, the taro, *Caladium Colocasia*, the starchy rhizomes of which are one of the food-staples of the natives. See ★*imo.*

saturater, *n.* (*d*) A shallow receptacle which contains liquid pentane through which air is drawn and saturated with vapor: an essential part of a pentane-lamp. See *pentane-lamp*. *W. M. Stine*, Photometrical Measurements, p. 139. (*e*) In *beet-sugar manuf.*, an apparatus for treating the juice extracted from the beet with carbonic-acid gas to free it from lime. It is essentially a closed vessel in which the juice is subjected to the gas under pressure.

saturation, *n.* (*a*) In the saturation of a liquid with a solid by solution, the quantity of the solid dissolved varies largely, in most cases, with varying temperature, the general rule being that rise of temperature is attended with increase in the quantity of the solid needed to produce saturation. In the saturation of a liquid with a dissolved gas the opposite relation prevails, as more of the gas is required to produce saturation at a low than at a high temperature, and in this case the influence of pressure is also very marked, increase of pressure being attended with increase in the quantity of gas needed to produce saturation.

2. In *biol.*, the hypothetical influence of an unborn offspring upon the body or the reproductive organs of the mother in such a way that children afterward borne by the mother to other sires resemble the first sire: a hypothesis to account for telegony. See ★*telegony*. —**Belt of saturation,** a zone or belt in the rocks of the earth's crust where the spaces are filled with water. This belt varies in depth and extent and in relationship to the other less completely saturated belts with local or seasonal changes. *Van Hise*, in U. S. Geol. Surv., Monograph XLVII. vi. 420.—**Curve of saturation.** See ★*curve*.—**Degree of saturation.** (*a*) In *phys.*, the weight of the vapor of a given liquid contained at a given temperature in a given volume, stated as a fraction of the weight of the saturated vapor contained in the same volume at the same temperature. Meteorologists have to do with water, and speak of the degree of saturation of the air with aqueous vapor. (*b*) In *phys. chem.*, the amount of a dissolved substance contained in a given volume of a solution, stated as a fraction of the amount of the dissolved substance contained in a solution saturated at the same temperature.—**Lit-par-lit saturation.** See ★*injection*. —**Magnetic saturation,** in *elect.*, the property of magnetic materials that for high magnetizing forces the magnetic induction increases less than proportionally to the magnetizing force. Also, the limiting value of magnetic induction, approached at very high magnetizing forces.

saturation-value (sat-ū-rā′shọn-val″ū), *n.* In *exper. psychol.*, the relation of color to brightness, or of chromatic to achromatic component, in a colored impression.

Saturday, *n.*—**Baff Saturday.** See ★*baff*^{3}.

Saturn's ring. The idea that the ring might consist of separate small particles moving like independent moons had been suggested by Cassini and Wright, in the eighteenth century, as well as by Roberval, but had attracted little attention until the work of Peirce. A little later (1857) Clerk-Maxwell showed that no ring could be permanent unless so constituted, and that such a ring might be. Since then there has been a general acceptance of this theory. It has received observational confirmation from Seeliger's photometric work upon the reflecting power of the ring, and more recently from Keeler's spectroscopic demonstration that the inner edge of the ring moves more swiftly than the outer, an observation since confirmed by several other spectroscopists.

saturniid (sā-tėr′ni-id), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Saturniidæ*.

II. *a.* Having the characters of or belonging to the family *Saturniidæ*.

Saturnine cachexia. See ★*cachexia*.

saturnismus (sat-ėr-nis′mus), *n.* [NL., < ML. *saturnus*, lead: see *Saturn*.] Chronic lead-poisoning.

satyr^1, *n.*—**Carolinian satyr,** an American agapetid butterfly, *Cissia sosybius*, occurring commonly in the Mississippi valley and the southern United States, and feeding, in the larval stage, on grasses.—**Georgian satyr,** an American agapetid butterfly, *Neonympha phocion*, small in size and dull mouse-brown in color, common in Georgia. Its larvæ feed on coarse grasses.

satyrid (sat′i-rid), *n.* and *a.* **I.** *n.* A member of the lepidopterous subfamily *Satyrinæ*.

II. *a.* Having the characters of or belonging to the subfamily *Satyrinæ*.

sauce, *n.*—**Agra dolce sauce,** an Italian sauce used with venison, sweetbreads, etc.—**Bearnaise sauce,** a rich egg-sauce flavored with tarragon.—**Bischoff sauce,** a rich wine-sauce containing fruits and sometimes almonds: served with cabinet puddings.—**Chaudfroid sauce,** a rich stiff sauce, made of stock and gelatin, used to cover cold meats.—**Chilli sauce.** See ★*chilli*.—**Dutch sauce,** a rich sauce served with fish.—**Espagnole sauce,** a highly seasoned sauce made of brown stock and flavored with wine: used as a foundation for many brown sauces.—**Financière sauce,** a rich brown sauce containing wine and mushroom catchup.—**Genoese sauce,** sauce made of white stock highly seasoned and flavored with wine: served with fish.—**Green sauce,** a sauce made with finely cut green herbs, vinegar, pepper, salt, etc. It was formerly considered very desirable with fish.

> *Grene sauce* is good with grene fysshe & halybut, cottell, & fresshe turbot.
> *Boke of Keruynge* (Wynkyn de Worde), p. 282.

Hard sauce, a creamy sauce of butter and sugar, usually flavored with vanilla or the like.—**Hollandaise sauce,** a thick rich sauce served especially with fish, but also with meats and sometimes with vegetables.—**Hot sauce,** in the West Indies, same as *pepper-sauce*.—**Long sauce,** beets, carrots, parsnips, etc.: opposed to *short sauce*, the vegetables that are shorter in shape and size and grow above ground, as peas, beans, tomatoes, etc. See *sauce*, 2. —**Piquante sauce,** an acid sauce, highly seasoned.—**Poivrade sauce,** a brown sauce flavored with claret.—**Ravigote sauce,** a sauce highly flavored with green herbs.—**Richelieu sauce,** a rich sauce containing candied fruits and almonds, served with puddings.—**Sabayon sauce,** a creamy sugar-sauce, usually flavored with wine, and served with fruit or plum-puddings.—**Soubise sauce,** purée of onions, mixed with brown sauce, and served with chops.—**Tabasco sauce,** a sauce seasoned highly with red peppers. See ★*tabasco*.—**Velouté sauce,** a smooth white sauce made with chicken or veal stock instead of milk: used with fish and vegetables. —**Villeroi sauce,** a rich, thick sauce used to coat eggs and cold meats when they are re-heated.

sauce-plate (sâs′plāt), *n.* A small saucer-like plate used to hold 'sauce.' It is usually placed by the side of the dinner-plate. [New England.]

saucer^2 (sâ′sėr), *n.* [*sauce*, *v.*, + *-er*.] A tobacco adapted by large absorptive capacity to take the 'sauces' in vogue in Continental Europe, which are said to consist chiefly of salt, sal-ammoniac, and sugar. See *sauce*, 6. A German and a Dutch saucer are known to the trade, consisting of varieties of the heavy export type chiefly from Virginia.

sauqui (sâ′kwē), *n.* [Also *sau-qui*, *sawqui*, *saw-qui*, *sawkeye*, *saukeye*, *saw-kwey*, *sockeye*; from an Amerindian name?] The blue-back salmon. See *salmon*, 2 (*e*). Also *sauqui salmon*. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 156.

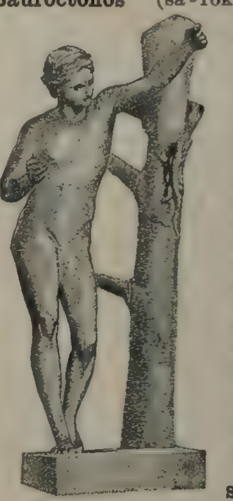
sauriderma (sâ-ri-dėr′mä), *n.* [NL., also *sauroderma*, prop. **saurodermia*, < Gr. σαῦρος, lizard, + δέρμα, skin.] A form of ichthyosis accompanied with an altered state of the sebaceous secretion. Also called *ichthyosis hystrix*.

sauriosis (sâ-ri-ō′sis), *n.* [NL., irreg. < Gr. σαῦρος, lizard, + *-i-* + *-osis*.] Same as ★*sauriderma*.

saurocrotaphous (sâ-rō-krot′a-fus), *a.* Having temporal fossæ similar in character to those of reptiles.

> I cannot accept the contention of McGregor that the Ichthyosauria had a primitively *saurocrotaphous* type of skull. *Williston*, in Proc. U. S. Nat. Mus., XXXII. p. 489.

Sauroctonos (sâ-rok′tọ-nos), *n.* [Gr. σαυροκτόνος.] The lizard-killer; the name of a bronze statue of Apollo described by Pliny (Nat. Hist. 34–70) which represented the divinity as a boy leaning with one hand upon the trunk of a tree and killing a lizard with an arrow held by the other. This statue is probably represented by many replicas, notably a bronze statuette in the Villa Albani in Rome, and marble statues in the Vatican and the Louvre. The original was probably suggested by some well-known cultus statue.



Apollo Sauroctonos.
(In the Louvre.)

saury, *n.* 2. Any mackerel-like pelagic species of fish belonging to the family *Scombresocidæ*, swimming close to the surface in large schools in temperate regions.

sausage, *n.* 2. In *milit. mining*, a canvas tube filled with powder.—3. *pl.* A commercial name for crude rubber in finger- or sausage-shaped pieces. See ★*rubber*^{1}, 3.—**Prankfort sausage.** See ★*frankfurter*.

sausage-stuffer (sâ′sāj-stuf″ėr), *n.* An appliance for filling sausage-skins with the minced and prepared meat. It is a hand-power screw-press with a spout over which the empty skin is held while being filled.

sauté (sō-tā′), *p. a.* [F., pp. of *sauter*, fry in a greased pan, lit. 'bounce.'] Fried. See *sauter*.

savanna, *n.* (*c*) In *phytogeog.* See ★*grass-land*.

savart (sa-vär′), *n.* [Named from Félix *Savart* (1791–1841), a French physician and physicist.] In *acoustics*, a unit proposed by Guillemin for interval of pitch; an interval of ten to one or of three octaves and a major third.

> In acoustics it is common to measure large intervals of pitch in octaves and smaller ones in "commas." M. A. Guillemin proposes to adopt instead of these units the *savart* and the millisavart. By the *savart* is meant an interval of ten to one, which equals three octaves plus a major third. The millisavart, which is the thousandth part of the *savart*, represents the interval between two French standard diapasons giving one beat per second.
> *Nature*, Aug. 21, 1902, p. 398.

Savastana (sav-as-tā′nä), *n.* [NL. (Schrank, 1789), named in honor of Francesco Eulalio *Savastano* (1657–1717), an Italian poet-botanist.] A genus of grasses. See *Hierochloë*.

savate (sa-vät′), *n.* [F., also an old shoe, < Prov. *sabata* = Sp. *zapata* = It. *ciabatta*, an old shoe.] The use of the feet for attack and defense: a method of fighting practised by the French and Cornishmen.

savice (sav′is), *n.* [Corruption of *service*^{2}.] The service-berry, *Amelanchier Canadensis*.

Savill's disease. See ★*disease*.

savin, *n.*—**Horse savin,** the common juniper, *Juniperus communis*.—**Red savin,** the red cedar, *Juniperus Virginiana*.

saving-tree (sā′ving-trē), *n.* The savin, *Juniperus Sabina*.

Savona pottery. See ★*pottery*.

savory^1, *a.* **II.** *n.* In *cookery*, a small, highly seasoned entrée, such as a cheese fondant, a tiny salt herring with red pepper, on toast, or deviled eggs: served at the end of a dinner.

> [The] justification of the existence of a *savoury* at the end of a dinner is surely convincing. It has nothing to do with hors d'œuvres. It takes the place of the now discarded cheese service.
> *A. Kenney-Herbert*, Common-sense Cookery for Eng.
> [Households, p. 419.

Savoy cabbage. Same as *savoy*.—**Savoy cakes,** lady's-fingers.

saw^1, *n.*—**Chairmaker's saw,** a form of fret-saw with wood frame and straining-link for the scroll forms used in chair-making by hand; hence, any scroll- or jig-saw with straining-frame.—**Chisel-tooth saw,** a circular saw used for logs or rafted lumber, in which the teeth are inserted into the periphery of the plate, and each tooth cuts on its front edge, which is sharpened like a chisel. The teeth are not set laterally, but the cutting-edge is wider than the gage of the plate of the saw. The teeth of saws for rough and rafted logs often encounter embedded pebbles and sand, and are liable to injury. To have them removable and easily inserted enables the saw to be always sharp at all points of its periphery.—**Cold-iron saw,** a circular saw, thick in proportion to its diameter, having short teeth, sharpened square across the edge of the disk. It runs at a slow speed, and is usually driven by power, though saws worked by hand by intervention of bevel-gearing are employed where a portable form is desired. A small circular saw is used for cutting slits in the heads of screws, and other articles where shallow and narrow grooves are required. Cold-iron saws having no teeth and running at a very high speed are also used. They cut through large pieces of iron or steel by a method which is practically melting a path through the material by the heat of friction.—**Corner saw.** (*a*) A saw for beveling the corners of blocks. (*b*) A keyhole saw; a saw which has a very narrow, thin blade, so that it can turn corners.—**Double-cut saw,** a saw, for hand use or in a reciprocating frame, in which the teeth are so sharpened as to cut both on the pulling and the pushing strokes. The cutting edges are formed on both faces of the symmetrical tooth of the cross-cut saw, or on the alternate teeth of the ripping- or slitting-saw.—**Foxtail saw,** a saw with an especially thin or especially thick blade, according to the desired use, for making in the end of tenons the slit to receive the foxtail wedge which is to expand the tenon when the wedge reaches the bottom of the mortise: also used in the thin-blade form for dovetails.—**Gigli saw,** in *surg.*, a wire toothed all around like a saw, so that it will cut in any direction. Also called *Gigli wire saw*.—**Insertable-tooth saw,** a circular saw the teeth of which can be removed separately. This allows of the insertion of a new tooth at any time to replace one which is damaged or dulled.—**Left-hand circular saw,** a saw situated at the left end of the carriage or saw-table, as seen by one toward whom the top of the saw turns.—**Long saw,** a log saw for hand use, intended to be used by two sawyers, one of whom stands above the log, and the other in a pit below the log.—**Metal-slitting saw.** See *milling-*★*saw*.—**Milling-saw,** a milling-machine employing a cutter resembling in form a circular saw. The disk is armed with teeth slightly wider than the disk to give it clearance. The cutter, and sometimes the machine itself, is called a *metal-slitting saw*. See ★*milling-machine*, 1, and ★*milling-cutter*, 2.—**Miter-box saw,** a saw for making joints in a miter-box. It is usually a fine-toothed, thin-gage, cross-cut saw, with a stiffened back.—**Screw-head saw,** a metal-cutting saw or milling-disk for cutting into screw-blanks the slot or nick which receives the screw-driver.—**Vertical saw.** (*a*) A reciprocating gang or muley-saw in which the frame or sash moves in vertical guides. (*b*) A circular saw turning in a vertical plane or with its shaft horizontal.

saw^1, *v. i.*—**To saw by,** in *railroading*, to drill cars on a single-track road by a method whereby two trains, meeting at a siding that is too short to contain either one of the trains, are enabled to pass. This method is troublesome and complicated, and is now seldom used.

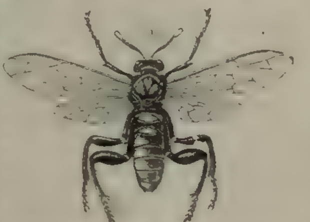
saw-back, *n.* 2. A regularly serrate ridge or mountain.

saw-brier (sâ′brī″ėr), *n.* 1. In the Bahamas, a climbing plant, *Smilax Havanensis*, having prickles on the midrib and margin of many of its leaves.—2. Same as *china* ★*brier*.

sawdust-chain (sâ′dust-chān″), *n.* A special type of conveyer-chain having cross-bars and wings that serve as flights: used in sawmills to convey the sawdust, through the conveyer, from the mill to the boiler-house, where it is used as fuel. See ★*conveyer*, 4, and ★*flight*¹, 10 (*c*).

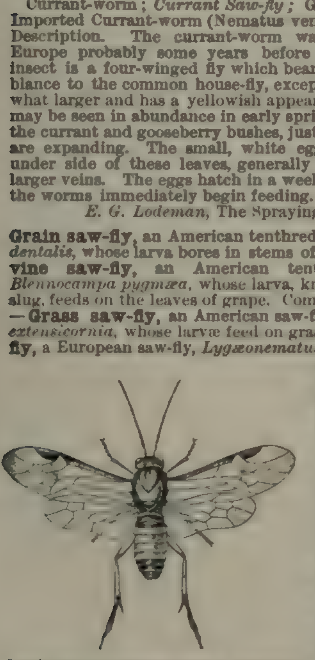
Saw-fish shark. See ★*shark*¹.

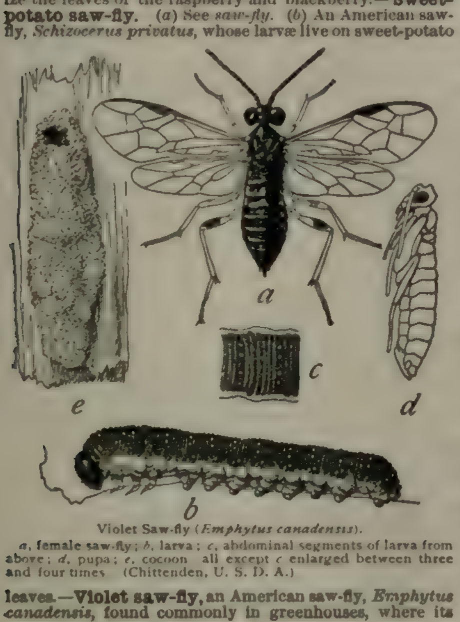
saw-fly, *n.* —**American saw-fly,** *Cimbex Americana*, a large and handsome species occurring commonly in the eastern United States, where its larvæ feed on the foliage of elms, willows, and birches. —**Apple saw-fly,** a hymenopterous insect, *Hoplocampa testudinea*, of the family *Tenthredinidæ*, found in England, France, Germany, and Sweden. In the larval stage it injures young apples and pears. —**Cranberry saw-fly,** an American tenthredinid, *Pristophora idiota*, whose larvæ feed on the foliage of the cranberry. —**Currant saw-fly,** the adult of the imported currant-worm. See *currant-worm* (*a*).


American Saw-fly (*Cimbex Americana*): natural size. (U. S. D. A.)

> Currant-worm; *Currant Saw-fly*; Gooseberry Saw-fly; Imported Currant-worm (Nematus ventricosus Klug.).—Description. The currant-worm was imported from Europe probably some years before 1860. The adult insect is a four-winged fly which bears a certain resemblance to the common house-fly, except that it is somewhat larger and has a yellowish appearance. These flies may be seen in abundance in early spring hovering about the currant and gooseberry bushes, just as the first leaves are expanding. The small, white eggs are laid on the under side of these leaves, generally in rows along the larger veins. The eggs hatch in a week or ten days, and the worms immediately begin feeding.
>
> *E. G. Lodeman*, The Spraying of Plants, p. 286.

Grain saw-fly, an American tenthredinid, *Cephus occidentalis*, whose larva bores in stems of wheat.—**Grapevine saw-fly,** an American tenthredinid insect, *Blennocampa pygmæa*, whose larva, known as the grape-slug, feeds on the leaves of grape. Compare ★*grape-slug.* —**Grass saw-fly,** an American saw-fly, *Pachynematus extensicornia*, whose larvæ feed on grass.—**Larch saw-fly,** a European saw-fly, *Lygæonematus erichsonii*, which also occurs in Labrador, Canada, and New England. It is red and black in color, and its whitish larvæ often defoliate larch forests over large areas.—**Locust saw-fly,** an American saw-fly, *Pteronus trilineatus*, whose larvæ eat the leaves of the black locust. —**Ohio currant saw-fly,** an American saw-fly, *Pristiphora rufipes*, whose larva feeds on the foliage of the currant in Ohio and neighboring States.—**Pine saw-fly,** any one of a number of tenthredinid insects whose larvæ injure the leaves of pine. *Abbot's white-pine saw-fly* is *Lophyrus abbotii*. The *pitch-pine saw-fly* is *Lophyrus pini-rigidæ*. Other species having this as a food-plant are *Lophyrus abietis* and *L. pinetum.*—**Raspberry saw-fly,** an American saw-fly, *Monophadnoides rubi*, whose larvæ skeletonize the leaves of the raspberry and blackberry.—**Sweet-potato saw-fly.** (*a*) See *saw-fly*. (*b*) An American saw-fly, *Schizocerus privatus*, whose larvæ live on sweet-potato leaves.—**Violet saw-fly,** an American saw-fly, *Emphytus canadensis*, found commonly in greenhouses, where its larvæ damage violets by eating the leaves and occasionally cutting the flower-stalks.—**Willow saw-fly.** See *willow-sawfly*.


Larch Saw-fly (*Lygæonematus erichsonii*): enlarged nearly twice. (U. S. D. A.)



Violet Saw-fly (*Emphytus canadensis*).

a, female saw-fly; *b*, larva; *c*, abdominal segments of larva from above; *d*, pupa; *e*, cocoon all except *c* enlarged between three and four times (Chittenden, U. S. D. A.)

sawkeye, saw-kwey. *n.* See ★*sauqui*.

saw-knife (sâ'nīf), *n.* A small hand-saw having a web which resembles the blade of a table-knife.

saw-log, *n.* **2.** A log for use in building. *Dialect Notes*, III. iii. [Local, U. S. (Arkansas).]

sawney² (sâ'ni), *a.* and *n.* [Origin obscure.] **I.** *a.* **1.** Soft; suave; somewhat deceitful or intended to persuade through excessive blandness.

> Lady Hampshire . . . spoke in her *sawney* voice of factitious enthusiasm as if she pitied the lot of all those who were not about to sleep in wet sheets.
>
> *Disraeli*, Tancred, i. 5.

2. Dawdling; idling.

> Curzon Street, after a long, straggling, *sawney* course, ceasing to be a thoroughfare, . . . is quite in keeping with all the accessories. *Disraeli*, Tancred, i. 1.

II. *n.* **1.** A stupid, easy-going man. [Local, Eng.]

> In my young days a *sawney* was not uncommonly used for a 'softy.' *H. P. L.* in N. and Q., 9th ser., VIII. 68.

2. A suave, soft-spoken, artful person. *T. Ratcliffe*, N. and Q., 9th ser., VIII. 68.—**To have a sawney.** See the extract.

> If a minder in a cotton mill have four or five hundred "ends" or threads broken through the chance intervention of an obstacle when the carriage is on the outward run, or through the sudden breaking of a band, he is said *to "have a sawney."* Incompetence is suggested in the use of the expression; but this feature is also noticeable, that when a "*sawney*" occurs the lineality of the carriage has been suddenly lost. *N. and Q.*, 9th ser., VIII. 170.

sawneying (sâ'ni-ing), *n.* Idling; lounging; dawdling.

> It looks like a sneaking, *sawneying* Methodist parson.
>
> *Southey*, Letters, ii. 63, quoted in Davies, Sup. [Eng. Glossary.

Saw-tooth roof. See ★*roof*¹.

sawwort, *n.* **2.** The button-snakeroot, *Laciniaria spicata*.

sawyer, *n.* **6.** In New Zealand, a large wingless locustid, *Deinacrida heteracantha* or *D. megacephala*. Called by the natives *weta-punga* or *weta*.

saxe² (saks), *n.* An apparatus consisting of a series of rectangular boxes containing some mercury on the bottom and provided with agitating blades. These boxes are used for removing the slime from the gold amalgam. *Phillips and Bauerman*, Elements of Metallurgy, p. 852.

saxifrage, *n.*—**Aconite saxifrage,** *Therofon aconitifolium*, closely related to *Saxifraga* and of similar habit, native to the southern United States. The leaves somewhat resemble those of the aconite, but the stem is hairy.—**Early saxifrage,** *Saxifraga Virginiensis*. See *saxifrage* (with cut).—**Mountain saxifrage,** the purple saxifrage, *Saxifraga oppositifolia*.

saxoline (sak'sō-lin), *n.* [NL. *Saxolinum*, < L. *saxum*, rock, + *-ol* + *-inum*.] A trade-name of a semisolid mixture of petroleum hydrocarbons, resembling vaseline. Also called *saxolinum*.

Saxon topaz. See ★*topaz*.

Saxonian (sak-sō'ni-an), *a.* [ML. *Saxonia*, Saxony.] In *geol.*, noting a division of the Permian system in Europe, embracing the red beds of the middle part of the formation, which extend from Germany to the northwest of England.—**Saxonian epoch.** See ★*epoch*.

say¹, *n.* **5.** In *poker*, the turn of a player to declare whether or not he will ante.

> When it is the turn of any player to declare what he will do, whether he will bet, or pass his hand, it is said to be his *say*. *Amer. Hoyle*, p. 163.

saya (sä'yä), *n.* [Tagalog and Bisaya *saya*.] In the Philippine Islands, a woman's skirt or petticoat worn in the manner of a sarong.

S. B. An abbreviation (*a*) of the Latin *Scientiæ Baccalaureus*, Bachelor of Science; (*b*) of *South Britain*; (*c*) of *Spartan Brotherhood*; (*d*) of *Steamboat*.

S. B. D. In *astron.*, an abbreviation of (Schönfeld's) *Southern Bonn Durchmusterung* (see ★*Durchmusterung*). Usage is divided between this abbreviation and ★*S. D. M.* (which see).

sc. An abbreviation (*d*) of *scene*.

S. C. An abbreviation (*c*) of *South Carolina*; (*d*) of *Staff Corps*; (*e*) of *Supreme Court*.

scab, *n.*—**Beet-scab,** a fungous disease of beet-roots caused by *Oöspora scabies*.—**Cherry-scab,** a disease which attacks the fruit of the cherry, due to the fungus *Cladosporium carpophilum*.—**Cucumber-scab,** a disease of the cucumber due to *Cladosporium Cucumerinum*.—**Fig-scab,** a disease of the fig due to the fungus *Fusarium roseum*.—**Follicular scab.** See ★*sheep-scab*. —**Grape-scab,** a disease of grapes caused by *Cladosporium viticolum*.—**Lemon-scab,** a fungous disease due to *Cladosporium Citri*, which attacks the young fruit of the lemon. The same fungus also attacks the fruit of the lime.—**Olive-scab,** a disease of the olive due to *Cycloconium oleaginum*. See ★*Cycloconium*.—**Onion-scab,** a disease of onion-bulbs due to the fungus *Vermicularia circinans*, which produces black blotches on the surface. See ★*Vermicularia*.—**Orange-scab,** a disease of the orange due to *Cladosporium Citri*.—**Peach-scab,** a disease of the peach due to *Cladosporium carpophilum*, which produces small brown or black spots on the side of the fruit.—**Plum-scab.** Same as *peach-★scab*.—**Potato-scab.** See ★*potato-scab*.—**Tomato-scab,** a disease of the tomato due to *Cladosporium fulvum*.—**Wheat-scab,** a disease of wheat due to any one of the following fungi: *Cladosporium herbarum*, *Fusarium culmorum*, or *F. roseum*.

scabby, *a.* **5.** In *founding*, blistered or marred with scabs: said of a casting. *Stand. Dict.*

scabby-head (skab'i-hed), *n.* The hedge-parsley, *Torilis Anthriscus*.

Scabies ferina, acariasis, scab, or itch of animals, caused by parasitic mites. See *acariasis*.

scabish (skab'ish), *n.* Sundrops, *Kneiffia fruticosa*; also the more southern species, *K. glauca*. The name is sometimes less properly applied to the common evening-primrose, *Œnothera biennis*.

scabrities (skā-brish'i-ēz), *n.* [L., < *scaber*, rough, scaly.] A condition of roughness and scaliness of the skin.

scad¹, *n.*—**Goggle-eye scad.** Same as *goggle-eyed jack*.

scaffold, *n.*—**Hanging scaffold,** in *mining*, a hanging platform in a mine-shaft attached to a crane or hoisting-engine.

scaffolding, *n.* **5.** In *tobacco-growing*, the hanging of the freshly cut plant upon a structure of poles or rails variously supported to wilt before housing: much practised in the heavy export and white Burley districts.

scalage¹ (skā'lāj), *n.* [*scale* + *-age*.] In *leather-manuf.*, an allowance in weight of hides, usually about 15 per cent., made for scalings that may drop off. *Stand. Dict.*

scalar. **I.** *n.* **2.** In *physics*, a quantity, such as mass or volume, which has magnitude but not direction.

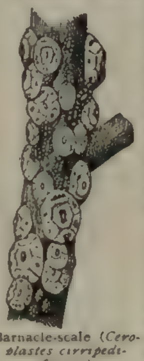
II. *a.*—**Scalar multiplication.** See ★*multiplication*.

scald¹, *n.* **2.** Same as ★*sun-scald*, 2.—**Scald of cranberry,** a fungous disease of the cranberry, due to a species of *Guignardia* which causes a softening and discoloration of the fruit.—**Scald of grape,** a disease of the grape due to the fungus *Aureobasidium vitis*, which attacks the fruit, producing livid depressed spots and at last completely destroying it. Also called *grape-fleck*.

Scaldesian (skal-dē'zhian), *n.* In *geol.*, a division of the Pliocene Tertiary in Belgium and Holland, lying above the Diestian sands.

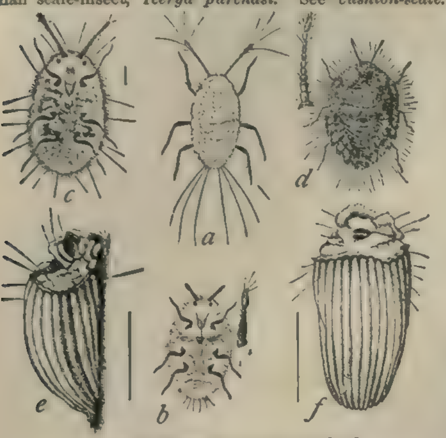
scalduggery, *n.* Same as *skulduddery*.

scale¹, *n.* **5.** An incrustation on the inside of a boiler or other vessel in which water is evaporated which contains in solution salts which are precipitated by heat. These salts are usually present in solution as compounds rich in carbonic acid, such as the acid carbonates of lime and magnesia, or as sulphates or silicates. The carbonates lose one atom of CO_2 on boiling and become insoluble protocarbonates, and the sulphates are less soluble in hot water than in cold. Such scale causes local overheating and injury to the metal of the vessel, retards the transfer of heat to the water to be evaporated, and clogs up waterways. —**Armored scale,** a name given to any or all of the scale-insects of the subfamily *Diaspinæ*, all of which are covered with a protecting scale.—**Auxiliary scale.** Same as ★*adipose lobe*.—**Barnacle-scale,** a coccine scale-insect, *Ceroplastes cirripediformis*, which occurs upon citrus-trees in Florida and somewhat resembles a very small barnacle, whence the popular and the specific names.—**Blackberry soft scale,** an American scale-insect, *Eulecanium fitchii*, occurring on the blackberry and raspberry in Canada and the northeastern United States. —**Broad scale.** Same as *brown* ★*scale*.—**Brown scale,** a cosmopolitan scale-insect, *Coccus* (*Lecanium*) *hesperidum*, occurring on various plants of economic importance. Also called *soft scale*, *flat scale*, and *turtle-back scale*.—**California red scale,** a diaspine scale-insect, *Chrysomphalus aurantii*, destructive to citrus-trees in California.—**Camellia scale,** another popular name for the so-called 'greedy scale,' *Aspidiotus rapax-camelliæ*, a cosmopolitan scale-insect which feeds on a great variety of plants.—**Canthal scale.** See ★*canthal*.—**Cherry scale.** See ★*cherry*¹. —**Circular scale,** a popular name sometimes applied specifically to the so-called red scale of Florida, *Chry-*


Barnacle-scale (*Ceroplastes cirripediformis*).

Group of scales on twig, showing different stages of growth: enlarged about 2 diameters. (After Marlatt, U. S. D. A.)

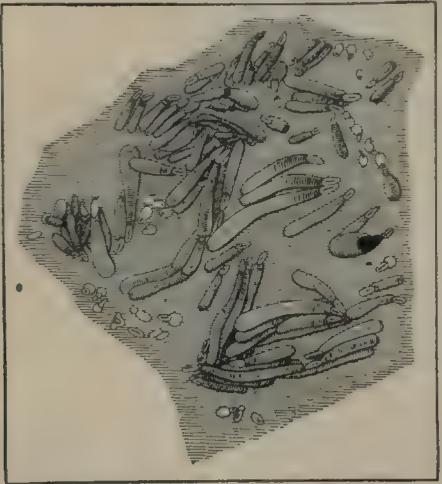
somphalus ficus.—**Cottony cushion-scale,** an Australian scale-insect, *Icerya purchasi.* See *cushion-scale.*



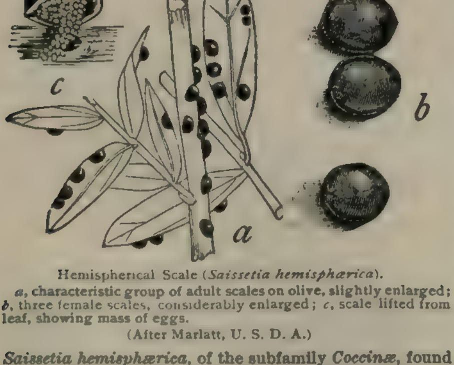
Cottony Cushion-scale (*Icerya purchasi*).

Female series, showing the development of the female insect from young larva to adult gravid stage: *a*, newly hatched larva; *b*, second stage; *c*, third stage; *d*, full-grown female; *e* and *f*, same after secretion of egg-sac. Lines show natural size. (After Marlatt, U. S. D. A.)

—**Cottony scale,** a scale-insect of the genus *Pulvinaria:* as, the *cottony maple-scale, P. vitis.*—**Cranberry scale.** See ★*cranberry-scale.*—**Crude scale,** in the manufacture of solid paraffin wax from petroleum or shale-oil, the impure product obtained by the first crystallization by cooling of the heavier fractions of the distilled oil.—**Currant scale,** an American coccine scale-insect, *Eulecanium ribis* Fitch.—**European fruit-scale.** See ★*Aspidiotus.*—**Forbes's scale,** an American diaspine scale-insect, *Aspidiotus forbesi,* found on many orchard and forest trees. Also called *cherry-scale,* since it was first found on cherry. It occurs throughout North America and in Germany.—**Genital scale,** in ophiuroids, the smaller of the two bar-like plates bounding the genital slit. See *genital* ★*plate.*—**Giant scale,** any homopterous insect of the family *Coccidæ* and subfamily *Monophlebinæ,* especially the species of the Australasian genus *Monophlebus,* some of which are an inch in length.—**Glover's scale,** a cosmopolitan scale-insect, *Lepidosaphes gloverii,* occurring abundantly on citrus-trees in various parts of the world. It is especially abundant in Florida, where it is known as the long scale.—**Grape scale.** See ★*grape-scale.*—**Greedy scale,** a cosmopolitan diaspine scale-insect, *Aspidiotus camelliæ* (often called *A. rapax*), which occurs in destructive numbers on many different trees and plants in many parts of the world.—**Hemispherical scale,** a common cosmopolitan naked scale, *Saissetia hemisphærica,* of the subfamily *Coccinæ,* found on a great variety of plants and especially abundant in greenhouses in the northern United States.—**Mealy scale.** Same as *mealy bug* (which see, under *bug*^{2}).—**Peach and plum scale,** an American coccine scale-insect, *Eulecanium nigrofasciatum,* wide-spread in the United States and occurring principally on peach and plum, but also on apple, olive, sycamore, maple, and other trees. Also called *terrapin scale.*—**Pernicious scale.** Same as *San José scale.* See ★*Aspidiotus.*—**Putnam's scale,** *Aspidiotus ancylus,* a comparatively innocuous North American diaspine scale.—**Quince scale,** a diaspine scale-insect, *Aspidiotus camelliæ,* possibly of American origin, but also found in Ceylon and Samoa, which attacks quince, fig, orange, cactus, the tea-plant, and other plants.—**Red scale.** (*b*) A diaspine scale-insect, *Chrysomphalus aurantii,* cosmopolitan in its distribution and occurring on orange, lemon, cocoa, fig, and many other trees. Also called the *California red scale,* to distinguish it from *Chrysomphalus aonidum* (*ficus*), sometimes called the *Florida red scale.*—**Ribbed scale,** in *entom.,* same as *cushion-scale.*—**Scale caterpillar.** See ★*caterpillar.*—**Soft scale.** Same as *brown* ★*scale.*—**Spindle-tree scale,** a diaspine scale-insect, *Chionaspis euonymi,* which occurs on the spindle-tree or euonymus-bush in Europe and North America.—**Terrapin scale.** Same as *peach and plum* ★*scale.*—**Tulip-tree scale,** a large American naked scale-insect, *Toumeyella liriodendri,* which often crowds the twigs and smaller branches of the tulip-tree, magnolias, and linden.—**Turtleback scale.** Same as *brown* ★*scale.*—**Walnut scale.** See *walnut-scale* and ★*Aspidiotus.*—**Willow scale.** This name is also given to *Chionaspis salicis-nigræ, Eulecanium capreæ, Chionaspis ortholobis, Aspidiotus camelliæ,* and others.—**Yellow scale,** a variety of the red scale of California, *Chrysomphalus aurantii,* var. *citrinus.*



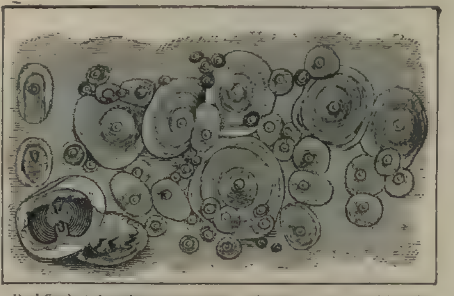
Glover's Scale (*Lepidosaphes gloverii*); showing cluster of male and female scales on fruit of orange: greatly enlarged. (Marlatt, U. S. D. A.)



Hemispherical Scale (*Saissetia hemisphærica*).

a, characteristic group of adult scales on olive, slightly enlarged; *b*, three female scales, considerably enlarged; *c*, scale lifted from leaf, showing mass of eggs.

(After Marlatt, U. S. D. A.)



Red Scale (*Aspidiotus aurantii*); showing a group of female and male scales on orange-leaf: greatly enlarged. (Marlatt, U. S. D. A.)

scale^{1}, *v.* **I.** *trans.* **9.** To cover with a crust or deposit: as, this water *scales* the boiler or the kettle.

II. *intrans.* **3.** To become crusted with a deposit from the feed-water: said of a boiler or other evaporating-vessel.

scale^{2}, *n.* **4.** Weight: an abbreviation of *scale weight.*

> Some of the best Hereford herds in England contain a large number of highly prized cows of a light-red color, very deep-fleshed cattle, and of very great *scale.*
> *Rep. Kansas State Board Agr.,* 1901–02, p. 148.

Abattoir scales. See ★*abattoir.*—**Army scales,** a *weigh-beam* (which see).—**Canal-boat scales.** See ★*canal-boat.*—**Cloth-sampling scale,** a weighing-scale for ascertaining the weight of a square or running yard of cloth by weighing a sample of standard size. The weight on the scale-beam gives the weight, in ounces and small fractions, of a yard of the same kind of cloth as the sample.—**Combination scales,** scales having several beams or several counterweights or sets of graduations upon one beam.—**Counter-scales,** weighing-scales of any form designed to be used on the counter of a store. Spice-scales, butter-scales, express-package scales, tea-scales, druggists' scales, and many other scales having various names may all be counter-scales.—**Creamery scales,** platform-scales for weighing milk. They have five or more scale-beams. In weighing milk delivered at the creamery the empty can is weighed on one beam; the first delivery of milk is then weighed in the can on another beam; the second delivery placed with the first in the same can is weighed on another beam; and so on.—**Dairy scales,** platform-scales with two beams, one for true weight and one for net weight.—**Dormant scale,** a weighing-scale which has a weighing-platform flush with the floor and fitted with appliances for rendering it firm and unmovable (dormant) when not in use.—**Milk-scales.** See ★*milk-scales.*—**Postage-indicator scales,** postal scales having a special form of beam for giving, in addition to the weight, the required postage, in cents, for the article weighed.—**Postal and coin scales,** postal scales having a series of slots on the platform which can be used to test the diameter and thickness of coins. They have also a supplementary beam and counter-weight to test the weight of the coins.—**Postal scales,** small scales for weighing letters and packages for mailing; a letter-scale. Another form of postal scale is the tangent balance (which see, under *tangent*).—**Railway scales,** large platform-scales having rails laid on the platform and used for weighing cars. See ★*computing-scale.*—**Torsion scale.** (*a*) A pair of scales in which the applied weight or force causes a calibrated wire to twist through an observed angle. The angle of torsion measures the applied force. (*b*) A form of scales in which the usual knife-edge fulcrums are replaced by flat bands, the loads twisting these bands through a small angle, quite within their elastic limit of stress. Such fulcrums are frictionless, or the molecular distortion is not variable with applied load.—**Tramway scale,** a scale adapted to the weighing of coal- or oil-cars and buckets on a wire cableway; the buckets or tram-cars travel over a section of track which is suspended from the levers of the scales.—**Weigh-lock scales,** scales used for weighing canal-boats when in a lock. This was done to ascertain the amount of toll to be paid for the boat. The scale used was a beam-scale of large capacity.

scale^{3}, *n.* **9.** In *graphics,* the ratio of the lines of the drawing to those of the object. Thus, if six inches on the drawing represent one foot on the object the scale is one half, variously indicated: as, *Scale* $\frac{1}{2}$; *Scale* 1 : 2; *Scale* 6 in. = 1 ft.; *Scale* $6'' = 1'$.—**Absolute** or **photometric scale,** the scale of stellar magnitudes proposed by Pogson in 1850 and now generally adopted as far as possible. It is based on the photometric determination of Sir John Herschel that the average first-magnitude star is just about 100 times brighter than the average sixth-magnitude star, the faintest steadily visible to the naked eye. The absolute scale therefore adopts for the uniform ratio between the brightness of two stars differing by one magnitude the fifth root of 100, or 2.512+, the logarithm of which is 0.4. For the lucid stars this scale agrees in the main with Argelander's, but diverges from it for telescopic stars. Its sixteenth magnitude is about the limit of visibility with our present telescopes. Stars brighter than Aldebaran (the standard first-magnitude star) have magnitudes less than unity. Thus Vega and Arcturus are 0.3 magnitude, and Sirius is −1.4 magnitude.—**Argelander's scale,** the scale of stellar magnitudes adopted by Argelander in his Durchmusterung. It is an arbitrary scale, but for the visible stars does not vary greatly from the absolute scale now generally accepted: for the telescopic stars it diverges seriously. See *absolute* or *photometric* ★*scale.*—**Base of the scale of notation,** the ratio of increase for each transfer one place to the left. In the Hindu notation it is 10.—**Beaufort scale,** the scale of wind-force introduced into the British navy in 1805, by Admiral, afterward Sir, Francis Beaufort. It proceeds from 'calm' to 'hurricane' by grades numbered as in the list given below. The values of the numbers were originally defined by the speed of a standard full-rigged naval vessel sailing under the influence of the respective winds; but as these vessels are now no longer used and as many studies have been made to determine the values as expressed by the velocity of the wind, the latter only are here given as published by Hann. See *wind-scale,* under *scale*^{3}.

NUMBER.	NAME.	VELOCITY.
Zero.	Calm.	
1	Light air	1.7 meters per second
2	Light breeze	3.1 " " "
3	Gentle breeze	4.8 " " "
[illegible]	Moderate breeze	6.7 " " "
5	Fresh breeze	8.8 " " "
6	Strong breeze	10.7 " " "
7	Moderate gale	12.9 " " "
[illegible]	Fresh gale	15.4 " " "
9	Strong gale	18.0 " " "
10	Whole gale	21.0 " " "
11	Storm	30 " " "
[illegible]	Hurricane	50 " " "

Baumé scale. See *hydrometer.* The two Baumé hydrometers have been constructed according to specifications modified arbitrarily by the instrument-maker, so that much confusion exists. A contract specifying a given degree Baumé may occasion great annoyance unless the particular Baumé scale intended is itself identified by stating what specific gravity corresponds to some given degree. The following table gives, for liquids heavier than water, that Baumé scale which was adopted and published by the Manufacturing Chemists' Association about 1877; for liquids lighter than water, the scale adopted by the United States Petroleum Association about 1864.

VALUES OF BAUMÉ DEGREES

LIQUIDS HEAVIER THAN WATER.			LIQUIDS LIGHTER THAN WATER.	
TEMPERATURE 60° F.			TEMPERATURE 54.5° F.	
Baumé degree	Specific gravity		Baumé degree	Specific gravity
0	1.000		10	1.0000
5	1.036		15	0.9[illegible]
10	1.071	[1.074]	20	0.9359
15	1.114	[1.115]	25	0.9068
[illegible]	1.158	[1.160[	30	0.8795
25	1.208		35	0.[illegible]
30	1.262	[1.261]	40	0.8295
[illegible]	1.317	[1.318]	45	0.[illegible]
40	1.386	[1.381]	50	0.7849
45	1.451	[1.450]	55	0.7644
50	1.531	[1.526]	60	0.7449
55	1.616	[1.611]	65	0.7264
60	1.705	[1.706]	70	0.7087
[illegible]	1.814	[1.813]	75	0.6919
[illegible]	1.835		80	0.6759
			85	0.6606

All the numbers but three in the table for heavy liquids contain errors of 1, 2, 3, or 5 units in the third decimal place, but since the table has been adopted by the chief users of this hydrometer it is given as so used; but the correct figures are added within brackets. Instruments, however, are likely to be graduated according to the correct figures.—**Board scale.** See ★*board-measure.*—**Circumference scale,** a measuring-scale marked on one edge in inches and fractions of an inch, and on the opposite edge with the corresponding diameters, so that, by measuring the circumference of a cylindrical body with the scale its diameter also is given.—**Distance scale,** a scale, attached to a range-finder, telemeter, or other device, for the optical determination of distances, so graduated as to indicate the number of meters or yards between an observed object and the instrument.—**Flying scale,** in *persp.,* a scale representing long measure directed toward the center of the picture.—**Front scale,** in *persp.,* a scale representing long measure parallel to the horizontal line.—**Fuller's scale,** the method devised by Fuller (1897) for expressing the reaction of nutrient media by titration with $\frac{n}{20}$ sodium hydroxid or $\frac{n}{20}$ hydrochloric acid.—**Full scale,** in *lumbering*, measurement of logs in which no reduction is made for defects.—**Index of the natural scale.** See ★*index.*—**Logarithmical scales,** logarithms placed on lines for multiplying and dividing by means of compasses or slide-rules.—**Logarithmic scale,** a scale upon which divisions marked with successive numbers are set down at distances from the origin proportional to the logarithms of those numbers, or to logarithms of a given function of the numbers. In the former case the scale is called a logarithmic scale of numbers; in the latter, a logarithmic scale of sines, tangents, or other functions.—**Log-book scale** (*naut.*), a scale which indicates the character of the sea-swell by capital letters, as follows: S., smooth; M., moderate; L., long; R., rough; C., cross; H., heavy; V. H., very heavy.—**Mohs's scale,** the accepted series of minerals, numbered from one to ten, by reference to which the hardness of a given species is defined. See *hardness*, 5. Also called *scale of hardness.*—**Natural scale** (*math.*), the scale of natural numbers, whose essence consists in the arrangement of its elements; the unending sequence of signs:

1, 2, 3, 4, 5, . . ., or
"one," "two," "three," "four," "five," . . .

—**Normal thermometric scale,** the scale of the hydrogen thermometer of constant volume type.—**Personal scale,** a scale numerically representing any personal peculiarities in an observer's habit of observation. Same as *personal equation.* *Smithsonian Rep.*, 1890, p. 178.—**Photometric scale.** See *absolute* or *photometric* ★*scale.*—**Radix of the scale.** Same as *base of the* ★*scale.*—**Scale of absolute temperatures.** See *thermometric* ★*scale.*—**Scale of multiples** of A, A, 2A, 3A, 4A, etc.—**Scale of notation,** in *arith.*, the particular progression of the local values for the numerals in a system of arithmetical notation like the Hindu (our so-called 'Arabic'). In the Hindu or denary scale the value of the unit as one proceeds from right to left increases tenfold.—**Scale of sines, tangents,** etc., a scale upon which numbers representing angles in arithmetical progression from zero are set down at distances from the origin proportional to their sines, tangents, or other functions.—**Scale of the gas-thermometer.** See *thermometric* ★*scale.*—**Scale of the hydrogen thermometer.** See *thermometric* ★*scale.*—**Scale of the platinum thermometer.** See *thermometric* ★*scale.*—**Sexagesimal scale,** a scale using 60 as base.—**Smithsonian wind-scale.** See *wind-*★*scale.*—**The complete scale,** in *math.*, the natural scale extended backward by zero and the negative integers, namely: . . ., −5, −4, −3, −2, −1, 0, 1, 2, 3, 4, 5, . . .—**Thermodynamic scale of temperatures.** See *thermometric* ★*scale.*—**Thermometric scale,** a scale used in the designation or measurement of temperatures; the scale of a thermometer. In addition to the ordinary scales, for the mercury thermometer, devised by Fahrenheit, Réaumur, and Celsius (see *thermometer*), there are numerous special thermometric scales. *The scale of absolute temperatures.* On this scale the degree is of the same size as in the centigrade scale, one degree corresponding to 1/100 of the interval between the temperature of melting ice and that of steam at normal pressure. The zero of the absolute scale, however, is at −273° C., the ice-point being designated +273° and the steam-point +373°. *The scale of the gas-thermometer.* In gas-thermometers, in which the expansion of air or of some other permanent gas is used for the measurement of temperatures, one degree of the thermometric scale corresponds to that change of temperature which causes a variation in the volume of the gas, at constant pressure, equal to 1/273 of its volume at the ice-point. Since a permanent gas expands by this amount when heated from 0° to 1° C., the scale of the gas-thermometer coincides at this point with the corresponding scale of the mercury thermometer. In the construction of the latter instrument it is assumed that the apparent expansion of mercury in a glass thermometer-tube is uniform, but this is not strictly true since there are slight variations in the coefficient of expansion of mercury and of glass. The gas-thermometers and the mercury thermometers do not agree, therefore, at every point. Thermometric scales based upon the assumption of the uniformity of the apparent expansion of that liquid in glass are designated as *mercury-in-glass scales.* *The scale of the hydrogen thermometer.* This is a thermometric scale based upon the assumption that hydrogen is a perfect gas. The definition of a degree, as in the case of other gas-thermometers, is that it is the interval corresponding to a change of volume of 1/273 of the volume of the hydrogen at the ice-point. *The scale of the platinum thermometer.* This is a thermometric scale based upon the change of electric resistance of a platinum wire with change of temperature. The relative change in the resistance of such a wire when heated from 0° to 1° C. is taken as 1° of the platinum scale. Since the temperature coefficient of platinum is not strictly the same at very high and very low temperatures the scale of the thermometer does not correspond throughout its entire range with the scale of the gas-thermometer. Numerous variations of substances due to heat, aside from the expansion of mercury or of a gas or the change of electrical resistance of a metal, are employed in the determination of temperatures. Thus, Wedgwood, in the eighteenth century, measured the heat of furnaces by means of the change in length of a porcelain bar. The linear expansion of platinum and of other metals, the electromotive force of thermojunctions, the specific heats of substances such as mercury, platinum, and carbon, and numerous other thermal properties of matter have been used by physicists in the determination of temperature. Owing to the complexity of the laws covering the change of such properties, however, it is not customary to base thermometric scales upon them and the indications of instruments in which such means are used are reduced by calibration to the scale of the gas-thermometer. *The thermodynamic scale of temperatures.* The thermometric scales mentioned above are based upon the thermal properties of particular substances, and such scales differ according to the thermometric substances employed. Recognizing the importance of a scale which shall be independent of these properties, Kelvin, in 1848, devised a so-called 'thermodynamic scale of temperatures' which he defined as follows: "The absolute values of two temperatures are to one another in the proportion of the heat taken in to the heat rejected by a perfect thermodynamic engine working with a source and a refrigerator at the higher and the lower of the temperatures respectively." This scale satisfies the equation $\frac{T_1}{T_2}=\frac{Q_1}{Q_2}$ where T_1 and T_2 are the absolute temperatures and Q_1 and Q_2 the corresponding quantities of heat. The thermodynamic scale thus defined agrees completely with that of a thermometer in which an ideal gas is employed, and it coincides so closely with the scale of the hydrogen thermometer that for most purposes the two may be regarded as the same. —**Thousandfold scale.** Hydrometers are said to be graduated on the thousandfold scale when, to avoid the use of decimals, the density of the standard substance, water, is represented by 1000 instead of 1.—**Universal scale,** a measuring-scale, for the use of draftsmen, on which all proportional divisions in common use for drawings are engraved in parallel rows. If used on a flat surface all scales not on the edges must be transferred by dividers, since they cannot be used directly. For this reason a scale of triangular form is preferable, since by it six edges are made available and six scales—or twelve scales, if the two on any edge are to each other as one is to two. —**Wind-scale.** The *Smithsonian wind-scale* is a scale of ten numbers and terms introduced by the Smithsonian Institution for the use of observers in the United States, whence it has spread through other countries and with some changes has been called an 'international wind-scale.' The scale is as follows: 0, calm; 1, light air, deflecting forms of smoke; 2, light wind, merely moving the leaves; 3, fresh wind, moving the smallest branches; 4, stronger wind, raising the dust and moving the larger branches; 5, stronger wind, moving the bodies of the trees; 6, stronger wind, swaying the largest trees; 7, strong, breaking off the branches; 8, strong, breaking the small trees, injuring roofs; 9, hurricane, breaking the larger trees, carrying away roofs; 10, whirlwind or tornado, that nothing can resist.

scalebark, scalybark (skāl', skā'li-bärk), *n.* Same as *shagbark*, 1. See *shellbark.*

scale-book (skāl'bu̇k), *n.* In *lumbering*, a book especially designed for recording the contents of scaled logs.

scale-caterpillar (skāl'kat"ėr-pil-ä̤r), *n.* See ★*caterpillar.*

scale-detector (skāl'dẹ̄-tek"to̤r), *n.* A small device which can be run into a boiler-tube and which indicates, through the motion of a pointer, any obstruction in the tube by scale.

scale-house (skāl'hous), *n.* A building in which are scales used in weighing or measuring the product of a manufactory or the food, material, etc., served out.

> This tract is made up of pastures, tilled fields, and feeding pens, all radiating around Hymer station, where are located the stock-yards, mill and elevator, blacksmith shop, *scale-house* and headquarters office of the company.
> *Rep. Kansas State Board Agr.*, 1901–02, p. 276.

scalelet (skāl'let), *n.* A diminutive accessory scale, sometimes found on the larger scales in fishes. *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 660.

scalenohedral, *a.*—**Scalenohedral class of crystals.** See ★*symmetry*, 6.

scalenohedron, *n.*—**Tetragonal scalenohedron.** A form belonging to the tetragonal system having eight faces, each a scalene triangle, arranged in four pairs. Also called a *disphenoid*, 6.

scale-pad (skāl'pad), *n.* A thickening of the skin from which arise the scales found on the under side of the tail in squirrels of the genus *Anomalurus.*

> Before the spot above the end of the lower *scale-pad* is reached the tail is covered with long black hair.
> *Proc. Zool. Soc. London*, 1898, p. 451.

scale-pan (skāl'pan), *n.* A shallow dish, commonly of sheet-brass, sometimes of glass, suspended from an end of the beam of a balance, and serving to contain the material to be weighed or the weights.

scale-rule (skāl'röl), *n.* See *log-scale.*

scale-tooth (skāl'töth), *n.* A tooth-like arrangement of scales on the wings of certain lepidopterous insects.

scaling[1], *n.* **4.** Scales collectively or the arrangement of scales, as on an insect's wing or on a fish.

> Primaries with a short line of grey scales across the cell close to its end, beyond which is a double V-shaped mark, beyond which is another V-mark placed horizontally, below which is a larger patch of grey *scaling.*
> *Annals and Mag. Nat. Hist.*, Sept., 1903, p. 330.

5. Specifically, the structure and distribution of the scales of fishes considered as a basis for classification.

> If it is true that the application of cut and dried definitions of the *scaling* will no longer enable us satisfactorily to subdivide the Pisces . . . nevertheless these facts do not by any means prove that the *scaling* is of little systematic importance.
> *E. S. Goodrich*, in Quart. Jour. Micros. Sci., March, 1904, [p. 466.

6. In *dentistry*, removing the tartar from the teeth.

scaling[3] (skā'ling), *n.* **1.** The measurement or estimation of the amount of lumber in logs or standing timber.—**2.** The taking of dimensions from a drawing by means of a measuring-scale, in the absence of figured dimensions. *Lockwood*, Dict. Mech. Engin. Terms.

scall, *n.*—**Honeycomb scall.** Same as *favus*, 2.—**Milky scall,** an eruption of minute whitish blisters which break, discharge, and form small scabs. The eruption occurs in infancy and chiefly on the cheeks and forehead.

scallop, *n.*—**Great northern scallop,** *Pecten tenuicostatus*, a kind of scallop, of large size, now nearly extinct; a sea-scallop.

scallum (skal'um), *v. t.* In *basket-making*, to force or plait (osiers) between the rods forming the bottom of a basket. [Prov. Eng.]

> [In basket making] osiers are forced or plaited, "*scallumed*," between the rods of the bottom.
> *Encyc. Brit.*, III. 423.

scalp[1], *n.* **7.** An early type of cultivator blade, nearly horizontal in position, so called as cutting a thin layer from the soil. Cf. ★*sweep*, 12 (*b*).

> But it may be made to work along three, five, or seven furrows according as the *scalps*, or broad feet (by many called duck-feet), may be placed.
> *T. Williamson*, Agricultural Mechanism, p. 265.

Scalp Act. See ★*act.*

scalp-dance (skalp'dȧns), *n.* A ceremonial of the American Indians in which scalps were used in celebrating a victory.

> Küfüra, the *Scalp Dance.* In this old war dance, which is no longer celebrated, both men and women formed a ring around one of their number—a woman who held aloft a scalp tied to a stick.
> *J. W. Fewkes*, in Amer. Anthropologist, Jan.–March, [1902, p. 67.

scalper[1], *n.* **4.** A heavy, compressed leather boot shaped to cover the forward portion of the cornet.—**5.** In *lumbering.* See ★*rosser.*

scalprum (skal'prum), *n.*; pl. *scalpra* (-prä̤). [L., a knife, chisel.] The cutting edge of an incisor tooth, such as is found in rodents. See *scalpriform.*

scaly, *a.* **6.** Covered with a scale or incrustation, as a boiler or kettle in which water containing mineral salts which become insoluble on heating has been evaporated.

scaly-fin (skā'li-fin), *n.* A fish of the suborder *Squamipinnes*, comprising a large number of species showing analogies with the *Carangidæ* on the one hand and with percoid fishes on the other.

scammonic (ska-mon'ik), *a.* [*scammon(y)* + *-ic.*] Derived from scammony.—**Scammonic acid,** an acid obtained from scammonin and said by some authorities to be identical with jalapic acid, while others deny this.

scammonin (skam'ọ-nin), *n.* [*scammon(y)* + *-in*[2].] Same as *jalapin.*

scammonose (skam'ọ-nōs), *n.* [*scammon(ia)* (see def.) + *-ose.*] A mixture of rhodeose, glucose, and a methyl pentose, obtained from the roots of *Convolvulus Scammonia*: formerly regarded as a chemical unity.

scammony, *n.*—**German scammony,** the hedge-bindweed, *Convolvulus sepium.*—**Scammony-root.** (*b*) Same as *wild* ★*scammony.*—**Wild scammony,** the wild potato-vine or man-of-the-earth, *Ipomœa pandurata.*

Scan. An abbreviation of *Scandinavian.*

Scanderoon (skan-dẹ-rön'), *n.* [For *Iskanderun*, Alexandretta, on the Gulf of Iskanderun?] A breed of domesticated pigeons, supposed to have originated in Persia, having long heads, bodies, and legs, wide shoulders, and a long curved bill with a moderate wattle at the base of the upper mandible. The birds may be plain-colored, or varied; in the latter case the wings are white, the saddle, upper neck, and upper breast, colored.

scandia (skan'di-ä̤), *n.* [NL., < *scandium.*] In *chem.*, scandium oxid.

Scanian epoch. See ★*epoch.*

scansionist (skan'sho̤n-ist), *n.* [*scansion* + *-ist.*] One who is expert in scansion; one who makes a study of scansion or meter.

> In a brief paper, entitled 'The Battle of the *Scansionists*,' Kent discusses the relative merits of stress-prosody and scansion by classical feet, and contrives to display a wide knowledge and an exquisite ear for metrical and rhythmical effect, without, however, arriving at any definite conclusion on the question.
> *Athenæum*, Jan. 28, 1905, p. 108.

Scaphaspis (ska-fas'pis), *n.* [NL., < Gr. *σκάφη*, a skiff, + *ἀσπίς*, a shield.] A generic name applied to the ventral shields of certain pteraspidian fishes of Devonian age, in the belief that they represented dorsal shields. See *Pteraspis.*

scaphium, *n.* **4.** In Greek pottery, a vase of boat-like form.

> Among the many forms of Greek cups one of boat shape was known as *scaphia*.
> *S. Gardner*, Old Silver-work from the XV–XVIII Centuries, p. 4.

scaphocephalus (skaf-ọ̄-sef′ạ-lus), *n.*; pl. *scaphocephali* (-lī). [NL., < Gr. *σκάφη*, a skiff, + *κεφαλή*, head.] A scaphocephalic individual or skull.

scapose (skā′pōs), *a.* [*scape* + *-ose.*] In *bot.*, bearing scapes, as plants; borne on scapes, as flowers.

s. caps. An abbreviation of *small capitals.*

scaptin (skap′tin), *n.* An obsolete name for an active extract of digitalis.

Scapula superior. Same as *post-temporal. Starks,* Synonymy of the Fish Skeleton, p. 520.

Scapular index. See ★*index.*

scapulare, *n.* **2.** In *ichth.*, same as *post-temporal. Starks,* Synonymy of the Fish Skeleton, p. 520.

scapularium, *n.* **2.** (*b*) Same as *episternum,* 3.

scapulospinal (skap″ụ̄-lọ̄-spī′nạl), *a.* Relating to the scapula and the spinal column. *Philos. Trans. Roy. Soc.* (London), 1897, ser. B, p. 188.

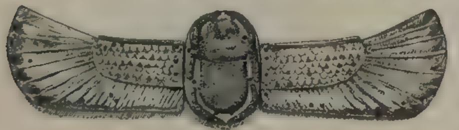
scapulothoracic (skap″ụ̄-lọ̄-thọ̄-ras′ik), *a.* Relating to the scapula and the thorax. *Buck,* Med. Handbook, II. 811.

scapus, *n.* **6.** (*a*) In sea-pens, the main stem, the lower part of which is sunk in the mud while the upper bears the zoöids. (*b*) In actinians, the main part of the body as differentiated from the upper, tentacle-bearing region or capitulum.

scar[1], *n.* **8.** A manufacturers' name for lumps or cakes of imperfectly fused ferrous sulphid which form in the burning of iron pyrites in making sulphuric acid, due to an insufficient supply of air to the burners. The formation of scars involves waste of sulphur which fails to be fully burned off. *G. Lunge,* Sulphuric Acid, I. 215.

scarab, *n.* **4.** A conventionalized beetle, which is a common motive in Egyptian art.

> The more oval form here seen still bears a closer affinity to some Egyptian *scarab*-borders of the Eighteenth Dynasty. *A. J. Evans,* in Jour. Hellenic Studies, XVII. 345.



Scarab.

Scarabeus, *n.* **2.** [*l. c.*] The curve $4(x^2+y^2+2ax)^2(x^2+y^2) = b^2(x^2-y^2)^2$.

Scarborough series. See ★*series.*

scarb-tree (skärb′trē), *n.* A wild or seedling apple-tree.

scare[4] (skãr), *v. t.* [Icel. *skara,* join the planks of a boat so that they overlap, clinch.] To fasten (two pieces of wood) by splicing; join by fitting; splice. *Eng. Dial. Dict.* [North Eng. and Scotch.]

scare[4] (skãr), *n.* [*scare*[4], *v.*] **1.** A joint in carpentry; a splice; one of the parts of a fishing-rod; etc. *Eng. Dial. Dict.* [North Eng. and Scotch.]—**2.** In *golf,* the narrow part of the neck of the club where it is fastened to the shaft, then glued and bound with whipping. [Scotch.]

scare-head (skãr′hed), *n.* A sensational headline in a newspaper. [Colloq.]

scare-line (skãr′līn), *n.* In *trap-shooting,* a line used to scare the bird and make it fly.

> Then, too, they were a freaky lot of birds. Four out of five of them needed the *scare lines* to make them move.
> *Forest and Stream,* Feb. 21, 1903, p. 159.

scare-sleep (skãr′slēp), *n.* In Dutch Guiana, the great fulgorid lantern-fly, which stridulates at night. *Kirby and Spence,* Entomology, p. 499.

scarf[1], *n.*—**Tabled scarf,** one in which the face of the joint of each part at the thin end has a rectangular projection which fits into a corresponding recess in the face of the joint on the other part so as to interlock the two parts together.

scarfing-machine, *n.* **2.** A machine for shaping the ends of a wire or rod so that they may be joined by a scarf-joint, using either welding, soldering, brazing, or any other process which may be convenient for making the two pieces one. The two ends are formed into half wedges, so that when placed together the joint line makes an acute angle with their common axis. *Jour. Brit. Inst. Elect. Engin.,* 1903–04, p. 852.

scarid (skar′id), *n.* A scaroid or parrot-fish.

scarlet. **I.** *n.* **4.** In *archery,* the second or next to the innermost circle of the target, which is colored red. See ★*red*[1], 7.—**5.** The rank, dignity, or office of a cardinal: so called from the official color of his robes.—**Acid scarlet.** Same as ★*acid-ponceau.*—**Acridine scarlet,** a mixture of acridine red and acridine yellow.—**Anisidine scarlet,** an acid coal-tar color related to anisidine: seldom used at the present time.—**Azin scarlet,** a basic dyestuff of the azin type. It is similar to safranine in composition and properties, but gives a yellower red.—**Biebrich scarlet,** an acid coal-tar color. Same as ★*ponceau 3RB.*—**Brilliant scarlet** an acid coal-tar color. Same as *cochineal* ★*red A.*—**Cochineal scarlet G, PS, 2R,** and **4R,** acid coal-tar colors of the monoazo type, derived from aniline or one of its homologies. They all dye wool red in an acid bath.—**Crocein scarlet B, 2B, 3B, 7B, 8B, 10B, BX, OX,** and **R,** acid coal-tar colors of the diazo type, derived from either amidoazobenzene or amidoazotoluene. They all dye wool red in an acid bath.—**Crocein scarlet 4BX.** Same as *cochineal* ★*red.*—**Crystal scarlet 6R.** Same as *crystal* ★*ponceau.*—**Diamine scarlet,** a direct cotton coal-tar color of the diazo type, derived from benzidine. It dyes unmordanted cotton red in a salt bath. It possesses good fastness.—**Direct scarlet,** a direct cotton coal-tar color of unpublished composition. It dyes unmordanted cotton red in a salt bath.—**Double brilliant scarlet,** an acid coal-tar color. Same as *brilliant* ★*ponceau 4R* (*a*).—**Eosin scarlet.** Same as ★*eosin B, BN,* or *BW.* Also see ★*coccin.*—**Fast scarlet.** (*a*) An acid coal-tar color of the diazo type, derived from amidoazobenzene. (*b*) A name by which *benzopurpurin 4B* is sometimes known.—**Imperial scarlet.** Same as ★*ponceau 3RB.*—**Induline scarlet,** a basic coal-tar color of the azonium-chlorid type. It dyes tannin-mordanted cotton scarlet, but is chiefly used in calico-printing.—**Milling scarlet.** Same as ★*acid-scarlet.*—**Naphthalene scarlet.** Same as *magdala red* (which see, under *red*1).—**Oxamine scarlet,** a direct cotton coal-tar color. It dyes unmordanted cotton red in a salt bath.—**Palatine scarlet,** an acid coal-tar color of the monoazo type, prepared by combining diazotized meta-xylidine with α-naphthol disulphonic acid. It dyes wool a yellowish red from an acid bath.—**Scarlet GR.** Same as *brilliant* ★*orange R.*—**Scarlet OOO.** Same as ★*crocein 2B* or *3BX.*—**Scarlet R.** Same as *brilliant* ★*orange R.*—**Scarlet 6R,** an acid coal-tar color of the monoazo type, prepared by combining diazotized naphthonic acid with β-naphthol-monosulphonic acid. It dyes wool scarlet from an acid bath.—**Scarlet 2R.** Same as *α-naphthylamine* ★*red.*

II. *a.*—**Scarlet acid,** a name sometimes given to a solution prepared by dissolving tin in a mixture of nitric and hydrochloric acid: used in the dyeing of cochineal scarlet.

scarlet-berry (skär′lẹt-ber″i), *n.* The bittersweet, *Solanum Dulcamara,* or its berry.

scarlet-cross (skär′let-krôs), *n.* The scarlet lychnis, *Lychnis Chalcedonica;* also called *knight-cross, Jerusalem-cross, Maltese-cross,* and *scarlet-lightning.*

scarlet-lightning (skär′let-līt″ning), *n.* Same as ★*scarlet-cross.*

scarp[1], *n.*—**Detached scarp,** a scarp-wall detached from the rampart in its rear.

Scarred snout-beetle. See ★*snout-beetle.*

scar-tattooing (skär′ta-tö-ing), *n.* Raised or depressed scars produced by incision and arranged in definite order on the skin, so as to serve as tribal marks, or for purposes of ornament. Scar-tattooing is used in place of tattooing by dark-skinned races, the light scars contrasting distinctly with the dark pigment of the skin. *Ratzel* (trans.), Hist. of Mankind, II. 427.

Scartella (skär-tel′ạ̈), *n.* [NL., < Gr. *σκάρτης,* springing, nimble, + L. dim. *-ella.*] A genus of blennioid fishes found in Cuba.

Scartichthys (skär-tik′this), *n.* [NL., < Gr. *σκάρτης,* springing, nimble, + *ἰχθύς,* fish.] A genus of blennioid fishes known from the coast of Chile and Peru and northward to Panama.

scat[5], *n.* See ★*skat*[2].

scatol, *n.* See *skatol.*

scatologia (skat-ọ̄-lō′ji-ạ̈), *n.* [NL.] See *scatology.*

scatologic (skat-ọ̄-loj′ik), *a.* [*scatolog*(*y*) + *-ic.*] Of or pertaining to scatology; also, relating to the study of excrements in relation to religious ceremonies and the like. See the extract.

> *Scatalogic* [scatologic] rites of all nations. A dissertation upon the employment of excrementitious remedial agents in religion, therapeutics, divination, witchcraft, love philters, etc., in all parts of the globe.
> *J. G. Bourke,* in Smithsonian Rep., 1891, p. 466.

scatological (skat-ō-loj′i-kạl), *a.* Same as ★*scatologic. G. S. Hall,* Adolescence, I. 116.

scatology, *n.* **2.** Study of the feces in relation to normal and pathological composition and the diagnostic importance of the latter.—**3.** The study of the use (or examination) of excrements in religious rites, witchcraft, etc.

scatophagic (skat-ọ̄-faj′ik), *a.* [*scatophag*(*y*) + *-ic.*] Relating to or practising scatophagy or the eating of excrements, particularly of human ordure. *An. Rep. Bur. Amer. Ethnol.,* 1896–97, p. 213.

scatophagy (skạ̄-tof′ạ-ji), *n.* [Gr. *σκατοφάγος,* eating dirt or dung, < *σκῶρ* (*σκατ-*), dirt, dung, + *φαγεῖν,* eat.] The eating of excrement, as a morbid habit or ceremonially, as in various savage rites.

> In general socialry no other known tribe better, or indeed so well, exemplifies zoocracy, while in such special features as those of ethnogamic mating, ceremonial *scatophagy,* and mortuary magnification of the blood-carriers, the folk mark the most primitive known phase of cultural advancement.
> *An. Rep. Bur. Amer. Ethnol.,* 1896–97, p. 295.

scatoxyl (skạ̄-tok′sil), *n.* [Gr. *σκῶρ* (*σκατ-*), dirt, dung, + E. *ox*(*ygen*) + *-yl.*] The radical, C_9H_8ON, of hydroxyscatol.—**Scatoxyl sulphuric acid,** a compound, $C_9H_8N.O.SO_3H$, found in human urine in the form of its potassium salt.

scatter, *v. t.* **6.** In *optics,* to reflect diffusely or irregularly, as from a rough surface.—**Scattered seed method.** See ★*seed.*

Scaur limestone. See ★*limestone.*

scavenge, *v. t.* **2.** In certain forms of the internal-combustion motor, to sweep out of (the cylinder) by an inrush of atmospheric air the burnt products of the previous combustion-stroke. By thus cleansing or scavenging the cylinder the fresh intake of combustible mixture is not diluted with incombustible gases, nor is it heated by them so as to contain less weight of fuel per cubic foot of volume.

> In all engines employing the two-stroke cycle, *scavenging* must be accomplished either by special piston movement or by a blast of air from an auxiliary pump, directed in such a manner as to force out the remaining burned gases, thus clearing the way, so to speak, for the incoming pure mixture. . . . The engine under description *scavenges* thoroughly and completely upon the return stroke of the pistons, which then draw in their charge of explosive mixture, undiluted either by products of combustion or by *scavenging* air.
> *Amer. Inventor,* Aug. 15, 1903, p. 78.

scavenger, *n.*—**Lamellicorn scavenger,** any laparostict scarabæid beetle. Consult *Laparosticta.*—**Scavenger cells.** See ★*cell.*—**Water scavenger.** See *water* ★*scavenger-beetle.*

scavenger-beetle, *n.*—**Water scavenger-beetle,** any member of the coleopterous family *Hydrophilidæ* (which see).

scavenging, *n.* **2.** The process of cleansing, especially in internal-combustion motors. See ★*scavenge,* 2.

> A still further improvement is the removal or *scavenging* of all products of combustion from the compression space in the cylinder. Apart from ensuring a more prompt and more regular ignition of the charge, *scavenging* reduces the risk of the explosive mixture being fired prematurely. *Encyc. Brit.,* XXVIII. 607.

Sc. B. An abbreviation of the Latin *Scientiæ Baccalaureus,* Bachelor of Science.

Sc. D. An abbreviation of the Latin *Scientiæ Doctor,* Doctor of Science.

Sceaux pottery. See ★*pottery.*

scelalgia (skel-al′ji-ạ̈), *n.* [NL., < Gr. *σκέλος,* leg, + *ἄλγος,* pain.] Pain in the leg.

scenograph (sē′nō-gráf), *n.* [Gr. *σκηνογραφία,* scene-painting. See *scenographic.*] A perspective drawing of some object, as a building.

scent, *n.*—**Mixed scent,** in *exper. psychol.,* the simple resultant of a mixture of olfactory qualities; a scent, simple to introspection, produced by the mixture of other and known smell-qualities.

> As certain visual qualities mix, to give a new quality, a quality which lies between the two primaries on the colour-cone, but is still itself simple, and different from either of them, so may smell qualities mix, to give a new '*mixed scent.*'
> *E. B. Titchener,* Exper. Psychol., I. i. 83.

scent-scales (sent′skālz), *n. pl.* Same as ★*androconia. A. S. Packard,* Text-book of Entom., p. 198.

scent-tuft (sent′tuft), *n.* An odoriferous tuft of scales or hairs which occurs on various parts of the body of certain insects.

scepter, *n.* **3.** A common name for the gold sovereign of James I. of England.

scepter-quartz (sep′tėr-kwârts), *n.* A crystallized variety of quartz in which a slender prism is terminated by larger crystal in parallel position.

sceptrella (sep-trel′ạ̈), *n.*; pl. *sceptrellæ* (-lē). [NL., < *sceptrum,* scepter, + dim. *-ella.*] In the nomenclature of the sponge-spicules, a cylindrical rhabd furnished with spines and disks in successive whorls.

sceptrelliform (sep-trel′i-fôrm), *a.* [NL. *sceptrella* + *forma*, form.] Having the form of a sceptrella.

schablone (shä-blō′ne̤), *n.* [G., a pattern, model, routine, routinism, late MLG. *scamplioen*, D. *schampelioen*, pattern, MD. *schampioen*, a model, another use of MLG. *schampelūn*, champion, < OF. *champion*, champion, = It. *campione*, champion, pattern: see *champion*. Compare *pattern* as related to *patron*.] In figurative use, the following of a model; routine; routinism: applied to music of a correct but mechanical sort (compare ⋆*kapellmeister music*), or to dry, dispiriting educational methods, etc.

schaefer (shā′fėr), *n.* [G. *schäfer*, shepherd?] A peddler of cheap oysters. [Local, U. S.]

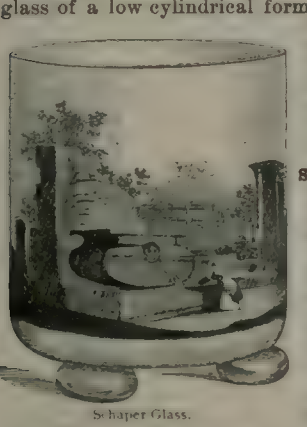
> *Schaeffers.*—Cart-boys, or Arabs, who peddle a mean quality of oysters (Maryland stock) about the streets of Baltimore. *E. Ingersoll*, The Oyster-Industry, glossary.

Schaeffer's acid. See ⋆*acid.*

schal (shäl), *n.* A common name of the catfish, *Synodontis schal*, which inhabits the Nile.

schalmei (shäl-mī′), *n.* [G., also *schalmey*. See *shawm*.] **1.** Same as *shawm*.—**2.** In clarinet music, same as *chalumeau*, 2.—**3.** In the bagpipe, same as *chanter*^{1}, 5.—**4.** In *organbuilding*, a soft reed-stop. Also called a *musette*.

Schaper glass (shä′pe̤r glås), *n.* A drinking-glass of a low cylindrical form: named from its originator, Johann Schaper, a German glass-painter of the seventeenth century.



Schaper Glass.
(In Victoria and Albert Museum, London.)

schappe, *n.* **2.** Yarn spun from waste silk, from which the gum has been removed by a process of maceration or fermentation.

> *Schappe* silk—This is known also as spun silk. In the operation of reeling the silk from the cocoon there is often some that has become disarranged or entangled in such a manner as to prevent its being reeled in the ordinary way. In some cocoons, where the cultivation of silk is carried on extensively, the moth is allowed to emerge, for the purpose of promoting a good breed or reproduction of silkworms at a later stage of the industry. The cocoons from which the moth emerges have their threads displaced. This silk is collected with the waste obtained from the various processes, such as winding, twisting, etc. *Hannan*, Textile Fibres of Commerce, p. 177.

scharf (shärf), *n.* [G., = E. *sharp*.] In *organbuilding*, a high mixture-stop.

scheam-arch (skēm′ärch), *n.* Same as *scheme-arch*.

Schedophilus (skē̤-dof′i-lus), *n.* [NL., irreg. < Gr. σχεδια, a raft, + φιλεῖν, love.] A genus of fishes of the family *Icosteidæ*, found in the open seas.

Scheele's acid. See ⋆*acid.*

scheelization (shā-li-zā′sho̤n), *n.* [*scheelize* + *-ation*.] In the manufacture of wine, the addition of glycerol, commonly called 'glycerin,' to the already fermented wine, in order to give sweetness of taste without revival of fermentation. *Sadtler*, Handbook of Indust. Chem., p. 206.

scheelize (shā′līz), *v. t.*; pret. and pp. *scheelized*, ppr. *scheelizing*. To treat (wine) with glycerin. See ⋆*scheelization*.

scheererite (shā′rėr-īt), *n.* [G. *scheererit*. Named (1827) after Captain Von *Scheerer*, its discoverer.] A native hydrocarbon, perhaps a polymere of marsh-gas. It occurs in whitish crystalline folia with brown coal, at Uznach, Switzerland.

Schefflera (shef′le̤-rä̤), *n.* [NL. (Forster, 1776), named in honor of *Scheffler*, a physician and botanist of Danzig, Prussia, who lived in the eighteenth century.] A genus of plants of the family *Araliaceæ*. See *Sciadophyllum*.

scheme, *n.* **8.** In *printing*, the written or printed summary of the proper quantity of types for each character: in Great Britain a 'scheme' of type is called a 'bill' of type. *DeVinne*, Plain Printing Types, p. 165.

schepel (scħep′e̤l), *n.* [D., a bushel, etc.] In Holland, a decaliter, equal to 2.64 United States gallons.

Scheuchzeriaceæ (shök″zē-ri-ā′sē̤-ē), *n. pl.* [NL. (Agardh, 1858), < *Scheuchzeria* + *-aceæ*.] A family of monocotyledonous plants of the order *Naiadales*, the arrow-grass family, chiefly characterized by racemed or spiked flowers and united carpels. There are four genera, of which *Scheuchzeria* is taken as the type and *Triglochin* is the best known. See *Juncaginaceæ*.

Schiaparellian canals. See ⋆*canals of Mars.*

Schilbeodes (shil-bē̤-ō′dēz), *n.* [NL., < *Schilbe*, a genus of siluroids, + Gr. -ωδης, < εἶδος, form.] A genus of catfishes which live in the fresh waters of the eastern United States.

schillerfels (shil′ėr-fels), *n.* [G., < *schiller*, glitter (see *schiller*), + *fels*, rock.] In *petrog.*, a variety of peridotite containing bronzite or enstatite, which has a glistening, silky to submetallic luster. Some rocks called schillerfels are bronzite-bearing gabbro. See *schillerite*.

schist, *n.*—**Blocky schist**, a schist which is cut up into blocks by intersecting series of joints.

> Claim No. 1 of Gold Run joins with Claim No. 3, Rhode Island. The bed rock consists of schists similar to those on Glenn Creek. It is described by the prospectors as a "*blocky schist*."
> *Contrib. to Econ. Geol.*, U. S. Geol. Surv., Bulletin 213, 1902, p. 53.

Callaway schist, a series of metamorphic rocks in the northwestern Highlands of Scotland, associated with the Precambrian Lewisian gneiss. *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 623.—**Gembloux schist**, in *geol.*, a subdivision of the Silurian in the Ardennes in Belgium and France. It is correlated with the Caradoc of Britain or the upper division of the Lower Silurian.—**Goffered schist**, finely crumpled or puckered schist, best shown in micaceous varieties.—**Matagne schists**, in *geol.*, the upper subdivision of the Frasnian stage which constitutes the lower division of the Upper Devonian in Belgium and northern France.—**Moine schist**, a series of flaggy schists in the Scotch highlands, which belong to the later Archæan. *Geikie*, Textbook of Geol., p. 793.—**Przibram schists**, a series of Precambrian slates in Bohemia, constituting Barrande's 'Étage A,' lying unconformably beneath the great series of Cambrian basal quartzites, conglomerates, slates, and igneous rocks that form 'Étage B.'

Schistochoanites (skiz-tō̤-kō-a̤-nī′tēz), *n. pl.* [NL., < Gr. σχιστός, cloven, + χόανος, funnel, + *-ites*, E. *-ite*^{2}.] In Hyatt's classification of the cephalopods, a suborder of the *Nautiloidea*, with incomplete siphonal funnels, developed on one side but imperfect on the side near the shell-wall.

schistocystis (skis-tō̤-sis′tis), *n.* [NL., < Gr. σχιστός, cloven, + κύστις, bladder.] Congenital fissure of the bladder.

schistocyte (skis′tō̤-sīt), *n.* [Gr. σχιστός, cloven, + κύτος, a hollow (a cell).] A segmenting blood-cell.

schistocytosis (skis″tō̤-sī-tō′sis), *n.* [NL., < Gr. σχιστός, cloven, + κύτος, a hollow (cell), + *-osis*.] Cell-division; specifically, division of a blood-cell.

schistoglossia (skis-tō̤-glos′i-ä̤), *n.* [NL., < Gr. σχιστός, cloven, + γλῶσσα, tongue.] Congenital fissure of the tongue.

schistoid (shis′toid), *a.* [*schist* + *-oid*.] In *petrog.*, somewhat like schist.

> These fragments consisted of granites, quartziferous diorites, *schistoid* diorites, amphibolites, mica schists, grained quartzites, sandstone, a few fragments of compact limestone, and partially decomposed earthy shales. *J. Murray*, in Smithsonian Rep., 1893, p. 360.

schistorrhachis (skis-tor′a̤-kis), *n.* [NL., < Gr. σχιστός, cloven, + ῥάχις, spine.] Same as *spina bifida*.

schistoscope (skis′tō̤-skōp), *n.* [Gr. σχιστός, split, + σκοπεῖν, view.] A simple polariscope for the production of complementary colors.

> By the aid of polarized light it is possible to produce with ease and certainty . . . colours which are truly complementary. There are quite a number of instruments for accomplishing this, but perhaps the simplest and best is that which was contrived by Brücke, . . . and called by him a *schistoscope*. *O. N. Rood*, Modern Chromatics, p. 161.

schizæaceous (skiz-ē̤-ā′shius), *a.* Of or pertaining to the *Schizæaceæ*.

schizaxon (skī-zak′son), *n.* [Gr. σχίζειν, divide, + ἄξων, axis.] In *neurol.*, the Y-shaped division of the axon of a sensory nerve-cell in the spinal cord. *Von Lenhossek.*

schizochroal (skī-zok′rō̤-a̤l), *a.* [Gr. σχίζειν, divide, + χρόα, skin, + *-al*^{1}.] In the compound eye of the trilobites, that type in which the corneal lenses are separated by interstitial portions of the sclera or test: contrasted with *holochroal*. See ⋆*holochroal*.

Schizodonta (skiz-ō̤-don′tä̤), *n. pl.* [NL., < Gr. σχίζειν, divide, + ὀδούς (ὀδοντ-), a tooth.] A division of the pelecypod mollusks in which the teeth of the valves are heavy, amorphous, and variable, often obscurely divided into subumbonal and lateral elements.

schizogamy (skī-zog′a̤-mi), *n.* [Gr. σχίζειν, divide, + γάμος, marriage.] A method of reproduction in which a sexual form is produced by fission or by gemmation from a sexless one, as in some worms. Same as *metagenesis*.

> This group is one of the most interesting to naturalists from the frequence of *schizogamy* and epigamy among its members. *Annals and Mag. Nat. Hist.*, April, 1902, p. 296.

Schizogenic cycle. See ⋆*cycle*^{1}.

schizogenous, *a.* **2.** Reproducing by schizogony or fission.

schizogonia (skiz-ō̤-gō′ni-ä̤), *n.* [NL., < Gr. σχίζειν, divide, + γόνος, generation.] Reproduction by successive cell-division; schizogony.

schizogonic (skiz-ō̤-gon′ik), *a.* [*schizogon*(*y*) + *-ic*.] Pertaining to or exhibiting schizogony; schizogonous.

> In *Klossia Eberthi*, for example, both microgametes and spores are formed, but there is no *schizogonic* cycle, only a sporogonic. *Encyc. Brit.*, XXXII. 816.

schizogonous (skī-zog′ō̤-nus), *a.* Same as ⋆*schizogonic*.

schizogony, *n.* **2.** Self-mutilation; autotomy.

> A constriction somewhat similar to that which occurs in Linckia before *schizogony* of the arm takes place. *Proc. Zool. Soc. London*, 1900, p. 289.

Schizogregarinæ (skiz-ō̤-greg-a-rī′nē), *n. pl.* [Gr. σχίζειν, divide, + NL. *Gregarinæ*.] A group of *Gregarinida* in which schizogonic reproduction takes place during the extracellular phase of the trophozoite, in addition to the ordinary sporogony. Compare ⋆*Amœbosporidia*.

schizolite (skiz′ō̤-līt), *n.* [Gr. σχίζειν, cleave, split, + λίθος, stone.] A silicate of manganese, calcium, and sodium, occurring in prismatic, triclinic crystals of a pink to brown color. It is related to pectolite in form and composition. Found in south Greenland.

schizolytic (skiz-ō̤-lit′ik), *a.* [Gr. σχίζειν, cleave, split, + λυτικός, < λύσις, dissolution.] In *biol.*, forming any organ or reproductive body by simple division or fission.

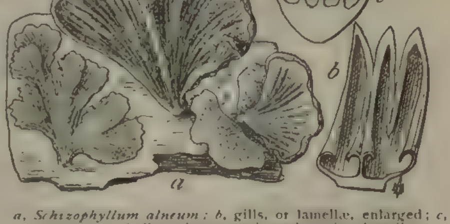
> The separation of the gemmae is by a *schizolytic* process. *Bulletin Torrey Bot. Club*, XXXI. 206.

schizomycetic (skiz″ō̤-mī-sē′tik), *a.* [*Schizomycetes* + *-ic*.] Of or pertaining to the *Schizomycetes* or bacteria. *Lancet*, July 11, 1903, p. 104.

schizont (skiz′ont), *n.* [Gr. σχίζων (σχιζοντ-), ppr. of σχίζειν, cleave, split: see *schism*.] In some sporozoans, an asexual reproductive body in which spores are formed by the internal division of the contained protoplasm into few or many gymnospores. *Proc. Roy. Soc.* (London), 1902, I. 74.

Schizopetalon (skiz-ō̤-pet′a̤-lon), *n.* [NL. (Sims, 1823), < Gr. σχίζειν, cleave, + πέταλον, leaf, petal.] A small genus of Chilian cruciferous herbs with laciniate purple or white petals. One of them, *S. Walkeri*, is grown as a flower-garden annual. It reaches a height of one or two feet and bears sessile sinuate or entire leaves and many fragrant white flowers.

Schizophyllum (skiz-ō̤-fil′um), *n.* [NL. (Fries, 1821), < Gr. σχίζειν, split, + φύλλον, leaf, in allusion to the split lamellæ.] A small genus of agaricaceous fungi, having the pileus coriaceous and the lamellæ split and revolute. A dozen or more species have been



a, *Schizophyllum alneum*; *b*, gills, or lamellæ, enlarged; *c*, cross-section of pileus showing split and revolute lamellæ.

described, most of which are probably mere forms of one or two polymorphic species. The plants are very common and cosmopolitan, occurring on dead wood. *S. alneum* is the type of the genus and the most common form.

Schizophyta (skiz-ọ̄-fī'tạ̈), *n. pl.* [NL., < Gr. *σχίζειν*, cleave, split, + *φυτόν*, plant.] A subdivision of the *Thallophyta*, including the *Schizophyceæ*, or blue-green algæ, and the *Schizomycetes*, or bacteria.

schizorhiny (skiz-ọ̄-rī'ni), *n.* [*schizorhin*(*al*) + *-y*³.] The fact or condition, found in certain groups of birds, of having a schizorhinal palate. *Proc. Zool. Soc. London*, 1901, p. 592.

schizospore (skiz'ọ̄-spōr), *n.* [Gr. *σχίζειν*, cleave, split, + *σπορά*, seed (spore).] A nonsexual spore formed by division in the *Chamæsiphonaceæ*, a family of blue-green algæ: same as the *conidiospore* of some authors.

schizotarsian (skiz-ọ̄-tär'si-ạn), *a.* Of or pertaining to the *Schizotarsia*.

schizotrichia (skiz-ọ̄-trik'i-ạ̈), *n.* [NL., < Gr. *σχίζειν*, cleave, split, + *θρίξ* (*τριχ-*), hair.] Splitting of hairs at their ends.

schizozoite (skiz-ọ̄-zō'īt), *n.* [Gr. *σχίζειν*, divide, + E. *zoite*.] A phase or form of an animal resulting from an asexual method of reproduction, as by fission or gemmation, as in some worms.

> Development of Metameres in Salmacina dysteri.— A. Malaquin has studied the development of the sexually produced larva ("oozoite") of this Serpulid, and compares it with what he has previously observed in the asexually produced form ("*schizozoite*").
> *Jour. Roy. Micros. Soc.*, Oct., 1903, p. 613.

Schleich's anesthetic mixture. See ★*anesthetic*.

schlempe (shlem'pẹ), *n.* [G.] Still-wash, the liquid residue left from distilling off alcohol from a fermented liquid. The name is especially applied to this residue from the distillation of fermented beet-root molasses, which is a valuable source of potash salts, principally potassium carbonate. The corresponding French term is *vinasse:* both words have been to a certain extent adopted into English. *Sadtler*, Handbook of Indust. Chem., p. 230.

schlempekohle (shlem'pe-kō-lẹ), *n.* [G., < *schlempe*, still-wash, + *kohle*, coal.] A black, porous mass obtained by evaporating schlempe to dryness and heating the residue until the organic matter present is charred. By leaching this mass with water the potash salts are dissolved out. See ★*schlempe*.

schlicker (shlik'ėr), *n.* [G.] The skimmings from molten unrefined lead, containing chiefly copper, iron, and zinc, with a little antimony and arsenic.

schlieren (shlē'ren), *n. pl.* [G. *schlieren*, prop. pl. of G. dial. *schlier* (OHG. *sclierro*, MHG. *schliere*), a boil.] In *petrog.*, streaks or irregularly shaped portions of an igneous rock which differ in texture or composition from the main mass.

> The figure shows a curious banded concretionary structure in deeper shades resembling the landscape marble from Cotham in England. It is a distinct *schlieren* structure in a sedimentary rock, as if a heavier layer had settled upon a lighter, and the latter had at stated points risen up into the former. The lines of flow marked by a delicate banding, and expanded outwardly into a fan structure. *Amer. Geol.*, Feb., 1905, p. 98.

schlieric (shlē'rik), *a.* [G. *schlier*(*en*) + *-ic*.] In *petrog.*, having the properties of schlieren. Schlieric texture is a streaked heterogeneous texture in which different parts of the rock exhibit differences in mineral composition accompanied or not by textural differences.

schlitte (shlit'ẹ), *n.* [G. dial. *schlitte*, G. *schlitten*, a sled, sledge, OHG. *slito*, m., *slita*, f., < *slītan*, G. *schleiten* = E. *slide*.] A Swiss form of small coasting sled, steered by hand with short, iron-pointed sticks. *Sci. Amer. Supp.*, April 15, 1905, p. 24488.

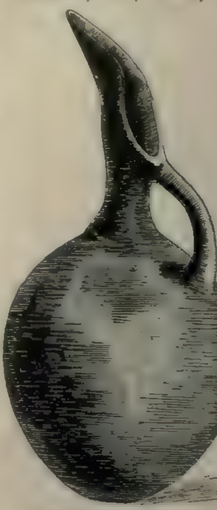
schloss (shlos), *n.* [G., a lock, castle, in OHG. *sloz* (= D. *slot*, etc.), a bolt, lock, castle, < *sliozan*, G. *schliessen*, shut, lock: see *slot*¹.] In German, a castle or manor-house: a term equivalent to the French *château*.

schmalzöl (shmälts'ėl), *n.* [G., < *schmalz*, lard, + *öl*, oil.] Literally, lard-oil: a term used as a trade-name for refined rape-seed oil, prepared for table use as salad-oil by treatment for the removal of a somewhat acrid taste. *Groves and Thorp*, Chem. Technol., II. 28.

schmeltz, *n.* See *schmelze*.

schnabelkanne (shnä'bel-kän-e), *n.* [G., < *schnabel*, bill, beak, + *kanne*, jug, can.] A jug or pitcher with the spout in the form of a tube: used in Greco-Roman archæology for vessels of a peculiar form found in great abundance among Mycenæan and later Greco-Roman work.

> A certain form of beaked jug, called by German archæologists *schnabelkanne*, is characteristic of the whole area from before the first introduction of the potter's wheel to the end of the period.
> *Encyc. Brit.*, XXXI. 56.



Schnabelkanne (Trojan).

schnapper (shnap'ėr), *n.* [Prop. *snapper*, the spelling *schnapper* having appar. arisen out of a notion that the word is Dutch or German. But the D. word would be ★*snapper* (compare D. *snaper*, the hornback, a fish), and the G. *schnapper* is not applied to a fish.] A fish, *Pagrus unicolor*, abundant in all Australasian waters and similar to the red porgy of the Mediterranean, and the red tai of Japan. *E. E. Morris*, Austral English.—**Cock schnapper,** the young of the Australian schnapper.—**School schnapper,** a name given to the schnapper when it begins to school.

schneider (shnī'dėr), *n.* [G., cutter, tailor, one who gets the worst, as in a game; < *schneiden*, cut.] A German equivalent for *lurch*, applied to the adversaries of the single player (*a*) in *skat*, when they fail to reach 30, and (*b*) in *sixty-six*, when they fail to make 33. *Double schneider* is the same as ★*schwarz*, 2.

schneller (shnel'ėr), *n.* [G., a jerker, lever, picker, < *schnellen*, jerk, let go, < *schnell*, quick, = E. *snell*.] In *music*, a term sometimes used for ★*pralltriller*, when the embellishment occurs with notes that are detached, not in a descending series.

schnorrer (shnōr'ėr), *n.* [Yiddish, < G. *schnurren*, to hum. It is said that wandering beggars used to play a trifling musical instrument called *schnurrpfeife*, 'humming pipe,' which produced a buzzing sound: hence the name.] Among German Jews, a beggar; a tramp.

schola cantorum (skō'lạ̈ kan-tō'rum). [L., 'school of singers.'] In *medieval music*, either the choir or chapel of a cathedral or monastery, or a choir-school attached to such an establishment; specifically, the Papal Choir at Rome.

scholasticate (skọ̄-las'ti-kāt), *n.* A house in which advanced courses in philosophy, theology, and science are given to candidates for the priesthood in the Jesuit Order.

schönite, *n.* See *schœnite*.

school¹, *n.*—**Ambulatory school.** See ★*ambulatory*.—**Austrian school,** in *polit. econ.*, a group of economists of whom the Austrian writers, Menger, Wieser, Sax, and Böhm von Bawerk, are the most prominent. The essential characteristic of the school is the explanation of the phenomena of valuation by the theory of "final utility."—**Barbazon** or (properly) **Barbison school,** the group of French landscape-painters, classed as realists, who from about the middle of the nineteenth century made their home in Barbison and other villages near Fontainebleau. The group includes Théodore Rousseau, Millet, Corot, Daubigny, Jules Dupré, Diaz, Troyon, and others.—**Classical school,** in *polit. econ.*, a group of writers of the early part of the nineteenth century including Ricardo, Malthus, J. B. Say, M'Culloch, James Mill, and minor writers. The underlying philosophy of the school was utilitarianism and the method employed was deductive. Also called the *orthodox school* or the *Ricardian school*.—**Dynamic school.** (*a*) In *sociol.*, a group of writers who teach the possibility of improving society by human effort directed by scientific knowledge, in opposition to those who doubt man's ability to hasten the processes of natural evolution. (*b*) A medical sect, followers of Stahl, so called because of the doctrine that all vital phenomena proceed from the action of an internal force. See *animism*, 2.—**Free school,** a school in which tuition fees are not charged. Specifically:—(*a*) A charity-school. (*b*) A school maintained in a community by taxes levied for the purpose.—**Historical school.** (*b*) In *polit. econ.*, a group of economists who emphasize the interdependence of economic, social, political, and legal phenomena, and who maintain that the economic condition of a nation can be understood only through a historical study of the institutional development of that nation. The earliest prominent representatives of the historical school were the German writers Wilhelm Roscher, Bruno Hildebrand, and Karl Knies. The historical school became predominant in German economics in the last half of the nineteenth century and profoundly influenced economic thought throughout the world.—**Latin school,** a school in which the pupils are instructed especially in Latin and Greek, in preparation for a college or university.—**Médan school,** a group of realistic writers who advocated a laborious reproduction of life in its most material features. Zola was the most noted of this school. *M. V. M. Crawford*, Studies in Foreign Literature, p. 64.—**National school.** (*b*) A school of political economy which represents a reaction against the laisser-faire doctrines and the cosmopolitanism of the classical economists. Writers of the national school regard state encouragement of industry, in the form of protective tariffs, bounties, etc., as essential to the development of the latent resources of a country. Friedrich List and Henry C. Carey were the most prominent writers of this school.—**Neapolitan school of painting.** See ★*naturalisti*.—**Norwich school of painting.** See ★*painting*.—**Pisan school of sculpture,** the small but influential coterie of sculptors which was formed in Pisa, Italy, in the thirteenth century. Its chief masters were Niccolò da Pisa, and his son Giovanni. It was much influenced by certain antique remains now in the Campo Santo at Pisa.—**Secondary school,** a school between the primary school and the college, university, or technological school.

> The *secondary school* course is normally four years in length. . . . The conditions prescribed by the colleges for admission to their courses affect powerfully both the *secondary school* programme and the methods of teaching.
> *Encyc. Brit.*, XXVII. 681.

> The school which seeks to retain its pupil to the age of sixteen or seventeen, and to prepare him to enter a skilled trade or one of the minor professions, is a *secondary* or intermediate *school*. *Encyc. Brit.*, XXVII. 663.

Staticokinetic school, in *sociol.*, those writers who merely try to explain society, without attempting to direct human progress by means of scientific knowledge.—**Tapestry school.** See the extract.

> Miss . works in all the stock effects of the *tapestry school*, reveling particularly in great splotches of red color. Helvin's hair is blood red. Brynhild's and Randvar's locks are gold red, the villain — a polished person who has learned his manners in France — wears slashed garments of red Spanish leather; when there is a fight blood flows redly from the rents in the garments of the combatants, the wine is red in the cups, and the campfire blazes red against the dark trees of the forest primeval. *N. Y. Times*, Sat. Rev., Feb. 24, 1906, p. 112.

Vested school, in Ireland, a school the control of which is vested in commissioners.

school-fish, *n.* **3.** A collective name for codfish which inhabit the open sea. *Stand. Dict.*

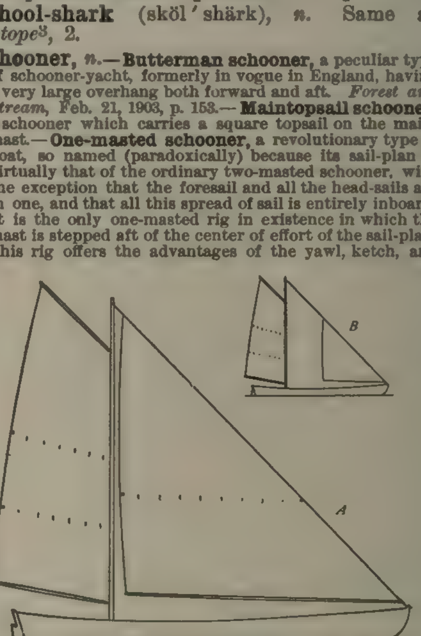
school-land (sköl'land), *n.* A portion of government land which is appropriated for the use or support of schools, as for an agricultural school.

schoolmaster, *n.* **2.** A common name of *Lutianus apodus*, a fish of the family *Lutianidæ*, found in the West Indies.

school-section (sköl'sek″shọn), *n.* A section of the public land devoted to the support of the public schools. [Western U. S.]

school-shark (sköl'shärk), *n.* Same as ★*tope*³, 2.

schooner, *n.*—**Butterman schooner,** a peculiar type of schooner-yacht, formerly in vogue in England, having a very large overhang both forward and aft. *Forest and Stream*, Feb. 21, 1903, p. 153.—**Maintopsail schooner,** a schooner which carries a square topsail on the mainmast.—**One-masted schooner,** a revolutionary type of boat, so named (paradoxically) because its sail-plan is virtually that of the ordinary two-masted schooner, with the exception that the foresail and all the head-sails are in one, and that all this spread of sail is entirely inboard. It is the only one-masted rig in existence in which the mast is stepped aft of the center of effort of the sail-plan. This rig offers the advantages of the yawl, ketch, and regular schooner, inasmuch as by simply lowering the jib the boat will lay head to wind; also that by having one mast instead of two there is saving of weight aloft and a natural increase of stability, while the large jib exerts a tremendous lifting power. The absence of a mast in the forward part of the boat increases her buoyancy and life in a seaway, and permits her to rise readily to a head sea. By reefing the jib, the balance of the sail-plan is not impaired, but leaves it like that of an ordinary two-



One-masted Schooner.
A, full sail; *B*, jib reefed.

masted schooner under jib and mainsail. The high, narrow-headed mainsail is of special service in a heavy sea as it catches the wind which blows over the crests, and thus keeps steerageway on the boat. This type of vessel is generally known as the *Andrade one-masted schooner.*

schott (shot), *n.* [G. *schott*, prob. < D. *schot*, a payment: = E. *shot*^{2}.] **1.** One twenty-fourth of a mark, gold and silver weight, at Danzig. —2. An early Prussian silver coin.

schraufite (shrouf'īt), *n.* [Named after Prof. A. *Schrauf*, an Austrian mineralogist (died 1897).] A native mineral resin of a deep-red color which occurs in the sandstone of Wamma, Bukowina.

Schroeder's figure, Schroeder's stair figure. See ★*figure.*

Schroeter's valley. See ★*valley.*

schungite (shöng'gīt), *n.* [*Schunga* (see def.) + *-ite*^{2}.] Amorphous carbon, intermediate between graphite and anthracite. It occurs in phyllite near Schunga, Russia.

Schuylkill cat. See ★*cat*^{1}.

Schwann cell. See ★*cell.*

schware (shvä're), *n.*; pl. *schwaren* (-ren). [LG. *schware*, < *schwar*, G. *schwer*, heavy.] **1.** Copper currency of Bremen in the eighteenth and nineteenth centuries, equal to one fifth of a groat.—**2.** A subsidiary coin of Oldenburg, one twelfth of a silver groschen; equivalent to one fifth of a United States cent.

schwarz (shvärts), *n.* [G. *schwarz*, black.] **1.** A coin of the Hanse Towns, equal to one fifth of a groat.—**2.** A double lurch or double schneider. In *skat*, if the adversaries of the single player fail to make a point, they are *schwarz.* In *sixty-six*, if a player fails to win a trick, he is *schwarz.* See ★*schneider.*

> If, however, he fails to make 61 points, he loses the game; if his opponent make 90 points, he is Schneider; or if he makes no points at all, he is *Schwarz*, and he pays each of his opponents (silent players included, if any) the value of his game, increased, as the case may be, by the additional payment for Schneider or *Schwarz.*
> *Amer. Hoyle*, p. 266.

schwegel (shvā'gel), *n.* [G., in OHG. *swegala*, a flute.] 1. An old form of pipe or flageolet. —**2.** In *organ-building*, a flue-pipe.

sci. An abbreviation (*a*) of *science*; (*b*) of *scientific.*

Sciadeichthys (sī-ad-ẹ̄-ik'this), *n.* [NL., < *Sciades*, a related genus, + Gr. ἰχθύς, fish.] A genus of marine catfishes found in tropical American waters.

sciænid (sī-ē'nid), *n.* A fish of the family *Sciænidæ.*

Sciænops (sī-ē'nops), *n.* [NL., < Gr. σκίαινα, a sea-fish (see *Sciæna*), + ὤψ, eye, face, appearance.] A genus of sciænoid fishes found on the South Atlantic and Gulf coast of the United States.

sciagram (sī'a̤-gram), *n.* [Gr. σκιά, shadow, + γράμμα, writing.] Same as ★*radiogram* or *radiograph*, 2. Also *skiagram.*

> The *skiagram* showed that there was a very great deficiency in the lime salts. *Lancet*, July 4, 1903, p. 32.

sciagrammatic (sī"a̤-gra-mat'ik), *a.* Pertaining to, of the nature of, or recorded by means of, a sciagram. Also *skiagrammatic.*

sciagrammatically (sī"a̤-gra-mat'i-kạl-i), *adv.* By means of a sciagram or of sciagraphy. Also *skiagrammatically.*

sciagraph, *n.* **2.** A photograph taken with the X-rays. See ★*ray*^{1}. Also *skiagraph.*

> When taking a *skiagraph* of the lungs the plate will not be marred as the result of movement of the ribs and lung and diaphragm, which is always the case when long exposures are made.
> *Amer. X-Ray Jour.*, Feb., 1903, p. 43.

sciagraph (sī'a̤-gråf), *v. t.* [*sciagraph, n.*] To take a sciagraph or radiograph of. Also *skiagraph.*

> The time of exposure depends largely upon the size and character of the apparatus employed, the degree of vacuum of the tube, and the thickness of the part to be *skiagraphed.* *Amer. X-Ray Jour.*, Feb., 1903, p. 41.

sciagraphic (sī-a̤-graf'ik), *a.* [*sciagraph*(*y*) + *-ic.*] Pertaining to or of the nature of sciagraphy; obtained by means of sciagraphy. Also *skiagraphic.*

sciagraphy, *n.* **4.** Photography by means of the Röntgen rays or other forms of radioactivity. Also *skiagraphy.*

> Many of the "old timers" refuse at first to believe that such a thing as instantaneous *skiagraphy* is possible, and become converted only after seeing for themselves.
> *Amer. X-Ray Jour.*, Feb., 1903, p. 41.

sciametry (sī-am'e-tri), *n.* [Gr. σκιά, shadow, + -μετρια, < μέτρον, measure.] Same as *skiascopy.* *Optical Jour.*, June 16, 1904, p. 42.

Sciara army-worm. See ★*army-worm.*

sciascope (sī'a̤-skōp), *n.* The ophthalmoscopic mirror employed in the shadow-test. See *skiascopy.*

sciascopic (sī-a̤-skop'ik), *a.* Of or pertaining to sciascopy. Also *skiascopic.*

> To make a *skiascopic* chimney for an argand burner, take a piece of tin about four inches square; with a small carpenter's chisel cut a circular hole out of it about two inches in diameter. *Optical Jour.*, Dec., 1903, p. 782.

science, *n.*—**Concrete science,** a science, not of laws of nature and their possible results, but descriptive and explanatory either of the kinds of objects (as in chemistry) or of the individual objects (as in astronomy) whose existence or potential existence (as in the case of a salt not hitherto made but which certainly might be made) has hitherto been revealed to us by experience. The term was introduced by Comte, along with *abstract science.* Spencer added an intermediate division, *abstract-concrete science.*—**Domestic science,** the applications of science (physics, chemistry, biology, hygiene, etc.) to household or domestic economy.—**Mental science.** (*a*) The science of mind; psychology. (*b*) A so-called system of healing, which aims at a cure of all physical ailments by educating the mind of the patient in certain directions. The mind is supposed to be trained to exclude every idea of the existence of any real discomfort, on the ground that all such discomfort is the result of abnormal mental conditions; the mind being properly trained to ignore the body, no discomfort exists, since the mind does not admit it. The system has many variations, but in general is, evidently, a form of mind-cure or faith-cure.—**Nautical science,** the arts of seamanship and navigation, to which may be added ship-designing, marine engineering, and naval gunnery.

scienter (sī-en'tėr), *n.* [L., *adv.*, knowingly, with knowledge.] In *law*, the clause in a complaint or indictment charging that the defendant has knowledge which renders him responsible or guilty; also, the fact that the defendant has such knowledge.

scientist, *n.*—**Christian Scientist.** See ★*Christian.*

scieropia (sī-ẹ-rō'pi-a̤), *n.* [NL., < Gr. σκιερός, shady (< σκιά, shadow), + ὤψ, eye.] A pathological condition in which objects seen appear to be in a shadow.

sciffarine (sif'a̤-rin), *n.* A trade-name of a plastic material, made of sawdust, hemp-fiber, starch, glue, and a mineral filler, intended for use in finishing interior walls of houses, filling spaces between joists, etc.

scillain (sil'a̤-in), *n.* [L. *scilla*, squill, + *-in*^{2}.] A bitter, poisonous, amorphous glucoside found in squills, *Urginea maritima.* It is hydrolyzed by acids into sugar and a resin. Its physiological action is similar to that of digitalin.

scillin (sil'in), *n.* [L. *scilla*, squill, + *-in*^{2}.] A light-yellow crystalline glucoside found in squills, *Urginea maritima.*

scillipicrin (sil-i-pik'rin), *n.* [L. *scilla*, squill, + Gr. πικρός, bitter, + *-in*^{2}.] A yellowish-white hygroscopic, pulverulent glucoside contained in squills.

Scillitan (sil'i-ta̤n), *a.* Of or pertaining to Scillium, a town in Numidia. See the extract.

> The recovery in their original form of the Acts of the *Scillitan* Martyrs has given us the earliest documents of the Church of Africa and, it would seem, the earliest specimen of Christian Latin. The martyrs take their name from Scilla (or Scillium), a town in Numidia.
> *Encyc. Brit.*, XXXII. 462.

scillitin (sil'i-tin), *n.* [L. *scilla*, squill, + *-it-* + *-in*^{2}.] A bitter compound found in squills, *Urginea maritima.* It is a diuretic used in certain forms of dropsy.

scillitoxin (sil-i-tok'sin), *n.* [L. *scilla*, squill, + E. *toxin.*] A light-brown amorphous glucoside found in squills. It is a cardiac poison, its action being similar to that of digitalin.

scind (sind), *v. t.* [L. *scindere*, cut.] To cut; cleave; separate. [Rare.]

> That which is false cannot be good, nor can it be beautiful. That which is beautiful must be true and good. It is impossible to *scind* these distinct aspects of perfection. The philosopher seeking truth errs if he attempts to oppose what is certain to what is goodly.
> *Baring-Gould*, Origin and Development of Religious [Belief, II. 37.

scintillescent (sin-ti-les'ẹnt), *a.* [See *scintillate.*] Scintillating; twinkling; having a tremulous motion to the eye.

> The moon,
> Bright, breathless, and buoyant, and brimful of June,
> . . . .
> Poised herself loose in mid-heaven, with one pale,
> Minute, *scintillescent*, and tremulous star
> Swinging under her globe like a wizard-lit car.
> *Owen Meredith*, Lucile, II. iii. 12.

scintilloscope (sin-til'ọ-skōp), *n.* [L. *scintilla*, spark, + Gr. σκοπεῖν, view.] An apparatus devised by F. H. Glew for detecting the effect of radioactive substances on polonium screens or other screens. A modification of the ★spinthariscope (which see).

> The little instrument, which is called the "*Scintilloscope*," consists of a simple magnifier of adjustable focus, as in the spinthariscope, but instead of the fixed screen and particle of radio-active substance a small double plate of glass is used. One of these pieces of glass is coated with a radio-active salt, and the other is a radio-sensitive screen. Upon looking at a combination of this kind with the lens the sparkling appearance is very clearly seen.
> *Nature*, Sept. 29, 1904, p. 535.

sciophilous (sī-of'i-lus), *a.* [Gr. σκιά, shade, shadow, + φιλειν, love, + *-ous.*] In *phytogeog.*, shade-loving; adapted to live in shade. *Pound and Clements.*

sciophyte (sī'ọ-fīt), *n.* [Gr. σκιά, shade, + φυτόν, plant.] In *phytogeog.*, a shade-loving plant.

Scipionism (sip'i-ō-nizm), *n.* [L. *Scipio* (*Scipion-*) + *-ism.*] The distinctive character of Scipio. [Rare.]

> Every great man is a unique. The *Scipionism* of Scipio is precisely that part he could not borrow.
> *Emerson*, Self-reliance, Essays, 1st ser., p. 82.

scirrhoma (si-rō'mä), *n.*; pl. *scirrhomata* (-ma̤-tä̤). [NL., < Gr. σκίρρος, a tumor, + *-oma.*] Same as *scirrhus.*

scirtopodous (sėr-top'ọ-dus), *a.* Pertaining to or characteristic of the *Scirtopoda.*

scissor-leg (siz'o̤r-leg), *n.* A deformity consisting in adduction of both hips, the legs crossing each other.

scissors, *n. pl.*—**De Wecker's scissors,** small surgical scissors the blades of which are opened and closed by pressure on two steel springs united at one extremity like the blades of a pair of tweezers: used in operations on the eyeball.

scissors-telescope (siz'o̤rz-tel"e-skōp), *n.* A stereotelescope the interobjective distance of which can be varied by rotation of the arms about a joint so situated with reference to the eyepieces that the interocular distance remains constant.

sciuromorphine (sī-ū-rọ-môr'fin), *a.* [*sciuromorph* + *-ine.*] Same as *sciuromorphic.* *Proc. Zool. Soc. London*, 1896, p. 187.

sclaff (sklåf), *v.* [Also *sklaff*; imitative. Compare *baff* and *slap.*] To strike with the open hand or with anything flat; specifically, in *golf*, nearly the same as *baff.* See the extract. [Scotch.]

> The distinction between the two words is somewhat subtle. In baffing a ball the stroke is played with the intention of lofting it high in the air, whereas a *sclaffed* ball is not necessarily lofted high.
> *W. Park, Jr.*, Game of Golf, p. 269.

sclaffy (sklåf'i), *a.* [*sclaff* + *-y*^{1}.] In *golf*, applied to a stroke when the ball is not taken clean but is struck only after the club has plowed through the ground behind it. *W. Park, Jr.*, Game of Golf, p. 91.

sclera, *n.* **2.** The test of the crustaceans, especially those parts of the test which separate the corneal lenses in aggregated schizochroal eyes.

sclereid (sklē'rẹ̄-id), *n.* [Gr. σκληρός, hard, + *-e-* + *-id*^{2}.] In *bot.*, a hardened and thickened cell; a lignified cell or stone-cell. See *sclerotic parenchyma*, under *sclerotic.*

sclerite, *n.* (*d*) One of the elements which by union or coalescence form the skeleton of a coral.

> At the base of the polyp between each pair of mesenteries, the infolded ectoderm secretes small, round, oval or irregular calcareous bodies (*sclerites*); these are opposed against one another in radial directions, and as others are successively laid down on the top of them, upright partitions or septa (Sternleisten, cloisons) are built up. *Zittel* (trans.), Text-book of Paleon., I. 69.

sclero-adipose (sklē-rọ-ad'i-pōs), *a.* [Gr. σκληρός, hard, + E. *adipose.*] Both fibrous and fatty; composed of a mixture of these two structures.

> There is deposited around the cæcum a thick and resistant *sclero-adipose* mass which gives the impression of a neoplasm. *Jour. Exper. Med.*, Nov. 29, 1901, p. 38.

sclero-anthin (sklē-rọ-an'thin), *n.* [Gr. σκληρός, hard, + ἄνθος, flower, + *-in*^{2}.] A little-known compound said to be present in ergot.

sclerocauly (sklē'rọ-kâ-li), *n.* [Gr. σκληρός, hard, + καυλός, stem, + *-y*^{3}.] In *phytogeog.*, the character exhibited by plant stems which, in response to conditions of physiological dryness, have become slender, hard, and dry as in *Ephedra* and *Spartium.* *A. F. W. Schimper.*

sclerochoroiditis (sklē-rọ-kō-roi-dī'tis), *n.* [NL., < Gr. σκληρός, hard, + NL. *choroides* + *-itis.*] Inflammation of both the sclerotica and the choroid.

sclerocornea (sklē-rọ-kôr'nẹ̄-ä), *n.* [NL., < Gr. σκληρός, hard, + NL. *cornea.*] The sclerotica and cornea considered together.

sclerocrystalline (sklē-rọ-kris'ta-lin), *n.* [Gr. σκληρός, hard, + κρυστάλλινος, of crystal.] A colorless crystalline compound found in ergot of rye, from which it is extracted by ether.

sclerodactylia (sklē"rọ-dak-til'i-a̤), *n.* [NL.,

‹ Gr. σκληρός, hard, + δάκτυλος, finger.] A condition of atrophy and deformity of the fingers, with thickening and hardening of the skin which covers them.

Scleroderma^3 (sklē-rọ-dėr′mä̤), *n.* [NL. (Persoon, 1801), ‹ Gr. σκληρός, hard, + δέρμα, skin.] A genus of gasteromycetous fungi having the peridium simple and coriaceous, rupturing irregularly and the gleba divided by irregular partitions. *S. verrucosum* is a common and widely distributed species occurring in grassy places.

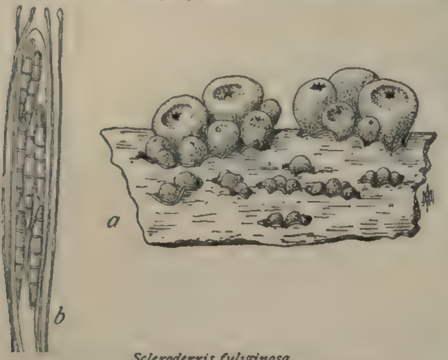
Sclerodermataceæ (sklē-rọ-dėr-mạ-tā′sẹ-ē), *n. pl.* [NL., ‹ *Scleroderma*^{3} (*Sclerodermat-*) + *-aceæ.*] A small family of gasteromycetous fungi, so named from the genus *Scleroderma* and including the common thick-skinned puffballs.

sclerodermatitis (sklē-rọ-dėr-mạ-tī′tis), *n.* [NL., ‹ Gr. σκληρός, hard, + δέρμα(τ-), skin, + *-itis.*] Inflammation of the skin with hardening of the cutaneous and subcutaneous tissues.

> Hence the results of the treatment in this case are very suggestive that in some cases at least *sclerodermatitis* is rheumatic in origin. *Med. Record*, Feb. 7, 1903, p. 228.

sclerodermite, *n.* **2.** In the corals, one of the calcareous elements occurring detached in the ectoderm and mesoderm or forming compact tubes which are periodically partitioned off into stories with the upward growth of the animal.

Scleroderris (sklē-rọ-der′is), *n.* [NL. (Persoon, 1822), ‹ Gr. σκληρός, hard, + δέρρις, a leather covering.] A genus of discomycetous fungi having coriaceous ascocarps arising from a stroma seated beneath the surface of the substratum. At first they are subglobose and closed, but finally the covering ruptures and exposes the disk. The spores are hyaline, elongate, and 4 to 8-celled. Over 25 species are known, mostly saprophytic on trunks and branches. *S. fuliginosa* is said to be parasitic on twigs and branches of willows in Europe and North America.



Scleroderris fuliginosa.
a, immature ascocarps: *b*, ascus containing spores and accompanied by paraphyses.

sclero-erythrin (sklē″rọ-e-rith′rin), *n.* [Gr. σκληρός, hard, + ἐρυθρός, red, + *-in*^{2}.] A red coloring-matter found in ergot of rye.

sclerogenic (sklē-rọ-jen′ik), *a.* [Gr. σκληρός, hard, + -γενης, -producing, + *-ic.*] Same as *sclerogenous*^{1}.

sclerogummatous (sklē-rọ-gum′ạ-tus), *a.* [Gr. σκληρός, hard, + E. *gummatous.*] Both fibrous and gummatous.

> Next in importance in syphilitic cardiac affections comes *sclerogummatous* arteritis. This is sooner or later complicated by insufficiency of the aortic valves and aortic aneurysm. *Med. Record*, Feb. 7, 1903, p. 229.

sclero-iodin (sklē-rọ-ī′ọ-din), *n.* [Gr. σκληρός, hard, + ἰώδης, like a violet, + *-in*^{2}.] A coloring-matter found in ergot of rye.

sclerokeratitis (sklē-rọ-ker-ạ-tī′tis), *n.* [NL., ‹ Gr. σκληρός, hard, + κέρας (κερατ-), horn, + *-itis.*] Inflammation of both the sclerotica and the cornea.

> Sandford says in the British Medical Journal of November 1, 1902, that by the term *sclerokeratitis* he means an inflammatory cellular infiltration of the fibrous tissue of the sclerotic coat, extending more or less into the substantia propria of the cornea.
> *Therapeutic Gazette*, Feb. 15, 1903, p. 115.

scleromere (sklē′rọ-mēr), *n.* [Gr. σκληρός, hard, + μέρος, part.] A primitive segment from which an osseous structure is developed: distinguished from a *myomere* or primitive muscular element. *H. Gadow*, in Philos. Trans. Roy. Soc. (London), 1896, ser. B, p. 12.

sclero-optic (sklē-rọ-op′tik), *a.* Relating to both the sclerotica and the optic nerve. *Buck*, Med. Handbook, I. 557.

sclerophyllous (sklẹ-rof′i-lus), *a.* [Gr. σκληρός, hard, + φύλλον, leaf, + *-ous.*] In *phytogeog.*, having coriaceous leaves: said of vegetation; favorable to vegetation with such leaves: said of conditions. Sclerophyllous plants are found in all xerophytic formations, but are commonest in mild temperate regions with wet winters and dry summers. See ★*garrigue* and ★*maqui*^{2}.

sclerophylly (sklẹ-rof′i-li), *n.* [Gr. σκληρός, hard, + φύλλον, leaf, + *-y*^{3}.] In *phytogeog.*, the character presented by a type of foliage reduced in size, thickened, and hardened in response to conditions of physiological dryness. *A. F. W. Schimper.*

scleroprotein (sklē-rọ-prō′tẹ-in), *n.* [Gr. σκληρός, hard, + E. *protein.*] A term suggested to designate the albuminoids which occur widely distributed in the skeletal tissues of the animal organism. *Nature*, March 7, 1907, p. 439.

sclerosarcoma (sklē″rọ-sär-kō′mä̤), *n.*; pl. *sclerosarcomata* (-mạ-tä̤). [NL., ‹ Gr. σκληρός, hard, + σάρκωμα, sarcoma.] A hard fleshy growth, especially one on the gums.

sclerose (sklẹ-rōs′), *v.*; pret. and pp. *sclerosed*, ppr. *sclerosing.* [*sclerosis, n.*] **I.** *trans.* To cause sclerosis or hardening.

> *Sclerosing* disorders, such as chronic alcoholism.
> *Buck*, Med. Handbook, II. 496.

II. *intrans.* To become affected with sclerosis.

scleroseptum (sklē-rọ-sep′tum), *n.*; pl. *sclerosepta* (-tä̤). [NL., ‹ Gr. σκληρός, hard, + L. *septum*, partition.] One of the calcareous septa of a coral, contrasted with the fleshy mesenteries or sarcosepta.

sclerosis, *n.*—**Unicellular sclerosis,** invasion of a gland by fibrous bands passing between the individual cells.

> Lemoine and Lannois, as already noted, have studied pancreatitis in four cases of diabetes and have thought that the new growth of interstitial tissue has its seat of origin in the perivascular tissue whence fibrous processes extend between the parenchymatous structures. An important feature of the inflammatory change described by them is the penetration of fibrous strands into the acini, separating the cells and producing what they designate *unicellular sclerosis.*
> *Jour. Exper. Med.*, Jan. 15, 1901, p. 424.

Vascular sclerosis. Same as *arteriosclerosis.*

> Dehio examined fingers that had been amputated on account of Raynaud's disease and found in these endarteritis, endophlebitis and degenerated nerves, but he only had about 1 cm. of normal tissue above the gangrenous area for his investigation. He, too, was uncertain whether the *vascular sclerosis* preceded the gangrene or vice versa. *Jour. Exper. Med.*, Oct. 1, 1900, p. 106.

sclerostenosis (sklē″rọ-stẹ-nō′sis), *n.* In *pathol.*, the contraction and hardening of a structure.

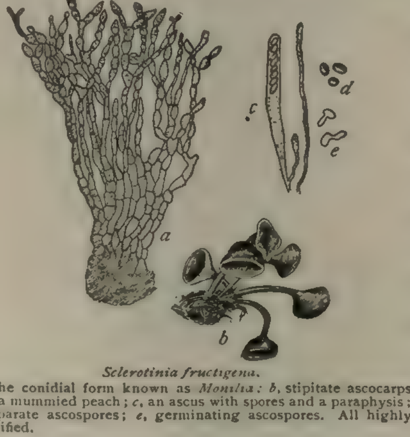
Sclerostoma, *n.* *Sclerostoma armatum* is a large palisade-worm (nematode) of horses: same as ★*Strongylus equinus.* *Sclerostoma tetracanthum*, or *Cylichnostomum tetracanthum* (Mehlis, 1831), is one of the smaller (9 to 12 millimeters long) nematode worms found in the cæcum and colon of horses.

Sclerotic plate, one of the series of thin plates of bone which surround the opening of the pupil of the eye and form the outer part of the eyeball in many birds, or, as in the owls, a deep bony box. See cut under *sclerotal.*

scleroticectomy (sklē-rot-i-sek′tọ-mi), *n.* [NL. *sclerotica* + Gr. ἐκτομή, excision.] Excision of a portion of the sclerotica.

scleroticotomy (sklē-rot-i-kot′ọ-mi), *n.* [NL. *sclerotica* + Gr. τομή, a cutting.] Incision through the sclerotica.

Sclerotinia (sklē-rọ-tin′i-ä̤), *n.* [NL. (Fückel).] **1.** A genus of discomycetous fungi having smooth-stalked, funnel or saucer-shaped ascocarps arising from sclerotia. The ascospores are unicellular and hyaline. Many of the species are parasitic on fruit of ericaceous plants. The conidial forms have been described as *Botrytis* and *Monilia.* *S. Fuckeliana*, the vine-sclerotinia, attacks various plants but especially the grape, destroying leaves, stems, and fruit. *S. Trifoliorum* attacks leaves and stems of clover and *S. fructigena* is the ascigerous form of the fruit-mold or Monilia of peaches and other fruits.



Sclerotinia fructigena.
a, the conidial form known as *Monilia*: *b*, stipitate ascocarps from a mummied peach; *c*, an ascus with spores and a paraphysis; *d*, separate ascospores; *e*, germinating ascospores. All highly magnified.

> Bees carry the spores of *Sclerotinia* as they do the pollen of the bilberries. *Encyc. Brit.*, XXXI. 575.

2. A fungus of the genus *Sclerotinia.*

Onion sclerotinia, *Sclerotinia bulborum*, a species which attacks the bulbs of onions and hyacinths. Its conidial stage belongs to the form-genus *Botrytis.*

sclerotinial (sklē-rọ-tin′i-ạl), *a.* [NL. *Sclerotinia* + *-al*^{1}.] Pertaining to or caused by fungi belonging to the genus *Sclerotinia.*

> De Bary's pioneer paper on Sclerotinia and *sclerotinial* diseases. *Science*, April 18, 1902, p. 607.

sclerotioid (sklẹ-rō′ti-oid), *a.* [NL. *sclerotî(um)* + *-oid.*] Resembling or pertaining to a sclerotium. Also *sclerotoid.*

sclerotium-disease (sklẹ-rō′shi-um-di-zēz″), *n.* Any parasitic disease of plants due to fungi of the genus *Sclerotinia.*

sclerotized, *a.* (*b*) In *pathol.*, same as *sclerosed.*

sclerotoid (sklē′rọ-toid), *a.* Same as ★*sclerotioid.*

sclerotome, *n.* **3.** That portion of the metamerically segmented mesoderm of the vertebrate embryo which gives rise to the sustentacular or supporting structures, such as the bony, cartilaginous, and connective-tissue skeleton.

scleroxanthin (sklē-rọ-zan′thin), *n.* [Gr. σκληρός, hard, + ξανθός, yellow, + *-in*^{2}.] A yellow crystalline compound extracted by ether from ergot of rye.

sclerozone (sklē′rọ-zōn), *n.* [Gr. σκληρός, hard, + ζώνη, a girdle.] One of the bony girdles, or series of bones, to which the limbs are attached; the shoulder girdle and pelvic girdle. [Rare.]

scob (skob), *n.* [Cf. *scobs.*] A fault, in weaving, caused by the entanglement of a broken warp-thread in the shed through which the weft passes. *R. Marsden*, Cotton Weaving, p. 481.

scobicular (skọ-bik′ụ-lär), *a.* Same as *scobiform.* Also *scobiculate.*

scobiculate (skọ-bik′ụ-lāt), *a.* Same as ★*scobicular.*

scodella (skọ-del′ä̤), *n.* [It. *scodella*, ‹ L. *scutella*, a shallow vessel, a waiter. See *scuttle.*] A majolica vessel in the form of a shallow bowl on a footed stem. Also *scudella.* See *tazza*, 1.

scof, *n.* and *v.* A simplified spelling of *scoff.*

scoff, *n.* **3.** Food; "grub." [Slang.]

> Duke's son, cook's son, all of 'em want their *scoff*,
> Fifty thousand horse and foot struggling to get some grub.
> *R. Kipling*, in War's Brighter Side, xv.

scoff, *v. t.* **3.** To steal; carry off. [Slang.]

> Their storeroom is a regular theatre, sir. . . . There's enough [paint] for two first-rates, and I've *scoffed* the best half of it.
> *R. Kipling*, Judson and the Empire, in Many Inventions, p. 396.

scoggan (skog′ạn), *n.* [Also *scoggin;* origin obscure.] **1.** A vane; a weathercock. [Prov. Eng.]—**2.** A device for operating the valve of an engine, consisting of cords attached to the valve-handle and pulled by some reciprocating part of the mechanism. This device was used as a valve-gear in some of the earliest forms of steam-engine.

scoggin (skog′in), *n.* Same as ★*scoggan.*

scoleciasis (skō-lẹ-sī′ạ-sis), *n.* [NL., ‹ Gr. σκωληκίασις, the condition of being worm-eaten, ‹ σκώληξ (σκωληκ-), worm.] Same as *helminthiasis.*

scolecoiditis (skọ-lē-koi-dī′tis), *n.* [NL., ‹ Gr. σκώληξ (σκωληκ-), worm, + εἶδος, form, + *-itis.*] Inflammation of the vermiform appendix; appendicitis.

scolecology (skō-lẹ-kol′ọ-ji), *n.* [Gr. σκώληξ (σκωληκ-), worm, + -λογια, ‹ λέγειν, speak.] Same as *helminthology.*

scolecomorphic (skọ-lē-kọ-môr′fik), *a.* Relating to or resembling the *Scolecomorpha.*

Scolecosporæ (skọ-lē-kọ-spō′rē), *n. pl.* [NL., ‹ Gr. σκώληξ (σκωληκ-), worm, + σπορά, seed (spore).] A name given by Saccardo to artificial divisions of various families and orders of fungi, especially to those of the *Pyrenomycetes* and *Fungi Imperfecti*, and including the genera which have the spores rod-like or filiform.

scoliid (skō′li-id), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Scoliidæ.*

II. *a.* Having the characters of or belonging to the family *Scoliidæ.*

scoliokyphosis (skol′i-ọ-kī-fō′sis), *n.* [Gr. *σκολιός*, curved, + *κύφωσις*, humpbacked condition.] A pathological condition in which the spinal column is curved laterally as well as posteriorly.

scoliometer (skol-i-om′e-tėr), *n.* [Gr. *σκολιός*, curved, + *μέτρον*, measure.] An instrument used for measuring the amount of deformity in lateral curvature of the spine.

scolion, *n.* See *skolion.*

Scolithus (skō′li-thus), *n.* [NL., for **scolecolithus*, < Gr. *σκώληξ* (*σκωληκ-*), worm, + *λίθος*, rock.] A generic name which has been given to supposed annelid tubes or worm-casts occurring in many sandstone rocks, especially those of Cambrian age.

Scolymus (skol′i-mus), *n.* [NL. (Linnæus, 1753, adopted from Tournefort, 1700), < Gr. *σκόλυμος*, the name of *Scolymus Hispanicus.*] A genus of plants of the family *Asteraceæ.* It contains three species, natives of the Mediterranean region. *S. Hispanicus*, the Spanish oyster-plant or golden thistle, is sometimes cultivated for its edible root, which is used like that of salsify. Other species are rarely grown for ornament.

scolytid (skol′i-tid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Scolytidæ.*

II. *a.* Having the characters of or belonging to the family *Scolytidæ.*

scombriform (skom′bri-fôrm), *a.* [L. *scomber*, a tunny or mackerel, + *forma*, form.] Scombroid.

scombrin (skom′brin), *n.* [Gr. *σκόμβρος*, a tunny or mackerel, + *-in*^{2}.] A protamine found in the testicles of the mackerel.

scombron (skom′bron), *n.* [Gr. *σκόμβρος*, a tunny or mackerel, + *-on.*] A histon found in the immature testicles of the mackerel.

Scombrops (skom′brops), *n.* [NL., < Gr. *σκόμβρος*, a tunny or mackerel, + *ὤψ*, eye, face (appearance).] A genus of fishes of the family *Cheilodipteridæ*, found in rather deep water in the western Atlantic.

Scone, the stone of. See ★*stone.*

sconse, *n* and *v. t.* A simplified (restored) spelling of *sconce.*

scooner, *n.* A simplified spelling of *schooner.*

scoot^1, *v. t.* **2.** To send or impel (something) with a quick, light motion at high speed. *Automobile Topics*, May 27, 1905, p. 462. [Colloq.]

scoot^1, *n.* **3.** Same as ★*dray*^{1}, 3.

scooter^1, *n.* **3.** An oblong plow, or cultivator shovel, from under 2½ to 5 inches wide, suited to break a furrow, and thus contrasted with a *sweep* or *scrape;* also a plow-stock fitted with such a blade; a scooter plow: used to break out the middle of cotton-beds, to mix fertilizer which has been deposited in furrows, etc. [Southern U. S.]

> A *scooter*, which is merely a flat shovel four to five inches wide and about twelve inches long.
> *T. F. Hunt*, Forage and Fiber Crops in America, p. 352.

> As soon as the tobacco plants are firmly set, a "*scooter*" is run between the rows, which throws up a flat bottom furrow through which the water is directed from the troughs.
> *Dept. Com. and Labor*, Bureau of Census, Bulletin 16, [Irrig. in U. S., 1902, p. 24.

4. Same as *ice-scooter.*—**Wing scooter,** a scooter blade developed above into lateral wings.

scooter (skö′tėr), *v. i.* To sail a scooter or ice-scooter.

Scopaic (skọ-pā′ik), *a.* In the style of Scopas (born about 420 B.C.), a celebrated Greek sculptor and architect, as it is known from ancient texts and probable copies of his works. It represented strong emotions and dramatic action. The so-called Niobide of the Chiaramonte Museum in Rome may be considered a fine example of the style of the Scopaic school, followers and imitators of Scopas.

scoparius (skọ-pā′ri-us), *n.* [See *scoparious.*] The dried tops of the leguminous plant *Cytisus Scoparius;* broom; broom tops; Irish or Scotch broom. It contains the alkaloid sparteine and the glucoside scoparin, and is a heart tonic and diuretic, used in dropsy.

scopelid (skop′e-lid), *n.* Any fish of the *Myctophidæ* (*Scopelidæ*) or lantern-fishes.

scopeloid^2 (skop′e-loid), *a.* [Gr. *σκόπελος*, a high rock, + *εἶδος*, form.] In *anthrop.*, noting a cranium which has a summit on its posterior part and an occiput rapidly descending to the wide base. *G. Sergi* (trans.), Var. of the Human Species, p. 46.

scopola (skō′pọ-lạ̈), *n.* [See the def.] The dried rhizome and larger roots of *Scopolina carniolica*, incorrectly called *Japanese belladonna.* It contains practically the same constituents as *Atropa Belladonna*, and is a mydriatic, sedative, and hypnotic.

scopolamine (skop′ọ-lam-in), *n.* [*scopol(in)* + *amine.*] A difficultly crystallizable alkaloid, $C_{17}H_{21}NO_4+H_2O$, obtained from *Scopolina carniolica, S. Japonica, Duboisia myoporoides, Atropa Belladonna, Datura Stramonium*, and other plants of the *Solanaceæ:* identical with *hyoscine.* The hydrobromide is most used. It is a soporific and anesthetic.

scopoleine (skop′ọ-lẹ-in), *n.* [*scopolin.*] An ether-like compound or alkaloid produced by heating scopolin with an organic acid anhydrid; analogous with the tropeines.

scopoletin (skop′ọ-let-in), *n.* [*Scopola* (see def.) + *-et-* + *-in*^{2}.] A colorless crystalline methyl ether of esculetin, $C_9H_5O_4.CH_3$, found in the root of *Scopolina japonica* and in belladonna root, and prepared by boiling scopolin with dilute sulphuric acid. Its solution in alcohol shows a blue fluorescence. It is slightly acid and melts at 198° C. Also called *chrysatropic acid.*

scopolin (skop′ọ-lin), *n.* [*scopol(amine)* + *-in.*] A colorless crystallizable alkaloid, $C_8H_{13}NO_2$, produced by boiling scopolamine for a long time with baryta water.

scopule (skop′ụl), *n.* [L. *scopulæ*, a little broom, dim. of *scopa*, thin twigs, a broom.] In the sponge-spicules, a long straight rhabd bearing at one end a cluster of rays each ending in a bulb. It is derived from the hexactine.

scopuliferous (skop-ụ-lif′ẹ-rus), *a.* [L. *scopulæ*, a broom, + *ferre*, bear, + *-ous.*] Bearing or furnished with a scopula, as the tarsi of certain hymenopterous insects.

scorch, *v. i.* **2.** To ride very fast on a bicycle or in a motor-car. [Colloq.]

> Why go '*scorching*' along the roads? To say nothing of the danger, the blinding clouds of dust raised are in proportion to the speed attained.
> *The Grand*, Oct., 1907, p. 521.

scorcher, *n.* **3.** One who rides very fast on a bicycle or in a motor-car. [Colloq.]

scorching, *n.* **2.** Fast riding on a bicycle or in a motor-car. [Colloq.]—**3.** The injury caused to tender bark or leaves of plants by excessive heat of the sun. See ★*firing*, 7.

scordinema (skôr-di-nē′mạ̈), *n.* [NL., < Gr. *σκορδίνημα*, retching, used in the earlier sense of the verb, stretching or yawning, < *σκορδινᾶσθαι*, stretch, yawn.] Same as *pandiculation.*

score^1, *n.* **5.** (*b*) In *archery*, a record of all the shots of an archer; a record of all the shots of all the archers in a shooting-match; the sum of all the units won by an archer in a round. See ★*round*, 7 (*i*).—**Open score,** in *music*, a score in which each voice or instrument is noted on a separate staff.

score^1, *v.* **I.** *trans.* **9.** In *lumbering*, to chip off the side of a log to a line, preparatory to facing it by hewing.—**To score a century.** See ★*century*^{1}.

II. *intrans.* **1.** (*b*) Specifically, in *archery*, to keep a record of all the shots of one or several archers; make an entry on such a record. By the present method of scoring, hits in the gold, red, blue, black, and white are scored 9, 7, 5, 3, and 1 respectively. See ★*target*, 2.—**4.** In *horse-racing*, to try for a start.—**5.** To part or tend to part along the elements of the surface: said of castings which split from unequal contraction on cooling of the various parts.—**6.** In *geol.*, to erode in striæ or grooves: said of glaciers. See ★*rock-scoring.*

score-book (skōr′bu̇k), *n.* A book in which the tallies or runs in base-ball, cricket, and other games are kept.

score-card (skōr′kärd), *n.* A card which shows the position of players in base-ball, cricket, and similar sports, with spaces in which to enter the record of each player and of the game.

score-playing (skōr′plā″ing), *n.* The act, process, or result of playing upon a keyboard instrument from music noted in full vocal or orchestral score.

score-reading (skōr′rē″ding), *n.* The act or process of appreciating and interpreting music noted in full vocal or orchestral score.

score-sheet (skōr′shēt), *n.* A sheet of paper upon which a record of the tallies or runs in base-ball, cricket, and similar games is or may be written.

scoria^1, *n.*—**Thread-lace scoria,** a form of basaltic pumice so highly inflated that the rock material between the bubbles is reduced to mere threads. It is found in small quantities at Kilauea. *J. D. Dana*, Manual of Geol. (4th ed.), p. 281.

scoring, *n.*—**Glacial scoring.** See ★*glacial.*

scoring-book (skōr′ing-bu̇k), *n.* In *archery*, a book for keeping the record of the shots; a score-book.

Scorpænichthys (skôr-pẹ-nik′this), *n.* [NL., < *Scorpæna* + Gr. *ἰχθύς*, a fish.] A genus of cottoid fishes of large size, found from Puget Sound to San Diego.

Scorpiid (skôr′pi-id), *n.* [*Scorpio, Scorpius*, + *-id*^{2}.] A meteor belonging to the flock which has its radiant in the constellation Scorpio.

> In April many fine meteors diverge from Virgo and Libra, while in May there are Serpentids, *Scorpiids* and Ophiuchids. *Nature*, April 14, 1904, p. 571.

Scotch. I. *a.*—**Scotch blessing,** a stern reprimand. [Colloq.] *Dialect Notes*, III. iii. p. 198.—**Scotch feed.** See ★*feed.*

II. *n.*—**Broad Scotch.** See ★*broad.*—**Court Scotch,** the court language of Scotland while it was still a separate kingdom. *Scott.*—**Highland Scotch,** the Gaelic language of Scotland.—**Lowland Scotch,** Scotch as spoken in the Lowlands.

Scotchman^1, *n.*—**Flying Scotchman,** a fast express-train that runs between Edinburgh and London. [Colloq.]

Scotic (skō′tik), *a.* [LL. *Scoticus*, < *Scoti*, the Scots.] Of or relating to the Scots.

scotodinia (skot-ọ-din′i-ạ̈), *n.* [NL., < Gr. *σκότος*, darkness, + *δῖνος*, a whirling.] Vertigo with dimness of vision.

scotography (skọ-tog′rạ-fi), *n.* [Gr. *σκότος*, darkness, + *-γραφια*, < *γράφειν*, write.] Same as *sciagraphy.*

Scotoma auris, inability to hear a sound which comes from a certain point, the disability being determined by the direction rather than by the distance from the ear.

scotomatous (skọ-tom′ạ-tus), *a.* [*scotoma(t-)* + *-ous.*] Relating to or affected with a scotoma.

scotoscopy (skọ-tos′kọ-pi), *n.* [Gr. *σκότος*, darkness, + *σκοπεῖν*, view, + *-y*^{3}.] Same as *skiascopy.*

scototherapy (skot-ọ-thėr′ạ-pi), *n.* [Gr. *σκότος*, darkness, + *θεραπεία*, medical treatment.] The treatment of disease by absolute exclusion of light-rays, with or without the admission of the ultra-violet rays.

> He [Dr. A. F. A. King] suggested several experiments in *scoto-therapy*—keeping some patients in the dark or in rooms with purple or indigo window glass, and exposing others, nude, to brilliant sunshine.
> *Science*, Jan. 2, 1903, p. 24.

scour^1, *v.* **II.** *intrans.* **4.** To pass through the soil without the latter adhering, the blade being thus rubbed bright: said of an agricultural implement.

> In the average soil there [Eastern U. S.] the cast-iron plow would *scour* perfectly. *Amer. Encyc. Agr.*, p. 742.

scour^1, *n.* **1.** (*b*) The violent removal of sand by the wind, especially when it blows through a funnel-shaped pass or cañon.

> The sandhill was afterwards attacked by a S.W. wind, which commenced to reshape it, and this alteration at first led to the formation of notches in the crest, in which the wind became concentrated, leading to a violent *scour* and to the excavation of deep pits to leeward.
> *Nature*, Dec. 10, 1903, p. 138.

scour-and-fill (skour″ạnd-fil′), *n.* The violent removal of loose materials, such as sand and gravel, by swift currents of air or water and the deposition of the same on the slowing up of the velocity.

> In the discussion alluded to, by Professor Chamberlin, occupying thirty-four pages of the Journal of Geology, the first ten pages are occupied by an illustrated introduction and an "academic statement" of the operation of *scour-and-fill* in river bottoms.
> *Amer. Geol.*, May, 1903, p. 264.

scour-fish (skour′fish), *n.* The escolar, *Ruvettus pretiosus*, named from its rough skin.

scouring, *n.* (*g*) A veterinary term for a loose discharge from the bowels. See *scour*^{1}, *n.*, 2.

> Keep the calf a little hungry and eager for more rather than fill it to dullness. The endeavor should be to prevent the beginning of indigestion, which leads to *scouring* and perhaps fatal diarrhea.
> *Yearbook U. S. Dept. Agr.*, 1894, p. 308.

scouring-brick (skour′ing-brik), *n.* A molded mass of an abrasive or silicious earth, usually in the form of a brick, used in domestic affairs for scouring steel knives and other bright metal surfaces. Also *Bath brick* (which see, under *brick*^{2}).

scouring-cinder (skour′ing-sin″dėr), *n.* A basic slag which attacks the lining of a shaft-furnace.

scouring-machine, *n.* **2.** In *leather-manuf.*, a machine for scouring or grinding the flesh side of skins or hides by means of a cylinder fitted with stones or brushes. *C. T. Davis*, Manuf. of Leather, p. 209.

scouring-sluice (skour′ing-slös), *n.* A short flume or similar device the entrance to which is controlled by gates or valves in such a way that the water of an irrigating-ditch or -canal can be turned through the sluice to scour or wash out sediment accumulated in the ditch. *H. M. Wilson*, Irrigation Engineering, p. 216.

scouring-stone (skour′ing-stōn), *n.* A stone for scouring or rubbing the grain side of a hide. *Mod. Amer. Tanning*, p. 103.

scourway (skour′wā), *n.* In *phys. geog.*, a channel eroded by a stream; especially, a channel, now dry, made by a former glacial stream.

scourwort (skour′wėrt), *n.* The soapwort, *Saponaria officinalis.*

scouse-kettle (skous′ket″l), *n.* *Naut.*, an iron cooking-kettle.—**To man the scouse-kettle halyards,** to lift a cooking-pot off the range. The expression is also understood as an invitation to eat.

scout^1, *n.* **9.** *Naval*, a vessel employed in obtaining information concerning the positions and numbers of the enemy's fleet. See also *scout* ★*cruiser*.

scramble, *v. i.* **3.** In *bot.*, to run or climb in all directions, especially over other plants. See ★*scrambler*, 2.

scrambler, *n.* **2.** In *phytogeog.*, a liana which supports itself by resting its long, straggling branches upon other plants, sometimes, as in roses and brambles, with incidental assistance from prickles and thorns. The liana character is usually less developed in this class than in any other, but in this regard the palm lianas of the tropics are an exception. *A. F. W. Schimper.*

scrap^1, *n.* **6.** *pl.* A commercial name of crude rubber obtained from the drippings of milky juice which adhere to the bark of the tapped tree and which are peeled off when dry. See ★*rubber*^{1}, 3.—**Ceara scraps,** a trade-name for a kind of crude rubber from the state of Ceara in Brazil.—**Clean scrap,** wrought-iron scrap from which all cinder has been removed by hammering.—**Nicaragua scraps and sheets,** a trade-name for crude rubber of excellent quality, the product of *Castilloa elastica*, imported from Nicaragua.—**Scrap process.** See ★*process.*

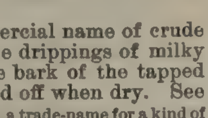
scrap^2 (skrap), *v. i.* [*scrap*^{2}, *n.*] **1.** To engage in a scrap or petty scrimmage; box. [Colloq.]—**2.** To engage in a war of words; squabble; quarrel.

scrap-basket (skrap′bȧs″ket), *n.* A basket for scraps, as of paper, etc.

scrape^1, *v.* **I.** *trans.* **5.** To scratch; draw sharply across something; "strike," as a match. *Cutcliffe Hyne*, A Master of Fortune, ix.

II. *intrans.* **6.** To remove the scrape, or concreted turpentine, from the faces of turpentined trees.—**7.** In *golf*, to drag the club slowly along the ground in the act of putting. *W. Park, Jr.*, Game of Golf, p. 217.

scrape^1, *n.* **6.** A small dredge which removes material by scraping the top; a scraper.—**7.** A plow or cultivator shovel consisting of a straight horizontal blade of steel, in use placed obliquely on the stock; a scraper. [Southern U. S.]—**Heel scrape,** a band of steel bent to a broad V-shape with the angle rounded like a heel, bolted to a light single-horse plow-stock, steadied by a full tongue blade, and used to scrape the weeds from the side of cotton beds, etc. Also *heelsweep.* [Southern U. S.]


Heel-scrape.

scraper, *n.* **1.** (*t*) In *calico-printing*, a thin steel blade that presses against the printing-roller to scrape off the color from the unengraved portions of the roller. Also called a *doctor.* *Georgievics* (trans.), Chem. Technol. Textile Fibers, p. 241. (*u*) A blade adjusted to the disk of a disk-harrow to remove adhering soil. Also *cleaner.* (*v*) Same as ★*scrape*, 6.—**Revolving scraper.** (*a*) A road scraper which turns on an axis and, in so doing, shifts or distributes the dirt. (*b*) A scraper for boiler-flues which turns on an axis as it is passed through the flue.

scraper-chaser (skrā′pėr-chā″sėr), *n.* In the transportation of petroleum by pipe-lines, a workman whose duties are to look after the go-devil (which see) when it is inserted for cleansing the pipe, and to give notice if it is arrested by a stoppage.

scraper-press (skrā′pėr-pres), *n.* An early form of lithographic press in which pressure was given to the stone by a straight edge that acted with a scraping motion.

scrap-hopper (skrap′hop″ėr), *n.* See the extract.

> As fast as the pieces of blubber are resolved into oil, the residuary fragments are transferred to a rough box called the "*scrap-hopper*" or "strainer-cooler." Its size depends upon the dimensions of the try-works, but usually it holds from 1 to 1½ pots of scrap. It consists of two compartments, the upper portion, or hopper, for the scrap and the lower part for the oil, the two separated by a wooden partition containing numerous holes, so that the oil may readily drain from the material.
> *Sci. Amer. Sup.*, March 5, 1904, p. 23551.

scraping, *n.*—**Dumb scraping,** the act of scraping a wet deck with a blunt-edged scraper.

scraping-wheel (skrā′ping-hwēl), *n.* A wheel with knives on its periphery for scraping and cleaning the surface of fiber leaves, as those of the Sisal hemp.

> The chains will then carry the leaves to the holding belts, by which they will be presented to the first *scraping wheel.* The leaves having been cleaned for the greater part of their length by the first wheel, a device placed between the two *scraping wheels* transfers the clean portion of the fiber to the second holding belt, and the remainder is cleaned by the second wheel, having no uncleaned or partially cleaned portions in the middle, as is usual in other machines.
> *U. S. Dept. Agr.*, Rep. No. 5, p. 25, note.

scrap-steel (skrap′stēl), *n.* See ★*steel*^{1}.

scratch^1, *v. t.* **6.** To treat with a scratch-brush, as in finishing metal.

> *Scratch* the silver article as bright as possible with the scratch brush and dip into the warm liquid. Remove the object after two minutes and rinse off in water. Then scratch it up again and return it into the liquid.
> *Sci. Amer. Sup.*, Jan. 24, 1903, p. 22636.

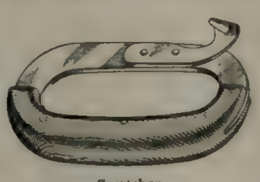
scratch^1. **I.** *n.* **5.** In *billiards :* (*b*) In handicaps, the zero starting-mark.—**9.** A 'fluke,' in any game.—**10.** In *pool*, the mark by which forfeitures are designated and tallied.—**Glacial scratches.** See ★*glacial.*—**On** or **at scratch,** in *racing* and *athletics*, in the position of having received no handicap, but obliged to give such advantage to any others who are entitled to it; at the starting-line: from the form of race in which less able contestants start at some distance in front of the real starting-line from which distances are measured, according to their handicaps, while the most competent start from the starting-line or 'scratch' on the ground.

> A dealers' handicap, in which $3,500 cars will be placed *on scratch* and the others will be allowed a certain number of seconds' start for each $100 less in price.
> *Automobile Topics*, May 27, 1905, p. 487.

II. *a.* **3.** In sports and games, so good as to be obliged to start at scratch (or give handicaps to opponents) literally or figuratively; very skilful.—**4.** Having been scratched off a list of entries, etc.: implying nothing dishonorable: as, a *scratch* colt, one which had been entered for the two year olds; a *scratch* nominee. [Colloq.]—**Scratch play,** play, as in golf or billiards, in which all the players start at scratch, or without handicap; hence, first-class play, or play of a high order of merit.—**Scratch player,** a player who starts at scratch, or without any handicap allowance.

scratch-brush (skrach′brush), *v. t.* To clean with a scratch-brush. *Electrochem. Industry*, April, 1904, p. 132.

scratcher, *n.* (*e*) An instrument for marking trees, usually a hook-like gouge fastened to a flat elliptical iron hoop with wooden handle-plates on the opposite side from the gouge. Also called *bark-blazer, cruiser's bark-blazer, tree-scribe,* and *bark-gouge.*


Scratcher.

scratch-gage (skrach′gāj), *n.* A marking-gage with a hard steel scribing-point.

scratch-man (skrach′man), *n.* In racing, athletics, and such games as billiards, one who starts at scratch, or without a handicap.

scrawl^2, *n.* **2.** In *law*, same as ★*scroll-seal.*

screamer (skrē′mėr), *n.* **4.** Specifically, in *golf*, an unusually long shot. [Slang.]—**5.** (*a*) The exclamation-point (!). (*b*) A heading in unusually bold type. [Printers' slang.]

screed, *n.* **5.** A band of paper or other material placed around a piece of cloth to keep the loose end in place, to prevent injury when cords are tied around it in packing, and for trade-mark and ornamental purposes. Generally used in sets of two. [Cloth trade.]

screen, *n.* **1.** (*d*) In *cricket*, the white canvas background placed behind the bowler to aid the batsman in seeing the ball. (*e*) In *meteor.* : (1) A shelter; something which protects from obnoxious meteorological influences but allows free action of any special influence whose intensity is to be observed. (2) Specifically, the Stevenson screen, a wooden frame or cage with louver sides 24 × 15 × 9 inches, holding thermometers, hygrometers, or evaporometers. This screen is allowable in very windy locations, but in general is objected to by meteorologists as being too small. The thermograph screen is a larger louvered cage for larger self-recording apparatus. The Weather Bureau screen is a cube of one yard or more. See *thermometer shelter.* (*f*) In *forestry*, same as ★*shade-frame.*

2. (*f*) In *paper manuf.*, a machine for sorting and separating the fine particles of the pulp from the large particles; a pulp-screen. It is made in a number of forms, some employing centrifugal force.

4. A transparent plate having ruled upon its surface lines, parallel or crossed, placed immediately in front of the sensitive plate in the manufacture of a half-tone negative, in order to break up the shadows by diffraction.—**Absorbent screen.** See ★*absorbent.*—**Aërial screen,** a transparent screen of smoke, gauze, etc., used in the production of lightning, ghosts, and similar scenic effects, with a magic lantern.—**Armored screen,** a thin vertical armor-plate in the interior of a war-ship in the vicinity of the guns, to protect them from flying splinters.—**Bunsen screen,** a photometric screen of the type devised by Robert Bunsen. It consists of a sheet of unsized paper a portion of which has been rendered translucent by soaking it in oil or paraffin. See *photometer.*—**Color-screen.** See ★*color-screen.*—**Crova's screen,** a solution composed of 22.3 grams of anhydrous ferric chlorid and 27.2 grams of nickel chlorid dissolved in 100 cubic centimeters of distilled water and used in a layer 7 millimeters thick as a screen through which to view a photometer-screen. Only light of 0.582μ, the clear yellow of the spectrum, is seen, since the iron cuts out the green and blue while the nickel cuts out the red rays. Lights of different color are thus comparable. *L. Bell*, Art of Illumination, p. 333.—**Dyed screen,** in *photog.*, a colored screen used in the orthochromatic process. *Woodbury*, Encyc. Dict. of Photog., p. 177.—**Electrostatic screen,** a conducting wall or layer, impenetrable to the lines of force of an electrostatic field and which thus serves to protect from the action of the field bodies which the wall surrounds. Thus a closed vessel of metal, however thin the walls, is a perfect electrostatic screen for objects within.—**Elster screen,** a photometer-screen for diffusing light. A two-inch cube of paraffin is divided centrally, and a sheet of metal or other substance impervious to light is inserted between the halves, which are then pressed together. The light, falling normally on the faces of the cube, is spherically diffused, and each half of the cube being illuminated from its respective light-source will present two illuminated fields from the face toward the observer, who views the screen in a sight-box. The fields will be sharply defined from each other by the thin partition. The screen is fairly sensitive. *W. M. Stine*, Photometrical Measurements, p. 41.—**Half-tone screen.** See ★*screen*, 4, and ★*half-tone.*—**Joly diffusive screen,** a photometer-screen resembling the Elster screen, consisting of a cube of paraffin centrally divided into two parallelepipeds, each 20×50×11 millimeters, which are then pressed together.—**Methven screen,** in *photom.*, a device for obtaining from an Argand gas-flame a light of standard intensity. It consists of a metal screen, with a rectangular opening, mounted in front of the flame. See ★*light standard.*—**Orthochromatic screen,** in *photog.*, a screen, as a plain yellow glass or a cell with parallel sides filled with potassium dichromate solution, placed either in front of or behind the objective of a camera, for the purpose of cutting off some of the blue and violet rays and leaving the less refrangible rays with such relative degree of intensity and of chemical actinicity as to produce a picture more correctly corresponding to the lights and shades as seen by the eye.—**Solar screen,** a small white plate or card supported a short distance before the eyepiece of a surveyor's transit to receive the image of the sun and the cross-wires of the telescope.

screening (skrē′ning), *n.* In *elect.* and *magnetism :* (*a*) The method of surrounding the apparatus inside of the screen with a shield of soft iron, so as to protect it from external magnetic influences. (*b*) The method of surrounding with a shield, cage, or netting made of good conducting material for protection against external electric forces. In large conductors carrying alternating currents, the outside part of the conductor may screen the inside so that less or no current flows in the interior, and the effective resistance of the conductor is thereby increased.

screenings, *n. pl.* **3.** The second grade of polished rice.

> One lot grown at Crowley, La., gave the following milling record in November, 1900: Eight hundred and seventy-one sacks, weighing 161,000 pounds, yielded 94,500 pounds of head rice, 9,400 pounds of *screenings*, and 3,500 pounds of brewer's rice, and the whole crop gave a profit of $3.85 per barrel of 162 pounds.
> *Yearbook U. S. Dept. Agr.*, 1900, p. 125.

screen-plate (skrēn′plāt), *n.* A brass or bronze cast plate having numerous narrow slots, used as a pulp-strainer in a pulp-screen. See ★*screen*, 2 (*f*).

screw^1, *n.* **8.** (*b*) In *Eng. billiards*, the draw shot. The movement actually is a screw, but so, in the opposite direction, is the follow shot, though it is not so named. When pocket-openings were larger it was by means of the screw, mainly, that long 'spot-ball' runs were made in England and America.—**13.** A mechanical loader for handling and lowering bales of cotton into the cargo-space of vessels. —**Capstan screw,** a large jack-screw having holes in the head in which bars may be inserted and used as levers in turning it; a capstan handscrew. It is used in raising buildings.—**Compressor screw,** a device employed on a slide gun-carriage for the purpose of increasing the friction and decreasing the recoil of the gun.—**Concave screw,** a female screw.—**Convex screw,** a male screw. Convex and concave screws are known respectively as 'male' and 'female' screws. A short, concave screw which is fitted to a convex screw is known as a *nut*.—**Hour-glass screw,** a name given to the screw in a worm-and-wheel combination in which the helix is developed upon a hyperboloid of revolution instead of on a cylinder. This enables the helix of the worm to drive the wheel by contact with several of the helical teeth on its periphery, instead of only one, as in the cylindrical type. The hyperboloidal section suggests the hour-glass. Also known as *Hindley's screw* (which see, with cut). —**Screw-slotting cutter,** a milling-cutter for making the slot in the head of a screw. It is a small disk armed on the edge with teeth. See *milling-machine* and *milling-cutter*.—**Square screw,** a screw with rectangular thread. The helix is generated by revolving a square or rectangle around a cylinder, while it moves axially in one turn through the distance of the hitch.—**Tangent screw.** (*a*) See *tangent*. (*b*) A screw placed against the edge of a disk and fitting into helical teeth formed on that edge, so that when the screw is turned a very fine angular motion of the disk results. It also acts as a clamp to prevent angular motion except when the screw is turned. It is used for index plates in gear-cutters to divide the circle into aliquot parts and on the graduated limbs and verniers of astronomical, surveying, and other instruments.

screw^1, *v. i.* **5.** In *golf*, to impart a side spin to a ball.

screw-auger, *n.* **2.** The nodding lady's-tresses, *Gyrostachis cernua*, so called from the spiral arrangement of the flowers.

screw-brake (skrö'brāk), *n.* Any brake applied by the action of a screw.

screw-conveyer (skrö'kon-vā"ėr), *n.* See ⋆*conveyer*, 4.

screw-down (skrö'doun), *n.* One who or that which adjusts the opening between the rolls in the roll-train of a rolling-mill, so that thicker or thinner material shall result from the rolling process. This adjustment of the bearings of the rolls is effected by screws which have a graduated scale and pointer by which the opening is indicated. In early forms of mill this adjustment and screwing was done by a workman; in modern mills it is done by power, either through belt-driven shafts or by an electric motor under the control of the man.

> A feature of the blooming mill is the electrical *screw-down*, which is driven by a 100-horse-power motor.
> *Sci. Amer. Supp.*, July 23, 1904, p. 23870.

screw-engine (skrö'en"jin), *n.* An engine used to drive the screw propeller of a steamer. The commonest type for this service is the vertical, inverted engine, with either compound, triple, or quadruple expansion, although horizontal and inclined engines are sometimes used, as are also single-cylinder engines and tandem engines. The steam-turbine when applied to turn a screw becomes a screw-engine.

screw-gun (skrö'gun), *n.* A gun used in mountain batteries, made to be taken apart in two sections for ease in transport, and screwed together again when in use.

> [The] mule . . . belonged to a *screw-gun* battery . . . The *screw-guns* are tidy little cannon made in two pieces that are screwed together when the time comes to use them. They are taken up mountains any where that a mule can find a road. *R. Kipling*, Her Majesty's Servants, in The Second Jungle Book, p. 202.

screw-hook (skrö'hůk), *n.* Any form of hook which is fitted with a screw.

screw-key, *n.* **2.** A socket-wrench in which the socket is formed on the end of the shank to receive the nut or head and the shank is turned by a crosspiece or T-head.—**3.** A form of adjustable wrench, or monkey-wrench, in which the movable jaw is held from slipping on the shank by a tapering wedge or key, the latter being adjustable lengthwise by a screw either on the shank or parallel to it.

screw-locket (skrö'lok"et), *n.* A locket the cover of which screws on; a dust- and moisture-proof locket which has the covers screwed on instead of hinged.

screwman (skrö'man), *n.* A stevedore who stows compressed cotton-bales in the holds of vessels by means of a device called a screw. See ⋆*screw*, 13. [Southern U. S.]

Screw-pine disease. Same as *Pandanus-*⋆*disease*.

screw-plug (skrö'plug), *n.* A design of plug upon which a thread is cut and which is screwed into the hole to be plugged. The plug is usually tapered three quarters of an inch to the foot or one in sixteen, and carries a squared end to receive a wrench by which it is screwed in to refusal.

screw-press, *n.* **2.** Same as ⋆*clay-press*.

screw-shaft (skrö'shȧft), *n.* The shaft which carries and drives a screw-propeller; a propeller-shaft.

screw-steamer (skrö'stē"mėr), *n.* A steam-vessel driven by a screw propeller. A vessel with two screws is called a *twin-screw steamer*; one with three screws, a *triple-screw steamer*.

> These spaces include the internal volume of the ship, below the deck forming the "crown" of the engine and boiler-rooms; the casings for engine-hatches, ventilation, funnels, etc., from this crown to the upper deck; and the shaft trunks in *screw-steamers*.
> *White*, Manual of Naval Arch., p. 61.

screw-stick (skrö'stik), *n.* A type-setter's composing-stick in which the adjustable knee is kept in place by a screw.

screw-tunnel (skrö'tun"el), *n.* The passage running aft through the hold of a vessel from the engine, in which are located the bearings of the propeller-shaft; a shaft-alley.

screw-turbine (skrö'tėr"bin), *n.* A device for propelling ships which consists of a propeller surrounded by a casing to which fixed guide-blades are attached. See *guide-blade* ⋆*propeller*.

> This was removed, and a *screw-turbine* 3 feet in diameter substituted. *White*, Manual of Naval Arch., p. 580.

screw-wedge (skrö'wej), *n.* A device for adjusting or taking up lost motion, in which an inclined surface, acting like a wedge, is moved forward by a screw and nut which form parts of it. *Jour. Brit. Inst. Elect. Engin.*, 1902–03, p. 411.

Screw-worm fly. See ⋆*fly*^{2}.

scribbling-card (skrib'ling-kärd), *n.* A wool-carding machine, consisting of a number of cylinders of different diameters, covered with card-clothing, revolving in opposite directions and at different speeds. *C. Vickerman*, Woollen Spinning, p. 175.

scriber, *n.* **2.** Same as ⋆*scribing-tool*, 3.

scribing-gage (skrī'bing-gāj), *n.* A recording-gage by which the record is made by means of a scribing-point moving over a graduated sheet of paper.

scribing-tool (skrī'bing-töl), *n.* **1.** Any tool by which lines can be drawn upon a piece which is to be machined or worked into shape or dimension.—**2.** A scratching-tool or point for marking the lines parallel to a plane upon a piece of work. Usually called a *marking-gage*.—**3.** A scratching-tool or point for marking lines parallel to the edges of work. Usually called a *scriber*.

Scrip. An abbreviation of *Scripture*.

scriptorial (skrip-tō'ri-al), *a.* [L. *scriptorius*, of writing, + *-al*^{1}.] Pertaining to or of the nature of writing; also, using the art of writing.

> The lower strata of *scriptorial* sculpture.
> *W. J. McGee*, in An. Rep. Bur. Amer. Ethnol., 1897–98, [p. 830.

Scrobicular circle, in the *Echinoidea* or sea-urchins, the outer limit of the scrobicule.

scrobicule (skrō'bi-kūl), *n.* [L. *scrobicula*.] Same as *scrobicula*.

scrodle (skrō'dl), *v. t.*; pret. and pp. *scrodled*, ppr. *scrodling*. [Origin obscure.] In *ceram.*, to marble or combine (differently colored clays) by wedging: as, *scrodled* ware.

scrofula-leaf (skrof'ụ-lạ̈-lēf), *n.* Same as ⋆*scrofula-weed*.

scrofula-plant (skrof'ụ-lạ̈-plant), *n.* **1.** The frostweed or Canadian rock-rose, *Helianthemum Canadense*.—**2.** The common figwort, *Scrophularia nodosa*; also the American or Maryland figwort, *S. Marylandica*.

scrofula-root (skrof'ụ-lạ̈-röt), *n.* The yellow adder's-tongue or dog-tooth violet, *Erythronium Americanum*.

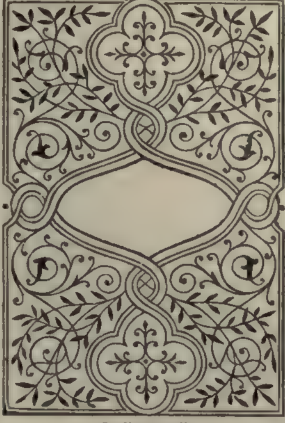
scrofula-weed (skrof'ū-lạ̈-wēd), *n.* The downy rattlesnake-plantain, *Peramium pubescens*. Also *scrofula-leaf*.

scrofulism (skrof'ụ-lizm), *n.* [*scrofula* + *-ism*.] The state of being scrofulous.

scrofuloderma (skrof"ụ-lọ-dėr'mạ̈), *n.* [NL.] Same as *scrofuloderm*.

scrofulosis (skrof-ụ-lō'sis), *n.* [NL., < *scrofula* + *-osis*.] Same as ⋆*scrofulism*.

scroll, *n.*—**Grolier scroll,** the flowing curved lines that surround and interlace the geometrical framework of a design for a book-cover in the style of Grolier.—**Quintic scroll,** in *geom.*, a non-developable ruled surface of the fifth degree.—**Tympanic scroll,** the tympanic bone.


Grolier Scroll.

scroll-band (skrōl'band), *n.* A rope or band that runs on a scroll in a spinning-mule, for operating the spindle-carriage. *Nasmith*, Cotton Spinning, p. 275.

scroll-finis (skrōl'fī"nis), *n.* A decorative design, in the form of a scroll, inclosing the word 'Finis' at the end of a book.

scroll-pick (skrōl'pik), *n.* A form of shuttle-picking motion in a loom, in which a disk with a scroll is used: a picking-scroll. *T. W. Fox*, Mechanism of Weaving, p. 309.

scroll-plate (skrōl'plāt), *n.* In *exper. psychol.*, an apparatus used to test steadiness of motor coördination. A glass plate is covered with a sheet of tin-foil, in which a narrow and complicated scroll pattern has been cut. The subject is given a tracing needle, and is required to follow out the pattern without touching the tin-foil. Electrical connections are so made that, for instance, a bell rings every time that the needle leaves the middle of the slit and comes into contact with its edge. *W. C. Bagley*, in Amer. Jour. Psychol., XII. 196.

scroll-seal (skrōl'sēl), *n.* Any flourish or scroll used in place of a seal: generally inclosing the letters L. S. or the word "seal."

scroll-shaft (skrōl'shȧft), *n.* A shaft on which band-scrolls are fixed in a spinning-mule. *Nasmith*, Cotton Spinning, p. 274.

scroll-tappet (skrōl'tap"et), *n.* A form of shedding-motion for operating the warp-threads in a loom, in the manufacture of fabrics which require a small number of harnesses. *T. W. Fox*, Mechanism of Weaving, p. 60.

scroll-wheel, *n.* **2.** A form of turbine water-wheel, in which the passages for the water and the buckets have a shape approximating that of a spiral or scroll.

scrowge, *v. t.* Same as *scrouge*.

> See 'em [the fishing fleet] comin' up one by one, lookin' fer nothin' in particular, o' course, but *scrowgin'* on us all the time? *R. Kipling*, Captains Courageous, iii.

scrub^1, *n.*—**Horizontal scrub.** See ⋆*horizontal*, *n.*, 2.

scrub-dangler (skrub'dang"glėr), *n.* In Australia, a wild bullock. *E. E. Morris*, Austral English.

> He is one of those infernal *scrub-danglers* from the Lachlan, come across to get a feed.
> *Rolf Boldrewood*, Colonial Reformer, xvi, quoted in E. [E. Morris, Austral English.

scrub-fowl (skrub'foul), *n.* The Australian mound-builder or scrub-hen.

scrub-hen (skrub'hen), *n.* A general name for the Australian mound-builders, or megapodes, which dwell in the thick underbrush or scrub.

scrub-vine (skrub'vīn), *n.* In Australia, same as ⋆*bauera*, 2.

scrub-wren (skrub'ren), *n.* One of several small passerine birds, of the genus *Sericornis*, belonging to the family *Lusciniidæ*, common in parts of Australia.

scruff^4 (skruf), *v. i.* [A variant of *scuff*^{1}, *v.*] In *golf*, to raze the grass slightly in striking.

scrum-pox (skrum'poks), *n.* An acneiform skin-disease acquired by infection: common in foot-ball players by reason of the frequent scratches on the skin and the intimate contact of the players.

scrutator, *n.* **2.** In *old Eng. law*, a bailiff appointed to protect the king's water-rights, as flotsam, jetsam, and wrecks; also, a public officer with like duties.

scrutch (skruch), *n.* [Origin obscure.] A trade-name of the residue obtained in the boiling part of the process of glue-making. It has a highly offensive odor.

As in the other processes employed for the utilization of all animal waste matter, the nuisance [of glue-making] comes from the decomposing material, from the odors given out during boiling, etc., and from the offensive residue or "*scrutch.*" *Buck*, Med. Handbook, VI. 332.

scrutinant (skrö'ti-nant), *a.* Scrutinizing; closely examining. *Stand. Dict.*

I would fain please you, and myself with you; and live here in my Venetian palace, luxurious; *scrutinant* of dome, cloud, and cockle-shell.
Ruskin, Fors Clavigera, VI. 245.

scry^1, *v. t.* **II.** *intrans.* To divine, or to attempt divination, by crystal-gazing; induce hypnagogic illusions by gazing into a glass or crystal sphere or some equivalent medium.

The practice of '*scrying*,' 'peeping,' or 'crystal gazing, has been revived in recent years.
A. Lang, Cock Lane and Common-sense, p. 212.

scryer (skrī'ėr), *n.* [*scry*^{1} + *-er*^{1}.] A crystal-seer.

As far as the '*scryer*' knows, however, her pictures of places and people are not revivals of memory.
A. Lang, Cock Lane and Common-sense, p. 218.

S. Cu. An abbreviation of *strato-cumulus.*

scud, *n.* **8.** Dirt, lime, and fat left in the grain of a skin after it comes from the puer. *C. T. Davis*, Manuf. of Leather, p. 161.

Scudder's blue. See ⋆*blue.*

scudding (skud'ing), *n.* In *leather-manuf.*, the process of removing scud by scraping with a knife. See ⋆*scud*, 8. *Sadtler*, Handbook of Indust. Chem., p. 329.

scudella (skö-del'ä), *n.* Same as ⋆*scodella.*

scuff^1 (skuf), *n.* [*scuff*^{1}, *v.*] A light shoe or slipper. [Local, U. S.]

scuffle^2 (skuf'l), *v. i.* [*scuffle*, *n.*] To use a scuffle or thrust-hoe. *Encyc. Dict.*

scul, *n.* and *v.* A simplified spelling of *scull.*

Sculda (skul'dä), *n.* [NL.] A genus of stomatopod *Crustacea* with highly ornate cephalothorax, three exposed thoracic segments, an elongate abdomen, and a semicircular telson. It is one of the few extinct representatives of the *Stomatopoda*, and occurs in three species in the Jurassic Lithographic limestones of Bavaria.

scull^2, *v. i.* **3.** In *skating*, to move forward or back without lifting the blades from the ice.

sculled, *a.* See ⋆*skulled.*

sculp., sculpt. Abbreviations (*a*) of the Latin *sculpsit*, he (or she) engraved or carved (it): also *sc.* and *sculps.*; (*b*) of *sculptor*; (*c*) of *sculptural*; (*d*) of *sculpture.*

sculpin, *n.*—**Arctic sculpin,** *Myoxocephalus scorpioides*, found in the arctic regions of America.—**Black sculpin,** *Myoxocephalus niger*, found in Bering Sea.—**European sculpin,** *Myoxocephalus scorpius*, of the northern Atlantic.—**Great sculpin,** *Myoxocephalus polyacanthocephalus*, known from Alaska to Kamchatka.—**Long-spined sculpin,** *Myoxocephalus octodecimspinosus*, found from Labrador south to Virginia.—**Red sculpin,** *Hemilepidotus hemilepidotus*, known from Kamchatka to San Francisco.—**Spineless sculpin,** a fish of the genus *Psychrolutes.*—**Stone sculpin,** a fish of the genus *Enophrys.*

sculps. See *sculpsit.*

sculptograph (skulp'tọ̄-gråf), *n.* [L. *sculptus*, pp. of *sculpere*, carve, engrave, + Gr. *γράφειν*, write.] A kind of photograph presenting figures in relief.

sculptor, *n.* **2.** [*cap.*] In *astron.*, an abbreviated name now generally used for the constellation Apparatus or Officina Sculptoris ('the sculptor's shop'), a modern constellation between Cetus and Phœnix, with no conspicuous stars.

sculpture, *n.* **1.** Sculpture is the expression of human thought and emotion in solid form, that is, in the three dimensions of space, length, breadth, and thickness. Sculpture may be created by carving, which is the removal of superfluous material, or by the addition of needed material, called modeling. Any material may be used for sculpture, if it is sufficiently permanent and valuable. A piece of sculpture appeals to the sense of sight solely by its light and shade,—that is, some portions receive more light and some less than others, which is equivalent to greater and less luminosity of the material. The color of the material, either natural or artificial, has therefore great importance. Until quite recently, and even now in the less sophisticated portions of the world, it has been the custom to enhance the value of sculpture by artificial color. If a work in sculpture gives to all three dimensions of space their full value, it is said to be "in the round"; if only length and breadth are completely expressed, and thickness or depth is abridged, it is said to be "in relief." According to the degree of this abridgment relief is said to be low, medium, or high (basso, mezzo, alto relievo). Historically, sculpture first appeared as decoration, in an attempt of the primitive artist to break up vacant spaces in an interesting way. At this stage it may express simple ornament or an extremely conventional representation of some familiar object. Primitive sculpture is usually in low relief. It may also be in the round, as in a totem pole, club, or paddle. In the recorded historical sequence sculpture first appeared in Egypt and attained its greatest perfection during the early or Memphitic dynasties. In the individual statues of this period there is an interesting realism, and sometimes, as in the colossal statue of the Sphinx, great monumental dignity. As Egyptian history advanced, individual statues became more and more formal and conventional, although always dignified. Throughout Egyptian work great use is made of the lowest forms of bas-relief. Sometimes it is cut below the general surface of the stone—the so-called 'sunken relief.' The areas of relief-work were always colored: the carving was little more than a definite way of drawing in the outlines of pictorial compositions. The style of Egyptian sculpture harmonizes with the architecture to which it is attached. The proportions of the human form are elegant, if monotonous. Animal life is represented with great realism. The sculpture of the nations which came under the influence of Egypt follows, in the main, the principles elaborated in the older country, that of Assyria, however, showing powerful local characteristics. The work of Persians, Phenicians, Cypriotes, and the peoples of Asia Minor expresses various degrees of degeneration. In the Mycenæan or prehistoric civilization of Greece, which corresponds roughly with the latter part of the middle or Theban period in Egypt, sculpture plays an important part and suggests slightly Egyptian influences. Hellenic brilliancy and power are, however, distinctly felt and occasionally individual genius of great distinction. The Lion gate of Mycenæ, certain figures found in Crete, and especially the gold cups of Vaphio have seldom been equaled in any period of art. The epoch of the so-called Dorian invasion, which is interposed between the Mycenæan and historic eras of Hellenic civilization, is barren of sculpture. Its reappearance in the latter part of the sixth century in Asia Minor, the islands of the Ægean, and at Delphi and Athens is marked by tentative qualities, occasionally picturesque and pleasing, as in the so-called pre-Persian statues of the Acropolis; or bold and virile, as in the decorations of the Treasury of the Cnidians at Delphi. The successful resistance to the Persian invasion in 490 and 480 B.C. seems to have revealed to the Greeks themselves the value of their system of athletic training. The perfect athlete and fighting man became a center of interest to the entire people and as such properly the chief preoccupation of the sculptors. From nude figures at rest and in action they evolved the type or "ideal" which has become definitely established. The Greek "ideal" is above all a matter of proportion—the relation of the length of the entire figure and of its several parts to their widths and masses. During the two centuries in which Greek sculpture enjoyed its highest development the proportions of the type varied. In the middle fifth century the heavy-armed soldier with large head and broad shoulders predominated, and was embodied in the so-called canon of Polycletus which is supposed to appear in the Doryphorus of the Naples Museum. In the middle fourth century the athlete predominated—tall, with small head and long limbs—as in the work of Lysippus, which is probably represented by the Apoxyomenus of the Vatican. Aside from its formal perfection Greek sculpture reflects in its spiritual qualities the extraordinary intellectual activity of the society which surrounded it. Its highest expression, in both a formal and a spiritual way, was found in the work of Phidias, which is doubtless represented by the recovered decorations of the Parthenon, most of which are in the British Museum. The emotional qualities predominated over the formal in the work of Scopas, and in the later schools of Pergamum and Rhodes dramatic action was carried to exaggeration. The actual work of the true Greek period has for the most part disappeared. What remains in modern museums is chiefly imitation dating from the Roman period. The original work of the Roman period has great interest. It is mainly decorative, attached to triumphal arches, columns, and the like, in Italy, France, and eastern countries. The Byzantine and Romanesque styles of sculpture are derived from the true Roman period by a process of degeneration. The influence of the Roman model became less and less dominant, and a decreasing interest in nature allowed the work to become more and more decorative. As decorative sculpture, in its entire subordination to dominating architectural conditions, the Byzantine and Romanesque work of Italy and France from the ninth to the twelfth centuries has not been surpassed. The most characteristic examples are the great portals of the church at Saint-Gilles and the church of Saint Trophinus at Arles. The three portals of the Cathedral of Chartres are quite similar to these, although they belong to the period of transition from the Romanesque to Gothic. During the Gothic period, the thirteenth and fourteenth centuries, the greatest activity in sculpture is associated with the construction of the leading cathedrals of France. The amount of work produced at this moment is enormous. It is thoroughly architectonic and decorative, but at the same time emotional, sometimes intensely so, and always shows a simple and keen appreciation of nature. The subject matter is mainly religious. The purpose of the work was the instruction of a public which could not read the few books which then existed. The Bible of the people was carved upon the stones of their buildings. In the latter part of the fourteenth and early fifteenth century, at the moment of birth of independent painting, French sculpture became intensely personal. The leading school was associated with the court of the dukes of Burgundy and the most noted sculptor was Claux Sluter, author of the "Puits de Moise" at Dijon. Until the thirteenth century, sculpture in Italy did not differ from the earlier Byzantine types. In the reign of the Emperor Frederick II. (1215–1250), there occurred a revival of interest in ancient art which found expression especially in the works of Niccola Pisano (or Niccolo d'Apulia), who studied directly from antique monuments. His son Giovanni Pisano, and their successor Andrea Pisano, returned to French sources of inspiration. French influence is dominant until the middle of the fifteenth century. Donatello (1386–1466), the leading sculptor of the cinquecento in Florence, was really much more a product of Gothic than of classic influences. The successors of Donatello in Tuscany, which during the early Renaissance is the chief seat of sculpture in Italy and in Europe, returned to classic sources of inspiration with an intensity of refinement similar to that expressed in the painting of the period. The works of Desiderio da Settignano (1428–1464), Antonio Rossellino (1427–1497), Mino da Fiesole (1431–1484), Benedetto da Majano (1442–1497), and the Della Robbias may especially be noted, although the body of production of works of this class is very large. The work of the fifteenth century, or quattro-cento, is largely confined to bas-relief. Toward the end of the century the sculptors Andrea (1460–1529) and Jacopo Sansovino (1479–1570) began to realize the importance of the proportion and structure of the individual Greek statues. This study of superior qualities was carried to a high point of exaltation by Michelangelo (1475–1564), always dominated by a temperament of extraordinary virility and the example of his predecessor Donatello. Michelangelo's interest was attracted mainly by the structural and emotional qualities of ancient art. His successors of the baroque period followed his example and produced a body of work which is, for the most part, degenerate, but occasionally shows great picturesqueness and power. The chief masters are John of Bologna (1530–1608), Benvenuto Cellini (1500–1571), Ammanati (1511–1592), and Bernini (1598–1680). The principles of the early Renaissance in Italy were carried across the boundary to France, Germany, Flanders, and Spain, and in each country acquired national characteristics. In France the period reached its highest attainment in the reign of Henry II. (1547–1559) in the sculptors Jean Goujon (1515–1568(?)), Germain Pilon (1535–1590), and their contemporaries. In the seventeenth and eighteenth centuries sculpture in France was dominated by the baroque influences of Italy, and especially by the work of Bernini. The translated style, however, acquires much elegance and refinement in French hands. The work of the period is best shown in the decoration of the palace and park of Versailles. Since the establishment of the French Academy in 1648, and especially since the foundation of its successor, the École des Beaux Arts, at the beginning of the nineteenth century the center of interest of the world's sculpture has been in Paris. The training of the modern French school has been based on thorough study of classic examples enriched by traditions derived from every other school. During the nineteenth century there was a succession of first-class masters in France: David d'Angers (1789–1856), Rude (1784–1855), Carpeaux (1827–1875), Rodin (1840–), and others. The sculpture of Europe outside of France, and of America, was much influenced by the formal classic tendencies of the critic Winckelmann (1717–1768) and the sculptor Canova (1757–1822). In Germany especially, appeared a school of sculptors who based their endeavor on a careful reproduction of classic formalism. The German sculptors of the more modern period have, however, followed generally the traditions of the French school. Practically the same may be said of modern sculpture in the smaller continental countries, England, and America. Sculpture in the United States was at first entirely provincial, being confined mainly to portraiture. Since the Civil War, the traditions of the French school have been dominant in this country. Among leading American sculptors may be mentioned Hiram Powers (1805–1873), Thomas Ball (1819–), William Rimmer (1816–1879), Augustus Saint-Gaudens (1848–1907), Daniel C. French (1850–), and Frederick MacMonnies (1863–). It is probable that the original impulse toward sculpture in the Orient came from Greek colonists and invaders. The Greek characteristics were, however, soon replaced by national and local qualities. In India, China, and Japan interest has centered on picturesque qualities. Much attention has been given to fine materials, such as jade, ivory, and bronze, and brilliancy and piquancy of style.

5. In *phys. geog.*, the change of land-forms by natural erosive processes.—**Pisan school of sculpture.** See ⋆*school.*

sculpture, *v. t.* **3.** In *phys. geog.*, to change the forms of (the land) by natural erosive processes.

sculpture-cast (skulp'ṭụ̈r-kåst), *n.* See ⋆*cast*^{1}, 14.

sculpture-gallery (skulp'ṭụ̈r-gal″ẹ-ri), *n.* A hall or large room for the exhibition of pieces of sculpture. It differs from the picture-gallery in being usually lighted from the sides, near the top, for skylights are less suitable.

sculpturing-machine (skulp'ṭụ̈r-ing-mạ̈-shēn″), *n.* A carving-machine; a profiling-machine for carving figures in marble, etc., from a model or from life.

scum-cock (skum'kok), *n.* A valve and its pipe-connections in a steam-boiler, by which scum floating on the surface of the water in the boiler may be blown off and the boiler cleansed without loss of pressure. The deposit from waters carrying magnesia in solution is light enough to float, and as it thickens the disengagement of steam-gas from the water-surface is impeded: as the gas bursts through the scum, it carries water with it, causing water to be entrained into the cylinders and producing the phenomenon known as 'priming' or 'foaming.' Since the water-surface is not at a fixed height and changes as the surface-water and scum are blown off, the scum-pipe has to have a flaring or trumpet mouth inside the boiler. There are often several of these scum blow-offs when the boiler is long, at different points in its length. In short boilers the flaring mouth can sometimes be turned, from outside the shell, so as to point in different directions. *W. S. Hutton*, Steam Boiler Construction, p. 490.

scummer, *n.* **2.** Same as ⋆*scum-cock.*

scum-pipe (skum'pīp), *n.* See ⋆*scum-cock.*

scupper-shoots (skup'ėr-shötz), *n. pl.* Tubes which carry overboard the water from the spar-deck.

scupper-shutters (skup′ėr-shut″ėrz), *n. pl.* Narrow horizontal lengths of board, or metal, which hang on hinges and cover the scupper holes or scupper openings on the upper deck. These scupper-shutters open outward to the pressure of water on the deck.

scup-seat (skup′sēt), *n.* A boatswain's chair; the wooden seat on which a sailor sits while working aloft where he can obtain no foothold.

scurf¹, *n.* **4.** A fungous disease of potatoes, due to *Rhizoctonia Solani*, which gives the tubers a scurfy appearance and is accompanied by decay.— **Retort scurf.** Same as *gas-carbon* (which see, under *carbon*).

scurfy-pea (skėr′fi-pē), *n.* A general name of plants of the genus *Psoralea*, which are scurfy with glandular dots: applied especially to *P. tenuiflora* and *P. floribunda*, in which this feature is most marked.

scurge, *n.* and *v.* **2.** A simplified spelling of *scourge*.

S-curve (es′kėrv), *n.* A curve shaped like the capital letter S.

scurvied (skėr′vid), *a.* [*scurvy*² + *-ed*².] Affected with scurvy; scorbutic.

scurvish (skėr′vish), *n.* The evening-primrose, *Œnothera biennis*.

scurvy², *n.* **2.** The black mustard, *Brassica nigra*.— **Infantile scurvy** or **scorbutus**, a form of scurvy which affects bottle-fed infants, due to improper food.

Scutata (skū-tā′tạ̈), *n. pl.* [NL., neut. pl. of *scutatus*, scutate.] A group of heteropterous insects of the gymnocerate series, having the scutellum very large, often covering the whole of the wings and abdomen. It corresponds to the family *Pentatomidæ* taken in a broad sense, or rather with a superfamily *Pentatomoidea*, and includes a number of families and more than 4,000 species.

scute¹, *n.* **4.** In *anat.*, a semilunar plate of bone forming the outer portion of the roof of the tympanum of the ear. Also called *scutum tympanicum*. *Buck*, Med. Handbook, III. 622.

Scutella limestone. See *Becraft* ★*limestone*.

scutellarin (skū-tel′ạ̈-rin), *n.* [*Scutellaria* + *-in*².] A yellow crystalline substance, $C_{10}H_8O_3$, found in the root of the mad-dog skullcap, *Scutellaria lateriflora*. It melts at 199° C. and is used in cases of chorea and insomnia.

scutellerid (skū-tel′ẹ-rid), *n.* and *a.* **I.** *n.* A member of the heteropterous family *Scutelleridæ*.

II. *a.* Having the characters of or belonging to the family *Scutelleridæ*.

scuttle², *n.*— **Magazine-scuttle**, the scuttleway in the magazine-passage of a warship through which the charges are passed.

scutular (skū′tụ̄-lạr), *a.* [*scutul*(*um*) + *-ar*³.] Relating to or of the nature of a favus-cup.

scutum, *n.* **5.** In *bot.*, the broad expansion of the style in plants of the milkweed family, especially in *Stapelia*.

scydmænid (sid-mē′nid), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Scydmænidæ*.

II. *a.* Having the characters of or belonging to the family *Scydmænidæ*.

scyllite (sil′īt), *n.* [Gr. *σκύλλος*, a young dog (*σκύλιον*, a dogfish), + *-ite*².] A crystalline hexose found in the kidneys and livers of sharks, skates, etc. It has a slightly sweetish taste and does not reduce Fehling's solution.

scyphomancy (sī′fọ̄-man-si), *n.* [Gr. *σκύφος*, cup, + *μαντεία*, divination.] An old form of divination in which a cup was used.

scyphopolyp (sī-fọ̄-pol′ip), *n.* [Gr. *σκύφος*, cup, + E. *polyp*.] A scyphistoma.

scyphos (sī′fos), *n.* Same as *scyphus*.

scyphula (sif′ụ̄-lạ̈), *n.*; pl. *scyphulæ* (-lē). [NL. fem., after LL. *scyphulus*, masc. dim. of *scyphus*, ‹ Gr. *σκύφος*, a cup.] The fixed larval stage of an acraspedote medusa; the scyphistoma.

Scytalichthys (sit-ạ-lik′this), *n.* [NL., ‹ Gr. *σκυτάλη*, a staff, a serpent, + *ἰχθύς*, a fish.] A genus of eels of the family *Ophichthyidæ*, found near Cape San Lucas, Mexico.

Scytalinidæ (sit-ạ-lin′i-dē), *n. pl.* [NL., ‹ *Scytalina* + *-idæ*.] A family of ophidioid fishes found in the northern Pacific.

scythe, *v.* **II.** *intrans.* To make a curving movement like that of a scythe, in mowing. [Rare.]

> He . . . felt the keel answer to his hand on the spokes and slide over the long hollows as the foresail *scythed* back and forth against the blue sky.
>
> *R. Kipling*, Captains Courageous, v.

Scythian, *a.* **3.** In *geol.*, noting the lowest series of the Triassic system in the Mediterranean basin, comprising the Brahmanian and Jakutian stages.— **Scythian disease.** See ★*disease*.

scythropasmus (sith-rọ̄-paz′mus), *n.* [NL., ‹ Gr. *σκυθρωπασμός*, sadness of countenance.] An expression of dullness or fatigue sometimes observed in severe illnesses.

S. D. An abbreviation (*a*) of the Latin *Scientiæ Doctor*, Doctor of Science; (*b*) of the Latin *salutem dicet*, (he or she) sends greeting; (*c*) of *Senior Deacon*; (*d*) [*l. c.*] of the Latin *sine die*, without day.

S. Dak. An abbreviation of *South Dakota*.

sdegnoso (sdān-yō′sọ̄), *a.* [It. See *disdainous*.] In *music*, showing scorn or indignation: indicating passages to be so rendered.

S. D. M. In *astron.*, an abbreviation for *Southern Durchmusterung*. *S. B. D.* is sometimes used. See ★*Durchmusterung*.

S. D. U. K. An abbreviation of *Society for the Diffusion for Useful Knowledge*.

S-dump (es′dump), *n.* A chute curved or bent so that it somewhat resembles the letter S.

S. E. An abbreviation (*c*) of *Southeastern* (Postal District, London); (*d*) of *Sanitary Engineer*.

sea¹, *n.*— **Cockling sea**, waves which possess short and quick motions and tumble against one another; waves which have no common direction or translation, but dash against each other in an irregular way.— **Command of the sea**, the condition of maritime warfare in which one of the states or allies engaged is able to prevent or to control offensive movements of the enemy's vessels and to have its own vessels secure from serious molestation, owing to its greatly superior naval strength compared to that of the enemy.

> *Command of the sea*, is a technical term of naval warfare, and indicates a definite strategical condition. The term has been substituted sometimes for the much older "Dominion of the sea" or "Sovereignty of the sea," a legal term expressing a claim, if not a right. It has also been sometimes treated as though it were identical with the rhetorical expression, "Empire of the sea." Mahan, instead of it, uses the term "Control of the sea," which has the merit of precision. *Encyc. Brit.*, XXXII. 483.

Full sea, an old term for high tide.— **Hollow sea**, a curling sea resembling breakers on a shore; a short, deep sea.— **Moderate sea**, a comparatively light-running sea, or a sea neither smooth nor rough. See *log-book* ★*scale*.— **Open sea**, in *law*, all the sea except the mare clausum (which see).— **Quartering sea**, a sea that strikes the ship's quarter, or one whose first impact is against that part of the ship which is under the counter—45° abaft the beam.— **Sea attorney**, a name given to the brown shark; another title for a sea-lawyer.— **To keep the sea.** See ★*keep*.

sea-angler (sē′ang″glėr), *n.* One who fishes in the deep sea.

> The British *Sea-Anglers'* Society, which soon numbered very nearly a thousand members.
>
> *Encyc. Brit.*, XXXII. 485.

sea-bass, *n.*— **Gulf sea-bass**, *Centropristes ocyurus*, a serranoid fish found in the Gulf of Mexico.— **Rock sea-bass**, a common name of *Centropristes philadelphicus*, a serranoid fish found off the coast of South Carolina.

sea-beef (sē′bēf), *n.* The flesh of the porpoise or the whale.

sea-bent, *n.* **2.** Same as *sea-sedge*, 2.

sea-blackberry (sē′blak″ber-i), *n.* A name in the West Indies for a shrubby, fleshy seaside plant, *Lobelia Plumerii*, bearing fruits resembling blackberries. *Science*, Jan. 29, 1904, p. 167.

sea-bladder (sē′blad″ėr), *n.* The Portuguese man-of-war, *Physalia pelagica*.

sea-board² (sē′bōrd), *n.* [*sea* + *board*, *n.*] *Naval*, a board laid out in squares representing a fixed distance, upon which models of vessels made to the same scale as the squares on the board can be manœuvered in playing a naval tactical war game.

> When the hostile forces approach within sighting distance, the models of the ships are transferred to the large checkerboard, which is known as the "*seaboard.*"
>
> *Sci. Amer.*, Dec. 27, 1902, p. 458.

sea-bread (sē′bred), *n.* A silicious sponge, *Halichondria panicea*, of porous structure.

sea-brent (sē′brent), *n.* The goose-barnacle. [Local, North Carolina.]

sea-bug, *n.* **2.** Same as ★*ocean-bug*.

sea-builder (sē′bil″dėr), *n.* In England, a name given to a constructor of lighthouses. In many lighthouses the foundations are entirely beneath the sea and caisson building and other engineering problems, involving the strength of the structure to resist the shock of heavy seas, require the highest class of technical knowledge and judgment on the subject.

> The new lighthouse off Beachy Head, on the English Channel, is now completed. . . . It . . . represents the latest example of the *sea-builder's* skill, as the engineers who build these structures are called.
>
> *Sci. Amer.*, Nov. 29, 1902, p. 358.

sea-chest (sē′chest), *n.* In *ship-building*, a short open pipe extending from the outside plating to the interior just inside the inner bottom, the inner end of which is closed by a sea-valve placed in a position accessible from the interior of the vessel.

sea-cliff (sē′klif), *n.* A cliff facing the sea, usually formed by the erosive action of waves at its base. *Chamberlin and Salisbury*, Geol., I. 331.

sea-coal, *n.* **2.** Soft or flaming bituminous coal: so named to distinguish it from the anthracites.

sea-cow, *n.* **5.** The sea-cucumber, *Holothuria nigra*. [West of England.]

sea-cuckoo (sē′ku̇k″ö), *n.* The red gurnard, *Trigla cuculus*.

sea-devil, *n.* (*f*) Any one of the great rays of the family *Mantidæ*, sometimes reaching a breadth of over 20 feet. They inhabit tropical seas. (*g*) A fish of the family *Ceratidæ*, inhabiting the open seas.

sea-dog, *n.* **6.** In *meteor.*, the solar halo seen in the mist and fog near the surface of the sea opposite the sun.

sea-dove, *n.* **2.** In *ichth.*, a name sometimes given to the puffers.

sea-dragon, *n.* **3.** An Australian fish which belongs to any one of the species of the genus *Phyllopteryx*, of the family *Syngnathidæ*. *E. E. Morris*, Austral English.

sea-drum (sē′drum), *n.* A name given to different sciænoid fishes, but particularly to those of the genus *Pogonias*. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 466.

sea-dust (sē′dust), *n.* In *geol.*, dust of deserts borne away by the wind and descending at a long distance in the form of 'red fog' or 'sirocco-dust.' It is usually of brick-red color, and when descending with rain occasions the so-called 'blood-rain.' *Geikie*, Text-book of Geol., p. 444.

sea-edge (sē′ej), *n.* A name applied by arctic navigators to the bounding-line between the frozen and the open sea.

sea-eel, *n.* **2.** Same as *silver* ★*eel* (*a*).

sea-endive (sē′en″div), *n.* See ★*endive*.

sea-frog (sē′frog), *n.* The angler, *Lophius piscatorious*.

sea-gall (sē′gâl), *n.* A jellyfish, as *Aurelia*.

sea-galliwasp (sē′gal″i-wosp), *n.* Same as *ten-pounder*, 3.

sea-gate (sē′gāt), *n.* The entrance from the sea into a harbor; the approach by sea to a city.

> May such ships of the future ever again enter the Port of London? If with a great bar with locks at Gravesend, yes, . . . but without it, then good-bye to London as a seaport of the world, and good-bye to Gravesend as the *sea-gate* key. *N. and Q.*, 10th ser., III. 136.

sea-going, *a.* **II.** *n.* A seafaring life.

> *Seagoin'* is all right . . . but . . . it 's a dreadful hard life. Boy on a schooner, even with the Cap'n here, ain't much of a place. *J. C. Lincoln*, Partners of the Tide, v.

sea-grape, *n.* **5.** The salt-grape (which see, under ★*grape*¹).

sea-grass, *n.* **3.** In *phytogeog.*, a marine vegetation, or one of the plants composing it, which roots in loose soil under shallow water and sends up long floating leaves or stems; an enalid. Algæ (*Caulerpa* and *Characeæ*) are included under this term, phanerogams (*Potamogetonaceæ* and *Vallisneriaceæ*, including *Enhalus*) predominating. Compare ★*benthos*.— **Iceland sea-grass**, the green algæ belonging to the genera *Ulva* and *Enteromorpha*.

sea-grocer† (sē′grō-sėr), *n.* A ship's purser.

sea-hay (sē′hā), *n.* The eel-grass, *Zostera marina*.

sea-horizon (sē′họ̄-rī″zọn), *n.* The circle which bounds the view of the observer at sea.

sea-horse, *n.*— **Common American sea-horse**, *Hippocampus hudsonius*, a fish found on the Atlantic coast of the United States.

Sea-island bale. See ★*bale*³.

seal¹, *n.* **3.** Sealskin; leather made from the skin of the seal.— **Bachelor seal**, a fur-seal, *Callorhinus ursinus*, from two to five or six years old: so named because the younger seals cannot enter the breeding-grounds, or rookeries, but herd by themselves on certain well-defined localities or 'hauling-grounds.' The larger bachelors are the 'half-bulls.' Also *holostiak*.

> All the male seals, from six years of age, are compelled to herd apart. . . . This class of seals is termed "holluschickie" or the "*bachelor*" *seals* by the people, a most fitting and expressive appellation.
>
> *H. W. Elliott*, Fur-seal Islands of Alaska, p. 43.

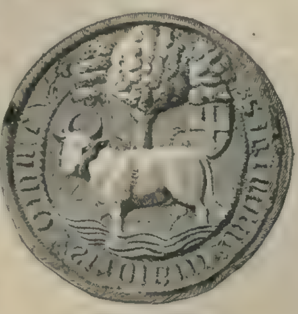
Caribbean seal, *Monachus tropicalis*, a large hair-seal, of a dark brown color, reaching a length of seven feet. It inhabits the shores of some of the West Indian islands, was discovered by Columbus, and is now nearly extinct.

Its nearest relative occurs in the Mediterranean.—**Native seal**, a Newfoundland name for the common or harbor-seal, *Phoca vitulina*, given because the animal is a resident species and not a spring or winter visitor. See *seal*1, 1.

seal2, *n.* 12. The amount of lap over the edge of an opening by which a lid or valve projects to make a tight joint and prevent leakage past it.—**Corporate seal**, the seal of a corporation, which renders valid and binding contracts and documents executed by it. In most jurisdictions a corporation is now held to any contract not sealed that would be valid unsealed between persons. See *common seal*, under *common*.—**French seal**, leather which has been embossed or printed with a small round or star-shaped figure, called a *seal-figure*.—**Riddle-seal**, a seal which contains a rebus, riddle, or other descriptive device.—**Seal days**1. See ★*day*1.

seal-figure (sēl′ fig″ ụ̄r), *n.* See *French* ★*seal*.

seal-grain (sēl′grān), *n.* Grain-leather with a seal pattern stamped or printed on the grain side. *Modern Amer. Tanning*, p. 114.

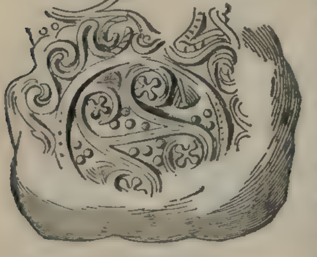


Riddle-seal of Oxford.

seal-indicator (sēl′in″di-kā-tọr), *n.* A thin rod, stuck through the snow in the breathing-hole of the seal, to indicate the approach of the animal.

> Sometimes a small implement [*seal-indicator*] is used in the hunt to indicate the approach of the seal. It is called qipekutang, and consists of a very thin rod with a knob or a knot at one end. It is stuck through the snow, the end passing into the water, the knob resting on the snow. As soon as the seal rises to blow, it strikes the rod, which, by its movements, warns the hunter.
> *Smithsonian Rep.* (Nat. Mus.), 1900, p. 209.

sealing2, *n.* 2. In the Mormon church, the rite of marriage 'for eternity' as opposed to marriage 'for time.' Such marriage is binding not only in life, but forever, and may be entered into by a man already married 'for time,' and vicariously after his death.—3. An impression in clay used to seal vases and other receptacles, examples of which are frequently found in archæological excavations. Very interesting ones have been discovered at Cnosus in Crete.



Ancient Cretan Sealing.
(From "Annual of the British School at Athens.")

sealing-stool (sē′ling-stöl), *n.* A stool used by the Eskimo hunter to sit on while waiting at the seal-hole for the seal to rise. *Smithsonian Rep.* (Nat. Mus.), 1900, p. 209.

sea-loch (sė′loċh), *n.* A narrow arm of the sea entering the land: as, the *sea-lochs* of Scotland.

> In general, it may be said that the detrital terraces are found chiefly in bays, *sea-lochs*, or other sheltered places, while the rock-terraces are conspicuous in more open sounds and exposed parts of the coast, where the tidal currents and wind-waves are most powerful.
> *Nature*, June 2, 1904, p. 112.

sea-lovage (sē′luv″ạ̄j), *n.* The Scotch lovage or sea-parsley, *Ligusticum Scoticum*.

seal-paper (sēl′pā″pėr), *n.* The daily calendar of official business issued by the Lord Chancellor for his own and the higher courts of Great Britain. Formerly the Master of the Rolls issued a similar seal-paper respecting his own court.

seal-scratcher (sēl′skrach″ėr), *n.* An implement consisting of a wooden handle, tipped with several seals' claws, used by the hunter when approaching the seal on the ice, to imitate the noise made by barking seals: used by Alaskan and Siberian Eskimos.

sealskin, *n.*—**Electric sealskin**, a pretentious name applied to rabbit-skin made to imitate sealskin.

sea-luce (sē′lūs), *n.* A common name of *Merlucius vulgaris*, the hake, a fish related to the codfish, found in the eastern Atlantic.

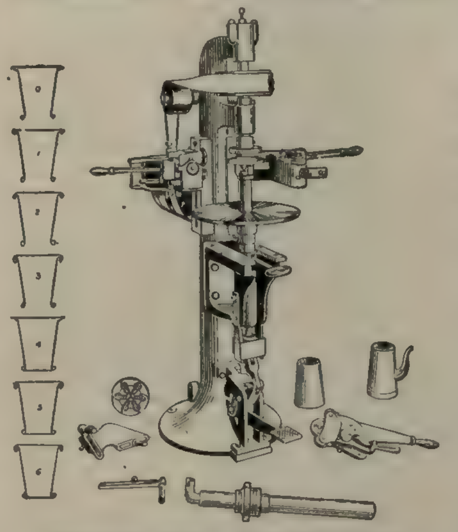
seam1, *n.* 10. Same as ★*slit-band*.—11. A joint used in sheet-metal work where two plates are joined by turning over the edge of the plate and hooking this turned edge into the similarly flexed edge of the next.—**Blastoporic seam.** See ★*blastoporic*.

seamanlike (sē′mạn-līk), *a.* Same as *seamanly*.

seam-dampener (sēm′damp″nėr), *n.* A hand-tool on small bench-machines for moistening the seams of garments without wetting other points.

sea-mignonette (sē′min-yọ-net″), *n.* A brilliantly colored, salmon-pink gorgonian, *Primnoa reseda*, found around Great Britain. *Nature*, April 11, 1907, p. 566.

seaming-machine, *n.*—**Double-seaming machine**, in the manufacture of sheet-metal ware, a name given to a large number of special power-machines for forming the double seam used in putting together the different parts of boxes, cans, bowls, pots, kettles, and other vessels. In all, the essential feature is the use of bending-and-pressing rolls, called *seaming-rolls*, which bend over and press together the edges of two pieces of sheet-metal to make a water-tight joint. In double-seaming the bottoms of tea-kettles and other flat-bottomed vessels a collapsible chuck is used to support the sides of the vessel while the seam is being formed, the chuck automatically collapsing and withdrawing from the vessel through the top on the completion of the seam. In some machines an inside roll is used, or the supporting table serves to hold the vessel. Special attachments are also used to center the parts and hold them firmly in place until the work is finished. All machines are automatic, carrying out every step in the work in turn, without attention from the operator beyond the placing of the parts in the machine and the removal of the finished vessel with the double seam closed. By employing machines of different sizes and by the use of a number of special attachments, the machines can be used in the manufacture of sheet-metal vessels of any size or shape, in great quantities and at a high speed. The illustration shows a typical machine with its different attachments and a partly finished double-seamed coffee-pot. At the side are diagrams which show the process of forming a double seam as done by this machine. Fig. 0 shows the pot upside down, with the burred-edge bottom in position. Figs. 1, 2, and 3 show the successive steps in the bending down and pressing together of the two edges to form the finished double seam shown in Fig. 3. Figs. 4, 5, and 6 show the steps used in double-seaming a plain blank bottom to the cylindrical sides of the pot.



Double-seaming Machine, with supplementary tools.

seaming-rolls (sē′ming-rōlz), *n. pl.* See *double-*★*seaming machine*.

seaming-tool (sē′ming-töl), *n.* The tool used by sheet-metal workers for bending over an edge to form a seam; also, the soldering-tool used to make a seam tight.

seam-lap (sēm′lap), *n.* In *iron ship-building*, a joint between two plates in the direction of their length, in which the edges are overlapped a sufficient width to receive one or more lines of rivets.

seamstering (sēm′stėr-ing), *n.* [*seamster* + *-ing*.] The work of a seamstress. [Colloq.]

> She's been picking up a living at *seamstering* in Melchester for several months.
> *T. Hardy*, Far from the Madding Crowd, xli.

seam-strap (sēm′strap), *n.* In *iron ship-building*, a long narrow strip of plate uniting two plates at a flush joint in the direction of their length. A *double seam-strap* is composed of two strips, one on each surface of the plates, the joint being between them. A seam-strap is further distinguished according to the number of lines of rivets on each side parallel to the joint, as a *single-riveted* or a *double-riveted seam-strap*.

sea-oats (sē′ōts), *n.* See *spike-grass* (*c*).

sea-parsley (sē′ pärs″ li), *n.* The Scotch lovage, *Ligusticum Scoticum*. Also called *sea-lovage*.

sea-partridge, *n.* 2†. The sole. *Cotgrave*.

sea-perch, *n.* 5. In New Zealand: (*a*) A scorpænoid fish, *Sebastapistes cottoides*. (*b*) A labroid fish, *Pseudolabrus celidotus*.—6. In Australia, *Latris antarcticus*, a fish of the family *Cirrhitidæ*.

sea-pike, *n.* 5. A fish of New South Wales, *Lanioperca mordax*.

sea-plain (sē′plān), *n.* A plain produced by the erosive action of waves, currents, tides, etc.; a plain of marine denudation.

> It is not always safe to assume, when we see the tops of a group of mountains all touching an approximately uniform level, that we have there the wreck of a *sea-plain* or, as some would call it, a plane of marine denudation or base level of erosion.
> *Nature*, Dec. 25, 1902, p. 172.

sea-plume (sē′plöm), *n.* Any gorgonian having a plumose form, as *Gorgonia acerosa*.

sea-postage (sē′pōs″tạ̄j), *n.* Postage paid on mail-matter sent by steamer or across the sea.

sea-power (sē′pou″ėr), *n.* 1. A nation or state having an important navy. Also called *naval power*.—2. Naval strength; ability to engage in military operations by sea. See the extracts.

> It must however be admitted, and will be seen, that the wise or unwise action of individual men has at certain periods had a great modifying influence upon the growth of *sea power* in the broad sense, which includes not only the military strength afloat, that rules the sea or any part of it by force of arms, but also the peaceful commerce and shipping from which alone a military fleet naturally and healthfully springs, and on which it securely rests.
> *A. T. Mahan*, The Influence of Sea Power upon History, [p. 28.
>
> Even in its present form the term is not of very recent date. Grote (Hist. of Greece, v. p. 67, published in 1849, but with preface dated 1848) speaks of "the conversion of Athens from a land-power into a *sea-power*." In a lecture published in 1883, but probably delivered earlier, the late Sir J. R. Seeley says that "commerce was swept out of the Mediterranean by the besom of the Turkish *sea-power*" (Expansion of England, p. 89). The term also occurs in vol. xviii. of this Encyclopædia, published in 1885. At p. 574 of that volume (Persia) we are told that Themistocles was "the founder of the Attic *sea-power*." The sense in which the term is used differs in these extracts. In the first it means what we generally call a "naval power"—that is to say, a State having a considerable navy in contradistinction to a "military power," a State with a considerable army but only a relatively small navy. In the last two extracts it means all the elements of the naval strength of the State referred to; and this is the meaning that is now generally, and is likely to be exclusively, attached to the term owing to the brilliant way in which it has been elucidated by Captain A. T. Mahan of the United States Navy in a series of remarkable works.
> *Encyc. Brit.*, XXXII. 491, 492.

sea-puss (sē′pus), *n.* Same as *sea-purse*, 2.

sea-quadrant (sē′kwod″rant), *n.* The Jacob's-staff, an old-fashioned instrument designed for measuring altitudes of the heavenly bodies.

seaquake (sē′kwāk), *n.* An earthquake which takes place beneath the ocean.

> Seismic geography, or the distribution of earthquakes over the surface of the earth, is adequately dealt with by Major Dutton; and his final chapter is devoted to "*seaquakes*," or those crustal disturbances which occur in submarine areas. *Athenæum*, April 1, 1905, p. 404.

sea-rate (sē′rāt), *n.* The running of a chronometer at sea in relation to its gain or loss on Greenwich mean time, or the mean time of any other prime meridian to which it may have been set.

search, *n.*—**Curve of search.** See ★*curve*.

search-coil (sėrch′koil), *n.* A small coil of insulated wire used for determining the strength of magnetic fields by means of the currents induced in the coil.

search-ephemeris (sėrch′e-fem″ẹ-ris), *n.* An ephemeris calculated from an approximate orbit of a comet or planet to aid in searching for it. *Nature*, Oct. 22, 1903, p. 606.

sea-region (sē′rē″jọn), *n.* A zoölogical region, or division, of the sea characterized by the presence of certain marine animals, especially fishes. *Geog. Jour.* (R. G. S.), X. 219.

sea-robin, *n.*—**Brown-winged sea-robin**, *Prionotus strigatus*, the northern striped gurnard.—**Red-winged sea-robin**, *Prionotus carolinus*, the common gurnard.

sea-sergeant (sē′sär″jant), *n.* A member of a Welsh secret society. This organization came into existence about the year 1725, and lasted for nearly half a century, when it was dissolved.

sea-serpent, *n.* 4. A name of *Ophichthys gomesii*, an eel of the family *Ophichthyidæ*, found in the West Indies.

sea-silk (sē′silk), *n.* The long, silky threads of the byssus of the bivalve *Pinna*, found in the Mediterranean. It has very little commercial value, the articles made from it, as purses, gloves, etc., being curious rather than useful.

> The marine products of the ocean have been investigated, with some success, in order to obtain a silk, independent of the silkworm culture, that may be used as a commercial article. This material has been termed *Sea Silk*. Certain marine mollusks, common on the coasts of Calabria and Sicily, attach themselves to rocks by means of stout threads. This material is combed and then treated with the juice of the lemon. Three parts of the material gives about one part of a lucid fibre of golden lustre, and from 3 to 8 centimetres long. It is of great strength, and bears a resemblance to real silk. It is made into articles such as gloves and purses.
> *Hannan*, Textile Fibres of Commerce, p. 183.

season, *n.* 1. (*d*) Any one of the chief periods or divisions of the ecclesiastical year, such as Advent, Lent, Easter, etc.

season-check (sē′zn-chek), *n.* Same as ★*check*¹, 19.

seasoning, *n.* 5. In *leather-manuf.*, the application of a solution of blood and logwood preparatory to blacking. *C. T. Davis*, Manuf. of Leather, p. 360.

seasoning-machine (sē′zn-ing-ma-shēn″), *n.* A machine for seasoning leather. The skin is brought into contact with revolving pads which apply the seasoning. *C. T. Davis*, Manuf. of Leather, p. 358.

sea-spry (sē′sprī), *n.* Sea-spray. [Rare.]

> Or, on a moonless night,
> To tinge, on syren shores, the salt *sea-spry?*
> *Keats*, Endymion, iv.

sea-stack (sē′stak), *n.* A sharp, isolated eminence which rises from the sea-bottom.

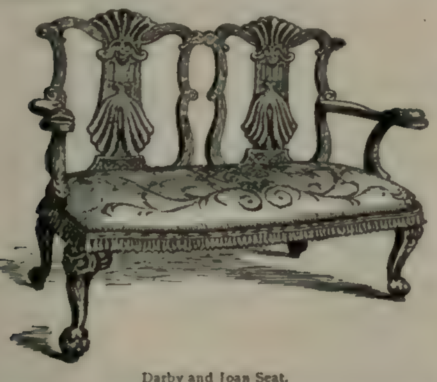
> The isolated rock-masses and *sea-stacks*, which we are enabled to trace by means of the soundings. One of these cases may be specially mentioned. The mass rises at a distance of about 36 miles off Cape Razo, in the submerged valley of the Tagus; it is an isolated *sea-stack*, with a height of 2340 feet from its base.
> *Geog. Jour.* (R. G. S.), XIII. 288.

sea-step (sē′step), *n.* One of a set of narrow steps fastened to the side of a war-ship and used in going on board from a small boat when the side ladders are unshipped, as at sea.

sea-stone (sē′stōn), *n.* Same as *sea* ★*amber*.

sea-swallow, *n.* 4. A West Indian name for the flying-fish. See *flying-fish* (*a*).

sea-swell (sē′swel), *n.* A wave of symmetrical form which has outrun the wind which produced it.



Darby and Joan Seat.

seat, *n.*—**Darby and Joan seat,** a settee having two chair-like backs, for two persons.

> If a name must be employed to differentiate between these and those with more splats, I should greatly prefer to revive the old and now forgotten term of '*Darby and Joan seats.*' *R. S. Clouston*, in Burlington Mag., V. 485.

seat, *v. i.* 3. To close tight upon its seat: said of a lifting-valve, which may be actuated mechanically from without or be self-acting by the variation of pressure within the passages which it controls.

seat-bone (sēt′bōn), *n.* The ischium.

sea-terrace (sē′ter″ās), *n.* A terrace formed by marine erosion. *Geikie*, Text-book of Geol., p. 29.

seath (sēth), *n.* The coalfish or pollack, *Pollachius virens*.

seating, *n.* 4. (*b*) In *iron ship-building*, a foundation or support built up of plates and angle-bars for the machinery in the interior of a vessel: as, an engine-*seating*; a boiler-*seating*.

seat-locker (sēt′lok″ėr), *n.* A locker whose lid, or top, forms a seat. In the forecastle these lockers run fore-and-aft on both the starboard and the port side.

seat-mast (sēt′mȧst), *n.* That member in a bicycle-frame to which the saddle is attached. It is the prolongation, above the horizontal upper member of the diamond frame, of the nearly vertical diagonal strut at whose lower end is the bearing for the pedals or crank-shaft.

> The purpose of this invention is so to construct the *seat-mast* that a perfect spring seat will be obtained, and that the distance between the seat and the pedals will remain constant. *Sci. Amer.*, Oct. 29, 1898, p. 284.

sea-transom (sē′tran″sum), *n.* In *naval arch.*, the stern transom. See *transom*, 4.

sea-trout, *n.*—**Spotted sea-trout,** *Cynoscion nebulosus*, a sciænoid fish found on the South Atlantic coast of the United States. It is not a trout, nor is it at all related to the trout.

seau (sō), *n.*; pl. *seaux* (sō). [F. *seau*, a bucket, < OF. *seel*, < ML. **sitellum*, dim., < L. *situla*, a vessel: see *situla*.] A pail-shaped vessel belonging to a dinner-service, made by English potters in the eighteenth century.

Seaward climate. See ★*climate*.

sebastine² (sẹ-bas′tin), *n.* A trade-name of a Swedish explosive which resembles dualin.

Sebastolobus (sē-bas-tol′ọ-bus), *n.* [NL., < *Sebastes*, a related genus, + Gr. λοβός, lobe.] A genus of scorpænoid fishes found in rather deep water in northern parts of the Pacific.

sebastopol (sē-bas′tọ-pōl), *n.* [Named in allusion to *Sebastopol*, famous for its siege.] A variety of the block-game in dominoes, in which the double-six leads and nothing but sixes can be played until both sides and both ends of the first set have been played to.

Sebastopsis (sē-bas-top′sis), *n.* [NL., < *Sebastes* + Gr. ὄψις, appearance.] A genus of scorpænoid fishes found on both sides of the northern and temperate Pacific.

sebolith (sē′bọ-lith), *n.* [L. *sebum*, tallow, + Gr. λίθος, stone.] A concretion in a sebaceous duct or gland.

Seborrhea nigricans, a form of chromidrosis in which there is an excretion of fat with the sweat, containing a dark pigment.

seborrheal, seborrhœal (sē-bọ-rē′ạl), *a.* Relating to or affected with seborrhea. *Buck*, Med. Handbook, I. 195.

sec (sek), *a.* [F.] Dry: said of champagne and other wines: opposed to *sweet*.

secant. I. *a.* 2. Specifically, noting a stream which cuts across folded strata.

> The author recognizes several classes of streams: consequent, inconsequent, obsequent (the definition of this term does not agree with that given by others) and *secant* (traversing an anticline).
> *W. M. Davis*, in Science, Dec. 20, 1901, p. 976.

II. *n.*—**Hyperbolic secant,** sech $x = \frac{2}{(e^x + e^{-x})}$.

Secchi's types of stars. See ★*star*¹.

seccotine (sek′ọ-tin), *n.* A trade-name of a cement used to unite surfaces of paper, cloth, leather, etc.

secentismo (sā-chen-tis′mō), *n.* [It., < *secento*, six hundred.] The literary style of Italian writers of the seventeenth century: a period of decadence in Italian literature. See ★*secentisti*.

> The Arcadia [1690] was a reaction against *Secentismo*, but a reaction which . . . only succeeded in impoverishing still further and completely withering up the literature.
> *Encyc. Brit.*, XIII. 511.

Secentisti (sā-chen-tis′ti), *n. pl.* [It. See ★*secentismo*.] The members of a decadent school of literature and art existing in Italy in the seventeenth century. It actually flourished for about 140 years from the middle of the sixteenth century. Its productions are marked by exaggeration of style and affectation.

> At the head of the school of the "*Secentisti*" comes Giovan Battista Marini of Naples . . . especially known by a poem called L'Adone. His aim was to excite wonder by novelties; hence the most extravagant metaphors, the most forced antitheses, the most far-fetched conceits, are to be found in his book. *Encyc. Brit.*, XIII. 511.

secessionist, *n.* 2. Specifically, a member of a body of artists which, in principles and methods, differs from and protests against the accepted traditions of older societies.

> The death, in his ninety-third year, is announced from Vienna of the distinguished painter in water colours, Rudolf Alt. His work presented a great contrast to that of the Viennese *secessionists*, whose Honorary President he was. *Athenæum*, March 25, 1905, p. 378.

séchard (sā-shär′), *n.* [F., < *sec*, *sèche*, dry, < L. *siccus*, dry.] The dry, warm, foehn wind which blows over Lake Geneva.

sechser (zech′sėr), *n.* [G., < *sechs* = E. *six*.] A copper coin of Ravensburg, Prussian Westphalia, of the early seventeenth century.

sechsling (zechs′ling), *n.* [G., < *sechs*, = E. *six*, + *-ling*, = E. *-ling*.] 1. A copper coin of Schleswig-Holstein under Danish rule, equal to half a skilling.—2. A copper coin of Hamburg.

Sec. Leg. An abbreviation (*a*) of *Secretary of Legation*; (*b*) [*l. c.*] of the Latin *secundum legem*, according to law.

second¹, *a.*—**Second dealing,** in *card-sharping*, the art of holding back the top card of the pack and dealing the one under it, so that the card held back may fall to the dealer himself. The cards having been previously marked on the backs, the dealer knows what cards to withhold.—**Second deliverance.** See ★*deliverance*.

second², *n.*—**Decimal second.** See ★*decimal*.—**Horse-power second,** one sixtieth of a horse-power minute.—**Metric horse-power second,** one metric horse-power exerted for one second; one sixtieth of a metric horse-power minute.—**Sidereal second,** $\frac{1}{86,400}$ part of the sidereal day, which is divided in the same way as the mean solar day into hours, minutes, and seconds.

secondary. I. *a.* 6. In *geol.*, applied to those rock-making minerals which are the products of the alteration or decay of the minerals, original or primary, in the rock. Thus quartz, feldspar, and mica are primary in granite, whereas kaolin, arising from the decay of the feldspar, is secondary. *Geikie*, Textbook of Geol., p. 89.—7. In *elect.*: (*a*) Pertaining to those parts of a transformer, or induction-coil, in which the induced currents occur, as distinguished from the corresponding parts of the primary or inducing circuit; as the secondary coils, windings, turns, or terminals of a transformer. (*b*) Pertaining to the induced current or electromotive force in a transformer or induction-coil.—**Secondary education,** the stage of education which follows the primary or elementary stage (of studies taught in the 'primary' schools to the age of ten or twelve) and is carried on in the 'secondary' or 'grammar' or 'high' schools (to the age of fourteen, sixteen, or eighteen). It concludes the formal education of the pupil, except in the cases in which he proceeds to a special or technical school (preparatory to business or trade), or to a college or university. See *secondary* ★*school*.

> *Secondary* instruction in high schools and academies continues the traditional course of study on the lines marked out already in the elementary schools.
> *W. T. Harris*, Psychol. Foundations of Education, p. 332.
>
> Perhaps the most serious defect of *secondary education* in the United States is its brevity.
> *De Garmo*, in Herbart (trans.), Outlines of Educational [Doctrine, p. 103.

Secondary insulation, the insulation of the secondary winding of a transformer or induction-coil.—**Secondary lag,** the difference of phase between the secondary and primary current or electromotive force in a transformer.—**Secondary resistance,** the resistance of the secondary circuit of a transformer.—**Secondary school.** See ★*school*.—**Secondary side,** that portion of a transformer in which the induced currents are formed, as distinguished from the primary or inducing side.—**Secondary terminals,** the free ends of the secondary winding of a transformer or induction-coil.—**Secondary turns,** the ampere turns in the secondary coil of a transformer.—**Secondary voltage,** the voltage at the terminals of that winding of a transformer or induction-coil within which currents are induced, as distinguished from the voltage of the primary or inducing circuit.—**Secondary winding,** the coil of the secondary circuit of a transformer or induction-coil.

II. *n.* 7. *pl.* The symptoms occurring in the second stage of syphilis.—8. One of the smaller tubercles on the surface of the test in the *Echinoidea* or sea-urchins. The secondaries are intermediate in size between the primaries and the miliaries.—9. In *Eng. law*, the second officer of the Courts of King's Bench and Common Pleas; also, an officer of the Corporation of London who hears inquiries to assess damages in cases where the defendant does not appear.—10. In an alternating-current transformer or other apparatus having several circuits in inductive relation to each other, that coil or circuit which receives power by induction from the primary coil.—**Movable secondary,** a secondary coil or winding of a transformer which is free to move with respect to the primary coil or is capable of adjustment with reference to the latter.—**Multipoint secondary,** a form of secondary coil of a transformer constructed so that it may be used in parts, for which purpose a series of terminal wires are brought out from various points of the coil.

second-foot (sek′und-fůt), *n.* Same as ★*foot-second*.

secondness (sek′und-nes), *n.* 1. The character of being second; the ordinal position in a series of the second member of it, whether this position is considered in itself or is spoken of as appertaining to the object that occupies it.—2. (*a*) The mode of being of an object which is such as it is by virtue of being connected with or related to another object or objects, regardless of any triadic relation. (*b*) The mode of connection or relation of such an object with such other. (*c*) In a looser sense, the secundal, or relative, character which belongs to an individual object, as having such a mode of being.

secondo, *n.* **II.** *a.* [fem. *seconda* (-dä).] Second: used of instruments or their parts in an orchestra: as, violino *secondo*, second violin. — **Seconda volta**, in *music*, the second time: used of a repeated passage.

secretaria (sä-krä-tä-rē′ä), *n.* [Sp., < *secretario*, secretary.] A secretary's office. [Philippine Is.]

secretariate, *n.* **3.** Specifically, in India, the central office of the administration: see the extract.

> The preceding sketch of Indian administration would be incomplete without a reference to the *secretariat*, or central office, which in some sense controls and gives life to the whole. From the *secretariat* are issued the orders which regulate or modify the details of administration; into the *secretariat* come all the multifarious reports from the local officers, to be there digested for future reference. But though the secretaries may enjoy the advantages of life at the presidency capitals, with higher salaries and better prospects of promotion, it is recognized that the efficiency of the empire rests ultimately upon the shoulders of the district officers, who bear the burden and heat of the day, with few opportunities of winning fame or reward. *Encyc. Brit.*, XII. 769.
>
> Even the *Secretariat* believes that it does good when it asks an over-driven Executive Officer to take a census of wheat-weevils through a district of five thousand square miles.
> *R. Kipling*, Wressley of the Foreign Office, in Indian [Tales, p. 671.

4. A number of secretaries forming a board or official body.

secretary, *a.* **2.** Knowing secrets; confidential; able to keep a secret.

> And when thou read'st a mooving syllable [in a love letter]
> Thinke that my soule was *secretary* to 't.
> *Marston*, Insatiate Countess, i. 1.

secretin (sē-krē′tin), *n.* [LL. *secretum*, a secretion, + *-in*².] A peculiar substance which is derived from the mucous membrane of the intestinal tract and, after absorption into the blood-current, stimulates the pancreas and possibly also the salivary glands to secretion. The substance is supposedly present in the epithelial cells of the intestinal mucosa in an inactive form which is termed *prosecretin*. Of its chemical nature nothing is known, but it appears certain that secretin is not a ferment.

secretion, *n.* **3.** A mineral deposit formed in a fissure or cavity by growth inward from the walls: contrasted with *concretion*, which grows outward from a nucleus. *Geikie*, Text-book of Geol., p. 135. — **Inner** or **internal secretion**, a specific product, elaborated in a glandular organ of the body, which is given off into the blood and lymph: such products are not waste products, but play an important part in the general metabolism. Products of this kind are furnished by the thyroid gland, the adrenals, the spleen, the pituitary body, the testicles, etc. — **Lateral secretion**, the process which accounts for the formation of ore-deposits by laterally moving currents of water.

> Some hold that the waters doing the work are descending; others that they are laterally moving; others that they are ascending. The first is known as the descension, the second as the *lateral-secretion*, and the third as the ascension theory.
> *Van Hise*, in Science, Nov. 15, 1901, p. 756.

secretionary (sē-krē′shon-ā-ri), *a.* [*secretion* + *-ary*.] Originating by secretion, in any sense, or pertaining to the process of secretion.

secreto-inhibitory (sē-krē″tō-in-hib′i-tō-ri), *a.* Causing diminished secretion: noting nerves which act in this manner upon the glands.

secretomotor (sē-krē-tō-mō′tor), *a.* [LL. *secretum*, a secretion, + *motor*, a mover.] Causing increased secretion: noting nerves which act in this manner upon the glands. *Nature*, Nov. 12, 1903, p. 48.

sect², *n.* **2.** In *geom.*: (*a*) A part cut out on a straight line; a limited straight line or rod; the part or piece of a straight line between two definite points (end-points of the sect); a portion of a given straight line, of definite length.

> Any two *sects* in plane space . . . determine a point, the intersection of the lines in which they lie, and an area, that of a parallelogram.
> *E. W. Hyde*, in Merriman and Woodward, Higher [Math., p. 394.

(*b*) A piece of a range bounded by two points. (*c*) Two points, A and B, upon a straight *a*. — **Explemental sects**, in *geom.*, two costraight sects with the same end-points and together making a complete straight or the complete point-row on a straight. See ★*explemental* (*c*). — **Perspective sect** of any point, the sect from the center of perspective to that point. — **Philo's sect.** See *Philo's* ★*line*. — **Product of two sects.** See ★*product*. — **Unit sect**, in *geom.*, an arbitrary sect, designated by 1, used to define the product of a sect *a* by a sect *b*.

II. *a.* In *math.*, of sects; operating with sects.

> He constructs a *sect* Calculus in which he shows that the theory of proportion can be founded without the introduction of irrational numbers.
> *J. W. Withers*, Euclid's Parallel Postulate, p. 56.

Sect calculus. See ★*calculus*.

sect. [*l. c.* or *cap.*] An abbreviation of *section*.

secta (sek′tä), *n.* [L. *secta*, sect, school, following.] In *law*: (*a*) A suit or action. (*b*) The pursuit of a criminal. (*c*) The feudal service of attendance at the lord's court. (*d*) The witnesses brought to court by a plaintiff to prove his count or declarations. In that sense they were his followers or suit, whence the term 'to bring suit.' — **Secta ad curiam**, in *old Eng. law*, the writ that lay against him who refused or neglected to perform his service or suit to the county court or to the court baron. *Cowel.* — **Secta ad molendinum**, service growing out of the established custom of carrying one's grain to a particular neighborhood mill for grinding; also, the writ that lay against one who neglected the service. *Kinney.* — **Secta curiæ**, attendance or service at court. This was due the feudal lord from his tenants, both to answer complaints against themselves, and to aid in the trial of others. *Cowel.*

Sectator² (sek-tā′tor), *n.* [NL., < L. *sectator*, a follower.] A genus of fishes of the family *Kyphosidæ*, known only from Panama.

sect-carrier (sekt′kar″i-ėr), *n.* In *geom.*, a physical instrument for the graphic performance of the following construction: to set off a given sect (piece of a straight line) on a given straight line, from a given point of this line, toward a given side of this point (in a given one of the line's two senses). — **Unit sect-carrier**, an instrument for laying off on any straight line, from any point on it and in either sense, a sect equal to the chosen unit sect: a simpler substitute for the compasses in elementary geometry.

section, *n.* **2.** (*j*) The smallest administrative subdivision of a railroad. It is usually a mile or two in length and is designated by a number.

10. In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*¹), a subdivision of any of the taxonomic divisions from class to subgrad. It is used wherever it is considered necessary to introduce a further subdivision. — **11.** In *geol.*, a group of several related stages, usually of the same kind of sedimentary rock; a series or formation. *Geikie*, Text-book of Geology, p. 860. — **12.** In *function-theory*, a line in the plane of the variable of a function upon crossing which the function abruptly changes its value. — **Development section.** Same as ★*development*, 6 (*c*). — **Effective section**, that part of the cross-section of any piece of material which is actually available for withstanding a stress. — **Median section.** Same as *golden section* (which see, under *golden*). — **Right section of a cylinder**, a section of which the plane is perpendicular to the elements. — **Section analysis.** See ★*tree analysis*. — **Working-out section.** Same as ★*development*, 6 (*c*).

section, *v.* **II.** *intrans.* To cut sections; divide into sections.

> They [the spores] are brown in color, somewhat flexible, and *section* readily on the microtome.
> *E. H. Sellards*, in Amer. Jour. Sci., July, 1903, p. 89.

section-angle (sek′shon-ang″gl), *n.* The angle between the planes which form the top face and either side face of a double-edged cutting-tool for a lathe or planer for metal.

section-boss (sek′shon-bos), *n.* The man who is in charge of the trackmen employed on a section of a railroad and is responsible for the maintenance of way for his section.

section-box (sek′shon-boks), *n.* **1.** In *railroading*, a tool-house or tool-box placed at some convenient point on a section for the storage of tools used by a section-gang. — **2.** The box or compartment within which connections between different sections of an electrical-wiring system are placed and fuses, switches, and other similar appliances are installed.

section-colors (sek′shon-kul″orz), *n. pl.* The colors used by draftsmen, on engineering or construction drawings, to represent the various materials where these appear in section. Conventional arrangement of lines in hatching the section is more usual in modern drawings, especially in such as are to be reproduced by printing processes.

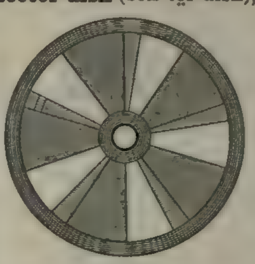
section-crew (sek′shon-krö), *n.* In *railroading*, the group or gang of track-hands or workmen employed under a section-boss in keeping the track in repair within the limits of a section.

section-finder (sek′shon-fīn″dėr), *n.* See ★*photophore*.

section-gang (sek′shon-gang), *n.* Same as ★*section-crew*.

sector, *n.* **6.** A cutting implement or device. — **Sectores coconis**, in *entom.*, the large black spines at the base of the fore-wings, having a cutting edge and teeth with which the adult saturniid moth cuts its way out of its cocoon. — **Spherical sector**, the solid generated by any sector of a semicircle when it revolves about its diameter.

sector-disk (sek′tor-disk), *n.* A rotating disk with open sectors the angular width of which is adjustable. The disk must be rotated at such a speed that it will make a complete rotation within the time limit of the persistence of vision (less than 0.04 second), Talbot's principle of diminution of the apparent intensity by intermission of the illumination being thus applied. *W. M. Stine*, Photometrical Measurements, p. 24.



Sector-disk.

sectored (sek′tord), *p. a.* [*sector* + *-ed*².] Divided into sectors: as, a *sectored* disk. *W. M. Stine*, Photometrical Measurements, p. 21.

sectoriform (sek′tor-i-fôrm), *a.* [L. *sector*, sector, + *forma*, form.] Shaped like the sector of a circle.

> Dorsal valve (of a fossil shell) considerably wider than long, "*sectoriform*," more gibbous than the ventral.
> *U. S. Geol. Surv.*, Monographs, XXXII. ii. 539.

sect-train (sekt′trān), *n.* A system of sects, AB, BC, CD, . . . KL.

secua (sā′kwä), *n.* [Native name.] A climbing vine of the gourd family, *Fevillea cordifolia*, native to northern South America and the West Indies. Its very large seeds yield a valuable medicinal oil. Also called *segra-seed*. See *antidote cacoon*, under *cacoon*.

Secular acceleration. See ★*acceleration*.

secundiflorous (sek-un-dif′lō-rus), *a.* [L. *secundus*, following, + *florere*, bloom.] Having secund flowers or inflorescence.

Secundum legem, in accordance with law. — **Secundum regulam**, by or according to rule.

security, *n.* — **Bond and disposition in security.** See ★*bond*¹. — **Liquid securities.** See ★*liquid assets*.

secus (sē′kus), *adv.* [L., otherwise, differently.] In *law*, otherwise; contrariwise: used in reports to indicate a different or dissenting opinion or an exception.

secutor (sē-kū′tōr), *n.* [L., a pursuer.] In *Rom. antiq.*, a light-armed gladiator with a square shield and a sword who was opposed to the retiarius in the gladiatorial contests. See *retiarius*.

sedarim, *n.* Plural of ★*seder*.

sedatin (sed′a-tin), *n.* [L. *sedatus*, pp. of *sedare*, make quiet, assuage, + *-in*².] **1.** An old trade-name of antipyrin. — **2.** A trade-name of paravaleryl-phenetidine, $C_2H_5OC_6H_4NHCOCH_2CH(CH_3)_2$, prepared by the action of valeric acid on paramino-ethoxybenzene (paraminophenetol). It is a colorless powder and is used in medicine as an analgesic and antipyretic.

sedentary, *a.* **5.** In *geol.*, remaining upon the rock from which it has been formed by disintegration: said of soil or loose rock material. — **6.** In *intern. law*, said of the private property of a neutral which has remained on belligerent soil or of a neutral vessel in foreign waters. See the extract.

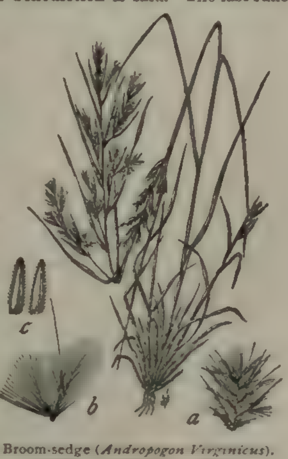
> Whereas private property of neutrals generally which has remained on belligerent soil is *sedentary*, or, so to speak, domiciled there, neutral vessels are mere visitors with a distinct external domicile. *Encyc. Brit.*, XXXI. 129.

sedentation (sed-en-tā′shon), *n.* [*sedent*(*ary*) + *-ation*.] The state of having become sedentary, or fixed in a given place or location.

> Climatic conditions, degree of *sedentation*, nature of food supply, and availability of material have each a marked influence on the condition of the arts.
> *An. Rep. Bur. Amer. Ethnol.*, 1898-99, p. 22.

seder (sā′dėr), *n.*; pl. *sedarim*. [< Aram. *sodar*, to arrange.] The order of the service and feast on the first night of the Jewish Passover, repeated on the second night by those who keep the second day. The seder table is very elaborately decorated. Three matsoth, or unleavened cakes (called mitsvoth or commandments), are placed one upon the other in front of the head of the family. The top cake is named 'Cohen,' the middle 'Levi,' and that at the bottom 'Israel,' the whole representing the three Mosaic categories of the Jewish nation. An oriental dish (a mixture composed of apples, almonds, cinnamon, etc.), called *haroseth*, horse-radish, called *maror* (bitter herbs), part of the shoulder-bone of a broiled lamb, called *zero'a* (shoulder), a baked egg, lettuce, and salt water are also placed upon the seder table. When it is fully spread, the celebrant, generally the head of the family, begins with the first of the thirteen functions in the seder service which is called *kadesh*, "sanctification," when a blessing (*berakah*) is pronounced upon the first cup of wine. The second function is called *rahats*, when the celebrant slightly washes his hands. The third is *karpas*, when celery or lettuce is eaten. At the fourth, *yahats*, the celebrant divides the middle cake, this 'Levi,' and hides one half under the cushion at the right, reserving it for the *afikomen*. At the fifth, *maggid*, the celebrant as well as all the participants recite the *hagadah* liturgy. At the sixth, *rah'tsah*, all wash their hands. The seventh, *motse*, is when the celebrant breaks the 'Cohen' and half of the 'Levi' cakes and distributes one piece of each to every member of the family, after which he says a blessing and the *motse* is eaten with avidity. The eighth, *maror*, is when a blessing is said and a piece of horse-radish or other bitter vegetable is eaten. At the ninth, *korekh* (Hillel's ceremony), horse-radish is placed between two pieces of matsa so as to fulfil to the letter the command (Exod. xii. 8) in the same manner that Hillel did "when the Temple (lit. the Holy House) existed." At the tenth, *shulhan*, the meal is eaten. At the eleventh, *tsaphon*, the half of the 'Levi' matsa which was put aside at the beginning of the service for the *afikomen* is produced, and the celebrant breaks it and distributes the pieces among the participants. At the twelfth, *berakh*, the benediction is said. The last function is called *hallel* (which see), when Ps. cxv-cxviii. are recited or chanted. Four cups of wine, called *kosoth*, are drunk by each member during the seder services. One special cup of wine is placed on the center of the table. It is called the 'Prophet Elijah's cup.' See *Elijah's* ★*cup*.

sedge^1, *n.*—**Broom-sedge.** See *broom-grass*, 2. Most properly, *Andropogon Virginicus*, a brown-colored tufted grass 2 to 4 feet high, with silky racemes in the fall, common along the coast from Massachusetts to Texas, perhaps the best-known native grass of the southern United States. It there affords excellent grazing when young, yet by preventing the formation of permanent pastures becomes one of the worst weeds of the section. Also called *broom-straw* and *sedge-grass*. See *Indian* ★*grass* (*b*). – **Coco sedge.** See ★*coco*^{3}.



Broom-sedge (*Andropogon Virginicus*). *a*, spike; *b*, spikelet; *c*, glumes.

sedge-grass (sej′gras), *n.* Any grass of the genus *Andropogon*, including the broom-sedges; beard-grass. See *broom-*★*sedge*.—**Feather sedge-grass.** Same as ★*feather-sedge*.

sedge-land (sej′land), *n.* Land between high- and low-water marks. Same as *sedge-flat*.

sediment, *n.* 2. In a steam-boiler, an internal deposit of precipitate from the feed-water, or of solid matter mechanically present, which lies as a loose or soft mud on the heating surfaces: distinguished from *scale*, which is a hard crystalline coating adhering to the metal.

sediment (sed′i-ment), *v. t.* and *i.* [*sediment*, *n.*] To allow to settle; settle: said of matter in suspension in a liquid.

> With the large number often required it is impossible to use the microscope, whilst in an afternoon several hundred *sedimenting* preparations can be put up.
> *Jour. Exper. Med.*, Jan. 15, 1901, p. 365.

sedimentation, *n.*—**Continental sedimentation**, accumulation of deposits by aggradation of continental valleys; sedimentation on land instead of on the sea-floor or in lake-basins: a term proposed by Professor Penck, then in Vienna. *Science*, Jan. 18, 1901, p. 97.—**Sedimentation test.** See ★*test*^{1}.

sedimented (sed′i-men-ted), *p. a.* Having settled into a sediment; having formed a sediment.

> Care will of course have to be taken not to overlook the *sedimented* bacteria which may be lying at the bottom of the tube.
> *Lancet*, June 1, 1901, p. 1533.

sedra (sed′rä), *n* [Aram. *sedra*, Syriac *sedro*, order, arrangement, row.] A name applied in the Jewish sabbatical liturgy to the weekly section of the Pentateuch which is read in the synagogue on the Sabbath. The Pentateuch is divided into fifty-four sedras or sections, which are subdivided into parashoth. The sedras must be read at the morning Sabbath services during the year, but as a year has only 52 weeks, in order to finish the sedras two of them are read on two special Sabbaths. The sedras bear different names. For example, the first, which is read on the first Sabbath after the feast of Succoth, is named *Bereshith*, "in the beginning." It is the first Hebrew word of the section (Gen. i. 1). The second section is called *Noah*, which is the third word of the first verse of that section (Gen. vi. 8). It specially treats of that patriarch and the history of the deluge. The last section is named *Vezoth Haberakah*, "and this is the blessing," which are the first two words of that section (Deut. xxxiii. 1).

see^1, *v. t.*—**To see one's way**, to see the possibility of accomplishing or permitting something, or of the feasibility of a certain course: with *to*.

> Could the major *see his way to* letting the Slane-McKenna wedding be adorned by the presence of four battery horses to pull a hired barouche?
> *Kipling*, In the Matter of a Private, in Soldiers Three, [p. 74.

see-bär (zā′bär), *n.* [G.] See *seiche*.

Seebeck effect. The phenomenon of thermo-electricity.

seecatch (sē′kach), *n.* Same as *seecatchie*.

seed, *n.* 10. The larvæ of the lac-insect.

> To some extent the lac is found occurring, so to speak, spontaneously, and is collected by the forest tribes, and brought by them to the fairs and bazars for sale. Where, however, there is a regular trade in stick-lac, propagation of the insect is systematically carried on by those who wish for a certain and abundant crop. This propagation is effected by tying small twigs, on which are crowded the eggs or larvæ of the insect, to the branches of the trees. These larvæ are technically called '*seed*.'
> *Sci. Amer. Sup.*, Feb. 14, 1903, p. 22671.

11. In *sugar-manuf.*, crystals of sugar placed in concentrated syrup to serve as starting-points for fresh crystallization.—**Reserve seed method**, that method of conservative lumbering in which, in a stand which is being reproduced by self-sown seed, a number of trees are left uncut for a period, usually a second rotation, after the stand itself is reproduced.—**Scattered seed method**, that method of conservative lumbering in which reproduction is provided for by leaving, after a single cutting, scattered seed-trees of the kind desired.—**Seed control**, the regulation of the quality of commercial seeds by means of stations equipped for testing samples. Such institutions (often in connection with agricultural experiment stations) exist in all the principal countries of Europe, Germany alone having more than forty, while the Department of Agriculture at Washington and the State experiment stations have taken up the work in the United States. The resort to these stations is voluntary. See *seed testing*, below.—**Seed coöperator**, an agriculturist who coöperates with an experiment station by growing seed of new varieties, selling it to the public, and furnishing reports of the yield.—**Seed races**, races or groups of plants that reproduce themselves with fidelity by means of seeds, or "come true from seed."—**Seed testing**, the examination of seed to determine its genuineness, purity, germinating power, and actual value. The question of genuineness is settled by expert inspection; of purity by the picking out of chaff, sand, weed seeds, etc., and weighing to ascertain percentage; of germinating power by a germination test consisting essentially of keeping the sample dark, moist, ventilated, and at the proper temperature and noting the percentage of seeds that sprout, also the promptness of their sprouting; that of actual value by a calculation based upon the data thus obtained. Various appliances have been devised for germinating tests, for some of which see ★*germinating-chamber* and *Geneva tester* (under ★*tester*^{1}).—**Seed variation**, variation or differences that arise in plants grown directly from seed as distinguished from those that arise from buds.

seed, *v. t.* 5. In *sugar-manuf.*, to start the process of crystallization in (concentrated syrup) by placing crystals of sugar, from a previous step in the process, to serve as seed or starting-points.

seedage (sē′dāj), *n.* [*seed* + *-age*.] The propagation of plants by means of sowing, that is, by means of seeds and spores. *L. H. Bailey*.

seed-bed, *n.* 2. In *forestry*, a specially prepared area, usually in the forest nursery, for the raising of seedlings.

seed-cake, *n.* 2. The cake left after oil has been expressed from such seeds as those of cotton, flax, rape, etc.

seed-cane (sēd′kān″), *n.* The stalk of sugar-cane as used for planting In most countries the upper part only is so used, but in Louisiana the whole stalk has generally been planted.

seeder, *n.* 1. The mechanical seeder consists of a large seed-box supported by a wheelbarrow and fitted with suitable seed-distributing machinery. It is operated by the movement of the machine as it is pushed over the ground and sows the seed in a thin film. Larger machines are operated by horse-power. Another form consists of a seed-holder and seed-distributing machine and is designed to be placed in a wagon, at or on the tail-board, and operated by a sprocket-chain from one of the wagon-wheels. These seeders are practically broadcast sowers, since the seed is discharged in a cloud (broadcast) as in the sowing-machine (which see).

Seeding stage. See *stand* ★*method*.

seed-leaf, *n.* 2. Same as *seed-leaf* ★*tobacco*.

seedling, *n.* 2. In *forestry*, specifically, a tree (grown from seed) which has not reached a height of three feet. See *tree* ★*class*.

seedling-disease (sēd′ling-di-zēz″), *n.* A disease of seedlings.—**Cabbage seedling disease, conifer seedling disease, oak seedling disease.** See ★*disease*.

seed-midge (sēd′mij), *n.* A midge that infests seeds.—**Clover seed-midge.** (*a*) An American cecidomyiid fly, *Dasyneura leguminicola*, whose larvæ live in the flowers of red clover. (*b*) See *clover* ★*flower-midge*.

seed-spot (sēd′spot), *n.* A small area, usually in a burn or in an opening in the forest, which is sown with tree-seed.

seed-tree (sēd′trē), *n.* Any tree which bears seed; specifically, in *forestry*, a tree which provides the seed for natural reproduction. Also called *mother-tree*.

seed-worm (sēd′wėrm), *n.* A worm that infests seeds.—**Clover seed-worm**, the larva of an American chalcidid, *Bruchophagus funebris*, that lives in the seeds of red clover. It was formerly thought to be a parasite on the clover flower-midge. Also called *clover-seed chalcis-fly*.—**Grape seed-worm**, the larva of a chalcidid, *Evoxysoma vitis*, which breeds in grape-seeds.

seed-year (sēd′yēr), *n.* In *forestry*, a year in which a given species of tree bears seed; specifically, a year in which a given species bears seed abundantly.

seep (sēp), *n.* [*seep*, *v.*] A small exudation of ground-water; a small spring.

> It is mentioned that at Comanche Spring, a small "*seep*," seven miles north of the Rio Grande, the limestone bluffs have been covered in a number of places with rude paintings of characteristic Indian design.
> *Nature*, Dec. 4, 1902, p. 113.

seep-well (sēp′wel), *n.* A well fed by the percolation into it of water through very small cracks in the surrounding rocks.

seer^4, *n.* 2. In Bombay, a dry measure equal to 1.41 liters; in Ceylon, a liquid measure equal to 1.14 liters.

seering (sēr′ing), *n.* A fish, *Elops saurus*, closely related to the tarpon, found on both coasts of the warm and tropical parts of America.

see-saw, *n.* 4. A motion of a steam-engine governor which oscillates on both sides of its mean or neutral position and causes the speed of rotation of the engine to vary above and below the mean.

see-town (sē′toun), *n.* The city which contains the cathedral and is the local center of a diocese. See *see*^{3}, 2.

> It was arranged that Winchester should remain the *see-town* of the older Wessex, whilst Sherborne was the ecclesiastical centre for Dorset and the rest of the newer Wessex.
> *Athenæum*, May 27, 1905, p. 650.

seevitchie (sē-vich′i), *n.* The northern sea-lion: a name adopted from the Russian and but little used.

Seewee bean. See ★*bean*^{1}.

Seger's cones. See ★*cone*.

segment, *n.* 4. An element of a machine, such as a toothed wheel, cam, or pulley, the active surface of which is not a full surface of revolution, but only a segment or part of such surface.—**Dark segment**, the ash-colored shadow of the earth seen in the eastern half of the horizon just after sunset or in the western half just before sunrise as defined by Von Bezold in 1864. See *twilight curve*.—**External segments**, of a sect AB, PA and PB when P is on the straight AB but not on the sect AB.—**Lower segment of a set**, in *math.*, the terms less than *u* if *u* is a single term, or less than a variable term of *u* if *u* is a class of terms all of which are less than some fixed term of the set, and if *u* has no maximum, that is, is such that every term of *u* is less than some other term of *u*.—**Median segment**, the so-called thoracabdominal segment of the aculeate *Hymenoptera*, the fourth thoracic segment, which is in reality morphologically the first abdominal segment, being transferred from the abdomen to the thorax in the semipupal stage.—**Premandibular segment**, a temporary segment in the head of an embryo insect, a temporary appendage of the tritocerebral segment.—**Segment of Rivinius**, a notch in the upper edge of the groove on the tympanic plate to which the drum-membrane is attached.—**Spinal segment**, a fraction of the spinal cord included between two imaginary frontal sections placed one on each side of a nerve pair and each half-way between the next pair below and the next above.

Segmental plate. See ★*plate*.

segmentation, *n.*—**Protoplasmic segmentation**, the cleavage or cutting up of the cytoplasm of the cell into pieces, as distinguished from the division or segmentation of the nucleus.

segregable (seg′rē-gä-bl), *a.* [NL. **segregabilis*, < L. *segregare*, segregate.] Admitting of segregation in Mendelian inheritance.

> An extracted type . . . may carry on *segregable* determinants.
> *Bateson and Punnett*, in Rep. Evol. Com. Roy. Soc., [1905, II. 124.

segregate, *v. i.* (*b*) To separate into dominants, recessives, and hybrids, in conformity to a numerical law: said of the descendants of Mendelian hybrids.

segregation, *n.* 4. The separation of the descendants of Mendelian hybrids into dominants, recessives, and hybrids, in conformity to a numerical law.

> This phenomenon is spoken of as *segregation*: which consists in the dispatch by the hybrid, at each generation, of offspring into dominant and recessive ranks.
> *A. B. Darbishire*, Manchester Memoirs, XLVIII. [xxiv. 4.

Law of segregation. See ★*law*^{1}.

segregator (seg′rē-gā-tor), *n.* [NL. **segregator*, < L. *segregare*, segregate.] One who or that which divides or separates.

> The *segregator* could not possibly have attained the results given thus by catheterism and the strong aspiration.
> *Annals of Surgery*, Jan., 1903, p. 30.

Urinary segregator, an appliance for obtaining the urine excreted by one kidney unmixed with that excreted by the other.

segundo (sā-gōn′dō), *n.* [Sp. *segundo*, < L. *secundus*, second.] A carangoid fish, *Hemicaranx secundus*, which inhabits West Indian waters.

sehta (seċh′tä), *n.* [E. Ind.] Cobalt ore from the Khetri mines in Jaipur, used under this name by Indian jewelers to give a blue color to enamel on ornaments of gold and silver.

seicentismo (sā-i-chen-tēs'mō), *n.* [It.] In Italian literature and art, the fashion of the seventeenth century. See ★*secentismo.*

Seicentist (sā-i-chen'tist), *n.* See ★*Secentisti.*

> The rest of the Italian School is of minor importance, though one or two of the *Seicentists* are here so well represented as to explain almost, even to modern eyes, the place they took for our forefathers.
> *Athenæum*, March 25, 1905, p. 376.

seicento (sā-i-chen'tō), *n.* [It. *seicento, secento*, six hundred, < L. *sex*, six, + *centum*, hundred. The term is elliptical, like cinque-cento.] In Italian art and literature, the seventeenth century considered as the period of certain styles and certain masters. It succeeds the cinque-cento, or sixteenth century.

seiche, *n.*—**Binodal seiche**, an oscillation of a body of water, in waves, in a lake in such a way that the surface shows two stationary nodal lines and the opposite ends of the lake rise or fall simultaneously while the central portion falls or rises respectively. The oscillations lengthwise of the lake are called *longitudinal* and those across the shorter diameter *transverse*, with respect to the axis of the lake.—**Dicrotic seiche**, a seiche due to the interference or combination of a uninodal and a binodal oscillation of a mass of water.—**Uninodal seiche**, the oscillation of a lake about one axial line near its surface, so that while one half rises the other half falls, like a balanced beam. According as the axial line trends lengthwise or transversely to the lake, this becomes a transverse uninodal seiche or a longitudinal uninodal seiche.

seichometer (sā-shom'e-tėr), *n.* [Irreg. < *seiche* + *-o-meter.*] An instrument for measuring the fluctuations of the level of the water in lakes.

> Sir John Murray communicated some preliminary observations on seiches in certain Scottish lochs, and exhibited a *seichometer* with which he hoped in the coming season to get a more definite and precise record of these oscillations. *Nature*, April 23, 1903, p. 599.

Seignette salt. See ★*salt.*

Seiji ware. See ★*ware*².

seine-block (sān'blok), *n.* In *fishing*, a block used for pursuing a seine.

Seis beds. See ★*bed*¹.

seisino (sā-i-sē'nō), *n.* [Sp. *seiseno*, sixth; whence *seisén*, a copper coin worth sixth dineros of Castile.] A Franco-Spanish copper money struck at Barcelona during the French occupation (1642–48).

seismetic (sīs-met'ik), *a.* [Irreg. < Gr. *σεισμός*, earthquake, + *-etic.*] Of or pertaining to earthquakes; of the nature of an earthquake.

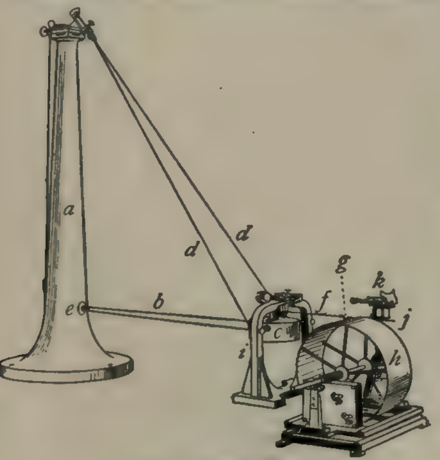
> The constant *seismetic* disturbances to which the cities of Cartago and San José are subject.
> *Geog. Jour.* (R. G. S.), X. 59.

seismicity (sīs-mis'i-ti), *n.* [*seismic* + *-ity.*] The ratio between the number of earthquakes in a region and the area of the region.

> If we pick out the well-marked earthquake districts of the world, and give to each of them a *seismicity* or earthquake frequency per unit area one-third of that in Japan, the conclusion arrived at is that considerable areas of our planet are on the average shaken every half-hour.
> *Encyc. Brit.*, XXVII. 603.

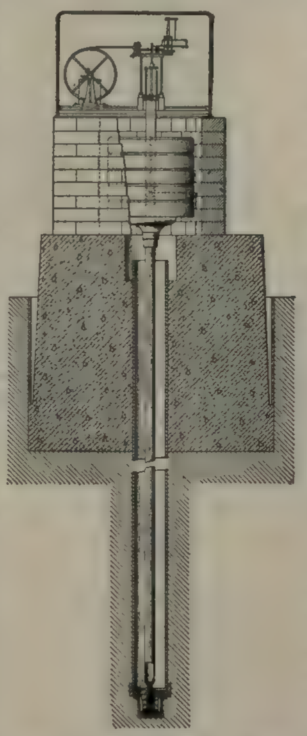
seismism (sīs'mizm), *n.* [*seism*(*ic*) + *-ism.*] The phenomena of earthquakes, collectively; seismic activity.

seismograph, *n.* See ★*seismometer.* A great variety of apparatus has been devised for recording earthquake phenomena, of which that perfected by Omori is used in Japan, that of Milne is established at about fifty British and international stations, and that known as the Bosch-Omori, improved by Marvin, is used at about thirty American and German stations. All these are adaptations of the horizontal pendulum at first used by Zolner in 1860 to investigate changes in terrestrial gravity, and they record the horizontal movements of the ground at great distances from the origin of the earthquake. A very different apparatus for this purpose is the inverted vertical pendulum devised by Wiechert (see ★*seismometer*) and greatly improved by Marvin at Washington. No apparatus for recording vertical movements of the ground and none for recording the largest movements near the epicenter have as yet been successful.—**Kreil's seismograph**, a pendulum hanging quietly by springs that allow of vibrations each in its own way, one meridionally, the other in the prime meridian, thus giving the north-south and the east-west components of an earthquake shock.—**Mallet's seismograph**, the first of modern simple and intelligible earthquake-recorders, constructed in 1846. It consisted of vertical and horizontal glass tubes each containing a small quantity of mercury. The movements of the mercury were recorded by electric currents on the revolving time-cylinder.—**Pendulum seismograph**, a recording instrument for earth-tremors, consisting of a large mass of metal mounted so as to have freedom of motion, as a pendulum about a point of support which is usually at the base. Owing to its great inertia the pendulum does not respond to sudden motions of its support and its displacement measures the amplitude of the tremor.



Bosch-Omori Seismograph.

a, cast-iron pillar; *b*, horizontal bar carrying very heavy weight *c* and held in place by steel wires *dd* and the pivot at *e*; *f*, light lever pivoted near one end and carrying at the other the pen *g*, which makes on a sheet of blackened paper wrapped around the revolving drum *h*, a magnified record of the motion of the ground and frame *i* relative to the steady mass *c*; *k*, an electromagnet actuated by a correct clock and causing the armature *j* to mark minutes on the record-sheet.



Inverted Vertical Pendulum Seismograph. Marvin System.

A stiff vertical tube, pivoted at its bottom end, carries a very heavy mass near its upper end, and is rendered stable or astatic by the elastic reaction of a central steel rod which has its bottom end firmly fixed inside the heavy mass and its top end attached to the framework on the pier. The horizontal motion of the ground and pier relative to the steady mass is magnified 120 times and inscribed on smoked-paper record-sheets by two sets of multiplying levers. One records the north-south, the other the east-west component of motion.

seismometer, *n.* In technical usage, the tendency is to restrict the application of the term "seismometer" to instruments of such high character that from the records or indications they give the actual motion of the ground may be inferred or worked out. Many instruments are sensitive to the vibrations of the ground, but their indications or records are very far from being exact measures of the disturbing influences. The Bosch-Omori and the Marvin seismographs while not absolutely perfect are seismometers, but, at the same time, they are seismographs, simply because they produce written records. The use of the term "seismoscope" is restricted to instruments that simply indicate the existence of seismic influences, without either measuring or recording them.—**Lamont's seismometer**, a delicately balanced needle carrying mirrors which reflect beams of light whose oscillations can be observed or recorded photographically.—**Wiechert's seismometer**, a stationary mass of iron, weighing about 1,000 kilograms, the inertia of which prevents it from moving appreciably during a sudden earthquake shock, while the relative movements of the earth, north-south and east-west, are recorded on a magnified scale of length and time.

seismometrograph (sīs-mọ̄-met'rọ̄-grȧf), *n.* [Gr. *σεισμός*, a shaking (an earthquake), + *μέτρον*, a measure, + *γράφειν*, write.] An instrument for recording the phenomena of earthquakes; a seismograph.

seismoscope, *n.*—**Mendenhall's seismoscope**, a small mass so supported that a shock of definite intensity will disturb its position and make an electric connection that will record the time or ring a bell and call attention to the fact. Also used as a burglar-alarm or bank-thief detector to give notice when a lock is dynamited or a vault is undermined.

seismotectonic (sīs″mọ̄-tek-ton'ik), *a.* Connected with the earth's structure so as to be related also to earthquakes: applied by W. H. Hobbs to fault-lines, at whose intersection earthquakes are believed to be specially frequent.

> Such straight lanes of special damage from earthquake have been called *seismotectonic* lines, or structure lines revealed by earthquakes.
> *W. H. Hobbs*, Earthquakes, p. 32.

seismotherapy (sīs-mọ̄-ther'ạ-pi), *n.* [Gr. *σεισμος*, a shaking, + *θεραπεία*, medical treatment.] Treatment by shaking or by vibration.

seismotic (sīs-mot'ik), *a.* [Gr. *σεισμός*, a shaking (an earthquake), + *-otic.*] Of or pertaining to earthquake movements; seismic.

seiz, *v.* A simplified spelling of *seize.*

seizer, *n.* 2. A hound trained to seize and hold game, especially wild boars.

> The deficiency is peculiarly marked in hounds, especially with those large dogs which I was accustomed to denominate as '*seizers.*'
> *Sir S. W. Baker*, Wild Beasts and Their Ways, p. 312.

seizin, *n.*—**Writ of seizin**, a writ giving possession of freehold to the plaintiff who has secured judgment in a suit for title.

seizing, *n.*—**Cross seizing**, an eye- or throat-seizing.—**Eye-seizing**, a seizing which is put on the strop of a block to form the eye, and to press the remainder of the strop into the score of the block.—**Flat seizing**, a seizing which has but one layer of turns.—**Riding seizing.** See *round* ★*seizing.*—**Round seizing**, a seizing which has what are called 'riding turns,' or upper turns, over the first layer of seizing stuff. This seizing is put on the eyes of rigging, etc.

sejant, *a.* **II.** *n.* A coin on which a lion or other animal is represented in a sitting attitude. *W. C. Hazlitt.*

sel, *v.* and *n.* A simplified spelling of *sell.*

sel. An abbreviation (*a*) of *selected* or *selection*; (*b*) [*cap.*] of *Selenium.*

Selaginaceæ (sẹ̄-laj-i-nā'sẹ̄-ē), *n. pl.* [NL.] Same as *Selagineæ.*

selaginellaceous (sẹ̄-laj″i-ne-lā'shius), *a.* Belonging to or resembling the *Selaginellaceæ*, a family of cryptogamous plants.

selah² (sē'lạ̈), *n.* [Heb.] A Jewish silver coin, equal to 2 shekels.

selamlik (sạ-läm'lik), *n.* [Turk.] 1. The part of a Turkish house reserved for the men.—2. The public visit to a place of worship made in state every Friday by the Sultan of Turkey.

> It is reported here officially from Constantinople that during to-day's *selamlik* an attempt was made to assassinate the sultan. *N. Y. Globe*, July 21, 1905.

Selbornian (sel-bōr'ni-an), *a.* and *n.* [*Selborne*, in Hampshire, + *-ian.*] In *Eng. geol.*, a term introduced by Jukes-Brown to embrace the Galt and Upper Greensand which, formerly regarded as consecutive, are now known to be continuous.

select, *v. t.* 2. To select and take up (land) under the land act; free-select. See ★*free-selection.* [Australia.]

selectance (sẹ̄-lėk'tạ̈ns), *n.* [*select*, *v.*] In *elect.*, the property of an alternating-current circuit of responding to oscillation of a certain frequency and not to others.

selection, *n.* 4. Same as ★*free-selection.*—5. In Australia, a station; land 'selected' or obtained cheaply from the government by a settler; a stock-farm.

> The size of Northern "*selections*," for instance, is proverbial throughout the Commonwealth, yet probably few Australians realize that there are outpost cattle stations each including country to the extent of between 1,800 and 3,000 square miles. *Living Age*, Dec. 9, 1905, p. 614.

5. *pl.* The highest grade of the heavy export tobacco. See *export* ★*tobacco.*—**Conscious selection.** (*a*) All those forms of selection in which individuals, or their properties, are deliberately and voluntarily picked out or chosen or selected. *J. M. Baldwin*, Development and Evolution, p. 167.—**Eliminative selection**, the extermination of the unfit. *H. E. Crampton*, in Biometrika, March-July, 1904, p. 129.—**Functional selection**, over-production of movements and the survival of the fittest functions. *J. M. Baldwin*, Development and Evolution, p. 167.—**Genetic selection**, a term proposed by Baldwin to designate changes that are produced in the birth-rate of organisms through the struggle for existence and the survival of the fittest.—**Germinal selection.** (*a*) A hypothetical struggle for existence among the germ-cells of an individual organism leading to the survival of the fittest, to the use of the unfit by them as food, and to the consequent modification of the race. (*b*) A hypothetical struggle for existence among the hereditary units in the chromatin of a germ-cell, and the survival of the fittest, and the corresponding modification of the germ-plasm or hereditary substance. See *substance of* ★*heredity.*—**Group selection**, natural selection acting upon entire aggregates of individuals. *K. Pearson.*—**Histonal selection**, the form of natural selection which results from the 'struggle for existence' between the cells of different tissues in the animal or plant body.—**Individual selection**, natural selection acting upon individuals. Compare *group* ★*selection.*—**Intrabiontic selection**, a struggle for existence which has been imagined as taking place between the component cells of an organism and as resulting in the survival of the fittest. *Weismann* (trans.), Germ-Plasm, p. 107.—**Organic selection**, a doctrine of the origin of species which has been advanced as supplementary to natural selection, or as a compromise between it and Lamarckism. Its advocates believe that species are modified along definite predetermined lines during the process of their adaptation to new conditions, or that they exhibit an innate tendency toward perfection; or, according to one of

its advocates, that "a definite evolution passes over the individual forms in a definite succession of stages by a natural necessity." The doctrine of organic selection is that the adaptation of the individual organism to its environment during its own lifetime is, or may be, antecedent to the production (in accordance with the principle of the survival of the fittest) of structural adjustments for bringing it about. While they do not believe that the effects of the activities of organisms, such as use and disuse, and the direct effects of the conditions of life (or what are commonly called *acquired characters*) are inherited, its advocates hold, nevertheless, that these activities are, on the average and in the long run, beneficial prior to selection, and that they thus enable the individual organisms to adjust themselves to new conditions, to acquire new useful habits, to escape from competitors, and to elude enemies in new ways, independently of or prior to the presence of hereditary structural adjustments for securing these useful ends. If hereditary modifications which serve the same purpose now make their appearance and accomplish the same end, they are perpetuated according to the principle of the survival of the fittest, and they thus become permanent additions to the characteristics of the species, because, it is held, they fit the species for a mode of life which its individuals have already assumed without hereditary fitness for it. The doctrine of organic selection is held by its advocates to be a compromise between Lamarck's view of the origin of species and natural selection, because, while abandoning the contention that acquired characters are inherited, it does not abandon the contention that the individual members of a species may, by their own activity, become fitted for new conditions before the species as a whole becomes structurally adjusted to these conditions through natural selection. Before organic selection can be accepted as precedent to natural selection, or as a compromise between it and Lamarckism, its advocates must show that living beings can do things for which they have no organic machinery, or else they must show that constitutional fitness for the performance of adaptive acts may arise in some other way than through the struggle for existence and the survival of the fittest.

Organic selection . . . if it has no limitations, brings about a very unexpected harmony between the Lamarckian and Darwinian aspects of evolution, by mutual concessions upon the part of the essential positions of both theories. *H. F. Osborn*, in Science, Oct. 15, 1897, p. 584.

Periodic selection, the failure of certain individual organisms and their ultimate extermination, together with the survival of others, because of failure or success at some recurring period in the life-history of each.

Pearson believes that "if a race has been long under the same environment it is probable that only *periodic selection* is at work, maintaining its stability."

T. H. Morgan, Evol. and Adapt., p. 267.

Physiological selection, a hypothesis advanced as preliminary to natural selection, and founded on the fact that there may be infertility or absolute sterility between two individuals of a species each of which is perfectly fertile with others, independently of any differences of form, color, markings, or structure. According to the hypothesis, this incompatibility may run through a whole race or strain, all the individuals of which are fertile with individuals of their own strain while sterile with individuals of another strain, which, on their part, are mutually fertile among themselves. Physiological selection is the interbreeding and multiplication of those members of a species which are mutually fertile, and it is held that any variation in the direction of the mutual infertility of different strains must be preserved, and thus give rise in time to new specific types, independently of and prior to natural selection. The facts that are adduced in support of this hypothesis show that there is often some degree of infertility between the hybrid offspring of races or incipient species, but they do not show, as the hypothesis requires, that there is any sterility between the pure-blooded members of these incipient species.

Hence we should not expect to find any constant infertility in the first crosses between the distinct strains or varieties that formed the starting point of the new species, but only a slight amount of infertility in their mongrel offspring. It follows that . . . *Physiological Selection*—which assumes sterility or infertility between first crosses as the fundamental fact in the origin of species—does not accord with the general phenomena of hybridism in nature.

A. R. Wallace, Darwinism, p. 181, note.

Reproductive selection, a change in the type of a species through the survival of the descendants of the individuals with a correlation between fertility and some feature of difference from the mode.

This selection by relative reproductivity, I have ventured to term *reproductive selection*, or acting on a suggestion from Mr. Francis Galton, genetic selection.

K. Pearson, Grammar of Sci., p. 439.

Secular selection, the rapid modification of species through the extermination of the relatively unfit and the survival of the fittest in the struggle for existence when periods of relative stability in the environment and in species alternate with periods when the environment is changing rapidly in climate, or in the relative elevation of land or water, or in any other way.—**Selection method** or **system.** See *single* ★*tree method*.—**Selection value,** usefulness great enough to be preservative of life in the struggle for existence. Darwin holds that all qualities that are useful, even in the slightest degree, contribute to determine the result of natural selection; but one of the oldest and most persistent objections to his view of the origin of species is that the raw material for natural selection must be supplied from other sources, since it is held to fail to account for the conservation and development of the minute and rudimentary incipient stages of useful properties when the value of these incipient stages is too slight to be preservative of life, and since it is also held to fail to account for the existence of reflex mechanism for the performance of adaptive acts which may also be performed consciously and voluntarily, because the time that is saved by the automatic mechanism is too slight to contribute to success in the struggle for existence. These objections to natural selection seem to have arisen through failure to perceive the difference between selection by man and natural selection. The breeder of domesticated animals and cultivated plants for points of excellence cannot select any point of excellence which eludes his observation, and the method of the breeder is usually the sudden and complete destruction of the discarded; but the process of extermination may go on so slowly in nature that a decadent stock may not come to an end, and fail to leave successors, for many generations. During this long period any useful property, however slight, if it be in any degree profitable to the individuals of a species, in their infinitely complex relations to other organic beings and to their physical conditions of life, will tend to the preservation of such individuals; for a living being is not a package of separate and independent points of excellence, but a coördinated whole which may fail in the struggle for existence if it fall short of its competitors and enemies in coördination.

In order that any adaptive structure or instinct should be seized upon and accumulated by natural selection, it must from the very first have had an adaptive value sufficiently great to have constituted its presence a matter of life and death in the struggle for existence. Such structures or instincts must not only have always presented some measure of adaptive value, but this must have always been sufficiently great to reach what I have elsewhere called *selection value*.

G. J. Romanes, Darwin and after Darwin, II. 62.

Social selection, selection by means of any social relation or activity, in distinction from *natural selection*. *Baldwin*, Dict. of Philos. and Psychol., II. 540.

selectionist (sē-lek′shọn-ist), *n.* and *a.* [*selection* + *-ist.*] **I.** *n.* One who advocates a theory of selection.

It can not be said, however, that the evidence adduced by the author from the botanical field in favor of Lamarckianism is more apt to carry conviction to the minds of *Selectionists* than much that has already been presented. *Science*, March 6, 1903, p. 382.

II. *a.* Pertaining to or according to the theories or principles of selectionists.

selection-time (sẹ̄-lek′shọn-tīm), *n.* In *psychophys.*: (*a*) The duration of the selective reaction (discriminative or cognitive type).

In this case a choice must be introduced in addition to the distinction or recognition; accordingly the reaction-time becomes still greater and is designated as the "*selection-time*."

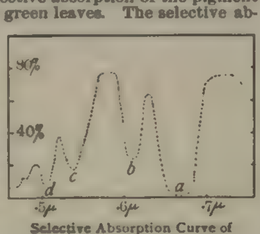
T. Ziehen (trans.), Introd. to Physiol. Psychol., p. 255.

(*b*) The duration of the selective reaction, minus the duration of the discriminative or cognitive reaction.

Selective absorption. It is the absorption of radiation by substances whose coefficient of absorption varies with the wave-length,—absorption which affects certain wave-lengths or regions of the spectrum more than others. It is an important optical property upon which the reflecting power, refracting power, dispersion, color, radiating power, and luminescence of substances depend. All bodies exhibit the phenomenon of selective absorption, no known substance transmitting all wave-lengths of the spectrum equally. Many substances, as glass, quartz, alum, and rock-salt, are transparent to the rays of the visible spectrum but opaque to portions of the infra-red or ultra-violet regions of the spectrum. Other substances, as lampblack, are opaque to the visible rays, but transmit the longer wave-lengths of the infra-red. Those portions of the absorption-spectrum of a body for which the coefficient of absorption is large are called *absorption-bands* (which see, under *absorption*). Absorption-bands are sometimes very wide, covering a considerable portion of the spectrum, glass, for example, having an absorption-band in the infra-red which covers all wave-lengths beyond 3.μ and another in the ultra-violet which includes all known wave-lengths shorter than about .2μ. In other cases the region of absorption is narrow, as in the case of the salts of didymium, which are opaque to certain limited portions of the visible spectrum. The dependence of the color of objects upon absorption is due to the fact that the color is produced by the loss of certain portions of the light penetrating the body and reflected back to the eye from its interior. The color of foliage, for example, is caused by the selective absorption of the pigment chlorophyl contained in green leaves. The selective absorption of this coloring-matter is shown by means of the curve in the accompanying figure, which indicates the percentage of light of the various wave-lengths of the visible spectrum transmitted by an alcoholic solution from green leaves one centimeter in thickness. It will be seen that this liquid, which is quite transparent in the extreme red, beyond .7μ, becomes almost opaque in the region (*a*) .66μ, and that there are at least three other narrow absorption-bands, *b*, *c*, and *d*. While selective absorption is not always accompanied by fluorescence, fluorescence occurs only in the case of bodies having an absorption-band; and the position of this band in the spectrum is definitely related to the position of the fluorescence spectrum. The well-known red fluorescence of chlorophyl, for example, is due to the absorption-band *a* shown in the figure. The reflecting power of a substance and its index of refraction are definite functions of its coefficient of absorption, the relation being expressed by the equation

$$R = \frac{n^2(1+k^2)+1-2n}{n^2(1+k^2)+1+2n},$$

where R is the reflecting power, k the coefficient of absorption, and n the index of refraction. In the case of metals, for example, which are nearly opaque, k has large values, and $n^2(1+k)^2$ is very large compared with $2n$, so that R is almost equal to unity. The reflecting power of such substances is therefore very large compared with that of transparent media. Since k, where selective absorption occurs, may vary greatly for different colors, the reflected light from the surface of many metals, such as copper, is strongly colored. The dependence of the index of refraction, n, upon the value of k explains the anomalous dispersion of substances having strong absorption-bands. See *anomalous* ★*dispersion*.—**Selective action, emission, mating, reaction.** See ★*action*, etc.



Selective Absorption Curve of Chlorophyl.

selectivity (sē-lek-tiv′i-ti), *n.* [*selective* + *-ity.*] In *elect.*, the property of a circuit by virtue of which it responds to electric oscillations of a given frequency.

The system of *selectivity* devised by Sir Oliver [Lodge] was the outcome of a series of classical experiments based upon his syntonic Leyden jars in which one jar is caused to discharge through a circuit by the sparks of another jar, provided the two circuits are of equal electrical dimensions. *Elect. World and Engin.*, Aug. 1, 1903, p. 173.

selector, *n.* **3.** An automatic switch used in telephone exchanges. See *selector* ★*switch*.

Selenaspis (sel-ẹ̄-nas′pis), *n.* [NL., < Gr. σελήνη, the moon, + ἀσπίς, shield.] A genus of catfishes found in tropical American seas.

selenhydric (sel-en-hī′drik), *a.* Noting an acid, same as *hydroselenic acid*.

seleniasis (sel-ẹ̄-nī′ạ-sis), *n.* [NL., < Gr. σελήνη, the moon, + *-iasis.*] Mental derangement formerly thought to be caused by sleeping in the full light of a tropical moon.

selenio-. In *chem.*, a prefix to the name of a substance, signifying the presence of selenium as a constituent.

selenion (sē-lē′ni-on), *n.* [NL.] Same as *selenium*. The termination *-on* is to be preferred, since the names of metals are made to end in *-um*, and selenion is much more closely related to the non-metallic elements.

Selenium eye, resistance. See ★*eye*1, ★*resistance*.—**Vitreous selenium,** one of several allotropic forms of the element, obtained by fusing it and allowing it to cool rapidly. It appears as a brownish-black translucent, amorphous, brittle mass, which becomes crystalline by reheating and gradual cooling. If the element is fused and raised to about 250° C., and then slowly cooled, the structure becomes coarsely crystalline or granular, and in this condition the conductivity for electricity is most affected by light. See *resistance*, 3, and *photophone*.

seleno-. Same as ★*selenio-*.

selenoplegia (sẹ̄-lē-nọ̄-plē′ji-ạ̈), *n.* [NL., < Gr. σελήνη, the moon, + πληγή, stroke.] Same as ★*selenoplexia*.

selenoplexia (sẹ̄-lē-nọ̄-plek′si-ạ̈), *n.* [NL., < Gr. σελήνη, the moon, + πλῆξις, stroke.] A morbid state, occurring in the tropics, formerly supposed to be due to the action of the moon's rays.

selenous (sẹ̄-lē′nus), *a.* Same as *selenious*.

selenyl (sel′ẹ̄-nil), *n.* [*selen*(*ium*) + *-yl.*] An atom of selenium and one of oxygen together appearing as a compound radical, as in selenyl chlorid, ($SeOCl_2$).

Seleucid, *n.* **II.** *a.* Pertaining to Seleucus or the royal dynasty of the Seleucids in Syria: as, a *Seleucid* coin.

self, *n.*—**Divided self, divided will,** in *psychol.*, the self or will of a person whose mental attitudes in internal discourse ('saying to oneself,' 'thinking to oneself') represent radically and even irreconcilably different views of life; the self or will of one whose successive feelings and impulses are so discrepant as to prevent his leading a consistent life.

Augustine's psychological genius has given an account of the trouble of having a *divided self* which has never been surpassed.

W. James, Var. of Religious Exper., p. 172.

Subliminal self, a supposed subconscious self or personality, usually dormant, but manifesting itself in hysteria, hypnosis, 'double personality,' etc., by means of speech, behavior, writing, etc., of a kind foreign to the normal character and, oftentimes, indicative of knowledge and experience which the normal self does not consciously possess.

He [Myers] took a lot of scattered phenomena, . . . and bound them together in a system by his bold inclusive conception of the *Subliminal Self*.

W. James, in Proc. Soc. Psychical Research, May, 1901, [p. 16.

self-actor (self-ak′tọr), *n.* An automatic machine, as a cotton-spinning mule.

self-adaptation (self″ad-ap-tā′shọn), *n.* The response of an organism to new conditions by changes that are adapted to those conditions. The improvement or strengthening of a muscle by exercise is an example of self-adaptation. The construction of a muscle and the structure and arrangement of its blood-vessels and nerves are such that normal use strengthens it, and most self-adaptations are effected by organic machinery for bringing them about under normal use, while abnormal or unnatural use is usually destructive instead of adaptive.

What the Rev. Dr. Henslow has termed '*self-adaptation*,' is in itself a result of natural selection.

H. F. Osborn, in J. M. Baldwin, Development and Evolu- [tion, p. 341.

self-alining (self-a̤-lī′ning), *a.* Alining automatically.—**Self-alining bearings**, bearings so constructed as to adjust themselves to an angular variation in position of the center-line of the shaft which they support. Such bearings diminish cramping, heating, and cutting of the bearing surfaces when rigidity is impossible or undesirable.

> Where the ends of the polar axis are supported on separate piers the bearings can be made *self-aligning*.
> *C. D. Perrine*, in Science, Jan. 29, 1904, p. 164.

self-amputation (self-am-pṳ-tā′sho̤n), *n.* Autotomy.

> Miss Monk's studies on Phataria, a star-fish remarkable even among its close allies within the family Linckiidæ, for the variability in the number of its rays, and the readiness with which it parts with them and then regenerates them, led to the following results: 1. The observations proved conclusively that the casting off of the rays is, in most cases at least, not accidental, but a true *self-amputation*. *Science*, Jan. 10, 1902, p. 62.

self-cocking (self-kok′ing), *a.* Cocking automatically: said of a pistol in which the hammer is cocked and released by simply pulling the trigger.

Self-constituted manifold. See ★*manifold*.

self-differentiation (self″dif-e̤-ren-shi-ā′sho̤n), *n.* In *embryol.*, the kind of differentiation shown in structures which in their development have a high degree of independence of neighboring structures.

self-digestion (self-di-jes′tyo̤n), *n.* Same as ★*autodigestion*.

self-dissociation (self-di-sō-shi-ā′sho̤n), *n.* In *phys. chem.*, the dissociation of a pure solvent itself, which is assumed in order to explain the fact that it conducts electricity slightly, even when carefully freed from all dissolved electrolytes.

> The conductivity of the pure solvents is explained by assuming "*self-dissociation*" and considerable space is devoted to mere speculation as to what the composition of the ions might be in the various individual cases.
> *Jour. Phys. Chem.*, Feb., 1905, p. 178.

self-docking (self-dok′ing), *a.* Having the ability to dock its parts on other parts so that all the sections can be examined above water successively: said of a floating dock. See ★*dock*3, 1.

> An important feature of the dock is the arrangement by which any portion of it can be examined, cleaned, and painted. Each pontoon can in turn be detached, lifted, and hung on the side walls, where any necessary work can be done upon it. The underneath portion of the walls may be exposed for cleaning and painting by careening the structure. It is this quality that gives the dock the name of *self-docking*. *Sci. Amer.*, Oct. 29, 1898, p. 280.

self-estrangement (self-es-trānj′me̤nt), *n.* See ★*absorption*, 2.

self-excitation (self″ek-si-tā′sho̤n), *n.* In *elect.*, the excitation of the field of a dynamo-electric machine by currents taken from the armature of the same machine.

self-excited (self-ek-sī′ted), *p. a.* In *elect.*, said of a generator having no source of magnetic induction other than that of its own residual field to bring it into function, and which, when started, is supplied by the current of its own armature-circuit: distinguished from *separately excited*.

self-exciting (self-ek-sī′ting), *p. a.* In *elect.*, capable of actuation by its own residual field and of providing its own magnetizing currents when once started: said of generators that are not separately excited.

self-feeling (self-fē′ling), *n.* In *psychol.*, egoistic feeling or emotion.

> The *self-feeling* . . . (selbstgefühl, amour propre) . . . may translate itself in two forms: in a negative form as a feeling of powerlessness and debility, and in a positive form as a feeling of strength and audacity.
> *Ribot* (trans.), Psychol. of Emotions, p. 15.

self-fermentation (self″fėr-men-tā′sho̤n), *n.* Fermentation referable to the action of enzyms, which have not been introduced from without. See ★*autolysis*.

self-hypnosis (self-hip-nō′sis), *n.* Auto-hypnosis; hypnosis by autosuggestion.

> This sort of *self-hypnosis* may lead even to an identification of the individual with the ideal form that absorbs his mind.
> *H. B. Woolston*, in Amer. Jour. Psychol., XIII. 71.

self-imitation (self″im-i-tā′sho̤n), *n.* The imitative repetition of one's own movements, characteristic of a certain stage of childhood. See the extract.

> That young children do go through a stage of intense interest in the sensations resulting from their own movements is a fact made clear from many observations. The curious period of "*self-imitation*" in the child when it repeats for an indefinite period the same movement or sound, over and over again, is very likely a period of vivid attention to movement sensations.
> *M. F. Washburn*, The Animal Mind, p. 283.

self-induced (self-in-dūst′), *p. a.* Induced or brought on by itself; specifically, in *elect.*, set up by the inductive action of a fluctuating current in the same circuit: as, a *self-induced* current.

self-inductance (self-in-duk′ta̤ns), *n.* **1.** Inductance due to interlinkage of an electric circuit with the lines of force of a current flowing in the same circuit: distinguished from *mutual inductance*, where the interlinkage is with lines of a current in a second circuit. See ★*inductance*.—**2.** The numerical value of self-induction; the coefficient of self-induction. See ★*inductance* and ★*unit of inductance*.

> In 1898 Rowland published a brief description of some twenty-six methods for the measurement and comparison of *self-inductance*, capacity and mutual inductance. These methods are mostly of the Wheatstone Bridge type and depend upon the use of an alternating current and an electrodynamometer.
> *Elect. World and Engin.*, Feb. 18, 1905, p. 354.

self-induction, *n.*—**Coefficient of self-induction.** See ★*coefficient*.

self-interrupting (self-in-te̤-rup′ting), *a.* Interrupting automatically: said of an instrument which automatically breaks and remakes an electric circuit, as, for instance, of the electrically driven tuning-fork. *Scripture*, Exper. Phonetics, p. 15.

self-luminosity (self″lū-mi-nos′i̤-ti), *n.* Luminosity due to the spontaneous vibratory motions of the particles of the luminous body. All bodies heated above red heat are self-luminous, whereas in most cases of luminescence the light emitted is due to excitation from without. The glowing of radium, and of other radioactive substances, is an instance of self-luminosity and it is in describing this phenomenon that the term is usually employed.

self-mate (self-māt′), *n.* A position in a chess problem such that the fact that white or black is to move compels black or white to effect a mate after a stated number of moves. The more modern term for such problems is *sui-mate*.

self-sense (self′sens), *n.* The sense of one's own personality: a more inclusive term than 'self-respect' and broader than 'self-consciousness.' *E. A. Ross*, Social Control, p. 241.

self-sown (self-sōn′), *a.* Disseminated without the intervention of human or animal agency; in common usage, sown by any agency other than man.

self-yew (self′yö), *n.* In *archery*, a self-bow made of yew. See *self-bow*, under *bow*2.

seligmannite (sā′lig-män-īt), *n.* [After Gustav *Seligmann* of Koblenz.] A rare mineral found in the dolomite of the Binnenthal, Switzerland. It is near bournonite in form and is probably a sulpharsenite of lead.

seliha (se-lē′ċhä̤), *n.*; pl. *selihot* (-ċhōt). [Heb. *seliḥah*, < *sālaḥ*, forgive, pardon.] Among the Jews, a collection of penitential prayers forming a prayer-book for fast-days, that is, for the week preceding the Jewish New Year, the ten days between New Year's Day and the Day of Atonement, etc. Most of the poems and prayers included under this name have been composed by medieval gaonim (see *gaon*) and Sephardi rabbis. The selihot are acrostically arranged, many containing not only the alphabet but also the names of the composer and his father.

sell1, *n.*—**To work a sell on**, to play a practical joke on; deceive. [Slang.]

> That I *work a sell on* you, that you 'll remember for the rest of your days. *R. Kipling*, Indian Tales, p. 142.

sell-out (sel′out), *n.* **1.** The act of selling out, literally or figuratively. [Colloq.]

> The Tariff Act . . . was an ungodly and unblushing *sell-out* to the Sugar Trust, the Standard Oil Trust, the steel and iron men, the greedy manufacturing interests generally. *Tom Watson's Mag.*, Jan., 1906, p. 362.

2. See *auction-pitch*, under *pitch*1.

selva (sel′vä̤), *n.* [Pg. *selva*, < L. *silva*, a forest.] In *phys. geog.*, naturally forested lands; especially, a forested plain in torrid South America.

> In the north [Northern Nyassa] the surface consists of rolling *selvas*, well watered, and fairly fertile, with peaks bearing dwindling tufts of primeval forests.
> *Geog. Jour.* (R. G. S.), XV. 534.

selvage, *n.* **6.** In the making of tin-plate or galvanized iron, a thin ridge or list of the coating metal at the lower edge of the plate where capillary action resists the draining action when the sheet is on edge to allow the excess of fluid coating to run off.—**Center selvage**, a selvage in the center of a loom when two or more widths of cloth are being woven side by side.

selvyt (sel′vit), *n.* [Trade-name.] A velveteen made in squares of eighteen or twenty inches, used in shops for polishing or dusting.

> The backs of guards are best renewed by polishing threads fixed at one end to the work-bench and held in the hand at the other extremity, the article being rubbed lightly backwards and forwards over them. A chamois-leather or piece of "*selvyt*" with a touch of rouge, gives the whole frame a bright appearance quite out of proportion to the few minutes spent in the operation.
> *Optical Jour.*, June 16, 1904, p. 53.

sem. An abbreviation (*a*) of *seminary*; (*b*) [*cap.*] of *Semitic*.

semantics (sē-man′tiks), *n.* [Gr. *σημαντικός*, significant, < *σημαντός*, emphatic, < *σημαίνειν*, show by a sign, indicate, signify, < *σῆμα*, a mark, sign: see *sematic*.] That branch of philology which is concerned with the meanings of words and the development of meanings; semasiology.

> The second of the recent additions to the domain of Philology — the study of meaning — presents fewer difficulties, but until recent years has been equally neglected. . . . The only attempt to deal with it on a large scale in M. Bréal's Essai de Sémantique (1897), now translated into English under the title of Semantics (1900), with a valuable introduction and appendix by Dr. Postgate.
> *Encyc. Brit.*, XXXI. 677.

semantology (sē-man-tol′ọ̄-ji), *n.* Same as *sematology*.

semaphore (sem′a̤-fōr), *v. i.*; pret. and pp. *semaphored*, ppr. *semaphoring*. To signal with a semaphore; humorously, wave one's arms and signal like a semaphore.

> Man dead ahead, . . . *semaphorin'* like the flagship in a fit!
> *R. Kipling*, Steam Tactics, in Traffics and Discoveries, [p. 176.

Sematic character, any characteristic of an organism, in form, color, or marking, which, when displayed, serves to alarm enemies or to bring together individuals of the species for their welfare. Sematic characters that warn enemies are termed *aposematic* or *warning*; those that serve to bring individuals of the species together are termed *episematic* or *signaling*.—**Sematic coloring.** See ★*coloring*.

sembling (sem′bling), *n.* [*semble*2, *v.*] The attraction of male insects to a captive female.

semeiological, *a.* See *semiological*.

semelincident (sem-el-in′si-de̤nt), *a.* [L. *semel*, once, + *incidens*, incident.] Occurring but once: noting a disease, such as smallpox, one attack of which confers immunity against subsequent infection.

> While the mass of evidence is against such a hypothesis, it is conceivable that the three erythematous diseases are variants of the same infection, which is not so strictly *semelincident* as has been supposed and that, analogously, chicken pox is a mitigated variola.
> *Medical Times*, Jan., 1908, p. 18.

semeniferous (sē-me-nif′e̤-rus), *a.* Same as *seminiferous*.

semestria (sẹ̄-mes′tri-ä̤), *n. pl.* [L. neut. pl. of *semestris*, semiannual.] In *civil law*, the semiannual collections of the decisions of the Roman emperors in their councils.

semi-aircooled (sem-i-ãr′köld), *a.* Partially but not entirely cooled by the air; having some means for cooling besides radiation to the air: said of the cylinders of internal-combustion engines.

semianna, *n.* See ★*shamiana*.

semiarc (sem′i-ärk), *n.* In *astrol.*, half the arc described by any celestial body between its rising and its setting, or vice versa.

semiarid (sem-i-ar′id), *a.* See the extract.

> The broad distinction between arid, *semiarid*, and humid regions lies in the ability of such regions to produce crops annually with or without the artificial application of water. The arid region, as a whole, may be said to lie between the western boundary of the Mississippi valley and the Pacific coast. Between the arid and the humid regions is a broad intermediate belt known as the *semiarid* or subhumid region. It has no clear-cut boundary, but shifts from season to season, backward and forward, over a vast range of country, extending practically from the ninety-seventh to the one hundred and fourth degree of west longitude. It is a region of plains and foothills, the former, commonly called the Great plains, extending across both the northern and southern boundaries of the United States.
> *Dept. Com. and Labor*, Bur. of Census, Bulletin 16, Irrig. [in U. S., 1902, p. 10.

semi-automatic (sem″i-â-tọ̄-mat′ik), *a.* Partly automatic: used in describing many machines for the manufacture of duplicate articles in which the will and action of the human attendant is brought into play in the process. Such are turret-lathes and some screw-and-bolt and nut-machines. The cutting-tools may be automatic so far as action and sizing are concerned, but they are brought into action at the discretion of the operator. The locomotive and motor-car are semi-automatic in this sense. The full automatics perform their functions when supplied with stock and started, no human intervention being required to start the successive operations.

semi-axis (sem-i-ak'sis), *n.* Half an axis, as of a hyperbola.—**Imaginary semi-axis of a hyperbola.** See ★*hyperbola.*

semic (sē'mik), *a.* [Gr. *σῆμα*, a mark, + *-ic.* See *semeion.*] **1.** Relating to or of the nature of a mark or sign.—**2.** Pertaining to or of the nature of a semeion.

semicarbazin (sem-i-kär'ba̤-zin), *n.* A colorless base, $NH_2CONHNH_2$, formed by the action of the hydrate of hydrazine on potassium cyanate. It melts at 96° C. It is used to form condensation-products with ketones and aldehydes for the purpose of characterizing and identifying these compounds.

semicarbazone (sem-i-kär'ba̤-zōn), *n.* A compound formed by the action of semicarbazin on an aldehyde or a ketone, as the semicarbazone of acetaldehyde, $CH_3CH:NNHCONH_2$. Such compounds are usually crystalline and are used to isolate or identify aldehydes or ketones.

semicha (se-mē'kä̤), *n.* [Lit. leaning, < *sāmak*, lean, lay, support.] Jewish ordination by competent rabbis, when the candidate receives his diploma stating his qualifications to officiate as a rabbi.

semicircle, *n.* **4.** In *meteor.*, one half of the area covered by a cyclonic storm. In the northern hemisphere the dangerous semicircle for navigation is that on the right-hand side as one advances along the path of the center of a progressive storm: the manageable, or navigable, or safer semicircle is that on the left-hand side.—**Barred semicircle.** See ★*barred.*—**Semicircle balk.** See *the D.* under ★*d.*

semicircumference (sem″i-sėr-kum'fe̤-re̤ns), *n.* Half a circumference or circle.

semiclassic (sem-i-klas'ik), *a.* Half classic; in the arts of design, based on classic motives; similar to classic motives.

semiconsonant (sem-i-kon'sọ-na̤nt), *a.* and *n.* **I.** *a.* Half or partly consonant in character.

II. *n.* A sound (vowel) having a partly consonantal character, as *y* in *you* or *loyal;* a semivowel viewed as a consonant.

semicontinuum (sem″i-kọn-tin'ụ̄-um), *n.*; pl. *semicontinua* (-ä̤). In *math.*, a cohesive but not perfect set; the continuum with its ends cut off. *G. Cantor.*

semiconvergence (sem″i-kọn-vėr'je̤ns), *n.* The convergence of a semiconvergent series.

semideaf (sem'i-def), *a.* Not entirely deaf: noting specifically a deaf-mute in whom the power of hearing is not entirely absent.

semidecussation (sem-i-dē-ku-sā'shọn), *n.* Partial decussation. noting particularly the course of the nerve-fibers in the optic chiasm. *Buck*, Med. Handbook, II. 444.

semidiagrammatic (sem″i-dī-a̤-gra-mat'ik), *a.* Partly diagrammatic; partly true to nature: noting a drawing. *Buck*, Med. Handbook, II. 1.

semidiameter (sem″i-dī-am'e-tėr), *n.* One half the diameter: especially, in *astron.*, one half the angular diameter of the sun, moon, or other object showing a disk; the radius.

semidigitigrade (sem-i-dij'i-ti-grād), *a.* Said of that type of mammalian foot in which the heel does not rest on the ground in walking, though not raised so high as in the digitigrade foot. Intermediate in character between the plantigrade and digitigrade foot.

The pes is pentadactyl and, except in the glyptodonts, is plantigrade, while in the latter group it is *semidigitigrade.*
Science, June 5, 1903, p. 902.

semidine (sem'i-din), *n.* An ortho- or par-amino derivative of diphenylamine, as $C_6H_5NHC_6H_4NH_2$. Such compounds are formed by the rearrangement of hydrazo compounds under the influence of dilute acids.—**Semidine rearrangement,** the molecular rearrangement which gives rise to the formation of a semidine.

Semidiurnal tide. See ★*tide*^{1}.

semi-elliptic (sem″i-e-lip'tik), *a.* Same as *semi-elliptical.*

semiferal (sem-i-fē'ra̤l), *a.* Partly wild; feral to some extent.

The *semiferal* Pigs of New Granada.
Flower and Lydekker, Mammals, p. 285.

semifluctuating (sem-i-fluk'ṭū-ā-ting), *a.* In *pathol.*, giving a sensation of elasticity and transmitting faintly the impact of a tap on one side: noting a semisolid tumor.

The parts affected increase in size and are tense and hard, or soft and *semifluctuating.*
Buck, Med. Handbook, IV. 507.

semifusa (sem-i-fū'sä̤), *n.* [ML.] In *medieval music*, same as *semiquaver*, or, less commonly, as *quaver*, 4.

semifusion (sem-i-fū'zhọn), *n.* A process of partial fusion or softening, or rendering plastic, which, if carried further or to a higher temperature, would cause complete liquefaction or fusion.

This mixture is calcined at a temperature that will produce *semifusion* and the resulting clinker is ground to a fine powder.
S. F. Peckham, in Pop. Sci. Mo., Dec., 1901, p. 147.

semiglazed (sem'i-glāzd), *a.* Slightly glazed or covered with a thin gloss. See ★*smear-glaze.*

semiglobular (sem-i-glob'ụ̄-lä̤r), *a.* Same as *semiglobose.*

semiglutin (sem-i-glö'tin), *n.* An albumose derived from gelatin by boiling for thirty hours in feebly acid solution. Insoluble in 70–80 per cent. alcohol.

semihardy (sem-i-här'di), *a.* Half hardy; hardy if protected from severe cold: said of plants.

Then, again, *semihardy* sorts may be tipped over by cutting the roots on one side, bending the branches close to the soil, pinning them down, and then covering the whole plant with matting and earth or a straw thatch and earth. *Yearbook U. S. Dept. Agr.*, 1901, p. 439.

semihyaline (sem-i-hī'a̤-lin), *a.* Partly hyaline; half hyaline.

semi-hypsodont (sem-i-hip'sọ-dont), *a.* Having teeth with rather long crowns, intermediate in character between the brachydont and hypsodont types. *Proc. Zool. Soc. London*, 1893, p. 180.

semi-hypsodonty (sem-i-hip'sọ-don-ti), *n.* [*semi-hypsodont* + *-y.*] The fact or condition of teeth with moderately long crowns. *Proc. Zool. Soc. London*, 1893, p. 180.

semi-infinite, *a.* **2.** Bounded by an infinite plane: said of a medium whose only boundary is a plane surface.

The paper treats of the propagation of vibrations over the surface of a "*semi-infinite*" isotropic elastic solid, i.e. a solid bounded only by a plane.
Nature, July 9, 1903, p. 237.

semi-lichen (sem-i-lī'ken), *n* Same as ★*half-lichen.*

semilocular (sem-i-lok'ū-lä̤r), *a.* In *bot.*, having incomplete dissepiments between the cells, as a fruit, so as to be virtually unilocular.

semilune (sem'i-lūn), *n.* Half a lune.

semimasculus (sem-i-mas'kụ̄-lus), *n.*; pl. *semimasculi* (-lī). [NL., < L. *semi*, half, + *masculus*, male.] Same as *eunuch.*

Seminal filament. See ★*filament.*—**Seminal variation.** Same as ★*seed variation.*

seminase (sem'i-nās), *n.* [L. *semen* (*semin-*), seed, + *-ase.*] A ferment occurring in alfalfa (lucerne) which has the power of producing mannose and galactose from the mannans and galactans of certain leguminous seeds.

seminormal (sem-i-nôr'ma̤l), *a.* In *phys. chem.*, having half the concentration of a normal solution, or containing half a gram-molecule (or gram-equivalent) of dissolved substance in one liter of solution. See ★*concentration* (*c*) (4).

seminose (sem'i-nōs), *n.* [L. *semen* (*semin-*), seed, + *-ose.*] Same as ★*mannose.*

semioccasional (sem-i-ọ-kā'zhọn-a̤l), *a.* Occurring once in a while: as, a *semioccasional* visit. [Colloq.]

semioccasionally (sem-i-ọ-kā'zhọn-a̤l-i), *adv.* At odd times; at semioccasional intervals. [Colloq.]

Semiophorus (sē-mi-of'ọ̄-rus), *n.* [NL., < Gr. *σημειοφόρος*, a sign-bearer, < *σημεῖον*, sign, + *φέρειν*, bear.] A genus of extinct fishes allied to the living horse-mackerel, with a very large dorsal fin, compressed trunk, and conical teeth: found in the Upper Eocene rocks.

semioxygenated (sem-i-ok'si-je-nā'ted), *a.* Incompletely combined with oxygen; literally, combined with half as much oxygen as might be taken up.

semiparameter (sem″i-pa-ram'e-tėr), *n.* In *math.*, half a parameter.

semiparasitic (sem″i-par-a̤-sit'ik), *a.* Partly parasitic: said, for example, of the capsules of mosses which are supported partly by the leafy haplogamic part of the plant and partly by their own vegetative tissues. *Cook and Swingle.*

semiparasitism (sem-i-par'a̤-si-tizm), *n.* Incomplete or partial parasitism.

semipermeable (sem-i-pėr'mẹ̄-a̤-bl), *a.* Capable of permitting the passage of certain molecules and of impeding that of others; said of membranes or septa which are permeable to the molecules of a solvent such as water, but which prevent the diffusion of the molecules of the dissolved substance.

When a substance is dissolved in a large quantity of a solvent its molecules are separated from each other to a distance comparable with that which obtains in gases. They are, therefore, capable of independent action and when placed in a vessel the walls of which are permeable to the solvent, but not to the dissolved substance ("*semipermeable* membrane"), the imprisoned molecules of the latter exert pressure on the interior surface of these walls as if they were gaseous.
W. Ramsay, in Smithsonian Rep., 1900, p. 253.

semipestis (sem-i-pes'tis), *n.* [NL., < L. *semi-*, half, + *pestis*, plague.] An old term for typhus fever.

semiplegia (sem-i-plē'ji-ä̤), *n.* [L. *semi-*, half, + Gr. *πληγή*, a stroke.] Same as *hemiplegia.*

semiporcelain (sem-i-pôrs'la̤n), *n.* An inferior grade of porcelain.

Semi-Porcelain, also known as Paris Granite or "P.G.," Opaque China, and by various other names, is much the color of French china, and the best brands are so nearly akin to porcelain as to show translucency in the very thin parts. It is largely wrought into the finer grades of articles for family service, and decorated for dinner, tea, and toilet sets, often in an elaborate manner.
E. A. Barber, Pottery and Porcelain of the U. S., p. 19.

semiprecious (sem-i-presh'us), *a.* Valuable, but less so than the most highly prized objects of similar nature.—**Semiprecious stone.** See ★*stone.*

semiprone (sem-i-prōn'), *a.* Neither on the side nor wholly prone, but in a position between the two. *Buck*, Med. Handbook, III. 740.

semipyramidal (sem″i-pi-ram'i-da̤l), *a.* Having the form of a pyramid of three, four, or more sides, vertically bisected.

semirecumbent (sem″i-rẹ̄-kum'be̤nt), *a.* In a reclining position, but not completely recumbent. *Buck*, Med. Handbook, I. 253.

semis, *n.* **2.** A coin of half the value of the coin called the solidus, which circulated widely in medieval Europe in imitation of the imperial gold piece so called.

semispheroidal (sem″i-sfẹ̄-roi'da̤l), *a.* Having the figure of a half-spheroid; hemispheroidal.

semistuporous (sem-i-stū'pọ̈r-us), *a.* In a partial stupor.

semivolcanic (sem″i-vol-kan'ik), *a.* Characterized by explosive volcanic outbreaks without the emission of lava.

semoule (sẹ-möl'), *n.* [F., < It. *semola*: see *semola.*] Flour containing a large proportion of vegetable albumen. Semoule flour is used in making macaroni.

semper (sem'pėr), *n.* Same as *samphire.*—**Rock-semper,** the samphire, *Crithmum maritimum.*

sempervirid (sem-pėr-vir'id), *a.* Same as *sempervirent.*

semsem (sem'sem), *n.* [Egypt.] Same as *sesame.* *Geog. Jour.* (R. G. S.), XIII. 411.

sen^3 (sen), *n.* The name given in Hindustan (*a*) to a unit of weight equal to one kilogram; (*b*) to a unit of volume equal to the liter. These units and their multiples were legalized in 1871, mainly for use by the railways.

Sen. An abbreviation (*b*) [*cap.*] of *Senate* or *Senator.*

senaite (sā'nä-īt), *n.* [Named after Prof. Joachin da Costa *Sena* of Ouro Preto, Brazil.] An iron-lead titanate related in form and probably in composition to ilmenite: found in the diamantiferous sands of Diamantina, Brazil.

send, *v. t.*—**To send back.** See ★*back*^{1}, *adv.*—**To send up.** (*c*) In *lumbering*, to raise (logs) up skids with cant-hooks, or by steam- or horse-power, in loading.

senda (sän'dä), *n.* [Sp.] A path; a foot-path. [Philippine Is.]

sender, *n.*—**Zinc sender,** in *telegraphy*, a transmitting device used on cables, and so arranged as to send a reversed current after each signaling impulse. This tends to neutralize the charge of the cables and increases the speed of signaling.

sending, *n.* **3.** That which is sent.

Specimens of plants were lent to a large number of persons, the principal *sendings* having been to the Gray Herbarium, at Cambridge, etc.
Smithsonian Rep. (*Nat. Mus.*), 1900, p. 66.

4. Specifically, a revenge or punishment supposed to be sent by a wizard at the request of an injured party.

A *sending* . . . is a Thing sent by a wizard, and it may take any form, but, most generally wanders about the land . . . till it finds the sendee, and him it kills by changing into the form of a horse, or a cat, or a man without a face, . . . a modified *Sending* could . . . be arranged for

> —such a *Sending* as should make a man's life a burden to him, and yet do him no harm . . . "Cats, and cats, and cats! Never was such a *Sending*. A hundred of cats."
> *R. Kipling*, The Sending of Dana Da, in Indian Tales, [p. 280.

Senegal tick. See ★*tick*^{2}.

senega-root (sen′ẹ̄-gä̤-röt), *n.* Same as *senega.*

seng (seng), *n.* An abbreviation of *ginseng.* [Local, U. S.]

senile, *a.* **2.** In *phys. geog.*, exhibiting features of old age in the geographical cycle: said of worn-down land-forms.—**Senile cataract, chorea, coxitis, degeneration, river.** See ★*cataract*, etc.

senilism (sē′nil-izm), *n.* [*senile* + *-ism.*] A state of premature senility.

senn (sen), *n.* [G. *senne*, a herdsman.] An Alpine herdsman.

> 'Twas night upon the Alps.—The *Senn's* wild horn,
> Like a wind's voice, had poured its last long tone.
> *Felicia D. Hemans*, The League of the Alps, st. 1.

senna, *n.*—**Coffee senna,** *Cassia occidentalis*, a common strong-smelling tropical weed, native of South America but naturalized in many parts of the world. See *Cassia*, 1, and *negro coffee* (under *coffee*).—**Compound infusion of senna,** a laxative draft made by macerating senna and fennel with boiling water, straining, and adding manna and magnesium sulphate. Also called *black-draught.*—**European wild senna,** *Globularia Alypum*, an Old World plant with strong purgative properties. See *Globularia*, 1, and *gutwort.*—**Low senna,** *Cassia Tora*, a plant of very wide distribution, ranging from Pennsylvania to Missouri and south to Florida and Mexico, and extending thence throughout tropical America. It occurs also in the warmer parts of the Old World. It is low compared with the wild senna and coffee senna, and has leaves with 2–4 pairs of obovate, mucronate leaflets. The pods are very narrow, long, and sickle-shaped, giving to it also the name of *sickle-senna.*—**Prairie senna,** the larger sensitive pea or partridge-pea, *Cassia Chamæcrista.*—**Sickle-senna.** Same as *low* ★*senna.*

sennacrol (sen′ạ-krol), *n.* [NL. *senna*, senna, + L. *acer* (*acr-*), sharp, + *-ol.*] A compound, soluble in ether, contained in the leaves of senna.

sennapicrin (sen-ạ-pik′rin), *n.* [NL. *senna*, senna, + Gr. *πικρός*, bitter, + *-in*^{2}.] A compound, insoluble in ether, contained in the leaves of senna.

sennegraes (sen′e-grãs), *n.* [Scandinavian.] An arctic sedge, *Carex vesicaria*, used by Nansen and his party to put in their shoes to keep their feet warm and dry.

> Inside the "finsko" we used . . . this "*sennegraes*" (Carex vesicaria), of which we had taken a supply.
> *Nansen*, Farthest North, II. 117.

sennet^3 (sen′et), *n.* The European barracuda. *Jordan and Evermann*, Fishes of N. and M. Amer., p. 826.

sennit^1, *n.*—**Common sennit,** sennit with simple plaiting with five or seven strands: also called *flat sennit.*—**Round sennit,** sennit formed by plaiting even numbers of strands in twos about a small rope which is used to form a heart.—**Square sennit,** sennit made of an even number of strands, and having a heart or core.

señorita, *n.* **3.** A Californian fish, *Halichæres semicinctus.*

sensate, *a.* **II.** *n.* That which is sensed; the object or contents of sensation.

> We may now . . . talk of Sensation as a phenomenon of consciousness, and we may call that which is sensed the *sensate.* *S. S. Laurie*, Institutes of Education, p. 63.

sensation, *n.*—**Articular sensation,** the sensation proceeding from the sense-organs of the surfaces of the joints or articular surfaces.—**Brightness-sensation,** a colorless visual sensation; a sensation of the black-white series; a black, white, or gray sensation.—**Circulational sensations, circulatory sensations,** in *psychol.*, sensations the adequate stimuli of which are changes in the circulation of the blood. Circulational components are probably contained in the sense-complexes of tickling, itching, tingling, 'pins and needles,' feverishness, etc.—**Concomitant sensation,** in *psychol.*, a secondary sensation which appears, without special stimulation, as the attendant of a primary sensation, regularly stimulated; the associated term in a synæsthesia.

> The *concomitant sensations* observed after stimulation of some part of the skin are nearly always referred to cutaneous regions on the same side of the body.
> *W. Wundt* (trans.), Physiol. Psychol., I. 162.

Cutaneous sensation, in *psychol.*, a sensation set up by stimulation of the skin, without affection of any deeper-lying tissue.

> We are apt to speak of 'sensations' of touch, resistance, impact, tickling, etc. . . . In reality, these processes are all mixtures of *cutaneous* and organic *sensations.* *E. B. Titchener*, Outlines of Psychol., p. 64.

Dermal sensation, cutaneous sensation; skin sensation.—**Hering's theory of temperature-sensations or of the temperature-sense,** in *physiol.* and *psychol.*, the theory, propounded by E. Hering, that there is a single nervous organ for the sensations of warmth and cold, the physiological processes corresponding to the two sensations being antagonistic, as (on Hering's theory) in the case of complementary visual sensations.

> According to *Hering's theory of the temperature sense*, two opposed processes, assimilation and dissimilation, run their course in the sensitive nervous substance. If they are in equilibrium, they cancel one another; . . . the sensation of cold corresponds to assimilation.
> *O. Külpe* (trans.), Outlines of Psychol., p. 95.

Joint-motion sensation. See *joint-pressure* ★*sensation.*—**Joint-pressure sensation,** in *psychol.*, the articular sensation when concerned in the perception of resistance: opposed to *joint-motion sensation*, the articular sensation when concerned in the perception of the movement of a limb or segment of a limb. The term was proposed by A. Goldscheider to characterize the part played by the articular surfaces in the illusory perception of resistance obtained when one slackens an elastic band held taut between the fingers and thumbs of the two hands, or after one has slowly lowered to the floor a weight held at the end of a string. There is, however, no introspective difference between the articular sensations observed in these experiments and in experiments upon active and passive movement. *E. C Sanford*, Exper. Psychol., p. 34.—**Marginal sensation.** See *marginal* ★*process.*—**Negative sensation,** in *psychol.*: (*a*) The one arbitrarily chosen term of a sensational opposition.

> When we speak of *negative sensations*, we ordinarily understand by the term sensations which are opposite in direction to other sensations which we call positive. Cold, e.g., is a *negative sensation* as opposed to hot. But it would be equally correct to call cold positive, and to make hot a *negative sensation.*
> *W. Wundt* (trans.), Human and Animal Psychol., p. 43.

(*b*) A hypothetical intensity of sensation which exists below the stimulus limen.

> We are surely justified in taking as the zero-point of our sensation-scale the point where sensation becomes just noticeable. That settled, we shall naturally call the noticeable sensations, to the right of that point, positive; the unnoticeable *sensations*, to the left of it, *negative.*
> *W Wundt* (trans.), Human and Animal Psychol., p. 45.

(*c*) A sense-distance or sense-interval, traversed in the direction opposite to that which has been chosen as the positive. Thus, if S_m and S_n are two points upon the scale of brightness qualities such that the distance S_m-S_n represents a just noticeable increase of brightness (positive), then the distance S_n-S_m may be considered negative in regard to S_m-S_n.—**Objective sensation,** any impression made upon one of the sense-organs by an object external to that organ.—**Positive sensation,** in *psychol.*: (*a*) A quality of sensation introspectively or psychophysically opposed to another quality which is arbitrarily termed 'negative.' Thus, warmth may be termed a positive, cold a negative sensation of temperature; or red may be termed a positive and green a negative visual sensation. *W. Wundt* (trans.), Human and Animal Psychol., p. 43. (*b*) A sensation which lies to the right of the zero-point of the sensation-scale, that is, which belongs to the group of noticeable (as opposed to unnoticeable) sensations. *W. Wundt* (trans.), Human and Animal Psychol., p. 45. (*c*) A sense-step or sense-distance regarded as traversed in the opposite direction to that taken as negative. Thus, if the sense-distance S_n-S_m be looked upon as negative, then the sense-distance S_m-S_n is positive.—**Pressure sensation,** in *psychol.*, the sensation aroused by adequate stimulation of the pressure-spots of the skin or of the organs of articular sensitivity. *W. Wundt* (trans.), Human and Animal Psychol., p. 32.—**Pure sensation,** in *psychol.*, the sensation considered as a mental element, in abstraction from accompanying sensations or affective processes.

> The concept "*pure sensation*" . . . is the product of a two-fold abstraction: 1) from the ideas in which the sensation appears, and 2) from the simple feelings with which it is united.
> *W. Wundt* (trans.), Outlines of Psychol., p. 38.

Reflected sensation, in *psychol.*, a sensation occasioned not by the stimulation of its own sensory nerve, but by that of some other. Same as *concomitant* ★*sensation.*

> There can, indeed, be no manner of doubt as to the existence of *reflected sensations.* . . . Normally, it is true, they are very weak; and it is only in conditions of pathologically increased excitability that they attain to a more considerable intensity.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 124.

Secondary sensation, in *psychol.*, a concomitant sensation or reflected sensation; especially, the unstimulated sensation in synæsthesia.

> In the case of *secondary sensations* the primary sensation directly imparts another sensation.
> *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 224

Sensation circle, sensory circle. See ★*circle.*—**Sensation coloring,** in *psychol.*, the specific character of a sense-feeling, sense-fusion, etc., which is dependent upon the nature of the peripheral organ or organs involved.

> In intermittent pains there are times when sensation is present which cannot be called painful; and during these intermissions the peculiar *sensation-colouring* which gives its special character to the ensuing pain is usually not at all affected.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 216.

Sensation-fusion, in *psychol.*, an intimate and unitary connection or blend of sensations, best illustrated by the musical tone (compound tone or clang).

> The clang-idea presents to us a simple and typical example of a psychological process which we shall frequently meet with, for the most part in a more complex form,—the process of *sensation-fusion.*
> *W. Wundt* (trans.), Human and Animal Psychol., p. 74.

Sensation of double contact. See ★*contact*^{1}.—**Sensation-scale,** in *psychol.*, a linear arrangement of intensities or qualities of sensation, the units of which represent equal sense distances or differences. The intensive sensation scale ranges from zero to the terminal sensation; the qualitative (for instance, the tonal) scale covers the whole range of sensible qualities (for instance, extends from the lowest to the highest audible tone).

> If we connect the upper ends of the perpendiculars drawn upon our [intensive] *sensation-scale* to represent stimulus-magnitudes, we obtain a curved line ascending more steeply as we approach the higher values of the *scale.*
> *W. Wundt* (trans.), Human and Animal Psychol., p. 36.

Sensation-unit, in *psychol.*, the unit chosen for the sensation-scale, intensive or qualitative; especially, the Fechnerian unit for the measurement of sensation intensity, the just noticeable difference.

> If we have once established a *sensation-unit*, we can easily determine by comparison with it the magnitude of any other sensation whatever.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 34.

Static sensation, in *psychol.*: (*a*) Generally, any sensation which may form an integral part of the perception of bodily position. In this meaning, visual and kinesthetic sensations may, on occasion, be termed static sensations. (*b*) Specifically, the sensations of dizziness furnished, in all probability, by the semicircular canals of the internal ear. *J. M. Baldwin*, Dict. of Philos. and Psychol., II. 218.—**Tendinous sensation,** in *psychol.*, a sensation derived from the sensory nerve-endings in tendon, and possessing in all probability the quality of strain.

> If we are working analytically, it is best . . . to speak of 'muscular sensation,' '*tendinous sensation*,' 'articular sensation,' as we speak of sight, hearing, cutaneous sensation, etc. *E. B. Titchener*, Exper. Psychol., I. ii. 144.

Tendon sensation. Same as *tendinous* ★*sensation.* *J. M. Baldwin*, Dict. Philos. and Psychol., II. 674.—**Weight sensation,** in *psychol.*, a term wrongly applied to the complex of kinesthetic sensations which mediates the perception of lifting or of supporting a weight.

> *Weight sensation* . . . is probably a compound of tendon sensation, muscle sensation, and pressure sensation.
> *J. M. Baldwin*, Dict. of Philos. and Psychol., II. 812.

> Even less tenable is the point of view which makes sensations the psychological symbols of objective facts or processes, and leads to their classification as *sensations* of 'movement,' '*weight*,' 'time,' 'space,' and so on.
> *O. Külpe* (trans.), Outlines of Psychol., p. 36.

sensational, *a.*—**Principle of sensational relativity.** See ★*relativity.*

sensation-cell (sen-sā′shọn-sel), *n.* In *physiol.* and *anat.*, a cortical cell which receives peripheral excitations by direct conduction, and is therefore supposed to be the seat of sensation: opposed to ★*memory-cell.*

> It thus becomes necessary to posit the existence of two sorts of cortical cells: *sensation cells* and idea cells.
> *W. Wundt* (trans.), Physiol. Psychol., I. 289.

> He has lost the acoustic memory-cells, but retained the acoustic *sensation-cells.*
> *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 160.

sensation-circle (sen-sā′shọn-sėr″kl), *n.* In *psychol.*, an area of the skin or of the retina within which two spatially distinct stimuli, simultaneously applied, evoke but a single sensation. The term was introduced by E. H. Weber, who regarded the skin as divided up into a large number of overlapping circular areas, each of these representing the area of distribution of the terminal fibrils of a single nerve fiber. So long as the two points of the esthesiometer were set down within a sensation-circle, the observer received but one sensation of pressure; as soon as the one point traveled into a second sensation-circle, the two impressions were sensed as two. The word has tended to fall into disuse, partly because the circles proved to be anything but circular and partly because the limen of dual impression was found to depend upon many other factors besides the structural conditions of the sense-organ. It may, however, be retained for historical reasons, if we abstract from Weber's theoretical views and have in mind rather these peripheral conditions than the general psychophysical or psychological factors which help to determine the magnitude of the limen.

> Within the area of a single "*sensation-circle*," therefore, the local signs and the associated ideas of motion are not sufficient to render two sensations distinguishable when they are caused by like stimuli.
> *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 82.

sensatory (sen′sạ̄-tō-ri), *a.* [*sensate* + *-ory.*] Of or pertaining to sensation; sensible; sensational. [Rare.]

sense^1, *n.* **11.** In *geom.*, one of two directly opposite ways in which a construct may be generated, described, or thought.

> On a given straightest OA, the two rays OO′, from O to its opposite O′, are distinguished as of opposite *sense.*
> *Halsted*, Rational Geom., p. 217.

Dermal sense, one of the senses of the skin, as a sense of pressure, of temperature, or of cutaneous pain. *E. C. Sanford*, Exper. Psychol., p. 1.—**Distance sense,** in *psychol.*, the power possessed by blind persons of perceiving a resisting object, as a wall, at some distance, without direct contact.

> The so-called "*distance sense* of the blind' . . . is made up of two factors: a very weak tactual stimulation of the forehead by the atmospheric resistance, and a change in the sound of the step.
> *W. Wundt* (trans.), Outlines of Psychol., p. 113.

General sense, in *psychol.*, a collective term for the sensations derived from the external skin, with the adjoining areas of mucous membrane, and from the sensory nerve-endings in joint, muscle, tendon, and bone.

> In point of time, the *general sense* is that which precedes all others and therefore belongs to all beings endowed with mind. In its spatial attributes, the *general sense* is distinguished from the particular senses in having the most extensive sensory surface exposed to stimuli.
> *W. Wundt* (trans.), Outlines of Psychol., p. 45.

Mechanical sense, in *psychol.*, a sense of which the terminal organ is adequately stimulated by mechanical means: opposed to *chemical sense.*

> With the *mechanical senses* may probably be reckoned (besides hearing) that of cutaneous pressure.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 111.

Sense-feeling, in *psychol.*: (*a*) The affective tone of sensation; the affection attaching to a sensation.

> The *sense-feeling* may in this way be considered as an integral element of the sensation itself; and for that reason it is also termed the affective tone of sensation.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 212.

(*b*) The simplest type of concrete affective experience; a complex of a sensation (or a well-defined group of sensations) and an affective process: such a feeling as hunger, or drowsiness: opposed to *emotion* and *sentiment*.

Sense-modality, in *psychol.*, a department of sense; a modal group or division of sensations.

> Wherever there occurs a quantitative apprehension of sensations, . . . the individual sensation is estimated by the relation in which it stands to other sensations of the same *sense-modality*.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 119.

Static sense, in *psychol.*: (*a*) Generally, any sense which can furnish data for the perception of bodily position (orientation, equilibration). (*b*) Specifically, the sense whose organ is the semicircular canals and vestibule of the internal ear, the portion of the internal ear supplied by the vestibular branch of the acoustic nerve. For the most part, this organ appears to function reflexly, that is, is not an organ of sense; but it undoubtedly gives us the sensation of dizziness or giddiness, and some authors refer this sensation to the ampullæ of the canals, and ascribe to the vestibule a second sensation, that of pressure.

> The literature of the *static sense* is large. An appreciation of theories . . . might be assigned . . . to an interested student.
> *E. B. Titchener*, Exper. Psychol., I. ii. 143.

sense-hair (sens'hãr), *n.* A hair arising over a nerve-cell or nerve-termination and having the function of a sense-organ: common in arthropods.

sense-idea (sens'ī-dē"ạ̈), *n.* [Trans. G. *sinnesvorstellung.*] In *psychol.*, a presentational idea; a perception.

> The instantaneous production of transitory *sense-ideas* . . . has proved a method of widening our knowledge of a large number of important mental phenomena.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 258.

sense-organ, *n.* 2. Specifically, a collection of nerve-cells which receive impressions from without (peripheral sense-organ), such as one of the taste-bulbs or tactile corpuscles; also a collection of nerve-cells in the cerebrospinal centers which translate such impressions into conscious sensation or reflex movement (central sense-organ).

sense-organule (sens'ôr"gạn-ūl), *n.* A modified epithelial cell in which a sensory nerve-fiber terminates; a sensilla.

sense-process (sens'pros"es), *n.* In *psychol.*, a sensation or a group of sensations, regarded not as states of consciousness but as mental processes.

> Attention is a state of consciousness; manifesting itself outwardly in attitudes and movements which . . . set up certain *sense-processes*.
> *E. B. Titchener*, Exper. Psychol., I. i. 110.

sense-vesicle (sens'ves"i-kl), *n.* In *embryol.*, the vesicular rudiment of a sense-organ, such as the optic and otic vesicles in vertebrates.

senshaw (sen'shâ), *n.* [Of Chinese origin.] A textile fabric worn by the Chinese.

sensibility, *n.*—**Absolute sensibility.** See ★*absolute*.

sensibilizator (sen'si-bi-li-zā"tọ̈r), *n.* [*sensibilize* + *-ator*.] Same as ★*amboceptor*.

sensibilize (sen'si-bl-īz), *v. t.*; pret. and pp. *sensibilized*, ppr. *sensibilizing*. [L. *sensibilis*, sensible, + *-ize*.] To render sensitive or sensible.—**Sensibilizing substance.** Same as ★*amboceptor*: so called because it renders the cell-receptors sensitive to the action of the complement. See also ★*sensitizing substance*.

> It is for this reason that the amboceptor is called by Bordet, Metschnikoff, and others the *sensibilizing substance* (substance sensibilisatrice) or the fixative (fixateur).
> *Med. Record*, Feb. 14, 1903, p. 249.

sensibilizer (sen'si-bl-ī"zėr), *n.* 1. Same as ★*amboceptor*. The term has reference to the action of the amboceptor in rendering the cell-receptor sensitive to the action of the complement.—2. In *photog.*, a sensitizing agent or substance applied to the photographic film.

> After having been in the dark for many weeks, the platinum selenium surface was covered, at a red illumination, with a sheet of silver bromide jelly to which a *sensibiliser* absorbing the yellow and green rays was added, an aluminium strip bent at right angles being interposed.
> *Knowledge*, May, 1904, p. 98.

sensible, *n.* 4. In *music*, same as *sensible note*. See *leading tone*.

sensilla (sen-sil'ạ̈), *n.*; pl. *sensillæ* (-ē). [NL., < L. *sensus*, sense, + dim. *-illa*.] A simple or elementary sense-organ represented by a single epithelial cell at the end of a sensory nerve-fiber.

sensitive-active (sen'si-tiv-ak"tiv), *a.* In *psychol.*, a mixed type of normal character distinguished by Ribot, including in its lowest degree those who have an egoistic craving for enjoyment and action, and in its highest forms martyrs, enthusiasts, revolutionists, and such artists as Cellini and Michelangelo. *Ribot* (trans.), Psychol. of Emotions, p. 400.

sensitiveness, *n.*—**Curve of sensitiveness.** See ★*curve*.

sensitive-plant, *n.* 2. The narrow-leaved sensitive-brier, *Leptoglottis angustata* (*Schrankia angustata* of Torrey and Gray), found from Virginia to Florida and west to Tennessee and Texas.—**Bastard sensitive-plant.** (*b*) The sensitive joint-vetch, *Æschynomene Virginica*.

sensitivity, *n.*—**Absolute sensitivity.** See ★*absolute*.—**Liminal sensitivity**, in *psychophys.*, the lower limit of sensitivity of a sense-organ: represented by the stimulus limen (qualitative, intensive, etc.). Thus the qualitative liminal sensitivity in the sphere of tonal hearing is reached with a stimulus of about 12 vibrations in one second.—**Modal sensitivity**, in *psychophys.*, a collective name for the total range of sensitivity of a sense-organ, that is, for the liminal and terminal sensitivities. Thus the qualitative modal sensitivity in the sphere of tonal hearing is represented by stimuli of about 12 to 50,000 vibrations in the one second.

sensitize, *v. t.*—**Sensitizing substance.** Same as ★*amboceptor*. The substance sensitizes, or renders sensitive, the cell-receptors to the action of the complements.

sensitizer, *n.* 2. Same as ★*amboceptor*.

> The *sensitisers* of the tubercle bacillus.
> *Nature*, Aug. 13, 1903, p. 360.

sensitometer, *n.*—**Color sensitometer**, a device for testing the color-screens or -filters used in photography.

sensitometric (sen"si-tọ̄-met'rik), *a.* Of or pertaining to sensitometry.

> The colour *sensitometric* methods that Sir William Abney has done so much to perfect are often employed for this purpose. A series of small pieces of suitably coloured material are arranged in such a manner that when the plate is exposed through its screen and this sensitometer a definite and easily recognisable result will be obtained if the plate and screen are mutually correct.
> *C. Jones*, in Nature, Oct. 6, 1904, p. 555.

sensitometry (sen-si-tom'e-tri), *n.* [*sensit*(*ive*) + Gr. *-μετρια*, < *μέτρον*, measure.] The measurement of the sensitiveness of photographic plates. *Scientific Abstracts*, VI., Section A, p. 74.

sensoriglandular (sen"sọ̄-ri-glan'dụ̄-lạ̈r), *a.* Relating to modifications of glandular secretion by sensory stimuli. *Baldwin*, Dict. of Philos. and Psychol., II. 436.

sensorimetabolic (sen"sọ̄-ri-met-ạ̈-bol'ik), *a.* Relating to metabolic processes induced, modified, or arrested by a sensory stimulus. *Baldwin*, Dict. of Philos. and Psychol., II. 436.

Sensorimotor action. See *psychomotor* ★*action*.—**Sensorimotor arc**, in *physiol.*, the functional unit of the nervous system; the path or circuit by which the nervous impulse is conveyed from sense-organ to muscle, consisting in the higher animals and man of at least two neurones, a sensory or afferent and a motor or efferent, joined end to end.

> This description of the nervous system as consisting of *sensori-motor arcs* of three principal levels is of course a very much simplified schematic view.
> *W. McDougall*, Physiol. Psychol., p. 23.

sensorimuscular (sen"sọ̄-ri-mus'kụ̄-lạ̈r), *a.* [NL. *sensorius* (see *sensory*) + E. *muscular*.] Relating to muscular contractions following sensation. *Baldwin*, Dict. of Philos. and Psychol., II. 436.

sensorivascular (sen"sọ̄-ri-vas'kụ̄-lạ̈r), *a.* [NL. *sensorius* (see *sensory*) + E. *vascular*.] Relating to changes in caliber of the blood-vessels induced by sensory stimuli. *Baldwin*, Dict. of Philos. and Psychol., II. 436.

sensorivasomotor (sen"sọ̄-ri-vas-ọ̄-mō'tọ̈r), *a.* [NL. *sensorius* (see *sensory*) + E. *vasomotor*.] Same as ★*sensorivascular*. *Buck*, Med. Handbook, VI. 275.

Sensory canal, cells, circle. See ★*canal*1, etc.—**Sensory crossway**, part of the internal capsule of the brain (approximately the posterior third) through which pass various nerve-fibers of special and general sensation.—**Sensory epithelium, ganglia.** See ★*epithelium*, ★*ganglion*.

sent1, *n.* and *v.* 2. An amended and former spelling of *scent*.

sentence, *n.* 7. (*b*) A brief response or antiphon sung by the choir in a church service.—**Declarative sentence**, a sentence which embodies a declaration or statement of fact.

sentiate (sen'shi-āt), *v. t.*; pret. and pp. *sentiated*, ppr. *sentiating*. To perceive; give the sense of. [Rare.]

> Pantagruel by the Way related to them, from point to point, the manner of [Judge] Bridlegoose's *sentiating* Differences at Law.
> *Urquhart and Motteux*, tr. of Rabelais, Gargantua [Pantagruel, iii. 43.

sentience, *n.* 2. Specifically, in *psychol.*, presentation regarded as immediate experience, without reference to its significance for thought.

> Presentation considered as having an existence relatively independent of thought may be called *sentience*, or anoetic consciousness. Thought and *sentience* are fundamentally distinct mental functions.
> *G. F. Stout*, Anal. Psychol., I. 50.

sentimental, *a.* 3. Of or pertaining to sentimentalism.

> It is one of the most curious features of the *sentimental* ailment, that, while it shuns the contact of men, it courts publicity.
> *Lowell*, Among My Books, 1st ser., p. 378.

sentry1, *n.*—**Flying sentry**, a sentry on temporary duty.

> An officer of one of the Guards Battalions . . . was found bathing in the Modder by a *flying sentry* stationed there to prevent the men from bathing.
> *L. James*, in War's Brighter Side, xix.

Sentry go. (*b*) Duty as a sentry on post.

> I turned out at 2 a.m. and did *sentry-go* till daybreak.
> *Geog. Jour.* (R. G. S.), XVI. 145.

sep. An abbreviation (*b*) of *separate*; (*c*) [*cap.*] of *September*; (*d*) [*cap.*] of *Septuagint*.

separate, *v. i.*—**Separating power.** See ★*power*1.

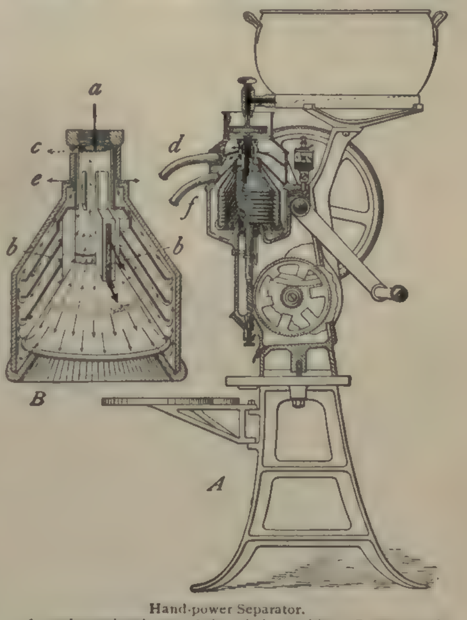
separated (sep'ạ̈-rā-ted), *p. a.* Affected by the action denoted by the verb *separate*; specifically, obtained (as milk or cream) by the ★centrifugal method (which see).

Separately excited, having, as a generator or motor, the field coils supplied with current from an outside source.

separating-chamber (sep'ạ̈-rā-ting-chām"bėr), *n.* 1. An enlargement in a flue or passage made in order that the velocity of flow through it may be reduced and time be given for dust or other solid matter in suspension to settle.—2. A space in which water may be allowed or compelled to separate from a current of steam, leaving the latter to move out of it dry and free from suspended water.—3. A chamber or device by which or in which oil moving in a current of steam or water may be caught and separated from it.

separation, *n.* 7. In *astrol.*, the condition when two significators have lately been in aspect and the aspect is just over.—8. In *hort.*, the method of propagating plants by means of naturally separable parts, as offsets, small bulbs that spring from a mother bulb, or detachable buds. *L. H. Bailey*.

separator, *n.* 2. (*e*) A machine for extracting cream from milk. It is essentially a centrifugal machine, allied in principle to the laundry centrifugal drier. By centrifugal action, set up in a rapidly revolving vessel containing fresh milk, the cream is driven out of the milk and escapes by a suitable spout, the milk being delivered through another. Separators are driven at high speed, the larger by steam or other mechanical power, the smaller by hand. A number of different types are in use in dairies and creameries, all of high efficiency. See ★*centrifugal*, 3.



Hand-power Separator.

A, partly sectional view of the whole machine; *B*, cross-section of the separator-bowl with cones, the dotted-line and full-line arrows showing the routes of the cream and the skim-milk respectively. The whole milk enters at the point *a*, and passes into the spaces between the revolving cones through the openings *bb* of the tubular shaft. The centrifugal action caused by the revolving cones immediately separates the cream from the skim-milk. The cream, being the lighter, is driven upward along the surface of the cones and, passing on the outside of the tubular shaft, is discharged through the outlet *c* into the upper chamber connecting with the spout *d*. The heavier skim-milk is driven downward toward the wall of the separator-bowl, where it is forced upward and discharged through the outlet *e* into the lower chamber connecting with the spout *f*. The separator cones are made of heavily tinned sheet-steel about one thirty-second of an inch in thickness, placed one upon the other about one sixteenth of an inch apart.

> Centrifugal *separators* are operated in ordinary practice so as to leave less than 0.1 of 1 per cent of fat in the skim milk; sometimes as little as 0.01 of 1 per cent.
> *Yearbook U. S. Dept. Agr.*, 1897, p. 511.

(*f*) A device for separating water from steam: usually a vessel, placed in the steam-line, having deflectors so arranged as to throw the water against metallic surfaces to which it will cling. (*g*) An insulating grid or plate of glass, vulcanite or other nonconducting material placed between the plates of a storage cell. *Elect. World and Engin.*, Jan. 30, 1904, p. 224.

3. A piece of metal placed between two ad-

jacent beams to hold them at a fixed distance apart.—4. A device on a ring-spinning machine designed to prevent interference between the yarns of adjacent spindles. Also called *antiballooner*.—5. An instrument for separating the membranes from the brain in a post-mortem examination.—6. An instrument for widening the jaw and effecting separation of the crowded teeth.—7. An appliance for obtaining the urine secreted by one kidney unmixed with that from the other kidney.—8. A device used in a type-setting machine to permit only one character to pass through at a time.

> A switch deflects the type from the disk to a flat traveling belt which runs parallel with the disk at this point, and which conveys the type to the "*separator*"—two rolls with just enough space between to permit the passage of a single type, so that if the operator has played two types which are traveling side by side they are separated before proceeding farther.
> *Census Bulletin* 216, June 28, 1902, p. 61.

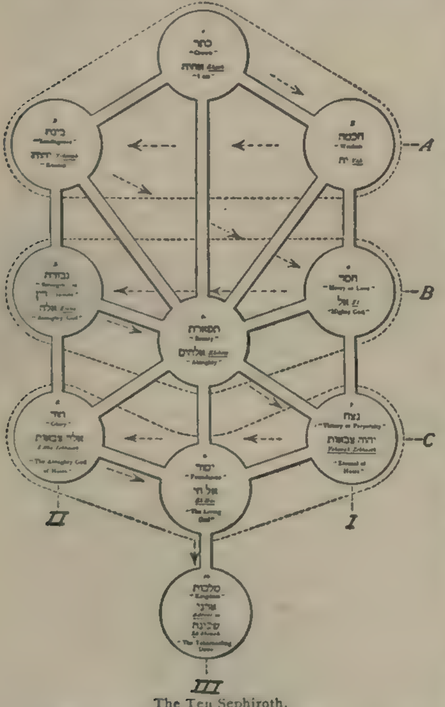
9. In *elect.*, a device by means of which a single line may be used simultaneously for telephony and telegraphic signaling or for two distinct sets of telegraphic signals. It depends upon the operation, in branch circuits, of two sets of receiving instruments, such as a relay in one branch and a telephone in the other, without interference. The signaling currents differ in frequency, and the inductance and capacity of the two branch circuits are so adjusted that the instrument in each is affected only by the current intended for it. *Elect. World and Engin.*, April 2, 1904, p. 663.—**Electrostatic separator**, a device for removing native gold and silver from crushed ores by the action of an electrostatic field. The particles become charged and cling to the surface of a revolving metal drum, but the metallic particles lose their charge more promptly than the non-conducting material, drop from the drum, and are thus separated.—**Magnetic separator.** (*a*) A magnetic machine, invented by Edison, used for the separation of magnetic iron ore of low quality. The powdered ore is allowed to fall through the air in a thin stream, passing the poles of a series of large electromagnets, which draw the magnetic particles away from the waste, without coming into contact with them. (*b*) A separator, invented by Venstrom, in which the powdered ore is carried by a traveling belt toward a partly magnetized cylinder, which attracts the magnetic ore, carrying it into a chute leading to the ore-bin, while the non-magnetic ore is carried by the belt to the waste chute.—**Mazza separator**, a centrifugal separator adapted to the separation of light gases from heavy: invented by Mazza of Italy.—**Oscillating separator**, a classifying or separating apparatus in which the particles of different sizes or specific gravities are stratified or separated by an oscillation or rocking motion of the containing-vessel, instead of by the up-and-down or rotary motion used in other types.

Sephira (se-fī'rä̤), *n.* See ★*Sephiroth.*

Sephiroth, *n. pl.* In the *cabala*, the Sephiroth are the ten attributes or intelligences which form the *Adam Kadmon*, the 'Primordial man' (the Deity). These attributes emanate from the *En-Soph*, the 'Infinite.' Their names are as follows: (1) *Kether*, 'the crown'; (2) *Ḥakmah*, 'wisdom'; (3) *Binah*, 'intelligence'; (4) *Ḥesed*, 'mercy' or 'love'; (5) *Pahad, Geburah*, or *Din*, 'strength and justice'; (6) *Tiphereth*, 'beauty'; (7) *Netsah*, 'firmness' or 'victory'; (8) *Hod*, 'majesty' or 'splendor'; (9) *Yesod*, 'foundation'; (10) *Malkuth*, 'kingdom.' The Sephiroth are divided in three categories called *'Amudim*, 'pillars'; numbers 2, 4, and 7 form the right pillar, the 'Pillar of Love'; numbers 1, 6, 9, and 10 form the middle pillar, the 'Pillar of Mercy'; numbers 3, 5, and 8 form the left pillar, the 'Pillar of Judgment.' The Sephiroth are united by links forming three more triads. The first, the uppermost triad, is composed of the Crown, Wisdom, and Intelligence; the second, of Love, Justice, and Beauty; the third, of Firmness, Majesty, and Foundation. These triads, according to the Zohar, form other triads. The three pillars together are known in the cabala as *Ets-Ḥaïm*, the *Tree of Life.* See ★*Adam Kadmon.*

אין־סוף

THE EN-SOPH, "THE INFINITE"



The Ten Sephiroth.

A, the World of Creation (B'riah); B, the World of Formation (Yetsirah); C, the World of Action (Asiah). I. Jachin, the Pillar of Mercy. II. Boaz, the Pillar of Judgment; III. Middle Pillar (Compassion). The arrows within the diagram point the order of the emanation and reception.

Sepic acid, a brownish-black pigment, one of the melanins.

sepion (sē'pi-on), *n.* See *sepium.*

seppa (sep'ä̤), *a.* [Sp. *cepa*, stump of a tree, or stock of a vine.] Springing from the roots of a previous planting: as, *seppa* cotton, a term used in southern Texas to distinguish the plants of a previous season which have lived through the winter, from those of the following season. Compare ★*ratoon.* *U. S. Dept. Agr.*, Div. Entom., Bulletin 45, p. 46.

sept³ (sept), *n.* [F. *sept*, ‹ L. *septem*, seven. See *seven.*] In *music*, same as *seventh* or *seventh-chord.*

Septal cartilage, funnel, neck, plate. See ★*cartilage*, etc.—**Septal gemmation.** See ★*calycinal gemmation.*

septan, *a.* **II.** *n.* Same as *septan fever* (which see, under *fever*¹).

septane (sep'tān), *n.* [L. *sept(em)*, seven, + *-ane.*] Same as *heptane.*

septated, *a.* **2.** In *geol.*, divided by septa. *J. D. Dana*, Manual of Geol. (4th ed.), p. 137.

septavalence (sep-tav'a̤-le̤ns), *n.* The state of being septavalent.

septavalency (sep-tav'a̤-le̤n-si), *n.* Same as ★*septavalence.*

septavalent (sep-tav'a̤-le̤nt), *a.* [L. *septem*, seven (with termination of Gr. ἑπτά, seven), + E. *valent.*] Same as ★*septivalent.*

> Chlorine is univalent with respect to hydrogen and *septavalent* with respect to oxygen.
> *D. I. Mendelléjeff*, in Athenæum, April 8, 1905, p. 437.

Septembrisade (sep-tem'bri-sād), *n.* [*Septembrist.*] In *Fr. hist.*, the slaughter of prisoners that occurred in September, 1792, and known as the massacre of September; hence, any similar slaughter. See *Septembrist.*

Septembriseur (sep-tem-bri-sėr'), *n.* [F.] A Septembrist.

Septembrism (sep-tem'brizm), *n.* [*Septembr(ist)* + *-ism.*] The principles and conduct of the French Septembrists.

septentrionaline (sep-ten'tri-ō-na-lin), *n.* [L. *septentrionale* (see def.) + *-ine*².] A crystalline alkaloid, $C_{31}H_{48}O_4N_2$, found in *Aconitum septentrionale.* It melts at 129° C. It depresses the action of the heart and both local and general sensibility.

Septic tank. See ★*tank.*

septicemia, *n.*—**Hemorrhagic septicemia.** Same as *cattle-and-game* ★*disease.*

Septicemic plague. See ★*plague*, 2.

septicize (sep'ti-sīz), *v. t.*; pret. and pp. *septicized*, ppr. *septicizing.* [*septic* + *-ize.*] To render septic.

septicopyemia, septicopyæmia (sep'ti-kō-pī-ē"mi-ä̤), *n.* [NL. *septicus*, septic, + *pyemia.*] Combined septic and purulent infection of the blood.

> As the fatal end of the process approaches, the pyæmic oscillations of the temperature become less typical, and the febrile phenomena assume the character of a remittent septic fever: *septicopyæmia.*
> *Med. Record*, June 27, 1903, p. 1007.

septiferous² (sep-tif'e̤-rus), *a.* [NL. *sepsis* (*septi-*), sepsis, + *ferre*, bear, + *-ous.*] Conveying septic poison.

septillion, *n.* **3.** The cardinal numeral obtained from a septillion: used like *hundred.*

septillionth (sep-til'yo̤nth), *a.* and *n.* **I.** *a.* **1.** Last in a series of a septillion individuals: an ordinal numeral.—**2.** Being one of a septillion equal portions.

II. *n.* One of a septillion equal parts of anything.

septipartite (sep'ti-pär-tīt), *a.* [L. *septem*, seven, + *partitus*, divided.] Consisting of seven parts.

> A quartic having three acnodes is the limiting form of an anautotomic quartic in which the acnodes are replaced by three perigraphic curves; and if a line cutting the fourth portion in four real points be projected to infinity, the projection will be *septipartite.*
> *A. B. Bassett*, in Nature, Nov. 27, 1902, p. 80.

septivalent (sep-tiv'a̤-le̤nt), *a.* [L. *septem*, seven, + E. *valent.*] In *chem.*, equivalent in combining power to seven atoms of hydrogen. Compare *heptad.*

septoglœum (sep-tọ-glē'um), *n.* [NL. (Saccardo, 1880), ‹ L. *septum*, a division, + NL. *glœa*, glue.] A genus of parasitic fungi very closely related to *Glœosporium*, from which it differs in having elongate several-septate conidia. About 25 species have been described. *S. acerinum* occurs on leaves of the maple.

septoic (sep-tō'ik), *a.* [L. *septem*, seven, + *-o-* + *-ic.*] Same as ★*heptoic.*

septomaxillary, *n.* **2.** In *ichth.*, a small paired bone occurring in *Amia calva*, a ganoid fish. It lies above the vomer and below the premaxillary, entirely out of sight until one of those bones is removed.

septometer¹ (sep-tom'e-tėr), *n.* [L. *septum*, partition, + Gr. μέτρον, measure.] An anthropometrical instrument used for measuring the thickness of the septum of the nose.

septometer² (sep-tom'e-tėr), *n.* [*sept(ic)* + *-o-* + Gr. μέτρον, measure.] An instrument for ascertaining the number and kind of septic organisms occurring in air.

septon (sep'to̤n), *n.* [NL., ‹ Gr. σηπτόν, neut. of σηπτός, ‹ σήπειν, make rotten.] In *med.*: (*a*) A principle formerly supposed to be the essence of infection. (*b*) Air deficient in oxygen and containing poisonous emanations.

septonal (sep'tọ-na̤l), *a.* [*septon(ate)* + *-al*³.] Of or pertaining to a septonate.

septonate (sep'tọ-nāt), *n.* [L. *septem*, seven, + *tonus*, tone, + *-ate*¹.] In *music*, a series of seven tones, ranging from the fifth below the key-note to the fourth above, proposed by J. Klauser, in 1890, as a more rational arrangement of the tones of the scale.

Septoria (sep-tō'ri-ä̤), *n.* [NL. (Fries, 1819), ‹ L. *septum*, partition (referring to the septate spores).] A large genus of sphæropsidaceous fungi having pycnidia produced beneath the epidermis of the host, and elongate hyaline, several-septate spores. Over 900 species have been described. They occur chiefly as parasites upon leaves, producing discolored spots. *S. Rubi* is a common species producing a leaf-spot disease of the blackberry.

septum, *n.*—**Alar septa.** See ★*alar.*—**Cardinal septum,** in the extinct rugose corals or *Tetracoralla*, the principal septum or mesentery wall, lying in the fossula on the longitudinal axis of the corallum: contrasted with *counter* ★*septum* and ★*alar septa.*—**Counter septum,** one of the two principal septa or mesenteric walls in the *Tetracoralla*, contrasted with and lying in the calice opposite to the cardinal septum. See ★*alar septa.*—**Horizontal septum,** in *ornith.*, a fibrous membrane overlying the cavities containing the liver.—**Lateral septum,** in *Ptychoderidæ*, one of a pair of vascular membranes passing from the dorsal wall of the gut in the postbranchial portion of the branchiogenital region to the free border of the genital pleuræ.—**Oblique septum,** in *ornith.*, a sheet of fibrous tissue covering the free walls of the thoracic air-sac of either side and uniting with its fellow in the mid-dorsal line, thus dividing the body-cavity horizontally into two parts.—**Pharyngeal septum,** in *embryol.*, the membrane or partition which for a time separates the stomodæum or mouth-cavity from the pharynx in the vertebrate embryo.—**Septum bronchiale,** a projection into the lumen of a bronchial tube at the point of its bifurcation.

seq. An abbreviation (*a*) of the Latin *sequentes* or *sequentia*, the following; (*b*) of the Latin *sequentibus*, in the following (places).

Sequanian (sē-kwā'ni-a̤n), *n.* [L. *Sequana*, the Seine, + *-ian.*] In *geol.*, a division of the Jurassic system in France and the Jura, equivalent to the upper half of the English Corallian series. It is subdivided into an upper or Astartian and a lower or Rauracian substage.

sequence, *n.* **7.** A musical setting of a liturgical prose or sequence.—**8.** In *math.*, an infinite set of numbers or objects arranged so that every one has a definite numbered position.—**Fundamental sequence,** in *math.*, every progression or regression which belongs to a given series.—**Harmonic sequence of vowels,** in *philol.*, a principle or tendency in certain languages, as in Turkish and other languages of the Ural-Altaic family, whereby the vowels of the terminations conform to the general quality—'heavy' or 'guttural' (*a, o, u*), or 'light' or 'palatal' (*e, i, ü, ö*)—of the first or root vowel, as in *av-mak, sev-mek*, etc. The principle is one of assimilation, somewhat analogous to that of mutation or umlaut in the Teutonic languages.—**Regular sequence,** a sequence in which there is a place beyond which all the elements differ from each other by less than ε, where ε is any fixed positive rational number.

sequential, *a.* **2.** Noting land-forms produced by erosive processes acting in consequence of uplifts which initiate a new cycle of erosion.

"Initial" is therefore a term adapted to ideal rather than to actual cases, in treating which the term "*sequential*" and its derivatives will be found more appropriate. *W. M. Davis*, in Geog. Jour. (R. G. S.), XIV. 487.

sequestrectomy (sē-kwes-trek'tọ-mi), *n.* [NL. *sequestrum* + Gr. ἐκτομή, excision.] An operation for the removal of a sequestrum.

sequin^2, (sē'kwin), *n.* [Origin uncertain.] A large basket of the Californian and southwestern Indians, used for storing seeds.

The art sense of the western basket makers extends to other objects made of grass or plants, and is particularly conspicuous in their so-called "*sequin*," or granary, which, while crude, is essentially artistic and attractive. *Sci. Amer.*, Oct. 10, 1903, p. 263.

sequoia-borer (sẹ-kwoi'ä̤-bōr"ėr), *n.* See ★*borer*.

sequoiene (sẹ-kwoi'ēn), *n.* [*Sequoia* + *-ene*.] A crystalline hydrocarbon, $C_{13}H_{10}$, found in the needles of *Sequoia Washingtoniana* of California.

seradella (ser-a̤-del'ä), *n.* Same as *serradilla*.

seraf, serafic, serafim. Simplified spellings of *seraph*, etc.

serah (ser'ä̤), *n.* [Malay *sarah*, *serah*, Jav. *serah*, yield, deliver, hand over.] A present of money or goods sent by the ruler to a village (usually to some leading individual), for which a quantity of produce much exceeding the gift in value is demanded: a favorite way of obtaining revenue in the Malay states.

Serah.—This is a very well-known manner of obtaining revenue, and is as much valued by the taxing classes as it is abominated by those upon whom devolves the duty of paying taxes. *Geog. Jour.* (R. G. S.), IX. 18.

Seraphic Doctor, a title bestowed upon St. Teresa, from a wound in her heart which, in a vision, she felt made by a seraph or an angel.

Teresa, by a definitive decree of the Tribunal of the Rota, is formally declared a Doctor of the Church. The "*seraphic doctor*," the antonomasia by which she is as often as not referred to in Spain, relates to this, and not to the Doctor's degree bestowed upon her, after her death, by the University of Salamanca. *G. C. Graham*, Santa Teresa, iv.

Seraphs (ser'a̤fs), *n.* [Nominally NL., a blunder for *Serapis* (?), or for some form based on the original of *seraph*, and hence later altered to *Seraphys*.] A genus of recent and Tertiary gastropod mollusks with elongate subcylindrical or fusiform shell and short spire largely overlapped by the body-whorl.

serch, *v.* and *n.* A simplified spelling of *search*.

sereh (sē'rẹ), *n.* A serious disease of sugar-cane, the cause of which is not well understood. Also called *fan disease*.

A whole group of diseases, the etiology of which mere field study and the ordinary laboratory methods do not appear to be competent to unravel; for example, the California (Anaheim) vine disease, the wilt of the orange, the *sereh* disease of the sugar cane, gum diseases, the yellows and rosette of the peach, the winter blight of the tomato, the internal brown spotting of potato tubers, etc. *E. F. Smith*, in Science, April 18, 1902, p. 611.

serendibite (sē-ren'di-bīt), *n.* [*Serendib*, Ceylon, + *-ite*^{2}.] A borosilicate of aluminium, iron, calcium, and magnesium, which occurs in blue grains near Kandy, Ceylon.

serendipity (ser-en-dip'i-ti), *n.* [A humorous formation, with an allusion to *dip*, from *Serendip*, a form of *Serendib*, a former name of Ceylon, + *-ity*. The island of Serendib figures in Eastern romance. The name is from Ar. *Serendīb*, *Sarandīb*, also *Sarandīp* (LL. *Serendivi*, pl., as the name of the people), MGr. Σιελεδίβα, < Skt. *Simhala-dvīpa*, the island of Ceylon, < *Simhala*, Ceylon (< *simha*, lion), + *dvīpa*, island. The Skt. *Simhala* is in Pali *Sihalan*, whence **Sīlan*, Old Tamil *Ilam*, whence Malay *Sailan*, European *Seilan*, *Zeilon*, *Ceylon*.] The happy faculty, or luck, of finding, by "accidental sagacity," interesting items of information or unexpected proofs of one's theories; discovery of things unsought: a factitious word humorously invented by Horace Walpole.

This discovery [of the two coats of arms of the Capello family of Venice] I made by a talisman, which Mr. Chute calls the sortes Walpolianæ, by which I find everything I want, à pointe nommée, wherever I dip for it. This discovery, indeed, is almost of that kind which I call *serendipity*, a very expressive word, which, as I have nothing better to tell you, I shall endeavor to explain to you; you will understand it better by the derivation than by the definition. I once read a silly fairy tale, called the three Princes of Serendip; as their Highnesses traveled they were always making discoveries, by accidents and sagacity, of things which they were not in quest of: for instance, one of them discovered that a mule blind of the right eye had traveled the same road lately because the grass was eaten only on the left side, where it was worse than on the right—now do you understand *serendipity?* one of the most remarkable instances of this accidental sagacity (for you must observe that no discovery of a thing you are looking for, comes under this description,) was of my Lord Shaftesbury, who, happening to dine at Lord Chancellor Clarendon's, found out the marriage of the Duke of York and Mrs. Hyde by the respect with which her mother treated her at table. *Walpole*, Letters to Horace Mann, CCLI.

serendipper (ser-en-dip'ėr), *n.* [*serendip*(*ity*) + *-er* (after *dipper*).] One who has the gift of serendipity, or who finds things unsought, by mere 'dipping.' See ★*serendipity*. *N. Y. Times Sat. Rev.*, April 29, 1905, p. 282. [Nonce-word.]

sergeant-painter (sär'jẹnt-pān"tėr), *n.* The title of the chief portrait-painter attached to the royal court of England.

Fine specimens of the work of some early Tudor *sergeant-painter*. *H. E. D. Blakiston*, in Burlington Mag., V. 211.

Sergestes (sėr-jes'tēz), *n.* [NL., < L. *Sergestus*, a steersman among the followers of Æneas.] A genus of *Crustacea*, belonging to the order *Schizopoda*.

serge-twill (sėrj'twil), *n.* Same as ★*cassimere-twill*.

serging (sėr'jing), *n.* [*serge* + *-ing*^{1}.] In *sewing-machine work*, a method of stitching, resembling blindstitching, done on carpet-sewing machines. See *carpet-sewing machine*, under ★*sewing-machine*.

Sergt. An abbreviation of *Sergeant*.

seriary (sē'ri-ā̤-ri), *a.* [L. *series*, series, + *-ary*.] Serial: particularly relating to the position of man in the animal series. *J. Deniker*, The Races of Man, p. 65. [Rare.]

Serica, *n.* 2. [*l. c.*] An individual of the genus *Serica*.—**Iridescent serica**, an American scarabæid beetle, *Serica iricolor*, dull bluish black in color, which damages the foliage of fruit-trees. See *pear* ★*leaf-chafer*.

sericic (sẹ-ris'ik), *a.* [*seric* + *-ic*.] Of or pertaining to or derived from silk.—**Sericic acid**, a deliquescent, transparent, amorphous compound, $C_{15}H_{30}O_7N_4$, prepared by the action of barium hydroxid on purified silk.

sericitization (ser-i-sit-i-zā'shọ̈n), *n.* [*sericite* + *-ize* + *-ation*.] In *petrog.*, the alteration of a mineral or rock to sericite.

All the transverse sections show a rather coarse and poorly defined cleavage and a very faint polarization in the matrix, in some cases none at all, indicating incomplete *sericitization*. *Contrib. to Econ. Geol.*, U. S. Geol. Surv., Bulletin 213, [1902, p. 363.

sericostomatid (ser"i-kọ-stom'a̤-tid), *n.* and *a.* **I.** *n.* A member of the trichopterous family *Sericostomatidæ*.

II. *a.* Having the characters of or belonging to the family *Sericostomatidæ*.

serictery (se-rik'tẹ̈-ri), *n.* [NL. *sericterium*.] Same as *sericterium*.

A pair of silk or spinning glands (*sericteries*) which unite to form a single duct opening in the upper lip at the end of the lingua, which is modified to form the spinneret. *A. S. Packard*, Text-book of Entom., p. 339.

series, *n.* 6. In *math.*: (*b*) A sequence of things such that the situation (before or after) of each can be told with respect to any other; a set.—11. In *elect.*, an arrangement of units of a group of cells, generators, or other electrical devices (such as condensers, resistance-coils, lamps, or the like), such that the positive terminal of the first is connected to the negative terminal of the second and so on. See ★*series-connected*.

We thus arrive at the second and third classes, namely, *series* and shunt machines. *Encyc. Brit.*, XXVII. 587.

Absolutely convergent series, in *math.*, a series which remains convergent when its terms are replaced by their absolute values.—**Allegheny River series**, a series of sandstones, shales, and limestones, with interbedded coal-deposits, developed along the Allegheny river in western Pennsylvania. It belongs to the Upper Carboniferous measures, attains a thickness of 250–300 feet, and lies between the Pottaville conglomerate below and the Conemaugh series above.—**Alternating series**, in *math.*, a series whose terms are alternately positive and negative.—**Aorere series** [Maori *Aorere*, a valley in New Zealand, from *aorere*, also *aorewa*, light, flying clouds], a division of the Lower Silurian formation in New Zealand.—**Arisaig series**, a term used by the Canadian geologists to include the series of Silurian strata which are highly developed in northeastern Nova Scotia. The strata consist of shales and limestones, and are exposed in a fine series along the sea-coast for a distance of several miles. They abound in fossils which indicate that their age is Middle and Upper Silurian. The strata are highly inclined but conformable, and appear to be wedged in between Carboniferous and volcanic rocks.—**Atane series**, a series of Cretaceous plant-bearing beds in western Greenland, containing remains of the poplar, fig, laurel, oak, and other dicotyledons, with ferns, cycads, and conifers, and, interbedded therewith, marine strata of Upper Cretaceous age.—**Bajuvarian series**, a division of the pelagic Triassic rocks of the Mediterranean province, as recognized by the Austrian geologists. It constitutes the uppermost part of the Upper Trias and includes the Juvavian and Rhætic stages.—**Banff series** [*Banff*, a town in Alberta, Canada], a series of limestones and shales in the Canadian Rocky Mountain region, regarded by Canadian geologists as of Upper Devonian or Lower Carboniferous age. It attains a thickness of 5,100 feet, and is underlain by the 'Intermediate limestone' (Devonian) and overlain by the Cretaceous Kootanie group.—**Bastion series**, a division of the Lias in New Zealand.—**Baton River series**, a division of the Upper Silurian formation in New Zealand.—**Belly River series**, a subdivision of the Cretaceous formation in Assiniboia, Saskatchewan, and Alberta, Canada, regarded by Canadian geologists as equivalent to the lowest part of the Montana group. It is thought to be underlain by the Niobrara group and is overlain by the Fort Pierre group. It consists of fresh-water beds which bear a fauna largely identical with that of the Laramie group.—**Bernardston series**, a terrain in Massachusetts, consisting of crystalline limestone associated with hydromica schist, gneiss, granite, diorite, quartzite, etc. The limestone and quartzite contain Devonian fossils. The crystalline character of the rocks is the result of synchronous metamorphism of the whole series of beds.—**Blackwood series**, a division of supposed Precambrian strata in central England.—**Brand series**, a division of the rocks of Leicestershire, England, regarded as of Precambrian age.—**Caledonian series**, a series of gneisses and schists occupying the eastern portion of the Northwest Highlands of Scotland, and associated with the Precambrian Lewisian gneiss. *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 623.—**Cantorian series.** See ★*cantorian*.—**Cardinal number of a series.** See ★*number*.—**Catlin's River series**, a division of the Jurassic rocks in New Zealand.—**Cimarron series**, a subdivision of the Permian in Kansas, Oklahoma, and Indian Territory, regarded by Western geologists as equivalent to the Upper Permian of Europe, by European geologists (Frech) as equivalent to the Upper Dyas (Zechstein). It is underlain in Kansas by the Wellington shales and overlain by Mesozoic beds. Its fauna is small, consisting of a few vertebrates (*Eryops megacephalus*), lamellibranchs (*Conocardium, Schizodus, Pleurophorus*, etc.), gastropods, and a *Dielasma*.—**Closed series.** Same as *closed* ★*set*.—**Coherent series.** Same as *coherent* ★*set*.—**Cohesive series.** Same as *cohesive* ★*set*.—**Comanche series**, a name given to the Lower Cretaceous rocks of Texas.—**Compact series**, in *math.*, series that have a term between any two.—**Complete series.** Same as *complete* ★*set*.—**Condensed series.** Same as *condensed* ★*set*.—**Conditionally convergent series**, in *math.*: (*a*) A series which sometimes loses its convergence, or at least changes its value, when the order of its terms is changed. (*b*) A series not absolutely convergent.—**Conemaugh series**, in the Carboniferous rocks of Pennsylvania, the Barren measures which lie between the lower and upper productive measures.—**Connected series.** Same as *connected* ★*set*.—**Continuous series**, in *math.*, a dense series satisfying Dedekind's postulate.—**Coosa series**, a series of limestones and shales in Alabama (named from Coosa county), portions of which have afforded fossils of Lower Cambrian age.—**Countable series.** Same as *denumerable* ★*series*.—**Coutchiching series**, a series of schists in the archæan area near Rainy Lake, on the border of Ontario and Minnesota. The name was applied by A. C. Lawson. *Geol. Surv. Canada*, 1890–91, I. Rep. G, p. 39.—**Dalradian series**, a local term, proposed in 1891, by Sir A. Geikie, for an important series of metamorphic rocks in central, southern, and eastern Scotland. The series includes many kinds of schists, graywackes, quartzites, and limestones, altered sedimentary strata whose exact stratigraphic position is not fully determined. Both Cambrian and Precambrian strata are represented, with possibly even later sediments. The name is from the Celtic region of Dalriada, where these rocks are well developed. *Geikie*, Text-book of Geol., p. 893.—**Denumerable series**, in *math.*, a series whose elements form a denumerable set. See *denumerable* ★*set*.—**Discrete series**, in *math.*, any simply ordered set or class which satisfies Dedekind's postulate, and of which every element, unless it be the last, has an immediate successor, and every element, unless it be the first, has an immediate predecessor.—**Dogger series.** See *dogger*^{2}.—**Dunkard series**, a division of the Carboniferous series in the Appalachian region, essentially equivalent to the Upper Barren measures and constituting the latest phase of Paleozoic sedimentation in this region. By some writers the flora of these rocks is regarded as indicating Permian age.—**Elk River series**, a subdivision of the Upper Carboniferous of the Appalachian region in North America. It is also known as the Barren measures or Conemaugh series, and attains a thickness of 800 feet. It is underlain by the lower coal-bearing or productive measures and followed by the upper productive measures. It contains some valuable coal-seams and in some of the limestones *Productus longispinus* and *P. semireticulatus*.—**Estuarine series**, a subdivision of the Jurassic system in the vicinity of Yorkshire, England. It is regarded by British geologists as equivalent to a part of the Inferior Oölite or Bajocian. It consists of three different series of estuarine beds, the lower and middle of which are separated by the Millepore bed, the middle and upper by the Scarborough or Gray limestone series. Their combined thickness is 600 feet. It is underlain by the Dogger and overlain by the Cornbrash. It is characterized by a terrestrial flora consisting of ferns, cycads, gingkos, and conifers.—**Farrington series**, a division of the Carboniferous series in Bristol and Somerset, England.—**Floridian series.** See ★*Floridian*.—**Fundamental series.** Same as *fundamental* ★*set*.—**Gaspé series**, a term applied by the Canadian geologist Logan to a series of limestones and sandstones on the peninsula of Gaspé, having a thickness estimated to be not less than 10,000 feet. The lower part of the series was termed the Gaspé limestones and the upper part the Gaspé sandstones, and the former were regarded as equivalent to Upper Silurian strata, the latter to Devonian. It is now known that both limestones and sandstones are of Devonian age, and they have been more precisely designated, in order of age from below up, the

St. Alban, Bon Ami, and Grande Grève limestones and the Gaspé sandstones. The limestone beds are profuse in fossils, the sandstones less so, but the composition of the latter indicates deposit in a coastal lagoon with an occasional inrush of ocean waters carrying marine fossils. —**Grenville series,** a series of quartzites, slates, schists, and gneisses, together with igneous intrusives, of the original Laurentian area of Ontario, Canada. This is regarded as the equivalent of the Hastings series and as older than the original Huronian of Lake Huron. The clastics are considered by the Canadian geologists the oldest sediments of the geologic column.—**Gympie series,** a subdivision of the Permo-Carboniferous system in Queensland, lying at the base of the system and overlain by the Star formation. It is said to reach sometimes more than 20,000 feet in thickness and contains many plants and marine fossils.—**Harmonic line-series,** in *phys.*, a series of lines in the spectrum of an element arranged in a regular order of distances which is found to be accurately represented by a simple mathematical formula. See ★*convergence frequency* and *spectral* ★*series.*—**Hawkesbury series,** a group of terrestrial sandstones and shales in New South Wales, regarded as of Triassic age.—**Hokkaido series,** a subdivision of the Cretaceous system in Japan, correlated with the Middle and Upper divisions of Europe.—**Homologous series.** See *homologous* (*c*).—**Horton series,** a subdivision of the Carboniferous system in Nova Scotia and New Brunswick. It is referred to the Lower Subcarboniferous and is underlain by Devonian rocks and overlain by the Windsor series. It contains numerous plant remains (erect trees) and fishes.—**Huggins series,** in *phys.*, the long well-known series of lines in the spectrum of hydrogen (of which the red C line is the beginning), shown by the photographs of Huggins to extend far into the ultra-violet in the spectra of stars belonging to Secchi's class I: in contradistinction to the second series discovered by Pickering in the spectrum of ζ Puppis and a few other stars.—**In multiple series,** in *elect.*, connected in a series of multiple groups, as when 12 cells of a battery are arranged in four groups of three cells each placed in multiple, and the groups are connected in series.—**In series.** See *series* ★*circuit.*—**Integral series,** in *math.*, a series of ascending successive positive integral powers of a variable, as

$$a_0 + a_1x + a_2x^2 + \ldots.$$

—**Isologous series.** See *isologous.*—**James River series,** a subdivision of the Cretaceous system in eastern North America, which forms the lowest part of the Potomac series and is followed by the Rappahannock beds. By some American geologists it is now correlated with the Upper Jurassic system.—**Kakanui series,** a subdivision of the Upper Silurian system in New Zealand. It belongs to the Beaton River series, which forms the upper part of the Takaka system.—**Keele series,** the highest subdivision of the Carboniferous rocks in North Staffordshire, England, overlying the Newcastle-under-Lyme group.—**Kootanay series,** a subdivision of the Cretaceous system in the Rocky Mountain region of northwestern America. It forms there the base of the Cretaceous system, and is overlain by the Intermediate series and correlated with the Lower Cretaceous by Canadian geologists. It is characterized by plant remains, lacking angiosperms, and consists of fresh-water deposits.—**Magellanian series,** a series of Tertiary deposits lying unconformably upon the Cretaceous rocks of Patagonia. They are regarded by Scott as of late Eocene or early Oligocene age.—**Maplewell series,** a division of supposed Precambrian rocks in the Malvern Hills of England, lying between the Blackwood and the Brand series.—**Mataura series,** the uppermost division of the Jurassic rocks of New Zealand. It consists of estuarine deposits with terrestrial plant remains, and overlies the Putakaka series, carrying marine fossils.—**Mauch Chunk series,** the upper member of the Lower Carboniferous series in the Appalachian region, consisting chiefly of red shales and sandstones, and overlying the Pocono series.—**Merced series,** a series of Pliocene sediments in California. *Amer. Jour. Sci.*, Jan., 1904, p. 92.—**Method of complete series.** See ★*method.*—**Mona series,** a name given by De la Beche to the crystalline rocks of Anglesey.—**Mount Vernon series,** a division of the Cretaceous Potomac series of the Atlantic border of the United States, which lies above the Rappahannock and below the Aquia Creek divisions. —**Multiple series.** (*a*) In *math.*, a double or higher dimensional series. (*b*) In *elect.* See ★*series-parallel circuit.*—**Newark series,** the Triassic rocks of eastern North America, laid down in long estuaries or lagoons which extend, with interruptions, from Nova Scotia to South Carolina. These deposits consist largely of red sandstones, conglomerates, and black and red shales intercalated with sheets of igneous rocks. In the Connecticut valley they are celebrated for the vast numbers of footprints of labyrinthodonts and probably dinosaurian reptiles, and both there and farther south for their fishes, cycads, ferns, and conifers. In North Carolina these beds have afforded the remains of the oldest American mammal, an insectivorous marsupial, *Dromatotherium sylvestre.* The series carries important coal-beds in Virginia and North Carolina.—**New York series,** the series of sedimentary formations of Paleozoic age which occur in the State of New York, or the subdivision and classification of that series as proposed by the original State geologists (1836–43). It was the purpose of these geologists (Mather, Emmons, Vanuxem, Conrad, and Hall) to institute a series of stratigraphic units of approximately equal value; they also made use of assemblages of these units, termed by some of them 'groups,' by others 'divisions.' These were four in number, namely (beginning at the bottom of the entire series), Champlain, Ontario, Helderberg, Erie; a fifth, Catskill, was employed by Mather. The gradual encroachment of the English standard divisions of the Paleozoic rocks eventually displaced these terms, but they are now in revived favor, since experience has shown that they meet the actual conditions more satisfactorily than the European terms. The unit terms of the New York series were wholly stratigraphic, and the geologists did not contemplate any uniform minor grouping of these units. Such a grouping, however, gradually came into general use, and thereby the unit terms were in several instances duplicated. Thus the term 'Niagara' came to be employed not only as a unit term, 'Niagara limestone,' but also as 'Niagara group,' including the Medina sandstone, Clinton limestone and shale, and the Niagara shale and limestone. The terms Trenton, Onondaga, Hamilton, and Chemung were similarly expanded. The terms of the New York series became of general application wherever Paleozoic rocks were studied in America, and the series has served as a standard of reference. Its present accepted form, which conserves all the original local stratigraphic terms and expresses the most practicable grouping of those terms, is as follows:

ERA OR SYSTEM.		PERIOD OR GROUP.	AGE OR STAGE.
Carbonic		Neocarbonic	Olean conglomerate
		Paleocarbonic	Knapp beds Oswayo beds (Panama conglomerate) Cattaraugus beds (incl. Wolf Creek conglomerate)
Devonic	Neodevonic	Chautauquan	Chemung beds (Catskill sandstone local facies)
		Senecan	Portage beds (Naples beds, Ithaca beds, Oneonta beds, local facies) Genesee shale Tully limestone
	Mesodevonic	Erian	Hamilton beds Marcellus shale
		Ulsterian	Onondaga limestone Schoharie grit Esopus grit
	Paleodevonic	Oriskanian	Oriskany beds
		Helderbergian	Port Ewen limestone Becraft limestone New Scotland beds Coeymans limestone
Ontaric or Siluric		Cayugan (Neontaric)	Manlius limestone Rondout waterlime Cobleskill limestone Salina beds (Shawangunk grit)
		Niagaran (Mesontaric)	Guelph dolomite Lockport dolomite Rochester shale Clinton beds
		Oswegan (Paleontaric)	Medina sandstone (Oneida conglomerate)
Champlainic (Lower Siluric or Ordovicic)		Cincinnatian (Neochamplainic)	Richmond beds (Ohio and Indiana) Lorraine beds Utica shale
		Mohawkian (Mesochamplainic)	Trenton limestone Black river limestone Lowville limestone
		Canadian (Paleochamplainic)	Chazy limestone Beekmantown limestone
Cambric or Taconic		Saratogan	Greenfield limestone Potsdam sandstone
		Georgian	Schaghticoke shale Georgia slates Stissing quartzite

Normal series. Same as ★*Cantorian series.*—**Oreti series,** a subdivision of the Triassic system in New Zealand, lying at the base and overlain by the Wairoa series. —**Oscillating series,** a series the value of which is different when we agree to take always an even, from what it is when we take always an odd number of terms, for example, $1 - 1 + 1 - 1 + \ldots$.—**Ozark series,** a term applied by Broadhead to a series of dolomites and sandstones in the Ozark Mountains of Missouri, partly of Cambrian and, in the upper part, of Lower Silurian age.—**Paniselian series,** a series of sparsely fossiliferous, coarse, glauconitic sands typically exposed at Mont Panisel, near Mono, Belgium, and forming the top member of the Belgian Lower Eocene. It lies between the Ypresian below and the Bruxellian beds above.—**Paradoxidian series.** Same as *Paradoxidian* ★*group.*—**Parallel series,** in *elect.* See ★*series-parallel circuit.*—**Pareora series,** a term applied by Hutton to the Miocene beds of New Zealand, comprising sandstones, clays, and limestones. Their invertebrate fauna is remarkable by reason of the large size of many of the pelecypods and gastropods, giving it a tropical expression. The upper part of the series, which consists of shales and lignites, contains a tropical fossil flora.—**Partial series.** Same as *partial* ★*set.*—**Patoot series,** the Upper Cretaceous beds of Greenland, which lie above the Atana group of Middle Cretaceous age, and are probably equivalent to the Montana group of the western United States and British Columbia. The fossil contents comprise marine invertebrates and plants, the latter exhibiting Tertiary affinities and comprising such genera as indicate a warm temperate climate for that region during late Cretaceous time.—**Perfect series.** Same as *perfect* ★*set.*—**Pocono series,** the basal member of the Lower Carboniferous system of Pennsylvania and the western slope of the Appalachians as far south as Alabama. It lies between Upper Devonian beds of Chemung age below and the Mauch Chunk formation above, and consists of sandstones, shales, and conglomerates, which aggregate 1,000 feet in thickness. The deposits are mostly of estuarine and terrestrial origin, with some thin intercalated beds which contain marine fossils.—**Potency of a series.** Same as *cardinal* ★*number of a series.*—**Pueyrredon series,** a series of greensands, conglomerates, sands, and clays, 800 feet thick, forming the lower part of the Cretaceous system of western Patagonia. The lower beds contain *Exogyra;* the upper, or Belgrano beds of sandstones and clays, contain an abundant molluscan fauna of Middle Cretaceous age. The Pueyrredon series lies upon black Jurassic shales and is overlain by the San Martin series of Upper Cretaceous age.—**Puget series,** a series of sandstones, shales, and coal-beds, underlying the Tejon group in the State of Washington, and containing molluscan and plant remains of Eocene Tertiary age. —**Putakaka series,** a group of marls, sandstones, and conglomerates, with irregular beds of coal, in New Zealand, containing marine invertebrate and plant fossils of Jurassic age.—**Rappahannock series,** a division of the Potomac series or Lower Cretaceous of the eastern coast belt of the United States, being the second division from the base, lying above the James River and below the Mount Vernon divisions.—**Regular series,** in *math.*, a series in which, after some term, the difference of terms (successive or not) becomes less than any assigned value however small.—**St. Marys River series,** in *geol.*, a series of Cretaceous strata in British North America which has been referred to the age of the Lower Laramie beds.—**Scarborough series,** in *geol.*, a subdivision of the Inferior Oölite or Bajocian rocks of Yorkshire, England.—**Series circuit, coil.** See ★*circuit,* ★*coil*^{1}.—**Series machine.** Same as *series dynamo.* See *electric machine.* —**Series-multiple circuit.** See ★*series-parallel circuit.*—**Series of Titius.** See the extract.

> In the first place, the planets known for ages — Mercury, Venus, Earth, Mars, Jupiter, and Saturn — are so arranged that the interval between any two consecutive orbits, passing from within outward, almost exactly doubles. This phenomenon was first emphasized by Titius, professor at the University of Wittenberg, and is consequently known as the "*Series of Titius.*" However, between the orbits of Mars and Jupiter the distance was so great that at this point a member of the *Series of Titius* was wanting. Indeed, Kepler, in his "Mysterium Cosmographicum" of 1596, had introduced at this gap a regular body as the symbol of an undiscovered planet. When Herschel (1781) discovered Uranus beyond Saturn, it came to light that this planet also continued with exactness the *Series of Titius* outwardly.
>
> *Sci. Amer. Sup.*, Jan. 25, 1908, p. 62.

Series-parallel circuit, an arrangement of a battery set of generators or the like in which the cells or units are divided into two or more equal groups, the members of each group being connected in series and the groups in multiple with each other. Also *series-multiple circuit.*—**Shasta-Chico series,** a division of the Cretaceous system in California, divided, in ascending order, into the Knoxville, Horsetown, and Chico beds.—**Simple series,** in *math.*, a series of one dimension.—**Solutrian series,** a term which has been applied to certain postglacial deposits in France containing paleolithic human implements, based upon their relative finish of workmanship. The Solutrian deposits take their name from Solutré in Burgundy. The flints found in them have been more deftly worked than those of ★Mousterian, ★Acheulian, and ★Chellean deposits (see these terms), but are not as highly finished as those of the Magdalenian. This classification is entirely independent of evidence of superposition of deposits.—**Spectral series,** in *phys.*, a group or series of lines in the spectrum the wave-lengths of which are related in some definite and systematic manner such that the position of one of them being given that of the others may be computed. —**Stockdale series,** the lowest division of the Silurian in Westmoreland and Cumberland, England, equivalent to the Llandovery group and subdivided into a series of graptolitic zones.—**Tejon series,** the upper member of the Eocene Tertiary on the Pacific coast.—**Transitional series,** in *paleon.*, an evolutional series of genetically related varietal forms which present gradual mutation from one species to another through successive geological horizons.—**Uitenhage series,** a formation in South Africa, regarded as of Lower Cretaceous age and having some plant species identical with those of the Rajmahal series of eastern India, which is accounted of late Jurassic age. The Uitenhage beds are regarded as indicating the continued existence of the belt of emerged land between India and South Africa beyond Jurassic and into Cretaceous time.—**Ultrabasic series,** those igneous rocks which contain less than the normal percentages of silica of the basic rocks, that is, rocks below 40 per cent. *Geikie,* Text-book of Geol., p. 240.—**Unartok series,** Eocene beds on the shore of Disko Island, Greenland, from which a considerable series of plants (*Laurus, Juglans, Magnolia, Quercus, Sequoia*) has been described by Heer. —**Unconditionally convergent series,** in *math.*: (*a*) A series which is convergent and has the same value, whatever the order of its terms. (*b*) Same as *absolutely convergent* ★*series.*—**Waihao series,** a division of the Upper Silurian rocks in New Zealand.—**Wairoa series,** a division of the Triassic system in New Zealand, lying above the Oreti and below the Otapiri series.—**Wanaka series,** a lower division of the Takaka system or Silurian of New Zealand.—**Well-ordered series.** Same as *well-ordered set.* See ★*well-ordered,* 2.—**White River series,** an extensive series of fresh-water Miocene Tertiary beds which cover large areas in Colorado, Nebraska, and the Dakotas, and extend into the Northwest Territories of Canada. These beds have a thickness of about 800 feet and have been subdivided, on the basis of the fossils they carry, into the *Protoceras, Oreodon,* and *Titanotherium* beds, all of which are profuse in mammalian remains.

series-connected (sē′rēz-ko̤-nek″ted), *p. a.* In *elect.*, said of a battery or group of generators connected positive terminal of the first to negative terminal of the second, and so on, so that the electromotive force of the group is the sum of the electromotive forces of the units and the resistance of the group is the sum of their resistances. *Steinmetz,* Elect. Engineering, p. 107.

series-dynamo (sē′rēz-dī″na̤-mō), *n.* In *elect.*, a machine the field coils of which are in series with the armature circuit.

series-generator (sē′rēz-jen″e̤-rā-to̤r), *n.* See ★*series-dynamo.*

series-motor (sē′rēz-mō″tô̤r), *n.* See ★*series-dynamo.*

series-transformer (sē′rēz-trȧns-fôr″mėr), *n.* See ★*transformer.*

series-turn (sē′rēz-tėrn), *n.* Any one of the ampere-turns in the series-windings of the field coils of an electric generator or motor.

serific (se-rif′ik), *a.* [Irreg. ‹ L. *seri*(*cum*), silk, + *-ficus*, ‹ *facere*, make.] Pertaining to the making of silk threads; having the function of making silk threads: as, the *serific* glands of a silkworm.

serigraph (ser′i-grȧf), *n.* [Irreg. ‹ L. *seri*(*cum*), silk, + Gr. *γράφειν*, write.] An instrument for testing the uniformity of raw silk.

serimeter (se-rim′e-tėr), *n.* [Irreg. ‹ L. *seri*(*cum*), silk, + Gr. *μέτρον*, measure.] An instrument for testing the tensile strength of silk thread.

serinda, *n.* See ★*sarinda.*

serine (ser′in), *n.* [L. *ser*(*icum*), silk, + *-ine*^{2}.] A colorless compound, $HOCH_2$-$CH(NH_2)COOH$, prepared by the action of dilute sulphuric acid on sericin. It forms monoclinic crystals, and is also called *a-amino-hydracrylic* acid.

serio-comic, *a.* **II.** *n.* A professional singer of serio-comic songs; one who performs serio-comic rôles.

Seriphus (ser′i-fus), *n.* [NL., ‹ Gr. *σέριφος*, a kind of locust, also a kind of wormwood.] A genus of sciænoid fishes known from one species found in the eastern Pacific.

sermonoid (sėr′mon-oid), *n.* [*sermon* + *-oid.*] Something resembling a sermon. [Nonce-word.]

> A sarcasm is converted into a *sermonoid.*
> *E. A. Poe*, Marginalia, v.

sermonology (sėr-mo-nol′ō-ji), *n.* [*sermon* + *-ology.*] The art of sermon-writing and preaching; sermons and their delivery; homiletics. [Rare.]

> Few liberal-minded preachers would not prize the opportunity of investigating . . . the *sermonology* of ancient and medieval as well as of modern times.
> *Kidder*, Homiletics, iii.

sernamby (sėr′nam-bi), *n.* [Perhaps based on *Serinhem*, *Serenhem*, a name of Pernambuco.] A coarse form of Para rubber obtained from latex which has coagulated before it could be smoked in the usual manner or which has been scraped from the collecting vessels. See *Para rubber*, under ★*rubber.*

serocolitis (sē″rō-kō-lī′tis), *n.* [NL., ‹ L. *serum*, serum, + Gr. *κόλον*, colon, + *-itis.*] Inflammation of the peritoneum covering the colon.

serocyst (sē′rō-sist), *n.* [L. *serum*, serum, + Gr. *κύστις*, bladder.] A tumor, as of the breast, which contains one or more cysts: possibly a dilatation of lactiferous ducts.

serocystic (sē-rō-sis′tik), *a.* [*serocyst* + *-ic.*] Relating to, or of the nature of, a serocyst.

serodiagnosis (sē-rō-dī-ag-nō′sis), *n.* [NL., ‹ L. *serum*, serum, + Gr. *διάγνωσις*, diagnosis.] Same as *serum* ★*diagnosis.* *Nature*, May 1, 1902, p. 16.

seroenteritis (sē-rō-en-te-rī′tis), *n.* [NL., ‹ L. *serum*, serum, + Gr. *ἔντερον*, intestine, + *-itis.*] Inflammation of the peritoneal coat of the intestine.

serohemorrhagic (sē-rō-hem-o-raj′ik), *a.* [L. *serum*, serum, + E. *hemorrhage* + *-ic.*] Marked by an exudation of serum and blood. *Bowhill*, Manual of Bacteriological Technique, p. 149.

serohepatitis (sē-rō-hep-a-tī′tis), *n.* [NL., ‹ L. *serum*, serum, + Gr. *ἧπαρ* (*ἡπατ-*), liver, + *-itis.*] Inflammation of the peritoneum which covers the liver.

serolemma (sē-rō-lem′ä), *n.* [NL., ‹ L. *serum*, serum, + Gr. *λέμμα*, a scale.] In *embryol.*, the outer or serous cell-layer of the amnion in vertebrates.

serolin (sē′rō-lin), *n.* [L. *serum*, serum, + *-ol* + *-in*^{2}.] **1.** Same as ★*stercorin.*—**2.** A term formerly applied to a mixture of fats contained in dried blood-serum.

serology (sē-rol′ō-ji), *n.* [NL. *serum* + *-ology.*] The scientific study or medical use of sera. See ★*serumtherapy* and ★*immunity*, 5.

seromucous (sē-rō-mū′kus), *a.* [L. *serum*, serum, + *mucus*, mucous, + *-ous.*] Composed partly of serum and partly of mucus.

seromuscular (sē-rō-mus′kū-lär), *a.* [L. *serum*, serum, + *musculus*, muscle, + *-ar*^{3}.] Relating to both serous and muscular coats of the intestine. *Med. Record*, Jan. 17, 1903, p. 112.

seroot (se-röt′), *n.* [African.] Same as ★*seroot-fly.*

seroot-fly (se-röt′flī), *n.* A very bloodthirsty tabanid fly, of the genus *Pangonia*, inhabiting the upper Nile region in Africa. *Cambridge Nat. Hist.*, VI. 482.

seroplastic (sē-rō-plas′tik), *a.* [L. *serum*, serum, + Gr. *πλαστός*, formed, + *-ic.*] Same as *serofibrinous.* *Buck*, Med. Handbook, III. 64.

seropuriform (sē-rō-pū′ri-fôrm), *a.* [L. *serum*, serum, + *pus* (*pur-*), pus, + *forma*, form.] Same as *seropurulent.*

seropus (sē′rō-pus), *n.* [L. *serum*, serum, + *pus*, pus.] Serum which contains an admixture of pus.

serosa (sē-rō′sä), *n.* [NL. (sc. *membrana*). See *serous.*] A serous membrane.

> The outer of these two membranes, that which arises from the outer leaf or layer of the amnion-fold, is the *serosa.* *A. S. Packard*, Text-book of Entom., p. 532.

Serosa mucin, a mucinous substance found in exudates of inflammatory origin or associated with new growths: precipitated with acetic acid.

serosanguineous (sē″rō-sang-gwin′ē-us), *a.* [L. *serum*, serum, + *sanguis* (*sanguin-*), blood, + *-eous.*] Composed of serum with an admixture of blood. *Buck*, Med. Handbook, I. 705.

serose^2 (sē′rōs), *n.* [*serum* + *-ose.*] An albumose derived from serum-albumin. *Simon*, Physiol. Chem., p. 178.

serositis (sē-rō-sī′tis), *n.* [NL., ‹ L. *serosus*, serous, + *-itis.*] Inflammation of a serous membrane. *Buck*, Med. Handbook, III. 78.

serosynovitis (sē-rō-sin-ō-vī′tis), *n.* [NL., ‹ L. *serum*, serum, + NL. *synovia* + *-itis.*] Inflammation of the synovial membrane accompanied by an effusion of watery fluid into the joint.

serotherapeutic (sē-rō-ther-a-pū′tik), *a.* [L. *serum*, serum, + E. *therapeutic.*] Relating to the treatment of disease by specific sera. *Encyc. Brit.*, XXX. 486.

serotherapeutical (sē-rō-ther-a-pū′ti-kal), *a.* Same as ★*serotherapeutic.*

serotherapist (sē-rō-ther′a-pist), *n.* [*sero-therap*(*y*) + *-ist.*] One who makes use of serumtherapy in combating disease.

serotherapy (sē-rō-ther′a-pi), *n.* [L. *serum*, serum, + Gr. *θεραπεία*, medical treatment.] Same as ★*serumtherapy.* *P. E. M. Berthelot*, in Smithsonian Rep., 1898, p. 696.

serotinal (ser-ō-tī′nal), *a.* [*serotina* + *-al*^{1}.] **1.** Relating to the decidua serotina. *Buck*, Med. Handbook, III. 384.—**2.** [*serotine*, late, + *-al*^{1}. See *serotine.*] See the extract.

> Estival, June 1 to about July 7—twenty-one species *serotinal*, July 7 to about August 7—thirteen species; autumnal, August 7 to about September 21—twenty-two species. The prairie elements show a marked grouping into layers which correspond with the floral aspects. Overtopped by the autumnal, the sublayers are successively those of the *serotinal*, estival, vernal and prevernal.
> *Science*, Feb. 7, 1908, p. 207.

Serous apoplexy, sac. See ★*apoplexy*, ★*sac*^{2}.—**Serous cyst.** Same as *hygroma.*—**Serous gland.** See ★*gland.*

serow (se-rō′), *n.* [Native name.] A name for the goat-antelopes of Asia, forming the genus *Nemorhædus*: specifically applied to *N. bubalinus* of the Himalayas. This is about the size of a goat, has small, round horns, curving backward, and a coat of coarse, long, gray hair. One species, *N. crispus*, occurs in Japan.

> This somewhat isolated ruminant has its nearest allies in the genus Nemorhædus, of the mountains of Asia, which occurs in Japan (N. crispus), but of which the best-known form is commonly designated the "*serow*" by the sportsmen of the Himalayas.
> *Geog. Jour.* (R. G. S.), IX. 71.

serpentarin (sėr-pen′ta-rin), *n.* [*Serpentaria* + *-in*^{2}.] A poisonous compound contained in Virginia and Texas snakeroot, *Aristolochia Serpentaria.* It is said to be identical with clematin from *Aristolochia Clematitis* and is also called *aristolochine.*

serpentarium (sėr-pen-tā′ri-um), *n.* [NL., ‹ L. *serpen*(*t-*)*s*, a serpent, + *-arium.* See *serpent.*] A place where serpents are confined for safety or for exhibition. [Rare.]

serpentary, *n.*—**English serpentary,** the bistort, *Polygonum Bistorta.* Also called *snakeweed.*

serpent-column (sėr′pent-kol″um), *n.* A twisted bronze column which stands on the site of the ancient Hippodrome at Constantinople. It was erected at Delphi in 479 B.C. to support a gold tripod. It was removed to Constantinople by Constantine in 330 A.D. The column is composed of three snakes intertwined. The heads have been broken away, but it still retains the inscription commemorative of the Hellenic states which took part in the second Persian war. *C. T. Newton*, Travels in the Levant, II. 25.

serpent-head (sėr′pent-hed), *n.* A common name of fishes belonging to the family *Ophiocephalidæ*, found in fresh waters of Asia and Africa.

Serpentian (sėr-pen′shian), *n.* Same as *Serpentinian.*

Serpentid (sėr′pen-tid), *n.* [*Serpent* + *-id*^{2}.] A meteor belonging to a flock which has its radiant in the constellation Serpens.

> In April many fine meteors diverge from Virgo and Libra, while in May there are *Serpentids*, Scorpiids, and Ophiuchids. *Nature*, April 14, 1904, p. 571.

serpentine, *n.* **5.** In *math.*: (*a*) The surface generated by a sphere whose center travels along a helix. (*b*) A special curve of the third order. *Newton.*

serpent-kame (sėr′pent-kām), *n.* An elongate curving ridge of roughly stratified sands and gravels, supposed to mark the course of a subglacial stream. See *eskar.* *Dana*, Manual of Geol. (4th ed.), p. 971.

Serpent-kame.

serpent-ulcer (sėr′pent-ul″sėr), *n.* A serpiginous ulcer; one which travels over the surface by healing on one side as it involves new tissues on the other.

serpyllum (sėr-pil′um), *n.* [L. *serpyllum*, *serpillum*, thyme.] Same as *serpolet.*

serra, *n.* **2.** [Sp.] A fish, *Alepisaurus serra*, of the family *Alepisauridæ*, known from the coast of California. The type specimen, which was four feet long and weighed seven pounds, was discovered at Monterey in 1859. *Jordan and Evermann*, Fishes of North and Middle Amer., p. 597.

Serranellus (ser-a-nel′us), *n.* [NL., ‹ *Serranus* + dim. *-ellus.*] A genus of serranoid fishes of Europe, typified by the common *Serranellus scriba.*

serranid (ser′a-nid), *n.* Any fish of the family *Serranidæ* or sea-bass.

serranine (ser′a-nin), *n.* A trade-name of a Swedish explosive which resembles dualin and sebastine.

serrate (ser′āt), *v. t.*; pret. and pp. *serrated*, ppr. *serrating.* [*serrate*, *a.*] To render serrate; notch like a saw.

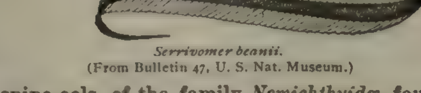
> Under a sheltering headland the lateral waves which run before the wind are small, and only serve to *serrate* the crest of the wave which comes from the offing.
> *Geog. Jour.* (R. G. S.), XI. 539.

serratiform (se-rat′i-fôrm), *a.* [*serrate* + *-form.*] Having a serrate, notched, or toothed form or appearance; serrate. [Rare.]

serre-fine (sãr-fēn′), *n.* [F., ‹ *serrer*, close, + *fine*, a fine (blood-vessel).] A small spring-forceps of spiral wire, used for closing a wounded blood-vessel during an operation.

serre-nœud (sãr-nė′), *n.* [F., ‹ *serrer*, close, + *nœud*, knot.] An instrument for tightening a ligature used in snaring off a tumor.

Serrivomer (ser-i-vō′mėr), *n.* [NL., ‹ L. *serra*, saw, + *vomer*, plowshare.] A genus of snipe-eels, of the family *Nemichthyidæ*, found in the deep sea off both coasts of North America.



Serrivomer beanii.
(From Bulletin 47, U. S. Nat. Museum.)

sertulum (sėr′tụ̄-lum), *n.*; pl. *sertula* (-lạ̈). [Dim. of L. *sertum*; in plural, a garland.] In *bot.*, (*a*) An umbel. [Obsolete.] (*b*) A selection of plants scientifically treated.

sertum (sėr′tum), *n.*; pl. *serta* (-ạ̈). [L.; in plural, a wreath or garland.] In *bot.*, an account of, or report upon, a collection of plants.

serum, *n.* 4. The blood-serum of an animal which has been rendered immune against some disease by injections of increasing quantities of the micro-organism of such disease; antitoxin. See *serum* ★*diagnosis* and ★*immunity*, 5.—**Anticholera serum, antiplague serum.** See *Haffkine's* ★*serum*.—**Antistaphylococcus serum,** a serum supposed to be curative of staphylococcus infections.—**Antistreptococcus serum.** Same as *streptococcus* ★*serum*.—**Artificial serum,** a solution of certain salts, chiefly chlorid of sodium, in the proportions existing in the blood, used in cases of shock, blood-poisoning, etc., by intravenous injection or hypodermoclysis.—**Blondel's serum,** the serum of fresh milk, obtained by filtration after coagulation and neutralization. Its action depends upon the presence of oxidases.—**Blood-serum.** See *serum*, 2. It is the liquid portion of the blood after coagulation has occurred—a yellowish liquid which differs from the blood-plasma in the absence of fibrinogen. The latter has been decomposed during the process of coagulation with the formation of fibrin and a small amount of fibrinoglobulin. The term 'blood-serum' is sometimes though incorrectly used synonymously with 'blood-plasma,' or to designate the liquid portion of the blood in contradistinction to the corpuscular elements.—**Calmette's serum,** an antiserum against certain kinds of snake-poison.—**Dunbar's serum,** an antiserum directed against the toxic action of the pollen of certain plants, as *Gramineæ*, *Solidago*, *Ambrosia*, etc., which is thought to be the cause of hay-fever.—**Haffkine's serum,** either of two different sera which bear Haffkine's name. The one is directed against cholera and hence is known as *Haffkine's cholera serum*; the other is directed against plague, and is known as *Haffkine's antiplague serum*.—**Immune serum.** See ★*immune*.—**Löffler's serum,** a 'bacteriological culture medium containing solidified blood-serum, used in the cultivation of certain bacteria, such as the diphtheria bacillus.—**Maragliano's serum,** an antituberculosis serum.—**Marmorek's serum,** an antistreptococcus serum; a serum intended to combat infection with streptococci.—**Motile serum,** an immune serum which contains flagellar agglutinins.—**Non-motile serum,** an antiserum which contains somatic agglutinins, in contradistinction to a serum which has been obtained with motile organisms and hence contains also flagellar agglutinins.—**Normal serum,** specifically in *serology*, an antiserum one tenth of a cubic centimeter of which will neutralize ten times the minimum fatal dose of a given toxin.—**Polyvalent serum,** an immune serum which contains antibodies directed against more than one immunizing agent. Marmorek's antistreptococcus serum is a polyvalent serum, resulting on immunization with several varieties of streptococci.—**Serum diagnosis.** See ★*diagnosis*.—**Streptococcus serum,** an antiserum to the action of streptococci.—**Yeast serum,** the serum of animals which have been treated with increasing doses of yeast in their food: suggested for the treatment of various infectious diseases.—**Yersin-Roux serum.** (*a*) An antiplague serum. (*b*) An antidiphtheritic serum.

serum-agar (sē′rum-ā″gạ̈r), *n.* A medium for growing certain bacteria, composed of blood-serum and agar.

serumal (sē′rum-ạl), *a.* [Irreg. < *serum* + *-al*^{1}.] Relating to or of the nature of serum or of a serum.

serum-identical (sē′rum-ī-den″ti-kạl), *a.* Showing the same behavior toward a given immune serum: applied to related bacteria. [Nonce-word.]

> Further, in discussing the "specific" value of the test, I found that two clearly differentiable vibrios . . . were, so to speak, *serum-identical*, that is, the serum of either affected the other not only by the clumping test, but also by the Pfeiffer bacteriolytic test and the protection afforded to animals.
> *H. E. Durham*, in Jour. Exper. Med., Jan. 15, 1901, [p. 355.

serum-mucoid (sē′rum-mū″koid), *n.* A mucoid which is peculiar to the blood-serum.

serumtherapy (sē-rum-ther′ạ-pi), *n.* The treatment of disease with the serum of animals which have been immunized against the specific organisms, or their products, to which the disease is supposedly referable. See ★*immunity*, 5, and *serum* ★*diagnosis*.

> In spite, however, of the mass of data thus collected in the study of the processes involved in meeting infection and the establishment of cure and immunity, actual advances in *serumtherapy* and biological methods of treatment during this period have not kept pace with theory.
> *Journal Med. Research*, Nov., 1908, p. 323.

serv. An abbreviation (*d*) [*cap.*] of *Servia*.

servage, *n.* 2. In *old Eng.* and *feudal law*, the bringing to his lord's service of other workmen by a tenant in addition to his own service or rent; also, the like bringing of other vassals by a subject to his sovereign or chief.

servant, *n.*—**Assigned servant.** See ★*assigned*.

server, *n.* 3. A male animal, particularly a bull, that copulates with, or serves, the female.

> The bulls of these families are also good *servers* and sure getters. *Rep. Kansas State Board Agr.*, 1901–02, p. 355.

servery (sėr′vẹ-ri), *n.* A service-room; a room from which to serve (something). *N. and Q.*, 8th ser., VIII. 286.

service^1, *n.* **20.** The act of copulation between domesticated animals, especially cattle and horses.

> There is no more important problem for the breeder to consider than that of *service*.
> *Rep. Kansas State Board Agr.*, 1901–02, p. 355.

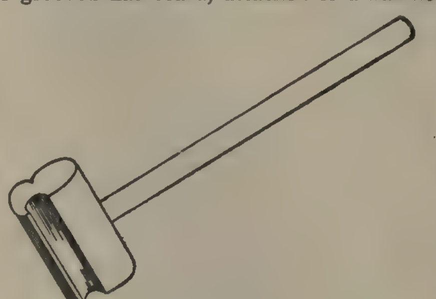
Cut service, in *lawn-tennis*, a service in which the ball is not hit squarely, but in which the racket draws strongly across the ball, so that it curves or bounds very much out of a straight line.—**Distinguished Service Order.** See ★*order*.—**Forest service.** See ★*forest*.—**Long service,** a hawser that has been served for a long distance to protect it from chafe.—**Long-service man,** an enlisted man whose term of service has been a long one.—**Overhand cut service,** in *lawn-tennis*, a cut service made overhand, that is, with the serving hand near or above the height of the shoulder.—**Reclamation Service,** the organization created by the Secretary of the Interior of the United States to carry into effect the Reclamation Act of June 17, 1902, which devoted the proceeds of the disposal of public lands to the construction of irrigation works in 14 Western States and 2 Territories. The expenditure to Jan. 1, 1909, amounted to about $50,000,000.

> All readily available sources of water supply have long since been utilized, and systems for controlling the spring floods and other waters now going to waste in the small streams and rivers must be installed before the irrigated acreage can be greatly extended. Many reservoirs have already been constructed, and several projects of considerable magnitude are now being considered by the *Reclamation Service* of the Federal Government.
> *Dept. Com. and Labor*, Bur. of Census, Bulletin 16, [Irrig. in U. S., 1902, p. 74.

Service by publication, the method of serving process on those who evade service or who are without the jurisdiction. Usually the writ or notice is published in a journal which the court specifies and a copy thereof is mailed to the person's last known address.—**United States Steamboat Inspection Service,** a bureau under the Department of Commerce and Labor, whose duty it is to examine and license all classes of steam-vessels, and certain classes of merchant sailing-vessels, and to grant to eligible masters, mates, pilots, and engineers certificates of competency authorizing them to serve in their respective capacities on board of the class of vessels for which they have received license.

II. *a.* Used ordinarily and every day, as distinguished from use under unusual conditions or in an emergency.—**Service wires,** the wires which connect the lamps, motors, or other apparatus to be supplied, within a building or on the premises of a consumer, with the mains of an electric lighting or power circuit.

service-board (sėr′vis-bōrd), *n.* A small piece of grooved flat board, attached to a handle, used in place of a serving-mallet for winding service stuff on small rope. Also called *serving-board*.



Service-board.

service-court (sėr′vis-kōrt), *n.* In *lawn-tennis*, the space in a tennis-court into which the ball must be struck by the server.

service-pump (sėr′vis-pump), *n.* A pump used every day and continuously for any duty, as distinguished from an emergency-pump.

service-rail (sėr′vis-rāl), *n.* In *railroading*, an ordinary rail in use on a line, as distinguished from the rails in a cross-over switch or crossing. See ★*stock-rail* and ★*adhesion-rail*.

service-stop (sėr′vis-stop), *n.* The gradual stop of a train by use of the train-brake in ordinary circumstances when it is desired to retard the train: distinguished from the emergency-stop, by which the train is brought to rest in the shortest distance and time.

service-tree, *n.* 3. The mountain-ash, either the European, *Sorbus Aucuparia*, or the American, *S. American*, the latter being usually distinguished as the *American service-tree*.—4. Same as *service-berry*, 3.

servigrous (sėr-vig′rus), *a.* Exceedingly or severely vigorous: as, *servigrous* oratory. [Prov., Southern U. S.]

> The Sun . . . employs that expressive provincialism of the Southern mountaineer, "*servigrous*," in describing the manner of oratory used by one of the . . . campaign speakers. . . . The word is of familiar use in the east Tennessee mountains, and has occasionally found its way down in the central basin and western valleys of this State.
> *Nashville Banner*, quoted in the N. Y. Sun, Nov. 1, 1901.

servil, *a.* and *n.* A simplified spelling of *servile*.

serving-stuff (sėr′ving-stuf), *n.* *Naut.*, spunyarn, rope-yarn, round-line, hambroline, etc., but especially the first.

servitial (sėr-vish′ al), *a.* [< L. *serviti(um)* (see *service*) + *-al*^{1}.] Pertaining to a relation of service, such as that between servant and master, child and parent.

servitude, *n.* 7. (*b*) In *civil* and *Scots law*, the subjection of a person or thing to another person or thing. The word is generally used as meaning an easement or real servitude. —**Mixed servitude,** the subjection of persons to things, or vice versa.—**Natural servitude,** a servitude which arises by reason of the natural conditions of the land.—**Real servitude,** in *Scots law*, a charge or burden upon one estate or tenement in favor of another.—**Rural servitude, urban servitude.** See *predial servitude*, under *servitude*.

Servo-Croatian (sėr″vọ-krō-ā′shiạn), *n.* Servian and Croatian considered as practically one Slavic dialect. *Keane*, Ethnology, p. 412.

servo-motor (sėr″vō-mō′tọr), *n.* [F. *servomoteur*, irreg. < L. *servire*, serve, assist, + *motor*, a mover.] A motor whose movements are automatically controlled and follow the motions of a controlling apparatus.

> The regulation of the turbine, which meets even the greatest requirements, is effected in a way similar to the hydraulic turbine of the Swiss company by means of an extremely sensitive spring governor, including a *servomotor*, the entering tension of the steam being altered according to the different loads.
> *Amer. Inventor*, July 15, 1904, p. 315.

sesame-oil, *n.*—**German sesame-oil,** camelina-oil or gold-of-pleasure oil, obtained from the seeds of *Camelina sativa*. See *gold-of-pleasure*.

sesi (sā-sē′), *n.* [Cuban Sp. *sesí*, also *jesí*, from an aboriginal name.] The black-fin snapper, *Lutjanus buccanella*, a common West Indian market-fish, crimson above and silvery beneath. Also called *boucanelle* and *sesi de lo alto* ('sesi of the deep sea').

sesquialter, *n.* **II.** *a.* In *bot.*, same as *sesquialteral* (*b*). Compare ★*hemiologamous*. *Jackson*, Glossary.

sesquicentennial (ses″kwi-sen-ten′i-ạl), *a.* and *n.* [L. *sesqui*, one half more, + E. *centennial*.] **I.** *a.* Relating or pertaining to a period of a century and a half; one-hundred-and-fiftieth: as, a *sesquicentennial* celebration.

II. *n.* A one-hundred-and-fiftieth anniversary.

sesquisulphuret (ses-kwi-sul′fụ̄-ret), *n.* Same as *susquisulphid*.

sesquiterpene (ses-kwi-tėr′pēn), *n.* [*sesqui-* + *terpene*.] The class name applied, in organic chemistry, to hydrocarbons of the formula $C_{15}H_{24}$, possessing a closed-chain structure. The term is derived from the fact that the terpenes have the formula $C_{10}H_{16}$.

sessil, *a.* A simplified spelling of *sessile*.

sessility (se-sil′i-ti), *n.* [*sessile*.] The condition of being sessile. *Amer. Geol.*, April, 1903, p. 204.

sestiad† (ses′ti-ad), *n.* [Irreg. < It. *sesto* (L. *sextus*), sixth (as in *sestina*), + *-iad* (as in *Iliad*, which Chapman translated), for *-ad*^{2} (as in *decad*, etc.). The proper term would be *hexad*.] One of six parts or divisions: applied by Chapman to his divisions, six in number, of Marlowe's (unfinished) narrative poem "Hero and Leander," including the four parts added by himself.

> The arguments of all the *Sestiads* are by Chapman; who when he continued Hero and Leander, divided into the First and Second *Sestiads* that portion of the poem which was written by Marlowe.
> *Dyce*, ed. Marlowe, Works, III. 1, note.

Sestian (ses′ti-ạn), *n.* [*Sesto*, near Florence, Italy, + *-ian*.] In *geol.*, the lowest stage of the Oligocene Tertiary in the northern Apennines of Italy.

sestino (ses-tē′nō), *n.* [It., < *sesto*, sixth, < L. *sextus*, sixth.] A bronze or copper coin struck in the name of Louis XII. of France as king of Naples (1501–1503).

Sesuto (se-sö′tō), *n.* [Basuto.] The language of the Basuto people; one of the Bantu languages of Africa. *Keane*, Ethnology, p. 274.

set^1, *v.* **I.** *trans.* **35.** In *foot-racing*, the order (*set!*) given to the runners by the starter just before firing his pistol.—**36.** In *dominoes*, to put down the first stone; pose.—**Setting-up exercises.** Same as *setting-up* ★*drill*.—**To set across,** to carry or ferry to the opposite side of a river, lake, or the like.—**To set flying.** See ★*flying.*—**To set out.** (*j*) In dressing skins, to smooth or work out flat and even with a machine or by hand. *C. T. Davis*, Manuf. of Leather, p. 214. (*k*) In *printing*, to exhaust (all the available type in a case or in a font).—**To set the watch,** to call out the night watch aboard ship.—**To set up.** (*p*) To erect or put in place with the parts fitted together in correct adjustment and ready for use: said of surveying instruments, steam-engines, etc.

II. *intrans.* **12.** To become attached to a support and, hence, likely to survive and to grow to maturity, as oyster spawn; strike, as spawn. *Stand. Dict.*—**To set out (to),** to undertake (to do something); to make up one's mind (to do something).

> We . . . kerry a hollerday, ef we *set out*,
> Ez stiddily ez though 't wuz a redoubt.
>
> *Lowell*, Biglow Papers 2d ser., vi.

set^{1}, *p. a.* **8.** In *cricket*, likely to make a good score; able to play the bowling: said of a batsman.

set^{1}, *n.* **18.** (*d*) An upsetting tool used as a punch with a hammer to give saw-teeth the desired angle from the plane of the plate or a width greater than the plate where they cut the wood. (*e*) A swage or upsetting tool for forming rivet-heads. Also called a *snap.* (*f*) A steel pin for driving finishing-nails into or below the surface of wood, or in places where the hammer-head cannot reach. (*g*) A form of spanner in which the holder for the nut or bolt-head is made by bending the shank around and back upon itself until the desired figure is formed by the bent stock. (*h*) A piece of hard wood placed on top of a pile to transmit the blows of the falling head when the pile proper has gone so far down that it cannot be struck directly. (*i*) The amount of compression which a spring takes under a load. (*j*) A device like a screw-clamp to hold two parts together until they are fitted or joined.—**27.** In *math.*, a sequence of things simply arranged; a series of terms; an aggregate of points; a manifold; an assemblage.

> Open *sets* and the theory of content: by Dr. W. H. Young. Two definitions of the content of an open *set* are given, and are shown to be in agreement for that class of open *sets* which has the property that the content of the *set*, obtained by adding to any number of the class any *set* of non-overlapping intervals, is equal to the sum of the contents of the component *sets*. This class contains all known open *sets*, and all those obtainable from them by any of the ordinary processes.
>
> *Nature*, Jan. 28, 1904, p. 311.

28. In *phys.*, a change of molecular arrangement or structure, in general of the nature of a strain, which remains after the stress which produced it has been removed. A set which gradually diminishes and finally disappears is called a *temporary set;* one which does not is a *permanent set.*

> Precautions are needed to avoid the influence of *temporary set*, or hysteresis in the resistance of the filament . . . and especially the *permanent set* due to abnormally high voltage. *W. M. Stine*, Photometrical Measurements, p. 191.

29. In *currying*, an uneven place on the flesh side of a hide, caused by careless splitting. [Rare.] *Modern Amer. Tanning*, p. 167.—**30.** A paving-block; also a curbstone. [Rare in the United States.]

> It is paved with *setts*, 6 inches by 3 inches, with a 1-inch gap, and has a regular but fairly rough surface.
>
> *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 348.

> This may be due to the fact that as the wheel travels faster, it has less time to fall into the little holes in the roadway, merely skimming along the tops of the ridges. Well-laid *setts* under these circumstances, even with wide, deep gaps, form a perfectly smooth track at high speeds. In some tests it was even found that the tractive effort was smaller for *setts* than for macadam.
>
> *Elect. World and Engin.*, Nov. 21, 1903, p. 851.

Articles of set. See ★*article.*—**Closed set,** in *math.*, a set every fundamental set in which has a limit in it.—**Coherent sets.** In *math.*, two fundamental sets or series wholly ascending or wholly descending are coherent: (1) if both are ascending, and after any term of either there is always a term of the other; (2) if both are descending, and before any term of either there is always a term of the other; (3) if one is ascending, the other descending, and the one wholly precedes the other, and there is at most one term which is between the two fundamental sets.—**Cohesive set,** in *math.*, a set for any two elements of which, t and t', if ϵ is an arbitrary distance of the kind presented by the set, for ϵ given in advance and as small as we please, there is always a finite number of elements, t_1, t_2, . . . t_n, belonging to the set, such that the distances tt_1, t_1t_2, t_2t_3, . . . t_nt' are all less than ϵ.—**Compact set,** in *math.*, a set having a term between any two.—**Complete set,** in *math.*, those terms, and only those terms, which have the generating relation or its converse to some one term, together with that one term.—**Condensed set,** in *math.*, a set each of the terms of which is a principal term.—**Connected set,** in *math.*, a set such that, given any two of its terms, there is a certain finite number (not necessarily unique) of steps from one term to the next by which we can pass from one of our two terms to the other.—**Content of a closed set of points.** If each point of a closed set of points is inclosed in a small interval of which it is the mid-point, the limit of the sum of the finite number of non-overlapping intervals filled up by these small overlapping intervals, when the lengths of these latter are indefinitely decreased, is the content I_P of the set of points.—**Continuous set.** Same as *continuous* ★*series.*—**Countable set.** Same as *denumerable* ★*set.*—**Countably infinite set,** in *math.*, a set in one-to-one correspondence with the scale of the natural numbers.—**Deduced set.** Given any finite or infinite number of sets of points, that set which contains all the points which belong to every set, and no other points, is the deduced set.—**Dense set,** in *math.*, a set between every two unequal elements of which there is another element.—**Denumerable set,** in *math.*, a set which can be exhibited as a series having a first term and in which every term takes a specifiable place; a set the elements of which can be put into one-to-one correspondence with the elements of a progression.—**Derivative of a set;** in *math.*, the assemblage of all its limiting points (*first derivative*). The first derivative of the first derivative is the second derivative, and so on.—**Derived set.** Same as *derivative of a* ★*set.*—**Equivalent sets,** in *math.*, two sets, A and B, when, and only when, it is possible to set up between the elements of A and those of B a one-to-one correspondence.—**Fundamental set,** of a given series, every progression or regression which belongs to the given series.—**Hanging sets,** in *mining*, timbers to which the cribs are suspended in sinking through soft strata.—**Infinite set,** in *math.*, a set having a proper part equivalent to the whole; a set which can be put into one-to-one correspondence with a proper part of itself.—**Limit of a fundamental set** contained in any one-dimensional set or series, in the case of a progression, a term such that it comes after the whole progression, but every term before the limit comes before some term of the progression.—**Linear set,** in *math.*, a one-dimensional set; a set representable by points on a straight line.—**Multitude of a set.** Same as ★*potency of a set.*—**Normally ordered set.** Same as *well-ordered set.* See ★*well-ordered*, 2.—**Nucleus of a set.** See ★*nucleus.*—**Numerable set.** Same as *denumerable* ★*set.*—**Open set.** (*a*) See *twill* ★*set.* (*b*) In *math.*, a set which is not closed. See extract under ★*set*^{1}, *n.*, 27. (*c*) In *coal-mining*, the unfilled space between pack-walls.—**Ordinal set.** Same as *ordinal* ★*system.*—**Partial set,** in *math.*, a set which is connected but not complete.—**Perfect set,** in *math.*, one which is closed and condensed.—**Permanent set,** in *phys.*, a strain which lasts indefinitely after the release from stress. See ★*set*^{1}, *n.*, 28.—**Potency of a set,** its Cantorian cardinal number. See ★*number.*—**Power of a set.** Same as *potency of a* ★*set.*—**Rib set.** See *twill* ★*set.*—**Set dense in itself.** Same as *condensed* ★*set.*—**Similar sets,** in *math.*, two sets such that there exists a one-to-one relation which couples every element of either with one, and only one, element of the other.—**Simply ordered set,** in *math.*, a set the elements of which have been arranged in an order of succession having the two following properties: (1) of any two elements m_1 and m_2, one, m_1, has the lower, the other, m_2, has the higher rank; (2) if of three elements, m_1, m_2, m_3, the m_1 is of lower rank than m_2, and m_2 of lower rank than m_3, then m_1 also is of lower rank than m_3.—**Spread set,** a bending sidewise of saw-teeth by a swage or set, as distinguished from the up set given to chisel-edge teeth used for cutting with the grain and the spring set given by sidewise bending.—**Spring set,** the bending of the teeth of a saw sidewise to form the kerf-width and prevent cramping of the blade.—**Temporary set,** in *phys.*, a set or strain of any sort which lasts after the removal of stress, but which gradually disappears. See ★*set*^{1}, *n.*, 28.—**Theory of sets,** in *math.*, a fundamental branch of mathematics (assemblage-theory) due, as regards its characteristic concepts and their organization into a distinct body of coherent doctrine, chiefly to Georg Cantor (dating from 1870).—**The smart set,** the ultrafashionable members of fashionable society. [Society slang.]—**Twill set,** one of the three methods of inserting wire into the foundation of card-clothing. The other two methods are called *open set* and *rib set.*—**Upper segment of a set,** in *math.*, all terms greater than μ, if μ is a single term, or greater than a variable term (some term) of μ, if μ is a class of terms all of which are greater than some fixed term of the set, and if μ has no minimum, that is, if every term of μ is greater than some other term of μ.—**Well-ordered set.** See ★*well-ordered*, 2.

seta, *n.*—**Aërostatic setæ,** certain hairs or bristles which occur on the young larvæ of the nun-moth, *Psilura monocha*, and allied bombycids, and of which each bears a small bladder in the middle. They possibly aid the spread of the larvæ by the wind. *Cambridge Nat. Hist.*, VI. 408.

Setarches (sē-tär'kēz), *n.* [NL., < L. *seta*, a bristle, + Gr. ἀρχός, the rectum.] A genus of scorpænoid fishes inhabiting deep water in temperate and warm seas.

set-back, *n.* **5.** Any game in which a failure to score is counted by setting back the player instead of allowing his adversary to add the points to his score: usually restricted to games such as all-fours, in which there is bidding for the trump.

set-copper (set'kop″ėr), *n.* A condition of the copper in the reverberatory process for refining crude copper, when the impurities have been oxidized and the amount of dissolved cuprous oxid has reached a certain point (about 6 per cent.). See the extract.

> In refining copper, the metal is melted down in a reverberatory furnace in a more or less oxidizing atmosphere and then further subjected to an oxidizing smelting in order to eliminate the common impurities, most of which have a stronger affinity for oxygen than has copper. In these operations some of the copper is oxidized to cuprous oxide and dissolved by the metal bath. When the quantity of dissolved cuprous oxide has reached about 6 per cent, the metal is said to have been brought to "*set-copper.*"
>
> *Electrochem. Industry*, March, 1904, p. 87.

set-down^{2} (set'doun), *n.* [*set*^{2} + *down.*] A meal to sit down to (implying luxury). [Slang.]

> He would hardly speak to me, he felt so important, but his main notion of style now is a sumptuous "*set-down*" and a well-filled pipe of "snipe" after it. Even if you should find him dressed in newspapers and a blue necktie he would not mind to-day, provided you caught him tucking away the *set-down.*
>
> *Josiah Flynt*, in McClure's Mag., June, 1901, p. 117.

seter (sē'tėr), *n.* [Also (Shetland and Orkney) *seater, setter, saeter;* Norw. *sæter*, *seter*, Sw. *säter*, Icel. *sætr*, *setr*, mountain pastures, dairy lands.] **1.** A pasture; a meadow; in Scandinavia, a mountain pasture to which the cattle are driven up and where they remain during the summer months.

> A large area of forest and mountain is attached to each farm, and there are usually one or two *sæters* on the mountain, to which the cows are driven for about three months in summer. *Proc. Zool. Soc. London*, 1903, p. 137.

> It is discovered . . . that B— went to pay a door-yard call on O— B—, who lives on the *saeter* where the wind and the bald granite scaurs fight it out together.
>
> *R. Kipling*, in Harper's Mag., May, 1900, p. 867.

2. A wave-cut terrace in solid rock, marking the former position of the strand.

> He believes that these phenomena extended even to the Norwegian coast, and that the strand-lines of the fjords, whether in the form of platforms eroded out of the solid rock (*seter*) or terraces of sediment, mark former levels of lakes that filled these valleys when their mouths were blocked up with the ice-sheet.
>
> *Nature*, June 2, 1904, p. 111.

setfast (set'fȧst), *n.* A boil.

Setigerous sac. See ★*sac*^{2}.

set-line (set'līn), *n.* A fish-line with a baited hook which is set or anchored: often a long line stretched horizontally, from which several shorter lines with baited hooks hang.

set-nut (set'nut), *n.* **1.** A nut screwed home on top of another, to take up any slack in the fitting of the threads and increase the friction of the helical surfaces on each other, so that unscrewing will be less likely or will be prevented; a jam-nut; a safety-nut; a pinching-nut.—**2.** A jam-nut with a radial set-screw made home against the stock of the bolt, so as to lessen the likelihood of the unscrewing of either nut.

seton (sē'ton), *v. i.* [*seton*, *n.*] To pass a tape or strip of linen through the skin to form a fistula; use a seton-needle and seton to obtain counter-irritation, to apply medicaments, and to secure drainage.

> Many plans of prevention have been adopted, such as bleeding, *setoning*, feeding upon diuretics and alteratives, all with the object of keeping down the condition, and thus making the animals less susceptible.
>
> *Yearbook U. S. Dept. Agr.*, 1897, p. 254.

set-screw, *n.* (*c*) Specifically, a screw having a square head, the distance across the flats of the head being equal to the diameter of the screw.

setsicker (set'sik-ėr), *n.* Same as ★*sitfast*, 2.

set-square (set'skwãr), *n.* **1.** In *drafting* or *plotting*, a form of T-square in which the blade can be rotated with respect to the head and can be set at any desired angle by means of a graduated arc: used for laying off parallel lines at any given angle of obliquity with the edge of the drawing-board.

> It obviates the use of the protractor, since the points can be projected with scale, T-square, and *set-square*, and the work can be set out more accurately than with any protractor. *Encyc. Brit.*, XXXIII. 88.

2. A square or right-angled triangle with acute angles of 45° or of 30° and 60°, used where the try-square (in which the stock is thicker than the blade) is not convenient.

sett^{2}, *n.* Same as ★*set*^{1}, *n.*, 30.

setter^{1}, *n.* **5.** A machine for setting out hides. See *to* ★*set out* (*j*). *Modern Amer. Tanning*, p. 113.

setting, *n.* **12.** The temporary station of a portable sawmill, yarding-engine, or other machine used in logging.—**13.** A wash of gum or other suitable material applied to the surface of a pencil or crayon drawing on paper in order to prevent the work of the artist from being rubbed off; a fixative.—**Indian setting,** a mode of setting imperfect gems whereby the normal upper or under surfaces are set face outward and are inclosed in the setting so that the flaws are not visible.—**Setting out.** (*c*) In *arch.*, the practice and art of fixing the exact place for any work to be done, as of a house upon its site, the paths and terraces of a garden, and the like. The term includes the determining of vertical height as well as of the horizontal plan.

setting-hammer (set'ing-ham″ėr), *n.* **1.** A tinsmith's hammer, having a square head and a chisel-shaped peen.—**2.** A light hand-hammer used for swaging the teeth of saws in setting them. It has a special shape to enable one tooth to be hit without striking the next also.

setting-machine, *n.* **2.** A machine for setting leather. See *set*¹, *v. t.*, 33. *Modern Amer. Tanning*, p. 116.

setting-point (set′ing-point), *n.* **1.** The point of adjustment or setting of any mechanism.—**2.** The position of any machine, or part of a machine, in which adjustment is most conveniently made.—**3.** The point or place in a machine where adjustment is arranged for or is designed to take place.

setting-screw (set′ing-skrö), *n.* **1.** A screw by which cams or timing devices may be so adjusted as to do their work as desired.—**2.** A set-screw; a screw by which pulleys or collars are fastened or adjusted on a shaft. The screw passes radially through hub or collar, and bottoms or beds upon the shaft, holding the hub or collar from slipping round or lengthwise. Sometimes the set-screw enters a counterbore made for it in the circumference of the shaft.

settings-in (set-ingz-in′), *n. pl.* Imperfections in velveteens and similar fabrics.

setting-stone (set′ing-stōn), *n.* A stone used in setting leather. See *set*¹, *v. t.*, 33. *C. T. Davis*, Manuf. of Leather, p. 416.

settlement¹, *n.* **10.** In *pathol.*, determinate nosological position.

> Even more set diseases began to lose their *settlements*, and were recognized as terms of series.
>
> *Encyc. Brit.*, XXX. 611.

Church, college settlement. See *social* ★*settlement.*—**Land settlement,** in India, the assessment of the land-tax. The assessor is styled the *settlement officer.* The details vary in different provinces, but in general a settlemen is a decision as to the agricultural capacity of a district and the value of its produce. The result is what is known as a *settlement report,* which records the mass of agricultural statistics and forms a basis for assessment. Often spoken of as *settlement* simply: as, the "*settlement* is preceded by the survey."—**Settlement officer.** See *land* ★*settlement.*—**Settlement report.** See *land* ★*settlement.*—**Social settlement,** a place of residence and varied social activity established by educated men or women in a neglected or unfavored neighborhood, for the purpose of bringing about acquaintance and sympathetic relations between educated people and the less fortunate ones living in such districts. Such houses are known also as *university settlements, college settlements, church settlements, church houses,* and *neighborhood houses.* The first experiment of the kind was Toynbee Hall, East London, established in 1884 by the Rev. Samuel A. Barnett in memory of Arnold Toynbee, an Oxford student who died before his efforts to found a social center of this kind were realized. The college settlement on Rivington street, New York city, was established by college women in 1889, and Hull House in Chicago by Miss Jane Addams in the same year. The activities of the social settlement have been enlarged from time to time, and now include reading-rooms, baths, gymnasiums, playgrounds, lectures, musical instruction, and classes in drawing, literature, kitchen-gardening and economics, and sometimes religious instruction. Day-nurseries, dispensaries, employment bureaus, and savings-banks also are carried on. Much attention is given by most of the social settlements to developing the play side of life. Social clubs and entertainments are instituted, with the object of providing means of recreation for those of all ages. Interest in civic activities is likewise stimulated, and the larger social welfare is kept in mind. In 1898 there were fifty college settlements in Great Britain and eighty in the United States. At present there are more than a hundred social centers in the United States of the kind described, a number of which bear the title of college settlement. There are social settlements in Japan, in India, and in New South Wales.—**University settlement.** See *social* ★*settlement.*—**Village settlement,** a settlement of immigrant families in a village instead of on scattered farms, the lands granted by the government for the settlement being owned and worked by the villagers in common: an experiment in colonizing first attempted in New Zealand, whence, being successful, it was introduced into the colonies in Australia.

Settlers' matches. See ★*match*².

settler's-twine (set′lėrz-twin″), *n.* A grass-like fiber-plant, *Gymnostachys anceps,* belonging to the arum family, used in New South Wales and Queensland as twine. When used for any purpose where particular strength is required, the leaves are prepared by singeing them in fire or hot ashes. Also called *traveler's-grass.*

settling-back (set′ling-bak), *n.* Same as ★*racking-back.*

settling-well (set′ling-wel), *n.* A well or basin in which water or other liquid is allowed to stand so that suspended matter or sediment may settle before the water or other liquid is drawn off for subsequent use. *Elect. World and Engin.*, Feb. 27, 1904, p. 396.

setwell (set′wel), *n.* Same as *setwall.*

set-work, *n.* **3.** In a sawmill, the mechanism of the carriage by which the log upon it is automatically set or fed to the saw after each advance of the carriage and is made to present a new section to the saw, this movement determining the thickness of the board or plank to be cut.

Sevatian (sẹ-vā′shiạn), *n.* In *geol.*, the upper division of the Juvavian stage in the pelagic Trias of the Mediterranean basin.

seven. **I.** *a.*—**The seven perfect colors,** in the manufacture of oriental carpets, indigo, blue, green, yellow, orange, rose, and red. *Burlington Mag.*, I. 79.

II. *n.*—**Under and over seven,** a dice-game played with two dice and a lay-out upon which three adjoining spaces are marked U, 7, O. After the bets are placed, the banker throws and pays even money on all bets in U if the throw is less than 7, on all in O if the throw is over 7. Bets on 7 flat pay 3 for 1. When 7 is thrown the bank takes all the money placed on U and O.

seven-bark (sev′n-bärk), *n.* The wild hydrangea, *Hydrangea arborescens.* *Buck*, Med. Handbook, IV. 774.

seven-sisters (sev′n-sis″tėrz), *n.* Either the sun-spurge, *Euphorbia Helioscopia,* or the petty spurge, *E. Peplus.*

seventh, *n.*—**Natural seventh,** in *music,* either a seventh tone in a scale derived from the seventh partial tone of the key-note, or the interval between such a tone and the key-note.

seventh-chord, *n.*—**Leading seventh-chord,** in *music,* a seventh-chord on the leading tone, usually considered to be a dominant ninth-chord with its root omitted.

Sèvres alloy. Same as ★*invar.*—**Sèvres blue.** See ★*blue.*

sew¹, *v. t.* **3.** In *bookbinding,* to pass the thread separately through the creased fold of each section of (an unbound book).

Sewage irrigation. See ★*irrigation.*

sewage-farm (sū′ąj-färm), *n.* A farm or field suitably embanked and underdrained and provided with proper channels and sluices, used for the purpose of sewage disposal by the method of irrigation, in which the production of agricultural crops may be either a primary or a secondary object.

> The Trent valley, in the southern part of the county, constitutes an important migration route, but with the exception of the *sewage farm* near Egginton there is but little to attract wild fowl and waders.
>
> *Athenæum*, Feb. 3, 1906, p. 129.

sewage-siphon (sū′ąj-sī″fọn), *n.* An arrangement of piping in connection with underground receptacles for sewage, or in disposal plants, by which the liquid is removed by siphoning, usually automatic, so as to effect a preliminary separation before the discharge is conveyed to disposing-works, or to retain the sewage in a contact-bed for a specified time and then discharge it.

sewage-sludge (sū′ąj-sluj), *n.* The precipitate or solid residue remaining after the usual treatment of sewage in sewage-disposal systems. It is often pressed into cakes after filtration.

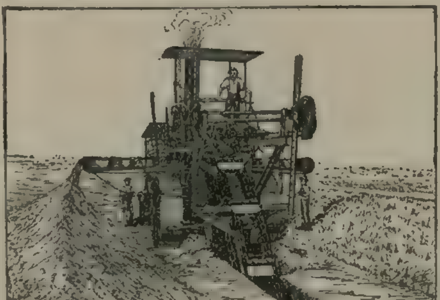
sewer³ (sū′ėr), *v.* **II.** *intrans.* To empty as a sewer; discharge sewage.

> Another change, slow in operation but serious in results, is that induced by the establishment of sewerage systems in river towns, through the growth of a population which naturally *sewers* into the river.
>
> *Buck*, Med. Handbook, VIII. 277.

sewer-brick (sū′ėr-brik), *n.* See ★*brick*².

sewering (sū′ėr-ing), *n.* The system of drains and conduits by means of which drainage and sewage are collected and conveyed by gravity to an outfall or a place of disposal.

sewer-machine (sū′ėr-mạ-shēn″), *n.* **1.** A special form of excavator of the chain-bucket dredge type used to cut the ditch or trench for sewers or other underground conduits by mechanical means and do away with hand-labor and improve the speed of such work. The excavating is done by steel buckets carried on an extension frame and fed downward and forward by power as the material is removed. The excavating and elevating frame is carried upon the front part of a steam-driven traction-engine the wheels of which rest upon the edges of the ditch on each side, and the whole machine can be self-propelled forward as the cut is made. A conveyer belt or buckets receive the discharged dirt from the excavating buckets, and can drop it at one side.



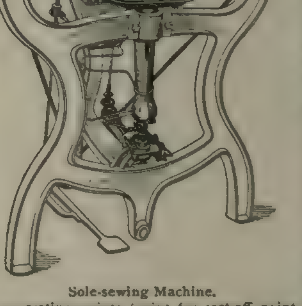
Sewer-machine.

2. A name less correctly given to the combination of wire-rope tramway with hoisting capacity, used in making sewer trenches, or similar excavations for subways or pipe-lines. It consists of a series of A-shaped frames placed in a line astride of the trench and supporting an overhead track on which a trolley, supporting a hoisting-block and bucket, traverses the whole length of the machine. At the advance end of the machine is a small house supported on wheels, which travels on a temporary track laid on the ground and contains a boiler and winding-engine, the engine controlling, by means of wire ropes, the hoisting of the bucket and the movements of the trolley. In operation the bucket, when filled in the trench, is hoisted to the trolley and hauled in either direction along the track to the dumping-place. As the trench advances, the power-house is moved forward and the frames and sections of track are taken down at the rear end of the work and reset in advance, the entire machine thus continually moving forward.

sewer-pipe (sū′ėr-pīp), *n.* A pipe for the conducting of sewage or drainage: usually a pipe of glazed earthenware with bell-and-spigot joints laid underground. It is distinguished from a soil-pipe in that the latter generally conveys the discharge from privies and water-closets of residences only, and not storm-water from the streets. The soil-pipe is usually a branch into the sewer-pipe.

sewer-trap (sū′ėr-trap), *n.* A device to seal the discharge-duct into a sewer-pipe in order to prevent the flow of gas or sewer-air into the house-drain: usually a water-seal, in a U-shaped piece of pipe of metal or glazed earthenware.

sewing-machine, *n.* **1.** The following are types of sewing-machines: (*a*) *Straight-ahead machine,* any machine in which the stitching is directly forward or in a straight line. The ordinary machine for domestic sewing is an example. (*b*) *Special machine,* any machine on which a special kind of stitching may be done or which is used on special kinds of work or material, as the carpet-sewing and the button-sewing machine. (*c*) *Cylinder-bed machine,* a machine in which a cylinder-arm takes the place of the bed-plate or table of ordinary machines. The cylinder-bed is designed to facilitate the handling of the work, particularly in sewing shoes, skirts, and large garments. (*d*) *Fancy-stitching machine,* a sewing-machine having one needle and no feed, the object being to give the operator complete control over the movement of the fabric as it passes under the needle, and to give a free hand-feed that is useful in decorative, ornamental, and fancy stitching, etc. (*e*) *Overseaming-machine,* any machine adapted to the overseaming or zigzag stitch. In this class of machines the needle-bar which supports the needle is held by a pivoted frame which, by suitable connections, can be given a reciprocating sidewise motion which changes the position of the needle at each stroke. As the feed-motion also advances at each stroke, the stitching is drawn out into an angular or zigzag figure. Since the stroke or shove of the needle and the feed are under the control of the operator, the combined motions can be used to make a great variety of stitches, adapted to a wide range of work. (*f*) *Two-needle machine,* any machine employing two needles and making two parallel rows of stitches. The needles may be fixed in the same relative positions, or the machine may be of the over-seaming type. Two-needle machines are adapted to a great variety of work, from carpet-sewing to the finest decorative and embroidery sewing. (*g*) *Multiple-needle machine,* any machine employing from three to twelve needles. The needles may be arranged side by side at equal distances apart, or in groups adapted to different stitching, as in staying, cording, boning, and other special work.



Sole-sewing Machine.

a, operating points (point for cast-off, point for feed, pressure-foot); *b*, whirl; *c*, Stanley steam-horn; *d*, feed-link; *e*, shaft for rocker; *f*, needle-lever; *g*, eccentric strap; *h*, ratchet-pawls; *i*, hand-lever; *j*, friction-pulley; *k*, friction-wheel; *l*, feed-cams; *m*, steam wax-pot; *n*, tension-truck.

3. In *shoe-manuf.*, a machine for sewing leather, built upon the general plan of the machine for sewing fabrics. It appears in a great variety of forms and under many different names, as *fair-stitch machine, counter-stitcher, saddle-seam machine, wax-thread machine, outsole stitcher*, etc. The illustration shows a typical sole-sewing machine of the McKay type.—**Carpet-sewing machine,** a portable hand-power sewing-machine used in sewing together matched lengths of carpet. The two pieces of carpet to be sewn are matched, and suspended face to face with the edges joined in a suspending- and stretching-machine. The sewing-machine is then hung on the joined edges, and is operated by turning a crank, the machine automatically feeding itself to the work as fast as the stitching is done. A larger clamping- and stretching-machine employs a power sewing-machine that is suspended from a traveling cable over the edges of the carpet-lengths. An extra heavy overseaming sewing-machine having a wide table is used in sewing carpets. A blind-stitch carpet-serging machine is also used in sewing pile carpets by employing a guide to turn the pile away from the edge of the carpet while the stitch is being made.

sewing-spasm (sō'ing-spazm), *n.* Same as *seamstresses' cramp.*

sewing-table, *n.* 3. A long bench or table on which a number of sewing-machines are placed. A shaft extends under the table to give power to the machines by means of short belts. The operator, seated before his machine, controls the power, as required, by a treadle and independently of all the other machines.

sewing-thread (sō'ing-thred), *n.* A three-ply twisted yarn suitably finished for use in sewing.

sex-abortion (seks'a̤-bôr'shọn), *n.* In *entom.*, the phenomenon of the production of sexless adults, as the worker, soldier, and other castes in certain social hymenopterous and isopterous insects. *L. O. Howard*, Insect Book, p. 1.

Sexagesimal system. See ★*system.*

sexavalence (sek-sav'a̤-lẹns), *n.* Same as ★*hexavalency.*

sexavalent (sek-sav'a̤-lẹnt), *a.* Same as *hexavalent.*

Sulphur is . . . *sexavalent* as regards oxygen.
D. I. Mendeléjeff, in Athenæum, April 8, 1905, p. 437.

sex-cell (seks'sel), *n.* A reproductive cell, either the sperm-cell of the male or the ovum of the female, or one of the cells from which they arise by division, such as the spermatogonia and the oögonia.

sexcuspidate (seks-kus'pi-dāt), *a.* [L. *sex*, six, + E. *cuspidate.*] Having six projections or cusps, as the molar teeth of some mammals; sextuberculate. *Proc. Zool. Soc. London*, 1899, p. 560.

sexenary (sek'se-nā̤-ri), *a.* [L. *sex*, six, + *-eni*, as in *centeni* (see *centenary*), + *-ary.*] In *arith.*, having a scale of notation with the radix 6.

sexigesimal (sek-si-jes'i-ma̤l), *a.* An erroneous spelling of *sexagesimal.*

sexipolar (sek'si-pō-lä̤r), *a.* [L. *sex*, six, + E. *polar.*] Having six poles.—**Sexipolar field,** a magnetic field, as in certain generators and motors, due to six magnet poles.—**Sexipolar generator or motor,** a machine with six pole-pieces.

sexitubercular (sek"si-tū-bėr'kṳ̄-lä̤r), *a.* [L. *sex*, six, + E. *tubercular.*] Having six cusps, or points, as do the molar teeth of some mammals; sextuberculate. *H. F. Osborn*, in Bulletin Amer. Mus. Nat. Hist., 1902, p. 179.

sexituberculy (sek"si-tū-bėr'kṳ̄-li), *n.* [*sexitubercul(ar)* + *-y*³.] The fact or condition of having six cusps or tubercles, as do the molar teeth of some mammals.

Superior molars progressive from tri- to *sexituberculy*, with progressive external cingulum, but without mesostyle.
H. F. Osborn, in Bulletin Amer. Mus. Nat. Hist., 1902, p. [179.

sex-prepotency (seks'prẹ̄-pō"tẹn-si), *n.* See ★*prepotency.*

sextet, *n.* 2. A bicycle for six riders.

sextil, *a.* and *n.* A simplified spelling of *sextile.*

sextile, *a.* **II.** *n.* The aspect of two planets, or of the sun and a planet, when they are at a distance of 60 degrees from each other.

sextillionth (seks-til'yọnth), *a.* and *n.* **I.** *a.* Last in a series of sextillion; also, being one of sextillion equal parts.

II. *n.* One of sextillion equal parts; the ratio of unity to sextillion.

sextipara (seks-tip'a̤-rä̤), *n.* [L. *sextus*, sixth, + *parere*, bring forth.] A woman who has passed through six pregnancies.

sextuberculate (seks-tū-bėr'kū-lạ̄t), *a.* [L. *sex*, six, + E. *tuberculate.*] Having six projections, cusps, or tubercles, as the molar teeth of some mammals; sexcuspidate. *Proc. Zool. Soc. London*, 1899, p. 558.

sextuple. **I.** *a.*—**Sextuple telegraph,** a telegraphic device for sending six messages simultaneously over a single wire; a sextuplex telegraph.

II. *n.* Same as *sextuple* ★*press.* *Census Bulletin* 216, June 28, 1902, p. 63.

sextuplex (seks'tṳ̄-pleks), *a.* and *n.* [NL., < L. *sex*, six, on the analogy of *duplex, quadruplex.* See *duplex.*] **I.** *a.* 1. Sixfold.—2. In *elect.*, designed for the transmission of six messages simultaneously.

His [Edison's] system of duplex telegraphy, which he later developed into quadruplex and *sextuplex* transmission. *Encyc. Brit.*, XXVII. 654.

II. *n.* A sextuplex telegraph.

Sexual cycle. See ★*cycle*¹.

sexuales (sek-sṳ̄-ā'lēz), *n. pl.* [L. pl. of *sexualis*, sexual.] The sexual generation in heteroparthenogenesis. See ★*heteroparthenogenesis* and *normal* ★*parthenogenesis.*

sexuosocial (sek"sṳ̄-ō-sō'sha̤l), *a.* Pertaining to the socially established relations of the sexes. *L. F. Ward*, Dynamic Sociol., I. 641.

sexupara (sek-sū'pa̤-rä̤), *n. pl.* [NL., < L. *sexus*, sex, + *parere*, produce.] Viviparous parthenogenetic female organisms which give birth to males and to females which lay fertilized eggs. See *normal* ★*parthenogenesis.*

sexupare (sek'sṳ̄-pãr), *n.* In the plant-lice, one of the parents of the sexed generation, usually developed late in the season; generally winged. Also called a *return migrant.*

These organs [nectaries of plant-lice] reached their maximum development toward the end of June, after which a general retardation set in, until the *sexupares* or return migrants were almost identical with those found on the apple during the spring.
U. S. Dept. Agr., Div. Entom., Bulletin 44, p. 8.

sexuparous (sek-sū'pa̤-rus), *a.* [*sexupar(a)* + *-ous.*] Pertaining to a sexupare or the sexupara.

seyid, *n.* See *sayid.*

seyssel (sī-sel'), *n.* An abbreviation of *Seyssel asphalt*, a bituminous limestone found in large quantities at Seyssel, department of Ain, France; extensively used as material for pavements.

sfenoid, sfere, sfinx, etc. Amended spellings of *sphenoid*, etc.

S. G. An abbreviation (*a*) of *solicitor-general*; (*b*) [*l. c.*] of *specific gravity*; (*c*) of the Latin phrase *salutis gratiâ*, 'for the sake of safety': placed on the upper left-hand margin of Lloyd's marine insurance policies, and equivalent to 'insured.'

shack¹, *n.* 5. A seafaring catch of fish made up of hake, pollack, and other cheap varieties, especially those of the cod family.

Such fish, tumbled in together, without effort at classification, are known as *shack.*
Rep. Mass. Com. Fisheries and Game, 1904, p. 78.

6. The right of common pasturage; the straying of cattle into public or on inclosed land.—**Common of shack,** the right of various owners to pasture their cattle on the one field or tract after it is harvested.

II. *a.* Relating to a catch of sea-fish of the cheaper varieties, or of shack-bait.

While at first a *shack* trip referred particularly to a voyage on which cheap species of fishes constituted the bulk of the catch, this system . . . has now broadened . . . to such a degree that it is common for vessels . . . to go as far as the Grand Bank, where cod alone are taken.
Rep. Mass. Com. Fisheries and Game, 1904, p. 78.

shackle¹, *v. t.* 3. In *elect.*, to place an insulator between the ends of (a wire that has been cut). *Houston*, Dict. Elect.

shackle-block (shak'l-blok), *n.* *Naut.*, a block provided with an iron strop, which has a fitting for a shackle in one end.

shackle-insulator (shak'l-in"sṳ̄-lā-tọr), *n.* See ★*insulator.*

Shaconian, Shakonian (shā-kō'ni-a̤n), *n.* [*Sha(kspere)* + *(Ba)conian.*] One who believes in the Baconian authorship of the plays attributed to Shakspere. [Nonsense-word.]

For a pleasing illustration of the fatuity of the "universal negative" (that fallacy so dear to a certain school of Old Testament critics as well as to *Shaconians*) he may further see Mr. Edwin Reed's "Bacon versus Shakspere" (1899). . . . This "portmanteau word" seems a necessary if unfortunate addition to our vocabulary, in order to distinguish the holders of a particular view of the authorship of certain plays from the real followers and students of the great master of inductive philosophy, who have for many years been correctly known as Baconians.
N. and Q., 9th ser., IX. 495.

shad¹, *n.*—**Alabama shad,** *Alosa alabamæ*, a fish found in streams which flow into the Gulf of Mexico.—**Gulf shad.** Same as *Alabama* ★*shad.*

shad-berry (shad'ber"i), *n.* The shad-bush or service-berry, *Amelanchier Canadensis.*

shadchan (shäd'ċhan), *n.* [Also *shatchen, schatchen*; < Yiddish *shadchan*, < Aram. *sh'dukh*, pacify.] Among the Jews, especially Russian and Eastern Jews, a professional match-maker or marriage-broker whose business it is to bring about marriages and make the contract between the parents of the parties as to the amount of dowry, etc., for which services he exacts a considerable fee from both sides. The business is not considered discreditable (it is, indeed, considered meritorious), but it is the subject of humorous treatment in novels of Jewish life.

Shaddai (shad'ī), *n.* [Heb.] Almighty: one of the Hebrew names of God in the Old Testament. *El-Shaddai* (Gen. xvii. 1) is rendered in the Authorized Version "God Almighty," but some later commentators translated it "All-sufficient." *Shaddai* is inscribed on the back of the mezuzah, which is fastened to the door-posts, and, according to the occult teaching of the cabala, the name guards the house from evil spirits and disease. The pious Jew, when leaving and entering his house, touches the name with his fingers and kisses them.

shade¹, *n.* **15.** A material for women's gowns, worn in the eighteenth century.

Painted lawns and cheqer'd *shades*,
Crape that's worn by lovelorn maids.
Anonymous, 1766.

Why cant you go and see McClellan's Lace *Shades* [for summer gowns]. I think there are some for ten shillings a yard.
Eliza Southgate Bowne (1800), in A. M. Earle, Costume [of Colonial Times, p. 213.

Cone of shade. See ★*cone.*—**Shades and shadows,** in architectural drawings, an adaptation of descriptive geometry by means of which the cast shadows on a building or other object and the difference between the lighted surfaces and the shades are all indicated. An arbitrary direction of light is assumed, usually the direction of the diagonal of a cube. The rays of light are supposed to be all parallel, and their projection on the horizontal plane and on the vertical plane to be always 45° with the base-line. The purpose of this, in architectural drawing, is usually the recording of the shape of the parts of the building, their projection from other parts, and the like, which cannot be shown otherwise except by drawing in perspective.

shade-deck (shād'dėk), *n.* See ★*deck*, 2 (*c*).

A tank steamer of the "*shade-deck*" type, 345 feet long, 45½ feet broad, and 35½ feet depth (to *shade-deck*), has had her condition examined carefully.
White, Manual of Naval Arch., p. 382.

shade-decked (shād'dekt), *a.* Having a shade-deck: said of a type of vessel.

Most of the latter have a continuous upper deck above the main deck: if this be of light construction, and openings be left between it and the main deck, the vessel is called a *Shade-decked* Vessel. *Encyc. Brit.*, XXXII. 550.

shade-frame (shād'frām), *n.* A frame for the partial shading of a seed-bed. It consists of a cover of laths, brush, or cloth, supported on posts and arranged to admit light as desired.

shade-glass (shād'glȧs), *n.* A piece of colored glass interposed between the eye and the object-glass of an astronomical instrument, usually before the eyepiece, to reduce the apparent brightness of the sun or other object under observation.

shade-roller (shād'rō"lėr), *n.* A roller resting upon supports in a window or other place, upon which a window-shade, curtain, awning, screen, or map may be rolled. The roller, usually hollow, is provided with a spring by which it is rotated, and a ratchet and pawl which control its movement.

shade-stone (shād'stōn), *n.* A flat stone projecting over a door to give shade. *H. C. Butler*, Architecture and Other Arts, p. 126.

shad-flower, *n.* 3. The trailing arbutus, *Epigæa repens.*

shading-coil (shā'ding-koil), *n.* In *elect.*, a closed copper ring or coil short-circuited upon itself, surrounding a part of the magnet poles of some motors excited by alternating currents, for the purpose of producing a lag of the alternating magnetism in the shaded portion of the magnet pole, and thereby starting the motor: used in alternating-current fan-motors. *Trans. Amer. Inst. Elect. Engin.*, 1898, p. 68.

shadow, *n.* **20.** In *alg.*, an umbral letter or symbol having no meaning apart from another sort of letter or symbol to which it assigns a property, and therefore not to be written alone.—**21.** Same as *shadow corpuscle.* See *phantom* ★*corpuscle.* *Buck*, Med. Handbook, III. 3.—**Acoustic shadow,** a sound-shadow. When the passage of a train of light-waves is obstructed by an opaque body, a shadow is formed behind the obstacle. In the case of sound-waves the similar effect is called an *acoustic shadow.* The production of a definite shadow requires an obstacle the dimensions of which are much greater than the length of the waves. Sound-shadows are formed, therefore, only in the case of a very large obstacle, as a hill or large building, or when the sound is of very high pitch.—**Cone of shadow.** See ★*cone of shade.*—**Electric shadow.** See *molecular* ★*shadow.*—**Molecular shadow,** a name sometimes given to the shadow cast upon the wall of a vacuum-tube, or upon any phosphorescent surface, when a cathode discharge takes place within the tube and some object opaque to the cathode rays intercepts portions of the cathode stream. Also called an *electric shadow.*—**Nuclear shadows,** isolated delicate bodies which appear in almost any specimen of blood. They stain a light blue with methylene blue and represent the remains of nuclei of degenerated leucocytes.—**Shades and shadows.** See ★*shade*^{1}.—**Shadow corpuscle.** See *phantom* ★*corpuscle.*—**Shell shadow.** Same as *shadow corpuscle.* See *phantom* ★*corpuscle.*

> The occurrence of . . . "*shell shadows*" in the blood after release from the bell jar.
> *Buck*, Med. Handbook, I. 204.

shadow-band (shad'ō-band), *n.* One of a series of roughly parallel broken bands, alternately bright and dark, seen during a solar eclipse traveling with an irregular flickering motion over every light-colored surface for a few moments just before and just after the totality. They are usually from 6 inches to 2 feet wide, and are probably due to the light from the then exceedingly narrow strip of the sun's disk shining through 'knots' of unequal density in the air, and carried by the wind.

> *Shadow bands* were seen, but those who attempted to measure their velocity found them too rapid and flickering for any great exactness in this determination.
> *S. P. Langley*, in Science, June 22, 1900, p. 977.

shadow-box (shad'ō-boks), *n.* A box made of some hard, polished wood, and with a glass front, in which a framed easel painting is placed. The box protects both the frame and the pigment from injury by contact or by furnace or illuminating gas, while it does not interfere with a free exhibition of the picture.

shadow-dance (shad'ō-dȧns), *n.* A dance in which the shadows of the performers (who are invisible) are thrown on a screen.

shadowgraph (shad'ō-grȧf), *n.* [*shadow* + Gr. *γράφειν*, write.] 1. A shadow-picture.—2. A radiograph or X-ray photograph; a sciagram.

> Interesting *shadowgraphs*, or radiographs, [made] by the aid of radium-bromide of high activity, imported from Paris, showing that emanations from this wonderful element discovered by Professor and Madam Curie, will penetrate cast-iron readily.
> *Jour. Franklin Inst.*, April, 1904, p. 312.

shadowgraph (shad'ō-grȧf), *v. t.* [*shadowgraph, n.*] 1. To outline in a shadow-picture on a screen.—2. In *photog.*, to take a picture of by means of X-rays, radium, or a similar source of actinic radiation.

> The third photograph is that of a chicken's foot and was *shadowgraphed* in eighteen hours with one-sixth of a grain of bromide of radium.
> *Amer. Inventor*, April 15, 1904, p. 173.

shadowgraphic (shad-ō-graf'ik), *a.* [*shadowgraph* + *-ic.*] Pertaining to or effected by shadowgraphy. *Encyc. Dict.*

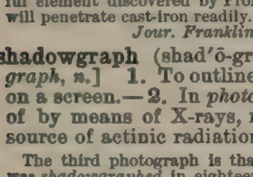
shadowgraphist (shad'ō-graf-ist), *n.* [*shadowgraph* + *-ist.*] One who is expert in shadowgraphy. *Encyc. Dict.*

shadowgraphy (shad'ō-graf-i), *n.* [*shadowgraph* + *-y*^{3}.] 1. The art or practice of producing shadow-pictures on a screen.—2. The art or practice of making photographic prints by placing an object between a sensitive surface and a source of radiant energy, such as radium salt, an X-ray bulb, etc., and then developing the latent image; sciagraphy.

shadow-photometer (shad'ō-fō-tom″e-tėr), *n.* A Rumford photometer. See *photometer.*

shadow-picture (shad'ō-pik″tūr), *n.* A picture produced by a shadow or shadows cast upon a screen or other lighted surface, as that of a wall.

shadow-pin (shad'ō-pin), *n.* A slender length of brass resting in a small brass button and designed to stand vertically on the center of a compass glass. From the shadow cast by it the sun's bearing is determined. It may also be used to take compass bearings of other objects.



Shadow-pin.

shadow-play (shad'ō-plā″), *n.* 1. The use in theatrical performances of marionettes, generally cut out of flat pieces of leather representing persons and scenery of theatrical plays, the shadows of which are thrown upon a screen. The shadow-play is found in China, the Malay Archipelago, and all over southern and western Asia. It is also known in Egypt, Turkey, and eastern Europe.—2. A theatrical performance played with figures, the shadows of which are thrown upon a screen.

shad-porgy (shad'pôr″gi), *n.* Same as *grass*-★*porgy.*

shadrach (shā'drak), *n.* [From the biblical name *Shadrach*, with allusion to the 'fiery furnace.'] In *metal.*, same as ★*salamander*, 10.

shaft^1, *n.* 4. (*f*) The main part of an arrow to which are fixed a bit of nocked horn at the butt and a head or pile at the point. See *foreshaft.* (*g*) In *golf*, the part of a club to which the head is joined.—**Cardan shaft,** a shaft having a Cardan joint at one end or at both ends.—**Cranked shaft,** a shaft into which a double crank is forged or fitted, so that the shaft is practically continuous as in one piece. There are bearings on both sides of the double crank or cranks.—**Divided shaft,** a discontinuous shaft: the construction used in most motor-cars for the driving-axle, the wheels being made fast to the driving-axle, but the axle itself being divided at the compensating-gear, so as to allow the car to turn corners or curves without slipping at the tires. See *compensating*-★*gear.*—**Flexible shaft,** a shaft which can be bent or curved, but will still transmit efficiently a turning motion. In its usual form it is composed of a number of helices of wire wound in opposite directions. The twisting force being applied at one end, this tends to unwind the coils in one direction and to wind more tightly those which are wound in the opposite direction. Hence one coil holds against the other, and the helices simply revolve. These shafts are extensively used on dental engines and portable tools, the power being taken from any source that is convenient.—**Forehand shaft,** an arrow for long-distance shooting; a flight-arrow.—**Half-speed shaft.** (*a*) A shaft carrying pulleys or gears so arranged as to drive a machine at a speed intermediate between the lowest and the highest speeds. (*b*) A shaft on a gas or internal-combustion motor, making one turn to two of the motor-shaft, and carrying the cams and other mechanisms for valves and ignition, when the motor operates on the Otto cycle (see ★*cycle*^{1}, 12), in which one working stroke occurs in each two revolutions of the fly-wheel shaft.—**Intermediate shaft,** the shaft which crosses the frame of a marine engine between the two engines and connects two paddle-shafts.—**Main shaft,** the principal shaft; a line-shaft; the long shaft in a shop from which power is taken to turn the several counter-shafts.—**Mid-wall shaft,** a column which stands in or near to the mid-line of the thickness of a wall. Thus, in Romanesque architecture, a window may be divided into two or three lights by mid-wall shafts which serve as mullions.—**Telescopic shaft,** a shaft which can be varied in length by the expedient of making it in sections, any one of which can slide over the next one, like the tubes of a telescope: used where the operating point or tool is frequently adjusted with respect to distance from the driving-point, as in some forms of drills, assembling machinery, and the like, and in piping for portable forges.—**Whippy shaft,** in *golf*, a club-shaft with a good deal of suppleness; a club-shaft which is easily bent.

shaft-bar (shȧft'bär), *n.* See ★*stoping-bar.*

shaft-bracket (shȧft'brak″et), *n.* Same as ★*strut*^{2}, 2. Also called *propeller-bracket.*

> Stems, sternposts, *shaft-brackets*, rudders, etc., are now commonly made of cast steel instead of forged iron or steel.
> *White*, Manual of Naval Arch., p. 415.

shaft-gap (shȧft'gap), *n.* A gap in a surface which is electrically conductive on a revolving shaft or armature, so arranged that when it passes a contact-piece, touching the circumference of the shaft, the electric current will be interrupted: used in motor-cars or other internal-combustion motors as a means of make-and-break to secure ignition by a spark.

shaft-governor (shȧft'guv″ėr-nọr), *n.* An engine-governor in which the admission of steam, gas, or air to the cylinder is controlled by the action of a weight which revolves with the shaft of the engine. This weight is commonly fastened to the fly-wheel.

shaft-hand (shȧft'hand), *n.* In *archery*, same as ★*loosing-hand.*

shaft-hanger (shȧft'hang″ėr), *n.* A bearing for a shaft, originally constructed to be suspended from overhead by a suitable pendent support; hence, any support for a revolving shaft, whether a support from overhead or a bracket projecting from a wall or post or from a floor.

shaft-house (shȧft'hous), *n.* The housing or protective structure over the mouth of a mine-shaft, designed to carry the pulleys and dumping-platforms and any other necessary machinery.

shafting, *n.* 2. A darkening of the shaft, or quill of a feather, as in some breeds of poultry.

> *Shafting* on the back will also help the black stripe in the saddles.
> *Yearbook U. S. Dept. Agr.*, 1896, p. 462.

shaft-lashing (shȧft'lash″ing), *n.* The combining of two or more harness-cords to one neck-cord, in a Jacquard loom, to increase the capacity of the loom. Also called *leashing.*

shaft-lathe (shȧft'lāᴛʜ), *n.* A very long lathe intended for turning shafts.

shaftment^2 (shȧft'ment), *n.* The part of an arrow on which the feathering is laid.

> It appeared that the number of sticks was originally four, and that the dice were originally made of canes, being the *shaftments* of arrows, painted or burned with marks corresponding with those used to designate the arrows of the four world-quarters.
> *Amer. Anthropologist*, Jan.-March, 1903, p. 60.

shaft-passage (shȧft'pas″āj), *n.* Same as *shaft-alley.* *White*, Manual of Naval Arch., p. 32.

shaft-ring (shȧft'ring), *n.* An annular band (see *annulated*, 3) which seems to surround a shaft of a column. It is often the wrought edge of a stone plate which separates two stones that make up a shaft, the inclosing ring being an appearance only.

shaft-rubber (shȧft'rub″ėr), *n.* An implement for smoothing arrow-shafts, consisting of two gritstones each having a groove. The arrow-shaft is placed in these grooves, the stones being held firmly together, and is polished by being rubbed to and fro between the stones.

shaft-sollar (shȧft'sol″är), *n.* A platform forming a story in a mine-shaft. It may cover either the entire section of the shaft or a part of it only.

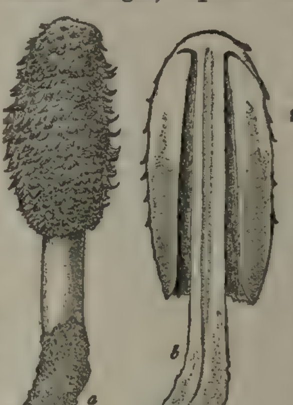
shaft-strut (shȧft'strut), *n.* See ★*strut*^{2}, 2.

shaft-tube (shȧft'tūb), *n.* In *ship-building*, a water-tight tube extending from the after end of the shaft-alley to the exterior of the vessel, of slightly larger diameter than the tail-shaft of the screw-propeller which it contains. At the after end of the tube is the stern-bearing, and at the forward end a bearing and a stuffing-box around the shaft to prevent the entrance of water into the vessel. In wooden vessels the stern tube is of bronze and is embedded in the after deadwood. In iron vessels it passes through and is fastened to the floors and framing, and in single-screw ships through the sternpost, which is bossed out to receive it.

shag^1, *n.*—**Shag, rag, and bobtail,** all; every one; every kind. [Colloq.]

> It will swallow us all, Ships and Men, *Shag, Rag, and Bobtail*, like a Dose of Pills.
> *Urquhart and Le Motteux*, tr. of Rabelais, Gargantus [and Pantagruel, iv. 33.

shaggy-mane (shag'i-mān), *n.* A common edible fungus, *Coprinus comatus*, having a white pileus covered with shaggy appressed scales and black deliquescent gills.



Shaggy-mane (*Coprinus comatus*).
a, young specimen; *b*, section through a specimen older than *a*.

shagroon (sha-grön'), *n.* [Prob. a corruption of Ir. *shaughraun.*] In the province of Canterbury, New Zealand, an original settler who came from some part of the world other than England. Those who came from England were called *Pilgrims.* *E. E. Morris*, Austral English.

> In the 'Dream of a *Shagroon*,' which bore the date Ko Matinau, April 1851, and which first appeared in the 'Wellington Spectator' of May 7, the term 'Pilgrim' was first applied to the settlers; it was also predicted in it that the 'Pilgrims' would be 'smashed' and the *Shagroons* left in undisputed possession of the country for their flocks and herds.
> *W. Pratt*, Colonial Experiences in New Zealand, p. [234, quoted in E. E. Morris, Austral English.

shahrith (shäċh'rith), *n.* [Heb., < *shaḥar*, morning.] Morning prayer, the first of the three daily services in the Jewish liturgy.

shake, *v. i.*—**Shaking ague.** See ★*ague.*

Shake culture. See ★*culture.*

shaked (shākd), *a.* In *old music*, said of certain graces or embellishments, such as the beat, backfall, etc., characterized or extended by a shake or trill: opposed to *plain* or *smooth.* Shaked graces, as a rule, were feasible only on keyboard instruments, like the harpsichord.

shaking-rig (shā'king-rig), *n.* A contrivance for shaking a grate, to relieve it from ashes and clinker.

shaku, *n.* **2.** In Japan, a stick or baton of wood or ivory which was formerly carried at court, and was held in a certain manner to give the body a dignified carriage on state occasions. When the ogi or folding fan was invented, it took the place of the shaku. *Salwey*, Fans of Japan, p. 6.

shal, *v.* A simplified spelling of *shall*^{1}.

shale^{2}, *n.*—**Astoria shale**, a division of the Miocene Tertiary deposits, which occurs in Oregon and Washington. It is largely constituted of clay shales and limestones, which are known to extend to Vancouver Island and Alaska.—**Bedford shale**, a bed of red and blue shale in Ohio, lying beneath the Berea grit and overlain by the black Cleveland shale. It is of Lower Carboniferous age.—**Benton shale**, a division or stage of the lower part of the Upper Cretaceous beds, developed in the Rocky Mountain region and the continental interior. Near Benton, Colorado, from which place it takes its name, it consists of clay shales and limestones with marine fossils, and has a thickness of about 1,000 feet.—**Birkhill shales**, a series of black shales in the uplands of Scotland, of the age of the lower part of the Upper Silurian and distinguished by the predominance of graptolites. On the basis of the species of these organisms the Birkhill shales have been divided into a series of six or more zones. The rocks are regarded as a partial equivalent of the Llandovery beds of northern England.—**Bloomsburg shale**, a subdivision of the Upper Silurian in Pennsylvania, regarded as equivalent to the lower Salina formation of New York.—**Bronsil shales**, a division of the Cambrian rocks in the Malvern Hills of England, which lies at the top of the section, attaining a thickness of 1,300 feet, including intercalated volcanic rocks, and containing many fossils, among them the graptolite *Dictyonema sociale*.—**Camillus shale.** See *Salina* ★*beds*.—**Cashaqua shale**, a division of the Portage group in the Upper Devonian rocks of western New York, which consists of soft shale with sandstone, and carries an abundant pelagic marine fauna contrasted with that of contemporaneous beds of central and eastern New York.—**Chattanooga shale**, a black carbonaceous shale which belongs at the base of the Devonian series in Tennessee and adjacent districts. The type locality is Chattanooga.—**Cleveland shale**, a rock series of Ohio, now generally regarded as the upper member of the Ohio shales. It is of Upper Devonian age and is notable for its large and numerous fishes.—**Couvin shales**, a division of the Middle Devonian in Belgium.—**Cuyahoga shale**, a thick mass of shales and sandstones which forms the middle part of the Waverly series in Ohio.—**Cypridina shales.** See ★*Cypridina*.—**Domanik shales**, a series of black bituminous shales with some calc-nodules, which in the Timan district of northeastern Russia represent the deposits of the Upper Devonian Naples beds of New York. The formation is locally known as *the Domanik*.—**Dufton shales**, an upper division of the Lower Silurian in Westmoreland and Cumberland, which lies below the Coniston limestone and is equivalent in part to the Bala beds of Wales.—**Genesee shale**, a term introduced by the New York geologists for a division lying at the base of the Upper Devonian in western and central New York and composed of black shales with some limestone. It is typically exposed on the Genesee river.—**Glarus shales.** See ★*Ligurian*, 2.—**Glenkiln shales**, a series of black shales which belongs to the Llandeilo or upper division of the Lower Silurian system in Scotland.—**Green River shale**, a subdivision of the Tertiary system in the Rocky Mountain region. It is a series of deposits of fluviatile origin, found in the Green River basin north of the Uintah Mountains, mostly in Wyoming. It attains a thickness of 4,000 feet, is regarded as of Middle Eocene age, and is placed between the Wahsatch and Bridger groups. It is noted for its fossil fishes and insects.—**Guichen shales**, a subdivision of the Lower Silurian of Brittany. It is regarded as equivalent in part to the Llandeilo shales of Great Britain.—**Halobia shales**, a division of the Triassic rocks in the Lombardy Alps, which lies above the Muschelkalk or Recoarco limestone and below the Esino limestone. It takes its name from the abundance of the mollusk *Halobia*, and is also geographically designated the *Prezzo limestone*.—**Hartfell shales**, a division of the Lower Silurian or Caradoc beds in the Moffat region of Scotland. Their characteristic fossils are graptolites, and they have been divided into many zones on the basis of the predominance and variation of these bodies.—**Hudson River shale**, a term introduced by the New York geologists to denote the uppermost division of the Lower Silurian in eastern North America, but now applied to the shaly graptolite facies homotaxial to nearly the whole Lower Silurian in the Appalachian basin.—**Huron shale**, a subdivision of the Upper Devonian in Ohio, underlain by shales with Hamilton fossils and overlain by the Erie shale. It forms the lowest part of the Ohio shales.—**Icla shales**, the lowest division of the Devonian system in the Bolivian Andes, overlain by the Huamampampa sandstone.—**Kuckers shale**, a subdivision of the Lower Silurian system in the Baltic provinces of Russia. It attains a thickness of 50 feet, and is underlain by the echinosphærite limestone and overlain by the Itfer beds. It is approximately equivalent to the Llandeilo formation of Great Britain.—**Laille shales**, a subdivision of the Lower Silurian system in the northwest of France, lying above the Armorican sandstone and below the slates of Angers. The beds are regarded as equivalent to the basal portion of the Llandeilo formation in Great Britain.—**Ledbury shales**, a division of the Silurian system of England, which lies at the top of the series and at Ledbury is recognized as passage-beds from the Downton Castle sandstone beneath into the Tilestones above, which are regarded as transitional to the Old Red Sandstone.—**Ludlowville shale**, a term introduced by Hall and applied to the lower part of the Hamilton group, in western New York, lying above the Marcellus and below the Moscow shale.—**Marcellus shale**, a term introduced by the early geologists for a series of black shales lying above the Onondaga limestone and beneath the Ludlowville and Skaneateles shale in New York. It attains a thickness of 100–200 feet, and is but sparsely fossiliferous, except in some limestone bands known as the Stafford, Cherry Valley, and agoniatite limestones. See *Marcellus group*.—**Merevale shales**, the uppermost division of the Cambrian system in the Nuneaton district of Warwickshire.—**Middlesex shale**, a subdivision of the Upper Devonian rocks in western New York, which lies above the Genesee shale and below the Cashaqua shale, and consists of highly bituminous, sparsely fossiliferous shale beds.—**Monroe shales**, shales of Middle Devonian age lying below the Bellvale flags in Orange county, New York.—**Montrose shales**, a local subdivision of the Upper Devonian rocks in eastern Pennsylvania.—**Moscow shale**, a term introduced by Hall and applied to the upper division of the Hamilton group in western New York, constituting the highest division of the Middle Devonian. It is highly fossiliferous.—**Normanskill shale**, a stage equivalent in age to the middle Trenton limestone of the Lower Silurian, but of distinct sedimentary facies, characterized by graptolites of the genera *Cœnograptus*, *Lasiograptus*, *Dicellograptus*, *Dicranograptus*, etc., which are wide-spread and thus indicate the presence of these facies and zones in North America, England, Scandinavia, Australia, etc.—**Ohio shale**, a division of the Upper Devonian rocks in Ohio, including the Cleveland, Erie, and Huron shales of Newberry.—**Oldbury shales**, a subdivision of the Cambrian system in the Nuneaton district of Warwickshire, which lies below the Merevale shales and above the Purley shales. It is composed of black shales and carries several species of trilobites.—**Oswayo shale**, a series of Lower Carboniferous shales in southwestern New York, which lies above the Cattaraugus beds and below the Knapp beds and Olean conglomerate.—**Pale shales**, a series of graptolite-bearing shales and flags of early Silurian age in the Rhayader district of Wales. They represent a pelagic facies of the Tarannon shales, lying between the Upper Llandovery below and the Woolhope beds above, and are divided into a lower Gwastaden group of flags and shales and an upper Cabau group of conglomerates and shales.—**Pittsford shale.** See *Salina* ★*beds*.—**Poligné shale**, a series of carbonaceous shales in Brittany, which contains a rich graptolitic fauna representative of the Tarannon shales of the English Silurian. The chief genera are *Monograptus*, *Petalograptus*, and *Retiolites*.—**Portland shale**, a division of the Portage group of the lower Upper Devonian of western New York.—**Pulaski shale**, in the New York series of geological formations, a group of shales developed in the vicinity of Pulaski, Oswego county, forming a local phase of the Lorraine stage of the New York Neochamplainic or Upper Silurian series.—**Purley shales**, a local phase of the middle Cambrian system developed in the Nuneaton district of Warwickshire, England.—**Rochester shale**, a division of the Upper Silurian rocks which lies beneath the Lockport dolomite and above the Clinton formation in New York, extremely profuse in finely preserved fossils which are closely similar to those of the English Wenlock. It is typically exposed between Rochester and Niagara Falls, but is not present in eastern New York.—**Shale naphtha.** See ★*naphtha*.—**Skaneateles shale**, the lowest division of the Hamilton series of the middle Devonian in central New York, resting on the Marcellus shale.—**Stockingford shales**, a division of the Cambrian rocks in the Nuneaton district of Warwickshire, comprising, in ascending order, the Purley, Oldbury, and Merevale shales.—**Utica shale**, a series of black shales in New York, lying above the Trenton limestone and below the Lorraine shales, which constitutes the topmost member of the Lower Silurian.—**Vernon shale.** See *Salina* ★*beds*.—**Warsaw shales**, a division of the Mississippian or Lower Carboniferous beds, which lies above the Keokuk limestone in the Mississippi valley.—**White-leaved-oak shales**, a division of the Cambrian system in the Malvern Hills, lying near the top of the section, below the Bronsil shale, and resting on the Hollybush sandstone. These shales are interleaved with basaltic outflows and contain characteristic trilobites which indicate their equivalence with the Lingula flags.—**Wianamatta shales**, the highest member of the Triassic system in New South Wales.

shale-ball (shāl'bâl), *n.* A local name at Meteor Crater, Coconino county, Arizona, for a globular mass, having an outer shell of limonite, an inner core of unoxidized iron, and an intermediate layer of nickel hydroxid and oxids of iron. Such balls are believed to be meteoritic in origin. *G. P. Merrill*, in Smithsonian Misc. Coll., 1907, IV. ii. 204.

shale-oil, *n.* **2.** A trade-name of mineral oil produced by the destructive distillation of bituminous shale, chiefly in the south of Scotland. It consists mainly of hydrocarbons of the paraffin, olefine, and crotonylen series, and yields as the principal commercial products illuminating- and lubricating-oils and solid paraffin wax for candles.

shale-tar (shāl'tär), *n.* Tar derived from certain thin shaly strata in the Carboniferous rocks, which contain bituminous matter.

shamanka (shä-män'kạ̈), *n.* [Russ. *shamanka*, < *shamanŭ*, Shaman, + *-ka*, a dim. and fem. ending.] A female Shaman.

shamash, *n.* See ★*shammash*.

shamba (sham'bä), *n.* [Swahili *shamba*, a plantation, a farm, a garden, etc., also the country, the rural regions.] A plantation; a portion of cultivated land.

> Statistics are given as to the manumission of slaves [East Africa], the greater number of whom have settled on "*shambas*" upon conditions entered into with the Arab cultivators. *Geog. Jour.* (R. G. S.), XVIII. 551.

shamble^{1}, *n.*—**Shamble meat**, fresh meat killed in the shambles, as opposed to salted, or to home-killed, meat. [Dial.]

> "Us did n't have no *shammel mate!*"—that is, no meat killed in the shambles but only the home-killed pig.
> Quoted in *N. and Q.*, 10th ser., I. 394.

shame-face (shām'fās), *n.* The spotted crane's-bill, *Geranium maculatum*.

shame-vine (shām'vīn), *n.* The sensitive-brier, *Leptoglottis uncinata*.

shamiana (shä-mi-ä'nạ̈), *n.* [Also *shameanah*, *shameeana*, *semianna*, etc.; < Hind. *shāmiyāna*, *shamiyāna*, dial. *samyāna*; said to be of Persian origin.] In India, an awning set on poles, forming a square tent with open sides, used for receptions and similar purposes.

shammash (shä'mash), *n.* [Heb. *shammash* (Yiddish *shames*), Syr. *shamosh*, *shamosho*, servant.] Among the Jews, especially in Russia and the Orient, one of the officers of the synagogue. In the United States the duties of the shammash have been curtailed and are now almost the same as those of a sexton, beadle, or janitor in Christian places of worship.

shamrock, *n.*—**Australian shamrock**, the Meninde clover, *Trigonella suavissima*. See under ★*clover*.—**Native shamrock**, in Tasmania, a valued forage plant, *Lotus australis*, for some time under suspicion as a poisonous plant. See *poison-plant* (*c*).—**Water shamrock**, the buckbean or marsh trefoil, *Menyanthes trifoliata*. Also called *water trefoil*.

shanga (shan'gä), *n.* Same as ★*changa*.

shanghai, *n.* **5.** A boys' catapult. [Australia.]

> The *shanghai*, which, as a secret instrument of mischief, is only less dangerous than the air-gun.
> *The Spectator* (Melbourne), July 17, 1875, p. 123, quoted [in E. E. Morris, Austral English.

Shanghai dollar. Same as *sun* ★*dollar*.

shanghai, *v. t.* **2.** To shoot with a shanghai. See ★*shanghai*, 5.

shanking, *n.* **2.** Same as ★*rattles*.

shank-ladle (shangk'lā"dl), *n.* An English name for the ordinary hand-ladle used in foundries to convey molten iron from the cupola to the molds: so named because the carrying-receptacle is borne in a ring formed in the carrying-handle or shank.

shank-steel (shangk'stēl), *n.* **1.** Steel having the properties which fit it for making shoe-shanks.—**2.** Steel suitable for shanks of anchors.

shanty^{2}, *v. i.* **2.** To visit the grog-shanty habitually; drink frequently or habitually at a public-house. [Slang, Australia.]

shanty-boat (shan'ti-bōt), *n.* Same as ★*wanigan*.

shanty-keeper (shan'ti-kē"pėr), *n.* One who sells liquor on the sly. *E. E. Morris*, Austral English. [Slang, Australia.]

shapai (shä'pī), *n.* [Amerindian of British Columbia.] In British Columbia, the Dolly Varden trout, *Salvelinus malma*.

shape^{1}, *n.* **9.** In *iron ship-building*, a general term including all forms of rolled bars, such as angle-bars, T-bars, I-bars, angle-bulb-bars, T-bulb-bars, channel-bars, Z-bars, etc., as distinguished from plates.—**Structural shapes**, rolled sections in steel or wrought-iron, which have been found convenient for combining in the framework of buildings and other structures. Such are angles, tees, channels, I-beams, Z-beams, and their combinations when riveted together. See *structural* ★*steel*.

shape^{2} (shä'pe), *n.* [See the extract below.] In Tibet, a privy councillor; one of the five who advise the Tibetan regent in state affairs.

> Another Tibetan title which has recently found its way into our journals [Aug., 1904] is *Shape* (two syllables). Yutok *Shape* was given as the name of one of the Tibetan peace delegates. *Sha-pe*, literally "lotos-foot," means a Privy Councillor, one of the five who advise the Tibetan Regent in State affairs. See Sandberg's 'Manual of Colloquial Tibetan,' 1894.
> *J. Platt, Jr.*, in N. and Q., 10th ser., II. 132.

shaper, *n.*—**Collar- and cuff-shaper.** See ★*collar*.—**Rotary shaper.** (*a*) A crank-shaper. (*b*) A shaper in which the piece operated upon can be rotated and hence a (nearly) cylindrical surface can be finished.

shaper-plate, *n.* **2.** Part of the mechanism on a spinning-mule for shaping the cop on the spindle. *Nasmith*, Cotton Spinning, p. 310.

shaper-wheel (shā'pėr-hwēl), *n.* A ratchet-wheel attached to the copping or shaping mechanism of a spinning-mule, to form the cop. *Nasmith*, Cotton Spinning, p. 308.

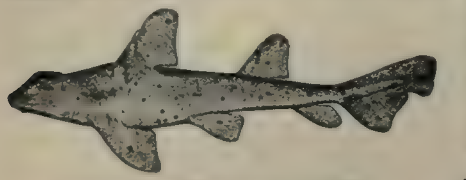
shapoo (shä'pö), *n.* A mountain-sheep, *Ovis vignei*, of central Asia, much resembling the bighorn of North America.

share^{1}, *n.*—**Founders' shares**, in *corporation law*, the part of the stock or shares of a corporation allotted to its promoters and organizers, the consideration for which usually consists in the things done or given whereby the corporation has been brought into existence.

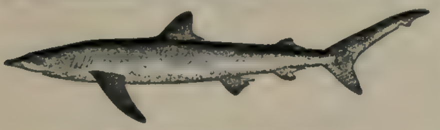
share^2, *n.* **1.** In primitive plows the share is the point or blade of iron or wood which stirs the soil. In modern turning-plows it is the entering member or segment, cutting the bottom of the furrow and is made of steel. In single-moldboard plows the share presents on one side a vertical surface with a horizontal base line, broadening by an excurved line, in the rear joining the land-side, with which it is in the same plane (see *bar share*, *slip share*, below); on the other side an oblique sloping surface extended on the outside into the 'wing' or 'heel,' on its upward and backward edges closely matching the mold-board.— **Bar share,** a plowshare which is consolidated with the land-side by welding. Compare *slip share* below.— **Double share,** a bilateral share used in a double-moldboard plow.— **Fin-cutter share,** a plowshare adapted to use with a fin-cutter, i.e., a vertical fin-shaped blade rising from the flat side of the share and serving as a colter.— **Slip share,** a plowshare secured to the land-side by bolting, therefore exchangeable. Compare *bar share*, above.

shariah (shạ-rē′ạ̈), *n.* [Ar. *sharī ʻah.*] The Mohammedan law.

shark^1, *n.*— **Bay-shark,** *Carcharhinus lamiella*, of San Diego Bay and the Mexican coast.— **Blind shark,** a long-bodied ray, *Rhinobatus granulatus.* It attains a length of 6 or 7 feet and lives on sandy bottoms feeding on crabs and the like. Also *sand-shark.* *E. E. Morris*, Austral English. [Australia.]— **Bramble-shark,** a shark of the family *Echinorhinidæ*, including only a single species of the eastern Atlantic.— **Bulldog shark.** Same as *Port Jackson shark.*— **Bull-head shark,** *Gyropleurodus francisci*, of the coast of California: especially interesting on account of its supposed relation to extinct forms.— **Cestraciont shark,** a shark of the family *Heterodontidæ*, of the suborder *Proarthri.*— **Cyclospondylous shark,** a shark of the order *Cyclospondyli.*— **Frilled shark,** a shark of the family *Chlamydoselachidæ*, containing a single species found in the open sea.— **Goblin-shark,** *Mitsukurina owstoni*, a species found in the deep waters off the coast of Japan, characterized by the peculiar trowel-like projection of the nose: hence sometimes called *rostrum-shark.* It attains a length of fourteen feet.— **Great blue shark,** *Prionace glauca*, of warm seas, occasionally taken off the coasts of the United States, but more common in Europe.— **Great white shark.** Same as *man-eater shark* (which see, under *shark*^{1}).— **Long-tailed shark.** Same as *thresher*^{1}, 3.— **Notidanoid shark,** a shark of the order *Diplospondyli.*— **Requiem shark,** a shark of the family *Galeidæ.* See ★*requiem.*— **Rostrum-shark.** Same as *goblin-★shark.*— **Saw-fish shark,** a shark of the family *Pristiophoridæ*, or genus *Pristiophorus*, embracing four species found in Australian and Japanese seas. They superficially resemble the saw-fishes (which belong among the rays), having the front of the head prolonged into a flat blade armed on each side with teeth. These saw-bearing sharks may at once be known from the saw-fishes by the position of the gill-slits, which are placed laterally rather than ventrally as in the saw-fishes and other rays.— **Scymnoid shark,** a shark of the family *Dalatiidæ.*— **Soup-fin shark,** a species of tope, *Galeus zyopterus*, in California, the dried cartilaginous fin-rays of which the Chinese use to make an excellent soup. See *tope*^{3}.— **True shark,** a shark of the suborder *Galei.* This group contains most of the living sharks.— **Typical shark,** a shark of the order *Asterospondyli.*



Bull-head Shark (*Gyropleurodus francisci*).
(From Bulletin 47, U. S. Nat. Museum.)



Great Blue Shark (*Prionace glauca*).
(From Bulletin 47, U. S. Nat. Museum.)

shark-barrow (shärk′bar″ō), *n.* The barrow or egg-case of a shark; a sea-purse or sea-barrow.

shark-hook (shärk′hůk), *n.* **1.** A large barbed hook for catching sharks.—**2.** An improvised hook-gage. [Slang.]

shark's-pilot (shärkz′pī″lọ̈t), *n.* Same as *rudder-fish*, 3.

shark-sucker (shärk′suk″ėr), *n.* One of the remoras, *Echeneis naucrates*, universally distributed over warm seas, being attached to large fishes without regard to species. Few large sharks are caught at Key West without them.

sharp, *n.*— **D sharp,** in *music:* (*a*) On the organ or piano keyboard, the black key on the right of each group of two black keys: also called *E flat.* (*b*) The tone given by such a key, or a tone in unison with such a tone: the D sharp next above middle C has (at French pitch) about 308 vibrations per second. (*c*) The staff-degree assigned to such a key or tone, being the same as that for D, but with a sharp upon it either in the signature or as an accidental. (*d*) A note placed on such a degree and indicating such a key or tone. (*e*) The key-note of the minor key of six sharps (*D sharp minor*). (*f*) In the fixed system of solmization, the sharp of the second tone of the scale, technically named *ri.*— **E sharp,** in *music*, a key, tone, or scale note a half-step above E. On the keyboard this is the same as F natural. On the staff E sharp is indicated by the same degree as E, but with a ♯ upon it either in the signature or as an accidental. E sharp is required as the proper seventh tone of the major key of F sharp and in several minor keys.— **G sharp,** in *music:* (*a*) On the organ or piano keyboard, the black key in the middle of each group of three black keys: also called *A flat.* (*b*) The tone given by such a key, or a tone in unison with such a tone: the G sharp next above middle C has (at French pitch) about 411 vibrations per second. (*c*) The staff-degree assigned to such a key or tone, being the same as that for G, but with a ♯ upon it either in the signature or as an accidental. (*d*) A note placed on such a degree and indicating such a key or tone. (*e*) The key-note of the minor key of five sharps (*G sharp minor*). (*f*) In the fixed system of solmization, the sharp of the fifth tone of the scale, technically named *si* (not to be confounded with the same syllable when used for the seventh tone).

sharping-corn (shär′ping-kôrn), *n.* A gift of grain which the farmers in some parts of England make at Christmas to the smiths for sharpening tools. *Blount*, Glossographia.

sharp-shooter, *n.* **1.** Specifically: (*b*) A soldier who makes 60 per cent. at target practice at ranges up to 1,000 yards. *Small Arms Firing Register*, 1906.—**3.** Any one of several hemipterous insects which puncture the cotton-boll, sometimes causing it to rot. *Homalodisca coagulata* is one of the commonest forms. The Mexican cotton-boll weevil was often called a 'sharp-shooter' when it was new in Texas.

> Early cotton . . . avoids to a great extent damage to the plant by the boll-worm, cotton worm, and *sharp-shooter*, as well as by a large number of fungous diseases.
> *Yearbook U. S. Dept. Agr.*, 1901, p. 377.

shas (shäs), *n.* A word formed, with an assistant vowel, from the initial letters of the Hebrew words *shisha sedārīm*, literally, 'the six orders,' the common rabbinical name for the Talmud, which is divided into six principal orders, namely: (1) Zeraim, seed; (2) Moed, holidays; (3) Nashim, women; (4) Nezikin, damages; (5) Kodshim, holy, sanctified things; (6) Ṭaharoth, purification.

shat (shut), *n.* [Ar. *shaṭṭ*, shore, coast, riverside, wharf.] A salina or saline playa; a dried-up salt lake. See *shott.* [North Africa.]

> The *shat*, or dried-up salt lake. . . . The *shats*, or salt lakes, of the south of Tunis are rather a disappointment to the traveller. On the map they promise so much in the way of expanse of water, and in reality all one sees is a flat plain of hardened mud, with a few streaks and pools of stagnant water and stretches of white salt incrustation. *Geog. Jour.* (R. G. S.), XI. 604.

shatchen (shät′ċhen), *n.* Same as ★*shadchan.*

shatter, *v.* **II.** *intrans.* **2.** Of cereals, to scatter the grain on account of overripeness.

> Other sorts from the East . . . *shatter* so badly that they soon have to be given up. Nonshattering varieties are in great demand.
> *M. A. Carleton*, in U. S. Dept. Agr., Div. Veg. Physiol. [and Pathol., Bulletin 24, 1900, p. 23.

3. Of soils, to fall into flakes or meal-like particles from the action of the weather instead of harsh angular particles as when broken by implements. *W. J. Malden*, Tillage and Implements, Glossary.

shave, *v. t.* **6.** In hat-making, to rub down the outside of (a felt hat), as with pumice or sandpaper.—**7.** To remove a thin film of oxid from a metal surface, as of sheet-lead or lead-pipe, so as to expose a clean area to receive the solder in making a joint.

shaved (shāvd), *p. a.* Affected by the action denoted by the verb 'shave'; specifically, noting a book with smooth-cut edges, as opposed to a similar book with rough or unshaved edges or leaves.

> The original edition of Spenser's 'Colin Clout,' 1595, 4to, 26*l*, 10*s*. (*shaved*), and of the same author's 'Prothalamion,' 1596. *Athenæum*, Jan. 2, 1904, p. 16.

shaver, *n.* **4.** In *leather-manuf.*, a workman who shaves the skins with a curriers' knife to get an even, smooth surface. See *shaving*, 3. *Modern Amer. Tanning*, p. 114.—**5.** An instrument or machine for removing a thin film or shaving: as, a spoke- or lap-*shaver.*—**6.** A pivoted knife and frame for cutting smoked beef into thin shavings.— **Rotary shaver,** a machine having a circular knife and adjustable feed for cutting dried meats into thin slices of uniform thickness.

shaving-cream (shā′ving-krēm), *n.* A soft paste intended for application to the face before shaving. It is usually made of high-grade cold-process soap free from excess of alkali, often with addition of glycerin and a little cocoanut-oil to facilitate lathering, and of scenting and coloring materials.

shaving-machine, *n.* **3.** In *leather-manuf.*, a machine for shaving the flesh side of hides or skins by means of a cylinder fitted with blades. *C. T. Davis*, Manuf. of Leather, p. 254.— **Wax-shaving machine,** a machine used by electrotypers for shaving the surface of their molding-composition or wax. *Census Bulletin* 216, June 28, 1902, p. 62.

Shawia (shâ′i-ạ̈), *n.* [NL. (Forster, 1776), named in honor of Thomas *Shaw* (1694–1751), an English clergyman, traveler, and botanist.] A genus of plants belonging to the family *Asteraceæ.* See *Olearia.*

shawl-goat (shâl′gōt), *n.* Same as *Cashmere* ★*goat.*

Shawnee-haw (shâ′nē-hâ″), *n.* [*Shawnee*, a tribe of North American Indians, + *haw*.] The larger withe-rod, *Viburnum nudum.*

Shawnee-wood (shâ′nē-wůd″), *n.* [*Shawnee*, a tribe of North American Indians, + *wood.*] The western catalpa or catawba-tree, *Catalpa speciosa.*

sheaf^1, *n.*— **Bearer of a sheaf.** Same as ★*vertex of a sheaf.*— **Perspective sheaves** (*geom.*), sheaves which are ejects of the same plane.— **Sheaf of lines.** Same as ★*sheaf of straights.*— **Sheaf of straights,** in *geom.*, the ∞^2 straights on a point.

shear^1, *n.* **4.** Deflection or deviation from the straight; curve or sweep; sheer: as, the *shear* of a boat.

> Some considerable *shear* to the bow lines will make a drier and safer boat. *Sportsman's Gazetteer*, p. 558.

5. In *geol.*, the attenuation or actual rupture of a mass of rock by a compressive strain, especially by one applied transversely to the bedding or foliation. It results in dragging out the component minerals into thin bands and, it may be, in rupturing their former continuity.

> In my paper on cleavage and distortion in the Geological Magazine I pointed out that it is to Sir John Herschel that we are indebted for the theory of the "molecular movement," which, I remarked, was in fact a "*shear*"—a term which has now been universally accepted for this kind of action in rocks; and in my "Physics of the Earth's Crust" I have explained how the crumpling in the harder and cleavage in softer layers of a rock would simultaneously arise from such a shearing movement. *O. Fisher*, in Nature, May 18, 1905, p. 56.

shear-blade (shēr′blād), *n.* One of the cutting-blades of a cloth-shearing machine.

shear-boom (shēr′böm), *n.* In *lumbering*, a boom so secured that it guides floating logs in the desired direction. Also called *fender-boom* and *glancing boom.*

shear-flocks (shēr′floks), *n. pl.* That portion of the nap which is cut from cloth while it is being sheared.

shearing-machine, *n.* **3.** A power-machine for clipping the fleece from the sheep; a sheep-shearer.— **Guillotine shearing-machine,** shears with two diagonal-edged knife-blades, of which the upper one moves vertically between guides. The guillotine-shears are used for shearing heavy plates and sheets as well as for puddled bars and blooms. *Phillips and Bauermann*, Elements of Metallurgy, p. 392.

shearing-plane (shēr′ing-plān), *n.* In *geol.*, the plane along which rupture takes place in rocks from a shearing-stress. *J. Geikie*, The Great Ice Age, p. 74.

shearing-stress, *n.*— **Curve of longitudinal shearing-stresses.** See ★*curves of ship calculation.*

shear-plane (shēr′plān), *n.* A plane along which strains of compression in the earth's crust are eased by shearing; a shearing-plane.

> The strata have been folded into close anticlines and synclines whose beds are often vertical or even overthrown, in some places severely faulted and occasionally overthrust, so that some are completely concealed by others that have been forced over them along *shear-planes* developed by the enormous pressures to which they have been subjected.
> *E. W. Claypole*, in Amer. Geol., Aug., 1903, p. 81.

shear-plow (shēr′plou), *n.* See ★*snow-plow.*

shears, *n. pl.* **2.** (*d*) In *calico-printing*, two metal clamps for holding the blade of the doctor on a cylinder printing-machine.—**5.** In the steam fire-engine, the side frames which carry the weight of the boiler and engine and transmit it to the wheels.— **Garden shears,** a form of cutting-shears with long wooden handles the plane of which is inclined to that of the cutting-blades: used for trimming hedges or borders or for other pruning work in gardens or lawns.— **Nail-plate shears,** a machine for cutting iron or steel plate into convenient sizes for the machines which are to make cut nails from such stock.— **Tailors' shears,** a form of shears in which the handles are bent from the line of the blades, so that the weight of the shears may be borne on a table while they are cutting cloth: the blades are longer than the handles.— **Tinmen's shears,** a hand-tool for shearing sheet-metal. The handles are longer than the cutting-blades and are either formed into a bow for the hand, or end in a bend toward each other such that they meet and stop the cut when the blades are parallel to each other.

shear-skid (shēr′skid), *n.* Same as ★*fender-skid.*

shearwater, *n.*—**Pink-footed shearwater,** *Puffinus creatopus,* a species resembling the common greater shearwater, but having pinkish feet; found off the Pacific coast of North America.—**Slender-billed shearwater,** *P. tenuirostris,* a small, dark-colored species of the North Pacific.

shear-zone (shēr′zōn), *n.* A belt of rock crushed and metamorphosed by compression. Along shear-zones massive rocks become schists. *J. D. Dana,* Manual of Geol. (4th ed.), p. 111.

sheath, *n.* **2.** (*d*) In old plows, the bar connecting the beam and sole in front: so called as sheathing the edge of the mold-board. It corresponds to the standard and in part to the shin (see ★*shin*^{1}, 8) of a modern plow. See ★*plow,* 1.—**Bast sheath.** See ★*bast*^{1}.—**Conducting sheath,** in *bot.,* the long cells of parenchyma in the inner cortex of the stem which invest the vascular bundles that pass into the leaves.—**Medullary sheath.** (*a*) See *medullary.* (*b*) The white substance of Schwann which surrounds the axis-cylinder in a nerve-fibril.—**Neumann's sheath.** Same as *dentinal sheath of Neumann* (which see, under *sheath*).—**Notochordal sheath,** an elastic envelop surrounding the notochord, known as the *elastica externa.*

sheathing-metal (shē′ᴛʜing-met″a̤l), *n.* An alloy of copper and tin, having somewhat the color of copper, used to cover the immersed surface of a wooden ship's hull to prevent the attack of boring marine worms, retard decay, and make adhesion of barnacles and vegetable growth more difficult.

sheath-piling (shēth′pī″ling), *n.* Same as ★*sheet-piling.* *Encyc. Brit.,* XXVI. 437.

sheave^{2}, *n.* **4.** The grooved wheel or disk on which a sliding door is carried upon a rail or track.—**5.** The disk or wheel over which a window-rope or -chain passes to the sash-weight.—**6.** The circular disk or body of an eccentric such as is used to operate the valves of steam-engines. [Eng.]

she-beech (shē′bēch), *n.* **1.** Same as *white sycamore* (which see, under *sycamore*). [Australia.]—**2.** Same as ★*beech*^{1}, 2.

shed^{1}, *v. i.* **3.** To fall prematurely, as the young bolls of cotton-plants do when affected by certain functional disorders. The disease is known as *shedding.*

shed^{2} (shed), *v. t.* To place in a shed; protect by means of a shed.

> If goats are to produce the best fleeces they are capable of they must be maintained in uninterrupted good condition. . . . They must not be kraaled (or *shedded*) except when absolutely necessary; they must have clean sleeping places, and must not be crowded together.
> *Yearbook U. S. Dept. Agr.,* 1901, p. 278.

shedding^{1}, *n.* **5.** Specifically, of the cotton plant, the dropping of young bolls. Shedding results to some extent from defect of pollination, but often from a deep cultivation at early flowering time, encouraging a growth of 'weed.'

> Over the eastern portion *shedding* was reported, with complaints of drought in portions of the Carolinas.
> *Yearbook U. S. Dept. Agr.,* 1899, p. 728.

Center shedding, the division of the warp in the center of the web in a Jacquard loom for the insertion of the weft. *T. W. Fox,* Mechanism of Weaving, p. 196.—**Closed shedding,** the leveling or closing of the warp-threads in a loom after the insertion of each weft-thread: opposed to *open* ★*shedding.*—**Open shedding,** a method of forming the warp-shed in a loom in which the warp-threads form two stationary lines, the changes being made by the threads passing from one fixed line to the other. *T. W. Fox,* Mechanism of Weaving, p. 20.

sheedy (shē′di), *n.* A local name in the Leeward Islands of the Spanish pistareen or 2-real piece.

sheep^{1}, *n.*—**Broad-tailed sheep.** Same as *fat-tailed* ★*sheep.*—**Criollo sheep,** a South American sheep descended from the Spanish merino but now so degenerated as little to resemble the latter in either wool or type.—**Dall's sheep.** See *mountain* ★*sheep.*—**Fannin's sheep.** See *mountain* ★*sheep.*—**Fat-tailed sheep,** the common name of a breed of sheep found in Syria, Asia Minor, and parts of Arabia, distinguished by its enormous tail, which sometimes weighs 40 or 50 pounds and is so long that it drags on the ground. Also known as *broad-tailed* and *flat-tailed sheep.* **Flat-tailed sheep.** Same as *fat-tailed* ★*sheep.*—**Indra's sheep,** delicate white alto-cumulus or alto-cirrus clouds.—**Mountain sheep.** Six species are now recognized from western North America, ranging from the Alaska Peninsula into Mexico. Dall's sheep, or white sheep, *Ovis dalli,* from the high regions of Alaska and adjoining British Territory, is almost pure white, with rather slender horns. Fannin's sheep, *O. fannini,* from the Yukon District, is bluish gray. Nelson's sheep, *O. nelsoni,* from southern and Lower California, is a small short-haired species. Stone's sheep, black sheep, *O. stonei,* from the mountains of British Columbia, is a handsome dark-colored animal.—**Nelson's sheep.** See *mountain* ★*sheep.*—**Shropshire sheep,** a breed of sheep resembling the Southdown, but larger, with a thicker fleece, a darker face, and more massive head.—**Stone's sheep.** See *mountain* ★*sheep.*

sheep^{1} (shēp), *v. t.* To pasture sheep upon; use as a sheep-range. [Western U. S.]

> The township has little value for pasturage, as it was long ago thoroughly "*sheeped.*" The lands, wherever accessible, have been "*sheeped*" so long that the grass has been exterminated. Most of the township has been closely "*sheeped,*" and its grazing value is exceedingly low. *U. S. Geol. Surv.,* Prof. Paper 22, pp. 36, 38, 54.

sheep-bine (shēp′bīn), *n.* The small bindweed, *Convolvulus arvensis.*

sheep-bug (shēp′bug), *n.* **1.** The sheep-tick, *Melophagus ovinus.*—**2.** A true tick of the genus *Argas.*

sheep-bur (shēp′bėr), *n.* The cockle-bur, *Xanthium strumarium.*—**Small sheep-bur,** the stickseed, *Lappula Lappula;* also, the American stickseed or beggar's-lice, *L. Virginiana.*

sheep-fly (shēp′flī), *n.* A European muscid fly, *Lucilia sericata,* allied to the screw-worm fly of the United States. Its larvæ infest the bodies of live sheep, especially in Great Britain and Ireland. *Nature,* Aug. 7, 1902, p. 352.

sheep-foot (shēp′fu̇t), *n.* The bird's-foot trefoil, *Lotus corniculatus.*

sheep-keep (shēp′kēp), *n.* Feed for sheep.

> The catch-croppings are therefore few and they are adopted more for the purpose of producing green-meat for cows and horses . . . than for *sheep-keep.*
> *W. J. Malden,* Tillage and Implements, p. 18.

sheep-poison, *n.* **3.** The upright yellow wood-sorrel, *Oxalis stricta.* Also called *poison sheep-sorrel.*

sheep-root (shēp′rŏt), *n.* The butterwort, *Pinguicula vulgaris.* Also called *sheep-rot* (which see).

sheep-scab (shēp′skab), *n.* Acariasis of sheep; specifically, the common sheep-scab, a disease due to mites (*Psoroptes communis*) which live on the skin and cause a formation of scab with fall of the wool. It is highly contagious, and economically one of the most serious of diseases. Scabby sheep cannot legally be shipped from one State to another. *Head-scab* is less frequent and less important; it is caused by the sarcoptic mite. *Foot-scab* is rather rare; it is caused by the chorioptic mite (*Chorioptes*). *Follicular scab,* caused by the demodectic mite, has been recorded in a few cases.

> In the appropriation bill for the current year (1894–95) tuberculosis and *sheep-scab* are specifically mentioned among those diseases which the Secretary of Agriculture is authorized to guard against in such manner as he may think best. *Yearbook U. S. Dept. Agr.,* 1894, p. 36.

sheep-shearer, *n.* **2.** Same as ★*shearing-machine,* 3. Also *sheep-shearers.*

sheep-sick (shēp′sik), *a.* Exhausted by sheep-pasturing and no longer fit for this use: applied to pasture-lands. [Australia.]

sheep-sorrel, *n.* **2.** Species of *Oxalis,* more properly called *wood-sorrel,* especially *O. Acetosella* and *O. violacea.*—**Poison sheep-sorrel,** *Oxalis stricta.* Also called *sheep-poison.*

sheepweed (shēp′wēd), *n.* **1.** The soapwort, *Saponaria officinalis.*—**2.** The butterwort, *Pinguicula vulgaris.*—**3.** The velvet-leaf, *Abutilon Abutilon.*

sheer^{3}, *v. i.*—**To sheer up,** to raise the sheer of a vessel.—**To sheer up aft,** to raise the sheer of a vessel at the quarters and stern.—**To sheer up forward,** to raise the sheer of a vessel at the bows and head.

sheer^{3}, *n.* **5.** A light scaffold, usually with three inclined legs, on which miners stand in drilling to get above the drill-rod.—**Sheer draft,** in *naval arch.,* a plan showing the lines of a vessel (see ★*line*^{2}, 4 (*b*)) in three parts: the *sheer plan,* showing the vessel in elevation with the vertical longitudinal sections in their true form; the *half-breadth plan,* showing the horizontal sections in true form; and the *body-plan,* showing the transverse vertical sections in true form. The three plans are interrelated and the whole delineates the form of the vessel. The surface usually shown is the molded surface, that is, the exterior surface of the framing with the planking or plating removed.—**Sheer line,** in *naval arch.,* one of the lines in the sheer draft indicating the sheer of a vessel at various levels, as the top-side line, gunwale line, deck line at side, etc.—**Sheer plan,** in *naval arch.,* a plan showing the form of a vessel in longitudinal elevation: one of the three plans forming the ★sheer draft (which see).

sheer-boom (shēr′böm), *n.* See ★*boom*^{2}.

> Ide had installed a system of *sheer-booms.* They spanned the current diagonally, and were to be the silent herders that would edge the log-flocks away from the banks, crowd them to centre at the sorting-gap, and keep them running free. *Holman Day,* King Spruce, p. 334.

sheer-lashing (shēr′lash-ing), *n.* *Naut.,* a lashing passed about the head of the sheers to confine them to one another.

sheer-mast (shēr′måst), *n.* *Naut.,* a mast which is made of two spars on the principle of sheers, and on which a yard is suspended.

sheet^{1}, *n.* **2.** (*e*) *pl.* A commercial name for crude rubber in thin pieces formed by coagulating the latex on a large leaf. See ★*rubber*^{1}, 3.

8. In *geol.:* (*a*) A mass of eruptive rock of great length and breadth as compared with its thickness. Two principal varieties are recognized: *surface flows,* which are poured out on the surface of the earth, and *intruded* or *intrusive sheets,* which are forced between relatively horizontal strata. (*b*) A deposit of any material, sedimentary or other, which has great areal extent and small thickness.

> In New York, the moraine is commonly rather free from large stones, as is the till *sheet* also.
> *Bulletin Amer. Geog. Soc.,* XXX. 199.

Intruded sheet, in *geol.,* a layer of igneous rock intruded in a nearly horizontal position, generally between strata of sedimentary rocks. See ★*sheet*^{1}, 8 (*a*).—**Intrusive sheet.** Same as *intruded* ★*sheet.*—**Sheet tent.** See ★*tent*^{1}.—**To give her sheet,** *naut.,* to slacken the sheets and give the sails more belly.—**To have the starboard sheets aft.** See ★*aft*^{1}.—**Vortex sheet,** in *hydrodynamics,* a surface, within the mass of a rotating fluid, made up of all the vortex lines that pass through any given line in the fluid.

sheet-brass (shēt′brȧs), *n.* Brass in sheets or broad thin plates.

sheet-ice (shēt′īs), *n.* Ice formed on the surface of a body of water.

sheeting, *n.* **5.** In carpenter-work, same as *sheathing:* a common term in the United States.—**6.** The breaking up of a massive rock into relatively thin, parallel tabulæ united by closely spaced faults or joints.

> The granite is very much altered by surface decomposition, and crumbles readily to a coarse sand. The granite is sheeted near the veins, the planes of sheeting being parallel to the veins themselves. The general *sheeting,* however, is in a different direction, the average strike being N.20°E., and the dip 70°SE.
> *Contrib. to Econ. Geol.,* U. S. Geol. Surv., Bulletin 213, [1902, p. 99.

sheet-leader (shēt′lē″dėr), *n.* A simple half-ring screwed to the deck of a ship. See ★*leader*^{1}, 5.

sheet-machine (shēt′ma̤-shēn″), *n.* Same as *sheeting-machine.*

Sheet-metal press. See ★*press*^{1}.

sheet-packing (shēt′pak″ing), *n.* Elastic packing of rubber or other material; packing made in large flat sheets of varying thicknesses.

sheet-piling (shēt′pī″ling), *n.* A vertical, thin diaphragm formed by driving into the soil planking, timbers, or narrow iron or steel members, the edges of which are kept in close contact and sometimes grooved together, used for the purpose of confining or supporting the soil on one side of the sheet-piling when that on the other is removed by excavating. Also *sheath-piling.* *Sci. Amer. Sup.,* Jan. 10, 1903, p. 22591.

sheet-steel (shēt′stēl), *n.* Steel in thin sheets, less than one quarter of an inch in thickness.

sheetwise (shēt′wīz), *adv.* In the manner of sheet-work: said of the printing of a sheet by two operations, first from a form on one side, then from another form on the other side. For a different method see *to work and* ★*turn.*

> One of the difficulties of *sheetwise* imposition is that of making register when there is a shrinkage of furniture in either form. Another is its greater liability to unevenness of color or of impression when the two forms are done on different presses and by different pressmen.
> *DeVinne,* Mod. Book Composition, p. 352.

sheety (shē′ti), *a.* Consisting of or resembling sheets; showing a tendency to break up into thin tabular masses: applied specifically to massive or eruptive rocks. *Contrib. to Econ. Geol.,* U. S. Geol. Surv., Bulletin 213, 1902, p. 287.

shel, *n.* and *v.* A simplified spelling of *shell.*

sheldrake, *n.*—**Winter sheldrake,** in New England, the merganser, *Merganser americanus,* which is found along the coast in winter.

shelf^{2}, *n.*—**Continental shelf,** the relatively shallow sea-bottom bordering a continent, in contrast to the deep ocean-floor; the submerged border of a continental plateau.

> The ocean often overlaps the borders of the continental masses in a comparatively shallow belt of water, at whose outer edge the depth is commonly about 600 feet; thence it rapidly sinks to the deep ocean floor. These shallow bottoms are known as *continental shelves.* The water on the shelf is often greenish from fine suspended sediment, unlike the clear deep blue water of the open ocean. A well-defined *continental shelf,* from 50 to 100 or more miles in width, stretches along the eastern side of North America from Newfoundland to Florida, and thence around the Gulf of Mexico. The British Isles stand upon a *continental shelf* that borders mid-western Europe. *W. M. Davis,* Elem. Phys. Geog., p. 107.

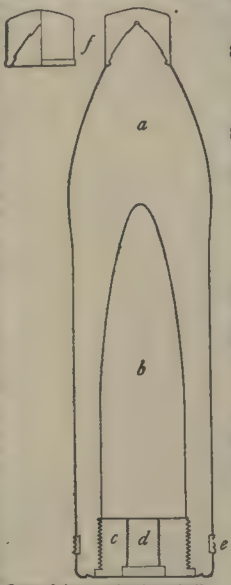
shelf-fungus (shelf′fung″gus), *n.* Same as ★*bracket-fungus.*

shelf-furnace (shelf′fėr″nạs), *n.* A furnace with shelves for the reduction of mercury ores. The shelves are arranged in an inclined position along the walls of the shaft and serve to retard the fall of the ore. A furnace with shelves was also much used formerly for roasting ores, there being several varieties. *Phillips and Bauerman,* Elements of Metallurgy, p. 603.

shelf-ladder (shelf′lad″ėr), *n.* A ladder designed for use in libraries and stores to give access to high shelves and drawers. It is fitted with wheels at the top and bottom on which it can be moved.

shelf-list (shelf′list), *n.* A list of the books in a library in the order of their location: distinct from the accessions list, and the author and subject catalogues.

shell, *n.* **19.** A smoked or colored concavo-convex glass for shielding the eye.—**20.** In *sheet-metal work,* any piece of sheet-metal upon which one operation has been performed and which requires one or more additional operations to complete it. It is usually of a cup or shell form.—**21.** The dug-out portion of a West Indian canoe, which consists of a dug-out the sides of which are built up to any required height. See ★*buck-shell.*—**22.** The part of a horse-hide obtained from the rump: a comparatively small piece. *Flemming,* Practical Tanning, p. 398.—**23.** The porous cover of ferric oxid which incloses the kernel of concentrated copper obtained in roasting cupriferous iron pyrites. See ★*kernel-roasting. Phillips and Bauerman,* Elements of Metallurgy, p. 485.—**24.** A special form of hollow flat-iron used in finishing felt hats.—**Armor-piercing shell,** a shell made of special steel with hardened point and strong walls, especially designed to penetrate through armor and containing a comparatively small bursting charge. A *semi-armor-piercing shell* is one of a character intermediate between the armor-piercing and common shell, with hardened point, and a medium-sized bursting charge, designed to penetrate moderate thicknesses of armor and burst after penetrating the armor.—**Blind shell.** (*d*) A shell containing no bursting charge.—**Capped shell,** an armor-piercing shell fitted with a soft steel plug or cap covering the point of the shell. The soft steel cap enables the shell to penetrate hard-faced armor against which the shell would otherwise break up.—**Common shell,** a shell with comparatively thin walls, containing a large explosive charge and not designed to penetrate armor.—**Flat-nose shell,** in *mining,* a cylindrical boring-tool having a valve at the bottom, used for boring through soft earth or clay.—**Pearly necklace-shell.** Same as ★*mariner,* 2.—**Roman-lamp shell,** a Tasmanian name for a brachiopod, *Waldheimia flavescens. E. E. Morris,* Austral English.—**Torpedo shell,** a projectile with thin walls and consequent large capacity for a bursting charge, and longer than the ordinary shell, or cored shot: used in mortar-firing.



Capped Armor-piercing Shell.

a, original head; *b,* powder-chamber for bursting charge; *c,* base-plug; *d,* hole for base-fuse; *e,* copper rotating band; *f,* soft steel cap.

shell-bed (shel′bed), *n.* A bed largely composed of shells: chiefly employed in glacial geology to describe the interglacial or postglacial beds associated with the continental ice-sheet. *J. Geikie,* The Great Ice Age, p. 268.

shell-boiler (shel′boi″lėr), *n.* A form of steam-generator in which the water from which the steam is generated is surrounded by a continuous shell of steel or other malleable metal, usually of a cylindrical form.

shell-curved (shel′kėrvd), *a.* In the rococo decoration of the eighteenth century, said of motives having curved lines similar to those of a sea-shell.

> The *shell-curved* lines which maintain their decorative value in the Salle à Manger have here disappeared.
> *Lady Dilke,* French Furniture and Decoration of XVIII [Cent., p. 48.

shell-extractor (shel′eks-trak″tọr), *n.* An instrument for extracting cartridges from small-arm rifles.

shell-eye (shel′ī), *n.* A dorsal eye; one of the supposed organs of sight found on the shells of various univalve and bivalve mollusks.

shell-feed (shel′fēd), *n.* In a cotton-carding machine, a feeding device consisting of a flat plate with its inner end turned up to conform to the curvature of a feed-roller. See ★*dish-feed.*

shell-fish, *n.*—**Rock shell-fish.** Same as *trunk-fish.*

shell-fishery (shel′fish″ėr-i), *n.* The industry of gathering oysters, clams, and other shell-fish; a mollusk fishery.—**Commissioner of Shell-fisheries,** a State official concerned with the protection, cultivation, and industry of gathering shell-fish in public waters. *Forest and Stream,* Jan. 31, 1903, p. 93.

shell-game (shel′gām), *n.* Another name for thimblerig, walnut-shells being used instead of thimbles to cover the pea which the victim tries to find.

shell-gland, *n.* **3.** In flatworms, the gland which supplies the material for the formation of egg-shells.

shell-opal (shel′ō″pạl), *n.* The nacreous substance of any molluscan shell in a fossil condition.

shell-plate (shel′plāt), *n.* One of the plates which form the shell or outer covering of a ship or of a boiler.

shell-plating (shel′plā″ting), *n.* In *iron shipbuilding* the plating which forms the outer shell of a vessel: also called *outside plating.*

> Iron or steel ships have comparatively thin *shell-plating* stiffened by transverse and longitudinal frames.
> *White,* Manual of Naval Arch., p. 333.

shell-powder (shel′pou″dėr), *n.* Quick-burning gunpowder especially made for the bursting-charges of shell and shrapnel.

shell-rack (shel′rak), *n.* *Naval,* a rack or support for the stowage of shells in the immediate vicinity of a gun.

shell-road (shel′rōd), *n.* A form of highway or pavement in which the road surface is composed of oyster, or other, shells.

shell-roll (shel′rōl), *n.* A form of drawing-roll used on cotton-machinery, consisting of a cylindrical shell of cast-iron on an arbor. See ★*boss-roll. Nasmith,* Cotton Spinning, p. 164.

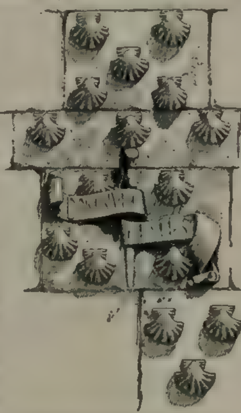
shell-shake (shel′shāk), *n.* Same as ★*ring-shake.* See also *shake,* 7.

shell-tracer (shel′trā″sėr), *n.* A device for showing the flight of a projectile at night and the point at which it strikes. A composition which burns slowly with a brilliant light is placed in the base of the projectile to be ignited upon firing.

shell-ware (shel′wãr), *n.* A name sometimes given to Gombroon ★ware (which see).

shell-work, *n.* **2.** In decorative design, especially carved or modeled, a motive which imitates or is suggested by the forms of shells.

shelter-belt (shel′tėr-belt), *n.* A natural or artificial forest maintained as a protection from wind or snow. A *wind-break* is a narrow shelter-belt in which true forest conditions do not exist, maintained as a protection against wind; a *snow-break* is a similar protection maintained against snow. Also called *wind-mantle* and *shelter-wood.*



Shell-work, Hôtel Cluny, Paris.

shelter-deck (shel′tėr-dek), *n.* See ★*deck,* 2 (*c*).

shelter-parasite (shel′tėr-par″ạ-sīt), *n.* An organism, such as certain of the algæ, which inhabits a cavity already present in the host or a place of shelter formed with the assistance of the algæ.

> The manner in which typical chlorophyllous plants gradually become *shelter-parasites,* and pass from this into the condition of true parasites is well demonstrated amongst the algae. *Tubeuf,* Diseases of Plants, p. 541.

shelter-trench (shel′tėr-trench), *n.* *Mil.,* a trench hastily excavated to secure shelter from an enemy's fire.

shelter-wood (shel′tėr-wůd), *n.* Same as ★*shelter-belt.*

shelv, *v.* and *n.* A simplified spelling of *shelve.*

shema (she-mä′), *n.* [Heb. *shem′a,* ‘hear,’ impv. of *sham′a,* hear.] In *Jewish ritual,* a name for the first word of the verse, Deut. vi. 4, and also for the verse itself, “Shem′a Yisrael,” etc., “Hear, O Israel, Jehovah is our God, Jehovah is one,” recited as the Jewish confession of faith. The term is also applied to the whole six verses, Deut. vi. 4–9, and to other verses, Deut. xi. 13–21 and Num. xv. 37–41, which form the confession of the liturgy. The shema is considered the sum and substance of the Jewish faith. It is taught to children before they learn to read. It is included by every pious Jew in his morning and evening prayers, and the first words form a sort of password among Jews everywhere. The shema is also written on square pieces of parchment which are fastened to the door-posts (see *mezuzah*), and it is placed in phylacteries.

Shenango group. See ★*group*1.

she-oak, *n.* **2.** Beer made in Australia or other English colonies. *E. E. Morris,* Austral English. [Slang.]

shepherd, *n.* **2.** A miner who does not work a claim, though preserving his legal rights respecting it. [Australia.]

sherardize (sher′ạ̈r-dīz), *v. t.*; pret. and pp. *sherardized,* ppr. *sherardizing.* [From the name of the inventor of the process.] To coat iron or steel with zinc by exposing the previously cleaned surfaces to zinc by heating them in a closed chamber containing zinc-dust.

shergottite (sher′got-īt), *n.* See ★*meteorite.*

sherif1, *n.* **3.** A high dignitary having both temporal and spiritual authority among the Sulus and other Mohammedans of the Philippine Islands. *D. C. Worcester,* Philippine Islands, p. 159.

sherif2, *n.* A simplified spelling of *sheriff.*

sheriff1, *n.*—**Issues on sheriffs.** See ★*issue.*—**Sheriff depute** or **sheriff principal,** in *Scots law,* the chief officer and judge of a county, with both civil and criminal jurisdiction. His court is known as the *sheriff court* and its clerk as *sheriff clerk.*

> Not its least valuable feature is the notices which he has compiled of the early sheriffs and *sheriffs-depute.*
> *Athenæum,* May 27, 1905, p. 655.

Sheriff's inquest. See *sheriff's jury,* under *jury.*—**Sheriff's sale.** See ★*sale*1.

sheristadar (she-ris-tä-där′), *n.* [Also *serishtadar; sar-rishtā-dār,* keeper of the clue, or file. *Yule and Burnell.*] In India, a court officer; a register-keeper who receives plaints, sees that they are in proper form and duly stamped, records depositions, etc., and generally attends to routine business. *Yule and Burnell,* Hobson-Jobson.

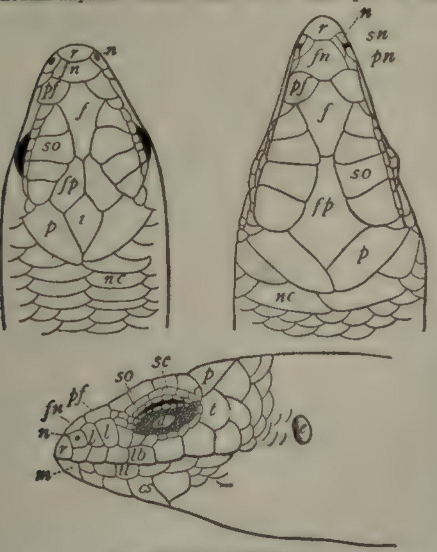
shibuichi (shē-bö-ē′chẹ̄), *n.* [Jap. *shi-bu-ichi,* ‹ *shi,* four, + *bu,* part, + *ichi,* one.] A composition extensively used in Japanese decorative art, composed of three parts of copper to one of silver.

shicer (shī′sėr), *n.* [Of low (prob. German) origin.] **1.** An Australian name for a mine which produces no valuable ore. Also called a *duffer. E. E. Morris,* Austral English.—**2.** A worthless or despicable person; specifically, one who does not pay debts of honor. Compare *shyster.* [Colloq.]

shield, *n.* **2.** (*c*) In *subaqueous tunneling,* a short metallic cylinder with its axis parallel and coincident with the axis of the circular tunnel, and with its diameter slightly larger than the exterior diameter of the masonry or metallic permanent tunnel lining. The shield is provided with a diaphragm of metallic construction occupying its entire cross-section, and through which openings give access from the rear to the forward compartment. The shield is forced forward by hydraulic or other pressure, driving the cylindrical cutting-edge or the forward extension of the shield in front of the diaphragm into the soft material through which the tunnel is being driven. The material overhead being thus protected from falling by the upper cylindrical portion of the shield, the material inside the forward compartment can be removed by workmen through openings in the diaphragm.

> The *shield* employed in the Hudson River tunnel is a cylinder, thirteen feet long and twenty feet in diameter, with a hardened-steel “cutting edge,” fifteen inches in length and three inches in circumference.
> *The Century,* Nov., 1903, p. 40.

(*g*) A guard placed over or in front of rapidly moving machinery, especially over cutters such as saws and planes, to protect the workmen from accidents. (*h*) A guard placed around belting where it passes through a floor, or around gears to prevent clothing of workmen or passers-by from becoming entangled. (*i*) A covering over bearings and shafts of grinding machinery to keep grit and dust from working into the contact-surfaces. (*j*) A guard placed on an exposed shaft, and turning loosely with it, to prevent injury from accidental contact with the revolving mass.—**Buccal shield.** See ★*buccal.*—**Canthal shield.** See ★*canthal scale.*—**Conning-tower shield.** See ★*conning-tower.*—**Dorsal shield,** in ophiuroids, one of the four plates which lie above the vertebral ossicle.—**Embryonic shield,** in *embryol.,* a shield-shaped region of the blastodisc in embryonic reptiles.—**Frontal shield.** (*b*) In *herpet.,* an unpaired scute or scale which occupies much the same position on the top of the head that the frontal bone



Head-shields of Scinid Lizards.

cs, chin-shields; *d*, disk on lower eyelid; *e*, ear-opening; *f*, frontal; *fn*, frontonasal; *fp*, frontoparietal; *i*, interparietal; *ll*, lower labials; *l*, loreals; *lb*, upper labials; *m*, mental; *n*, nasal; *nc*, nuchals; *p*, parietals; *pf*, prefrontal; *pn*, postnasal; *r*, rostral; *sc*, supraciliaries; *sn*, supranasal; *so*, supraocular; *t*, temporal.

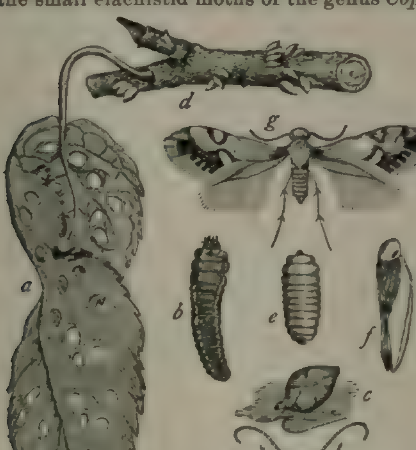
(After Stejneger, Report U. S. Nat. Museum.)

does in the skull.—**Frontonasal shield**, in *herpet.*, a median unpaired dermal scale which forms part of the covering of the head. It lies immediately in advance of the frontal.—**Frontoparietal shield**, in *herpet.*, one of a pair of dermal scales which form part of the covering of the head. It lies between the frontal and the parietal shields.—**Intergular shield.** Same as ★*intergular*.—**Interparietal shield**, in *herpet.*, a median unpaired dermal scale which forms part of the covering of the head and lies between the parietals.—**Loral shield**, one of the plates or scutes forming part of the covering of the head of reptiles, especially lizards, lying just in front of the eye.—**Magnetic shield**, a shield or wall of magnetic material, usually iron, used to protect an instrument such as a watch or a galvanometer from the action of magnetic fields.—**Mental shield**, a horny plate which covers the front of the chin in reptiles.—**Nasal shield**, in *herpet.*, the horny plate covering the end of the nose.—**Nasorostral shield**, in *herpet.*, a single horny plate or shield representing the nasal and rostral shields on the nose of a reptile. *Proc. Zool. Soc. London*, 1903, p. 185.—**Parietal shield**, one of a pair of large scales, forming part of the covering of the head of reptiles, lying at the back of the series of head-scales, much in the position of the parietal bone.

shield-back (shēld′bak), *n.* In old English furniture, a back the center of which resembles a shield.

> In the "*shield back*" chair, which is Hepplewhite's favourite shape, the shield and its interior ornament making the splat never touch the seat of the chair at all.
> *K. W. Clouston*, Chippendale Period of Eng. Furniture, [p. 65.

shield-bearer (shēld′bãr″ėr), *n.* Any one of the small elachistid moths of the genus *Coptodisca* (formerly *Aspidisca*), as the resplendent shield-bearer.—**Resplendent shield-bearer**, an American tineid moth, *Coptodisca splendoriferella*, whose larva mines the leaves of the apple, plum, and pear, eventually making an oval leaf-case which it carries about. *Comstock*, Manual of Insects, p. 254.



Resplendent Shield-bearer (*Coptodisca splendoriferella*).

a, leaf of apple showing work; *b*, summer larva; *c*, larva in case, traveling; *d*, cases tied up for winter; *e*, hibernating larva; *f*, pupa; *g*, moth; *h*, parasite: all enlarged.

(Comstock, U. S. D. A.)

shield-hand (shēld′hand), *n.* See the extract.

> Fixed in all our military and social customs, and living at the base of language itself are two facts which solve the riddle and make clear whence and how right-handedness arose. In all tribes and countries since man used implements of offense and defense, the sinistral or cardiac side was protected by the shield and the sinistral hand was called the *shield-hand*, as the dextral was called the spear-hand.
> *G. M. Gould*, in Med. Record, Nov. 2, 1907, p. 724.

shield-ibis (shēld′ī″bis), *n.* Same as *shell-ibis*.

shielding (shēl′ding), *n.* [*shield*, *v.*] The act of protecting or screening, or that which protects or screens.—**Magnetic shielding**, protection, as of the works of a watch or the needles of a galvanometer from the action of an external magnetic field. Magnetic shielding is commonly attained by surrounding the object to be screened with an iron case. Sometimes two or more concentric layers of iron are used. *Astrophysical Jour.*, July, 1903, p. 19.

shield-pigeon (shēld′pij″ọn), *n.* A breed of domesticated pigeons of small size. The head and body are white and the wings party-colored; there is no crest. Commonly called *shield*.

shift, *n.* **11**. In *pianoforte-making*, the action of the shifting ★pedal (which see).—**Angle of shift**, in *elect.*, the angular displacement of the brushes of a generator or motor, made necessary by the distortion of the magnetic field of the machine.—**One-string** or **two-string shift.** See *shifting* ★*pedal*.—**Shift of butts.** See ★*butt2*.

Shifting-pivot carriage, a gun-carriage used in the old types of war-ships in which heavy pivots secured to the deck were used for training the guns. By a suitable arrangement of front and rear pivots, the gun-carriage could be shifted from the center line so as to pivot in a gun-port on either side of the vessel.

shift-joint (shift′joint), *n.* In *masonry*, the placing of a stone or brick so that the vertical joints will come over the solid members of the course below; a break-joint; also, the stone or brick so placed.

Shigaraki pottery. See ★*pottery*.

Shiga's bacillus. See ★*bacillus*.

shikar (shi-kär′), *v. t.*; pret. and pp. *shikarred*, ppr. *shikarring*. [Hind. *shikār*, hunting. See *shikaree*.] To hunt; chase game; hence, tease; haze.

> The 'Shikarris' [nickname of regiment] *shikarred* [him] very much, and he bore everything without winking.
> *R. Kipling*, His Wedded Wife, in Plain Tales from the [Hills, p. 159.

shikimi (shē̦-kē′mē), *n.* [Japanese.] The Japanese anise-tree, *Illicium religiosum*. See *Illicium*.

shikimic (shi-kim′ik), *a.* [Jap. *shikimi* (see def.) + *-ic*.] Noting an acid, a colorless, levo-rotatory, non-poisonous compound, $C_7H_{10}O_5$, contained in the fruit of *Illicium religiosum* (Japanese shikimi). It crystallizes in fine needles, and melts at 184° C.

shikimin (shik′i-min), *n.* [Jap. *shikimi* + *-in2*.] A colorless, poisonous crystalline glucoside contained in the seeds of *Illicium religiosum* (Japanese shikimi).

shikimol (shik′i-mol), *n.* [Jap. *shikimi* (see *shikimin*) + *-ol*.] Same as *safrol*.

shilling, *n.* **3**. In *archery*, a measure of weight for arrows, equal to the weight of a new (British) silver shilling: as, a 4*s.* 6*d.* arrow.—**Baltimore shilling.** Same as *Maryland* ★*shilling*.—**Bermuda shilling**, a silver coin struck about 1615.—**Maryland shilling**, a silver coin struck by Lord Baltimore (Cecil Calvert) for the colony of Maryland about 1659.—**New England shilling**, a silver coin, stamped with the letters NE, struck in the colony of Massachusetts in 1652.—**Pomfret shilling**, a siege-piece of Charles I. of England, struck at the castle of Pomfret (Pontefract).—**Shove-groat shilling**, a worn shilling used in the game of shove-groat, which was new in England in the reign of Henry VIII. See *shove-groat*.—**Sixty shilling**, a Scotch silver coin of the time of William and Mary.—**York shilling**, the unit of the colonial currency of New York, that is, the Mexican real, eight of which went to the Spanish milled dollar and twenty to the New York currency pound.

shim2, *n.* **4**. An imperfect shingle, thicker at one side than the other; also, an imperfect stave for a bucket. [Local.]

shimmer2 (shim′ėr), *v. t.* [*shimmer2*, *n.*] In *mech.*, to correct an inequality by inserting a thin slip or shim.

> A remedy for this [poor fitting of share and mold-board] is procured by *shimmering* the share up or down with small pieces of paste-board.
> *Davidson and Chase*, Farm Machinery and Farm [Motors, p. 71.

shimose (shi-mō′sā̦), *n.* [Said to be named after its Japanese inventor.] An explosive, which consists largely of picric acid, made and used by the Japanese. The exact composition is not generally known.

> An explosive used by the Japanese, and called *Shimose*, after its inventor, for want of a better name, is said to be more powerful than either dynamite or gun-cotton, and to possess features found in no other high-power explosive. *Shimose* does not explode on percussion, or by fire, and is not injured by wetting. When it is exploded, by a charge of fulminite, it tears a hole several hundred per cent. greater than would result from the use of a similar quantity of dynamite, and, unlike that substance, its force is equally exerted in all directions.
> *Amer. Inventor*, June 1, 1904, p. 256.

shin1, *n.* **7**. In a modern turning-plow, the lower front corner of the mold-board, next the share and forming part of the cutting edge. It replaces in part the head or sheath of old plows.—**Double shin**, a mold-board shin reinforced by a piece of steel welded on.—**Sore-shin disease.** See ★*disease*.—**Sore-shin fungus.** See ★*fungus*.

shin3 (shin), *n.* An adapted pronunciation of the abbreviation *sinh*, used as a colloquial substitute for 'hyperbolic sine.'

shin4 (shēn), *n.* [Heb. Aram. Syr. Ar. *shīn*.] The twenty-first letter (ש) of the Hebrew alphabet, corresponding in sound to the English *sh*. Its numerical value is 300.

shiner, *n.* **3**. (*f*) A minnow of the genus *Notropis*.—**Spotted shiner**, one of the cyprinoid fishes, *Hybopsis dissimilis*, found in the eastern Great Lake region.

shingle1, *n.*—**Dimension shingle**, a shingle having a definite measurement as regards width or length, or both.—**Shaved shingle**, a shingle cut by hand in the old-fashioned way, generally by means of the drawing-knife, which gives it the wedgelike form, while the butt is held in a strong vise.

shingle-band (shing′gl-band), *n.* One of the wooden cross-bars used to hold a bunch of shingles together by being tied together at the ends. See cut under *shingle1*.

shingle-bolt (shing′gl-bōlt), *n.* A block of wood ready to be cut into shingles. See cut under *shingle1*.

shingle-press (shing′gl-pres), *n.* A simple form of press for use in bunching shingles.

shingle-saw (shing′gl-sâ), *n.* A saw or machine by which shingles are cut from the stock or bolt. The shingle having a definite taper from point to butt, the holder or carrier must present the stock alternately to the saw at tip and butt, to ensure least waste of stock.

shingling, *n.* **3**. In *geol.*, the arrangement of flat pebbles or boulders in such a manner that they overlap like shingles. It is especially marked in the coarse gravel of a beach (shingle) or on the bottom of a swift river, and may be detected in conglomerates.

> Besides the sandstone and shale elements, the rusty quartz pebbles which have been mentioned in connection with the old valleys on the north side of the Ohio are here a very marked feature, as are also the numerous nodules of hematite ore. In three instances a very imperfect *shingling* was observed.
> *W. G. Tight*, in U. S. Geol. Surv., Prof. Paper 13, p. 64.

shining-grass (shī′ning-gràs), *n.* **1**. The spotted touch-me-not or jewel-weed, *Impatiens biflora*.—**2**. The early meadow-rue, *Thalictrum dioicum*.

shinnery (shin′ėr-i), *n.* [*shin1*, alluding to low growth.] A dense growth of shrubby timber covering a large area, of mixed composition but predominantly of shin-oak (which see). [Southwestern U. S.]

> A great deal of the *shinnery* country undoubtedly represents a recent gain of timber growth on prairie divides.
> *U. S. Dept. Agr.*, Bur. Forestry, Bulletin 49, p. 23.

shin-oak (shin′ōk), *n.* [*shin1* + *oak*, alluding to the low growth.] **1**. One of several dwarf oaks of the southwestern United States, forming the largest element in 'shinneries.' That perhaps most properly so called is *Quercus undulata* (also called *scrub-oak*). Others are *Q. gambelii* and *Q. breviloba* (both also called *white oak*).—**2**. The upland willow oak, *Quercus cinerea*.

Shino pottery. See ★*pottery*.

shin-wood (shin′wůd), *n.* The American yew or ground-hemlock, *Taxus Canadensis*.

shiny, *a.* **3**. Rubbed smooth by abrasion: said of cloth, rails, wire rope, etc.—**4**. Reflecting light or showing differences in shade or color on account of the presence of a film of grease, as in cloth, or its absence locally from a surface which is normally lubricated, as in engine-guides.

> The entire rope, including the hemp center, is kept constantly lubricated and never allowed to work "*shiny*." The rope grease is applied with a brush, it having been found that better penetration between the wires is obtained in this way.
> *Sci. Amer. Sup.*, Dec. 27, 1902, p. 22564

ship, *n.* 3. [Ar. *markeb*, ship.] In an ancient style of chess played with dice, the piece called 'bishop' in the modern game. In this game each player had two sets of white pieces and two sets of black pieces respectively, consisting of two kings, two rooks (elephants), two knights (equestrians), two bishops (ships), and four pawns (pedestrians) each.

> Our word Rook, . . . is no doubt the Roka, or *Ship* of the Hindoos; for by no other supposition can a meaning be ascribed to it.
> *H. Staunton*, Laws and Prac. of Chess, p. 4.

Belted ship, an early type of armored war-ship in which the hull-protection was concentrated in the water-line armor-belt.—**Line-of-battle ship**. Same as *ship of the line* (which see, under *ship*).—**Lofty ship**, a ship that carries long masts; a square-rigged vessel is said to be a lofty ship because she has lower masts, topmasts and topgallant masts, and sometimes royal masts.—**Symondite ship**, an obsolete type of British war-ship having a peg-top form of cross-section, devised by (and named for) Admiral Symonds.

> A single roll, even of a *Symondite ship*, may not produce much vertical motion, but a succession of rolls may.
> *White*, Manual of Naval Arch., p. 163.

ship-maul (ship'mâl), *n.* A long-handled, heavy steel hammer used by shipwrights, one end of which is flat-faced while the other has a conical point. Also called *pin-maul*.

shipper, *n.* 4. A tobacco suited for export; a shipping tobacco. See *export* ★*tobacco*.

> It is also a first-class "*shipper*," and is sought for by the stemmer for making the highest grade of strips for the English market.
> *Killebrew and Myrick*, Tobacco Leaf, p. 321.

shipper-fork (ship'ėr-fôrk), *n.* A two-pronged device for guiding a belt from one pulley to another on a machine.

shipping, *n.*—**Merchants' Shipping Act**, an act, passed in 1854 in Great Britain, which requires all masters and other officers of British merchant-vessels to be examined and to obtain certificates of competency issued in accordance with the provisions of the act. These certificates are granted by the British Board of Trade.—**Shipping commissioner.** See ★*commissioner*.

shipping-jacket (ship'ing-jak″et), *n.* A wadded hood or cover used to slip over a milk- or cream-can to protect the contents from excessive heat or cold during transportation.

ship-sloop (ship'slöp), *n.* Formerly, in the British navy, a sloop of war under the command of a captain of full rank: so called because officers of such high rank were supposed to fly their pennant on nothing lower in rating than a ship or frigate.

ship-splice (ship'splīs), *n.* A special type of scarf used in splicing or joining broken timbers, especially in repairing railroad-cars; properly, a scarf having two cuts, one diagonal to the length of the timber and the other at nearly a right angle.

shire-horse (shīr'hôrs), *n.* A breed of English draft-horses that has long been cultivated in Lincolnshire, Cambridgeshire, and other counties to the west. The color is black; the height from 17 to 17.3 hands.

shirozame (shē-rō-zä'mạ̄), *n.* [Jap., < *shiroi*, white, + *zame*, shark.] A shark of the family *Carchariidæ*, *Mustelus manazo*. Also called *manazo*.

shirry (shėr'i), *a.* [*shirr* + *-y*^{1}.] Puckery: noting a defect in cloth caused by irregular weaving.

> The fly-wheel loses the control it has at a slow speed, and the blow of the lay becomes uneven, because the accelerated motion of the loom has also increased many fold whatever lost motion was in it before and "*shirry*" cloth is the result.
> *Elect. World and Engin.*, Feb. 20, 1904, p. 374.

shiva^2 (shiv'ä), *n.* [Yiddish, < Heb. *shib'āh*, seven.] Among the orthodox Jews, the period of mourning for a parent, brother, sister, husband, or wife, consisting of seven days. At the burial the principal mourners tear their garments; afterward they retire to their homes, take off their shoes, and sit upon the floor for seven days, spending the time in prayer and liturgical exercises.

shive, *n.* 5. A fragment of the rind or outer bark of flax, hemp, etc.

shivering^1, *n.* 2. In *ceram.*, the flaking off of parts of the ware, caused by the unequal contraction of body and glaze. Compare *crazing*, 2.

shivering^2, *n.* 2. A horsemen's term for chorea or St. Vitus's dance affecting the muscles of the hip and thigh of the horse. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 207.

shivy (shī'vi), *a.* [Also *shivey*: < *shive* + *-y*^{1}.] Containing shives or short fragments of vegetable substance, as wool, hair, etc. *C. Vickerman*, Woollen Spinning, p. 122.

sho^3 (shō), *n.* [Jap. *shō*.] A Japanese unit of measure for liquids, equal to 1.80 liters, or .477 of a United States gallon.

shoal^1, *n.*—**Magnetic shoal**, an area of magnetic disturbance under the sea.

> This remarkable area of disturbance was then called a "*magnetic shoal*," a term which at first sight hardly appears to be applicable. We have, however, become familiar with the terms "ridge line, valley line, peak, and col," as applied to areas of magnetic disturbance on land; therefore I think we may conveniently designate areas of magnetic disturbance in land under the sea "*magnetic shoals*."
> *E. W. Creak*, in Sci. Amer. Sup., Nov. 7, 1903, p. 23287.

shoal-brain (shōl'brān), *n.* An ignorant or shallow-witted person. [Rare.]

> One day more
> These muttering *shoalbrains* leave the helm to me:
> God, let me not in their dull ooze be stranded.
> *Lowell*, Columbus, l. 267.

shock^1, *n.* 4. A mirror of the poorest quality, made of ordinary window-glass.—**Secondary shock**, a condition of shock which returns after the first symptoms have passed away.

shock-compressor (shok'kọm-pres″ọr), *n.* A device for compressing corn when standing in shocks for convenience in handling and as a protection against loss or injury by storms. It consists of a short rope drawn through a locking-block which has a supporting hook, and a twine-holder. In use, the block is hooked into the shock, and the rope and twine are carried around it, the rope being drawn tight and locked to compress it, when the twine may be tied and the compressor released.

shoddy-picker (shod'i-pik″ėr), *n.* Same as *shoddy-machine*.

shode^2, *n.* 2. Refuse material used in the adulteration of oil-cake.

shoe^1, *n.* 3. (*o*) In *suspension-bridge construction*, an iron or steel "eye" or loop, resembling several horseshoes placed on one another, around which all the individual wires forming a single strand of a cable are looped. The shoes forming the ends of the several strands are permanently placed side by side with the cable end of a long anchorage eye-bar or link placed between each two adjacent shoes, with a long steel pin extending through the openings of the shoes and eye-bars alternately, thus fastening the cable to the anchorage-bars.

> In each cable there are thirty-seven of these strands, which requires thirty-seven *shoes* at each end, there being but one strand looped around a *shoe*. These *shoes* are bolted between steel bars which are anchored in masonry, pins seven inches in diameter passing through the bars and *shoes*, holding the latter in place.
> *Amer. Inventor*, July 15, 1903, p. 26.

(*p*) A sliding-contact device for connecting the moving car on an electric railway with the third rail or with an underground insulated conductor. *Trans. Amer. Inst. Elect. Engin.*, 1901, p. 666.

4. In China, a silver or gold ingot said to be derived from the Dutch *goudschuit*, boat of gold, applied to the ingots imported from India into China in the seventeenth century.

> During the Boxer trouble the transfer issued was not settled up for a period of nine months. The next settling day it was settled up by the issuers of transfer paying $81.50 for each *shoe* of transfer, the *shoe* then being worth about $79, the difference between these amounts standing for the interest. *Sci. Amer. Sup.*, Aug. 13, 1904, p. 23925.

Cross-bar shoe. Same as *bar-shoe*.—**Scarpa's shoe**, an appliance for the correction of club-foot.

shoe-boil (shö'boil), *n.* A fibrous, flabby new growth over the elbow of a horse, due to repeated injury from lying on hard floors or with the front feet doubled under the body. Also called *capped elbow*.

shoe-boss (shö'bos), *n.* A shoe-manufacturer. *Dialect Notes*, III. iii. [New Eng.]

shoe-dressing (shö'dres″ing), *n.* A liquid or pasty material used to give suppleness and luster to the upper leather of boots and shoes, sometimes also to render it waterproof.

shoeing, *n.* 3. Something designed to protect a surface as the shoe protects the foot.

> Another direction in which mechanical invention is required for the wheels of motor cars and wagons is a *shoeing* or protection of hard material of easily renewable character which can be firmly and safely attached to the outside of the tyre covers to take the wear and cutting action caused by the driving strain and by the action of the brakes on sudden stops.
> *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 766.

shoemaker, *n.* 2. A common name of various species of carangoid fishes, especially of *Alectis ciliaris*, from its thread-like dorsal spines.—**Shoemakers' cramp** or **palsy**. See ★*cramp*^{2}.

shoe-plate (shö'plāt), *n.* 1. In *iron ship-building*, a U-shaped plate sometimes fitted around the bar-keels of coasting vessels to prevent the wearing away of the keel through friction on the ground. *A. C. Holms*, Practical Shipbuilding, p. 79.—2. A flat plate placed at the bottom or underneath part of a structure (as a column) or of a machine, to increase the bearing area or to take the wear.

shoe-shop (shö'shop), *n.* A shop or factory in which shoes are made. *Dialect Notes*, III. iii. [New Eng.]

shoe-strings (shö'stringz), *n.* The lead-plant, *Amorpha canescens*. Compare *devil's-shoestrings*.

shog-board (shog'bōrd), *n.* An oscillating-board in a threshing-machine.

> In Nalder's Threshing-machine, the shakers, *shog-board*, and large riddle are all driven from one crank.
> *J. Scott*, Textbook of Farm Engin., V. 93.

shohet (shō'ċhet), *n.* [Heb. *shoḥet*, < *shaḥat*, slaughter.] A slaughterer; a Jewish butcher who is learned in the rabbinical laws of slaughtering animals. His duty is to slaughter the animal according to the law prescribed in Hilchoth sh'ḥitah (rules for slaughtering) and examine the vital parts of the viscera. No meat is considered 'kosher' without the shohet's sanction.

shoji (shō'ji), *n.* [Jap.] A sliding screen used instead of a wall or partition in a Japanese house.

> I know of one place to which I have returned to look out of the *shoji* screens into the garden, where there is a big pottery statue of Kwannon.
> *J. La Farge*, An Artist's Letters from Japan, p. 217.

shomer (shō'mėr), *n.* [Heb., < *shamar*, watch, keep.] 1. A watchman; a keeper.—2. A trustee.—3. An official appointed by Jewish authorities to see that meat sold by butchers is 'kosher.'

shonkinite (shon'kin-īt), *n.* [*Shonkin*, an Indian name of the Highwood Mountains in Montana, + *-ite*^{2}.] In *petrog.*, a phaneric igneous rock with granular texture, consisting of augite and orthoclase, with or without olivin, and small quantities of nephelite, sodalite, etc. A rock related to syenite but rich in augite. *Weed and Pirsson*, 1895.

shoo-fly (shö'flī), *n.* The wild indigo, *Baptisia tinctoria*: so called in allusion to the wide-spread belief that the mere presence of the plant attached to the harness will keep away horseflies. Called *horsefly-weed* for the same reason.

S-hook (es'hůk), *n.* A double-pointed hook with the points turned in opposite directions.

shoot, *v.* I. *intrans.* 10. In *cricket*, to bound low and close to the ground after pitching: said of a ball bowled. *R. H. Lyttelton*, Cricket and Golf, p. 31.

II. *trans.* 15. To cast or drop, as the claw of a lobster. *Stand. Dict.*

> Lobsters have the power of dropping or "*shooting*' one or both claws, which may be more or less completely replaced by a new growth. Many incentives are quoted for this curious procedure, the principal ones being handling . . . entanglement of the claws, and fright.
> *G. B. Goode*, Fisheries and Fishery Industries of the
> [U. S., § 1, p. 805.

To shoot a jam. See ★*jam*^{1}.

shoot, *n.* 17. A district or estate over which game is shot.—18. See ★*sprout*, 1 (*c*).—**Deferred shoots**, in *bot.*, shoots produced by buds which have long remained dormant.—**Stump shoot.** See ★*sprout*.

shooter, *n.* 5. In *cricket*, a ball bowled which, owing to an inequality in the ground, bounds close to the surface after pitching. *Hutchinson*, Cricket, p. 155.

shooting, *n.*—**Turtleback shooting**, in *archery*, shooting over a tree or other high barrier at a target lying upon the ground. This form of competition is sometimes used in American shooting-matches.

shooting-field (shö'ting-fēld), *n.* A field used for archery practice.

shooting-glove (shö'ting-gluv″), *n.* In *archery*, a glove worn on the drawing-hand to protect it from the friction of the bowstring; a drawing-glove. It is now made, ordinarily, in the form of tips for the drawing-fingers.

shooting-lodge (shö'ting-loj), *n.* A hunting-box; a shooting-box.

shooting-tenant (shö'ting-ten″ạnt), *n.* A tenant who rents the privilege of shooting game on an estate.

> The landlord being continually in danger of losing the farming or *shooting tenant*, possibly both.
> *Walsingham and Payne-Gallwey*, Shooting.

shoot-off (shöt'ôf), *n.* In *trap-shooting*, a subsequent competition between contestants who have made tied scores. *Forest and Stream*, Feb. 21, 1903, p. 160.

shoot-pole (shöt′pōl), *n.* See ★*polarity*, 1 (*c*).

shop^{1}, *n.*—**Open shop,** a shop or business establishment in which either union or non-union workmen may be employed, but in which, usually, the hours and prices prescribed by the trades-unions are observed.—**Setting-up shop,** a shop where manufactured products, as machines, barrels, etc., are set up or assembled.

shop-boiler (shop′boi″lėr), *n.* A boiler which furnishes steam for power or heating in a shop.

shop-drive (shop′drīv), *n.* The set of motors and accessory devices for operating the machinery of a shop or factory by electric power. *The Iron Age*, March 26, 1903, p. 22.

shop-hour (shop′our), *n.* See ★*hour.*

shop-pan (shop′pan), *n.* A shallow pan of pressed steel used in machine-shops, bolt-works, and foundries for the convenient transportation of bolts, nails, drop-forgings, and other small articles or tools; a tote-box.

shop-tender (shop′ten″dėr), *n.* A name applied to codfish living near shore. Also called *ground-tender, ground-keeper*, and *inshore cod.*

shor (shōr), *n.* [Turki *shōr*, a salina; Turkish *shōr*, saltish, brackish (Redhouse).] A salina; a shat: used by writers on Turkestan.

> The *shors* (elongated saline depressions) . . . are seen on the southern border of the Kara-kum sands.
> *Geog. Jour.* (R. G. S.), XII. 308.

Shore hold, terrace. See ★*hold*^{1}, ★*terrace*^{1}.

shore-bug (shōr′bug), *n.* Any member of the heteropterous family *Saldidæ* (which see). *L. O. Howard*, Insect Book, p. 291.

shore-cleat (shōr′klēt), *n.* One of the heavy wooden cleats which are nailed to the side of the vessel, and against which the shores rest. See *cleat.*

shore-fast (shōr′fȧst), *n.* A hawser or length of cable which secures a vessel to the dock.

shore-fish (shōr′fish), *n.* A name used for several fishes which inhabit shallow waters, especially *Fundulus diaphanus*, a small fish of the family *Pœciliidæ*.

shore-grape (shōr′grāp), *n.* Same as *sea-grape*, 2.

shore-grass, *n.* **2.** Same as *St. Augustine* ★*grass.*

shore-horizon (shōr′hō-rī″zon), *n.* The water-line on the beach: the shore-line when the sea-horizon is hidden by the intervention of land.

shore-line, *n.*—**Mature shore-line,** the relatively stable shore-line that is produced wherever sea-border conditions remain permanent for a long time. It develops by the cutting back of promontories and the filling out of embayments making a line of comparatively smooth curves. *F. P. Gulliver*, in Proc. Amer. Acad. of Arts and Sciences, Jan., 1899, p. 151.

shore-platform (shōr′plat″fôrm), *n.* The relatively flat sea-bottom which extends outward from nearly all land-areas and is the place of habitation of sedentary marine life. *J. D. Dana*, Manual of Geol. (4th ed.), p. 222.

shore-tender (shōr′ten″dėr), *n.* Same as ★*shop-tender.*

shore-wall (shōr′wâl), *n.* Accumulations of sand and gravel pushed up into mounds by the expansion and contraction of ice formed on rivers or lakes. *Geikie*, Text-book of Geol., p. 532.

short. I. *a.* **13.** Iron is said to be *cold-short* when it shows brittleness if worked at ordinary temperature, and *red-short* when it is brittle at a red heat, crumbling under the blacksmith's hammer.—**Short and rough,** a term used in brickmaking to describe clay which is newly taken out and unmellowed, as distinguished from clay mellowed by weathering which is mild and tough.—**Short ball cause.** See ★*ball*^{1}, ★*cause.*—**Short circuit.** (*b*) In *surg.*, a passage formed around an obstructed segment of intestine by establishing an anastomosis between the portions above and below this part. *Lancet*, May 30, 1903, p. 1520.—**Short sweetening.** See *sweetening.*—**Short train.** See *long* ★*train.*—**Wet short.** See ★*wet-short.*

II. *n.* **10.** In *elect.*, a short circuit.

> All circuits are so arranged and designed that by manipulating the keys all required tests for "opens," grounds, reserves, *shorts* and all other trouble, both on the line and on the switchboard, can be made from this desk. *Elect. World and Engin.*, April 30, 1904, p. 802.

The shorts, in stock-exchange slang, those who do not possess the stocks or goods which they have agreed to deliver.

short, *adv.*—**Short apeak,** a phrase applied to an anchor cable when it is up and down from the hawse-hole — when the anchor is under foot.

short, *v.* **II.** *trans.* **3.** To short-circuit an electrical machine, line, or system of conductors. [Colloq.]

> Provision is also made on the board for generator trouble, the current passing through two lamps, so that, should any line become "*shorted*" or "grounded," etc.
> *Elect. Rev.*, Sept. 3, 1904, p. 341.

short-circuit, *v.* **II.** *trans.* **1.** In *elect.*, to establish a short circuit in.—**2.** In *surg.*, to form a communication between two portions of intestine above and below an obstruction, so that the contents may pass along. *Buck*, Med. Handbook, II. 637.

short-circuiting (shôrt′sėr″kit-ing), *n.* The act or process of establishing a short circuit, as in electricity; in *surg.*, the establishment of a short circuit in any part of the alimentary canal.

> The establishment of a permanent communication between the stomach and the small intestine when the ordinary gateway between these parts of the alimentary canal is obstructed by an irremovable malignant growth; between two parts of the small intestine so that some obstruction may be passed; or between small and large intestine. The operative procedure goes by the name of *short-circuiting*; it enables the contents of the bowel to get beyond an obstruction. *Encyc. Brit.*, XXXIII. 78.

short-fired (shôrt′fīrd), *a.* Not sufficiently baked; under-fired: said of porcelain and pottery.

short-flame (shôrt′flām), *a.* Giving out, when burned, a flame that is comparatively short: said of some kinds of coal which contain little volatile hydrocarbon matter.

short-hair (shôrt′hãr), *v. t.* In *currying*, to remove (from a skin) the short, fine hairs left after the skin has been limed. *Modern Amer. Tanning*, p. 43.

short-headed (shôrt′hed″ed), *a.* Brachycephalic; broad-headed; round-headed.

shorthorn, *n.* **2.** A new-comer; a greenhorn: as resembling a steer which, on account of the shortness of its horns, is not able to defend itself: opposed to ★*longhorn.* [Slang, western U. S.]

> Don't let no *shorthorn* have my room Mr. Stumps, I may need it myself; an' in case I do I don't want to be obleeged to bootcher no harmless stranger.
> *A. H. Lewis*, Sunset Trail, ii.

short-leg (shôrt′leg), *n.* In *cricket:* (*a*) A player who fields near to the batsman on the leg side. (*b*) The position of such a player in the field.

short-rump (shôrt′rump), *n.* Same as ★*goose-rump.*

short-rumped (shôrt′rumpt), *a.* Same as ★*goose-rumped.*

short-slip (shôrt′slip), *n.* In *cricket:* (*a*) That fielder in the part of the field behind the wicket, and to the off side, who is nearest to the wicket-keeper. (*b*) The position of such a player in the field. *R. H. Lyttelton*, Cricket and Golf, p. 43.

short-spent (shôrt′spent), *a.* Unexpended; left over.

> The sum *short-spent* on new construction amounts to £2,270,000. *T. A. Brassey*, Naval Annual, 1898, p. 1.

short-spoon (shôrt′spön), *n.* In *golf*, a wooden club, lofted, having less distance than a mid-spoon. *W. Park, Jr.*, Game of Golf, p. 27.

short-stay (shôrt′stā), *a.* Noting the condition of an anchor when it is nearly atrip, or when the cable is nearly up and down.

short-stepper (shôrt′step″ėr), *n.* A horse of which the hind feet, in walking, fall behind the imprints made by the fore feet. The animal accordingly takes short steps and covers ground slowly, at a walk.

short-suiter (shôrt-sū′tėr), *n.* In *whist* or *bridge*, one who does not believe in fixed adherence to the doctrine that the longest suit should always be selected for the original lead, no matter what the strength or weakness of the hand may be.

short-wing (shôrt′wing), *n.* A small bird of the genus *Oligura*, *Brachypteryx*, or some closely related form, belonging to the family *Timeliidæ*, found in southeastern Asia.

shoshonite (shō-shō′nīt), *n.* [*Shoshone* (Indians) + *-ite*^{2}.] In *petrog.*, a variety of basalt comparatively rich in potash, having phenocrysts of labradorite with variable amounts of augite and olivin, in a ground-mass containing labradorite and orthoclase, with pyroxene, magnetite, etc. It grades into absarokite with increase of augite and olivin and decrease in labradorite. *Iddings*, 1895.

shot^{1}, *n.* **19.** In *athletics*, a metal sphere, either with or without a covering, weighing in championship contests 16 pounds and in school contests 12 pounds, which a competitor 'puts' as far as possible beyond a ring within which he stands.—**20.** In *lawn-bowls*, the point made by the ball which lies nearest the jack at the close of the head or innings.—**Benching shot,** in *mining*, a blast-hole bored vertically downward in an open face of rock or mineral. *Barrowman*, Glossary.—**Blow-out shot,** a shot that has blown out the tamping but has not broken the coal or rock. *Coal and Metal Miners' Pocketbook.*—**Capped shot.** See ★*capped.*—**Draw-jump shot,** in *billiards*, a shot in which the cue-ball bounds up from the table almost at the instant of striking the first object-ball, and then, its forward motion dying out, begins to retrograde. As a means of smothering the cue-ball in a powerful drive, it can also be lifted, twisted, made to go forward, and then to come back.—**Palliser shot,** a chilled cast-iron projectile invented by Major Palliser of the British army to overmatch wrought-iron armor.—**Wrist-shot,** in *golf*, a short approach, played principally with the wrists.

shot-borer, *n.*—**Apple shot-borer, apple-tree shot-borer.** Same as *apple* ★*bark-beetle* (*b*).

shot-dyeing (shot′dī″ing), *n.* The process of producing two-colored effects upon union cloth of vegetable and animal fibers in a dye-bath. It may be done by first using an acid color which will dye the wool and not the cotton and later dyeing the cotton with a direct cotton color, or by the process of ★*crossdyeing* (which see).

shot-effect (shot′e-fekt″), *n.* A two-color effect produced upon union fabrics by dyeing the vegetable fiber (usually cotton) one color and the animal fiber (usually wool) another. See ★*crossdyeing* and ★*shot-dyeing.*

Shot-hole fungus. See ★*fungus.*

shot-ladle (shot′lā″dl), *n.* *Naut.*, an instrument employed for handling hot shot, and also for drawing the shell from a gun.

shot-metal (shot′met″al), *n.* An impure form of lead which contains two per cent. of arsenic: used for making shot for cartridges.

shot-stifled (shot′stī″fld), *a.* Said of a horse affected with stifle. See *stifle*^{2}, 2.

shot-tongs (shot′tôngz), *n.* An instrument for grasping and moving projectiles of large caliber. It is used in connection with the operation of bringing projectiles to a gun from the magazine.

shot-whip (shot′hwip), *n.* *Naut.*, a purchase used in hoisting or lowering shot.

shoulder, *n.* **12.** In *hort.*, the squared or expanded base of a bunch of grapes, usually produced by an extra branch in the cluster.

shoulder-clod (shōl′dėr-klod), *n.* See ★*clod*^{1}, 8.

shouldered, *a.* **2.** In *hort.*, said of grape-clusters that have a shoulder or are broadest at the base.—**3.** Broad and high in the umbolateral regions: used in the characterization of the *Brachiopoda.*

shoulder-lappet (shōl′dėr-lap″et), *n.* Same as *patagium* (*c*).

shoulder-splat (shōl′dėr-splat), *a.* Same as *shoulder-splayed.*

shoulder-steak (shōl′dėr-stāk), *n.* A steak of beef cut from the fore quarter through the shoulder.

shoulder-tuft (shōl′dėr-tuft), *n.* Same as *patagium* (*c*).

shout^{1}, *n.* **2.** A treat; a free drink. [United States and Australian slang.]

> I . . . gave the boys round a spread and a *shout.*
> *G. Walch*, Head over Heels, p. 83, quoted by E. E. [Morris, Austral English.

To go on the shout, to get drunk. [Slang.]

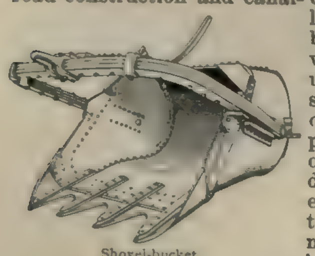
> But a bloke can do a gallon — if the tiddley 's fairly
> weak —
> Without actually *going on the shout.*
> "*Mark Thyme,*" in War's Brighter Side, xx.

shove, *n.* **4.** In *billiards*, the more common designation of the push. Degrees of strength have also given it other names. When it was foul in America to push so gently as to control the balls, the strenuous stroke was called *Bowery* in New York city, *Germantown* in Philadelphia, and *timber-lick* in the West.

shovel^{1}, *n.* **5.** The blade of any plow or cultivator exclusive of those having shares and mold-boards. Not only shovel-like blades but narrow vertical forms and horizontal scrapers are sometimes included. See ★*scalp*^{1}, *n.*, 7; ★*scooter*^{1}, 3; ★*scrape*^{1}, 7; and entries below.—**Bull's tongue, calf's tongue diamond-point egg-point shovel,** narrow forms of plow or cultivator shovels for deep penetration.—**Turning shovel,** an oblique shovel plow-blade resembling a narrow mold-board.—**Wing shovel,** a plow shovel with adjustable wings designed for hilling work.

shovel-beaked (shuv′l-bēkt), *a.* Having the muzzle produced into a spatulate beak: as, the *shovel-beaked* sturgeons.

shovel-bucket (shuv'l-buk'et), *n.* In railroad construction and canal- or road-work, a large scooping bucket armed with teeth and used with a steam-shovel or operated by power by means of chains that drag the bucket over or through loose material, causing it to scoop up a load. When filled, the bucket is lifted, swung over a car or to the spoil-bank, tripped and dumped, or dragged to a fill point and there tripped and dumped.



Shovel-bucket.

shovelnose, *n.* **2.** (*c*) A New South Wales species of ray-fish, *Rhinobatus bougainvillei*. Also called *blind shark* and *sand-shark*. In the northern hemisphere, the name is given to three different sharks and a sturgeon. *E. E. Morris*, Austral English.

shovel-spur (shuv'l-spėr), *n.* A flattened, leathery projection, found on the hind foot of toads belonging to the genera *Scaphiopus*, *Pelobates*, etc. It is used in digging; hence the popular name of *spade-foot*.

shovel-weed (shuv'l-wēd), *n.* The shepherd's-purse, *Bursa Bursa-pastoris*, so called from the shovel-shaped pods.

show^1, *v. i.*—**To show up.** (*b*) To stand out; hold its own. [Colloq.]

> There is, however, one other artist here whose work *shows up* even beside Corot, and that is Hervier, who still awaits due recognition. *Athenæum*, April 15, 1899, p. 471.

show^1, *n.* **9.** In *mining*, the effect on the flame within the gauze of a miner's safety-lamp by which the presence of fire-damp or combustible gas in the atmosphere is revealed.

II. *a.* Designed to be shown or only for show; in fanciers' language, raised for display purposes; bred for 'points.' Thus a *show* homer is a homing pigeon bred for certain characters or markings, in distinction to one raised for flying long distances.

shower^1, *n.*—**Uric-acid shower**, a temporary increase in the amount of uric acid contained in the excreted urine, occurring at times in the course of an attack of gout.

show-pipe (shō'pīp), *n.* Same as ★*display-pipe*.

shrager (shrag'ėr), *n.* A coarse pot of marl for baking wares. Same as *saggar*. [Prov. Eng.]

shredded (shred'ed), *p. a.* Torn or cut into shreds or strips, as fodder or grain.

shredder (shred'ėr), *n.* **1.** A machine for cutting into shreds or short slivers the stalks, leaves, and husks of ripe corn-plants in making stover or shredded fodder for cattle. It is a large and complicated power-machine resembling in general appearance a threshing-machine, and is often called a *husker and shredder*. The stalks of corn, with the ears, are fed to the machine, which removes and husks the ears, cuts the stalks into short pieces, shreds the stalks, leaves, and husks, cleans them from dust, and delivers the shredded product to a stacker or to a baling-press.—**2.** A machine for shredding whole wheat into long filaments or shreds. It consists essentially of pairs of steel rolls, one having a finely fluted face, placed above a traveling conveyer. Prepared whole wheat is fed between each pair of rolls and is torn into long threads that fall upon the conveyer and are conveyed to cutting-knives which divide them into cakes ready for baking.

shredder-head (shred'ėr-hed), *n.* The cylinder which carries the cutters and shredding-knives of a shredder.

shredding-machine (shred'ing-ma-shēn"), *n.* See ★*shredder*.

shril, *v.*, *a.*, *n.*, and *adv.* A simplified spelling of *shrill*.

shrilling-organ (shril'ing-ôr"gan), *n.* The sound-organ of a male cicadid.

shrimp^2, *n.*—**Sponge-shrimp**, a sponge-inhabiting shrimp, as species of the genus *Alpheus*.

shrinkage, *n.* **3.** In *founding*, the allowance made by which the pattern is larger than the finished casting is designed to be, to permit the metal in solidifying to occupy less space than when molten and hot enough to pour. The further reduction in size after solidifying and during the rest of the cooling process is called *contraction*.

shrinking-ring (shring'king-ring), *n.* A ring upon the commutator of an electric motor or generator which serves to hold the commutator-bars in place. *Elect. World and Engin.*, March 26, 1904, p. 595.

shrink-ring (shringk'ring), *n.* **1.** A ring placed when hot around some other piece, so that in the process of cooling and consequent contraction it will exert a powerful compression and add strength to resist internal strains in the piece.—**2.** A ring so located in a structure that all tendencies to contract on cooling shall be concentrated at this point, and can there be compensated or allowed for and their effects reduced or eliminated.—**3.** Same as a shrink- or shrunk-collar. *Jour. Brit. Inst. Elect. Engin.*, 1902–03, p. 419.

shrink-rule (shringk'röl), *n.* A shrinkage-rule; a rule or graduated scale used by pattern-makers, which is a fraction of an inch longer per foot than a standard rule. When used for iron, $\frac{1}{8}$ of an inch allows for the shrinkage of the casting in cooling, since every dimension is longer than the nominal or standard one in that proportion. For brass pattern-work it is $\frac{3}{16}$ of an inch longer in each foot; for steel it is $\frac{1}{4}$ of an inch larger.

shroud^1, *n.* **7.** In *mach.*: (*a*) A rim or flange cast on the ends of the teeth of a gear-wheel, so that they appear to be formed entirely or partly in the solid periphery of the wheel. If the flange or shroud extends radially to the tips of the teeth, the term *full* or *whole shrouding* is used; if the flange extends only to the pitch-line, *half-shrouding* is applied to it. Two wheels in gear may both be half shrouded if of the same width of face; if one is cast with a full shroud, the gear meshing with it cannot have any; or if not of the same width of face, the narrower one cannot have any. The shroud is to give increased strength to the teeth and diminish the danger of breaking. It is particularly serviceable for gears of large circular pitch and small diameter, giving an increase of strength of nearly 50 per cent.

(*b*) In an undershot wheel, the cylindrical surface at the inner circumference or bottom of the bucket.—**8.** The name given to the legendary portrait of Christ which is supposed to have been imprinted on the shroud in which he was wrapped in the tomb. *L. Cust*, in Burlington Mag., V. 517.

shroud^2, *n.*—**Lower-shrouds**, the shrouds of the lower fore-, main-, and mizzenmasts; the shrouds of any lower-mast.

shrouding, *n.* **2.** Same as ★*shroud*^{1}, 7.—**Full or whole shrouding.** See ★*shroud*^{1}, 7 (*a*).—**Half-shrouding.** See ★*shroud*^{1}, 7 (*a*).

shroud-laid (shroud'lād), *a.* Right-handed: said of a four-stranded rope which has a heart.

shroud-warp (shroud'wârp), *n.* *Naut.*, the length from which shrouds are cut.

shrub^1, *v. t.* **3.** To clear land of small growth by cutting it off at the ground. *Dialect Notes*, III. iii. [Western U. S.]

shrubwood (shrub'wůd), *n.* [*shrub*^{1} + *wood*^{1}.] See ★*woodland*, 2.

shtoff (shtof), *n.* [Russ. *shtofŭ* = Little Russ. *shtof*, a square bottle, a stoup, < OHG. MHG. *stouf*, a stoup. See *stoop*^{2}.] A Russian measure for liquids, equal to 1.23 liters, or .325 United States gallon.

shucker, *n.* **2.** A hulling-machine.

shuffle, *n.*—**Intricate shuffle**, in *card-playing*, the act of dividing the pack into two parts and then forcing one into the other at the ends.

Shunammite (shö'na-mīt), *n.* [*Shunem* + *-ite*^{2}.] An inhabitant of the ancient Shunem near Jezreel. 1 *Ki.*, I., 3, 15, II., 17, 21, 22; 2 *Ki.*, IV. 12, 25, 36. Also called, in "Song of Songs," *Shulammite* (?).

shunpike (shun'pīk), *n.* A road or byway so situated, by intent or not, that travelers may avoid paying toll on the turnpike which is the main thoroughfare. Such a road may be closed by injunction. [U. S.]

> There was a road which branched off from the turnpike, about a mile from the town, and which, after some windings, entered the pike again beyond the toll-gate, and although this road was not always in very good condition, it had seen a good deal of travel, which, in time, gave it the name of the *shunpike*.
>
> *F. R. Stockton*, The Captain's Toll-Gate, p. 6.

shunt, *n.*—**Calibration shunt**, in *elect.*, a shunt the resistance of which bears a known relation to that of some instrument, as a galvanometer, and which is used for the purpose of calibrating the latter.—**Inductance-shunt**, in *elect.*, a shunt consisting of a coil of wire, usually with an iron core, which because of its self-induction has much greater impedance than resistance.—**In shunt**, in *elect.*, so connected as to form a multiple circuit. For example, when the terminals of the field-coils of an electric motor are connected with the terminals of the armature, so that the current is divided between them, the field is said to be in shunt with the armature.—**Magnetic shunt**, in a magnetic circuit, a parallel or multiple path for the magnetic flux.—**Shunt coil, motor.** See ★*coil*1, *electric* ★*motor*.

shunt-box (shunt'boks), *n.* A box containing a resistance-coil or set of coils in the shunt-circuit of an electrical instrument such as an ammeter; or, in general, a box containing the shunt-circuit of any electrical device.

> Particular attention was directed to the *shunt-box* system and to the constant-current transformer method.
>
> *Elect. Rev.*, Aug. 27, 1904, p. 310.

shunting-yard (shun'ting-yärd), *n.* A railway-yard in which car-shunting takes place. *Webb*, Indust. Democracy, I. 380.

shunt-ratio (shunt'rā-shiō), *n.* In *elect.*, the ratio of the resistance of a shunt to that of the main circuit with which it is in parallel. Sometimes the ratio of the current in a shunt to that in the main circuit of which it forms a branch is called the 'shunt-ratio.'

shunt-turn (shunt'tėrn), *n.* Any one of the ampere-turns in the shunt-winding of a generator or motor.

shunt-winding (shunt'wīn-ding), *n.* The field coils of a shunt-wound generator or motor, or those coils in a compound winding which are connected in parallel with the armature-circuit.

shunt-wound (shunt'wound), *p. a.* In *elect.*, having its field coils in shunt with the armature circuit: said of certain generators and motors. *W. J. Dibdin*, Public Lighting, p. 431.

Shunuri lacquer. See ★*lacquer*.

shut^1, *v.* **I.** *trans.*—**To shut one's head** or **keep one's head shut**, to hold one's tongue; keep one's mouth shut. [Slang.]

> "If any of my inferiors on board ship don't *keep their heads shut* when they are n't spoken to," said Kettle unpleasantly, "I always disarrange their front teeth."
>
> *Cutcliffe Hyne*, A Master of Fortune, iii.

II. *intrans.*—**To shut up.** (*d*) To close the open spaces or interstices of a porous material by compression, as by hammering or pressing.

shut-in (shut'in), *n.* **1.** An invalid, cripple, or convalescent who is confined to the house for a long time. [Colloq.]—**2.** In *phys. geog.*, a narrow part of a valley which is elsewhere broadly open. [Missouri.]

> The terms "meander" and "*shut in*" and the like, have a definite enough geomorphological meaning, as appears clearly from Mr. Marbut's use of them, but we cannot help feeling that they sound crude and angular, more conformable in style to the German language than our own. *Geog. Jour.* (R. G. S.), IX. 666.

shut-out (shut'out), *n.* The act of shutting out or the state of being shut out in any sense; in sporting slang, the preventing of the opposite side from scoring, as in a game of base-ball.

> On the pitching . . . was entitled to a *shut-out*. The Tigers scored their only run in the fifth.
>
> *N. Y. World*, Aug. 3, 1904.

shutter, *n.* (*f*) In *founding*, a gate or movable partition designed to cut off the runner to a mold from the channel in which molten metal is flowing. (*g*) The name given by Inigo Jones, the architect, to the side scenes or slips which he used in his pomps and masques. *R. T. Blomfield*, in Portfolio, 1889, p. 91.—**Cat's-eye shutter**, a pneumatic photographic shutter. [Colloq.]—**Pneumatic shutter**, in *photog.*, a shutter operated by air-pressure conveyed by a rubber tube from a compressed rubber ball.

shutter-armature (shut'ėr-är"ma-tūr), *n.* The piece of soft iron, attached to the shutter of an annunciator or telephone indicator, by the attraction or release of which the signal is given.

shutter-hook (shut'ėr-hůk), *n.* A hook for holding a hinged shutter in place: usually a long hook which holds a shutter open at a certain angle with the sill.

shutter-weir (shut'ėr-wēr), *n.* See ★*weir*.

shuttle^1, *n.*—**Circular shuttle**, a swivel-shuttle used on ribbon-looms.

shuttle-armature (shut'l-är"ma-tūr), *n.* A simple form of armature for generators or motors, having a single coil wound upon a shuttle-formed bobbin, the latter being frequently of soft iron.

shuttle-bone (shut'l-bōn), *n.* A small bone applied to the posterior face of the pedal joint; the navicular bone.

shuttle-guard (shut'l-gärd), *n.* An appliance fastened to a loom to prevent the shuttle from flying up or flying out. *T. W. Fox*, Mechanism of Weaving, p. 347.

shuttle-wound (shut'l-wound), *p. a.* In *elect.*, noting an armature the single coil of which is wound longitudinally in two diametrically opposite slots in an elongated iron bobbin or shuttle.

Shu-urushi lacquer. See ★*lacquer*.

shuvel, *n.* and *v.* An amended spelling of *shovel*.

shy^1, *a.*—**To be shy.** (*a*) In *poker*, to have failed to ante in a jack-pot. (*b*) Hence, in general, to lack; be short of: as, to be *shy* four dollars. [Slang.]

shy^2, *n.* **4.** In *cricket*, a ball thrown instead of bowled.

shyer (shī'ėr), *n.* A thrower; in *cricket*, one who, in the guise of bowling, throws the ball. [Colloq.]

S. I. An abbreviation (*a*) of *Sandwich Islands;* (*b*) of *Staten Island.*

sialadenitis (sī″a̤l-ad-e-nī'tis), *n.* [NL., < Gr. *σίαλον*, saliva, + *ἀδήν*, gland, + *-itis.*] Inflammation of a salivary gland; mumps.

sialid (sī'a̤-lid), *n.* and *a.* **I.** *n.* A member of the neuropterous family *Sialidæ.*

II. *a.* Having the characters of or belonging to the family *Sialidæ.*

sialidid (sī-al'i-did), *n.* and *a.* Same as ⋆*sialid.*

sialodochitis (sī″a̤-lō-dō̤-kī'tis), *n.* [NL., < Gr. *σίαλον*, saliva, + *δοχή*, receptacle, + *-itis.*] Inflammation of a salivary duct.

sialogenous (sī-a̤-loj'e-nus), *a.* [Gr. *σίαλον*, saliva, + *-γενης*, -producing, + *-ous.*] Promoting the excretion of saliva. *Buck*, Med. Handbook, I. 645.

sialology (sī-a̤-lol'ō̤-ji), *n.* [Gr. *σίαλον*, saliva, + *-ology.*] The science of the saliva; the study of the secretion and composition of saliva in health and in disease.

Siamese cat. See ⋆*cat*^{1}.

siao (sē̤-ou'), *n.* [Chinese.] A Chinese syrinx with 16 pipes of bamboo.

siapo (sē̤-ä'pō), *n.* [Native name.] In Samoa, the name of bark cloth made from the paper mulberry (*Papyrius papyrifera*). See *tapa.*

siaresinotannol (sī″a̤-rez″i-nō-tan'ol), *n.* [*Sia*(*m*) + *resin* + *tann*(*ic*) + *-ol.*] A brown amorphous compound, $C_{12}H_{14}O_3$, contained in gum benzoin from Siam.

Sib. An abbreviation (*a*) of *Siberia;* (*b*) of *Siberian.*

sib-bred (sib'bred), *a.* [*sib* + *bred.* Cf. *sibred.*] Descended from ancestors who were blood-relations; interbred. See ⋆*sibling.*

> The possibility, however, should not be forgotten that the prepotency of the *sib-bred* hens may have been an original character of their particular strain.
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., [1902, I. 4, note.

Sibiric (sī-bir'ik), *a.* [Also *Siberic:* Russ. *Sibirĭ*, Siberia, + *-ic.*] Relating to those branches of the Asiatic race whose center of distribution is Siberia, and which includes the Tungusic, Mongolic, Tataric, Finnic, Arctic, and Japanese groups. *D. G. Brinton*, Races and Peoples, p. 206.

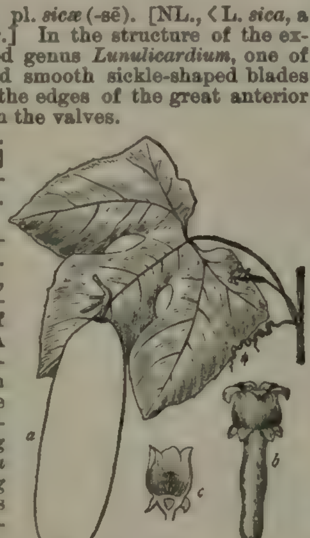
sibling (sib'ling), *n.* [*sib* + *-ling*^{1}.] A member of a family born to the same parents; a brother or a sister considered without reference to sex. *K. Pearson.*

> From the information at hand, which is not so satisfactory as information I hope to obtain during the next few years, the resemblance of twins in mental traits is roughly twice that of ordinary *siblings;* according to the actual figures of my measurements of *siblings*, more than twice.
> *E. L. Thorndike*, in Jour. Philos. Psychol. and Sci. [Methods, Sept. 28, 1905, p. 547.

Sic. An abbreviation (*a*) of *Sicilian;* (*b*) of *Sicily.*

sica (sī'kä̤), *n.*; pl. *sicæ* (-sē). [NL., < L. *sica*, a curved dagger.] In the structure of the extinct pelecypod genus *Lunulicardium*, one of the two curved smooth sickle-shaped blades which bound the edges of the great anterior hiatus between the valves.

sical (sī'ka̤l), *a.* [*sic*(*a*) + *-al*^{1}.] Of or pertaining to the sicæ. See ⋆*sica.*


Sicana odorifera.
a, fruit; *b*, female flower; *c*, male flower.

Sicana (si-kā'nä̤), *n.* [NL. (Naudin, 1862), < *sicana*, a Peruvian name of the plant.] A genus of tropical American plants of the family *Cucurbitaceæ*, differing from *Cucurbita* in not having the anthers united and having the calyx-lobes reflexed or wide-spreading. The genus has recently come into prominence in this country by the advertising of the cassabanana, *S. odorifera.* This is a tall, herbaceous, perennial tendril-climber, which produces large fruits like a vegetable marrow. It is grown for ornament and screens. It is tender in the North.

siccimeter (sik-sim'e-tėr), *n.* [L. *siccus*, dry, + Gr. *μέτρον*, measure.] An apparatus for measuring the evaporation from a surface of water; an evaporometer; an atmidometer; specifically, the tank, about 18 inches square, used by L. Dufour, in 1865, on the border of Lake Geneva.

Sicilian, *n.* **2.** In *geol.*, the uppermost stage of the Pliocene Tertiary in southern Europe.

sicilienne, *n.* **2.** A mohair of heavy weight, either plain or with a fancy pattern. *Dry Goods Economist*, June 13, 1908, p. 81.

sick^1, *a.* **11.** Having floured: said of mercury.

sickle, *n.* **3.** In *embryol.*, a crescentic thickening at the posterior edge of the blastodisc in certain vertebrate embryos with meroblastic eggs, such as the fishes and reptiles.

> In birds, typical concrescence can occur only during the earliest stage of formation of the primitive streak, i.e. so long as the groove of the *sickle* and knob is open.
> *Proc. Zool. Soc. London*, 1903, p. 18.

4. A crescentic whitish area in the choroid commonly observed in cases of myopia. *Buck*, Med. Handbook, VI. 81.—**5.** One of the arms which support the yarn guide-wire, or faller, on the spindle-carriage of a spinning-mule: so named from its shape.—**6.** A sickle-feather.

sicklebill, *n.* (*f*) The California thrasher, *Harporhynchus redivivus.*

sickle-grass (sik'l-gràs), *n.* **1.** The sedge, *Carex crinita*, so called from the sickle-shaped spikes. See *sedge*^{1} (Fig. 4).—**2.** Same as *tear-thumb.*

sickle-hammed (sik'l-hamd), *a.* Having the hock-joint too much flexed, the foot placed too far forward under the body, and the fetlock too slanting: said of a horse. Also *sickle-hocked.* See ⋆*saber-legged.*

sickle-hocked (sik'l-hokt), *a.* Same as ⋆*sickle-hammed.*

sickle-senna (sik'l-sen″ä̤), *n.* See ⋆*senna.*

sicklewort, *n.* **2.** The common bugle, *Ajuga reptans.*

sickness, *n.*—**Foehn sickness**, a depression experienced by invalids and other impressionable persons during the prevalence of the foehn wind in the Alps.

> Professor Ebert considered the cooperation of aeronauts valuable, and cited as a result of the investigation in the Alps that in the foehn wind an excess of positive electrons is found and this disturbance of the electrical equilibrium perhaps may cause the *foehn sickness.*
> *U. S. Monthly Weather Rev.*, July, 1902, p. 361.

Spotted sickness. Same as *pinta.*

sicula (sik'ṳ̄-lä̤), *n.*; pl. *siculæ* (-lē). [NL., < L. *sicula*, dim. of *sica*, a dagger.] In the graptolites, the triangular stiletto-shaped body at the proximal end of a polypary, representing the primary theca or zoöid of the colony.

sicular (sik'ṳ̄-la̤r), *a.* [NL. *sicul*(*a*) + *-ar*^{3}.] Of or pertaining to the sicula in the graptolites.

sicuri (sē-kö'rē), *n.* [Aymará of Bolivia.] One of the best-known groups of Indian dancers in Bolivia, who perform at nearly every festival. They wear as distinctive ornament a tall crown of long feathers or plumes of the nandu or American ostrich.

Sicydium (si-sid'i-um), *n.* [NL., so named in allusion to the ventral disk, < Gr. *σικύδιον*, dim. of *σικύα*, a gourd, a cupping-glass.] A genus of gobioid fishes found in fresh waters of the West Indies.

sid (sēd), *n.* [Egyptian Ar. *sīd*, a reduction of *seyyid* (*saiyid*), lord.] Master: a title of respect.

Sidalcea (sī-dal'sē̤-ä̤), *n.* [NL. (Asa Gray, 1848), < *Sida* + *Alcea*, the ancient names of two allied genera.] A genus of plants of the family *Malvaceæ*, containing about a score of West American annual and perennial herbs. The flowers are mostly destitute of involucels, in color white, purple, or pink, borne in terminal racemes; the leaves are palmately cleft or parted. A few of the hardy perennial species are in cultivation.

siddha (sē-dhä'), *n.* [Skt. *siddha*, hit (as a mark), accomplished, achieved, perfected, pp. of √ *sidh*, hit, attain one's end, etc.] In Hinduism, a seer, saint, or semi-divine being supposed to possess supernatural powers, such as volitation, etc.

siddhartha (si-där'tä or sid-härt'hä), *n.* [Skt. *siddhārtha*, < *siddha*, accomplished, + *artha*, aim, purpose.] One who has accomplished his object: an epithet of Buddha and others.

siddur (sid'ör), *n.* [Yiddish *sidder*, Heb. *siddur*, otherwise *seder tephilloth*, 'order of prayers.'] The Jewish prayer-book. The prayers are placed in order for the daily, Sabbath, and part of the festival services in the synagogue. The siddur of the Ashkenazim (German Jews) differs somewhat from the ritual of the Sephardim (Spanish Jews). The reformed Jews have eliminated a considerable number of prayers of the old siddur and substituted others.

side^1, *n.* **9.** (*b*) In *golf*, the two players playing together in a best-ball match, a threesome, a foursome, or a four-ball match.—**15.** In *geom.*: (*b*) One of the determining straights of a polygram.—**On side.** See ⋆*on*^{1}.—**Side of a court**, in *law*, a term used to indicate whether equity practice or common law practice prevails: as, equity *side*, law *side.* Formerly, in England, there were distinct branches for the two sides; but the tendency is toward the blending of them, and the highest court of England and the majority of the courts in the United States practise both.—**Three-on-a-side**, a system of playing faro in which cards are bet upon to win or lose an uneven number of times: the opposite of *to* ⋆*break even.*—**To man the side**, to form the side-boys in line on either side of the gangway for the reception of some official when he passes over the side to the deck of a vessel.

side^1, *v.* **II.** *trans.* **9.** To cultivate alongside of, as a row of cotton. [Southern U. S.]

> Two hoeings and ten furrows with the sweep, eight to *side* the cotton and two to split out the middle of the row.
> *U. S. Dept. Agr.*, Exper. Station, Bulletin 33, 1896, [p. 239.

side-beard (sīd'bērd), *n.* See ⋆*beard*, 6 (*b*).

side-bearing (sīd'bãr″ing), *n.* **1.** In *car-building*, a supporting plate on a car-truck. Such plates are arranged in pairs on each side of the ⋆center-bearing (which see), the body-bolster side-bearing and the truck-bolster side-bearing forming an opposing pair. Normally, the weight of the car rests upon the center-bearing, the side-bearings being designed to prevent excessive rocking of the car when it is in motion.—**2.** A bearing so constructed as to limit side motion.

side-beat (sīd'bēt), *n.* Same as ⋆*cross-beat.*

side-chain, *n.* **2.** The driving-chain which transmits motion to the driving-wheels of a motor-car from the counter-shaft or compensating-shaft. One is placed outside of the body of the vehicle on each side, an arrangement which necessitates two chains, and is distinguished from the center-chain design, which uses one chain under the body and near the center of the vehicle.—**3.** Same as ⋆*receptor.* See ⋆*immunity*, 5.

side-check (sīd'chek), *n.* In a harness for a horse, a check-rein that is placed at the side of the horse's head. Where the check passes over the head it is an *over-check.*

side-current (sīd'kur″e̤nt), *n.* The current produced in a Hertz receiver by the action of the oscillator.

side-edge (sīd'ej), *n.* A forming-tool made of hard wood, over which sheet-lead may be shaped for safes and similar work.

side-firing (sīd'fīr″ing), *n.* The act or process of firing or feeding fuel to a fire through a door in the side of a furnace. *W. S. Hutton*, Steam Boiler Construction, p. 48.

side-flash (sīd'flash), *n.* In *elect.*, the disruptive discharge between neighboring parts of a bent conductor which sometimes occurs in the case of oscillatory currents of high frequency; the spark between a lightning-rod and neighboring masses of metal induced by an oscillatory discharge of lightning.

side-frame (sīd'frām), *n.* **1.** That member of the structure of a machine which is at either side, as the side-frame of a locomotive, a motor-car, or a steam fire-engine.—**2.** The supporting-frame for the guides of the cross-head in an old-style vertical marine engine having no beam, but two back-acting connecting-rods from the cross-head.—**3.** Any side portion of a frame or structure.

side-head, *n.* **3.** A slide-rest carrying a cutting-tool and adjusted on ways forming part of the uprights at the sides of a metal-planing machine.—**4.** In wood-working machines, a revolving cutter-head on a vertical axis on the side of the frame, for working out profiles of moldings and similar strips.

side-jacketed (sīd'jak″et-ed), *a.* Protected on the sides by a casing or hollow wall carrying hot steam within it: distinguished, in cylinder-work, from a jacketing on the heads or ends only.

side-jointer (sīd'join″tėr), *n.* In *wood-working*, a guide or machine for a planing-block or cutting-edge which cuts upon its side or in which the edge moves in a horizontal direction.

side-keel (sīd'kēl), *n.* In *ship-building*, same as *bilge-keel.*

The power of *side-keels* placed near the water-line is very great; for example, in the Elorn the effect of such keels was one-third greater than that of ordinary bilge-keels. *White*, Manual of Naval Arch., p. 179.

side-kicker (sīd'kik″ėr), *n.* A partner. *O. Henry*, in McClure's Mag., Feb., 1903, p. 432. [Thieves' slang.]

side-ladder (sīd'lad″ėr), *n.* *Naut.*, same as *accommodation ladder* (which see, under *accommodation*).

side-lay (sīd'lā), *n.* In *printing*, the broader margin of a printed sheet, which receives the grippers. The narrower margin is called the *guide-lay*.

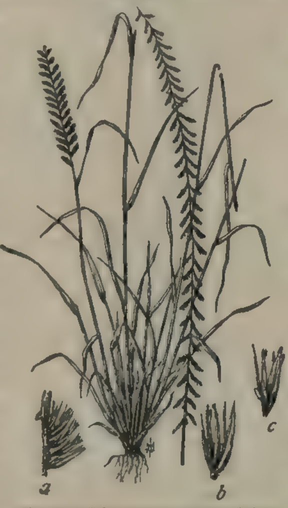
side-lever (sīd'lev″ėr), *n.* In a steam-engine, a side-beam; a lever or walking-beam beside the vertical cylinder instead of over it.—**Side-lever engine.** Same as *side-beam* ★*engine.*

side-lighting (sīd'lī″ting), *n.* In *topographical mapping*, a method of representing the relief or vertical irregularities of the topographical surveys mapped by representing the shadows (caused by an imaginary source of illumination situated at one side) cast by the mountains and other vertical irregularities. The method is an alternative of the methods of vertical lighting and of horizontal contours.

The disadvantages of "*side-lighting*" in the delineation of mountainous countries. *Geog. Jour.* (R. G. S.), X. 459.

side-line, *n.* **3.** In *foot-ball*, *hockey*, and similar games, a line defining the limit of play on the side of the field, and outside of which the ball is out of bounds.

side-oats (sīd'ōtz), *n.* A grama-grass, *Atheropogon curtipendulus*, ranging from New Jersey to the Rocky Mountains and southward into Mexico. Where abundant it makes fair hay, and its root-leaves make good pasture, though the blue grama is preferred by stock. It is one of the tallest of its genus and bears many short declined spikes along the sides of the stem. Also called *tall grama*, *jointed grama*, and *prairie-oats*, in Tennessee *horseshoe-grass*, and in the southwestern United States *mesquite* or *mesquite-grass.*



Side-oats (*Atheropogon curtipendulus*). *a*, spike; *b*, spikelet; *c*, spikelet with glumes removed.

side-partner (sīd'pärt″nėr), *n.* One who goes or works next to another. *Evening Post*, June 1, 1903, p. 1. [Colloq.]

side-planer (sīd'plā″nėr), *n.* See ★*planer.*

side-plate, *n.* **3.** One of the perpendicular plates which line the sides of the ambulacra in the *Crinoidea.*

side-play (sīd'plā), *n.* Side movement; motion not in the direction of the desired motion but at an angle to it.

Side play of this spring is prevented by beads on the post, and the top of the post is also provided with a channel or groove, so that by turning the securing screw the spring is pressed slightly into the channel, thus raising the armature. *Sci. Amer.*, Feb. 7, 1903, p. 99.

Sidereal minute. See *sidereal* ★*second.*—**Sidereal second.** See ★*second*2.

siderealize (sī-dē'rẹ-ạl-īz), *v. t.*; pret. and pp. *siderealized*, ppr. *siderealizing.* [*sidereal* + *-ize.*] To place among the constellations; relegate to sidereal regions; exalt.

German literature transformed, *siderealised*, as we see it in Goethe, reckons Winckelmann among its initiators. *W. H. Pater*, Renaissance, p. 150.

siderite, *n.* **3.** A meteorite consisting essentially of nickeliferous metallic iron. See ★*meteorite.*

sideritic (sid-ẹ-rit'ik), *a.* [*siderite* + *-ic.*] Pertaining to, containing, or composed of siderite.

siderodromophobia (sid″ẹ-rọ̄-drō″mọ̄-fō'bi-ạ̈), *n.* [NL., < Gr. σίδηρος, iron, + δρόμος, course (way), + -φοβια, < φοβεῖν, fear.] A morbid fear of railway travel. *Ribot* (trans.), Psychol. of the Emotions, p. 213.

siderognost (sid'ẹ-rog-nost), *n.* [Gr. σίδηρος, iron, + γνώστης, one that knows.] In *elect.*, an apparatus for the practical testing, by the yoke method, of the magnetic quality of iron or steel.

siderolite, *n.* **3.** Lacquered ware, manufactured in northern Bohemia, intermediate in character between fine and common stoneware. It has no glaze, but a strong surface-color of varnish or lacquer. The color or bronze is mixed with turpentine or linseed-oil and applied with a pencil. The ware is then placed in a slow oven, the ethereal oils volatilize, and the bronze color becomes fixed to the surface of the ware. *R. J. Wagner*, Chem. Technol.

sideromelane (sid″ẹ-rọ̄-mel'ān), *n.* [Gr. σίδηρος, iron, + μέλας (μελαν-), black.] In *petrog.*, a name given by Von Waltershausen (1853) to basaltic glass from palagonite tuff from Iceland.

sideronym (sid'ẹ-rọ̄-nim), *n.* [L. *sidus* (*sider-*), constellation, + Gr. ὄνομα, name.] The name of a celestial object or constellation.

siderophyre (sid'ẹ-rọ̄-fīr), *n.* See ★*meteorite.*

siderosis, *n.* **2.** A deposition of iron pigment in any of the tissues of the body.

siderosthen (sid-ẹ-ros'then), *n.* [Gr. σίδηρος, iron, + σθένος, strength.] A trade-name of a material used for protecting iron and steel from rust, consisting of tar from fat gas-producers, refined Trinidad asphalt, and refined asphalt-oil. Sometimes sulphur is used instead of the last two constituents, the gas-tar being heated with it. *Jour. Soc. Chem. Industry*, XII. 364.

siderous (sid'ẹ-rus), *a.* [Gr. σίδηρος, iron, + *-ous.*] Containing iron, as hemosiderin. *Buck*, Med. Handbook, III. 224.

siderum (si-dē'rum), *n.* [NL., < Gr. σίδηρος, iron.] A supposed new metal announced by Bergman, in 1781, as obtained from cold-short iron. It turned out to be merely iron phosphide.

siderurgic (sid-ẹ-rėr'jik), *a.* Same as *siderurgical.*

side-slip, *n.* **3.** The tendency of the rear or driving pair of wheels of a smooth-tired motor-vehicle to slip sidewise when the surface of the roadway is coated with a thin film of slippery mud. It occurs also on dirt roads when the mud has a certain consistency and the surface is crowned or high in the middle. When driving recklessly at high speed, side-slip is an occasion for dangerous accident, since the vehicle is for an instant, or until the wheels bite again, practically unmanageable. Many forms of tires to correct this evil have been proposed and patented.

side-spark (sīd'spärk), *n.* See ★*spark*^{1}.

sidestep (sīd'step), *v. i.*; pret. and pp. *sidestepped*, ppr. *sidestepping.* To take a side-step; step to one side.

The temperature Sunday held the icicles in place, but with yesterday's thaw they began to work loose. By 10 o'clock pedestrians were *sidestepping.* *N. Y. Times*, Jan. 16, 1905.

side-stop (sīd'stop), *n.* *Naut.*, one of the stops which are fastened to the side ropes of an awning in order to spread the latter to the ridge-rope.

side-stringer (sīd'string″ėr), *n.* See ★*stringer.*

side-thrust (sīd'thrust), *n.* That component of the thrust which is not in the direct line of the main force, as the axial thrust on a carriage- or car-wheel when going around a curve, or the thrust on a lathe- or planer-tool which tends to make it slip sidewise in the holder.

sidewalk, *n.*—**Moving sidewalk**, a long ramp or traveling-apron used as a conveyer for foot-passengers. It usually consists of two or more conveyers placed side by side and moving at different speeds, forming an extension of a sidewalk. The fixed portion of the walk may extend the entire length of the conveyer or may serve only as a landing. The passenger steps from the landing upon the first or slow-moving conveyer, and is carried along by it, or may then step from this to the parallel high-speed conveyer, and, standing or walking upon it, be conveyed to his destination. See ★*ramp*, 9, ★*conveyer*, 4, ★*escalator*, and *moving* ★*platform.*

As a matter of fact, however, the treatment is rather more general and comprehensive, as one finds included such diverse topics as electric locomotives for mining purposes, and the *moving sidewalk* at the Paris Exposition and Chicago, as well as brief references to elevators and traveling stairs. *Elect. World and Engin.*, April 23, 1904, p. 781.

sidewalk-light (sīd'wâk-līt″), *n.* Same as ★*pavement-light.*

sidewinder^{2} (sīd'win-dėr), *n.* In *lumbering*, a tree knocked down unexpectedly by the falling of another.

side-wipe, *n.* **2.** In *railroading*, a term used to describe a collision between trains in which one train meets another at a slight angle, as in crossing a switch, and slides or scrapes past it, doing damage to the sides of the cars, but not necessarily producing a disastrous wreck.

side-wiped (sīd'wīpt), *a.* Damaged by a side-wipe. See ★*side-wipe*, 2.

side-wire (sīd'wīr), *n.* A stout wire introduced by Helmholtz as a shunt to the primary coil in du Bois-Reymond's inductorium. When the side-wire is in place, the primary circuit is never wholly interrupted. A weakened make-current is produced when the side-current is broken, a weakened break-current when it is made. *E. B. Titchener*, Exper. Psychol., I. ii. 144.

siding, *n.*—**Novelty siding**, in *carp.*, a form of mill-worked boards used to replace clapboards. The boards are planed with a projecting tongue at one edge and an overlapping rabbet on the other.

siding-tile (sī'ding-tīl), *n.* A tile used for covering the side wall of a house or the like, and replacing clapboards and shingles.

sidonal (sī'dọ̄-nạl), *n.* A trade-name of piperazine quinate. It is used medicinally in cases of gout and rheumatism. *Buck*, Med. Handbook, VII. 214.

Sidot blende. See ★*blende.*

sidur, *n.* See ★*siddur.*

Siemens's law, electrical thermometer. See ★*law*^{1}, ★*thermometer.*

sierra, *n.*—**Pacific sierra**, a scombroid fish, *Scomberomorus sierra*, found from San Diego to Panama.

sierrated (sier'ā-ted), *a.* [*sierra* + *-ate*^{1} + *-ed*^{2}.] Having the form of a sierra: said of ridges and mountains. Compare *serrate.*

Ranges of *sierrated* crests like many Andean chains of South America. *Geog. Jour.* (R. G. S.), X. 58.

sierrita (sie-rē'tạ̈), *n.* [Sp., dim. of *sierra*, a saw.] A needle-fish, *Tylosurus stolzmanni*, found on the tropical Pacific coast of America.

siesta (sies'tạ̈), *v. i.* [*siesta*, *n.*] To rest and sleep or take a nap; to indulge in a siesta.

"Right," said Kettle. "I'll *siesta* too. My fever 's gone now, and I 'm feeling pretty rocky and mean. Sleep 's a grand pick-me-up." *Cutcliffe Hyne*, A Master of Fortune, ii.

sieve-plate, *n.* **4.** In certain hexactinellid sponges like *Euplectella*, a transverse irregular network or reticulum covering the top of the skeleton, formed at a late stage in the growth of the sponge, and serving to protect the interior of the colony by the subdivision of the excurrent passage.

sifon, *n.* and *v.* An amended spelling of *siphon.*

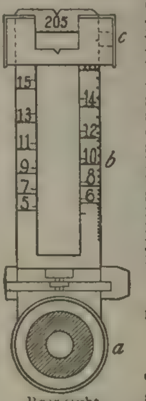
sifter, *n.* **4.** In *milling* and *baking*, a machine for sifting flour preparatory to blending it or using it in baking. It consists of a sieve inclosed in a casing and fitted with a cylindrical brush which, revolving above the sieve, breaks up all the lumps and presses the flour through the sieve.—**Sifter and blender.** See ★*blender*, 2.

sig^{2}, *n.* **2.** A bath applied to the grain side of a hide or skin, before applying the black. The sig prevents the black from striking through to a light-colored flesh. *Modern Amer. Tanning*, p. 116.

sight^{1}, *n.* **16.** In *cards*, a show of the opponent's hand. In *poker*, when a player has not enough money to call a bet, he may demand a sight for what he has, but if he has borrowed to raise he must borrow to call.—**Bill at sight.** See ★*bill*3.—**Rear sight**, the device near the breech of a gun used in aiming. It generally consists of a leaf or bar with a movable and adjustable slide having a notch or hole through which the front sight and the object can be seen.—**Reinforce-sight**, a sight situated at or near the reinforce of the gun in old ordnance.—**Sight unseen**, without seeing the objects exchanged: used by boys in trading jack-knives, marbles, and the like. [Colloq.]

The intelligent farmer of to-day has got beyond trading "*sight unseen*" or "buying a cat in a bag." *Yearbook U. S. Dept. Agr.*, 1897, p. 427.

Tangent sight, in *ordnance*, a rear sight.—**Telescopic sight.** See ★*telescopic.*



Rear-sight *a*, gun-barrel; *b*, rear-sight leaf; *c*, slide.

sight-hood (sīt'hůd), *n.* Same as ★*sighting-hood.*

sighting-hood (sīt'ing-hůd), *n.* In a warship, a small armored box or cylinder on the roof of a turret. A number of sight-holes are cut through the armor of the hood. The hood is large enough to contain the head of the gun-pointer and the turret gun-sight which is pointed through the forward sight-hole. Modern turrets usually have three sighting-hoods, one in the center line for the turret training-pointer and one on each side for the two gun-pointers. Also called *sight-hood.* See cut under ★*turret*^{1}.

sight-setter (sīt′set″ėr), *n.* A member of a gun's crew on a war-ship whose duty it is to keep the gun-sight set at the proper elevation for the range as shown by the range-indicator, so that the gun-pointer can keep his eye continuously at the gun-sight.

sight-tube (sīt′tūb), *n.* The telescopic tube through which the observer looks at the screen of a photometer. *W. M. Stine,* Photometrical Measurements, p. 77.

Sigillaria, *n.* 2. *pl.* The last days of the Saturnalia in Rome, under the empire, in which presents of figurines of wax or clay were made, especially to children and slaves. *M. B. Huish,* Greek Terra-Cotta Statuettes, p. 214.

Sigillariaceæ (sij-i-lā-ri-ā′sē-ē), *n. pl.* [NL. (Engler, 1892), < *Sigillaria* + *-aceæ.*] A family of Paleozoic fossil plants of the order ★*Lycopodiales* (which see), typified by and consisting chiefly of the genus *Sigillaria.* Some of the forms called *Ulodendron* and *Knorria* have been referred to this family, and the roots, as well as those of the *Lepidodendraceæ,* are called *Stigmaria.* Potonié regards the *Sigillariaceæ* as the remote ancestors of the *Isoëtaceæ.*

sigillarid (si-ji-lā′rid), *n.* Any fossil plant of the genus *Sigillaria* or of the family *Sigillariaceæ.*

sigillographical (sij-i-lọ̄-graf′i-kal), *a.* [*sigillography* + *-ic-al*^{1}.] Of or pertaining to sigillography.

> The matrix of the seal of the Barbers Gild is in the *sigillographical* collection of the Musées Royaux du Cinquantenaire. *R. Petrucci,* in Burlington Mag., II. 191.

sigma, *n.* 3. (*a*) The curve of the letter S or any approximate curve. (*b*) In *descriptive biol.,* one of the S-shaped ridges on the surface of certain molluscan shells, as those of gastropods and cephalopods.—4. In *exper. psychol.,* the time-unit, $\frac{1}{1000}$ of a second: abbreviated *σ.*

sigmatoid (sig′mạ-toid), *a.* Same as *sigmoid.*

Sigmistes (sig-mis′tēz), *n.* [NL., so called from the form of the lateral line, < Gr. *σίγμα,* sigma, + *-istes.*] A genus of cottoid fishes found in rock pools on the Alaskan coast.

sigmoiditis (sig-moi-dī′tis), *n.* [NL., < *sigmoid* + *-itis.*] Inflammation of the sigmoid flexure. *Med. Record,* Sept. 5, 1908, p. 403.

sigmoidoproctectomy (sig-moi″dọ̄-prok-tek′tọ̄-mi), *n.* [*sigmoid* + Gr. *πρωκτός,* anus, + *ἐκτομή,* excision.] Excision of the rectum and sigmoid flexure. *Med. Record,* June 27, 1903, p. 1057.

sigmoidoscope (sig-moi′dọ̄-skōp), *n.* [*sigmoid* + Gr. *σκοπεῖν,* view.] A form of speculum used in examination of the sigmoid flexure. *Buck,* Med. Handbook, III. 201.

sigmoidoscopy (sig-moi-dos′kọ̄-pi), *n.* [*sigmoidoscope* + *-y*^{3}.] Inspection of the mucous membrane of the sigmoid flexure.

sigmoidostomy (sig-moi-dos′tọ̄-mi), *n.* [*sigmoid* + Gr. *στόμα,* mouth, + *-y*^{3}.] Establishment of a permanent opening into the sigmoid flexure through the left flank. *Lancet,* July 4, 1903, p. 33.

sign, *n.*—**Argyll-Robertson's sign.** Same as *Argyll-Robertson pupil* (which see, under *pupil*^{2}).—**Babinski's sign,** extension of the toes, instead of flexion, when the sole of the foot is tickled. See *Babinski* ★*phenomenon.*—**Bamberger's sign,** inability to locate exactly tactile or painful sensations: observed frequently in locomotor ataxia.—**Braxton-Hicks sign,** a sign of pregnancy, shown in intermittent contractions of the uterus, detected on palpation after the fourth month.—**Charcot's sign,** elevation of the eyebrow in facial paralysis.—**Common signs,** in *astrol.,* Gemini, Virgo, Sagittarius, and Pisces.—**Complex local sign,** in *psychol.,* a local sign resulting from a fusion of qualitative sensations of special sense (sight, touch) and of intensive sensations of movement.—**Congruence sign.** (*a*) In theory of numbers, the symbol $\equiv$. *Gauss.* See *congruence,* 2. (*b*) In *geom.,* the symbol $\cong$.—**Dugas's sign,** inability to place the hand on the shoulder of the other side while the elbow rests against the chest: a sign of dislocation of the shoulder.—**Entry sign.** See ★*entry.*—**Fixed signs,** in *astrol.,* Taurus, Leo, Scorpio, and Aquarius.—**Hegar's sign,** softness of the lower portion of the womb, as felt by the finger in the rectum: an indication of pregnancy.—**Herodianic signs,** the oldest Grecian numerical symbols; the old Attic numerals, described by Herodianus.—**Kernig's sign,** inability to extend the leg when the thigh is flexed at a right angle with the body, although such extension is possible when the thigh itself is extended: a more or less trustworthy sign of cerebrospinal meningitis.—**Koplik's sign,** the enanthem of measles, a bluish-white dotted eruption on the mucous membrane of the cheeks and lips. It appears before the exanthem, or skin eruption.—**Oliver's sign,** pulsation felt in the larynx when it is grasped between the thumb and finger of the examiner and elevated: a supposed sign of thoracic aneurism.—**Quinquaud's sign,** a very fine muscular tremor perceived by the examiner when the finger tips, slightly separated, of the person examined are made to rest lightly against his palm: thought to occur only in persons using alcohol to excess. *Med. Record,* June 22, 1907, p. 1035.—**Rumpf's sign** or **symptom,** increased rapidity of the pulse on slight cause, a common symptom of neurasthenia.—**Simple local sign,** in *psychol.,* a local sign or mark, visual or cutaneous, which may be derived either from movement sensations or from the characteristic local coloring (intensive or qualitative) of the different regions of the skin or retina: distinguished from the *complex local sign,* which derives from the interaction of these two factors.

> If, following Lotze, we call every constituent of sensation which may be of influence upon the act of spatial ideation a local sign, the theories which hold that space-perceptions have been generated by psychological processes, and are neither given a priori nor result from a special quality of sensation, may be distinguished as the theory of *simple* and the theory of complex *local signs.*
> *W. Wundt* (trans.), Human and Animal Psychol., p. 169.

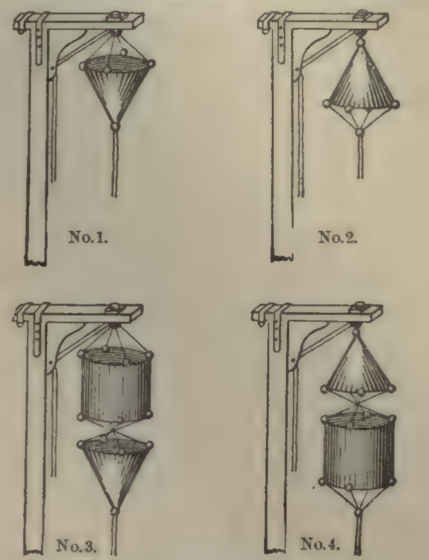
Temporal sign, in *psychol.,* elements of an idea which, by their presence, constitute it a temporal idea; mental processes or attributes of mental processes which serve as the conscious mark or tag of temporalness: a phrase formed on the analogy of *local sign.*

> We may, accordingly, regard the feelings of expectation as the qualitative, the sensations of movement as the intensive, *temporal signs* of a temporal idea.
> *W. Wundt* (trans.), Outlines of Psychol., p. 157.

Trousseau's sign. See ★*symptom.*—**Von Graefe's sign,** absence of motion of the eyeball on the attempt to look downward, although the upper lid drops naturally.—**Westphal's sign,** loss of the knee-jerk: same as *Westphal's symptom.*

signal, *n.* 2. In *railroading,* flags, lamps, gestures, sounds from a whistle, torpedoes, fusees, etc., are employed as signals to convey information to engineers, train-crews, gatemen, trackmen, or other employees. *Signals made by sounding a locomotive whistle* have the following meanings, a long blast being represented here by a dash and a short one by 0: — — 0 0, warning, as on approaching a grade street-crossing; —, warning on approaching a station; 0, stop! apply brakes; — —, release brakes; — 0 0 0, rear brakeman go back and display red flag; — — — —, flagmen return (from west and south); — — — — —, flagmen return (from east and north); — — —, train has parted; 0 0 0, train is to move back; 0 0 0 0, call for attention of train-crew; — 0 0, call for attention from other train-crews; 0 0 0 0 0, general alarm for fire or accident. One explosion of a torpedo means stop! two explosions, proceed with caution to the next signal. *Flag or light signals* have the following meanings: white (flag or lamp), trains proceed; red, stop! green, proceed with caution and slowly to next signal; white beyond a green, resume full speed; red and green, stop at flag-station. On some roads red means stop; green, proceed; blue, train or car stopped for repairs, must not be moved. A red fusee burning beside the track means stop until fire has burned out and then proceed with caution to next signal. *Signals made by the hand or a lantern:* the hand, with or without a white-light lantern (lantern lighted at night) swung across the track, stop! a lantern raised and lowered vertically, proceed; swung in a circle vertically, back; swung at arm's-length, train has parted; swung in the hand horizontally, apply air-brakes; held at arm's-length overhead, release brakes, prepare to proceed. A *slow-board* is a sign beside a railroad-track upon which repairs are being made, calling for reduced speed. A *speed-board* is a sign on a railroad-track, beyond a slow-board, indicating that full speed may be resumed. A *home signal* is a fixed signal displayed on a mast or signal-bridge at the beginning of a block to control trains approaching the block. A *distant signal* is a fixed signal placed below a home signal to report the condition of the next block in advance. If the home signal is at clear and the distant is at danger, the rule is to proceed with caution through the block. If both the home and the distant signal are clear, the train may proceed at full speed. Compare ★*signaling.*

4. In *whist,* any method of showing that the player wants trumps led. See *trumps* ★*signal.*—**Ardois signal system** (*naut.*), a night-signaling apparatus used by war-ships. It consists of a set of four or five double lanterns hung vertically over one other. Each lantern has two electric lights, one with a red, the other with a white glass. By means of a keyboard, different combinations of red and white lights can be displayed, thus signaling letters of the alphabet or numbers.—**Automatic signal,** in railway signal systems, a form or principle of such apparatus by which the passage of the train itself sets, locks, and releases the signals on the track behind it, so that no human intervention is required to operate signals by which collisions should be prevented or accidents averted. See ★*signaling.*—**Ball signals, staff-and-ball signals,** a system of signals consisting of three balls of different sizes, painted black and white, and placed vertically above each other in any specific order. The significance of each combination is arranged to suit the system of weather forecasts.—**Bomb signals,** colored lights thrown up by bombs to great heights and indicating by colors and numbers the forecasts of the weather.—**British storm signals,** the cone hung from a frame by day or the triangle of light by night, replacing the former drum and cone: strong northwest or north winds veering through E. to S.E. are indicated when the cone points upward; strong southeast or south winds veering through W. to N.W. are indicated when the cone points downward.—**Buys Ballot's system of weather signals,** a modification of the French semaphore consisting of a horizontal bar or wind-vane and an arm hinged to the vane carrying a disk at its free end. The arm and disk can be set in different directions relative to the vane, so as to indicate the expected wind, weather, and temperature. Historically it was the first of the modern systems of weather signals; adopted in Holland in 1860.—**Canadian storm signals.** See the cut.—**Cautionary signal,** a special signal used by the United States Signal Service, 1871–1891, to announce the probable occurrence, within 12 hours and within a radius of 100 miles, of a wind with a velocity of over 25 miles an hour. Now replaced by the storm warnings of the United States Weather Bureau. See *storm and hurricane* ★*warnings,* ★*weather-flag.*—**Coston signals,** colored signal rockets, of private patterns, used for distinguishing vessels of different lines at sea, etc., named after gunner Coston of the United States navy, who modified and improved the Rogers system. These rockets are held in the hand and ignited by percussion.—**Deprez signal.** See *Deprez* ★*marker.*—**Drum-and-cone signal,** the individual drum or cone or any combination of these hung from a frame, as used to signal expected strong winds at European and Colonial signal stations: in general the cone points up for north and down for south winds. See *storm-cone* and ★*wind-signal.*—**Information signal,** in the United States, a triangular red flag formerly used by the Signal Service to give warning of possible storms, and to notify shipmasters to apply for information to the local office of the Bureau: now replaced by the 'warnings' of the United States Weather Bureau.—**Meal signal.** Same as *meal pennant* (which see, under *meal*^{2}).—**Nautical signals.** See *international* ★*code.*—**Pilot signals.** The following signals are displayed separately or together as summons for a pilot: *in the daytime,* the jack hoisted at the fore; the international signal P.T. or S, with or without the code-pennant over it; the distant signal consisting of a cone pointing upward and having over it two balls, or shapes resembling balls: *in the night-time,* a blue light burned every 15 minutes; a bright white light flashed or shown at frequent intervals just above the bulwarks for about a minute at a time.—**Steam-navigation signals.** One short blast means that the boat giving the signal intends to port her helm and direct her course to starboard; two short blasts mean that she intends to starboard her helm and direct her course to port; three short blasts mean that the engines have been reversed; four or more short blasts are a danger-signal, and call for an understood and accepted agreement on the part of the two pilots for passing one another—this signal being used when there is danger of collision.—**Train signals.** See ★*signal, n.,* 2.—**Trumps signal,** in *whist,* the playing of an unnecessarily high card on one trick, followed by a lower card of the same suit on another trick, as a conventional signal to the partner to lead trumps.—**Very signals,** a system of night signals used in the United States navy, in which green and red burning stars are shot up into the air from a special pistol: named from its inventor.



Canadian Storm Signals.

These signals, if displayed by day on lakes Superior, Erie, or Ontario, indicate: No. 1, a moderate gale is expected at first from an easterly direction; No. 2, a moderate gale, at first from a westerly direction; No. 3, a heavy gale, at first from an easterly direction; No. 4, a heavy gale, at first from a westerly direction. If displayed on Lake Huron or in Georgian Bay: No. 1, a moderate gale is expected at first from a southerly direction; No. 2, a moderate gale, at first from a northerly direction; No. 3, a heavy gale, at first from a southerly direction; No. 4, a heavy gale, at first from a northerly direction. The cone, when displayed alone, indicates that it is expected that the wind will attain a velocity of 25 miles an hour, but will not exceed 35 miles, and it is not intended to indicate that an ordinary well-found vessel should stay in port, but is simply a warning that strong winds are expected from the quarter indicated. The drum is always hoisted when the velocity of the wind is expected to exceed 35 miles an hour. The night signal corresponding to day signals Nos. 1 and 3 is a red light; corresponding to day signals Nos. 2 and 4 is a white light above a red light.

signal-cabin (sig′nạl-kab″in), *n.* A small signal-house or cabin on the crest of a hill or mountain through which a tunnel is being cut, designed as a protection for the reference-points and the theodolite or transit used in locating and establishing the center-line of the tunnel. *Jour. Brit. Inst. Elect. Engin.,* 1902–03, p. 555.

signal-hose (sig′nạl-hōz), *n.* Short lengths of a hose used to couple the ends of the signal-pipes of adjoining cars in a train and make a flexible continuous pipe through the length of the train.

signaling (sig′nal-ing), *n.* The use of signals; in *railroading*, the business of controlling the traffic by means of signals. In block-signaling, signals are placed at the beginning of every one of the continuous series of blocks into which a railroad is divided. There are various methods of controlling the signals. In the *telegraph block-signaling system* they are controlled by a signalman stationed at the beginning of the block, who receives information by telegraph from the signalman in the block next above him, in the direction of travel, and sends information to the one next below him. If the next train ahead is reported to have cleared the block and proceeded to the next block in advance, the signalman displays his signal at 'clear.' If not, he detains the following train by displaying his signal at 'danger' until the block is reported clear. In the *controlled manual system* the signals are operated by hand by each signalman in coöperation with the signalman next in advance, by an electric circuit on the telegraph-pole line running between block-stations and sometimes supplemented by an electric circuit through the rails, each train shunting the circuit through its wheels and thereby controlling the signals or block-signal apparatus. In the *automatic system*, signals on masts or brackets are operated through an electric current which traverses the rails, the train, through its wheels, shunting the current when occupying these track-circuits, thus indirectly opening the signal-controlling circuits. Each track-circuit is connected with the signals at the beginning of each block, and a train entering the block sets the signal automatically at 'danger' and maintains it there until the rear end of the train has entered the next block, when the danger-signal is released and shows that the line is clear. This applies to the home signals, the distant signals, though on the same mast, being controlled by a much longer rail-circuit and remaining at 'caution' until after the home signal on its own post as well as the next home signal in advance has come to clear. Various methods are employed to move the signals under the control of the rail-circuits. The *interlocking system* of signals is one which is adapted to the movements of trains at stations, at crossovers, and in yards; its operation includes the control of the switches, the signals being displayed as the result of the switch-movements, reporting the position of the switches and permission to proceed to the train-crews. Several methods of thus controlling the movements of switches and signals are employed upon American roads. In the *mechanical system* all the switches and signals of a yard are operated from a switch-tower through the movement of hand-levers, each lever opening and closing one switch or operating one signal. The movement of the lever is transmitted to the switch by means of long rods (pipes joined together by screw-couplings) resting on roller-bearings with a bell-crank at each change of direction. Each lever opens or closes the switch and, through the interlocker, locks other levers of the system and prevents any signal from being displayed except that which shows the track-connection to be clear at that point, and leaves all other signals governing conflicting routes at danger until the next switch-movement is made. This mechanical system is limited, in point of distance, by the ability of the signalman to move a switch by means of a rod, or a distant signal by means of a long wire. The *pneumatic system* employs air-motors placed at each switch and signal to operate it, each air-motor being operated by compressed air supplied through small pipes which extend from the switch-tower to each switch and which are fed from a main feed-pipe that is kept supplied by a compressor placed at some central point in the system. A movement of the hand-lever in the tower admits air to the motor through a small pipe, and the completion of the movement of the apparatus is reported back through a second pipe to indicate to the signalman that the switch has moved and that the proper signal can be displayed to lock all conflicting routes. To change the switch or signal, air is admitted to other pipes by the movement of the lever, and the switch and signal are reversed and their reversal reported back. In the *electropneumatic system*, compressed air is employed to operate the switches and signals, the control being by means of electric circuits (through wires underground) connecting the tower with each switch and signal. The movement of a lever in the tower sets the motors at the switches and signals in motion, reporting back their movement, interlocking all signals, and, when required, reversing all switch and signal movements. In the *electric system* the switches and signals are operated by electric motors placed at each switch and signal and fed by storage-batteries, the control from the tower being by electric circuits. Compare ★*signal*, 2.—**Curb-signaling**, in telegraphy through cables, a method by which the cable is discharged between each signaling impulse by sending a reversed current into the cable and then connecting it momentarily to the earth.—**Double curb-signaling**, in telegraphy through cables, a method by which, between each signaling impulse, a current flowing first in one direction and then reversed is sent through the cable to discharge it and the cable is then grounded.—**Double-current signaling**, in *telegraphy*, the use of signaling impulses in which the current is reversed by means of a pole-changer or similar device, the positive current being immediately followed by one in the opposite direction.—**Selective signaling**, in *telephony*, a system which permits the calling of any one of a number of subscribers on a party-line without disturbing those not wanted.—**Single-current signaling**, in *telegraphy*, the sending of signals by the making or breaking of a direct-current circuit.—**Submarine sound signaling**, the transmission of signals between ships at sea or from the shore to vessels by means of subaqueous sound-waves. The transmitting device, in the system generally employed, is a submerged bell the vibrations of which are transmitted through the water to the receiving instrument of the distant ship. The receiver is attached to the hull of the vessel below the water-line and contains a telephonic transmitter which sends the signals electrically to a telephonic receiver on the bridge.

signal-locker (sig′nạl-lok″ėr), *n.* A locker on the bridge of a war-ship in which the signal-flags are kept.

signalman, *n.* **2.** In *lumbering*, one who transmits orders from the foreman of a yarding-crew to the engineer of the yarding-donkey.

Signalosa (sig-nạ-lō′sạ), *n.* [NL., so called in allusion to the long dorsal ray; < L. *signum*, a sign, standard, + *alosa*, a shad.] A genus of clupeoid fishes found in the bayous of Mississippi and Louisiana.

signal-pipe (sig′nạl-pīp), *n.* In *car-building*, an air-pipe under the body of a car used to convey signals from the train to the locomotive cab. It connects, through the signal-hose, all the cars of a train with the locomotive.

signal-tower, *n.* **2.** Specifically, an armored tower or inclosure above the deck of a war-ship to protect the signalmen when hoisting signals in action.

signal-yard (sig′nạl-yärd), *n.* A light yard on a military mast fitted with blocks for signal-halyards from which various signals can readily be displayed.

signary (sig′nā-ri), *n.* [L. *signum*, a sign, + *-ary*^{1}.] The list of Egyptian hieroglyphic signs.

> Probably all the signs in the hieroglyphic *signary* can be employed in their primary sense. The secondary value expresses the consonantal root of the name, and any, or almost any, derivative from that root.
>
> *Encyc. Brit.*, XXVII. 730.

signature-prayer (sig′nạ-tụ̄r-prãr″), *n.* A prayer expressed by a symbolic action.

> This action possibly symbolized the fertilization of the earth; indeed, one is tempted to suppose that it was once a *signature prayer* to make the earth yield buffalos.
>
> *J. W. Fewkes*, in Amer. Anthropologist, July-Sept., [1902, p. 508.

signet, *n.* **3.** The ring-shaped form of the plasmodium of malaria. See ★*signet-ring*, 2.

> While some of the stained *signets* were much larger than others, there was nothing else seen to suggest a mixed infection.
>
> *Jour. Tropical Med.*, July 15, 1903, p. 222.

Privy signet, in *Eng. law*, the seal used in making grants of the crown. By 14 and 15 Vict. c. 82 this practice was simplified and royal grants and letters patent are sealed under authority with the privy seal or with wafer seals.

signet-ring, *n.* **2.** One of the forms of the malarial parasite in which the body is of a ring shape thickened on one side.

> At a very early period of its development the æstivo-autumnal parasite in the present cases assumed a very characteristic ring shape. Many of these rings early developed a thickening of one segment, and to these bodies of various sizes the term "*signet-ring*" very aptly applies.
>
> *J. Ewing*, in Jour. Exper. Med., March 25, 1901, p. 446.

significature (sig-nif′i-kạ̄-tụ̄r), *n.* Significance.

> The morphological *significature* of the limbs of vertebrate animals has likewise been determined by Professor Owen. *McCosh*, Divine Government, p. 124.

significs (sig-nif′iks), *n.* [See *signify*.] The science or study of signification, meaning, or significance (ideal worth).

> *Significs* as a science would centralize and co-ordinate, interpret, inter-relate, and concentrate the efforts to bring out meanings in every form, and in so doing to classify the various applications of the signifying property clearly and distinctly. *Baldwin*, Dict. Phil. and Psychol., II. 529.

sigtesite (sig′te-sīt), *n.* [*Sigtes* (see def.) + *-ite*^{2}.] A supposed new alkali feldspar, shown to be merely an intimate mixture of albite and elæolite, from Sigtesö, southern Norway.

siguatera, *n.* Same as ★*ciguatera*. *Buck*, Med. Handbook, IV. 184.

sikatch (sē′käch), *n.* A Russian name for the adult bull fur-seal, in use among the natives on the Pribyloff Islands. See *seecatchie*. *D. S. Jordan*, Fur Seals and Fur-seal Islands.

sikka, *a.* See *sicca*.

sil^2, *n.* A simplified spelling of *sill*.

silage, *n.* The practice of ensiling has in recent times been greatly extended, with much change of method, at least in America. For the structures employed, see ★*silo*. The largest use of silage is on dairy farms, Indian corn being in the United States by far the most important material. Success in making silage lies in thoroughly excluding the air. Close packing is required and coarse material, such as Indian corn, should be cut up fine. The top of the mass is not now weighted. Slow filling is found to be better than rapid filling, since it gives time for settling and permits a temporary heating which expels all the air not consumed by the live tissues. This initial heating, formerly ascribed to fermentation, is now believed to be due to respiratory processes. See the phrases below.—**Sour silage**, a quality, now regarded as inferior, resulting from acid fermentation which, when carried far, imparts strong acidity, dark color, and an offensive smell. Compare *silo*, *sour* ★*hay*, and *sweet* ★*silage*.—**Stack silage**, silage produced by stacking the material compactly in the open air, with or without the aid of palings, the pile being commonly weighted. This method has been largely adopted in Australia, South Africa, etc., but is not adapted to moist climates. Compare *brown hay* (under *sour* ★*hay*).—**Sweet silage**, silage in which fermentation is mainly prevented, and which is therefore little acid, of a bright green color, and not unpleasantly scented. Sweet silage is secured (the thorough exclusion of air being presumed) by slow filling and avoidance of excessive moisture, the mass heating spontaneously to a temperature above 122° F., which kills all ferments and puts an end to chemical change. This is the only kind now sought in the United States.

silajit (si-lā-jēt′), *n.* [Hind. *silājit*, storax, stone lac, mineral coal, bitumen, red chalk, benzoin, a crystallized foliated gypsum (Fallon), < Skt. *ṣilājatu*, bitumen, < *ṣilā*, stone, rock, + *jatu*, bitumen.] A name applied in India to several distinct substances used now or formerly as a supposed cure for many disorders.

> "*Silajit*," an ancient Eastern medicine, forms the subject of a paper by Mr. David Hooper (Journ. Asiatic Society of Bengal, vol. lxxii., part ii., No. 3, 1903). There seem to be three substances known under this name; one appears as an exudation on the rocks in certain districts of the Himalayas, and consists largely of aluminium sulphate; a second, the black and probably true *silajit*, is said to form an exudation on rocks in Nepal, and consists mainly of alkalies and alkaline earths in combination with an organic acid related to humic acid; and a third, or white *silajit*, is apparently of animal origin. The substance is said to be a cure for most disorders.
>
> *Nature*, July 14, 1904, p. 255.

Silenaceæ (sī-lẹ̄-nā′sẹ̄-ē), *n. pl.* [NL. (Lindley, 1836), < *Silene* + *-aceæ*.] A family of dicotyledonous archichlamydeous plants of the order *Chenopodiales*, the pink family, for which the genus *Silene* is taken as the type. It is the *Caryophyllaceæ* of Reichenbach and most botanists, for which it is now substituted, *Caryophyllaceæ* being especially inappropriate because the genus *Caryophyllus*, from which the name was formed, does not belong to the family *Silenaceæ*.

silence, *n.*—**Belt of silence** or **region of silence**, the region in the neighborhood of a fog-signal where its sound is not heard by an observer on a vessel's deck, though it may sometimes be heard by ascending to the mast-head. According to Professor Joseph Henry, the sound is refracted by the action of the wind and passes over or around the belt of silence.—**Silence post**. See ★*post*^{1}.

silence-cabinet (sī′lẹns-kab″i-net), *n.* A telephone-booth, so called because its construction is such as to exclude noises from without.

> At most telephone exchanges a "*silence cabinet*" is provided in the public office.
>
> *Preece and Stubbs*, Manual of Telephony, p. 227.

silencer (sī′len-sėr), *n.* **1.** One who or that which silences.—**2.** Same as ★*muffler* (*c*).—**3.** A device, invented by H. P. Maxim, for silencing, or greatly reducing, the noise produced by the discharge of a rifle or other firearm. It is in the form of a steel tube, several inches in length, which can be attached to the muzzle of the gun.

Silesian. **I.** *a.*—**Silesian zinc furnace**, a direct-fired or gas-fired furnace provided with large fire-clay muffles into which the previously calcined calamin is introduced. Around these muffles the flame of the furnace burns. The heat thus generated produces a reaction between the oxid of zinc and the carbon in the muffle, producing metallic zinc which is volatilized and passes into a condenser where it is condensed in the liquid form.

II. *n.* **2.** [*l. c.*] Silesia: commonly in the plural. [Trade use.]

silica^1, *n.* Silica fused by the oxyhydrogen blowpipe may be worked in the plastic state, very much as glass is, and retains its amorphous character on cooling. Extremely delicate threads of this material may be drawn, and are used to suspend minute, readily mobile mirrors or other such parts of physical apparatus; they are also valuable as electrical insulators, being less affected by atmospheric moisture than threads of glass. Tubes, flasks, and beakers of moderate size have also been made from fused silica, and are useful on account of the hardness of the material, the high temperature it will bear without melting, the rapid changes of temperature it will sustain without cracking, and its superior resistance to most chemical reagents. Its behavior as respects dilatation by heat is also important. Berthelot has, however, recently shown that it is permeable by gases, particularly at high temperatures.

silica^2, *n.* Same as ★*siliqua*, 6.

silicane (sil′i-kān), *n.* [L. *silex* (*silic-*), flint, + *-ane*.] A name proposed for siliciureted hydrogen (SiH_4) as the analogue of methane (CH_4).

silicarenyte (sil-i-kar′e-nīt), *n.* [*silic*(*a*) + *arenyte*, < L. *arena*, sand, + *-yte*, for *-ite*^{2}.] A sandstone containing little else than grains of quartz.

> When a clastic rock is nearly or quite pure in chemical composition, as not infrequently happens, we can combine chemical and textural terms. Thus a purely siliceous arenyte like the St. Peter's sandstone of the Mississippi valley (over 99 per cent. SiO_2) may be called a *silicarenyte*.
>
> *A. W. Grabau*, in Amer. Geol., April, 1904, p. 242.

silication (sil-i-kā′shọn), *n.* [*silicat*(*e*) + *-ion.*] The union of silicic acids with bases producing silicates; silicatization. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. iv. 168.

silicicolous (sil-i-sik′ọ̄-lus), *a.* [L. *silex* (*silic-*), flint, + *colere*, inhabit.] In *phytogeog.*, inhabiting silicious soils.

According to Thurmann the so-called *silicicolous* plants are hygrophilous and the calcicolous plants xerophilous.
A. F. W. Schimper (trans.), Plant-Geog., p. 101.

silicide, *n.*—**Copper silicide.** Same as ★*silicon-copper.*

silicification, *n.* 2. In *geol.*, the replacement of a rock or of the remains of an organism with silica, as in petrified or silicified wood, or silicified limestone. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. iv. 217.

silicilutyte (si-lis-i-lū′tīt), *n.* [*silic*(*a*) + -*i*- + L. *lut*(*um*), mud, + *-yte* for *-ite*^{2}.] A rock composed essentially of finely comminuted quartz, whose particles are comparable in size to the components of clay. *A. W. Grabau*, in Amer. Geol., April, 1904, p. 242.

Silicious cement. See ★*cement.*

silicirudyte (si-lis-i-rö′dīt), *n.* [*silic*(*a*) + -*i*- + *rudyte.*] A pure quartz conglomerate or breccia. *A. W. Grabau*, in Amer. Geol., April, 1904, p. 242.

silicite (sil′i-sīt), *n.* [L. *silex* (*silic-*), flint, + *-ite*^{2}.] Same as ★*ferrosilicon*, the latter term being more commonly used.

silico-. In *chem.*, a combining form of *silicon.*

Silicofluoric acid. Same as *hydrofluosilicic acid.*

silicoformic (sil″i-kọ̄-fôr′mik), *a.* Noting a compound containing the trivalent group HSi⋞. Such compounds are derivatives of formic acid in which the carbon atom has been replaced by one of silicon.

silicol (sil′i-kol), *n.* [*silic*(*on*) + *-ol.*] A name proposed for the compound $SiH_3.OH$, as the analogue of methyl alcohol ($CH_3.OH$).

silicomethane (sil″i-kọ̄-meth′ān), *n.* Same as ★*silicane.*

silicon, *n.* Elementary silicon can now be prepared in large quantity by electrolysis, and in a fused condition. Like its oxid, in cooling from a state of fusion it passes through a plastic stage in which it can be molded into special forms or drawn into threads.—**Copper-silicon**, a general name under which various alloys of copper and silicon are known. These alloys are used for increasing the tensile strength of copper, brass, and bronze castings. The effect of the silicon is to deoxidize the casting and make it sounder. See ★*silicon-copper.*

As to *copper silicon*, this has been prepared for a long time in the furnace of Cowles, and has found considerable application as a deoxidizer, and for increasing the tensile strength in copper and brass castings.
Sci. Amer. Sup., March 21, 1903, p. 22761.

Silicon carbide. See ★*carborundum.*—**Silicon-copper**, a compound of copper and silicon, used in the manufacture of *silicon-bronze* (which see, under *silicon*). Also called *silicium copper* and *copper silicide.*—**Silicon star.** See ★*star*^{1}.—**Silicon tetrachlorid**, a colorless liquid of specific gravity 1.524, and of acrid smell, which fumes in the air and boils at 59.6° C., prepared by passing dry chlorin gas over a strongly heated mixture of silica and carbon. It is decomposed by water, hydrochloric and silicic acids being produced, the latter in gelatinous form.

silicospiegel (sil″i-kọ̄-spē′gl), *n.* Spiegeleisen containing ten per cent. or more of silicon in combination. It is used in steel castings to add both silicon and manganese at once to the metal. *Phillips and Bauerman*, Elements of Metallurgy, p. 273.

siliqua, *n.* 5. The lowest unit in the Roman coinage, the twenty-fourth part of a solidus. See *solidus.*

The solidus of Constantine (of which 72 went to the Roman pound of gold) was divided into 24 *siliquæ* or *κεράτια* (whence comes carat).
W. Ridgeway, in Jour. Hellenic Studies, X. 95.

6. A coin of base silver of the Gothic and Lombard kings of Italy. Also *silica.*

silk. I. *n.*—**Artificial silk**, a fine, continuous fiber having the luster and appearance of silk, made from a solution of tetranitrated cellulose in a mixture of alcohol and ether forced through a very small orifice into water, which solidifies it.—**Byssus silk.** See ★*byssus.*—**Chardonnet silk**, a denitrated nitrocellulose substance formed into a fine thread of silken luster by a process invented by M. de Chardonnet, and first practically demonstrated on a small scale at the Paris exposition of 1889.—**Fagara silk**, silk obtained from the cocoon of the Atlas moth (*Attacus atlas*), which is found in southern Asia.—**Gauze silk**, a thin, transparent fabric made of silk.—**Glass silk**, very fine long flexible glass threads; spun glass. **Jama-mai silk.** See *yama-mai* ★*silk.*—**Lettered silks**, in Oriental textiles, silks in the decoration of which inscriptions are used, as names of princes, verses of the Koran, etc.—**Souple silk**, raw silk which has had the silk-gelatin removed but partly by working in warm soap solution, so that there is a loss of only about 8 per cent. in weight, and has afterward been bleached and worked in a weak solution of cream of tartar nearly at the boiling-point. The product is soft and pliant, but not so strong as completely scoured silk.—**Wild silk**, silk obtained from the wild or uncultivated silkworm.—**Wood-pulp silk**, artificial silk made from woody fibers or cellulose treated with a mixture of nitric and sulphuric acids. See *artificial* ★*silk.*—**Yama-mai silk**, silk produced by the larva of the yama-mai (which see).

II. *a.*—**Silk wool**, wool which has been made to assume a silky appearance by treatment with an acidified solution of bleaching-powder.

silk (silk), *v. i.* To be in course of earing: said of growing Indian corn.

The month closed with the rye crop and the bulk of the barley crop in shock or stack, oat harvest far advanced . . . corn mostly *silking* or earing. Early potatoes and flax very good.
U. S. Monthly Weather Rev., July, 1902, p. 346.

silk-cotton, *n.*—**Red silk-cotton tree**, the simool of India, *Bombax Ceiba.* See *bubui gubat*, under ★*bubui.*

silker (sil′kėr), *n.* One who embroiders (the back of a glove, etc.) in silk.

From the cutters' room the leather, which has assumed the shape of the glove, is sent to the "*silkers*," who embroider the back, and then to the "makers." Some make the gloves, that is they sew the fingers and put the thumbs in; others, called "welters," are engaged in welting or hemming the glove round the edge of the wrist; still others, called "pointers," work the ornamental lines on the back. *Sci. Amer. Sup.*, Jan. 24, 1903, p. 22629.

silkoline (sil′kọ̄-lin, or sil-kọ̄-lēn′), *n.* [A trade-name, irreg. < *silk* + *-ol* + *-ine*^{2}.] A light-weight fabric made from mercerized cotton yarn.

silk-scouring (silk′skour″ing), *n.* The process by which the gelatinous coating is removed from the surface of the fibers of raw silk, rendering them soft, pliant, and lustrous. It consists essentially in working the hanks of raw silk in a solution of soap, sometimes with the addition of carbonate of soda, and boiling for a longer or shorter time until the silk-gelatin swells up and dissolves, finally rinsing in tepid water.

silk-snapper (silk′snap″ėr), *n.* See ★*snapper.*

silk-stocking (silk′stok″ing), *n.* 1. One who wears silk stockings; hence, a person of luxurious habits.—2. One of the well-to-do or 'aristocratic' members of the community or of a party: applied particularly to certain members of the Whig party in the United States in the second quarter of the nineteenth century. [U. S. political slang.]

silkworm, *n.*—**Giant silkworm**, the larva of any member of the lepidopterous family *Saturniidæ* (which see).

silkworm-tree (silk′wėrm-trē), *n.* The white mulberry, *Morus alba*, which furnishes the chief food of the silkworm.

silky, *a.*—**Silky fracture**, a fractured surface of steel which has a sheen like silk. This effect is produced when the grains or crystals of steel are very small in size. It is oftenest seen in high-carbon steels (1 per cent.) which have been correctly heated, and in certain alloy steels, such as nickel steel, tungsten steel, etc.

silky-villous (sil′ki-vil′us), *a.* In *bot.*, villous with silky hairs.

sillage (si-läzh′), *n.* [F. *sillage*, a wake, track.] Wake; track; specifically, the disturbance of the ether produced by the movement through it of an electrified corpuscle or electron.

The wake (*sillage*) which accompanies the electron in its motion.
Langevin, at Congress of Arts and Science, St. Louis, IV.

sillare (sẹ̄l-yä′rạ̄), *n.* [Mex. Sp.] A local name for beds of chalky limestone beneath and around the city of Monterey, Mexico, which are supposed to have been deposited by the evaporation of the lime-bearing waters of a former lake. *Amer. Geol.*, March, 1905, p. 172.

sill-cock (sil′kok), *n.* A faucet or valve for use at the sill of a house or building to give a hose-connection.

sill-complex (sil′kom″pleks), *n.* In *geol.*, a series of intruded sheets of eruptive rock or sills.

During the geological periods when the fault-vent continued intermittently active, the form of the *sill-complex* was capable of being re-moulded periodically in harmony with the localised crust-stresses.
Nature, Sept. 3, 1903, p. 413.

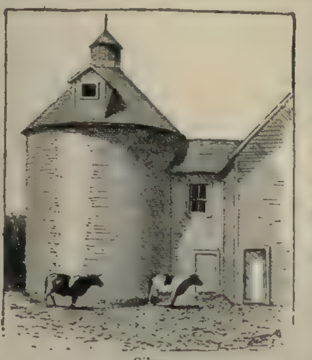
sill-course (sil′kōrs), *n.* In *arch.*, a continual horizontal course closely connected with the sills of a row of windows, either immediately below the sills, or more properly with its lower bed on a line with the lower beds of the sills so that the sills form part of it.

siller-cup (sil′ėr-kup), *n.* A name sometimes applied to fungi of the genus *Nidularia.* [Eng.]

silly, *a.*—**Silly season**, a season when there is little news and the editors of newspapers are supposed to be obliged to use any material, however foolish, that comes to hand. [Colloq.]

The recurrence of the "*silly season*" is marked this year by the revival, both in the . . . and in the . . . of the old fable as to the "derivation" of Whitsunday from the German Pfingsten. *N. and Q.*, 10th ser., II. 121.

silo, *n.* The pit silo has, in America, largely given way to above-ground structures of brick or stone or, commonly, of wood, these being found cheaper, equally effective, and more convenient except on hillsides. The wooden silo was at first rectangular, but for greater strength and to avoid the spoiling of silage in the corners a round form has been largely adopted. Round wooden silos are walled either with staves (see *stave* ★*silo*), or with studding lined and sheathed with boards or inside lathed and plastered with cement. The foundation in either case is of stone laid in cement. The superstructure may be sunk a short distance into the ground. Rectangular (and square) silos (preferred inside a rectangular building) are built with studding. All above-ground silos require doors, which are placed one above another and are often covered with an external shoot down which the silage falls as it is taken out. Outdoor silos usually require a roof with provision for ventilation.—**Stack silo**, a compactly built stack or rick of green forage, sometimes topped with grass and commonly weighted. This mode of ensiling has been largely adopted in South Africa, Australia, etc., and is said to answer well in the dry southwestern United States; but it is not adapted to moist climates. Compare *sour* ★*hay.*—**Stave silo**, a cylindrical wooden silo with walls composed of staves bound together by flat or round hoops.


Silo.

siloist (sī′lọ̄-ist), *n.* [*silo* + *-ist.*] See the extract.

The term *siloist*, a farmer making and feeding silage, is occasionally met with, and has also sometimes been used in this book. *F. W. Wool*, Book on Silage, p. 12.

siloxicon (sil-ok′si-kon), *n.* [*sil*(*icon*) + *ox*(*ygen*) + -*i*- + *c*(*arb*)*on.*] A trade-name of a refractory material useful as a furnace-lining and in making fire-proof bricks, crucibles, muffles, etc., made by the interaction of carbon and silica in an electric furnace, less carbon and a somewhat lower temperature being required than in the manufacture of carborundum. The substance is an amorphous solid, of grayish-green color; insoluble in melted iron; unattacked by acid or basic slags, by hot alkaline solutions, and by all acids except hydrofluoric; self-binding when strongly heated; and refractory in a very high degree. Its composition approximates to Si_2C_2O. When heated to 2700° F. in the presence of free oxygen it takes up that element and is resolved into silica and carbon dioxid, and in the absence of oxygen it seems to be decomposed at 5000° F. into silicon carbide (carborundum), vapor of silicon, and carbon monoxid.

"*Siloxicon*" is a term destined to become as familiar to the commercial world as "Carborundum." It is the name of a new compound, or class of compounds, discovered by Mr. Acheson, consisting of carbon, silicon and oxygen in chemical combination, and possessing physical and chemical properties of great importance to the metallurgical arts.
C. P. Townsend, in Elect. World and Engin., March [28, 1903, p. 525.

silting (sil′ting), *n.* The process of deposition of very fine sediment or silt.

The altitude of the Manchester col, or possibly of some other col still farther down the Ohio, would represent the maximum elevation to which the waters would rise within the basin. This would determine the upper limit of the *silting.*
W. G. Tight, in U. S. Geol. Surv., Prof. Paper 13, 1903, [p. 100.

Siluria (si-lū′ri-ä̤), *n.* [NL. See *Silurian.*] In *geol.*, the region of Silurian rocks taken as a whole irrespective of geographical boundaries.

silurin (si-lū′rin), *n.* [*Silur*(*us*) + *-in*^{2}.] A protamine obtained from the testicles of the fish *Silurus glanis.*

Siluro-Celtic (si-lū′rọ̄-sel″tik), *a.* Pertaining or relating to the Silurian Celts, or the Celts of Wales and Ireland.

silvaline (sil′va̤-lin), *n.* [Irreg. < L. *silva*, a wood (taken in sense of *lignum*, wood), + *-l-* + *-ine*^{2}.] A trade-name of yarn or thread made by spirally twisting, with the aid of special machinery, narrow strips of paper as made on the ordinary Fourdrinier machine, largely from chemical wood-pulp. This yarn is available for the production of textile fabrics, replacing jute or perhaps coarse cotton yarn. See, for a similar product, ★*xyloline.*

silver. I. *n.*—**Alkaline nitrate of silver.** See ★*nitrate.*—**Allotropic silver.** Carey Lea has described several forms of silver differing in properties, especially in color, from the common metal. The most notable of these are a bluish-black, a reddish-brown, and a bronze- or gold-colored precipitate, very finely divided, and apparently colloidal in character. None of them has been obtained in a pure state, and the evidence is not conclusive that they represent different allotropic forms of the element. — **Berthollet's fulminating silver,** a black powder, consisting of silver nitride (Ag_3N), produced by the action of aqueous ammonia on silver oxid. It explodes, when dry, with great violence on slight heating or gentle friction. Quite distinct from the silver salt of fulminic acid, $Ag_2C_2N_2O_2$. — **Blue silver,** metallic silver, assumed to be in a distinct allotropic form, in which it appears of a golden-yellow color by reflected light and blue by transmitted light. These appearances may be due merely to molecular grouping. — **Caustic silver.** See ★*caustic.* — **Coin silver,** the alloy of nine parts of silver and one of copper, legally fixed as the standard of fineness of the silver coins of the United States. — **Dark-red ruby silver.** Same as *pyrargyrite.* — **Fulminating silver.** (*b*) See *Berthollet's fulminating* ★*silver.* (*c*) Silver hydrazoate (AgN_3), prepared by precipitating a solution of silver nitrate by one of sodium hydrazoate. — **Herring silver,** in *old Eng. law,* money paid in lieu of the customary duty of supplying herrings to a religious institution. — **Hyposulphite silver-extraction process,** the process of extracting silver by means of hyposulphite leaching. In the Russel process the chloridizing roasted ore is first lixivated with hyposulphite of soda, and the lead is separated from the solution by means of sodium carbonate, which converts it into lead carbonate. Then the ore is leached with cuprous hyposulphite, known as the 'extra solution,' which dissolves metallic silver, silver sulphid, sulpharsenide, and sulphantimonide, and thus an additional amount of silver is extracted, which would have been lost in the ordinary method of extraction. The solutions from both of these leachings are joined and the silver precipitated and recovered. — **Light-red ruby silver.** Same as *proustite.* — **Molecular silver,** metallic silver in a finely divided state, obtained by reduction of one of its compounds at a temperature below the fusing-point of the metal. — **Platinum silver,** an alloy of silver and platinum, in which the proportion of the latter varies from 17 to 35 per cent. It has a gray color and is used principally for resistance-coils, since its electrical resistance is very little affected by changes in temperature. It is also employed in dentistry. — **Red silver.** (*b*) Metallic silver, assumed to be in a distinct allotropic form, in which it appears of an indigo-blue color by reflected light and red by transmitted light. The appearances may be due merely to molecular grouping. — **Silver acetylide.** See ★*acetylide.* — **Silver chlorid,** a compound occurring in nature as the mineral cerargyrite, used as an ore of silver. It is easily prepared by precipitation from a solution of a silver salt by a soluble chlorid, and its appearance and properties furnish a much-used test for either of its constituent elements. It is also utilized in photography. — **Silver iodide.** See ★*iodide.* — **Soluble silver,** an allotropic form of silver, collargol, possessing marked germicidal power. — **Sterling silver,** silver of the legal standard of fineness. If the term is used without further qualification it is generally understood to refer to the British standard. See *standard*^{2}, *n.*, 2, and *sterling*^{2}, *a.*, 1. — **White silver,** a form of metallic silver in a finely divided state, obtained by reduction of the metal from a strongly acid solution of one of its salts, nearly white as seen by reflected light, and nearly opaque, even in the thinnest films, in respect to transmission of light. — **Yellow silver,** metallic silver, assumed to be in a distinct allotropic form, in which it appears of an indigo-blue color by reflected light and yellow by transmitted light. These appearances may be due merely to molecular grouping.

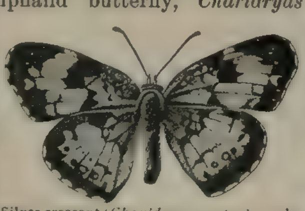
II. *a.*—**Silver-bar fish.** See ★*fish*^{1}.—**Silver emulsion.** See ★*emulsion.*—**Silver stain.** See ★*stain.*—**Silver tree-fern.** See ★*tree-fern.*

silverbelly (sil′vėr-bel″i), *n.* 1. Same as *white* ★*bream* (*b*).—2. A common name used in Tasmania for the silversides, species of fishes of the family *Atherinidæ.* *E. E. Morris,* Austral English.

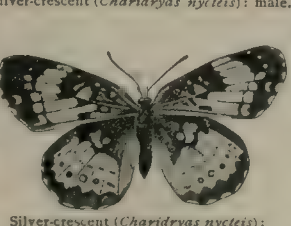
silverbilly (sil′vėr-bil″i), *n.* A common name of a fish, *Gerres ovatus,* found in Australian waters.

silver-button (sil′vėr-but″n), *n.* The large-flowered everlasting, *Anaphalis margaritacea.* Also called *silver-leaf*

silver-crescent (sil′vėr-kres″ent), *n.* An American nymphalid butterfly, *Charidryas nycteis,* dark brown in color, with a band of orange across both wings, the under sides being marked with silvery lunules. It is of wide distribution, and its larvæ feed on the foliage of a variety of compositaceous plants.



Silver-crescent (*Charidryas nycteis*): male.



Silver-crescent (*Charidryas nycteis*): female.

silverette, *n.* It is a subbreed or strain of domesticated pigeons, derived from the satinette, of a light gray color, but each tail-feather bearing a white spot as in the satinette.

silver-feather (sil′vėr-feᴛʜ″ėr), *n.* Same as *silverweed,* 1.

silver-fish, *n.* 7. A Tasmanian name for *Carangus georgianus,* of the family *Carangidæ,* the white or silver trevally. *E. E. Morris,* Austral English.

silver-lead (sil′vėr-led″), *n.* A mixture of silver and lead sometimes found in Cyprian excavations.

> Several rings of unrefined *silver-lead,* . . . like the bronze rings, and an unrecognisable fragment of silver, complete the list of metallic objects.
>
> *J. L. Myres,* in Jour. Hellenic Studies, XVII. 148.

silver-leaf, *n.* 4. The large-leaved umbrella-tree, *Magnolia macrophylla.*—5. The American or willow-leaved meadow-sweet, *Spiræa salicifolia.*—6. The spotted touch-me-not, *Impatiens biflora.*—7. Same as ★*silver-button.*

silverling, *n.* 2. The tarpon, *Tarpon atlanticus,* a large silvery game-fish of the Atlantic coast of America, known from Long Island to Brazil, and common on the southeastern coast of the United States. Also *silver-fish.*

silver-mite (sil′vėr-mīt), *n.* The rust-mite of the orange, *Phytoptus oleivorus.* See *rust-mite.*

silver-plant (sil′vėr-plant), *n.* Same as ★*silver-leaf,* 6.

silver-rod (sil′vėr-rod), *n.* 1. Same as *white* ★*goldenrod.*—2. Same as ★*king's-rod.*

silver-shilling (sil′vėr-shil″ing), *n.* The honesty, *Lunaria annua,* so called from the large, nearly circular, shining septum of the fruit, which remains after the valves fall away. Also called *money-flower* and *gold-and-silver plant.*

silversides, *n.*—**Lake-silversides.** Same as *brook-silversides.* See *silversides.*

silverspot, *n.*—**Mountain-silverspot,** an American nymphalid butterfly, *Argynnis atlantis,* occurring in Canada and the northeastern United States. Its larvæ feed on violets.

silver-standard (sil′vėr-stan″därd), *a.* Using silver money alone as full legal tender. The silver-standard countries are Central America (except Costa Rica), China, Hong-Kong, and Persia. Certain countries have had, nominally at least, a double standard (gold and silver), as the United States, Mexico, Haiti, Uruguay, Argentine Republic, Venezuela, France, Belgium, Italy, Switzerland, Greece, Spain, Servia, Bulgaria, Netherlands, Algeria, Tunis, Java, Philippine Islands, and Hawaii. Many of these, as the United States, are virtually or actually on a gold basis. In British India the gold standard has been adopted. See ★*gold-standard.*

silver-steel (sil′vėr-stēl″), *n.* Steel containing as an alloying element a small percentage of silver.

silversword (sil′vėr-sōrd), *n.* Same as ★*ahinahina.*

silvertail, *n.* 2. One who belongs to the upper classes in society or the community. Compare ★*coppertail.* *E. E. Morris,* Austral English. [Australia, bushmen's slang.]

silver-thaw (sil′vėr-thâ″), *n.* Ice which falls in large thin flakes from sails and rigging.

silver-tip (sil′vėr-tip), *n.* A variety of the grizzly bear, *Ursus horribilis,* in which the long hairs are tipped with yellowish white, giving the pelage something the appearance of that of the silver fox.

> It is a common thing . . . to see a dozen Bears feasting there at one time. They are of all kinds — Black, Brown, Cinnamon, Grizzly, *Silvertip,* Roachbacks, big and small.
>
> *E. Thompson Seton,* The Biography of a Grizzly, p. 127.

silver-trevally (sil′vėr-trẹ-val″i), *n.* See ★*trevally.*

silverwood-tree (sil′vėr-wụ̂d-trē″), *n.* A large, elegant tree of Barbados, *Drypetes serrata,* belonging to the spurge family.

Silvery spleenwort. See ★*spleenwort.*

silvical, silvics. See ★*sylvical,* ★*sylvics.*

sim (sēm), *n.* [Hind.] The lablab or Egyptian bean, *Dolichos Lablab.*

Simblum (sim′blum), *n.* [NL. (Klotzsch, 1831), < Gr. *σίμβλον,* a beehive.] A genus of gasteromycetous fungi, of the family *Clathraceæ,* which have the stipitate receptacle inclosing the gleba latticed, with the meshes about equal in diameter each way. *S. rubescens* occurs in America. The gleba has a very unpleasant odor.

Simian fissure. See ★*fissure.*

similar, *a.* 3. (*b*) In the theory of aggregates, similarly arranged; coupled by a one-one relation.

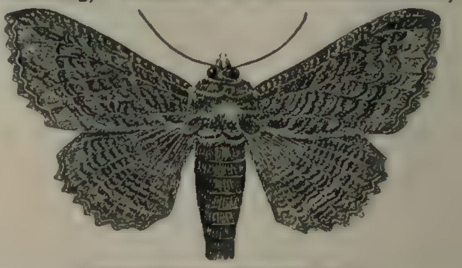
> When the elements of a manifold are arranged according to the scheme $1', 2'', 3'''$ . . . it may be said to be *similar,* or to be arranged similarly, to the natural scale.
>
> *Encyc. Brit.,* XXXI. 284.

Directly similar, in *geom.,* capable of being so rotated that corresponding sides are parallel.—**Inversely similar,** in *geom.,* similar but incapable of being so rotated that corresponding sides are parallel.—**Ordinarily similar,** capable of being brought into one-to-one correspondence in such a way that the order of any two elements is the same as the order of the corresponding elements.—**Similar sets, surds, variation.** See ★*set*^{1}, ★*surd,* ★*variation.*

similarity, *n.*—**Helmholtz's principle of mechanical similarity,** a principle in hydrodynamics by which results obtained with apparatus of small dimensions may be transferred to natural phenomena on a large scale in geometrically similar masses. It is expressed in two propositions: (1) If the ratio of the densities is not changed in geometrically similar waves, the linear dimensions increase as the squares of the velocities of the two media; the velocities increase in equal ratios. (2) If the ratio of the densities is varied, the ratio of the living forces of the corresponding units of volume must remain unchanged.

similarly, *adv.*—**Similarly placed,** in *geom.,* said of similar figures when any translation leaves them with a center of similitude (which see, under *center*^{1}).

similar-wing (sim′i-lär-wing), *n.*—**Lunate similar-wing,** a book-name for an American noctuid moth, *Homoptera lunata,* brownish with marbled wings. Its larva feeds on the leaves of plum, rose, maple, willow, and other plants.



Lunate Similar-wing (*Homoptera lunata*).
(Redrawn from Comstock.)

similative (sim′i-lā-tiv), *a.* Serving to express similarity; in *gram.,* noting the case which expresses similarity (like, similar to). Also used as a noun.

> Besides a general locative some of the most frequently occurring are inessive, superessive, introessive, ablative and terminative. Besides these comitatives, *similatives,* partitives, and suffixes expressing similar ideas are found.
>
> *Amer. Anthropologist,* Jan.–March, 1903, p. 13.

similitude, *n.*—**Axis of similitude.** See ★*axis*^{1}.—**Circle of similitude.** (*b*) See ★*circle.*—**Direct center of similitude.** See ★*center*^{1}.—**Triangle of similitude.** See ★*triangle.*

simillimum (si-mil′i-mum), *n.*; pl. *simillima* (-mạ̈). [NL. use of L. *simillimum,* neut. superl. of *similis,* like. The name alludes to the dogma *similia similibus curantur,* 'like (effects) are cured by like (agents).'] The remedy best adapted for the treatment of any special condition in accordance with the fundamental therapeutic principle of homeopathy. See *homeopathy.*

simmon (sim′ọn), *n.* [Corruption of *persimmon.* Compare *possum.*] The persimmon, *Diospyros Virginiana.* [Negro dial.]

simoleon (si-mō′lẹ̄-ọn), *n.* [Origin obscure.] A dollar. [Slang.]

> She wears a dress — it cost no less
> Than ninety-five *simoleons;*
> It 's faded tan, and looser than
> That great coat of Napoleon's.
>
> *Kansas City Daily Times* Dec. 23, 1903.

simosaur (sim′ọ-sâr), *n.* An animal of the genus *Simosaurus.*

Simosaurus (sim-ọ-sâ′rus), *n.* [NL., < Gr. *σιμός,* flat-nosed, + *σαῦρος,* lizard.] A genus of sauropterygian reptiles from the trias of Germany. It has a broad skull, with obtuse snout, and short, obtusely conical teeth.

simple. I. *a.*—**Simple branch-point,** in *math.,* a branch-point which merely interchanges a pair of branches.—**Simple circuit,** in *math.,* a circuit which cannot (without crossing the boundary or leaving the surface) be continuously deformed into two circuits.—**Simple connection,** in *math.,* the connection of a surface which is finite, open, contained by a single boundary, and such that every closed cut (or, what is equivalent, any open cut joining two points of the boundary) separates it into two parts.—**Simple curve,** one whose equation cannot be factored.—**Simple elliptic space.** See ★*space.*

II. *n.* 8. (*a*) In *French boston,* or in *heart solo,* the winning of five tricks with a partner. (*b*) In *division loo,* a pool which has been put up by the dealer alone. Pools which have been contributed to by players who have been looed are double pools.

simple, *v. i.* II. *trans.* To make (the second or low-pressure cylinder of a compound engine) receive live steam direct from the boiler, instead of receiving its working fluid as exhaust from the first or high-pressure cylinder, as in normal series-working. This is done in starting, or occasionally with unusual overload on the engine, and the two cylinders work as two simple engines.—**Simpling valve.** See *intercepting* ★*valve.*

simpler's-joy, *n.* 2. The blue vervain, *Verbena hastata*, of eastern North America: so called probably by confusion with the officinal verbena.

simplesse, *n.* 2. An affected simplicity. [Rare.]

> The simplicity of Homer is remarkable; "*simplesse*," as Arnold calls affected simplicity of a literary kind, is a very different thing, and a popular thing nowadays.
> *Athenæum*, July 15, 1905, p. 77.

simplex (sim′pleks), *a.* [L., simple, plain.] Simple; single: applied to telegraphy.

> The actual speed (*simplex*) obtained by automatic transmission with the latter cable is as high as forty-seven (or even up to fifty) five-letter words per minute.
> *Engin. Mag.*, Dec., 1898, p. 428.

Simplex telegraph, a telegraph in which the apparatus is arranged for the sending of one message over the line at a time: distinguished from duplex, or multiplex.—**Simplex telegraphy**, telegraphy in which but one message at a time is transmitted over a single wire.

Simplicative rules of evidence, those laws and customs which eliminate or restrict such testimony as, however pertinent, is confusing or creates prejudice, as opinion testimony or expert evidence, and the evidence of a judge or juryman. *Wigmore*, Evidence, § 1863.

simplifier (sim′pli-fī-ėr), *n.* One who or that which simplifies or makes clear or simple.

> Charles Fox was the great *simplifier* of debate.
> *Athenæum*, April 1, 1905, p. 394.

Simply ordered set. See ★*set*1.

simulance (sim′ụ̄-lans), *n.* [L. *simulare*. See *simulant*.] A deceptive resemblance; a mere appearance or semblance.

> Man embodies an immaterial and immortal spiritual principle which no lower creature possesses, and which makes the resemblance of the apes to him but a mocking *simulance*. *Sir D. Wilson*, Anthropology, ii.

simuliid (si-mū′li-id), *n.* and *a.* **I.** *n.* A member of the dipterous family *Simuliidæ*.

II. *a.* Having the characters of or belonging to the family *Simuliidæ*.

simulism (sim′ụ̄-lizm), *n.* [*simul*(*ate*) + *-ism*.] A term proposed to replace *mimicry*, in referring to the resemblances of animals, as implying a less conspicuous resemblance and the absence of the idea of a conscious or designed resemblance.

> The word "mimicry" is also adversely criticised, as implying conscious resemblance, which is not known to exist, and "*simulism*," "simulation," "simulating," are substituted "as being at once expressive, explanatory and euphonious, and free from the inference of designed and cognitive resemblance." *Nature*, March 30, 1905, p. 521.

Simultaneous variation. See ★*variation*.

sina (sē′nä), *n.* [From some form (ML. *Sina*, Tagalog *Sina*?) of *China*.] A Chinese silkworm, larva of *Bombyx sinensis*.

sinabatan (sē-nă-bă-tän′), *n.* [Also *sinabotan*; Tagalog *sinabatan*.] A mat made by the natives of the Philippine Islands from the leaf-fibers of the screw-pine, *Pandanus spiralis*.

Sinæan (si-nē′ạn), *n.* Of or pertaining to the Sinæ, an ancient people supposed to be the Chinese.

> To Paquin of *Sinæan* kings; and thence
> To Agra and Lahor of Great Mogul,
> Down to the Golden Chersonese.
> *Milton*, Paradise Lost, xi. 390.

sinalbin (si-nal′bin), *n.* [L. *sin*(*api*), mustard, + *alb*(*us*), white, + *-in*2.] A colorless compound, $HO.C_6H_4.CH_2N:C(SC_6H_{11}O_5).O.SO_3.C_{16}H_{24}O_5N.5H_2O$, contained in the seed of white mustard. It crystallizes in glassy lustrous needles and is colored intensely yellow by a very minute trace of alkali.

sinamay (sē-nă-mä′ẹ̄ or -mī′), *n.* [Bisaya *sinamáy*.] A fabric made by the natives of the Philippine Islands from the fibers of the leaf-stalks of the abaca (*Musa textilis*), usually mixed with fibers of silk, cotton, piña, etc.

sinapic (si-nap′ik), *a.* Pertaining to sinapin or sinapic acid.—**Sinapic acid**, a pale-yellow compound, $\overset{4}{H}O.C_6H_2(\overset{3}{O}\overset{5}{C}H_3)_2CH:CH.COOH$, prepared by the action of barium-hydroxid solution on sinapin. It crystallizes in needles or small prisms and melts at 186.5–192° C. Also called 3,5-*dimethoxy-4-hydroxycinnamic acid*.

sinapize (sin′ạ-pīz), *v. t.*; pret. and pp. *sinapized*, ppr. *sinapizing*. [LL. *sinapizare*, poultice with mustard, < *sinapi*, mustard.] To impregnate with mustard: said of a poultice or a plaster so treated.

sinapoline (si-nap′ọ̄-lin), *n.* [L. *sinapi*, mustard, + *-ol* + *-ine*2.] A colorless compound, $CH_2:CH.CH_2NHCONHCH_2CH:CH_2$, prepared by the action of lead hydroxid on allyl mustard-oil. It crystallizes in plates, melts at 100° C., and is volatile with steam. Also called ab- or symmetrical diallyl carbamide.

sincaline (sin′kạ-lin), *n.* [Also *sinkalin*, *sinkaline*, < L. *sin*(*api*), mustard, + *-cal* or *-kal*? + *-ine*2.] Same as *choline* or ★*bilineurine*.

Sinceny pottery. See ★*pottery*.

sinder1, *n.* 2. An amended spelling of *cinder*.

Sindhi (sin′dē or sind′hē), *a.* and *n.* [Also *Sindi*; Sindhi *Sindhi*, < *Sindh*, Sindh, < Skt. *Sindhu*, the Indus, the region of the Indus, Sindh: see *Indian*.] **I.** *a.* Of or pertaining to Sindh or its people or their language.

II. *n.* 1. A native of Sindh, or one whose native tongue is Sindhi.—2. An Aryan language spoken principally in Sindh, India.

Sindi, *n.* See ★*Sindhi*.

sine2, *n.*—**Hyperbolic sine**, hysin $x \equiv \sinh x = \frac{1}{2}(e^x - e^{-x})$. See ★*shin*3.—**Sine law.** See ★*law*1.

sine-compass (sīn′kum″pạs), *n.* A sine galvanometer (which see, under *galvanometer*).

sine-curve (sīn′kėrv), *n.* Same as *curve of sines*. See *curve* and *sinusoid*.

Sinesian (si-nē′zhiạn), *a.* [L. *Sinæ*. See *Sinic*.] Of or pertaining to China; Sinic: as, the *Sinesian* countries of Eastern Asia. *Athenæum*, Feb. 13, 1904, p. 200.

sine-wave (sīn′wāv), *n.* A wave in which the vibrations of the particles of the transmitting medium are simple harmonic motions. *H. Hertz* (trans.), Electric Waves, p. 17.—**Sine-wave current**, in *elect.*, an alternating current in which the wave-form is sinusoidal.—**Sine-wave telegraphy**, a system of telegraphy in which a single-phase alternating current, the wave-form of which is approximately sinusoidal, is used for signaling.—**Sine-wave transmitter**, in *teleg.*, an instrument for sending the signaling impulses used in sine-wave systems of telegraphy. The characteristic feature is an automatic device by which the circuit is opened and closed only when the current intensities pass through zero.

sing, *v. i.*—**To sing out.** (*b*) To sing with the full strength of the voice.

> "*Sing out*"—shouted one gentleman in a white greatcoat. "Don't be afraid to put the steam on, old gal," exclaimed another. . . . "Sing louder," said Mrs. Jennings Rodolph.
> *Dickens*, The Mistaken Milliner, in Sketches by Boz, I. [337.

Singing glass. See ★*glass*.

Singapore cedar. Same as *Moulmein* ★*cedar*.

singeing-plate (sin′jing-plāt), *n.* A heated metallic plate or cylinder over which cotton cloth intended for calico-printing is rapidly drawn, so as to singe or burn off the nap of short projecting fibers without scorching the cloth itself. A row of small gas-flames is now generally used for this purpose.

singer1, *n.*—**Singer's nodes.** See ★*node*.

singing-tube (sing′ing-tūb), *n.* The glass tube used in the production of a singing-flame. See *singing-flame*. *J. M. Baldwin*, Dict. of Philos. and Psychol., I. 610.

single1. **I.** *a.*—**Single court.** See ★*court*.

II. *n.* 1. (*f*) In *whist*, the score made by the winners when the game is 5 points up and rubbers are played, if the losers of any game are 3 or 4 up: as, '*single*, double, and the rub.' (*g*) In the extraction of antimony from its native sulphid, the manufacturers' name for the first crude product from melting the ore with scrap-iron. It generally contains about 91.5 per cent. antimony, 7 per cent. iron, and 1 per cent. sulphur. (*h*) In *golf*, two players playing against each other. (*i*) In furniture, silverware, and the like, a separate piece not belonging to a set.

> Fine specimens, even if '*singles*,' have been added wherever possible.
> *R. S. Clouston*, in Burlington Mag., V. 381.

5. One strand of sliver, roving thread, or yarn.—6. *pl.* A commercial name in England for thin sheet-steel or -iron used as a foundation for tin-plate, having a thickness ranging from 0.238 to 0.35 of an inch, or from No. 4 to No. 20 B. W. G.

single-beat (sing′gl-bēt), *a.* Having only one beat: noting valves which have a single bearing-surface or seat, as ordinary lifting-valves: distinguished from *double-beat* valves, which have two seats, so that they may be in equilibrium of pressures above one face and below the other. Cornish valves and most puppet-valves for large engines are double-beat. Check-valves of small area are single-beat.

> Both valves are of the *single-beat* poppet, or mushroom type, and seat vertically along the same axis but in opposite directions, the admission valve opening downward and the exhaust upward.
> *Elect. World and Engin.*, Sept. 24, 1904, p. 517.

single-break (sing′gl-brāk), *a.* In *elect.*, opening the circuit at one point only: said of certain types of switch. *Jour. Brit. Inst. Elect. Engin.*, 1901–02, p. 1210.

single-gear (sing′gl-gēr), *n.* A transmission, usually by toothed wheels, in which only one pair of wheels or one pair of transmission elements is involved: usually one wheel and one pinion, for the gain of power and loss of speed or for a gain in velocity with corresponding reduction of power.

single-geared (sing′gl-gērd), *a.* Directly driven by belt or other transmission without the interposition of a reducing-gear shaft: used of speed-lathes or drill-presses having no back-gear on the head-stock, and of motor-car transmissions where the motor turns slowly enough to render a counter-shaft and gear-train unnecessary.

single-hung (sing′gl-hung), *a.* Having a cord and pulley on one side only, the single weight being a sufficient counterpoise: said of a window-sash. Such fitting is used for narrow sashes only, or else rollers are put on the other side to prevent the sash from binding on the window-frame.

single-leaf (sing′gl-lēf), *n.* The one-leaved piñon or nut-pine, *Pinus monophylla*: so called because there is only one leaf in a bundle.

single-phase (sing′gl-fāz), *a.* In *elect.*, noting a system of electric distribution by alternating currents produced by a single alternating electromotive force, in which therefore all the currents are in phase with each other, that is, reverse simultaneously in direction, or differ in phase only so far as is due to the different character of the circuits in which they flow.—**Single-phase alternater**, a generator supplying alternating current to a single-phase circuit, as distinguished from the machines for producing simultaneously two or more currents differing in phase such as are used in polyphase systems.—**Single-phase circuit**, an ordinary two-wire circuit for the transmission of an alternating current, as distinguished from the circuits in a polyphase system.—**Single-phase current**, an ordinary alternating current the wave-form of which is sinusoidal, sometimes with superimposed harmonics, as distinguished from the two or more currents, differing in phase, that are employed in polyphase systems.—**Single-phase generator.** See ★*generator* and ★*single-phase alternater*.

single-phaser (sing′gl-fā″zėr), *n.* In *elect.*, a single-phase alternating-current generator. *Jour. Brit. Inst. Elect. Engin.*, 1899–1900, p. 246.

single-riveted (sing′gl-riv″et-ed), *a.* Having only one row of rivets parallel to the joint or seam: distinguished from *double-* or *chain-riveted*, where two rows of rivets are used.

single-seeded (sing′gl-sē″ded), *a.* Same as *monospermous*.

single-stage (sing′gl-stāj), *a.* Having only one stage; completed in one operation; not continued through two or more similar stages: used of air-compressors and steam-turbines. A *single-stage* compressor is one in which the compression is completed in the first cylinder; a *single-stage* turbine, one in which the steam passes through an expansion-nozle only once.

single-sticker (sing′gl-stik″ėr), *n.* A sloop or cutter; a vessel having but one mast. [Colloq.]

single-taxer (sing′gl-tak″sėr), *n.* One who advocates the levying of all, or practically all, taxation upon a single object, as land, capital, or consumption; specifically, one who accepts the doctrine of Henry George that all taxes should be levied upon the value of land, exclusive of all improvements due to industry. The measure, if fully carried out, would divert to the government the rent of the land itself.

> *Single-taxers* maintain that the reason the wages of labor do not increase as material progress advances is because rent, or the price paid for the use of land, is continually increasing. *Science*, Dec. 13, 1901, p. 915.

single-valued (sing′gl-val″ūd), *a.* Taking under specified conditions only a single value.—**Single-valued function**, in *math.*, one which by all continuations within a certain region always takes the same value at any point: said to be *single-valued* in that region.

singling (sing′gling), *n.* A manufacturers' name for the first step in the reduction of antimony from its ore, namely, fusion with scrap-iron in crucibles. See ★*single*, 1 (*g*).

sing-sing2 (sing′sing), *n.* Same as *singsong*, *n.*, 3. [Colloq.]

> The number of native songs is enormous, and musical evenings or "*sing-sings*" are a regular institution.
> *Geog. Jour.* (R. G. S.), XIII. 664.

singular, *a.*—**Non-essential singular point.** See ★*point*1.—**Singular point of a function.** See ★*point*1.

singularity, *n.*—**Accidental singularity**, in *math.*, a singularity at a non-essential singular point.—**Compound singularity** in *geom.*, one involving two or more ordinary singularities—these being called 'ordi-

nary,' because, without limiting the generality of a curve of given order or class by any special hypothesis, they may all present themselves.—**Logarithmic singularity**, in *math.*, a point about which a function acts like a logarithm.—**Non-essential singularity**, in *math.*, a value of the variable of a function for which the function has a determinate infinite value. The term was proposed by Cathcart.—**Ordinary singularity.** See *singularity*, 3, and *compound* ★*singularity*.—**Singularity of the first class**, in *math.*, accidental singularity.—**Singularity of the second class**, in *math.*, an essential singularity of the simplest kind.—**Singularity of the third class**, in *math.*, a singularity resulting from the union of an infinity of those of the second class.

sinh (pron. shin). An abbreviation for 'hyperbolic sine,' a function having a relation to a rectangular hyperbola similar to that of the ordinary trigonometric sine to a circle.

Sinicize (sin′i-sīz), *v. t.*; pret. and pp. *Sinicized*, ppr. *Sinicizing*. [*Sinic* + *-ize*.] To make similar in habits and thought to the Chinese. *Encyc. Dict.*

Sinico-Japanese (sin′i-kō-jap-a-nēs″), *n.* Belonging both to China and to Japan.

> The science of old Japan was equally modelled upon that of China. Nothing original of any importance has yet been found in the *Sinico-Japanese* literature of the last millenium. *Athenæum*, April 1, 1905, p. 396.

Sinify (sin′i-fī), *v. t.*; pret. and pp. *Sinified*, ppr. *Sinifying*. [ML. *Sina*, China, + *-fy*.] To make Chinese or similar to the Chinese in habits and thought. *Encyc. Dict.*

sinigrin (sin′i-grin), *n.* Same as *potassium myronate* (which see, under *myronate*).

Siniperca (sin-i-pėr′kä), *n.* [NL., < ML. *Sina*, China, + L. *perca*, perch.] A genus of serranoid fishes found in the rivers of China, Manchuria, and Japan.

sinistraural (sin-is-trâ′ral), *a.* [L. *sinister*, left, + *auris*, ear, + *-al*^{1}.] Noting a condition in which one naturally turns the left ear rather than the right when listening to some faint or distant sound. *G. M. Gould*, in Pop. Sci. Mo., Aug., 1904, p. 361.

sinistrin (sin′is-trin), *n.* [L. *sinister*, left, + *-in*^{2}.] 1. Same as *inulin*.—2. A colorless, pulverulent, levorotatory compound, $C_6H_{10}O_5$, contained in the white or red sea-onion or squill, *Urginea Scilla*. It is probably identical with achroödextrine.

sinistrocular (sin-is-trok′ū-lär), *a.* [L. *sinister*, left, + *oculus*, eye, + *-ar*^{3}.] Noting a condition in which one naturally uses the left eye in monocular work, as sighting a gun, looking through a microscope or telescope, etc. *G. M. Gould*, in Pop. Sci. Mo., Aug., 1904, p. 361.

sinistrodextral (sin″is-trō-deks′tral), *a.* [L. *sinister*, left, + *dexter*, right, + *-al*^{1}.] From left to right.

sinistromanual (sin″is-trō-man′ū-al), *a.* [L. *sinister*, left, + *manus*, hand, + *-al*^{1}.] Left-handed.

> The bow and arrow, the spear, boomerang, club, etc., could be used as well with the left hand by the *sinistromanual*. *G. M. Gould*, in Pop. Sci. Mo., Aug., 1904, p. 363.

sinistromanuality (sin″is-trō-man-ū-al′i-ti), *n.* [*sinistromanual* + *-ity*.] Left-handedness.

> No pupil with *sinistromanuality* established can learn piano-playing easily.
> *G. M. Gould*, in Pop. Sci. Mo., Aug., 1904, p. 363.

sinistropedal (sin″is-trō-ped′al), *a.* [L. *sinister*, left, + *pes* (*ped-*), foot, + *-al*^{1}.] Left-footed. *G. M. Gould*, in Pop. Sci. Mo., Aug., 1904, p. 361.

sinistrorsally (sin-is-trôr′sal-i), *adv.* Left-handedly; with turnings to the left.

Sinitic (si-nit′ik), *a.* Same as *Sinic*.

sink, *v. i.* 16. (*a*) To drive a mine or exploration shaft downward through the earth's surface.

> Nor do we, as in the past, throw away vast sums of money in *sinking* for coal in Cambrian or Silurian rocks. *Science*, Oct. 9, 1903, p. 462.

(*b*) To run a shaft or drift in any direction into the earth in search of mineral or ore.

sink, *n.* 8. In *mining:* (*b*) The amount by which the shaft-level is lowered by a blast in sinking operations. (*c*) The distance inward, or depth, to which the excavation for a shaft or drift is to be carried. (*d*) The lowest point in the shaft, toward which the drainage flows.—10. In *geom.*, a place of transition from space of *n* into space *n* − 1 dimensions.—11. In *elect.*, in the theory of the flow of current in plane sheets, a point at which the current leaves the sheet.

> We may investigate, first, the simple case of one source and one *sink* in an infinite plane sheet of thickness δ, and conductivity *k*. *Encyc. Brit.*, XXVIII. 18.

sink-boat (singk′bōt), *n.* An oblong box submerged to the rim in the water, used as a boat and for concealment by persons engaged in shooting wild-fowl; a sink-box; a battery.

sink-box (singk′boks), *n.* Same as ★*sink-boat*.

sinker, *n.* 4. Same as ★*dead-head*, 4.—5. A heavy dumpling or doughnut; a dough-sinker; a dough-boy. [Slang.]

> The New York Dairy Lunch, with its mirrored and marbled bathroom decoration, its elevating Bible texts, and depressing "*sinkers*" . . . would never make a success with Parisians.
> *F. B. Smith*, How Paris Amuses Itself, p. 48.

6. A (silver) dollar. [Slang.]

> I waited for him [a city tramp] nearly an hour, when he returned with a "poke-out" (food given at the door) and "a *sinker*" (a dollar). I of course was a little surprised, and asked for details.
> *Josiah Flynt*, in The Century, March, 1894, p. 713.

7. See the extract.

> The parasite is attached to the host by "*sinkers*" which consist of specially modified, but true, rootlets, although in function they simulate the haustoria of other parasites. The *sinkers* penetrate the bark of the host and obtain nourishment for the parasite from the growing tissues beneath it, much as food-sap is obtained from the soil by normal plants. The parasitism is complete. Examples: The mistletoes. *Amer. Nat.*, Jan., 1908, p. 22.

sinker-boat (sing′kėr-bōt), *n.* Same as ★*catamaran*, 4.

sink-head (singk′hed), *n.* A riser; a column of metal which is cast as a part of a large casting for the purpose of increasing the soundness of the casting. It exerts a pressure to fill all cavities while the metal in the mold is fluid and is shrinking during the cooling process, and all bubbles of gas tend to rise into it and remain there.

sinking, *n.* 5. In *piquet*, the manœuver of calling only a part of a combination, so as to conceal the strength of the hand for playing: usually resorted to only when the player knows his adversary has no better call.

sinking-fire (sing′king-fīr), *n.* A forge in which wrought-iron scrap or refined pig-iron is partly melted or welded together by means of a charcoal fire and a blast.

sinking-lift (sing′king-lift), *n.* In *mining:* (*a*) An elevating apparatus especially designed for use in sinking shafts. (*b*) A sinking-pump for use at the bottom of a shaft while it is being sunk.

sink-pipe (singk′pīp), *n.* 1. The outflow-pipe from a sink.—2. The pipe which enters a sink in a mine to remove the water which drains into the sink from higher points.

Sino-Australian (sīn″ō-âs-trā′li-an), *a.* [L. *Sinæ*, the Chinese, + E. *Australian*.] Noting a hypothetical continent, restored by M. Neumayr by interpretation of the strata and believed to have existed in the Jurassic and Cretaceous periods, and perhaps in the Tertiary. Including Australia on the south, it embraced the East Indies, the Malay peninsula, and portions of China. *Amer. Nat.*, Sept., 1904, p. 646.

Sino-Japanese (sin′ō-jap-a-nēs″), *a.* [L. *Sinæ*, the Chinese, + E. *Japanese*.] Relating to both China and Japan; Sinico-Japanese: as, *Sino-Japanese* art, literature, or religion.

> We must place to the front the fact that *Sino-Japanese* design is almost exclusively an art of contours, of values of movement, and, in its own way, not ours, of space-composition. *B. Berenson*, in Burlington Mag., III., 13.

Sinophile (sin′ō-fil), *n.* [Gr. Σῖναι, Chinese, + *φιλεῖν*, love.] One who loves or admires the Chinese; an admirer of the Chinese nation or of Chinese civilization.

> That the author [E. R. Scidmore] is no *sinophile* will be gathered from the following: No one knows, or ever will really know, the Chinese—the heart and soul and springs of thought of the most incomprehensible, unfathomable, inscrutable, contradictory, logical and illogical people on the earth. *Outlook*, July 21, 1900, p. 693.

Sinoxylon, *n.*—**Red-shouldered sinoxylon**, an American bostrychid beetle, *Sinoxylon basilare*, the larva of which bores into the stems of the grape and into the twigs of the apple and peach. See cut at *Sinoxylon*.

sinse, *adv.*, *prep.*, and *conj.* An amended (restored) spelling of *since*.

sinter^1, *n.*—**Ceraunien sinter**, the glassy material of fulgurite.

sinter (sin′tėr), *v. t.* and *i.* To compact or become compacted together by partial fusion, so as to resemble sinter. See ★*sintering*.

> A fine crystalline precipitate of methylmercaptothymine came down, which weighed 9.2 grams, or 20 per cent of the calculated. It crystallized in strings of small plates from water, in which it is difficultly soluble when hot and nearly insoluble when cold. On heating, it *sintered* at about 225° and melted at 233°.
> *Amer. Chem. Jour.*, May, 1903, p. 487.

sintering (sin′tėr-ing), *n.* The incomplete union into a solid mass of the particles of a powder heated so that softening but not perfect fusion occurs.

> *Sintering*, therefore, may be defined as diffusion at a temperature below the melting point of the components or of the resulting solid solution.
> *Sci. Amer. Sup.*, Dec. 17, 1904, p. 24207.

sinuitis (sin-ū-ī′tis), *n.* [NL., < L. *sinus* (*sinu-*), sinus, + *-itis*.] Same as ★*sinusitis*.

sinus, *n.*—**Accessory sinus.** Same as *air-sinus* (which see, under *sinus*).—**Axial sinus.** See ★*axial*.—**Cerebral sinuses**, sinuses of the dura mater.—**Circumintestinal sinus**, in certain chætopod worms, a blood-sinus lying between the epithelial and the muscular walls of the intestine.—**Intestinal sinus**, in some arthropods, as *Apus*, a large median cavity, a subdivision of the body-cavity, in which lies the enteric canal. Compare *lateral* ★*sinus*.—**Lateral sinus**, in some arthropods, as *Apus*, one of the cavities in which the muscles are contained. Compare *intestinal* ★*sinus*.—**Mastoid sinus**, a vacuity, or air-space in the mastoid bone: correlated with *frontal sinus*, *maxillary sinus*, etc.—**Median sinus**, in many of the *Brachiopoda* (*Spirifer*, *Athyris*, *Rhynchonella*), a median depression of the shell, usually on the ventral valve, accompanied by a median fold on the opposite or dorsal valve.—**Pericardial sinus**, in arthropods, a cavity lying in the median dorsal region and containing the heart.—**Pyriform sinus**, a small fossa on the side of the larynx external to the aryepiglottic fold.—**Sinus caroticus**, a prolongation of the cavernous sinus into the carotid canal.—**Sinus præcervicalis**, a sac-like structure in the embryo formed by the folding in of the posterior branchial arches. *W. Bateson*, Study of Variation, p. 176.—**Sinus terminalis**, a blood-channel which surrounds the vascular area in the embryo.—**Vertebral sinuses**, two large venous sinuses which extend the entire length of the spinal canal along the bodies of the vertebræ.

sinusitis (sī-nu-sī′tis), *n.* [*sinus* + *-itis*.] Inflammation of any sinus, whether an air-sinus or a sinus of the dura mater. *Med. Record*, Aug. 17, 1907, p. 256.

Sinusoidal circulation. See ★*circulation*.—**Sinusoidal current**, in *elect.*, an alternating current the wave-form of which is a curve of sines.—**Sinusoidal variation**, in *elect.*, a fluctuation of current or electromotive force such that the variations of intensity are graphically indicated by a curve of sines.

sion, *n.* A simplified (and former) spelling of *scion*.

Siouan, *a.* **II.** *n.* The linguistic stock which embraces the Siouan languages and includes the languages of the Sioux or Dakota, Hidatsa, Crow, Mandan, Omaha, Ponca, Osage, Winnebago, Kansa, Quapaw, Iowa, Oto, Missouri, Biloxi, Tutelo, and Catawba.

sipapu (sē-pä-pö′), *n.* [Hopi.] An opening somewhere in the Grand Cañon of the Colorado, according to the legends of the Hopi, through which they reached the surface of the earth; also, its symbolic representation on altars, kivas, and other objects.

> The Snake chief at Cipaulovi has no tiponi, and consequently no altar. The only objects at the end of the kiva, where the altar would have been had he possessed a tiponi, was a row of twenty snake whips leaning against the ledge of the rear wall, behind the *sipapū*.
> *J. W. Fewkes*, in An. Rep. Bur. Amer. Ethnol., 1894–95, [p. 279.

sipho (sī′fō), *n.*; pl. *siphones* (si-fō′nēz). [NL.: see *siphon*.] In the shell-bearing cephalopods, the fleshy or muscular tube extending from the posterior end through the internal chambers. Also *siphon*.

siphon, *n.* 2. (*d*) (2) A tubular anal organ of the aquatic bugs of the family *Nepidæ*, probably respiratory in function. (*h*) In siphonophorans, a feeding zoöid or hydranth.—**Electric siphon**, a siphon provided with an electrically operated device for automatically removing the accumulation of gases in the neck of the tube.—**Exhalant siphon**, the more dorsal of the two siphons at the posterior end of many lamellibranch mollusks, being the tube through which the water passes away from the gills after having been admitted to them through the ventral or inhalant siphon.—**Inhalant siphon**, in bivalve mollusks, the siphon through which water enters the mantle-cavity.—**Inverted siphon**, an offset in a continuous line of pipe by which the pipe is carried under and thus avoids an intervening obstacle to its straight alinement: usually limited to pipes or open channels which in their straight portions are not under pressure, as in a sewer passing under a stream.—**Mitscherlich's siphon** a simple form of siphon filled by suction and provided with a bulb safety-device to prevent corrosive liquids from entering the mouth.—**Siemens's siphon**, a contrivance by which the gases from the producer are pressed down to the level of the furnace. It consists of a horizontal cooling-tube connecting the uptake-tube with the downcomer. The gases passing through the cooling-tube gain from 50 to 60 per cent. in weight and pass into the descending tube by overbalancing the ascending column, although both tubes are of equal length. In the modern producers air and steam are supplied under pressure, so that the siphon tubes are no longer needed.

siphonaceous, *a.* 2. Of or pertaining to the *Siphonales*, an order of the grass-green algæ.

Siphonal cæcum, lobe. See ★*cæcum*, ★*lobe*.—**Siphonal process**, in some gastropods, as *Triton*, a spout-like prolongation of the peristome of the shell.

Siphonales (sī-fọ-nā'lēz), *n. pl.* [NL., < L. *sipho(n-)*, a pipe, tube, + *-ales.*] Same as *Siphoneæ*, of which it is the modern form.

Siphonanthæ (sī-fọ-nan'thē), *n. pl.* [NL., < Gr. *σιφων*, a tube, + *ἄνθος*, flower.] A group or suborder of *Siphonophora*, having the stem formed by the manubrium of the original bilateral medusa, the buds arising in the ventral line of this manubrium, and the larva bilateral.

siphonanthous (sī-fọ-nan'thus), *a.* [NL. *Siphonanth(æ)* + *-ous.*] Having the characters of, or belonging to, the *Siphonanthæ*.

siphonapter (sī'fọ-nap-tėr), *n.* A member of the order *Siphonaptera*; a flea.

siphonate, *a.* **II.** *n.* That part of a mass of liquid which has been drawn off by means of a siphon.

> Such organisms, however, can be secured by filtering the *siphonate*, and washing the filter with a small quantity of filtered or distilled water.
> *B. L. Seawell*, in Trans. Amer. Micros. Soc., Nov., 1903, [p. 18.

siphoneous (sī-fō'nẹ̄-us), *a.* Same as ⋆*siphonaceous*.

> The gigantic Nematophycus, to be described below, has been regarded as having *Siphoneous* affinities
> *Encyc. Brit.*, XXXI. 409.

Siphonia² (si-fō'ni-ạ̈), *n.* [NL., < L. *sipho(n-)*, < Gr. *σίφων*, a pipe, tube, siphon.] A genus of pear-shaped, silicious, lithistid sponges with a long or short peduncle, the interior having a deep cloaca and numerous arched canals. It abounds in the Cretaceous rocks.

siphonogam (sī-fon'ọ-gam), *a.* [*Siphonogam(a)*.] In *bot.*, same as ⋆*spermatophyte*.

Siphonogama (sī-fọ-nog'ạ-mạ̈), *n. pl.* [NL., < Gr. *σιφων*, pipe, tube, + *γάμος*, marriage.] Same as ⋆*Spermatophyta*. See also ⋆*Embryophyta*. Also *Siphonogamæ*.

siphonogamous (sī-fọ-nog'ạ-mus), *a.* [*siphonogam* + *-ous.*] Same as ⋆*spermatophytic*.

siphonoglyph (sī-fon'ọ-glif), *n.* [Gr. *σίφων*, a pipe, + *γλυφή*, a carving.] In sea-anemones, one of the ciliated grooves at each end of the mouth leading down into the gullet. In alcyonarians, the groove is single. Also *gonidial groove*, and *sulcus*.

> When the mouth is closed the central parts are in apposition, but the grooves, called *Siphonoglyphs*, remain always open, and through them a current of water may be kept circulating in and out of the animal even when in its most contracted condition.
> *A. E. Shipley*, Zool. of the Invertebrates, p. 65.

siphonophoral (sī-fọ-nof'ọ-rạl), *a.* Same as *siphonophorous*.

siphonopore (sī'fọ-nọ-pōr), *n.* [Gr. *σίφων*, a pipe, + *πόρος*, pore.] In *Octocoralla* of the family *Helioporidæ*, one of the smaller tubes or corallites which, with the larger tubes or autopores, constitute the corallum. Both are tabulate, but the siphonopores are not septate.

siphonosome (sī'fọ-nọ-sōm), *n.* [Gr. *σίφων*, a pipe, + *σῶμα*, body.] The portion of a siphonophore colony that bears siphons.

siphonostele (sī'fọ-nọ-stēl), *n.* [Gr. *σίφων*, a pipe, tube, + *στήλη*, pillar.] In *bot.*, a tubular stele. See ⋆*stele*³, 2.

siphonostelic (sī'fọ-nọ-stel'ik), *a.* [*siphonostel(e)* + *-ic.*] Pertaining to or possessing a siphonostele.

Siphonotreta (sī″fọ-nọ-trē'tạ̈), *n.* [NL., < Gr. *σίφων*, pipe, tube, + *τρητός*, perforated.] A genus of neotrematous brachiopods with elongate conchiolinous shells, the pedicle-passage long and tubular, the epidermal shell-layer covered with spines, and the inner layers punctured by radiating tubules. It occurs in Silurian rocks.

siphonozoöid (sī″fọ-nọ-zō'oid), *n.* [Gr. *σίφων*, pipe, tube, + E. *zoöid.*] In alcyonarians, one of the modified zoöids whose function it is to drive currents of fluids through the canal system of the colony.

> The name zooid is applicable to any asexually-produced individual entering into the composition of a colony, and therefore Kölliker was in error when he restricted it to those arrested and modified individuals whose function it is to drive currents of water through Alcyonarian colonies. These should be called *siphonozooids*.
> *G. C. Bourne*, in Trans. Linnean Soc., Zool., March, [1900, p. 521.

siphon-tap (sī'fọn-tap), *n.* A contrivance for tapping metal out of a furnace. The molten metal rises through an oblique channel to the bottom of a reservoir outside of the furnace, in which it rises to a higher level than it occupies in the furnace on account of the blast pressure and the weight of material in the furnace, and from which it can be ladled without disturbing the furnace. It is used commonly in lead-furnaces under the name of *Arendt's siphon-tap*. *Phillips and Bauerman*, Elements of Metallurgy, p. 75.

siphon-trap (sī'fọn-trap), *n.* A piece of pipe which has the shape of an inverted U or siphon and which acts, when filled with water, as a seal.

siphonula (sī-fon'ụ̄-lạ̈), *n.* [NL., < L. *sipho (siphon-)*, a siphon, + dim. suffix, *-ula.*] An early bilateral embryonic form in the development of certain cœlenterates such as the *Siphonanthæ*.

Siphostoma (sī-fos'tọ-mạ̈), *n.* [NL., < Gr. *σιφων*, a pipe, + *στόμα*, mouth.] A genus of pipe-fishes (*Syngnathidæ*) which embraces numerous species found in all warm seas.

siphuncle, *n.* (*c*) In the cephalopods, the calcareous tubular wall of the siphon. (*d*) The protrusible portion of the mouth-parts of a true louse, supposed to be modifications of the epipharynx and hypopharynx.

Siphunculata (sī-fung-kụ̄-lā'tạ̈), *n. pl.* [NL., < L. *siphuncul(us)*, dim. of *sipho*, tube, + *-ata.*] An order of insects erected by Meinert to include the true lice, whose mouth-parts, he believes, are radically different morphologically from those of the *Hemiptera*.

sipid (sip'id), *a.* [(*in*)*sipid*. See *sapid* and *insipid*.] Same as *sapid*. [Rare.]

sipidity (si-pid'i-ti), *n.* [(*in*)*sipidity*. Same as *sapidity*. [Rare.]

> The *sipidity* of honey, sugar, and juices of fruits.
> *An. Rep. Bur. Amer. Ethnol.*, 1897–98, p. lx.

sipiri (sẹ̄-pē'rẹ̄), *n.* [Guarani.] Native name in British Guiana for the greenheart, *Ocotea Rodiæi*. See *greenheart*, 1.

sipp (sip), *n.* The form of sling or hurling implement used by the natives of New Guinea. *Smithsonian Rep.*, 1904, p. 637.

sippio (sip'i-ō), *n.* [A made name?] A game played with balls on a table, extending across the foot of which is a row of pockets or pens, each of sufficient width to receive the ball. There are fifteen of these pens, numbered, from left to right (as one faces the foot of the table), 17, 4, 11, 9, 16, 8, 2, 20, 1, 13, 7, 12, 15, 3, 18. The game is played with nine balls, eight of one color, usually red, and one of another color, usually white. The object is to drive each of the eight red balls into some one of the pens by means of the white ball struck with an ordinary cue. For each ball penned, the player scores the number of points painted over the pen which the ball entered. The balls drop down through the pens after entering, and are returned to the head of the table by runways under the table; and the exit of each runway under the head of the table has painted over it the same number as over the pen itself, so that there may be no question as to which pen was entered. The player making the larger score by penning the balls wins.

> The mayor and aldermen of a city, except Boston, and, in Boston, the board of police, and the selectmen of a town, may grant a license to a person to keep a billiard, pool or *sippio* table, etc.
> *Revised Laws of Mass.*, cii. § 168.

sir¹, *n.*—**Sir Garnet**, a special bid in the game of napoleon.

> *Sir Garnet* consists of an excess hand of five cards, dealt in the usual way, and left on the table. Until this extra hand is appropriated, each player, when it is his turn to call, has the privilege of taking it up and combining it with his own hand. From the ten cards thus in his possession, he must reject five, which he throws away face downwards, and on the remaining five he is bound to declare Napoleon. The stakes are the same as on an ordinary Nap call. *Amer. Hoyle*, p. 298.

sir² (sēr), *n.* [Pers. **sīr*, < Hind. *sēr*, *sīr*: see *seer*⁴.] A Persian measure of weight, equal to 16 miskals or 2⅜ ounces troy.

sirajo (sē-rä'hō), *n.* [Cuban.] A gobioid fish, *Sicydium plumieri*, found in fresh waters of the West Indies.

Siratic group. See ⋆*meteorite*.

sirdar-melon (sėr-där'mel″ọn), *n.* [Afghan *sirda (palíz)*, muskmelon, + E. *melon.*] In Afghanistan, the muskmelon, *Cucumis Melo*.

> The pomegranates of Kandahar, with its "*sirdar*" melons and grapes, being unequalled in quality by any in the East. *Encyc. Brit.*, XIII. 836.

siree (sė-rē'), *n.* [*sir* + *-ee.*] An emphatic form of *sir*: especially in the phrase 'yes (no) *siree*!' *Dialect Notes*, III. iii. [Colloq.]

siren, *n.* **11.** A monster without lower extremities.—**12.** Same as *sympus*.

siren-limb (sī'ren-lim), *n.* In *teratol.*, a fusion of the lower extremities with incomplete separation of the feet.

sirenomelus (sī-re-nom'e-lus), *n.*; pl. *sirenomeli* (-lī). [NL., < Gr. *σειρήν*, siren, + *μέλος*, limb.] A monster whose lower extremities are fused and taper to a point without feet.

Sirian, *a.* **2.** A term introduced by Lockyer to denote stars having a spectrum resembling that of Sirius.

siricid (sir'i-sid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Siricidæ*.

II. *a.* Having the characters of or belonging to the family *Siricidæ*.

sirium (sir'i-um), *n.* [NL., < *Sirius.*] The name of a supposed new chemical element announced in 1818 as present in a nickel ore. It was later shown to consist of nickel, iron, sulphur, and arsenic. Also called *vestium*.

Sirmian (sėr'mi-ạn), *a.* [NL. **Sirmianus*, < LL. *Sirmium*, < Gr. *Σίρμιον*, a city in ancient Pannonia Inferior whose ruins are at Mitrowitz.] Of or pertaining to Sirmium; specifically, pertaining to the three councils of Sirmium (351, 357, 358 A.D.). Their purpose was to form some basis of union between the strict Arians and the semi-Arians or Eusebians.

Sirmuellera (sėr-mül'ẹ-rạ̈), *n.* [NL. (Kuntze, 1891), named for *Sir* Ferdinand von *Müller* (1825–1896), the Australian botanist.] A genus of proteaceous plants including about 46 species.

sirocco, *n.* **2.** A name for a special drying apparatus using a heated blast of air derived from a fan, and blowing over the material to be dried, as fruit, or tea-leaves.—**3.** A trade-name for a form of fan-blower.

sirocco-dust (si-rok'ō-dust″), *n.* See ⋆*sea-dust*.

siserskite, *n.* Same as *sisserskite*.

sissified (sis'i-fīd), *a.* [*sissy* + *-fy* + *-ed*².] Effeminate; girlish. [Colloq.]

> To be seen with girls was not so "*sissified*," in his mind as it used to be. *J. C. Lincoln*, Partners of the Tide, iv.

sissoo (sis'ö), *n.* [Hindi *sisu.*] A large, deciduous tree of the bean family, *Dalbergia Sissoo*, common in India and Afghanistan. It is much planted throughout India as an avenue tree and yields a very durable, dark brown wood used extensively for boat- and carriage-building and for furniture.

sissors, *n.* An amended spelling of *scissors*.

sister, *n.*—**Little Sisters of the Poor.** See ⋆*poor*.—**Three sisters**, the three rattans once carried by the master-at-arms and boatswain's mates on British men of war, which were 'laid on' the backs of slow-moving sailors. These rattans were bound together at the handle, but were allowed to separate at the other end.

sistole, *n.* Same as *citole*.

sistroid (sis'troid), *a.* [*sistr(um)* + *-oid.*] Included between the convex sides of two intersecting curves: as, a *sistroid* angle.

Sistrurus (sis-trö'rus), *n.* [NL., < Gr. *σεῖστρον*, a sistrum, + *οὐρά*, tail.] A genus of rattlesnakes distinguished by having the top of the head covered with plates (as in harmless snakes and the *Proteroglypha*) instead of scales. There are but three species, two of which occur in the United States. The best known is the *massasauga*.

sit, *v. i.*—**To make (one) sit up**, to surprise; astonish; shock. [Slang.]

> "When the time comes," said the little sailor grimly, "we shall be ready for them, and if they interfere with me, I shall *make* the Congo Free State people *sit up*. But in the meanwhile they are not here."
> *Cutcliffe Hyne*, A Master of Fortune, iv.

> If the poet had emulated the frankness of Byron, and owned that his purpose in these things was to *make* the British matron "*sit up*," he would have disarmed much of the criticism that has befallen him.
> *N. Y. Times Sat. Rev.*, Aug. 12, 1905, p. 527.

To sit tight, to keep one's seat firmly, as on a horse; hold oneself steady; hold on quietly; devote one's attention closely. [Colloq.]

> He promised himself the pleasure of probing with his usual exquisite dexterity, into the problem so abruptly presented to him. He therefore *sat tight* and began to look very observant. *R. Hichens*, The Londoners, iv.

sitar (si-tär'), *n.* [Hind. *sitār*, < Pers. *sitār*, < *sih*, three, + *tār*, string.] A Hindu guitar with a pear-shaped body, a long neck, and three or more strings. It is sometimes played with a bow, like a viol.

site² (sīt), *v. t.*; pret. and pp. *sited*, ppr. *siting*. [*site*², *n.*] To select a site for; place; locate.

> The *siting* of the trenches will depend on the ground. The position generally should be on high ground, both for the sake of a clear view of the enemy's advance, and for concealment of the dispositions of the defence.
> *Encyc. Brit.*, XXVIII. 449.

sitfast, *n.* 2. The creeping buttercup, *Ranunculus repens*, so called from the difficulty in eradicating it.—3. The rest-harrow, *Ononis repens*. See *rest-harrow*, 1.—4. A fixed object, as an obstacle encountered by a plow.

> More subject to snap when the share is strained by any *sit-fast*, root, &c.
> *T. Williamson*, Agricultural Mechanism, p. 172.

sithe^1, *n.* An amended (restored) spelling of *scythe*.

Sitilias (si-til′i-as), *n.* [NL. (Rafinesque, 1836), said by its author to be an ancient name of *Hieracium*, a related genus.] A genus of cichoriaceous plants. See *Pyrrhopappus*.

sitotoxicon (sī-tọ-tok′si-kon), *n.* [Gr. *σῖτος*, food, + *τοξικόν*, poison.] A substance responsible for the symptom complex produced by vegetable poisoning.

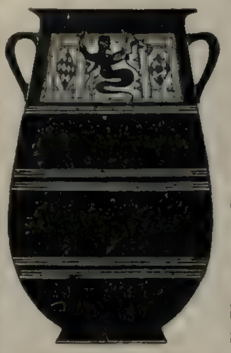
sitotoxin (sī-tọ-tok′sin), *n.* [Gr. *σῖτος*, food, + E. *toxin*.] A substance which produces vegetable poisoning.

sitotoxism (sī-tọ-tok′sizm), *n.* [*sitotox*(*in*) + *-ism*.] Poisoning by vegetable food. *Vaughan and Novy*, Cellular Toxins, p. 188.

sitter, *n.* 2. In *cricket:* (*a*) An easy catch missed by a fielder. (*b*) A fielder who misses such a catch. *Hutchinson*, Cricket, p. 117. [Slang.]

situla, *n.* 3. A deep bucket-shaped vase with a wide mouth and two handles near the top. In Greek pottery this form is found mainly in the earlier styles.

> In the center was a silver *situla* standing upon three feet, which contained the ashes of the deceased.
> *C. D. Edmonds*, in Jour. Hellenic Studies, XX. 23.



Situla (Greco-Egyptian).

situs, *n.*—**Analysis situs**, a general and fundamental kind of geometry, which neither considers sects or arcs or surfaces or solids in their character of being measurable by a unit, nor distinguishes straight from curved or crooked lines, nor plane from curved or bent surfaces, but studies only the manner in which the parts of places are continuously connected.

siv, *n.* and *v.* A simplified spelling of *sieve*.

Sivaism (sē′va̤-izm), *n.* [*Siva* + *-ism*.] The worship of Siva. Also *Sivism*.

Sivism (sē′vizm), *n.* Same as ★*Sivaism*.

siwash (si-wäsh′), *a.* and *n.* [Chinook jargon, ‹ F. *sauvage*, savage.] **I.** *a.* Of or relating to an Indian, more particularly to an Indian of the North Pacific coast.

II. *n.* An Indian of the North Pacific coast: often used as though *siwash* were the name of a particular tribe.

sixain, *n.* 3. The half of the douzain. See ★*douzain*, 2.

six-coupled (siks′kup″ld), *a.* Having six driving-wheels connected together by coupling- or connecting-rods: used of a locomotive with three driving-wheels on a side, as in the mogul or ten-wheeler types. The weight of the engine for adhesion is distributed over a longer length of track or over more points of contact than when fewer wheels are used, while the use of coupling-rods enables the wheels to act in unison.

sixer, *n.* 2. In *cricket*, a hit which scores six runs. [Colloq.]

six-faced (siks′fāst), *a.* Having six faces.—**Six-faced octahedron**, in *crystal.*, a hexoctahedron.

sixfold, *a.*—**Sixfold symmetry.** See ★*symmetry*, 6.

sixpence, *n.*—**Pudsey sixpence**, a silver coin of Elizabeth of England: said to be so called from a place in Yorkshire.

six-phase (siks′fāz), *a.* In *elect.*, pertaining to a system of electric distribution by six alternating currents displaced in phase from each other by one sixth of one period. Six-phase converters are frequently built, the six-phase currents being derived by transformation from three-phase currents.

sixteen, *n.*—**In sixteens**, said of an imposed form of composed type or plates containing 16 pages; also of a book that has 16 printed pages to each section.

sixty, *n.*—**Like sixty**, very fast; very hard; like fury. [Colloq.]

> They came down the hill *like sixty*, the old mare going for all she was worth, the reins flying.
> *The Good Fortune of Silas Mearns*, p. 27.

size^1, *n.*—**Victoria size**, a photograph 2 × 4½ inches, the size of the mount being 3½ × 5 inches.

size^1, *v. t.* 7. To cut or trim to the size required.—**To size down**, to arrange according to size with the smallest at the top, as shingles or slates.

> As here and in all the traditional old houses of the country-side, they are '*sized down*,' the smaller ones to the top and the bigger ones toward the eaves.
> *A. Vallance*, William Morris, p. 115.

sizer, *n.* 3. A wood-turning chisel which has an adjustable gage for regulating the size of the work.

sizing-chisel (sī′zing-chiz″el), *n.* A form of chisel, used in wood-turning, fitted with a gage by which the diameter of the work is determined.

sizing-machine^1 (sī′zing-ma̤-shēn″), *n.* [*size*^{1}, *v.*, + *machine*.] In *candy-making*, a pair of engraved or fluted rolls used in forming and sizing caramels, chocolates, and other candies.

sizing-machine^2 (sī′zing-ma̤-shēn″), *n.* [*size*^{2}, *v.*, + *machine*.] A machine for sizing warp-yarns for weaving. Sometimes called a *dressing-machine* or *slasher*.

sizing-ring (sī′zing-ring), *n.* A ring carrying cutters on its side or inner face, so that it will reduce to a determined size rods of wood presented to it: used for making dowel-pins or the pins on blind-slats and the like.

sizzard (siz′a̤rd), *n.* [*sizz*(*le*) + (*blizz*)*ard*.] A very uncomfortably hot, moist atmosphere in which one 'sizzles.' [Colloq.]

sjambok (shäm′bok), *n.* [D. *sjambok*, formerly also *siamback*, prob. taken up from Malayan servants at the Cape, ‹ Jav. *sambok*, also *chambok*, nasalized forms of the Malay *chābuk*, ‹ Hind. *chābuk*, whence E. *chabouk*, q. v.] A heavy whip of leather or hide. [South Africa.]

> When the mules ceased pulling in every direction except the right one from sheer exhaustion, a few judicious cracks of the *sjambok*, together with a few different languages, mostly bad, and up we eventually did go.
> *H. P. Battersby*, in War's Brighter Side, ix.

sjambok (shäm′bok), *v. t.* [*sjambok*, *n.*] To strike with a sjambok.

> One refugee states that several Free State burghers who displayed cowardice at Belmont were afterwards publicly *sjamboked* as an example to the others.
> *Pall Mall Gazette*, Jan. 15, 1900, p. 7. *N. E. D.*

Skaneateles shale. See ★*shale*^{2}.

skat^2 (skät), *n.* [G. *skat*, a game so named, ‹ It. *scarto*, a discarded card, a discard, useless paper, refuse, ‹ *scartare*, take from the paper or cards, discard, = Sp. Pg. *descartar* = E. *discard*, *v.*] The German national card-game for three players. The pack contains 32 cards, ranking A, 10, K, Q, 9, 8, 7, the four jacks being always the four best trumps, and preserving the same rank as the suits, clubs being the best, then spades, hearts, and diamonds. All trumps in unbroken sequence with the club jack held by the same side are called *matadors*. Ten cards are given to each player, three, four, three at a time, two being laid off for the skat, between the first and second rounds. The players bid against one another for the privilege of playing some one of the four varieties of the game. 'Mittelhand' bids to 'Vorhand,' and when 'Vorhand' refuses or 'Mittelhand' stops bidding, 'Hinterhand' bids to the survivor. Each bids well within what he thinks he can make, naming the value in figures, without stating what game he purposes playing. If he fails to make good his bid in his play, the adversaries score what he should have made as the matadors lie. The successful bidder is known as the 'player.' The four games are: *tournee*, in which the player turns over one of the skat cards for the trump, afterward taking both skat cards into his hand and discarding others in their place; if the turned card is a jack, he may change his game from tournee to grando; *solo*, in which the trump suit is named and the skat cards are not touched until the end of the play, when they are counted for the player's side; *grando*, in which the four jacks are the only trumps, so that there are four plain suits; *nullo*, in which there are no trumps and the cards rank A, K, Q, J, 10, 9, 8, 7, the object of the player being not to take a single trick. Each of these games has a standard value according to the trump suit. The tournees are: diamonds 5, hearts 6, spades 7, clubs 8. The solos are: diamonds 9, hearts 10, spades 11, clubs 12. There are four varieties of grando (or grand). The *turned grand* is worth 12. *Gucki grand*, in which the player announces in advance that jacks shall be the only trumps, but takes both the skat cards and then discards two in their place, is worth 16. *Solo grand*, played without touching the skat cards, is worth 20. *Open grand*, in which the player lays his cards face up on the table and guarantees to win every trick, is worth 24. Nullos also have four varieties. *Gucki nullo*, in which the player takes both the skat cards and then discards, having previously announced to play nullo, is worth 15. If the player announces an *open gucki nullo*, he must lay his cards face up on the table after discarding; it is worth 30. *Solo nullo*, if played without touching the skat cards, is worth 20; if played open, 40. If the first card turned in a tournee does not suit the hand, the player can announce *passt mir nicht*, and turn the other. All guckis and passt mir nichts lose double if lost. The unit values of all games except nullos are multiplied by the number of matadors, and it does not matter which side holds the sequence of matadors, its multiplying power is the same. If the single player has the jacks of clubs, spades, and hearts, he is 'with three.' If he has nothing higher than the king of trumps, he is playing 'against six.' There are also five game values, which are used as multipliers. Counting each ace as 11, tens 10, kings 4, queens 3, and jacks 2, there are 120 points in the pack. If the player gets 61 of these he wins his game; if his two adversaries combined get 60 they beat him. If the player gets 91 he makes them 'schneider'; if they get 90 they make him 'schneider.' If he gets every trick he makes them 'schwarz'; if they get all the tricks they make him 'schwarz.' The multipliers are: game 1; schneider 2; if the schneider is announced in advance, or if schwarz is made without announcing anything, 3; if schwarz is made after announcing schneider, 4; schwarz announced, 5. No announcement of schneider or schwarz can be made in any game in which the skat cards have been used, such as tournees and guckis. Suppose the player announces a club solo, unit value 12, and is with two matadors, getting 74 points out of the 120. He reckons, one for game, with two, three times twelve, or thirty-six points won. Varieties of skat, such as *point ramsch*, *schieber ramsch*, *contra* and *recontra*, *uno* and *duo*, are sometimes played; but they are not recognized by the Skat League. When four play at the same table, the dealer takes no cards; but he shares the fortunes of those opposed to the single player as to winning or losing on the hand. Vorhand, on the dealer's left, always leads for the first trick, no matter who is the successful bidder. Players must follow suit if they can; but if they cannot follow suit, they can trump or discard at pleasure. In nullos, the moment the single player takes a trick, his game is lost. The penalty for a revoke is the loss of the game.

skate^1, *n.* In New Zealand, the skate is *Raja nasuta*.

skate-leech (skāt′lēch), *n.* See ★*leech*^{2}.

Skatol carbonic acid. See ★*carbonic*.

skatologic, skatology, etc. See ★*scatologic*, *scatology*, etc.

skatosin (skat′ọ-sin), *n.* [*skat*(*ol*) + *-ose* + *-in*^{2}.] A derivative of skatol, $C_{10}H_{16}N_2O_2$.

skatoxyl, *n.* Same as ★*scatoxyl*.

skedge (skej), *n.* [Cornish.] The privet, *Ligustrum vulgare*. Also *skedgwith*. [Prov. Eng.]

skeep (skēp), *n.* [Cf. *skep*.] A scoop, especially one used for baling small boats. *Eng. Dial. Dict.* [Prov. Eng.]

skeep (skēp), *v. t.* [Cf. *skeep*, *n.*] To hew or shave off a thin piece of anything; also, to skin a small place by a glancing blow; skin (an animal). *Dialect Notes*, III. iii. [Local, U. S.]

skein^1, *n.* 5. In *cytol.*, same as ★*spireme*.

> No sign of chromatin thread (linin or *skein*) is apparent.
> *Science*, March 4, 1904, p. 393.

skein^1 (skān), *v. t.* [*skein*^{1}, *n.*] To wind (yarn) into hanks of definite lengths other than the normal. *Nasmith*, Cotton Spinning, p. 360.

skein-dyeing (skān′dī″ing), *n.* Same as ★*hank-dyeing*.

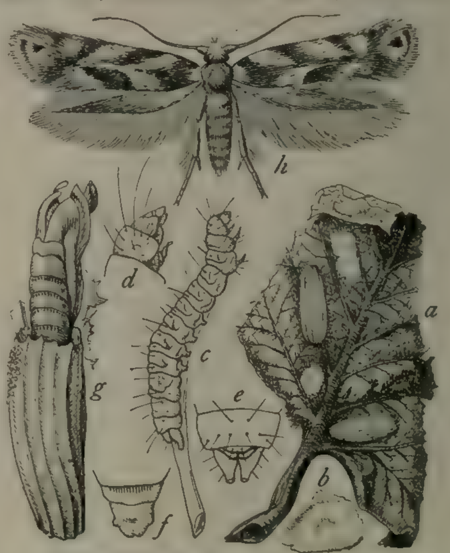
skeletin (skel′e-tin), *n.* [*skelet*(*on*) + *-in*^{2}.] One of certain complex organic substances which supposedly belong to the albuminoids. They are the principal components of the internal supporting structures of many invertebrates. The group comprises the fibroin found in silk, the spongin found in sponges, the conchiolin of molluscan shells, etc.

Skeletogenous layer. See ★*layer*.

skeleton, *n.*—**Intermediate skeleton.** Same as *supplemental* ★*skeleton*.—**Supplemental skeleton**, in the *Foraminifera*, calcareous deposits on the periphery of the test and in its cavities, giving rise to excrescences and in some cases pierced with tubules.

skeleton-crystal (skel′e-to̤n-kris″ta̤l), *n.* See ★*crystal*.

skeletonizer, *n.*—**Birch skeletonizer**, an American tineid moth, *Bucculatrix canadensisella*, whose larva mines the leaves of birch-trees in Canada and the northeastern United States.



Birch Skeletonizer (*Bucculatrix canadensisella*).

a, skeletonized leaf; *b*, pseudo cocoon; *c*, larva; *d*, head of same; *e*, anal segments of same; *f*, anal segments of pupa; *g*, cocoon with extruded larval skin; *h*, adult: all enlarged.

(Packard, U. S. D. A.)

skeleton-weed (skel′e-tọn-wēd), *n.* The gum succory, *Chondrilla juncea.* Also called *naked-weed.*

Skelgil beds. See ★*bed*¹.

skene-arch (skēn′ärch), *n.* Same as *scheme-arch.*

Skene's ducts. See ★*duct.*

sker, *n.* A dialectal form of *scar*².

sketch-map, *n.* **2.** In *surv.*, a map prepared without accurate measurement.

The accompanying *sketch-maps* are based on the maps given in the Mitteilungen of the Royal Hungarian Geographical Society. *Geog. Jour.* (R. G. S.), XVI. 219.

sketch-paper (skech′pā″pėr), *n.* Paper in sheets of any convenient size ruled vertically and horizontally with lines which are distant any desired aliquot parts of an inch. It is used in making sketches rapidly and in scaling without the use of measuring-instruments.

sketch-plan (skech′plan), *n.* The first plan of a building or architectural scheme, suggesting matter to be developed in later detailed drawings.

sketch-plate (skech′plāt), *n.* In *iron ship-building*, a plate of any polygonal shape not a rectangle. Such plates are ordered to avoid waste in cutting to the shape required on the vessel. The name is derived from the fact that they are ordered from the rolling-mills by an outline dimensioned sketch.

skete (skēt), *n.* [NGr. *σκῆτος*, a monastery (cf. *ἀσκητήριον*, a hermit's cell), < *ἀσκητής*, a hermit, an ascetic: see *ascetic.*] A monastery or monastic settlement of the Greek Church, characterized by a strict discipline.

Dependent on the several monasteries are twelve *sketes* (*σκητια, ἀσκητήρια*), or monastic settlements, some of considerable size, in which a still more ascetic mode of life prevails. . . . The large *skete* of St. Andrew and some others belong to the Russians; there are also Rumanian and Georgian *sketes.* *Encyc. Brit.*, XXX. 399.

skeuobiomorph (skū-ọ-bī′ọ-môrf), *n.* [Gr. *σκεῖος*, vessel, utensil, + *βίος*, life, + *μορφή*, form.] An ornamental form or pattern due to the combination or amalgamation of a skeuomorph and a biomorph. *Haddon*, Evolution in Art, p. 192.

skeuomorph (skū′ọ-môrf), *n.* [Gr. *σκεῦος*, vessel, utensil, + *μορφή*, form.] A form of ornament or ornamental design which can be shown to be due originally to the nature of the material and the method of working it, or to technique. The forms and patterns originating in a certain technique may then be further modified or copied in other material. *Haddon*, Evolution in Art, p. 75.

skeuomorphic (skū-ọ-môr′fik), *a.* [*skeuomorph* + *-ic.*] Relating to or having the character of a skeuomorph; illustrating or exhibiting skeuomorphs in its form or decoration: as, *skeuomorphic* pottery. *Haddon*, Evolution in Art, p. 6.

skew¹, *a.*—**Skew variation.** See ★*variation.*

skew¹, *n.* **6.** In *math.*, a regulus.

A Ruled Surface, Regulus, or *Skew*, is a configuration of lines which satisfy three conditions, and therefore depend on only one parameter. *Encyc. Brit.*, XXVIII. 660.

skewback (skū′bak), *n.* In masonry arch construction, one of the series of consecutive stones extending along the top of the abutment of a segmental arch having its upper face inclined so as to receive the lower stone of the arch. As the number of skewback stones is dependent on the length of the arch measured parallel with its axis, a segmental arch in a wall may require but one or two skewback stones at each end of the arch. The name is sometimes specifically confined to the sloped surface of the top course of stones forming the abutment, rather than to the stone itself. In full-center arches the tangents to the arch curve at the ends are vertical and the upper surface of the top course of the abutment is therefore horizontal instead of sloped, and hence the name 'skewback' is not properly employed in connection with full-center arches. See *skew back*, under *skew*¹, *a.*

The main span, which is of trussed steel arch construction, measures 376½ feet between *skewbacks.* Of the seven smaller spans, five measure 113 feet between *skewbacks*, and the other two 51 feet.
Sci. Amer. Sup., May 23, 1903, p. 22894.

skewer, *v. t.* Specifically—**2.** See the extract.

Various schemes are used to hasten the growth of mold. The cheese may be *skewered* (punched with holes with an instrument resembling a skewer) or it may be "ironed" and the plug left out some time to admit fungus spores. Such a cheese becomes dry and hard without acquiring the proper flavor.
U. S. Dept. Agr., Bur. Animal Industry, Rep., 1905, p. 97.

skewing, *n.* **2.** In *printing*, an improper method of fastening type in a chase, by which the lines are put askew or made to hang or bow.

skewness (skū′nes), *n.* [*skew*¹, *a.*, + *-ness.*] The character or state of being skew. Specifically: (*a*) In *biometry:* (1) The property of exhibiting skew variation. See ★*variation.*

There is positive *skewness* in body length, and negative in the mandibles. *Science*, March 8, 1901, p. 375.

(2) The numerical expression of skew variation; asymmetry, measured by the ratio $a=D/\sigma$, where D is the distance (mean, mode) and σ is the index of variability.

The following Table gives the means, modes, standard deviations, and *skewnesses* of the various age groups.
A. O. Powys, in Biometrika, Oct., 1901, p. 43.

(*b*) In *math.*, the degree of disturbance of symmetry in a curve.

The left-hand polygon has a *skewness* of +0.48; the right-hand polygon of −0.03.
C. B. Davenport, in Pop. Sci. Mo., Sept., 1901, p. 455.

Negative skewness, in *biol.*, a skewness where the mean is less than the mode.—**Positive skewness,** in *biol.*, a condition of skewness where the mean is greater than the mode.

skew-sight (skū′sīt), *n.* Oblique vision, the object being seen distinctly only when to one side of the direct line of vision.

skiagram (skī′ạ-gram), *n.* Same as ★*sciagram.*

skiagrammatic (skī″ạ-gra-mat′ik), *a.* Same as ★*sciagrammatic.*

skiagrammatically (skī″ạ-gra-mat′i-kạl-i), *adv.* Same as ★*sciagrammatically.*

skiagraph (skī′ạ-gráf), *n.* Same as ★*sciagraph.*

skiagraph (skī′ạ-gráf), *v. t.* Same as ★*sciagraph.*

skiagraphic (skī-ạ-graf′ik), *a.* Same as ★*sciagraphic.*

skiagraphy, *n.* **2.** Same as ★*sciagraphy.*

skiametry (skī-am′e-tri), *n.* Same as ★*sciametry.*

skiascope (skī′ạ-skōp), *n.* Same as ★*sciascope.*

skiascopic (skī-ạ-skop′ik), *a.* Same as ★*sciascopic.*

skid¹, *n.* **8.** In *lumbering*, a log or pole, commonly used in pairs, upon which logs are handled or piled; also the log or pole laid transversely in a skid-road.—**9.** A peeling-iron; an instrument for peeling bark from trees or logs. [Colloq., U. S.]—**Spiked skid**, in *lumbering*, a skid in which spikes are inserted in order to keep logs from sliding back when being loaded or piled.

skid¹, *v. t.* **4.** In *lumbering:* (*a*) To draw (logs) from the stump to the skidway, landing, or mill. (*b*) As applied to a road, to reinforce (it) by placing logs or poles across it. —**5.** To check with a brake, as wheels, so that they will continue to slide but not to rotate, as the wheels of a moving train. (See *skid*¹, *v. i.*, 1.)

When the wheels are *skidded* the retardation of the train is always reduced. *Encyc. Brit.*, XXVI. 348.

To skid up. (*a*) Same as ★*skid*¹, 4 (*b*). (*b*) To collect (logs) and pile upon a skidway.

skid-beam (skid′bēm), *n.* One of a set of beams placed athwartship above the open deck of a large vessel, upon which the small boats are carried when not in use. Also called *boat-beam.*

skidder, *n.* **2.** A steam-engine, usually operating from a railroad-track, which skids logs by means of a cable.—**3.** The foreman of a crew which constructs skid-roads.

skidding-chain (skid′ing-chān), *n.* A heavy chain used in skidding logs.

skidding-hooks (skid′ing-hụ̇ks), *n. pl.* Same as ★*skidding-tongs.*

skidding-sled (skid′ing-sled), *n.* Same as ★*dray*¹, 3.

skidding-tongs (skid′ing-tôngz), *n. pl.* A pair of hooks, attached by links to a ring, used for skidding logs. Also called *skidding-hooks, grips, grapples, grabs*, and *dogs.*

skid-grease (skid′grēs), *n.* A heavy oil applied to skids to lessen the friction of logs dragged over them.

skid-road (skid′rōd), *n.* See ★*road.*

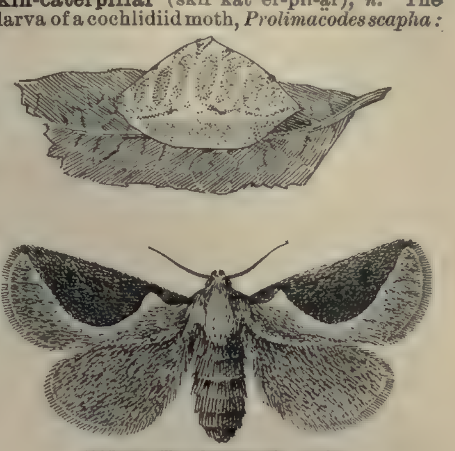
skidway (skid′wā), *n.* In *lumbering:* (*a*) Two skids laid parallel at right angles to a road, generally raised above the ground at the end nearest the road. Logs are usually piled upon a skidway as they are brought from the stump for loading upon sleds, wagons, or cars. (*b*) A prepared path down which logs, etc., can slide as down a skid. See *skid*¹, *n.*, 2.

Once in a while open lanes run from the water's edge up to the hilltop. Down these "*skidways*" slid the great logs, cleaving the blue waters with a splash that sent the spray flying high into the air. *Outing*, Feb., 1906, p. 539.

To break a skidway, to roll piled logs off a skidway.

skif, *n.*, *v. t.*, and *a.* A simplified spelling of *skiff.*

skiff-caterpillar (skif′kat″ėr-pil-ạ̈r), *n.* The larva of a cochlidiid moth, *Prolimacodes scapha:*



Skiff-caterpillar (*Prolimacodes scapha*).
Larva above, moth below, enlarged.
(Hubbard, U. S. D. A.)

so named on account of its fancied resemblance to a minute boat.

skil, *v.* and *n*¹. A simplified spelling of *skill.*

skil² (skil), *n.* A fish, *Anoplopoma fimbria*, found from California to Alaska.

skild, *a.* A simplified spelling of *skilled.*

skil-fish (skil′fish), *n.* Any fish of the family *Anoplopomatidæ*, found in the North Pacific.

skilling³, *n.*—**Skilling banco,** a subsidiary coin of Sweden until 1857, equal to one forty-eighth of a rix-dollar, or 1.12 United States cents.

skim, *v. t.* **9.** In *plastering*, to put the finishing coat or skim-coat on.

skim, *n.* **3.** A cultivator blade for surface work, analogous to a sweep. See ★*scalp*¹, 7, and ★*sweep*, 12 (*b*).

This *skim* is cast in two parts, which renders it movable to suit any width of ridge.
J. Scott, Field Implements and Machines, p. 119.

skim-cheese (skim′chēz), *n.* See ★*cheese*¹.

skim-coat (skim′kōt), *n.* In *plastering*, the finishing coat in three-coat work, which is generally very thin. Compare *hard-finish.*

skimfish (skim′fish), *n.* *Carpiodes velifer*, one of the suckers (*Catostomidæ*) found in the Mississippi.

skimmene (skim′ēn), *n.* [*Skimm*(*ia*) (see def.) + *-ene.*] A colorless dextrorotatory liquid, $C_{10}H_{16}$, contained in the oil from *Skimmia Japonica.* It boils at 170–175° C.

skimmer¹, *n.* **1.** (*e*) An attachment to a plow placed like a skim-colter, but turning a slice of sod 10 inches broad and 2 inches thick. [Kentucky.]

Two methods of breaking are practiced: one with a plow having a "*skimmer*" attached just in front of the subsoiler. *Killebrew and Myrick*, Tobacco Leaf, p. 343.

skimmer-pipe (skim′ėr-pīp), *n.* In *soap-making*, a pipe working on a swivel joint and capable of adjustment to any height within a soap-boiling pan, so that the soap in solution may be drawn off from any desired level.

skimmetin (skim′e-tin), *n.* [*skimm*(*in*) + *-et* + *-in*².] A colorless crystalline compound, $C_9H_6O_3$, prepared by the action of dilute acids on skimmin. It melts at 223° C.

skimmin (skim′in), *n.* [*Skimm*(*ia*) (see def.) + *-in*².] A colorless glucoside, $C_{15}H_{16}O_8$, contained in *Skimmia Japonica.* It crystallizes in needles and melts at 210° C.

skimming-back (skim′ing-bak), *n.* In *brewing*, a large wooden vat, provided with funnels, into which the surplus yeast is skimmed from the surface of the beer after the first or principal fermentation is at an end. The beer thus 'cleansed' is run off into a 'settling-back' or into casks.

skimming-ladle (skim′ing-lā″dl), *n.* A ladle for use in pouring molten metal in foundries and elsewhere, especially adapted by shape and construction to deliver the pure metal from below the surface, and retain the scum of oxids and impurities which are light and float at the top. There may be a guard at the lip, or, in larger types, the discharge may be from the bottom instead of over the upper edge.

skin, *n.* **9.** In *elect.*, the outer layers of a conductor, which serve in the conduction of currents of high frequency.—**Glossy skin,** a condition sometimes following an injury to the trophic nerve-supply, consisting of intense burning pain with atrophy and abnormal smoothness of the skin.—**Inner skin**, the interior covering or inner-bottom plating of a vessel.—**Outer skin**, the outer covering or outside plating of a vessel.

skin, *v. t.* 6. To take off the top layer of, as of a race-track. [Colloq.]

The time, 2:05 flat, was not considered fast, for the track stood in prime condition and has been "*skinned*" and generally rendered faster than it was a year ago.
N. Y. Eve. Amer., Aug. 2, 1904.

skin-beetle (skin′bē″tl), *n.* Any scarabæid beetle of the genus *Trox* (which see). *Comstock*, Manual of Insects, p. 559.

skin-conduction (skin′kon̤-duk″shon̤), *n.* In *elect.*, the conduction, as of high frequency currents, by the outer layers only of the conducting material.

Increasing the frequency of alternation removes the current from the interior towards the boundary, shortening the wave-length. The tendency is towards *skin conduction*. The attenuation is so rapid in going inwards that only one wave-length in the wire itself need be considered. This may be confined within a mere skin.
Encyc. Brit., XXXIII. 216.

skin-current (skin′kur″ent̤), *n.* An electric current conducted, as is the case with alternating currents of high frequency, by the outer layers only (skin) of the conducting material.

skin-effect (skin′e-fekt″), *n.* In *elect.*, see ★*effect*.

skin-field (skin′fēld), *n.* The area of skin to which a given nerve is distributed on the ultimate ramification of its fibers.

skin-grafting, *n.*—**Thiersch's method of skin-grafting**, the application of broad pieces of skin, as distinguished from the ordinary method of applying very small bits.

skin-hunter (skin′hun″tėr), *n.* One who hunts animals for their skins.

The Boers trekked to the districts now known as the Orange River Colony and the Transvaal, and, once there, the fierce pursuit of the game, which, as we have seen, had taken place in Cape Colony, was repeated, but at a more rapid rate, owing to improvements in fire-arms, and the operations of the "*skin-hunters*," who shot down the animals by tens of thousands, prompted by the commercial uses to which their hides could be put. Between the years 1840 and 1875 the destruction of animals in the old republics, it is safe to say, might be reckoned by millions.
Knowledge, July, 1905, p. 190.

skin-moth (skin′môth), *n.* Any one of the tineid moths whose larvæ live on furs and skins.

skin-muscle (skin′mus″l), *n.* The thin muscle, *panniculus carnosus*, lying just beneath the skin, whose contractions give rise to the twitching of the skin so evident in horses. It is by a modification of this muscle that the hedgehog is able to curl into a ball. *Nature*, Oct. 30, 1902, p. 661.

skinning-knife (skin′ing-nīf), *n.* A knife adapted for doing the cutting when removing a hide from a carcass.

skin-plating (skin′plā″ting), *n.* In *iron-ship-building*, the exterior plating which covers the bottom and sides of a vessel. *White*, Manual of Naval Arch., p. 338.

skin-resistance (skin′rē̤-zis″tan̤s), *n.* 1. Same as *skin-friction*.—2. See ★*resistance*.

skin-vision (skin′vizh″on̤), *n.* The perception of light by the skin by a reflex functional action and without special organs of vision, as in earthworms.

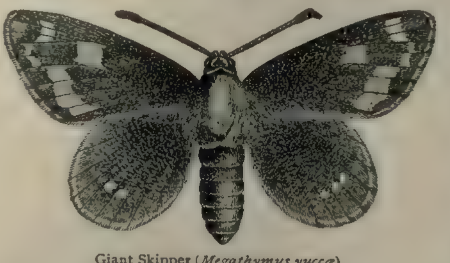
skip^{1}, *n.* 7. In *poker*, a straight in which the cards are alternate, such as 2, 4, 6, 8, 10: when played, it beats two pairs.

"*Skips*," consisting of alternate cards in sequence, for instance, Three, Five, Seven, Nine, Jack are sometimes played to beat two pairs, where "blazes" are unknown, but are equally destitute of merit.
American Hoyle, p. 163.

skipful (skip′fu̇l), *n.* Same as *skepful*.

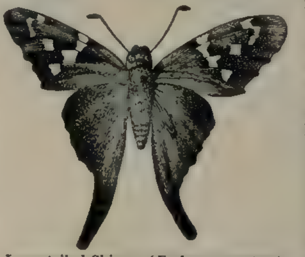
skipjack, *n.* 4. (*j*) *Pomolobus chrysochloris*, of the family *Clupeidæ*, a herring found land-locked in the Ohio and Mississippi rivers.

skipper^{1}, *n.* 7. Same as ★*climbing-fish*, 2.—**Arctic skipper**, an American hesperiid butterfly, *Pamphila palæmon*, of northern distribution. In the larval state it feeds on grasses.—**Brazilian skipper**, an American hesperiid butterfly, *Calpodes ethlius*, brown in color, with whitish translucent spots on the wings. It occurs in the southern United States and extends southward to Argentina. Its larva feeds on canna-leaves.—**Broad-winged skipper**, an American hesperiid butterfly, *Phycanassa viator*, having blackish-brown wings marked with dull tawny. It occurs from New England to the Gulf of Mexico.—**Canadian skipper**, an American hesperiid butterfly, *Erynnis comma*, occurring throughout Canada from the Atlantic to the Pacific and in the mountains of the northwestern United States.—**Cobweb skipper**, an American hesperiid butterfly, *Erynnis metea*, found in the northeastern United States, where its larva feeds on grasses.—**Cofaqui skipper**, an American butterfly, *Megathymus cofaqui*, found in Florida and Colorado.—**Cross-line skipper**, an American hesperiid butterfly, *Limochroes manataaqua*, occurring from New England west to Nebraska, and in the larval stage feeding on grasses.—**Dun skipper**, an American hesperiid butterfly, *Euphyes vestris*, widely distributed in the Mississippi valley and in the northern United States.—**Giant skippers**, the butterflies of the family *Megathymidæ*.



Giant Skipper (*Megathymus yuccæ*).
(Redrawn from Riley, U. S. D. A.)

There are two species in the United States, *Megathymus cofaqui* and *M. yuccæ*. The larvæ of the latter bore in the stems and roots of plants of the genus *Yucca*.—**Golden-banded skipper**, an American hesperiid butterfly, *Rhabdoides cellus*, brown in color, with a golden band across each fore-wing. It ranges from West Virginia south to the Gulf of Mexico.—**Grizzled skipper**, a hesperiid butterfly, *Hesperia centaureæ*, common to boreal North America, Norway, and Lapland, having dark-brown wings checkered with white.—**Hobomok skipper.** Same as ★*Mormon*1 (*c*).—**Indian skipper**, an American hesperiid butterfly, *Erynnis sassacus*, having yellowish wings bordered with brown. It occurs in the Atlantic United States and ranges westward to Colorado. Its larvæ feed on grasses.—**Least skipper**, an American hesperiid butterfly, *Ancyloxipha numitor*, which occurs throughout the eastern United States. Its larvæ feed on grasses.—**Leonard's skipper**, an American hesperiid butterfly, *Anthomaster leonardus*, occurring from New England to Florida and westward to Kansas. Its larvæ feed on grasses.—**Long-tailed skipper**, an American hesperiid butterfly, *Eudamus proteus*, ranging from New York southward into Mexico. In the south its larva, known as the *roller-worm*, is a pest in vegetable-gardens, eating the leaves of beans, turnips, and cabbages.—**Otho skipper**, an American hesperiid butterfly, *Thymelicus otho*, which occurs in the eastern United States. Its larvæ feed on grasses.—**Pepper-and-salt skipper**, an American hesperiid butterfly, *Amblyscirtes samoset*, occurring in the northern and middle United States west to Iowa.—**Powesheik skipper**, an American hesperiid butterfly, *Oarisma powesheik*, occurring in the western United States.—**Roadside skipper**, an American hesperiid butterfly, *Amblyscirtes vialis*, of wide distribution within the United States. Its larvæ feed on grasses.—**Silver-spotted skipper**, a common American hesperiid butterfly, *Epargyreus tityrus*, occurring throughout the United States. Its larvæ feed on locust-leaves and other allied trees and plants.—**Swarthy skipper**, an American hesperiid butterfly, *Euphyes fusca*, which is found in the Gulf States and extends as far north as Pennsylvania.—**Vitellius skipper**, *Phycanassa vitellius*, a species of butterfly which occurs in the West Indies and the United States.—**Zabulon skipper**, *Atrytone zabulon*, which occurs in the eastern United States. Its larvæ feed on grasses.



Long-tailed Skipper (*Eudamus proteus*).

skipper^{3}, *n.* 2. In *cricket*, the captain of a cricket eleven. [Colloq.] *Encyc. Brit.*, XXVII. 280.—3. Also the commander of any other body of men, as of a company of soldiers; a leader. [Colloq.]

He returned to sit at the feet of Revere, his '*skipper*'—that is to say, the captain of his company, and to be instructed in the dark art and mystery of managing men.
R. Kipling, Only a Subaltern, in Soldiers Three, p. 115.

skipper^{3} (skip′ėr), *v. t.* [*skipper*^{3}, *n.*] To command a ship; command and drill (as sailors); serve as skipper to. [Colloq.]

If a saint was to come down and *skipper* the brutes we have to ship as sailor-men nowadays, he'd wear out his halo flinging it at them.
Cutcliffe Hyne, A Master of Fortune, xi.

skippery (skip′ėr-i), *a.* [*skipper*^{1} + *-y*^{1}.] Containing skippers or cheese-hoppers. See *skipper*^{1}, 4 (*b*).

skipple (skip′l), *n.* [D. *schepel*, a bushel.] A measure equal to three pecks. The old Amsterdam schepel, or bushel, was about one fourth less than the bushel used in the United States. See *bushel*^{1}, 1. *N. and Q.*, 9th ser., VIII. 183. [New England.]

skip-road (skip′rōd), *n.* 1. The ways or guides for a bucket or skip in a mine-shaft or drift.—2. The path left free for the passage of the bucket or skip, over which it traverses.

Skip-shaft draft. See ★*draft*^{1}.

skirt^{1}, *n.*—**Parasol skirt**, a short spreading skirt worn by ballet-dancers in the latter part of the nineteenth century.

skirt-dance (skėrt′dȧns), *n.* See *skirt-dancing*.

skirt-dancer (skėrt′dȧn″sėr), *n.* One who dances skirt-dances.

skirted (skėr′ted), *a.* [*skirt*^{1} + *-ed*^{2}.] 1. Having a skirt: usually in composition.—2. Having the skirt or skirting removed.

skirt-steak (skėrt′stāk), *n.* A steak of beef cut from the inside of the plate.

skitter (skit′ėr), *n.* [*skitter*, *v.*] The act of skittering, or gliding or skimming over with a light touch.

The grind of the slides and the tearing swash of blades abruptly ceased as the slim shell trailed with dying headway to the *skitter* of the resting oars.
Scribner's Mag., July, 1905, p. 1.

skiving-machine, *n.*—**Amazon skiving-machine**, a special form of skiver.

skoke, *n.* Same as *scoke*.

skowitz (skō′wits), *n.* An Amerindian name of the silver salmon, *Oncorhynchus kisutch*, found on both sides of the North Pacific.

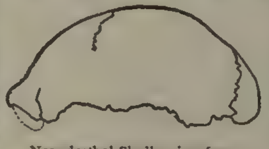
skreel (skrēl), *n.* [Appar. a dial. form of *reel*, by confusion with *creel*. Confusions of *cr-* and *scr-* are common in modern dial. usage.] A form of small spool or bobbin for holding yarn or thread.

skul, *n.* A simplified spelling of *skull*.

Skuld (sku̇ld), *n.* [ONorse *Skuld*, in origin identical with *skuld* (= Dan. *skyld* = AS. *scyld* = G. *schuld*), debt, due, from root of *skulu*, shall: see *shall*.] In *Norse myth.*, one of the three Fates; the Norn of the future.

skulduggery, *n.* See *skulduddery*.

skull^{1}, *n.* 7. The trade-name for the anterior plate of the carapace of the hawk's-bill turtle, which yields the tortoise-shell of commerce.—**Calaveras skull**, a skull found in Calaveras county, California (in 1886), believed by some to be of great antiquity. It is, however, more probable that it belonged to one of the present race of Indians.—**Cannstatt skull**, a skull found at Cannstatt, near Stuttgart, about two hundred years ago, and long believed by some authors to belong to the paleolithic race, but probably of much more recent origin. *Keane*, Ethnology, p. 133.—**Neanderthal skull**, a part of a skull, of a low type and high geological age, found, with other portions of a skeleton, in the Neanderthal near Düsseldorf, in 1856, under a diluvial deposit about two meters thick.



Neanderthal Skull: view from left side.

skull-banker (skul′bang″kėr), *n.* In Australia, a loafer; a tramp. Also *scowbanker*. [Slang.]

A *skull-banker* is a species of the genus loafer—half highwayman, half beggar.
A. Michie, Retrospects . . . of the Colony, p. 9, quoted [in E. E. Morris, Austral English.

skull-cracker (skul′krak″ėr), *n.* A falling weight, with the necessary framing and hoisting apparatus, used in breaking up the skulls or solidified metal from ladles and runners in steel-works.

The track leading to the drop from the casting level of the open-hearth building rises six feet to the drop, and the track from the charging level descends six feet, tracks on the two levels, which are twelve feet apart, thus having a loop connection in the rear of the *skull-cracker*. The latter consists of a tripod, and the drop is operated by a winding drum driven by a 25-horse-power motor.
Sci. Amer. Sup., July 23, 1904, p. 23870.

skulled, *a.* 2. In *metal.*, covered with skull. See *skull*^{1}, *n.*, 6.

skunk, *n.* Including the little striped skunks, at least twelve species have been recognized. After being changed back and forth by various revisers the name *Mephitis* is retained for the larger species and *Spilogale* for the smaller.—**Little spotted skunk**, any one of the small skunks of the genus *Spilogale*, which are marked with rows of spots.—**Striped skunk**, a general name for the smaller skunks of the genus *Spilogale* found in the southern and western United States.

skunk, *v. t.* 3. In an election, to defeat (an opponent) completely, so that the latter gets no votes at all.

II. *intrans.* To leave without paying one's bills. *Jour. Amer. Folk-lore*, Oct.-Dec., 1902, p. 258.

skunk-bear (skungk′bãr), *n.* A name sometimes given to the wolverene, *Gulo luscus*, whose appearance and markings are somewhat suggestive of a large skunk.

skunk-bush (skungk′bu̇sh), *n.* 1. The ill-scented or Canadian sumac, *Rhus trilobata*.—2. The bear-brush, *Garrya Fremontii*. See ★*bear-brush* and ★*quinine-bush*.

skunk-grass (skungk′grȧs), *n.* Same as ★*stink-grass.*

skunkweed, *n.* **2.** A low annual herb, *Navarretia squarrosa,* troublesome as a weed in grain and grass lands from Washington to California. Its ill odor (which suggests the common name) is damaging to the quality of the crop.

Skunnemunk conglomerate. See ★*conglomerate.*

sky^1, *n.* **6.** An abbreviation of *sky-blue. T. W. Fox,* Mechanism of Weaving, p. 382.—**Clear sky.** See ★*clear day.*—**Green sky,** a sky of a pale-green or pea-green color seen at sunset and rarely on other occasions: possibly due to a combination of the colors from the red sky and the blue sky.—**Lamb's-wool sky,** small white fleecy patches of cloud against a blue sky.—**Livid sky,** clouds of a dark leaden color.—**Sky aspect.** See ★*aspect.*

sky^1, *v. t.* **2.** In *golf,* to so strike (a ball) as to cause (it) to go unusually high in the air.

sky-blue, *n.*—**Diamine sky-blue,** a coal-tar color of the diazo type, related to dianisidine. It dyes unmordanted cotton a very pure blue in an alkaline salt bath.

skyer (skī′ėr), *n.* In *cricket,* a ball hit high in the air.

sky-glow (skī′glō), *n.* See the extract.

> "*Sky glows,*" . . . These phenomena were first observed about July 1 at Copenhagen, Kònisberg, Berlin, Vienna, and other places. Mr. W. F. Denning, the English astronomer, says: "Certain features of the glows struck me as being essentially different from exhibitions of normal auroræ boreales. No streamers whatever were seen. Clouds observed were of peculiar character, and some of them showed traces of spiral formation. Though thin, they were strongly illuminative, and stars shone through them with surprising distinctness."
>
> *Sci. Amer.,* Aug. 29, 1908.

skylight, *n.* **2.** The light of the sky; specifically, the blue or pale white color of the aërial vault. The light of the sky is, in general, reflected sunlight. Its color is due to the size of the reflecting particles, blue light coming from the finest gaseous particles and red light from larger vaporous ones. Blue light may also come from the molecules of the gases mixed together in the atmosphere. The white light with which the blue is adulterated comes from larger particles or globules of water that reflect all the colors of the sunlight. The blue light is polarized in a plane perpendicular to the sun's rays, the white light in the plane of the sun's rays; the resultant light is polarized according to the law combining these two elementary conditions. **3.** Illumination by means of the light of the sky: as, a studio with a good *skylight.*

skylight-quadrant (skī′līt-kwod-rant), *n.* In *marine hardware,* a brass bar in the form of a quadrant, or quarter-circle, hinged to a plate at one end and having a slot in the middle. The plate is screwed to the side of a ship's skylight and the sash carries a set-screw that slides in the slot. It is used to hold the sash open at any desired angle.

sky-line, *n.* **2.** In *arch.,* the profile of a building or mass of buildings as seen against the sky; in *painting* and other arts of representation, the profile of mountains, trees, or other natural masses seen in the same way.

sky-pilot (skī′pī″lot), *n.* A clergyman; a priest; one who pilots or shows the way to heaven. [Slang.]

> We insist that the gravediggers, pallbearers, "*sky-pilot,*" choristers, surviving members of the family, hired mourners, charioteers, brass band and the like shall wear flowers at the obsequies.
>
> *Kansas City Daily Star,* May 4, 1903.

skysail-mast (skī′sāl-mȧst), *n.* The spar on which the skysail-yard is carried, and on which the skysail is set. Strictly speaking, this should be called the *skysail-pole,* which is that part of the royal-mast above the shoulder, and which terminates at the truck.

skysail-pole (skī′sāl-pōl), *n.* The upper part of a royal-mast (from the shoulder to the truck) to which the skysail-yard is confined by a parrel.

skysail-yard (skī′sāl-yärd), *n.* The spar to which the head of the skysail is bent.

sky-scraper, *n.* **4.** A very tall office-building such as those first erected in various cities of the United States in the latter part of the nineteenth century. Originally from ten to fifteen stories in height, they are now occasionally built with forty stories and more. [Colloq.]

> We are told . . . that "*sky-scrapers*" are preventers of conflagrations, and that a law should be passed requiring the erection of a double row of them, the length of Broadway. . . . There are happily not many of these "modern" structures in any city, and this is one reason why we have not yet heard of a serious fire originating in one of them. Another is, that being few in number, they are as yet used exclusively for office purposes and the contents are not especially combustible.
>
> *Sci. Amer.,* Jan. 21, 1899, p. 39.

sky-sign (skī′sīn), *n.* See the extract.

> Advertisements coming within the definition of *sky-signs* in the London Building Act of 1894. These specifications are as follows:—"*Sky sign*" means any word, letter, model, sign, device, or representation in the nature of an advertisement, announcement, or direction supported on or attached to any post, pole, standard, framework, or other support, wholly or in part upon, over, or above any building or structure, which, or any part of which, *sky sign* shall be visible against the sky from any point in any street or public way, and includes all and every part of any such post, pole, standard, framework, or other support. The expression "*sky sign*" shall also include any balloon, parachute, or similar device employed wholly or in part for the purposes of any advertisements or announcement on, over, or above, any building, structure, or erection of any kind, or on or over any street or public way.
>
> *Encyc. Brit.,* XXV. 97.

sky-worship (skī′wėr″ship), *n.* That form of primitive religion in which the sky, the heavenly bodies, and meteorological phenomena are worshiped. *Jour. Amer. Folk-lore,* Jan.–March, 1902, p. 31.

S. L. An abbreviation (*b*) of *sergeant at law;* (*c*) of *solicitor at law.*

slab^1, *n.* **1.** (*b*) In Australia, a piece of timber, two or three inches thick, ax hewn, not sawed: used for the walls of rough houses. Also used attributively. *E. E. Morris,* Austral English.

> The house in which this modern Robinson Crusoe dwelt was what is called a *Slab* Hut, formed of rough boards and thatched with grass.
>
> *J. L. Stokes,* Discoveries in Australia, I. 266.
>
> The hut was built of logs and *slabs.*
>
> *R. M. Praed,* Australian Life, p. 8, quoted in E. E. [Morris, Austral English.

6. A flat mass of metallic tin cast in a chilling mold of stone or metal.—**7.** *pl.* A commercial name of crude rubber in pieces an inch or two thick formed by pressing several sheets together. See ★*rubber*^{1}, 3.—**Fibrous slab.** See ★*fibrous.*

slab^1, *v. t.* **2.** To keep (the sides of any excavation, as a mining-shaft or a well) from crumbling and falling by facing (them) with slabs, either of timber or of stone.

> The *slabbed* margin of a well.
>
> *Keats,* Endymion, i.

slabbing (slab′ing), *n.* In *soap-making,* the process of cutting the blocks of soap, which have solidified in frames, into slabs which are afterward cut transversely into bars. A loop of wire is used and drawn through the block by hand, or a special slabbing-machine is applied.

slabby, *a.* **3.** Consisting of slabs, or resembling a slab or series of slabs.

slab-dross (slab′dros), *n.* A by-product of the manufacture of galvanized iron consisting of impure zinc which in the molten state has alloyed with and dissolved a large proportion of iron.

slab-saw (slab′sâ), *n.* A saw which cuts the bark and outer slab from a round log, to make it square in section or flat-sided with irregular corners.

slab-wave (slab′wāv), *n.* A wave consisting of the motion of an element or 'slab,' of the ether bounded by parallel planes and subjected to uniform electric and magnetic forces at right angles to each other and parallel to the bounding planes: a term used by Heaviside in the discussion of electric waves.

slack^1. **I.** *a.*—**Slack water.** (*c*) See ★*water.*

II. *n.* **5.** The interval of slack water, when the tide is at rest, either at high or low tide; sluggishness of the current, at that time. See *slack*^{1}, *a.,* 2.

> There is little or no *slack* in the stream at high water, and the ebb runs out with strength to low water.
>
> *Geog. Jour.* (R. G. S.), XVIII. 179.

6. *pl.* A sailor's loose trousers.

> Bill blushed and became interested in the foretop until nudged by Smith, when he suddenly hitched up his *slacks,* saluted, and said, hurriedly, "Aye, aye, sir."
>
> *Wide World Mag.,* April, 1903, p. 596.

7. Feeble, foolish talk. [Slang.]

> "If I were not crippled you would not give me that *slack* before strangers."
>
> "Well, use common sense, then, and you won't get any *slack* from me," his son told him.
>
> *Forest and Stream,* Feb. 21, 1903, p. 142.

slackage (slak′āj), *n.* [*slack, a.,* + *-age.*] The amount allowed for the droop or for any unstressed part of a rope or cable; slack.

> The Anglia laid exactly 1,315 knots of cable from Midway to this point, and with the additional eighteen miles of shore end the actual amount of cable laid is 1,333 knots. There was about eight per cent. of *slackage.*
>
> *Elect. World and Engin.,* July 25, 1903, p. 145.

slack-dross (slak′dros), *n.* Refuse coal or coke in powder or very small fragments.

slacken (slak′n), *n.* The slags or cinder from previous fusions, used in smelting operations to mix with natural ores and to retard fusion of the ores until reduction shall have proceeded to the desired point.

slackener (slak′nėr), *n.* One who or that which slackens; specifically, a rod in a loom for weaving leno or gauze, designed to ease the tension on the warp-threads. Also called *easer* and *slackner.*

slackness, *n.* **2.** A tendency of a vessel under sail to fall off or away from the direction of the wind when the helm is amidships: opposed to *ardency.*

> The contrary condition, where the resultant resistance acts abaft the resultant wind pressure, and makes the head of the ship fall off from the wind, is termed "*slackness,*" and can only be counteracted by keeping the helm a-lee.
>
> *White,* Manual of Naval Arch., p. 508.

slag^1, *n.*—**Basic slag,** slag from the manufacture of steel by either the Bessemer or the Siemens-Martin process with the Thomas-Gilchrist modification of basic (lime and magnesia) lining of the converter or hearth. The object of such lining is the removal from the metallic product of sulphur and phosphorus; the presence of the latter element in the slag, in the state of phosphates, gives it value as a fertilizer, for which purpose it is used on a very large scale.—**Gray slag,** lumps of a mixture of lead, lead sulphid, oxid, sulphate, silicate, gangue, cinders, and lime, obtained in smelting lead ore in an ore-furnace. It is treated generally in a blast-furnace, but sometimes in a slag-hearth to extract the lead.—**Ore-furnace slag,** in the Swansea process of copper-smelting, the slag, consisting principally of ferrous silicate and practically free from copper, which is produced in the first melting-furnace and serves to get rid of the iron of the ore treated.—**Phosphatic slag,** basic slag; odorless phosphate.—**Refinery slag.** (*a*) In the Swansea process of copper-smelting, the slag which separates when crude blister copper is re-fused and exposed to the action of atmospheric oxygen on the hearth of a roasting-furnace. It contains a number of impurities removed from the residual copper, such as arsenic, antimony, iron, etc., along with a large amount of cuprous oxid and some silicate of copper, silica having been taken up from the furnace-lining. (*b*) In the puddling process for making wrought-iron, the slag which forms when, as a preliminary step not always taken, air is blown down upon the surface of a charge of melted cast-iron in a specially constructed hearth. Silicon is the principal substance removed from the iron, and the slag consists mainly of ferrous silicate.—**Sharp slag,** the slag obtained in the third stage of the Welsh process for copper smelting.—**Thomas slag.** Same as *basic* ★*slag,* the basic process of steel-making having been introduced by Messrs. Thomas and Gilchrist. *Sci. Amer. Sup.,* Nov. 15, 1902, p. 22463.

slag^1, *v.* **II.** *trans.* In *metal.*: (*a*) To convert into slag: as, an excess of limestone used as a flux may to a greater or less extent *slag* the lining of a furnace. (*b*) To cake together as the result of chemical action at a heat lower than that of fusion.

slag-buggy (slag′bug″i), *n.* A car for carrying a slag-ladle.

slag-dump (slag′dump), *n.* A place of deposit for the slag or cinder which results from a metallurgical operation on an ore. The cinder is conveyed in cars and dumped, or it is allowed to flow in fluid form through runners or channels.

slag-eye (slag′ī), *n.* An eye or hole through which slag can be drawn off, as in certain blast-furnaces used for lead.

Slag-hearth browse. See ★*browse*^{2}.

slag-hole (slag′hōl), *n.* The opening through which slag or cinder is discharged from a blast-furnace or cupola. The slag is lighter than the fused metal and floats upon its surface. It can therefore be discharged through an opening at the proper level as it accumulates during the process.

slag-lead (slag′led), *n.* See ★*lead*^{2}.

slaglessness (slag′les-nes) *n.* The fact of having no slag or cinder. Those forms of wrought-iron and steel which have not been fused in their production are liable to suffer from the presence of such foreign ingredients. From material which has been fused all slag is removed by the difference in specific gravity of the slag and the metal.

> But the former [certain varieties, such as blister steel] lack the essential quality—*slaglessness*—which makes the latter [low-carbon] steel.
>
> *Encyc. Brit.,* XXIX. 571.

slag-lip (slag′lip), *n.* The edge, or lip, of a ladle or other receptacle over which the slag is poured. *Phillips and Bauerman,* Elements of Metallurgy, p. 671.

slag-machine (slag′ma-shēn″), *n.* A machine for granulating the slag from a blast-furnace and reducing it to the form of fine gravel suitable for various industrial purposes.

slag-pot (slag′pot), *n.* A vessel or pot designed to receive the discharge of cinder, scorias, or slag from a furnace in continuous operation, such as a shaft-furnace. The slag is allowed to cool in these pots, and is then removed and dumped.

slam^1, *n.*—**Grand slam,** in *bridge*, the winning of all thirteen tricks by the same partners, which counts 40 in the honor column; in other games, the winning of all the tricks.—**Little slam,** in *bridge*, the winning of 12 out of the 13 tricks by the same partners, which counts 20 in the honor column. See *bridge*.

slam-bang (slam-bang′), *v. i.* [*slam-bang, adv.*] To move with violence or noise. [Colloq.]

> My engines, after ninety days o' race an' rack an' strain
> Through all the seas of all Thy world, *slam-bangin'* home again.
>
> *R. Kipling*, McAndrew's Hymn, l. 10.

slander, *n.*—**Slander of title,** defamatory and false statements injuring one's property, real or personal, or one's title thereto.

slank^2 (slangk), *n.* **1.** A slope; a declivity; a depression in the ground. *Eng. Dial. Dict.* [Prov. Eng. and U. S.]—**2.** Wrinkled skin: especially used of animals. *Eng. Dial. Dict.*

slant. **I.** *a.*—**Slant culture.** See ★*culture*.

slant-eyed (slant′īd), *a.* Having eyes the inner part of which is covered by a heavy fold of the upper eyelid and therefore appearing to be set obliquely, as the Chinese and other Mongoloid races.

> The prophets of the elder day,
> The *slant-eyed* sages of Cathay,
> Read not the riddle all amiss
> Of higher life evolved from this.
>
> *Whittier*, Miriam, st. 3.

slapiness (slā′pi-nes), *n.* [**slapy* + *-ness.*] Slipperiness; deficiency in clinging quality. Also *slapeiness*.

> In the staple bulk, again, they do not lie so close together as do those of cotton fibres. This *slapeiness* may be put down to the want of spiral character in the fibres. What resistance there is in the staple of ramie comes from the length of the fibres as they are drawn out from their entanglements, and the nearly glabrous surface of the fibres. *Hannan*, Textile Fibres of Commerce, p. 56.

slapping, *a.* **II.** *n.* Specifically, in *ceram.*, the process of preparing clay for the wheel. See *wedging*, 2.

slash^1, *n.* **7.** (*b*) A wet or marshy linear depression between nearly parallel ridges of dunes on a sand-reef. See the extract.

> There are many successive ridges of shingle running in varying directions, and often with narrow strips of marsh enclosed between successive ridges. Such bands of marsh have been given the very appropriate name of "*slashes*" in New Jersey. *Geog. Jour.* (R. G. S.), IX. 538.

slashed (slasht), *a.* Specifically, in *bot.*, deeply cut-lobed or laciniate.

slasher, *n.* **1.** (*b*) (3) In a *sawmill*, a saw-table fitted with one or two saws and used to slash or cut up short slabs and other stuff into short lengths; a slab-slasher. (4) In *paper-manuf.*, a sawing-machine for cutting logs and short lengths of wood into blocks suitable for grinding into wood-pulp. The single-saw slasher has an appliance for delivering the wood to the saw and holding it until cut.

slashing, *n.* **4.** The sizing, drying, and beaming of cotton warp for weaving on a machine called a slasher. *R. Marsden*, Cotton Weaving, p. 514.

slat^3, *n.* **5.** A green sheepskin, with the wool removed, which has been dried in the sun. *Modern Amer. Tanning*, p. 43.

slate^2, *n.*—**Dolgelly slates,** a division of the Upper Cambrian or Lingula flags of Wales.—**Ilfracombe slates,** the middle division of the Devonian series in North Devon, equivalent to the Torquay and Plymouth limestones of South Devon.—**La Couyère slates,** a subdivision of the Lower Silurian system in the northwest of France. The slates are underlain by the shales of Guichen and overlain by the Grès de May. They are correlated with the Llandeilo formation of Great Britain.—**Lithographic slates.** See *lithographic stone*, under *lithographic*. Specifically, a very fine and even-grained limestone in thin layers occurring in the Jurassic beds at Solnhofen in Bavaria, where it is about 80 feet thick and noted for its wonderfully perfect preservation of fossil crustaceans, spiders, insects, impressions of birds' feathers and wings of pterodactyls. A division of the Subcarboniferous Kinderhook group in Missouri is also known as the 'Lithographic limestone.'—**Moel Ferna slates,** a division of the Upper Silurian in North Wales lying above the Pen-y-glog grits and equivalent to the Lower Ludlow rock.—**Momable slates,** a subdivision of supposed Precambrian rocks in Newfoundland regarded by Walcott as containing evidences of organic remains.—**Morte slates,** the lowest division of the Upper Devonian in North Devon, lying above the Ilfracombe slates and below the Pickwell Down group.—**Spirit slates,** the slates employed by a medium in ★slate-writing (which see). *A. A. Hopkins*, Magic, p. 123.—**Transparent slate,** a sheet or pane of glass slightly ground on one side. A picture or design placed against the unground surface can be traced on the ground surface with a lead-pencil. Also called *tracing-slate*.—**Vireux slates,** a division of the Coblenzian group of the Lower Devonian in Belgium and northern France.

Slaters' hammer. Same as *sax*^{1}, 2.

slate-writer (slāt′rī″tėr), *n.* One who practises slate-writing, or is supposed to have the mediumistic gift of slate-writing.

> The death of Henry Slade, the *slate-writer*, removes the last of the mediums who a generation and more ago made spiritualism a fashionable cult.
>
> *N. Y. Evening Post*, Sept. 12, 1905.

slate-writing (slāt′rī″ting), *n.* A sleight-of-hand trick, regarded by the credulous, in spite of repetition and of exposure, as due to a mediumistic gift whereby communication may be had with the spirits of the dead. There are many ways of performing the trick. In general, two wooden-framed slates, with a piece of slate-pencil between them, are tied together with string and the knots sealed. The slates are held beneath the table by the medium; the scratching of the pencil is heard; knots and seals are found intact; and the slates, when taken apart, prove to have writing upon their inner faces. The result may be most easily produced by means of a false slate (piece of slate-colored cardboard): the writing is done beforehand, and the sound is produced by the finger-nail. *A. A. Hopkins*, Magic, p. 124.

> President G. Stanley Hall of Clark University said he knew seven different tricks of legerdemain by which he could explain all the cases of *slate-writing* of which he had ever heard. *N. Y. Evening Post*, Sept. 12, 1905.
>
> There has probably been nothing that has made more converts to spiritualism than the much talked of "*Slate Writing* Test," and if we are to believe some of the stories told of the writings mysteriously obtained on slates, under what is known as "severe test conditions" that preclude, beyond any possible doubt, any form of deception or trickery, one would think that the day of miracles had certainly returned; but we must not believe half we hear nor all that we see, for the chances are that just as you are about to attribute some unaccountable spirit phenomena to an unseen power, something turns up to show that you have been tricked by a clever device which is absurd in its simplicity. *Sci. Amer.*, Oct. 8, 1898, p. 229.

slath (slath), *n.* [A dial. form of *sloe.*] In *basket-making*, the parallel rods and the largest osiers which are intertwined.

> The *slath*, which is the foundation of the basket.
>
> *Encyc. Brit.*, III. 423.

slating-machine (slā′ting-ma-shēn″), *n.* A machine for setting out a hide on the grain side to give it an even surface and to remove fine hairs. *Flemming*, Practical Tanning, p. 12.

slating-table (slā′ting-tā″bl), *n.* A table for setting out a hide on the grain side to give it an even surface and to remove fine hairs. *C. T. Davis*, Manuf. of Leather, p. 113.

slaughter-tree (slâ′tėr-trē), *n.* Same as ★*strangler-tree*.

slauter, *n.* and *v.* A simplified spelling of *slaughter*.

Slav. An abbreviation of *Slavic*, *Slavonian*, or *Slavonic*.

slave-ant (slāv′ȧnt), *n.* An ant held in slavery by another species of ant. Thus *Formica subsericea* is frequently a slave in the colonies of *Formica difficilis*. *Comstock*, Manual of Insects, p. 641.

slave-maker (slāv′mā″kėr), *n.* One who or that which (as an ant) makes slaves. See *slave-making*.

> In its pure form it is known to occur only in two of the several thousand described species, namely, in the sanguinary or blood-red *slave-maker* (Formica sanguinea) and the amazon (Polyergus rufescens).
>
> *W. M. Wheeler*, in Pop. Sci. Mo., Dec., 1907, p. 550.

slaving (slā′ving), *n.* Slave-dealing; the buying and selling of slaves.

> Formerly, numerous caravans of Arabs and Swahilis came up to trade for ivory, combined with a little quiet *slaving*, but the days of *slaving* and dealing in contraband are now past. *Geog. Jour.* (R. G. S.), XII. 372.

slavocratic (slā-vọ-krat′ik), *a.* [*slavocrat* + *-ic.*] Characteristic of, or pertaining to, a slavocrat or slavocracy.

Slavo-Lithuanic (slȧv″ọ-lith-ụ-an′ik), *a.* and *n.* Slavic and Lithuanic considered as a separate division of the Indo-European languages. *Keane*, Ethnology, p. 411, note.

Slavo-Teuton (slȧv-ọ-tū′tọn), *n.* One of a people of mixed Slavic and Teutonic descent. *Keane*, Ethnology, p. 200.

Slavo-Teutonic (slȧv″ọ-tū-ton′ik), *a.* Of or pertaining to the Slavo-Teutons; of mixed Slavonic and Teutonic descent.

slay^2 (slā), *v. t.* [*slay*^{2}, *n.*] To arrange (the warp-threads) in the loom-reed for weaving.

slay-block (slā′blok), *n.* The beam of the slay, or lathe, of a loom. *R. Marsden*, Cotton Weaving, p. 166.

slay-cap (slā′kap), *n.* A strip of wood, grooved on its under side, for holding the reed in position in the slay, or lathe, of the loom. *R. Marsden*, Cotton Weaving, p. 166.

slay-sword (slā′sōrd), *n.* One of the supports upon which the slay, or lathe, of a loom oscillates during the process of weaving. *R. Marsden*, Cotton Weaving, p. 166.

sled^1, *n.* **4.** A small tool, resembling a sled in form and having sharp blades for runners, used for cutting gold-leaf into rectangular sheets.

> In it the gold is beaten for about one and a half hours with a 10-pound hammer, until each leaf is about four inches square. The leaves are then again quartered, this time by means of a small instrument called a "*sled*" or a "wagon." *Sci. Amer. Sup.*, June 25, 1904, p. 23816.

5. The device for making sliding contact between the underground conductors of an electric road and those of a moving railway-car upon the road.—**Automobile sled,** an automobile vehicle constructed with runners, like a sled, and propelled by a motor which actuates levers which grip the surface of the ice.—**Donkey sled,** the heavy frame upon which a donkey-engine is fastened.

sledge^1, *n.* **6.** The thick wooden outer case of a mummy.

> In front of these [boxes] rose, shoulder-high, the oblong black mass of a "*sledge*," the outermost case for a mummy.
>
> *H. C. Greene*, in The Century, Nov., 1905, p. 66.

sledge^2, *n.*—**Plow sledge,** a vehicle with low wheels or with none, designed for the conveyance of a plow on the farm. *J. Scott*, Textbook of Farm Engineering. [Eng.]

sled-tender (sled′ten″dėr), *n.* In *lumbering*: (*a*) One who assists in loading and unloading logs, or skidding with a dray. Also called *chain-tender*. (*b*) A member of the hauling crew who accompanies the turn of logs to the landing, unhooks the grabs, and sees that they are returned to the yarding-engine.

sleeker, *n.* **4.** See ★*boss-tool*.—**Brass sleeker,** a tool with a brass blade set in a wooden handle, used for scraping or smoothing out wet skins on a table or bench. See *sleeker*, 1.

sleep, *n.*—**Diurnal sleep,** in *bot.* See *paraheliotropism* and *sleep*, 5.—**Sleep drunkenness.** See ★*drunkenness*.

sleeper^1, *n.* **9.** In *faro*, a bet left upon a card which the case-keeper shows is dead. Such a bet is public property and the first one to see it can take it.

Sleeping rent. See ★*rent*^{2}.

sleeping-beauty (slē″ping-bū′ti), *n.* The wood-sorrel, *Oxalis Acetosella*.

sleeping-car, *n.*—**Tourist sleeping-car.** See ★*tourist*.

sleeping-sickness, *n.* **2.** A disease of silkworms. *Jour. Roy. Micros. Soc.*, April, 1904, p. 179.

Sleepy staggers. See ★*stagger*.

sleepy-dick (slē′pi-dik″), *n.* The star-of-Bethlehem, *Ornithogalum umbellatum*, so called from the early closing of its flowers.

sleepy-grass (slē′pi-grȧs), *n.* A stout bunch-grass, *Stipa Vaseyi*, growing in the Rocky Mountains at altitudes of from 5,000 to 6,000 feet. The leaves have a narcotic effect upon horses which feed upon them, causing a drowsiness which lasts several days. After once eating, the victim thenceforth avoids it. The hay does not appear to have any ill effect.

sleepy-yellow (slē′pi-yel″ō), *n.* A pierid butterfly found throughout the United States. Its larvæ feed on cassia, senna, and clover.

sleet-cutter (slēt′kut″ėr), *n.* In electric railroading, a trolley-wheel which has a corrugated tread used to break the ice that may form on an overhead trolley-wire during sleet-storms.

sleev, *n.* and *v.* A simplified spelling of *sleeve*.

sleevd, *a.* A simplified spelling of *sleeved*.

sleeve^1, *n.* **2.** Specifically: (*a*) A hollow tube or cylinder inserted into some structural detail, so that some other element may pass freely through, such as a sleeve in a wall to allow a shaft to pass through, or a pipe or conduit. (*b*) A hollow tube or cylinder fitting loosely upon a revolving shaft, so that no accident may result from the catching of clothing on projections upon the shaft. Such a sleeve is often in sections. (*c*) A hollow tube or pipe into the ends of which two other lengths of pipe may be screwed to join them together. Also called a *muff*, but more usually, in this sense, a *coupling-sleeve*. (*d*) A hollow tube or cylinder fitting with a running fit upon a revolving shaft and carrying a pulley or clutch. The shaft may turn without the pulley on the sleeve, or the pulley turn without the shaft, or both may turn together when a clutch is engaged. The sleeve may be moved lengthwise on the shaft. Used in jack-shaft designs, and in reversing and quick-return motions, and in compensating gears in motor-cars and in traveling cranes. (*e*) A hollow tube or cylinder running in independent bearings, the inside diameter being so large that a shaft may traverse the sleeve, without touching it, allowing a flexibility and lateral adjustment if the shaft and sleeve do not aline perfectly. Used in some designs of motor-driven electric locomotives.

3. A square of cloth or other flexible material through the center of which a catheter is passed and tied. It is then inserted into a canal to be tamponed, and the space between the catheter and its cloth covering is packed with pledgets of cotton, worsted yarn, or other material.

> A *sleeve* for a packing which has to be left in the nose for any length of time. *Med. Record*, March 7, 1903, p. 387.

Insulating-sleeve, a tube or cover of insulating material used to protect a joint or splice in an electric circuit.

sleeve^{1}, *v. t.* 3. In *mech.*, to fasten or adjust in the manner of a sleeve.

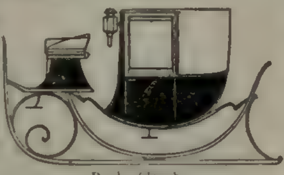
> On the Baltimore and Ohio locomotives the motors are *sleeved* on the axles, there being a slight play between the sleeve and the axle, which allows a flexible support. *Encyc. Brit.*, XXVIII. 97.

4. To attach or operate by a sleeve. See ★*sleeve*^{1}, *n.*, 2.

sleeve-bearing (slēv′bãr″ing), *n.* 1. A form of bearing in which a hollow cylinder or quill fits the shaft-journal on its inside and the box or bearing proper on its outside surface. The sleeve may turn in the box or the shaft turn in the sleeve. — 2. A form of long bearing for a shaft to be inserted in a ,wall and permit the revolving shaft to pass through it to the other side.

sleeve-joint (slēv′joint), *n.* A connecting device for electric wires in which the conductors are passed, from opposite ends, through a sleeve or tube of metal and then twisted together, brazed, or soldered.

sleigh^{1}, *n.*—**Booby sleigh**, a sleigh having a body resembling that of a brougham swung by straps from a sleigh-frame.



Booby Sleigh.

sleuth^{2}, *n.* 2. A newspaper name for a detective. [Recent.]

> The *sleuths* were unable to discover how the [thief] had gotten into the house, and concluded, therefore, that he must have used a skeleton key. *N. Y. Times*, Dec. 24, 1905.

slewing-bracket (slö′ing-brak″et), *n.* A bracket or arm projecting from the mast of a pivoted crane and carrying the gear-wheel used in rotating the crane or slewing it. The gear is driven and meshes into a stationary or fixed gear or rack.

slice, *n.* 3. (*k*) Same as *paddle*^{1}, 6 (*b*).
5. A mill or machine for slitting or dividing gems. — 6. In *golf*, the side spin imparted to a ball which causes it to curve to the right in the case of a right-handed player, or the reverse in the case of a left-handed player. *W. Park, Jr.*, Game of Golf, p. 111.

slice, *v.* I. *trans.* 4. In *golf*, to draw the face of the club across (the ball) from right to left in the act of hitting it, the result being that it will travel with a curve toward the right; or the reverse for a left-handed player. *W. Park, Jr.*, Game of Golf, glossary.— 5. To break with a bar. Bituminous coal, when burned, fuses and forms a solid mass which must be broken up in this manner. *Trans. Amer. Soc. Mech. Engin.*, 1903, p. 320.

II. *intrans.* In *golf*, to cause the ball, when struck with the club, to curve from left to right in the case of a right-handed player, or the reverse in the case of a left-handed player.

slicer, *n.* (c) The name of various machines and appliances used in cutting bread, smoked beef, potatoes, etc., into thin slices. The simplest form is a horizontal knife set in a wooden frame; in another the knife is pivoted; still others employ revolving cutters.

slice-shot (slīs′shot), *n.* In *croquet* and similar games, a shot in which the object-ball is but little displaced, the mallet-ball receiving most of the force of the blow.

slickens (slik′nz), *n. pl.* [*slicken*, *a.*] 1. The fine dust or powdered rock from an ore stamp-mill or rock-crusher. — 2. The lighter earth carried away in the sluices of a hydraulic mining operation.

slicker, *n.* 2. Same as *silver-fish*, 6. [Local, U. S.] *L. O. Howard*, Insect Book, p. 380.

slick-stone (slik′stōn), *n.* Same as ★*setting-stone*. *C. T. Davis*, Manuf. of Leather, p. 545.

slide, *v. i.* — **Sliding-bow contact**, in *elect.*, a sliding-contact used as a substitute for the trolley on many electric railways, especially in Europe. It consists of a horizontal transverse metallic rod bent downward upon itself at the ends and mounted above the roof of the car. It is held in contact with the under side of the trolley-wire by the action of springs.

slide, *n.* 14. An inclined plane up which hay is drawn by horse-power on to a rick by means of a net and a cable running over the top of the rick. The net, when emptied, is drawn back by a horse with a long rope. This method is practised on very large ranches. *U. S. Dept. Agr.*, Bur. Plant Industry, 1902, Bulletin 15, p. 30.—**Label-card slide.** See ★*label-card*.

slide-bar, *n.* 3. One of the bars or elements which guide and control a reciprocating piece in any machine or engine. Usually called *guide*. *Uhland*, Corliss-Engines, p. 27.

slide-car (slīd′kär), *n.* A conveyance without wheels, consisting of a pair of shafts attached to short runners.

slide-feed (slīd′fēd), *n.* A gravity feed-motion in which sheet-metal is fed, by sliding into the press, to a blanking-die, the cut blank then sliding down to a stamping-die; a gravity feed-motion in which the shells, cans, or other objects slide down an incline in any manner to any machine.

slide-frame (slīd′frām), *n.* A frame which embraces or forms guides for a slide. *D. K. Clark*, Steam Engine, III. 27.

slider, *n.* 1. (*h*) The sliding contact device used in some forms of the Wheatstones bridge or the potentiometer. See ★*slide-wire*. *Elect. World and Engin.*, Feb. 6, 1904, p. 283.

slide-rail, *n.* 3. A rail or track on the bed of a machine upon which some element, such as the tool-carriage, slides and is guided to its work.

slide-resistance (slīd′rẹ̄-zis″tạ̈ns), *n.* See ★*resistance*.

slide-rock (slīd′rok), *n.* Same as *talus*, 7.

> In the mountains we often find the hillside slopes covered with broken stone of various sizes. This we call *slide rock*. This *slide rock* may be very coarse and the surface extremely ragged, when it is called "heavy slide." It may be fine and bound together by soil, in which case it can be plowed. It may be fine and dry and run just like dry sand when one attempts to walk on it or otherwise disturb it; this is called "fine *slide rock*." *Yearbook U. S. Dept. Agr.*, 1900, p. 195.

slide-tender (slīd′ten″dėr), *n.* In *lumbering*, one who keeps a slide in repair.

slide-tongs (slīd′tôngz), *n. pl.* Blacksmiths' tongs, in which the handles are pressed together to grip the work by means of a ring which envelops them and slides along their length until it is held by friction on their inclined sides.

slide-wheel (slīd′hwēl), *n.* A part of an oscillating tappet-motion of a loom for rotating the pattern chain in such a manner as to place the weft in the fabric progressively. *T. W. Fox*, Mechanism of Weaving, p. 58.

slide-wire (slīd′wīr), *n.* In *elect.*, a resistance wire with sliding contact or contacts: a simple form of rheostat consisting of a stretched wire. By means of a fixed contact at one end and an adjustable sliding contact, which can be moved at will the entire length of the wire, any desired portion of the resistance of the wire can be introduced into an electric circuit.

> The electrical method required the use of a standard solution of potassium chloride the resistance of which was balanced against that of the sample by means of a *slide-wire* Wheatstone's bridge, a telephone being used instead of a galvanometer. *Nature*, Dec. 4, 1902, p. 98.

slide-zone (slīd′zōn), *n.* The lower part of the pitcher of a pitcher-plant (*Nepenthes*, *Sarracenia*, etc.), which is slippery, so that the insects slide down it into the water at the bottom of the pitcher.

Sliding-gear transmission. See ★*transmission*.

sliding-plane (slī′ding-plān), *n.* Same as *gliding-plane*. See also ★*solution-plane*.

> Various experiments showed that the ice was plastic both under pressure and under tension, at temperatures far below the freezing-point — the glacier-grains or ice-crystals apparently slipping over each other. Even the crystals themselves exhibited plasticity, due to *sliding-planes*, the rate of distortion increasing with the temperature. *J. Geikie*, The Great Ice Age, p. 32.

sliding-pole (slī′ding-pōl), *n.* A smooth, vertical pole which reaches from the floor of the engine-room in a fire-engine house, through an opening in the floor above to the ceiling of the room above. The hole in the floor is large enough to permit a man to slide down the pole, thus enabling him to reach the floor below more quickly than by going down the stairs. *Sci. Amer.*, Feb. 28, 1903, p. 159.

sliding-ways (slī′ding-wāz), *n. pl.* In *shipbuilding*, the lower part of the cradle on which a vessel slides down the launching-ways (which see). Also called *bilge-ways*.

slight^{2}, *n.* A simplified and former spelling of *sleight*.

slim^{3} (slim), *a.* [D. *slim*, cunning. See *slim*^{1}, *a.*] Cunning; crafty; tricky.

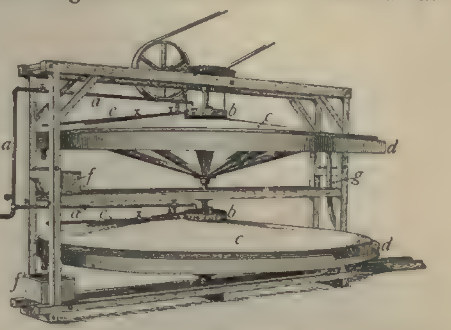
> For "*slim* 's" the word now most in vogue
> (That 's "sly," if read aright);
> From head to heel be dull and dim,
> Your brain alone be bright.
> *E. T.*, in War's Brighter Side, x.

> The Boer word "*slim*" has not yet been introduced in America, but some of the English papers are using it, and, as it expresses a quality which is not exactly defined by any English word, it is likely to become incorporated in the English language. *N. Y. Times*, July 6, 1902.

slime, *n.*— **Electrolytic slime.** See ★*electrolytic*.

slimer (slī′mėr), *n.* [*slime* + *-er*^{1}.] Same as *toad-fish*, 1.

slime-table (slīm′tā″bl), *n.* In *ore-dressing*, a revolving table whose surface is that of a flat cone and has about 1$\frac{1}{8}$ inches of inclination for each foot of radial distance, the inclination varying, however, with the material to be treated. On this revolving cone the slime is delivered, and the gentle motion and the incline separate the elements in the flowing water. Also called *buddle* and *vanner*.



Double-deck Slime-table.

a, *a*, *a*, feed-water piping; *b*, *b*, feed-boxes; *c*, *c*, slime-tables; *d*, *d*, launders; *e*, *e*, wash-water pipes; *f*, *f*, receptacles for concentrator; *g*, drain-pipe for gangue.

> *Slime-tables* are circular revolving tables . . . with flattened conical surfaces, and a slope of 1$\frac{1}{8}$ inch more or less per foot from centre to circumference. . . . These tables treat material [grains (quartz)] of $\frac{1}{100}$ inch and less in diameter coming from box classifiers. . . . The capacity of such a table is 12 tons or more of pulp, dry weight, in twenty-four hours. *Encyc. Brit.*, XXXI. 372.

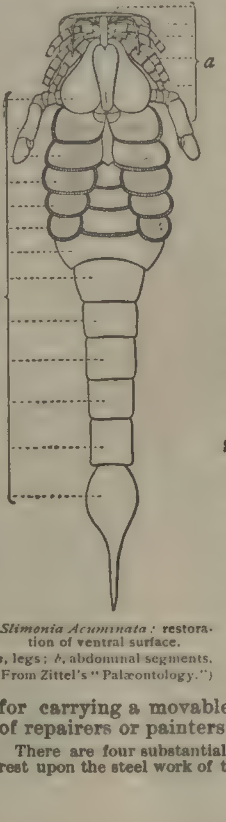
slime-washer (slīm′wosh″ėr), *n.* A machine for washing, separating, and concentrating slimes; a buddle or vanner.

slime-water (slīm′wâ″tėr), *n.* Water containing ore and gangue in suspension, to be treated in slime-tables for the concentration and separation of the ore and rejection of the tailings or valueless rock.

slimness^{2} (slim′nes), *n.* [*slim*^{3} + *-ness*.] The character of being 'slim' or sly; craftiness. See ★*slim*^{3}.

> The British officer may be criticized for lack of '*slimness*,' but when it comes to leading straight into an ugly breach he can give them all cards and spades. *The Citizen* (Ottawa), quoted in N. and Q., 9th ser., XI. [508.

Slimonia (slī-mō′ni-ạ̈), *n.* [NL., from a personal name.] A genus of extinct merostomatous crustaceans of the family *Eurypteridæ*, of large size, with subquadrate cephalothorax, the preoral appendages small and chelicerate, five pairs of postoral appendages of which the first is antenniform, the first six of the twelve abdominal segments represented on the ventral side by parts of the genital plate, and four discontinuous plates bearing branchial lamellæ. The genus is found in the Old Red Sandstone of Scotland.



Slimonia Acuminata: restoration of ventral surface.
a, legs; *b*, abdominal segments.
(From Zittel's "Palæontology.")

sling^{1}, *n.* 10. A harness consisting of a wide girth with breast-strap and breeching, suspended from a ceiling, for supporting invalid horses in a standing position. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, plate XXVIII.—11. A suspending chain or rope for carrying a movable platform for the use of repairers or painters.

> There are four substantial brackets at the base which rest upon the steel work of the building, and the top

stiffened by a ring made of two 6-inch by 6-inch by ⅜-inch angles, and below this a ring made of Z bar for carrying *slings* for painting. A ladder extends from the roof to the top of the stack.
Elect. World and Engin., Sept. 24, 1904, p. 512.

sling-bow (sling′bō), *n.* A bow with a double bowstring provided in the middle with a small rope for a bullet: used in Brazil and other parts of South America, and also in China. *Ratzel* (trans.), Hist. of Mankind, II. 62.

sling-fruit (sling′fröt), *n.* Same as ⋆*bolochore.*

sling-hoop (sling′höp), *n.* **1.** A hoop or ring of round or flat iron, with a board seat at the bottom, by which a workman may be raised by a block and fall to inspect or repair elevated structures such as chimneys, steeples, and the like.— **2.** The hoop or ring on the end of a hoisting-rope to which rope- or chain-slings may be made fast.

sling-psychrometer (sling′sī-krom″e-tėr), *n.* See ⋆*psychrometer.*

sling-rod (sling′rod), *n.* **1.** A rod used for fastening a locomotive boiler to the frame.— **2.** One of the suspension-rods by which a boiler is hung from beams which rest on the top of the side walls of the brick setting.

sling-shot (sling′shot), *n.* Same as *catapult*, 2.

sling-stay (sling′stā), *n.* One of the rods or braces in a steam-boiler by which the girder or crown-bar stays are tied to a part of the shell which resists strain in an opposite direction. In a locomotive-boiler, for example, the crown-sheet of which is stiffened from collapse by crown-bars, the bars are tied to the sides of the dome overhead by sling-stays, which hold the dome down and resist flexure of the bars.

slink², *n.* **5.** The skin of a still-born calf. Also *slunk. Modern Amer. Tanning*, p. 157.

slinker (sling′kėr), *n.* A name of the pickerel, *Esox lucius*, in Maine and Canada. This fish is found from Alaska to the Ohio river in America, and in northern parts of Asia and Europe. See cut at *pike.*

slinkweed (slingk′wēd), *n.* The swamp loosestrife, *Decodon verticillatus.*—**Red** or **Cardinal slinkweed,** the cardinal-flower, *Rapuntium cardinale.*

slip¹, *v. i.*—**To slip up.** (*b*) To fail in a scheme; be disappointed in any expectation. *Dialect Notes*, III. iii. [Colloq., U. S.]

slip¹, *n.* **5.** The slip of a screw-propeller or of a paddle-wheel is the difference between the speed of the propeller or paddle-wheel and the actual speed with which it advances through the water. The speed of the propeller is the speed at which it would move forward if it were working in a solid nut, which is the same as the product of the pitch of the propeller by the revolutions per minute; and the speed of the paddle-wheel is the circumferential velocity of the outer edges of the paddle-floats. The slip is usually expressed as a percentage of the speed of the propeller. The water immediately in front of the screw-propeller at the stern of a vessel in motion has a forward motion with reference to the surrounding water. The *true slip* is that with reference to the difference of the speed of the propeller and the actual speed through this water. The *apparent slip* is the difference between the speed of the propeller and that of the vessel propelled by it, and is therefore less than the true slip. *Negative slip* is apparent slip in which the speed of the ship is greater than the speed of the propeller. In most such cases, however, the assumed pitch of the propeller is less than the maximum real pitch which should be taken. **32.** In *elect.*, in alternating-current induction-motors, the difference in speed from synchronism, that is, from rotation in step with the alternations of the impressed voltage, usually given as fraction or in percentage of synchronous speed.—**33.** The moving on each other of two surfaces which are intended to be immovable with respect to each other, as the slip of the plates in a riveted joint under stress.—**34.** In pumps, the difference between the actual volume of water or other liquid delivered by a pump during one complete stroke, revolution, or period, and the theoretical volume during the same stroke, revolution, or period as determined by calculation of the displacement. It is due both to leaks past pistons, plungers, and valves, and to the back-flow through valves during the time the valves are closing. It is usually expressed as a percentage of the displacement volume. —**35.** See the extract.

A "*slip*" is neither cockerel nor capon, but is between the two, possessing the mischievous disposition and the appearance of an ordinary cockerel, but, as a rule, being unable to reproduce. This condition is due to the fact that a small piece of the testicle is left in the body. This piece often grows to a considerable size. As the "*slips*" possess the same restless disposition as the cockerels, they grow and fatten little if any better, while they do not bring as good a price in the market as the capons.
U. S. Dept. Agr., Bur. Animal Industry, Rep., 1905, [p. 273.

Albany slip, a clay dug from the shore of the Hudson river at Albany, New York, used extensively as a dark-colored glaze for earthenware by American potters, and as a test of the heat of the kiln in the early stages of the firing.—**Coefficient of slip.** See ⋆*coefficient.*—**Shear slip,** in *geol.*, small crushes and movements along a thrust fault or zone of compression.

Horizontal differential movements had occurred, and local thrusts and *shear slips* took place again, fragmenting the previous thrust-masses and igneous intrusions.
Nature, Feb. 12, 1903, p. 359.

Slip of an induction motor, the ratio of the difference between the speed of the rotating field and that of the rotor to the speed of the rotating field. If n_s be the speed of the rotating field, n_r that of the rotor, $n_s - n_r / n_s$ is the *slip.*

slip-angle (slip′ang″gl), *n.* The angle between the helix which would be generated by a point on the face of screw-propeller, if working at a given speed of rotation in a solid nut, and the helix actually developed by the same point when the propeller works at the same speed in the water and drives the ship; the angle between the actual and theoretical helixes generated by the same point on the screw.

slip-band (slip′band), *n.* One of the lines which appear in a material which is under stress, and which consists of an aggregation of minute elements which must move upon each other if they are not all of the same elastic character. These lines appear in testing a material, such as a weld-iron of ductile character, after the common elastic limit is passed and the elements are being pulled lengthwise in a testing-machine. They seem to be due to variation in adherence of the elements to each other sidewise. They are called *slip-lines* if filamentous, and *slip-bands* if more massive. They are clearly revealed on polishing and etching the smooth surface.

The metal chosen for experiment was Swedish iron, of high and very uniform quality. It had the further advantage for our purpose of possessing a clearly defined and fairly large crystalline structure, well adapted when polished and etched to exhibit the characteristic lines known as "slip-lines" or "*slip-bands,*" which appear in ordinary testing when any portion of the material has passed its limit of elasticity under strain.
Philos. Trans. Roy. Soc. (London), 1903, ser. A, p. 242.

slip-catch (slip′kach), *n.* A device which slides or slips on two parts of a mechanism for their relative adjustment.

slip-cup (slip′kup), *n.* In *ceram.*, a baked earthenware utensil in which the potters' slip, or diluted clay, is placed; a quill-box. It is provided with one or more quills at one side, through which the slip is poured in decorating pottery. A slip-cup differs from a pipette in being open at the top, while the latter is closed, having only an air-hole or vent by means of which the potter regulates the flow of slip by the pressure of his thumb. The latter term is used by European potters.

slip-cut (slip′kut), *n.* A certain cut of the pile in velveteen and similar fabrics.

slip-decorated (slip′dek″ō-rā-ted), *a.* In *ceram.*, ornamented with designs traced with diluted clay, or slip, poured through a quill.

slip-dish (slip′dish), *n.* An earthenware utensil ornamented with liquid clay, or slip, poured through a quill; a slip-decorated dish.

An interesting *slip-dish* in the Pennsylvania Museum, Philadelphia, remarkable for its unusual size, light weight, and perfect condition, is embellished with a conventional design of tulips in white and green outlined with lavender, on an orange-colored ground. This superb specimen measures seventeen and a half inches in diameter and possesses a double band of inscriptions in low German, and the date 1769. . . . This was made at one of the old potteries in Eastern Pennsylvania.
E. A. Barber, Pottery and Porcelain of the U. S., p. 71.

slipe-cart (slīp′kärt), *n.* Same as *slipe* (*a*).

slip-fault (slip′fâlt), *n.* In *geol.*, a normal, tension, or gravity fault.

The Triassic masses in this region consist largely of Dolomites; and these are said by the Author [M. M. O. Gordon] to be isolated by faults. Folded by many successive creeping movements of the Earth's crust, intersected by *slip-faults* and thrust-faults.
Annals and Mag. Nat. Hist., Jan., 1904, p. 78.

slip-fiber (slip′fī″bėr), *n.* See the extract under ⋆*cross-fiber.*

This has caused the slickensiding phenomena on the fracture planes and a consequent stretching of the fibrous content; hence the term "*slip-fiber.*"
Amer. Geol., March, 1905, p. 194.

slip-gear (slip′gēr), *n.* A slip-motion; a device to make a slide-valve, or other sliding piece, change its position sidewise and hence prevent wear on one part of the sliding surface more than on another.

slip-glaze (slip′glāz), *n.* In *ceram.*, a glaze of clay mixed with ground minerals, applied in a liquid state and then burned.

slip-glazed (slip′glāzd), *a.* In *ceram.*, glazed with a liquid preparation composed of ground minerals mixed with clay.

slip-grab (slip′grab), *n.* A pear-shaped link attached by a swivel to a skidding evener or whiffletree through which the skidding-chain is passed. The chain runs freely when the slip-grab is held sidewise, but catches when the grab is straight. Also called *grab-link.*

slip-hitch (slip′hich), *n.* *Naut.*, a hitch so formed that it will not jam, but will untie if the hanging end is pulled.

slip-jaws (slip′jâz), *n. pl.* Movable jaws slipped on the active surfaces of a holding apparatus, such as vise-jaws and clutches. They are usually set in dovetails on the massive parts of the jaw, and are intended to be easily removable when worn, or to permit of the use of different styles of contact-surface with the work.

slip-joint (slip′joint), *n.* A form of expansion-joint for use in a long pipe which is subject to changes of length by temperature. On one end at the joint is a stuffing-box construction; entering this is a smoothly finished piece of tube, often of bronze, which may slide or slip without leakage through the packing material in the stuffing-box. Care must be taken to prevent the smooth tube from drawing out of the box lengthwise under pressure, since the joint is effective to resist leakage only, and not to prevent the two lengths from separating in the direction of the slip-motion. *F. R. Hutton*, Power Plants, p. 354.

slip-line (slip′līn), *n.* See ⋆*slip-band.*

slip-motion (slip′mō-shon), *n.* In *mach.*: (*a*) An intentional looseness of fit, which allows one part to move without driving the other during a part of the phase of such first part: used in direct-acting pumps where the valve of one is driven by the piston of the other. (*b*) A motion of one part on another where only the components in one direction are to be used, as of a pin driving a rocking arm by contact with the sides of the slot in such an arm, or the driving of a Corliss valve-arm by a detent which slips by on the return stroke.

slip-noose (slip′nös), *n.* Same as *slip-knot*, 2.

slip-pan (slip′pan), *n.* See ⋆*pan*¹.

slipper³, *n.* **3.** In *mech.*: (*a*) A part which is adjustable by sliding, usually in the direction of its length, as a nozle or tube. *Elect. World and Engin.*, Nov. 21, 1903, p. 845. (*b*) A steam-engine cross-head having somewhat the shape of a slipper. The piston-rod is attached to the part which is where the heel or counter would be, and the guides are under the sole. The connecting-rod vibrates over the toe part.—**4.** In *cricket*, one who fields in the slips, that is, in the part of the field behind the wicket and somewhat to the 'off' side. *Hutchinson*, Cricket, p. 102. [Slang.] —**5.** Same as ⋆*rosser.*

slipper-bowl (slip′ėr-bōl), *n.* An earthen bowl somewhat resembling a slipper in form: found in the archæological remains of Central America and some of the adjoining countries.

slipper-brake (slip′ėr-brāk), *n.* A form of brake for railway-trains on steep gradients in which a block or shoe is pressed downward by a lever upon the surface of the rail to retard the motion. Since the block acts on the fixed surface of rails secured to the ground, and the abutment to its pressure is furnished by the weight of the car itself, these brakes can be very effective. Used on mountain roads as an emergency brake. *Science Abstracts*, VI. sec. B, p. 56.

slipper-weed (slip′ėr-wēd), *n.* The pale touch-me-not or jewel-weed, *Impatiens aurea*; also the spotted touch-me-not, *I. biflora.* These plants are also sometimes called *wild lady's-slipper*, or simply *slippers*, the names all referring to the shape of the flowers.

slippery-dick (slip′ėr-i-dik), *n.* In the Bahamas and Florida Keys, the brilliantly colored fish *Halichœres bivittatus*, of the family *Labridæ.*

slipping (slip′ing), *n.* Specifically, in *ceram.*, the process of mixing clay with water to form slip; also, the act of decorating ware with slip.

slip-ratio (slip′rā″shiō), *n.* The ratio between the slip of a propeller and the speed of the propeller. It differs from slip percentage only in being represented as a fraction of unity instead of parts in a hundred. See ⋆*slip*, 5.

slip-ring (slip′ring), *n.* A metal ring, usually of copper or cast-iron, used on electric apparatus to lead the current into a revolving structure.

Since the generator side of the motor generator set may always be brought up to speed before being loaded, it is unnecessary to use a motor with wound secondary, or *slip rings.* *Jour. Franklin Inst.*, Nov., 1903, p. 356.

slip-shuck (slip′shuk), *v. t.* To pick from the husk or shuck leaving the latter attached to the stalk: said of the ears of maize. Compare ★*snap, v. t.*, 9. [Southern U. S.]

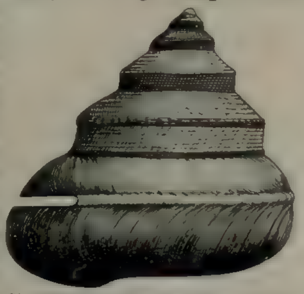
In handling, the ear left in the field pendent, in situ, from the stalk . . . is frequently "*slip-shucked*" and carted to barn or crib. *The Book of Corn*, p. 169.

slip-ware (slip′wãr), *n.* Earthenware which is coated with slip, or thinly diluted clay. See *slip*^{1}, 11.

Slip ware, though naturally superseded by the finer earthenwares of the eighteenth century, is not yet extinct. *R. L. Hobson*, in Burlington Mag., II. 69.

slit^1, *n.* **6.** In *optics*, the narrow opening through which a beam of light is admitted into the tube of a spectroscope or other optical instrument.—**Cephalic slits.** See ★*cephalic.*—**Double slit,** the two slits of the spectroheliograph, one, as usual, at the end of the collimator, the other in front of and very close to the photographic plate. As the collimator slit traverses, or is traversed by, the image of the object (ordinarily the sun) formed by the object-glass of the telescope to which the spectroscopic apparatus is attached, an exactly corresponding motion is given by some mechanism to the slit before the plate. Thus a photograph is obtained due to the light of some single wave-length, say that of the calcium K or of hydrogen F. See ★*spectroheliograph.*—**Vierordt slit,** a double slit the halves of which are opened and closed by means of separate micrometer-screws: a form of slit used in spectrophotometry.

slit-band (slit′band), *n.* In gasteropod mollusks of the families *Pleurotomariidæ*, *Bellerophontidæ*, and some others, a band on the periphery of the whorl produced by the progressive closing of a slit at the aperture which is due to the exsertion of the anal tube.



Pleurotomaria subscalaris (Tower Oolite), showing slit-band.
(From Zittel's "Palæontology.")

slit-bar (slit′bär), *n.* A bar or lever within which is formed a slit or slot. In this slot a pin or stud is fitted on a suitable slide, the latter usually on a screw parallel to the slot and serving to adjust and clamp the stud in a desired position; or the block may be moved by hand to its desired position and clamped there by a nut. The length of stroke of rods attached to the stud and driven by it may be varied according to the effective radius of the traverse of the pin. The device is used in feed-motions and in a wide variety of mechanical movements. A disk, called a *slit-disk*, is also used for the same purposes as the lever.

slit-disk (slit′disk), *n.* See ★*slit-bar.*

slither, *n.* **2.** In *archery*, a minute longitudinal split in a bow.

slither, *v. i.* **2.** To suffer a minute longitudinal split: said of a bow.

slitheroo (sliTH-e̤-rö′), *v. i.* [*slither, v.*] To slide with a slow gliding motion; slidder. [Slang.]

Don't *slitheroo* thet way [in rowing]. . . . Short 's the trick, because no sea 's ever dead still. *R. Kipling*, Captains Courageous, iii.

slit-jaw (slit′jâ), *n.* One of the two pieces which form the sides of a spectroscope slit and can be moved so as to widen or narrow it.

Huggins's reflecting *slit-jaws* . . . permit the star image to be seen on the slit, and are preferred by many observers to other guiding devices. *Encyc. Brit.*, XXXII. 783.

slitting-gage, *n.* **2.** A form of marking-gage.

sliver-can (sliv′ėr-kan), *n.* In *cotton-manuf.*, a can for holding the sliver in the carding or drawing process.

slob^2 (slob), *n.* [See *slobberer.*] One who is untidy in his habits and dress; a slovenly fellow. [Slang.]

You don't know how the swell
Can put it on the plain unfinished *slob*
Who lacks the . . . warpaint of the snob,
And can't make good inside a giddy shell.
Wallace Irwin, Love Sonnets of a Hoodlum, vii.

slog^2, *v. i.* **2.** In *cricket*, to hit at the ball wildly and without judgment.

slogger^1, *n.* **2.** In *cricket*, one who strikes at the ball wildly and without judgment. *R. H. Lyttelton*, Cricket and Golf, p. 219.

Sloid bench, a woodworker's bench designed for use in manual-training schools. It is fitted with a vise, stops, etc., and is adapted for both instruction and practice.

slone-bloom (slōn′blöm), *n.* The sloe or blackthorn, *Prunus spinosa.* [Prov.]

sloop^2, *n.*—**Loose-tongued sloop.** See ★*swing-dingle.*

sloop^2, *v. t.*—**To dry-sloop,** to sloop logs on bare ground, a method employed when the slope is so steep that it would be dangerous to sloop on snow.

slop^1, *n.* **6.** The product from finely ground Indian corn freed from the germs and bolted, the bran which remains on the bolting-cloth sieves being pressed, mixed with about 50 per cent. of water, and sold for immediate use as cattle-food. Also called *glucose food, sugar-food, corn-food*, etc. *Census Bulletin* 190, June 16, 1902, p. 23.—**Slop padding-mangle.** See ★*padding-mangle.*

slope, *n.* **4.** The gradient of a surface, as of land. In the description of forests, the following terms are used to define the slope, each of which has its equivalent in percentages of the horizontal distance and in degrees.

	Per cent.	Degrees.
Level	0– 5	0. – 3.0
Gentle	5– 15	3.0– 8.5
Moderate	15– 30	8.5–16.5
Steep	30– 50	16.5–26.5
Very steep	50–100	26.5–45.0
Precipitous	Over 100	Over 45.0

5. In *printing*, a face of type that inclines forward or backward.

FORWARD SLOPE

BACKWARD SLOPE

6. In *bacteriol.*, same as *slant* ★*culture.*—**Constructional slope,** in *geol.*, a slope formed by a process of accumulation or deposition.

The Soufrière rises on all sides, with even, *constructional slopes* of rather low angle, to an altitude of a little over 4,000 feet. *E. Howe*, in Amer. Jour. Sci., Oct., 1903, p. 317.

Continental slope, the submarine declivity which descends from a continent or continental shelf to the deep ocean-floor.

It is well known that mud travels persistently from the shore seawards, and that it forms the bottom over vast tracts beneath deep-sea water, e. g. at the foot of the *continental slope.* *Geog. Jour.* (R. G. S.), XI. 533.

Potential slope. Same as ★*potential gradient.*—**Temperature slope,** in *phys.*, the line or curve indicating, by its inclination to the base-line of a diagram, the rate of change of temperature within a substance; temperature gradient.

The difference of *temperature-slope* at different parts of the two bars was measured by means of thermoelectric couples. *Physical Rev.*, March, 1905, p. 174.

slope-wall (slōp′wâl), *n.* A rubble-masonry layer on a slope of a canal, river, or reservoir, designed to preserve it from wash or abrasion, but usually too thin to act as a retaining-wall and resist pressure from behind.

slot^2, *n.*—**Mechanical slot,** a trade-term applied to a railroad-signaling interlocking device employed where one signal is controlled from two separate cabins. Its essential features are a sliding-box controlling by its movements the signal, two rods each controlled from separate cabins, and a roller resting in the box on the sloping ends of the two rods. When the first signalman, through his lever and its connections, causes the first rod to move, it slides upward, slipping past the roller and causing it to rest on top of the other rod, and, thus far, not affecting the signal. When the second rod is moved, by the second signalman, it encounters the roller and, being unable to push it to one side, carries it upward, taking the box with it and changing the signal. The signal is now locked and the second signalman cannot then move it until the first signalman causes the first rod to move downward past the roller, taking the box with it and clearing the signal. The device makes it impossible for one signalman to change a signal without the coöperation of the other signalman.

slot-drill (slot′dril), *n.* A flat-ended, double-cutting drill ground with two radial cutting-edges opposed to each other and without a center point: used to cut slots. It is traversed laterally or lengthwise as it operates, and really acts like an end-mill. Also called *traversing drill.* *Lockwood*, Dict. Mech. Engin. Terms.

slot-insulator (slot′in″sụ̄-lā-tọr), *n.* See ★*insulator.*

slot-link (slot′lingk), *n.* The member or element in a Stephenson or other link-motion, for engine valve-gears, in which the position of the pin which actuates the valve is made to vary as desired. This is done by forming a slot in this link or bar, *g* (see cut at *Stephenson* ★*link-motion*), and fitting a slider carrying the pin which drives the valve. The forward eccentric is attached to the upper end of this link, in the Stephenson gear, and the backward eccentric to the lower, usually; thus, when the sliding block is opposite the forward eccentric the valve is constrained to move as required for the forward motion of the engine; and the reverse for the backward running. In intermediate positions of the slider in the slot the travel of the valve on its seat is diminished, and as a consequence admission ceases or cut-off takes place earlier in the stroke. In other link-motions, as in the Walschaert, the link, *g*, may be fixed in position and have a rocking motion only, and the position of the slider is made to vary, or to pass the center of its motion.

slot-machine (slot′ma̤-shēn″), *n.* A machine for vending small articles of merchandise, exhibiting pictures, weighing, playing musical instruments, etc., which is either unlocked or set in motion by dropping a coin into a slot. See ★*vending-machine.*

slot-rail (slot′rāl), *n.* See ★*rail*^{1}.

slotting-drill (slot′ing-dril), *n.* See ★*drill*^{1}.

slotting-machine, *n.*—**Frame-slotting machine,** a slotting-machine for finishing locomotive-frames which has several heads on one base and can take several cuts at once across the axis of the frame.

slot-winding (slot′wīn″ding), *n.* An armature-winding the wires of which are laid in deep grooves or slots cut in the core. *Jour. Brit. Inst. Elect. Engin.*, 1899–1900, p. 802.

slot-wound (slot′wound), *p. a.* Said of an electric generator or motor the core of the armature of which is provided with deep grooves or channels within which the wires are laid. *Science Abstracts*, VI., sec. B, p. 120.

slough-bass (slö′bås), *n.* The large-mouthed black-bass, *Micropterus salmoides. Jordan and Evermann*, Amer. Food and Game Fishes, p. 358.

slough-grass (slö′grås), *n.* A stout subaquatic perennial grass, *Beckmannia erucæformis*, found in Europe and Asia, and in North America from Ontario to the Pacific, reaching north to Alaska. It grows in sloughs and along streams, and in some places in the northwest makes an important part of the forage of lowlands. It bears narrow one-sided spikes suggesting the rattle of a rattlesnake, whence sometimes called *rattlesnake-grass.* Also called *nit-grass* and *wild timothy.*

slow-ardent (slō′är″dent), *a.* In *psychol.*, a mixed type of character, based upon a classification in terms of rapidity and energy of bodily movement. See ★*lively-ardent. Ribot* (trans.), Psychol. of Emotions, p. 384.

slub^2, *n.* **2.** A lump or thick piece of cotton which becomes attached to or twisted into the yarn during the process of spinning. *Nasmith*, Cotton Spinning, p. 175.

slubbing-frame (slub′ing-frām), *n.* In *cotton-manuf.*, the first fly-frame machine which takes the sliver from the drawing-frame. *Nasmith*, Cotton Spinning, p. 184.

slubbing-jenny (slub′ing-jen″i), *n.* A slubbing-machine, an adaptation of Hargreave's jenny, for preparing slubbing for the spinning-mule. Also called *billy.* *C. Vickerman*, Woollen Spinning, p. 217.

slubbing-wheel (slub′ing-hwēl), *n.* A wheel or gear on a spinning-mule for indicating the length in inches of the roving delivered from the rollers, which are regulated without change-wheels.

sludge, *n.* **5.** The more or less viscid mud thrown down from dilute waste soap-liquors of wool-scouring, cotton-bleaching, and dyeing industries when such liquors are treated with crude aluminium sulphate and milk of lime. The remaining effluent is thus in a large measure purified, but the sludge thrown down has usually little value, even as a manure.—**6.** The precipitated solid matter in sewage, usually collected in settling-basins in sewage-disposal works after chemical treatment and filtration. Often pressed into cakes.—**7.** The sediment, in the form of a mud, which collects in a steam-boiler.—**8.** Incorrectly, by abbreviation, an opening in a steam-boiler for the removal of sludge or mud; also, the lid which covers such an opening.—**9.** A sand-pump or mud-pumping device for removing sludge from a sink or a bore-hole.—**10.** The silt-like deposit in the bottom of an electrolytic cell. *Jour. Brit. Inst. Elect. Engin.*, 1899–1900, p. 274.

The rationale of electrolytic refining is to transfer this copper, by the selective action of the current, from the anode to the cathode and to leave the impurities behind as a *sludge.* *B. Blount*, Pract. Electro-Chemistry, p. 35.

sludge-cock (sluj′kok), *n.* The valve at the bottom of a boiler or a mud-drum through which the mud or sediment precipitated from the water may be removed by blowing off the water under pressure, or by washing. In the United States it is called the *blow-off valve.*

sludgy, *a.* 2. Figuratively, slushy; mushy; sickening; as if made of sludge or refuse.

> I shall get a *sludgy* paragraph in the papers for the Grosser Carl, headed 'Gallant rescue,' with all the facts put upside down.
> *Cutcliffe Hyne*, A Master of Fortune, xii.

sluf, sluft. Amended spellings of *slough*^{2}, *sloughed*.

slug^{4}, *n.* 1. (*h*) The solid line produced by the linotype machine. See ★*linotype*.

> Types have no existence in the product of the linotype machine; the unit is the line, which is known as a "*slug*." *Census Bulletin* 216, June 28, 1902, p. 51.

(*i*) A lead of extra thickness used to widen the space between lines of type.

3. In *mech.*, a name proposed by Worthington for the mass to which a gravitational unit of force must be applied to produce a foot-pound unit of acceleration; 32.2 (or *g*) times the mass of a standard pound.

> The author [A. M. Worthington] introduces the name "*slug*" to denote the mass to which a foot-pound unit of acceleration is produced by a gravitation unit of force.
> *Nature*, Feb. 12, 1903, p. 352.

slug-caterpillar, *n.*—**Willow slug-caterpillar**, the larva of an American cochlidiid moth, *Euclea delphinii*. It is spiny and slug-like in shape, and feeds on the foliage of willow, oak, and certain fruit-trees.

slugger, *n.* 2. A form of steam- or air-driven rock-drill which delivers powerful strokes of the drill-bar with the least cushioning effect of steam or air in the actuating cylinder.

slugger-plate (slug'ėr-plāt), *n.* A corrugated plate fastened to the mandrel of a rock-crusher roll. It protrudes slightly more than the other plates on the mandrel, thus striking a harder blow as the roll revolves, whence its name.

> On one row, two of the plates are supplanted by "*slugger plates*," the corrugations of which extend slightly beyond the rest to act more or less as a sledge-hammer in breaking up the rock.
> *Sci. Amer. Sup.*, Jan. 30, 1904, p. 23470.

slug-shot (slug'shot), *n.* A trade-name for an insecticide preparation used to protect plants from grubs, etc., containing as its active constituent a small proportion of copper arsenite.

sluice, *n.* 2. (*b*) Same as ★*flume*, 4.

sluice, *v. t.* 6. In *lumbering:* (*a*) Same as ★*flume*, 2. (*b*) To float (logs) through the sluiceway of a splash-dam. Same as ★*splash*, 5. (*c*) To injure (as a team of horses or their driver) by the down-rush of a load of logs due to the breaking of the hawser used to control its descent over a steep slope. [Maine.]

> Tommy Eye knew without looking—knew without understanding. He knew—that most terrible knowledge of all woods terrors—that he was "*sluiced*."
> *Holman Day*, King Spruce, p. 318.

sluice-box (slös'boks), *n.* A rectangular vessel which receives the flow from a pipe or stream, from which through a flume or sluice the water is led to the desired point of discharge.

sluice-gate, *n.* 2. The gate which closes a sluiceway in a splash-dam.

sluice-valve, *n.* 3. A straightway valve having a free through opening; a gate-valve.

sluiceway, *n.* 2. The opening in a splash-dam through which logs pass.

sluice-weir (slös'wēr), *n.* A notch in a sluice or channel below the level of which the water comes to rest to allow solid matters held in suspension to settle out; also used to enable the quantity of water flowing in the channel to be measured by the use of accepted weir formulæ. *Jour. Brit. Inst. Elect. Engin.*, 1899–1900, p. 190.

sluing-gear (slö'ing-gēr), *n.* The horizontal rack and pinion, or the swinging wheel and rope and connections, used at the base of a derrick to slue or swing the boom in a circular path. Also called *swinging-wheel*.

sluit (slėit), *n.* [D., related to *slot*, track, etc.: see *slot*^{3}.] A watercourse or gulch. [South Africa.]

> River-beds as dry as a bone in a furnace are very plentiful, and so are other smaller gutters, called "*sluits*," where water flows in the rainy season.
> *J. Ralph*, An American with Lord Roberts, p. 30.

slumber-cell (slum'bėr-sel), *n.* In *histol.*, one of the cells supposed to exist in connective tissues and to be undifferentiable by any known histological methods.

slumgum (slum'gum), *n.* The propolis or bee-glue and other impurities which remain when a honeycomb has been drained of honey and the wax clarified by melting in hot water.

slumming^{2} (slum'ing), *n.* [An arbitrary use of *slumming*^{1}, with a vague suggestion of dirty work. Compare *puddling* as associated with *puddle*, *n.*] The washing of earthy matter, pulverized rock, etc., to separate a desired element, as fossil remains or grains of ore.

> Whatever method is employed for bleaching, this process has to be done very carefully, so as to prevent the fossils from being destroyed by the acids. The next step is the "*slumming*," or washing of the macerated mass. For this purpose there are different devices for slumming vessels. These are all constructed on the plan of creating a rising current of water through the mass, which is poured over a sieve of brass netting with meshes not smaller than 1.5 mm. in diameter.
> *Amer. Nat.*, Nov., 1903, p. 794.

slunk-weed (slungk'wēd), *n.* The joepye-weed, *Eupatorium purpureum*.

slur^{1}, *v. t.*—**Slurred third**, in *music*. See ★*tierce coulée*.

slur-cock (slėr'kok), *n.* A cam for operating the jacks and jack-sinkers in a knitting-machine.

slurry, *n.* 1. (*b*) In the manufacture of Portland cement, the mixture of silicious and calcareous ingredients in due proportion, brought to the consistence of a fluid mud by the addition of a sufficient amount of water, so as to insure intimate and uniform admixture before drying and burning the solid material.—3. In *ceram.*, inequalities in the interior of a pottery vessel which are smoothed by the rib or profile held in the left hand of the workman as the wheel revolves, while a damp sponge, held in the right hand, smooths the exterior.

slusher (slush'ėr), *n.* On an Australian station at shearing-time, an assistant to the cook. Also *slushy*. *E. E. Morris*, Austral English.

> 'Sundays are the most trying days of all,' say the cuisiniers, 'for then they have nothing to do but to growl.' This man's assistant is called 'the *slusher*.'
> *The Argus*, Sept. 20, 1890, p. 13, quoted in E. E. Morris, [Austral English.
>
> The tarboy, the cook, and the *slushy*, the sweeper that swept the board,
> The picker-up, and the penner, with the rest of the shearing horde.
> *A. B. Paterson*, Those Names, in Man from Snowy [River, l. 5.

slushing-machine (slush'ing-ma̤-shēn″), *n.* In *paper-manuf.*, a machine for extracting the water in which wood-pulp or other pulp is suspended and causing the pulp to thicken preparatory to using it in the paper-machine.

slush-lamp (slush'lamp), *n.* A lamp made from an old tin can and with a rag as a wick, and filled with slush or refuse fat: used in the Australian bush, and by explorers in the Arctic regions, etc.

> The *slush-lamp* shone with a smoky light.
> *J. Keighley*, Who are You? p. 45, quoted in E. E. [Morris, Austral English.

slush-wheel (slush'hwēl), *n.* A wheel or drum for washing hides or skins. *Modern Amer. Tanning*, p. 118.

slushy (slush'i), *n.* Same as ★*slusher*.

Sm. The chemical symbol of *samarium*.

S. M. An abbreviation (*b*) of the French *Sa Majesté*, His (or Her) Majesty; (*c*) of *Senior Magistrate*; (*d*) of *sergeant-major*; (*e*) [*l. c.*] of *sewing-machine*; (*f*) of *Sons of Malta*; (*g*) of *State Militia*; (*h*) of the Latin *Scientiæ Magister*, Master of Science.

small. I. *a.*—**Small circle.** See ★*circle*.

II. *n.*—**Pyrites smalls**, a manufacturers' name for the smaller fragments and dust of iron pyrites, as distinguished from the lumps, the two needing to be separately roasted. All that will pass through a riddle of half-inch or sometimes quarter-inch mesh is usually classed as 'smalls.'

small-fruit (smâl'fröt), *n.* See ★*bush-fruit*.

smallpox, *n.*—**Modified smallpox.** Same as *varioloid*.

smallpox-plant (smâl'poks-plant), *n.* The pitcher-plant or side-saddle flower, *Sarracenia purpurea*; also the southern species, *S. minor*, which was called *S. variolaris* by Michaux, from its supposed value in cases of smallpox.

smalto (smäl'tō), *n.* [It. See *smalt*.] Small squares of colored glass used in mosaic work.

smaragd-green (smar'agd-grēn″), *n.* A green of the color of smaragd. *A. S. Packard*, Text-book of Entom., p. 202.

smart^{1}, *a.*—**The smart set.** See ★*set*^{1}.

smartweed, *n.*—**Dotted smartweed.** Same as *water-smartweed* (*a*) (which see, under *smartweed*).—**Water-smartweed.** (*b*) *Polygonum emersum*, which grows in swamps and low grounds in the eastern United States and is somewhat injurious to pastures, meadows, and muckland crops.

smartweed-dodder (smärt'wēd-dod″ėr), *n.* See ★*dodder*^{1}.

smash, *v. t.* 5. To press or make (the folded and sewed sections of a proposed book) of a uniform thickness.

> During the next ten years the principal advance in bookbinding doubtless will be in those branches of the industry which are concerned with casting-in, gathering, *smashing*, folding and sewing.
> *Census Bulletin* 216, June 28, 1902, p. 65.

smash, *n.* 5. In *lawn-tennis*, an overhand volley played hard and fast to prevent, by the speed of the stroke, a return by the opponent.

smashing-point (smash'ing-point), *n.* That point in the life of an incandescent lamp at which, owing to its decreased efficiency, it should be broken and replaced by a new lamp as a matter of economy. *Amer. Inventor*, Nov. 1, 1903, p. 214.

Sm. C., sm. caps. Abbreviations of *small capitals*.

S. M. E. An abbreviation (*a*) of the Latin *Sancta Mater Ecclesia*, Holy Mother Church; (*b*) of *School of Military Engineering*.

smear, *n.* 5. The soft, semi-fluid mud of calcium sulphate left in the generators when whiting and sulphuric acid were used to produce carbon-dioxid gas in the manufacture of aërated waters.—6. In *bacteriol.*, a preparation of bacteria for microscopical examination made by smearing the organisms upon a slide or cover-glass. Also called *spread*. See ★*culture*.

> Gonococci were demonstrated . . . by *smears* only.
> *Med. Record*, Feb. 7, 1903, p. 209.

smear, *v. t.* 5. To give a gloss to (pottery or stoneware) without glazing, as by putting a volatile flux or glazing preparation in the kiln or in the saggar with the ware. See ★*smear-glaze* and ★*smearing*.

smear-culture (smēr'kul-t̤ūr), *n.* A culture of a micro-organism obtained by smearing some of the material under examination over the surface of one of the usual solid culture media.

smear-glaze (smēr'glāz), *n.* In *ceram.*, a slight gloss produced by smearing the inside of the saggar or case in which unglazed pottery is fired with glaze which in the kiln vaporizes and forms a slight deposit on the surface of the ware.

smearing (smēr'ing), *n.* Specifically, in *ceram.*, the process of glazing by evaporation. See ★*smear-glaze*.

> In the earthenware kilns, where common glazes are employed upon the ware, if the saggars be closed, and the heat be sufficient, other biscuit-ware placed in the saggars may be slightly covered with a coating of glaze, or be 'smeared,' by the evaporation from the glazes. Certain compositions may also be placed in the bottom of the closed saggars and by their evaporation the ware in them may be smeared or semi-glazed.
> *Handbook Brit. Pottery and Porcelain*, Mus. Pract. [Geol., p. 58.

smeeching (smē'ching), *n.* See the extract.

> While the kiln is in operation, the escape of the arsenic fumes can be detected here and there in the form of little jets, which the workmen describe as "*smeeching*."
> *Sci. Amer. Sup.*, Oct. 5, 1907, p. 210.

Smegma bacillus. See ★*bacillus*.

smel, *v.* and *n.* A simplified spelling of *smell*.

smell-hollow (smel'hol″ō), *n.* An olfactory pit on the antenna of a honey-bee.

smelling-stick (smel'ing-stik), *n.* The sassafras.

smelt^{2}, *n.* 1. (*h*) In Melbourne, the fish *Havengula vittata*, of the family *Clupeidæ*. (*i*) In New Zealand and Tasmania, *Retropinna retropinna*, of the family *Salmonidæ*. Its young are called *whitebait*.—**Cobbosseecontee smelt**, *Osmerus mordax abbotti* of Cobbosseecontee Lake, Maine.—**Derwent smelt**, a fish, *Haplochiton scali*, of the family *Haplochitonidæ*, found in Tasmania.—**Kodiak smelt** *Osmerus albatrossis*, found in Alaska.—**Pond smelt**, *Hypomesus olidus* of Alaska and Kamchatka.—**Smelt of the New York lakes**, *Argyrosomus osmeriformis*, one of the ciscos, found in lakes of central New York.—**Wilton smelt**, *Osmerus mordax spectrum*, of Wilton Pond, Maine.

smer (smėr), *n.* [Sw. *smör*, butter: said to be due to the fact that much of the butter made by the Swedish homesteaders was unfit for use.] Rank, rancid, or soiled butter. [Western U. S.]

S. M. I. An abbreviation of the French *Sa Majesté Impériale*, His (or Her) Imperial Majesty.

smick-smock (smik'smok), *n.* The meadow bitter-cress or cuckoo-flower, *Cardamine pratensis*. Also called *lady's-smock* and *smell-smock*.

smiddy-leaves (smid'i-lēvz), *n.* The good-King-Henry, *Chenopodium Bonus-Henricus*.

smilacaceous (smi-lā-kā'shius), *n.* Belonging to the plant family *Smilacaceæ*.

smilaceous (smī-lā′shius), *a.* Pertaining to or resembling smilax: sometimes used for ★*smilacaceous.*

smilacin (smī′lạ̄-sin), *n.* [*Smilax* (*smilac-*) + *-in*².] Same as ★*smilasaponin.*

smilasaponin (smī-lā-sap′ọ̄-nin), *n.* [*smila*(*x*) + *saponin.*] A yellowish white, horn-like, levorotatory glucoside contained in the root of sarsaparilla, *Smilax medica, S. officinalis,* etc. It resembles saponin and was formerly called *sarsaparillasaponin* or *smilacin.*

sminthurid (smin′thụ̄-rid), *n.* and *a.* **I.** *n.* One of the collembolous family *Sminthuridæ.*

II. *a.* Having the characters of or belonging to the family *Sminthuridæ.*

Smithianism (smith′i-an-izm), *n.* The economic doctrines of Adam Smith. The term is often used to characterize a belief in the beneficence of unrestricted competition. *Gumplowicz* (trans.), Outlines of Sociol., p. 155.

Smithism (smith′izm), *n.* Same as ★*Smithianism.*

smithite (smith′īt), *n.* A rare mineral species from the dolomite of the Binnenthal, Switzerland. It occurs in light-red monoclinic crystals with adamantine luster, and contains sulphur, arsenic, and silver. Its formula is probably $AgAsS_2$.

Smithsonian wind-scale. See *wind-*★*scale.*

smithy (smith′i), *v. t.*; pret. and pp. *smithied,* ppr. *smithying.* To forge in a blacksmith's fire or shop.

S. M. M. An abbreviation of the Latin *Sancta Mater Maria,* Holy Mother Mary.

smoke, *v. i.* **9.** To get away; skip; skedaddle. [Slang, Australia.]

> He said to the larrikins, "You have done for him now; you have killed him." "What!" said one of them, "do not say we were here. Let us *smoke.*" "*Smoke,*" it may be explained, is the slang for the "push" to get away as fast as possible.
> *Sydney Morning Herald,* June 26, 1893, p. 8, quoted in [E. E. Morris, Austral English.

smoke, *n.*—**Cape smoke.** Same as ★*dop*³.

> Crude spirits such as *Cape* "*Smoke*" and the cheap Portuguese liquors. *Encyc. Brit.,* XXXII. 808.

smoke-breeching (smōk′brich″ing), *n.* A flue for conducting the hot gases from a boiler, or a battery of boilers, to the chimney; an uptake. *Trans. Amer. Soc. Mech. Engin.,* 1903, p. 936.

smoke-burner (smōk′bėr″nėr), *n.* A name improperly given to furnaces or fires in which the formation of smoke is prevented. A true smoke, which consists of a current of gas carrying particles of carbon, is not combustible; and if the tarry gases or fumes are combustible, a furnace which consumes them is a 'smoke-preventer' and not a smoke-burner. Smoke-prevention is secured by supplying enough oxygen at a sufficiently high temperature to unite with the combustible gases and giving room enough for such mixture and union to take place.

smoke-cap (smōk′kap), *n.* A device, such as a cowl or hood, on the top of a smoke-stack or chimney, designed to prevent gusts of wind from striking the unprotected opening from above and blowing the products of combustion downward or backward into the flue, carrying the smoke with them. Such caps may be simple deflectors, or they may be movable so as to turn the smoke outlet in the direction toward which the wind blows.

smoke-eater (smōk′ē″tėr), *n.* A fireman: a name given to the men of the fire patrol. [Slang.]

smoke-preventer (smōk′prē̦-ven″tėr), *n.* A device designed to prevent the incomplete combustion of carbon which causes the formation of smoke. Such devices, to be successful, must furnish an adequate supply of oxygen, and keep both air and gas at a temperature high enough for chemical combination to be complete. This combination also must have room enough and time enough to be complete before the temperature falls below the temperature of combustion and ignition. See ★*smoke-burner* and *smoke-consumer.*

smoke-proof (smōk′prōf), *n.* In *type-founding,* the trial proof taken by the punch-cutter or engraver. The steel punch is held over a smoking flame until covered with carbon, and is then impressed by hand on slightly dampened paper.

> Pleasing as a new ornament in this style might appear in the *smoke-proof,* it was sure to be a blotch in the print and at variance with the type.
> *De Vinne,* Title-pages, p. 79.

smoker, *n.* **1.** (*d*) In *bee-keeping,* an apparatus for creating a smoke to quiet the bees.

5. An informal gathering of men where smoking is freely indulged in: music, a vaudeville show, cards, etc., are sometimes part of the evening's entertainment. [Colloq.]

> The *smoker* on Saturday, February 21, was well attended by members and their friends. The programme was exceptionally good, several of the numbers received enthusiastic encores. *N. Y. Athl. Club Jour.,* March, 1903, p. 19.

smoke-room (smōk′röm), *n.* A room or cabin set apart for the use of smokers: usually referring to such a room on a ship.

> Kettle turned on his companion with a sudden viciousness. "By James!" he snapped, "you better take care of your words, or there 'll be a man in this *smoke-room* with a broken jaw.
> *Cutcliffe Hyne,* A Master of Fortune, xi.

smokery (smō′kėr-i), *n.* **1.** A smoking-room; a place in which to smoke.

> Brenton was in his *smokery,* a happy-go-lucky room on the first floor. *Story of a Great Scoop,* p. 31.

2. A place in which opium is smoked; an opium-joint.

> The law is cumbrous on the subject; but the immorality of the '*smokeries*' will probably suffice to close them as disorderly. *Daily Chronicle,* May 29, 1901.

smoke-stack, *n.*—**Telescopic** or **telescoping smoke-stack,** a smoke-stack consisting of two or more sections which telescope or slide one into another: used on small boats to enable them to pass under bridges.

smoke-tree, *n.*—**American** or **wild smoke-tree,** the chittam-wood, *Cotinus cotinoides.*

smoking-bean (smō′king-bēn), *n.* The catalpa or Indian bean, *Catalpa Catalpa:* so called from the custom of boys of smoking the pods.

smoking-chair (smō′king-chãr), *n.* A chair, of the Chippendale period of English furniture, which faces diagonally, that is, which is so made that one corner is directly in front, and the opposite corner directly behind. Also called *corner-chair.*

smoking-lamp, *n.* **2.** In *physiol.,* a lamp employed for the smoking of the glazed paper fastened to the drum of the kymograph. Various forms of smoking-lamps are in use, the most common, perhaps, being gas-burners with broad fish-tail flames, petroleum-lamps with very broad wicks, and lamps fitted with an air-bulb to spray the soot upon the paper. *E. B. Titchener,* Exper. Psychol., I. ii. 173.

smoking-stand (smō′king-stand), *n.* In *physiol.,* a stand of wood or metal in which the drum of the kymograph is held and slowly rotated during the smoking of the glazed paper. *E. B. Titchener,* Exper. Psychol., I. ii. 173.

Smoky stones. See ★*stone.*

smooth, *a.* **15.** In *old music,* same as ★*plain*¹, 16.

smooth, *v. t.*—**To smooth a series of observed quantities** or **a curve,** to diminish or smooth away the accidental irregularities so as to bring out the general systematic variations. The principal methods of smoothing are the following: (*a*) The *graphical method,* in which the original observations are plotted to scale and a smooth curve is drawn by hand so as to leave about the same area on either side of it: the coördinates of the curve are then used instead of those plotted from the original observations. (*b*) *Numerical methods,* in which the means are taken of successive pairs of observations and again the means of successive means. This process may be repeated indefinitely, and is known as *Bloxaming* or *Bloxam's method.* An analogous method, but one more nearly in accord with the precepts of the laws of chance, is embodied in the following rule, devised by Dr. Galle of Breslau, for combining together seven consecutive daily means *a* . . . . *g* into one value for the median date (*d*):

$$\frac{t}{n} = \tfrac{1}{40}\,(a + 4b + 9c + 12d + 9e + 4f + g).$$

This formula can be rearranged so as to reduce the whole process of computation to a simple system of summing and halving.

> *Smoothed* rainfall *curves* for the British Isles, Brussels, Madras, Bombay, Cape Town and the Upper Ohio valley show a long-period variation at all the stations.
> *Science,* July 17, 1903, p. 91.

smooting (smö′ting), *n.* Same as ★*grassing,* 2. *Webb,* Indust. Democracy, I. 439. [Trade Union cant.]

smother, *v. t.*—**Smothering crop.** See ★*crop.*—**To smother the ball.** See ★*ball*¹.

smouse, *n.* **2.** In South Africa, a peddler; a kind of commercial traveler for storekeepers in large towns, who goes through the thinly inhabited parts selling goods; an itinerant merchant. Also *smous.*

> Even the wandering "*Smouse*" had not penetrated so far. *Mrs. Lionel Phillips,* South African Recollections, ii.

s. m. p. An abbreviation of the Latin *sine mascula prole,* without male issue.

smudge¹, *n.* **3.** In the game of set-back all-fours, the player who bids 4 and makes it, winning the game on the hand if he is not in the hole on the score at the time.

smut, *n.*—**Barley-smut,** a disease of barley caused by smut-fungi. There are two kinds: *covered barley-smut,* due to *Ustilago Hordei,* in which the spores of the fungus are often retained by a thin envelop until harvest; and *naked barley-smut,* due to *Ustilago nuda,* in which the spores soon become free and are blown away.—**Corn-smut.** See *maize-smut* and *corn-*★*ergot.*—**Hard smut,** the stinking smut. See *smut,* 3 (*b*).—**Hidden smut,** a smut disease of oats caused by *Ustilago avenæ levis.* It is so called because the spore-mass of the fungus is concealed within the chaff of the grain.—**Loose smut,** a destructive fungous disease of grain which attacks and destroys the kernels, producing a black powdery mass of spores. The loose smut of wheat is caused by *Ustilago Tritici,* and that of oats by *Ustilago Avenæ.*—**Onion-smut,** a fungous disease of the onion due to *Urocystis Cepulæ,* which attacks the young leaves and bulbs.—**Rice-smut,** a smut disease of rice due to the smut-fungus *Tilletia corona.*—**Rye-smut,** the smut disease of rye due to *Urocystis occulta,* which attacks the leaves and culms of rye. Also called *rye-stem smut.*—**Sorghum-smut,** the disease of sorghum-grain caused by the smut-fungus *Cintractia Sorghi-vulgaris.*—**Stone-smut,** the stinking smut. See *smut,* 3 (*b*).—**White smut,** a disease of spinach due to *Entyloma Ellisii.*

smut, *v. t.* **5.** In *leather-manuf.,* to go over (the blacked side of a hide or skin) with a woolen cloth to remove dirt and improve the appearance of the blacking. *C. T. Davis,* Manuf. of Leather, p. 433.

smut-grass (smut′gràs), *n.* A rush-grass, *Sporobolus Indicus,* widely distributed through the warmer regions of the world, and common in many parts of the southern United States. It grows in scattered tufts and patches in dry open fields. The slender leafy stems soon become woody and tough, unfitting the plant for forage. The long and slender spike is usually blackened by a smut (*Helminthosporium Ravenelii*), whence this name and that of *black-seed grass.* Sometimes called *carpet-grass.*

snaffle-bit, *n.* Specifically, a light bit for the riding-bridle, with long-horned and solid ring-cheeks, which are loose in the heads of the mouthpiece. The name was originally applied to a single-cheek riding-bridle; on the introduction of the double-cheek bridle it was retained for the bit.—**Dexter snaffle-bit,** a trotting-bit which has a mouthpiece with unusually large ends and a small center.—**Half-cheek snaffle-bit,** a light driving-bit characterized by ring cheek-pieces with half-cheeks attached that fall below the mouth.—**Half-horned snaffle-bit,** a bit with half-horns and rings at the outer ends of the mouthpiece.—**Rarey snaffle-bit,** a bit in which the mouthpiece is a wooden roller turning upon an iron pin: introduced by Rarey, a noted horse-trainer. It is also called a *wooden gag-bit.*—**Ringed snaffle-bit,** a light ring-bit with loose rings on the mouthpiece for a nose-band.

snaffles (snaf′lz), *n.* The wood-betony or lousewort, *Pedicularis Canadensis.*

snag¹, *n.* **9.** In *mech.,* a lug, or projection from a surface, through which there is a hole to receive a bolt or pin.

snagrel (snag′rel), *n.* Same as ★*sangrel.*

snag-scow (snag′skou), *n.* A scow used in pulling snags out of a river.

> The white *snag-scow* that likes to hang round St. Louis considerable did keep the snags pulled out of the mouth of the Missouri anyway.
> *C. D. Stewart,* Partners of Providence, xiii.

snail-cam (snāl′kam), *n.* A cam shaped somewhat like a snail; a rocker-cam. *W. J. Dibdin,* Public Lighting, p. 77.

snail-eater (snāl′ē-tėr), *n.* A book name for *Anastomus lamelligerus,* one of the African storks.

snail-shell, *n.*—**Snow snail-shell,** a modified form of snow-roller produced by a small object rolling down a steep slope of moist snow, collecting the adhesive surface layer and surrounding itself with a spiral strip of snow wound like the whorl of a snail-shell. *Plant World,* March, 1904, p. 65.

snake, *n.*—**Horned snake,** the horned viper, *Cerastes,* a very poisonous African snake.—**Horsehair-snake.** Same as ★*hair-snake.*—**Ringneck snake.** See ★*ring-neck.*—**Snake-skin green.** See ★*green*¹.

snake-arrow (snāk′ar″ō), *n.* An arrow carved and ornamented so as to represent a snake. *Haddon,* Evolution in Art, p. 25.

snake-berry (snāk′ber″i), *n.* **1.** The red baneberry, *Actæa rubra.*—**2.** The common bryony, *Bryonia dioica.*—**3.** The partridge-berry, *Mitchella repens.*—**4.** The bittersweet, *Solanum Dulcamara.*

snake-bite (snāk′bīt), *n.* **1.** The nodding wake-robin, *Trillium cernuum.*—**2.** The bloodroot, *Sanguinaria Canadensis.*—**3.** The wild lettuce, *Lactuca Canadensis.*

snake-blenny (snāk′blen″i), *n.* A blennioid fish of the genus *Lumpenus.* *L. serpentinus* is found in the North Atlantic.

snake-dance (snāk′dàns), *n.* A ceremony or dance in which snakes or images of snakes are used; particularly, a ceremony of the Hopi in which live rattlesnakes are caught and carried by the priests in their mouths. The ceremony is related to observances intended to procure rain.

> The description of the snake and flute ceremonies, still performed according to the ancient ritual, unmodi-

> fied by Christianity, for the purpose of bringing abundant rains and successful crops, is founded on studies conducted in 1896 and 1897, and is illustrated by coloured pictures of the *snake dance* and the antelope altar at Mishongnovi, and by other plates. The ceremony is attended by some repulsive features—as the rush to catch the snakes, their being carried by the priests in their mouths, and the general distribution of an emetic prior to the great feast which closes the proceedings.
> *Athenæum*, Sept. 19, 1903, p. 385.

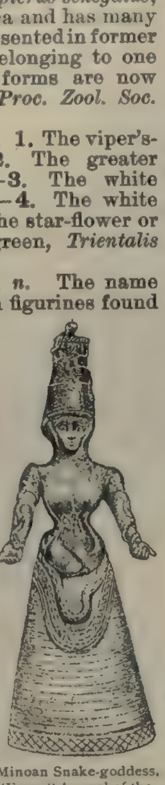
> The psychic element of religion in the *Snake dance* is totemic ancestor worship, which is fundamental in the whole Hopi ritual. The reptile is a society totem, the lineal survivor of a clan totem, and the totem ancestor, called the Snake maid, is, generally, like totemic ideas, an anthropo-zoömorphic conception.
> *An. Rep. Bur. Amer. Ethnol.*, 1897–98, p. 1009.

snake-fern, *n.* 2. See ★*fern*1.

snake-fish, *n.* 4. A fish, *Polypterus senegalus*, which lives in rivers of Africa and has many peculiar characters: well represented in former times, but only two genera belonging to one family remain. The fossil forms are now arranged in five families. *Proc. Zool. Soc. London*, 1899, p. 985.

snake-flower (snāk′flou″ėr), *n.* 1. The viper's-bugloss, *Echium vulgare*.—2. The greater stitchwort, *Alsine Holostea*.—3. The white dead-nettle, *Lamium album*.—4. The white campion, *Lychnis alba*.—5. The star-flower or American chickweed-wintergreen, *Trientalis Americana*.

snake-goddess (snāk′god″es), *n.* The name given to the subject of certain figurines found in recent excavations in Cnosus in Crete. The most important of these is 34.2 centimeters high and is dressed in a high tiara and an extremely modern-looking bodice and skirt. The breasts are bare and full. The image dates from the Mycenæan and Minoan periods, probably before 1500 B.C.



Minoan Snake-goddess.
(From "Annual of the British School at Athens," 1903.)

snake-grass (snāk′gràs), *n.* 1. The forget-me-not, *Myosotis palustris*.—2. Same as ★*snake-flower*, 2.

snake-lily (snāk′lil″i), *n.* See ★*lily*.

snake-milk (snāk′milk), *n.* The flowering spurge, *Euphorbia corollata*.

snake-necked (snāk′nekt), *a.* Having a long, snake-like neck.—**Snake-necked turtles**, a group of fresh-water turtles, usually considered as a suborder, in which the neck can not be drawn into the shell, but is bent sideways; the *Pleurodira*.

snakeroot, *n.*—**Evergreen snakeroot**, the fringed milkwort, *Polygala paucifolia*.—**Oil of Canada snakeroot.** See ★*oil*.—**Poison snakeroot**, the poison hemlock, *Conium maculatum*.—**Samson's snakeroot.** (*b*) See *soapwort-gentian*, under ★*gentian*.

snake-salamander (snāk′sal″a-man-dėr), *n.* A limbless, burrowing amphibian of the order *Gymnophiona*; a cœcilian.

> Burrowing amphibians generally known as cœcilians, but which may be better designated in popular zoology as *snake-salamanders*. *Knowledge*, Dec., 1904, p. 293.

snake's-eyes (snāks′īz), *n. pl.* A term popularly applied in England to certain fossil fish teeth, generally those of the pavement-toothed selachians.

snake-worship (snāk′wėr″ship), *n.* See *ophiolatry*.

snap, *v. t.* 8. In *cricket*: (*a*) To snatch at instead of waiting for (the ball). (*b*) To catch (a batsman) out: said of the wicket-keeper. [Colloq.]—9. To pick without releasing from the husk: said of the ears of maize: as, a crib of *snapped* corn. Compare ★*slip-shuck*. [Western U. S.]

snap, *n.* 21. A temporary banking game: as, to deal a *snap* at faro.—22. Same as *snap-*★*bean*.

snap-bean (snap′bēn), *n.* See ★*bean*1.

snap-berry (snap′ber″i), *n.* The coral-berry, *Symphoricarpos Symphoricarpos*.

snap-cracker, *n.* 2. A fire-cracker. *Dialect Notes*, III. iii. [U. S.]

snap-finger (snap′fing″gėr), *n.* Same as *trigger-finger*. *Buck*, Med. Handbook, IV. 526.

snapper, *n.* (*j*) In *glass-manuf.*, a workman who operates a snap or case. See *snap*, 16.

> Eighteen "*snappers*" of the Kansas window glass factory returned to work today after a two days' strike for higher wages. *Kansas City Daily Star*, Dec. 12, 1903.

(*k*) An automatic attachment to a sounding-lead for taking samples of the bottom. It consists of jaws which close when the lead strikes the sea-bottom.—**Black-fin snapper**, a small snapper, *Lutjanus buccanella*, found in the West Indies.—**Dog-snapper, lane-snapper.** See ★*dog-snapper*, ★*lane-snapper*.—**Mahogany snapper**, *Lutjanus mahogoni*, a small brown West Indian snapper of the family *Lutianidæ*.—**Mexican snapper.** Same as *red snapper*. See *snapper*.—**Red-tailed snapper**, a common name of *Lutjanus synagris*, an abundant food-fish of the West Indian fauna, found from Florida to Brazil.—**Silk-snapper**, a common name given to two related lutianoid fishes, *Neomænis hastingsi* and *Neomænis vivanus*, both of them of the West Indian fauna. Also called *pargo de lo alto*.—**Yellow-tailed snapper**, *Ocyurus chrysurus*, a food-fish of the West Indian fauna.

Yellow-tailed Snapper (*Ocyurus chrysurus*).
(From Jordan's "Guide to the Study of Fishes.")

snapper-flower (snap′ėr-flou″ėr), *n.* See *snap-jack*.

snap-ring (snap′ring), *n.* 1. A form of ring, used by jewelers and others, in which a segment of the circumference of the ring can be slid round upon the adjacent portion, so as to open the ring to receive a closed link or ring. The movable segment snaps back into place by a spring, and locks in place by fitting into or over the segment against which the spring presses it.—2. A ring which is snapped into place; a cast-iron ring cut at only one point, used for packing an engine-piston. It is expanded to pass the end of the piston and snaps into place.

> In so far as the rings are concerned, the best practice now makes them as light as possible, in many cases dispensing with springs entirely. This type of piston is used on the heaviest kind of work, with very high pressures, in locomotive and torpedo-boat engines, and is wholly reliable against leakage. The advantages are that being relieved from abnormal and unnecessary pressure on its walls, the cylinder wears true and is not scored or cut by the packing rings. These last are called "*snap rings*," from the fact that they are sprung into the piston, having elasticity enough to go over its flanges and resume their form when they get into the grooves provided in the piston for them. *Sci. Amer.*, Feb. 14, 1903, p. 110.

snap-shot (snap′shot), *n.* and *a.* I. *n.* A sudden or quick shot, literally or figuratively; in *photog.*, the instantaneous taking of a picture as with a detective camera, or with one of the many portable cameras.

> *Snapshots* by night may soon be a matter of course to every possessor of a camera.
> *Photo-miniature*, Sept., 1901, p. 289.

II. *a.* 1. Pertaining to or taken by a snap-shot, as a photograph; adapted to the taking of instantaneous photographs: as, a *snap-shot* camera.

> A large number of "*snapshot*" photographs.
> *Geog. Jour.* (R. G. S.), XVI. 124.

2. Hence, executed rapidly or sketchily. [Colloq.]

> Each line of the above, it should be added, is illustrated by *snap-shot* sketches of Franz at his toilette.
> *R. C. Brooks*, in Bookman, Sept., 1905, p. 16.

snapshot (snap′shot), *v.*; pret. and pp. *snapshotted*, ppr. *snapshotting*. I. *trans.* To take a photographic snap-shot of.

II. *intrans.* To take photographs with a snap-shot camera.

snap-welding (snap′wel-ding), *n.* A method of joining the rails of an electric road in which the ends of the rails are heated to softness and then snapped or squeezed together.

snap-willow (snap′wil″ō), *n.* Same as *crack-willow* (which see, under *willow*1).

snap-wood (snap′wu̇d), *n.* The spice-bush, *Benzoin Benzoin*.

snare, *v. t.* 3. In *surg.*, to cut off by means of a snare. *Buck*, Med. Handbook, I. 146.

snark (snärk), *n.* [*sn*(*ake*) + (*sh*)*ark*.] A name given in "Alice's Adventures in Wonderland" to an imaginary animal. See ★*blend-word*.

snatch-block, *n.*—**Eye snatch-block**, an iron snatch-block having an eye at the top and open at the side for convenience in adjusting the rope to the block.—**Link snatch-block**, a snatch-block in which the open side is connected by a link with the hook of the block.—**Plate snatch-block**, an iron snatch-block which has a plate at the bottom for convenience in securing it to the deck; a deck snatch-block. Another form of deck-block is secured by a bolt.

snatch-hook (snach′hu̇k), *n.* 1. The hook of a snatch or snatch-block.—2. The hook of a chain or wire rope which may be caught in one of the links or over the standing part of the chain or rope.—3. The hook of a chain-sling for catching barrels under the chime to hoist them.

sneak, *n.* 3. In *cricket*, a ball bowled along the ground; a grub. *Hutchinson*, Cricket, p. 34.—4. In *whist*, a singleton lead.

sneak-current (snēk′kur″ent), *n.* In *elect.*, stray current, due to leakage or deficient insulation, which, while not of sufficient intensity to melt fuses or open circuit breakers, is detrimental to the circuit in which it flows if of long duration; specifically, such a current in telegraphic and telephonic circuits. *Elect. World and Engin.*, Oct. 8, 1904, p. 630.—**Sneak-current coil**, a protective device against sneak-currents, consisting of a coil of high resistance the gradual heating of which by such currents results in the melting of a fuse and the breaking of the circuit in which it is placed.

sneaker, *n.* 3. Same as ★*grub*, 4.—4. *pl.* Low heelless canvas shoes with rubber soles. [Colloq.]

sneez, *v.* and *n.* A simplified spelling of *sneeze*.

sneezeweed, *n.* 2. In Australia, a dwarf, erect, odorous herb of the aster family, *Centipeda Cunninghamii*, considered a valuable specific for certain diseases of the eye.

snib2 (snib), *v. i.*; pret. and pp. *snibbed*, ppr. *snibbing*. In *lumbering*, to allow one's self to be carried away (ostensibly by accident) on the first portion of a jam that moves; ride away from work under the guise of being accidentally carried off in river-driving. [U. S.]

snibel, *n.* In New England, the pin that fastens the tongue to the body of a cart. See the extract.

> This is obviously the Dutch *snavel*, German *Schnabel*, beak, point, hook. . . . The word, of course, came through the Dutch. *F. M.*, in N. and Q., 9th ser., VIII. 183.

snide, *n.* 2. A spurious object; a humbug; a fake; something designed to cheat. [Slang.]

> His diamond ring 's a cut-glass *snide*.
> *Wallace Irwin*, Love Sonnets of a Hoodlum, vi.

snif, *v.* and *n.* A simplified spelling of *sniff*.

snip, *n.* 5. A small, insignificant person or thing: as, a mere *snip* of a girl.

snipe1, *n.* 4. The Lake Tahoe trout, *Salmo clarkii henshawi*, found in western Nevada and neighboring parts of California.

snipe1, *v. i.* 2. To shoot at the enemy, or at isolated soldiers or outposts, in a casual way, as opportunity offers. See ★*sniping*.

II. *trans.* To shoot (one of the enemy) from ambush or in a casual way, and not in a regular battle.

snipe3 (snīp), *v. t.*; pret. and pp. *sniped*, ppr. *sniping*. Same as ★*nose*1, 5.

sniper1 (snī′pėr), *n.* [*snipe*1, *v.*, + *-er*.] 1. One who shoots snipe.—2. An irregular fighter; a sharp-shooter. See ★*snipe*1, *v. i.*, 2.

> We were going to ride over open, rolling country, dotted with kopjes and believed to hold a good number of the genus '*sniper*.' The escort fell in behind us in file, and walked solemnly after us like a string of ducks.
> *Army and Navy Jour.*, March 30, 1901, p. 749.

3. A prospector.

> Some unsystematic work [searching for gold] was done during the fall of 1901 by *snipers*, usually working with rockers. *U. S. Geol. Surv.*, Prof. Paper 10, p. 51.

sniper2 (snī′pėr), *n.* [*snipe*3, *v.*, + *-er*.] One who noses logs before they are skidded. See ★*nose*1, 5.

sniping (snī′ping), *n.* and *a.* I. *n.* Desultory firing by an enemy into a camp or force on the march; sharp-shooting: so called from the methods of snipe shooters.

> The soldiers in the trenches put their hats on the parapet to draw the enemy's marksmen and "humorously called it *sniping*."
> *Gen. Evening Post*, June 15, 1773, quoted in N. and Q., [9th ser., XI. 434.

II. *a.* Characteristic of the firing of a sharp-shooter; desultory; irregular; unexpected: said of shooting.

> But even this advantage was greatly reduced by their being exposed to a *sniping* fire from neighbouring walls.
> *V. Blacker*, Mahratta War, p. 179.

> Lieut. . . . of the Ninth United States Infantry received a serious *sniping* wound while patrolling at Hoshiru.
> *N. Y. Times*, Aug. 28, 1900.

snippy, *a.* 3. Inclined to be supercilious or 'uppish'; snobbish. [Colloq.]

snip-snap-snorem (snip′snap-snō″rem), *n.* A card-game in which any number can play, a full pack being dealt out, one at a time, as far as it will go. The eldest hand lays on the table, face up, any card he pleases. Each player to the left in turn matches it, if he can, with one of the same denomination, calling out "snip." The holder of the third card of that denomination calls "snap," and the holder of the fourth calls "snorem" and is entitled to start another round with any card he pleases. The first to get rid of all his cards gets a chip for every card held by others. Also called *Earl of Coventry.*

snolly-goster (snol′i-gos-tėr), *n.* [Origin obscure.] An ambitious, boastful, talkative, unprincipled fellow. [Slang.]

A *snollygoster* is a man who is ambitious for office regardless of party, platform or principles, and if he gets there at all he does so by monumental talk.
The Georgia Cracker, Aug. 17, 1896.

We am de *snollygosters*
An' lubs Jim Ribber oysters.
Dan Emmet, The Black Brigade.

snook², *n.* 5. The pike and various other fishes of similar shape.

snooker (snö′kėr), *n.* A game played with balls on a billiard table.

He nodded significantly towards the new-comers, as much as to hint that a third person with them would be distinctly an inconvenient third. Onslow turned to them, cue in hand, and proposed a game of *snooker.*

"That's precisely what we came up for," said Amy Rivers promptly. "Hamilton, get out the balls. Mr. Onslow, will you put the billiard-balls away, so that they don't get mixed?"

They played and talked merrily.
Cutcliffe Hyne, The Little Red Captain, iii.

snooz, *v.* and *n.* A simplified spelling of *snooze.*

snorter¹, *n.* 5. A motor-car driven by an internal-combustion engine, the high-pressure exhaust of which is so incompletely muffled as to emit a snorting noise. [Slang.]—6. Something unusually good. *Dialect Notes*, III. iii. [U. S., slang.]

snot, *n.* 4. The first part of the shedding stage, in the soft crab industry. *Saturday Eve. Post.*

snotgall (snot′gâl), *n.* A common name in Tasmania of *Seriolella brama*, a fish belonging to the family *Carangidæ.*

snotty, *a.* II. *n.* In the British navy, a midshipman. [Slang.]

Our Mr. Moorshed. He was the second cutter's *snotty* — my *snotty* — on the Archimandrite — two years.
R. Kipling, Their Lawful Occasions, in Traffics and [Discoveries, p. 101.

Snouba bark. See ★*bark*².

snout-beetle, *n.*—**Scarred snout-beetle**, any member of the family *Otiorhynchidæ*, so called on account of a scar at the tip of the rostrum characteristic of this family of beetles.

snout-moth, *n.*—**Cotton snout-moth.** See ★*cotton*¹.

snow¹, *n.* **Glory of the snow.** See ★*Chionodoxa.*—**Golden snow**, a light-yellow colored snow which occasionally falls in Europe and America. The color is due to the admixture of the pollen of pine-trees.—**Pole of snow.** See ★*pole*².—**Treading snow**, a crunchy sound due to slowly repeated puffs of gas igniting in a wood fire, imitating the slow heavy step of an old man in the snow. [Colloq., Virginia.]

snow¹, *v. t.*—**To snow the cards**, to take a card from the top and bottom of the pack simultaneously and throw them on the table, instead of shuffling them. See ★*fuzzing.*

snowball, *n.* 3. (*d*) A delicate pudding steamed in a mold, then rolled in powdered sugar, and served with wine sauce.—**Little snowball**, the button-bush, *Cephalanthus occidentalis.*—**The snowball system**, in England, the name of a popular system of making charitable collections in which one person asks each one of a certain number (say five) to contribute a small sum, every one of the five pledging himself to ask five others to do the same; the twenty-five in turn ask five each; and so on, the amount collected rolling up (like a snowball) to a large sum in a very short time. Also called the *endless chain system.*—**Wild snowball.** (*b*) The redroot or New Jersey tea, *Ceanothus Americanus.*

snowberry, *n.* 3. A Tasmanian name for *Gaultheria hispida.* See *wax-cluster* and ★*chucky-chucky.*

snow-bird, *n.* (*e*) The ivory gull, *Larus eburneus*, an arctic species that in winter is pure white.

snow-blanket (snō′blang″ket), *n.* Snow which covers the ground and protects vegetation from severe cold. As the snow melts slowly by the conduction of heat from below it furnishes water for the plants that are living below it.

snowbreak, *n.* 2. In *forestry*, the breaking of trees by snow.—3. An area on which trees have been broken by snow.—4. See ★*shelter-belt.*

snow-cloud (snō′kloud), *n.* A cloud from which snow is falling or is likely to fall.

snow-craft (snō′kråft), *n.* A knowledge of the behavior of snow and the best methods of combatting it: an important part of successful mountaineering.

In *snow-craft* the choice of route is the result of a full understanding of the behaviour of snow under a multitude of varying conditions; it depends largely upon experience, and much less upon gymnastic skill.
Encyc. Brit., XXXI. 23.

snow-creep (snō′krēp), *n.* The slow movement or settling of snow down a slope.

Small trees are directly broken and abraded by weight of snow or by *snow creep.* *Science*, Feb. 28, 1908, p. 339.

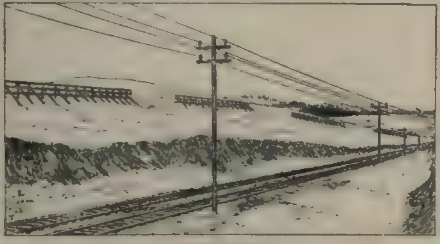
snow-cripple (snō′krip″l), *n.* A tree crippled by snow. See the extract.

On the other hand, when the struggle of trees for existence is primarily with snow, the forest as altitude increases is resolved into groups of trees. These become more separated, and the upper groups of the trees occupy ridges and local elevations. *Snow-cripples* possess the spire form, with flourishing upper shoots, but the lower branches and foliage are dying or dead, broken by snow and attacked by fungi. *Science*, Feb. 28, 1908, p. 339.

snow-drift, *n.* 2. Same as *snow-on-the-mountain*, 1.—3. The sweet alyssum, *Aduseton maritimum.*

snowdrop, *n.*—**African snowdrop.** Same as *African* ★*bladder-nut.*—**Yellow snowdrop**, the yellow dog-tooth violet, *Erythronium Americanum.*

snow-dust (snō′dust), *n.* The finest snow raised from the ground by the wind and carried along, as in the purga.



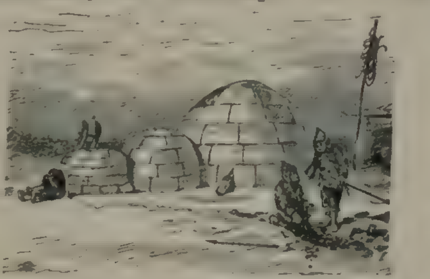
Snow-fence.

snow-fence (snō′fens), *n.* A fence built to break the force of the wind in snow-storms and to prevent the drifting of the snow.

Snow-fences are commonly erected in Canada to check the rate of snow-drifting. *Nature*, Sept. 4, 1902, p. 454.

snowflake, *n.* 3. (*b*) The sweet-william, *Dianthus barbatus.*

snow-hut (snō′hut), *n.* A hut built of snow, particularly the dome-shaped hut of the Eskimo built of blocks of snow which are arranged spirally so as to form a vault.



Snow-hut.

snowing (snō′ing), *n.* 1. The falling of snow.—2. Same as ★*fuzzing.*

snow-plow, *n.* Snow-plows used on electric roads are special cars fitted with high-power motors and some form of snow-scraper. One form, called a *shear-plow*, is fitted with strong wide shear-boards placed in pairs, the lower and outer board being adjustable at an angle of about 45° across the track in front of the car; another, called a *nose-plow*, has a double shear in front of the car. Each style also employs wing-scrapers behind the plows to shove the snow away from the car. Small shear-plows, called *track-scrapers*, are also fitted to ordinary cars to remove light falls of snow. For city streets snow-plows are often replaced by a machine called a *track-sweeper.*

snow-ripple (snō′rip″l), *n.* A ripple-mark in snow.

On *Snow-ripples.* Abstract of paper by the author [V. Cornish] read at Section E, British Association, 1900. See Report Bradford Meeting.
Geog. Jour. (R. G. S.), XVIII. 192, note.

snow-roller (snō′rō″lėr), *n.* See the extract.

It seems that the flakes of a light fluffy layer of surface snow are made adhesive by a rise in the temperature of the air above the freezing point, while the under snow remains cold and dry, and the particles of damp surface snow are enabled to adhere to each other, but not to the dry under snow. A strong wind may then push over little projections of the surface snow and start them rolling, when, of course, they will travel and grow until the resistances overcome the propelling power of the wind. These "*snow rollers*" vary in size, some being only a few inches in diameter, while at times others have been seen 2 feet or more in length. *Nature*, March 12, 1908, p. 453.

snow-rose (snō′rōz), *n.* See ★*rose*¹.

snow-slide, *n.* 2. In *lumbering*, a temporary slide on a steep slope, made by dragging a large log through deep snow which is soft or thawing. When frozen solid, the track may be used to slide logs to a point at which they can be reached by sleds.

snow-spectacles (snō′spek″ta-klz), *n. pl.* A shield, with narrow slits, designed to protect the eyes from the glare of snow.

snow-worm (snō′wėrm), *n.* Same as *snow-flea.*

snubbing-pitch (snub′ing-pich), *n.* In *lumbering*, the slope at which it is necessary to use a snub-line to control the downward movement of a load of logs. [Maine.]

It was the crux of the situation, that *snubbing-pitch.* With its desperate dangers, its uncertainties, its celerity, it was ominous and it was fascinating.
Holman Day, King Spruce, xxvi.

snub-line (snub′līn), *n.* 1. Same as *snubbing-line.*—2. In *lumbering*, a hawser used to control the movement of a load of logs down a steep slope. [Maine.]

It was well into February before they began to haul their logs to the landing-place on Blunder Stream. But even with an estimated five millions to dump upon the ice of Blunder, time was ample, for the *snub-line* down the steep quarter-mile of Enchanted's shoulder made a cut-off that doubled the efficiency of the teams.
Holman Day, King Spruce, xxvi.

snuf, *v.* and *n.* A simplified spelling of *snuff.*

snuff¹, *n.*—**High dried snuff**, a type like Scotch, but more pungent, with only 5 per cent. of moisture.—**Maccoboy snuff.** Same as *maccouba* ★*snuff.*—**Maccouba snuff.** See *maccouba* and *rappee* ★*snuff.*—**Offal snuff**, in the British excise law, waste material formerly converted into snuff, but with the disuse of that article left on the hands of manufacturers. A drawback is allowed by the Customs for this material. See quotation under ★*Queen's Pipe.*—**Rappee snuff.** See *rappee.* The dark color of this snuff is due to longer fermentation. It is highly scented and contains an average of 40 per cent. of moisture. Maccouba snuff is sometimes included as a variety of this.—**Scotch snuff**, a light-colored type, plain or scented, containing about 20 per cent. of moisture.

snuff², *v. t.* 2. In *currying*, to smooth or put out with a sleeker. See *to put out* (*c*), under *put*¹, *v. i.* *C. T. Davis*, Manuf. of Leather, p. 429.

snuff-bean (snuf′bēn), *n.* A name given to the tonka-bean, from its use in scenting snuff.

snuff-box, *n.*—**Musical snuff-box**, a name formerly used for all musical boxes, because early examples were made of small size and were not unlike snuff-boxes in appearance.

snuff-work (snuf′wėrk), *n.* In the British excise law, any tobacco material, whether leaf, stalks (midribs), returns (see under ★*tobacco*), or stalk flour, or these combined, in course of fermentation to be ground into snuff. To *lay down snuff work* was to place such material, after damping, cutting, and mixing, in a cask or bin to ferment. *A. E. Tanner*, Excise Tobacco Laws, p. 121.

snug, *v. t.*—**To snug down**, to take in, as sails; to make all snug.

Before dark, Kettle *snugged* her *down* to single topsails, himself laying out on the foot ropes with the Portuguese. *Cutcliffe Hyne*, A Master of Fortune, vii.

snum (snum), *v. i.* A euphemistic substitute for *swear.* [Dial. or slang, New Eng.] See *swan*², *swow*².

"Drive where?" asked old Anthony, pausing with one foot on the step of the ancient carryall.

"To Miss Dane's!"

"Well, I *snum!*" said old Anthony.
L. E. Richards, Mrs. Tree, xiii.

snuzzle (snuz′l), *v. i.* [See *nuzzle.*] To thrust the nose against; rub closely with the nose; nuzzle: said of animals. [Dial.]

His [the dog's] general look, and a way he had of going '*snuzzling*' about the calves of strangers, were not pleasant for nervous people.
T. Hughes, Tom Brown at Oxford, iii.

sny (snī), *v. i.* [*sny*, *n.*] In *ship-building*, to curve away sideways from the normal straight position: said of a plank or plate, as at the bows or stern, where it is necessary to force the strakes so as to get an even distribution of the planking or plating.

so¹, *adv.*—**So fash.**, an abbreviation of *so fashion*, a colloquial phrase meaning, in this or such a fashion or way; hence, in the right fashion, mode, or form. [Slang.]

If you put my coat on that chair, you 'll be more *so fash*, sir.
R. Kipling, The Disturber of Traffic, in Many Inven- [tions, p. 4.

So. An abbreviation of *south.*

soaa (sō-ä′ä), *n.* [Fijian *soangga*, the vernacular name of the fruit and plant.] See ★*fei.*

soak, *v. t.* 10. To place in a furnace, or soaking pit, with the object of equalizing the temperature rather than causing an increase: especially applied to ingots of steel which, soon after casting, have a solid exterior or shell and a molten interior, and are therefore unfit for rolling until solid and of a nearly uniform temperature throughout.

> The only other furnace treatment, that of "*soaking*," merely equalizes the heat of the ingot.
> *Encyc. Brit.*, XXIX. 571.

soak, *n.* **6.** A slough.

> The term *soak* in Western Australia, as used on maps and plans, signifies a depression holding moisture after rain. It is also given to damp or swampy spots round the base of granite rocks. Wells sunk on *soaks* yield water for some time after rain. All *soaks* are of a temporary character.
> *The Australasian*, Sept. 7, 1895, p. 461, quoted by E. E. [Morris, Austral English.

7. In *tanning*, a tank or vat of water for soaking hides or skins. *C. T. Davis*, Manuf. of Leather, p. 80.

soakage, *n.* **2.** A slough; a soak.

> Some 50 feet from the surface, is a small pool of water, evidently a *soakage* from the surrounding country, and possibly a spring. *Geog. Jour.* (R. G. S.), XI. 261.

3. The residual charge of a cable or condenser. *Houston*, Dict. Elect. [Rare.]

soaking, *n.* **3.** The operation of desilverizing a lead regulus by running it into a bath of molten lead in the fore-hearth of a blast-furnace; also the operation of equalizing the temperature of steel ingots in a soaking-pit.

soap, *n.*—**Acid soap.** (*a*) An acid ammonium ricinoleate which approximates the formula $NH_4C_{18}H_{33}O_3 + C_{18}H_{34}O_3$ and is prepared by partly neutralizing Turkey-red oil with ammonia. (*b*) The fatty matter obtained by adding just enough acid to a soap solution to cause the separation of the fatty acids.—**Bast soap,** a soap bath which has been used in degumming or boiling off silk and which has become so charged with sericin as to be of no further value as a scouring agent. It is often added to the dye-bath in silk-dyeing. Also known as *boiled-off liquor.*—**Black soap,** soft soap used in France as an insecticide: originally made with hemp-seed oil and potash, and sometimes artificially colored by copperas and nutgalls or logwood.—**Borax soap,** soap made with an addition of borax to increase its cleansing effect on clothing, while borax is not to any serious extent injurious to the fabric, at any rate in the case of linen and cotton.—**Calico-printers' soap,** a soap made of tallow, cocoanut-oil, castor-oil, and palm-oil. This soap should contain no free fat and no free caustic. The following composition gives a good calico-printers' soap: water, 23.5 per cent.; alkali as soap, 9 per cent.; alkali, free, 0.2 per cent.; fat, free, 0.2 per cent.; fat as soap, 67.1 per cent.—**Cold-process soap,** soap made from cocoanut-oil saponified with caustic alkali without boiling, leaving the glycerin in the soap.—**Cold-water soap,** a soap which washes well in cold water: usually made of very soft, fatty materials, and containing 20 per cent. of water, that is, two thirds of the usual amount. It is occasionally stiffened by the addition of sodium carbonate or silicate.—**Dyers' soap,** an absolutely neutral soap, either a 'finely fitted' soap, or a curd soap from which the caustic lye has been pumped and which has been finished by boiling in brine.—**Filled soap,** soap which has its weight unduly increased by retention of water, aided by leaving in it the glycerin produced in soap-boiling, or by adding 'soluble glass' (sodium silicate) or other hygroscopic material. Also known as *padded soap* or *hydrated soap. Sadtler*, Handbook of Indust. Chem., p. 62.—**Fish-oil soap,** soap made by boiling fish-oil with potash lye and used especially for spraying plants.

> *Fish-oil Soap.*—
>
> | | |
> |---|---|
> | Crystal potash lye | 1 pound. |
> | Fish-oil | 3 pints. |
> | Soft water | 3 gallons. |
>
> Dissolve the lye in the water, and when boiling, add the oil, and boil for two hours. One pound of the soap may be dissolved in 5 to 10 gallons of water. This is of value as an insecticide.
> *E. G. Lodeman*, The Spraying of Plants, p. 146.

Grained soap. (*b*) Soap separated as curd from solution by the addition of common salt to the product of the boiling together of fat and an aqueous solution of an alkali. Also known as *salted-out soap.* See *to ★salt out.*—**Hydrated soap.** Same as *filled ★soap.*—**Magnesia soap,** the magnesium salt of one or more of the acids of ordinary fats. It is insoluble in water. Hence magnesium compounds, as well as those of calcium, in natural water render it 'hard' or capable of curdling the common alkaline soaps.—**Marbled soap,** soap irregularly streaked with various colors by drawing through the melted white stock soap a comb with blunt teeth which has been dipped into melted soap containing dissolved or suspended coloring-matter.—**Marseilles soap,** originally soap made at Marseilles from olive-oil and soda: practically the same as Castile soap. The term is now applied to any good hard soap of substantially similar character, wherever made, although the olive-oil is frequently replaced by other oils which pass under that name.—**Medicated soap,** a kind of soap prepared either for internal use, such as croton or jalap soap, or for use on the skin, on which, on account of certain substances which it contains, it exercises a specific influence. Among the principal varieties which are prepared for external use are those which contain carbolic acid, petroleum, borax, camphor, chlorin, iodine, mercurial salts, sulphur, or tannin.—**Milled soap,** soap which has been cut into thin slices or chips, dried until very little water remains, ground between rollers, mixed with any desired perfume or coloring-material, compressed into a continuous bar, cut into short pieces, and stamped into cakes. Fine toilet-soap is to a large extent manufactured in this way, since delicate perfumes can be used which would be volatilized or destroyed by the application of heat.—**Mottled soap,** soap made by boiling together fat and dissolved alkali, adding salt to separate the 'curd,' drawing off the 'underlye,' and boiling down the curd, generally with further addition of alkali, until the remaining water does not exceed about 20 per cent. of the mass, which is then well stirred and poured into frames to solidify. As a result of the thick consistence due to boiling down, ferrous sulphid and iron soap, present in small quantity, instead of settling to the bottom, remain irregularly distributed through the mass and give it the mottled or marbled bluish-green appearance to which the name refers. Originally the iron was present in consequence of the impure alkali, crude barilla, used; but since such soap acquired a good reputation as not containing a large proportion of water, the practice was adopted of intentionally adding iron, as green vitriol, to produce the mottled appearance.—**Niger soap,** the dark-colored layer containing caustic lye, soap, water, and organic impurities, which settles from the good soap after a boiling of soap is given the finishing change.—**Normandy soap,** soap to which in the melted condition sodium sulphate or thiosulphate has been added to the extent of one fifth or one third of the weight of the soap, the object being to harden the product and prevent it from being too rapidly dissolved and wasted in scrubbing, particularly with hot water.—**Petroleum soap,** a laundry-soap which contains paraffin, naphtha, or some other product of petroleum, the use of which in soap facilitates the removal of greasy matter from linen.—**Remelted soap,** soap prepared by remelting in a steam-jacketed kettle one or more kinds of soap, together with the perfume and other ingredients.—**Salt-water soap,** a soap consisting of 2–3 per cent. of carbonated alkali (Na_2CO_3), not more than 3 per cent. of salt, not more than .50 per cent. of mineral matter, not more than 55 per cent. of water, and the rest of cocoanut-oil with the proper amount of alkali.—**Sand soap,** soap containing about 75 per cent. of powdered quartz or feldspar, 20 per cent. of cocoanut-oil soap, and 5 per cent. of sal-soda or silicate of soda.—**Scouring soap,** a sand soap made usually of about 75 per cent. of powdered quartz and 25 per cent. of cocoanut-oil soap. A small amount of sal-soda and silicate of soda is also usually added. The soap is used in cleaning metal and window-glass.—**Soap leaves,** small sheets of tissue-paper which have been covered with a film of soap by dipping them into a good grade of toilet-soap melted with a little water and perfumed as desired. Each leaf suffices for a single washing of the hands.—**Tobacco soap,** a solution of soap to which an infusion or extract of tobacco-stems has been added, used as an insecticide for application, by spraying, to growing plants.—**Whale-oil soap,** a coarse soap, made from whale-oil, a solution of which is used as an insecticide and as a means of emulsifying kerosene and other substances to be employed for the same purpose on growing plants.—**Whale soap,** the 'foots' or deposit from the refining of crude spermaceti by heating with a small quantity of potash lye. It consists mainly of potassium palmitate.

soap, *v. t.* **3.** In *calico-printing*, to remove, by means of soap, impurities from (cloth) before bleaching; also, after printing, to remove the thickening used in the color.

soapberry, *n.*—**Soapberry family,** the plant family *Sapindaceæ* (which see).

soap-copper (sōp'kop″ėr), *n.* A large open vessel in which soap is made by boiling together the fatty and alkaline materials with water: now generally made of boiler-plate iron or steel, heated by steam-coils, and provided with stirrers. Compare *soap-kettle* and *soap-pan*.

soap-cyst (sōp'sist), *n.* An encysted collection of yellowish fatty material in the breast. Called also *butter-cyst*.

soaper, *n.* **2.** In *calico-printing*, a machine in which the cloth is washed with soap.

soap-lock, *n.* **2.** A man who wears soap-locks; hence, a low fellow; a young rowdy or rough: as, "the *soap-locks* of the Bowery." [U. S.]

soap-lye (sōp' lī), *n.* In *soap-making*, the watery solution which settles out on graining the soap with salt. It contains the glycerin and organic impurities which are the products of the stock saponified.

soap-oil (sōp'oil), *n.* See ★*oil*.

soap-powder (sōp'pou″dėr), *n.* A trade-name of various mixtures of pulverized dry soap with soda crystals, starch, oatmeal, bran, or other materials also in the powdered state.

soap-press (sōp'pres), *n.* A machine for imprinting upon bars or cakes of soap designs and the manufacturer's name.

soaproot, *n.* **3.** The soapwort, *Saponaria officinalis.*—**4.** The soap-plant, *Chlorogalum pomeridianum.*

soap-slabber (sōp' slab″ ėr), *n.* A machine containing a number of tightly stretched steel wires, which are pushed against a frame of soap, cutting it into slabs of the desired thickness.

soap-test (sōp'test), *n.* The process of determining the hardness of a natural water by measuring the volume of a solution of soap of known or standard strength which is curdled by a given volume of the water. Adding the soap solution by small portions in succession, and shaking after each addition, a froth or lather lasting several minutes is produced as soon as the quantity required for curdling has been slightly exceeded.

soapwort, *n.*—**Spanish soapwort.** Same as *soaproot*, 1.

sobaco (sō-bä'kō), *n.* [Cuban Sp. *sobaco*, prop. *sabaco*, a native name.] A fish, *Canthidermis sobaco*, of the family *Balistidæ*, found in the West Indies.

sobby (sob'i), *a.* [Var. of *soppy*. Cf. *seep*.] Wet; soppy, as land. [Local.]

Sobralia (sō-brā'li-ä), *n.* [NL. (Ruiz and Pavon, 1794–1798), named in honor of Francisco Martinez *Sobral*, physician and councilor of the king of Spain, and patron of botany.] A genus of plants of the family *Orchidaceæ*. There are about thirty species, inhabiting the region from Mexico southward. They are large-growing, handsome plants with leafy stems and very large but fugacious flowers. Some of the species to be found in the collections of orchid fanciers are *S. macrantha*, *S. Cattleya*, *S. fragrans*, and *S. xantholeuca*.

Sobranje, *n.* **2.** [*l. c.*] A local representative assembly in Russia.

soccer, socker (sok'ėr), *n.* [A corruption of *association*.] The 'Association' game of football. See *foot-ball*, 2.

social, *a.* **5.** In *botany*, in recent (phytogeographical) usage, following that of Drude, the term is confined to species which control the vegetation of large tracts: essentially the original use of the term (see the extract). Compare ★*gregarious*, 2. If all other species are excluded, the species (according to F. E. Clements) is *social-exclusive*; if secondary species are admitted, it is *social-inclusive*.

> Those species of plants which I have termed *social* uniformly cover vast extents of land.
> *Humboldt* (trans.), Cosmos, I. 346.

Social aggregate. See ★*aggregate.*—**Social capillarity,** the effort and tendency—statistically demonstrated—of all individuals in democratic society to rise from lower to higher social functions, and to a higher plane of living. *Arsène Dumont*.

> In brief M. Dumont's theory is that population increases inversely with '*social capillarity*.'
> *Pop. Sci. Mo.*, Aug., 1903, p. 357.

Social chemistry, classes. See ★*chemistry*, ★*class.*—**Social composition,** the combination of small social groups, as families, tribes, or villages, into larger compound societies, as nations. Compare ★*social constitution.*

> By *social composition* is to be understood a combination of small groups into larger aggregates, when each of the smaller groups is so far complete as a social organism that, if necessary, it could lead an independent life for a time. Family, clan, tribe, and folk, or family, township, commonwealth and nation, are names that stand both for elements and for stages in social composition.
> *Giddings*, Prin. of Sociol., p. 73.

Social constitution, that organization of society which corresponds to the social division of labor—which does the work and achieves the ends of the community. Compare ★*social composition. Giddings*, Prin. of Sociol., p. 73.—**Social Democratic Federation.** See ★*federation.*—**Social economics, heredity, parasitism, pyschology, surplus, telesis, telics, transmission.** See ★*economics*, etc.—**Social settlement.** See *college* ★*settlement.*—**Social synergy,** co-working of social forces.

II. *n.* A sociable; an informal gathering of people, especially a church gathering. [U. S.]

socialism, *n.*—**State socialism.** (*a*) Socialism established and directed by the existing state, in opposition to proletarian socialism, established and directed by working-men. (*b*) Specifically, in Germany, legislation, supported by Prince Bismarck, intended to improve the condition of the working-man. Among the measures included were the insurance of workmen against accident, sickness, and old age, and the establishment of coöperative associations under state protection.

Socialist Labor party. See ★*labor*^{1}.

socialry (sō'shal-ri), *n.* [*social* + *-ry*.] Social organization. *W. J. McGee*, in 17th An. Rep. Bur. Amer. Ethnol., p. 285.

> The career of the Society from 1883 up to the present seems to have been normal, fully in accord with the times, and beyond reproach; its present function as a nucleus for special societies—i. e., subtribes, in the analogy with primitive *socialry*—would also seem to be ideal.
> *Science*, Feb. 14, 1902, p. 249.

sociétaire (sō-si-ā-tãr'), *n.* [F.] A member of one of the two classes of actors at the *Comédie Française*, in Paris, who has an interest in the theater and its government, a share of the profits, and assists in the choice of plays. On retirement he is pensioned. The other class is composed of ★pensionnaires (which see).

societal (sō-sī'e-tal), *a.* [L. *societ*(*as*), society, + *-al*^{1}.] Pertaining to the social order or to natural society.

> A very wide range of ethnographical inquiry under the following heads:—(1) maintenance; (2) perpetuation; (3) gratification; (4) religious and superstitious ideas and usages; (5) the *societal* system; (6) contact and modification. *Nature*, Dec. 24, 1903, p. 172.

society, *n.*—**Burial society,** a friendly or mutual benefit society which provides a certain sum for the burial of each of its members.—**Component society,** a social group which could lead an independent life, as a family, tribe, or village, but is in fact one among like groups which make up a larger compound society. Compare ★*constituent society.*

Social groups that could exist as complete and independent societies, but which in fact are only component parts of integral societies to which they are, in certain respects, subordinate, may be called *component societies.*
Giddings, Elem. of Sociol., p. 7.

Constituent society. See ★*constituent.*—**Ethnic society,** society organized on the basis of real or nominal blood-kinship; tribal society; gentile society. *Giddings,* Elem. of Sociol., p. 186.—**Grand medicine society.** Same as ★*mide* or ★*midewiwin.*—**Integral society,** a complete natural society.

A natural society that is large enough to carry on every known kind of social activity and coöperation, and which, independently of every other society, maintains control over the territory that it occupies, may be called an *Integral Society.* *Giddings,* Inductive Sociol., p. 6.

Natural society, a society which is spontaneously formed and is not a product of conscious planning.—**Society of Jesus.** See *Jesuit.*—**Turnway society.** See the extract.

The most primitive form of sharing work is seen in the "*turnway*" societies of the Thames watermen, for regulating the "turns," or order in which the men plying at any particular "stairs" serve the passengers who present themselves. *Webb,* Indust. Democracy, I. 437.

sociocracy (sō-shi-ok′rạ̄-si), *n.* [L. *socius,* fellow, + Gr. -κρατια < κρατεῖν, rule.] The art of applying social science to the betterment of social conditions. *L. F. Ward,* Dynamic Sociol., I. 60.

socio-economic (sō″shi-ō-ē-kọ̄-nom′ik), *a.* Pertaining to phenomena that are both social and economic. *L. F. Ward,* Dynamic Sociol., I. 525.

sociogenetic (sō″shi-ō-jẹ̄-net′ik), *a.* [L. *socius,* companion, + E. *genetic.*] Pertaining to the forces and conditions which create and mold society. *L. F. Ward,* Pure Sociol., p. 41.—**Sociogenetic forces,** society-creating or socializing forces. L. F. Ward defines the sociogenetic forces narrowly, to include particularly the spiritual forces, moral, esthetic, and intellectual.

sociol. An abbreviation (*a*) of *sociological;* (*b*) of *sociology.*

sociology, *n.*—**Anthropogenic sociology,** a division of social science concerned with the anthropogenic stage of social evolution. *Giddings,* Prin. of Sociol., p. 74.—**Demogenic sociology.** See ★*demogenic.*—**Ethnogenic sociology** that division of social science which is concerned with tribally organized or gentile society; ethnology; especially the study of that stage of social evolution in which society is organized on the basis of kinship. Compare *zoögenic, anthropogenic,* and ★*demogenic sociology.* *Giddings,* Prin. of Sociol., p. 74.—**Zoögenic sociology,** that division of social science which deals with the stage of social evolution in which the association and mutual aid of animals in swarms, herds, or bands develops social instincts and modifies the processes of selection and survival. *Giddings,* Prin. of Sociol., p. 73.

socionomic (sō′shi-ọ̄-nom′ik), *a.* [*socionom(y)* + *-ic.*] Of or pertaining to socionomy.

His second order of play is *socionomic,* that is, it takes two or more to fight, play chess, torment, haze, court, cooperate in diversion.
O. T. Mason, in Science, May 31, 1901, p. 862.

sociophagous (sō-shi-of′ạ-gus), *a.* [L. *socius,* fellow, + Gr. φαγεῖν, eat.] Subsisting upon or at the expense of others. [Rare.]

As, among anthropophagi, the suppression of man-eating is not favourably regarded; so in *sociophagous* nations like ours, not much pleasure is caused by contemplating the cessation of conquests.
H. Spencer, Prin. of Ethics, I. 472.

Soc. Is. An abbreviation of *Society Islands.*

socius, *n.* 2. The individual, in his social qualities and relations, as the unit of society, in distinction from the individual as an animal or as a mind. *Giddings,* Elem. of Sociol., p. 10.—3. In *social psychol.,* the social self. See the extract.

The development of the child's personality could not go on at all without the constant modification of his sense of himself by suggestions from others. . . . He thinks of the other, the alter, as his *socius:* just as he thinks of himself as the other's *socius:* and the only thing that remains more or less stable, throughout the whole growth, is the fact that there is a growing sense of self which includes both terms, the ego and the alter. In short, the real self is the bipolar self, the social self, the *socius.*
J. M. Baldwin, Social and Ethical Interpretations, p. 30.

sock², *n.*—**Broad-finned, feathered, winged sock.** See ★*plow.*

socker, *n.* See ★*soccer.*

socket, *n.* 7. In *golf,* the neck of a club into which the shaft runs.—8. A chuck or holder on the end of a drill-spindle having a taper-hole to receive the corresponding taper-shank of the drill or of another socket.—**Dental socket,** in the hinged *Mollusca* (*Brachiopoda* and *Pelecypoda*), one of the pits into which the teeth of the opposite valve fit. In the *Brachiopoda* the dental sockets are in the dorsal valve only; in the *Pelecypoda* they may be in either or both of the lateral valves.

socket-club (sok′et-klub), *n.* In *golf,* a wooden club of which the shaft enters a socket at the neck: in contradistinction to a spliced club or wooden club with a thin, tapering neck, to which the shaft is glued and then whipped.

socket-hammer (sok′et-ham″ėr), *n.* A form of carpenters' hammer having the part to which the handle is fitted drawn down into socket form to give a better bearing for the wood and strengthen it for use as a claw for drawing nails.

socket-headed (sok′et-hed″ed), *a.* Having a socket in the head or end, as a wrench or key for turning nuts which are at the bottom of a depression where they cannot be turned with the ordinary spanner or wrench.

socket-pick (sok′et-pik), *n.* 1. A form of pickax for heavy work, in which the part where the handle fits has been forged in socket form.—2. A form of pickax in which the cutting or working ends are removable and fit in sockets in the body to which the handle is attached.

socket-screw (sok′et-skrö), *n.* 1. A screw having a polygonal socket in its head by which it may be turned.—2. A screw which passes through a thimble, and by bottoming on the latter secures it in place.

socket-tool (sok′et-töl), *n.* A tool formed with a socket, either for use as a socket-wrench or as a holder of other tools.

Socratic elenchus. See ★*elenchus.*

soda, *n.* 1. The manufacture on a commercial scale of this important material is understood to include the production both of sodium hydroxid, or caustic soda, and of sodium carbonate. The new electrolytic process, involving the decomposition of common salt in solution by an electric current, is now industrially established, though both the Solvay and Leblanc processes are still the chief means of manufacturing soda, the Solvay process being the more advantageous, so far as soda alone is concerned, but having the drawback of yielding chlorin as a by-product in a form in which it cannot readily be utilized.—**Anhydrous soda,** in early chemistry, sodium oxid, Na_2O: still sometimes so used, as in stating the results of the analysis of silicious minerals. But at present the term is, in a scientific sense, applied to dry sodium hydroxid ($NaHO$), and technologically also to sodium carbonate (Na_2CO_3) in a dry state and without water of crystallization.—**Crystal soda.** Same as *washing-*★*soda.*—**Greenbank caustic soda.** See ★*caustic.*—**Recovered soda,** carbonate of soda, mixed with some silicate of soda, obtained by evaporating to dryness the waste liquor of the soda process for making paper-pulp from wood, esparto, and other similar materials, and then burning off organic matter from the residue. This recovered carbonate can be converted again into caustic soda by boiling with slaked lime, and the product used in the treatment of fresh fibrous material.—**Soda card, process.** See ★*card*1, ★*process.* **Summer soda,** carbonate of soda obtained by the natural evaporation in summer of water holding this salt in solution, such solution occurring in pools or small lakes in various parts of the world. The material so obtained is the *trona* of Lower Egypt and the *urao* of South America.—**Washing-soda,** usually a normal sodium carbonate with ten molecules of water of crystallization ($Na_2CO_3.10H_2O$). Also called *washing-soda crystals, washing-crystals,* and *crystal soda.* But the name is sometimes also applied to the normal salt crystallized with one molecule of water ($Na_2CO_3.H_2O$), known as *crystal carbonate,* and occasionally to sodium bicarbonate or acid-carbonate ($NaHCO_3$).

sodamide (sọ̄-dam′id), *n.* [*sod(a)* + *amide.*] A solid substance, white when pure, but generally seen of greenish or brownish color, readily fusible, and at a high temperature decomposed into its elements, obtained by passing dry gaseous ammonia over heated metallic sodium. Its composition is $NaNH_2$. It is used with advantage in the preparation of hydrazoic acid.

sodammonium (sōd-a-mō′ni-um), *n.* [NL., < *sod(a)* + *ammonium.*] A copper-colored substance which separates from a blue liquid obtained by dissolving metallic sodium in liquefied ammonia in a sealed tube. There is some reason to assume that it is a definite compound of the composition $N_2H_6Na_2$.

soda-orthoclase (sō′dạ̈-ôr″thọ̄-klāz), *n.* A variety of the potash feldspar, orthoclase, peculiar in containing several per cent. of soda.

soda-prairie (sō′dạ̈-prā″ri), *n.* An alkaline playa.

sod-form (sod′fôrm), *n.* In *phytogeog.,* see ★*vegetation-form.*

Sodic chlorid. Same as *sodium chlorid.*

sodioferric (sō-di-ọ̄-fer′ik), *a.* [*sodium* + L. *ferrum,* iron, + *-ic.*] Containing as constituents iron (in the ferric state or with apparent triad valence) and sodium: as, *sodioferric* sulphate.

sodipotassic (sō″di-pọ̄-tas′ik), *a.* [*sodi(um)* + *potass(ium)* + *-ic.*] In *petrog.,* in the quantitative classification of igneous rocks (see ★*rock*1), having soda and potash in equal or nearly equal amounts, within the limits $\frac{K_2O'}{Na_2O'} < \frac{5}{3} > \frac{3}{5}$.

sodium, *n.*—**Acid sodium carbonate.** Same as *sodium acid-carbonate* or *sodium bicarbonate,* $NaHCO_3$.—**Becker's sodium process.** See ★*process.*—**Sodium acetate,** a salt prepared by the action of acetic acid on sodium carbonate. It forms large transparent prisms belonging to the monoclinic system and has a chemical constitution expressed by the formula $NaC_2H_3O_2 + 3$ aq. The crystals effloresce slightly in dry air and completely at a moderate heat, and melt below 100° C. They are soluble in three parts of cold and an equal weight of hot water, and are also soluble in alcohol.—**Sodium acid-carbonate.** See *sodium bicarbonate.*—**Sodium aluminate.** As a commercial product in the United States this salt is known by the trade-name *Natrona saponifier,* being manufactured at Natrona, Pennsylvania, for use in soap-making.—**Sodium arseniate,** a substance used in dyeing calico: known as *dung substitute* or ★*dunging-salt* (which see).—**Sodium dioxid.** Same as ★*sodium peroxid.*—**Sodium hyposulphite.** See ★*sodium thiosulphate.*—**Sodium light.** See ★*light*1.—**Sodium manganate,** a compound now manufactured on a large scale for use as a disinfectant. The alternate formation and decomposition of this salt form the basis of the Tessié du Motay process, as modified by Fontana, for the preparation of oxygen in large quantity.—**Sodium methylate.** See ★*methylate.*—**Sodium permanganate,** a salt now used to some extent, though not as largely as the manganate, for disinfecting purposes.—**Sodium peroxid,** a yellowish-white solid substance prepared by heating metallic sodium in an excess of oxygen or of air to about 300° C. It has the composition Na_2O_2. When heated with combustible substances it acts as a most energetic oxidizing agent, the combustion by means of it of aluminium in a finely divided state being used as a source of extremely high temperature. (See ★*aluminothermics* and ★*thermit.*) Dissolved in water, sodium peroxid becomes a source of hydrogen dioxid, and thus, advantageously with addition of magnesium sulphate to correct the injurious effect of caustic soda formed at the same time, this material is coming into use as a valuable bleaching agent. Also called *sodium dioxid.*—**Sodium phosphate,** crystallized disodium orthophosphate, $Na_2HPO_4.12H_2O$. It is used as a saline purgative in medicine, and to some extent finds applications in calico-printing and photography.—**Sodium silicate.** This compound, as manufactured for industrial use, varies in composition, but commonly approximates to $Na_2Si_4O_9$. It is made either by fusion of silicious sand with carbonate or sulphate of sodium, or more usually by heating quartz, flints, or silicious sand with a solution of caustic soda under pressure. It is known as *soluble glass* or *water-glass,* and is largely used in making artificial stone for building and paving and for grindstones, in cementing stone, in fixing fresco-painting, in making "silicated" soap, and in connection with dyeing and calico-printing.—**Sodium stannate,** a salt (Na_2SnO_3) prepared by fusing together the dioxid of tin and caustic soda: extensively manufactured for use in calico-printing. When so used it is known as *preparing salts.*—**Sodium sulphate,** a substance known in the dry state as *salt-cake* (which see), being obtained by the action of sulphuric acid on common salt. *Niter-cake* (which see) is the same substance produced by the action of sulphuric acid on Chile saltpeter. It is used on a very large scale in the manufacture of glass and for conversion into sodium carbonate by the Leblanc process. Crystallized from solution it has the composition $NaSO_4.10H_2O$, and in this state is known as *Glauber's salt* and is used in medicine as a common saline purgative.—**Sodium sulphid,** a substance frequently used, along with a creamy mixture of slaked lime and water, by tanners to effect the loosening of hair and epidermis from hides, so that these may be removed from the hides preparatory to tanning.—**Sodium sulphite.** The normal sulphite (Na_2SO_3) is used as an antichlor to remove any traces of residual chlorin after bleaching by means of it, and also occasionally as an antiseptic. The *acid-sulphite* ($NaHSO_3$) is employed by brewers to sterilize the interior of casks to be filled with beer.—**Sodium thiosulphate,** a salt (in the crystallized state $Na_2S_2O_3.5H_2O$) largely used in the metallurgy of silver, as a fixing agent by photographers, and as an antichlor in connection with the bleaching of paper-pulp, occasionally also in medicine. Formerly, and often still in commercial language, called *sodium hyposulphite,* or by photographers *hypo.* By scientific writers the term *sodium hyposulphite* is applied to a different substance, $Na_2S_2O_4$.—**Sodium tungstate.** See *tungstate.*

sodium-bead (sō′di-um-bēd), *n.* A globule of sodium carbonate, or some other salt of sodium, fused in a loop formed at the end of a slender platinum wire. When heated in a clear flame it tinges the flame with the characteristic monochromatic (yellow) light of sodium in the state of vapor.

sod-oil, *n.* It is sometimes confounded with degras or moellon. Properly speaking, skins which have been prepared for oil-tanning are thoroughly saturated (by heating) with fish-oils, hung up for some time in a warm atmosphere, and submitted to pressure to squeeze out the surplus, partially oxidized, oil. This oil or soft grease is known as *degras* or *moellon.* The skins are then washed in an alkaline bath, which dissolves out more oil, and sulphuric acid being afterward added to the liquid after the skins have been removed from it, a further portion of oil or grease is separated, to which the name sod-oil is applied. Both degras and sod-oil are used in currying leather.

sof (sōf), *n.* [Turk. Ar. *sūf, sōf,* wool, goats' hair, a fabric thereof.] A kind of cloth made of mohair.

soffioni (sō-fē-ō′nē), *n. pl.* [It., pl. of *soffione*, a blowing-pipe (of a bellows), ‹ *soffio*, blowing, ‹ *soffiare*, ‹ L. *sufflare*, blow up from below: see *sufflate*.] Vents from which steam, sulphurous fumes, and other exhalations issue in the dying stages of vulcanism.

> With the reduction in volume of steam and the lighter gases the heavier and nonexplosive gases become more evident, and then occur the later phenomena known as fumaroles, solfataras, *soffioni* and mofettes. It may be that in the volcanic reservoirs the several vapors are arranged, as in the atmosphere, according to their specific gravity. *Amer. Geol.*, Feb., 1904, p. 103.

sofism^2, sofist, sofisticate, sofistry. Amended spellings of *sophism*, etc.

soft. I. *a.* 19. In *archery*, smooth and even in flexure and recoil: said of a bow.—**Soft drink**, any drink that is non-alcoholic, as lemonade, ginger-ale, tea, etc.—**Soft ground**, in *etching*, the ordinary varnish or ground rendered soft by melting it with an equal quantity of tallow. A piece of paper is placed upon this ground and the drawing is made upon the paper. Where the point of the pencil presses, the ground will adhere and the plate be exposed. The plate may then be bitten with the usual mordants. This method was invented two hundred and fifty years ago by a Swiss etcher, Dietrich Meyer. It has recently been revived. See *etching*.

II. *n.* 3. *pl.* Rags of loosely woven or knitted goods, such as flannel, hosiery, etc.

soft-board (sôft′bōrd), *v. i.* In *currying*, to roll on itself, as a skin in graining. *C. T. Davis*, Manuf. of Leather, p. 417.

soften, *v. t.* 2. To remove from (natural water) the hardness due to the presence of salts of calcium or magnesium in solution. In the case of temporary hardness, boiling the water or adding to it a carefully determined proportion of calcium hydroxid is used to produce softening; in the case of permanent hardness, sodium carbonate, not in too large excess, may be added. See ★*hardness*, 2.

softening, *n.* 4. The removal of antimony and other impurities from lead. See ★*improving*, 2. *Phillips and Bauerman*, Elements of Metallurgy, p. 686.

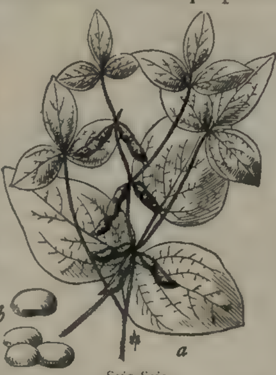
softwood, *n.* 2. A needle-leaved, coniferous tree.

II. *a.* 1. As applied to trees and logs, needle-leaved; coniferous.—2. In *hort.*, designating the 'wood' or twig that is not yet hardened or ripened; green wood: used with reference to the making of cuttings. Compare ★*hardwood*.

soggarth (sog′ärth), *n.* [Also *sogarth*, ‹ Ir., *sagart*, a priest.] Same as ★*saggart*. *Eng. Dial. Dict.*

sohaga (sō-hä′gä), *n.* [Hind. *suhaga*, *sohaga*, borax.] A name in use in the bazaars of India for borax brought from Tibet: same as *tincal*.

Soia (soi′ä), *n.* [NL. (Moench, 1794), from *suju*, the Japanese name of a sauce prepared from the beans.] A genus of plants of the family *Fabaceæ*. It contains about 20 species, chiefly twining herbs of the Old World tropics. The genus is of generail nterest because it includes the soy-bean, *Soia Soja*, an erect, hairy, bean-like plant from China and Japan that is now grown in the United States for soiling and green-manuring. The genus is closely allied to *Phaseolus*, *Vigna*, and *Dolichos*, from which it is distinguished by very technical characters.



Soia Soja.
a, leaf, and spray with pods; *b*, beans.

soie (swo), *n.* [F., silk. See *say^3* and *satin*.] In *fencing*, the tongue of the foil, which traverses the handle and is riveted down on the pommel.

soie laine (swo lān′). [F., 'silk wool.'] A soft, silky flannel for women's dresses.

soil^1, *n.* 3. In *forestry*, the depth of soil is defined by the following terms, each of which has its equivalent in inches: *very shallow*, less than six inches; *shallow*, 6 to 12 inches; *moderate*, 12 to 24 inches; *deep*, 24 to 36 inches; *very deep*, over 36 inches. The moisture of the soil is defined by the following terms: *wet*, when water drips from a piece held in the hand without pressing; *moist*, when water drips from a piece pressed in the hand; *fresh*, when no water drips from a piece pressed in the hand, though it is unmistakably present; *dry*, when there is little or no trace of water; *very dry*, when the soil is parched. Very dry soils are usually caked and very hard, sand being an exception.—**Acid soil,** virtually a swamp, peat, or muck soil, since this only (on account of its large humus content) contains much acid. Excessive soil acidity is corrected by draining and by liming.—**Buckshot soil,** a black or grayish black soil found in the bottom lands of Louisiana, which crumbles into fine grains when dry. It is very deep and extremely rich and is said to be the best cotton soil of the United States.—**Bureau of Soils.** See ★*bureau*.—**Cane-brake soil.** See ★*cane-brake*.—**Cold soil,** practically one that is relatively retentive of water, especially in the spring.—**Gumbo soil.** See ★*gumbo^1*, 4.—**Heavy soil,** a compact, tenacious soil difficult to work; hence, a clay soil, though such a soil is much lighter in weight when dry than a sandy soil.—**Light soil,** a soil of little cohesion, easily worked; hence, a sandy soil, though actually heavier than a clay soil.—**Soil analysis,** the determination of the contents of a soil. This may be either chemical or mechanical. In the latter case it consists in the separation of the particles according to size and the determination of percentages by weight according to an assumed standard of classification. The three principal grades from coarser to finer are sand, silt, and clay. The separation is effected by taking advantage in some way of the different rates of subsidence of different-sized particles in water. See ★*soil elutriator*.—**Soil atmosphere,** air contained in the interstices of the soil mingled with gases and usually saturated with vapor.—**Soil climatology.** See ★*climatology*.—**Soil elutriator,** an apparatus employed in the mechanical analysis of soils (see ★*soil analysis*). In Hilgard's elutriator a current of water passes upward through a tube containing the sample, taking with it particles increasing in size with the velocity of the current. In Goder's elutriator and other late apparatus the principle of centrifugality is depended upon. See ★*elutriator*.—**Soil hygrometer,** an instrument for determining soil moistures by measuring the resistance offered by the moisture between two carbon plates buried in the ground to the passage of an electric current from one to the other. *Yearbook U. S. Dept. Agr.*, 1900, pl. XLVIII.—**Soil moisture,** the water contained in soils, which, in its mechanical relations, is of three kinds: *gravitation* or *ground* water—that which stands in the soil by gravitation (see *ground water* under *water* and ★*water-table*, 4); *capillary* water—that which is retained in the interstices by capillarity; and *hydroscopic* water—that which adheres to the surface of the particles regardless of gravitation and capillarity.—**Sour soil.** Same as *acid* ★*soil*.—**Stiff soil,** a tenacious or heavy soil.—**Strong soil,** a soil rich in available plant food.—**Sweet soil,** a non-acid soil.—**Wash soil,** an alluvial soil. Cf. *wash*, *n.*, 7.

soil^1 (soil), *v. t.* [*soil^1*, *n.*, 4.] In *plumbing*, to paint (the ends of pipes about to be joined) by wiping (them) with soil. See *soil^1*, *n.*, 4.

soil-aspirator (soil′as″pi-rā-tọr), *n.* An apparatus for studying the permeability of the soil to air. It consists of a tube reaching down to the desired depth, connected with a manometer and aspirator that establishes a definite suction-pressure and measures the rate at which the air can be drawn through the soil under this pressure.

soil-binder (soil′bīn″dėr), *n.* A plant which serves to protect a clayey or loamy soil from washing. Soil-binding grasses form a compact turf. Some of them are *mud-binders*, fixing the soil of bogs and muddy shores.

soil-creep (soil′krēp), *n.* The slow movement or settling of soil down a slope, caused by removal of support and by circulating water, air currents, and frost.

> Hill-drifts [of flints] which have suffered from the movement of *soil-creep* and foundering, and it is concluded that this is the cause of the chipped edges [of pressure-chipped flints]. *Athenæum*, Dec. 30, 1905, p. 902.

soil-disease (soil′di-zēz″), *n.* See ★*disease*.

soiling, *n.* 1. The objects of soiling (the summer feeding of cattle, chiefly dairy stock, in confinement with green feed) are to economize land, to permit the better regulation of the feed of animals and save their strength in seeking it, and to conserve the whole yield of manure. Three to five times as much forage can be produced on the same area by cropping as by pasturing, while the yield of milk is maintained or increased and the manure, otherwise largely wasted, keeps up the fertility of the soil. Soiling is either *complete* or *partial*, in the latter case consisting of the supplementary use of green feed at the time when the pasturage is low. The latter practice is thought to be of great utility in America where the cost of labor and the comparative abundance of land make complete soiling less advantageous. Also *green feeding* and, pleonastically, *green soiling*.—**Soiling crop.** See ★*crop*.

soil-inoculation (soil′in-ok-ū-lā″shọn), *n.* The transplanting of micro-organisms to the soil, especially the nitrogen-gathering bacteria which assist in supplying nitrogen to cultivated crops.

soil-map (soil′map), *n.* A map which shows the distribution of different kinds of soils.

> Hilgard published an agricultural map of Mississippi in 1860 showing the distribution of the soils of the State. This was based principally upon the distribution of the native vegetation, especially upon the forest trees. Following out this idea, *soil maps* of all the cotton-producing States were published in connection with the Tenth Census. Much of this work has subsequently been republished in modified form by the several States and enlarged maps have been issued. Many general reconnoissances have been made by State geological surveys and by the transcontinental surveys for railroads. In 1892 the first *soil map*, based upon the texture and physical properties of soils, was issued by the World's Fair Commission of Maryland, in connection with the Handbook of the State prepared at the Johns Hopkins University. *Yearbook U. S. Dept. Agr.*, 1899, p. 344.

soil-mulsh (soil′mulsh), *n.* See ★*mulsh*.

soil-survey (soil′sėr-vā), *n.* A field and laboratory study of soils with regard to their relation to crops, involving their classification and local delimitation, the results being expressed finally in a soil-map. The classification is based mainly on physical features determined from samples, but chemical character and vegetation are also observed. Such surveys are undertaken by the United States government in conjunction with State institutions. *Yearbook U. S. Dept. Agr.*, 1899, p. 26.

soil-thermometer (soil′thėr-mom″e-tėr), *n.* A thermometer adapted to taking the temperature of the soil at a considerable depth.

sojurn, sojurner. Simplified spellings of *sojourn*, *sojourner*.

sol. An abbreviation (*b*) [*cap.*] of *Solicitor*.

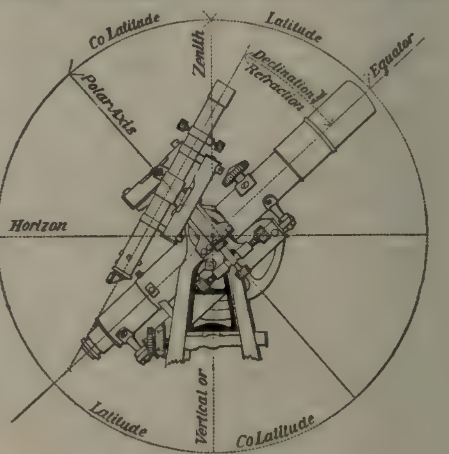
sola^3 (sō′lä), *a.* Feminine of *solo* or *solus*. See *solus*.

solanicine (sō-lan′i-sin), *n.* [*solan*(*ine*) + *-ic* + *-ine^2*.] A bright-yellow, amorphous, strongly basic compound, $C_{26}H_{39}ON$ (?), prepared by the action of concentrated hydrochloric acid on solanine. It melts and decomposes above 250° C.

solanidine (sō-lan′i-din), *n.* [*solan*(*ine*) + *-id* + *-ine^2*.] A colorless, basic compound, $C_{40}H_{61}NO_2$, prepared by the action of dilute hydrochloric acid on solanine. It crystallizes in long needles and melts at 88° C.

solanoma (sol-a-nō′mä), *n.*; pl. *solanomata* (-ma-tä). [NL., ‹ L. *solanum* (*tuberosum*), potato, + *-oma*.] A cancer of a type intermediate between scirrhus and encephaloid.

solar^1, *a.*—**Apparent solar day.** See ★*day^1*.—**Carrington's law of solar rotation.** See ★*law^1*.—**Solar attachment,** a later and improved form of Burt's solar compass, consisting of a small telescope with adjustments, attached to an engineer's transit or theodolite. It determines the true meridian directly within a minute or two of arc, by a simple pointing upon the sun. Compare *solar* ★*compass*.—**Solar cautery, climate, compass.** See ★*cautery*, etc.—**Solar constant.** It is the amount of heat received from the sun in a unit of time by a unit of area at the earth's mean distance perpendicularly exposed to the sun's rays and unshielded by atmosphere, that is, the amount of heat actually measured by the actinometer and corrected by adding the heat absorbed by the air. On account of the difficulty in determining this latter correction, the deduced values of the solar constant vary widely, ranging from about two to four gram-calories per square centimeter per minute. At present it is generally assumed to lie between 2.0 and 2.5. It is possible that it may vary with the condition of the sun's surface.—**Solar cyclone, flocculus, granule.** See ★*cyclone*, etc.—**Solar magnetic period.** See ★*period*.—**Solar motor, parallax, tide.** See ★*motor*, etc.—**Solar phosphori,** substances that are photoluminescent, emitting light as the result of exposure to sunlight. See ★*luminescence*.—**Solar star.** See ★*star^1*.



Solar Attachment.

solar^2 (sō′lär), *n.* [L. *solarium*. See *sollar*.] In Roman and early medieval houses, a terrace, or balcony, or a room much exposed to the sun; a sollar.

> Rooms at the side of the great hall were added, called *solars* (solaria), the sunny or light rooms. *Pollen*, Furniture at South Kensington, lxvii.

Solarian (sọ̄-lā'ri-ạn), *n.* [L. *solari(s)*, of the sun, + *-an.*] An inhabitant of the Utopian "City of the Sun." *C. Lombroso* (trans.), Man of Genius, p. 287.

solarization, *n.*—**Reversal by solarization,** in *photog.*, the conversion of what should be a negative image into a positive by over-exposure.—**Solarization of the earth,** in *meteor.*, the heat, light, or other influence received by radiation from the sun; insolation; incident solar radiation.

solarometer (sō-lạ̈-rom'e-tėr), *n.* [L. *solar(ium)*, sun-dial (?), + Gr. *μέτρον*, measure.] An instrument built upon the theory of the astronomical triangle, mounted upon a pedestal whose base is in the plane of the horizon: designed by Commodore W. H. Beehler, *U. S. N.* It affords a mechanical solution of the astronomical triangle, and obviates logarithmic and other mathematical calculations; it also combines in itself a pelorus, thereby furnishing a solution of the entire problem for ascertaining a ship's place in latitude and longitude, and the error of the compass. Another feature of the solarometer is that it provides means of observing astronomical angles independently of the sea horizon, as all calculations are made from the zenith.

soldado, *n.* **2.** The West Indian squirrel-fish, *Holocentrus ascensionis.*

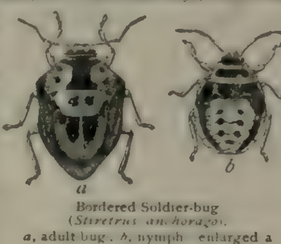
solder, *n.*—**Brass solder,** a class of copper-zinc alloys used for joining various parts of articles by fusion. The proportions vary from 34 parts of copper and 66 parts of zinc to 58 parts of copper and 42 parts of zinc. When brass solder is used for soldering iron and copper, tin is added to the copper and zinc, and the alloy changes in color from yellow to gray or white. In some brass solders a small proportion of lead is also added; but these are now used very rarely. The preparation of brass solders is usually effected by adding strongly heated zinc to melted brass, and pouring the mixture through a wet broom into cold water, thereby producing granulation.—**Pale solder.** See *pewterers'* ★*solder.* **Pewterers' solder,** an alloy of the color of lead or pewter, made up of tin and lead, with or without bismuth. When the alloy is tin (66⅔) parts and lead (33⅓), it is called *hard pale solder*; when bismuth is added it is called *middling pale solder.*—**Soft solder.** (*a*) The more fusible solder in general use for articles which need not withstand temperatures much above that of boiling water. It consists of an alloy of tin and lead in various proportions: *fine solder*, 2 parts tin to 1 part lead; *tinmen's solder*, 1 tin to 1 lead; *common* or *plumbers' solder*, 1 tin to 2 lead; *coarse solder*, 1 tin to 3 lead; *pewterers' solder*, 2 tin, 1 lead, and 1 bismuth.

soldier, *n.* **6.** (*g*) A scorpænoid fish, *Gymnapistes marmoratus*, of Tasmania. (*h*) A labroid fish, *Pseudolabrus miles*, of New Zealand. (*i*) A percoid fish, *Etheostoma cæruleum*, of the United States.—**9.** An artificial fly used in bass-fishing. *Jordan and Evermann*, Amer. Food and Game Fishes, p. xlviii.—**Soldier's spots,** whitish spots sometimes seen post-mortem on the serous surfaces of the pericardium, the peritoneal covering of the liver, etc. *Buck*, Med. Handbook, IV. 772.

soldier-ant, *n.* **2.** The bulldog ant of Australia

soldier-bird (sōl'jėr-bėrd), *n.* A name of two Australian honey-suckers, *Philemon corniculatus*, also called the *friar-bird*, and *Myzomela sanguineolenta.*

soldier-bug, *n.* **Bordered soldier-bug,** an American hemipterous insect, *Stiretrus anchorago*, of the family *Pentatomidæ*, red and black in color and predatory in habit, feeding upon the larva of the asparagus-beetle (*Crioceris asparagi*) and other injurious insects.—**Glassy winged soldier-bug,** an American capsid bug, *Hyaliodes vitripennis*, which is predatory in its habits and destroys leaf-hoppers and other small soft-bodied insects. It is a noted enemy of the grape-vine leaf-hopper. **Green soldier-bug,** an American pentatomid bug, *Nezara hilaris*, which preys on soft-bodied insects and also sucks the sap of tender plant growth. **Placid soldier-bug,** an American pentatomid bug, *Podisus placidus*, which destroys the imported currant-worm and other insect larvæ.



Bordered Soldier-bug (*Stiretrus anchorago*).
a, adult bug; *b*, nymph: enlarged a little more than two times.
(Chittenden, U. S. D. A.)

soldier-fish, *n.* **2.** A common name of a scorpænoid fish, *Sebastes kuhlii*, of Madeira.

soldier's-buttons (sōl'jėrz-but"nz), *n.* The marsh-marigold, *Caltha palustris.*

soldier's-cap (sōl'jėrz-kap"), *n.* The plant Dutchman's-breeches, *Bikukulla Cucullaria.*

soldier's-plume (sōl'jėrz-plöm"), *n.* The flaming or smaller purple fringed orchis, *Blephariglottis psychodes.*

soldino (sọl-dē'nō), *n.* [It., dim. of *soldo.* See *soldo.*] A small silver coin introduced in Venice in the fourteenth century, and subsequently current in other parts of Italy.

soldone (sọl-dō'nạ̄), *n.* [It., aug. of *soldo.* See *soldo.*] **1.** A copper coin of Mantua in the eighteenth century.—**2.** A billon coin of Venice, equal to 12 soldi.

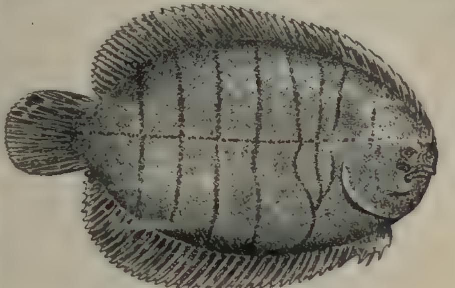
sole[1], *n.* **4.** (*o*) The closely interwoven mass of roots which forms the base of a turf.

> Crested dog's tail-grass . . . contributes materially to the production of a good "*sole*" in the turf of pastures.
> *W. Fream*, Complete Grazier, p. 898.

(*p*) In *golf*, the flat, bottom part of a club which rests on the ground. (*q*) The inner cylindrical surface of a water-wheel which forms the bottoms of the buckets on the periphery. See *sole-plate*, 2.

sole[1], *v. t.* **2.** In *golf*, to place the sole of (a club) on the ground immediately behind the ball in preparing for a shot.

sole[2], *n.* **2.** A name given to various Australian fishes: in Sydney to *Synaptura nigra*; in Melbourne to *Rhombosolea bassensis*; in New Zealand to *Rhombosolea monopus* (called the *flounder* in Tasmania) and *Peltorhamphus novæ-zelandiæ*; and in Tasmania to *Ammotretis rostratus*, of the family *Pleuronectidæ.* *E. E. Morris*, Austral English.—**American sole,** *Achirus fasciatus*, of the Atlantic coast of the United States.—**English sole,** a name given in California to the flounder, *Eopsetta Jordani.*—**Long-finned sole,** *Glyptocephalus zachirus*, found in deep waters of the northern Pacific.—**Mexican sole,** *Achirus mazatlanus*, a sole found on the west coast of Mexico.—**San Diego sole,** *Symphurus atricaudus*, known from San Diego to Cape San Lucas.—**Slippery sole,** *Microstomus pacificus*, found in rather deep water off the Pacific coast of North America, from Monterey to Unalaska.—**Tasmanian sole,** *Ammotretis rostratus*, a flatfish of the family *Soleidæ.*



American Sole (*Achirus fasciatus*).
(From Bulletin 47, U. S. Nat. Museum.)

sole-bar (sōl'bär), *n.* An outside sill in a railway car. [Eng.]

solem, *a.* A simplified spelling of *solemn.*

soleniform (sọ-len'i-fôrm), *a.* [NL. *Solen* + L. *forma*, form.] Having the form of the pelecypod genus *Solen.*

solenium (sọ-lē'ni-um), *n.*; pl. *solenia* (-ạ̈). [NL., < Gr. *σωλήνιον*, a small pipe or conduit.] In some alcyonarians, one of the canals lined by endoderm, which are given off as diverticula from the cœlentera of the zoöids comprising a colony and from which buds develop. *G. C. Bourne*, in Trans. Linn. Soc., Zool., March, 1900, p. 522.

solennemente (so-len-ẹ̄-män'tẹ̄), *adv.* [It., < *solenne*, solemn.] In *music*, with solemnity or dignity.

Solenopsidæ (sol-ẹ̄-nop'si-dē), *n. pl.* [NL., < *Solen* + Gr. *ὄψις*, form, + *-idæ.*] A primitive family of prionodesmaceous pelecypods having thin elongate valves with edentulous hinge and external ligament. Its representatives are found in rocks from the Silurian to the Triassic.

solenostelic (sō"lẹ̄-nọ-stē'lik), *a.* [Gr. *σωλήν*, a tube, + *στήλη*, a column.] In *bot.*, having a tubular stele with both external and internal phloem, as in certain ferns, etc. *Nature*, Nov. 19, 1903.

solentine (sol'en-tīn), *n.* [Variant of *celandine.*] The spotted touch-me-not, *Impatiens biflora.* Also called *ceroline* and *brook-celandine.*

sole-plate, *n.* **3.** Any bed-plate or base-plate on which a machine rests. It is ordinarily less massive than a bed-plate, and parts are bolted to it rather than cast in one piece with it.—**4.** The bed of a horizontal or reverberatory heating-furnace.—**5.** The casting underneath a large bearing for a shaft.

solfataric, *a.* **2.** Noting that stage in the expiring or quiescent phase of a volcano during which steam and vapors, more or less sulphurous, are alone emitted. *Geikie*, Text-book of Geol., p. 278.

sol-flower (sol'flou"ėr), *n.* The rock-rose, *Helianthemum Helianthemum.*

Sol.-Gen. An abbreviation of *Solicitor-General.*

solid, *a.* **15.** Of uniform color; self-colored: a pigeon-fanciers' term.—**Solid box,** a cylindrical bushing or bearing which has no joint; a deadeye.

solidity, *n.*—**Geometrical solidity,** tridimensional extension. *Sir W. Hamilton.*—**Physical solidity,** that property of matter which prevents two different bodies from occupying the same portion of space at the same time. *Sir W. Hamilton.*

solidus curve. [L. *solidus*, solid.] A curve which shows the temperatures of complete solidification or beginning liquefaction of a series of alloys containing every proportion of the two constituents. See *liquidus* ★*curve.*

> The authors give data for the liquidus and for the *solidus curve* for aluminum and tin.
> *Jour. Phys. Chem.*, May, 1904, p. 363.

Solinian (sọ-lin'i-ạn), *a.* [LL. *Solin(us)* (see def.) + *-ian.*] Of or pertaining to Solinus, a Roman grammarian and geographer of the third century A.D.

> The chief additional references [in mediæval maps] to what may be called the fact and fiction of the central Mediæval period do not lie in the monsters [geographical mythology] of South Africa (as some have supposed), for these are almost purely *Solinian.*
> *Geog. Jour.* (R. G. S.), XV. 141.

solitary, *a.* **12.** In *astron.*, noting certain stars which have no conspicuous neighbors (*α* Hydræ, for instance), or stars which are not members of a binary system, visual or spectroscopic. Called by W. Herschel *intersystematical.*

solitidal (sol-i-tī'dạl), *a.* [L. *sol*, sun, + E. *tide* + *-al*[1].] Pertaining to the tide produced by the sun. See *solar* ★*tide.*

solo, *n.* **3.** In *card-playing*, a bid to play without a partner or without discarding from the hand, as in solo whist and skat.—**Heart solo,** solo for three players, the pack being reduced to 24 cards by throwing out the 8 of hearts and all the diamonds but the 7. Diamonds are always color, and the only bid is solo. *Amer. Hoyle*, p. 292.

soloid (sol'oid), *n.* [*sol(id)* + *-oid.*] A compressed preparation of a drug.

> The contents are as follows: . . . pipette, vaseline, brush, &c.; cover-glasses when spread with blood, &c., ready for staining; "*soloids*" of various staining powders; tissue paper for blood spreads, etc.
> *Lancet*, July 4, 1903, p. 36.

Solomonian (sol-ọ-mō'ni-ạn), *a.* Of, pertaining to, or characteristic of, King Solomon: as, "*Solomonian* wisdom." *Ratzel* (trans.), Hist. of Mankind, I. 134.

Solomon's-seal, *n.* **1.** (*b*) In Tasmania, the turquoise-berry, *Drymophila cyanocarpa.* See ★*turquoise-berry.*—**Clustered, dwarf, small, zigzag Solomon's-seal,** the false Solomon's-seal, *Vagnera racemosa.*—**Two-leaved Solomon's-seal,** *Valentinia Canadensis.* Also called *false lily-of-the-valley* and *oneblade.* See *Maianthemum.*

soloric (sọ-lor'ik), *a.* [*Solor(ina)* + *-ic.*] Of or derived from *Solorina.*—**Soloric acid,** a ruby-red compound, $C_{15}H_{14}O_5$, contained in the lichen *Solorina crocea.* It crystallizes in lustrous monoclinic prisms or needles and melts at 199-201° C.

solotnik, *n.* See ★*zolotnik.*

solpugid (sol-pū'jid), *n.* and *a.* **I.** *n.* A member of the family *Solpugidæ.*

II. *a.* Having the characters of or belonging to the family *Solpugidæ.*

Solr. An abbreviation of *Solicitor.*

solubility, *n.*—**Coefficient of solubility,** in *chem.* or *phys.*, a numerical constant denoting the degree of solubility of a substance in a given solvent.—**Solubility product.** See ★*product.*

solut. An abbreviation of *solution.*

solute, *a.* **II.** *n.* The substance dissolved in a given solution: as, a solution is composed of solvent and *solute.*

> As the molecular weight of the *solute* is inversely proportional to the difference in the vapor pressure of solvent and solution, it follows that the observed vapor pressure of the solution was much too small to conform to theory. *Jour. Phys. Chem.*, May, 1904, p. 317.

solution, *n.*—**Almén's solution,** a solution prepared by dissolving 4 grams of potassium-sodium tartrate, 2 grams of bismuth subnitrate, and 10 grams of sodium hydrate in 90 cubic centimeters of water, heating to the boiling-point, and filtering on cooling. It is used in testing for glucose.—**Battley's solution.** Same as *laudanum.* Also known as *liquor opii sedativus.*—**Belt of solution,** in *geol.*, a phrase used by Van Hise to indicate a characteristic process of the 'belt of weathering,' a belt from which matter is removed by the solvent action of water. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. 487.—**Concentrated solution,** a strong solution; one containing a large proportion of the dissolved substance, either as approaching the maximum amount capable of solution, or as compared with the amount of most other substances soluble in the same liquid.—**Critical composition of solution,** the composition of the solution which belongs to the critical temperature.—**Critical solution,** a solution having the critical composition.—**Critical temperature of solution,** a temperature below which two liquids which are without chemical action on each other do not dissolve in each other in all proportions, while above this temperature they do thus dissolve.—**Decinormal solution.** See ★*decinormal*, 2.—**Dilute solution,** a weak solution; a solution containing a small proportion of the dissolved substance, either as compared with the maximum amount capable of solution, or as compared with the amount of most other substances soluble in the same liquid.—**Dunham's solution,** a bacteriological culture-medium which is composed of 10 grams of peptone and 3 grams of salt to the liter of water. It differs from ordinary nutrient bouillon in the absence of the constituents of beef extract. It is used to study the production of indol.—**Ehrlich-Biondi solution,** a staining mixture prepared by mixing solutions of acid-fuchsin, orange G, and methyl green, saturated at ordinary temperatures, in the proportion of 4 : 7 : 8 respectively. The resulting solution may then be diluted with water to the desired degree 1 : 50-100. It is essential that the dyes in question should be chemically pure. They are best obtained from the Berliner Actiengesellschaft für Anilinfabrikation. The solution is used in the study of the blood.—**Equimolecular solutions.** See ★*equimolecular*.—**Geometrical solution,** a solution by means of ruler and compasses only, that is, by straight lines and circles only.—**Gravity-solution** or **heavy solution.** Of the numerous solutions proposed, the following are the most important: *Thoulet's* or *Sonstadt's solution* and *Klein's solution*. See *gravity-solution*. *Braun's solution*, methylene iodide, CH_2I_2, having a density of 3.33. *Penfield's solution*, silver-thallium nitrate, liquid at 75° C, density 4.5. *Retger's solution*, mercury-thallium nitrate, liquid at 76° C, density 5.3. *Rohrbach's solution*, barium-mercury iodide, density 3.588.—**Heat of solution.** See ★*heat*.—**Heavy solution.** See *gravity-*★*solution*.—**Isotonic saline solution,** a solution in which the salts are in the same proportion as in the blood-plasma, so that when injected into the veins it causes no alteration in the blood-corpuscles.—**Isotonic solution.** See *isotonic saline* ★*solution*.—**Mandl's solution,** a solution of 10 grains of iodine, 4 grains of phenol, and 20 grains of potassium iodide, in one ounce of glycerin.—**Mayer's solution,** a solution of potassium-mercuric iodide used in chemical analysis for the detection and quantitative determination of alkaloids.—**Monsel's solution,** a deep red-brown, syrupy, aqueous solution of basic ferric sulphate of variable composition, which contains not less than 13.57 per cent. of metallic iron. It is a powerful styptic.—**Morton's solution,** a solution of 5 grains of iodine, and 30 grains of potassium iodide, in one ounce of glycerin.—**Nessler's solution.** (*b*) The solution of Nessler's reagent for the detection and determination of ammonia. It is made by precipitating a solution of mercuric chlorid by one of potassium iodide, adding the latter in excess until the precipitate is barely redissolved, and making the liquid so obtained strongly alkaline with potassium or sodium hydroxid.—**Normal salt solution,** in *med.*, a term often incorrectly used to denote the so-called *physiological salt solution*, or one containing approximately the same proportion of chlorid of sodium as the blood; the latter is more nearly a decinormal solution, or one one tenth the strength of a normal solution. Also *normal saline solution*. See *physiological salt* ★*solution*.—**Normal solution,** a solution which contains in one liter a sufficient quantity of a chemical reagent to replace, unite with, or directly or indirectly bring into action one gram of hydrogen. A liter of a normal solution of a chemical reagent therefore always contains a number of grams of the reagent equal to its molecular weight divided by the number of active hydrogen atoms it contains, or by the number of hydrogen atoms the active element or group it contains can replace. The following table illustrates the principle:

Reagent.	Formula.	Molecular Weight.	Normal Solution, grams per liter.
Hydrochloric acid	HCl	36.4	36.4
Sodium hydroxid	$NaOH$	40	40
Sulphuric acid	H_2SO_4	98	[illegible]
Phosphoric acid	H_3PO_4	108	36
Sodium chlorid	$NaCl$	58.4	58.4

Normal solutions are of great value in volumetric chemical analysis. When solutions of less strength than the normal are desired, they are diluted one half, one fifth, one tenth, and one one-hundredth, giving seminormal, quintinormal, decinormal, and centinormal solutions. These are usually abbreviated as $\frac{N}{2}$, $\frac{N}{5}$, $\frac{N}{10}$ and $\frac{N}{100}$.—**Orth's solution,** a mixture of 10 parts of Müller's fluid and 1 part of formol: used as a fixative agent in histological work.—**Pacini's solution,** a solution of sodium chlorid and corrosive sublimate, used to dilute the blood in counting the red corpuscles in a drop under the microscope.—**Perfusion solution.** See ★*perfusion*.—**Physiological salt solution,** a solution of sodium chlorid of the same strength as that found in the blood-serum of a given animal; when used for injections in man a 0.7 to 0.8 per cent. solution should be employed. Such a solution is said to be isotonic, and will not cause the dissolution of hemoglobin from the red blood-corpuscles. Physiological salt solution, injected subcutaneously or intravenously, is extensively utilized to combat heart-failure. Compare *normal salt* ★*solution*.—**Physiological solution.** Same as *physiological salt* ★*solution*.—**Ringer's solution,** a solution which is extensively used in physiological experiments as a substitute for blood-serum in maintaining the life of tissues. It is composed of 100 cubic centimeters of a 0.75 per cent. solution of sodium chlorid, 5 cubic centimeters of a 0.25 per cent. solution of calcium chlorid, 2.5 cubic centimeters of a 0.5 per cent. solution of bicarbonate of sodium, and the same amount of a 0.75 per cent. solution of potassium chlorid.—**Saline solution,** in *physiol.* and *pathol.*, when not otherwise qualified, a physiological solution of salt (sodium chlorid). See *physiological salt* ★*solution*.—**Salt solution.** Same as *saline* ★*solution*.—**Seiler's solution.** Same as *Seiler's* ★*spray*.—**Solid solution,** a solid homogeneous mixture of two or more constituents which remains homogeneous although their ratio is varied. One important property of a solution is that a dissolved substance diffuses from places where it is abundant to places where it is less abundant. The fact that diffusion may take place in solids suggested the conception of solid solutions. If clean gold and lead are left in close contact for ten years, gold is found to have diffused into the lead more than three or four hundredths of an inch from the surface. So carbon, absorbed by hot wrought-iron, diffuses to the center of the mass, as in making steel by cementation. The application of the principles governing solid solutions, not only to matters of purely theoretic interest, but also to important metallurgical processes, has been fruitful.

No one had done more than Sir Benjamin Baker to insist on the importance of phenomena which engineers used to consider "mysterious" in connection with the behaviour of steel, and his warnings and example were at last being regarded and followed. The lecturer pointed out that when metallurgists gave engineers mild steel, they provided a cinder-free *solid solution* of iron and carbon. All subsequent advance has been due to the recognition of this fact, and to the gradual studies of the properties of metallic *solid solutions*.
Nature, May 1, 1902, p. 19.

Solution tension. See ★*tension*.—**Solution theory,** the theory that steel and various alloys consist of solid solutions, subject to the laws of solid solutions, and to be studied by the same methods.—**Standard solution,** in *analyt. chem.*, a solution made of such strength that one cubic centimeter of it corresponds to some convenient definite quantity of a substance whose amount is to be determined by measuring the volume of the standard solution required to complete some suitable reaction with it. Since Gay-Lussac the assay of silver is made by dissolving in nitric acid an amount of the alloy which contains a little more than one gram of silver, precipitating the silver by a standard solution of sodium chlorid of such strength that 100 cubic centimeters of it precipitate one gram of silver, and measuring the volume of the standard solution required. See *standardized solution*.—**Supersaturated solution,** in *phys. chem.*, a solution which contains more dissolved substance than produces saturation at the actual temperature if the solution is in contact with undissolved solid. The addition of a minute fragment of the solid will cause the excess of the dissolved salt to crystallize, and the temperature of the solution to rise; even a mechanical disturbance will end the supersaturation, if it be considerable.—**Thiersch's solution,** a solution of salicylic acid 2 parts, boric acid 12 parts, in distilled water 1,000 parts, used as an antiseptic lotion.—**Toison's solution,** a solution used as a diluent in counting the blood-corpuscles with the hematocytometer: it also prevents the blood from clotting. It has the following composition: sodium chlorid 1 gram, sodium sulphate 8 grams, neutral glycerin 30 grams, distilled water 160 grams, methyl violet 5B 0.025 grams.—**Vapor pressure of a solution.** See ★*pressure*.—**Wackenroder's solution,** a liquid obtained by passing sulphureted-hydrogen gas into an aqueous solution of sulphur dioxid. It is a complex mixture, containing pentathionic acid, and probably also hexathionic, tetrathionic, trithionic, and sulphuric acids.—**Ziehl's solution,** a carbol-fuchsin of the following composition: 1 part of fuchsin, 100 parts of a 5 per cent. aqueous solution of carbolic acid, and 10 parts of absolute alcohol.

solutional (sọ-lū'shọn-al), *a.* [*solution* + *-al*¹.] Of the nature of a solution; of or pertaining to solution. *Nature*, Dec. 3, 1903, p. 103.

solution-plane (sọ-lū'shọn-plān), *n.* See ★*plane*¹.

solution-pressure (sọ-lū'shọn-presh″ụ̈r), *n.* See ★*pressure*.

solutol (sol'ụ-tol), *n.* [L. *solutus*, pp. of *solvere*, dissolve, + *-ol*.] A trade-name of a mixture of cresol and its sodium salt. It is soluble in water and is used as a disinfectant.

Solutrian (sọ-lū'tri-a̤n), *a.* [F. *Solutré*, a cave in the Mâcon district, Saône-et-Loire.] Of or pertaining to the Solutré cave; specifically, noting the third of De Mortillet's paleolithic periods, characterized by flint implements of higher perfection than the preceding Chellian and Moustierian periods. Also *Solutrean*. *Keane*, Ethnology, p. 87.

M. Armand Viré describes the *Solutrean* cavern of Lacave (Lot), which yielded many objects of reindeer horn, some bearing carvings (one a spirited head of antelope), and well-worked flint implements.
Athenæum, Jan. 20, 1906, p. 82.

solv, *v.* A simplified spelling of *solve*.

solvate (sol'vāt), *n.* [*solv*(*ent*) + *-ate*¹.] In *phys. chem.*, a term suggested to denote supposed compounds of one or more molecules of a solvent either with the ions or with the undissociated molecules of a dissolved substance: if the solvent is water, these compounds are called *hydrates*. *Jour. Phys. Chem.*, Jan., 1905, p. 80.

Solvent naphtha. See *naphtha*, 2.

solveol (sol'vẹ̄-ol), *n.* [L. *solvere*, dissolve, + *-ol*.] **1.** A trade-name of a mixture of cresol and sodium cresotinate. It is used in medicine internally like creosote.—**2.** A trade-name of solutions of mixtures of the cresols and salicylates.

solvin (sol'vin), *n.* [L. *solvere*, dissolve, + *-in*².] A trade-name of sodium sulphoricinate. See ★*sulphoricinate*.

sölvsbergite (sėlvs'berg-īt), *n.* [*Sölvesberg*, Norway, + *-ite*².] In *petrog.*, a dense aphanitic to fine-grained igneous rock composed of alkali feldspars (albite and microcline) with ægirite, and sometimes hornblende (katoforite), with or without quartz or nephelite; a grorudite poor in quartz. *Brögger*, 1894.

soma¹, *n.* (*c*) The body of a multicellular organism as contrasted with its germ-cells.

In the Metazoa, according to my opinion, the germ-cells are immortal like the Protozoa . . . ; only the *soma* dies. *Eimer* (trans.), Organic Evolution, p. 68.

somæsthetic, *a.* See ★*somesthetic*.

somal (sō'ma̤l), *a.* [*soma*¹ + *-al*¹.] Of or pertaining to the body. *Proc. Zool. Soc. London*, 1900, p. 133.

soma-plasm (sō'ma̤-plazm), *n.* [Gr. *σῶμα*, body, + *πλάσμα*, anything formed.] The plasm or protoplasm of the body-cells of an organism, in contradistinction to the reproductive plasma of the germ-cells.

With Weismann, we suppose the germ-plasm to be different in kind from the general *soma-plasm*.
Encyc. Brit., XXIX. 259.

Somaschian, *n.* **II.** *a.* Pertaining to the religious society of Somaschians.

somatalgia (sō-ma̤-tal'ji-ä̤), *n.* [NL., < Gr. *σῶμα*(*τ-*), body, + *ἄλγος*, pain.] Bodily pain. *G. S. Hall*, Adolescence, I. 480.

Somatic cell. (*b*) A cell that takes part in the formation of the soma or body, as distinguished from a germ-cell. See ★*soma*1 (*c*).

But, from another point of view, it may be said with equal accuracy that the fertilized ovum gives rise in development to two sets of elements—to the *somatic cells* which become differentiated into the various tissues of the body, and to a lineage of non-specialized germ-cells, some of which will eventually be separated off to begin a new generation. *Encyc. Brit.*, XXXII. 209.

Somatic mesoblast. See ★*mesoblast*, 2.

somatically (sọ-mat'i-ka̤l-i), *adv.* Corporeally; as regards the body or soma.

But while the Seri Indians are so well developed *somatically*, are runners in a land of running peoples (their very name signifies 'spry'), . . . 'they have been no less notorious among the Caucasian settlers of two generations for unparalleled laziness.'
A. F. Chamberlain, in Pop. Sci. Mo., March, 1902, p. 421.

somaticos (sọ-mat'i-kos), *n.*; pl. *somaticoi* (-koi). [Gr. *σωματικός*, adj.: see *somatic*.] The human body; man viewed from an anatomical point of view without regard to his psychic activities. [Rare.]

Accordingly, the *somatikos* is gradually reshaped by the demotic activities; and, since the course of development of the activities is convergent, the somatic modification is also convergent, and hence bodies of unrelated peoples tend toward a common type.
J. W. Powell, in An. Rep. Bur. Amer. Ethnol., 1895-96, [xxxviii.

somatoblast (sō'ma̤-tọ-blȧst), *n.* [Gr. *σῶμα*(*τ-*), body, + *βλαστός*, germ.] A blastomere which is to give rise to the ventral plate and nervous system of an annelid.

somatochrome (sō'ma̤-tọ-krōm), *n.* [Gr. *σῶμα*(*τ-*), body, + *χρῶμα*, color.] A nerve-cell which possesses a well-marked cell-body surrounding the nucleus on all sides and staining deeply in basic aniline dyes. *Nissl*.

Cells which react both as to their nuclei and as to their cell bodies to the Nissl stain. To these cells Nissl has given the name "*somatochromes*."
F. R. Bailey, in Jour. Exper. Med., Oct. 1, 1901, p. 552.

somatoderm (sō'ma̤-tọ-dėrm), *n.* [Gr. *σῶμα*(*τ-*), body, + *δέρμα*, skin.] The somatopleura or somatic layer of mesoderm in the vertebrate embryo.

somatogenetic (sō″ma̤-tọ-jẹ̄-net'ik), *a.* [Gr. *σῶμα*(*τ-*), body, + *γένεσις* (*γενετ-*), origin, + *-ic*.] In *biol.*, arising in the somatic elements of the body and not in the germ-cells: opposed to ★*blastogenetic*: said of the acquired as opposed to the congenital characters of an organism.

But although the modifications thus induced may be and generally are adaptive,—such as the increased muscularity caused by the use of muscles, "practice making perfect" in the case of nervous adjustments, and so on,—in no case can these so-called acquired or "*somatogenetic*" characters exercise any influence upon the germ-cells, such that they should re-appear in their products (progeny) as congenital or "blasto-genetic" characters.
G. J. Romanes, in Smithsonian Rep., 1890, p. 441.

somatogenic, *a.* **2.** Pertaining to or concerning origin from the larval or later stages of development. [Rare.]—**Somatogenic variation.** See ★*variation*.

somatography (sō-ma̤-tog'ra̤-fi), *n.* [Gr. *σῶμα*(*τ-*), body, + *-γραφία*, < *γράφειν*, write.] The description of the physical characteristics of the races of man.

somatologist (sō-ma̤-tol'ọ̄-jist), *n.* [*somatolog*(*y*) + *-ist*.] One who devotes himself to, or is versed in, the study of somatology.

This plan of partial deportation and colonization was familiar to the Carthaginians, Romans, and other enterprising nations of the Mediterranean Basin, and explains to a large extent the constant blending of extreme physical types which the *somatologist* discovers in the remains from the oldest cemeteries around that great interior sea.
D. G. Brinton, in Smithsonian Rep., 1893, p. 594.

somatophyte (sō′mạ-tọ-fīt), *n.* [Gr. σῶμα(τ-), body, + φυτόν, plant.] A plant some part of which ceases from growth, thus forming a body. All the higher plants are somatophytes, and qualifiedly even those unicellular ones (*Vaucheria*, *Mucor*) in which growth is at length only apical. Opposed to *asomatophyte*. *Pfeffer* (trans.), Physiol. of Plants, II. 3.

somatophytic (sō″mạ-tọ-fit′ik), *a.* [*somatophyt(e)* + *-ic*.] Of the nature of a somatophyte: opposed to *asomatophytic*. *Pfeffer* (trans.), Physiol. of Plants, II. 6.

somatoplasma (sō″mạ-tọ-plaz′mạ̈), *n.* [NL.] Same as *somatoplasm*.

somatopsychic (sō″mạ-tọ-sī′kik), *a.* [Gr. σῶμα(τ-), body, + E. *psychic*.] Consisting of mind and body; pertaining to mind and body, or to their relation.

> Consciousness is a function of the associative mechanism and may be considered in its threefold relationship to the outer world, the body and self — allopsychic, *somatopsychic*, and autopsychic. *Buck*, Med. Handbook, V. 27.

somatopsychical (sō″mạ-tọ-sī′ki-kạl), *a.* [Gr. σῶμα(τ-), body, + ψυχικός, of the mind, + *-al*¹.] Relating to both body and mind: as, "*somatopsychical* ideas of anxiety." *Alien. and Neurol.*, Feb., 1903, p. 56.

somatose (sō′mạ-tōs), *n.* [Gr. σῶμα(τ-), body, + *-ose*.] A commercial peptone (albumose) preparation. *Buck*, Med. Handbook, I. 186.

somatosplanchnic (sō″mạ-tọ-splangk′nik), *a.* [Gr. σῶμα(τ-), body, + σπλάγχνα, viscera, bowels, + *-ic*.] Of or pertaining to both the somatic and splanchnic layers of mesoderm. *Philos. Trans. Roy. Soc.* (London), 1890, ser. B, p. 165.

somesthesis (sō-mes-thē′sis), *n.* [Gr. σῶμα, body, + NL. *æsthesis*.] A supposed subconscious alertness or diffused 'touchiness' due to varying tonicity of the sensory centers of the cortex.

> I shall use the term 'kinesthesis' for that diffused sensation-feeling due to variations in muscular tonicity; 'cœnesthesis' for the sea of undifferentiated organic 'tone'; and, finally, '*somesthesis*' for the melange of sensibility due to the fusion of currents coming from low-tension ('tonal') functioning of the specific-sensation centers.
> *T. P. Bailey*, in Jour. Philos., Psychol., and Sci. [Methods, Dec. 20, 1906, p. 710.

somesthetic (sō-mes-thet′ik), *a.* [Gr. σῶμα, body, + E. *esthetic*.] Relating to organic or common sensation: noting an area in the cortex of the brain which is believed to be the center for such sensation.

> At a rough estimate it may be said that the association areas constitute two-thirds of the human cerebral cortex, while only the remaining third, taking the *somæsthetic* and sense-areas together, is provided with projection fibers chiefly.
> *Amer. Anthropologist*, Oct.–Dec., 1903, p. 609.

somite, *n.* — **Mesoblastic somite**, one of the segmental or metameric pieces of mesoblast found in embryos of annelids, arthropods, and vertebrates: same as *protovertebra* in vertebrate embryology. The mesoblastic somites are of considerable theoretical importance as indicating the number of segments in the body or particular regions of the body, like the head, trunk, etc.

somnal (som′nạl), *n.* [L. *somnus*, sleep, + *-al*³.] A trade-name of a solution of chloral hydrate and urethane in alcohol. It is used in medicine as a hypnotic. *Jour. Soc. Chem. Industry*, IX. 101.

somnambulancy (som-nam′bụ̄-lạn-si), *n.* Somnambulism; somnambulance.

> The enthusiast passes through life in a sort of happy *somnambulency* — smiling and dreaming as he goes, unconscious of whatever is real, and busy with whatever is fantastic. *Isaac Taylor*, Nat. Hist. Enthusiasm, i.

somnambulize (som-nam′bụ̄-līz), *v.*; pret. and pp. *somnambulized*, ppr. *somnambulizing*. [*somnambul(ism)* + *-ize*.] I. *trans.* To put into a sleep-walking state; mesmerize or hypnotize into such a state.

II. *intrans.* To fall into a state of somnambulism or of sleep-walking; act in such a state.

somnifuge (som′ni-fūj), *n.* [L. *somnus*, sleep, + *fugere*, flee.] Something that drives away or prevents sleep. [Rare.]

> I am not sure we would have [the nightingale] if we could, for, in spite of the poets, . . . he has a bad character . . . as a *somnifuge*. *Lowell*, Letters, II. 411.

Somniosus (som-ni-ō′sus), *n.* [NL., < LL. *somniosus*, sleepy, < *somnus*, sleep.] A genus of scymnoid sharks known from northern seas.

somnipathy (som-nip′ạ-thi), *n.* [L. *somnus*, sleep, + Gr. πάθος, passive state.] Hypnotic sleep. [Rare.]

somnium (som′ni-um), *n.*; pl. *somnia* (-ạ̈). [L., < *somnus*, sleep.] A dream; the dreaming state; the semiconscious state between sleeping and waking.

somnoform (som′nọ-fôrm), *n.* [L. *somnus*, sleep, + *-form*. Compare *chloroform*.] An anesthetic mixture of ethyl and methyl chlorid with a small quantity of ethyl bromide.

Son of Heaven. See ★*heaven*.

Sonata di camera, a chamber sonata. — **Sonata di chiesa**, a church sonata.

sonder (zọn′der), *a.* [Abbr. of G. *sonderklasse*, < *sonder*, special, particular, + *klasse*, class.] Noting a class of small yachts which originated in Germany, and which are restricted in relation to points in construction and sail area. In the aggregate of water-line length, extreme beam, and extreme draft they must not exceed thirty-two feet: as, for example, a water-line of 22 feet, beam of 6 feet, and draft of 4 feet. They must not cost to build more than $1,440 in Germany or more than $2,400 in America, including two suits of sails. Another feature of this sonder class is that their displacement must not be less than 4,035 pounds, and it is required also that their draft of water and their water-line length must be measured with stores on board but without a crew, which latter must consist of three men, all amateurs, and citizens of the country in which the yacht is built. Hollow spars cannot be used, and the sail area is restricted to 550 square feet. Races are sailed under the rules of the International Yacht Racing Union.

> *Sonder* yachtsmen, both victors and vanquished.
> *N. Y. Evening Post*, Sept. 9, 1909.

songsmith (sông′smith), *n.* A song maker; a poet. *Athenæum*, March 18, 1905, p. 329. [Rare.]

song-speech (sông′spēch), *n.* A method of speaking that approximates song, — is characterized, that is, by fuller resonance, longer quantities, more continuity of tone, and more definite modulations of pitch than are usual in ordinary speech.

sonomaite (sō-nō′mạ-īt), *n.* [*Sonoma* (see def.) + *-ite*².] A hydrated sulphate of aluminium and magnesium, which occurs in silky crystalline forms at the geysers in Sonoma county, California.

sonora (sọ-nō′rạ̈), *n.* [From *Sonora*, one of the states of Mexico.] A local storm originating east of San Diego, in the mountains of California or adjacent Arizona, and descending from the east, but preceded by westerly winds. Storms of a similar character occur also in the northern part of the Great Basin of California.

Sonoran (sọ-nō′rạn), *a.* and *n.* I. *a.* 1. Of or pertaining to Sonora, Mexico.

> The division of the northern part of Arctogæa into a palæarctic and a nearctic region is, however, retained; and it is somewhat regrettable to find that the author is unable to convince himself of the necessity of a *Sonoran* region. *Nature*, Aug. 14, 1902, p. 374.

2. Of or pertaining to a long-headed Indian type which is found in the state of Sonora and scattered over the southwestern parts of the United States. — **Sonoran region, Sonoran zone**, a zoögeographical region instituted by Cope, in 1875, including northern Mexico and adjoining desert portions of New Mexico, Arizona, Nevada, and eastern California. As defined by Merriam, in 1890, the Sonoran zone included also the peninsula of Lower California and part of western Texas as well as much of central Mexico. The term was loosely used by Cope, whose map and description do not agree with one another.

II. *n.* A division of the supposed Uto-Aztecan linguistic family: equivalent to *Piman*.

Sonorous texture, the texture of the sonorous stone which gives forth a musical sound when struck lightly with a mallet. See *sonorous stone*, under *sonorous*.

> Large Canton Punch Bowl. *Sonorous texture.*
> *Marquand Catalogue*, 1903.

Sonsonate balsam. See ★*balsam*.

sool² (söl), *v. t.* 1. To excite (a dog) or set him on; 'sic' (a dog). *E. E. Morris*, Austral English.

> She went quickly towards her camp, calling softly, 'Birree gougou,' which meant '*Sool* 'em, *sool* 'em,' and was the signal for the dogs to come out. Quickly they came and surrounded the black fellows.
> *Mrs. K. L. Parker*, Australian Legendary Tales, p. 90.

2. To worry, as a dog worries a rat.

soomga (söm′gạ̈), *n.* [Russ. *semga*, *sëmga*, pron. syōm′gạ̈, a salmon.] A large sea-trout, *Salmo gairdneri*, common on the Pacific coast; the steelhead.

sooner (sö′nėr), *n.* [*soon*, *a.*, + *-er*³.] In the western States, any one who settles on government territory before it is legally opened to settlers and thus gains the choice of land and location; hence, any one who gains an unfair advantage by getting ahead of others. [Slang, U. S.]

> As the Department holds that every person who now goes upon the strip is a "*sooner*" and loses his rights to take land there, the negatives will become valuable evidence against those going in now to hunt out good claims.
> *Weekly Post*, N. Y., Aug. 2, 1893.

soor (sör), *n.* Aphthæ; thrush.

> The streptococcus in pure culture was found in the pus of the cerebro-spinal meninges, but the *soor* fungus appeared in the cultures made from both kidneys.
> *Jour. Exper. Med.*, Feb. 4, 1905, p. 396.

soothless (söth′les), *a.* Truthless; treacherous; false.

> Lochiel. — Down *soothless* insulter! I trust not the tale:
> Though my perishing ranks should be strewed
> in their gore.
> *Campbell*, Lochiel's Warning.

soot-proof (sůt′pröf), *a.* Not affected by soot or deposited carbon, as apparatus and devices for igniting or for other purposes within the combustion chambers of internal-combustion engines, which are likely to become coated with lampblack from incomplete combustion.

soot-sucker (sůt′suk″ėr), *n.* A device for removing deposits of carbon, in the form of soot, lampblack, or cinders, by the aspirating effect of a current of steam which induces a flow of air and carries out the deposited carbon. Water may also be used to induce the motion. Also called *cinder-ejector*.

sooty-wing (sůt′i-wing), *n.* An American hesperiid butterfly, *Pholisora catullus*, widespread in the United States. Its larvæ live on *Chenopodium*.

sop. An abbreviation of *soprano*.

sophic, *a.* 2. Relating to the philosophic opinions of man, including the beliefs of primitive tribes.

> The *sophic* activities so highly developed among the tribes of the arid pueblo region.
> *J. W. Powell*, in An. Rep. Bur. Amer. Ethnol., 1897– [98, p. xlv.

sophiology (sof-i-ol′ọ-ji), *n.* [Gr. σοφία, wisdom, + -λογια, < λέγειν, speak.] The scientific study of the philosophies developed by the various races of man, from the most primitive tribes to the present civilized nations.

> The sciences of esthetology, technology, sociology, philology, and *sophiology*.
> *J. W. Powell*, in An. Rep. Bur. Amer. Ethnol., 1897– [98, p. xii.

sophoretin (sof-ọ-rē′tin), *n.* [*Sophora* + *-et-* + *-in*².] A yellow compound, $C_{15}H_{10}O_7$, prepared by the action of dilute sulphuric acid on sophorine. It crystallizes in yellow needles and closely resembles quercitin in general properties.

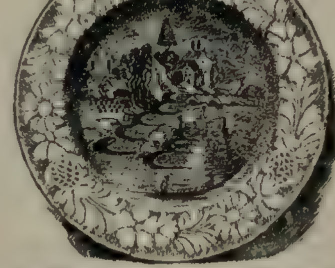
sophorine (sof′ọ-rin), *n.* [*Sophora* (see def.) + *-ine*².] A colorless crystalline alkaloid, $C_{11}H_{14}ON_2$, contained in the seeds of *Sophora tomentosa*, *S. secundiflora*, *Anagyris fœtida*, and *Euchresta Horsfieldii*: same as ★*baptitoxine*, *cytisin*, and *ulexine*.

sophronist (sō′frō-nist), *n.* [Gr. σώφρων, of sound mind, prudent, + *-ist*.] A cautious, meticulous person; one who is afraid to go too far; one who is given to qualifying his statements. [Rare.]

> The latter's [youth's] instincts are far wiser than they know, for iconoclasm is never better directed than against the literalist, formalist, and *sophronist*.
> *G. S. Hall*, Adolescence, II. 412.

sopilka (sọ-pil′kạ̈), *n.* See *sopelka*.

sopra bianco (sō′prạ̈ bẹ-än′kō). [It. *sopra*, above, over, + *bianco*, white.] In *ceram.*, a style of decoration in which the design is painted in white enamel on a ground of a slightly different tint. See *damassé*, 2. Also called *bianco sopra bianco*.



Sopra Bianco. — Delf plate, Bristol, 18th century.
(In the Pennsylvania Museum, Philadelphia.)

sora, *n.* — **King sora**, a name sometimes given to the Florida gallinule, *Gallinula galeata*.

sorbinose (sôr′bin-ōs), *n.* [*sorbin* + *-ose*.] Same as *sorbin*, which term it has now superseded.

sorbite, *n.* 2. A constituent of steel; practically pearlite which has not had time to become perfectly formed. The solid solution of carbon in iron (austenite) will decompose into pearlite, together with either excess ferrite or excess cementite, according as the percentage of carbon is less or more than 0.90 per cent. The complete decomposition of the austenite requires time, and there is therefore very frequently only a partial resolution into pearlite. The transition-forms between the austenite and pearlite are called respectively *martensite, troostite,* and *sorbite.* Present knowledge does not disclose fully the nature of these transition-forms.

Austenite, troostite, *sorbite,* and other constituents [of iron] have also been described. *Encyc. Brit.*, XXIX. 572.

sorbitic (sôr-bit'ik), *a.* [*sorbite* + *-ic.*] Pertaining to or of the nature of sorbite: as, *sorbitic* steel.

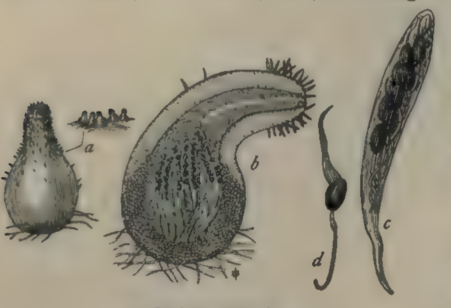
Stead and Richards in a paper on *sorbitic* steel rails give a simple method for the production of sorbite in steel. *Electrochem. Industry,* Feb., 1904, p. 51.

sorbitol (sôr'bi-tol), *n.* [*sorbite* + *-ol.*] Same as *sorbite,* 1, which term it has now superseded.

sorbose (sôr'bōs), *n.* [*sorb*¹ + *-ose.*] Same as ★*sorbinose.*

sorcerer, *n.* 2. A fish of the family *Nettastomidæ,* found in the deep sea, having a fragile body and a thin skin charged with black pigment.

Sordaria (sôr-dā'ri-ä), *n.* [NL. (Cesati and De Notaris, 1863), < L. *sordes,* filth, referring to the habitat of many of the species.] A genus of pyrenomycetous fungi having separate perithecia and unicellular dark-colored spores frequently provided with hyaline appendages. The species are numerous and widely distributed. Many are found on dung. *S. fimiseda* occurs on horse and cow dung in Europe and North America.



Sordaria fimiseda.
a, ascocarps, or perithecia; *b,* vertical section of a perithecium; *c,* ascus, or spore-case; *d,* spore.

Sordariaceæ (sôr-dā-ri-ā'sẹ-ē), *n. pl.* [NL., < *Sordaria* + *-aceæ.*] A family of pyrenomycetous fungi named from *Sordaria,* one of its principal genera. Most of the genera and species are found on dung.

sordidin (sôr'di-din), *n.* [NL. *sordida* (see def.) + *-in*².] A colorless neutral compound, $CH_3OC_{12}H_7O_7$, contained in the lichens *Lecanora sordida* and *L. sulphurea.* It crystallizes in needles, melts at 210° C., and is volatile without decomposition.

sore¹, *n.*—**Veldt sore,** a painful ulcer, of the hands or feet chiefly, occurring in South Africa. Also called *Natal boil.*

sorehead, *n.* 3. Same as ★*bird-pox.*

Sorel's cement. See ★*cement.*

sore-shin (sōr'shin), *n.* Same as *sore-shin* ★*disease.*

Soret phenomenon or **principle.** See ★*phenomenon.*

sorghum-blight (sôr'gum-blīt), *n.* A disease of sorghum producing red spots on the culms and leaves, believed to be due to *Bacillus Sorghi.*

sorghum-evaporator (sôr'gum-ẹ̄-vap"ọ-rā-tọr), *n.* A device for removing moisture or excess of liquid from sorghum molasses.

sorghum-knife (sôr'gum-nīf), *n.* A heavy knife used for cutting sorghum.

sorghum-midge (sôr'gum-mij), *n.* A cecidomyiid fly, *Diplosis sorghicola,* which deposits its eggs in sorghum heads in the southern United States, and whose larvæ absorb the juices from the young ovaries, causing a sterility of the seeds. *Science,* Jan. 17, 1908, p. 114.

sorghum-smut (sôr'gum-smut), *n.* See ★*smut.*

soroban (sō-rō-bän'), *n.* [Jap.] The Japanese abacus.

sororiation (sọ-rō-ri-ā'shọn), *n.* [L. *sororiare,* grow up or swell together: said of the female breasts.] The enlarging of the female breasts at puberty.

sorority (sọ-rō'ri-ti), *n.* [NL. *sororitas,* sisterhood, < L. *soror,* sister.] A sisterhood, corresponding to *fraternity:* often applied to women's Greek letter societies.

One saw many of those neat little *sorority* pins the American girl proudly brings home from boarding-school or college.
E. Insley, in Harper's Mag., Sept., 1900, p. 490.

sorosis, *n.* 2. A woman's club; specifically, the first woman's club in America, organized in 1868.

Sorosporium (sō-rọ-spō'ri-um), *n.* [NL. (Rudolphi, 1829), < Gr. σωρός, heap, + σπόρος, seed, referring to the masses of spores.] A genus of smut-fungi of the order *Ustilaginales,* having the spores loosely united in small spherical masses which are surrounded by a gelatinous envelop when young. *S. Ellisii* occurs frequently and destroys the inflorescence of species of *Andropogon.*

sorrel¹, *n.*—**Engelmann's sorrel.** Same as *drop-seed* ★*dock.*—**Guinea sorrel.** Same as *Indian sorrel* (which see, under *sorrel*¹).—**Ladies' sorrel,** *Oxalis stricta,* a delicate species with yellow flowers, ranging throughout most of temperate North America east of the Rocky Mountains and introduced into Europe. Also called *upright yellow-wood sorrel.*—**Queensland sorrel,** the green kurrajong, *Hibiscus heterophyllus,* the young shoots, leaves, and roots of which are eaten by the aborigines.—**Upright yellow-wood sorrel.** See *ladies'* ★*sorrel.*

sorrel-dock (sor'el-dok), *n.* See ★*dock*¹.

sorrel-tree, *n.* 2. The stagger-bush, *Pieris Mariana.*

Sorrento work. See ★*work.*

sortation, *n.* II. *a.* Of or pertaining to sorting.

On a Correct Colour Code or *Sortation* Code in Colours.
Geog. Jour. (R. G. S.), XVIII. 342.

sortes, *n. pl.*—**Sortes viales,** in *Rom. antiq.,* divination by a lot drawn by the first person encountered on the street.

sortilegic (sôr-ti-lej'ik), *a.* [*sortilege* + *-ic.*] Divinatory; of or pertaining to sortilege.

Seri warfares, like the hunting customs of the tribe, is 'largely *sortilegic,*' and the warfare of the tribe (devoid of military tactics in the strict sense of the term) is 'merely an intensified counterpart of their chase.'
Science, May 17, 1901, p. 782.

sorting-boom (sôr'ting-böm), *n.* In *lumbering,* a strong boom used to guide logs into the sorting-jack, to both sides of which it usually is attached.

sorting-gap (sôr'ting-gap), *n.* See ★*sorting-jack.*

sorting-hammer (sôr'ting-ham"ėr), *n.* A hammer of about two pounds weight, shaped like a narrow, blunt ax, used to break ores for sorting.

sorting-jack (sôr'ting-jak), *n.* In *lumbering,* a raft, secured in a stream, through an opening in which logs pass to be sorted by their marks and diverted into pocket booms or the down-stream channel. Also called *sorting-gap.*

sospirando (sọs-pi-rän'dō), *a.* [It., ppr. of *sospirare,* sigh.] Sighing: used, in *music,* to denote passages that are to be rendered in a doleful manner.

sospiro (sọs-pē'rō), *n.* [It., a sigh, < *sospirare,* sigh. See ★*sospirando.*] In *music,* an old name for a crotchet or quarter-note rest; also, earlier, for a minim or half-note rest.

sospiroso (sọs-pi-rō'sō), *a.* [It., < *sospiro,* a sigh.] Doleful: used, in *music,* like ★*sospirando.*

soterial (sọ-tē'ri-a̤l), *a.* [Gr. σωτήρ, savior, + *-i-al*¹.] Of or pertaining to the Saviour or to salvation; soteriological.

The *soterial* pith of the Gospel is simple and soon exhibited. *Howard Crosby,* Christian Preacher, ii.

sotol (sō-tōl'), *n.* [Nahuatl *zotoli,* the ancient Mexican name.] In the southern United States and Mexico a name given to several species of yucca-like plants belonging to the genus *Dasylirion,* sometimes called bear-grass. The fleshy crown at the apex of the stem of *Dasylirion Texanum* and *D. Wheeleri* are roasted and eaten by the Mexicans and Indians, and yield an inferior brandy called *mezcal de sotol,* which is distilled in the same manner as the common mescal from the agave. The ancient Mexicans wove sandals (*zotolcactli*) and mats (*zotolpetlatl*) from the leaves. The fresh ladle-like leaf-bases of *Dasylirion acrotrichum* are now used in some of the markets as receptacles for carrying home lard, olives, oil, etc.

sou. An abbreviation of *southern.*

Soubise sauce. See ★*sauce.*

souchong, *n.* Souchong tea is prepared from the souchong leaves, namely the fourth and fifth from the tip of the shoot, or is of a quality regarded as corresponding to these. The leaf is longer and thinner than in the congous, in the prepared state folded rather than curled or twisted. In drinking-quality the souchongs are similar to the congous; the flavor is technically described as 'tarry.' Six trade subclasses are enumerated. Cf. *congou* ★*tea,* ★*pekoe.*—**Pekoe souchong,** a grade of tea somewhat coarser than pekoe.

Soudan III. See ★*Sudan III.*—**Soudan formation.** See ★*formation.*—**Soudan G.** See ★*Sudan G.*

souesite (sö'e-sīt), *n.* [Named after F. *Soues,* who sent the specimen for examination.] A native nickel-iron alloy from the auriferous gravels of the Fraser river in British Columbia: closely allied to awaruite, but containing somewhat more nickel.

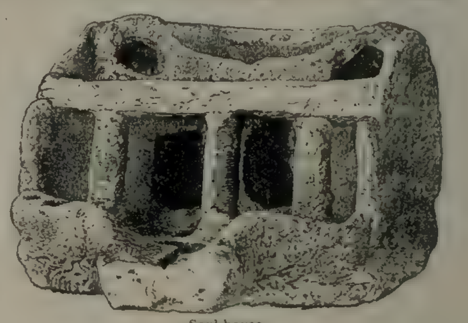
souffle, *n.*—**Funic souffle,** a soft blowing sound heard on auscultation of the abdomen of a pregnant woman, believed to be caused by the movement of blood in the umbilical cord. *Buck,* Med. Handbook, IV. 342.

soufrière (sö-fri-yãr'), *n.* [F. *soufrière,* < *soufre,* sulphur. See *sulphur.*] The French equivalent of *solfatara,* somewhat current in English since the volcanic outbreaks in Martinique and St. Vincent in 1902. The word is a common geographical name in the Windward Islands where the French influence either is or has been predominant. It is applied to any expiring volcanic vent. When there is but one on an island it is called La Soufrière.

The steam puffs grew in magnitude, and before the end of April there were several explosions, accompanied by rumblings and tremblings of the earth, in which jets of mud were shot into the air and swept far a-sea by the trade-winds; while the warm springs and solfataras (or *souffrieres*) on Martinique and other islands displayed unwonted activity.
W. J. McGee, in Pop. Sci. Mo., July, 1902, p. 273.

soul¹, *n.*—**Animal soul,** the conscious principle of an individual animal in contradistinction to the vegetative soul, or mere life.—**Heart and soul.** See ★*heart.*

soul-house (sōl'hous), *n.* A small clay model of a house or residence placed, by the ancient Egyptians (VIth–XIIth dynasty), in a tomb for the accommodation of the soul of the departed.



Soul-house.
(From restored model in Metropolitan Museum of Art, New York.)

Prof. Petrie also gave a paper to the section describing the excavations carried out by the British School of Archæology, under his direction, at Gizeh and Rifeh. In this communication he described the interesting series of pottery *soul-houses,* found on the latter site, which are of great importance apart from their religious significance as showing the design and evolution of the ordinary Egyptian house, about which little had previously been known. *Nature,* Aug. 29, 1907, p. 462.

souling, *n.* See ★*suling.*

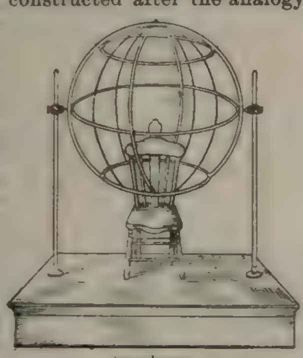
soul-worship (sōl'wėr"ship), *n.* The worship of ghosts or spirits; belief in the survival of a conscious spirit after the death of the body, and acts of propitiation to appease it: one of the most wide-spread and persistent of primitive cults. *Gumplowicz* (trans.), Outlines of Sociol., p. 55.

sound⁵, *n.*—**Colored sounds,** sounds having imaginary colors strongly associated with them in the minds of some persons.—**Sounds of subdivision,** in *acoustics,* the upper partials of a compound tone or clang; overtones.

soundboard, *n.* 3. In *organ-building,* same as *wind-chest.*

sound-box (sound'boks), *n.* In *phonet.,* the round metal box which carries the reproducing or the recording stylus of the gramophone.

The reproducing *sound-box* differs only in detail from the recording *sound-box.*
Scripture, Exper. Phonetics, p. 55.



Sound-cage.
(From "Yale Psychol. Studies.")

sound-cage (sound'kāj), *n.* In *exper. psychol.*, an instrument, constructed after the analogy of the perimeter, for the study of localization of sound. In fixed form, the sound-cage consists of a hollow spherical cage. The imaginary surface of the sphere is divided, perhaps, into eight equal parts by four vertical great circles: and again, horizontally, by the equator and by two small circles parallel to the equator at a distance of 45° from the poles. The cage, made of stout wire, is left open below to admit the back of a chair and the observer's body. The observer is so seated that the center of the line joining the external openings of his two ears is the center of the sphere. Sounds are given by a telephone-sounder, which travels from point to point over the surface, the observer, who is blindfolded, being required to indicate the direction from which the sound appears to come. As this apparatus is bulky, sound-cages have been devised in which two semicircles, or two quadrants, are made to revolve in such a way as to cover the whole surface of the sphere. Also *sound-perimeter*. *E. B. Titchener*, Exper. Psychol., I. i. 179.

sound-centroid (sound'sen"troid), *n.* In *exper. phonet.*, an imaginary point in the flow of sound in speech or song, at which (for purposes of scientific treatment) we may regard the entire energy of the sound to be concentrated. See the extract.

> Just as in the case of any irregular body, we can find different grades of centroids by limiting the consideration to larger or smaller portions. There are thus phrase-centroids, syllable-centroids, *sound-centroids*, etc.
> *Scripture*, Exper. Phonetics, p. 451.

sound-chest (sound'chest), *n.* Same as *resonance-box*, or as *soundboard* or *wind-chest*. In some old keyboard-instruments, resonance was sought by using not a mere soundboard, but a fully inclosed *sound-chest*, after the analogy of other stringed instruments.

soundflat (sound'flat), *n.* In *pianoforte-making*, same as *soundboard*.

sound-hammer (sound'ham"ėr), *n.* In *physiol.* and *psychophys.*, a metal hammer which strikes upon a metal block, and therefore (if shaft and block are included in an electrical circuit) makes electrical contact at the moment that the sound of the stroke occurs. The hammer is much used as a sound-stimulator in reaction experiments in which the Hipp (or other electrical) chronoscope is employed. *E. B. Titchener*, Exper. Psychol., II. i. 154.

sound-helmet (sound'hel"met), *n.* In *exper. psychol.*, a sound-cage made in the form of a cap of light wire, which is fitted to the head of the observer, and from which free wires, straight or bent, radiate out in the various directions of space: the stimuli are sounded at the extremities of these wires. *E. B. Titchener*, Exper. Psychol., I. ii. 359.

sound-hole, *n.* **2.** See the extract.

> These *sound-holes*, which are a special feature of the finer Norfolk towers, are square, unglazed openings filled with tracery in the stage below the bell-chamber windows. *Athenæum*, April 9, 1904, p. 473.

sounding[1], *n.* **4.** In *astron.*, the investigation of the probable distance of the boundaries of the stellar universe by enumerating the number of stars visible in different regions in the field of a given telescope or on a photographic plate.

> The second point for photographic investigation refers to the limits of the system towards the galactic poles. There is reason to believe them comparatively restricted. M. Celoria, of the Milan observatory, using a refractor capable at the utmost of showing stars of eleventh magnitude, obtained for a "mean *sounding*," at the north pole of the milky way, almost identically the same number given by Herschel's great reflector.
> *A. M. Clerke*, in Smithsonian Rep., 1891, p. 106.

Pneumatic sounding-apparatus, an apparatus devised by Paulsen, Prytr, and Rung in 1885, in which a volume of air is compressed and the depth is calculated from the pressure that effected this compression. It is applicable to much greater depths than the analogous Thomson sounding-tube.

sounding-balloon (soun'ding-ba-lön"), *n.* A small balloon bearing meteorological apparatus, but without an aëronaut, sent rapidly up to the highest possible elevation in order to ascertain the atmospheric conditions. The balloon is carried off by the wind and comes to the ground at a long distance, and the record is found and brought back. Two forms of sounding-balloons are in use. One, the older, usually of silk or paper, falls when sufficient hydrogen gas escapes through the open appendix; the other, of rubber, sealed, expands as it rises and eventually bursts, the apparatus falling slowly, supported by a parachute. Originally and frequently called *ballon-sonde*.

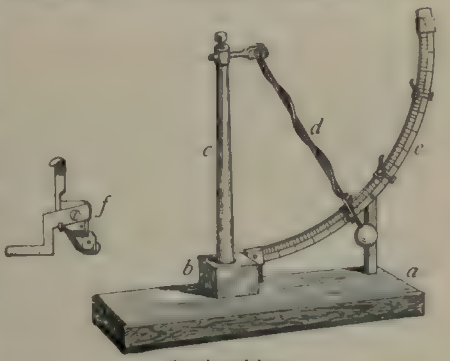
sounding-machine, *n.*—**Sigsbee sounding-machine**, a machine for taking soundings in very deep water by means of a lead weight attached by a cord to the end of a fine wire on which are marks to show the amount of wire paid out at the time the lead touches bottom: the invention of Rear-Admiral C. D. Sigsbee, U. S. N.

sounding-tube (soun'ding-tūb), *n.* **1.** A watertight tube or pipe extending vertically up from the bottom of a vessel, or from any compartment, so that the depth of water in the interior can be conveniently measured from the deck by dropping a sounding-rod attached to a line through the tube to the bottom.—**2.** A glass tube, in a protecting case, lowered with sounding-lead to the bottom of the shoaler parts of the ocean, the lower end of the tube being open and the upper end closed. The air within is compressed in proportion to the depth of the ocean. The water penetrates and dissolves a red paint from the inside of the tube, so that the colored remainder indicates the amount of compression of the air and hence the depth of the water. It was invented by Sir William Thomson (Lord Kelvin) about 1860.

sound-memory (sound'mem"ọ-ri), *n.* In *psychol.*, auditory memory; memory aroused by auditory cues and couched in auditory terms.

> The meaningless sound sen . . . called up the *sound-memory* of 'clams.' *Scripture*, Exper. Phonetics, p. 118.

sound-pendulum (sound'pen"dụ̄-lum), *n.* In *psychophys.*, a pendulum suspended from a steel pillar, the hard-rubber bob of which strikes, as the pendulum falls, upon a block of ebony cemented to the base of the instrument. Since the intensity of the sound produced by the blow is directly proportional to the height of fall of the bob, that is, to the square of the sine of half the arc through which the pendulum swings, the relative intensities of successive sounds may readily be calculated by reference to a graduated arc of metal, also attached to the base of the instrument. The sound-pendulum is sometimes made with two pendulums, hung to right and left of the pillar and striking on the two faces of the block: but it is difficult to insure the qualitative similarity of the two sounds thus produced. The sound-pendulum was first constructed by Volkmann, and since Fechner's time it has been a standard piece of psychophysical apparatus.



Sound-pendulum.

a, wooden base on layer of felt; *b*, ebony striking-block; *c*, steel pillar; *d*, pendulum, wrapped with rubber tubing to prevent vibration; *e*, arc, doubly supported on base, and capped with sponge-rubber (it carries three releases); *f*, pendulum catch and release, shown separately on larger scale.

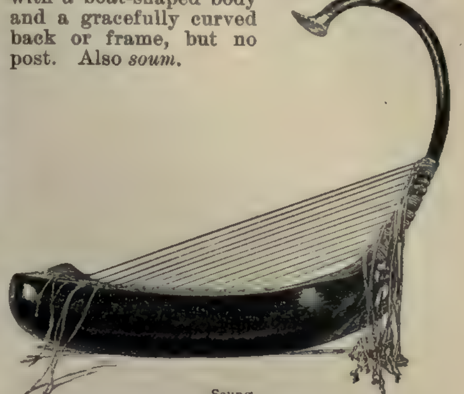
> A good way of turning this principle to account for the investigation of sound-intensities which do not differ very greatly from one another is indicated in the [accompanying] schematic representation of the *sound-pendulum*.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 30.

sound-perimeter (sound'pẹ̄-rim"e-tėr), *n.* In *exper. psychol.*, same as ★*sound-cage*. *Psychol. Rev.*, Jan., 1903, p. 64.

sound-sensation (sound'sen-sā"shọn), *n.* In *psychol.*, auditory sensation; especially, a sensation of noise. *W. Wundt* (trans.), Human and Animal Psychol., p. 32.

sound-shifting (sound'shif"ting), *n.* [Tr. G. *lautverschiebung*.] The 'shifting of (consonant) sounds' in a regular series or rotation: applied to this phenomenon in the history of Teutonic languages. See ★*lautverschiebung* and *Grimm's law*, under *law*[1]. *Keane*, Ethnology, p. 413.

soung (söng), *n.* [Burmese?] A Burmese harp with a boat-shaped body and a gracefully curved back or frame, but no post. Also *soum*.



Soung.
(In the Stearns Collection, University of Michigan.)

soup[2], *n.*—**In the soup**, in a predicament; helpless to act; in a mortifying situation. [Slang.]

soup-bone (söp'bōn), *n.* A bone (with some meat on it) used for making soup-stock: usually the shank of beef.

soupir (sö-pēr'), *n.* [F., a sigh. See ★*sospiro*.] In *music*, an old name for a crotchet or quarter-note rest.

soupon, *n.* See *supawn*.

soup-spoon (söp'spön), *n.* A spoon of a size and form adapted for use in eating soup.—**Soup-spoon man**, a certain member of a gang of burglars. See ★*yeggman*. [Thieves' slang.]

> When the prisoners were taken to Police Headquarters Assistant Superintendent Dougherty of the Pinkerton Detective Bureau identified the man who said he was William Smith as Gus De Ford, alias "Ky Yellow," alias "Buggsey," an expert with high explosives, known as the "King of the *Soup Spoon Men*." *N. Y. Times*, Jan. 2, 1905.

soup-stock (söp'stok), *n.* See *stock*[1], 24.

sour, *n.* **5.** In drenching or puering skins, the old liquor which has become sour or turned. *Modern Amer. Tanning*, p. 47.—**White sour**, the bath of very dilute sulphuric acid in which cotton cloth is immersed after it has been exposed to the action of a weak solution of bleaching-powder, as a part of the usual process of chlorin-bleaching. *Sadtler*, Handbook of Indust. Chem., p. 475.

sour-ball (sour'bâl), *n.* A round sugar-plum, very strongly flavored with lemon.

sour-berry (sour'ber"i), *n.* The European cranberry, *Oxycoccus Oxycoccus*.

source, *n.* **4.** In *geom.*, a place of transition from space of $n \pm 1$ into space of n dimensions.—**5.** In *elect.*: (*a*) That point or region in an electric circuit at which abrupt difference of potential exists so that current flows from it on one side through the circuit and toward it through the circuit from the other side. Thus a dynamo generator, a voltaic cell, or a charged condenser is a source of current in the circuit in which they are placed. (*b*) In the case of current flow in plane sheets, a point at which the current enters the sheet.

> In the case of current flow in plane sheets, we have to consider certain points called *sources* at which the current flows into the sheet, and certain points called sinks at which it leaves. *Encyc. Brit.*, XXVIII. 18.

sourdine, *n.* **II.** *a.* Softly played; muted; pathetic. [Rare.]

> Yet there is here and there a stroke of dramatic force, and there is the art of making a commonplace event striking by telling it in hints, as in the *sourdine* little tragedy of "A Modern Melodrama," where a prostitute guesses her death-sentence from the doctor's visit.
> *N. Y. Times*, July 2, 1898.

sour-dock (sour'dock), *n.* **1.** See *sour*.—**2.** See ★*dock*[1].

sourdough (sour'dō), *n.* See the extract. [Local slang.]

> Strange as it may seem, the closing in of winter [in Alaska] opens up the country to the "*sourdough*," for dogs can pull where horses fail, and the prospector with his team and "grubstake" roams at will.
> *National Geog. Mag.*, March, 1905, p. 107.

sour-grass, *n.* **2.** In the West Indies, *Andropogon pertusus*, a native of India, but naturalized in Australia and the West Indies, where it is considered one of the most valuable fodder-grasses.—**3.** Either the common Old World sorrel, *Rumex Acetosa*, or the sheep-sorrel, *R. Acetosella*.—**Ladies' sour-grass.** Same as *ladies'* ★*sorrel*.

sour-gum, *n.* **2.** See ★*gum*[2].

souring-machine (sour'ing-ma-shēn"), *n.* In *bleaching*, a machine for washing cotton or linen cloth in an acidulated bath. *G. Duerr*, Bleaching and Calico-printing, p. 11.

sour-sop, *n.*—**Sour-sop bird**, a small, bright-colored tanager, *Calliste versicolor*, so called from its frequenting the sour-sop tree.

sourweed (sour′wēd), *n.* The sheep-sorrel, *Rumex Acetosella.*

Southern canary-grass. See ★*canary-grass.*—**Southern cattle-fever.** Same as *Texas fever.*—**Southern cattle-tick.** See ★*cattle-tick.*—**Southern root-rot.** Same as *Ozonium* ★*root-rot.*—**Southern timothy.** See ★*canary-grass.*

southing, *n.* **4.** In *surveying* and in *navigation*, the linear distance measured in a north and south direction from the northerly end of a line to the true east and west line or the parallel of latitude passing through the southerly end of the line. Geometrically the southing or the northing of a line is equal to its east and west projection on to a meridian. The southing of a line thus is equal to its northing, and the former or the latter will be used solely in accordance with the direction of real or imaginary motion along the line.

> The position of each point is calculated trigonometrically with reference to its distance east or west, north or south, of the starting-point of the survey. The distance from point to point, measured along or parallel to the meridian, is called the difference of latitude of these two points, or northing or *southing*. *Encyc. Brit.*, XXXIII. 88.

South Sea arrowroot. See *Tacca* and ★*gaogao.*

sovereign, *n.* **2.** (*b*) An Austrian gold coin of the value of three ducats. The sovereign of Ferdinand I. was worth $6.76.—**3.** Any one of several nymphalid butterflies of the genus *Basilarchia*, as the banded purple, the hybrid purple, the red-spotted purple, the viceroy and the vicereine.—**Adelaide sovereign**, a pound gold token struck by the assay-office of Port Adelaide in 1852.—**Brabant sovereign**, a gold coin of Austria. That of Joseph II. (1766) weighed 171.468 grains, 916.667 fine, and was worth $6.76.—**Silver sovereign**, a nickname of the Spanish dollar.

soveren, soverenty. Simplified spellings of *sovereign, sovereignty.*

sovik (sō′vik), *n.* [Samoyed?] A large, loose fur tunic worn by the Samoyeds over the malitza, with the hair outside, and provided with a large hood. See extract under ★*loupthu.*

sovrano (sō-vrä′nō), *n.* [It. See *sovereign.*] A coin of Francis I. of Austria, in 1831, for the dukedom of Milan and for Austrian Lombardy.

sow^2, *n.* **3.** In *metal.*: (*b*) Same as *bear*^{2}, 7.

sowberry (sou′ber″i), *n.* Same as ★*sourberry.*

sow-foot (sou′fůt), *n.* The coltsfoot, *Tussilago Farfara.*

sow-grass (sou′gràs), *n.* The swine-cress, *Coronopus Coronopus.*

sowne^2†, *a.* [Corrup. of F. *souvenu*, remembered.] In *old Eng. law*, such as is leviable: said of a sheriff's return.

sow-plum (sou′plum), *n.* See ★*plum*^{1}.

sow-tit (sou′tit), *n.* The wood strawberry, *Fragaria vesca.*

Soxhlet extractor. See *Soxhlet's extraction* ★*apparatus.*

Soyka's bacteria flask. See ★*flask.*

sozal (sō′zal), *n.* [Irreg. < Gr. *σώζειν*, save, + *-al*^{3}.] A trade-name of aluminium paraphenolsulphonate, $(\mathrm{H}\overset{4}{\mathrm{O}}\mathrm{C}_6\mathrm{H}_4\overset{1}{\mathrm{S}}\mathrm{O}_3)_3\mathrm{Al}$. It is a crystalline astringent compound and is used in surgery as an antiseptic.

sozin (sō′zin), *n.* [Irreg. < Gr. *σώζειν*, save, + *-in*^{2}.] Any defensive albuminous substance. *Buck*, Med. Handbook, III. 844.

sozoiodol (sō-zọ-ī′ọ-dol), *n.* [Gr. *σώζειν*, save, + E. *iod*(*ine*) + *-ol.*] A crystalline powder (diiodophenol-sulphuric acid), employed in surgery and gynecology as a substitute for iodoform. *Jour. Soc. Chem. Industry*, VII. 227.

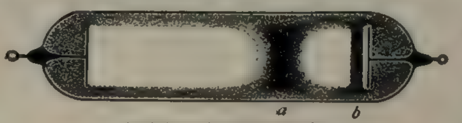
sozoiodolate (sō″zọ-ī-ō′dọ-lāt), *n.* [*sozoiodol* + *-ate*^{1}.] A trade-name of a salt of diiodoparaphenol-sulphonic acid. The potassium, sodium, zinc, and mercury salts are used medicinally as antiseptic and antipyretic remedies, applied both internally and externally.

sozol (sō′zol), *n.* [Irreg. < Gr. *σώζειν*, save, + *-ol.*] A trade-name of aluminium paraphenolsulphonate, $\mathrm{Al}(\mathrm{HOC}_6\mathrm{H}_4\mathrm{SO}_3)_3$. It is a brownish granular compound and is used in surgery as an antiseptic. *Buck*, Med. Handbook, VII. 262.

sozolic (sọ-zol′ik), *a.* [*sozol* + *-ic.*] Noting an acid, the same as ★*aseptol*: a trade-name.

Sp. An abbreviation (*b*) of Spain.

space, *n.*—**Bolyai space.** Same as *Lobachevskian* ★*space.*—**Cathodic dark space.** See ★*cathodic* and *Crookes's* ★*space.*—**Clifford-Klein spaces**, space-forms obtained when the geometric axioms are only assumed for an every-way bounded piece of space.—**Clifford's space**, the space formally analogous to Clifford's surface of zero curvature and finite extent. In it most of the usual Euclidean properties hold as regards figures not exceeding a certain size. The angle-sum of a triangle is two right angles, and there are motions in which all points travel along straight lines. The straight line is closed and the whole space is finite.—**Crookes's space, Crookes's dark space**, in the electric discharge through vacuum-tubes, a dark layer immediately surrounding the cathode and separating it from the negative glow. As the pressure diminishes the dark layer increases in thickness, gradually displacing the negative glow.—**Curvature of space**, a metric property which an imaginary space can have and which real or physical space may have in an almost inconceivably small degree, which is expressible by such a differential equation as to require mathematical analysts to admit that it is of the nature of a curvature. A curvature like that of the surface of a sphere will cause the sum of the three angles of a triangle to be greater than two right angles; and that curvature if constant implies that space is finite and unbounded. A curvature like that of a saddle will cause the sum of the three angles of a triangle to be less than two right angles; and that curvature if constant implies that space is infinite in its measurement and that measurable space is bounded. It is only the flat space in which the sum of the angles of a triangle is exactly 180° that is at once limitless and infinite — characters generally opposed to one another. For in proceeding along a line, and measuring as one goes, either the line comes to an end while the measurement is still finite, in which case the line is finite and limited, or the line returns into itself, completing the measurement while the measurement is still finite, in which case the line is finite and unlimited, or the measurement becomes infinite before the line comes to an end or returns into itself when the line is infinite and the measurable part of it is limited, whether the whole line is limited or not; and it is only when the line returns into itself simultaneously with the measurement becoming infinite that the whole line is measurable yet infinite and is unlimited. There is always some law of progress along a line such that the progress is brought to an end by a character of the line itself, namely, either its coming to an end or its return into itself.—**Dark space**, a region, within a vacuum-tube traversed by the electric discharge, which is devoid of luminescence. When an electric current passes through a tube containing a gas, such as air, at low pressures the glow does not extend uniformly throughout the tube. Near the cathode is a non-luminous region the length of which increases as the pressure diminishes. This is the first dark space or Crookes's space. Beyond this is the negative glow, followed by the second dark space or Faraday's space.—**Dead space.** (*b*) In *chem.*, a name given by Liebreich to certain parts of a solution in which he thought no reaction occurred between substances dissolved in it. (*c*) The clearance-space in a steam-engine cylinder between the head of the cylinder and the end of the piston when the crank is on its dead center. (*d*) The difference between the readings of the mercurial thermometer when the temperature is rising and when it is falling, due in part to the change in the curvature of the meniscus and in part to the expansion of the bulb from the change in pressure of the vertical capillary column. The general effect is analogous to that of the dead motion of the micrometer-screw.—**Double elliptic space**, a space in which the straight line is finite and every two meet twice.—**Faraday's dark space**, in the electric discharge through vacuum-tubes at pressures less than about ½ a centimeter, the dark space between the positive column and the glow around the negative electrode. Faraday's dark space increases in width as the pressure decreases until it finally displaces the positive column altogether.—**Five-to-em space**, in *printing*, a blank type, one fifth the width of the square of the body of the text-type.—**Four-to-em space**, in *printing*, the low or blank type that is one fourth the width of the square of the body of the text-type.—**Fourth dimension of space.** See ★*dimension.*—**Hair-space.** See *hair-space.*—**Ideal space**, that part of the complete spatial manifold without (outside) the absolute.—**Interseptal space**, in sea-anemones and corals, the space between two mesenteries of adjacent pairs. Compare ★*intramesenterial space.*—**Larrey's spaces**, open spaces along the line of attachment of the diaphragm to the chest-walls.—**Linear space.** (*a*) See *linear.* (*b*) Euclidean space.—**Lobachevskian space**, the space characterized by the Bolyai-Lobachevski non-Euclidean geometry.—**Monodromy of space.** See ★*monodromy.*—**Non-Euclidean space**, a space in which a non-Euclidean geometry is true (is actual).—**Poiseuille's space**, that part of the blood-stream in contact with the walls of the capillaries, where the white corpuscles move along sluggishly, the red corpuscles moving more rapidly in the center. Also called *still layer.*—**Postperforated space.** Same as *posterior perforated space.* See *perforated space* (*b*), under *perforated.*—**Prussak's space**, a small space in the tympanum bounded by the malleus, its external ligament, the outer wall of the attic, and Shrapnell's membrane. Also called *Prussak's pouch* or *chamber.*—**Retzius's space**, a small space or cavity in the tissues anterior to the bladder.—**Riemannian space**, a space in which a Riemannian geometry is actual. See ★*geometry.*—**Robin's spaces**, minute spaces in the outer coat of an artery, which connect with the lymphatics.—**Simple** (or **single**) **elliptic space**, one in which the straight line is finite and no two have more than one point in common.—**Six-to-em space**, in *printing*, a blank type, one sixth the width of the square of the body of the text-type: same as *hair-space* on small bodies.—**Space error.** See ★*error.*—**Space of Broca**, the central portion of the anterior olfactory lobe of the brain.—**Space of discission.** See ★*discission.*—**Space of dissolution.** See ★*dissolution.*—**Space of straights**, in *geom.*, space with the straight as element.—**Space of Tenon**, the space between Tenon's capsule and the sclerotica.—**Space of Vestberg**, the periaortic space between the pericardium and the beginning of the aorta.—**Spaces of Fontana**, intervals left between the prolongations of the suspensory ligament of the iris.—**Tactile space**, space considered as a synthesis from tactile sensations and perceptions.—**Temperature of space**, the temperature of an interplanetary or interstellar region not exposed to the radiation from the sun or from other hot bodies. According to the estimates of Langley, confirmed by subsequent investigations by others, the temperature or space is approximately the absolute zero or −273° C.—**Thick space**, in *printing*, the space usually known as three-em or three-to-em.—**Thin space**, in *printing*, a space of indeterminate width, thicker than the hair-space and thinner than the commoner three-to-em space. Usually applied to the four- or five-to-em space.—**Three-to-em space**, in *printing*, a low type, one third the width of the body of the text-type, used to make a blank between words.—**Traube's space**, an area on the left side of the chest over the stomach, where a tympanitic percussion-sound is heard, contrasting with the dullness of the precordial area.—**Visual space**, space considered as a synthesis from visual sensations and perceptions.



Dark Space in a Vacuum-tube.
a, Faraday's dark space; *b*, Crookes's dark space.

space-bar (spās′bär), *n.* Same as *spacer*, 2.

space-consciousness (spās′kon″shus-nes), *n.* In *psychol.*, a general term for the various modes (visual, auditory, tactual, etc.), of perception or apprehension of space.

> An analogous difficulty is at present felt by the disciples of Kant. These cannot imagine how it is possible that our *space-consciousness* can have arisen out of that which was not originally a *space-consciousness*.
> *H. Spencer*, in Mind, O. S., XV. 310.

space-constant (spās′kon″stant), *n.* The reciprocal of the square root of Riemann's measure of curvature.

> It has, consequently, become customary to speak of the reciprocal of the square root of Riemann's measure of curvature as the *space-constant*, in order to avoid all appearance of implying a curvature of non-Euclidean spaces.
> *Encyc. Brit.*, XXVIII. 666.

space-contrast (spās′kon″tràst), *n.* The reciprocal influence of adjacent spatial extents or areas, of widely different dimensions: supposed by some psychologists to explain certain phenomena of optical illusion.

space-experience (spās′eks-pē″ri-ẹns), *n.* In *psychol.*, experience of spatial magnitudes or relations; experience couched in terms of spatial perceptions or ideas: usually opposed to ★*time-experience.*

> An hour is just as much an hour of *space-experience* as an hour of time-experience.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 19.

space-hunger (spās′hung″gėr), *n.* In *psychol.*, the instinct of truancy or vagrancy; instinctive aversion to the confinement of every-day life. [Rare.]

> Ennui, malaria, *space-hunger*, horror of familiar environments and habitual duties, and spring fever are comparatively infrequent as long as children are sexually neuter. *G. S. Hall*, Adolescence, II. 376.

space-key (spās′kē), *n.* In a type-writer or type-setting machine, a key which controls the spacing. See ★*type-writer.*

space-lattice (spās′lat″is), *n.* A net-like structure assumed in discussing the molecular relations of different types of crystalline forms. In it the particles are regarded as situated at the solid angles of equal, parallel parallelepipeds. Also *space-net.*

space-net (spās′net), *n.* Same as ★*space-lattice.*

spacer, *n.* **3.** In a type-setting machine, a device for spacing words.

> After being once brought into use, a matrix bar or *spacer* is not employed again until all others of the same kind stored in the magazine have been used in turn.
> *Census Bulletin* 216, June 28, 1902, p. 58.

4. Anything by which a space or interval is made.

> Large horizontal and radial ventilating spaces are provided. These ventilating spaces are obtained by means of metal *spacers*. *Elect. Rev.*, Sept. 10, 1904, p. 404.

space-sense (spās′sens), *n.* In *psychol.*: (*a*) A sense which mediates perceptions of space.

> This conclusion, that sight is a *space-sense*, is supported by the results of Franz's experiments.
> *G. M. Stratton*, Exper. Psychol. and its Bearing upon [Culture, p. 134.

(*b*) A term formed on the analogy of 'light-sense,' 'pressure-sense,' etc., to denote the capacity of space-perception. It is doubly misleading, since it implies that our simplest spatial experiences are sensations as specific as those of color or pressure, and also suggests that we are endowed with a sense-organ of space, as we are with an organ of vision, etc.

> E. H. Weber tested the 'cutaneous *space sense*' by applying the two points of a pair of compasses to the skin. *O. Külpe* (trans.), Outlines of Psychol., p. 37.

space-telegraph (spās′tel″ẹ-gràf), *n.* Same as *wireless* ★*telegraph.*

space-telegraphy (spās′tel″ē̤-graf-i or -te-leg″-ra̤-fi), *n.* Telegraphy without wires.

space-threshold (spās′thresh″ō̤ld), *n.* In *psychophys.*, the limen of dual impression for the skin or retina, as determined by the esthesiometric compasses or by the just noticeable separation of black dots on a white background.

> The smallest, just noticeable distance between two impressions is called the *space-threshold* for touch.
> *W. Wundt* (trans.), Outlines of Psychol., p. 105.

space-variation (spās′vā-ri-ā″sho̤n), *n.* In *math.*, the change in value of any function from point to point throughout a space.

space-washer (spās′wosh″ėr), *n.* A distance-piece, usually annular; a disk with a central hole, placed upon a spindle or axis to keep two other objects on the same axis at a desired fixed distance apart.

space-writer (spās′rī″tėr), *n.* In newspaper and other literary work, one who is paid by space, usually by the column, line, or word.

> In one way or another . . . by learned professors or by clever *space-writers* . . . all but a very few of the leading actors in our earlier scenes have been . . . sufficiently bewritten and belauded.
> *W. G. Brown*, Life of Oliver Ellsworth, i.

spacing-rod (spā′sing-rod), *n.* In *elect.*, a rod or strip, usually of insulating material, which separates the successive layers of a coil. Spacing-rods are used particularly where a circulation of air for ventilating through the coil is desired.

spadaite (spä′dä̤-īt), *n.* [Named in honor of L. di Medici-*Spada*.] A hydrated magnesium silicate which occurs in reddish amorphous masses: found near Rome, Italy.

spade¹, *n.* **5.** In *artillery*, a thick metal projection at the end of the trail of a field-gun carriage, which is forced into the ground by the recoil and tends to keep the carriage in the same position for subsequent rounds.

> The [gun] carriage was fitted with hydraulic recoil cylinders, and with a "*spade*."
> *Hazell's Annual*, 1902, p. 41.

Spade pattern, a reciprocal trefoil pattern to be seen in some Oriental rugs, especially in the borders.

spade², *n.*—**Spade casino.** See ★*casino*.

spade-fish, *n.* Same as *paddle-fish*.

spade-foot, *n.* **2.** An enlargement of the thin end of a leg of a chair or other piece of furniture having a contour similar to that of a spade. Also used adjectively.

> By using the "*spade foot*," as the square excrescence at the thin end of the leg is called.
> *K. W. Clouston*, Chippendale Period in Eng. Furniture, [p. 154.

spade-money (spād′mun″i), *n.* An early Chinese bronze coinage made in imitation of spades and shovels.

spade-press (spād′pres), *n.* A wool-press of rude construction, used in Australia, in which a spade is employed for ramming down the wool. *E. E. Morris*, Austral English.

spader, *n.*—**Rotary spader**, a machine consisting of a drum turning on a horizontal axis and carrying on its rim a series of projecting blades which turn up the earth as the machine is drawn along.

Spagnuoli (spän-yö-ō′lē̤), *n. pl.* The Sephardim Jews of Turkey and the Balkan states.

spain, *v. t.* Same as *spane*.

span¹, *v. t.* **7.** To harness (a horse, etc.) to a vehicle; inspan; furnish (a vehicle) with animals to draw (it). [South African Dutch.]

> Montsioa's reply was short: "No one ever *spanned* in an ass with an ox in one yoke." *Encyc. Brit.*, XXVI. 187.

span¹, *n.* **9.** In *math.*, the span of a region in any direction is the width of a strip which is bounded by lines perpendicular to that direction, contains every internal point of the region, and has on each of its bounding lines at least one boundary point of the region; and the upper limit of these spans of the region in every direction is called the span.

> If R_1, R_2, . . . be a countably infinite series of closed regions, each being entirely within the preceding, and if the *span* of the regions do not decrease indefinitely, the common points form a perfect connected set.
> *W. H. Young*, in Proc. Math. Soc. (London), ser. 2, [III. 371.

span-dogs, *n. pl.* **2.** *sing.* In the bending of barrel-staves, a bar of iron used as a holder to retain the curved shape of the staves until they have cooled, when they will not bend back.

> Before the stave is released, a bar of iron bent at each end is forced over it to hold it in position until it has cooled, when it will retain the curve made by the bender. This bar is called the "*span-dog*," and as a rule it is required to be nearly half the thickness of the wood it holds, such is the force which it is utilized to counteract.
> *Sci. Amer. Sup.*, Sept. 10, 1904, p. 23982.

spangle, *n.* **4.** One of many small, somewhat triangular spots on the wing of a pigeon or fowl.

spangled, *a.* **2.** Having numerous small pointed markings on the wing or body. In spangled pigeons the markings are on the 'shoulder,' or bend of the wing; in fowls, such as the spangled Hamburgs, they occur on the body as well. Spangles differ from checkers in being smaller and more numerous.

Spaniard, *n.* **2.** [*l. c.*] Same as *jack-spaniard*. —**3.** In New Zealand, same as *spear-grass*, 3.

spanipelagic (span″i-pē̤-laj′ik), *a.* [More prop. **spanopelagic*, < Gr. σπάνις, rarity (σπάνιος, rare), + πέλαγος, sea.] Floating or swimming in the depths of the sea, and coming to the surface only rarely or exceptionally. See ★*pelagic*, ★*autopelagic*, and ★*bathypelagic*.

> The final cause of this remarkable *spanipelagic* mode of life must lie chiefly in the conditions of reproduction and ontogeny.
> *Haeckel* (trans.), Planktonic Studies, p. 583, in Rep. [U. S. Fish Com., 1889–91.

Spanish blanket, bur, cane, etc. See ★*blanket*, etc.—**Spanish cat.** Same as *tortoise-shell* ★*cat*.—**Spanish château**, a castle in Spain, or in the air.

> In short she 's the pink of perfection, you know;
> And she lives like a queen in my *Spanish Château!*
> *J. G. Saxe*, My Castle in Spain, st. 2.

Spanish reef. See ★*reef*².—**Spanish wild cherry.** Same as *islay*.

Spanish-American (span′ish-a̤-mer′i-ka̤n), *a.* and *n.* **I.** *a.* Of or pertaining to the parts of America settled or controlled by Spaniards or their descendants, and where Spanish, more or less modified, is the vernacular.

II. *n.* An American of Spanish blood; a citizen of a Spanish-American state.

spank-stick (spangk′stik), *n.* A flat stick with which the operation of spanking was performed. [Dial.]

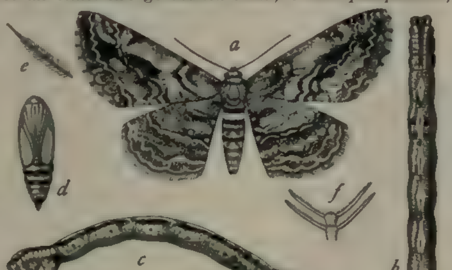
> "Do you remember your Uncle Tree's *spankstick*, Phœbe?"
> "Shall we perhaps change the subject?" said Miss Phœbe, with bland severity.
> *L. E. Richards*, Mrs. Tree, viii.

spanner, *n.*—**Clyburn spanner**, an adjustable spanner wrench the movable jaw of which is adjusted by means of a screw with a knurled head.

spanopnœa (span-op-nē′ä̤), *n.* [NL., < Gr. σπάνιος, rare, scarce, + -πνοια, < -πνοος, < πνεῖν, breathe.] Abnormal slowness of respiration.

span-wire (span′wīr), *n.* A tightly stretched wire attached to the trolley-wire of an electric road and used to hold the latter in its position above the track.

span-worm, *n.*—**Cranberry span-worm**, the larva of an American geometrid moth, *Cleora pampinaria*, found commonly in the Massachusetts cranberry-bogs.—**Elm span-worm**, the larva of an American geometrid moth, *Ennomos subsignarius*.—**Gooseberry span-worm**, the larva of an American geometrid moth, *Cymatophora ribearia*.—**Horned span-worm**, the larva of an American geometrid moth, *Ania limbata* (formerly called *Nematocampa filamentaria*). The larva lives on plum and strawberry and other rosaceous plants, and bears on its back four long curved fleshy horns, two curving forward and two backward.—**Pine span-worm**, any one of several geometrid larvæ which feed on pine-leaves, as the *pine measuring-worm*, larva of *Paraphia subatomaria*, the *redhead inchworm*, larva of *Macaria bisignata*, and others.—**Strawberry span-worm.** Same as *horned* ★*span-worm*.



Cranberry Span-worm (*Cleora pampinaria*).

a, female moth; *b*, larva, dorsal view; *c*, larva, lateral view; *d*, pupa; *e*, male antenna; *f*, enlarged joints of same: all enlarged, *e* and *f* more so.

(Chittenden, U. S. D. A.)

Moth of Elm Span-worm (*Ennomos subsignarius*).

spar¹, *v. t.*—**To spar-down**, *naut.*, to seize oars, or short pieces of light timber, across the shrouds preparatory to rattling down the rigging.

spar², *n.*—**Flaky-spar**, cleavable calcite. [Local, Eng.] **Greenland spar.** Same as *cryolite*.—**Zinc spar**, smithsonite or calamin, native zinc carbonate.

sparadrapier (spar-a̤-dra-pēr′ or -drap′i-ėr), *n.* [F. *sparadrapier*, < *sparadrap*, sparadrap.] A machine for spreading antiseptic paraffin or other medicating compound upon thin linen, cotton, or other fabric to make surgical bandages or plasters; a spreading-machine for coating cerecloth.

sparassodont (spa-ras′ō̤-dont), *a.* and *n.* **I.** *a.* Having the characters of or pertaining to the *Sparassodonta*.

II. *n.* An individual of the suborder *Sparassodonta*.

Sparassodonta (spa-ras-ō̤-don′tä̤), *n. pl.* [NL., < Gr. σπαράσσειν, tear, rend, + ὀδούς (ὀδοντ-), a tooth.] A suborder proposed by Ameghino for the large carnivorous marsupials of the Santa Cruz formation of Patagonia. According to its author, the *Sparassodonta* are neither creodonts, placental carnivores, nor carnivorous marsupials.

sparer, *n.* **2.** That which spares; specifically, in metabolism, a substance which through its own destruction will curtail the destruction of other material: for example, carbohydrates are sparers of the tissue albumins.

> The great power as proteid *sparers* which the carbohydrates exercise. *Buck*, Med. Handbook, V. 564.

sparesome (spãr′sum), *a.* Economical; careful of money; somewhat close. [Colloq.]

Sparganiaceæ (spär-gā-ni-ā′sē̤-ē), *n. pl.* [NL. (Agardh, 1858), < *Spargani(um)* + *-aceæ*.] A family of monocotyledonous plants of the order *Pandanales*, the bur-reed family, containing only the genus *Sparganium* (which see).

sparge (spärj), *n.* [L. *spargo*, a sprinkling, < *spargere*, sprinkle, spray.] In *brewing*, the spray of heated water which is thrown upon malt in the preparation of 'wort.'

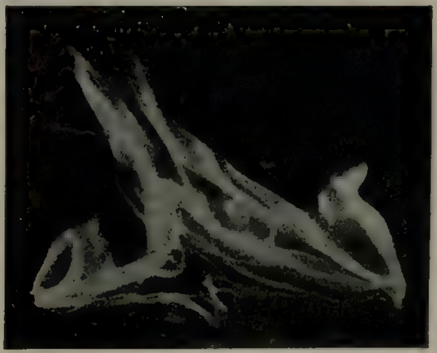
> One may note the temperature at which the "*sparge*" is applied; 170° is frequently exceeded, and the use of stirrers in wash stills by no means universal, especially where small stills are employed.
> *Nature*, May 1, 1902, p. 2.

Sparisoma (spar-i-sō′mä̤), *n.* [NL., < *Sparus* + Gr. σῶμα, body.] A genus of scaroid fishes including many species, most of them found in warm and tropical parts of America.

spark¹, *n.*—**Active spark**, in an experiment described by Hertz, an electric spark the ultra-violet rays from which are used to influence a second, simultaneously produced, spark called the *passive spark*.

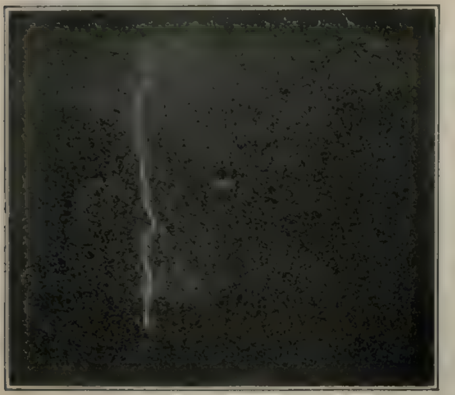
> The efficiency of the *active spark* is not confined to any special form of it.
> *H. Hertz* (trans.), Electric Waves, p. 66.

Advanced spark. See ★*ignition*, 5.—**Electric spark**, the passage of the electric current between two terminals, at high voltage, by mechanical disruption of the insulating medium between the terminals. In the electric spark, the medium filling the space between the terminals or electrodes carries the current, becoming temporarily conducting by disruption by the electrostatic stress of very high voltage, while in the electric arc a bridge of conducting vapor of the electrodes carries the current. The spark therefore starts spontaneously as soon as the voltage is sufficiently high to disrupt the insulating medium, while the arc has to be started by forming the conducting vapor bridge. The voltage re-



High-voltage alternating arc, and spark which started it (150,000 volts).

quired to produce a spark between two terminals usually is many hundred times greater than the voltage required to maintain an arc. If the supply of current is sufficient, an arc usually follows the spark. In air the spark is sharply defined, of irregular shape and intense brilliancy, while the arc is more diffused. The light of the spark shows the spectrum of the material filling the space between the electrodes, the light of the arc the electrode spectrum. See *electric* ★*arc.*— **Jump-spark.** See ★*jump-spark.*— **Mercury-spark,** an electric spark discharge the spectrum of which shows the bright lines characteristic of the metallic vapor of mercury.—**Passive spark,** in an experiment described by Hertz, an electric spark which is subjected to the ultra-violet rays from another, and simultaneously produced, spark called the *active spark.* (See above.)



Lightning Spark.

> The susceptibility of the *passive spark* to the action is to a certain extent dependent upon its form.
> *H. Hertz* (trans.), Electric Waves, p. 66.

Retarded spark. See ★*ignition,* 5.— **Side-spark,** in *elect.*, the spark in the air-gap of a Hertz's receiver.— **Wiping-spark** or **wipe-spark,** an electric spark obtained by bringing into contact two terminals which are in a circuit of sufficient potential difference and then separating them. There is usually more or less sliding or slipping of the terminals past each other while in contact, whence the name. Distinguished from a ★*jump-spark,* in which the electrodes are permanently separated.

spark-arrester, *n.* **2.** Spark-arresters are required when the fuel is wood or shavings even with natural or chimney draft, but with forced or mechanical draft, as in locomotives, they are needed for coal fuels also. In chimneys for wood-fires the spark-arrester may be a cage of galvanized-iron wire netting in the top of the stack; or the stack may be enlarged in cross-section near the top and a gauze grating placed at the largest section; or the arrester may be a deflecting cone, or several of them, by which the sparks or cinders are caught and their motion is stopped while the current of gas passes around and so out. These deflectors have usually spark-pockets or receptacles in which the cinders accumulate and from which they may be removed. In locomotives this catcher has often been in an annular cavity, the stack being double, or one tube within another, the sparks passing between the tubes. The more modern practice, with locomotives, is to put the spark-arresting netting below the base of the stack and in the extension-front smoke-box. The sparks then accumulate in the smoke-box below the netting, and are washed out or removed by spark-ejectors when convenient. In this method, the exhaust steam does not have to work through the meshes of the netting. The accumulated cinders and sparks in the smoke-box are emptied through a gate-valve in the bottom into a hopper at the top of a short tube called the *spark-hopper*, the tube discharging into a pit between the rails at the roundhouse or terminal.

spark-balls (spärk'bâlz), *n. pl.* The spherical metal terminals with which electrical apparatus for the production of the disruptive discharge is commonly provided and between which the spark-gap lies.

spark-box (spärk'boks), *n.* Same as ★*spark-arrester*, 2.

spark-break (spärk'brāk), *n.* The breaking of an electric circuit at a point of usual contact, so that an electric arc or series of sparks jumps across the gap until the space between the terminals is too great for the tension of the current to overcome the resistance offered by the air or other medium through which the current would have to pass: used in igniting charges in internal-combustion motor cylinders in the make-and-break system.

> The trip is worked by a vertical rod which moves up and down, and its end raises or lowers the trip and thus operates the *spark-break.* *Elect. Rev.*, Sept. 10, 1904, p. 386.

spark-catcher (spärk'kach″ėr), *n.* Same as ★*spark-arrester*, 2.

spark-coil, *n.* **2.** A coil of many turns of insulated wire on an iron core, used for producing a spark by opening the circuit of the coil, for electric gas-lighting, igniting the charge in the gas or gasolene engine-cylinder, etc.

spark-deflector (spärk'dẹ̄-flek″tọr), *n.* See ★*spark-arrester*, 2.

spark-gap (spärk'gap), *n.* The open space between the terminals of the secondary circuit of an induction-coil, or the similar space in any electric circuit, across which the disruptive electric discharge in the form of a spark takes place.

spark-hopper (spärk'hop″ėr), *n.* See ★*spark-arrester*, 2.

sparking-plug (spär'king-plug), *n.* See ★*spark-plug.*

sparking-point (spär'king-point), *n.* In explosion-engines, the terminal of the spark-producing device for ignition.

> It [electric reigniting device] consists of a spark-producing device contained in a cylindrical metal case, five inches long and three inches in diameter. Projecting from the upper side of this case is a stem surmounted by platinum *sparking points*, one of which is automatically movable. *Hiscox*, Horseless Vehicles, p. 404.

spark-instant (spärk'in″stant), *n.* The time or period, in the stroke of an internal-combustion motor, at which the spark which is to ignite the combustible mixture in the cylinder is caused to jump the gap between the terminals of an electric circuit in that cylinder. *F. R. Hutton*, Gas Engine, p. 219.

spark-knobs (spärk'nobz), *n. pl.* The knobs or balls with which the spark-gap of induction-coils, or other machines for the production of the disruptive discharge, is usually provided.

sparkle, *v. i.*—**Sparkling waters,** waters containing or charged with carbonic acid gas.

spark-lead (spärk'lēd), *n.* See ★*ignition*, 5.

spark-length (spärk'length), *n.* The distance traversed by the disruptive discharge in passing the spark-gap of any electric circuit. The spark-length affords a measure of the difference of potential between the terminals.

spark-lever (spärk'lev″ėr), *n.* The lever or handle by which the period at which a spark passes between terminals in an internal-combustion motor is controlled: used especially in motor-cars and motor-cycles, where such control of the instant of ignition is very important, as the resistance to be overcome or the desired speed may vary. Spark-levers are usually on the steering-post of motor-cars, and on the handle-bars of motor-cycles.

spark-micrometer (spärk'mī-krom″e-tėr), *n.* See ★*micrometer.*

spark-plug (spärk'plug), *n.* In internal-combustion motors, the apparatus which carries into the combustion-chamber the electric terminals, properly insulated, by which the charge of carbureted air or gas is electrically ignited at the proper time. It is a tube of non-conducting material, such as porcelain, inserted into a screwed bushing or plug fitting a threaded hole in the cylinder. The electric conductors are attached to platinum wires insulated in this tube and with their points projecting inside the cylinder, with a small air-gap ($\frac{1}{16}$ inch) across which the spark will jump and fire the mixture. If these points are foul or are too far apart, or if the current is of too low electric tension, the spark does not pass when the contact is made by the commutator, and the ignition fails and the motor stops.

> Instead of the usual *spark-plug*, a mechanical break is made in the cylinder head. This is carried out by using a contact piece which is fixed inside the cylinder.
> *Elect. Rev.*, Sept. 10, 1904, p. 386.

spark-spectrum (spärk'spek″trum), *n.* The spectrum of the light produced by an electric spark. Spark-spectra are usually bright-line spectra the character of which depends not only on the gases in the spark-gap but also upon the nature of the terminals: thus the spark between terminals of zinc, tin, cadmium, etc., gives a spectrum which contains the lines characteristic of the vapors of those metals.

spark-telegraphy (spärk'tel″ẹ̄-graf-i or -tẹ̄-leg'ra̤-fi), *n.* Same as *wireless* ★*telegraphy.*

Sparnacian (spär-nā'shia̤n), *a.* and *n.* In *geol.*, noting a division of the Lower Eocene Tertiary in northern France and Belgium, lying above the Thanetian or Thanet sands.

sparrow, *n.*—**Ipswich sparrow,** *Ammodramus princeps*, a species much like the well-known savanna-sparrow, but larger, without the yellow markings, and of a more rufous cast. It was named from Ipswich, Massachusetts, where it was discovered. It is restricted to the New England coast and immediate vicinity, breeding on Sable Island.— **Oregon sparrow.** See *Oregon song-sparrow.*— **Sea-shore sparrow,** *Ammodramus rostratus*, a species common on the Pacific coast.

sparrow-bottle (spar'ō-bot″l), *n.* A bottle or jar made to hang on a nail in a wall and serve as a nesting-place for house-sparrows: a device resorted to by farmers in certain districts of England in order to save their thatch roofs from the inroads of nesting sparrows.

sparsioplast (spär'si-ọ̄-plast), *n.* [Irreg. < L. *sparsus*, scattered, + Gr. *πλαστός*, formed.] A colored elæoplast found in certain diatoms. It is variable in number and position. See ★*stabiloplast.*

spar-varnish (spär'vär″nish), *n.* A superior make of varnish which is not affected by salt water, steam, soap, grease, or ammonia fumes. It is used as a coating for spars and all outside or exposed work where natural wood (unpainted) is found, such as boats, skylights, etc.

spasm, *n.*— **Malleatory spasm.** Same as *malleation*, 3. — **Mimetic spasm,** involuntary convulsive twitching of certain of the muscles of the face.— **Mimic spasm.** Same as *mimetic* ★*spasm.*— **Occupation spasm.** Same as *functional spasm* (which see, under *spasm*).

> Dr. James Putnam referred to the view that these continuous movements which hysterical patients sometimes carried on were the work of dissociated cerebral centres; they seemed to be performed without fatigue to the patient and differed from the "*occupation spasms*" (habit spasms) which occurred in some persons without any relation to hysteria, and which were brought on by work, and were attended with profound local fatigue of the affected parts. *Lancet*, June 25, 1904, p. 1810.

spasmophilia (spas-mọ̄-fil'i-ạ̈), *n.* [NL., < Gr. *σπασμός*, contraction, + *φιλεῖν*, love.] In *pathol.*, a tendency to convulsions from slight causes.

spasmophilic (spas-mọ̄-fil'ik), *a.* [*spasmophil(ia)* + *-ic.*] Relating to spasmophilia; marked by a tendency to tetany and other convulsive disorders. *Med. Record*, May 30, 1908, p. 963.

spasmotin (spas'mō-tin), *n.* [Gr. *σπασμός*, contraction, + *-ot-* + *-in*^{2}.] A yellow amorphous principle present in ergot in very small quantity and claimed by Jacobi to be the specifically active substance. It is probably impure sphacelotoxin.

Spastic gait. See ★*gait*^{1}.

spatch-cock (spach'kok), *v. t.* **1.** To kill and serve (a fowl) hastily, as a spatch-cock.— **2.** To prepare (something) in haste for an emergency; in the extract, to insert hastily into a document.

> As a matter of fact, the suggestion of surrender which he "*spatchcocked*" into one of his messages to General White was capable of an explanation not altogether discreditable to General Buller. *N. Y. Tribune*, Oct. 24, 1901.

3. *Milit.*, to punish by stretching upon the ground with arms and legs extended and fastened down.

Spathiocaris (spath″i-ok'a̤-ris), *n.* [NL., < Gr. *σπάθη*, a blade, + *καρίς*, a shrimp.] A group of organic structures having the form of oval or circular disks split at one end by a triangular cleft running from center to edge, composed of chitinous matter: originally described as phyllocarid crustacean carapaces and later as the opercula of cephalopods; their real nature is not known. They are found in Upper Devonian rocks.

spatialization (spā-sha̤l-i-zā'sho̤n), *n.* [*spatial* + *-iz(e)* + *-ation.*] The act of rendering spatial; the act of giving a spatial character (to).

> All forms of external experience are not alike calculated to awaken the mind to react with a *spatialization* of its objects. *B. P. Bowne*, Metaphysics, p. 209.

spatiology (spā-shi-ol'ọ̄-ji), *n.* [L. *spatium*, space, + *-λογια*, < *λέγειν*, speak.] The science of space, spaces, or hyperspaces, Euclidean or non-Euclidean.

> With the elliptic hypothesis (space finite) the Principle of Duality has full sway; in any theorem, points and straight lines, lengths and angles, being respectively interchanged, a new and true theorem results in the geometry of the plane. This is an æsthetic argument against the Euclidean scheme of *spatiology*.
> *W. B. Frankland*, Euclid with Commentary, p. 13.

spatter-cone (spat'ėr-kōn), *n.* A subordinate volcanic cone formed at mildly explosive vents that throw out little dabs of lava. They sometimes arise from the lava-flows themselves. *Chamberlin and Salisbury*, Geol., I. 580.

spattle^2 (spat'l), *v. t.* [*spattle*^{2}, *n.*] In *ceram.*, to sprinkle or mottle with colored glaze.

spawning-brush (spâ'ning-brush), *n.* A brush used in fish-hatcheries when the fishes are spawned (the eggs are taken). *Philos. Trans. Roy. Soc.* (London), 1900, ser. B, p. 307.

spawning-place (spâ'ning-plās), *n.* Any place selected by fishes to deposit their spawn, as the rocky shores chosen by codfishes or the river-beds by anadromous fishes.

> Some beds of this kind, in salmon-frequented rivers, have been notable from time immemorial as *spawning-places.* *Chambers' Encyclopædia*, IX. 114.

S. P. C. An abbreviation of *Society for the Prevention of Crime.*

S. P. C. A. An abbreviation of *Society for the Prevention of Cruelty to Animals.*

S. P. C. C. An abbreviation of *Society for the Prevention of Cruelty to Children.*

S. P. C. K. An abbreviation (*a*) in England, of *Society for Promoting Christian Knowledge*; (*b*) in Scotland, of *Society for Propagating Christian Knowledge.*

speak-easy (spēk′ē′zi), *n.* A bar-room or saloon where liquor is sold (illegally) without a license. Also used adjectively. [Slang.]

> There are to-day, as then, in abundance, disorderly houses, "*speak-easies*," saloons, or "clubs" where liquor is sold long after the permitted time, and tramps.
> *Josiah Flynt*, in McClure's Mag., June, 1901, p. 116.

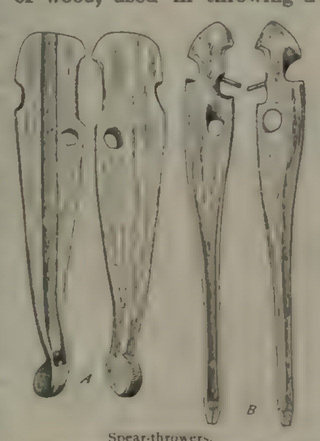
spear^1, *n.*—**Sucking spears,** in *entom.*, the coadapted mandibles and maxillæ, forming spear-like organs which are suctorial in function. These occur in the larvæ of the neuropterous families *Chrysopidæ*, *Hemerobiidæ*, *Myrmeleonidæ*, and *Coniopterygidæ*. *Cambridge Nat. Hist.*, V. 466.

spear-grass. **4.** In Australia, any one of several species of valuable forage grasses, namely, several species of the genus *Stipa* and *Andropogon contortus*. The seeds of these grasses are sharp and covered with fine barbs so that they easily become entangled in the wool of sheep and frequently penetrate the skin, often causing the death of the animal.—**Creeping sea spear-grass.** Same as *sea* or *sea-coast* ★*spear-grass.*—**Sea** or **sea-coast spear-grass,** a slender perennial grass, *Puccinellia maritima*, with creeping rootstocks, found on the northern coasts of both hemispheres. It is a valuable element in the salt-marsh hay of New England and the Middle States.—**Southern spear-grass,** a grass, *Eragrostis Purshii*, with lance-shaped spikelets, common from the Middle States to Arizona. It has no agricultural value. Two woodland grasses, *Poa brevifolia* and *P. autumnalis*, have also been so called.—**White spear-grass,** the reed meadow-grass, *Panicularia Americana*.

spearing (spēr′ing), *n.* **1.** The action denoted by the verb *spear*; specifically, in harvesting tobacco, the forcing of a pointed stick through the butts of several cut stalks which are to hang upon it while curing. For other methods see ★*pegging*, 6, and ★*splitting*.—**2.** A fish, *Trachinocephalus myops*, the ground-spearing, belonging to the family *Synodontidæ*, found in tropical parts of the western Atlantic.

spear-kite (spēr′kīt), *n.* See ★*kite*^{1}.

spear-thrower (spēr′thrō″ėr), *n.* An implement, usually of wood, used in throwing a spear so as to give it an increased velocity. Such implements are usually about two feet long, with a knob or notch at one end to engage the end of the spear, the other end being often provided with a special grip for the hand. They are found only in limited areas, such as among some Indian tribes of the coast of Alaska, the Eskimos, the Australians, in parts of South America, and in Mexico. Also called *throwing-board*.



Spear-throwers.
A, Ungava type; *B*, Yukon River type.
(In U. S. Nat. Museum.)

specchia (spek′ē-ä), *n.*; pl. *specchie* (spek′ę-ā). [It. dial., < L. *specula*, a lookout, a watch-tower. See *speculate*.] A kind of prehistoric stone structure found in southern Italy, supposed to have been intended for a watch-tower.

Special state. See ★*state*.

speciegraphic (spē-shi-ę-graf′ik), *a.* Same as ★*speciegraphical*.

speciegraphical (spē-shi-ę-graf′i-kąl), *a.* [*speciegraph*(*y*) + *-ic* + *-al*^{1}.] Of or pertaining to the scientific description or diagnosis of species.

speciegraphy (spē-shi-eg′rą-fi), *n.* [L. *species*, species, + Gr. -γραφία, < γράφειν, write.] The scientific description or diagnosis of species. Also *speciography*.

species, *n.* **10.** A former standard of currency in certain parts of Germany and in the north of Europe, apparently answering to the modern dollar of commerce.—**Agricultural species,** one of two or more plant types developed under cultivation from the same natural species and considered to be as distinct as natural species. **Bipolar theory of distribution of species.** See ★*bipolar*.—**Doctrine of the immutability of species.** See ★*pre-Darwinian*.—**Elementary species,** a number of individuals, within the limits of a species, characterized by a distinctive and hereditary peculiarity, or by more than one.

> What is a species, what is a new species? What is an *elementary species*, which has also been called a subspecies? *Pop. Sci. Mo.*, July, 1904, p. 217.

Form species, an apparent species which is only a form or stage in the development of a pleomorphous species.—**Superstitial species,** in *paleon.*, those species that survive into later geological periods and are hence found in formations higher than those in which they are normally characteristic or culminant.

species-cycle, *n.* **2.** In *biol.*, the series of forms needed to represent the species in its completeness. The species-cycle is the same as the ovum-cycle or genealogical individual, except in cases where the sexes are separate or polymorphism occurs. See *ovum-cycle*.

> The complete series of forms needed to represent the species . . . [is] the *species-cycle*. *Encyc. Brit.*, XVI. 843.

specific. **I.** *a.*—**Specific conductance** or **conductivity, refractivity.** See ★*conductance*, ★*refractivity*.

II. *n.* **2.** A definite substance in the serum of an animal that gives rise to a special kind of immunity.

speciographic (spē-shi-ǫ-graf′ik), *a.* [*speciograph*(*y*) + *-ic.*] Same as ★*speciegraphic*. *Science*, Jan. 10, 1902, p. 58.

speciography (spē-shi-og′rą-fi), *n.* Same as ★*speciegraphy*. *Science*, Jan. 10, 1902, p. 61.

speck^1, *n.*—**White speck of tobacco,** a disease producing small white spots on the leaves of tobacco caused by the fungus *Macrosporium tabacinum*.

speck^1, *v. t.* **3.** To stain or dot with ink small blemishes in (a finished fabric), so as to conceal or obliterate them.

spectacle, *n.* **8.** *pl.* Signal-glasses of varying color, held in a metal frame suggesting spectacles, to be moved in front of the lenses of signal-lights at night: usually of red and green if there are two. Also used, in the singular, for one frame with its colored glass.

> This calendar shows a miniature equipment of a complete signal system, presenting the arrangement of a universal ninety-degree *spectacle* for two positions, continuous light, lamp on top of post; also double ninety-degree *spectacles* arranged for two and three positions, and continuous light sixty-degree *spectacles* applied to a double arm for home and distant signals.
> *Elect. Rev.*, March 7, 1903, p. 356.

9. A frame with two bow-shaped handles for carrying well-boring tools.—**Bifocal spectacles,** spectacles having a lens of different focal distance, cemented to or replacing the lower portion of the main lens: a form of compound spectacles, usually distance and reading glasses combined in one frame.—**Pulpit spectacles,** spectacles with the upper part of the lens removed, enabling the wearer to look over them. [Colloq.] **Skeleton spectacles,** spectacles whose lenses are pierced with holes for the attachment of the temples and the bridge-piece for the nose, instead of being held in a wire frame.—**To make a pair of spectacles,** in *cricket*, to make a score of nothing in each inning. *Hutchinson*, Cricket, p. 76.

spectacle-frame (spek′tą-kl-frām), *n.* **1.** The frame, usually of metal, which holds the lenses of a pair of spectacles.—**2.** In *iron ship-building*, a cast-steel frame projecting from each side of the stern of a twin-screw steamer which supports the stern-bearings of the propeller-shaft in vessels of a form in which the hull of the vessel is bossed out to cover the whole screw-shaft. The spectacle-frame forms the after termination of the bossed-out part of the hull.

spectacle-iron (spek′tą-kl-ī″ėrn), *n.* The clue-iron in the lower corners of squaresails.

spectacle-scars (spek′tą-kl-skärz″), *n. pl.* In some *Brachiopoda*, such as the extinct genera *Obolus* and *Lingulella*, the two oval adductor muscle impressions which make spectacle-like scars on the inner surface of the valves.

Spectral series. See ★*series*.

spectrobolograph (spek-trǫ-bō′lǫ-gråf), *n.* [NL. *spectrum*, spectrum, + E. *bolograph*.] An automatic record of the distribution of energy in the spectrum, made by means of the bolometer. See ★*bolograph*.

spectrobolographic (spek″trǫ-bō-lǫ-graf′ik), *a.* [*spectrobolograph* + *-ic.*] Of or pertaining to a bolographic measurement of the spectrum; obtained by means of the spectrobolograph. *Smithsonian Rep.*, 1899, p. 69.

spectrobolometric (spek″trǫ-bō-lǫ-met′rik), *a.* [NL. *spectrum*, spectrum, + E. *bolometer* + *-ic.*] Of or pertaining to the measurement of the spectrum by means of a bolometer, or to the use of the spectrobolometer.

> Recent unpublished *spectrobolometric* studies at the Astrophysical Observatory show that on two apparently equally clear days, near the middle of March, 1902, with equal altitudes of the sun, the difference in the absorption in the well-known visible and infra-red water-vapor bands alone was such as to cause a difference in the solar radiation at the earth's surface of 7 per cent. Changes far in excess of this occur from the same cause between spring and summer.
> *U. S. Monthly Weather Rev.*, April, 1902, p. 180.

spectrocolorimetry (spek″trǫ-kul-ǫ-rim′e-tri), *n.* [NL. *spectrum*, spectrum, + E. *colorimetry*.] The spectrophotometric study of the colors of solutions and chemical compounds, especially as a method of chemical analysis.

spectrocomparator (spek″trō-kom′pą-rā-tǫr), *n.* [NL. *spectrum*, spectrum, + E. *comparator*.] An instrument devised by Hartmann for the precise comparison and measurement of photographs of line-spectra. *Nature*, Dec. 20, 1906, p. 182.

spectrogram (spek′trǫ-gram), *n.* [NL. *spectrum*, spectrum, + Gr. γράμμα, anything written.] The photograph of a spectrum, made by a spectrograph, that is, a spectroscopic camera.

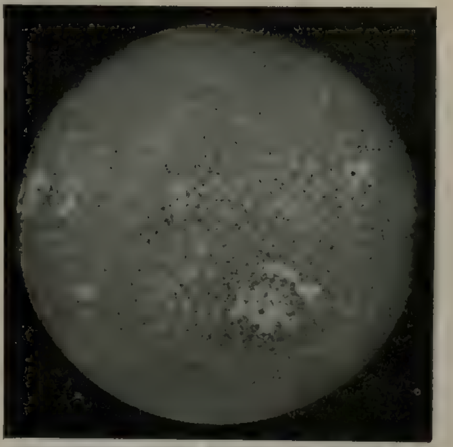
> *Spectrograms* taken with a slit by Professor Campbell at Jeur suggested, by the distortions of the characteristic ray impressed upon them, the progress of radial movements, such as might well be deemed inevitable in an aerial envelope obviously not in a state of equilibrium.
> [*A. M. Clerke*, Problems in Astrophysics, p. 131.

spectrograph, *n.*—**Autocollimating spectrograph,** a spectrograph the adjustment of which, as to collimation, is automatically done by means of a mechanical attachment. *Science*, Jan. 31, 1908, p. 167.—**Quartz spectrograph,** an apparatus for the photography of ultra-violet portions of the spectrum, the lenses and prisms of which are of quartz. The absorption of the shorter wave-lengths by glass is thus avoided and the range of the instrument is increased.

spectrographic, *a.*—**Deslandres's spectrographic method,** a method of determining the rate of rotation of a planet by measuring the inclination of the lines in the photograph of its spectrum to those of an adjacent comparison spectrum, the slit of the spectroscope being adjusted so as to coincide with the equator on the planet's image.—**Keeler's spectrographic method,** the method of determining the rotation rate of a planet by placing the slit of the spectrograph across the equator of the planet's image and measuring the apparent inclination of the lines in its spectrum to the lines in the sky-spectrum taken on the same plate as soon as possible without disturbing the instrument. According to Doppler's principle, the lines at one limb of the planet will be shifted slightly toward the red and at the other toward the blue by the planet's rotation, and thus slightly tilted.

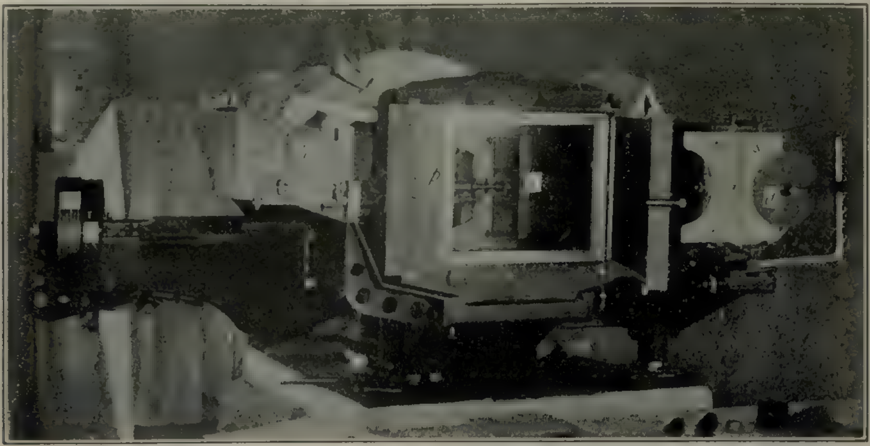
spectrographically (spek-trǫ-graf′i-kąl-i), *adv.* By means of the spectrograph; by means of spectrographic methods. *Nature*, Sept. 17, 1903, p. 477.

spectroheliogram (spek-trǫ-hē′li-ǫ-gram), *n.* [NL. *spectrum*, spectrum, + Gr. ἥλιος, sun, + γράμμα, anything written.] A photograph of the sun made by means of the spectroheliograph with monochromatic light, usually that of one of the violet calcium lines (K or H), and showing the details of the sun's surface and surroundings as they would appear if no other kind of light were emitted.



Spectroheliogram showing the calcium (H_2) flocculi (1906, August 25, 6^h 18^m A. M., Pacific Standard time), made with five-foot spectroheliograph of Mt. Wilson Solar Observatory.

spectroheliograph (spek-trǫ-hē′li-ǫ-gråf), *n.* [NL. *spectrum*, spectrum, + Gr. ἥλιος, sun, + γράφειν, write.] A specialized spectrograph, invented independently by Hale in the United States and by Deslandres in Paris about 1892, for the purpose of photographing the sun by monochromatic light. Its essential feature is a second slit placed immediately in front of the sensitive plate so as to isolate some line of the spectrum, all other light being cut off. The instrument is used in connection with a telescope so pointed as to throw the image of the sun upon the collimator slit. If then this slit is made to traverse the sun's image, and a corresponding motion is accurately communicated to the second slit, the object will be attained. A better plan is to keep the two slits fixed, and to cause the image of the sun to travel across the slit by moving the telescope, while a corresponding motion is automatically communicated to the sensitive plate. This is the arrangement used at the Yerkes Observatory. Deslandres has improved the instrument by placing a second spectroscope 'tandem' with respect to the first. The slit which was next the photographic plate becomes the collimator slit of the second spectroscope, while a third slit is placed before the sensitive plate of that spectroscope; this secures a more perfect isolation of the ray which forms the image. The instrument is based upon the fact that the dark lines of the solar spectrum are dark only relatively to the background and are really luminous.



Five-foot Spectroheliograph mounted for use with Snow telescope (Mt. Wilson Solar Observatory).

In this case the solar image and plate remain stationary, while the box, *b*, containing the prisms and lenses, and the slits, *s* and *s′*, are moved slowly sidewise by a screw turned by the wheel *m*, which is connected by an endless cord with a distant electric motor. To insure an even motion, the box and slits are supported by wooden blocks floating in mercury. The plate in its plate-holder is clamped into position at *p*, and the solar image brought to a focus at *d*. The disk, *d*, is left in position if the prominences at the limb of the sun are to be photographed; but is removed when a spectroheliogram of the entire solar disk is to be made.

> George E. Hale, under the title of The Rumford *Spectroheliograph* of the Yerkes Observatory, described in detail the *spectroheliograph* recently constructed at the Yerkes Observatory for photographing the sun in monochromatic light, in conjunction with the forty-inch telescope. Photographs which have been taken with the *spectroheliograph* show a finely mottled structure covering the entire surface of the sun. In certain parts of the sun, and especially in the neighborhood of sun spots, there are extensive regions of very bright calcium vapor. The photographs taken with this instrument include those which represent the denser calcium vapor at low levels in the solar atmosphere, and others showing the less dense vapor at higher levels.
> *Sci. Amer.*, May 9, 1903, p. 351.

spectroheliographic (spek-trọ-hē″li-ọ-graf′-ik), *a.* Of or pertaining to the spectroheliograph; obtained by means of the spectroheliograph.

> Prof. Julius's contribution to the subject, entitled '*Spectroheliographic* Results explained by Anomalous Dispersion.' According to his view, the photographic results achieved require no new hypothesis to explain their peculiarities. *Athenæum*, April 29, 1905, p. 535.

spectrometer, *n.*—**Bolometric spectrometer,** a spectrometer having a bolometer in place of the eyepiece: same as *spectrobolometer.*

spectrometry (spek-trom′e-tri), *n.* [*spectrometer* + $-y^3$.] The measurement of wave-lengths by means of a spectrometer.

spectromicroscope (spek-trọ-mī′krọ-skōp), *n.* [NL. *spectrum*, spectrum, + E. *microscope.*] A microscope in which a spectroscope replaces the eyepiece.

spectromicroscopically (spek-trọ-mī-krọ-skop′i-kạl-i), *adv.* In a manner pertaining to the spectroscopy of minute objects; by means of the spectromicroscope.

spectrophotograph (spek-trọ-fō′tō-gräf), *n.* [NL. *spectrum*, spectrum, + E. *photograph.*] The photograph of a spectrum. *Philos. Trans. Roy. Soc.* (London), ser. A, p. 118.

spectrophotography (spek″trọ-fọ-tog′rạ-fi), *n.* [NL. *spectrum*, spectrum, + E. *photography.*] The photography of spectra. *Woodbury*, Encyc. Dict. of Photog., p. 304.

spectrophotometer, *n.* To serve as a spectrophotometer a spectroscope must be so constructed as to permit of the production side by side, wave-length corresponding with wave-length throughout, of the spectra of the two sources of light to be compared. It is also necessary to be able to vary the intensity of these spectra separately by any desired amount, and to measure the amount of such variation. In some instruments the light which is to form one of the spectra is introduced into the slit of the spectroscope by placing a right-angled reflection-prism over half the slit, as shown in Fig. 1. The sources of light to be spectrophotometrically compared being placed at *A* and *B*, the light from *A* enters the slit directly, while that from *B* is totally reflected within the prism into the other half of the slit. The line dividing the spectra, in instruments in which this device is used, lacks sharpness, and the ray from *B* suffers losses by reflection and absorption. To secure symmetry two reflecting-prisms are sometimes used, as in the *horizontal slit photometer* of Nichols (Fig. 2), in which the light from *A* and *B* is reflected into the slit from either side by means of the two similar prisms *P*, *P*. Numerous other devices have been employed for this purpose, one of the most satisfactory of which is that of the *Lummer-Brodhun spectrophotometer.* This instrument has two collimators, *C* and *C′* (Fig. 3), mounted at right angles to each other. An arrangement consisting of two right-angled prisms placed together so as to form a cube (*L*), known as the *Lummer-Brodhun body*, transmits a portion of the light from *C* to the prism *P* and reflects a portion of the light from the collimator *C′* at the surface separating the two prisms. The reflected beam, thus rendered parallel to that from collimator *C*, likewise enters the prism *P*, and both beams are dispersed, forming adjacent spectra which may be observed in the usual manner by means of the telescope *T*. In *Brace's spectrophotometer* (Fig. 4) the dispersing-prism *P* is split and a portion of the interface *SS* is silvered. A portion of the light from the collimator *C* passes through the unsilvered parts of the interface and enters the telescope *T* after dispersion in the usual manner. Light from *C′*, reflected from the silvered strip, also enters *T* and forms a spectrum adjacent to that from *C*. In the spectrophotometric comparison of two sources of light, different regions of their spectra are isolated successively by means of a diaphragm in the eyepiece of the instrument. Each of these is brought in succession to the same intensity, and for each region the reduction to which the brighter of the two spectra must be subjected to produce equality is noted. It is then possible to express the brightness of one of the spectra, wave-length for wave-length, in terms of that of the other, which is called the comparison spectrum, and to express the relation between the two by means of a curve known as the curve of relative intensities. To produce equality of the spectra, Vierordt substituted for the slit of the ordinary spectroscope a double slit the upper and lower halves of which could be opened and closed independently by means of separate micrometer-screws. The brightness of the spectrum of the light entering either half of such a slit is approximately proportional to the slit-width, so that when the two spectra are equal the ratio of the intensities is readily computed from that of the slit-widths. In instruments of the Lummer-Brodhun type the measurement is made by adjusting the slits of the two collimators. Another means of equalizing the two spectra in a spectrophotometer consists in polarizing the light before dispersion and of regulating the light which reaches the eye by the rotation of a Nicol prism. The measurement of the angle between the plane of the polarizing prism and that of the analyzer gives the ratio of the two intensities. Such polarizing devices are used in the spectrophotometers of Hüfner, Glan, Koenig, Gouy, and others. To avoid the errors introduced by varying the width of the collimator-slits, the two spectra are sometimes brought to equality by placing in the path of the beam of light from the brighter source a revolving open-sectored disk so constructed that the openings are capable of adjustment during observation. The ratio between the open and closed sectors gives directly the reduction in intensity of the periodically interrupted beam. By means of the spectrophotometer it is possible to determine quantitatively the character of the light emitted by various flames and artificial light sources, the selective absorption of substances through which light is transmitted, and the selective reflection of surfaces, and to find the distribution of energy in all sorts of continuous spectra.—**Flicker spectrophotometer,** an instrument for the determination of the luminosity of different parts of the spectrum, in which each region of the spectrum is separately compared in brightness with an undispersed beam of light by the method of the flicker photometer. See ★*photometer.*

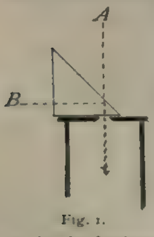


Fig. 1.

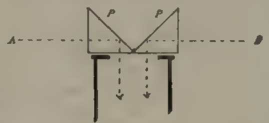


Fig. 2.

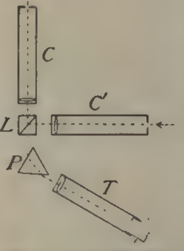


Fig. 3. Lummer-Brodhun Spectrophotometer.

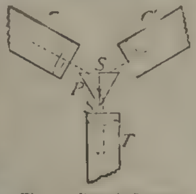


Fig. 4. Brace's Spectrophotometer.

spectrophotometrically (spek″trọ-fō-tọ-met′-ri-kạl-i), *adv.* By means of the spectrophotometer; by comparisons as to brightness, wave-length by wave-length, throughout the spectrum.

spectropolarigraph (spek″trọ-pọ-lar′i-gräf), *n.* [NL. *spectrum* + L. *polaris*, polar, + Gr. *γράφειν*, write.] A spectrograph with a Nicol prism behind the slit.

spectropolarimeter (spek-trọ-pō-lạ-rim′e-tėr), *n.* [NL. *spectrum* + E. *polarimeter.*] An instrument in which are combined a spectroscope and a polariscope, used for determining the amount of optical rotation of media. *W. D. Halliburton*, Chem. Physiol. and Pathol., p. 53.

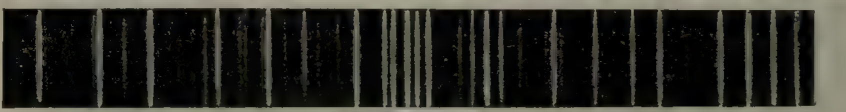
spectropolariscope, *n.* **2.** A sensitive form of half-shadow polariscope, used in combination with a spectroscopic apparatus in the study of the polarization of light.

spectrorefractometer (spek″trọ-rē-frak-tom′-e-tėr), *n.* [NL. *spectrum* + E. *refractometer.*] An instrument for the determination of the dispersion constants of liquids.

spectroscope, *n.*—**Constant-deviation spectroscope,** a form of spectroscope in which the prism is always at minimum deviation. The collimator and telescope are at right angles to one another.—**Echelon spectroscope,** a spectroscope of high dispersive power, invented by Michelson, in which the spectrum is produced by diffraction at the projecting edges of a set of glass plates arranged stepwise, as an echelon.—**Fixed-arm spectroscope,** a form of spectroscope in which collimator and view-telescope are firmly fixed upon a pier and different parts of the spectrum are brought into view by motion of the prism-train or grating, or by reflection from a mirror in the prism-box.—**Interference spectroscope,** a spectroscope, as the echelon spectroscope of Michelson or the more recent instrument of Lummer and Gehrke, in which dispersion is obtained through interference of light.—**Objective spectroscope,** a form of slitless spectroscope.—**Protuberance spectroscope.** See ★*protuberance-spectroscope.*—**Slitless spectroscope,** a spectroscope without a slit. The objective spectroscope is the most usual form.—**Slit spectroscope,** a spectroscope of the usual form, with collimator and slit: distinguished from the objective or slitless spectroscope.—**Stellar spectroscope,** a spectroscope adapted to the observation of star-spectra.

Spectroscopic camera, doubles, eyepiece. See ★*camera*, ★*double*, 18, and ★*eyepiece.*

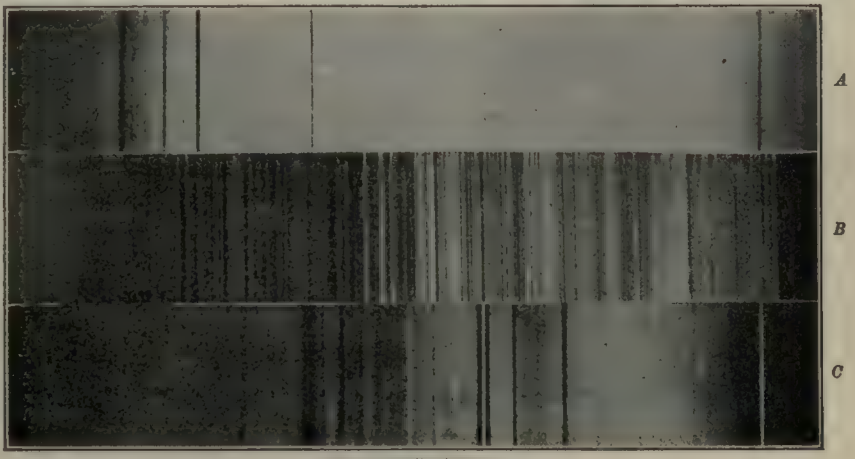
spectrum, *n.*—**Abnormal spectrum,** a spectrum in which the dispersion varies with the wave-length: opposed to *normal spectrum.*—**Actinic spectrum,** the spectrum considered with reference to its chemical or photographic action. Since the violet and ultra-violet rays are of great actinic power, the term is sometimes applied specifically to those parts of the spectrum in which they lie; however, such power is not confined exclusively to any definite region of the spectrum.—**Arc-spectrum,** the spectrum obtained from the light of the electric arc. The term is applied not only to the spectrum of the ordinary arc between carbon terminals, but also to the bright-line spectra obtained by volatilizing various substances in the arc or by using metals as terminals.—**Artificial spectrum top.** See ★*top*³.—**Atmospheric spectrum,** the spectrum formed by the refraction and dispersion of a beam of light in its passage through the atmosphere.—**Banded spectrum,** a spectrum consisting of bright bands of light, not monochromatic but nearly so, or a continuous spectrum crossed by dark bands due to absorption.—**Bolometric spectrum,** that portion of the spectrum, lying chiefly in the infra-red, which it is possible to explore and measure by means of the bolometer.—**Bright-line spectrum,** a discontinuous spectrum consisting of bright lines due to the radiation from an incandescent vapor or gas.—**Channeled spectrum.** Same as *fluted spectrum.*—**Comparison spectrum,** a reference spectrum brought into the field of a spectroscope or spectrophotometer for comparison, wave-length by wave-length, with the spectrum under observation.—**Compound spectrum,** a gas spectrum of more complex structure than the usual bright-line spectrum, obtained from a glowing gas or vapor.—**Diffraction-spectrum,** a spectrum which is produced by the diffraction of light as by a grating or set of closely ruled parallel lines.—**Discontinuous spectrum,** a banded, fluted, or channeled spectrum; a line spectrum; any spectrum in which some of the wave-lengths are absent.—**Emission-spectrum,** the spectrum of the light emitted by a glowing substance, owing its character to the composition of that light, and not, as in the case of absorption-spectra, to the effect of the media through which the light has passed.—**Energy-spectrum,** a curve whose abscissæ



Bright-line Spectrum.

represent the wave-lengths and whose ordinates represent the intensity or amount of radiant energy transmitted by each individual wave-length.—**Flash-spectrum.** See ★*flash-spectrum.*—**Fluorescence-spectrum,** the spectrum of the light emitted by a substance when excited to fluorescence.—**Fraunhofer spectrum,** a continuous spectrum crossed by black lines such as the spectrum of the sun or of certain fixed stars: so called because these lines were first observed by Fraunhofer (1814).—**Gas-spectrum,** the emission-spectrum of a glowing gas or the absorption-spectrum due to the dispersion of light which has been transmitted by a vapor or gas.—**Grating-spectrum,** the spectrum produced by transmission of light through or reflection from the surface of a diffraction-grating; a diffraction-spectrum.—**Infra-red spectrum.** (*a*) A spectrum the wave-lengths of which all exceed that of the extreme red of the visible spectrum, as in the case of a body below the red heat. (*b*) That portion, of any spectrum, which consists of rays less refrangible than the longest wave-lengths of the visible spectrum.—**Lunar spectrum,** the spectrum of sunlight reflected from the moon and modified by the selective reflection of that body.—**Magnetic spectrum,** the band of light observed when a phosphorescent screen is subjected to the action of a stream of cathode rays which have been deflected from their path by a magnetic field. Owing to the differing velocities of the cathode particles they are not all equally deflected, and the single spot of light which would have marked the point of contact of the stream with the screen is elongated, giving what has been termed the *magnetic spectrum.*—**Metallic spectra,** bright-line spectra of the metals. The number and wave-lengths of the lines vary greatly according to the metal from whose vapor they are emitted and also according to the temperature to which the vapor is heated. Thus fewer lines appear in the spectrum of a metal capable of being volatilized in the flame of a Bunsen burner than in the spark-spectrum or arc-spectrum of the same metal. The number of lines is vastly greater in the case of some metals, such as iron or titanium, in whose spectra thousands of lines have been mapped, than in others, such as sodium, lithium, and thallium, which have but few strong lines in the visible spectrum. As we pass from the visible spectrum to the shorter wave-lengths of the ultra-violet, the lines of metallic spectra become as a rule more numerous, although they no longer excite vision and are to be detected only by photography or by their power to produce fluorescence and phosphorescence. In some cases metallic spectra are a source of intense illumination. Thus the red lines of the strontium spectrum are used in signaling under the name of red fire; the calcium spectrum in combination with the spectra of certain other substances forms the chief source of light in the flaming arc; the spectra of titanium and iron are prominent in the so-called magnetite arc, while the mercury arc-lamp derives its light solely from the mercury spectrum. The sodium spectrum, zinc spectrum, cadmium spectrum, iron spectrum, mercury spectrum, and many other metallic spectra have numerous uses in science. The iron spectrum, with its numerous and widely distributed lines, affords an excellent scale of wave-lengths in the study of other spectra. The red line of the lithium spectrum, the yellow lines of the sodium spectrum, the green lines of the spectra of mercury and thallium are used as sources of monochromatic light. The following table gives the wave-lengths of some of the most prominent lines in the visible spectrum of several elements. Wave-lengths are given in Angstrom units. **Mixed spectrum,** a spectrum of a source of such breadth, in the plane of dispersion, that the overlapping of the spectral images causes appreciable mingling of unlike wave-lengths.—**Multiple spectra,** spectra differing as to the number, arrangement, and position of their lines or bands, but all pertaining to the same substance.—**Normal spectrum,** a spectrum of uniform dispersion in which equal distances measured in the plane of dispersion correspond to equal changes of wave-length.—**Phosphorescence-spectrum,** the spectrum of the light emitted by a phosphorescent body. Such spectra, which frequently consist of two or more broad bands, may vary in character, according to the interval of time that has elapsed since the close of excitation, because the bands may diminish in brightness at different rates.—**Planetary spectrum,** the spectrum of sunlight reflected from any planet and modified in composition by absorption in the planet's atmosphere and selective reflection at its surface.—**Prismatic spectrum,** a spectrum produced by the dispersive action of a prism or train of prisms.—**Pure spectrum,** one in which the overlapping of the spectral images of the source produces no appreciable mingling of unlike wave-lengths.—**Radiation-spectrum.** Same as *emission-*★*spectrum.*—**Solar spectrum,** the spectrum of the sun's light. See *spectrum*, 3.—**Spark-spectrum,** the bright-line spectrum of the light of an electric discharge.—**Spectrum of the second order,** the second spectrum in either of the two symmetrical series of spectra produced by a diffraction-grating. The innermost spectra of these groups are termed *spectra of the first order*, the third pair, counting from the axis, *spectra of the third order*, etc.—**Spectrum top.** See ★*top*^{3}.—**Stellar spectrum,** the spectrum of a fixed star.—**Swan spectrum,** the fluted or channeled spectrum of the non-luminous parts of a hydrocarbon flame: so called because it was first mapped by Swan in 1857. The characteristic flutings of this spectrum have been found to be due to carbon monoxid.—**Thermal spectrum,** a spectrum of heat-waves, specifically of the infra-red waves.—**Ultra-violet spectrum,** that portion of any spectrum that consists of rays of greater refrangibility than those which constitute the visible portion.

Element.	Wave-lengths of important lines.
Lithium	6708., 6104., 4972., 4602., 4273., 4132., 3985., 3915.
Sodium	6161/55., 5890/96., 5680., 5150., 4980., 4750., 4670., 4540., 4500., 4390., 4320.
Potassium	6930/11., 5832/12., 5802/782., 5360/43., 5340/24., 5112/098., 5100/085., 4966/52., 4957/43., 4864/51.
Magnesium	5529., 5184/73/68., 4703., 4352., 4058.
Barium	6142., 5854., 5778., 5535., 4934., 4554., 3994.
Calcium	6494., 6463., 6439., 6162., 6122., 5858., 5594., 5589., 5350., 5270., 4878., 4586., 4454/35/26., 4302., 4227., 3969.
Strontium	5504., 5481., 5257., 5239., 5156., 4962., 4832/12., 4607., 4216., 4078.
Zinc	6364., 5182., 4811., 4722., 4630.
Cadmium	6439., 5086., 4800., 4678.
Mercury	5770/90., 5461., 4358., 4047/78.
Aluminium	3962/44.
Indium	4511., 4102.
Thallium	5351. (also 5940., 5154., 5079., 4983., 4737.; spark-lines).
Tin	5632., 4524. (also 6453., 5799., 5589., 5564., 5333., 4859., 4586.; spark-lines).
Lead	6002., 4168., 4058/62., 4020.
Antimony	4034.
Bismuth	5552., 4723., 4493., 4308.
Tungsten	5071., 5054., 4171., 4138., and very many less intense lines.
Uranium	5528., 5495., 5483., 5478., 4544., 4342., 4270., 4242., 4090., and very many weak lines.
Molybdenum	5571., 5533., 5507., 4382., 4326., 4293/92., 4277., 3903., 3798., and many other lines.
Titanium	5036., 5014., 4990., 4556.—4513. (a group of nine lines), 3999., 3990., 3982., and very many weaker lines.
Chromium	5209/06/05., 4290., 4275., 4255., and many weaker lines.
Manganese	6014/17/22., 5341., 4415., 4035/33/31., and numerous other lines.
Iron	6495., 6192., 6137., 6066., 5863., 5616., 5587., 5195/93., 5041., 4384., 4270., 4072/64/46/05., and numerous weaker lines.
Cobalt	5484., 4868/40/14., 4534/31., 4122/19/11., and many other lines.
Nickel	6177., 5893., 5477., 5084/81/80., 4866/56., 4716/15., 4649., 4471/63/59/02., and many other lines.
Copper	5782/00., 5218., 5106/53., 4023/63.
Silver	5472/66., 5209., 4669., 4476., 4213., 4212., 4055., 3982.
Gold	5838., 4793.



Types of Stellar Spectra.
A, α Cygni; B, Betelgeux; C, μ Centauri.

specularite (spek′ụ̄-lär-īt), *n.* [*specular* + *-ite*^{2}.] Same as *specular iron*, or *hematite*.

speculum, *n.* 7. In *astrol.*, a table exhibiting at one view the latitudes, destinations, semi-arcs, etc., of the planets in a nativity.—**Bridge-like speculum,** in *ichth.*, a mesocoracoid, a bone of the shoulder-girdle in the soft-rayed fishes. It arches from the hypercoracoid to the hypocoracoid.

specus (spē′kus), *n.* [L. *specus*, a cave, ditch, channel, underground watercourse, etc.] In *Rom. archæol.*, the channel or waterway of an aqueduct, usually of masonry and vaulted over. This was carried underground and on embankments, according to the level, but also for great distances on long arcades.

speech, *n.*—**Clipped speech.** See ★*clipped.*—**Explosive speech,** sudden, loud enunciation, constituting a disorder of speech occurring as a symptom of certain forms of cerebral disease.—**Internal speech,** in *psychol.*, endophasia; the contents of consciousness when speech is reproduced or recalled, whether or not the reproduction prompts to utterance.

> The rise of the larynx for high tones and its fall for low ones indicate activity of the thyrohyoid and sterno-thyroid muscles. Movements during *internal speech* have been similarly registered.
> *Scripture*, Exper. Phonetics, p. 266.

Slurred speech, the clipping of syllables or entire words which sometimes characterizes speech in general paralysis of the insane.—**Visible speech.** See *visible.*

speech-curve (spēch′kėrv), *n.* A speech-record; a graphic representation of the flow of speech, as obtained by means of the phonautograph, phonograph, gramophone, etc.

> The analysis of *speech curves* might be greatly facilitated by an inspection of curves produced by compounding vibrations of known characters.
> *Scripture*, Exper. Phonetics, p. 67.

speechfulness (spēch′fůl-nes), *n.* The character or fact of being speechful; loquacity. [Rare.]

> Sensory aphasia is . . . in the beginning . . . the aphasia of comparative *speechfulness*, while motor aphasia in the beginning is usually absolute speechlessness.
> *Buck*, Med. Handbook, I. 414.

speech-song (spēch′sông), *n.* See ★*song-speech.*

speed, *n.* 6. Rapidity of action, as of a lens. The speed of a lens is dependent upon the amount of light it projects on the plate.

> There is much talk regarding the *speed* of various lenses. The matter is simple in the extreme. The *speed* of the lens depends upon no mystical properties, but almost entirely upon the amount of light which it projects on the plate. As in a house, the larger the window compared to the size of the room, the greater the light; so with the lens, the more light that passes through it the speedier the lens. *Trade Catalogue.*

7. In *mech.*, a device by which the rate of motion may be changed or controlled, particularly in motor-vehicles.

> It will be readily observed that the main driving *speed*, as well, also, the intermediate and backing *speeds*, are operated by friction disks through the operation of two hand levers. *Hiscox*, Horseless Vehicles, p. 251.

Critical speed. (*a*) The highest speed at which a machine, or part of a machine, can be operated without breaking. (*b*) The speed at which a machine, vibration, or other periodic element synchronizes with another machine, vibration, or periodic element: for example, the synchronizing of the speed of a machine with the period of vibration of the building in which it is operated. (*c*) A rate of travel or speed of revolution of the drivers of a locomotive or of a motor-car at which the rate of flow of steam, or motor fluid to the cylinder, is so retarded by friction in passages, or otherwise, that further increase of speed is not accompanied by increase of power. This may also occur because of diminished adhesion of the drivers to the rail or road surface at such high speed.—**Rotary speed,** speed of revolution; angular velocity.

speed-cone, *n.* 2. A cone-shaped form made of light canvas painted black displayed by each vessel when war-ships are steaming in fleet or squadron, to indicate to all other vessels the speed and direction of motion of its propelling engines. The cone is suspended from the yard-arm by signal-halyards in such a way that it may be made to point upward or downward to indicate motion ahead or astern respectively. The height to which the cone is hoisted between the ship's rail and the yard-arm is proportionate to the speed of the engine. In a twin-screw vessel a cone on each side of the vessel may be used to give indication of the motions of the starboard and port engines respectively.

speed-controller (spēd′kọn-trō″lėr), *n.* A form of friction-coupling designed to transmit power from one shaft to another at variable speeds. The simplest type is composed of two cones placed one above the other with the apex of one opposite the base of the other. The upper or delivery cone is on the driving-shaft and revolves with it at a uniform speed. The transmitting-cone is placed on another shaft immediately under the first cone. The frictional contact between the two cones is made by means of a sliding contact-belt placed between them. A slight change in the position of the contact-belt along the line of contact of the two cones will produce a change of speed. Another type consists of two pairs of conical disks placed side by side, one disk of each pair being mounted on a hollow shaft or sleeve and the other disk of each pair being mounted on a shaft which runs through the sleeve. The central disks, on the sleeve, form the delivery-disks, and the two outside disks, on the shaft, are the transmitting-disks. Between each pair of delivery- and transmitting-disks are two smaller disks pivoted at right angles with the larger disks and touching each one at some point of its surface. By rotating the small disks the points of contact may be changed, each change in relative position between the disks causing a change of speed. A third type, called the *speed-changing pulley*, employs two large disks and two small disks, the larger disks each being a pulley, one carrying the delivery-belt and the other the transmitting-belt. The same principle is used with different forms of pulleys. Electric motors used to drive lathes and other machine-tools also employ electrical speed-controlling appliances. See *friction-cones, friction-gearing,* and *motor.*

speed-counter (spēd′koun″tėr), *n.* Same as ★*counter*¹, 2.

speeder, *n.* **5.** A regulator or governor for controlling the revolutions of a machine, such as an electric motor.

speed-gear (spēd′gēr), *n.* That arrangement of the gear-train driving a machine which makes it run at its highest speed. *Science Abstract*, VI. sec. B, p. 49.

Speeding up. See the extract.

> The workman steadily becoming less and less of an individual producer, working at his own speed, and more and more a member of a "team," or set of operatives each performing a small part of the process, and thus obliged to keep up with each other. This enforced "*speeding up*" would be all very well if the old plan of paying by the piece were continued. *Webb*, Indust. Democracy, I. 399.

speed-lathe (spēd′lāᴛʜ), *n.* Any lathe which runs at a high speed or faster than the iron-working lathes. All wood-working lathes are speed-lathes.

speed-light (spēd′līt), *n.* *Naval*, in station-keeping, one of the stern-lights displayed by each ship in line, to regulate the speed of the following ship if station is to be kept properly.

> The Sub watches the *speed-lights* of the next ahead, for as those lanterns change so must he adjust his pace. . . . The leading ship has slowed a certain number of revolutions, . . . but she has not changed her *speed-light* in time. . . . But *speed-lights* unless properly handled . . . are, he doubts not, an invention of the Devil.
>
> *Kipling*, A Fleet in Being, ii.

speed-limit (spēd′lim″it), *n.* See ★*engine-stop.*

speedometer (spē-dom′e-tėr), *n.* [*speed* + Gr. *μέτρον*, measure.] A speed-recorder; a speed-indicator or recorder adapted to an automobile, carriage, or bicycle. See *speed-indicator.*

speed-reducer (spēd′rẹ-dū″sėr), *n.* A set of grooved wheels, of various diameters, by means of which the rate of rotation of an apparatus driven, for instance, by an electric or water motor may be reduced by any required amount.

> The power by which the discs were rotated was obtained from a Crocker-Wheeler motor, whose speed was reduced by a Pillsbury *speed reducer.*
>
> *Amer. Jour. Psychol.*, VIII. 494.

speedway (spēd′wā), *n.* A public road set apart for fast driving. [U. S.]

speiskobalt (shpīs′kō″bält), *n.* [G., < *speis(e)*, mortar, + *kobalt*, cobalt.] A German name for the cobalt-nickel diarsenide, smaltine.

spel, *n.* and *v.* A simplified, and former, spelling of *spell.*

speleological (spē″lẹ-ọ-loj′i-ka̤l), *a.* [*speleolog(y)* + *-ical.*] Of or pertaining to speleology, or the study of caves.

> The progress of *speleological* exploration in Yorkshire by the members of local scientific societies.
>
> *Geog. Jour.* (R. G. S.), XV. 78.

speleologist (spē-lẹ-ol′ọ-jist), *n.* [*speleolog(y)* + *-ist.*] One who is concerned in the exploration and study of caves; a student of speleology.

> Palæontology and archæology have been until now the principal objects of English *speleologists.*
>
> *Geog. Jour.* (R. G. S.), X. 500.

speleology (spē-lẹ-ol′ọ-ji), *n.* [F. *spéléologie*, < Gr. *σπήλαιον*, a cave, + *-λογια*, < *λέγειν*, speak.] The scientific study of caves.

> E. A. Martel in France has initiated the special study of caverns, a fascinating branch of minor exploration, to which the name *Speleology* has been applied, and to which attention is now directed in all European countries.
>
> *Encyc. Brit.*, XXVIII. 629.

spelt⁴ (spelt), *n.* An unrecognized abbreviation of *spelter*, a commercial name of zinc.

speltz (spelts), *n.* [G.] Same as *spelt*¹, *n.*

Spencerian, *a.* **2.** Pertaining or relating to P. R. Spencer or to his system of free-hand writing, introduced about the middle of the nineteenth century.

spender, *n.* **2.** In *leaching*, the pit in which the bark is leached. *C. T. Davis*, Manuf. of Leather, p. 61.

Spenerism (spā′nėr-izm), *n.* The Pietist doctrines taught by Philip Jacob Spener of Strasburg, Germany, in the latter half of the seventeenth century. The system was a protest against the dogmatism in the Lutheran Church engendered by its continuous controversies with Geneva and Rome, and against the low state of public morals due to the incessant preaching of dogma. Stress was laid on the duty of active morality.

spergulin (spėr′gū-lin), *n.* [NL. *Spergul(a)* (see def.) + *-in*².] A colorless amorphous compound, $(C_5H_7O_2)_x$, contained in the seeds of *Spergula arvensis.* Its alcoholic solution exhibits an intense blue fluorescence.

Spermaceti cerate. See ★*cerate*¹.

spermacrasia (spėr-ma̤-krā′zịä̤), *n.* [NL., < Gr. *σπέρμα*, seed, + *ἀκρασία*, ill condition.] Same as *spermatorrhea.*

spermanucleinic (spėr″ma̤-nū-klẹ-in′ik), *a.* [Gr. *σπέρμα*, seed, + L. *nucleus*, nucleus, + *-in*² + *-ic.*] Noting a nucleinic acid obtained from the testicles of certain animals. A product of this order derived from the salmon has the formula $C_{40}H_{54}N_{14}O_{17}.2P_2O_5$.

Spermaphyta (spėr-ma̤-fī′tä̤), *n. pl.* [NL.] Same as ★*Spermatophyta.*

spermase (spėr′mās), *n.* [Gr. *σπέρμα*, seed, + *-ase.*] An oxidizing ferment which occurs in barley grains.

> Grüss has recently observed an oxidizing enzym in barley grains which has no reaction on guaiac, but yields a violet color with tetramethylparaphenylendiamine. He calls it *spermase.* *U. S. Dept. Agr. Rep.* 68, p. 39.

sperm-aster (spėrm′as″tėr), *n.* The aster associated with the male pronucleus or head of the spermatozoön during the precleavage stages of the fertilized egg. *Biol. Bull.*, April, 1904, p. 226.

spermatangium (spėr-ma̤-tan′ji-um), *n.*; pl. *spermatangia* (-ä̤). [NL., < Gr. *σπέρμα(τ-)*, seed, + *ἀγγεῖον*, a vessel.] A multicellular organ which gives rise to sperms, found in the *Characeæ* and the brown alga *Dictyota*: formerly included under *antheridium.* See ★*spermatocyst*, 3.

Spermatic capsule. See ★*capsule.*

spermatid (spėr′ma̤-tid), *n.* [Gr. *σπερμα(τ-)*, seed, + *-id*².] One of the two cells which arise by division of a secondary spermatocyte and give rise by transformation to a spermatozoön. In oögenesis the spermatid is represented by the oötid.

> In Ascaris megalocephala univalens there is the normal number of two chromosomes. The ovotid and *spermatid* have each only one. In the fertilized egg there is one derived from the *spermatid*, one from the ovotid; therefore the bivalent chromosome found in the maturation period of the spermatocyte or ovocyte must have been formed by the conjugation of a paternal with a maternal chromosome. *Biol. Bulletin*, Feb., 1904, p. 150.

spermatide, *n.* Same as ★*spermatid.*

spermatiferous (spėr-ma̤-tif′ẹ-rus), *a.* [Gr. *σπέρμα(τ-)*, seed, + *φέρειν*, bear.] Containing or producing spermatia.

spermatin (spėr′ma̤-tin), *n.* [Gr. *σπέρμα(τ-)*, seed, + *-in*².] A nucleo-albumin found in spermatic liquid.

spermatocidal (spėr″ma̤-tọ-sī′da̤l), *a.* [Gr. *σπέρμα(τ-)*, seed, + L. *-cida*, < *cædere*, kill, + *-al*¹.] Causing the arrest of motility of spermatozoa: as, a *spermatocidal* serum. *Vaughan and Novy*, Cellular Toxins, p. 145.

spermatocyst, *n.* **3.** In *bot.*, any unicellular structure which produces sperms found in the algæ or fungi. See ★*spermatangium.*

spermatocyte, *n.*—**Primary spermatocyte**, one of the testicular cells belonging to the last generation of spermatogonia and giving rise by mitotic division to two secondary spermatocytes, each of which divides in turn to form a spermatid.—**Secondary spermatocyte**, one of the two cells arising by the mitotic division of a primary spermatocyte.

spermatocytic (spėr″ma̤-tọ-sit′ik), *a.* [*spermatocyt(e)* + *-ic.*] Of or pertaining to a spermatocyte. *Biol. Bulletin*, Feb., 1904, p. 158.

spermatogone (spėr′ma̤-tọ-gōn), *n.* [NL. *spermatogonium*, < Gr. *σπέρμα(τ-)*, seed, + *γονή*, generation.] **1.** A spermatic or seminal cell. *Buck*, Med. Handbook, IV. 318.—**2.** In *entom.*, one of the colossal cells, in the blind end of the testicular tube, from which the whole contents of the testes originate. They occur in the larvæ of many insects.

> In the blind end of the testicular tubes lies a colossal cell visible to the naked eye, the *spermatogone*, from which the entire contents of the testes originate.
>
> *A. S. Packard*, Text-book of Entom., p. 499.

spermatogonial (spėr″ma̤-tọ-gō′ni-a̤l), *a.* [NL. *spermatogoni(um)* + *-al*¹.] Of or pertaining to spermatogonia or spermatogones. *Buck*, Med. Handbook, VI. 870.

spermatogonic (spėr″ma̤-tọ-gon′ik), *a.* Same as ★*spermatogonial.* *Biol. Bull.*, Feb., 1904, p. 158.

spermatomerite (spėr-ma̤-tom′ẹ-rīt), *n.* [Gr. *σπέρμα(τ-)*, seed, + *μέρος*, part, + *-ite.*] One of the chromatin granules into which the sperm-nucleus resolves itself after it has entered the egg. *Böhm*, 1887.

spermatophobia (spėr″ma̤-tọ-fō′bi-ä̤), *n.* [NL., < Gr. *σπέρμα(τ-)*, seed, + *-φοβια*, < *φοβεῖν*, fear.] Morbid dread of having spermatorrhea, or hypochondriacal belief that it is present when it is not.

Spermatophoral sac. See ★*sac*².

Spermatophyta (spėr-ma̤-tọ-fī′tä̤), *n. pl.* [Gr. *σπέρμα(τ-)*, seed, + *φυτόν*, a plant.] A great group or phylum, the highest in the vegetable kingdom, embracing the seed-bearing plants. It is the same as the *Phanerogamia* of the older botanists, all properly flowering plants also bearing seeds, and as this latter character is now regarded as the more fundamental one, the name *Phanerogamia* is being generally abandoned. It is also equivalent to the *Embryophyta Siphonogama* of Engler. Sometimes shortened to *Spermaphyta.* The form *Spermophyta* is no longer used. See *Phanerogamia* and ★*Embryophyta.*

spermatophyte (spėr′ma̤-tọ-fīt), *n.* [NL. *Spermatophyta.*] A plant of the phylum *Spermatophyta*; a seed-plant; a spermophyte.

> It is possible that in some such way the reduction in numbers of megaspores took place in those *spermatophytes* in which only three or fewer megaspores have been reported. *Bot. Gazette*, Dec., 1902, p. 401.

spermatophytic (spėr-ma̤-tọ-fit′ik), *a.* [*spermatophyt(e)* + *-ic.*] Belonging to the plant phylum *Spermatophyta*; seed-bearing; spermophytic.

spermatoschesis (spėr-ma̤-tos′kē-sis), *n.* [NL., < Gr. *σπέρμα(τ-)*, seed, + *σχέσις*, retention, < *ἔχειν*, hold, retain.] Partial or complete absence of the spermatic secretion.

spermatostrote (spėr′ma̤-tọ-strōt), *n.* [Gr. *σπέρμα(τ-)*, seed, + *στρωτός*, strewn.] In *phytogeog.*, a plant distributed by means of seeds. *F. E. Clements.*

spermatotoxin (spėr″ma̤-tọ-tok′sin), *n.* [Gr. *σπέρμα(τ-)*, seed, + E. *toxin.*] A cytotoxin which results on immunization with spermatozoa. *Buck*, Med. Handbook, Appendix, p. 539.

spermatoxin (spėr-ma̤-tok′sin), *n.* Same as ★*spermatotoxin.*

spermaturia (spėr-ma̤-tū′ri-ä̤), *n.* [NL., < Gr. *σπέρμα(τ-)*, seed, + *οὖρον*, urine.] Presence of spermatozoa in the urine when voided.

sperm-center (spėrm′sen″tėr), *n.* In *cytol.*, the centrosome supposed to be derived from the middle-piece of the spermatozoön after its entrance into the egg.

sperm-duct (spėrm′dukt), *n.* Same as ★*spermiduct*, 2.

sperm-filament (spėrm′fil″a̤-me̤nt), *n.* A flagellate spermatozoön.

spermiducal (spėr-mi-dū′ka̤l), *a.* Of or pertaining to a spermiduct. *Proc. Zool. Soc. London*, 1897, p. 343.—**Spermiducal gland.** See ★*gland.*

spermiduct, *n.* **2.** In many invertebrates, a canal for carrying the seminal fluid to the exterior.

spermin, *n.* **2.** A trade-name of a preparation of the testicle used for hypodermic injection in cases of senility and of locomotor ataxia.

spermine (spėr′min), *n.* [Gr. *σπέρμα*, seed, + *-ine*².] A colorless crystalline basic compound, $C_{10}H_{26}N_4$, found, in combination, in spermatic fluid and in the heart and liver of calves.

spermocenter (spėr-mọ-sen′tėr), *n.* [Gr. *σπέρμα*, seed, + *κέντρον*, center.] The sperm centrosome during the fertilization of the ovum. *Wilson.*

spermoduct (spėr′mọ-dukt), *n.* Same as *spermaduct.*

sperm-oil, *n.*—**Arctic sperm-oil.** Same as *doegling* ★*oil.*

spermolysin (spėr-mol′i-sin), *n.* [Gr. *σπέρμα*, seed, + E. *lysin.*] Same as ★*spermatotoxin.*

spermoön (spėr-mō′on), *n.*; pl. *spermoa* (-ä̤). [NL., < Gr. *σπέρμα*, seed, + *ᾠόν*, egg.] The fertilized ovum.

spermophorium (spėr-mọ-fō′ri-um), *n.*; pl. *spermophoria* (-ä̤). [NL.] Same as *spermatophore.*

spermotoxin (spėr-mọ-tok′sin), *n.* Same as ★*spermatotoxin.*

sperm-sac (spėrm′sak), *n.* A sac which contains spermatozoa.

sperm-whale, *n.*—**Pygmy sperm-whale.** Same as *sperm-whale porpoise.*

spessartite, *n.* **2.** In *petrog.*, a name used by Rosenbusch (1895) for a variety of lamprophyre composed of hornblende and diopside with lime-soda feldspar. Occasionally orthoclase and olivin may be present. The variety is nearly the same as camptonite.

spet² (spet), *n.* [Origin obscure.] The European barracuda. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 260.

spew, *v. i.* **3.** To exude grease or become dull on the surface after being finished a short time: said of leather. *Modern Amer. Tanning*, p. 117.

S. P. G. An abbreviation of *Society for the Propagation of the Gospel.*

sphacelic (sfạ-sel'ik), *a.* [*Sphacel*(*ia*) + *-ic.*] Noting an acid, a compound said to be contained in ergot.

sphacelinic (sfas-e-lin'ik), *a.* [*Sphacel*(*ia*) + *-in* + *-ic.*] Same as ★*sphacelic.*

sphaceloderma (sfas″e-lō-dėr'mạ̈), *n.* [NL., < Gr. *σφάκελος*, gangrene, + *δέρμα*, skin.] Gangrene of the skin.

sphacelotoxin (sfas″e-lọ-tok'sin), *n.* [Gr. *σφάκελος*, gangrene, + E. *toxin.*] A colorless compound, $C_{13}H_{24}O_2N_2$, contained in ergot, which it resembles in physiological properties.

sphacelous (sfas'e-lus), *a.* [Gr. *σφάκελος*, gangrene, + *-ous.*] Gangrenous; necrotic.

Sphærexochus (sfẹ-rek'sọ-kus), *n.* [NL., < Gr. *σφαίρα*, sphere, + *ἐξοχή*, a prominence.] A genus of proparian Silurian trilobites with inflated lobed glabella, small eyes, and ten thoracic segments.

Sphæriales (sfē-ri-ā'lēz), *n. pl.* [NL., < Gr. *σφαιρα*, sphere, + *-ales.*] A large order of pyrenomycetous fungi, so named from the genus *Sphæria.* As defined by Engler and Prantl it includes 18 families and over 2,000 species.

sphæricephalic (sfē″ri-se-fal'ik), *a.* [Gr. *σφαίρα*, sphere, + *κεφαλή*, head, + *-ic.*] In *craniom.*, having a brachycephalic skull, with the occipital and basal regions globular. *Aitken Meigs.*

Sphærioidaceæ (sfē″ri-oi-dā'sẹ-ē), *n. pl.* Same as ★*Sphæropsidaceæ.*

sphærobacterium (sfē″rọ-bak-tē'ri-um), *n.*; pl. *sphærobacteria* (-ạ̈). [NL., < Gr. *σφαῖρα*, sphere, + NL. *bacterium.*] One of the *Sphærobacteria.*

sphæroblast (sfē'rọ-blȧst), *n.* [Gr. *σφαῖρα*, a ball, + *βλαστός*, germ.] A nodule or small mass of wood arising from the cambium of a dormant bud and becoming separated from the wood beneath. Also called *wood-nodule.*

> Wood-nodules or *Sphæroblasts* are curious marble-like masses of wood which protrude with a covering of bark from old trunks of Beeches, etc., and can be readily dug out with a knife. *H. M. Ward*, Disease in Plants, p. 225.

sphærocobaltite, *n.* See *spherocobaltite.*

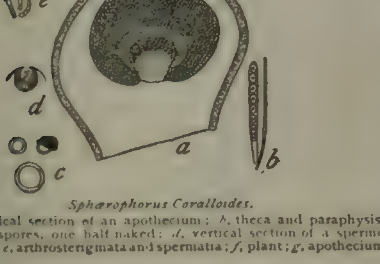
sphærolite (sfē'rọ-līt), *n.* In *petrog.*, same as *spherulite.*

sphærolitic (sfē-rọ-lit'ik), *a.* Same as *spherulitic.*

Sphæronema (sfē-rọ-nē'mạ̈), *n.* [NL. (Fries, 1818), < Gr. *σφαίρα*, a ball, + *νῆμα*, a thread, alluding to the thread-like necks of the pycnidia.] A genus of *Fungi Imperfecti* of the order *Sphæropsidales*, having pycnidia with more or less elongated necks and unicellular hyaline spores. Over 70 species have been described. They occur chiefly on dead leaves and branches.

Sphærophoraceæ (sfē″rọ-fọ-rā'sẹ-ē), *n. pl.* [NL., < *Sphærophor*(*us*) + *-aceæ.*] A family of foliaceous or fruticose ascolichens, so named from the principal genus *Sphærophorus.*

Sphærophorus (sfẹ-rof'ọ-rus), *n.* [NL. (Persoon, 1794), < Gr. *σφαίρα*, a ball, + *-φορος*, < *φέρειν*, bear.] A genus of ascolichens, type of the family *Sphærophoraceæ*, having the thallus much branched and brittle, bearing terminal globose apothecia at first inclosed by the thallus, which finally ruptures. The spores are unicellular and dark-colored. About 10 species are known. They grow upon the ground or at the base of trees. *S. coralloides* is found in the mountains of Europe and America.



Sphærophorus Coralloides.

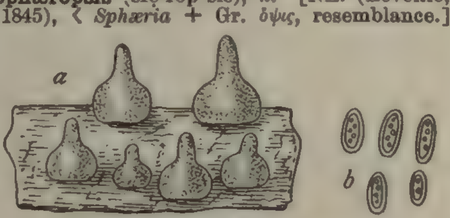
a, vertical section of an apothecium; *b*, theca and paraphysis; *c*, three spores, one half naked; *d*, vertical section of a spermogonium; *e*, arthrosterigmata and spermatia; *f*, plant; *g*, apothecium.

Sphæropsidaceæ (sfē″rop-si-dā'sẹ-ē), *n. pl.* [NL., < *Sphæropsis*, the typical genus, + *-aceæ.*] A large family of *Fungi Imperfecti*, having mostly black, glòbose, carbonaceous or coriaceous pycnidia.

sphæropsidaceous (sfē″rop-si-dā'shius), *a.* Pertaining or belonging to the fungus family *Sphæropsidaceæ.*

Sphæropsidales (sfē″rop-si-dā'lēz), *n. pl.* [NL., < *Sphæropsis* + *-ales.*] One of the three orders of *Fungi Imperfecti*, having spores produced in perithecia-like cavities called pycnidia which resemble the sporocarps of the pyrenomycetous order *Sphæriales.* Some are known to represent an early stage in the life-cycle of ascomycetous fungi.

Sphæropsis (sfẹ-rop'sis), *n.* [NL. (Léveillé, 1845), < *Sphæria* + Gr. *ὄψις*, resemblance.] A large genus of fungi, type of the family *Sphæropsidaceæ*, having separate black pycnidia and dark-colored unicellular spores. Over 180 species have been described. They are especially numerous in North America. *S. Malorum* is the cause of the black rot of the apple. *S. tabacina* is found on decaying wood.



Sphæropsis tabacina.

a, several pycnidia of the fungus; *b*, spores of the same, much magnified.

sphærotheriid (sfē-rọ-thē'ri-id), *n.* and *a.* **I.** *n.* A myriapod of the family *Sphærotheriidæ.*

II. *a.* Having the characters of or belonging to the family *Sphærotheriidæ.*

Sphagebranchus (sfaj-ẹ-brang'kus), *n.* [NL., < Gr. *σφαγή* or *σφάξ* (*σφαγ-*), the throat, + *βράγχια*, gills.] A genus of ophichthyoid eels remarkable for showing no trace of fins in the adult stage.

Sphagnales (sfag-nā'lēz), *n. pl.* [NL. (Engler, 1892), < *Sphagn*(*um*) + *-ales.*] An order of mosses, the peat-mosses, containing the single family *Sphagnaceæ* and genus *Sphagnum* (which see).

Sphagnous or **sphagnum bog.** See ★*bog*1.

sphecid (sfes'id), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Sphecidæ.*

II. *a.* Having the characters of or belonging to the family *Sphecidæ.*

sphegid (sfej'id), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Sphegidæ.*

II. *a.* Having the characters of or belonging to the family *Sphegidæ.*

Sphegoidea (sfẹ-goi'dẹ-ạ̈), *n. pl.* [NL., < *Sphex* (*Sphec-*) + *-oidea.*] The *Sphegidæ* considered as a group of superfamily rank.

sphenocephalia (sfē″nọ-se-fā'li-ạ̈), *n.* [NL., < Gr. *σφήν*, a wedge, + *κεφαλή*, the head.] Monstrosity characterized by a wedge-shaped head.

sphenoid, *n.* **1.** By some authors the term is limited to a form having two faces only, which meet in a wedge-shaped edge. The combination of two complementary forms of this type is then called a *bisphenoid.* A tetragonal scalenohedron, a form having eight similar triangular faces arranged in symmetrical pairs, has been called a *disphenoid.*

3. In *anthrop.*, a cranium the norma verticalis of which has a wedge-shaped form, the forehead being narrow and the greatest width being near the occiput. *G. Sergi* (trans.), Var. of the Human Species, p. 32.

sphenoidal, *a.*—**Sphenoidal class.** See ★*symmetry*, 6.

Sphenomaxillary crest. See ★*crest.*

sphenosis (sfẹ-nō'sis), *n.* [NL., < Gr. *σφήνωσις*, a wedging, obstruction, < *σφηνοῦν*, wedge, close up, < *σφήν*, a wedge.] Impaction of the fetal head in the pelvis.

sphenosquamous (sfē-nọ-skwā'mus), *a.* [Gr. *σφήν*, wedge, + L. *squama*, a scale.] Relating to the sphenoid bone and the squamous portion of the temporal bone: noting a suture.

sphenotic, *n.* **2.** In *ichth.*, an anterodorsal ossification of the auditory capsule. It articulates above with the pterotic and frontal, and below with the alisphenoid and proötic. It usually bears part of the concavity for the reception of the head of the hyomandibular.

sphere, *n.* **10.** A spherical sponge-spicule, a modified form of the monaxial type.—**Celestial sphere**, the spherical surface upon which the heavenly bodies appear to lie. Its radius is assumed to be infinite, so that not only the earth but also the entire solar system and all the stars are sensibly but a point at its center.—**Directive sphere.** Same as ★*astrosphere* (*a*).—**Great circle of sphere**, a circle whose plane contains the sphere's center. See *great circle.*—**Harmonic spheres**, four spheres of a sphere-complex which determine, with every sphere not belonging to the complex, four harmonic radical planes.—**Mean sphere**, in *phys. geog.*, a spheroid which has its surface at the mean level of the solid crust of the earth, or about 7,500 feet below actual sea-level.—**Morgagni's spheres.** Same as *Morgagni's* ★*globules.*—**Neumann's sphere**, a sphere used for the representation of imaginary quantity and formed by stereographic projection from an Argand diagram. It is due to Riemann and was named for Carl Neumann.—**Orthogonal spheres**, spheres which cut at right angles.—**Oval sphere**, a sphere having a radius less than $\frac{1}{4}\pi\gamma$, where γ is the numerical constant used in defining distance.—**Sphere-complex**, the assemblage of spheres (of ordinary space) which are all orthogonal to the same sphere; the aggregate of all spheres with respect to which a given point *C* has a certain power *p*.—**Sphere-congruence**, the totality of spheres common to two sphere-complexes.—**Sphere geometry**, geometry with the sphere as element.—**Sphere of influence.** See *sphere*, 7.—**Sphere of interest**, the name first given to what is now known as a *sphere of influence.* See *sphere*, 7.

> "Spheres of influence," "spheres of action," "*spheres of interest*," "zones of influence," "field of operations," "Machtsphäre," "Interessensphäre," are phrases which have come into use to describe regions as to which nations have agreed that one or more of them shall have exclusive liberty of action. These phrases became common after 1882, when the "scramble for Africa" began, to describe diplomatic arrangements with respect to it. *Encyc. Brit.*, XXXII. 789.

Sphere range, the common intersection of three independent sphere-complexes.

sphere-apparatus (sfēr'ap-a-rā″tus), *n.* In *cytol.*, a general name applied to idiozome, centrotheca, and centriole considered as a unit.

> Yolk-Nucleus or Corpus Balbiani in Vertebrates.—K. v. Skrobansky has studied this much discussed body in the ova of the guinea-pig. The question is, whether it represents morphologically and genetically a "*sphere-apparatus*" (idiozome, centrotheca, or centriole), or whether it is a quite distinct structure. According to the author's observations, the formation of the body is not associated with the division of the oogonia, and the corpuscle cannot therefore be identified as a *sphere-apparatus.* *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 485.

sphere-circle (sfēr'sėr″kl), *n.* The circle in which all spheres meet the plane at infinity.

Spheric number. See ★*number.*

spherical, *a.*—**Lateral spherical aberration.** Same as *circle of aberration* (which see, under *aberration*).—**Negative, positive spherical aberration.** See ★*aberration.*—**Spherical candle.** See ★*candle.*—**Spherical chord**, a great-circle arc whose end-points are on a circle of the sphere.—**Spherical ellipse**, the locus of the point whose spherical sects from two fixed points have a constant sum.—**Spherical harmonic analysis.** See ★*harmonic.*—**Spherical hyperbola**, the locus of the point whose spherical sects from two fixed points have a constant difference.—**Spherical radius, sector, ungula**, etc. See ★*radius*, etc.—**Spherical wedge.** Same as *spherical* ★*ungula.*

spherics, *n.*—**Pure spherics**, two-dimensional spherics; intrinsic spherics; spherics deduced from a set of assumptions which have no reference to anything not in the sphere (sphere meaning what is sometimes called the surface of a sphere).

spheridium, *n.* See *sphæridium*, 1.

spheroid, *n.* **3.** In *anthrop.*, a cranium of nearly spherical form. *G. Sergi* (trans.), Var. of the Human Species, p. 35.—**Bessel's spheroid**, the spheroid given by Bessel as most nearly representing the figure of the earth.—**Elliptic spheroid.** Same as *ellipsoid of revolution* (which see, under *ellipsoid*).—**Maclaurin spheroid**, a rotating spheroid in equilibrium.—**Mean spheroid**, in *phys. geog.*, an imaginary spheroidal form which represents the figure of the earth as if sea-level were everywhere continued and to which geodetic measures are referred; the geoid.—**Spheroid of reference**, an imaginary regular spheroid whose surface is approximately coincident with the earth's sea-level, from which the actual sea- and land-surface is measured: contrasted with *geoid.* See the extract.

> It may be worth while adding a quotation from Prof. C. A. Young, to show that the *spheroid of reference* is only a convenient assumption. "On the whole," says Prof. Young, "astronomers are disposed to take the ground that since no regular geometrical solid whatsoever can absolutely represent the form of the Earth, we may as well assume a regular spheroid for the standard surface, and consider all variations from it as local phenomena, like hills and valleys." *Geog. Jour.* (R. G. S.), XIII. 242.

Spheroid of revolution. See ★*revolution.*—**Viscous spheroid,** a spheroid of a viscous consistency. Thus the flattening at the poles of the rotating earth shows that it behaves as a slightly viscous spheroid. *Geog. Jour.* (R. G. S.), XV. 47.

spheroidal, *a.* **4.** In *petrog.*, noting the cracking or parting of rocks upon shrinking, commonly from cooling, whereby they break into spheroidal masses. It is the same phenomenon as perlitic cracking in volcanic glasses. The term is sometimes used as a synonym of *orbicular* as applied to certain granites and diorites.—**Spheroidal constant, recovery.** See ★*constant,* ★*recovery.*

Spheroides (sfẹ-roi′dēz), *n.* [NL., < Gr. *σφαιροειδής*, spheroid. See *spheroid.*] A genus of tetrodontoid fishes widely distributed in warm seas.

spheroidism (sfē′roi-dizm), *n.* [*spheroid* + *-ism.*] The property or condition of being a spheroid. *The Engineer*, Jan. 9, 1903, p. 42.

Spherometer caliper, an apparatus devised by Harkness in which a delicate spherometer is utilized in calipering the diameters and determining the irregularities of the pivots of transits and other astronomical instruments. *Nature*, March 12, 1903, p. 442.

spherophyric (sfē-rọ-fir′ik), *a.* [*spher*(*ulite*) + (*por*)*phyr*(*y*) + *-ic.*] **1.** Noting a porphyritic rock containing spherulites in place of the usual phenocrysts. *J. D. Dana*, Manual of Geol. (4th ed.), p. 77.—**2.** In *petrog.*, in the quantitative system of classification (see ★*rock*¹), having megascopic spherulites in a ground-mass; noting the character of a porphyry with megascopic spherulites.

spherospermia (sfē-rọ-spėr′mi-ạ̈), *n. pl.* [NL., < Gr. *σφαῖρα*, sphere, + *σπέρμα*, seed.] Rounded spermatozoa, without tails, characteristic of the nematodes and crustacea.

spherotetrahedral (sfē-rọ-tet-ra-hē′dral), *a.* [Gr. *σφαῖρα*, sphere, + E. *tetrahedr*(*on*) + *-al*¹.] Intermediate in shape between a sphere and a tetrahedron. *Buck*, Med. Handbook, V. 616.

spherotocephalus (sfē″rō-tọ-sef′ạ-lus), *n.*; pl. *spherotocephali* (-lī). [Gr. *σφαῖρα*, sphere, + *οὖς* (*ὠτ-*), ear, + *κεφαλή*, head.] In *anthrop.*, a cranium, spheroid in its anterior part, but with more irregular curves back of the coronal suture. *G. Sergi* (trans.), Var. of the Human Species, p. 35.

sphincter, *n.*—**Oscular sphincter,** in some sponges, a band of fibers or elongated cells surrounding the osculum and serving to close the same. *Parker and Haswell*, Zoology, I. 102.

sphindid (sfin′did), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Sphindidæ.*

II. *a.* Having the characters of or belonging to the family *Sphindidæ.*

sphingal (sfing′gạl), *a.* [Gr. *σφίγξ* (*σφιγγ-*), sphinx, + *-al*¹.] Of or pertaining to the sphinx; sphinx-like. [Rare.]

> No *sphingal* countenance more calm,
> Than his majestic face.
> *B. W. Ball*, Elfin-Land.

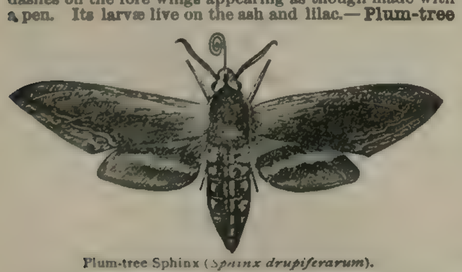
sphinges (sfin′jēs). A plural of *sphinx.*

> Duncan says of the Senegal Galago (Galago senegalensis): "It pursues Beetles, *Sphinges*, and Moths with great ardour, even while they are on the wing, making prodigious bounds at them, and often leaping right upwards to seize them." *Amer. Jour. Sci.*, Jan., 1904, p. 26.

sphingid (sfin′jid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Sphingidæ.*

II. *a.* Having the characters of or belonging to the family *Sphingidæ.*

sphinx, *n.*—**Four-horned sphinx,** an American sphingid moth, *Ceratomia amyntor*, whose larva feeds on the foliage of the elm. *J. B. Smith*, Econ. Entom., p. 257.—**Green grape-vine sphinx,** an American sphingid moth, *Ampelophaga myron*, common in the Mississippi valley and the eastern United States, whose larvæ feed on grape foliage.—**Harris's sphinx,** an American sphingid moth, *Lapara bombycoides* (formerly called *L. harrisii*), whose larvæ feed on pine-leaves and are protectively colored with alternating green and white longitudinal stripes.—**Pen-marked sphinx,** an American sphingid moth, *Sphinx chersis*, ash-gray in color, with a series of black dashes on the fore wings appearing as though made with a pen. Its larvæ live on the ash and lilac.—**Plum-tree sphinx,** an American sphingid moth, *Sphinx drupiferarum*, which occurs throughout the United States. Its larvæ feed on plum-leaves.—**Purblind sphinx,** an American sphingid moth, *Smerinthus myops*, which occurs in the eastern United States and the Mississippi valley. Its larvæ feed on the leaves of rosaceous plants.—**Twin-spotted sphinx,** an American sphingid moth, *Smerinthus jamaicensis* (formerly *S. geminatus*), which has an eye-spot on each hind wing. Its larvæ feed on the ash, willow, plum, elm, and apple.—**Vine-sphinx,** any one of the several sphingid moths whose larvæ feed on grape-leaves, as the achemon sphinx, Abbot's sphinx, and others.—**White-lined sphinx,** the white-lined morning-sphinx. See *morning-sphinx*, under *sphinx.*



Plum-tree Sphinx (*Sphinx drupiferarum*).
(About two thirds natural size.)

sphragistic (sfrạ-jis′tik), *a.* [Gr. *σφραγιστικός*, < *σφραγίζειν*, seal, < *σφραγίς*, a seal.] Of or pertaining to seals. See *sphragistics.*

> The prevailing type of seal, for instance, is the Oriental cylinder, and among the most frequent of the engraver's designs is a native adaptation of the Egyptian floral pillar as seen on the porcelain ornaments and beads of Tell-el-Amarna. But the whole together forms a new *sphragistic* style of a specifically Cypro-Mycenæan class.
> *A. J. Evans*, in Jour. Anthrop. Inst., July–Dec., 1900, [p. 200.

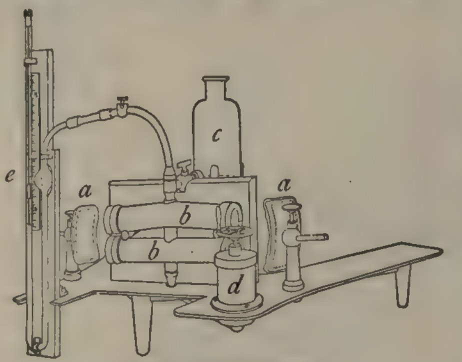
sphygmocephalus (sfig-mọ-sef′ạ-lus), *n.* [Gr. *σφυγμός*, pulse, + *κεφαλή*, head.] A beating pain in the temples.

sphygmochronograph (sfig-mọ-kron′ọ-grȧf), *n.* [Gr. *σφυγμός*, pulse, + *χρόνος*, time, + *γράφειν*, write.] A sphygmograph with an attachment for recording the number of pulsations to the minute.

sphygmodic (sfig-mod′ik), *a.* [Gr. *σφυγμώδης*, like the pulse (see *sphygmoid*), + *-ic.*] Pulse-like; beating rhythmically.

sphygmogenin (sfig-moj′e-nin), *n.* [Gr. *σφυγμός*, pulse, + *-γενης*, -producing, + *-in*².] An old term for adrenalin.

sphygmomanometer, *n.*—**Mosso's sphygmomanometer,** in *physiol.* and *exper. psychol.*, a form of sphygmomanometer devised by A. Mosso and used, for example, in the study of the influence of mental or physical work, or of emotion, upon blood-pressure. The instrument consists essentially of two metal tubes, for the reception of the first and second fingers of each hand; of a recording mercurial manometer; and of a metallic piston for regulating the pressure of the water which fills the system.



Mosso's Sphygmomanometer.

a a, adjustable supports for the back of the hand; *b b*, finger-tubes of metal, containing rubber finger-stalls; *c*, flask for water; *d*, regulator; *e*, manometric tube.

sphygmoplethysmograph (sfig″mọ-plẹ-this′mọ-grȧf), *n.* [Gr. *σφυγμός*, pulse, + E. *plethysmograph.*] In *physiol.*, a plethysmograph whose tracing shows a record of pulse (volume pulse) superimposed upon the curve of fluctuation of volume.

> But by a still better contrivance called the plethysmograph or . . . *sphygmoplethysmograph* we get not only the pulse, but the changes in the general volume of a limb.
> *G. M. Stratton*, Exper. Psychol. and its Bearing upon [Culture, p. 264.

sphygmotonometer (sfig″mọ-tọ-nom′e-tėr), *n.* [Gr. *σφυγμός*, pulse, + *τόνος*, tension, + *μέτρον*, measure.] An instrument for measuring the degree of elasticity of a blood-vessel in experimentation on animals. *Nature*, Oct. 21, 1897, p. 591.

Sphyrænops (sfī-rē′nops), *n.* [NL., < NL. *Sphyræna* + Gr. *ὤψ*, eye, face (appearance).] A genus of fishes of the family *Chilodipteridæ*: found only in Cuba, in deep water.

sphyrelaton (sfī-rel′ạ-ton), *n.* [Gr., neut. sing. of *σφυρήλατος*, wrought with the hammer.] Art work in metal which is beaten out and not cast; especially archaic Greek bronze work in hammered plates, nailed together.

> A canopus of this metal in a curule chair of the same, all in *sphyrelaton* or hammered work, the plates being hammered together with big nails.
> *Dennis*, Etruria, II. 313.

sphyrotomy (sfī-rot′ọ-mi), *n.* [Gr. *σφῦρα*, hammer, + *-τομια*, < *ταμεῖν*, cut.] In *surg.*, excision of the handle of the malleus.

spianato (spē-ạ-nä′tọ), *a.* [It., < L. *explanatus*, made level, flattened. See *explanate.*] In *music*, smooth, even: noting passages to be so rendered.

Spicara (spi-kā′rạ̈), *n.* [NL., < It. *Spicara*, a local name in Sicily, prob. < L. *spica*, a spike.] A genus of fishes of the family *Mænidæ*, carnivorous shore-fishes chiefly of the Old World.

spicigerous (spī-sij′ẹ̈-rus), *a.* Same as *spiciferous.*

spick (spik), *a.* An abbreviation of *spick-and-span-new.*

spiculate, *v. t.* **2.** To cover with or stick full with fine points, darts, etc. [Rare.]

> In those representations, man indeed was not more uglily than fearfully made,—as he stood erect and naked, *spiculated* by emitted influences from the said signs, like another St. Sebastian. *Southey*, Doctor, lxxxvii.

spicule, *n.* **2.** (*c*) In *bot.*, the empty frustule of a diatom.

spiculofiber (spik″ụ-lọ-fī′bėr), *n.* A portion of a sponge consisting of spicules and fibers.

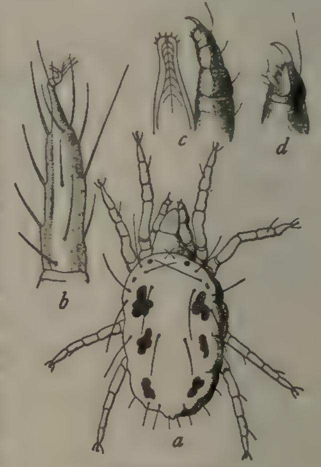
> Skeleton forming a rectangular network, the meshes being for the most part unispiculate, but with a few slender primary lines of *spiculo-fibre* 2–4 spicules thick.
> *Proc. Zool. Soc. London*, 1900, p. 137.

spiculofibrous (spik″ū-lọ-fī′brus), *a.* [*spiculofiber* + *-ous.*] Consisting of or pertaining to spiculofibers.

> Skeleton consisting of an axial or central open *spiculofibrous* network formed of broad loose strands about 10 spicules thick. *Proc. Zool. Soc. London*, 1900, p. 138.

spiculum, *n.* **2.** A needle-shaped splinter of bone.

spider, *n.* **7.** In the English form of pyramid-pool billiards, a skeleton rest, or bridge, designed for certain exigencies.—**8.** In *archery*, a prize for the best gold, awarded at the Grand National Archery meeting in England.—**Birds'-dung spider,** any spider which possesses a protective resemblance to birds' dung, notably a Ceylonese species of the genus *Phrynarachne.*—**California spider,** one of the so-called red-spiders, *Tetranychus sex-maculatus*, occurring on oranges in California and Florida. Also called the *six-spotted mite of orange.*—**Flying spider,** any one of many young spiders of the family *Theridiidæ* and allied families. They are wafted through the air by long light threads of silk.—**Purse-web spider.** See ★*purse-web.*—**Red spider.** See *red-spider.*—**Red-streaked spider.** Same as *katipo.*—**Running spider,** any spider of the family *Lycosidæ.*—**Spider cancer, spider nævus.** See *spider* ★*cancer.*



California Spider
(*Tetranychus sex-maculatus*).

a, dorsal view of adult spider, vastly enlarged; *b*, greater enlargement of foot; *c*, *d*, mouth parts.

(Marlatt, U. S. D. A.)

spider-beetle (spī′dėr-bē″tl), *n.* A British collectors' name for certain beetles of the genus *Ptinus*, as *P. fur* and *P. brunneus.*

spider-fern (spī′dėr-fėrn″), *n.* See ★*fern.*

spider-lily (spī′dėr-lil″i), *n.* See ★*lily.*

spider-sheave (spī′dėr-shēv), *n.* A wrought-iron or malleable iron pulley-block, or the grooved disk therein, in which the wood of the ordinary construction is replaced by forged iron. The iron is only required to stand the strain and guide the rope, hence the structure is solid at the pin and open on the sides, suggesting the body and bent legs of a spider.

> On reaching the place selected for the landing of the cable, the ship approached as close to the shore as possible. A couple of *spider-sheaves* were sent ashore, and fixed by sand anchors some 60 yards apart. Hauling lines were payed out from the ship, reeved through the sheaves, and brought back on board again.
> *Sci. Amer.*, Jan. 31, 1903, p. 80.

S-piece (es′pēs), *n.* In mechanical construction, a bracket or other piece in which the braces or compression-elements are curved like the letter S, so as to deflect under stress and not deform on the contracting of the principal elements of the structure.

spiel (spēl), *n.* [Also written *speal, spiel, speil.* A shortened form of *bonspiel* (which see). Cf. G. *spiel*, play.] **1.** A game; play; a curling-match. *Eng. Dial. Dict.*—**2.** Talk; a yarn; lingo; patter. [Slang.]

> Can you not see that Murphy's handy *spiel*
> Is cheap balloon juice of a Blarney brew.
> *Wallace Irwin*, Love Sonnets of a Hoodlum, xi.

spieler (spē′lėr), *n.* [*spiel*, *v.*, + *-er.*] **1.** At a booth or fair, a crier or announcer of the goods for sale; a barker for side-shows.

> In front of the entrance a "*spieler*" stood on a starch box and beat upon a piece of tin with a stick, and we weakly succumbed to his frenzied appeals and went inside. *N. Y. Times*, June 12, 1899.

2. A cheat; a sharper; a professional gambler.

> Open the ranks like a "*spieler's*" Wink.
> This is a speedy and frolicsome bomb,
> Do not despise it, but do not shrink,
> This is a nerve-test, this swift Pom-pom.
> *J. H. M. A.*, in War's Brighter Side, xxi.

spigeline (spij′ē̤-lin), *n.* [*Spigelia* + *-in*².] An alkaloid said to be present in spigelia.

spigot, *n.*—**Bell and spigot.** See ★*bell*¹.

spike¹, *v. t.* **6.** In *base-ball* and *foot-racing*, to strike or injure (a player) with the spikes in the shoes.

spike³ (spīk), *n.* [*spike*¹, *n.* (?)] A disease of the pineapple in which the plants are dwarfed and the leaves become narrow and crowded; also a disease which destroys sandalwood timber in India.

spike-tub (spīk′tub), *n.*. *Naut.*, a temporary receptacle for the blubber, etc., from whales.

spil², *v.* and *n.* A simplified spelling of *spill*¹.

spile-driver (spīl′drī″vėr), *n.* A machine for driving spiles or piles into the earth.

spile-worm (spīl′wėrm), *n.* A ship-worm or teredo, *Teredo navalis.*

spill², *n.* **7.** *pl.* The thin layers or filaments of cinder in wrought-iron bars of poor quality due to imperfect working of the metal in squeezer, hammer, or roll treatment. [Eng.]

spill², *v. t.* **2.** To brace or stay a drift or adit with piles. [Eng.]

spill-box (spil′boks), *n.* In *irrigation*, a measuring device or module so arranged that excess water spills over a lip or edge back into the main supply-ditch. *F. A. King*, Irrigation and Drainage, p. 245.

spilly (spil′i), *a.* [*spill*² + *-y*¹.] Showing spills (see ★*spill*², 7) or cracks or seams: said of inferior wrought-iron bar. [Eng.]

spiloma (spi-lō′mạ̈), *n.*; pl. *spilomata* (-ma-tạ̈). [NL., < Gr. *σπίλωμα*, a blemish, < *σπιλοῦν*, spot, stain, soil, < *σπίλος*, a spot, stain, blemish.] Same as *nævus.*

spiloplania (spil-ọ̄-plā′ni-ạ̈), *n.* [NL., < Gr. *σπίλος*, a spot, + *πλάνος*, wandering.] An evanescent eruption of small red spots.

spin¹, *n.* **4.** A variation of the game of newmarket in which the holder of the diamond ace is allowed to play it in order to stop the suit, provided it is his play to the sequence at the time. See *newmarket.*—**5.** In *cricket*, a twist or rotation imparted to the ball by the bowler. *Hutchinson*, Cricket, p. 34.

spin² (spin), *n.* An abbreviation of *spinster.* [Colloq., Eng.]

> There were all the Gurrumpore *spins* in their beautiful new frocks. *B. M. Croker*, Diana Barrington, xxiii.

spina, *n.* **5.** A slender projection from the upper, median portion of a bird's sternum, just between the articulations of the coracoids. When the spina lies above the line of the coracoid grooves it is termed the *spina interna*, and when below them the *spina externa*; when these are both present, united in one mass, it forms a *spina communis.* *Proc. Zool. Soc. London*, 1903, p. 276.—**Spina ventosa**, any morbid swelling of bone, such as sometimes occurs in cancer or caries, in which the cancelli are enlarged and the osseous tissue is thinned.

Spinach flea-beetle. See ★*flea-beetle.*—**Summer spinach**, in England, same as *New Zealand spinach.*

spinal, *a.*—**Short spinal reflex.** See ★*reflex.*—**Spinal meningitis.** See ★*meningitis.*—**Spinal weakness**, a relaxed state of the spinal muscles allowing of a lateral or other abnormal curvature of the spine.

spinalgia (spī-nal′ji-ạ̈), *n.* [NL., < L. *spina*, spine, + *ἄλγος*, pain.] Pain caused by pressure on the spinous processes of the dorsal vertebræ. *Med. Record*, June 27, 1903, p. 1057.

spinant (spī′nant), *n.* [L. *spina*, spine, + *-ant.*] A substance (as a drug) which stimulates the spinal motor centers, causing muscular contraction.

spination (spī-nā′shọn), *n.* [L. *spina*, a spine, + *-ation.*] The state or condition of bearing spines.

spindle, *n.* **3.** (*g*) A manufacturers' name for a hydrometer, from the shape of the instrument. *Sadtler*, Handbook of Indust. Chem., p. 163.—**Achromatic spindle.** See ★*achromatic.*—**Directive spindle**, in *embryol.*, one of the karyokinetic division spindles that gives rise to a polar or directive body; a polar-body spindle.—**Elastic spindle**, a type of spinning-spindle which assumes its center of gravity in attaining its full speed.—**Mozambique spindles**, a trade-name for crude india-rubber from Mozambique, in pieces of the shape of a finger, of various colors, yellow, pink, brown, and black.—**Nissl spindles.** See *Nissl* ★*granules.*—**Nuclear spindle**, the fusiform arrangement of chromatin fibers in karyokinesis.—**Tigroid spindle.** Same as *Nissl* ★*body.*

spindle-band (spin′dl-band), *n.* The band which runs the spindle on a spinning-machine. *Nasmith*, Cotton Spinning, p. 357.

spindle-box (spin′dl-boks), *n.* The bearing for a small axle, spindle, or arbor.

spindle-chuck (spin′dl-chuk), *n.* A form of holding device for drills or similar small tools or work, attached to or forming part of the rotating spindle or shaft of the tool.

spindle-draft (spin′dl-dråft), *n.* In *cotton-spinning*, the drawing or attenuation of the roving by the spindle during the outward traverse of the carriage in a mule. *C. Vickerman*, Woollen Spinning, p. 210.

spindle-draw (spin′dl-drâ), *v. t.* To draw or attenuate (the roving of wool or cotton) by the spindle instead of by rollers. *C. Vickerman*, Woollen Spinning, p. 207.

spindle-frame (spin′dl-frām), *n.* That part of a spinning-machine which holds the spindles. *C. Vickerman*, Woollen Spinning, p. 14.

spindle-oil (spin′dl-oil), *n.* See ★*oil.*

spindle-rail (spin′dl-rāl), *n.* An iron bar on a ring-spinning frame to which the spindles are fixed. *Nasmith*, Cotton Spinning, p. 335.

spindle-sander (spin′dl-san″dėr), *n.* See ★*sandpapering-machine.*

spindle-valve, *n.* A valve which is actuated from without the casing in which it works by a rod or stem or spindle. The spindle may be threaded, so that the valve is operated by screwing the spindle or turning it in a nut; or the spindle may be pushed in or out without turning. When the stem or spindle does not screw in and out, the valve is called a *valve with non-advancing stem;* when it does move in and out it is said to be an *advancing-stem valve.*

spine, *n.* **7.** One of the quills of a harpsichord or spinet.—**8.** Specifically, a sharp, columnar mass of solidified lava which was forced upward to a height of over 1,000 feet above the summit of Mount Pelée, Martinique, in 1903. See ★*volcano*, 1. It constituted a new phenomenon in vulcanology. See cut under ★*cumulo-volcano.*

> There was at that time [April, 1903] a tremendous *spine* or tooth, more than 1,000 feet in height, rising from the side of a cone-shaped base, the top of which was higher than the old altitude of Morne Lacroix. The tip of the spine was about 600 feet above the highest part of the new cone. *Science*, Nov. 13, 1903, p. 622.

Helcodermatous spine, one of the boring or tearing spines of a pupal insect, as distinguished from the locomotor spines. *A. S. Packard*, Text-book of Entom., p. 612.—**Henle's spine**, a bony projection occasionally found above the opening of the external auditory canal.—**Hysterical spine**, a simulation of disease of the vertebræ which occurs in neurotic individuals and is accompanied by a lateral curvature as well as the usual subjective symptoms of spinal disease.—**Interpalatine spine**, the interpalatine when produced anteriorly in a long, slender process.—**Poisonous spines**, certain specialized spines on some lepidopterous larvæ. They are partly hollow and are supplied with a poisonous fluid secreted by large cells at the base of the spines.—**Squamosal spine**, in *ornith.*, a slender process or projection directed forward from the upper anterior part of the squamosal bone. *Proc. Zool. Soc. London*, 1899, p. 396.—**Typhoid spine**, weakness and pain in the spine sometimes observed in convalescence from typhoid fever. It is not permanent, but while it continues it incapacitates the sufferer for all continuous effort.

spine-cell (spīn′sel), *n.* One of the cells of the rete mucosum of the skin. Also called *prickle-cell.* *Buck*, Med. Handbook, III. 854.

spine-finned (spīn′find), *a.* Same as ★*spiny-rayed.*

spinel, *n.*—**Adamantine spinel**, a name applied to the very pale spinel which has an adamantine luster when brilliant-cut.—**Blue spinel**, a blue variety of spinel.—**Spinel law.** See *spinel twin*, under ★*twin*¹.

spinelet (spīn′let), *n.* [*spine* + *-let.*] A small spine.

> It is quite likely, therefore, that these horny *spinelets* are equally characteristic of Galago garnetti. *Proc. Zool. Soc. London*, 1901, p. 273.

spinescence (spi-nes′e̤ns), *n.* [See *spinescent.*] The character of being spinescent. [Rare.]

spinetail, *n.* (*d*) The log-runner, a bird of the genus *Orthonyx.* See ★*log-runner.*

spine-tube (spīn′tūb), *n.* One of the canals which extend from the interior of the ventral valve in the brachiopod genus *Chonetes* through the cardinal substance and are continued beyond the hinge in the form of a series of spines.

spinibulbar (spī-ni-bul′bä̤r), *a.* [L. *spina*, spine, <NL. *bulbus*, bulb, + *-ar*³.] Relating to the spinal cord and medulla oblongata together.

spinicerebellar (spī″ni-ser-ē̤-bel′ä̤r), *a.* [L. *spina*, spine, + *cerebellum*, cerebellum, + *-ar*³.] Relating to both the spinal cord and the cerebellum. Also *spinocerebellar.* *Buck*, Med. Handbook, VII. 322.

spinifex (spin′i-feks), *n.* [L. *spina*, spine, + *facere*, make.] In Australia, any one of several species of grasses having stiff, sharp-pointed leaves or spiny flower-clusters, especially the two following, distantly related species: (*a*) *Spinifex hirsutus*, the hairy spinifex or spiny rolling-grass. See under ★*rolling-grass.* (*b*) *Triodia irritans*, the desert spinifex, more often called *porcupine-grass.* See ★*porcupine-grass*, 2.

spinifugal (spī-nif′ụ̄-ga̤l), *a.* [L. *spina*, spine, + *fugere*, flee.] In *neurol.*, moving from the spinal cord toward the periphery of the body: said of efferent nerve-impulses. Compare ★*spinipetal.*

spinimuscular (spī″ni-mus′kụ̄-lä̤r), *a.* [L. *spina*, spine, + *musculus*, muscle, + *-ar*³.] Relating to the spinal cord and the muscles. Also *spinomuscular.* *Med. Record*, Feb. 14, 1903, p. 263.

spiniperipheral (spī″ni-pe-rif′e̤-ra̤l), *a.* [L. *spina*, spine, + Gr. *περιφέρεια*, periphery, + *-al*¹.] Relating to the spinal cord, or nerve-center, and the periphery. Also *spinoperipheral.* *Buck*, Med. Handbook, VI. 845.

spinipetal (spī-nip′e-ta̤l), *a.* [L. *spina*, spine, + *petere*, seek.] In *neurol.*, moving from the periphery of the body toward the spinal cord: said of afferent nerve-impulses. Compare ★*spinifugal.* Also *spinopetal.* *Buck*, Med. Handbook, VII. 325.

Spinivomer (spī-ni-vō′mėr), *n.* [NL., < L. *spina*, spine, + *vomer*, plowshare.] A genus of snipe-eels taken in the Atlantic at a depth of over two thousand fathoms.

spinner¹, *n.* **6.** A quality of leaf suitable for roll tobacco. See *spinning-leaf* ★*tobacco.*

spinning, *n.* **3.** In *angling*, fishing with a spinner. See *spinner*¹, 1 (*c*).

> In all sorts of *spinning* . . . a good breeze is usually an advantage.
> *H. Cholmondeley-Pennell*, Modern Pract. Angler, p. 123.

4. The operation of running off a part of the water on the top of the charge in an amalgamating-mill.—**5.** The operation of molding metals such as silver, etc., while they are rapidly revolving ('spinning'), in a manner similar to the molding of wet clay, into pitchers, vases, etc.

spinning-gland (spin′ing-gland), *n.* A silk-gland. See *spinneret* and *spider.*

spinning-lathe (spin′ing-lāᴛʜ), *n.* In *sheet-metal work*, a power-lathe of simple form and heavy construction adapted to metal-spinning. By the use of a number of attachments and special tools it can also be used for finishing sheet-metal ware which has been stamped in a press, by spinning a portion of the vessel into new forms, and for burnishing, trimming, beading, and wiring vessels already partly finished on other machines. See ★*metal-spinning.*

spinning-machine, *n.*—**Throstle spinning-machine.** Same as *throstle*, 2.

spinning-metal (spin′ing-met″a̤l), *n.* A metal or an alloy which by reason of its great ductility is capable of being worked up from disks into surfaces of revolution by spinning in a lathe. Such are copper, brass, britannia, and the like.

spinning-mule (spin′ing-mūl), *n.* An intermittent spinning-machine for cotton, etc., invented by Samuel Crompton in 1779, combining the principles of Hargreaves's and Arkwright's spinning-machines. See *mule*, 5.

spinning-tackle (spin′ing-tak″l), *n.* In *angling*, tackle for fishing with a spinner or spoon-bait. It consists of a spinning-hook or -hooks attached by a trace to the reel-line.

spinning-tube (spin′ing-tūb), *n.* Any one of the small tubes on the end of a spider's spinneret.

spinning-whorl (spin′ing-hwėrl), *n.* Same as *whorl*, 4. Also called *spindle-whorl.* *Haddon*, Evolution in Art, p. 177.

spinobulbar, *a.* Same as ★*spinibulbar.*

spinocerebellar, *a.* Same as ★*spinicerebellar.*

spinola (spin′ọ̄-lạ̈), *n.*; pl. *spinolæ* (-lē). [NL., irreg. (or from It. *spinola*, pron. spi-nō′lä) dim., < L. *spina*, a thorn, spine. See *spine.*] Same as *spina bifida.*

spinomuscular, *a.* Same as ★*spinimuscular.*

spinoperipheral, *a.* Same as ★*spiniperipheral.*

spinopetal, *a.* Same as ★*spinipetal.*

spinthariscope (spin-thar′i-skōp), *n.* [Gr. *σπινθαρις* (*σπινθαριδ-*), a spark, more prop. **spintharidoscope* or **spintheroscope*, ‹ *σπινθήρ*, a spark (see *scintilla*), + *σκοπεῖν*, view.] An instrument, invented by Sir William Crookes, exhibiting the fluorescence produced by radium, containing a screen of fluorescent material, usually willemite (zinc silicate), on which a trace of radium is mounted, and a magnifying-glass in front of the screen. In darkness the screen shows a number of scintillating sparks caused by the impact of the radium rays on the willemite.

> A convenient way to show these scintillations is to fit the blende screen at the end of a brass tube with a speck of radium salt in front about a millimeter off, and to have a lense at the other end. I propose to call this little instrument the '*spinthariscope*,' from the Greek word *σπινθαρις*, a scintillation.
> *Sir W. Crookes*, in Science, June 26, 1903, p. 1002.

spinthariscopic (spin-thar-i-skop′ik), *a.* [*spinthariscop*(*e*) + *-ic.*] Of or pertaining to the phenomena exhibited in the spinthariscope.

spintherism (spin′thẹ-rizm), *n.* [Gr. **σπινθηρισμός*, ‹ *σπινθηρίζειν*, emit sparks, ‹ *σπινθήρ*, a spark.] The sensation as of points of light dancing before the eyes.

spintheropia (spin-thẹ-rō′pi-ạ̈), *n.* [NL., ‹ Gr. *σπινθήρ*, spark, + *ὤψ*, eye.] Same as ★*spintherism.*

Spiny bamboo. See ★*bamboo.*

spiny-eel, *n.* **2.** An eel-like fish of the family *Notacanthidæ*, found in deep water, and characterized by the presence of numerous spines in the dorsal fin.

spiny-rayed (spī′ni-rād), *a.* Having spines in the fins: said of certain fishes, particularly when more than one or two spines are present in the dorsal fin. Fishes with only a single dorsal spine do not technically belong to the spiny-rayed fishes, *Acanthopteri.*

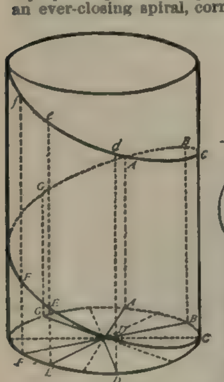
S-pipe (es′pīp), *n.* See ★*pipe*¹.

spiracle, *n.* **3.** A vent for small explosive outbreaks, produced upon the surface of a still highly heated and at least partially molten lava-stream by the escape of imprisoned vapors. A little cone of ejected clots may gather around it.

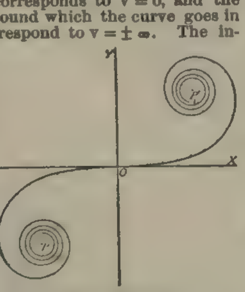
spiradenoma (spī″ra-dẹ̄-nō′mạ̈), *n.*; pl. *spiradenomata* (-mạ-tạ̈). [NL., ‹ Gr. *σπεῖρα, coil,* + *adenoma.*] Adenoma of the sweat-glands. *Buck*, Med. Handbook, I. 116.

Spiræa, *n.*—**Blue spiræa.** Same as *Japanese* ★*beni.*

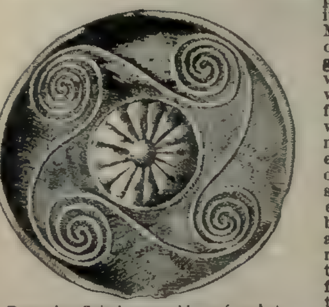
spiral, *n.* **6.** A loop in a railroad line used to overcome steep grades in a mountainous region by carrying the line through a continuously rising curve. Spirals may be cut entirely within a mountain in the form of a constantly turning and rising tunnel, the outlet being much higher than the inlet. The more common valley spirals consist of double loops or complicated curves which return and pass under or over one another, by means of tunnels or bridges, on a continuously rising grade. The spiral loop on the Georgetown branch of the Union Pacific Railroad is an example of a valley spiral.—**Bismuth spiral.** See ★*bismuth.*—**Conical spiral**, a spiral on a conical surface.—**Conjugate spiral**, in phyllotaxy, a whorl involving two or more genetic spirals parallel with each other.—**Cornu's spiral**, a curve exhibiting the relationship between Fresnel's integrals considered as rectangular coördinates (x, y) of a point: $x = \int_0^v \cos\frac{1}{2}\pi v^2.dv$, $y = \int_0^v \sin\frac{1}{2}\pi v^2.dv$. The origin of coördinates O corresponds to $v = 0$, and the asymptotic points, P', P_1, round which the curve goes in an ever-closing spiral, correspond to $v = \pm\infty$. The intrinsic equation, expressing the relation between the arc σ (measured from O) and the inclination ϕ of the tangent at any point to the axis of x, is $\phi = \frac{1}{2}\pi\sigma^2$.—**Cylindrical spiral**, a helical curve which winds round a cylinder like a screw.—**Drobisch's spiral**, in *psychol. acoustics*, a diagram, published by M. W. Drobisch in 1855, which represents by a spiral line the range of tonal hearing and the interrelations of the tones of the musical scale. The spiral takes the same place among diagrammatic representations of auditory sensation that is held among those of visual sensation by the color triangle or the color pyramid.—**Fermat's spiral.** Same as *parabolic spiral* (which see, under *spiral*).—**Flat spiral**, in *geom.*, a plane spiral.—**Reciprocal spiral.** Same as *hyperbolic spiral* (which see, under *spiral*, 1).—**Returning spiral**, a double spiral, the two branches originating in a common point: a favorite motive in Mycenæan decoration.—**Roget's spiral**, a vertical helix of wire the lower free end of which dips into mercury. An electric current of sufficient strength shortens the helix by the mutual attraction of neighboring turns and the free end leaves the mercury, thus breaking circuit. The helix immediately returns to its normal length, the circuit is again closed and this action repeats itself indefinitely, giving a rapid vertical vibratory motion to the spiral.—**Spiral theory**, the theory that the Milky Way consists of streams of stars arranged spirally in space.—**Vortex spiral**, a spiral fluid vortex. *W. M. Hicks*, 1895.



Drobisch's Spiral.
(From Hofler's "Psychologie.")



Cornu's Spiral.



Returning Spiral on a gold cup found at Ægina, now in British Museum.
(From Jour. Hellenic Studies, by permission of The Council.)

spiral, *v.* **II.** *intrans.* To assume a spiral form; move in a spiral course.—**Spiraling winds.** See ★*wind*².

spirale (spī-rā′lẹ̄), *n.*; pl. *spiralia* (-li-ạ̈). [NL., neut. of ML. *spiralis*, spiral.] In the brachiopods of the superfamily *Spiriferacea*, either of two spirally coiled calcareous ribbons which support the brachia. These consist of two cones placed base to base or with their axes inclined to one another. The spiralia are usually joined by a transverse band or jugum the bifurcations from which may be produced between the volutions of the spiralia, thus forming a double spiral on each side, or diplospire.

spiraliform (spī-ral′i-fôrm), *a.* [ML. *spiralis*, spiral, + L. *forma*, form.] Having the form of a spiral; specifically, in decoration, noting a pattern or type based on the spiral: common in primitive art, especially the Mycenæan in Greece proper and Crete. See *returning* ★*spiral. Haddon*, Evolution in Art, p. 142.

spiraxon (spī-rak′son), *n.* [Gr. *σπεῖρα*, a coil, + *ἄξων*, axis.] Among sponge-spicules, a monaxon whose ideal axis is a screw helix. See ★*pedinaxon.*

spireme (spī′rēm), *n.* [Gr. *σπείρημα, σπείραμα*, a coil, ‹ *σπειρᾶσθαι*, to be coiled, ‹ *σπεῖρα*, a coil.] The stage of the nucleus in karyokinesis, or mitosis, during which the chromatin assumes the form of a continuous or segmented thread. *Flemming*, 1882.

Spiriferina (spir″i-fe-rī′nạ̈), *n.* [NL., ‹ L. *spira*, a spire, + *ferre*, bear, + *-ina*¹.] A genus of spire-bearing brachiopods like *Spirifer*, but having a punctate shell-substance and a median septum in the ventral valve: found in rocks from the Carboniferous to the Jurassic.

spirigerous (spi-rij′ẹ-rus), *a.* [L. *spira*, a spire, + *gerere*, bear.] Spire-bearing; spiriferous.

spirilliform (spī-ril′i-fôrm), *a.* [NL., ‹ *Spirill*(*um*) + *-form.*] Shaped like bacteria of the genus *Spirillum.*

spirillosis (spī-ri-lō′sis), *n.* [NL., ‹ *Spirill*(*um*) + *-osis.*] A general term denoting any infection of any animal by organisms belonging to the genus *Spirillum.*

> *Spirillosis* of Fowls.—E. Marchoux and A. Salimbeni have investigated a disease of fowls common in Rio de Janeiro. The symptoms are diarrhœa, pyrexia, malaise, and death usually in a few days. In the blood they found a spirillum, and this blood produced the disease in other fowls. *Jour. Roy. Micros. Soc.*, Feb., 1904, p. 100.

Spirillum, *n.* **2.** [*l. c.*] A bacterium of the genus *Spirillum.*—**Deneke's cheese spirillum**, a species of bacteria, *Microspira* (*Spirillum*) *tyrogena*, found in old cheese.—**Miller's spirillum**, *Microspira* (*Spirillum*) *Milleri*, found in decaying teeth.—**Spirillum of Asiatic cholera.** Same as *Koch's comma* ★*bacillus.* See ★*Microspira.*

spirit, *n.* **11.** (*b*) One of an officially recognized class of pharmaceutical preparations, formerly made by distilling with alcohol a crude drug containing some volatile and medicinally useful ingredient, but now frequently by direct solution in alcohol of this ingredient, such as a volatile oil or essence, previously obtained in separate form. Spirit of cinnamon is an example.—**Amaranth, aniline spirits.** See *tin* ★*spirits.*—**Compound spirit of ether**, a mixture of 32½ parts of ether, 65 parts of alcohol, and 25 parts of ethereal oil by volume; Hoffman's anodyne.—**Cotton spirits**, a liquor consisting chiefly of stannic salts. Sometimes used in the mordanting of cotton.—**Finishing spirit**, a name given by dyers to one of the acid mixtures containing stannic chlorid which were formerly used as mordants much more than at present. *Sadtler*, Handbook of Indust. Chem., p. 481.—**Orange spirits.** See *tin* ★*spirits.*—**Perfumers' spirit.** Same as *spirits of* ★*cologne.*—**Plum spirit**, a trade-name for one of the solutions which contain stannic chlorid used as mordants in dyeing. It derived its name from being used with a decoction of logwood to produce a plum color (purple) upon cloth.—**Puce, purple spirit.** See *tin* ★*spirits.*—**Rectified spirit.** As defined by the British Pharmacopœia, a mixture of alcohol and water which contains 84 per cent. by weight of real alcohol and has a specific gravity of .8382 at 60° F.—**Red spirits.** See *tin* ★*spirits.*—**Resin spirit.** Same as ★*pinolene.*—**Scarlet spirits.** See *tin* ★*spirits.*—**Spirit fresco**, a method of fresco-painting invented by Mr. Gambier Parry, in England, which enabled him to use wax without heating it, as in ancient encaustic. He dissolved wax in various volatile oils making a medium which could be applied in the usual way.—**Spirit of vitriol**, an old name for sulphuric acid.—**Spirit of vitriolic ether.** See ★*ether*¹.—**Spirit ration.** See ★*ration.*—**Spirits of cologne.** See ★*cologne spirit.*—**Spirit varnish.** See ★*varnish.*—**Spirit Wrestlers.** See ★*Doukhobors.*—**The Great Spirit**, the supposed supreme deity of the North American Indians. While many Indian tribes believe in a spirit of great power, their ideas are not monotheistic, and this spirit is only one among many that, in their belief, have sway over the destinies of man. In its refined form the 'Great Spirit' of the Indians is an elaboration of American romancers and poets.—**Tin spirits.** Specifically, a solution of stannous chlorid or tin crystals: sometimes known by the names of *yellow, orange, scarlet, amaranth, purple, plum*, and *puce spirits*, when sulphuric and hydrochloric acids are used in its preparation. When nitric and hydrochloric acids are used in its preparation it is sometimes designated as *red*, and *aniline spirits.* Other special names are sometimes applied to tin spirits, but they are of little importance, as the introduction of the coal-tar coloring matters has rendered their use almost obsolete.—**Yellow spirit**, a manufacturers' name for a solution of tin made with a mixture of hydrochloric and sulphuric acids, formerly used as a mordant in dyeing yellow with quercitron

spiritine (spir′i-tin), *n.* [*spirit* + *-ine*².] A trade-name for spirits of turpentine made by distilling with water the refuse wood of the long-leafed pine in the southern United States. In an imperfectly refined state it has been regarded as different from ordinary spirits of turpentine, obtained by distillation of the oleoresinous exudation from the tree, but when properly purified it is the same material.

spiritology (spi-ri-tol′ọ̄-ji), *n.* [L. *spiritus*, breath, spirit, + Gr. *-λογια*, ‹ *λέγειν*, speak.] Same as *pneumatology*, 3.

Spiritual wife. See ★*wife.*

Spiritus Mindereri. See *spirit of Mindererus.*—**Spiritus salis**, a name applied by the alchemist Basil Valentine to hydrochloric acid obtained by heating together common salt and green vitriol. See *spirit of sea-salt.*—**Spiritus tartari**, a name given by Paracelsus to the product of the destructive distillation of the tartar from wine-casks. This he used medicinally. It is a complex mixture, containing among other substances pyrotartaric acid.

Spirobranchiopoda (spī″rọ̄-brang″ki-op′ọ̄-dạ̈), *n. pl.* [NL., ‹ Gr. *σπεῖρα*, a coil, + *βράγχια*, gills, + *πούς* (*ποδ-*), foot.] A name introduced by Gray for the *Brachiopoda.*

Spiroceras (spī-ros′ẹ-rạs), *n.* [NL., ‹ Gr. *σπεῖρα*, a coil, + *κέρας*, a horn.] A genus of Jurassic ammonoid cephalopods showing decadent or phylogerontic characters in its loose open coils.

spirograph (spī′rọ̄-gráf), *n.* [Gr. *σπεῖρα*, a coil, + *γράφειν*, write.] **1.** A device for drawing spirals.—**2.** Same as ★*atmograph*, 1.

spirographidin (spī-rọ̄-graf′i-din), *n.* [NL. *Spirograph*(*is*) + *-id* + *-in*².] A hyalin derived from spirographin. *W. D. Halliburton*, Chem. Physiol. and Pathol., p. 486.

spirographin (spī-rog′rạ-fin), *n.* [NL. *Spirograph*(*is*) (see def.) + *-in*².] An albuminous substance, belonging to the hyalogens, found in the skeletal portions of a worm, *Spirographis. C. E. Simon*, Physiolog. Chem., p. 46.

spirogyrate (spī-rọ̄-jī′rāt), *a.* [Gr. *σπεῖρα*, a coil, + *γυρός*, round.] Twisted or coiled in a spiral.

spiroid (spī′roid), *a.* [Gr. **σπειροειδής, σπειρώδης*, ‹ *σπεῖρα*, a coil, + *εἶδος*, form.] More or less spiral; resembling a spiral. *Buck*, Med. Handbook, VII. 154.

spirojector (spī′rọ̄-jek-tọr), *n.* [L. *spira*, a coil, + *-jector* (in comp.), ‹ *jacere*, throw.] A commercial name for a form of ejector, or siphon-condenser, in which the descending current of injection-water is compelled to move in a helical path by deflecting flanges. It is asserted that a more effective aspiration of air is secured at the point where the vacuum is to be maintained than where no care is taken to secure a spiral motion.

> The pump for supplying water to the *spirojector* condensers has a double-reduction 20-hp General Electric motor. *Elect. World and Engin.*, Jan. 2, 1904, p. 14.

Spirorbis (spī-rôr′bis), *n.* [NL., < L. *spir(a)*, a coil, + *orbis*, a circle.] A genus of tubicolous worms which form spirally enrolled calcareous tubes cemented to some object by the flat lower side. The spiral may be dextral or sinistral, and is frequently ornamented with tubercles or spines. Tubes of this kind are found in Paleozoic rocks and thenceforward to the present seas.

spiroscope (spī′rọ-skōp), *n.* [Gr. *σπεῖρα*, a coil, + *σκοπεῖν*, view.] Same as *spirometer*.

Spirosoma (spī-rọ-sō′mä), *n.* [NL. (Migula, 1900), so named from the form of the cells; < Gr. *σπεῖρα*, a coil, + *σῶμα*, body.] A genus of bacteria having broad comma-shaped or spiral non-flexile and non-motile cells. They commonly form zoöglœa. Most of the species are found in sewer-mud.

spiroylic (spī-rọ-il′ik), *a.* [*Spir(æa)* + *-o-* + *-yl* + *-ic.*] Derived from *Spiræa*.

spirular (spir′ụ-lär), *a.* [*spirul(e)* + *-ar*3.] Having the form of or pertaining to a spirule.

spirule (spir′ūl), *n.* [L. *spirula*, a small twisted cake, lit. a little coil, dim. of *spira*, a coil: see *spire*2.] In the sponge-spicules, a form with a gently spiral curve to the rhabd.

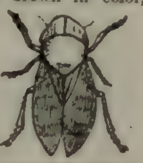
spissum (spis′um), *n.* [ML., neut. of L. *spissus*, thick.] In *medieval music*, a semitone or other small interval.

spitfire, *n.*—**Spitfire jib**, *naut.*, a small storm jib, common on English cutters.

spitting-devil (spit′ing-dev″l), *n.* See ★*peeoy*.

spittle1, *n.* 2. The secretion surrounding the larva of a spittle-insect.

spittle-insect, *n.*—**Cranberry spittle-insect**, a small cercopid, *Clastoptera proteus*, whose larvæ are found in frothy masses on the growing shoots of cranberry.—**Four-spotted spittle-insect**, an American cercopid, *Aphrophora quadrinotata*, brown in color, with four black spots on the wing-covers, the spaces between the spots being whitish.—**Signoret's spittle-insect**, an American cercopid, *Aphrophora signoreti*, whose froth-covered larva is often found on grape-canes.



Four-spotted Spittle-insect (*Aphrophora quadrinotata*). (Enlarged about two and one-half times.)

spitzharfe (shpitz′här″fe), *n.* [G.] Same as *pointed* ★*harp*.

splanchnectopia (splangk-nek-tō′pi-ạ̈), *n.* [NL., < Gr. *σπλάγχνον*, pl. *σπλάγχνα*, viscera, + *ἔκτοπος*, out of place.] A displacement of any of the viscera.

splanchnocœle, *n.* 2. In *embryol.*, the portion of the body-cavity lying between the somatopleure and splanchnopleure of the vertebrate embryo and persisting in the adult as the pleuroperitoneal cavity.

splanchnoderm (splangk′nọ-dėrm), *n.* [Gr. *σπλάγχνον*, pl. *σπλάγχνα*, viscera, + *δέρμα*, skin.] The splanchnopleure, or splanchnic layer of mesoderm, in the vertebrate embryo.

> In Amblystoma the mesonephric blastula is derived from a portion of the somite which is homologous with the mesomer of elasmobranchs, and it contains both *splanchnoderm* and somatoderm. *Jour. Roy. Micros. Soc.*, Oct., 1904, p. 511.

splanchnodynia (splangk-nọ-din′i-ạ̈), *n.* [NL., < Gr. *σπλάγχνον*, pl. *σπλάγχνα*, viscera, + *ὀδύνη*, pain.] Pain in any of the abdominal organs.

splanchnomegaly (splangk-nọ-meg′ạ-li), *n.* [Gr. *σπλάγχνον*, pl. *σπλάγχνα*, viscera, + *μέγας*, (*μεγαλ-*), great.] A condition in which the abdominal organs are of abnormal size.

splanchnopathy (splangk-nop′ạ-thi), *n.* [Gr. *σπλάγχνον*, pl. *σπλάγχνα*, viscera, + *-πάθεια*, < *πάθος*, disease.] Disease of any of the abdominal viscera.

splanchnoptosis (splangk-nop-tō′sis), *n.* [NL., < Gr. *σπλάγχνον*, pl. *σπλάγχνα*, viscera, + *πτῶσις*, a falling.] Downward displacement of the abdominal viscera, especially the intestines; enteroptosis. Also called *Glénard's disease*. *Med. Record*, March 7, 1903, p. 398.

splash, *v. t.* 5. In *lumbering*, to drive (logs) by releasing a head of water confined by a splash-dam.

splash, *n.* 7. A bird-fanciers' name for an elongate spot of color.—8. A dash; a show; display. [Slang.]

> The Patrie Française made a great *splash* in the way of a patriotic funeral for the assassinated colonel. *H. Lynch*, French Life in Town and Country, ix.

II. *a.* Dashing; ostentatious; extravagant.

> Girls . . . brought up in foolish luxury, whose parents "entertained" in that thriftless, *splash*, Irish fashion, drank champagne, drove horses, when the French of the same class would be . . . teaching their children the art of counting. *H. Lynch*, French Life in Town and Country, vii.

splash-about (splash′ạ-bout), *n.* A device or method to secure lubrication of working surfaces in the inclosed crank-case of a steam-engine by agitating the lubricant in a suitable well. If the oil is struck by the end of the connecting-rod and the latter has a spattering effect upon the oil, the lubrication is better assured.

splash-board, *n.* 2. A kind of screen raised above the deck-line or bulwark-rail, to prevent water from coming on deck owing to a low freeboard or a swell.

> The cabin did n t go clear to the stern, either. Only the engine-room roof was back there and that was so low that the *splash-board* stood up in front of the wheel like a back-yard fence—but higher. *C. D. Stewart*, Partners of Providence, vi.

splash-dam (splash′dam), *n.* A dam built to store a head of water for driving logs.

splashed (splasht), *p. a.* Marked with splashes; specifically, having the tips of many of the body-feathers marked with elongate spots of color: as, a *splashed* pouter pigeon.

splashing (splash′ing), *n.* In a specific use, a succussion sound (see *succussion*).

> The stomach was dilated and extended to about two fingers' breadth below the umbilicus; "*splashing*" could be detected. *Lancet*, Aug. 29, 1903, p. 587.

splat2 (splat), *n.* A thin, flat piece of wood; in *furniture*, a flat piece of wood worked into a back or other part of a frame. [Prov. Eng.]

> The carving of this specimen is peculiarly good, both in the *splats* and the front leg. *R. S. Clouston*, in Burlington Mag., V. 382.

splate (splāt), *n.* [Origin not ascertained.] A substance used for the purpose of adding extra weight to sole-leather (which is sold by the pound). *Modern Amer. Tanning*, p. 192.

splatter-work (splat′ėr-wėrk), *n.* In *lithography*, an effect produced by filling a brush with ink and drawing it over a knife or other edge. *Singer and Strang*, Etching, Engraving, etc., p. 124.

splay1, *v. t.* 4. In *cooperage*, to form (a barrel) by drawing it together at the ends.

spleen, *n.*—**Accessory spleen**, a small mass of splenic tissue detached from the spleen proper.—**Wandering spleen**, a spleen the attachments of which have become stretched so that there is more or less displacement of the organ.

spleenwort, *n.*—**Dwarf spleenwort**, *Asplenium Trichomanes*, a small fern of wide distribution, common upon shaded ledges. The fronds, which are borne in rosettes, are narrow and simply pinnate, from 4 to 8 inches long, with polished purplish-brown stipes and rachises. See under *Asplenium* and *spleenwort*.—**Green spleenwort**, *Asplenium viride*, a small fern of boreal range in Europe and North America, similar to the dwarf spleenwort, but readily distinguished by the green rachis, which suggests its vernacular name.—**Silvery spleenwort**, *Athyrium thelypteroides*, a woodland fern of eastern North America and eastern Asia, the common name referring to the color of the under surface of the immature frond, in which the sori are silvery white, numerous, and borne close together.

splenatrophia (splē-nạ-trō′fi-ạ̈), *n.* [NL., < *σπλήν*, spleen, + *ἀτροφία*, atrophy.] Atrophy of the spleen. Also *splenatrophy*.

splendor (splen′dọr), *v. t.* To make splendid; illuminate with splendor; light up. [Rare.]

> 'T is not for me
> To fling a Poem, like a comet, out,
> Far-*splendoring* the sleepy realms of night.
> *Alex. Smith*, Life-Drama, i. 49.

splenectasis (splē-nek′tạ-sis), *n.* [NL., < Gr. *σπλήν*, spleen, + *ἔκτασις*, extension.] Enlargement of the spleen.

splenectomize (splẹ-nek′tọ-mīz), *v. t.*; pret. and pp. *splenectomized*, ppr. *splenectomizing*. [*splenectom (y)* + *-ize*.] To remove the spleen from by a surgical operation.

Splenic anemia, cachexia. See ★*anemia*, ★*cachexia*.

splenification (splē″ni-fi-kā′shọn), *n.* [Gr. *σπλήν*, spleen, + L. *-ficatio(n-)*, < *facere*, make.] Same as *splenization*.

splenocolic (splē-nọ-kol′ik), *a.* [Gr. *σπλήν*, spleen, + *κόλον*, colon.] Relating to both the spleen and the colon: noting a fold of peritoneum called the *splenocolic ligament*.

splenolymph (splē′nọ-limf), *a.* [Gr. *σπλήν*, spleen, + L. *lympha*, water (lymph).] Relating to or originating in both the spleen and the lymphatic glands. *Buck*, Med. Handbook, IV. 469.—**Splenolymph glands.** See ★*gland*.

splenolymphatic (splē″nọ-lim-fat′ik), *a.* Same as ★*splenolymph*.

splenolysin (splẹ-nol′i-sin), *n.* [Gr. *σπλήν*, spleen, + *λύσις*, dissolving, + *-in*2.] A cytotoxin resulting on immunization with spleen substance. *Buck*, Med. Handbook, Appendix, p. 539.

splenomedullary (splē-nọ-med′u-lạ̄-ri), *a.* [Gr. *σπλήν*, spleen, + L. *medulla*, marrow, + *-ary*.] Relating to both the spleen and the bone-marrow.

> The general result of the investigations has been to show that an increase in the number of leucocytes does not necessarily go hand in hand with a rise of endogenous alloxuric bodies in the urine, but that only in cases of *spleno-medullary* leucocythæmia is a distinct increase present. *R. Hutchison* and *J. J. R. Macleod*, 122 Jour. Exper. [Med., Oct. 1, 1901, p. 542.

splenomegalia (splē″nọ-me-gā′li-ạ̈), *n.* [NL., < Gr. *σπλήν*, spleen, + *μέγας* (*μεγαλ-*), great.] Enlargement of the spleen. *Med. Record*, April 11, 1903, p. 590.

splenomegaly (splē-nọ-meg′ạ-li), *n.* Same as ★*splenomegalia*.

splenomyelogenous (splē″nọ-mī-e-loj′e-nus), *a.* [Gr. *σπλήν*, spleen, + *μυελός*, marrow, + *-γενής*, -producing.] Relating to or originating in both the spleen and the bone-marrow: noting a form of leucemia.

> *Spleno-myelogenous* leucæmia or myelœmia is almost always chronic, and may last for several years. *Encyc. Brit.*, XXXI. 558.

splenoncus (splẹ-nong′kus), *n.* [Gr. *σπλήν*, spleen, + *ὄγκος*, mass.] Same as ★*splenomegalia*.

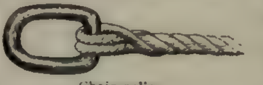
splenonephroptosis (splē″nọ-nef-rop-tō′sis), *n.* [NL., < Gr. *σπλήν*, spleen, + *νεφρός*, kidney, + *πτῶσις*, a falling.] Displacement downward of the spleen and of the kidney on the same side.

> Consequently, ptoses of the spleen do not exist without hepatoptoses. The same may be said of *splenonephroptosis*, which always accompanies ptosis of the liver. *Med. Record*, Oct. 19, 1907, p. 641.

splenopexy (splē′nọ-pek-si), *n.* [Gr. *σπλήν*, spleen, + *πῆξις*, a fixing.] Operative fixation of a wandering spleen. *Med. Record*, June 27, 1903, p. 1057.

splenoptosis (splē-nop-tō′sis), *n.* [NL., < Gr. *σπλήν*, spleen, + *πτῶσις*, a falling.] Same as *wandering* ★*spleen*. *Med. Record*, May 30, 1903, p. 862.

splice, *n.* 3. In *cricket*, that part of the handle of the bat which fits into the blade.—**Chain-splice**, a rope spliced into the link of a chain, only two strands of the rope being used.—**Drawing splice**, a splice made without tucking the ends in order that the strands may be readily drawn out.—**Horseshoe-splice**, a short piece of rope with its two ends spliced into the bight of another rope, so that when the latter is pulled taut the splice will stand out distinct and with some resemblance to a horseshoe.—**Mariner's splice**, a long splice in a cable-laid rope.—**Sailmaker's splice**, the joining of two ropes of different sizes, the effect being a tapered splice.—**Wire-eye splice**, an eye or loop formed in a wire rope by splicing the end of the rope into its own part.—**Wire-long splice**, the uniting of the ends of two wire ropes, where the laying in of the many strands is so extended and carefully done that the original diameter of the rope is not increased in any part.—**Wire-short splice**, the joining of the ends of two wire ropes in a comparatively short space by a process of tucking, and which in the direct vicinity of the splice considerably enlarges the original diameter of the rope.

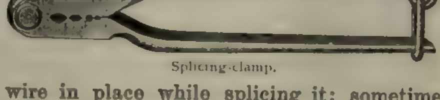


Chain-splice.

splice-bar (splīs′bär), *n.* A metallic piece or fish-plate connecting the ends of rails on a rail-way. Same as *splice-piece*.

splice-joint (splīs′joint), *n.* A joint formed by fishing, lapping, scarfing, or splicing the pieces together.

splicing-clamp (splī′sing-klamp), *n.* A lineman's hand-clamp for holding a telegraph wire in place while splicing it: sometimes called a *connector*.



Splicing-clamp.

spline, *n.* 3. In *building*, a thin piece of board, especially when used under certain conditions, as in light and thin ceiling, the filling of large panels like the backs of seats in a church, or the curved outer shell of the centering for an arch.—**Feather-tongue spline**, a spline sawed to a wedge-shaped section like a clapboard. See *clapboard*, 2.

splint, *n.* 6. A variety of bituminous coal which is of a dull, stony luster and breaks in slab-like masses; splint-coal. It is contrasted with the shining variety or *glance-coal*, which breaks in cubes and which is often strongly coking, whereas splint-coal is not.—**Interdental splint**, a splint used in fracture of the jaw, being held in position by wires passed between the teeth.—**Thomas's splint**, a form of immobilizing apparatus employed in the treatment of hip-disease and other chronic joint-affections. *Lancet*, July 4, 1903, p. 19.

splint-bar (splint′bär), *n.* Same as ★*splinter-bar*.

Splinter bulkhead. See ★*bulkhead*.

splinter-bar, *n.* 2. A bar or roller placed close in front of the revolving cutter-heads of wood-working or power-planing machines to remove or diminish the tendency of the fibers to splinter and destroy the smoothness of surface when working the stock with the grain of the wood. *D. K. Clark*, Steam Engine, IV. 408.

splinter-deck (splin′tėr-dek), *n.* See ★*deck*, 2 (*a*).

splinter-proof, *a.* II. *n.* A shelter impervious to splinters.

> The houses even of the more solid sort offered such slender defence against shells, that hundreds of households prepared what were called "*splinter proofs*" in their yards and gardens. These were little chambers or caves hollowed out of the earth.
> *J. Ralph*, An American with Lord Roberts, p. 70.

splinter-screen (splin′tėr-skrēn), *n.* A thin plate of vertical armor in the interior of a war-ship to intercept flying fragments from exploding shells.

split, *v. t.* 7. In *agri.*, same as ★*cleave*^{2}, 4.—8. In *faro*, to divide (a bet). When two cards of the same denomination come out of the box on the same turn, the banker splits all bets on that card, taking half the amount for himself.—**Splitting freeze**, a frost so severe as to split the stalk of sugar-cane; a stalk-splitting freeze. [Louisiana.]

> After a *splitting freeze*, every effort should be made to work up standing cane as rapidly as possible.
> *W. C. Stubbs*, Sugar Cane, p. 167.

To split the difference. See ★*difference*.—**To split the ridge**, in plowing, to start a new land by turning two furrow slices in opposite directions from the same line, then plowing them together again the next bout.

> This is known as *splitting the ridge* and is the best form, as all the land is ploughed, etc.
> *W. J. Malden*, Tillage and Implements, p. 106.

split, *n.* 15. In *glass-cutting*, an acute-angled cut made by a mitered wheel.—**Flesh split.** See ★*flesh-split*.

split, *p. a.* 4. In *whist*, noting a hand which contains four trumps and three of each of the plain suits.—5. In *glass-manuf.*, said of a cut made by a mitered wheel and showing an acute angle.—**Billet's split lens.** See ★*lens*.

split-finger (split′fing″gėr), *n.* A stomatopod crustacean, *Gonodactylus chiragra*, found in the West Indies. It is so called because it frequently cuts with its claws the fingers of one who handles it.

splitfoot, *n.* 2. A congenital deformity of the foot in which the separation between two adjacent toes extends farther than usual into the foot itself; cleft foot.

> Split-hand and *split-foot* deformities, their types, origin, and transmission. *Biometrika*, March, 1908, p. 26.

splithand (split′hand), *n.* A congenital deformity in which the separation between two adjacent fingers extends into the hand itself, sometimes nearly to the wrist; cleft hand.

> From the many varieties of *split-hand* and split-foot, one stands out prominently, and of this our "G" family presents notable examples. This type is characterised by its marked tendency to transmission, and by other features. *Biometrika*, March, 1908, p. 27.

split-joint (split′joint), *n.* A tongue-joint; a welded joint in which one of the parts to be joined is split or opened to receive the other part.

split-motion (split′mō″shọn), *n.* A mechanism attached to a loom for weaving center selvages to a fabric to be afterward split or severed.

split-phase (split′fāz), *a.* In *elect.*, said of an alternating single-phase current in a divided circuit where, in consequence of inductance in one branch of the circuit, there is a difference of phase between the currents in the two branches.

split-rock (split′rok), *n.* Same as *alum-root*.

splitting (split′ing), *n.* An act denoted by the verb 'split'; specifically, in harvesting tobacco, the cleaving of the stalk nearly to the base, with the purpose of 'hanging,' i.e. placing it astride a stick for curing: practised with heavy export tobacco. For other methods see ★*pegging*, 6, and ★*spearing*, 1.

splitting-machine, *n.*—**Belt-splitting machine**, a machine for dividing belt-leather parallel to the face of the hide, so as to reduce the thickness to that suitable for transmission of light power. *Sci. Amer. Sup.*, Jan. 24, 1903, p. 22629.

split-worm (split′wėrm), *n.* The tobacco leaf-miner (which see, under ★*leaf-miner*). *Yearbook U. S. Dept. Agr.*, 1898, p. 122.

splotch (sploch), *v. t.* To soil with splotches; cause to look splotchy.

> The place was as bare and rude as a printing-office seems always to be; the walls were *splotched* with ink and the floor littered with refuse newspapers.
> *W. D. Howells*, in Scribner's Mag., May, 1893, p. 545.

S. P. M. An abbreviation of *short particular meter*.

spod (spod), *n.* [Origin uncertain.] The inferior bottom leaves of the tobacco-plant; the flyings (fliers) and sand leaves. *Killebrew and Myrick*, Tobacco Leaf, p. 347.

Spode's tower. See ★*tower*^{1}.—**Spode ware.** See ★*ware*^{2}.

spodiophyllite (spod-i-of′i-līt), *n.* [Gr. *σπόδιος*, ashy, + *φύλλον*, leaf.] A metasilicate of aluminium, iron, manganese, magnesium, sodium, and potassium, related to ægirite. It occurs in ash-gray or pearl-gray rhombohedral crystals, with micaceous cleavage, in southern Greenland.

spodogenic (spod-ọ-jen′ik), *a.* [Gr. *σποδός*, ashes, + *-γενης*, -producing, + *-ic.*] Caused by or giving origin to waste organic material. See *spodogenous*. *Buck*, Med. Handbook, VI. 413.

Spoerer's law. Same as ★*law of zones*.

spoil-ground (spoil′ground), *n.* A place where refuse material from an excavation or from dredging is deposited; a spoil-bank.

> An examination of the *spoil ground* at Spithead showed that the deposit from the dredges, which have been at work for two years in Portsmouth harbour, has made no appreciable difference in the depth.
> *Geog. Jour.* (R. G. S.), IX. 656.

spoil-truck (spoil′truk), *n.* A form of wagon or buggy, running usually on a track, in excavations or underground workings, on which the refuse or material to be wasted is loaded and run off to the waste-dump or spoil-bank.

> The space occupied by the pipes in service allowed so little clearance room on each side of the heading *spoil-trucks* as to impede and even endanger the safety of the various maneuvers.
> *Sci. Amer. Sup.*, April 1, 1905, p. 24452.

spoke^1, *n.* 5. See ★*spoke-stitch*.

spoke-machine (spōk′ma-shēn″), *n.* In *wood-working*, a general term applied to a number of machines, each one of which performs one step in the process of making a wagon-wheel spoke. In several machines two or more steps in the work of finishing a spoke are performed by one machine, as in the *spoke-tenoning, -mitering*, and *-pointing machine*, a machine that cuts a tenon on the spoke, shaves the end down to the proper miter, and points the end of the spoke. Examples of these multiple machines are found in the *tenoning and equalizing machine, spoke-facing and -tapering machine, spoke-sizing and retenoning machine.* The names, as in the *spoke-throating machine*, are self-explanatory. Such machines are usually fitted with *feeding-reels*, the spokes being laid by unskilled labor in the reels, and the machine performing all the work automatically. In all, the results are obtained by means of revolving cutter-heads carrying cutters of various shapes.

spoke-shave, *n.* 2. A ring with cutting edge attached to a handle, used in certain operations within the cavity of the nose. *Buck*, Med. Handbook, VI. 120.

spokesman, *n.* 2. One who or that which speaks; one who is able to speak. [Rare.]

> Psittacus erithacus — the well-known Grey Parrot with a red tail — is the most accomplished *spokesman* of the whole group. *Encyc. Brit.*, XVIII. 323.

spoke-stitch (spōk′stich), *n.* A method of sewing by which the loose threads of drawn-work are sewn together in a series of short bunches or groups called *spokes*.

spondylarthrocace (spon″di-lär-throk′ạ-sē), *n.* [NL., < Gr. *σπόνδυλος*, a vertebra, + *ἄρθρον*, joint, + *κάκη*, bad condition.] Any disease of the vertebræ, especially caries.

spondylioid (spon-dil′i-oid), *a.* [*spondyli(um)* + *-oid.*] Having the form of a spondylium.

Spondylitis rhizomelia, progressive rigidity of the spine due to ankylosis of the vertebræ advancing from below upward.

spondylium (spon-dịl′i-um), *n.*; pl. *spondylia* (-ạ̈). [NL., < Gr. *σπονδύλιον*, dim. of *σπόνδυλος*, a vertebra.] In certain genera of the brachiopods, as *Pentamerus* and *Conchidium*, an internal spoon-shaped shelly plate extending from the beak of the ventral valve and serving as a support for the muscles. It is usually connected with the bottom of the valve by a vertical septum.

spondylocace (spon-di-lok′ạ-sē), *n.* [Gr. *σπόνδυλος*, a vertebra, + *κάκη*, a bad condition.] Same as ★*spondylarthrocace*.

spondylodynia (spon″di-lọ-din′i-ạ̈), *n.* [NL., < Gr. *σπόνδυλος*, a vertebra, + *ὀδύνη*, pain.] Pain in the spine.

spondylopyosis (spon″di-lọ-pī-ō′sis), *n.* [NL., < Gr. *σπόνδυλος*, a vertebra, + *πύον*, pus, + *-osis.*] Suppurative inflammation of the vertebræ.

spondylose (spon′di-lōs), *n.* Same as *spondylitis*.

spondylotomy (spon-di-lot′ọ-mi), *n.* [Gr. *σπόνδυλος*, a vertebra, + *-τομια*, < *ταμεῖν*, cut.] 1. Same as ★*laminectomy*.—2. Division of the spine of the fetus in order to effect delivery in a case of impacted cross-birth.

sponge, *n.* 3. (*c*) Any absorbent material employed to take up the blood and other fluids in surgical operations.

> Aprons, towels, gauze *sponges*, blankets, and sheets.
> *Buck*, Med. Handbook, I. 568.

Bakers' sponge test. See ★*test*^{1}.—**Great sponge**, the immense swampy forest tract which lies at the head-waters of the Kongo river, in the interior of Africa.

> Not even in the "*great sponge*," from which the Zambesi and the Congo draw their remote supplies, do we meet with such impenetrable density.
> *J. S. Keltie*, in Smithsonian Rep., 1890, p. 287.

Platinum sponge. See ★*platinum*.

sponged (spunjd), *p. a.* Specifically, in *ceram.*, decorated with designs transferred to the ware by means of a piece of sponge cut in a pattern and dipped into the coloring preparation.

sponge-graft (spunj′gråft), *n.* See ★*graft*^{2}.

sponge-grafting (spunj′gråf″ting), *n.* The employment of sponge-grafts. See ★*graft*^{2}.

sponge-iron (spunj′ī″ėrn), *n.* Porous iron produced in a bloomery. *Phillips and Bauerman*, Elements of Metallurgy, p. 197.

sponge-lead (spunj′led), *n.* Same as *spongy* ★*lead*.

sponge-shrimp (spunj′shrimp), *n.* See ★*shrimp*^{2}.

spongiarian (spon-ji-ā′ri-ạn), *a.* [NL. *_spongiarius_, < L. *spongia*, sponge, + *-an.*] Pertaining to or containing *Spongiæ* or sponges: as, the *spongiarian* bed of the Upper Cretaceous in Great Britain.

spongiculture (spun′ji-kul-ṭụ̄r), *n.* The cultivation and growing of sponges.

> Sponges in Commerce, *Spongiculture*.
> *Encyc. Brit.*, XXXII. 813.

sponging (spunj′ing), *n.* 1. The act denoted by the verb 'sponge.'—2. In curing yellow tobacco, a staining of the face side of the leaf of a dull Spanish brown, due to insufficient heat in the process of fixing the color.

spongioblast (spon′ji-ọ-blåst), *n.* [Gr. *σπογγιά*, sponge, + *βλαστός*, germ.] 1. In *histol.*, one of the branching ectodermic cells situated in the embryonic brain and spinal cord and giving rise to the neuroglia: distinguished from ★*neuroblast*.

> Mitotic figures are occasionally found in multipolar nerve cells and in *spongioblasts*.
> *Science*, Jan. 17, 1902, p. 103.

2. One of the granules in the reticular layer of the retina which send prolongations into the layer of rods and cones.

spongiologist (spon-ji-ol′ọ-jist), *n.* Same as *spongologist*.

> Sollas and other competent *spongiologists* consider that the leucon type has been evolved many times.
> *Natural Science*, Jan., 1897, p. 30.

spongioplasm, *n.* 2. The supporting framework of the cell protoplasm, inclosing in its reticulum the hyaloplasm. *Buck*, Med. Handbook, II. 761.—3. In *entom.*, the longitudinal and radiating filaments in the muscle-fiber of an arthropod.

> The longitudinal . . . and radiating filaments or reticulum (*spongioplasm* of Gehuchten) lie in a nutritive filling substance (the hyaloplasm of Gehuchten).
> *A. S. Packard*, Text-book of Entom., p. 217.

spongioporphyrin (spon″ji-ọ-pôr′fi-rin), *n.* [Gr. *σπογγιά*, sponge, + *πορφύρα*, purple, + *-in*^{2}.] A pigment found in an Australian sponge, *Suberites Wilsoni*. *Encyc. Brit.*, XXVII. 151.

spongy, *a.* 5. In *bookbinding*, having a certain looseness or softness, which arises from irregularities in type impressions which have not been beaten out.

For the permanent solidity of the volume beating is the best process to obtain it. A *spongy* book is very unsatisfactory. *W. Matthews*, Modern Bookbinding, p. 20.

sponson, *n.* (*b*) In a war-ship, a projecting structure in which a gun is placed: designed to enable the gun to be trained forward and aft.

sponson (spon'sọn), *v. i.* In *ship-building*, to be fitted with a sponson, or to have a projection from the side of a vessel of the form of a sponson: usually followed by *out*.

The guards, which are usually dangerous in river boats when they go outside, were in this case *sponsoned out* and tightly planked, so that they were not a serious disadvantage to her. They tapered out very quickly forward, so that for a long distance they presented no obstruction to the bow in entering a wave.
Sci. Amer., Jan. 14, 1899, p. 23.

spool, *n.* 3. In *elect.*, the reel or bobbin upon which a resistance coil, magnet coil, or sometimes the field coil of a generator or motor is wound.

There are six high-tension and 16 low-tension *spools*, which subdivision of the windings has been chosen in order to facilitate repairs.
Elect. World and Engin., Jan. 31, 1903, p. 184.

Spool donkey. See ★*donkey*.

spool-strip (spöl'strip), *n.* In *wood-working*, a bolt of wood of suitable shape and size for turning into spools.

spoon^{1}, *n.* 3. (*i*) In *pianoforte-making*, see ★*damper-lifter*.—4. In *cricket*, a mishit which sends the ball high in the air.—**Daviel spoon**, an instrument used to extract the lens in an operation for cataract. *Buck*, Med. Handbook, II. 727.—**Puritan spoon**, in old English silver, a slip-top spoon, the end being beveled as if the knob were sliced away.—**Sharp spoon**, an instrument with spoon-shaped expanded extremity having sharp edges, used to scrape away diseased tissue.—**Slip-top spoon**, a spoon in which the end is beveled as if the knob were sliced away. Same as *Puritan* ★*spoon*. *J. S. Gardner*, Old Silver Work, p. 44.—**Souvenir spoon**, a spoon of a special design, intended to be sold as a souvenir of a particular locality.—**Spanish spoon**, a ★post-spoon (which see).—**Volkmann's spoon**. Same as *sharp* ★*spoon*.

spoon^{1}, *v. t.* 3. In *angling*, to fish for with spoon-bait.—4. In *golf*, *croquet*, and similar games, to send (the ball) into the air with the club or mallet.—5. Specifically, in *cricket*, to send (the ball) high in the air by a mishit.—6. In *golf*, to move (the club) very slowly in putting, as though it were a teaspoon: an unfair stroke. *W. Park, Jr.*, Game of Golf, p. 217.

spoon^{3}, *v. i.* II. *trans.* To be spoony about; be in love with; court. [Colloq.]

"Bobby Ferris told me . . . that there was a fellow *spooning* his sister once —"
"What 's *spooning?*"
"Oh, I dunno. . . . It 's—it 's—it 's just a thing they do, you know." *K. Grahame*, Golden Age, p. 90.

I confess I have *spooned* other women,—have perhaps made a point of telling them I adored them, simply because I did n't. *M. Hungerford*, Beauty's Daughters, vi.

spoon-bow (spön'bou), *n.* In *ship-building*, a bow the shape of which bears a general resemblance to the bowl of a spoon. Whaleback steamers of the Great Lakes and some yachts have such bows.

spoon-brake (spön'brāk), *n.* A shoe or block which is curved to fit a rounded wheel or tire.

By the side of the main gear and within the same case is a pulley on which acts a band brake, besides which shoe or *spoon brakes* are also fitted to the rear tires.
Hiscox, Horseless Vehicles, p. 339.

spoon-ladle (spön'lā"dl), *n.* See ★*butter-ladle*.

spoon-motion (spön'mō"shọn), *n.* In *cotton-manuf.*, a spoon-shaped device on a sliver-drawing frame for stopping the machine when a sliver breaks or runs out. *Thornley*, Cotton Combing Machines, p. 27.

spoon-nail (spön'nāl), *n.* A concave condition of the nails; koilonychia.

spoon-oar (spön'ōr), *n.* An oar which is curved at the end of the blade: used in racing-shells and other light boats.

spoon-tree (spön'trē), *n.* In the Danish West Indies, same as ★*cocorron*.

spoon-wheel (spön'hwēl), *n.* A form of turbine water-wheel in which the shape of the buckets receiving the water suggests a spoon-bowl.

Two of the first group of 150-hp turbines are of the Girard type and the third turbine of this group is of the Rusch "*spoon-wheel*" type.
Elect. World and Engin., Jan. 2, 1904, p. 34.

spoony, *a.* 2. Being in love; sentimentally fond of (some one): with *upon* or *on*. [Colloq.]

"Don't you think Alfred Hardie is *spoony upon* our Julia?" . . . Edward did not relish her remark, it menaced more spoons than one. *C. Reade*, Hard Cash, iv.

spoor, *n.* 2. In general, any track or trace.

The meaning of this apparent confusion is perceived when we trace out the track of the glaciers that issued from the Highlands, and follow the *spoor* of those that crept down from the Southern Uplands.
J. Geikie, The Great Ice Age, p. 69.

sporadic, *a.* 2. In *phytogeog.*, distributed in several regions: so used specifically by A. P. de Candolle (F. *sporadique*), in contrast with *endemic*, of plant genera whose species are thus distributed. Compare ★*polydemic*.

sporadicity (spō-rạ-dis'i-ti), *n.* [*sporadic* + *-ity*.] The state or quality of being sporadic.

sporadosiderite (spọ-rad-ọ-sid'ėr-īt), *n.* [*sporad*(*ic*) + Gr. σίδηρος, iron, + *-ite*^{2}.] See ★*meteorite*.

Among the distinctive and significant characters of meteorites are their fragmentary forms, . . . the scattered condition of iron crystals among silicate crystals in many cases (*sporadosiderites*), etc.
T. C. Chamberlin, in Carnegie Inst. Yearbook, 1904, p. 201.

spore^{2}, *n.*—**Summer spore**, a spore produced in summer, as the uredospores of rusts and the conidia and pycnospores of ascomycetous fungi.—**Winter spore**, a spore especially adapted to survive the winter, as the teleutospores of rust-fungi and the ascospores of pyrenomycetous fungi.

spore-print (spōr'print), *n.* A print made by placing the pileus of a fungus with the hymenium downward upon paper and allowing the spores to collect.

sporidial (spọ-rid'i-ạl), *a.* [NL. *sporidi*(*um*) + *-al*^{1}.] Of or pertaining to sporidia.

spork (spôrk), *n.* [*sp*(*oon*) + (*f*)*ork*.] A 'portmanteau-word' applied to a long, slender spoon having at the end of the bowl projections resembling the tines of a fork. [Trade use.]

sporoblast, *n.*—**Definitive sporoblast**, in *Sporozoa*, a sporoblast formed by the complete union, including the nuclei, of two conjugating gametes.

sporocyst, *n.* 2. In *bot.*, a unicellular alga which, usually by a process of division, produces only asexual spores: in contrast with *sporangium*, which is usually limited to multicellular organs producing asexual spores.

sporodochium (spō-rọ-dō'ki-um), *n.*; pl. *sporodochia* (-ạ̈). [NL., < Gr. σπορά, a spore, + δοχεῖον, a receptacle.] The dense tubercular or wart-like mass of sporogenous hyphæ which produce conidia in *Tubercularia* and related genera of the *Fungi Imperfecti*.

sporogenic (spō-rọ-jen'ik), *a.* [Gr. σπορά, seed (spore), + -γενης, -producing.] Pertaining to or of the nature of development from spores; sporogenous.—**Sporogenic cycle, germ-plasm.** See ★*cycle*^{1}, ★*germ-plasm*.

sporogonic (spō-rọ-gon'ik), *a.* [*sporogon*(*y*) + *-ic*.] Of or pertaining to sporogony.

There exists a whole group of Coccidiida, the Goussia and Coccidium of fish, of which only the *sporogonic* cycle is known, the microgametes being perhaps represented by the old Rhabdospora (Laguesse).
Encyc. Brit., XXXII. 816.

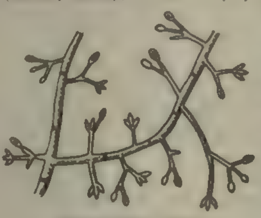
sporological (spō-rọ-loj'i-kạl), *a.* [*sporolog*(*y*) + *-ic-al*^{1}.] Pertaining to or based upon spore characters: as, a *sporological* system of classification.

sporophyl, *n.* 2. In *algol.*, a leaflet-like outgrowth upon which occur the sporangia, arising below the large terminal blade in *Alaria* and other closely related genera of the *Phæophyceæ*.

sporostrote (spō'rọ-strōt), *n.* [Gr. σπορά, seed (spore), + στρωτός, strewn.] In *phytogeog.*, a plant disseminated by spores. *F. E. Clements*.

sporotrichosis (spō-rọ-tri-kō'sis), *n.* [NL. *Sporotrich*(*um*) + *-osis*.] A mycotic disease of the skin and mucous membranes due to the presence of a mucedinous fungus of the genus *Sporotrichum*.

Sporotrichum (spọ-rot'ri-kum), *n.* [NL. (Link, 1809), < Gr. σπορά, spore, + θρίξ, hair.] A large genus of hyphomycetous fungi having much-branched, widely-spreading, prostrate hyphæ, bearing acrogenous, mostly single, uniseptate conidia. Over 120 species have been described. They are widely distributed and mostly saprophytic. *S. globuliferum* is one of the few parasitic species. It attacks the chinch-bug and has been used with some success in combating it. *S. roseum* occurs on damp paper and similar substances.



Sporotrichum roseum.

sporozoite (spō-rọ-zō'īt), *n.* [*Sporozoa* + *-ite*^{2}.] One of the minute germs of telosporidean *Sporozoa*, which enter the intestinal cells of vertebrates and start the life-cycle of the species to which they belong.

If a piece of fresh muscle be teased in some indifferent fluid and examined under a low power the whitish streaks resolve themselves into opaque, thin-walled tubes, densely packed with crescentic bodies, the so-called *sporozoites*.
Jour. Exper. Med., Nov. 29, 1901, p. 4.

sporozoitoblast (spō"rọ-zọ-it'ọ-blåst), *n.* [*sporozoite* + Gr. βλαστός, germ.] The parent-cell from which the sporozoites are derived.

sport, *n.* 10. A man; a fellow; especially a man who has a fad: as, a fresh-air *sport*. [Slang.]

A passel of surveyor *sports* who comes . . . through the hills. *A. H. Lewis*, Wolfville Nights, xii.

A short sport. See the extract. [Slang.]

There is a kind of people who go about projecting plans and weakly withdrawing them. We have a name for them back in America. Nobody likes it, nobody would be it, nor have a wife . . . *a short sport*.
L. C. Hale, in Bookman, Jan., 1906, p. 512.

sporty (spōr'ti), *a.* Sporting; devoted to sports; characteristic of sportsmen; game. [Colloq.]

A thoroughbred in spirit, as in looks;
Sporty, yet tender; and though steadfast, gay.
Judge, quoted in N. Y. Com. Advertiser, May 11, 1901.

spot, *n.* 9. A small piece of ground or inclosure; a plot: applied to land or crops. *Eng. Dial. Dict.* [Prov. Eng.]—**Bacterial spot.** See ★*bacterial*.—**Brown spot**, a disease of tobacco-leaves caused by *Macrosporium longipes*.—**Canker-spot**, a diseased and distorted place on the branch of a tree. See ★*canker*, 1 (*b*).—**Fairy-ring spot**, a disease of carnation leaves caused by *Heterosporium echinulatum*, which frequently forms irregular circles on the diseased spots. See ★*Heterosporium*.—**Fruit-spot**, a fungous disease of the pear and quince caused by *Entomosporium maculatum*, which forms dark blotches on the fruit. The same fungus occurs on the leaves, causing leaf-blight. See ★*Entomosporium*.—**Great red spot** an immense oval spot which appeared on the southern hemisphere of the planet Jupiter in 1878. It was at first of a conspicuous brick-red color, but is now (1908) extremely faint. Its cause and nature are problematical.

This can scarcely be called a current, as the surface material referred to under this heading is confined within the limits of the *Great Red Spot*. This remarkable object was detected in 1878 by M. O. Lohse, of Potsdam (who appears to have been the first to draw it), and by Professor Pritchett, of Missouri, and Mr. Dennett, of Southampton (whose observations seem to have been the earliest published), and quickly attracted general notice. Nearly every telescope was directed to its observation, and its behaviour carefully watched. It is elliptical in shape; its dimensions being about 27,000 miles in length, and nearly 9000 in breadth. What the nature of the spot may be it is impossible at present to say. Certainly it cannot be regarded as a solid feature of the planet's globe, since it is by no means stable in position; but, on the other hand, there can be no doubt that it is the product of forces which have considerable permanence, and, judging from the very definite and regular appearance of the well-known hollow or bay on the S. side of the S. equatorial belt in which the *Red Spot* lies (see Fig. 5), despite the present faintness of the spot itself, as yet show no signs of declining energy. *Knowledge*, Jan., 1904, p. 10.

Koplik's spots, the enanthema, or mucous-membrane eruption, of measles, consisting of bluish-white spots in the mouth, preceding by some days the cutaneous eruption.—**Lenticular rose spots**, the typical eruption of typhoid fever.—**Mariotte's spot.** Same as *blind spot* (which see, under *blind*^{1}).—**Ocular spot**, in *zoöl.*, a specialized pigment-spot or accumulation of pigment-cells supposed to be sensitive to light, and hence representing a preliminary stage in the phylogenetic development of the eye; an eye-spot.—**On the spot.** (*c*) In *cricket*, of the bowler, accurate in pitch; of a good length.—**Round the spot**, a dice game in which nothing counts but the dice that have a spot in the center, so that the ace, deuce, four, and six are blanks. Three-spot counts two and five-spot four.—**Violet spot.** See ★*leaf-spot of violet*.

II. *a.* Made, paid, delivered, or the like, on the spot, or at once: as, *spot* wheat. [Colloq.]—**Spot cash.** See ★*cash*^{2}.—**Spot freight**, freight which is to be shipped at once.—**Spot rate**, the rate charged on spot freight.

At the beginning of the season, *spot rates* on grain shipped to the United Kingdom were about $9 per ton.
Yearbook U. S. Dept. Agr., 1901, p. 579.

spot, *v. t.* 9. In New Zealand, to buy up (choice spots of land containing water, etc.), ruining the neighboring property. Called *peacock* in Australia.

Under free selection, the squatter *spotted* his run, purchasing choice spots.
E. E. Morris, Austral English, s. v. 'spotting.

10. See *blaze*^{3}, 2, 3.

spot-disease (spot'di-zēz"), *n.* Any fungous disease of plants which appears in the form of discolored spots on stem, leaves, or fruit. See ★*disease*.

spot-face (spot′fās), *v. t.* To face a small area; finish a section or spot on (a piece of material) and not the surrounding surface. *Trans. Amer. Soc. Mech. Engin.*, 1903, p. 1141.

spot-frequency (spot′frē″kwen-si), *n.* The frequency or abundance of sun-spots, which varies in a semi-regular manner from year to year.

spot-indicator (spot′in″di-kā-tor), *n.* In *elect.*, a form of inclosed safety fuse in which the blowing of the fuse darkens a spot on the surface of the inclosing cylinder, thus indicating the fact that the circuit is open at that point.

> Disruption of the indicator follows, but the final break takes place in the interior conductor. Figs. 26, 27, 28, 29 show this action and also the "*spot*" *indicator* before and after blowing.
> *Jour. Franklin Inst.*, Jan., 1903, p. 21.

spot-stroke (spot′strōk), *n.* A billiard manœuver consisting chiefly in repeatedly pocketing a red ball from its spot, and at the same time pulling the cue-ball back. The process may be easy or hard, according to both the size and the shape of pocket-opening. If hard, the striker can work into position for a series of caroms, starting near a corner; and when this opportunity for nursing threatens to vanish, he can plan to resume spot-playing. The highest number for the English championship, which was instituted in 1870 and came to an end in 1885, was 16 (a run of 48 only) in sixteen matches having an aggregate of 22,744 points. In America, more than half a century ago, spot-playing was limited to thrice in succession.

Spotted paria. See ★*paria.*—**Spotted strawberry leaf-beetle.** Same as *spotted* ★*paria.*

spotter, *n.* **2.** Specifically, a person employed to keep secret watch on the employees of a company, especially on a street railway to spot or note the number of fares (if any) not turned in by the conductor.—**3.** *Naval*, a person stationed at a suitable position above the deck to note the point at which the shots from a gun strike with reference to a target or the enemy's vessel, and thus give information as to the necessary correction of the range at which the gun-sight is set.

> Our ship was to umpire the Ohio's night practice, sending over a chief umpire and assistants, chief *spotter* and assistants, as the custom is. They pass upon doubtful hits, inflict the many penalties of the regulations—disinterestedly, like their counterparts in athletic games.
> *N. Y. Evening Post*, May 16, 1908.

4. One who tints photographs.—**5.** A somersault in which the performer comes down upon the same spot from which he springs—that is, does not advance forward or backward. [Slang.]

> He ran to the door of the tent and come out of it on a back somersault and threw a row of flip-flaps through that crowd that made them all stand back. He could throw *spotters* and gainers and twisters; he was as good as Quigley or anybody in Barnum and you bet he let them folks see it.
> *C. D. Stewart*, Partners of Providence, xix.

spotting, *n.* **2.** The tinting of photographs. —**3.** The process of separating a train into sections.

> This breaking up and switching of the trains into sections, which is called "*spotting*," is attended to by one or the other of two small General Electric electric locomotives, each of which is equipped with two 12½-hp motors provided with R38 controllers.
> *Elect. World and Engin.*, Sept. 24, 1904, p. 506.

spotty, *a.* **II.** *n.* A New Zealand fish, a wrasse, *Pseudolabrus bothryocosmus.* Also called *poddly* and *kelp-fish.* *E. E. Morris*, Austral English.

spot-weave (spot′wēv), *n.* Any weave in which the warp and weft are so interlaced as to show a fancy design in spots. *R. Marsden*, Cotton Weaving, p. 102.

spot-white (spot′hwīt), *n.* In *billiards*, the reverse of *plain* ★*white* (which see).

spot-zone (spot′zōn), *n.* One of two zones on the surface of the sun, within which the sun-spots ordinarily appear. They lie between 5° and 40° of solar latitude on each side of the sun's equator, only occasionally appearing nearer to the equator, and with extreme rarity outside the 40° limit.

spoud (spöd), *n.* [Gr. σπουδή, haste, speed.] A name proposed for the unit of acceleration; an acceleration of one centimeter per second per second.

spout, *n.* **6.** In *turpentine-making*, the projection of the lower gutter beyond the center of the face. See ★*gutter*¹, 9.—**7.** A narrow part of a river, with a swift current. [Canada.]

spout-plane (spout′plān), *n.* A gutter-plane or round-molding plane. See *plane*², 1, and *molding-plane.*

S. P. Q. F. An abbreviation of the Latin *Senatus Populusque Florentinus*, the Senate and the People of Florence: letters often found on Italian majolica.

sprag¹, *n.* **3.** A bar of steel attached by one end to a wagon or motor-car frame or body, while the other end (which is sharpened) can be let down at an angle with the ground, to prevent the vehicle from running backward down hills or grades. This device was first used on heavy wagons on hilly roads, so that the horses might be rested without the strain of the load. In motor-cars it guards against accident in case the brakes fail to hold or the tires slip. The sprag should be of such length as to be in no danger of being toppled over by a small lift of the body, and must be short enough to dig effectively even into a hard road surface. Also called locally a *dart* or a *dagger.*

> A device which does not seem to receive from the makers the attention which it merits is the *sprag*, the iron rod suspended from the rear axle to hold the car on a grade in case brakes do not operate or are not in use. Too often the *sprags* fitted to heavy large cars are altogether too slender for the purpose; often they are stout enough, but so short that the car would be certain to ride over them. It is not often that the *sprag* is needed, but when it is wanted the need is great and immediate, and not only the car, but the lives of its occupants may depend upon the apparently insignificant device.
> *N. Y. Times*, quoted in Sci. Amer., Dec. 20, 1902, p. 444.

sprangle-top (sprang′gl-top), *n.* **1.** The grass *Scolochloa festucacea*, found in wet places from Iowa and Nebraska northward. It is a stout, erect, smooth perennial with a large open panicle, not possessing marked value.—**2.** A grass, *Diplachne dubia*, found in the southwestern United States, in Mexico, and in southern Florida. Its panicle consists of 8 or 10 spreading spikes.

sprat², *n.* **2.** (*e*) Same as *thread-herring.*—**Yellow-billed sprat,** a West Indian marine fish, *Sardinella bishopi.*

sprat-weather (sprat′weᴛʜ-ėr), *n.* Dark days in the late fall and early winter (November and December) which are supposed to be favorable for sprat-fishing.

sprawl¹, *n.* **4.** Ability to spread one's self or to make a show or 'splurge'; 'go.' [Slang.]

> Stella Kimbark informed me to-day that she had a place in view for me. "A reg'lar cinch, too," she added, "if you only had a nickel's worth of *sprawl.*"
> "What is *sprawl?*" I asked.
> "*Sprawl,*" explained Miss Kimbark, sarcastically, "means what you an' most other folks ain't got. It means reg'lar git-up-an'-go, if that suits you better; an' what's more, it means the knowin' how an' when to git up an' go!" *F. M. Kingsley*, The Singular Miss Smith, xi.

spray¹, *n.* **5.** A set of castings fed from a common runner, to which they are still attached by the smaller channels or sprues, and resembling a branch with twigs and leaves.

spray², *n.*—**Dobell's spray.** Same as *Dobell's solution.*—**Seiler's spray,** an alkaline antiseptic solution containing bicarbonate of sodium, borax, sodium benzoate, sodium salicylate, eucalyptol, menthol, thymol, and oil of wintergreen. Also called *Seiler's solution.*

spray², *v. t.* **3.** To protect (cultivated plants) from insect enemies and vegetable parasites by covering them with a spray which has a toxic effect upon the animal or vegetable organisms.

spray-cart (sprā′kärt), *n.* A light cart carrying a liquid to be sprayed upon plants or vegetables with the view of killing obnoxious insects or fungi.

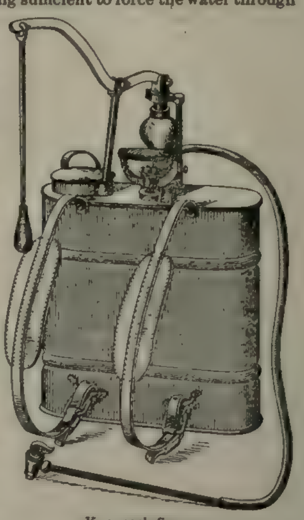
> Without his *spray-cart* and fungicide the tomato-grower is lost—and knows it!
> *L. H. Bailey*, Cyc. Amer. Horticulture, p. 1816.

spray-cure (sprā′kūr), *n.* Treatment of disease by the application of water in the form of spray.

sprayer, *n.* **2.** A device or apparatus for making into a fine mist or spray the particles of liquid fuel which are to form a hydrocarbon vapor to be burned in internal-combustion motors.

> Air passes from the air-pump D by way of the annular channel b into the *sprayer* c, and there meets the oil jet issuing from a. *Encyc. Brit.*, XXVIII. 189.

Knapsack sprayer, a combined reservoir and pump for spraying liquid insecticides and fungicides over trees and plants. It consists of a copper tank, resembling in form a knapsack, and designed to be carried on the back of the operator, combined with some form of pump for forcing the liquid through a hose. Several types of pumps are used, one employing a rubber compression-diaphragm, and another a rubber bulb, while others are simple piston-pumps placed inside the tank. Another method used is to force air under pressure into the tank, the air-pressure being sufficient to force the water through the hose and nozle. The illustration shows a knapsack sprayer with piston-pump operated by a hand-lever.



Knapsack Sprayer.

sprayer-pump (sprā′ėr-pump), *n.* A force-pump fitted with a short length of hose for drawing a liquid from a small tank or from a barrel and sending it in a fine spray over plants and trees. Small pumps are made in many forms and are operated by hand; larger pumps for spraying fruit-trees or field crops are mounted on wheels and may be operated by some form of motor.

spraying (sprā′ing), *n.* Specifically, in *ceram.*, the process of applying color or glaze to the surface of ware in spray blown from an atomizer. By this means different colors may be blended in the ground tinting, as in Rookwood pottery.

spraying-bellows (sprā′ing-bel″ōz), *n.* An atomizer operated by means of a bellows.

spray-injector (sprā′in-jek-tor), *n.* A device for injecting into a combustion-chamber a spray of liquid hydrocarbon so as to form a mist of finely divided carbon in a carrying current of air. This is done by forcing a fine jet of liquid into the current of air, or by forcing the current of air through an annular jet of liquid. The liquid is atomized by the air acting in injector fashion, and a sort of air-gas is formed which is highly combustible and burns both rapidly and completely. It is used in many forms of ★carbureter (which see). *W. S. Hutton*, Steam Boiler Construction, p. 33.

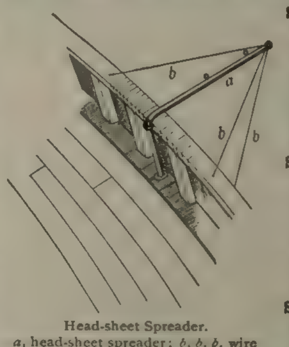
spray-nozle, *n.* **2.** A nozle designed to deliver water or other liquid either as a fine spray, in the form of a fan, or an inverted cone, or a cloud-like mist.

spray-tube (sprā′tūb), *n.* A tube to be used in a spray-injector or sprayer to secure the atomizing of the liquid by the current of air, and to convey the mixture to the point where it is to be utilized: used in internal-combustion motors as part of the ★carbureter (which see).

spray-twyer (sprā′twī″ėr), *n.* An open box-twyer cooled by the vaporization of a spray of water.—**Lloyd's spray-twyer,** a water-cooled twyer open at the back and cooled by a spray of water driven from a perforated pipe against the front of the twyer.

spread, *n.* **13.** In *math.*: (*b*) A continuous or discontinuous connected aggregate, assemblage, or manifold of elements: thus, for instance, a two-spread may be considered as a surface with points or lines as elements.—**14.** In *bacteriol.*, same as ★*smear*, 6.—**15.** A misère or grando, in any game of cards in which the single player's cards are placed face up on the table. See ★*skat*² and *boston.*—**Angle of spread,** in an armature winding, the angle within which all the turns of the winding are contained.

spreader, *n.* —**Head-sheet spreaders,** the horizontal bars rigged out on the bows of sharp-built yachts in order to give greater spread to the head-sheets.



Head-sheet Spreader.
a, head-sheet spreader; *b*, *b*, *b*, wire guys to hold it firm.

spread-head (spred′hed), *n.* In newspapers, a heading set in several lines of large type. [Colloq.]

spreading-hammer (spred′ing-ham″ėr), *n.* A gold-beaters' hammer for spreading gold-leaf.

spred, *r.*, *n.*, and *p. a.* A simplified, and former, spelling of *spread.*

sprigger (sprig′ėr), *n.* In *ceram.*, a workman in a pottery who attaches molded ornaments, or sprigs, usually of a different color, to the surface of the ware.

sprightly, *a.* 3. Having a lively, distinctive taste; not palling.

> Flesh [of grape] tender, breaking, juicy; seeds of medium size, two or three to the berry; flavor mild, sweet and *sprightly.* *Yearbook U. S. Dept. Agr.*, 1901, p. 388.

sprig-molded (sprig′mōl″ded), *p. a.* In *ceram.*, decorated with relief designs which have been made in separate molds.

spring, *v. t.* 17. To fit with springs, as a carriage or a motor-vehicle.

> Having learned to properly *spring* horse-drawn and railway carriages, builders of transportation vehicles were next confronted with a much more difficult problem.
> *Automobile Topics*, May 27, 1905, p. 491.

spring. I. *n.* 16. In *golf*, the movement of a ball lying in a small cup or hollow when struck with a straight-faced club. *W. Park, Jr.*, Game of Golf, p. 43.—**Cañon spring**, a spring emerging on a cañon-wall or in an alcove of the wall.

> From beneath the lava stream or from a porous layer, numerous powerful springs issue along the side of the canyon below Shoshone falls. These may be called '*canyon springs*,' a new term introduced in the classification of springs. *Science*, Jan. 17, 1902, p. 86.

Combination spring, a spring made up of several coils or sets which act together under a load.—**Cylindrical spring.** (*a*) A spring the coils of which have been wrapped around a cylindrical mandrel, so that a casing to inclose it will have a cylindrical shape. (*b*) A helical spring made by coiling a cylindrical or round steel rod around a mandrel.—**Elliptic spring**, a carriage-spring formed of two half-elliptic sections. The ends are secured by bolts which pass through lips on the upper section, and eyes on the lower.—**Flat spring**, a spiral spring made of wire wound around an axis, so that the plane in which the wire is wound is everywhere approximately perpendicular to the axis.—**Graduated spring**, a nest of concentric helical springs arranged one inside of another, and so connected that light loads are taken by the small springs. When a heavy load is applied, it closes the small springs and is carried by the heavy ones.—**Grasshopper-spring**, a half-elliptic spring used on a tandem cart. The center is clipped to the axle-bed, and the ends are shackle-jointed to half-circle arms attached to the shaft.—**Hour-glass spring**, a spring which is so coiled as to be smallest in diameter at the middle and larger at the top and bottom, and hence resembles an hour-glass in form.—**Laminated spring**, a leaf-spring; a spring made up of a number of leaves, plates, or strips placed one over the other.—**Multicoil spring**, a spring made up of several separate coils.—**The Pierian spring.** See ★*Pierian.*

II. *a.*—**Spring azure.** See ★*azure.*

spring-board, *n.* 2. In *lumbering*, a short board, shod at one end with an iron calk, which is inserted in a notch cut in a tree, on which the faller stands while felling the tree.

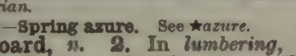
spring-box, *n.* 4. In *organ-building*, that part of a wind-chest in which are the pallets and their springs.

spring-brake (spring′brāk), *n.* An early form of train-brake in which a powerful spiral spring was coiled in a casing on the spindle of the brake hand-wheel. This spring could be wound up by hand, using the brake-wheel for this purpose, and held under strain by a detent. The detents on the cars of the train were connected to the continuous rope of the bell-signal in the engine, so that when the rope was pulled by the engineer, the detents were released, and the uncoiling of the incased springs turned the brake-wheels and set the brakes. The hand-wheels were made extra heavy so as to act with a fly-wheel effect, increasing the tension on the brake-levers. The objections to the device were the suddenness with which the brakes were set, the lack of any gradation in the intensity of an application, and the necessary consequence of slack in the bell-rope, which set the brakes on the front end of the train first. This entailed great discomfort to travelers, and prevented the use of the brake except in an emergency. The best-known type of spring-brake was the Creamer.

spring-branch (spring′brȧnch), *n.* A stream which originates in springs. [U. S.]

spring-cord (spring′kôrd), *n.* A tension-regulator for the whip warp-threads in a loom for tappet-weaving. *T. W. Fox*, Mechanism of Weaving, p. 275.

springer, *n.* 6. In *old music*, a grace or embellishment, consisting of an after-note one degree above the principal note: as,



spring-finger (spring′fing″gėr), *n.* Same as *trigger-finger.*

springfish (spring′fish), *n.* Same as *miller's-thumb.*

spring-governor (spring′guv″ėr-nor), *n.* A governor in which the constant force of gravity, generally used, is replaced by the varying force of a spring. *Thurston*, Manual of Steam-Engine, II. 367.

springing, *n.* 3. The act or process of furnishing with springs; also, springs (as of a vehicle) collectively. See *spring*, *n.*, 9.

> One has but to try any one of a dozen reputable cars to see that *springing* is now a science instead of, as in the past, a compound of ignorance and guesswork. There are still instances of bad *springing* to be found — cases where the springs are too light and lacking in temper, or too heavy and unresponsive to absorb the road shocks to which they are subjected.
> *Automobile Topics*, May 27, 1905, p. 491.

spring-key (spring′kē), *n.* A spring-wedge often used to fasten a pulley firmly to a shaft.

spring-load (spring′lōd), *n.* The load which can be applied to a spring to compress, deflect, or extend it without setting it down solid or straining it beyond its elastic resiliency; the normal weight on a spring. *The Engineer* (London), 1901, p. 612.

spring-louse (spring′lous), *n.* Same as *flea-louse.*

spring-motor (spring′mō″tor), *n.* A motor driven by a coiled spring, as a clock or railway-signal mechanism, or some forms of car-starting apparatus. The effort required to coil powerful springs and store in them any considerable amount of power limits this type of motor to comparatively light service. *Trans. Amer. Inst. Elect. Engin.*, 1903, p. 18.

spring-plate (spring′plāt), *n.* 1. A plate or sheet of steel from which the leaves of flat or spiral springs are cut.—2. A plate on which a nest or series of springs rests or against which the springs act.

spring-rail (spring′rāl), *n.* In *pianoforte-making*, see ★*hammer-rest.*

spring-ring (spring′ring), *n.* A snap-ring.

spring-saddle (spring′sad″l), *n.* Same as ★*saddle*, 3 (*c*) (5).

spring-seat (spring′sēt), *n.* A seat which rests on or is suspended by springs; a wagon- or carriage-seat attached to the body by springs.

springtanz (shpring′tänts), *n.* [G.: see *spring* and *dance.*] An old dance, probably the same as the *lavolta* or *volta*, and possibly a precursor of the waltz, or the music for such a dance.

spring-trip (spring′trip), *n.* A mechanism which permits a part of an implement to give way to an obstacle but restores it to position by means of a spring: applied in many cultivators.

spring-vise (spring′vīs), *n.* 1. A screw- or lever-vise for compressing a spring: used in assembling, as in gun-work.—2. A vise closed by a spring, so that no more compression may be possible on the work than the maximum effort of the spring.—3. A vise opened by a spring when the compression of the screw is released.

sprinkle, *v. t.* 6†. To make intoxicated or tipsy. [Old slang.]

> Why! we were all a little stained last night, *sprinkled* with a cup or two. *B. Jonson*, Bartholomew Fair, i. 1.

sprinkler, *n.* 1. (*d*) A vehicle carrying water in a reservoir and fitted with a delivery-pipe having perforated nozles or spouts or surfaces, for watering streets and highways. (*e*) An automatic fire-extinguisher for stores, factories, warehouses, and other inclosed spaces. Pipes are placed along the ceilings, in which water is maintained under pressure, at all times, from an overhead tank or reservoir. At intervals varying with the height of the room, sprinkler-heads are attached to these pipes, constructed as outward-opening valves, held shut by a linkage or lever action which is locked in place by a joint of fusible solder. Any heat in the room from a fire hot enough to melt this solder releases the valve, and the water is sprayed upon the burning mass below. The head is constructed to act as a diffuser and spread the flowing water uniformly over a large area. (*f*) In *lumbering*, a large wooden tank from which water is sprinkled over logging-roads during freezing weather, in order to ice the surface.—**Automatic sprinkler.** See ★*sprinkler*, 1 (*e*).

sprinkler-head (spring′klėr-hed), *n.* See ★*sprinkler*, 1 (*e*).

sprinkling-cart (spring′kling-kärt), *n.* See *watering-cart.*

sprinkling-tower (spring′kling-tou″ėr), *n.* 1. An elevated structure carrying a tank from which pressure and supply of water may be derived for the pipes of automatic sprinkling systems in factories and warehouses. See ★*sprinkler*, 1 (*e*).—2. An elevated structure from which water may be showered or sprayed in a finely divided state for moistening currents of air or other similar uses.

sprite[1], *n.* 6. A beach-crab, especially *Ocypoda arenaria.*

sprit-topsail (sprit′top″sāl, or -sl), *n.* A topsail set flying from the deck, with its luff laced to a pole called a 'sprit.' This sail does not project beyond the gaff-end like a club-topsail, and it must not be confounded with the spritsail, spritsail-topsail, or spritsail topgallantsail.

sprout, *v. i.* 5. Specifically, used to designate the action of silver during solidification. The molten silver beneath the thin solid crust forces up the crust with explosive violence and a part of it solidifies in the form of trees or sprouts. This action is attributed to the oxygen absorbed by the silver while above the melting-point, and seeking to escape at the point of solidification of the metal. Also *vegetate.* *Phillips and Bauerman*, Elements of Metallurgy, p. 637.

sprout, *n.* 1. (*c*) In *forestry*, a tree which has grown from a stump or root. A *shoot* is a sprout which has not reached a height of three feet.—**Reserve sprout method**, that method of conservative lumbering in which an overwood composed of seedling trees is maintained above a stand of sprouts. Also called *standard coppice system.*—**Sprout forest**, a forest consisting of sprouts or trees which have grown from stumps or roots.—**Sprout system**, one of the three chief systems of forest management, in which reproduction is secured by sprouts. Also called *coppice system.*

spruce^3, *n.*—**Brown rot of the spruce.** See ★*rot.*—**Douglas spruce bark-beetle.** See ★*bark-beetle.*—**Sitka spruce.** Same as *tideland spruce.*

spruce-bird (sprös′bėrd), *n.* The white-winged crossbill, *Loxia leucoptera*: so named from its habit of frequenting evergreen forests.

spruce-borer (sprös′bōr″ėr), *n.* 1. Any one of several species of bark-beetles, as *Xyloteres bivittatus*, *Xyleborus cælatus*, *Crypturgus atomus*, and *Hylurgops pinifex.*—2. The buprestid *Melanophila longipes* and allied species.—3. The cerambycids *Rhagium lineatum* and *Xylotrechus undulatus.*—4. Various other species, including the white-pine weevil, *Pissodes strobi.*

spruce-gum, *n.* 2. See ★*gum*^{2}.

sprue-cutter (sprö′kut″ėr), *n.* A power-tool for cutting off the sprue or other excess of metal which clings to a casting. See *sprue*, *n.*, 1.

sprue-head (sprö′hed), *n.* Same as *sinking-head.*

spruit (sproit), *n.* [D. *spruit* = E. *sprout.*] A small stream or creek. [South Africa.]

> These plains . . . are much cut up by small *spruits* and hippo tracks. *Geog. Jour.* (R. G. S.), XI. 618.

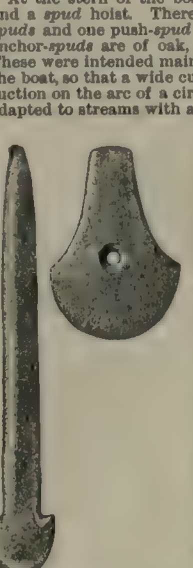
spud, *n.* 6. A curved chisel-like tool for removing bark.—7. One of several heavy vertical pieces of timber shod with a pointed iron at the lower end, arranged to slide in guides on a floating dredge. When lowered to the bottom the spuds anchor the dredge and hold it in place against the push of the dredging machinery.

Spud for removing Bark.

> At the stern of the boat [dredge] is a steam capstan and a *spud* hoist. There are also two vertical anchor-*spuds* and one push-*spud* at the stern of the boat. The anchor-*spuds* are of oak, 24 ins. square and 40 ft. long. These were intended mainly as pivots on which to swing the boat, so that a wide cut could be made by moving the suction on the arc of a circle, but this method is not well adapted to streams with a strong current.
> *Engin. News*, XL. 236.

8. In *archæol.*, one of a class of pecked or polished stone implements varying considerably in size and form, but always having a rather broad blade with a sort of handle of variable length: often referred to as spade-like or paddle-shaped implements.

> It has been a puzzle to archeologists to assign to any class the peculiar stones called "*spuds.*" They are usually of a comparatively soft material, carefully worked and polished, and bear no marks of rough usage. On the other hand, they seem too large for ornament. Perhaps their office may have been in some ceremony or game.
> *Smithsonian Rep.* (*Bur. of* [*Ethnol.*), 1892, p. 109.



Forms of Spud.
(From An. Rep. Bur. Amer. Ethnol., 1891–92.)

9. In *surg.*: (*a*) A flat spade-like instrument used for the detachment of soft parts from

bone. (*b*) An instrument of similar shape used in the extraction of foreign bodies from the eye.—**Spud casing,** one of the two or more square, vertical openings or wells extending entirely through the hull of a dredge-boat, closed and water-tight on the four sides, but open at the upper and lower ends, in which is placed a heavy, square timber or spud. See ★*spud*, 7.

spudder (spud′ėr), *n.* See *barker*^{2}, 1.

spudding-bit (spud′ing-bit), *n.* A tool used in boring wells through earth and near the surface. It has a broad and dull or spade-like edge.

spudger (spuj′ėr), *n.* An implement for tamping, stirring, or mixing.

> Or, in some localities, the masses (of fishes) are separated by stirring them with a "*spudger*," consisting of a thick board 10 inches long and 2 or 3 inches wide, nailed in the center to a wooden handle.
> *Bulletin U. S. Fish Com.*, XVIII. 438.

spud-grower (spud′grō″ėr), *n.* A farmer who raises potatoes. See *spud*, 5 (*b*). *L. M. Wilcox*, Irrigation Farming, p. 238. [Colloq.]

spud-hoist (spud′hoist), *n.* The device used in lifting the spuds of a scow or dredge when the latter is to be moved. See ★*spud*, 7.

spumose (spū′mōs), *a.* Same as *spumous.*

spunge, *n.* and *v.* A simplified, and former, spelling of *sponge*.

spun-ware (spun′wãr), *n.* Bowls, vases, saucepans, or other cylindrical vessels for domestic use, formed from copper, brass, or other sheet-metals on a spinning-lathe. See ★*spinning-lathe.*

spur, *n.* **3.** (*n*) (4) Same as *ram*^{2}, 1 (*b*), but much less frequently used.

> These decks are usually curved downwards at the fore end, for the purpose of gaining such a depth below water as will enable the *spur* to pierce an enemy below the armour. *White*, Manual of Naval Arch., p. 340.

(*w*) The ridge in the interior of a bifurcating tube between the two branches given off from it. (*x*) In *hort.*, a twig or short branch that bears flowers and fruit, in distinction from one that continues to elongate in woody growth.

> With these two plants, however, the bearing shoots are not those making the most vigorous growth at the ends of the branches, but they are usually more obscurely located upon the sides of the branches, and make a much smaller growth, for which reason they have been termed "*spurs.*" *Yearbook U. S. Dept. Agr.*, 1901, p. 437.

4. A side-track running out from a main railway line and forming part of a Y.—**Palatine spur.** See ★*palatine*^{2}.

spur-bow (spėr′bō), *n.* *Naval*, same as *ram-bow*. [Rare.]

> The *spur-bows* themselves, prolonged under water as they are, also tend to reduce pitching by increasing resistance; and in the French navy, where this form of bow has been largely adopted for unarmoured as well as for armoured ships, it is said that a sensible reduction in pitching has resulted.
> *White*, Manual of Naval Arch., p. 272.

spur-gear, *n.* **2.** Toothed gearing for transmission of motion and power in which the pitch-surfaces from which the teeth are developed are cylinders with elements parallel to the axis. *Jour. Brit. Inst. Elect. Engin.*, 1902–1903, p. 1003.

spurge-ipecac (spėrj′ip″ẹ̄-kak), *n.* See ★*ipecac.*

spurket, *n.* Same as *spirket.*

spurrite (spėr′īt), *n.* [After J. E. *Spurr*, who collected the specimens.] A mineral consisting of the silicate and carbonate of calcium $(2Ca_2S:O_4.CaCO_3)$. It occurs in cleavable granular masses of pale gray color at Velardeña, Durango, Mexico.

sputum-tube (spū′tum-tūb), *n.* A graduated capillary tube for holding sputum while it is rotated in a centrifugal, as the ★*hematocrit* (which see).

sp. vin. rect. An abbreviation of the Latin *spiritus vini rectificatus*, rectified spirit of wine.

sq. An abbreviation (*b*) of the Latin *sequens*, *sequentes*, *sequentia*, the following.

sqq. An abbreviation (*a*) of the Latin *sequentia*, the things following; (*b*) of the Latin *sequentibus*, in the following places.

squadron, *n.* **3.** The vessels of a fleet are assigned consecutive numbers from one upward. When the vessels are in column with number one leading, or in line with number one on the right, and the other vessels in the order of their numbers, the fleet is in natural order and in that case the squadron with the lowest numbers is the *van squadron* and is leading in column and on the right in line; the middle squadron is the *center squadron;* and the last in column or to the left in line is the *rear squadron.* When there are but two squadrons, they are designated as *van squadron* and *rear squadron.*—**Flying squadron,** a squadron of cruisers of high speed and great mobility.—**Squadron of evolution.** See ★*evolution.*—**White squadron,** a name given to the first vessels of the modern navy of the United States, cruising in squadron, from the fact that these steel vessels were painted white outside, whereas the old wooden vessels were painted black.

squall-cloud (skwâl′kloud), *n.* The roll-cloud at the front of and above an advancing squall of wind. Its formation is often the first intimation of the existence of the squall. It is most fully developed in front of a large thunder-storm cloud.

squalodont (skwal′ọ̄-dont), *a.* and *n.* [L. *squalus*, a shark, + Gr. ὀδούς (ὀδοντ-), tooth.] **I.** *a.* Related to or having the characters of the *Squalodontidæ*.

II. *n.* One of the *Squalodontidæ*.

Squalodontidæ (skwal-ọ̄-don′ti-dē), *n. pl.* [NL., < *Squalodon(t-)*, the type genus, + *-idæ.*] A family of extinct cetaceans having a skull resembling that of the toothed whales, but with two-rooted molars quite distinct in shape from the other teeth. *Brandt*, 1873.

Squaloraja (skwal-ọ̄-rā′jạ̈), *n.* [NL., < L. *squalus*, a shark, + NL. *raia*, *raja*, a ray or skate.] A genus of fossil chimæras or selachian fishes of the order *Holocephali*, having a depressed or elongated trunk, the head produced in a long, slender snout on which there is a prehensile spine in the males, tapering tail, and calcified vertebral rings. Specimens of *S. polyspondyla* occur as nearly complete skeletons in the Lower Lias of Lyme-Regis, England.

squama, *n.* **5.** The scale-like exopodite of a crustacean antenna.

> The antennal *squama* reaches nearly to the end of the antenn. ped. [peduncle of the antennulæ], with its distal portion broad and the outer spine well developed.
> *Proc. Zool. Soc. London*, 1903, p. 53.

Squama occipitalis, the supraoccipital bone: same as *squama occipitis.*—**Squama temporis,** a bone on the posterior lateral surface of the cranium in fishes; the pterotic. *Starks*, Synonymy of the Fish Skeleton, p. 511.

squamatine (skwam′a-tin), *a.* [NL. *Squamat(a)* + *-ine*^{2}.] Relating to or having the characteristics of the members of the reptilian order *Squamata.*

squamipinnate (skwā-mi-pin′āt), *a.* [*Squamipinn(es)* + *-ate.*] Having the fins more or less extensively covered with scales; relating to or having the characteristics of the *Squamipinnes* or chætodonts, a group of fishes in which the scales extend for some distance on the fins.

squamosity (skwā-mos′ị-ti), *n.* [*squamose* + *-ity.*] **1.** The state of being squamose.—**2.** A squamose area, as on the elytron of a beetle.—**3.** The collective scales on a squamose area.

> Elytra broader, with more nodiform shoulders, their series of punctures more regular and distinct, *squamosity* more infuscate.
> *Annals and Mag. Nat. Hist.*, Aug., 1904, p. 107.

squamosomaxillary (skwā-mō-sō-mak′si-lā-ri), *a.* Relating to the squamosal and maxillary bones.

> Note . . . the single *squamoso-maxillary* bar.
> *Am. Nat.*, Feb., 1904, p. 102.

squamosoparietal (skwā-mō″sō-pạ̄-rī′e-tạl), *a.* Relating to the squamosal (temporal) and parietal bones: as, the *squamoso-parietal* suture. *Proc. Zool. Soc. London*, 1898, p. 962.

squamosphenoid (skwā-mọ̄-sfē′noid), *a.* Same as *squamosphenoidal* and ★*sphenosquamous.*

squantum (skwon′tum), *n.* [Possibly, as some assert, of Amerindian origin, connected with *Squantum*, a place-name, or Massachusetts (Natick) *squantum*, *squantam*, an evil spirit, a reduction of *musquantam* (*musquantum manit*, 'God is angry').] A good time; a merrymaking; a picnic. *Osgood*, New England, 1883, p. 61; *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 259. [Nantucket and other parts of New England.]

> The *squantum* was to be held at a point on the narrow peninsula, or rather mere sandbar, that divides the ocean from the broad lagoon which extends for many miles above the harbor proper of Nantucket.
> *E. Bellamy*, Six to One, vi.

square^1, *n.* **21.** A strong iron frame to which the carriages of a spinning-mule are fastened and coupled, and in which is carried some of the mechanism for giving motion to the spindles and for building the cops.—**22.** The three to five (often four) leaf-like heart-shaped bracts surrounding the flower of the cotton plant, taken collectively. They are fringed or cut in different degrees in different species, of which they thus become distinctive. [Southern U. S.]

> The writer found a "patch" of cotton with luxuriant stalks . . . but almost devoid of "*squares*" or blooms.
> *E. W. Hilgard*, Soils, p. 503.

General magic square, n^2 integers arranged in a square in such a manner that the rows, columns, and diagonals contain partitions of the same number, zero and repetitions of the same integer being permissible among the integers.—**Greco-Latin square,** a square lattice of square compartments each containing one Greek and one Latin letter of two sets of as many different letters as rows, and so placed that every row and every column contains all the Greek letters and also all the Latin letters.

αf	βg	γh	[illegible]	εj
βg	γh	δi	εj	αf
γh	δi	εj	αf	βg
δi	εj	αf	βg	γh
εj	αf	βg	γh	δi

Imperfect square. See ★*imperfect.*—**Latin square,** in *math.*, a square lattice, divided into rows and columns of square compartments, every compartment containing one of a set of different Latin letters equal in number to the square's order, and arranged so that every one of the letters occurs in every row and in every column. The square's order is the number of the compartments in a row.

a	b	c	d	e
b	c	d	e	a
c	d	e	a	b
d	e	a	b	c
e	a	b	c	d

Latin square problem. See ★*problem.*—**Law of inverse squares.** See ★*law*^{1}.—**Ordinary magic square,** a general magic square in which the n^2 integers are restricted to be the first n^2 integers of the natural succession: the component integers being 0,1,2,3,4,5,6,7,8, are 8 in number: for example,

7 2 3
0 4 8
5 6 1.

Set-square. See ★*set-square.*—**Vaulting square,** in a vaulted building, one compartment taken horizontally, that is, the space between four points of support from which the vault springs. The nave or aisle of a church is said to be made up of so many vaulting squares.

square^1, *a.* **12.** In *golf*, said of a game when both sides are all even, neither being ahead.—**13.** Analogous to the side of a square, as in the phrase *square root.*—**All square.** (*b*) In *golf*, said of the players when the game is even, neither side being any holes ahead.—**Square bar,** a bar or shaft of square section: used often when several wheels are to be free to slide lengthwise upon the shaft as desired, but must turn with it when it revolves. It is much employed in traveling-cranes which are not electrical and in the gear-cases of the transmission mechanisms of motor-cars.—**Square by the braces,** said of a yard when the braces are so hauled upon that the yard is exactly at right angles to the keel.—**Square by the lifts,** said of a yard when the weight of the spar rests upon the lifts and remains perfectly horizontal, and at right angles to the mast.—**Square deep,** in *cricket*, noting a fielder's position at right angles to the wicket, and opposite to the batsman on either the 'on' or the 'off' side. *Hutchinson*, Cricket, p. 86. [Rare.]—**Square degree.** (*a*) A square area of the celestial sphere each side of which is one degree of a great circle. A square degree equals 3,600 square minutes and 12,960,000 square seconds. The entire surface-area of the celestial sphere equals 41,253 square degrees, that is, $4\pi \times (57.29578)^2$. (*b*) See ★*degree.*—**Square minute.** See ★*square degree.*—**Square second.** See ★*square degree.*—**Square wheel.** See ★*wheel*^{1}.

square^1, *v. t.* **11.** To mark with lines forming squares, as paper for mathematical use; mark off in squares. See *coördinate* ★*paper.*

> The use of *squared* paper by schoolboys is becoming universal. *Nature*, Dec. 17, 1903, p. 147.

II. *intrans.*—**To square up,** to pay up; pay arrears. [Colloq.]

> It was high time for the young gentleman in the parlour to *square up* or to seek accommodation elsewhere.
> *N. and Q.*, 10th ser., I. 62.

square^1, *adv.*—**To stand square to the ball,** in *golf*, to have the ball about midway between the feet, the feet being practically on the same plane: said of a player.

square-body (skwãr′bod″i), *n.* In *ship-building*, all that part of a vessel in which the frames are square to the center plane. See also *cant-body.*

square-butted (skwãr′but-ed), *a.* *Naut.*, said of a yard-arm when it is of considerable diameter and is cut off square at the end instead of tapering down fine.

squared (skwãrd), *p. a.* Made square; also, marked off in squares: as, *squared* paper. See *coördinate* ★*paper.*

square-drawn (skwãr′drân), *a.* Rolled with a square section, or passed through a square hole in a draw-plate: used of wire or rods and tubes. *The Engineer* (London), 1901, p. 277.

square-ended (skwãr′en″ded), *a.* 1. Having an end formed with a square cross-section.—2. Having the end-plane at 90° or at a right angle to the axis.

square-mark (skwãr′märk), *n.* *Naut.*, a piece of twine wound around the hauling part of a brace or lift at a certain point, used as a guide when squaring the yards.

squaremouth (skwãr′mouth), *n.* Same as ★*chiselmouth*.

square-ribbons (skwãr′rib″ons), *n. pl.* In *naval arch.*, the horizontal lines in the plans of a vessel.

square-rigger (skwãr′rig″ėr), *n.* A vessel carrying yards on her fore-, main-, and mizzenmasts; a vessel carrying yards on all her masts; a ship.

square-tail (skwãr′tāl), *n.* A fish of the family *Tetragonuridæ*, found in the open Atlantic.

square-threaded (skwãr′thred″ed), *a.* Having a thread with a rectangular section instead of the more usual triangular or sharp thread: said of a screw. The helical projection is formed by revolving a rectangle or square around a cylinder, and causing it to advance in one complete revolution a distance equal to the pitch parallel to the axis.

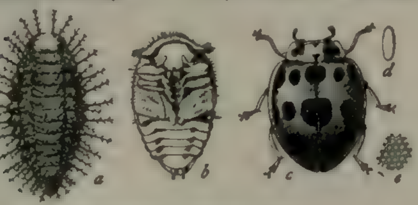
squaring-lathe (skwãr′ing-lāᴛʜ), *n.* A lathe for turning square or nearly square pieces, such as table-legs.

squaring-machine (skwãr′ing-ma-shēn″), *n.* In *marble-working*, an appliance for holding tiles on edge upon a rubbing-bed for the purpose of forming the edges, bringing the corners to a right angle, and making the tiles of a uniform size. The tile is automatically released from the bed when it is brought to the right shape and size.

squash^1, *n.* 4. An indoor or court game developed from a combination of lawn-tennis and court-tennis. The court is walled on three sides, and the players strike a ball alternately above a certain line on the back wall. The ball is similar to a tennis-ball of rubber covered with felt, but is made capable of bearing harder hitting because it is designed to be driven with great force against the walls.

squash^2, *n.*—**Squash-vine borer.** See ★*vine-borer*.

squash-beetle, *n.* 2. Any beetle which feeds on the squash-vine; especially, in the United States, the coccinellid *Epilachna borealis*.



Squash-beetle (*Epilachna borealis*).

a, larva; *b*, pupa; *c*, adult beetle; *d*, egg; *e*, surface of same: *a*, *b*, and *c* enlarged about two times, *d* about two and one half times, *e* highly magnified. (Chittenden, U. S. D. A.)

squat^1, *v. i.* 4. To settle on land obtained, from the government on special terms, for the purpose of raising stock. See *squattage* and *squatter*^{1}, 4. [Australia.]

squat^1, *n.* 5. *Naut.*, the settling of a vessel, when under way, in the water, particularly at the stern, as compared with its position at rest. The phenomenon occurs to some extent in every vessel under way at high speed, but it is of importance only in shallow water, the depth of which is not much greater than the draft of the vessel. In such cases, in large vessels, the sinking of the stern may be from 2 to 6 feet with very moderate speeds.

> To the loaded draft there should be added about four feet for "*squat*," when running at full speed, and four more for clearance in rough water, making a total of about forty feet necessary to meet modern requirements. It will soon be forty-five at present rate of growth.
> *Sci. Amer.*, Jan. 7, 1905, p. 7.

squat-lobster (skwot′lob″stėr), *n.* An Australian crustacean, *Themis orientalis*.

> Amongst other crustacea, the *squat lobster* (Themis orientalis) is, with giant prawns and quampi, or small golden-lipped pearl shell, obtained by trawling in the southern waters *Encyc. Brit.*, XXXII. 111.

squato (skwä′tō), *n.* A California fishermen's name for *Squatina squatina*, a shark of the family *Squatinidæ*.

squatter^2, *v. i.* 2. To make a noise like a flock of wild fowl flapping their wings against or through the water.

> Then we heard . . . Buldoo an' 'is friends *squatterin'* in the water like boys in the Serpentine.
> *R. Kipling*, The Three Musqueteers, in Soldiers Three, [p. 9.

squatterarchy (skwot′ėr-är-ki), *n.* Squatters collectively; also, the squatter rule. [Rare.]

> The *squatterarchy* of the Koorong rose up in a body and named its hero, martyr.
> *R. M. Praed*, Longleat of Kooralbyn, iii. Quoted in [E. E. Morris, Austral English.

squattocratic (skwot-ọ̄-krat′ik), *a.* Connected with or having the characteristics of squattocracy: as, "*squattocratic* impudence." *Melbourne Morning Herald*, Feb. 18, 1856, p. 4, quoted in E. E. Morris, Austral English. [Slang, Australia.]

Squaw winter. See ★*winter*^{1}.

squaw-bush (skwâ′bůsh), *n.* A name of *Cornus stolonifera*, *C. serica*, and *C. Canadensis*.

squaw-carpet (skwâ′kär″pet), *n.* Same as ★*mahala-mats*. [California.]

squaw-fish (skwâ′fish), *n.* A cyprinoid fish, *Ptychocheilus oregonensis*, found in fresh waters of the northwestern part of the United States. *Jour. Amer. Folk-lore*, April–June, 1902, p. 111.

squaw-flower (skwâ′flou″ėr), *n.* The plant *Trillium erectum*. [Vermont.]

squaw-grass (skwâ′grȧs), *n.* Same as *bear*-★*grass*, 2.

squaw-huckleberry, *n.* The squaw-huckleberry is now known to include several species, and by recent authorities is classed as a genus, *Polycodium*. *P. melanocarpum*, of mountain woods in the Southern States, bears copiously a juicy and palatable purple fruit, which gives it the name of *wild gooseberry*, borne also to some extent by other species. *P. candicans*, of the Alleghanies, has a large, light-colored glaucous fruit which is barely edible. *P. stamineum*, the common squaw-huckleberry, has a smaller green inedible fruit.

squaw-man, *n.* 2. An Indian who does woman's work; an effeminate. *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 259.

squaw's-carpet (skwâz′kär″pet), *n.* Same as ★*mahala-mats*.

squeaker, *n.* 5. A European water-beetle, *Pelobius tardus*, which is a very loud stridulator. They are sold as curiosities in the London markets. *Cambridge Nat. Hist.*, VI. 209.—6. Any stridulating crab, as the American lady-crab.

squeeze, *v. t.* 7. To compel to repurchase at disadvantage stock that has been sold short.—**A squeezing watch,** a name formerly given to a repeating watch, from the fact of its being made to strike by compressing or squeezing the side of the watch. *N. and Q.*, 9th ser., XI. 35.

> Lost or taken from a Lady's side . . . the last day of May Fair a gold *Squeezing Watch*.
> Lost coming out of the Play House in Drury Lane on the 18th Instant, a gold *Sweezing Watch* . . . ten guineas Reward. *British Apollo*, June 25–30, 1708.

squeezer, *n.*—**Alligator squeezer.** (*b*) A device used by druggists to compress and size corks to fit small bottles.

squeezing-bowl (skwē′zing-bōl), *n.* One of a set of two or more cylindrical bowls, or rollers, which act in contact for squeezing or pressing wash-water out of textile fabrics. *G. Duerr*, Bleaching and Calico-printing, p. 10.

squeezing-machine (skwē′zing-ma-shēn″), *n.* In *textile manuf.*, a washing-machine with two heavy cylindrical rollers between which cloth is passed for squeezing out water. *G. Duerr*, Bleaching and Calico-printing, p. 12.

squeezing-rollers (skwē′zing-rō″lerz), *n. pl.* Same as *nipping*-★*rollers*.

squelch, *v. i.* 2. To make a sound like that produced by treading in mud.

> "Beg y' pardon, sir," said a voice at the tent door. . . . There was an undecided *squelching* of heavy boots. . . . "Here, come in out of the rain till I 'm ready."
> *R. Kipling*, Only a Subaltern, in Soldiers Three, [p. 123.

Squibb's urea apparatus. See ★*urea*.

squib-cracker (skwib′krak″ėr), *n.* Same as *squib*, *n.*, 3. *Beau. and Fl.*, Philaster, ii.

squiffy (skwif′i), *a.* Tight; tipsy; drunk. [Slang.]

> While something 's doing underneath my vest,
> That makes me think I 'm *squiffier* than I looked.
> *Wallace Irwin*, Love Sonnets of a Hoodlum, xv.

> "'Should n't wonder if he thought we got tight."
> "I never got *squiffy* but once — that was in the holidays."
> *R. Kipling*, Stalky & Co., p. 20.

squint, *n.*—**Convergent squint.** Same as *convergent strabismus* (which see, under *strabismus*).

squire^1, *n.* 6. The schnapper when two years old. See ★*schnapper*. *E. E. Morris*, Austral English.

squirrel-frog (skwur′el-frog), *n.* A small green tree-frog, *Hyla squirrella*, found in the southern United States.

squirt, *v. t.* 3. To force (lead or other metal) by hydraulic pressure into the form of rods or pipes; to force through a small hole under pressure as in the manufacture of carbonaceous paste into filaments for glow-lamps or into pencils for arc-lamps.—**Squirted carbon,** an arc-light carbon made by forcing a carbonaceous paste through a hole of proper diameter and heating the rod thus formed to a high temperature.—**Squirted filament,** a filament for a glow-lamp made by forcing carbonaceous paste through a small hole and carbonizing the cylindrical thread thus formed by heating it to incandescence.

squirt-can (skwėrt′kan), *n.* A small oil-can with a tapering spout and a flexible bottom. By compressing the bottom with the thumb, the volume of the interior is slightly reduced, and a drop or fine jet of oil is projected or flows from the tip of the spout. Larger cans pour the oil out, but these will not do so except at a very slow rate and with very limpid oil. *Trans. Amer. Inst. Elect. Engin.*, 1902, p. 591.

squirting (skwėr′ting), *n.* The act denoted by the verb 'squirt'; specifically, the process of forcing a viscous material through a small hole under pressure, as in the making of the filaments of glow-lamps. See ★*squirt*, 3.

> The plastic mass is then inserted in a press and forced through a small hole of requisite diameter, this process being the same as used in "*squirting*" incandescent lamp filaments.
> *Elect. World and Engin.*, May 21, 1904, p. 981.

S. R. I. An abbreviation of the Latin *Sacrum Romanum Imperium*, Holy Roman Empire.

S. R. S. An abbreviation of the Latin *Societatis Regiæ Socius*, Fellow of the Royal Society.

SS. (*c*) See *Collar of SS.*, under *collar*.

s. t. An abbreviation (*a*) of the Italian *senza tempo*, without marked time; (*b*) of *short ton*.

sta (stä). [It., 'stand,' impr. of *stare*, stand.] In *music*, let it stand as written.

staatsraad (stäts′räd), *n.* [D.] The council of state. [Dutch South Africa.]

stab, *v. t.* 5. In *bookbinding*, to perforate near the back folds (the assembled sections of an unbound book). This operation is immediately followed by the insertion of the thread or wire which secures the sections together.

stab, *n.* 4. In *bacteriol.*, a culture of bacteria produced by stabbing the inoculating needle into the solid medium. See ★*culture*.

> The early surface-growth in the glucose agar *stab* presents a whitish, heaped up center.
> *Jour. Exper. Med.*, Oct. 1, 1900, p. 80.

5. In *billiards*, a foreshortened stroke, causing the cue-ball, for some special reason, to stop in the place of the one it set in motion.—6. See the extracts.

> The various Trade Unions of the compositors, in all parts of the country, have, for over a century, formally recognised both the "scale" of piecework rates and the "*stab*" or time wages. *Webb*, Indust. Democracy, I. 229.
>
> As a matter of fact most straightforward setting-up of ordinary book matter and daily newspaper work is done by the piece, whereas corrections and special jobs difficult of calculation are done by "*stab*" men.
> *Webb*, Indust. Democracy, I. 300.

Stab culture. See ★*culture*.

Stabat Mater. 3. A sequence regarding the Virgin Mary in contemplation of the infant Jesus. It first appeared in 1495, but has not been incorporated into a regular liturgy. It is more fully known as the *Stabat Mater speciosa*, to distinguish it from the *Stabat Mater dolorosa* (see def. 1).—4. A musical setting of this Christmas sequence, as in Liszt's "Christus."

stabile (stab′il), *a.* [L. *stabilis*, < *stare*, stand. See *stable*^{1}.] Fixed; firm: noting, in *electrotherapeutics*, an electrode which is kept applied to one part, as distinguished from a *labile* electrode, which is moved about over the surface.

stabilist (stab′i-list), *n.* [L. *stabilis*, stable, + *-ist*.] One who is keenly interested in maintaining social order.

> After the professionals come the *stabilists*, or those who stake most on good order. . . . They are firm upholders of such standards as affect property and contract.
> *E. A. Ross*, Social Control, p. 363.

stability, *n.*—**Cross-curves of stability.** See ★*cross-curve*.—**Curve of stability.** See ★*curve*.—**Dynamical stability,** in *naval arch.*, the work done in inclining a vessel from the upright or position of equilibrium to the inclination considered.

> Before concluding these remarks on the hypothesis of unresisted rolling, a brief exposition of the principles of *dynamical stability* must be attempted. On the assumption that no account shall be taken of the effect of fluid resistance, *dynamical stability* may be defined as the "work" done in heeling the ship from her upright position to any angle of inclination; the amount of work done, of course, varying with the inclination.
> *White*, Manual of Naval Arch., p. 158.

Kinetic stability stability of motion. Bodies moving under such conditions that when subjected to a slight temporary disturbance they tend to return to their undisturbed path are said to have kinetic stability. The motions of vibrating bodies and certain motions of a spinning top exhibit kinetic stability.

> The criterion of *kinetic stability* proposed by Klein and Sommerfield is as follows:—"If the undisturbed path be the limiting form of the disturbed path when the impulses are indefinitely diminished it is said to be stable, but not otherwise." *Encyc. Brit.*, XXVII. 571.

Molecular stability, permanence of condition as regards the arrangement of the molecules: said of metals which, by repeated annealing, have been brought into a state in which further changes of dimensions or structure do not occur.—**Range of stability**, in *naval arch.*, the maximum angle measured from the upright to which a vessel can be inclined without upsetting. This is the angle at which its righting ★couple (which see) becomes zero.

> The length (OX), measuring the inclination at which the ship becomes unstable, determines what is known as the *range of stability* for the ship, and this is an important element of safety. *White*, Manual of Naval Arch., p. 128.

Secular stability, stability of the permanent type possessed under certain conditions by a continuously moving system. The conditions of secular stability are that the potential energy of the system, added to that portion of its kinetic energy which is related to its momentum, shall be a minimum.—**Statical stability**, the stability of a body at rest and in equilibrium; specifically, in *naval arch.*, the effort which a vessel makes to return to the upright or position of equilibrium when inclined by an extraneous force, measured by the righting ★couple (which see).

stabiloplast (stab'i-lọ̄-plȧst), *n.* [L. *stabilis*, firm, + Gr. *πλαστός*, verbal adj. of *πλάσσειν*, to mold.] A name given to the colored elæoplasts, of certain diatoms, which do not vary in number or position. See ★*sparsioplast*, ★*placoplast*, and ★*libroplast*.

stable^{2}, *a.* **4.** In *phys.*, being in equilibrium such that no displacement, distortion, or molecular or chemical change can be produced without the expenditure of work: said of a body which, when displaced, tends to return to its former position, or, when distorted, to its former shape, also of a substance which resists molecular or chemical change.

staccato, *a.* **II.** *n.* In *music*, the act, process, or result of singing or playing on an instrument in a staccato manner.

Stachychrysum (stak-i-krī'sum), *n.* [NL. (Bojer, 1837), < Gr. *στάχυς*, an ear of grain, a spike, + *χρυσός*, gold. The name alludes to the yellow color of the flowers in the type species, *S. chrysostachyum* (*Acacia chrysostachys* of Sweet).] A genus of dicotyledonous plants of the family *Mimosaceæ*. See *Piptadenia*.

stachydrine (stak'i-drin), *n.* [*Stac*(*hys*) + *hydr*(*ogen*) + *-ine*^{2}.] A colorless, crystalline, deliquescent, basic compound, $(CH_3)_2N.C_9H_6COOH.H_2O$, contained in the sap of the tubers of *Stachys tuberifera*. It melts at 210° C. when anhydrous.

stachyose (stak'i-ōs), *n.* [Gr. *στάχυς*, an ear of grain, + *-ose*.] Same as ★*manneotetrose*.

stack^{1}, *n.* **9.** In *gambling* and *banking games*, twenty chips or counters.—**10.** A group of retorts set together in the furnace for the manufacture of coal-gas.—**11.** That part of a blast-furnace which extends from the boshes to the throat.

stack^{1}, *v. t.*—**To stack chips**, in *gaming*, to pile chips one on the other, so that twenty are in each pile.

stacking-swivel (stak'ing-swiv"l), *n.* A hook at the upper band of a military small arm, used for fastening it to others in stacking arms when the bayonet is not of such shape that it may be used for this purpose.

stadia, *n.*—**Stadia work**, in *surveying*, the surveying work or operations conducted by the stadia method. See *stadia*, 3.

stadic (stā'dik), *a.* [*stad*(*ia*) + *-ic*.] Of or pertaining to a stadia, or connected with stadia work. *Nature*, March 28, 1901, p. 514. *Encyc. Dict.*

stadion (stā'di-on), *n.* Same as *stadium*, 1 and 2.

stadium, *n.* **3.** (*b*) In *zoöl.*, same as *stage*, 9.—**4.** In *entom.*, same as ★*instar*^{2}.

staf, *n.* A simplified spelling of *staff*.

staff^{1}, *n.*—**Chief of staff.** See ★*chief*.—**General staff corps.** See ★*corps*^{2}.—**Non-commissioned staff**, non-commissioned officers not attached to any company, as a sergeant-major, quarter-master sergeant, etc.—**Octave staff**, in *musical notation*, a peculiar form of staff, designed to provide a fixed place for each of the twelve semitones of an octave, so that they can be indicated by notes without any sharps or flats. Three such staffs, connected, supply places for all the tones used in vocal music. The system has never come into general use.—**Personal staff**, the personal aides of a general officer in the United States army.—**Staff corps.** See ★*corps*^{2}.—**Staff department.** See ★*department*.—**Staff system**, in *railroading*, a block system in which, in place of block-signals, the control of the right of way is given to the engineer, who, on entering a block, is given by the signalman a staff, as proof of his right of way over the block and as tangible evidence that the block has been declared clear for his train.

staff^{2} (stȧf), *n.* [Said to be from G. *staffieren*, to fit out. See *stuff*, *n.*] In *building*, plastering in portable sheets or slabs, prepared for nailing on a frame. It is made by mixing the mortar with a durable fibrous material, as shavings, hemp, and the like. First employed at the Paris Exposition of 1878.

staff-gage (stȧf'gāj), *n.* A staff graduated upward in feet and tenths, and so placed that its zero-mark will lie below the lowest tides: employed for measuring the range of tides.

Staffordshire delf. See ★*delf*^{2}.

staff-ride (stȧf'rīd), *n.* A course of instruction in the field for officers of the general staff.

> It may be remarked, however, that "*staff-rides*," as exercises on the ground without troops have come to be called, are just as effective a means of teaching strategy as field-days are of teaching tactics; in fact, a better means, for they bear a far closer resemblance to strategical work on a campaign than do the mimic battles of the manœuvre ground. *Encyc. Brit.*, XXXIII. 7.

Stag cult, in *Gr. antiq.*, a primitive worship of the stag which later developed into that of Artemis Elaphia.

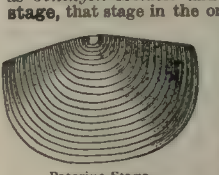
stag, *v. t.* **2.** To cut off (trousers at the knee, or boots at the ankle). [Local, U. S.]

stag-beetle, *n.*—**Giant stag-beetle**, an American lucanid beetle, *Lucanus elephas*, which inhabits the southern United States and the West Indies. It is often two inches in length, with mandibles which in the male are an inch in length and branched like the antlers of a stag.

stage, *n.* **11.** In *geol.*, a stratigraphic division equivalent to and expressing the work done during an *age*.—**Bolderian stage**, one of the divisions of the Miocene Tertiary in Belgium and Holland.—**Brahmanian stage**, the lowest division in the classification of the Triassic rocks of the Mediterranean province, as adopted by the Austrian geologists.—**Burdigalian stage** [L. *Burdigala*, F. *Bordeaux*], a division of the Miocene Tertiary lying at the base of the series in France and taking its name from Bordeaux. It is equivalent to the Langhian stage in Italy, and in the great Paris Tertiary basin is represented by fluviatile deposits containing remains of *Dinotherium*, *Mastodon*, *Rhinoceros*, *Machærodus*, apes, and monkeys. In Aquitania the deposits are marine. The sea at this period stretched across Provence, ascended the valley of the Rhone and swept around the west end of the Alps, leaving behind as its record a series of conglomerates and sandy and marly deposits with characteristic shells. These strata have since been folded and faulted in the great movements of upheaval which gave its final form to the Alpine chain. *Geikie*, Text-book of Geol., p. 1267.—**Carinthian stage**, a division of the Triassic system in the Mediterranean province as recognized by the Austrian geologists. It lies below the Juvavian stage and above the Norian stage, and is regarded as equivalent to the Keuper and upper part of the muschelkalk in the German sections.—**Charmouthian stage.** See ★*Charmouthian*.—**Free stage**, dramatic composition and representation freed from the artificiality, traditions, customs, and conventionalisms that formerly prevailed. The name was applied to a new and successful departure in play-writing and play-acting inaugurated about 1885 by the French actor Antoine, who founded the Théâtre Libre in Paris, and which, almost simultaneously, was attempted in the Independent Theatre in London and the Freie Bühne ('Free Stage') in Berlin.

> These young men, however, so quickly gained the ear of the general public, that the need for a special "*free stage*" was no longer felt, and the Freie Bühne, having done its work, ceased to exist. Unlike the French Théâtre Libre and the English Independent Theatre, it had been supported from the outset by the most influential critics, and had won the day almost without a battle. *Encyc. Brit.*, XXVII. 520.

Georgian stage, the lower subdivision of the Cambrian system of North America. It is especially developed in the eastern mountain-ranges, where it consists of huge masses of shales, limestones, and quartzites bearing the *Olenellus* fauna. See ★*Olenellus*.—**Hanging stage.** (*a*) A scaffolding or platform suspended by chains, ropes, or rods for the use of painters or repairers. Specifically—(*b*) A plank hung horizontally over a ship's side for men to stand or sit upon while cleaning or painting the ship.—**Helvetian stage.** See ★*Helvetian*.—**Johannean stage**, a division of the Cambrian rocks in New Brunswick as classified by Matthew, lying above the Acadian and below the Bretonian, and taking its name from St. John, N. B. The strata are about 1,000 feet in thickness and contain a considerable fauna.—**Juvavian stage.** See ★*Juvavian*.—**Ladinian stage**, a division of the pelagic Trias of the Mediterranean basin, constituting a stage at the base of the Upper Trias and equivalent in meaning to the Noric stage.—**Levantine stage**, a division of the upper Pliocene Tertiary in the Vienna basin.—**Liburnian stage**, the basal division of the Eocene Tertiary rocks in the southern and southeastern Alps. It embraces, in descending order, the Upper Foraminiferal limestone (marine), the Cosina beds (fresh-water), and the Lower Foraminiferal limestone (marine).—**Mediterranean stage**, the marine strata of Miocene Tertiary age in the Vienna basin, comprising a great variety of subdivisions and contrasted with the Sarmatian stage overlying, in which the fossils indicate a diminution of salinity in the waters.—**Noric stage**, a division of the Alpine Trias, following the period of the muschelkalk, at the close of which two great biological provinces were established in the northern and southern Alps, which continued during the remainder of Triassic time.—**Oeningen stage**, a division of the Miocene Tertiary, consisting of fresh-water limestones typically exposed at Oeningen, on Lake Constance, Switzerland. These beds are remarkable for their fossils, especially the insects and plants. "In these strata so gently have the leaves, flowers and fruits fallen, and so well have they been preserved, we may actually trace the alternation of the seasons by the succession of the different conditions of the plants. . . . Judging from the proportion of [insect] species, the total insect fauna may be presumed to have been then richer in some respects than it now is in any part of Europe. Nor did the large animals of the land escape preservation in the silt of the lake. We know, from bones found in the Molasse, that among the inhabitants of that land were species of tapir, mastodon, rhinoceros and deer. The woods were haunted by musk-deer, apes, opossums, three-toed horses, and some of the strange, long extinct Tertiary ruminants akin to those of Eocene times. There were also frogs, toads, lizards, snakes, squirrels, hares, beavers and a number of small carnivores. On the lake the huge *Dinotherium* floated, mooring himself perhaps to its banks by the two strong tusks in his under jaw. The waters were likewise tenanted by numerous fishes, crocodiles and chelonians." *Geikie*, Text-book of Geol., pp. 1270, 1271. Also known as *Oeningen Molasse* and *Tortonian stage*.—**Paterina stage**, that stage in the ontogenetic development of all brachiopods which is marked by the acquisition of the embryonic shell or protegulum, which bears a very close resemblance to the adult shell of a primitive genus, *Paterina* or *Kutorgina*, found in the Lower Cambrian rocks. In this stage the shell is unornamented, of semicircular outline, with a straight or arched hinge-line, and without cardinal area; and growth proceeds by peripheral additions to the lateral or posterior margins. In the succeeding nepionic and neanic stages the generic and specific characters are acquired. This *Paterina* type of embryonic shell is found only in the *Brachiopoda*, and its possession by members of that class is hence a phylembryonic characteristic of the *Brachiopoda* as a whole.—**Pontian stage**, a name given by some authors to the uppermost member of the Miocene Tertiary series of southern Europe: by others it is considered to be synonymous with *Messinian*, the basal stage of the Pliocene in the same region.—**Poteau stage**, the uppermost member of the upper coal-measures of western Arkansas and Oklahoma, consisting of a series of shales and sandstones with some coal-beds, in all 3,500–5,000 feet in thickness.—**Pottsville stage**, the basal stage of the coal-measures or Pennsylvanian series of the Appalachian region, consisting of conglomerates, sandstones, shales, and coal-beds, aggregating several thousand feet in thickness and lying above the Mauch Chunk red shale. The series is divided from below upward into the Pocahontas, Sharon, Conoquenessing, Mercer, and Homewood formations.—**Richmond stage**, the uppermost stage of the Lower Silurian formation in the interior or Appalachian basin of North America, succeeding the Lorraine stage and typically represented in Ohio and Indiana, taking its name from Richmond, Indiana.—**Sannoisian stage**, in *geol.*, the lowest division of the Oligocene Tertiary in the Paris basin.—**Sheridan stage**, the Equus beds: so named from their development in Sheridan county, Nebraska.—**Stage positions**, imaginary points upon the stage of a theater used as a guide to the actors in forming the groups that occur in the action of the play. The most important stage position is of course the center: all the other positions are fixed and named with reference to it. The stage positions are as follows: *center*, a point at the exact center of the stage, as it stands after the scene is set, and equally distant from the sides of the scene and from the front of the stage, called the *curtain line*, and the back of the visible scene; *right center*, a point half-way between center and the right-hand side of the scene; *left center*, a point half-way between center and the left-hand side of the scene; *up center*, a point at the extreme back of the scene and behind center; *down center*, a point on the curtain line in front of center; *down right*, a point on the curtain line at the extreme right of the visible scene; *down left*, a point on the curtain line at the extreme left of the scene; *up right*, a point at the extreme right and at the back of the scene; *up left*, the corresponding opposite point at the back of the scene. The four positions 'down right,' 'up right,' 'up left,' and 'down left' form a more or less rectangular figure (according to the plan of the scene) within which all the action of the play takes place. When the performer passes a line drawn through these points, or if he moves below the curtain line, he is said to be *out of the picture*. *Down right center* is a point on the curtain line half-way between down center and down right; *down left center*, a point on the curtain line half-way between down center and down left; *up right center*, a point half-way between up center and up right; *up left center*, a point half-way between up center and up left. Two imaginary lines, drawn one from up right to down right and the other from up left to down left, form the right side and the left side of the stage. Each of these lines is divided into four conventional points called *entrances*, named and numbered, from down right to up right and from down left to up left, as follows: *right first entrance*, *right second entrance*, *right third entrance*, and *right fourth entrance*; *left first entrance*, *left second entrance*, *left third entrance*, and *left fourth entrance*. These entrances may not all be actual entrances (real doors, gates, or passageways in the scenery), and the scene may not include them all. 'Right' or 'left' means in all cases the performer's right hand or left: sometimes called *stage right*, *stage left*. *Up stage* is at or toward the back; *down stage*, at or toward the front. The *curtain line* is an imaginary line drawn across the stage from one side of the proscenium opening to the other, and just in the rear of the opening. The lower border of the curtain, when down, is parallel to the curtain line. The action of the play is presumed to be above (behind) the line, as any action below (before) it lacks the proper illumina-


Paterina Stage.
(From Zittel's "Palaeontology.")

tion, appears out of proportion to the rest of the stage picture, and thus tends to destroy the stage illusion. See *theater*.— **Sweating stage,** the third stage, following the decline of the fever, in the malarial attack.— **To take the stage.** See the extract.

> Again, certain technicalities, which the trained actor knows by experience, or which the untrained may divine intuitively, will always affect an audience. Thus, what we call '*taking the stage*' on a heroic line is certain to induce a burst of applause; an exit exactly timed after a comedy speech will be rewarded in the same way, but if one takes but one step too far down the stage or miscalculates the distance to the door by a step, the applause will not be forthcoming. *The Grand*, Oct., 1905, p. 463.

stage-pumping (stāj′pum″ping), *n.* A system of pumping the water from deep mines, in which the lift from the bottom is divided into steps or stages, so that the water is raised by a series of pumps from level to level, instead of being forced to the surface in one operation. The stress on the pipe which discharges the water is less than if the head on one pump only were the depth of the shaft, and each pump is lighter than if the total head had to be overcome at once.

stage-setting (stāj′set″ing), *n.* Arrangement of scenery and property upon the stage of a theater.

> The *stage-setting* consists of rows of clipped cypresses, each advancing a few feet beyond the one before it. *E. Wharton*, Italian Villas, p. 72.

stagger, *v. t.*— **Staggered riveting.** See ★*riveting.*

stagger, *n.*— **Sleepy staggers,** a non-contagious disease of horses, the cause of which is unknown; it is associated with the ingestion of moldy or musty hay and grain. More commonly called *forage-poisoning* or *cerebrospinal meningitis*. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 79.

stagger-spokes (stag′ėr-spōks), *n. pl.* Spokes set alternately on one side and the other of the plane of a wheel.

staggery (stag′ėr-i), *a.* Staggering; inclining to stagger or fall. [Colloq.]

> I kept on passing old run-down houses; sometimes a tired-out looking frame building that was as *staggery* as its shed and so old they was both dark to match. *O. D. Stewart*, Partners of Providence, xxxiv.

stag-head (stag′hed), *n.* A diseased condition of trees in which the topmost branches become dead and bare. It is usually regarded as due to an insufficient water-supply, but may be caused by parasites or other injuries. See *stag-headed*.

stag-hunter (stag′hun″tėr), *n.* One who engages in the chase of the deer; one who follows a pack of staghounds. *Encyc. Dict.*

stagily (stā′ji-li), *adv.* Theatrically; with extravagance of action or emphasis.

> The rather perfunctory and *stagily* improbable rescue of Lance Carlyon from a watery grave in the secret chambers. *Pall Mall Gazette*, Nov. 13, 1900, p. 4.

stagnin (stag′nin), *n.* [*stagn*(*ate*) + *-in*².] A substance which is formed during the autolytic digestion of splenic tissue and has hemostatic properties.

Stagodontidæ (stag-ọ̄-don′ti-dē), *n. pl.* [NL., < *Stagodon*(*-t-*), the type genus, + *-idæ*.] A family of extinct marsupial mammals, containing species of small size, having the molar teeth with low, rounded crowns, as if solidified from a drop of liquid. Known from specimens from the Laramie Cretaceous of the United States. *Marsh*, 1889.

Stahl ear. See ★*ear*¹.

stahlstone (stäl′stōn), *n.* [G. *Stahl*(*berg*) (see def.) + E. *stone*.] Siderite (iron carbonate) from the Stahlberg, Müsen, Germany.

stain, *n.* 6. (*b*) Specifically, a solution of a dye used in microscopical work to render more readily visible various structures, and for purposes of differentiation.— **Ehrlich's triple stain,** a dye for staining blood-corpuscles and other cells, composed of acid-fuchsin, orange G, and methyl green in alcohol and water.— **Giemsa's stain,** a staining mixture containing methylene azure and methylene blue in combination with eosin: a valuable polychrome dye which is extensively used in hematological studies.— **Gram's stain,** a method of staining by which the organisms (bacteria) are first stained with gentian-aniline water, then decolorized with Lugol's solution (an iodine preparation), placed in alcohol until no more color is extracted, and dried and mounted. Some organisms, when thus treated, hold the original color of the gentian violet, while others lose it. The method is thus of use in the recognition of different types of bacteria.— **Hasting's stain,** a modification of Romanowsky's stain: used in the study of the blood.— **Jenner's stain,** a stain used in the study of the blood. It is a 0.5 per cent. solution of eosinate of methylene blue in absolute methyl alcohol.— **Leishman's stain,** a modification of Romanowsky's stain: used in the study of the blood.— **Neisser's stain,** a method of staining the diphtheria organism. First the bacilli are colored with a solution of methylene blue (20 cubic centimeters of an alcoholic solution of the dye, 950 cubic centimeters of distilled water, and 30 cubic centimeters of glacial acetic acid), and then counterstained with a 0.2 per cent. solution of vesuvin. In this manner the bacilli appear brown and show from two to four blue granules near the poles.— **Neutral stain,** a dye containing both an acid and a basic stain, necessary for coloring a neutrophilic cell or tissue.— **Nocht's stain,** a modification of Romanowsky's stain: used in the study of the blood.— **Plasma stain.** See ★*plasma-stain*.— **Romanowsky's stain,** a stain which, in its many modifications (Ziemann's, Nocht's, Giemsa's, Leishman's, Wright's), is essentially an eosin methylene-blue mixture which contains methylene azure, the latter being derived from the methylene blue. The stain is especially well adapted for the study of the malarial and allied organisms.— **Silver stain,** in *glass-painting*, a yellow color applied to the surface of the plain glass, with which it unites in a very permanent way. It is a chief element in the decorative work of the fifteenth century and later.— **Specific stain,** in *histol.* and *cytol.*, a staining solution which has a definite and marked affinity for particular cells or tissues or parts of such elements. For example, Sudan III is a specific stain for fat; eosin one for the oxyphilic granules found in certain leucocytes; methyl green, a specific nuclear dye.— **Triacid stain,** a polychrome stain devised by Ehrlich for the study of the blood. It is composed of methyl green, acid-fuchsin, and orange G or aurantia, in such proportions that a neutral mixture is obtained. The term 'triacid' is referable to the fact that all three basic amino groups of the methyl green have been saturated by acid radicals of the acid-fuchsin and the orange G.— **Van Gieson's stain,** a counterstain of picric acid and acid-fuchsin, used after staining with hematoxylin.— **Wright's stain,** a stain used in the study of blood: a modification of Leishman's stain.— **Ziemann's stain,** a modification of Romanowsky's stain: used in the study of the blood.

stainability (stā-na-bil′i-ti), *n.* [*stainable* (*-bil-*) + *-ity*.] In *histol.*, the ability to take up a stain: said of cells or tissues.

stainer, *n.* 4. An insect that causes stains, as the cotton-stainer.— **Apple-wood stainer,** an American scolytid beetle, *Pterocyclon mali*. Also called *pin-borer* on account of the minute exit-holes it makes in bark.

staining-jar (stā′ning-jär″), *n.* In *cytol.* and *embryol.*, a jar in which series of animal or plant sections, mounted on glass slides, are submitted to the action of a staining solution for the purpose of differentiating the parts of their cells or tissues.

stair, *n.*— **Hanging stairs,** stairs which are not supported directly from below, as by a wall or columns, yet are not self-supporting, as where the string-pieces are sufficient in themselves, but which are carried on brackets projecting from the wall or on rods from the roof. Stone stairs of which one end of each step is built into the wall, and which rest one upon the other by slight bearings at the top, are sometimes called *hanging stairs*.— **Schroeder's stair figure.** See ★*figure*.— **Spiral stairs,** stairs composed entirely of winders; steps of which the flight has a greater width on the outside and a smaller (sometimes coming to a point) at the center of the circular plan. They may be built about a central column called a newel; or free with an open well in the heart of the stair, in which case they are called *open-newel stairs*. They may be built of stone or wood; in a stone spiral stair it is usual to build each step of a single block with the outer end built into the wall of the tower which contains the stair.

stair-gage (stãr′gāj), *n.* An attachment to a carpenter's steel square used to give any pitch or angle required in cutting braces, rafters, stairs, etc.

stairway, *n.*— **Moving stairway.** See ★*escalator*.

stake¹, *n.* 6. The post or arm which carries the fixed or stationary jaw of a riveting-machine, and holds up the rivet against the pressure which upsets the metal and forms the head.— **To drive stakes,** specifically, to stake a claim out or off; hence, to settle; establish oneself. See *stake*¹, *v. t.*, 4. [Colloq.]

> "Well, after drifting about several years I finally *drove stakes* on the Spokane River. I carried people across and kept a general store. It struck me there ought to be some money in furs. *G. Morris*, in Outing, Feb., 1906, p. 605.

To plant at stake or **at the stake,** in tea-growing, to plant at the point (marked by a stake) where the bush is to stand.

> A favourite method is *to plant* out with germinated seed "*at stake.*" *Claud Bald*, Indian Tea, p. 54.

stake², *n.*— **Club stakes,** the amount always played for in any game of cards when there is no special understanding to the contrary.

stake-presidency (stāk′prez″i-den-si), *n.* The office of president of a stake of the Mormon Church. The president, with two counselors, presides over the spiritual affairs of the church in the stake locality. See *stake*², 5.

staking-iron (stā′king-ī″ėrn), *n.* In *currying*, an upright blade at the end of a stake or post over which the skin is drawn back and forth to soften it. *Mod. Amer. Tanning*, p. 201.

staking-machine (stā′king-ma̤-shēn″), *n.* A machine for softening leather, in which a blade is drawn back and forth over the skin or hide. *C. T. Davis*, Manuf. of Leather, p. 273.

stalactite, *n.* 4. In decorative architecture of certain schools, a pendent ornament with sharp edges and generally one of many in a group.

stalagma (sta̤-lag′mä̤), *n.* [Gr. στάλαγμα, a drop, < σταλάσσειν, drop, drip. See *stalagmite*.] Same as *stalagmite*. [Rare.]

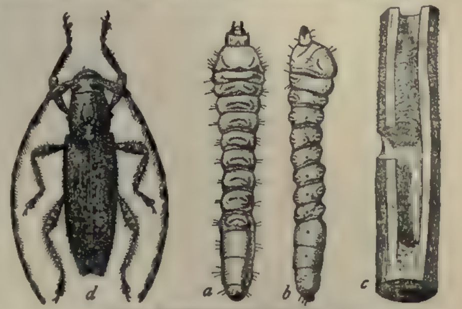
Stalagmite marble. Same as *onyx marble* (which see, under *onyx*).

stale³, *a.*— **Stale demand** or **claim.** See ★*demand*.— **To go stale.** (*a*) To be the worse for age, or lack of freshness and interest; become flat, or insipid; lose initiative. (*b*) To be overtrained; be injured by the strain of long training, so that the response to stimulus, mental or physical, is impaired: said of horses and athletes, and also used figuratively.

> In 1892, the Unionist administration having *gone stale*, it was turned out. *W. T. Stead*, in Rev. of Revs., May, 1903, p. 574.

stalk², *n.*— **Abdominal stalk.** See ★*abdominal*.

stalk-borer, *n.*— **Cotton stalk-borer,** a cerambycid beetle, *Ataxia crypta*, whose larva bores in the stalks of cotton in the southern United States.— **Larger corn stalk-borer.** See ★*borer*.— **Rice stalk-borer,** the larva of an American crambid moth, *Chilo plejadellus* It bores into rice-stalks near the base.— **Smaller corn stalk-borer.** See ★*borer*.— **Wheat stalk-borer,** the larva of an American noctuid moth, *Achatodes zeæ*. It bores into the stalks of wheat, corn, potatoes, and many other plants.



Cotton Stalk-borer (*Ataxia crypta*).

a, larva from above; *b*, larva from side; *c*, tunneled cotton-stalk showing exit hole; *d*, adult beetle: *a*, *b*, and *d*, enlarged. (Howard, U. S. D. A.)

stalk-chopper (stâk′chop″ėr), *n.* A tool or machine designed for use in cutting the stalks of plants.

> This may be accomplished economically by cutting the stalks into pieces by means of a machine known as a *stalk chopper*, followed by burning, or the plants may be uprooted with a plow commonly used for that purpose in clearing cotton fields in the spring and then treated in the same manner. *Yearbook U. S. Dept. Agr.*, 1901, p. 378.

stalk-cure (stâk′kūr), *v. t.* To cure (tobacco) with the leaves still on the stalks: opposed to ★*leaf-cure*.

> The net financial returns amounted to $32.89 for the *stalk-cured* and $53.55 for the leaf-cured or Snow process. *U. S. Dept. Agr.*, Rep. 63, p. 26.

stalk-worm (stâk′wėrm) *n.* The larva of an American crambid moth, *Crambus caliginosellus*, which feeds on tobacco-stalks, where tobacco has been planted on grass-lands. It also feeds on corn and grasses. Also called *tobacco root-worm*.

stall¹, *n.* 10. Same as *cot*¹, 4. See also *finger-stall*.

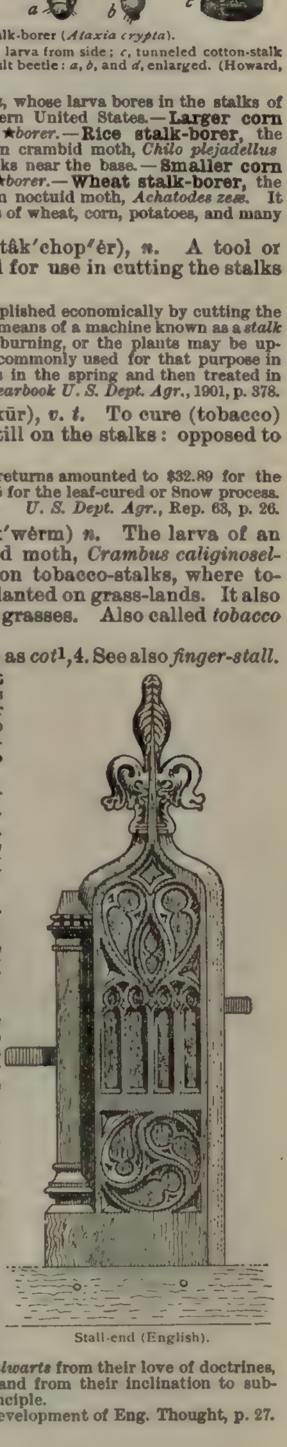
stall², *n.*— **Front stall,** one who makes acquaintances in order to introduce them to sharpers; the 'hat-raiser' in a bunco game. [Slang.]

stall-end (stâl′end), *n.* In ecclesiastical furniture, the end of a stall, usually richly carved.

stall-keeper (stâl′kē″pėr), *n.* The keeper of a book-stall or other stall.

> The *stall-keepers* generally offered to his notice any English book which they thought likely to take his fancy. *Southey*, Doctor, cxii.

stall-work (stâl′wėrk), *n.* In ecclesiastical furniture, the carved work of choir-stalls.



Stall-end (English).

stalwart, *n.* 3. An ascetic, dogmatic, and strenuous person: noting a social type. [Rare].

> I shall call them *stalwarts* from their love of doctrines, dogmas, and creeds, and from their inclination to subordinate policy to principle. *Patten*, Development of Eng. Thought, p. 27.

stalwartism, *n.* 2. As a social creed and tendency, devotion to principles of self-restraint, frugality, and religious and political dogmatism. See ★*stalwart*, *n.*, 3.

> In the eighteenth century, *stalwartism* became a political force through the democratic ideals which developed in harmony with frugal ideas.
> *Patten*, Development of Eng. Thought, p. 29.

stamp, *n.*—**Commission of stamps.** See ★*commission*1.—**Gravity stamp,** a massive pestle lifted by mechanically driven cams and allowed to fall by its own weight upon rock and ore in a mortar at its foot: used for crushing ores to sizes which fit the particles for further treatment of concentration and extraction.—**Local stamp,** in *psychol.*, the characteristic coloring of cutaneous impressions at different parts of the surface; the local sign.

> If we touch the skin of the cheek, the sensation of pressure has a very characteristic stamp which is especially conditioned by the absence of a firm substructure, the flaccidity of the skin, and the insertion in the skin of muscular fibres. . . . In accordance with Lotze's precedents these "*local stamps*," characteristic of sensations of pressure, are also designated as "local signs."
> *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 76.

Pneumatic stamp, a form of pestle driven by a crank-motion which raises it and delivers its blow upon rock and ore in a mortar at its base. Since the crank would not deliver a dead or inelastic blow on the rock, and the thickness in the mortar must be variable, the crank connecting-rod is not attached directly to the pestle, but drives the latter through a pneumatic cylinder. The piston is attached to the crank, and the cylinder to the pestle or stamp, or vice versa. Compression of the air above or below the piston causes powerful dead blows to be delivered, and relieves the pin and bearings from shock, providing also for variable thickness of the layers of material.—**Stamp copper, tax.** See ★*copper*1, ★*tax.*—**Trading-stamp.** See ★*trading-stamp.*

stampee (stam-pē′), *n.* [*stamp* + *-ee*1.] An old local name for restamped subsidiary coins in the islands of St. Vincent and Trinidad.

Stampian (stam′pi-an), *a.* and *n.* [L. *Stamp*(*æ*) (whence *Étampes*) + *-ian.*] **I.** *a.* In *geol.*, noting a group of Oligocene Tertiary deposits in the Étampes district of France, intermediate in age between the Aquitanian above and the Tongrian or Sannoisian below.

II. *n.* The Stampian group.

stamping-machine, *n.* 2. In *shoe-manuf.*, a press for stamping a trade-mark or the name of the maker on the sole of a shoe; a bottom-stamping machine.

stamp-licker (stamp′lik″ėr), *n.* One who licks postage or other stamps or moistens them with the tongue.—**Stamp-lickers' tongue.** See ★*tongue.*

stamp-rock (stamp′rok), *n.* In *mining*, ore or quartz which has to be stamped in the process of separating the metal.

stamp-weed (stamp′wēd), *n.* Same as ★*butter-print*, 2.

stance, *n.* 4. In *golf*, the position of a player's feet, in addressing the ball.

stanchion, *n.*—**Beam-stanchion.** See ★*pillar*, 13.—**Box-section stanchion,** a stanchion or upright post or column, used in bridge-building and in ship-building, made up of four longitudinal steel or iron plates riveted together at the edges by the aid of angle-irons. The stanchion thus resembles a long box, whence its name.—**Deck-stanchion.** See ★*pillar*, 13.—**Hold-stanchions** (*naut.*), the vertical props or supports, usually of cylindrical metal rods or tubes, which extend from the bottom of the vessel to the hold-beams.—**Hollow stanchions** (*naut.*), the props or supports for deck-beams, etc., which are made from a rolled shape, similar to an ordinary gas-pipe, but of heavier proportions.—**Man-rope stanchion,** a deck-stanchion which holds the end of a man-rope.

stand, *v.* **I.** *intrans.*—**To stand by.** (*c*) In *law*, to remain silent and unprotesting while another's interest is suffering. A duty of disclosure is implied.—**To stand clear,** *naut.*, to keep out of danger.—**To stand for.** (*b*) To mean; represent: as, A *stands for* apple.

> His worst quarrel with Gus and her friend, Clara Hopkins . . . came about because the new member refused to tell what the initials "*stood for.*"
> *J. C. Lincoln*, Partners of the Tide, iv.

To stand pat. See ★*pat*2, *adv.*

II. *trans.*—**To stand trial.** See ★*trial.*

stand, *n.* 6. (*b*) In *agri.*, the state or condition of a crop in respect to the number and uniformity of plants that occupy a given area. A good stand of corn is one that has the proper or requisite number of plants on the area and in which the plants are of similar size and vigor. (*c*) In *forestry*, the trees of a given area collectively, either all or those of a particular species, grade, etc. A pure stand is one composed exclusively of a given species, as of spruce, etc.—13. In *calico-printing*, a color-mixture used as a standard or base from which other shades are made by the addition of starch-thickening or -paste. Also called *standard.*—**Bold stand,** in *division loo*, when the pool is a simple and every one is obliged to play his hand.—**On stand,** in *law*, a term expressing the right of an outgoing tenant of a farm to sell manure thereon to his successor, though he may not remove it. It is *on stand* and may not lawfully be used until sold. This right is by no means universal.—**Stand method.** See ★*method.*—**Stand table,** in *forestry*, a tabular statement of the number of trees of each species and diameter class upon a given area.—**To take a,** or **one's, stand.** (*a*) To rest upon something as a support or ground in argument or resolution: as, *to take one's stand* upon the Constitution. (*b*) To adopt a definite position with regard to some matter that is in dispute or is undecided; adopt and express a positive and definite view or resolve.

standard2. **I.** *n.* 5. In *hort.*, a fruit-tree that grows to its normal size, that is, is not dwarfed; in Great Britain, a tree or other plant that is grown to a single trunk, in distinction from one that is grown in bush form.—6. In *forestry*, a tree from 1 to 2 feet in diameter, breast-high.—7. Same as ★*stand*, 13.—8. A wholesale unit of measurement for timber. A standard of pine timber is equal to 720 feet of 11 inches × 3 inches cross-section. Also, the standard sizes of planks, as St. Petersburg, Quebec, etc. *Lockwood*, Dict. Mech. Engin. Terms.—**Absolute photometric standard,** a photometric standard the definition or specification of which is based directly upon some absolute system of units.—**Barometric standard,** the standard adopted by any institution for measuring atmospheric pressure. See *standard* ★*pressure.*—**Bureau of Standards.** See ★*bureau.*—**Color standard.** See ★*color.*—**Light standard.** See ★*light*1.—**Matthiesen's standard,** a practical unit of resistance, the resistance of a copper wire $\frac{1}{16}$ of an inch in diameter and one mile in length, at 70° F. Also called *Matthiesen's mile standard. Elect. World and Engin.*, Nov. 14, 1903, p. 816.—**Methven standard,** an Argand lamp with a Methven screen, used in the photometry of gas-flames. See *Methven screen*, under ★*light standard.*—**Mile standard.** See *Matthiesen's* ★*standard.*—**Pentane standard.** See ★*pentane.*—**Platinum standard.** Same as *Violle's platinum standard.* See ★*light standard.*—**Thermometric standard,** the standard adopted by an institution for measuring temperatures. The international standard of the International Bureau of Weights and Measures at Sèvres is the gas-thermometer reduced to an ideal thermodynamic scale.—**Violle standard,** in *photom.*, the platinum standard of light devised by Violle. See ★*light standard.*

II. *a.*—**Standard pressure.** See ★*pressure.*

stand-by, *n.* **II.** *a.* Standing; fixed. See the extract.

> The actual cost of generation, i.e., the cost of coal, oil, etc. These are the chief items which go to make up what are called the Standing or *Stand-by* Charges. Other items which might fairly be added to the *stand-by* charges are the rent, rates, and taxes, and a part of the management expenses. . . . He [Mr. Wright] also includes *stand-by* coal charges used for banking fires, etc., and all wages of workmen.
> *Jour. Brit. Inst. Elect. Engineers*, 1899–1900, p. 680.

stand-cask (stand′kȧsk), *n.* A more or less ornamental cask in a liquor-dealer's establishment, intended to be filled and placed in such a way that the contents can be drawn off through a faucet or spigot into other receptacles to be sold.

standfast (stand′fȧst), *n.* That which stands firm, showing strength and resistance to change; something strongly rooted either physically or mentally.

> The travellers swarm forth from the cars. . . . It seems as if the whole world, both morally and physically, were detached from its old *standfasts* and set in rapid motion. And, in the midst of this terrible activity, there sits the old man . . . so subdued, so hopeless, so without a stake in life, and yet not positively miserable.
> *Hawthorne*, Mosses from an Old Manse, Old Apple Dealer, p. 223.

stand-galley (stand′gal″i), *n.* Same as *standing galley* (which see, under *galley*).

stand-hand (stand′hand), *n.* In *écarté*, a hand on which it is right to play without proposing; also, one on which it is right to refuse, or play without giving cards: usually called ★*jeu de régle* (which see).

> The player who makes the highest declaration becomes the *stand-hand.* If a player declares Nap, i. e., that he plays for all five tricks, he becomes the *stand-hand*, as no higher declaration can be made.
> *Amer. Hoyle*, p. 297.

standing-bolt (stan′ding-bōlt), *n.* A bolt screwed into a threaded hole in a fixed surface and threaded on its projecting end to receive a nut.

standing-vise (stan′ding-vīs), *n.* 1. A form of bench-vise so large, and at such a height from the floor, that the operator must stand while at work.—2. A form of heavy vise attached to a bench at one side and standing upon a leg which reaches to the floor. Also called *leg-vise.*

stand-pat (stand-pat′), *a.* Characterized by the principle of 'standing pat.' See ★*pat*2, *adv.*, 2. [U. S. political slang.]

stand-patter (stand′pat″ėr), *n.* One who 'stands pat'; one who refuses to consider any change or reform of the existing status or policy, especially reform of the tariff. See *to stand* ★*pat.* [U. S. political slang.]

> The vehement and numerous protests of disappointed manufacturers and indignant "*stand-patters*"—even those within the Cabinet—are not having the slightest effect on the President. *N. Y. Tribune*, May 18, 1905.

stand-pattism (stand-pat′izm), *n.* The principles or conduct of the stand-patters. *N. Y. Sun*, Jan. 19, 1906. [U. S. political slang.]

stand-pipe, *n.* 8. A fixed vertical pipe for furnishing water to the upper part of a high building in case of fire. The stand-pipe may be connected to a high-pressure water-main or may be dependent on a hose from a fire-engine for its supply.

> It has become the practice to erect at convenient points within the building steel *stand-pipes*, generally 6 inches in diameter, extending from the pavement to the roof, provided at each storey with double branches and plugs of the dimension and pitch of screw to receive the regulation fire-hose connexion.
> *Encyc. Brit.*, XXVI. 440.

standstill, *n.* 2. The state of standing still; a state of immobility.

> One may be permitted to doubt whether any style of starting can be considered thoroughly satisfactory which does not permit the horses to be started from "motion" instead of a "*stand-still.*" *Athenæum*, July 9, 1904, p. 40.

To gallop to a standstill. See ★*gallop.*

stang1, *n.* 4. A bar or pole, in a kind of warp-dressing machine, over which the warp passes.

stang5 (stang), *n.* A Siamese coin.

> The Bangkok Times understands that a gold coinage law is being drafted for Siam, and that the measure may become law within the year. It is under this law that it is proposed to reintroduce the *stang*—a copper coin this time, not nickel as before. Matters have not developed sufficiently far yet, however, for orders to be given for the manufacture of the coins.
> *Daily Cons. and Trade Rep.*, Sept. 3, 1907, p. 6.

stanhope, *n.*—**Double stanhope,** a carriage with a body composed of two stanhope bodies, with the brackets cut away and the seats facing each other. There is a driver's seat on iron supports at the front and a footman's foot-board at the rear.

Stanley's actinometer. See ★*actinometer.*

stannate, *n.*—**Sodium stannate.** See ★*sodium.*

stannel, *n.* See *staniel.*

Stannic chlorid, $SnCl_4$, a compound of tin and chlorin, used in dyeing as a mordant, but not to as large an extent as formerly.—**Stannic oxid.** See ★*oxid.*

stannofluoride (stan-ǫ-flö′ǫ-rid), *n.* [L. *stannum*, tin, + E. *fluoride.*] A double salt consisting of stannic fluoride united to the fluoride of a more basic metal: as, potassium *stannofluoride*, K_2SnF_6.

Stannous chlorid, $SnCl_2$: used in the same way as ★*stannic chlorid.*

Stansfield's formula. See ★*formula.*

stapeal (stā′pę-al), *n.* and *a.* [NL. *stape*(*s*) (see *stapes*) + *-al*1.] One of the bones of the gill-cover of fishes: same as ★*opercular. Starks*, Synonymy of the Fish Skeleton, p. 515.

stapedectomy (stap-ę-dek′tō-mi), *n.* [NL. *stapes* (assumed stem *staped-*) + Gr. ἐκτομή, excision.] An operation for the removal of the stapes in the middle ear.

stapes, *n.* 2. A bandage for the foot forming figure-of-eight turns around the ankle.

staphyleaceous (staf″i-lę-ā′shius), *a.* [NL. *Staphyleace*(*æ*) + *-ous.*] Belonging or pertaining to the *Staphyleaceæ.*

staphyledema (staf″i-lę-dē′mä), *n.*; pl. *staphyledemata* (-ma-tä). [NL., < Gr. σταφυλή, the uvula, + οἴδημα, swelling.] Edematous swelling of the uvula.

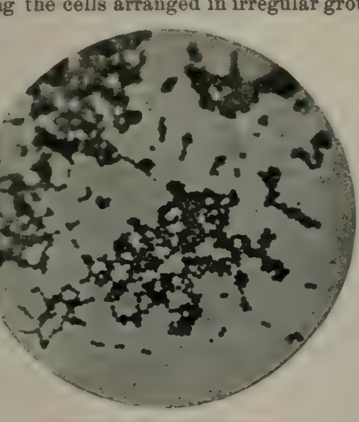
staphylinic (staf-i-lin′ik), *a.* [*staphyline* + *-ic.*] Of or relating to the uvula or to the palate.—**Staphylinic index.** See ★*index.*

staphylococcal (staf″i-lǫ-kok′al), *a.* [*staphylococc*(*us*) + *-al*1.] Of or pertaining to staphylococci.

staphylococcic (staf″i-lǫ-kok′sik), *a.* [*staphylococc*(*us*) + *-ic.*] Same as ★*staphylococcal.*

staphylococcomycosis (staf″i-lǫ-kok″ǫ-mī-kō′sis), *n.* [NL., < *staphylococcus* + *mycosis.*] A morbid state of the skin due to the presence of staphylococci. *Med. Record*, July 25, 1903, p. 144.

Staphylococcus (staf″i-lǫ-kok′us), *n.* [NL. (Rosenach, 1884), < Gr. σταφυλή, a bunch of grapes, + κόκκος, a berry (see *coccus*).] 1. An invalid generic name applied to certain species of pus-forming bacteria, of which *Micrococcus* ('*Staphylococcus*') *pyogenes* is the most common.—2. [*l. c.*; pl. *staphylococci* (-sī).] Any member of this group which is characterized by having the cells arranged in irregular groups.



Staphylococcus pyogenes aureus.
Magnified 1,000 times.
(From Buck's "Reference Handbook of the Medical Sciences.")

—**Staphylococcus botryomyces,** a pathogenic microorganism belonging to the class of micrococci which are virulent for mice, guinea-pigs, sheep, and horses. In the latter animal it produces the affection of the severed end of the spermatic cord known as ⋆*botryomycosis* (which see).

staphylodialysis (staf″i-lọ̄-dī-al′i-sis), *n.* Same as ⋆*staphyloptosis.*

staphylolysin (staf-i-lol′i-sin), *n.* [Gr. σταφυλή, a bunch of grapes (see *Staphylococcus*), + E. *lysin.*] A bacteriolysin which results on immunization with staphylococci.

staphyloplastic (staf″i-lọ̄-plas′tik), *a.* [*staphyloplast(y)* + *-ic.*] Of or relating to staphyloplasty.

staphyloptosis (staf″i-lop-tō′sis), *n.* [NL., < Gr. σταφυλή, uvula, + πτῶσις, a falling.] Elongation of the uvula.

staphylorrhaphic (staf-i-lọ̄-raf′ik), *a.* [*staphylorrhaph(y)* + *-ic.*] Of or pertaining to the operation of staphylorrhaphy.

staphylotoxin (staf″i-lọ̄-tok′sin), *n.* [Gr. σταφυλή, a bunch of grapes (see *Staphylococcus*), + E. *toxin.*] Same as ⋆*staphylolysin.*

staple¹, *n.* 7. In *bookbinding*, a clenched wire used to bind together the sections of a book.—8. In *iron ship-building*, an angle-bar bent and welded so as to form approximately a right angle in two places so that the bar has the outline of a flattened U. A *box-staple* is an angle-bar similarly bent and welded into an approximately rectangular outline.

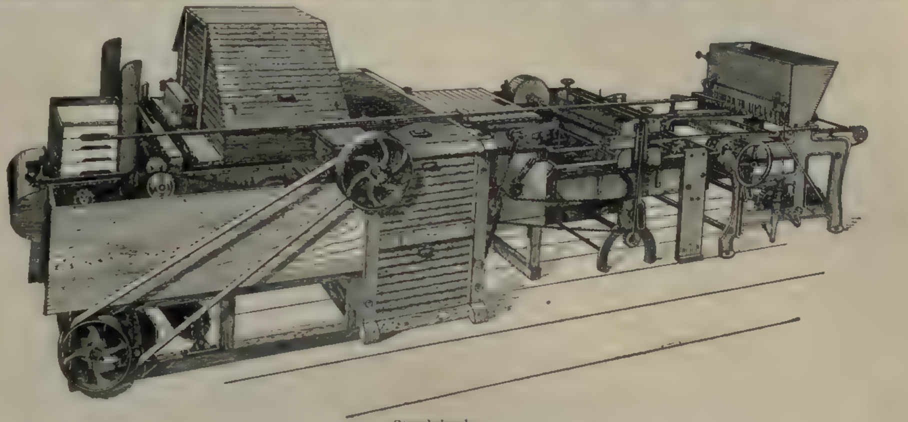
staple¹, *v. t.* 2. In *iron ship-building*, to make or fit (an angle-bar) in the form of a staple. See ⋆*staple*¹, *n.*, 8.

staple-knee (stā′pl-nē), *n.* An iron knee welded in the form of a staple, having one arm secured to the upper and the other arm to the lower deck-beam, while the body is bolted to the ship's side.

stapling-machine (stā′pling-ma̤-shēn″), *n.* The wire-stitching machine used by bookbinders.

star¹, *n.* 8. A book-name for humming-birds of the genus *Calothorax, Oreotrochilus*, and related genera.—**Carbon stars,** stars of Secchi's fourth group, the spectra of which have absorption-flutings sharply defined at the lower edge and fading out toward the blue, attributed to carbon or one of its compounds. They are few and not brilliant. The star known as '152 Schjellerup' is the type.—**Cepheid star.** See ⋆*Cepheid.*—**Dark star,** a body in mass and dimensions of the same order as other stars in the same region, but shining only feebly or not at all; a star which has not yet attained luminosity or has outlived it. Such a body is at present discoverable only by its effect upon some visible star with which it forms a binary couple. In the Algol class of variable stars the dark one discloses its existence by regular eclipses of its partner, and from the duration and other phenomena of the eclipse, combined with the spectroscopic observations of the motion of the visible star, it is possible to compute the dimensions, mass, and density of both components. Other examples are the faint companions of Sirius and Procyon, which are thousands of times less luminous than their brilliant primaries, but have a mass not very greatly inferior. Long before telescopes had become powerful enough to make them visible, Bessel had inferred their existence from the peculiar motions of the larger stars. Isolated dark stars seem to be hopelessly beyond the possibility of detection; but while less than 100 dark stars are certainly known at present, there is no improbability in the suggestion of Bessel that the dark stars are at least as numerous as those that shine; they may even greatly outnumber them, as some maintain.—**Greenwich stars,** originally, the stars used for lunar computations in the nautical ephemeris. At present the number given in the almanac is greatly increased, and is not limited to those utilized for lunar observations.—**Helium star,** a star in the spectrum of which the lines of helium are characteristic. They are often called *Orion stars*, because several of the leading stars in that constellation belong to this class and supply typical examples. The helium stars stand at the summit in Lockyer's temperature classification of the stars.—**Hydrogen star,** a star of Secchi's class I, in the spectrum of which the hydrogen lines are specially conspicuous, those of other substances being faint or absent.—**Longitude star.** See ⋆*longitude.*—**Nautical stars,** certain stars made use of by navigators for determining the latitude and longitude of a ship at sea.—**Nebulous star.** (*b*) A small, strongly condensed nebula, which appears like a badly defined star in a small telescope, but shows its true character in one sufficiently powerful.—**Order of the African Star.** See ⋆*order.*—**Orion stars.** See *helium* ⋆*star.*—**Oxygen star,** one of the stars which show in their spectra lines due to the presence of oxygen.—**Ruddy star,** any star of reddish color. Such stars are rare as compared with white and yellow stars, but several hundred are known.—**Runaway star,** a star which has an extraordinary velocity, as indicated by the greatness of its angular proper motion, combined with the smallness of its parallax. The one to which the appellation was first applied is 1830 Groombridge.

> The velocity of a number of stars has been calculated, and, as this can be done by independent methods, the results may be taken as fairly reliable. The speed of some of the so-called "*runaway stars*," like 1830 Groombridge, indicates a stellar system vastly more extensive than the one hundred million suns, which was the assumed figure when the *runaway stars* got their name. On the basis of such an estimate, it was thought that the attractive force of the whole stellar system was insufficient to hold such stars in leash, and that they would dash into the depths of space and be lost forever. Such a view now appears untenable.
>
> *C. Snyder*, New Conceptions in Sci., p. 76.



Starch-buck.

Secchi's types of stars, the four types or classes into which Secchi divided stellar spectra: the earliest classification and still recognized as practically convenient.—**Silicon star,** a star in the spectrum of which the lines of silicon are especially conspicuous.—**Solar star,** a star the spectrum of which essentially resembles that of the sun.—**Star class,** a class (of persons or things) marked with or bearing a star as a distinguishing mark. See the extract.

> The principle of the "*star class*," so successfully tried since 1879 in the convict prisons, has been extended to the local prisons; a prisoner never previously convicted is designated as a "star," and absolutely segregated from his fellows at chapel, labour, exercise, and quarters occupied. *Encyc. Brit.*, XXXII. 8.

Star connection, current, in *elect.* See ⋆*polyphase.*—**Star formation.** See ⋆*formation.*—**Star magnitude.** See ⋆*magnitude.*—**Star of Bethlehem.** (*c*) A star, or a light called a star, which in the gospel of Matthew is stated to have guided the wise men of the East to the manger at Bethlehem. As to its nature and its reality, opinions are divided.—**Star polygon.** Same as *stellated polygon.*—**Stars of Verheyen,** a radiating plexus of veins on the surface of the kidney.—**Stars of Winslow,** a stellate plexus of capillaries giving origin to the venæ vorticosæ of the choroid coat of the eye.—**Triple star,** three stars so close as to appear single to the naked eye. They usually form a physically connected system.—**Wolf-Rayet star,** a star with a peculiar spectrum, which consists of light and dark bands, especially a bright one in the blue, and a number of bright lines attributable, many of them, to hydrogen and helium. Over a hundred of these stars are now known, all but one (γ Argus) small, and all in or near the Milky Way. They take their name from the astronomers who discovered the first of them in 1867.—**Zone of stars,** the stars contained within a zone included between two given parallels of declination.—**Zone star,** a star which belongs to a zone catalogue of stars included between two parallels of declination.

star¹, *v. t.* 5. To cut with radiating incisions: said with reference to a chronic ulcer which may be so cut through the base and edges in order to loosen up adhesions, and so promote healing.

starboard. I. *n.*—**Put the wheel to starboard!** a common but misleading expression or command meaning not necessarily that the wheel shall be turned toward the starboard side of the vessel, but that it shall be revolved so that the tiller shall go to the starboard side.

II. *a.*—**To have the starboard sheets aft.** See ⋆*aft*¹.

starbowl (stär′bōl), *n.* A hemispherical mass of refined metallic antimony which has been cast in an iron bowl as a mold and which shows on the surface the stellate markings due to crystallization.

star-candle (stär′kan″dl), *n.* The French standard candle or *bougie de l'étoile.* See *standard* ⋆*candle.*

starch², *n.*—**Moss starch.** Same as *lichenin.*—**Soluble starch,** a colorless dextrorotatory pulverulent compound prepared by the action of glycerol, dilute acids, or diastase on starch. It is insoluble in alcohol, but dissolves in warm water and separates out when the liquid cools.—**Tapioca starch,** that variety of starch which is found in cassava- or manioc-root. The characteristic forms of tapioca are produced by drying the starch on heated plates. This causes many of the granules to burst; consequently the starch is somewhat soluble in cold water.

star-chart (stär′chärt), *n.* A chart which shows the stars in a certain portion of the sky. *Smithsonian Rep.*, 1890, p. 180.

starch-buck (stärch′buk), *n.* In *candy-making*, a machine for separating the candied creams, syrups, pastes, or conserves used as filling for chocolate candies from the starch-molds in which they are cast in the depositing-machine. The wooden trays containing the starch-molds filled with the cast candies are placed in the starch-buck and automatically dumped; then the empty tray is removed, refilled with fresh starch, and made ready to be used again. The mixed candies and starch are separated, the starch is removed, and the candies are thoroughly cleaned and delivered ready for the final coating with chocolate. It is often combined with other machines. In the illustration it is shown at the left of the large machine, and performs the first of several continuous operations in candy-making. The trays containing the filled starch-molds are placed in the machine at the left, the contents dumped, the candy is cleaned, the starch removed, and the trays are refilled, passed on to the starch-printer shown in the middle of the machine, and then to the depositing-machine shown at the extreme right. The trays of filled molds are then transferred by hand to the cooling- and drying-rooms, where the candies are hardened so that they may be readily released from the molds. The next step is to transfer them to the starch-buck, when the whole process is repeated, except that the candies are removed from the machine as fast as they are cleaned, when they may be conveyed to the dipping-machine or the coating-machine, to be covered with chocolate.

starcher, *n.* 2. In *laundry-work*, a machine for saturating collars, cuffs, and parts of shirts and other garments with hot starch, preparatory to passing them through an ironing-machine. The simplest machine is a tumbling-barrel in which collars and cuffs are placed with a small quantity of starch, the rolling motion of the barrel distributing the starch over the goods. In more complicated machines the goods are fed to endless tapes or conveyers of some openwork fabric, and carried through a tank holding starch, and then between stripping-rolls which remove the surplus starch. In other machines distributing-rolls spread the starch on the goods.

starch-printer (stärch′prin″tėr), *n.* In *candy-making*, a form of molding- or printing-press used to form molds for candy in trays filled with starch. Plaster-of-Paris formers suspended from a horizontal plate are pressed into the soft starch to form the required cup-shaped molds, the starch being pressed firm enough to retain the shape of the molds when filled with hot candy in the depositing-machine. In the illustration under ⋆*starch-buck*, a starch-printer stands between the starch-buck and the depositing-machine.

starch-sheath (stärch′shēth), *n.* See ⋆*phlœoterma.*

starch-tree (stärch′trē), *n.* [*starch* + *tree.*] One of a class of trees of temperate zones, consisting chiefly of hardwoods, in which during the winter the starch of the wood remains unaltered and that of the cortex is converted into glucose and unknown bodies. *A. F. W. Schimper* (trans.), Plant-Geog., p. 436.

starchy^2, *a.* 2. Of a powdery texture due to the predominance of starch: said chiefly of the more amylaceous (soft) wheats: opposed to ★*horny.*

star-connected (stär′kǫ-nek″ted), *a.* Said of a polyphase apparatus, such as a transformer, in which one end of each of the windings is connected to a common neutral point while the free ends make contact with the terminals of the line-wires.

star-count (stär′kount), *n.*. Enumeration of the number of stars visible in the field of a given telescope: either the total number or the number of stars of each magnitude separately.

> For simple *star-counts*, we have only to substitute *star-counts* by magnitudes over selected areas of the sky.
> *A. M. Clerke*, in Smithsonian Rep., 1891, p. 104.

star-current (stär′kur″ent), *n.* In *elect.*, the current in a star-connected polyphase circuit.

stare-about (stãr′ạ-bout″), *n.* One who stares about from idle curiosity; one who has the curiosity of a greenhorn.

> Yea, under the gallows at executions,
> They stick not the *stare-abouts'* purses to take.
> *Ben Jonson*, Bartholomew Fair, iii. 1.

starer, *n.* 2. *pl.* A pair of eye-glasses; a pince-nez. [Slang.]

> She sat with the *starers* she had taken off lying in her lap, absently rubbing their glasses with her pocket-handkerchief. *R. Broughton*, Waif's Progress, p. 128.

star-finder (stär′fin″dėr), *n.* A pointer or tube with a rough equatorial mounting, designed to facilitate the finding of a given star from the data on a star-map.

star-fungus (stär′fung″gus), *n.* Same as *earth-star.*

star-gage (stär′gāj), *v. t.* To count the stars visible in the field of a given telescope. See the extract.

> We may now describe the process of photographic *star-gauging.* It consists in the enumeration, by magnitudes or half magnitudes, of the stars down, say, to the fifteenth magnitude, self-pictured from distinctively situated patches of the sky.
> *A. M. Clerke*, in Smithsonian Rep., 1891, p. 105.

star-gazer, *n.*—**Electric star-gazers,** a name of species of fishes of the genus *Astroscopus*, of the family *Uranoscopidæ.*—**Sand star-gazers,** fishes of the family *Dactyloscopidæ*, living on sandy shores of tropical seas.

star-grass, *n.* 2. The Australian *Chloris truncata.* See ★*finger-grass.*

star-hyacinth, *n.* 2. The star-of-Bethlehem, *Ornithogalum umbellatum.* [Pennsylvania.]

> Of the *star hyacinth*, or star of Bethlehem, we hear no more until the third volume of the Memoirs is published.
> *J. Lorain*, Pract. of Husbandry, p. 138.

star-image (stär′im″ạj), *n.* The small circular (apparent) disk of a star as seen in a telescope or as formed on a photographic plate.

> Owing to the error inherent in the *star-images*, the probable error of a position of Eros derived from a number of measures of four images on one plate is not nearly so small as the above measures suggest.
> *Nature*, June 9, 1904, p. 135.

Staring coat. See ★*coat*^{2}.

star-jelly (stär′jel″i), *n.* A common name for any of the gelatinous blue-green algæ which appear suddenly upon the surface of the ground after a rain or heavy dew, popularly believed to have fallen from the stars.

Starksia (stärk′si-ạ̈), *n.* [NL. (1896), named after Edwin C. *Starks*, an American ichthyologist.] A genus of blennioid fishes found in the Gulf of California.

star-ledger (stär′lej″ėr), *n.* A record of certain star-observations in ledger form. *Nature*, June 9, 1904, p. 135.

starling-stone (stär′ling-stōn), *n.* A kind of petrified wood which shows, in a cross-section, markings suggesting the speckled plumage of a starling.

star-of-Bethlehem, *n.* 3. In Australia, a plant of the lily family, *Chamæscilla corymbosa.*—4. In Tasmania, *Reya umbellata*, an ornamental liliaceous plant having greenish-white flowers.

star-quartz (stär′kwârts), *n.* A variety exhibiting asterism; asteriated quartz.

starring (stär′ing), *n.* A manufacturers' name for the refining of crude metallic antimony by which the purified metal exhibits on solidification a starlike crystalline surface.

star-scattered (stär′skat″ėrd), *a.* Scattered like the stars. [Rare.]

> And when like her, oh Sákí, you shall pass
> Among the Guests *Star-scatter'd* on the Grass,
> And in your joyous errand reach the spot
> Where I made One—turn down an empty Glass!
> *Fitzgerald*, tr. of Omar Khayyam, Rubaiyat, ci.

starship (stär′ship), *n.* The state or condition of being a star, as the chief actor in a dramatic company.

> It must be now some nine or ten years since [this actor] took on the yoke of syndicated *star-ship.*
> *H. Tyrrell*, in The Forum, Jan.-March, 1904, p. 412.

star-shower (stär′shou″ėr), *n.* A shower of meteors. See *meteoric showers. Knowledge*, Nov., 1903, p. 255.

star-system (stär′sis″tem), *n.* In *astron.*: (*a*) A system composed of a multitude of stars apparently set off by themselves from the rest of the stellar universe. (*b*) A binary or multiple star.

start^1, *n.*—**Flying start** (*naut.*), a racing start, now in general use, in which upon the firing of a preparatory gun the yachts are supposed to be under way and manœuvering for position, ready to cross the line upon the firing of a second or starting gun.

starter, *n.* (*f*) In *cribbage*, the cut card.

star-thistle, *n.* A native star-thistle (known also as *Texas thistle*) is *Centaurea Americana*, giving trouble from Texas to Kansas as an annual or perennial weed of cultivated ground; elsewhere planted for its rose or flesh-colored (sometimes white) flowers, and known under the name of *basket-flower.* A book-name is *American centaury.*

starting-bar, *n.* 2. Same as ★*gee-throw.*

starting-box (stär′ting-boks), *n.* In *elect.*, a starting-rheostat or an autotransformer.

starting-crank (stär′ting-krangk), *n.* A crank used for starting machinery; specifically, in an internal-combustion motor, the crank by which the motor-shaft is turned, by hand, to draw in a charge of the mixture, compress it, and cause the first ignition. The engine will not, as a rule, start from rest until this starting process is performed upon it from without.

starting-cylinder (stär′ting-sil″in-dėr), *n.* 1. A cylinder of comparatively small size by which the mechanism of a much larger engine may be put in motion.—2. The cylinder of a barring-engine.—3. A cylinder controlling the valve-gear of a larger engine and used to operate the gear in starting.

starting-gate (stär′ting-gāt), *n.* In *racing*, a gate which opens automatically when the horses are ready to start.

> Perhaps the most interesting of the writer's remarks concern the comparatively novel invention called "the *starting-gate*," upon which he looks with anything but a favourable eye, to judge from his concluding words. "I suppose," says he, "it has . . . 'come to stay,' and we must make the best of it, but it adds greatly to the uncertainty of results, and I agree with the remark I read the other day that it renders some good horses absolutely useless for racing purposes."
> *Athenæum*, July 9, 1904, p. 40.

starting-gear (stär′ting-gēr), *n.* Any mechanical arrangement by which engines or other forms of machinery are started from rest: usually operated by hand in small units, but by power in larger ones. The valves of many engines, for example, can be liberated from the mechanism which drives them when at work and steam admitted by hand-levers to the cylinders,; or pilot-valves or pilot-engines may be furnished to operate the main valves; or the engine may be started by a barring-engine and steam gradually admitted through the main distribution system; or, again, under other systems, clutches and fast-and-loose pulleys, sliding- or clash-gears, and many others may be called starting-gear.

starting-lever (stär′ting-lev″ėr), *n.* The lever attached to and operating a starting-gear; specifically, in vertical-beam engines with lifting poppet-valves, such as side-wheel marine engines, the lever which operates a supplementary rock-shaft by which the valve-rods are lifted in starting slowly from rest: used also for working the engine backward when it is not designed to operate in either direction by its own valve-gear.

starv, *v.* A simplified spelling of *starve.*

Star-wheel motion. See ★*motion.*

star-wound (stär′wound), *a.* In *elect.*, said of a polyphase alternating-current winding in which one terminal of each of the coils is connected to a common neutral point while the free ends are in circuit with the mains. See ★*star-connected.*

stasis, *n.* 1. In *pathol.*: (*b*) Same as *stagnation.*

> No muscular tissue was detected in the walls of the diverticula, and hence the conclusion seems justifiable that they were mucosal hernias through the muscularis in consequence of the pressure produced by the *stasis* of the secretions within the appendix.
> *M. H. Fischer*, in Jour. Exper. Med., Jan. 15, 1901, p. [347.

stat. An abbreviation (*b*) of the Latin *statim*, immediately; (*c*) of *statuary.*

state, *n.* 18. In *biol.*: (*a*) Figuratively, a community of colonial organisms, such as a hive of bees. A state, in which the bond of union is not organic but social, is contrasted by Haeckel with a cormus or cormidium, such as a siphonophore, in which the bond of union is organic.

> The bees sacrifice the welfare of the individual . . . to the advantage of the *state*, in that they kill their drones when they have become useless.
> *Eimer* (trans.), Organic Evolution, p. 275.

(*b*) An aggregation of cells which exhibits centralization, interdependence, divergent specialization, and division of labor.

> In all cases except that of the lowest organisms the descendants of one cell unite to form communities or *states.*
> *Arnold Lang* (trans.), Compar. Anat., p. 1.

Critical state. See ★*critical.*—**Equation of state.** See ★*equation.*—**Everglade State,** the State of Florida.—**Special state,** in the kinetic theory of gases, the state or condition of a gas which is attained when the distribution of the velocities of its molecules is that known as the Maxwell-Boltzmann distribution. See *Maxwell-Boltzmann* ★*law of the distribution of velocities.*—**State's attorney.** See ★*attorney*^{1}.

state-line (stāt′līn), *n.* The boundary line of a state; the boundary line between two states.

statement, *n.* 3. In *law*, a formal narration of facts or an averment in judicial proceedings, as the allegations of a complaint or answer in a cause.—**Statement of defense.** See ★*defense.*

static, *a.* 3. In *art criticism*, monumental; stable; simply posed. [Rare.]

> His [Giotto's] art is too *static;* his figures are too well realized as mass and not sufficiently well articulated.
> *B. Berenson*, in Burlington Mag., III. 19.

Static action, head. See *dynamic* ★*action*, ★*head.*—**Static hysteresis,** hysteresis of a dielectric when subjected to fluctuations of electrostatic stress.—**Static interrupter,** in *elect.*, a device for the protection of apparatus in high-tension circuits from sudden surges of current. It consists of a choke-coil in the line-circuit and a condenser between the line and the core or base of the machine.—**Static sensation, sense, stress.** See ★*sensation*, etc.

Statical stability. See ★*stability.*

staticodynamic (stat″i-kọ-dī-nam′ik), *a.* Pertaining to social processes which modify without wholly transforming or transmuting the existing social order. *E. A. Ross*, in Amer. Jour. Sociol., IX. 796.

staticokinetic (stat″i-kọ-ki-net′ik), *a.* Pertaining to sociological theories which emphasize the mechanical distinction between social forces in equilibrium and social forces in equilibration, that is, producing change.

> The *statico-kinetic* school might also with considerable propriety be called the Spencerian school.
> *L. F. Ward*, Outlines of Sociol., p. 192.

station, *n.* 6. (*b*) In *phytogeog.*, the spot at which a plant has been collected or a species has been observed to occur.—10. (*d*) In the *Meth. Ch.*, a single church supplied with a fixed pastor: distinguished from a circuit. See *circuit*, 9.—14. In *zoöl.*, the particular district or districts inhabited by a given group of animals. See ★*area.*—**Agricultural experiment station.** See ★*agricultural.*—**Central station.** Same as ★*communication-room.*—**Generating station,** in *elect.*, an establishment for the production of a current for supplying power or light or both.—**Load diagram of a station.** See ★*load*^{2}.—**Station error.** See ★*error.*—**Station of a planet,** the cessation of a planet from moving in longitude when it seems to come to rest before reversing its motion. The first and second stations of a superior planet are respectively those which take place before and after opposition. The morning and evening stations of an inferior planet are respectively those which take place while the planet is west and east of the sun. The point of station (or stationary point) is the position of the planet at its station with respect to the sun. Thus the point of station for Jupiter is (nearly) at trine. The 'arc of the first station' is half the arc of retrogradation; the 'arc of the second station' is 180° plus half the arc of direct motion.—**Station of the moon,** a lunar mansion (which see, under *lunar*).—**Stations of the cross.** See ★*cross*^{1}.—**To keep station,** in *naval manœuvers*, to keep the proper distance ahead of one ship and behind another; keep the proper relative position in the squadron. At night this is done by means of speed-lights on the next ship ahead, to which the pace is adjusted.

> "Oh, that 's nothing," said a gentleman of twenty-two. "Wait till we have *to keep station* tonight. It 's my middle watch." . . . The leading ship has slowed down a certain number of revolutions . . . but she has not changed her speed-lights in time. We slide out to the

right. . . . Our next ahead lies on our port bow. . . . Our next astern is alongside of us. . . . The avenging electric [signal] spells out the name of our next ahead . . . and then — "Why don't you *keep station?*"
R. Kipling, A Fleet in Being, iii.

Zoölogical station, an observatory or laboratory, situated upon the ocean or the shore, equipped with appliances for collecting, observing, and experimenting upon marine animals and plants. Zoölogical stations are often joined to stations for the propagation of food-fishes, and are wholly or in part devoted to the study of problems relating to fisheries.

stationarily (stā'shọn-ạ-ri-li), *adv.* In a stationary position; without moving. [Rare.]

Torches were used in the funeral procession generally . . . while wax tapers were burnt *stationarily* at the "month's mind." *N. and Q.*, 10th ser., I. 196.

stationarity (stā-shọn-ar'i-ti), *n.* [*stationar*(*y*) + *-ity.*] The state or condition of a system in which the motions of its parts conform to the definition of stationary motion.

Stationary flat, -flat card, vibration, etc. See ★*flat*^{1}, etc.

stationer, *n.*—**Shop stationer,** a stationer whose business is carried on in a shop. An old division was into *running*, or *flying stationers*, who were peddlers and hawkers, and *shop stationers.*

Direct . . . to Alexander Ogstouns, *Shop Stationer*, at the foot of the Plain-stones, at Edinburgh, on the Northside of the Street.
A. Lang, Adventures among Books, p. 283.

station-jack (stā'shọn-jak), *n.* In Australia, a pudding much used by the 'hands,' consisting of meat boiled in a jacket of flour paste.

The great art of bush-cookery consists in giving a variety out of salt beef and flour . . . let the Sunday share be soaked on the Saturday, and beat it well . . . take the . . . flour and work it into a paste; then put the beef into it, boil it, and you will have a very nice pudding, known in the bush as '*Station-jack.*'
The Emigrant's Guide to Australia, pp. 111–112, [quoted in E. E. Morris, Austral English.

station-keeping (stā'shọn-kē"ping), *n.* See the extract, and *to keep* ★*station.*

Away we fled to take up station at such and such a distance from our neighbours ahead, and astern. . . . The end of it was a miracle to lay eyes. . . . But our Captain . . . bade me observe how slack we were . . . "Now we 're all over the shop. The ships have n't worked together, and *station-keeping* is n't as easy as it looks."
R. Kipling, A Fleet in Being, i.

Statistical equilibrium, method. See ★*equilibrium*, ★*method.*

statocyst (stat'ọ-sist), *n.* [Gr. στατός, standing, fixed (static), + κύστις, bladder, cyst.] An organ in certain animals, such as crustaceans and jellyfishes, which enables its owner to orient itself in a definite position with respect to gravity.

It has been conclusively proved by Kreidl's beautiful experiment that in the Crustacean Palæmon the sense of verticality depends on the pressure of heavy bodies on the inside of cavities now known as *statocysts*, and formerly believed to be organs of hearing. The point of the experiment is that when the normal particles are replaced by fragments of iron the Palæmon reacts toward the attraction of a magnet precisely as it formerly reached towards gravity. *Nature*, Sept. 8, 1904, p. 468.

statocyte (stat'ọ-sīt), *n.* [Gr. στατός, standing, fixed (static), + κύτος, hollow.] One of the sense-cells in the walls of a statocyst; one of the cells, in animals or plants, containing statoliths.

We must add to this a very important consideration — namely, that we know from Nemec's work that an alteration in the position of the statoliths does stimulate the *statocyte.* *Nature*, Sept. 8, 1904, p. 468.

statogenesis (stat-ọ-jen'e-sis), *n.* [NL., < Gr. στατός, < ἱστάναι, cause to stand (see *static*), + γένεσις, generation.] The state or condition of equilibrium in organisms considered as a means of bringing about evolution. *J. A. Ryder.* [Rare.]

statogenetic (stat"ọ-jẹ-net'ik), *a.* [*statogene*(*sis*) (*-t-*) + *-ic.*] Bringing about development by means of rest or equilibrium.

The *statogenetic* factors of development are therefore of just as much importance as the kinetogenetic, or those involving motion. *J. A. Ryder*, Biol. Lectures, 1895, p. 47.

statogenetically (stat"ọ-jẹ-net'i-kạl-i), *adv.* By means of statogenesis, or in a statogenetic way.

statogeny (stạ-toj'e-ni), *n.* [Gr. στατός, standing, + -γένεια, < -γενής, -producing.] Same as ★*statogenesis.*

statolith (stat'ọ-lith), *n.* [Gr. στατός, standing, + λίθος, stone.] 1. A small stony secretion or an accumulation of particles of sand contained in an open or closed sensory sac or lodged in a sensory pedicel of some actively locomotor invertebrate (cœlenterate, ctenophore, worm, mollusk, or arthropod), and so situated that it enables the animal possessing it to become oriented with reference to the center of the earth by responding to the pressure it exercises through the pull of gravity.— 2. In *bot.*, a movable starch-grain occurring in the cell sap of some cells, supposed to correspond in function with bodies so named found in the statocysts of animals. See ★*statoplast.* —**Statolith theory**, the view originated by Haberlandt and Němec that the upward curving of a plant-stem when laid horizontally occurs as a response to a stimulus administered to the sensitive cell-wall by statoliths which, when the cell is prostrated, fall from the base to the now horizontal side. *Nature*, Sept. 8, 1904, p. 467.

statoplast (stat'ọ-plȧst), *n.* [Gr. στατός, standing, fixed (see *static*), + πλαστός, verbal adj. of πλάσσειν, form, mold.] In *bot.*, same as ★*statolith.*

I would suggest the word *statoplast* in place of the cumbersome expression movable starch-grains.
F. Darwin, in Nature, Sept. 8, 1904, p. 468, note.

stator (stā'tọr), *n.* [L. *stator*, a stayer, a supporter: used, in *elect.*, in the sense of a stationary part.] The stationary element of an electric machine, more particularly of an induction-motor.

The high pressure current is taken only to the *stators* of the high tension motors; the rotors of these machines are used to supply low tension three-phase current to the *stators* of the low tension motors.
Nature, April 23, 1903, p. 588.

Stator armature. (*a*) An armature of a dynamo or motor that remains at rest during the operation of the machine. (*b*) An immovable element of a machine which is also its armature. *Houston*, Dict. Elect.

status, *n.*—**Régime of status.** See ★*régime.*—**Status convulsivus,** a condition in which a series of convulsive attacks follow one after another, with no interval of rest.—**Status epilepticus,** a state in which one epileptic attack follows another in almost uninterrupted succession, the intervals, when they occur, being passed by the patient in a semicomatose condition.—**Status lymphaticus,** a state of lowered vital resistance in the young in which slight injuries may produce rapidly fatal shock. It is usually associated with persistence and enlargement of the thymus gland.

statute, *n.*—**Real statutes,** legislative acts which refer to property rather than to persons, referring to the latter only in relation to property.—**Restraining statute,** a legislative act which limits the common law; also, one which restricts the powers of a corporation.—**Revised statutes,** a classified compilation and revision of the permanent and general statutes in force when compiled. Such revised statutes supersede the original statutes, save for omission and discrepancy. In many of the United States the revised statutes are known as *codes.*—**Statute of accumulations,** in *Eng. law*, an act, otherwise known as the Thellussion Act, passed under George III., whereby a legacy, or gift, cannot stand untouched at interest longer than twenty-one years after the testator's or grantor's death. —**Statute of distributions.** See *distribution.*—**Statute of Wills.** See *will*^{1}.—**Statutes at large.** (*a*) Laws given in full, with no condensation or abridgment. (*b*) A compilation of all statutes enacted by a legislature during a session or a series of sessions. The United States Statutes at Large run consecutively from March 4, 1789. *Session laws, pamphlet laws, public laws*, and *general public laws* are other names for statutes at large.

stauractine (stâ-rak'tin), *n.* [Gr. σταυρός, a cross, + ἀκτίς (ἀκτιν-), a ray.] In the nomenclature of the spicular elements of sponges, hexactinellid spicules of the dermal sponge-layer in which two of the arms are atrophied, leaving the remaining four in the form of a cross. Also *stauractin.* *Jour. Roy. Micros. Soc.*, April, 1905, p. 190.

staurion (stâ'ri-on), *n.*; pl. *stauria* (-ạ̈). [NL., < MGr. σταυρίον, dim. of Gr. σταυρός, a cross.] In *craniom.*, the point of intersection of the transverse and median palatine sutures. *Von Török.*

stauroplegia (stâ-rọ-plē'ji-ạ̈), *n.* [NL., < Gr. σταυρός, a cross, + πληγή, a stroke.] Paralysis of the upper extremity of one side and of the lower extremity of the opposite side.

Stauroscopic eyepiece. See ★*eyepiece.*

Staurosporæ (stâ-rọ-spō'rē), *n. pl.* [NL., < Gr. σταυρός, a cross, + σπορά, a seed (spore).] A name given by Saccardo to artificial divisions of various families and orders of fungi, especially those of the *Pyrenomycetes* and *Fungi Imperfecti*, to include the genera which have the spores angular, forked, or stellate.

stave, *n.* **4.** The porter-bar used to start and hold massive forgings which are undergoing treatment in a furnace or under a hammer or press. The part to be made is welded to the stave or porter-bar, and when completed the latter is cut off. [Eng.]

stave-cutter (stāv'kut"ėr), *n.* A tool or machine for cutting staves either radially from a bolt or by shaving it circumferentially.

stavewood, *n.* **3.** In Australia, *Flindersia Schottiana*, one of the trees called *Queensland yellow-wood.*

staving^2 (stā'ving), *a.* Excellent; exceeding: as, we had a *staving* good time. *Dialect Notes*, II. vi. [Slang.]

staxis (stak'sis), *n.* [Gr. στάξις, a dropping, < στάζειν, drop, let drop.] In *pathol.*, hemorrhage.

stay^1, *n.*—**Keep full for stays.** See ★*full*^{1}.—**Quick in stays,** *naut.*, said of a vessel when it goes from one tack to the other quickly in tacking. In the opposite case, it is said to be *slow in stays.*—**To refuse stays,** *naut.*, said of a vessel when it fails to tack — when it balks at going about.

stay^2, *n.*—**Stay law,** a statute suspending or limiting for a time extreme judicial measures for the collection of debts or other legal remedies.—**Stay of execution.** See ★*execution.*—**Suborbital stay,** a name applied by Gill to the third suborbital bone of fishes when it is large and extends toward or to the preoperculum. This condition occurs in the gurnards and their allies, which are known as the mail-cheeked fishes.

stay^2, *v. i.* **7.** In *poker*, to come in when an ante has been raised.—**Touch and stay,** in *law*, words in a policy of marine insurance giving the insured vessel the right to stop at the port or ports named, but not the right to trade there without forfeiting the insurance.

stay-bar, *n.* **3.** Same as *stay-rod*, 1.

stay-beam (stā'bēm), *n.* In any machine or structure, a member used to secure stiffness and strength, usually by its resistance to flexing strains, but also by strengthening against tension or buckling; a reinforce-bar.

stay-bolt, *n.* Specifically, in locomotive-boilers, the bolt screwed into the parallel plates of the water-legs, or the crown-sheet and the wagon-top sheets, riveted over at both ends, and serving to keep each from deformation by pressure.

The [pneumatic] *stay-bolt* cutter, which is simply a powerful pair of nippers, designed to remove by a single movement the surplus ends of locomotive *stay-bolts.*
Encyc. Brit., XXXI. 803.

stay-boom (stā'böm), *n.* In *lumbering*, a boom fastened to a main-boom and attached upstream to the shore to give added strength to the main-boom.

stay-fastening (stā'fȧs"ning), *n.* In *mech.*, any fastening for a stay. It may be riveted, pinned to a socket single or double, or screwed and headed over.

stay-joint (stā'joint), *n.* In a pantograph apparatus for enlarging or reducing reproductions from originals, that joint in the rhombus frame which is diagonally opposite the point used in following the lines of the original; specifically, the joint so situated in a pantograph used for drawing from microscopic originals, where the joint is opposite, diagonally, to the tube carrying the microscope tube and objective lens.

In the "*stay-joint*" (diagonally opposite to the object-point, or microscope) of the pantograph is a rounded knob, which moves to and fro in the rotations about the fixation-point.
Jour. Roy. Micros. Soc., Aug., 1905, p. 510.

stay-knot (stā'not), *n.* A knot employed in ligating an artery. Two ligatures are placed side by side and each is tied once with itself; then the two are taken together and the second half of the knot is tied with the double strand. *Buck*, Med. Handbook, I. 543.

stay-nut (stā'nut), *n.* A thin nut fitted on the end of the external surface of a stay-tube, enabling the latter to hold the flat head of the tube-sheet from bulging outward under the internal pressure. See ★*stay-tube.* *D. K. Clark*, Steam Engine, IV. 666.

stay-peak (stā'pēk), *n.* See ★*peak*^{1}.

staysail, *n.*—**Foretopmast-staysail,** a head-sail that sets on the foretopmast stay.—**Main-staysails,** the fore-and-aft sails which set between the main- and foremasts.—**Main storm-staysail,** a storm-sail set on the mainstay.—**Maintopmast-staysail,** a sail which sets between the foremast and mainmast. A flying maintopmast-staysail has two sets of halyards, as it is square on the head. It also has a tack and sheet to trim it down. One set of halyards leads through a block at the head of the mainmast and the other through a block at the fore lower masthead.

stayship (stā'ship), *n.* Any fish of the family *Echeneididæ*, formerly supposed to stop ships by fastening to them. *Stand. Dict.*

stay-stitching (stā'stich"ing), *n.* In *sewing-machine work*, a method of sewing with a two-needle machine in which a stay or tape is sewed down over a seam to strengthen it: used in staying gaiters, corsets, etc. The machine feeds the stay to the fabric or leather and sews both edges down at the same time. Stay-stitching is also done with a special two-needle machine, without the use of a stay or reinforcing tape, by making a flat stay-stitch across the seam.

stay-tap (stā'tap), *n.* A specially long tap, usually from 15 to 20 inches in length, though sometimes reaching 2 or 3 feet, used for tapping or threading the holes which receive the stay-bolts in the stayed surfaces of locomotive and marine boilers. The threads in both surfaces must be parts of the same screw in order that the threaded bolt may enter the thread in the second surface while fitting on the thread in the first. The lower end of the stay-tap is not screwed, but turned smooth in order to keep the tap truly concentric with the holes in both the inner and outer shells.

stay-tube (stā'tūb), *n.* In a boiler of the fire-tube design, a tube of specially heavy gage or stock, fitted to receive nuts on the ends, which project through both tube-sheets, so as to serve as a through-stay to prevent these flat surfaces from bulging under internal pressure. *Thurston*, Manual of Steam-Boilers, p. 39.

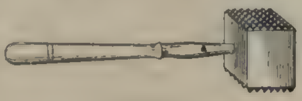
S. T. B. An abbreviation of the Latin *Sacræ Theologiæ Baccalaureus*, Bachelor of Sacred Theology.

steady¹, *n.* **4.** A young man who is the 'steady company' of a young woman; also, the young woman in the same relation to the young man. [Slang.]

steak, *n.*—**Cross-rib steak**, a steak of beef cut from the fore quarter just above the leg.—**Delmonico steak**, a small steak of beef cut from the hind quarter and having no tenderloin. A similar cut for roasting is called a *Delmonico roast.*—**Flank steak**, a steak of beef cut from the hind quarter on the inside of the flank.—**Skirt steak.** See ★*skirt-steak.*

steak-hammer (stāk'ham″ėr), *n.* A hammer having a broad face divided into points or projections, used in beating steak; a steak-maul.

steak-maul (stāk'mâl), *n.* A wooden maul having a large square head with two corrugated faces, used in pounding steaks to soften and break up the fiber.



Steak-maul.

steal¹, *v. t.* **11.** In *cricket*, to gain (a run) and increase the score because of the slowness of the fielders: said of the batsman.—**12.** In *golf*, to hole (a long, unlikely putt) so that the ball just drops into the hole.

steal¹, *n.* **2.** In *golf*, a long putt which wins a hole.

stealer-plate (stē'lėr-plāt), *n.* In *iron shipbuilding*, the end-plate of a strake of outside or inner-bottom plating which is dropped out as the girth of the vessel narrows toward the ends.

steam, *n.*—**Anhydrous steam.** Same as *dry steam.*—**Combined steam**, a mixture of superheated steam and wet steam sometimes advantageously employed to minimize the evils of boiler corrosion on the one hand and of priming on the other.—**Greasy steam**, steam with which a heavy oil or a grease has been mixed to furnish lubricant for the valves of the engine.—**Primary steam**, steam from the boiler, ready to enter and do work in the high-pressure or first cylinder in the series of a multiple-expansion engine.—**Secondary steam**, steam which has done its work in the high-pressure or first cylinder of a multiple-expansion engine and, having been exhausted therefrom, is ready to do work in the second cylinder of the series.—**Superdried steam**, superheated steam, or steam heated to a temperature above that of saturated steam at that pressure. The moisture which may have been present previous to the saturation temperature is dried out, and then additional heat is supplied. [Not in use in the United States.]—**Surcharged steam**, steam charged with heat above the quantity normal to it at that pressure; superheated steam. [Not in use in the United States.]—**Tertiary steam**, steam which has passed through the high-pressure or first stage of expansion in a multiple-expansion engine, and has been exhausted also from the cylinders of the second stage, and is about to enter upon the expansive working of the third stage in one or more cylinders.—**To raise steam.** See ★*raise*¹.

steam-arm (stēm'ärm), *n.* A metal-planing machine, invented by James Nasmyth: so called because the tool has a reciprocating movement, being driven by a steam-cylinder.

steam-auger (stēm'â″gėr), *n.* A device for removing ashes and the tarry deposit (with dust) from the fire-tubes of steam-boilers. A steam-jet at high pressure receives from a suitable nozle a spiral or helical motion, when introduced at the end of the tube, and acts both mechanically and as a solvent to remove the clogging material.

steam-balance (stēm'bal″ans), *n.* **1.** Any device or apparatus in which the pressure of steam is used to oppose and balance a weight or spring or other force.—**2.** A steam-accumulator in which steam, acting on a piston, balances a water-pressure upon a plunger or second piston acting in the opposite sense.—**3.** A steam-cylinder, in a vertical engine, with a piston to balance the weight of the piston-rod and connecting-rod, so that the up and down strokes may be of equal power.—**4.** A steam-cylinder with a piston to balance or reduce the pressure by which a slide-valve is held to its seat by the working pressure on its back.—**5.** The weighted lever of a boiler safety-valve which tends to hold the valve on its seat against the steam-pressure underneath it. [Rare in U. S.]

steam-barrel (stēm'bar″el), *n.* A radiator or collection of pipes (arranged in cylindrical form) for heating by steam. *M. W. Travers*, Exper. Study of Gases, p. 106.

steam-bath (stēm'bȧth), *n.* A piece of apparatus, much used in chemical laboratories, consisting of a vessel, commonly of sheet-copper, with double walls between which steam is caused to circulate, a practically fixed temperature being thus maintained in the interior of the vessel where materials to be dried or otherwise affected by heat are placed.

> When the aminotriazole was warmed in an excess of benzoyl chloride without a solvent, on the *steam-bath*, it dissolved and then suddenly precipitated out as a solid cake. *Amer. Chem. Jour.*, Jan., 1903, p. 78.

steam-blast (stēm'blȧst), *n.* **1.** A strong current of steam issuing at high pressure from an orifice.—**2.** A current of steam issuing from an orifice in such a way as to induce or cause a current of air to flow with it, as in the exhaust-nozles of a locomotive by which air and gases are caused to flow through the tubes and out through the stack.

steam-blower (stēm'blō″ėr), *n.* **1.** A device or apparatus for causing air to move or for creating a draft, as in a chimney, by a jet of steam. The jet is usually central in the axis of a tube of larger cross-section; the rush of steam at high velocity entrains with it the air or gas and thus causes a flow.—**2.** Any air-moving apparatus, such as a fan or other blower, driven by a steam-motor.

steam-calorimeter (stēm'kal-ọ-rim″ẹ-ter), *n.* See ★*calorimeter.*

steam-casing (stēm'kā″sing), *n.* A hollow wall around a chamber, through which steam is caused to circulate; a steam-jacket.

steam-chest, *n.* **1.** Steam-chests may be cast in one piece with the cylinder casting, or may be bolted to the latter by stud-bolts and nuts. The lid or bonnet is always made separate and bolted to the sides to give access to the valve and seat. When made in one casting, the bonnets must be constructed to admit of introducing the valves through them and of having all work of fitting and finishing done. In large upright engines of the beam type used for paddle-wheel and pumping practice, the steam-chests are separate for upper and lower ends, connected by side-pipes, which have an expansion-joint near one end to allow for variations of length by temperature. Sometimes also called *valve-chest.*

3. A name incorrectly given to a steam-chamber or dome of a land-boiler, or to the steam-chimney of a marine boiler.

steam-chimney, *n.* The type is much used on riverboats, having the advantage that the part of the boiler near to the deck-structures is no hotter than the steam in the dome, while the gases in the central portion may be much hotter. The height of the dome removes the steam-outlet a considerable distance above the water-line, diminishing the dangers from priming in rough weather, or the mechanical entrainment of water into the engine. Slight superheating may result with low-pressure steam.

steam-drier (stēm'drī″ėr), *n.* An apparatus or plant for removing moisture from lumber, cloth, air, etc., by heat conveyed from a boiler to coils of pipe. A circulation of air, either natural or forced by a fan, carries away the moisture vaporized out of the material by the heat. To raise the temperature of air is to increase its capacity to carry moisture without tendency to precipitate it, and this principle is made use of in the steam-driers to cause the air to absorb moisture from other objects. *Jour. Brit. Inst. Elect. Engin.*, 1903–04, p. 965.

steam-driven (stēm'driv″n), *a.* **1.** Driven directly by the pressure of steam, either at boiler-pressure or while expanding, or by the impact of a jet of steam.—**2.** Propelled by a steam-engine: as, a *steam-driven* motor-car.

steam-drum (stēm'drum), *n.* **1.** A vessel, usually a cylinder with curved ends, for collecting the steam from a boiler. Such a receptacle is almost always used on a water-tube boiler to permit a sufficient volume of steam to be accumulated so that the pressure will not fluctuate as steam is taken intermittently by the engine.—**2.** A pipe or cylinder on top of or above a steam-boiler and connected thereto by a short neck, serving as a dome to allow the flow of steam from the water to be slow enough therein to permit entrained water to settle at the bottom and be drained back. It is usually horizontal, or nearly so, and one drum may be connected to several boilers. It is much used in batteries of several sectional boilers in one block, and when so used a throttle-valve is placed in the pipe between the boiler and the drum to allow one boiler to be put out of use while the others are in action.

steam-drying (stēm'drī″ing), *n.* **1.** The use of steam-driers to remove moisture from objects.—**2.** The elimination from steam-vapor of any moisture in the form of water or mist. For every pressure and temperature steam which is called 'dry' is in equilibrium of tendency to condense back to water and to vaporize any water accidentally present. If the temperature rises such water will become steam and the vapor become drier. If the temperature falls some steam will go back to water, but the steam remaining uncondensed is dry as before. Further effort to dry results in superheating.

steam-eater (stēm'ē″tėr), *n.* An engine or apparatus which consumes a great deal of heat in performing its functions, requiring a powerful evaporating apparatus to keep it supplied with hot steam. Such consumption may be normal for the size of the apparatus, or it may be unnecessarily wasteful and therefore costly. *Jour. Brit. Inst. Elect. Engin.*, 1899–1900, p. 581. [Colloq.]

steam-edge (stēm'ej), *n.* That edge of a sliding-valve which, in relation to the side of the port or opening which it controls, acts to limit the size of the free passage of steam from the boiler to the engine-cylinder, and cuts off or closes such supply and opening at the proper time.

steam-engine, *n.*—**Central-valve steam-engine**, a form of steam-engine in which the pistons are annular and the valve is located in the line of the cylinder-axes. The engine is usually vertical, multiple-expansion, and single-acting, and runs at high speed with considerable economy. It has been much used for electric lighting and central power-stations.—**Cross-compound steam-engine**, a compound steam-engine in which the two or more cylinders are placed side by side or parallel, so that each requires a connecting-rod, as distinguished from a tandem engine, in which two or more pistons are connected to and act on the crank by means of one connecting-rod. The cranks are usually at 90° or quartering to make the turning effort more uniform and eliminate a dead-center. The side-by-side arrangement makes it easy to locate reheaters between the cylinders, and the connecting- or cross-pipe serves as a receiver.—**Fan steam-engine**, a steam-turbine which has tangential steam-jets acting on dished blades which are attached to a revolving wheel.—**Left-hand horizontal steam-engine**, a steam-engine which has the fly-wheel at the left of a center-line through the cylinder, when looking from the cylinder toward the shaft; or one which has the steam-cylinder on the left hand of one who faces the crank-disk.

steamer-keir (stē'mėr-kēr), *n.* A horizontal cylindrical chamber of iron, like a boiler, one end of which is provided with a strong iron door: used in bleacheries for steaming cloth.

steam-evaporator (stēm'ẹ̄-vap″ọ̄-rā-tọ̈r), *n.* An evaporator employing the heat of steam.—**Continuous steam-evaporator**, an apparatus for boiling, concentrating, or drying, the operation of which is not intermitted for the withdrawal of the material under treatment or for the charging of new stock.

steam-hauler (stēm'hâ″lėr), *n.* A form of traction-engine running on a portable bed or track, used for hauling logs over rough ground. It is equipped with a spiked metal belt which runs over sprocket-wheels replacing the driving-wheels, and is guided by a sled turned by a steering-wheel upon which the front end rests.

steam-header (stēm'hed″ėr), *n.* A pipe, cylinder, or other tubular chamber with a number of side-outlets from which a series of pipes may be supplied with steam, as from a common supply: used in the construction of sectional boilers of water-tube design, in which a number of generating tubular units deliver steam into a chamber transverse to them; also in supplying steam to a number of pipes in a radiator coil used in steam-heating.

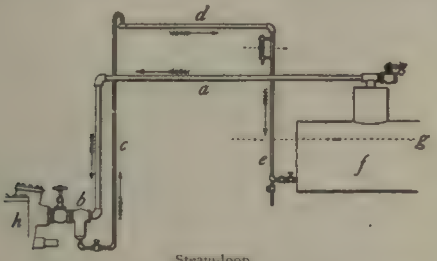
steam-heater (stēm'hē″tėr), *n.* **1.** A heater the temperature of which is maintained by the circulation of hot steam within it, as in a coil or radiator for heating the air of buildings.—**2.** A device for heating food or plates, in which hollow shelves have steam circulating between their walls.—**3.** A device for heating or boiling water or other liquids, in which steam in coils or hollow plates is circulated within the liquid to be heated.

steam-jacket (stēm′jak″et), *v. t.* To apply a steam-jacket to or surround with one; furnish with hollow walls within which hot dry steam may be circulated to supply heat: used of engine-cylinders, feed-water heaters, cookers, sterilizers, and other devices where heat is to be maintained against condensation, radiation, or other losses.

> He [Bryan Donkin] studied the effects of 'cylinder condensation' and of the two correctives of that serious form of wasted energy, superheating and *steam-jacketing*, and invented the 'revealer' to reveal the then mysterious changes occurring in the interior of the engine-cylinder.
> *Science*, March 28, 1902, p. 515.

steam-lead (stēm′lēd), *n.* The amount the steam-port is open when the piston of an engine reaches its extreme travel at the end of one stroke and is ready to begin its next stroke in the opposite sense. To give this opening of the port before the stroke of the piston begins, the valve must lead or be in advance of the phase of the piston; or the valve-crank or eccentric must lead the engine-crank at an angle in excess of 90°. It procures full boiler-pressure on the piston through a practical opening of the port when the stroke begins, and helps by this effective pressure to arrest the motion of the reciprocating parts and relieve the crank-pin from strain. *Whitham*, Const. Steam Engin., p. 170.

steam-loop (stēm′löp), *n.* A device or apparatus for removing water of condensation from a steam-pipe and returning it to the steam-boiler without the use of a pump or trap, even if the boiler is not enough below the engine to utilize gravity for the purpose. From a separator near the engine a pipe-riser enters the top of a horizontal run at an elevation sufficient to operate the system. From this horizontal run a vertical pipe descends into the water-space of the boiler below the water-line. The condensation in the riser is not liquid water; the water in the drop-leg to the boiler is liquid. Hence the boiler-pressure will balance a longer leg of mixed steam-gas and water than of liquid water in the drop-leg. A flow toward the boiler from the overhead horizontal pipe will therefore take place as water is lifted by dry-steam pipe pressure up the riser, since the drop-leg pressure is less than that on the engine side by the pressure due to the height of the liquid water column in the drop-leg. The longer the drop-leg the more effective is the elimination from the bottom of the separator. *Thurston*, Manual of Steam-Engine, II. p. 81.



Steam-loop.

a, pipe for live steam; *b*, separator; *c*—*e*, the steam-loop, of which *c* is the pipe-riser, *d*, the horizontal run, and *e*, the drop-leg; *f*, boiler; *g*, water-line; *h*, engine-cylinder.

steam-meter (stēm′mē″tėr), *n.* A meter designed to measure and record the weight or quantity of steam which passes through a pipe or to an engine.

steam-packing (stēm′pak″ing), *n.* In *mach.*: (*a*) Any material used in a joint to make it steam-tight. (*b*) The material used in a stuffing-box to keep steam from leaking through an opening in which a rod slides in and out. (*c*) A form of packing for steam-pistons in which the packing-rings in the piston are forced out against the bore of the cylinder by pressure of steam admitted into the grooves behind or inside of the rings. The rings may be made in sections to yield easily to this radial pressure.

steam-pocket (stēm′pok″et), *n.* A place below the water-level of a boiler where steam accumulates or is formed and does not pass away quickly.

steam-point (stēm′point), *n.* In *phys.*, that point on the thermometric scale which corresponds to the temperature of steam under a pressure of 76 centimeters of mercury. *Philos. Trans. Roy. Soc.* (London), 1903, ser. A, p. 122.

steam-separator (stēm′sep″a̤-rā-tọr), *n.* A device for eliminating water from steam, or oil from steam, when the steam is moving to a point at which it is convenient to have it dry or clean. Steam-separators may be based on the difference in weight of water and steam, the water accumulating at the bottom of the separator and dry steam being led off from the top; or the current of steam may receive a gyratory motion in the separator whereby particles of greater density, such as oil and water, are sent centrifugally to the sides and the steam is led from the center. Another device is to oppose corrugated surfaces as baffles on which oil and water adhere and are drained while the steam moves on unaffected; or the separation may be made by a filtering process with or without a chemical reaction. Separators are used to prevent the entrance into the cylinder of entrained or primed water from the boilers, and to prevent fouling and clogging of the condenser surfaces and passages by oil and grease from the condensing-engine cylinders.

Steamship license. See ★*license.*

steam-shovel (stēm′shuv″l), *n.* A digging-, dredging-, or excavating-machine, driven by steam in its own engine from its own boiler: usually mounted on a car to run upon the rails of a track and used in mining, canal, and railway work. Called *steam-navvy* in England. It is essentially the same as the dredge, but is operated on land instead of from a boat. See cut at *excavator*.

> This material is a glacial boulder formation of clayey consistency which required blasting before it could be handled with *steam shovel*. It puddled well and formed a watertight fill which set hard in the embankment almost like concrete.
> *Elect. World and Engin.*, Oct. 1, 1904, p. 555.

steam-stamp (stēm′stamp), *n.* A pestle on the upper end of which is a steam-cylinder by which it is lifted and which gives striking energy to its blow upon rock and ore in a mortar at its foot: used for crushing rock and ore.

steam-style (stēm′stīl), *n.* In *calico-printing*, a process by which, the dye and mordant having been mixed and printed together upon the cloth, the color effect is developed and fixed by exposure to an atmosphere of steam.

steam-thawing (stēm′thâ″ing), *n.* **1.** In *mining*, a method used in cold climates, as in Alaska, for softening frozen gravel so that it can be worked after frost has hardened the surface. Pipes tipped with steel nozles are driven down from four to six feet and dry steam at 120 pounds' pressure is forced through them. The pipes, called 'points,' are inserted one to every square yard. The alternative plan (called 'fire-setting') is to use wood fires, which are unsatisfactory, the smoke being objectionable, while the thawing, if uncontrolled, may soften the frozen roof of workings underneath and cause accidents.—**2.** A method of thawing out the frozen water in gutters, leaders, or underground pipes and softening the congealed condensation in gas-pipes by means of heated steam from a portable steam-boiler. *Pop. Sci. Mo.*, July, 1902, p. 235.

steam-valve, *n.* **2.** Specifically, an admission-valve; a valve for admitting steam to the inlet of a cylinder, as distinguished from an exhaust-valve.

steamway (stēm′wā), *n.* A channel or passage in a cylinder or valve-chest of an engine, usually cast with it by coring, through which steam may pass in or out of the cylinder from the boiler or toward the exhaust-pipe. *D. K. Clark*, Steam Engine, II. 458.

steapsinogen (stē-ap-sin′ọ-jen), *n.* [*steapsin* + *-o-* + *-gen.*] The proenzym of the fat-splitting ferment of the pancreas.

steariform (stē′a̤-ri-fôrm), *a.* [Irreg. < Gr. *στέαρ*, stiff fat, tallow, suet, + L. *forma*, form.] Resembling stearin or hard fat.

stearin, *n.*—**Cocoanut, cotton-seed stearin.** See ★*cocoanut*, ★*cotton-seed*.—**Solar stearin**, the solid fat left on subjecting lard to pressure without artificial heating, lard-oil being removed. It is used in the manufacture of candles.—**Vegetable stearin**, a name given to the solid portion of cotton-seed oil. It consists essentially of compounds of glycerol with palmitic and stearic acids.

stearinsulphuric (stē″a̤-rin-sul-fū′rik), *a.* Same as ★*sulpholeic*.

stearolauretin (stē″a̤-rō-lâ′re-tin), *n.* [Irreg. < Gr. *στέαρ*, stiff fat, tallow, suet, + L. *laurus*, laurel, + *-et-* + *-in²*.] A compound said to be present in the fat of the sweet-bay, *Laurus nobilis*.

stearolaurin (stē″a̤-rọ-lâ′rin), *n.* Same as ★*laurostearin*.

stearolic (stē-a̤-rol′ik), *a.* [*stear(in)* + *-ol* + *-ic.*] Noting an acid, a colorless compound of the acetylene series, $CH_3(CH_2)_7C:C(CH_2)_7$-COOH, prepared by the action of alcoholic potassium hydroxid on bromoleic acid. It crystallizes in long prisms and melts at 48° C.

stearoxylic (stē″a̤-rok-sil′ik), *a.* [*stear(in)* + *ox(ygen)* + *-yl* + *-ic.*] Noting an acid, a colorless compound, $CH_3(CH_2)_7CO.CO(CH_2)_7$-COOH, prepared by the action of fuming nitric acid on stearolic acid. It crystallizes in plates and melts at 86° C. Also called 9, 10-*diketostearic acid*.

stearrhea (stē-a̤-rē′ä̤), *n.* [NL. *stearrhœa*, < *στέαρ*, stiff fat, tallow, suet, + *ῥοία*, flowing.] Same as *seborrhea*.

steatadenoma (stē-a̤-tad-e-nō′mä̤), *n.*; pl. *steatadenomata* (-ma̤-tä̤). [NL., < Gr. *στέαρ* (*στεατ-*), stiff fat, tallow, suet, + NL. *adenoma*.] Adenoma of the sebaceous glands.

steatite, *n.* **2.** A gem or seal, cut in steatite.

> This is a small lenticular seagreen *steatite* . . . engraved with a cuttle fish, above which is a tunny-fish to the right.
> *H. B. Walters*, in Jour. of Hellenic Studies, XVII. 68.

Cupric steatite, a mixture of pulverized steatite or talc and sulphate of copper, used to dust over plants as a fungicide.

steatitis (stē-a̤-tī′tis), *n.* [NL., < Gr. *στέαρ* (*στεατ-*), stiff fat, + *-itis*.] Inflammation of adipose tissue.

steatocele (stē′a̤-tọ-sēl), *n.* [*στέαρ* (*στεατ-*), stiff fat, + *κήλη*, a tumor.] A fatty tumor in the scrotum.

steatolytic (stē″a̤-tọ-lit′ik), *a.* [Gr. *στέαρ* (*στεατ-*), stiff fat, + *λύσις* (*λυτ-*), dissolving, + *-ic.*] Same as ★*lipolytic*. *Buck*, Med. Handbook, III. 474.

steatopathic (stē″a̤-tọ-path′ik), *a.* [Gr. *στέαρ* (*στεατ-*), stiff fat, + *πάθος*, disease, + *-ic.*] Noting any disease of the sebaceous glands.

sted, stedy. Simplified and former spellings of *stead*, *steady*.

steel. **I.** *n.*—**Acid steel**, steel produced in a vessel or hearth, in either the Bessemer or the open-hearth process, in which the slag and linings are silicious. Such steels must be made from ores low in phosphorus or else the product is likely to be brittle and unreliable in the cold. See *steel¹*, 1.—**Air-hardening steel**, a steel which is hardened by cooling ordinarily in the air, as distinguished from ordinary tool-steel, which must be rapidly cooled from above a red heat in order to have a hard cutting-edge. See *self-hardening* ★*steel*.—**Aluminium steel**, steel containing a very small percentage of aluminium added for the purpose of stopping the evolution of carbon monoxid and other occluded gases from the molten steel. There are two theories to account for this function of aluminium: that the aluminium decomposes the gases and absorbs the oxygen, for which it has a strong affinity, and that aluminium increases the solubility of the gases in the steel and thereby prevents the formation of blow-holes and bubbles. The proportion of aluminium is determined by the grade of steel, the amount of occluded gases, and other factors, but it usually varies from one eighth to three quarters of a pound to a ton of steel. An excessive amount of aluminium makes the metal set very solid and produces 'pipes' in the ingots.—**Basic steel**, steel made by the basic process. See *steel¹*, 1.—**Bronze steel.** See ★*bronze-steel*.—**Cement-steel.** Same as ★*cementation-steel*.—**Chrome steel.** The ordinary chrome steel used for armor-plates and armor-piercing projectiles contains from about 2 to 2.75 per cent. of chromium, but in some file-steels the amount of chromium reaches 3 per cent. Up to the introduction of the aluminothermic process of Goldschmidt (see ★*aluminothermics*) chrome steel was prepared in crucibles or in electric furnaces by the addition of ferrochromium to molten mild steel, an operation of considerable difficulty on account of the refractory nature of the ferrochromium. The chrome steel produced by this method contained sometimes over 1 per cent. of combined carbon. By the Goldschmidt process chromium is produced in an almost pure state and added to steel without perceptibly increasing its percentage of carbon. Besides armor-plates and projectiles, chrome steel is used for tires, springs, rock-crushing machinery, and safes. The effect of chromium on steel when added in small quantities is to raise its strength and hardness without seriously diminishing its ductility. When added in too large quantities it produces brittleness.—**Chromium-aluminium steel**, an alloy steel containing chromium and aluminium in varying proportions.—**Chromium-nickel steel**, steel containing 2 per cent. of nickel and about 1 per cent. of chromium. It is used principally for armor-plate and for armor-piercing shells.—**Cold-rolled steel**, steel to which, after it is rolled hot to approximately the required thickness, a very smooth surface and a very accurately gaged thickness are imparted by first chemically cleaning the surface and then rolling it cold between smooth-surface rollers.—**Electric steel process.** See ★*process*.—**Granulated steel**, steel made from pig-iron by a process in which the first step is the granulation of the iron to give the steel a uniform structure.—**Gun-steel**, steel used for guns. Crucible-steel and nickel-steel are largely used for that purpose.—**Hadfield's manganese-steel**, a name frequently given to manganese-steel from its inventor, Robert A. Hadfield.—**Hard steel**, steel to which has been added manganese, phosphorus, or carbon to increase its hardness, or resistance to abrasion, and to raise its elastic limit.—**High-carbon steel**, steel with a high percentage of carbon: usually containing more than .65 or .75 per cent. of carbon.—**High-speed steel**, an alloy steel suitable for cutting-tools working at a very high speed. Tools made of ordinary carbon-steel lose their temper as soon as the heat generated by the friction of the work rises above about 300° C. High-speed steel, on the other hand, retains a cutting-edge at a temperature more than twice as high as ordinary carbon-steel, and often does its work while its edge is red-hot; consequently the speed of the lathe or other machine can be increased from one to three times the usual limit. A speed of 500 cutting-feet per minute has been attained, working upon mild-steel forgings. The composition of high-speed steel varies in accordance with the uses for which the tools are intended. The chief constituents are tungsten, silicon, chromium, molybdenum, and manganese. The proportion of carbon is usually below 1 per cent. Tools of high-speed steel are used chiefly for making roughing-cuts in the lathe or planer. The valuable properties of high-speed steel are attributed to the alloying element and the special heat treatment to which it is subjected. Thus, in one process, it is first heated to about 1,000 degrees C., then rapidly cooled in a bath of molten lead, where it is kept for about 10 minutes, and then allowed to cool slowly in lime or some other inert non-conducting body. For some purposes the steel when quite cool is reheated to visible red and allowed to cool in the open air. In other (more recent) processes the steel is hardened by heating nearly to melting and then cooling in a blast of air, after which the strains are removed by reheating to a temperature below a red heat.—**High steel,** steel containing a percentage of carbon above .60, or of other hardeners, such as phosphorus, silicon, or manganese, by which it is made of high tensile strength and elastic limit but at the expense of ductility and toughness. Such steel will temper and harden.—**Low steel,** mild steel; steel low in carbon.—**Machinery steel,** low-carbon steel suitable for making parts of machines, but not cutting-tools, since it cannot be tempered.—**Manganese-nickel steel,** an alloy steel which contains manganese and nickel.—**Mushet steel,** a variety of self-hardening steel, so called from the fact that its first development was due to the metallurgist of that name. It contains tungsten and manganese.—**Natural steel.** (*a*) Steel made by refining cast-iron directly. (*b*) Steel made from the ore by a direct process.—**Open-hearth steel,** a form of mild steel, so named because produced in an open-hearth furnace by the Siemens-Martin process. It is called *acid steel* when the lining of the hearth is of acid material and *basic steel* when the lining is of basic material. See *steel*1, 1.—**Overheated steel,** steel which has been heated to a temperature considerably above that of recalescence and has consequently acquired a coarse crystalline structure which materially weakens it. This defect may be remedied by forging the metal while hot.—**Phosphorus steel,** steel containing an amount of phosphorus in excess of its carbon.—**Pressed steel,** steel which has been subjected to pressure by mechanical means while in a fluid state and undergoing the process of solidification in a mold. The pressure is usually applied by hydraulic presses, and results in a diminution of height in the proportion of one and a half inches to the foot. The steel is made more dense and blow-holes and other defects are less likely to occur. Gases forming in the mass of steel by chemical reaction are mechanically expelled from it.—**Raw steel,** steel produced by partial decarburization of cast-iron in an open-hearth furnace.—**Scrap-steel,** any non-salable pieces of steel from previous manufacture or industrial use, such as crop-ends of rails, ends of billets and blooms, or broken stock, used in open-hearth steel-manufacture as an addition to the bath of melted pig-iron to reduce the percentage of carbon therein by increasing the weight of metallic iron without adding a corresponding weight of carbon.—**Self-hardening steel,** steel which hardens itself and does not require the heat treatment necessary for ordinary high-carbon steel. (See *air-hardening* ★*steel*.) In the trade self- and air-hardening steels are usually classed together. A distinction exists between them, however, in that some steel which hardens in the air may be softened by extremely slow cooling, whereas true self-hardening steels are not made soft by any process, though their hardness is appreciably lessened by rapid cooling from a very high temperature (almost at the melting-point), the same treatment which makes ordinary steels harder than glass. The best known of the self-hardening steels is Mushet's self-hardening steel, containing up to 8 per cent. of tungsten, together with 2–5 per cent. of manganese, and 1.50–2.25 per cent. carbon. This was extensively used for heavy work in cutting-tools. Hadfield's manganese-steel is another well-known self-hardening steel. This is used for armor-plate, burglar-proof safes, jaws of rock-crushers, etc. It is so hard that it will stand great wear and cannot be machined.—**Siemens-Martin steel,** steel made in the open-hearth furnace with regenerators by the Siemens modification of the Martin process. See *steel*1, 1.—**Silicon-nickel steel,** an alloy-steel containing silicon and nickel.—**Soft steel,** steel with a low elastic limit, ductile and not brittle; mild steel: its properties are due to a low percentage of carbon and phosphorus.—**Steel road.** See *steel* ★*roadway*.—**Structural steel.** (*a*) Steel of toughness and ductility as well as of strength, suitable for use in structures such as roofs, bridges, trestles, towers, buildings, and the like. (*b*) Such steel rolled in the shapes adapted for these uses, such as angles, tees, channels, I-beams, T-beams, Z-bars, and deck-beams.—**Tincture of steel,** a hydro-alcoholic solution of ferric chlorid; tincture of iron. It is tonic and hematinic.—**Tool steel,** steel proper containing carbon enough to allow of hardening or tempering: distinguished from *mild* or *structural steel*, which is almost destitute of carbon, incapable of being hardened or tempered, and rather to be viewed as well-purified wrought-iron rendered uniform by fusion.—**Tungsten-chromium steel,** an alloy of steel containing tungsten and chromium in varying proportions. The steel is used in the manufacture of high-speed cutting-tools. See *high-speed* ★*steel*.—**Tungsten-manganese steel,** an alloy steel containing varying proportions of tungsten and manganese. See *air-hardening* ★*steel*, *self-hardening* ★*steel*, and *high-speed* ★*steel*.—**Vanadium steel,** special steel containing vanadium. While the effect of vanadium on steel has not yet been thoroughly investigated, it has been proved that one or two tenths of one per cent. of vanadium added to mild or low-carbon steel raises the elastic limit and tensile strength. As vanadium has a very high melting-point, it is added to steel usually in the form of ★*ferro-vanadium* (which see).—**Whitworth's compressed steel,** steel compressed while in a fluid state by the process patented by Sir Joseph Whitworth in 1865. The steel is cast into molds with forged steel hoops, and a pressure of from 6 to 15 tons per square inch is applied for the purpose of preventing the occluded gas from escaping from the molten metal and forming blow-holes or pipes. See *compressed steel*.—**Wolfram steel,** steel containing tungsten as an alloying element to give special hardness and strength.

II. *a.*—**Steel alloy.** See ★*alloys*.—**Steel cage,** the steel framework or skeleton for a building, as set up before the brick or stone casing is added.—**Steel luster, wire.** See ★*luster*2, ★*wire*1.

steel-concrete (stēl′kon″krēt), *n.* See *reinforced* ★*concrete*.

steel-faced (stēl′fāst), *p. a.* Faced with steel; specifically, in *etching* and *engraving*, treated by a process by which, in the electrotype bath, a thin coating of steel is deposited on a copper plate, rendering it much more durable. Steel-facing may be removed and renewed.

> *Steel-faced* it may be printed over and over again practically without a limit, for as soon as the steel face should wear off, the plate can be again immersed in the electrotyper's bath and a new coat of steel be deposited.
> *Singer and Strang*, Etching, Engraving, etc., p. 61.

steelhead, *n.* **3.** A large trout, *Salmo rivularis*, of the Pacific coast of the United States.

> The small catch of *steelhead* is the result of a state law which restricted the fishing for this species to the use of hook and line, thus preventing professional fishermen from operating nets.
> *W. A. Wilcox*, in Rep. U. S. Fish Com., 1905, p. 52.

steeling, *n.* **3.** In general, the operation of overlaying, tipping, or facing with steel. It is usually done to a softer and tougher metal in order that the required hardness, resistance to abrasion, or tempering quality may be secured by the steel face or point. It was formerly practised more than now, because steel of the desired properties was much more costly than iron, and the solidity or mass was given by iron, and the steel quality secured at the working-face only. Ax-heads were made with a steel bit or cutting-edge on a wrought-iron head; rails were faced with steel on their tops; armor-plate was steel-faced.

steel-iron (stēl′ī″ẽrn), *n.* **1.** Iron, or metal made by puddling or some other non-fusion process, which contains enough carbon to possess the hardening and tempering quality and some other properties of steel.—**2.** Iron which is a mechanical mixture of iron and steel, as respects its properties, by reason of incomplete manufacture into either.—**3.** Steel-faced iron.

steelyard2, *n.*—**Crane steelyard,** a steelyard suspended on the hoisting-rope of a derrick or crane the hook of which is the hoisting-hook of the crane, so that objects can be weighed while being hoisted.

steely-bug (stē′li-bug), *n.* The grape-vine flea-beetle (which see, with cut, under *flea-beetle*). *E. G. Lodeman*, The Spraying of Plants, p. 306.

steenbras (stān′bräs), *n.* [Cape D. *steenbras (?), < D. *steen*, stone, + *brasem*, bream.] A South African sparoid fish, *Dentex rupestris*.

steenstrupite (stēn′strup-īt), *n.* Same as *steenstrupine*.

steep2, *n.* **4.** Same as *brasque*.—**5.** *pl.* The solutions or baths in which metals are dipped preparatory to electro-plating.

steeping-pool (stē′ping-pöl), *n.* A pool for steeping or retting flax, hemp, etc.

> That the fiber can be disintegrated and separated from the stalks by steeping in water, like flax and hemp, or jute (as is practiced in India), is well understood, but the *steeping pool* should be avoided if possible.
> *U. S. Dept. Agr.*, Rep. No. 6, p. 29.

steeping-vat (stē′ping-vat), *n.* A vat in which the indigo-plant is steeped in water in order that it may ferment and decompose. The resulting solution of indigo white is run by gravity into the beating-vats, which are situated on a lower level.

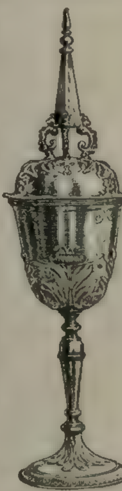
steeple (stē′pl), *v. i.*; pret. and pp. *steepled*, ppr. *steepling*. To rise above other buildings or objects as a steeple or a spire.

> They have adopted what they call 'the Chicago method' in putting up these *steepling* hives.
> *J. Ralph*, in Harper's Mag., Feb., [1892, p. 427.

steeplechase, *n.* **2.** In *billiards*, primarily, an exhibition stroke in which the cue-ball is lifted from the table and made to jump, the cue having first been laid flat upon the table. It can be fair, but is liable to be foul (a push), and on Nov. 28, 1905, the English Billiard Association, called upon to rule it out of regular billiards, enacted equivocally that, "properly made, it is fair." It is neither recognized nor needed in American billiards.

steeple-compound (stē′pl-kom″pound), *a.* See ★*tandem-compound*.

steeple-cup (stē′pl-kup), *n.* A silver standing cup having on its cover a pyramidal, steeple-like crest.

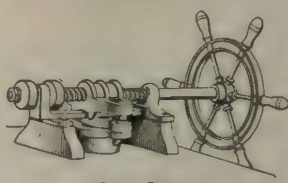


Steeple-cup.

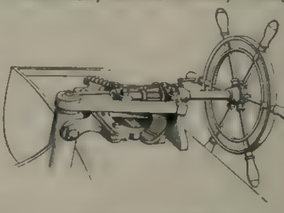
Steerage officer. See ★*officer*.

steerageway, *n.*—**To make steerageway,** to have speed enough to be controlled by the rudder: said of a ship.

steerer, *n.* **4.** A machine for controlling the rudder of a boat or yacht. It consists essentially of a hand steering-wheel which controls the rudder-head by means of a screw or by gearing. In the screw type the wheel is on a screw-arbor carrying a large nut having wings at right angles with the screw. Each wing has a slot, and the rudder-head carries corresponding wings, one of which carries a steel pin that fits in the slot at either the right or the left of the rudder-head. Turning the wheel causes the nut to travel on the screw, and its motion, through the pin, causes the rudder-head to turn to the right or left. In the rack-and-pinion type the rudder-head supports a quadrant having at its outer edge a quadrant-rack. The wheel controls an arbor which carries a pinion that meshes into the quadrant-rack, and any motion of the wheel causes the quadrant and the rudder to turn to the right or left.



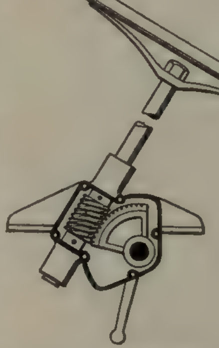
Screw Steerer.



Rack-and-pinion Steerer.

steering-engine (stēr′ing-en″jin), *n.* In *shipbuilding*, an engine for moving the rudder and steering by steam, hydraulic, or electric power on large steamers. As usually fitted, the engine follows the motion of the steering-wheel on the bridge or other steering station, so that the effect is the same as if the rudder were moved or stopped directly by the steering-wheel. This is accomplished in steam and hydraulic engines by a distributing valve on the engine controlled by suitable shafting or ropes from the steering-wheel. When the valve is opened in one direction by turning the wheel, the engine in moving tends to close the valve so that the engine stops when the wheel stops. Electric steering-engines are complicated in their controlling mechanism and have been little used.—**Steering-engine room,** a compartment on a ship in which the steering-engine is placed. In a war-ship, this is usually in the extreme after part of the vessel under the protective deck.

steering-gear, *n.* **2.** (*a*) The mechanism used in motor-cars to steer the pair of wheels which guide the car. Most motor-cars are steered by the control of the front wheels, which is given by mounting these wheels upon steering-knuckles on the front axle; the knuckles are held in position by links or rods connected to a sector, the latter being controlled by a screw on the post of the steering-wheel. If a lever tiller is used, the knuckle-arms are linked to an arm on the tiller upright or post. The wheel-steerer is preferred, since it is a self-locking or irreversible gear and is much less trying to the operator on long runs. (*b*) In traction-engines and road-rollers, a gear operated by chains wound upon a drum and drawing the front axle out of parallel with the rear or driving axle. This drum may be driven by worm and screw by hand, or it may be driven by power by reversing clutches or gear. (*c*) The handle-bar and connected parts for steering a tricycle, motor-cycle, or bicycle.—**Steam steering-gear,** the steam-driven machinery by which the rudder of a vessel is operated. There are several types. Those which are placed at the stern of the vessel operate directly upon a quadrant or sector attached to the rudder-post; those more directly under the pilot-house or wheelman's position operate through chains and rods to pulleys and purchases at the tiller. In either form some flexible element must be introduced to prevent shocks of wave-impact from wrecking the machine or its mountings. A very usual design is a reversing-engine having two cylinders with cranks at 90° so as to avoid a dead-center. The valves are driven by a reversing link-motion, the motion of the pilot's wheel to port throwing the link downward, as for forward motion, and the turning of the wheel to starboard causing



Steering-gear.

the engine to reverse. The steering-chains are coiled upon a drum turned by this engine, and one chain is wound up by one motion while the other is unwound, and vice versa. To make the motion of the pilot's wheel resemble the ordinary hand-steering movements, the turning of the chain-drum draws the link up or down to mid-gear again if the wheel of the helmsman is held still, and the motion of the drum ceases. The engine keeps on winding the rudder-chain as long as the helmsman moves his wheel, but when he stops the engine stops. This feature is secured in all steering-gears, but different means are used in different designs.

steering-knuckle (stēr′ing-nuk″l), *n.* That part of the front axle of a motor-car which furnishes the bearing for front wheels. Each wheel fits upon one arm of a knuckle, the other being connected by links to the steering-wheel mechanism. The knuckle is supported in a strong yoke at the end of the axle proper, so that the vertical plane in which the wheels turn can be turned at any desired angle with the long axis of the vehicle and turn the latter in the desired direction. The wheels turn on the knuckle-arm by ball-bearings.

The front axle is provided with ball-bearing *steering knuckles*, which assures the maximum solidity and great ease of steering. *Sci. Amer. Sup.*, Aug. 27, 1904, p. 23953.

steering-lever (stēr′ing-lev″ėr), *n.* A hand-lever for operating a steering mechanism.

When you have the *steering-lever* in your hand and can speed ahead at your own pleasure by simply pressing a button, or lever . . . it is truly a new and delightful sensation. *Hiscox*, Horseless Vehicles, p. 20.

steering-stand (stēr′ing-stand), *n.* In *shipbuilding*, a pedestal or support for a small steering-wheel on a bridge or other steering-station. In the stand are gear-wheels and the upper part of the shafting by which the motion of the wheel is transmitted to the steering-engine.

steering-telegraph (stēr′ing-tel″ẹ̄-gráf), *n.* See ⋆*telegraph*.

steering-wheel, *n.* **2.** A wheel by which the driver of a motor-car alters the direction of the front or rear pair of wheels, thus steering the car.

steer-shaft (stēr′sháft), *n.* A controlling-rod for putting any part of a mechanism into a desired position and holding it there, as in valve-gear, governing mechanisms, and the like.

Stefan's law. See ⋆*law*¹.

stegnosis (steg-nō′sis), *n.* [NL., ‹ Gr. *στέγνωσις*, obstruction of the bowels or pores, ‹ *στεγνοῦν*, obstruct, make tight, ‹ *στεγνός*, contracted from *στεγανός*, tight, water-tight, close.] Obstruction in an excretory or secretory canal.

stegnotic (steg-not′ik), *a.* [Gr. *στεγνωτικός*, ‹ *στέγνωσις*, obstruction.] Suppressing secretion; constricting.

stegoceph (steg′ọ̄-sef), *n.* [*stegoceph*(*alian*).] A stegocephalian.

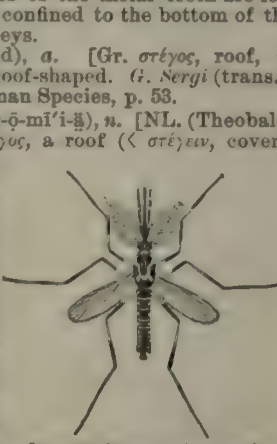
stegocrotaphous (steg-ọ̄-krot′a-fus), *a.* [Gr. *στέγειν*, cover, + *κρόταφος*, the side of the head, + *-ous*.] Having the temporal fossa roofed over with bone, as it is in most turtles, and in the rare mammal *Lophiomys*. Contrasted with ⋆*therocrotaphous*.

The turtles have a *stegocrotaphous* skull, unlike all other reptiles save the Cotylosauria, Procolophonia, etc. *Williston*, in Proc. U. S. Nat. Mus., XXXII. 488.

stegodont (steg′ọ̄-dont), *a.* [NL. *Stegodon* (*-odont-*).] Pertaining to or having the characters of the elephant subgenus *Stegodon*, in which the ridges of the molar teeth are low and the cement confined to the bottom of the intervening valleys.

stegoid (steg′oid), *a.* [Gr. *στέγος*, roof, + *εἶδος*, form.] Roof-shaped. *G. Sergi* (trans.), Var. of the Human Species, p. 53.

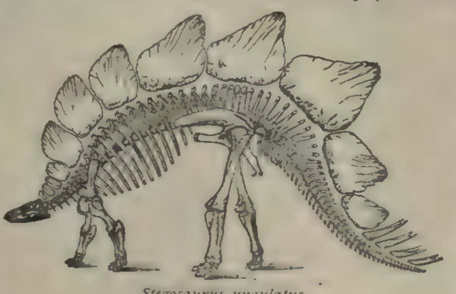
Stegomyia (steg-ọ̄-mī′i-ạ̈), *n.* [NL. (Theobald, 1901), ‹ Gr. *στέγος*, a roof (‹ *στέγειν*, cover), + *μυῖα* a fly.] **1.** An important genus of mosquitos having the palpi short and four-jointed in the female and long and five-jointed in the male. They are black in color, marked with silvery white. The head is completely clothed with broad, flat scales. About 40 species are known. *S. fasciata* (*calopus*) is the transmitter of yellow fever and is known as the *yellow-fever mosquito*. The genus is of tropical and subtropical distribution.—**2.** [*l. c.*] A mosquito of this genus.



Stegomyia fasciata (*calopus*), male. (Howard, U. S. D. A.)

stegorrhine (steg′ọ̄-rin), *a.* [Gr. *στέγος*, a roof, + *ῥίς* (*ῥιν-*), nose.] In *craniom.*, having a high bridge of the nose, like man. *Von Török.*

Stegosaurus, *n.* **1.** It was characterized by a very small skull with a diminutive brain-cavity (not more than one tenth the capacity of the neural cavity in the sacrum and relatively the smallest known in any land vertebrate), large nostrils, edentulous premaxillæ, and numerous and spatulate teeth. The vertebræ were amphicœlous. The sacrum consisted of four fused vertebræ, sometimes with one or more lumbars added in front. The anterior caudal vertebræ were the largest of all and bore strong chevron-bones. The fore limbs were short and stout and the hind limbs long and massive, the femur being from 5 to 6 feet in length. The foot was 3-toed, with a fourth toe rudimentary. The dermal armature consisted of a double row of enormous erect flattened bony plates extending from the back of the head almost to the tip of the tail, the largest being over the pelvis. Essentially complete skeletons show that the animal attained a length of almost 40 feet.



Stegosaurus ungulatus. Restoration. Marsh. (From Dana's "Manual of Geology.")

stegurous (ste-gū′rus), *a.* [Gr. *στέγος*, a roof, + *οὐρά*, tail.] Referring to a type of tail structure, in bony fishes, in which the vertebral column terminates in front of the tail-fin with a vertebra bearing a broad vertical fan-shaped plate which is formed by the fusion of several fin-supports and hemapophyses. This terminal plate generally incloses a short upwardly directed remnant of the notochord or a bony style (urostyle).

stein² (stīn), *n.* [G. *stein*, stone.] An earthenware mug, especially one designed to hold beer.

Steindachneria (stīn-däk-nē′ri-ạ̈), *n.* [NL., named after Dr. Franz *Steindachner*, an Austrian zoölogist.] A genus of macruroid fishes found in deep seas.

Steinegeria (stī-ne-jē′ri-ạ̈), *n.* [NL., named after Leonhard *Stejneger*, of the U. S. National Museum.] A genus of fishes of the family *Steinegeriidæ*, found only in the Gulf of Mexico.

Steinegeriidæ (stī″ne-jẹ̄-rī′i-dē), *n. pl.* [NL., ‹ *Steinegeri*(*a*) + *-idæ*.] A family of fishes related to the *Bramidæ*, found in the Gulf of Mexico.

stele³, *n.* **2.** In *bot.*, the axial cylinder of a stem, beginning as the plerome (see *plerome*, 2, and *plerome-sheath*) and passing into the older tissues which supply the vascular tissue of the plant.

Stelgis (stel′jis), *n.* [NL., ‹ Gr. *στελγίς*, a variant of *στλεγγίς*, a scraper.] A genus of fishes of the family *Agonidæ*, found in deep waters off the California coast.

Stelgistrum (stel-jis′trum), *n.* [NL., ‹ Gr. *στέλγιστρον*, a variant of *στλέγγιστρον*, a scraper.] A genus of cottoid fishes found in Bering Sea.

stelic (stē′lik), *a.* [*stel*(*e*)³ + *-ic*.] Of or pertaining to a stele. See ⋆*stele*³, 2.

stella, *n.* **2.** A cross-shaped bandage.

Stellar heat, nebula, parallax, etc. See ⋆*heat*, etc.

Stellate ganglion. See ⋆*ganglion*.

Stellenbosch (stel′en-bosh), *v. t.* [See the extract.] To 'send to Coventry'; side-track. [Slang.]

In the early days of the Boer war (1899–1902) Stellenbosch was one of the British military bases, and was used as a "remount" camp; and in consequence of officers being sent back to it when they had not distinguished themselves at the front, the expression "to be *Stellenbosched*" came into general use; so much so, that in similar cases officers were spoken of as "*Stellenbosched*" even if they were sent to some other place altogether. *Encyc. Brit.*, XXXII. 851.

Stellerina (stel-ẹ-rī′nạ̈), *n.* [NL., named after Georg Wilhelm *Steller*, a naturalist and explorer, the first to study the fishes of Bering Sea.] A genus of agonoid fishes found in rather deep water off the coasts of Oregon and California.

Stelleroidea (stel-ẹ-roi′dẹ̄-ạ̈), *n. pl.* [NL.] A group or class of *Echinodermata* including the starfish, brittle-stars, sand-stars, basket-fish, and branching-stars. All are characterized by a flattened, stellate body consisting of a central disk bearing radiating arms, by radiately arranged genital organs, by not having the body attached by the aboral surface, and by having the podia usually limited to the lower surface of the body.

Stellifer (stel′i-fėr), *n.* [NL., ‹ L. *stellifer*, bearing stars, ‹ *stella*, star, + *ferre*, bear.] A genus of sciænoid fishes. All of the species are rather small and all are found in American waters.

stellino (stạ̄-lē′nọ̄), *n.* [It., ‹ *stella*, ‹ L. *stella*, a star.] A silver coin of Florence, struck under Cosmo de' Medici (1537–74). The name alludes to a star (a mint-mark) on the obverse.

stellium (stel′i-um), *n.*; pl. *stellia* (-ạ̈). [NL., ‹ L. *stella*, a star.] In *astrol.*, a crowd of planets in an angle. See ⋆*doryphory* and ⋆*satellitium*, 2.

stelth, *n.* A simplified spelling of *stealth*.

stem¹, *n.*—**Stem analysis.** See ⋆*tree analysis*.—**Stem density,** in *forestry*, the extent to which the total number of trees in a given forest approaches the total number which the index forest of the same age and composition contains. It is ordinarily expressed as a decimal, 1 being taken as the numerical equivalent of the stem density of the index forest.

stem-blight (stem′blīt), *n.* A fungous disease of plants which attacks the stem. Stem-blight of the peach is due to *Phoma Persicæ*, that of the potato is attributed to *Fusarium acuminatum*, and that of rye to *Leptosphæria herpotrichoides*.

stem-borer (stem′bōr″ėr), *n.* An insect the larva of which bores in the stems of plants.—**Clover stem-borer,** an American erotylid beetle, *Languria mozardi*, whose larvæ bore in the stems of red clover.—**Lima bean stem-borer,** the larva of an American phycitid moth, *Monoptilota nubilella*, which bores into the stems of Lima beans.

stem-form (stem′fôrm), *n.* The form that determines the stem; the ancestral form.

Darwin was inclined to believe that articulate speech came at an early period in the history of the *stem-form* of man. *Nature*, Sept. 26, 1901, p. 545.

stem-gall (stem′gâl), *n.* A gall upon the stem of a leaf.—**Strawberry-leaf stem-gall,** an elongate gall occurring on the leaf-stems of the strawberry-plant. It is evidently a cynipid gall, but the adult insect is unknown.

stem-mark (stem′märk), *n.* A mark or symbol used to indicate the stem or family to which the owner belongs. *H. Haddon*, Evolution in Art, p. 254.

stem-mat (stem′mat), *n.* A thick, heavy mat secured to the stem of a towboat to protect the side of a vessel against which the boat is pushed or rested in docking.

stemmer² (stem′ėr), *n.* [*stem*¹ + *-er*¹.] One who removes stems; especially one who separates the midribs from the leaves of tobacco.

stemming² (stem′ing), *n.* The act of removing the mid-rib ('stem') from a tobacco-leaf. See *stemmed* ⋆*tobacco* and ⋆*stemmer*².

stem-mother (stem′muᴛʜ″ėr), *n.* The foundress of a summer colony of *Aphididæ* which is herself born of a winter egg; any female plant-louse that hatches in the spring from a winter egg. The first spring generation of any species is composed of stem-mothers.

During the last week in April the *stem mothers* of an aphis, determined by Mr. Th. Pergande to be a species of Myzus, were found depositing young with A. mali. These *stem mothers* were large, globular, bluish-black, slightly pruinose, and the young were of a light-brown color. *Proc. Ass'n Econ. Ent.*, 1900, p. 68.

stemonaceous (stē-mọ̄-nā′shius), *a.* [NL. *Stemonace*(*æ*) + *-ous*.] Belonging or pertaining to the *Stemonaceæ*.

stem-ossicle (stem′os″i-kl), *n.* Any one of the calcareous elements composing the stem or column of a pelmatozoan echinoderm. Called *columnals* in Bather's terminology.

stem-pole (stem′pōl), *n.* See ⋆*polarity*, 1 (*c*).

stem-rot (stem′rot), *n.* A fungous or bacterial disease affecting the stems of various plants. That of the carnation is due to a species of *Rhizoctonia*; that of the clover to *Sclerotinia Trifolium*; that of the cucumber to *S. Libertiana*; that of the egg-plant and sweet potato to *Nectria Ipomœæ*; and that of tobacco to *Botrytis longibranchiata*.

stem-sawfly (stem'sâ"flī), *n.* Any sawfly of the family *Cephidæ*. The larvæ of these insects live in the stems of plants and in the tender shoots of trees and bushes. *Cambridge Nat. Hist.*, V. 504.

stem-winding (stem'wīn"ding), *a.* Wound by turning the stem, and not by a key: said of a watch.

stenciling, stencilling (sten'sil-ing), *n.* 1. The act of using or the process of marking with a stencil; also, the markings, collectively, so produced.—2. Specifically, in *ceram.*, the act or process of reserving spaces or patterns on the ware in ground-laying. A stencil, composed of rose-pink water-color mixed with sugar or common molasses, is painted on the places which are to be reserved. When thoroughly dry, boiled linseed-oil is laid over the entire surface, and when this has become dry the ware is immersed in a tub of clear water. After being allowed to soak for a few moments the stenciling medium is easily removed by light touches of a soft tuft of cotton, leaving the reserved patterns clear and clean.

stenciling-press (sten'sil-ing-pres), *n.* A printing-press employing stencils instead of type. The stencil, perforated in minute holes arranged in the form of letters, is placed in the press and ink is pressed through the perforations, stenciling the letters on the paper: used in addressing-machines.

stencil-machine (sten'sil-ma̤-shēn"), *n.* A simple form of type-writer for cutting letters and figures in sheets of oiled paper to form stencils for marking packing-boxes. It consists of a revolving horizontal wheel of steel supported at the center, in a suitable frame, and carrying stamps for cutting out the stenciled letters and a lever for pressing each stamp through the paper as it is brought in turn, by the revolution of the wheel, under the lever. It has a graduated table to guide the paper as it passes under the stamp and to hold it firmly in place as each letter is stamped.

stender-dish (sten'dėr-dish), *n.* A shallow circular glass dish with an accurately ground glass cover, used in microscopic work.

> A simpler and more striking method is to float a quantity of these spores on the surface of water half filling a *stender dish*; then cover and shake vigorously for a moment. *Bot. Gazette*, Jan., 1904, p. 12.

stenellipsoid (sten-e-lip'soid), *n.* [Gr. *στενός*, narrow, + E. *ellipsoid*.] In *anthrop.*, a narrow cranium of ellipsoid form. *G. Sergi* (trans.), Var. of the Human Species, p. 51.

stenion (sten'i-o̤n), *n.*; pl. *stenia* (-a̤). [NL., < Gr. *στενός*, narrow.] In *craniom.*, one of the points on the alisphenoid at which the skull is narrowest. *Von Török.*

stenobathic (sten-ọ-bath'ik), *a.* [Gr. *στενός*, narrow, + *βάθος*, depth, + *-ic*.] Having a narrow range of depth: said of animals living in the water between definite limits of depth, as contrasted with ★*eurybathic* (which see).

> Similarly, in regard to depth, species have been classed as eurybathic and *stenobathic*, but, since increased depth practically means diminished temperature, these are probably merely expressions of the same fact in another form. *Encyc. Brit.*, XXXIII. 934.

stenobregmate (sten-ọ-breg'mạ̄t), *a.* [Gr. *στενός*, narrow, + *βρέγμα*, the front part of the head.] In *craniom.*, having a laterally compressed high vertex, like the Eskimo. *J. C. Pritchard.*

stenocardiac (sten-ọ-kär'di-ak), *a.* [Gr. *στενός*, narrow, + *καρδία*, heart, + *-ac*.] Relating to or affected with angina pectoris.

stenocephalic (sten-ọ-se-fal'ik), *a.* [Gr. *στενός*, narrow, + *κεφαλή*, head, + *-ic*.] 1. Same as *stenocephalous*.

> By dolichocephalic, chamaecephalic and *stenocephalic* crania within the race we understand those of individuals having their *B/L*, *H/L* and *B/H* indices below the racial mean; by brachycephalic, hypsicephalic, platycephalic crania, those of individuals having the corresponding indices above the mean.
> *C. D. Fawcett*, in Biometrika, Aug., 1902, p. 462.

2. Specifically, belonging to one of the divisions of cranial forms given by Aitken Meigs, and characterized by merocephalic form, with receding forehead, triangular crown, and flat occiput.

stenocephalus (sten-ọ-sef'a̤-lus), *n.*; pl. *stenocephali* (-lī). [NL., < Gr. *στενός*, narrow, + *κεφαλή*, head.] A narrow type of skull. *G. Sergi.*

stenochromy, *n.* The art of printing several colors at one impression: (4) by printing colors (from separately inked plates) successively on an elastic cylinder and then transferring the combined impressions upon the desired surface of paper or metal. See *Orloff* ★*process*.

stenocoriasis (sten"ọ-kọ-rī'a̤-sis), *n.* [NL., < Gr. *στενός*, narrow, + *κόρη*, pupil, + *-iasis*.] Narrowing of the pupil of the eye.

stenocranial (sten-ọ-krā'ni-a̤l), *a.* [Gr. *στενός*, narrow, + *κρανίον*, skull, + *-al*¹.] In *anthrop.*, characterized by or exhibiting a skull of less than medium width. *W. R. Macdonell*, in Biometrika, March–July, 1904, p. 240.

stenocrotaphy (sten-ọ-krot'a̤-fi), *n.* [Gr. *στενός*, narrow, + *κρόταφος*, temple, + *-y*³.] In *anthrop.*, narrowness of the temples, particularly constriction of the region of the temporal fossæ. *Jour. Anthrop. Inst.*, July–Dec., 1901, p. 258.

stenografer, stenografic, stenografy. Amended spellings of *stenographer*, etc.

stenometer (ste-nom'e-tėr), *n.* [Gr. *στενός*, narrow, + *μέτρον*, measure.] A distance-measurer consisting of a small telescope with a divided object-glass and a micrometer-screw for moving the half-lenses. At the distant point a rod is placed carrying two targets a known distance apart. The observation consists in making their images coincide by turning the screw and reading the micrometer-head, as in heliometer work.

> The rivers were meandered by using a prismatic compass for directions and a *stenometer* for distances.
> *Rep. U. S. Geol. Surv.*, 1900-01, p. 168.

stenostegnosis (sten"ọ-steg-nō'sis), *n.* [NL. in form, < Steno (? see def.) + Gr. *στέγνωσις*, obstruction; but apparently an error for **stenostenosis*.] Stricture of Steno's duct.

stenostenosis (sten"ọ-ste-nō'sis), *n.* [NL., < Gr. *στενός*, narrow, + *Steno* (Steno's duct) + *-osis*.] Same as ★*stenostegnosis*.

stenothermal (sten-ọ-thėr'mal), *a.* [Gr. *στενός*, narrow, + *θέρμη*, heat.] In *zoöl.*, incapable of enduring a great range of temperature; not found in places differing greatly in their temperature: contrasted with ★*eurythermal*.

> In relation to temperature the wide-ranging species are termed eurythermal, the limited, *stenothermal* (Moebius); the terms are useful to record a fact, but are not explanatory. *Encyc. Brit.*, XXXIII. 934.

stenothorax (sten-ọ-thō'raks), *n.* [NL., < Gr. *στενός*, narrow, + *θώραξ*, thorax.] A narrow chest.

stentando (stān-tän'dọ), *a.* [It., ppr. of *stantare*, toil, labor, be in want, < ML. **abstentare*, freq. of L. *abstinere*, abstain. See *abstain*.] In *music*, same as *ritenuto*, but with heavy emphasis on the tones.

step, *v. t.* 6. In *elect.*, to raise or lower (the voltage of an alternating-current circuit) by means of transformers: see *to* ★*step up* and *to* ★*step down*.

> The current is furnished to a sub-station, one compartment of which contains the company's transformers, etc., which *step* the pressure down to 2,000 volts and deliver the current to the 2,000-volt bus-bars in the municipality compartment.
> *Elect. World and Engin.*, Aug. 8, 1903, p. 230.

Stepped up, arranged in steps.

> The terraces being *stepped up* with revetments wherever the natural features of the ground had not availed, to maintain the earth in position.
> *S. B. Miles*, in Geog. Jour. (R. G. S.), XVIII. 480.

To step down, in *elect.*, to lower (the voltage of an alternating-current circuit) by transformation.—**To step up,** in *elect.*, to raise (the voltage of an alternating-current circuit) by transformation.

step, *n.* 13. In *mach.*: (*c*) The radial distance on a cone or step-pulley of a machine between the belt-face on one diameter and the belt-face on the next larger or smaller. Twice the step is the difference in the diameters of the successive belt-surfaces. In England also called the *fall*.—15. In *math.*, a change of place without rotation. *Clifford.*—**Fifth step,** in *acoustics*, the interval of the perfect fifth (vibration-ratio $\frac{3}{2}$) when used as a measure for precise tone-determination. See *third* ★*step*.—**In step,** in *elect.*, having the same frequency and continually in the same phase: said of two or more alternating currents or alternating-current generators or motors.—**Step-and-platform topography.** See ★*topography*.—**Step by step.** (*c*) One step after another; one step at a time; slowly and methodically; in *physics*, used to designate various methods of measurement, as in the determination of magnetization where the magnetizing force is increased discontinuously a step at a time and the induction is measured at each stage. Step-by-step methods are also frequently employed in the determination of the wave-form of alternating currents and in many other cases.—**Step-by-step method.** Same as *point-to-point* ★*method*.—**Step-by-step telegraph,** a method of telegraphic signaling in which the pointer of the receiving instrument moves discontinuously, step by step, over a dial marked with the various characters of the alphabet.—**Third step,** in *acoustics*, the interval of the natural major third (vibration-ratio $\frac{5}{4}$) when used as a measure for precise tone-determination: compare *fifth* ★*step*. In ancient musical theory it was supposed that only such intervals were correct as could be attained by the use of fifth steps, but it is now held that the use of third steps, alone or with fifth steps, is not only valid but necessary, since the consensus of musical opinion as early as the sixteenth century began to discard the tuning of certain intervals by the ancient system. Up to that time theorists had held, for instance, to the Pythagorean third, derived by taking four fifth steps upward from the starting-tone (discarding the octaves), with the vibration-ratio $\frac{81}{64}$. This was so dissonant that it was useful neither alone nor in the formation of the major triad. The adoption of the natural third step at once made feasible a better theory of the scale and of all triads. All the recognized intervals of modern theory (over 100 within the octave) are definable in fifth steps and third steps, or some combination of them.

step-bearing (step'bãr"ing), *n.* In *mach.*, a bearing which carries a vertical shaft; the bearing in which the weight of a vertical shaft is supported. *Sci. Amer. Sup.*, Aug. 13, 1904, p. 23925.

step-down (step'doun), *n.* and *a.* I. *n.* In *elect.*, a transformer or other device for lowering the potential in an electric circuit.

II. *a.* Serving to convert a current of higher voltage into one of lower voltage: said specifically of transformers and allied devices.—**Step-down transformer,** in *elect.*, a transformer with more turns in the primary than in the secondary coil so that the secondary voltage is lower than that of the primary circuit; a transformer used to step down from higher to lower voltage. *Science Abstracts*, VI., sec. B, p. 22.

Stephanian (stē-fā'ni-a̤n), *a.* and *n.* In *geol.*, noting the uppermost division of the Carboniferous system in Europe where it is developed as lagoon deposits: used in contrast to the *Uralian*, which notes the marine sedimentation of the same period.

Stephanoberycidæ (stef"a̤-nọ-be-ris'i-dē), *n. pl.* [NL., < *Stephanoberyx* (*-beryc-*) + *-idæ*.] A family of berycoid fishes containing only one genus and two species, found in deep seas.

Stephanoberyx (stef"a̤-nọ-ber'iks), *n.* [NL., < Gr. *στέφανος*, a crown, + NL. *Beryx*.] A genus of berycoid fishes of the family *Stephanoberycidæ*.

Stephanocrinus (stef-a̤-nok'ri-nus), *n.* [NL., < Gr. *στέφανος*, a crown, + *κρίνον*, a lily. See *crinoid*.] The only genus of the crinoid family *Stephanocrinidæ*, an aberrant representative of the order *Larviformia*, in which the calyx is small and compact and consists of three basal, five radial, and five interradial plates, the radials being deeply forked, very short biserial arms arising from them. It occurs in the Silurian rocks of America and Bohemia.

stephanoscope (stef'a̤-nọ-skōp), *n.* [Gr. *στέφανος*, a crown, + *σκοπεῖν*, view.] An instrument devised by Dove (1847) for demonstrating the formation by interference of the small coronal rings of color seen around any source of light. It consists essentially of a series of close concentric circles scratched by a diamond point on glass. Oertling substituted a rectangular network of straight lines and gave the plate a rapid rotation in its own plane.

stephanozygomatic (stef"a̤-nō-zī-gọ-mat'ik), *a.* [*stephan*(*ion*) + *zygomatic*.] In *craniom.*, relating to the stephanion and the zygomatic arches. *Amer. Anthropologist*, Jan.–March, 1901, p. 38.—**Stephanozygomatic index.** See ★*index*.

step-log (step'log), *n.* A log or piece of timber cut roughly into steps so as to produce a kind of ladder. Evidences of its use are found among the remains of primitive man.

step-motion (step'mō-sho̤n), *n.* Discontinuous motion by a succession of stages or steps, as of a pointer around a dial in the dial telegraph or of the type-wheel in certain systems of printing-telegraphy, or of the sliding-contact devices in certain automatic controllers for electric machinery.

steppage (step'āj), *n.* The act of stepping.—**Steppage gait.** Same as *stepping* ★*gait*.

steppe, *n.* 2. In *phytogeog.*, xerophilous grassland. This formation as met with at high elevations is distinguished as *alpine steppe*. *A. F. W. Schimper* (trans.), Plant-Geog., p. 162.—**Steppe disease.** See ★*disease*.

steppe-lake (step'lāk), *n.* A shallow temporary lake on a subarid plain, such as those which occur on steppes.

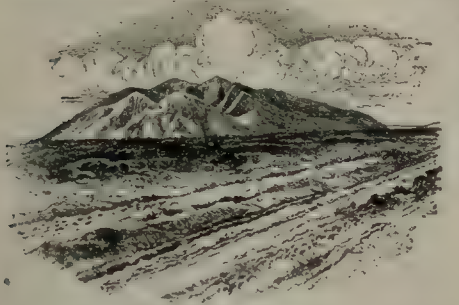
> Lake Zyma, the only lake of any size in Morocco, was carefully examined. It is a typical *steppe-lake*, becoming in summer little more than a sheet of salt.
> *Geog. Jour.* (R. G. S.), XVIII. 92.

stepping-line (step'ing-līn), *n.* Same as *bearding-line*.

step-pyramid (step′pir″a̤-mid), *n.* Same as *stepped pyramid* (which see, under *stepped*).

The ziggurat or *step-pyramid*, which forms so marked a feature in Babylonian worship.
Athenæum, Sept. 19, 1903, p. 387.

steptoe (step′tō), *n.* [Origin obscure.] A hill or mountain surrounded and isolated by a large flow or plain of lava. [Northwestern U. S.]



Steptoe, Big Butte, Idaho.

The border of the plains contours around the enclosing mountains, converting valleys into bays, spurs into headlands and outlying knobs into '*steptoes.*' . . . The most remarkable examples of the latter forms are two dissected rhyolitic volcanoes, of which the highest, Big Butte, rises 2,350 feet over the plains. *Science*, April 24, 1903, p. 672.

step-up (step′up), *n.* and *a.* **I.** *n.* In *elect.*, a transformer or other device for increasing the voltage in an electric circuit. *Elect. World and Engin.*, Nov. 21, 1903, p. 864.

II. *a.* Serving to convert a current of lower voltage into one of higher voltage: said specifically of transformers and allied devices. *F. B. Crocker*, Elect. Lighting, II. 149.—**Step-up transformer**, in *elect.*, a transformer the secondary coil of which contains more turns than the primary, so that the secondary voltage is higher than that of the primary circuit; a transformer used to step up from lower to higher voltage. *Trans. Amer. Inst. Elect. Engin.*, 1901, p. 125.

step-way (step′wā), *n.* A flight of steps; a stairway.

At Cnossus we have traces of a southern *stepway* and entrance.
A. J. Evans, in Jour. Roy. Inst. of Brit. Architects, [Dec. 20, 1902, p. 104.

step-wise (step′wīz), *a.* In the manner of steps; by regular ascent.

The balustrade of its upper flight rising *step-wise*, and showing at intervals the sockets of its colonnade.
A. J. Evans, in Jour. Roy. Inst. of Brit. Architects, [Dec. 20, 1902, p. 101.

steradian (stẹ̄-rā′di-a̤n), *n.* [Also *stereradian*, prop. **stereoradian*, < Gr. *στερεός*, solid, + L. *radius*, radius, + *-an.*] A unit of solid angular measure; the solid angle subtended at the center by that part of a sphere which is equal to the square of its radius, hence by the unit surface on a sphere of unit radius. *Halsted.*

Stercoral abscess, an abscess communicating with the intestine and containing pus and fecal matter.—**Stercoral ulcer**, an ulcer of the intestinal mucous membrane due to the pressure of hard lumps of fecal matter.

stercorin (stėr′kọ̄-rin), *n.* [L. *stercus* (*-or-*), dung, + *-in*2.] An organic substance obtained from the feces: probably an impure form of cholesterin.

stercorolith (stėr′kọ̄-rọ̄-lith), *n.* [L. *stercus*(*-or-*), dung, + Gr. *λίθος*, stone.] An intestinal calculus formed about a center of fecal matter.

steregon (ster′ẹ̄-gon), *n.* [Prop. **stereogon*, < Gr. *στερε(ός)*, solid, + *γωνία*, an angle.] In *geom.*, the whole amount of solid angle around a point in space.

stereo. An abbreviation (*a*) of *stereotype*; (*b*) of *stereotyping*.

stereo-agnosis (ster″ẹ̄-ọ̄-ag-nō′sis), *n.* [Gr. *στερεό*, solid, + *ἀ-* priv. + *γνῶσις*, knowledge. See *agnostic.*] In *mental pathol.*, the inability to apprehend the form of objects by touch, although the peripheral tactual sensitivity is unimpaired or but little reduced. See ★*stereognostic*.

stereobinocular (ster″ẹ̄-ọ̄-bī-nok′ụ̄-lä̤r, -bin-ok′ū-lä̤r), *a.* [Gr. *στερεός*, solid, + E. *binocular.*] Of or pertaining to that form of binocular field-glass in which the interobjective is greater than the interocular distance, thus increasing the stereoscopic effect above that of normal vision.

stereocentric (ster″ẹ̄-ọ̄-sen′trik), *a.* [Gr. *στερεός*, solid, + *κέντρον*, center, + *-ic.*] The term applied, in organic chemistry, to a formula which has been suggested for benzene. It purports to represent the arrangement in space of the carbon and hydrogen atoms in the molecule, and shows one bond of each carbon atom to be directed toward a common center.

A discussion of the various possible space formulæ of benzene and a reply to Graebe's objections to the *stereocentric* representation. *Nature*, July 3, 1902, p. 238.

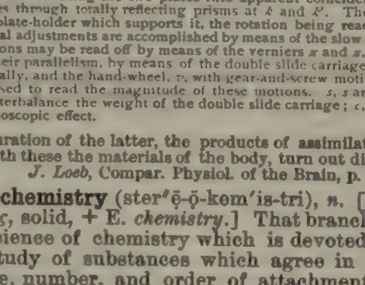
stereochemical (ster″ẹ̄-ọ̄-kem′i-ka̤l), *a.* [Gr. *στερεός*, solid, + E. *chemical.*] Of or pertaining to stereochemistry, or the arrangement of atoms in space.

For the inheritance of form the conditions are not very different. The egg is not the bearer of the form of the full-grown animal, but of certain chemical substances, especially of ferments. According to the *stereochemical* configuration of the latter, the products of assimilation, and with these the materials of the body, turn out differently. *J. Loeb*, Compar. Physiol. of the Brain, p. 202.

stereochemistry (ster″ẹ̄-ọ̄-kem′is-tri), *n.* [Gr. *στερεός*, solid, + E. *chemistry.*] That branch of the science of chemistry which is devoted to the study of substances which agree in the nature, number, and order of attachment of the atoms constituting the molecule, but are believed to differ in the relative position of these atoms in space, as assumed by a hypothesis put forward by Van't Hoff and Le Bel; that branch of chemistry which deals with the relative arrangement in space of the atoms or groups constituting a molecule.

Hardly a decade had elapsed since the general admission of the doctrine of valency when a fundamental deepening of the same was announced, which our science owes to two savants, working independently of each other—to Le Bel and van't Hoff. These chemists, considering those substances which turn the plane of polarization of light, arrived at views which soon led to a result until then thought to be out of reach, a conception of the aggregation of the atoms within the molecules in space. Thus a field of study was created which van't Hoff called "la chimie dans l'espace" and which we now call *Stereochemistry*. *V. Meyer*, in Smithsonian Rep., 1890, p. 366.

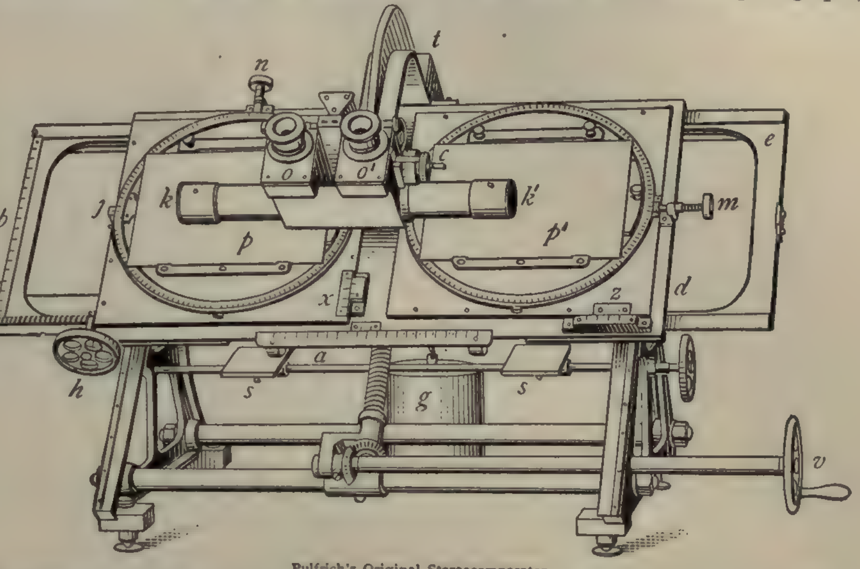
stereochromoscope (ster″ẹ̄-ọ̄-krō′mọ̄-skōp), *n.* [Gr. *στερεός*, solid, + E. *chromoscope.*] A form of stereoscope by which the reproductions are seen stereoscopically in their natural colors.



Stereochromoscope.

Two stereoscopic images, placed at *Ss*, axially to the oculars, are viewed by means of light passing through them, the translucent screens at *Ee*, and the platinum mirror *M*. One screen is red, the other blue, and the positives are obtained from negatives secured by the use of appropriate color-screens. A third picture, *S′s′*, is placed above a green screen *E′e′*, and the light reflected from the mirror *CD* passes through the screen and picture, but is reflected from the mirror *M*. The two images *Ss*, in combining, give the sensation of one solid image, and as the images are seen against the colored screens placed at *Ee* and *E′e′*, the combination of colors takes place at the same time.

stereocomparator (ster″ẹ̄-ọ̄-kom′pā-rā-to̤r), *n.* [Gr. *στερεός*, solid, + NL. *comparator.*] **1.** An instrument, invented by Pulfrich in 1901, which utilizes the principle of the stereoscope in the comparison of pairs of photographs, as of a given stellar field, or of the sun, made by the same camera with a short interval of time between them. The stereocomparator optically superposes the two plates, and the images all lie apparently upon an even surface; but any object which has moved between the two exposures becomes at once conspicuous by apparently lying before or behind that surface.



Pulfrich's Original Stereocomparator.

The plates, *p* and *p′*, which are to be compared, are placed on the double slide carriage, *de*, and viewed with a Helmholz reflecting stereoscope which is supported by the bracket *t*. The stereoscope may consist simply of two sets of mirrors which by reflection bring the two plates into apparent coincidence, or it may consist of broken binoculars, *o* and *o′*, which view the plates through totally reflecting prisms at *k* and *k′*. The plate *p* is adjusted to agree in position-angle with *p′* by a rotation of the plate-holder which supports it, the rotation being read off by means of the divided circle and index *j*. The vertical and lateral adjustments are accomplished by means of the slow motions *m* and *n*, *m* moving *p′* laterally, *n* moving *p* vertically. These motions may be read off by means of the verniers *x* and *z*. The adjusted plate pairs may be shifted about without a disturbance of their parallelism, by means of the double slide carriage. The hand-wheel, *h*, with rack-and-pinion motion, moves the plates laterally, and the hand-wheel, *v*, with gear-and-screw motion, moves them up and down. The scales with verniers, *a* and *b*, may be used to read the magnitude of these motions. *s*, *s* are mirrors for reflecting light through the plates; *g*, a weight used to counterbalance the weight of the double slide carriage; *c*, a micrometer which may be used to measure the magnitude of any stereoscopic effect.

In No. 5, vol. xii., of Popular Astronomy, there appears a translation of a paper communicated to the Astronomical Society of Belgium by Dr. G. van Biesbroeck, in which the author traces the evolution of, and describes, the *stereo-comparator* invented by Dr. Pulfrich.
Nature, June 2, 1904, p. 110.

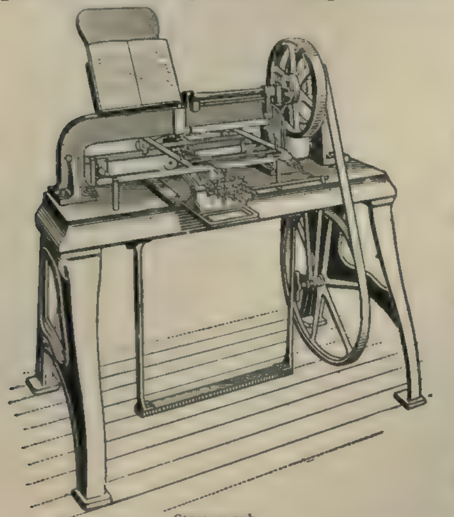
2. A stereoscope of greatly extended interobjective distance by means of which it is possible to make exact measurements of the distances of objects pictured: used in topographical surveying.

stereognosis (ster″ẹ̄-og-nō′sis), *n.* [NL., < Gr. *στερεός*, solid, + *γνῶσις*, knowledge, < *γνῶναι*, know.] In *psychol.*, apprehension by touch of the form or corporeality of objects. See ★*stereognostic*.

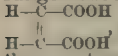
stereognostic (ster″ẹ̄-og-nos′tik), *a.* [Gr. *στερεός*, solid, + *γνωστικός*, < *γνῶναι*, know. See *gnostic.*] In *psychol.*, pertaining to the apprehension of form or of the corporeality of objects by touch: as, *stereognostic* perception, *stereognostic* memory. The term was introduced by H. Hoffmann in 1883. *Amer. Jour. Psychol.*, XII. 268.

stereogram, *n.*—**Parallax stereogram**, in *photog.*, a positive transparency, invented by F. E. Ives, which consists of narrow stripes alternately derived from the two halves of a stereogram. In front of this composite positive, but not quite in contact, there is fixed a line-screen which is so adjusted that each eye sees its appropriate set of stripes. *Wall*, Dict. of Photog., p. 483.

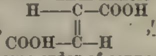
stereograph, *n.* **2.** A machine for making the embossed or raised points used in New York point-printing for the blind upon sheet-metal plates, the plates being designed for use in an embossing-press for transferring the points (characters, letters, etc.) to paper. It is an adaptation of the kaleidograph and differs from it in employing a fly-wheel, operated by a foot-pedal or other power, to operate the embossing mechanism, the selection of the points and their position being controlled by the operator by means of the keyboard. See ★*kleidograph* and ★*point-printing.*—**3.** In *craniom.*, an instrument for drawing orthogonal projections of skulls. *Topinard*, Anthrop., p. 268.—**Broca's stereograph**, an apparatus devised by Broca for making outline drawings of skulls.


Stereograph.

stereo-isomer (ster″ẹ̄-ọ̄-ī′sọ̄-mėr), *n.* [Gr. στερεός, solid, + ἴσος, equal, + μέρος, part.] An isomer which differs from the other of the two isomeric bodies, not by a difference in the order of connection of the atoms of the two isomers, but by a difference in the arrangement in space of the two. Thus maleic acid,


$$\begin{matrix}\mathrm{H{-}C{-}COOH}\\ \Vert\\ \mathrm{H{-}C{-}COOH}\end{matrix}$$

, and fumaric acid,


$$\begin{matrix}\mathrm{H{-}C{-}COOH}\\ \Vert\\ \mathrm{COOH{-}C{-}H}\end{matrix}$$

, have the same structure, that is, the same order of connection of the atoms, but in one two hydrogen atoms are believed to be adjacent in space, while in the other a carboxyl group is adjacent to a hydrogen atom: these bodies are accordingly called stereo-isomers.

Work on these bodies was chiefly directed towards the preparation of *stereoisomers* and the effecting of the Beckmann rearrangement. On the basis of Hantzsch and Werner's theory of stereoisomerism (syn and anti) produced by a doubly-linked nitrogen atom, as in the oximes, the halogen imido ethers might exist in the two stereoisomeric forms.
Amer. Chem. Jour., April, 1903, p. 294.

stereo-isomeric (ster″ẹ̄-ọ̄-ī-sọ̄-mer′ik), *a.* Pertaining to the isomerism of chemical compounds due to differences in the relative arrangement, in the molecule, of its constituent atoms or groups. See ★*stereo-isomer. Nature*, July 7, 1904, p. 239.

stereo-isomeride (ster″ẹ̄-ọ̄-ī-som′ẹ-rid), *n.* [*stereo-isomer* + *-ide.*] Same as ★*stereo-isomer. Nature*, July 7, 1904, p. 239.

stereo-isomerism (ster″ē-ọ̄-ī-som′ẹ-rizm), *n.* [*stereo-isomer* + *-ism.*] That kind of isomerism which is produced, not by a difference of order of connection between the atoms of the molecule, but by a difference in their arrangement in space: sometimes called *geometrical isomerism.* See ★*stereo-isomer.*

The succeeding subsection deals with the stereoisomeric carbon-nitrogen compounds, such as the oximes, and is followed by a subsection on the substances that owe their *stereoisomerism* to the configuration of nitrogen atoms. *Nature*, Aug. 11, 1904, p. 341.

stereom (ster′ẹ̄-om), *n.* Same as ★*stereome*, 2.

stereome, *n.* **2.** The hard tissue of the body of invertebrates. Also *stereom.*

Among wants long felt, at least by animal morphologists, is some word that shall express for Invertebrata the idea that the word bone expresses for Vertebrata. . . . Driven back on cumbrous periphrases, I therefore venture to suggest the adoption of the word *Stereom* (*στερέωμα*, that which has been made solid). This word was used by Aristotle ("De Anim. Part.," ii. 9) for the hard as opposed to the soft tissues of the body.
F. A. Bathe, in Nature, Feb. 12, 1891, p. 345.

Originally the calcareous substance of the plates (*stereom*) was pierced by irregular canals, more or less vertical, and containing strands of the soft tissue (stroma) that deposited the *stereom*, as well as spaces filled with fluid. *Encyc. Brit.*, XXVII. 622.

stereomeric (ster″ẹ̄-ọ̄-mer′ik), *a.* Same as ★*stereo-isomeric. Rev. Amer. Chem. Research*, VIII. 309.

Stereometric product. See ★*product.*

stereomicrometer (ster″ẹ̄-ọ̄-mī-krom′e-tėr), *n.* [Gr. στερεός, solid, + E. *micrometer.*] A device for the precise measurement of stereographs.

stereophantascope (ster″ẹ̄-ọ̄-fan′tạ-skōp), *n.* [Gr. στερεός, solid, + φάντα(σμα), appearance, + σκοπεῖν, view.] A binocular form of bioscope or kinetoscope in which a series of stereoscopic views exhibiting the successive phases of a moving scene are shown, giving the semblance of motion together with the effect of perspective. *J. Marey*, in Smithsonian Rep., 1901, p. 318, note.

stereophoroscope (ster″ẹ̄-ọ̄-fōr′ọ̄-skōp), *n.* [Gr. στερεός, solid, + φέρειν (φορ-), bear, + σκοπεῖν, view.] A form of phenakistoscope in which stereoscopic views are used.

stereophotograph (ster″ẹ̄-ọ̄-fō′tọ̄-gråf), *n.* [Gr. στερεός, solid, + E. *photograph.*] A product of stereophotography; a stereoscopic photograph.

stereophotographic (ster″ẹ̄-ọ̄-fō-tọ̄-graf′ik), *a.* Of or pertaining to stereophotography. *Geog. Jour.* (R. G. S.), May, 1908, p. 537.—**Stereophotographic surveying**, a method of surveying or, more specifically, of topography, in which various points in the region to be mapped are located by taking photographs from stations of known position with a stereocamera of great interobjective distance, and locating the points to be determined on these photographs with a stereocomparator.

stereophotography (ster″ē-ọ̄-fọ̄-tog′rạ-fi), *n.* [Gr. στερεός, solid, + E. *photography.*] Stereoscopic photography; the making of stereoscopic pictures by means of photography, using either a stereoscopic camera or a common camera; in the latter case two pictures are taken from points of view which correspond in distance apart to the space between the eyes. *Nature*, Oct. 8, 1903, p. 546.

stereophotomicrograph (ster″ẹ̄-ọ̄-fō″tō-mī-krọ̄-gråf), *n.* [Gr. στερεός, solid, + E. *photomicrograph.*] A photograph of microscopic objects taken with a stereoscopic camera. *Nature*, Nov. 14, 1907, p. 46.

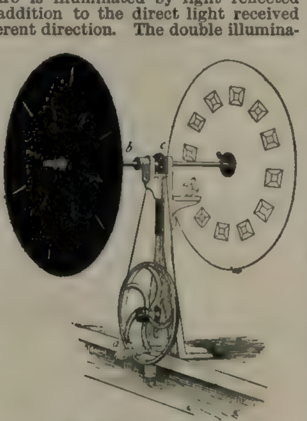
stereoplanigraph (ster″ẹ̄-ọ̄-plan′i-gråf), *n.* [Gr. στερεός, solid, + E. *planigraph.*] A form of stereocomparator by means of which the trigonometrical data needed in the survey of a region may be obtained from the measurement of stereoscopic photographs.

stereoplanula (ster″ẹ̄-ọ̄-plan′ū-lạ̈), *n.*; pl. *stereoplanulæ* (-lē). [NL., < Gr. στερεός, solid, + NL. *planula.*] A solid planula. *Stand. Dict.*

stereoplasm, *n.* **3.** The denser or more solid portion of the protoplasm of the cell, as distinguished from the more fluid portion, or hygroplasm. *Nägeli*, 1884.

Stereornithes (ster-ẹ̄-ôr′ni-thēz), *n. pl.* [NL., < Gr. στερεός, solid, + ὄρνιθες, pl. of ὄρνις, bird.] A group of extinct birds, including some of gigantic size, the remains of which are found in the Santa Cruz formation, Miocene, of Patagonia. They have a large head; a high, compressed, and powerful beak; and a desmognathous palate; and are distantly related to the herons and the *Seriema. Moreno and Mercerat*, 1891.

stereoscope, *n.* **2.** An instrument resembling a catheter with a bell-like extremity, used in the diagnosis of stone in the bladder or of bullets and other foreign substances in the body.—**Achromatic mirror stereoscope**, a stereoscope in which the picture is illuminated by light reflected from a mirror in addition to the direct light received upon it from a different direction. The double illumination imparts a proportionate brilliancy to the photographs and to the perfection of the stereoscopic slide. *E. L. Wilson*, Cyclopædic Photog., p. 20.—**Münsterberg's stereoscope**, in *exper. psychol.*, a stroboscopic device for producing the stereoscopic effect. *Psychol. Rev.*, Jan., 1894, p. 56.



Münsterberg's Stereoscope.

a, handle for rotation of the two disks, *b* and *c*; *b*, disk furnished with slits (for the two eyes) through which the disk *c* is observed; *c*, disk furnished with alternating right-eye and left-eye stereoscopic diagrams.

stereoscopism (ster′ẹ̄-ọ̄-skō-pizm), *n.* [*stereoscop(e)* + *-ism.*] The impression or effect of solidity obtained by binocular vision; stereoscopic effect.

Stereospondyli (ster″ẹ̄-ọ̄-spon′di-lī), *n. pl.* [NL., < Gr. στερεός, solid, + σπόνδυλος, a vertebra.] A suborder of the stegocephalous *Amphibia* having completely ossified vertebræ sometimes perforated for the passage of the notochord, and teeth highly complicated by infolding of the dentine as in the *Labyrinthodontidæ*, which see. See also ★*Mastodonsaurus.*

stereospondylous (ster″ẹ̄-ọ̄-spon′di-lus), *a.* Pertaining to or having the characters of the *Stereospondyli.*

stereostatics (ster″ẹ̄-ọ̄-stat′iks), *n.* [Gr. στερεός, solid, + E. *statics.*] The science of solid bodies in equilibrium.

stereotaxis (ster″ẹ̄-ọ̄-tak′sis), *n.* [NL., < Gr. στερεός, solid, + τάξις, disposition.] Same as ★*thigmotaxis.*

stereotelemeter (ster″ẹ̄-ō-tẹ̄-lem′e-tėr), *n.* [Gr. στερεός, solid, + τῆλε, afar, + μέτρον, measure.] A stereotelescope of great interobjective distance and provided with eyepiece scales or other devices for the determination of the distances between objects in the field of view.

stereotelescope (ster″ẹ̄-ọ̄-tel′e-skōp), *n.* [Gr. στερεός, solid, + E. *telescope.*] A binocular telescope the interobjective distance of which is several times the interocular distance. In the *stereotelescope*, the optical system for the left eye of which is shown in Fig. 1, the axis of the objective *o* is at right angles to that of the eyepiece *e*. The beam of light from the object to be observed is totally reflected in the right-angled prism *p*, passes through the objective, and suffers three successive total reflections in the prism *p′*, after which it passes through the eyepiece to the eye of the observer. A similar and symmetrically placed system serves the right eye. The general form of the instrument is shown in Fig. 2. By rotating the two arms of the telescope about the joint *j* the interobjective distance *oo* may be varied (as shown in Fig. 3) without changing the interocular distance *ee*. The stereotelescope is frequently employed in military operations as a range-finder, in which case scales are fitted to the eyepieces by the stereoscopical combination of which, in looking through the instrument, the distance of any object in the field of view can be accurately determined.

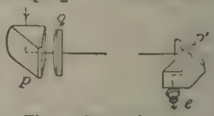


Fig. 1. Stereotelescope.

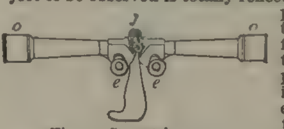


Fig. 2. Stereotelescope.

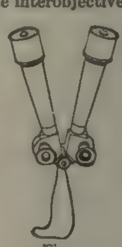


Fig. 3. Stereotelescope.

stereotomist (ster-ẹ̄-ot′ọ̄-mist), *n.* [*stereotom(y)* + *-ist.*] One who is versed in stereotomy or the cutting of solids; specifically, one who cuts building-stones; a stone-cutter.

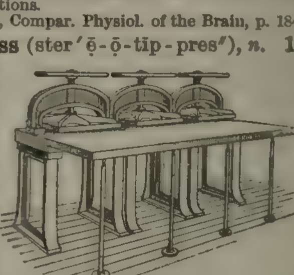
Gothic architects were wonderfully skilful *stereotomists.*
M. G. Van Rensselaer, Handbook of Eng. Cathedrals, p. 32.

stereotropic (ster″ē-ọ̄-trop′ik), *a.* [Gr. στερεός, solid, + τρόπος, a turning, + *-ic.*] Pertaining to or exhibiting stereotropism or growth or movement in relation to the point of contact with a foreign body. See ★*stereotropism.*

stereotropism (ster-ẹ̄-ot′rọ̄-pizm), *n.* [Gr. στερεός, solid, + τρόπος, a turning, + *-ism.*] The growth or movement of an organism in relation to the point of contact with a foreign body. *Positive stereotropism* is growth or movement toward and *negative stereotropism* growth away from such a point of contact.

Many plants and animals are forced to orient their bodies in a certain way toward solid bodies with which they come in contact. I have given this kind of irritability the name *stereotropism.* Like the positive and negative heliotropism and geotropism, there is also a positive and negative *stereotropism*, and there are also stereotropic curvations.
J. Loeb, Compar. Physiol. of the Brain, p. 184.

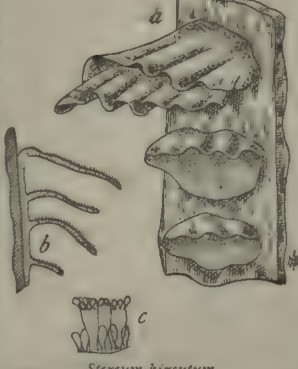
stereotype-press (ster′ẹ̄-ọ̄-tīp-pres″), *n.* **1.** A screw-press with a flat bed and a raising and lowering platen for drying the matrix on the form while under pressure. Also called *drying-table*, *drying-press*, and *matrix-drying press.*—**2.** A newspaper press which prints from stereotype plates.


Stereotype Matrix-drying Press.

stereotypy, *n.* 2. Persistence, in the insane, of a single idea or trend of thought. *Buck*, Med. Handbook, V. 100.

stere-radian, *n.* See ⋆*steradian.*

Stereum (stē′rẹ-um), *n.* [NL. (Persoon, 1796), ‹ Gr. στερεός, solid, hard, firm: referring to the texture of the plants.] A large genus of hymenomycetous fungi of the family *Thelephoraceæ*, having the pileus usually coriaceous or woody, and the hymenium smooth. The plants are either resupinate and adnate or pileate. About 250 species have been described. They are widely distributed and grow on dead wood. *S. hirsutum* is a common species, usually saprophytic, but occasionally acting as a wound-parasite.



Stereum hirsutum.

a, several pilei of the fungus; *b*, sections through the same; *c*, basidia bearing four spores each.

steric (ster′ik), *a.* [Irreg. ‹ Gr. στερεός, solid, + *-ic.*] Pertaining to an arrangement in space: applied especially to the arrangement of atoms in the molecule of a compound.

> Stereochemical formulas are confessedly more than reaction formulas, and the *steric* conception of the so-called double and triple union asserts that these actually exist in the sense the words imply, and are not merely names for unknown conditions.
>
> *H. N. Stokes*, in Smithsonian Rep., 1898, p. 301.

Steric hindrance, in *organic chem.*, the hindrance of a reaction owing to the arrangement in space of the atoms of the molecules of one of the reacting compounds. *Nature*, Oct. 17, 1907, p. 609.

steril, *a.* A simplified and former spelling of *sterile.*

Sterile clinker. See ⋆*clinker.*

sterilizability (ster″il-ī-za-bil′ị-ti), *n.* The quality of being sterilizable; capacity for being sterilized.

> Simplicity, cheapness, and easy *sterilisability* are claimed for the syringe; also that it can be used with one hand, and can be laid down when full or even inverted. *Jour. Roy. Micros. Soc.*, Oct., 1903, p. 680.

sterilizable (ster′i-lī-za̤-bl), *a.* [*steriliz*(*e*) + *-able.*] Capable of being sterilized.

> Some of the earliest electric sigmoidoscopes were not *sterilisable*, as the electric light and connexions were an integral part of the tube. *Lancet*, June 25, 1904, p. 1782.

sterilizer, *n.* 2. A washing-machine having a steam-tight vessel in which infected fabrics can be washed in boiling water, with or without disinfecting liquids, and through which live steam may be passed to kill all germs. It is also fitted with ventilating-pipes for carrying away odors.—**Bacteriological sterilizer**, a double-walled Russia iron oven the interior temperature of which can be raised, by the aid of gas-flames, high enough to destroy bacterial organisms.—**Maiche's sterilizer**, an apparatus for sterilizing water. The water is heated to a temperature high enough to destroy germ life, and is then cooled on its way to the receiving-tank. *Jour. Trop. Med.*, June 15, 1903, p. 192.—**Steam-sterilizer**, specifically, a jacketed vessel for sterilizing culture-vessels or surgical instruments with steam: used in bacteriological laboratories and hospitals.

stern², *n.*—**Elliptical stern**, a form of stern in which the upper part above the knuckle of the stern is approximately an elliptical cone enlarging upward from the knuckle, and the surface below the knuckle is a continuation of the forms of the ship's bottom. This is the form used on the majority of modern merchant ships.—**Round stern**, a form of stern in which the upper part aft is given a rounded form without flat surfaces.—**Square stern.** Specifically, a form of stern in which the upper part of the vessel aft is ended in a large flat surface nearly vertical and square to the central longitudinal plane. See cut showing square-stern under *sheer-hulk.*—**Torpedo-boat stern**, a form of stern in which the under-water surface near the stern is broad and nearly flat, ending in a knuckle at about the water-line. Above this knuckle the surface is of an approximately conical shape, the conical surface being inclined inward and upward. The horizontal sections of this part are sometimes elliptical and sometimes ogival. Sometimes called *torpedo-stern*, and much used on torpedo-boats and other small high-speed boats.

> The boat is thirty-one feet six inches long over all, and is built with the Lozier *torpedo stern*; on account of being designed for use in the shallow waters of the Florida coast, the draft is but twenty-four inches. The beam is nine feet, rather more than the average, but it makes the boat unusually roomy for its length.
>
> *Amer. Inventor*, March 1, 1904, p. 104.

Sternal callosity, cartilage. See ⋆*callosity*, ⋆*cartilage.*

Sternaspidæ (stėr-nas′pi-dē), *n. pl.* [NL., ‹ *Sternasp*(*is*) + *-idæ.*] A family of polychætous annelids, represented by the single genus *Sternaspis*, formerly classed among the gephyreans.

sternebra (stėr′nẹ-bra̤), *n.* [NL.] See *sterneber.*

stern-frame, *n.* Specifically, in *iron ship-building*, the frame at the stern of a screw-steamer, in the aperture of which is placed the screw-propeller. It includes the following parts: the after, outer, or rudder-post; the inner, body, propeller, or stern-post; the arch or bridge-piece uniting them above; and the sole-piece uniting them at the bottom. The frame is made of a heavy iron or steel forging, the parts being welded or scarfed and riveted, or, more frequently in modern practice, it is a heavy steel casting in one or two parts. The screw-shaft passes through the boss of the propeller-post, and the rudder is hung to the rudder-post. The sole-piece forms a prolongation of the keel to which it is riveted. Also called *propeller-frame.*

Sternias (stėr′ni-a̤s), *n.* [NL., ‹ Gr. στέρνον, the breast, the chest.] A genus of cottoid fishes found only in the northern Pacific.

stern-line (stėrn′līn), *n.* A mooring line run over the stern of a vessel.

stern-mat (stėrn′mat), *n.* A mat hung over the stern of a ship to take chafing.

sternodynia (stėr-nọ-din′i-a̤), *n.* [NL., ‹ Gr. στέρνον, the breast, + ὀδύνη, pain.] Same as *sternalgia.*

stern-tube (stėrn′tūb), *n.* A tube or pipe in the shell of a ship at the stern, below the water-line, through which passes the tail-shaft or aftermost section of the propeller-shaft.

stern-walk (stėrn′wâk), *n.* A stern gallery such as was built on old line-of-battle ships.

stern-wave (stėrn′wāv), *n.* One of the waves set up at the stern of a vessel in motion of the same general character but of less pronounced form than the ⋆bow-wave (which see). Besides the diagonal waves diverging from the stern, there is a series of transverse waves, of gradually diminishing size, following the vessel and traveling at the same speed.

> That is to say, "the height of the waves made, and the amount of the resistance caused will be at the maximum or minimum according as the crests of the bow-wave series coincide with the crests or troughs of the natural *stern-wave* series."
>
> *White*, Manual of Naval Arch., p. 461.

Sterrholophus (ste-rol′ọ-fus), *n.* [Gr. στερρός, stiff, + λόφος, a crest.] Same as ⋆*Ceratops* (which see).

steso (stā′sọ), *a.* [It., pp. of *stendere*, ‹ L. *extendere*, stretch out, extend: see *extend.*] In *music*, extended; slow: as, *steso moto*, with a slow movement.

stetefeldtite (stet′ẹ-fel-tīt), *n.* [Named after C. *Stetefeldt*, a mining engineer.] A mineral substance of uncertain homogeneity, consisting chiefly of the oxid of antimony with that of copper and that of iron, and water: found in Nevada.

stethal (stē′tha̤l), *n.* An old name for *octadecyl alcohol.*

stethendoscope (ste-then′dọ-skōp), *n.* [Gr. στῆθος, the breast, + ἔνδον, within, + σκοπεῖν, view.] A modified form of fluoroscope employed in examination of the chest by means of X-rays.

stethogoniometer (steth″ọ-gō-ni-om′e-tėr), *n.* [Gr. στῆθος, the breast, + E. *goniometer.*] A device employed in recording the configuration of the chest.

stethorrheuma (steth-ọ-rū′ma̤), *n.* [NL., ‹ στῆθος, breast, + ῥεῦμα, rheum.] Same as *pleurodynia.*

stethospasm (steth′ọ-spazm), *n.* [Gr. στῆθος, the breast, + σπασμός, contraction.] Irregular and involuntary contraction of the chest muscles.

stethylic (ste-thil′ik), *a.* [*steth*(*al*) + *-yl* + *-ic.*] Pertaining to a methane derivative with 15 carbon atoms in the molecule. Also *octadecylic.*—**Stethylic alcohol**, a colorless compound, $C_{18}H_{37}OH$, of the methane series, contained, in combination with acids, in spermaceti. It crystallizes in large silvery lustrous plates, melts at 59° C., and boils at 210.5° C. under 15 millimeters pressure.

stew¹, *n.*—**Brunswick stew**, a stew of squirrels (sometimes chicken) and vegetables.

Stewartia (stṳ̄-är′ti-a̤), *n.* [NL. (Linnæus, proposed in 1746, established in 1753), named in honor of John *Stuart* (1713–92), third Earl of Bute, an English statesman and patron of botany.] A genus of plants belonging to the family *Theaceæ.* See *Stuartia.*

stew-meat (stū′mēt), *n.* A butchers' term for beef cut into small pieces from different parts, lean meat and a small proportion of fat together, and used in making beef stew.

Sthenic emotion. See ⋆*emotion.*

stibianite (stib′i-a̤-nīt), *n.* [*stibi*(*um*) + *-an* + *-ite*².] A hydrated oxid of antimony from Australia, derived from the alteration of stibnite.

stibide (stib′īd), *n.* [*stib*(*ium*) + *-ide.*] A compound of antimony with a more electropositive element or radical.

stibine (stib′in), *n.* [*stib*(*ium*) + *-ine*².] 1. Antimoniureted hydrogen (SbH_3), a colorless gas of disagreeable odor, poisonous if respired, and burning in the air with a bluish flame: it deposits metallic antimony in spots on a piece of cold porcelain pressed down upon the flame. The gas also deposits the metal by passage through a glass tube heated at one point.—2. A general term for any compound of antimony with an electropositive or alkyl radical, as triethyl-stibine, $Sb(C_2H_5)_3$.

stibiodomeykite (stib″i-ọ-dọ-mā′kīt), *n.* [*stibium* + *domeykite.*] A variety of domeykite from Keweenaw county, Michigan, containing a small amount of antimony.

stibioferrite (stib″i-ọ-fer′īt), *n.* [*stibium* + L. *ferrum*, iron, + *-ite*².] A mineral substance of a yellow color and resinous luster from Santa Clara, California, which forms a coating on stibnite. It consists largely of the hydrated oxid of antimony.

stibiotantalite (stib″i-ọ-tan′ta̤-līt), *n.* [*stibium* + *tantalum* + *-ite*².] A mineral which contains chiefly the oxids of tantalum, niobium, and antimony: found in water-worn fragments in the tin-bearing gravels of Greenbushes, West Australia.

stibonium (sti-bō′ni-um), *n.* [NL., ‹ *stibium* + *antimonium.*] A hypothetical compound of antimony, SbH_4, known in the form of certain organic derivatives.

stich², *n.* and *v.* A simplified spelling of *stitch.*

Stichæus (sti-kē′us), *n.* [NL., ‹ Gr. στίχος, a row.] A genus of blennioid fishes found in arctic seas.

stichochrome (stik′ọ-krōm), *a.* and *n.* [Gr. στίχος, a row, + χρῶμα, color.] **I.** *a.* Having the color in rows: applied, in *neurol.*, to a form of nerve-cell in which the Nissl bodies are arranged in nearly parallel lines. *Buck*, Med. Handbook, II. 336.

II. *n.* A somatochrome nerve-cell in which the stainable cytoplasmic substance is arranged in the form of striæ which run parallel with the contour of the cell-body and concentrically with the cell-nucleus.

> *Stichochromes* or cells in which the chromatic substance is arranged in more or less distinctly parallel rows, the direction of the rows usually bearing some relation to the contour of the nucleus and to that of the periphery of the cell body. To this group belong such cells as the large cells of the ventral horn of the cord, the spinal-ganglion cells, some of the cells of the cornu Ammonis, and some of the cells of the cerebral cortex.
>
> *Jour. Exper. Med.*, Oct. 1, 1901, p. 552.

stick¹, *v. t.*—**To stick up.** (*a*) In *cricket*, to perplex; nonplus (the batsman). (*b*) To cook (cutlets or steaks) by spitting them on long sticks with a piece of bacon at the end. The sticks are stuck in the ground, close to leeward of the fire. See ⋆*sticker-up*, 2. [Australian.]

> To men that are hungry *stuck-up* kangaroo and bacon are very good eating.
>
> *Mrs. Meredith*, My Home in Tasmania, I. 55, quoted [in E. E. Morris, Austral English.

(*c*) To 'hold up'; rob. [Australian.]

> Look here, I know this man Kettle a lot better than you do. He wants the pay very badly. And when it comes to *sticking up* the cable station, you 'll see him do the work of any ten like us.
>
> *Cutcliffe Hyne*, A Master of Fortune, vi.

(*d*) Hence to be importuned by a beggar; be forced to give in charity. [Australian.]

> There is no poverty here, or very little; you never get *stuck up* for coppers in the streets of the towns.
>
> *E. W. Hornung*, Bride from the Bush, xix.

(*e*) To bring (a kangaroo) to bay. [Australian.]

> We knew then that she had "*stuck up*" or brought to bay a large forester. If middle-sized she would have killed him. *Rolf Boldrewood*, Old Melbourne Memories, iii.

(*f*) To stop (without idea of violence). [Australian.]

> This [waterfall] '*stuck* us *up*,' as they say here concerning any difficulty.
>
> *S. Butler*, First Year in Canterbury Settlement, p. 68, [quoted in E. E. Morris, Austral English.

(*g*) To pose; puzzle: as, "I was *stuck up* for an answer." [Australian.]

> The professor seems to have *stuck up* any number of candidates with the demand that they should 'construct one simple sentence out of all the following.'
>
> *The Australasian*, Jan. 2, p. 33, quoted in E. E. Morris, [Austral English.

stick², *n.* **4.** A material of syrupy consistence obtained by cooking mixed city garbage and other refuse material with steam, removing grease and water by expression from the liquid product, skimming off the grease, and evaporating the watery residue. It is mixed with some of the solid matter from the same garbage or with chemicals, and used as a 'filler' or subordinate ingredient in fertilizers.

stick³, *n.* **13.** Rum, brandy, or any other liquor when used as a 'stiffener' or flavoring in 'soft' drinks: as, tea with a *stick* in it. [Slang.]—**To eat stick,** to receive a thrashing. [Slang.]

> "If he does n't [show the way], *he eats* more *stick.* I think," said Captain Tazzuchi, with a wide smile, "that he 'll take us there the quickest road."
>
> *Cutcliffe Hyne*, A Master of Fortune, x.

stick-candy (stik'kan″di), *n.* Candy made in the form of sticks.—**Stick-candy machine,** a machine in which engraved, fluted, crimped, or corrugated rolls are used in forming hard candies into sticks, ornamental rods, or other forms.

stick-caterpillar (stik'kat″ėr-pil-ạ̈r), *n.* Any one of the twig-like or stick-like geometrid larvæ.

stick-dice (stik'dīs), *n.* A gambling game of the North American Indians, played with sticks bearing different marks. These sticks are tossed up, and the casts are counted according to the marks that are up. In some cases the sticks have the form of parts of an arrow, and suggest that at one time the game may have been played with arrows. *Amer. Anthropologist*, Jan.–March, 1903, p. 60.

sticker¹, *n.* **4.** In *wood-working*, another name for a molding-machine: often described by the work done, as *door-sticker, sash-sticker;* and also by the number of cutter-heads employed and the work done, as *one-side, two-side,* or *four-side sticker*, meaning that the machine cuts a molding on one, two, or four sides of any piece of wood. The sash-sticker is also adapted to plowing out and boring the groove for the sash-cord, when it is called a *sash-sticking and -plowing machine:* often called *sticking-machine.* It is essentially a molding-machine employing cutter-heads in various positions and is used for a great variety of work. See *molding-machine*, 1.—**5.** A needle with a double lance-shaped point, used for pricking the skin to secure a drop of blood for examination. *Buck*, Med. Handbook, I. 39.—**6.** In *cricket*, a batsman who plays entirely on the defensive; a 'stone-waller.' *Hutchinson*, Cricket, p. 190. [Slang.]

sticker-up (stik'ėr-up), *n.* **1.** One who sticks up. See *to* ★*stick up* (*b*). [Australia.]—**2.** Also the meat itself: as, our *sticker-up* consisted only of ham. *Mrs. Meredith*, My Home in Tasmania, I. 55, quoted in E. E. Morris, Austral English.

> Pounds of rosy steaks . . . skilfully rigged after the usual approved fashion (termed in Bush parlance a '*sticker-up* '), before the brilliant wood fire, soon sent forth odours most grateful to the hungered way-worn Bushmen.
>
> *G. T. Lloyd*, Thirty-three Years in Tasmania and Vic-[toria, p. 103, quoted in E. E. Morris, Austral English.

3. A highwayman or bush-ranger; one who sticks up and plunders mail-coaches, etc., killing his victims if necessary (?). See *to* ★*stick up* (*c*). [Australia.]

> They had only just been liberated from gaol, and were the *stickers-up*, or highwaymen mentioned.
>
> *W. J. Barry*, Up and Down, p. 197, quoted in E. E. [Morris, Austral English.

sticking², *n.* **3.** In *billiards*, the act or operation of landing the cue-ball close to a cushion for safety. *W. Broadfoot*, Billiards, p. 278.—**4.** In *cricket*, batting entirely on the defensive; batting not to make runs, but to keep in. *R. H. Lyttelton*, Cricket and Golf, p. 122.

sticking-knife (stik'ing-nīf), *n.* A knife used for sticking or stabbing animals in butchering.

sticking-tommy (stik'ing-tom″i), *n.* A portable candlestick having a sharp point that can be thrust into the wood of a wall or floor to hold it temporarily in any desired position.

stickleback, *n.*—**Alaska stickleback,** *Gasterosteus cataphractus*, found from San Francisco to Alaska and Kamchatka.—**Brook stickleback,** *Eucalia inconstans*, found in fresh waters from New York to Kansas.—**California stickleback,** *Gasterosteus microcephalus*, found in the Pacific coastwise streams of the United States.—**Common Eastern stickleback,** *Gasterosteus bispinosus*, of the east coast of the United States.—**European stickleback,** *Gasterosteus aculeatus*, of northern Europe.

sticktoitive (stik-tö'ị-tiv), *a.* [*stick to it* (persist) + *-ive.*] Persistent; indomitable. [Local, U. S.]

sticktoitiveness (stik-tö'ị-tiv-nes), *n.* The character of being sticktoitive. *Dialect Notes*, III. iii. [Local, U. S.]

stick-up (stik'up), *n.* A name for a certain member of a gang of burglars. Same as ★*sticker-up*, 3. See the quotation, and ★*yeggman.* [Thieves' slang.]

> The man . . . is declared to be a typical "yeggman of the *stick-up*" class. He is of massive proportions, has an abundance of brown hair, and a pair of piercing steel-gray eyes. The "*stick-up*" is always a powerful man, whose duties are to intimidate intruders and kill them, if necessary, while the others are at work on a safe.
>
> *N. Y. Times*, Jan. 2, 1905.

stick-work (stik'wėrk), *n.* In *base-ball*, the work of batting; also, the use of clubs in other games. [Slang.]

Stictaceæ (stik-tā'sẹ-ē), *n. pl.* [NL., < *Stict*(*a*) + *-aceæ.*] A family of gymnocarpous lichens, named from the genus *Sticta* (which see).

stictaurin (stik-tâ'rin), *n.* [*Stict*(*a*) *aur*(*ata*) (see def.) + *-in*².] A lustrous golden orange-red to reddish-brown compound, $C_{36}H_{22}O_9$(?), contained in the lichens *Sticta aurata, Candelaria vitellina, C. concolor,* and *Gyalolechia aurea.* It forms large crystals which melt at 211–212° C. and are probably monoclinic.

Stictis (stik'tis), *n.* [NL. (Persoon, 1799), < Gr. *στικτός*, pricked, spotted.] A genus of discomycetous fungi having the ascocarps sunken in the substratum and the disk at first covered, the covering rupturing at maturity and forming angular segments. The spores are filiform, hyaline, and many-celled. Over 70 species are known. They are widely distributed and occur on dead herbaceous or woody stems and branches.

stif, *a.*, *n.*, and *v.* A simplified spelling of *stiff.*

stiffener, *n.* (*c*) In *iron ship-building*, one of a series of angle-bars, Z-bars, or other shapes, riveted to plating, particularly to the plating of bulkheads, to give them the necessary stiffness or rigidity. Stiffeners are called *vertical stiffeners* or *horizontal stiffeners*, according to the way they are arranged on the bulkhead.

stiff-joints (stif'joints), *n.* Milk-sickness.

stiffness, *n.* **2.** Specifically, the power or ability of a vessel to oppose great resistance to inclination from the upright from the pressure of wind on the sails or other external forces.

> For most ships the angles of steady heel under canvas lie within the limits for which the metacentric method holds; and consequently this method may be used in estimating the "*stiffness*" of a ship, i. e. her power to resist inclination from the upright by the steady pressure of the wind on her sails.
>
> *White*, Manual of Naval Arch., p. 84.

stifle-out (stī'fl-out), *n.* Same as *stifle*², 2. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 338.

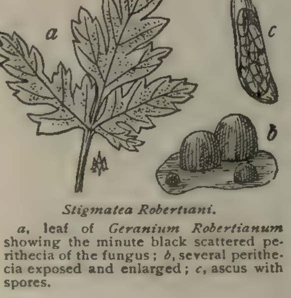
stigma¹, *n.* **7.** In *geom.*, a point so connected with another, called the *index*, that motion of the index in a plane through their join causes definite motion of the stigma in this plane.

stigmat (stig'mat), *n.* [G. *stigmat*, < Gr. *στίγμα*(*τ*-), a mark. See *stigma*, ★*anastigmatic*, etc.] An anastigmatic lens or objective.

> "Single" lenses, such as the elements forming Gray's Double *Stigmat*, which are practically rectilinear.
>
> *Photo-miniature*, Sept., 1901, p. 245.

Stigmatal cord. See ★*cord*¹.

Stigmatea (stig-mā'tẹ-ạ̈), *n.* [NL. (Fries, 1849), < Gr. *στίγμα*, a mark, spot.] A genus of minute parasitic pyrenomycetous fungi, having separate perithecia arising beneath the epidermis of the host, and hyaline or slightly greenish two-celled spores. About 20 species are known. *S. Mespili* has been suspected of being the ascigerous form of *Entomosporium maculatum*, which causes leaf-blight of the pear. *S. Robertiani* occurs on *Geranium Robertianum* in Europe and America.



Stigmatea Robertiani.

a, leaf of *Geranium Robertianum* showing the minute black scattered perithecia of the fungus; *b*, several perithecia exposed and enlarged; *c*, ascus with spores.

stigmatic¹, *a.* (*d*) (2) Possessing a stigma; stigmatose: said of angiosperms as contrasted with gymnosperms and perhaps in other connections.—**Stigmatic geometry.** Same as ★*stigmatics.*

stigmatic² (stig-mat'ik), *a.* [*stigmat* + *-ic.*] In *photog.*, pertaining to or of the character of a stigmat or anastigmat, a combination of lenses corrected for astigmatism.

> A distinctly new type of anastigmatic objective, involving several new principles of construction, was invented. . . . It was brought out in three series . . . under the name of "*Stigmatic.*"
>
> *Encyc. Brit.*, XXXI. 696.

Stigmatic lens, a photographic objective or lens system consisting of a front combination of three lenses and a back combination of two lenses, each combination achromatic, designed with special reference to freedom from astigmatism.

Stigmaticæ (stig-mat'i-sē), *n. pl.* [ML. *stigmaticus.* See *stigmatic*¹.] That (ecological) division of flowering plants in which the pollen is received upon a stigma; the angiosperms.

stigmatics (stig-mat'iks), *n.* In *geom.*, the doctrine of the relations of a stigma to its index. See ★*stigma*¹, 7.

stigmatism (stig'mạ-tizm), *n.* [*stigma*(*t*-) + *-ism.*] The condition in which stigmata are present.

stigmatosis (stig-mạ-tō'sis), *n.* [NL., < Gr. *στίγμα*(*τ*-), a spot, + *-osis.*] A skin-disease marked by spots of superficial ulceration.

stigmatypy (stig'mạ-ti-pi), *n.* [Gr. *στίγμα*(*τ*-), a spot, + *τύπος*, type.] The art or process of making typographic portraits with small types that have round dots of different sizes on their faces. These faces are combined to convey a notion of light and shade by their unequal degrees of blackness.

stigmonose (stig'mọ-nōs), *a.* [Gr. *στιγμή*, prick, point, + *νόσος*, disease.] A diseased condition of the leaves and young growth of plants, especially carnations, produced by sucking-insects and mites. The reserve proteids and sugars being thus removed, oxidizing enzyms increase and the growing cells lose their chlorophyl and die. *U. S. Dept. of Agr.*, Div. Veg. Physiol. and Pathol., Bulletin 19, 1900, p. 7.

stigmonym (stig'mō-nim), *n.* [Gr. *στίγμα*, spot, + *ὄνυμα*, name.] A pseudonym in which dots take the place of letters. See ★*syncopism. Stand. Dict.*

stil, *a.*, *n.*, *v.*, and *adv.* A simplified spelling of *still.*

stilbene (stil'bēn), *n.* [Irreg. < Gr. *στίλβειν*, glitter, + *-ene.*] A colorless compound, $C_6H_5CH{:}CHC_6H_5$, prepared by the action of heated lead oxid on toluene. It crystallizes in large monoclinic plates, melts at 124° C., and boils at 306–307° C. Also called *toluylene* and *symmetrical diphenylethylene.*—**Stilbene color.** See ★*color.*

Stilbiscus (stil-bis'kus), *n.* [NL., irreg. < Gr. *στίλβειν*, glitter, + dim. *-ισκος.*] A genus of eels of the family *Murænesocidæ.* There is one known species from the Bahamas.

Stilbum (stil'bum), *n.* [NL. (Tode, 1790), < Gr. *στιλβός*, shining.] A genus of hyphomycetous fungi giving name to the family *Stilbaceæ*, and having the hyphæ united into a stipe which bears a small head from which the conidiophores arise bearing small hyaline unicellular conidia. About 100 species have been described, most of which are regarded as saprophytic, though *S. flavidum* is considered to be the cause of the American coffee-disease.

stile¹, *n.*—**Diminished stile,** in a framed door, a stile which is wider at one place than at another, as where it is broad below the lock-rail and narrower above.

stile-borer (stīl'bōr″ėr), *n.* A wood-working machine which bores holes for mortises in the stiles for doors or windows.

stiletto-fly (sti-let'ọ-flī), *n.* Any dipterous insect of the family *Therevidæ.* The popular name is derived from the slender form of these flies. *Comstock*, Manual of Insects, p. 464.

still², *n.*—**Cheese-box still,** a still of boiler-plate iron or steel, shaped somewhat like a cheese-box, for the distillation of crude petroleum. *Sadtler*, Handbook of Indust. Chem., p. 20.—**Dorn's still,** a form of apparatus for distilling and rectifying alcoholic liquors; one of the early arrangements for utilizing the heat given out in condensation of the vapor by applying it to heat up the wash to be distilled.—**Pine-wood still,** the still in which refuse wood of the long-leaf pine is distilled with water for the production of an inferior kind of spirits of turpentine. See ★*spiritine.*—**Pistorius's still,** a form of apparatus for distillation much used in Germany in distilling and rectifying spirit from grain, and especially that from potatoes.—**Tar-still.** (*a*) The still in which the second stage of the distillation of crude petroleum is carried out, yielding in the distillates lubricating-oils and paraffin-scales, and leaving coke as a final residue. (*b*) The wrought-iron still in which either coal-tar or wood-tar is in the crude state submitted to fractional distillation in order to separate the various useful products obtainable.—**Wash still,** a still for the distillation of the original fermented liquor, as distinguished from one used to redistil the condensed product from the former. —**Weldon still,** the form of still, of stone flags cemented together, devised by Walter Weldon for the purpose of making chlorin for bleaching-powder, using his regenerated manganese or Weldon mud. See *Weldon* ★*mud.*—**Whisky-still,** the still, usually of hammered copper, in which whisky is distilled from the fermented mash or wort. There are many forms, of varying simplicity or complexity.

still-hunt (stil′hunt), *n.* [*still-hunt, v.*] 1. A hunt for game carried on by stalking or from ambush.—2. In *politics*, a secret canvass carried on somewhat after the methods of a still-hunt for game, with precautions against publicity.

still-hunting (stil′hun″ting), *n.* Stalking; also hunting from ambush. See *still-hunt, v.*

As a companion to the preceding excellent volume and its fellow in the same series, "The Deer Family," Mr. Van Dyke's "The Still-Hunter" may be heartily commended. . . . It deals in considerable detail with the technique of stalking—or "*still-hunting*" as our American friends term this kind of sport. *Nature*, July 21, 1904, p. 267.

Still's disease. See ★*disease.*

stillwater (stil′wâ″tėr), *n.* That part of a stream which has such slight fall that no current is apparent: opposed to ★*quick-water.* Also *deadwater.*

stilt, *n.*—**Banded stilt,** *Himantopus pectoralis*, an Australian species with a dark band across the breast.—**Black-winged stilt,** *Himantopus himantopus*, a species widely distributed over Europe, Asia, and Africa, distinguished when adult by having the entire head and neck white.

stilt-bug (stilt′bug), *n.* Any one of the slender plant-bugs of the family *Berytidæ*. *Comstock*, Manual of Insects, p. 143.

stimie, *n.* See *stymie.*

stimulation, *n.*—**Areal stimulation,** in *psychophys.*, stimulation of an area or extended portion of a sense-organ: opposed to *punctual stimulation.* *E. B. Titchener*, Exper. Psychol., I. i. 57.

stimulator, *n.* Specifically—2. In *exper. psychol.*, any instrument employed to furnish the stimulus in a psychological experiment; especially, the instrument used in the reaction experiment to give the sensory stimulus to which response is made by the reactor.

We must consider, in order, the chronoscope, the instruments for its control, the *stimulator*, and the reaction key. *E. B. Titchener*, Exper. Psychol., II. i. 142.

stimulin (stim′ū̦-lin), *n.* [L. *stimul(us)*, a spur, + *-in*^{2}.] A name given by Metchnikoff to a hypothetical substance present in immune sera which stimulates the leucocytes to phagocytosis.

stimulose, *a.* 2. In *entom.*, furnished with stinging-hairs, as certain caterpillars, for example, the saddleback caterpillar.

stimulus, *n.* 6. In *entom.*, a stinging-hair.—**Areal stimulus,** in *psychophys.*, a stimulus which affects an area of a sense-organ; an extended stimulus.—**External stimulus,** in *psychol.*, a stimulus of a special sense; a process of movement in the outside world which, after it has acted upon the sense-organ and, as excitation, been conducted to the brain, is accompanied by a mental process of sensation. The external stimulus is opposed sometimes to the internal stimulus of organic sensation, sometimes to the excitation process into which it is transformed after affecting an organ of special sense.—**Internal stimulus,** in *psychol.*: (*a*) A process of stimulation set up within a sense-organ, consisting in a change of the state of that organ; the normal stimulus to organic sensation. (*b*) The continuation in sense-organ, nerve, and brain of a process of stimulation externally initiated; the physiological excitation which is aroused by the action of an external stimulus. *W. Wundt* (trans.), Human and Animal Psychol., p. 16.—**Method of constant stimuli.** See ★*method.*—**Method of doubled stimuli.** See ★*method.*—**Stimulus releaser,** in *psychophys.*, same as ★*stimulator*, 2. *J. M. Baldwin*, Dict. Philos. Psychol., I., p. 614.

stimulus-unit (stim′ū̦-lus-ū″nit), *n.* In *psychophys.*, the unit of a physical scale of which the different values represent different intensities of stimulus.

The way to determine this is obviously to set out, not from a definite *stimulus-unit*, but from the unit of sensation. *W. Wundt* (trans.), Human and Animal Psychol., p. 37.

stimy (stī′mi), *n.* In *golf*, the position of a ball on a putting-green when it is directly between the hole for which an adversary is playing and his ball at any distance over six inches between the two.

stimy (stī′mi), *v. t.*; pret. and pp. *stimied*, ppr. *stimying.* In *golf*, to force to play a stimy. To stimy one's opponent is so to play one's ball as to bring it into a position between his ball and the hole, the two balls being more than six inches apart.

sting^1, *v. t.* 6. To 'stick' for a dinner, a railway fare, or the like. [U. S. college slang.]

An undergraduate is no longer "stuck" for a dinner, a seat at the play, a railroad ticket; he is "*stung.*" *Kansas City Daily Star*, April 21, 1903.

stingareeing (sting′ga̤-rē-ing), *n.* Fishing for sting-rays or stingarees.

It has been recently discovered—by the writer of the animated article in the 'Field' on "Fishing in New Zealand" [London, Nov. 25, 1871], that '*stingareeing*' can be made to afford sport of a most exciting kind. *Hutton and Hector*, Fishes of New Zealand, p. 121.

sting-bladder (sting′blad″ėr), *n.* A sea-bladder; a Portuguese man-of-war, *Physalia.*

stinger^2 (sting′ėr), *n.* [Compare *stingo.* Prob. < *sting*^{1}, *v.*, + *-er*^{1}; but a Malay origin (*satenga, s'tenga*, half, *i. e.*, 'half-and-half') has been suggested.] An alcoholic drink.

Two "*stingers*" were brought. Now a "*stinger*," it should be known, . . . a noggin of Scotch whiskey enlivened by much or little, according to individual taste, of the local buzz-water. *S. Bonsal*, in Scribner's Mag., Jan., 1901, p. 106.

stinging-capsule (sting′ing-kap″sū̦l), *n.* Same as *stinging-cell.*

sting-ray, *n.*—**California sting-ray,** *Myliobatus californicus*, a very common ray of mud-flats along the California coast.—**Common sting-ray,** *Dasyatis centrura*, found in abundance from the coast of Maine to Cape Hatteras.—**Round sting-ray,** any ray of the genus *Urolophus.* These fishes are small sting-rays, but the most vigorous and dangerous of the group. Most of them are confined to warm and tropical parts of America.—**Southern sting-ray,** *Dasyatis say*, found from Carolina to Brazil and occasionally as far north as New York.—**Spotted sting-ray,** *Aëtobatus narinari*, widely distributed in tropical seas.

stink-bells (stingk′belz), *n.* The Californian *Fritillaria agrestis*, an ill-smelling species, in some places occupying grain-fields, the bulb being so deep as to escape the plow.

stink-brand (stingk′brand), *n.* Same as *stinking smut.* See *smut*, 3 (*b*).

stinker, *n.* 3. Same as *stinkhorn.*

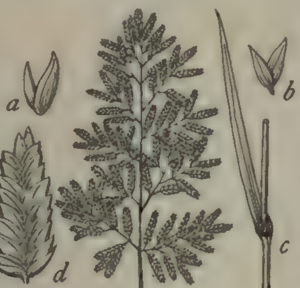
A *stinker* (which is the trivial name of the phallus impudicus). *Southey*, Doctor, cxxvii.

stink-fish (stingk′fish), *n.* A sparoid fish, *Boops salpa*, found about the Cape of Good Hope.

stink-fly (stingk′flī), *n.* Any golden-eyed lace-wing fly: so called on account of their very disagreeable odor. See *Chrysopa.*

stink-gland (stingk′gland), *n.* One of the various special glands, differently located, which occur in *Myriapoda* and numerous insects, and which secrete a liquid of an offensive odor. Also called *glandulæ odoriferæ.* See *defensive* ★*glands.* *Cambridge Nat. Hist.*, VI. 257.

stink-grass (stingk′gräs), *n.* A handsome but ill-smelling and nearly worthless grass, *Eragrostis major*, native in Europe and Asia and widely introduced in waste and cultivated, chiefly sandy, lands in the United States. Also called *candy-grass, skunk-grass*, and *pungent meadow-grass.* This name is also given to the similar but smaller species *E. Eragrostis.*



Stink-grass (*Eragrostis major*).
a, floret; *b*, glumes; *c*, leaf and culm; *d*, spikelet.

stink-pot, *n.* 5. A name given by sailors to the giant petrel, *Ossifraga gigantea*, on account of its rank, musty smell.

stinkweed, *n.* 3. The penny-cress, *Thlaspi arvense.* It is an ill-smelling plant and renders unfit for use the milk of cows which eat it, while beef-cattle must be removed from pasture containing it two or three weeks before slaughter. It is more troublesome in Canada than in the United States. See ★*French weed* (*b*).

stinkwood, *n.*—**Mexican stinkwood,** *Pseudosmodingium perniciosum.* See ★*cuajiote*, 1.

stipes, *n.* 2. (*a*) Also, the stalk of the halter of a dipterous insect.

stipites (stī′pi-tēz), *n.* Plural of *stipes.*

stipple-paper (stip′l-pā″pėr), *n.* A special drawing-paper having a coated and embossed surface which can be removed by scraping with a knife to intensify the high lights of a picture.

stippling, *n.* 2. In *ophthalmol.*, an appearance of the retina as if thickly dotted with light and dark points.

The general appearance of this eye-ground presents to the examiner's eye a peculiar appearance, as of a very small irregularly figured carpet, somewhat like a mosaic of small light and dark spots; this is called the *stippling* of the retina. *Med. Record*, July 11, 1903, p. 49.

stipulated (stip′ū̦-lā-ted), *p. a.* Same as *stipulate*^{2}.

stipulatio (stip-ū̦-lā′shiō), *n.* [L.] The highest form of contract under the civil law. It was oral and formally entered into through interrogatories before a magistrate or public officer, and was thus made definite to both parties. It could be released for fraud or deceit only, and by the same formality.

stirpiculturist (stėr-pi-kul′tū̦r-ist), *n.* [*stirpicultur(e)* + *-ist.*] One who devotes himself to the improvement of the breed or stock in animals; hence, one who desires to secure the improvement, physical and mental, of the human race.

If we examine the cause of an American citizen's distrust of the immigrant we find that it varies according to the citizen's point of view. The mechanic fears cheap competition, resulting in low wages; the *stirpiculturist*, noting the poor physique and low mental caliber of some of the immigrants, fears race degeneration. *A. J. McLaughlin*, in Pop. Sci. Mo., Jan., 1903, p. 231.

stirrup-iron, *n.* 2. An iron strip to hold the end of a beam or girder.

stirrup-plate (stir′up-plāt), *n.* In *naval arch.*, an iron plate which joins the keel and stern-post, and is bolted through them.

stirrup-vase (stir′up-vās), *n.* Same as ★*pseudamphora.*

Among the painted ware "*stirrup vases*" were specially abundant, some with magnificent decorative designs. *Athenæum*, Jan. 28, 1905, p. 115.

stitch, *n.* 10. Same as *suture.*

The side-knot, or "square" *stitch*, in rendering a retaining suture unnecessary, is superior to the topknot or "circular" *stitch.* *Phil. Med. Jour.*, Jan 31, 1903, p. 197.

Hudson stitch. See extract under ★*tee*^{6}.—**Interrupted stitches.** See *interrupted* ★*suture.*—**Kensington stitch,** in *embroidery*, a long and a short outline-stitch, appearing alternately, mostly on the right side.—**Stitch abscess.** See ★*abscess.*

stitch, *v. t.* 4. In *weaving*, to unite by concealed threads, either warp or filling or both, (two or more fabrics), so that they shall appear as one, forming a two-ply, three-ply, etc., fabric.—5. In *bookbinding*, to pass a thread or flexible wire through perforations made near the back fold of the assembled sections of (an unbound book).

stitch-bird (stich′bėrd), *n.* A small perching bird, *Pogonornis cincta*, found in the North Island, New Zealand, the clicking note of which is supposed to resemble the word *stitch.* The nest is small and open. *Pop. Sci. Mo.*, Jan., 1903, p. 223.

stitcher, *n.* Specifically—2. The operator or the machine that stitches together the sections of an unbound book.

stitching, *n.*—**Circular stitching.** See *spiral* ★*stitching.* **Figure-of-eight stitching.** Same as ★*brier-stitch.*—**Overedge stitching.** See ★*overedge.*—**Spiral stitching,** in *sewing-machine work*, a method of sewing in which the fabric is continually rotated under the needle and the stitching is laid down in spiral lines. When the sewing is in complete circles it is called *circular stitching.*

stit-tse (stit′ze), *n.* Same as *Kamloops* ★*trout.* *Jordan and Evermann*, Fishes of N. and M. Amer., p. 499.

stivy (stī′vi), *a.* [Corrup. of *stifling.*] Stifling; close. [Slang.]

By this means I get you out quietly into the air and away from those *stivy* chambers. *E. Yates*, Kissing the Rod, ix.

Stizolobium (stī-zō̦-lō′bi-um), *n.* [NL. (Patrick Browne, 1756), < Gr. *στίζειν*, prick, + *λοβός*, pod: so named from the barbed hairs on the pods of some of the species.] A genus of leguminous plants. See *Mucuna.*

S. T. L. An abbreviation (*a*) of the Latin *Sacræ Theologiæ Licentiatus*, licentiate in sacred theology; (*b*) of the Latin *Sacræ Theologiæ Lector*, reader or professor of sacred theology.

S. T. M. An abbreviation of the Latin *Sacræ Theologiæ Magister*, master of sacred theology.

Stoa basileios, stoa basilike, the king's portico, specifically the stoa or porch in which the king-archon of ancient Athens transacted the business of his office. It was on the western side of the Agora, at the foot of the mound on which the Theseum stands. It probably consisted of a wall at the back and a colonnade facing the Agora. The name passed to the Roman and medieval basilica. (See *basilica*^{1}, 1.)

stock^1, *n.* 9. (*k*) The handle attached to the wooden cup that secured the inking-ball used in early hand-press printing.

At his burial in an obscure part of Islington churchyard, many of the printers boys called devils, made a noise like such, with their ball *stocks* carried thither for that purpose. *Southey*, Doctor, cxiv.

(*l*) Same as ★*head-stock*, 2.—35. In *geol.*, a large columnar intrusion of eruptive rock, the length and breadth of which are roughly equal. A stock may be the deep-seated and uneroded portion of a volcanic neck or plug. Compare def. 32.

> Notwithstanding the spectacular nature of these sample phenomena observed in different quarries, the forces engaged in their production are almost insignificant compared with those which must be produced in the shell of country-rock concentric with the molar contact of a still molten *stock* or batholith. The latter forces may be compared with the force of compression which has so often developed peripheral cleavage and schistosity concentric with molar contacts of *stocks* and batholiths; but fracture is the necessary product of the one kind of energy applied suddenly, as rock-flowage is the product of the other applied slowly and for a much greater period of time.
> *Amer. Jour. Sci.*, Aug., 1903, p. 117.

36. The material removed from a quarry which is of suitable size to be worked into marketable articles.—**37.** *pl.* A moldy defect sometimes found on wool and woolens that have been stored while damp in a warm, badly ventilated room. *Georgievics* (trans.), Chem. Technol. of Textile Fibers, p. 40.—**Stock brick.** See ★*brick*2.—**Stock culture.** See ★*culture.*—**Stocks and bowls.** See ★*bowl*2.—**Ten-weeks stock.** See *Matthiola* and *stock*1, 26.

Stockbridge limestone. See ★*limestone.*

stock-broker, *n.*—**Inside stock-broker, outside stock-broker.** See the extract.

> Before proceeding to deal with some of the operations favoured by bucket-shops, it is necessary to point out the difference between "inside" and "outside" men. The *inside stockbroker* is an intermediary who obtains a commission from his client—whose agent he is—for carrying out a legitimate transaction; the *outside man* [stockbroker] gambles against the client for whom he purports to act. The first is governed by a representative and exceedingly severe Committee, whilst the latter is only ruled by his own sweet will and conscience; the first has to show his bona fides and have substantial guarantors before he can start business, whilst the other only needs plenty of assurance, occasionally backed by a little capital. *The Strand*, Oct., 1905, p. 349.

stock-distributor (stok'dis-trib″ụ̄-tọr), *n.* In a *blast-furnace*, a machine used to receive the coal, limestone, and ore, collectively known as stock, and distribute it evenly inside the furnace. It consists essentially of a revolving hopper and spout inclosed in the gas-tight cap of the furnace. When filled with stock from the skips or barrows it revolves and deposits its load in a spiral path over the burning mass of stock in the furnace. See *blast-furnace.*

stock-farming (stok'fär″ming), *n.* Stock-raising. Stock-farming may include an element of dairy-farming, but the word refers distinctively to the production of cattle and hogs for their meat, horses for trotting or work, sheep for wool and mutton, etc.

stock-feed (stok'fēd), *n.* **1.** The apparatus or device in an automatic or semi-automatic machine by which the material to be operated on is supplied to the tools or processes for fabrication. *The Engineer* (London), March 8, 1901, p. 249.—**2.** The carriage which feeds logs or wood bolts to the sawing- or cutting-tools.

stock-frost (stok'frôst), *n.* Same as *ground-ice* or *anchor-ice.* *Nature*, Jan. 30, 1908, p. 295. [Local, Eng. (Norfolkshire).]

stockholder, *n.* **2.** A proprietor of stock, that is, of herds of cattle or flocks of sheep; a grazier. *E. E. Morris*, Austral English. [Australia.]

> The most negligent *stock-holders* now carefully house their wool, and many take the trouble to wash their sheep. *E. Curr*, Account of Van Diemen's Land, p. 83.

stock-hut (stok'hut), *n.* The shelter or hut of a stock-man in the bush. [Australia.]

> We crossed the Underaliga creek a little below the *stock-hut*, and encamped about a mile beyond it.
> *C. Sturt*, Two Expeditions into the Interior of Southern [Australia, II. 21.

stocking-feet (stok'ing-fēt), *n. pl.* The feet covered only with stockings (without shoes): chiefly in the phrase, 'in one's *stocking-feet.*' *Dialect Notes*, III. iii. [Colloq., U. S.]

stocking-thread (stok'ing-thred), *n.* Same as *stocking-yarn.*

stock-keep (stok'kēp), *v. i.* To herd stock: a word fashioned after *bar-keep*, etc. [Colloq., Australia.]

> 'What can you do, young man?' 'Well, most things,' answered the Australian, with quiet confidence; 'fence, split, milk, drive bullocks, *stock-keep*, plough.'
> *Rolf Boldrewood*, Colonial Reformer, x.

stock-keeper (stok'kē-pėr), *n.* The manager or herdsman of a cattle-station; a shepherd; a herdsman. *E. E. Morris*, Austral English. [Australia.]

stock-line (stok'līn), *n.* The level of the charge (or stock) in a blast-furnace. *Phillips and Bauerman*, Elements of Metallurgy, p. 283.

stock-rail (stok'rāl), *n.* In *railroading*, either of the two rails of a main or line track. At a switch one stock-rail may be continuous and the other continuous with the connecting-rail of the siding or crossover. See *switch*, 2, *frog*2, 2, and ★*adhesion-rail.*

stock-riding (stok'rī″ding), *n.* In Australia, the occupation of a stock-rider; the work of a cow-boy; riding herd.

> Like other Australian aborigines, the Kŭrnai have a natural aptitude for *stock-riding.* I have also known among them good shearers and reapers.
> *Fison and Howitt*, Kamilaroi and Kurnai, p. 260, note.

stock-room, *n.* **2.** A room, usually in a hotel, where travelers for business-houses show their samples and take orders.

stock-route (stok'röt), *n.* In Australia, a right of way through the land of a squatter which he is legally obliged to leave unobstructed for the use of cattle or sheep on their way to distant parts of the country. If the squatter fences his land he must provide slip-rails or other arrangement for their free passage. *E. E. Morris*, Austral English.

stock-saw (stok'sâ), *n.* One of the saws in a mill by which lumber is sawed from the log into the standard or stock sizes.

stock-whip (stok'hwip), *n.* A herder's whip. It has a short handle and long thong.

> The *stock-whip*, with a handle about half a yard long and a thong of three yards long, of plaited bullock-hide, is a terrible instrument in the hands of a practised stockman. Its sound is the note of terror to the cattle; it is like the report of a blunderbuss, and the stockman at full gallop will hit any given spot on the beast that he is within reach of, and cut the piece clean away through the thickest hide that bull or bison ever wore. He will strike a fly or a spot of mud on a hillock at full speed.
> *W. Howitt*, Tallangetta, I. 100.

stodge (stoj), *n.* [Also *studge.*] **1.** Any thick, satisfying food; a stiff, thick mass of a semi-liquid nature. *Eng. Dial. Dict.*—**2.** Thick, slimy mud; a wet, muddy condition. *Eng. Dial. Dict.*—**3.** A fat, thick-set person; a deformed person. *Eng. Dial. Dict.* [Dial. in all uses.]

stodge (stoj), *v. t.* and *i.*; pret. and pp. *stodged*, ppr. *stodging.* [*stodge, n.*] **I.** *trans.* **1.** To make heavy, full, and stupid by cramming with surfeiting or coarse food. [Dial., Eng.]

> The most robust of appetites for clerical lives cannot but confess itself—well, *stodged* is the only word, we fear. *Athenæum*, Feb. 2, 1901, p. 134.

2. To mix into a thick, liquid mass; stir up. *Eng. Dial. Dict.* [Dial.]

II. *intrans.* To walk with short, heavy steps; walk with the feet sticking in mud; stick fast in mud. *Eng. Dial. Dict.* [Dial.]

stodginess (stoj'i-nes), *n.* The character of being stodgy; heaviness; dullness; crudeness. [Colloq., Eng.]

> The bulk of the reviewing to-day is in no sense log-rolling. It is conscientious enough, as conscientious as work can be that is turned out very hurriedly and within a few hours of the publication of a book. *Stodginess* is its worst feature. *Bookman*, June, 1899, p. 360.

stodgy, *a.* **4.** Dull; stupid; crude; thick-headed: as, a *stodgy* way of looking at things. [Colloq., Eng.]

stoicheiological (stoi-kī-ọ-loj'i-kạl), *a.* [*stoicheiolog(y)* + *-ical.*] Relating to stoicheiology or the doctrine of elements. *G. S. Hall*, Adolescence, II. 114.

stoicheiology, *n.* **2.** In *histol.*, the science of the tissue-elements; cytology.

stoicheiometry, *n.* **2.** The study of the properties of each of the characters of an organism in relation to inheritance. See the extract.

> It is reasonable to infer that a science of *Stœchiometry* will now be created for living things, a science which shall provide an analysis, and an exact determination of their constituents.
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., 1902, [I. 159.

stoke-hold (stōk'hōld), *n.* The space below the decks of a steam-vessel where the boilers are located and fired; a stoke-hole. The stoke-hole may be constructed with air-tight bulkhead doors, so that a forced draft sent by fans or blowers into the hold finds its way out through the ash-pits and fuel-beds of the furnaces. This is the closed stoke-hold system. If the air comes in by natural means through openings for ventilation, the stoke-hold is 'open,' and no tight bulkhead doors are needed.

> The spaces occupied by the machinery almost necessarily form large compartments amidships; but in recent war-ships the *stoke-holds* have each been divided into two by means of a middle-line bulkhead.
> *White*, Manual of Naval Arch., p. 33.

stokery (stō'kėr-i), *n.*; pl. *stokeries* (-iz). [*stok(e)* + *-ery.*] A place where firing or stoking is done. [Eng.]

> In the south-east side of the Inch very complete remains of baths were found, with two brick-built hypocausts and a *stokery.*
> *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 791.

Stokes-Adams disease. See ★*disease.*

Stokesian (stōks'i-ạn), *a.* Of, pertaining to, or due to Sir George Gabriel Stokes (1819–1903), an eminent British mathematician and physicist: as, a *Stokesian* theorem, principle, or law.

Stokes's law. See ★*law*1.

stolon, *n.*—**Genital stolon,** in echinoderms, same as ★*axial organ.*

stolonal (stō'lọn-ạl), *n.* [*stolon* + *-al*1.] Of or pertaining to a stolon.—**Stolonal thecæ.** See ★*theca.*

stolonization (stō″lon-i-zā'shọn), *n.* [*stolon* + *-iz(e)* + *-ation.*] The act of producing stolons or runners.

> *Stolonization* occurs as in Aurelia, but much less freely, as does also the origin of buds from the stolons. Budding from the side of the polyp was not observed in Cyanea, its small size probably rendering such process difficult. *Science*, April 11, 1902, p. 571.

stomach, *n.*—**Chylific stomach.** Same as ★*mid-intestine.*—**Colliers' stomach.** See ★*collier*1.—**Hour-glass stomach,** a ring-like contraction of the wall of the stomach dividing the organ into two cavities.

stomachache (stum'ạk-āk), *n.* Pain in the stomach; gastralgia; commonly, any pain in the abdomen, especially colic.

stomach-mouth (stum'ạk-mouth), *n.* The entrance to the proventriculus of the honey-bee. *A. S. Packard*, Text-book of Entom., p. 309.

stomalgia (stọ-mal'ji-ạ̈), *n.* [NL., < Gr. *στόμα*, mouth, + *ἄλγος*, pain.] Same as ★*stomatalgia.*

stomapyra (stō-mạ-pī'rạ̈), *n.* [NL., < Gr. *στόμα*, mouth, + *πῦρ*, fire.] Aphthæ.

stomatalgia (stō-mạ-tal'ji-ạ̈), *n.* [NL., < Gr. *στόμα(τ-)*, mouth, + *ἄλγος*, pain.] Neuralgic pain in the mouth.

stomatitic (stō-mạ-tit'ik), *a.* [*stomatit(is)* + *-ic.*] Relating to or affected with stomatitis.

stomatoblast (stō'mạ-tọ-blȧst), *n.* [Gr. *στόμα(τ-)*, mouth, + *βλαστός*, germ.] One of the cells from which the larval pharynx of certain marine annelids is developed. *Torrey.*

stomatognath (stō'mạ-tọ-gnath), *n.* [Gr. *στόμα*, mouth, + *γνάθος*, jaw.] See the extract.

> I would suggest the word "*stomatognath*" as a convenient term by which to refer to the various chitinous, or calcified, or siliceous "teeth" or "jaws" occurring as specialized thickenings of the lining of the stomodæum, such as the teeth or jaws of Annelids, including Leeches; the "teeth" in the gastric mill of Crustacea; the elements of the "mastax" of Rotifers; the individual members of the radular apparatus of Mollusca; and possibly, also, the horny teeth of Cyclostome fishes. The word was used by me some years ago, in a course of advanced lectures on the Annelida that I gave in the University of Oxford; and it appears to me that some such word would be useful in referring to these and kindred structures.
> *W. B. Benham*, in Proc. Zool. Soc. London, 1900, p. 982, [note.

stomatomalacia (stō″mạ-tọ-ma-lā'si-ạ̈), *n.* [NL., < Gr. *στόμα*, mouth, + *μαλακία*, softness.] Progressive ulcer of the mouth; cancrum oris.

stomatorrhea (stō″mạ-tō-rē'ạ̈), *n.* [NL. *stomatorrhœa*, < Gr. *στόμα(τ-)*, mouth, + *ῥοία*, flowing.] Salivation.

stomatose (stō'mạ-tōs), *a.* Same as *stomatous.*

stomidium (stọ-mid'i-um), *n.*; pl. *stomidia* (-ạ̈). [NL., < Gr. *στόμα*, mouth, + dim. *-ιδιον.*] A pore which indicates the position of a rudimentary tentacle in an alcyonarian.

stomochord (stō'mọ-kôrd), *n.* [Gr. *στόμα*, mouth, + E. *chord.*] A forward dorsal diverticulum of the gut in the collar region of *Enteropneusta* which pushes before it the wall of the preoral body-cavity. It is a complex structure possessing paired lateral pouches and a ventral convexity.

> The Notochord.—This structure, which occurs in the embryos of all Vertebrata, and persists in many of them throughout life, has always been recognized as one of their chief morphological characters. It is not disputed that this is homologous with the notochord of Amphioxus, and only a few authorities refuse to admit some relationship between the latter and the "notochord" of Enteropneusta, for which Willey's term "*stomochord*" will here be used. The *stomochord* is a forward dorsal diverticulum of the gut in the collar region, which pushes before it the wall of the præ-oral body cavity or protocœle.
> *Encyc. Brit.*, XXIX. 251.

stomochordal (stō-mọ-kôr'dạl), *a.* [*stomochord* + *-al*1.] Of or pertaining to the stomochord; provided with a stomochord.

stomodæum, *n.* **2.** In anthozoans, the sac-like pharynx, or so-called stomach.

Stomodeal canal. See ★*canal*^{1}.

stomoxyid (stọ-mok′si-id), *n.* and *a.* **I.** *n.* A member of the dipterous family *Stomoxyidæ*.

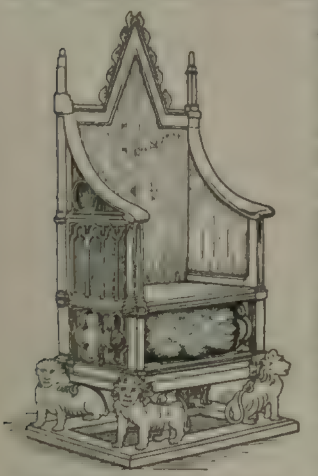
II. *a.* Having the characters of or belonging to the family *Stomoxyidæ*.

stone. **I.** *n.*—**Armenian stone.** (*a*) See *Armenian.* (*b*) An imitation stone made up of red, yellow, blue, and green glass in small particles, which is cut in brilliant form and extensively sold by Armenian and Syrian dealers.—**Back stone,** a cast-iron prism placed on the back edge of the bottom of a lead-ore hearth and surmounted by the nozle of the twyer.—**Black stone,** a rock, usually a basalt, of especially dark color but whose other characters are either imperfectly known or unnecessary to take into account.

> It stands upon an eminence well above the leveled and buried ruins of the ancient city, and though, to reach it from the western mountains, one must pass over the great *black-stone* belt, it is in the midst of a limestone region and is of the purest white.
> *H. C. Butler*, Architecture and Other Arts, p. 76.

Discoidal Stone.
(In U. S. Nat. Museum.)

Ceramic stone. See ★*ceramic.*—**Ceremonial stone.** See ★*ceremonial.*—**Cotham stone,** a division of the White Lias rock of southwestern England, commonly known as the ★*landscape-marble* (which see) and belonging to the upper or Rhætic member of the Triassic series.—**Dimension stone.** (*b*) Stone cut to a standard size, or to the size specified on drawings.—**Discoidal stone,** a stone of discoidal shape with concave surfaces, sometimes perforated in the center, found quite frequently among archæological remains in North America. Such stones were used in games, but may have served other purposes as well.—**Fish-eye stone.** See *apophyllite* and ★*fish-eye.*—**Gibraltar stone.** Same as *onyx marble.*—**Hercules stone,** a lodestone.—**Porcelain stone.** See ★*porcelain*^{1}.—**Portland stone.** (*b*) In the eastern United States, a chocolate-colored sandstone or brownstone which is quarried at Portland, opposite Middletown, Connecticut.—**Semiprecious stone,** a mineral which may be cut and polished so as to be decorative and fit for jewelry, but is not of great rarity and consequent cost. Thus agates and jaspers, carnelians and sardonyx, are usually classed as semiprecious, and turquoises, except at certain times and places. Some varieties even of the most precious stones may be so classed: thus, Burmese sapphires are semiprecious as compared with the true Indian sapphire, the difference being a mere matter of color and luster.—**Smoky stones,** precious stones, more particularly diamonds, which in consequence of internal imperfections lack perfect transparency.—**Stone of Cronus,** in *Greek antiq.*, a bætylic or sacred stone which was exhibited at Delphi as the stone which, according to the legend, Rhea had substituted for the infant Zeus, her son by Cronus, in order to preserve him from being destroyed by his father.—**The stone of Scone,** a block of stone lying in a frame or box under the seat of the coronation chair in Westminster Abbey. The tradition is that it was the stone which served Jacob for a pillow (Gen. xxviii. 11), that it was taken to Scone in Scotland, where the Scottish monarchs sat on it when they were crowned, and that it was brought from Scotland by Edward I., by whose orders the chair was made to contain it. It is a historical fact that the chair has been used continuously since the time of that king.—**Thulite stone,** a mixture of thulite and quartz which has a pink or rose color: used for small ornaments.

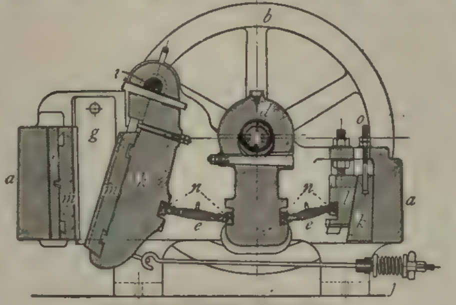

Coronation Chair with Stone of Scone.

II. *a.*—**Stone china.** See *ironstone* and *white* ★*granite.*

stone-bolt (stōn′bōlt), *n.* Two sets of wheels, joined by a pole below the axles, used for carrying stone. [Local, U. S.]

stone-carrier (stōn′kar″i-ėr), *n.* Same as *stone-lugger.*

stone-crusher, *n.* It consists, usually, of two or more jaws of hardened or chilled metal which are brought together to a gaged distance by a toggle-joint or other system of levers. The rock is fed in to the upper end of these jaws, which are inclined to each other, and as the movable jaw recedes from the fixed one and advances toward it by the toggle action, the rock feeds itself downward and is crushed by the nip of the jaw. The first crusher was designed by Blake of New Haven, Connecticut, and first patented in 1858. In connection with crushers there are usually sizing-screens,—revolving hollow barrels with perforated sides,—by which the crushed material is mechanically sorted. Crushers are much used in the building of permanent roads, the manufacture of concrete and cement, as well as in mining and the separation of ores.



Blake Stone-crusher, sectional view.

a, a, main frame; *b,* fly-wheel; *c,* crank-shaft; *d,* pitman; *e, e,* toggles; *f,* fixed jaw; *g,* cheek; *h,* movable jaw; *i,* jaw-shaft; *j,* rubber spring; *k,* wedge; *l,* toggle-block; *m, m,* jaw-plates; *n, n,* toggle-bearings; *o,* wedge-nut.

stone-fish, *n.* **2.** A scorpænoid fish, *Synancidium horridum*, living in Australian waters.

stone-flagged (stōn′flagd), *a.* Paved with flagstones. *E. Wharton*, Italian Villas, p. 53. [Rare.]

stone-hand (stōn′hand), *n.* In *printing*, the compositor who imposes pages of type on the stone and secures them in the chase for electrotyping or printing. Also called *stoneman.*

stone-ice (stōn′īs), *n.* Same as *fossil* ★*glacier.*

stone-lifter (stōn′lif″tėr), *n.* A common name of *Kathetostoma læve*, a fish belonging to the family *Uranoscopidæ.* [Australia.]

stoneman, *n.* **2.** In *printing*, same as ★*stone-hand.*

> Front and tail margins can be most accurately made by the *stoneman*, for they cannot be predetermined with precision by guesswork.
> *De Vinne*, Mod. Book Composition, p. 301.

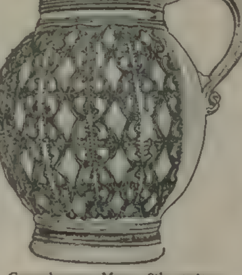
stone-mill, *n.* **3.** A flouring-mill in which stones are used in place of rollers. [Rare.]

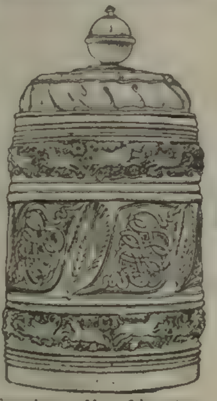
stone-pheasant (stōn′fez″ạnt), *n.* See ★*pheasant.*

stone-waller (stōn′wâl-ėr), *n.* In *cricket*, a batsman who plays entirely on the defensive, that is, whose object is merely to keep the ball out of his wickets. [Colloq.]

> With them [able batsmen] was associated Scotton, most patient of *stonewallers.* *Encyc. Brit.*, XXVII. 278.

stoneware, *n.*—**Coblenz stoneware,** salt-glazed gray stoneware with blue ornamentation, made extensively at Coblenz, Germany, and vicinity in the seventeenth, eighteenth, and nineteenth centuries.—**Frechen stoneware,** brown salt-glazed stoneware made at Frechen, near Cologne, Germany, in the sixteenth century. The bellarmine, a jug with a bearded mask on the front of the neck, is a familiar example of Frechen ware.—**Grenzhausen stoneware,** a gray stoneware with incised and embossed decoration, usually embellished with blue and purple enamels, made at Grenzhausen and Höhr, near Coblenz, Germany, since the sixteenth century.—**Kreussen stoneware,** a dark, metallic brown stoneware with relief decorations of apostles, etc., usually enriched with brightly colored enamels, red, blue, yellow, and white, made at Kreussen, Bavaria, in the seventeenth and eighteenth centuries.—**Limburg stoneware.** See *Raeren* ★*stoneware.*—**Raeren stoneware,** a variety of grès de Flandres with a lustrous brown salt-glaze and applied relief decorations, made at Raeren, near Aix-la-Chapelle (in the ancient duchy of Limburg), during the sixteenth and seventeenth centuries. Among the most characteristic objects are jugs with relief friezes representing peasant dances. Also called *Limburg stoneware.*—**Siegburg stoneware,** a variety of stoneware of white clay with molded reliefs, made at Siegburg, near Bonn, Germany, in the sixteenth century. The best-known forms of this ware are the tall, tapering flagons, or cannettes, and the baluster-shaped jugs with funnel-shaped tops.


Grenzhausen Mug, 18th century.
(In the Pennsylvania Museum, Philadelphia.)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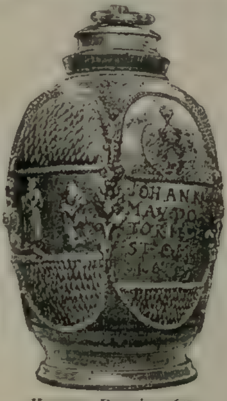
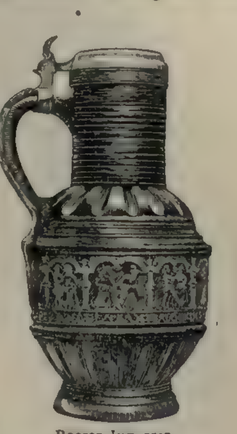
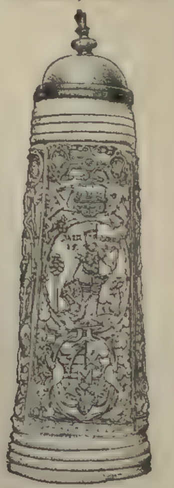


Kreussen Drug-jar, 1657.
(In the Pennsylvania Museum, Philadelphia.)


Raeren Jug, 1597.
(In the Pennsylvania Museum, Philadelphia.)


Siegburg Cannette, 1589.
(In the Pennsylvania Museum, Philadelphia.)

stonewood (stōn′wụd), *n.* The broad-leaved tea-tree (which see, under *tea-tree*). The Australian silver-tree, *Tarrietia Argyrodendron*, is also sometimes known by this name.

stonework, *n.* **2.** In *printing*, the imposing of pages of type on a surface of stone and the securing of them in the chase for electrotyping or printing.

> Correct *stone-work* depends primarily on properly justified lines and exact make-up, but the stone is not the place to remedy the grosser faults made by the compositor. *De Vinne*, Mod. Book Composition, p. 306.

stoning-jack (stō′ning-jak), *n.* In *leather-manuf.*, a jack with a glass or stone at the end of an arm which moves back and forth over the leather to remove the wrinkles. *C. T. Davis*, Manuf. of Leather, p. 185.

stonite (stōn′īt), *n.* [*ston*(*e*) + *-ite*^{2}.] A trade-name for an explosive consisting of 68 per cent. nitroglycerin, 8 per cent. potassium nitrate, 20 per cent. kieselguhr, and 4 per cent. wood-meal.

stook, *n.* **2.** A shock of Indian corn. [Northern U. S., especially New England.]

> If the corn is cured and husked, the bundles are carried together and set up in large shocks or *stooks*, as commonly known in New England. *Book of Corn*, p. 180.

stool, *n.* **8.** (*c*) In wooden ships, one of the pieces of plank bolted to the quarters for the purpose of forming and erecting the galleries; also, one of the ornamental blocks for the poop lanterns to stand on abaft. *Knowles*, Naval Architecture. (*d*) In *iron ship-building*, a small foundation or seating for the support of some part of the machinery, as the shaft-bearings, pumps, etc.

stool-pigeon, *n.* **3.** One who looks over the hand of a card-player and signals its contents to a confederate.

stop^1, *v. t.* **16.** See *to stop down a lens*, under *stop*^{1}, *v. t.*

stop^1, *n.* **18.** In games such as newmarket and pope-Joan, a card which is left in the stock and stops the run of a sequence which is played. Certain named cards are sometimes arbitrarily agreed on for stops.

> A *Stop* is a card which baulks or stops the further play in a sequence. It may be the highest card of a suit; or a card next lower in sequence to the card led in a suit already played. For example: Suppose a Seven of Hearts has already been led, and the sequence played up to the King, which is a *Stop*; then the Six of Hearts, being the highest remaining card of that suit, is necessarily a *Stop.*
> *Amer. Hoyle*, p. 331.

19. In *mech.*, an obstacle, such as a pin, peg, or block, placed so as to limit in a definite manner the movement of any part of a machine or instrument.

> The cock is quarter stopped so that when it is turned in one direction as far as the *stop*, it is full open and in communication with the inside of the meter.
> *W. J. Dibdin*, Public Lighting, p. 94.

20. In *wrestling*, a counter to any particular hold.—**21.** In *boxing*, a guard that prevents a blow from reaching home.—**Accessory stop**, in *organ-building*, a stop-knob which controls some mechanical contrivance, such as a coupler, the tremulant, the bellows-signal, etc., which is not a true stop, since it does not have a set of pipes connected with it. See *stop*1, *n.*, 6. Often called an *accessory*, absolutely, or a *mechanical stop*.—**Automatic stop**, a device, in railroad signal systems, by which the failure of an engineer or motorman to observe a danger-signal and stop his train is followed by a cutting off of the power, or an application of brakes to the train independent of his action. Such stops are usually levers which normally lie out of the path of the train when the signals are at safety. When the signal stands in the danger position, the lever rises or swings so as to hit either a valve or an electric switch, or break a fragile piece of pipe, and stop the train.—**Emergency stop**, in a railway-train fitted with a continuous brake, the stoppage of the train by such an application of the brake as brings the full power of the brake-system into action upon the brake-shoes. This stops the train in the shortest possible distance or time, but with ordinary adjustment of the levers the stop is so sudden as to be uncomfortable to passengers. Distinguished from a *service* ★*stop*.—**Manual stop**, in *organ-building*, a stop or set of pipes that belongs to one of the partial organs controlled by or played from a manual keyboard: opposed to a *pedal stop*, which belongs to a partial organ controlled by or played from a pedal keyboard.—**Mechanical stop.** See *accessory* ★*stop*.—**Rudolph's system of stops**, a series of photographic lens-stops in which $\frac{1}{50}$ (f) is the smallest aperture. In this series the exposures corresponding to the stops are inversely related, other things being equal, as the numbers by which they are distinguished.—**Service stop**, in a continuous train-brake system, the arrest of the motion of the train by applying the brakes in the usual or ordinary manner, by which the inertia of the moving mass is gradually overcome. It is used in regular service to bring trains to rest at stations or for other regular stops, by a gradual or step-by-step increase in the braking power, so as to avoid jars or shocks, and to cause the least discomfort to passengers and least injury to the cars of the train. In air-brake service it is effected by successive reductions of the pressure in the continuous train-pipe, with intervals for the equalization of air-pressure in the pipe between reductions. A gradually increasing pressure is thus exerted on the brake-levers and the brake-shoes which bear against the wheels, and a retarding force is exerted which gradually increases in effect as compared with the diminishing living force of the moving mass, until the energy is entirely absorbed and the train stops. See *emergency* ★*stop*.—**Sounding stop**, in *organ-building*, a real stop or set of pipes, or the stop-knob for such a stop: opposed to *accessory* ★*stop*.

stop-bead (stop'bēd), *n.* In *carp.*, a strip secured to the jamb of a door to stop it at the right point when closed: used when there is no rebate cut in the solid frame.

stop-board (stop'bōrd), *n.* In *athletics*, the rim surrounding the circle which marks the position of the shot-putter or hammer-thrower in making his attempt.

stop-gage (stop'gāj), *n.* An instrument for setting the nippers of a cotton-combing machine which hold the cotton while the combing-needles pass through it. *Thornley*, Cotton Combing Machines, p. 152.

stop-gate, *n.* **2.** A valve of large size, of the type which slides across the opening it controls. In large sizes for pipe it is also called *gate-valve* and *stop-valve*.

> In article 12 the closing of the *stop-gate* is instantaneous, and the kinetic energy of the moving water is absorbed by the elastic compression of the water itself (the pipe being supposed fixed and its possible distension neglected). *Science*, Jan. 10, 1902, p. 66.

stop-guard (stop'gärd), *n.* In *archery*, a catch upon the inside of a shooting-glove, or finger-tips, to fix the place of the drawing fingers upon the bowstring.

stoping, *n.* **2.** A method by which intrusive igneous masses are supposed to make a way for themselves by breaking off blocks of the overlying rock and passing them downward and backward until wholly or partially absorbed. See the extract.

> Daly has recently urged that lavas work out reservoirs and enlarge passageways for themselves by detaching masses of rock from the roofs and sides of the spaces already occupied by them, these masses either melting and mingling with the lava, or else sinking to lower positions in the column. This process he designates *stoping*.
> *Chamberlin and Salisbury*, Geol., I. 603.

stoping-bar (stō'ping-bär), *n.* In *quarrying*, a telescopic bar of steel having a jack-screw at one end, used as a support for a rock-drill. The bar, by means of the screw, is firmly wedged between the walls of a shaft or tunnel, the rock-drill being adjustable at any angle and in any position upon the bar. A stoping-bar used vertically between the floor and roof of a tunnel or drift is called a *drifting-column*. A modification of a stoping-bar, having a separate support for the drill and moving upon the bar, is called a *shaft-bar*.

stop-joint (stop'joint), *n.* A device which limits motion in any jointed apparatus.

> The common form [of support] is a simple steel sole plate of sufficient size to support the foot and the toes, if their muscles are paralyzed, attached to a light upright provided with a calf band. The upright is usually applied on the inner side of the leg where it is least noticeable. At the ankle there is a "*stop joint*," which allows dorsiflexion but prevents the toe-drop.
> *Buck*, Med. Handbook, IV. 234.

stop-key (stop'kē), *n.* In *lock-making*, a safety-key which, when placed in its lock, may serve to prevent the use of a master-key or any other key from the opposite side of the door.

stop-motion, *n.*—**Back-stop motion**, in *cotton-manuf.*, a mechanism in a sliver-drawing machine for stopping it if one of the sliver-ends breaks.

stop-needle (stop'nē″dl), *n.* A surgical needle with a shoulder which allows it to penetrate into the tissues only to a certain depth.

stop-nut (stop'nut), *n.* A nut used on an adjusting-screw to limit motion in one direction, either of the screw itself or of some part moving upon the screw.

> The saddle is adjusted in and out by *stop-nuts* and bolted down on the knee by four bolts with swing handles, as shown. *Elect. World and Engin.*, Jan. 30, 1904, p. 242.

stop-off (stop'ôf), *n.* The leaving of a train at a station, before the destination is reached, with the privilege of resuming the journey on a subsequent train and with the original ticket; the privilege of 'stopping off,' or 'over,' in this way. [U. S.]

> If a sufficient number join the station and desire the organization of a party to make the trip together, such organization will be undertaken and the trip will be made by one of the northern transcontinental routes with the usual *stop-offs* in the mountains.
> *Science*, April 22, 1904, p. 676.

stop-order, *n.* **2.** An order issued out of the court of chancery on petition of one having an assigned or other interest in funds in the hands of the paymaster-general of that court, staying the payment thereof. Any person who has a lien on funds in court may obtain a stop-order. [Eng.]

stopper, *n.* **4.** In the Bahamas, either of two trees, (*a*) the red rodwood, *Eugenia axillaris*, and (*b*) the marlberry, *Icacorea paniculata*. See *marlberry*.—**Check-stoppers**, a series of short lengths of rope, called 'stops,' fastened to an anchor-cable, or other chain, and designed to part in turn as the cable runs out, but to serve as a check to the natural rapidity of its motion.—**Dog-stoppers**, collectively, ropes secured to the mainmast, bitts, hatch, etc., as auxiliary to the deck-stoppers, and which take their respective names according to the place they occupy on deck.—**Hatch-stopper**, a strong rope fastened in the hatch to assist the deck-stopper. Iron stoppers are employed as hatch-stoppers, being situated in the corners of the hatches, with compressors on the lower deck. Iron levers, controlled by a tackle, compress the chain-cable and stop it from running.—**Lanyard-stopper**, a short length of rope with a large knot in one end and a rope lanyard of a smaller sized rope, while the other end of the stopper has a large hook or shackle. The latter secures into an eye-bolt in the deck, and the lanyard is wound about the cable and stopper, while the knot keeps it from slipping.—**Lever-stopper**, an iron casting holding one link of chain which is kept in place by the use of a turn-screw, or lever. See *hatch*-★*stopper*.—**Mechanical-stopper**, a contrivance for checking the running out of a cable, and also for controlling the running in of a cable when it is being stowed in the chain-lockers.—**Rope-stopper.** Same as *lanyard*-★*stopper*.

stopping-off (stop″ing-ôf'), *n.* In electroplating, deposition on the exposed portions of a surface the remainder of which is protected by a non-conducting coat of varnish or wax.

stop-ridge, *n.* **2.** In drains and other piping, a ridge which prevents one section slipping too far over another at the joints. Examples have been found in excavations of prehistoric Cnosus in Crete. *A. J. Evans*, in An. Brit. School at Athens, 1901–02, p. 14.

stop-shaft (stop'shȧft), *n.* A mechanism that will lock or stop the motion of a shaft either lengthwise or when it has traversed a certain part of a revolution, or a multiple of such part: used in printing-presses, gear-cutters, and other machines.

stop-swing (stop'swing), *n.* In club-swinging, the act of bringing the club against the opposite arm, thus reversing its swing.

storage, *n.*—**Capillary storage-capacity**, the quantity of moisture that can be held in a given volume of soil in the shape of capillary films surrounding the particles of soil. This capacity increases from the surface down to the ground-water level in accordance with the laws of capillarity.—**Storage reservoir.** See ★*reservoir*.

storage-boom (stōr'ạj-böm), *n.* A strong boom used to hold logs in storage at a saw-mill. Also *holding-boom*.

storage-cell (stōr'ạj-sel), *n.* An electric accumulator.

storage-track (stōr'ạj-trak), *n.* In *railroading*, any track at a drill-yard or terminal yard on which loaded or empty cars are stored for cleaning, or safe-keeping between runs.

store3, *n.* **5.** An animal bought to be fattened for the market; store cattle. *E. E. Morris*, Austral English. [Australia.]

> They then, if '*stores*,' pass to the rich salt-bush country of Riverina.
> *W. H. L. Ranken*, Dominion of Australia, xiii.

storesin (stō'rez-in), *n.* [*sto*(*rax*) + *resin*.] An amorphous compound, $C_{36}H_{55}(OH)_3$, the chief constituent of the resinous balsam storax.

storm, *n.*—**Espy's theory of storms**, the explanation of the method of the formation and maintenance of storms as due to the evolution of latent heat by the condensing moisture of ascending moist air, whereby the cloud becomes specifically lighter than the surrounding air at the same level, thus forming an up-draft and a continued process of condensation. With the addition of the whirlwind tendency where the air flows inward and upward, Espy's theory forms the foundation of modern meteorology.—**Law of storms.** See ★*hurricane distance*.

storm-beach (stôrm'bēch), *n.* A beach the form of which has been determined by a storm of unusual strength. *Geikie*, Text-book of Geol., pp. 381, 580.

Stormberg beds. See ★*bed*1.

storm-breeder (stôrm'brē″dėr), *n.* A day or condition of weather regarded as likely to 'breed' or produce a storm: said, usually, of warm moist days of winter or hot hours or days of summer.

storm-clock (stôrm'klok), *n.* A meteorograph; specifically, the self-registering meteorological apparatus devised and named by Sir Francis Ronalds.

storm-coat (stôrm'kōt), *n.* A waterproof coat or mackintosh; also, a heavy ulster.

storm-energy (stôrm'en″ėr-ji), *n.* The energy within a storm, or the sum total of the vis viva of the moving air and falling rain; the total or average prominent characteristics of a system of cyclonic winds. A storm of great energy is one having strong winds and heavy rain.

storm-jib (stôrm'jib), *n.* A small jib made of heavy canvas and used in bad weather.

stormward, stormwards (stôrm'wärd, -wärdz), *a.* and *adv.* **I.** *a.* Turned toward or facing the storm.

> So every year that falls with noiseless flake
> Should fill old scars up on the *stormward* side.
> *Lowell*, The Oak, st. 4.

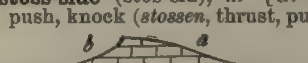
II. *adv.* Moving toward the storm; in such a way as to face the storm.

> The team made little progress *stormward*, for the blizzard was raging more furiously and they had left the shelter of the woods. *N. Y. Times*, April 11, 1888.

storm-wave (stôrm'wāv), *n.* A wave of water piled up on a coast or at sea by strong ocean winds.

story2, *n.*—**Lower story, upper story.** (*b*) In *forestry*. See ★*two-storied*.

stoss-side (stos'sīd), *n.* [G. *stoss*, a thrust, push, knock (*stossen*, thrust, push), + E. *side*.] The side (of a hill, etc.) that receives (or has received) the thrust of a glacier, or other impulse. *R. D. Salisbury*, in Geol. Surv. of New Jersey, 1891, p. 47.



Form of hill after it has been worn by glacial ice. The movement of the ice was from *a*, the stoss-side, to *b*.

> There was also more rapid erosion upon the north or *stoss side* of hills than upon the southern or lee side, against which the ice-currents had little chance to scour.
> *Bulletin Amer. Geog. Soc.*, XXX. 225.

stott, *v. i.* See *stot*2. *W. J. Travis*, Practical Golf, p. 134.

stotter (stot'ėr), *n.* [*stot*2 + *-er*1.] In *golf*, a ball that stots or bounces: generally used in some such expression as 'a good *stotter*,' meaning a ball that possesses resiliency and bounces well upon being dropped on a hard, flat surface. *W. Park, Jr.*, Game of Golf, p. 52.

stouker (stou'kėr), *n.* [Also *stowker*; a dial. form of *stalker*, < *stalk*, handle, + *-er*1.] A workman in a pottery who makes and attaches handles, feet, and spouts to vessels. [Eng.]

stouking (stou'king), *n.* [Also *stowking*; a dial. form of *stalking*.] The making and attaching of handles and spouts to vessels. [Eng.]

stovaine (stō'vạ̈-in), *n.* [*stove*1, *n.*, + *-a-* + *-ine*2: an arbitrary rendering into English of F. *Fourneau* ('stove'), the name of the discoverer.] The hydrochlorid of benzoylethyldimethylaminopropanol, $CH_3C(C_2H_5)(OC_7H_5O)CH_2N(CH_3)_2HCl$: a local anesthetic resembling cocaine but weaker in its effect and less poisonous. *Sci. Amer.*, Dec. 14, 1907, p. 443.

stove^1, *n.* 7. A chamber in which hides are dehaired.— **Cowper's stove,** a stove used to heat the blast for the iron blast-furnace by means of the waste heat from the same furnace. It consists of a circular wrought-iron tower about 100 feet high and from 25 to 30 feet in diameter, lined with fire-brick. The body of the stove is occupied by a checkerwork of fire-brick shaped to form hexagonal channels. Each blast-furnace is accompanied by four hot-blast stoves. At any one time three of these stoves are occupied by burning the waste gases from the blast-furnace within the channels described. The effect of this combustion is to heat the fire-brick of the channel to a very high temperature. The fourth stove, having been previously heated as described, is used for the passage of the blast from the blowing-engine to the furnace. It thus gives up the heat impounded in its fire-brick to the air. When this stove has become somewhat cooled by this process, the air is switched through another of the stoves. *Jour. Soc. Chem. Industry*, 1893, p. 311.—**Hanging stove** (*naut.*), a stove suspended from a deck-beam to keep it free of the deck. **Hot-blast stove,** the oven or inclosed chamber, usually now of fire-brick, in which air is heated on its way from the blowing-cylinders to the blast-furnace in which iron is smelted.— **Massick's and Crooke's hot-blast stove,** a stove which has a wide combustion-chamber in the center and a heating-chamber divided by radial and concentric walls into annular passages. The gases enter the chimney after having passed through three sets of tubes.— **Napier's stove,** a stove for heating ordinary dwelling-rooms by means of solid fuel, which is very economically used. It consists essentially of two concentric cylinders, in the inner of which the fuel is burned, while the gaseous products of combustion are carried from top to bottom of the space between this and the outer cylinder before passing off to the chimney. — **Pistol-pipe stove,** a hot-blast stove with a single vertical pipe divided longitudinally and bent over in the form of a pistol-stock. The cold air entering one division descends through the other, and after becoming heated by the furnace passes off to the twyers.— **René Duvoir stove,** a hot-air stove or furnace much used in France for heating houses and factories. The hot gases from the fireplace are carried off through a number of cast-iron pipes around which circulates the air to be heated, which is then distributed by flues to the various rooms of the building.— **Reservoir stove.** (*a*) A stove having a reservoir for coal; a self-feeder. (*b*) A stove having a tank or reservoir for hot water.— **Spoor's stove,** a stove for domestic warming of rooms, in which the hot gases from the fire are made to pass upward and downward round the circumference of the fireplace before reaching the chimney, and the round grate can be turned on an axis in order to remove ashes.— **Talabot stove,** a hot-air stove, designed by M. Talabot, and used to heat the Chambre des Deputés in Paris. The air to be heated was passed through a number of horizontal cast-iron pipes set in an arched fireplace of brick.— **Tinners' stove.** See ★*tinner*.— **Whitwell's stove,** a stove for heating the blast on its way from the blowing-engine to the iron blast-furnace. It is lined with fire-brick. It is distinguished from the Cowper stove by the fact that the air must make several passes up and down through the Whitwell stove, whereas, in the Cowper stove, it makes one pass up and back.

stove^1, *v. t.* 1. (*f*) In the manufacture of explosives, to dry (the granulated powder) by exposure to warm air in a 'stove' or drying-room fitted with shelves under which run lines of steam-pipe. A similar drying process is applied in the manufacture of smokeless powder to remove any remains of acetone.

> All cordite, after pressing, is dried in stoves. . . . The object of the *stoving* is to remove the acetone and any moisture from the cordite. *Encyc. Brit.*, XXXII. 24.

3. In *wool-bleaching*, to expose (woolen yarn or cloth) in a dampened condition to the fumes of burning sulphur, and hence to the action of sulphurous acid, in a closed, usually wooden, building. The same treatment is sometimes applied to silk.

stove^2, *pret.* and *pp.*— **Stove up,** said of iron forgings or bars which are locally heated and then struck in the direction of their length; upset. The effect of this is to increase the diameter at the heated part, but at the expense of the length. The metal for heads of bolts is often secured by upsetting, as well as the parts of bridge-rods which are to carry the screw-threads when it is desired that the rod at the bottom of the threads shall be as strong as or stronger than the body of the bar.

stove-blacking (stōv′blak″ing), *n.* A preparation of graphite or plumbago used to rub over the surface of iron stoves, in order to give it a glossy appearance and to protect the iron from rusting.

stove-bolt (stōv′bōlt), *n.* A small bolt with a slot in the head for a screw-driver and with a square nut on the screw.

stove-lid (stōv′lid), *n.* A cover, usually a circular disk, fitting an opening in the top of a cooking-stove or range.

stove-lifter (stōv′lif″tėr), *n.* A tool for lifting a stove-lid from the stove.

stove-mat (stōv′mat), *n.* A mat (usually circular) of asbestos cloth used to place on a cooking-stove.

stover^1, *n.* (*b*) In American agriculture, the stalks of Indian corn collectively, after removal of the ears but including the leaves, used as fodder.

stove-shelf (stōv′shelf), *n.* A metallic shelf over the back part of a cooking-stove or range, often attached to the rising-pipe. It is intended to be in the rising currents of hot air around the stove and to carry plates to be warmed, or to keep cooked food warm until it is called for.

stow^1, *v.* II. *intrans.* To conceal one's self on a ship (with a view to a free passage): with *away*. See *stowaway*.

> [He] . . . opened his campaign by *stowing away* in one of [the ship's] boats.
> *R. Kipling*, Bonds of Discipline, in Traffics and Discoveries, p. 38.

stowker, *n.* Same as ★*stouker*.

stowking, *n.* Same as ★*stouking*.

str. A contraction of *steamer*.

strabometry (strā-bom′e-tri), *n.* [NL. *strab*(*ismus*) + *-o-* + Gr. μέτρον, measure.] The measurement of the degree of strabismus.

Strad^2 (sträd), *n.* An abbreviation of ★*Stradivari*.

straddle-mill (strad′l-mil), *n.* A revolving milling-machine cutter, either solid or made up of several cutters set side by side in a gang, which will cut or finish the top and sides of the work at the same time, when it is presented to the cutters in the plane in which they revolve, or at right angles to their common axis. This can only be done when the outside cutters have cutting-edges on their inside faces, or appear to straddle the work. The straddle-mill generally faces the top and sides of the work at the same time.

Stradivari, Stradivarius (strä-di-vä′rē, strad-i-vā′ri-us), *n.* The name of Antonio Stradivari (Latinized *Stradivarius*) of Cremona (d. 1737), a famous violin-maker, applied to a violin or similar instrument made by him.

straggle, *v.* II. *trans.* To rough-dress (a stone for grinding) by a wriggling motion of the dressing-tool, so as to give a roughened surface; rag.

straight^1, *n.* 4. In *geom.*, a straight line.— 5. In *trap-shooting*, a perfect score.

> In the 10-bird event W. . . . and C. each made a *straight*. *Forest and Stream*, Feb. 21, 1903, p. 160.

Alternate straight, in *poker*, a sequence of alternate cards, such as 2, 4, 6, 8, 10: usually played to beat two pairs.—**Basal straights,** in *geom.*, the four straight lines touched by a range of conics.—**Brocard straight,** the straight line determined by the Brocard points Ω, Ω′. —**Dutch straight,** in *poker*, an *alternate* ★*straight* (which see).—**Euler's straight,** the straight line on which are the centroid, G, the orthocenter, H, and the circumcenter, O, of any triangle ABC.—**Figurative straight,** the straight line at infinity on which all points at infinity on a plane lie.— **Frégier straight** of a point P, the polar of the Frégier point F of P. F is the cointersection point of chords of the conic which subtend a right angle at the fixed point P of the conic. F is on the normal at P.— **Harmonic straights.** Same as *harmonic flat pencil*. See *harmonic pencil*.— **Harmonic straights of a ruled system,** in *projective geom.*, four straights cut in four harmonic points by one (and so by every) guide-straight.—**Inside straight,** in *poker*, a sequence which is broken in the middle, such as 5, 6, 8, 9, or 3, 5, 6, 7.— **Lemoine straight,** the polar of the Lemoine point of a triangle with respect to its circumcircle.— **One-end straight,** in *poker*, a four-card straight which only one card will fill, such as A, K, Q, J. — **Open-end straight,** in *poker*, a four-card straight which is open at both ends, so that either of two cards will fill it, such as 5, 6, 7, 8.—**Pascal straight,** in *geom.*, the straight line on which intersect the three opposite pairs in any complete set of connectors of a hexastigm whose dots are in a conic.—**Sheaf of straights.** See ★*sheaf*^{1}.—**Simson straight** of a point P on the circumcircle of triangle ABC, the bearer of the feet of the three perpendiculars from P to the sides of ABC.—**Space of straights.** See ★*space*.

straightaway, *a.* II. *n.* A race-course which is without turn or curve; also a race which is run without turning or curving.

> The discovery of this new course is a matter of importance to all interested in the mile *straightaway*, because it will offer an opportunity for the record to be lowered oftener than once a year, thus making it possible for this country to keep up with record developments abroad.
> *Automobile Topics*, May 27, 1905, p. 447.

straight-bolt (strāt′bōlt), *n.* A soldering-bit or copper 'iron' the axis of which is in line with the shank and handle.

straight-bred (strāt′bred), *p. a.* Descended from a given breed without mixture of other blood; pure-blooded: applied to cattle and other domesticated animals.

> The Gazette is asked for information in reference to certain so-called "pure" or "*straight-bred*" strains of pedigreed cattle; particularly those spoken of as "pure Cruickshank" Short-horns. In this latter case the term "pure" or "straight" is properly applied only to such cattle as have been bred on both sides from stock descending from animals bred by the late Amos Cruickshank, of Sittyton farm, Aberdeenshire, Scotland, without admixture of blood from other herds.
> *Rep. Kansas State Board Agr.*, 1901–02, p. 57.

straight-edge, *n.* 2. A wooden board or metal strip, with an edge accurately planed, used in irrigation for laying out ditches in connection with a level or plumb-bob and in place of a surveyor's level.

> The pioneer irrigators in planning a ditch use a *straightedge* or board a rod long (16.5 feet), on one end of which is a block projecting one-half of an inch or an inch. When this board is placed horizontally, the lower projecting point will thus indicate a fall of one-half of an inch or an inch to the rod. By this means points are determined at intervals of a rod where stakes may be driven into the ground, marking out the course of the ditch upon a slightly ascending or descending grade, according as the work is begun from the lower or upper end.
> *Sci. Amer. Sup.*, Jan. 10, 1903, p. 22599.

straightening-roll (strāt′ning-rōl), *n.* A machine, allied to the bending-roll, used in straightening out bent or wrinkled metal plates or sheets. It consists of three lower rolls and four upper rolls placed in housings immediately above them, all being geared together.

straightest (strā′test), *a.* and *n.* I. *a.* Superlative of *straight*.

II. *n.* Specifically, in *spherics*, a great circle, the analogue of the straight, being unbounded but determined by any two points not opposites.

straight-field (strāt′fēld), *n.* In *geom.*, the ∞^2 straight lines on a plane.

Straight-over draft. See ★*draft*^{1}.

straight-rail (strāt′rāl), *n.* In *carom billiards*, a straightforward movement by which, with the aid of the parallel cushion, three balls are carried around the table. A limit was placed upon it in 1879, and since that time it has been little played, and generally for exhibition only.

straights-geometry (strāts′jē-om″e-tri), *n.* Geometry with the straight line as element.

straight-sheaf (strāt′shēf), *n.* In *geom.*, the ∞^2 straights on a point.

straight-spoken (strāt-spō′ken), *a.* Straightforward and truthful in speech. [Colloq.] *Dialect Notes*, III. iii.

straightway (strāt′wā), *a.* Permitting something, as a fluid, to pass without changes of direction: used of valves or fittings for pipe. —**Straightway valve.** See ★*valve*.

strain^1, *v. t.* 14. In *photog.*, said of a lens when an object is brought so near that the image appears distorted.

> But if brought nearer than a certain point, the lens will be what is termed "*strained*," and the image will become dreadfully distorted. It is for this reason that long focus lenses are specially constructed for obtaining large images. *Woodbury*, Encyc. Dict. of Photog., p. 262.

strain^1, *n.*— **Components of a strain,** six quantities continuously variable from point to point, which determine the positions of the particles of a body when it is strained. They are quantities in terms of which the extensions and contractions of all the lines joining particles of a body which are near together can be expressed. —**Dielectric strain,** the mechanical effect upon a dielectric of the stress exerted by an electrostatic field of force.— **Differential strain,** a strain caused by a variable or a moving load.— **Elongation strain,** the percentage of elongation of a piece of material being tested in a testing-machine. It is the amount of stretch expressed as a fraction whose numerator is the amount of stretch in the test-specimen and whose denominator is the length between the gage-marks on the specimen within which the observed amount of stretch is measured.— **Intrinsic strain,** in *phys.*, an internal strain affecting a portion of a solid but not producing deformation of the body as a whole, as the strains produced within a mass of glass which has been suddenly cooled.— **Irrotational strain.** Same as *pure strain* (which see, under *strain*^{1}).— **Level of no strain.** See ★*level*^{1}.— **Magnetic strain,** the mechanical effect of the stress exerted by a magnetic field. See *magneto-striction*.— **Optical strain,** any deformation of an isotropic medium which renders it doubly refracting; any strain which affects the optical properties of a transparent medium.— **Strain-energy method,** a method of calculating the deflection of a beam or structure, which involves finding the energy necessary to do the work of deflecting the beam by a given amount. If the load is not applied for a long enough period, the deflection will not reach the maximum attainable with the given load.— **Strain sensation,** in *psychol.*, a kinesthetic sensation, having the quality of strain, and referred by most authors to the sensory nerve-endings of the tendons.

> When we are trying to remember a name or are pondering a difficult problem we notice the presence of *strain-sensations*.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 247.

Tensile strain. See ★*tensile*.

strain^2, *n.* 1. (*b*) In *agri.* and *hort.*, a group of cultivated plants derived from a race which does not differ from the original race in visible taxonomic characters, but into which has been bred some intrinsic quality, such as a tendency to yield heavily, or a better adaptability to a certain environment. If a breeder by the careful selection of blue-stem wheat should produce a sort of blue-stem which differs from the original race only in the ability to give greater yields, it would be called a strain of blue-stem. *H. J. Webber*, in Science, Oct. 16, 1903, p. 502. Compare ★*race*^{3}, 5 (*c*).—7. A name given in Ireland to long masses of half-molded peat before the latter is cut up into briquets for drying and subsequent burning. The peat is excavated from the bog, and by a machine is torn, comminuted, kneaded, and pressed, leaving the machine in continuous rods or bars (strains). On drying, the strains shrink to about half their size when wet.

The machine digs out, elevates, and drops into the dump-cars a ton of raw peat every five minutes. It is transported to the machine, conveniently located at the edge of the bog, which tears, pulverizes, kneads, and presses the plastic mass out into long masses or "*strains*," which are cut into sections a foot long and dried in the open air to hard, tough blocks, which resist rain and bear transportation to any distance.
Sci. Amer. Sup., May 21, 1904, p. 23735.

strain-diagram (strān'dī″ạ̈-gram), *n.* See ★*diagram*.

strainer, *n.*—**Macomb strainer,** in *ship-building*, a fitting forming part of a suction-pipe for bilge-water. The inlet-pipe is attached near the top of the strainer-casing, the outlet-pipe at the bottom. In the interior, between the inlet and the outlet, is a strainer in the form of a basket which can be removed for cleaning by taking off a water-tight cover which forms the top of the casing.

strainer-cooler (strā'nėr-kö″lėr), *n.* Same as ★*scrap-hopper*.

straining-head (strā'ning-hed), *n.* In a testing-machine for metals and other materials, the part which is operated by power to produce stress in the test-piece and cause the strain of which its deformation is the measure. This head may be actuated by hydraulic pressure or by screws, one end of the test-piece being fastened to the head by a holder or wedges, while the other is held in a similar holder in a part connected to the weighing-levers and scale-beam.

straining-screw (strā'ning-skrö), *n.* The screw, or one of a pair of screws, in a machine for testing the strength and resistance of materials, by which the power is applied to produce deformation; or, one of the screws by which the movable head is adjusted in such machines to fit them for different lengths of test-piece.

strain-insulator (strān'in″sụ̄-lā-tọr), *n.* See ★*insulator*.

strain-quadric (strān'kwod″rik), *n.* The quadric surface whose axes coincide with the axes of the strain and in length are proportional to the tangents of the angles whose sines are the quotients of old radii vectors by new ones in the same directions.

strain-slip (strān'slip), *n.* Slipping along a plane of fracture, as in rocks, whereby a strain is eased.

The second cleavage being of the nature of *strain-slip*, its development along the axial planes of the folds is of interest, and is briefly discussed.
Nature, March 12, 1908, p. 454.

strait^1, *n.* 7. *pl.* See *cod-liver oil*.

strake^2, *n.*—**Bilge strake.** See ★*bilge-strake*.—**Ceiling-strakes,** in *naval arch.*, the strakes worked below the lower deck-clamps.—**Deck-strakes,** in *naval arch.*, deck-planking.—**Passing strake.** See *shift of* ★*butts*.—**Raised strake,** a strake between two adjacent sunken strakes which laps over the mat the edges and is separated from the frames by liners of the same thickness as the sunken strakes. See cut under ★*liner*^{2}, 5.—**Sunken strake,** a strake of plating in direct contact with the frames. Also called *inner strake*.

strand^1, *v. i.* 1. Specifically, in *law*, to ground: said of the running of a vessel by accident upon the sands or rocks so that she is helpless there for some time.

strand-line (strand'līn), *n.* A shore-line; also, a shore-line from which the sea or a lake has receded.

But it is in Scotland that the former "*strand-lines*' are most abundantly and most clearly developed. . . . Where most fully developed, as near Tain, they are at least five in number, and follow each other in successive platforms at heights of about 15, 25, 50, 75, and 100 feet.
Encyc. Brit., XXVIII. 648.

strand-looper (strand'lö″pėr), *n.* [*strand* + D. *looper*, runner.] One living on the coast and getting his living largely along the shore. *Jour. Anthrop. Inst.*, 1900, p. 47.

The inquiry starts from a series, unfortunately limited in numbers, of skulls of the race known as the *Strandloopers* found in caves along the south-eastern seaboard. These constitute a group more pure than that of the Bushmen, and apparently quite distinct from that of the Hottentots. The up-country Bushmen are intermediate between the *Strandloopers* and the Hottentots. The latter, again, present dimensions between the up-country Bushmen and the Bantu, and in many characters they approach the Negroes of British Central Africa more closely than the Kafir tribes of the east coast.
Nature, Jan. 2, 1908, p. 211.

strand-plant (strand'plant), *n.* A plant belonging to, or characteristic of, the vegetation of the strand of the sea. See the extract.

Dr. Holtermann describes three other formations of *strand-plants* besides the mangroves, viz., first the plants of moist sand, which fall into two categories, (1) those growing on the edge of the sea, absorbing salt water, and possessing water-tissue; (2) those growing further from the sea, with fresh bottom-water, which have no special xerophilous adaptations. Secondly, the dune plants, a highly xerophilous type; and, thirdly, the plants growing on salty mud, which have internal water-tissue, and resemble succulent desert-plants in many anatomical features. *Nature*, Feb. 6, 1908, p. 313.

stranger, *n.* 8. A name in Victoria and Tasmania for a labroid fish, *Odax richardsoni*. Also called *rock-whiting*. *E. E. Morris*, Austral English.—**Strangers' cold.** See ★*cold*.

strangle, *n.* 3. In *wrestling*, a hold by which the wrestler's breathing is hampered.

strangler-tree (strang'glėr-trē), *n.* Either of two tropical American trees, *Clusia rosea* and *C. alba*, which grow usually as parasites on other trees, often killing them. The roots spread over the trunk and downward until the ground is reached, when other roots are formed, and the tree comes finally to be supported by its own trunk. See ★*aralie*, ★*cupay*, and *Clusia*.

strap, *n.* 8. In *mach.*: (*a*) The narrow band which surrounds the disk of a steam-engine eccentric and forms the bearing-surface for the eccentric-rod. It is usually separate from the latter and bolted to it, generally in two parts to permit adjustment for wear. (*b*) An enveloping band of steel, somewhat U-shaped, which passes around the outside of the brasses at the ends of a steam-engine connecting-rod, and, by means of bolts, wedges, and gib and key, makes a solid unit of the connecting-rod end or stub, while providing for easy adjustment or renewal as wear occurs upon the bearings on the pins. *F. R. Hutton*, Power Plants, p. 340.—9. In *iron ship-building*, a narrow strip of plate or a bar with a wide flange used to unite two parts to each of which the strap is riveted. See also ★*butt-strap* and ★*seam-strap*.

strap-bar (strap'bär), *n.* 1. The bar which carries the belt-fork on a counter-shaft combination or similar place, where a belt is to be shifted from a fast to a loose pulley on a shaft. The bar is guided by slots in brackets projecting from the hangers, and may be moved in the direction of its length by cords over pulleys or by a lever. [Eng.]—2. One of the bars connecting the first transverse bar of a cupel-hearth with the frame or test-ring. *Phillips and Bauerman*, Elements of Metallurgy, p. 701.

strap-bolt, *n.* 2. A lug-bolt with round threaded portions at both ends, so that the strap part may be bent into U-shape around some element and the latter be drawn against the surface through which the threaded ends pass.

strap-brake (strap'brāk), *n.* A brake in which the frictional contact surface is a flexible metal strap surrounding a cylindrical bearing surface, instead of a shoe or block bearing or a small surface only.

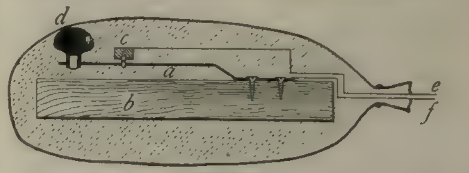
strap-copper (strap'kop″ėr), *n.* Copper in flat bands. *Amer. Inventor*, June 1, 1904, p. 246.

strap-driven (strap'driv″n), *a.* 1. Same as ★*belt-driven*. [Eng.]—2. Driven by means of a narrow metal band surrounding the driving part, as of an eccentric-rod. *The Engineer* (London), Feb., 1901, p. 124.

strap-fork (strap'fôrk), *n.* A device with two prongs for guiding a driving-belt from one pulley to another on a machine. *Thornley*, Cotton Combing Machines, p. 7.

strap-iron (strap'ī″ėrn), *n.* A form of flat iron in which the thickness is small compared with the width, being small enough to make the ductile stock bend easily around corners when used as a tie or strap for securing packages, such as bundles of shingles, hay-bales, and the like. *Trans. Amer. Inst. Elect. Engin.*, Oct., 1904, p. 665.

strap-key (strap'kē), *n.* In *exper. psychol.*, a noiseless break-key used in experiments on tapping. An elastic brass strip, mounted on a wooden block, carries a button for the finger; a platinum point on its upper surface is in contact with a platinum plate on a brass stop fixed above it; and the whole key is incased in a rubber bag packed with felt. A very small pressure on the button breaks the circuit without noise. *Scripture*, Exper. Phonetics, p. 529.



Strap-key.

a, elastic brass strip mounted on wooden block, *b*. *c*, brass stop to keep free end of *a* from rising beyond the desired height (platinum points, attached to *a* and *c*, insure contact); *d*, button, pressure on which breaks contact; *e*, *f*, wires projecting from the rubber bag.

strap-loop (strap'löp), *n.* A flat band or strap bent to form a loop, or to be used as a clip by securing the two ends.

strapping^1, *n.* 4. In *surg.*, the application of strips of adhesive plaster, one overlapping the other so as to cover the surface and make pressure upon it: a method employed in the treatment of ulcers and open wounds.

strapping-machine (strap'ing-mạ̈-shēn″), *n.* See ★*sandpapering-machine*.

strapping-motion (strap'ing-mō″shọn), *n.* Same as ★*governing-motion*.

strap-rail (strap'rāl), *n.* A flat rail laid upon a continuous longitudinal sleeper.

strap-wire (strap'wīr), *n.* A wire or bar of rectangular cross-section sometimes used in the construction of armature-coils for electric generators and motors.

strascicando (strä-shẹ-kän'dō), *a.* [It., ppr. of *strascicare*, drag, parallel to *strascinare*, drag, freq. verb ult., ‹ L. *trahere*, drag. See *tract*^{1}.] In *music*, in a drawling, dragging manner.

strascicato (strä-shẹ-kä'tō), *a.* [It., pp. of *strascicare*, drag. See ★*strascicando*.] Same as ★*strascicando*.

strascino (strä'shẹ-nō), *n.* [It., ‹ *strascinare*, drag. See ★*strascicando*.] In *music*, a slurred, drawling effect in passing from one tone to another. Compare *portamento*.

stratal (strā'tạ̈l), *a.* [*stratum* + *-al*^{1}.] Related in some way to strata.

strategos (stra-tē'gos), *n.* [Gr. *στρατηγός*, the leader of an army, a general. See *strategus* and *strategy*.] A war-game or kriegspiel. See *kriegspiel*.

stratic (strat'ik), *a.* [*strat*(*um*) + *-ic*.] Same as *stratigraphic*. [Rare.]

straticulation (strạ-tik-ụ̄-lā'shọn), *n.* [**straticulat*(*e*), *v.*, + *-ion*. See *straticulate*, *a.*] The apparent stratification which appears in glacial ice.

(d) Slipping along planes of bedding or *straticulation*, or those of the blue bands.—This slipping has been shown to be a fact in several glaciers, by Forel (1889); among them, the Bossons Glacier at Chamouni. In the lower part of a glacier these planes have a dip up stream, and as a consequence the mass of the glacier above, as it flows along, rises by slipping along one or more of the planes of lamellar structure.
Dana, Manual of Geol. (4th ed.), p. 246.

stratify, *v. t.* 2. To preserve (tree-seeds) by spreading them in layers alternating with layers of earth or sand.

Stratigraphic geology, the study of the chronological succession of the great formations of the earth's crust and the sequence of events of which they contain the record; stratigraphy. It determines the order of succession of the various plants and animals which in past time have peopled the earth, and thereby seeks to unravel the story of the earth as made known by the rocks of the crust. Further, by comparing the sequence of rocks in one country with that in another, materials are furnished for determining the successive stages in the geographical evolution of the various portions of the earth's surface. Also called *historical geology* or *geologic history*.

stratiomyid (strat″i-ọ̄-mī'id), *n.* and *a.* I. *n.* A member of the dipterous family *Stratiomyidæ*.

II. *a.* Having the characters of or belonging to the family *Stratiomyidæ*.

strato-cumulus, *n.* See ★*cloud*^{1}, 1.

stratum, *n.* (*c*) In *archæol. excavations*, one of the layers of deposits left by successive civilizations, as in the overlying cities at Hissarlik, the ancient Troy.—**Correlate strata.** See ★*correlate.*—**Stratum moleculare,** the outermost layer of the cerebral cortex.—**Stratum mucosum.** Same as *rete mucosum.*—**Stratum vasculare,** the muscular wall of the uterus between the mucous and the peritoneal membranes.

stratus, *n.* See ★*cloud*^{1},1. The International Conference at Innsbruck in Sept., 1905, officially adopted the following for international use: "Instead of 'raised fog in a horizontal layer' *stratus* should be defined as 'a uniform layer of cloud similar to fog but which does not rest on the ground': the complete absence of details distinguishes the stratus from other compact forms of cloud."—**Stratus maculosus,** the mackerel-cloud or mackerel-sky.

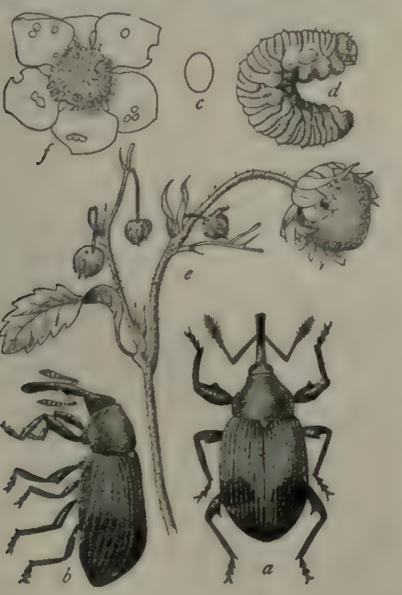
straw^{1}. **I.** *n.*—**Broom-straw.** See *broom-★sedge.*

II. *a.*—**Straw ring,** a ring of plaited straw used in chemical laboratories to support a round-bottomed vessel, such as a flask or capsule, in an upright position.

straw-bass (strâ'bås), *n.* The large-mouthed black-bass, *Micropterus salmoides.*

strawberry, *n.*—**Crushed strawberry.** (*b*) In *ceram.*, a glaze of Chinese porcelain; a variety of peach-bloom.—**Indian strawberry.** (*a*) *Duchesnea Indica.* Also called *mock strawberry* and *yellow strawberry.* (*b*) The strawberry-blite, *Blitum capitatum.*—**Leaf-blotch of strawberry.** See ★*leaf-blotch.*—**Mock-strawberry.** Same as *Indian* ★*strawberry* (*a*).—**Neat strawberry leaf-roller.** See ★*leaf-roller.*—**Spotted strawberry leaf-beetle.** Same as *spotted* ★*paria.*—**Strawberry blond,** a red-haired person. [Slang, U. S.] *Stand. Dict.*—**Strawberry false-worm.** Same as ★*strawberry-slug.*—**Strawberry leaf-beetle.** See ★*leaf-beetle.*—**Strawberry leaf-spot.** See ★*leaf-spot.*—**Strawberry root-louse.** See ★*root-louse.*—**Strawberry span-worm.** Same as *horned* ★*span-worm.*—**Yellow strawberry.** Same as *Indian* ★*strawberry* (*a*).

strawberry-beetle (strâ'ber-i-bē″tl), *n.* **1.** In America, the little curculionid, *Anthonomus signatus*, a small blackish beetle which lays its eggs in the developing buds of the strawberry. Also called the *strawberry-weevil.*—**2.** An Australian curculionid, *Rhinaria perdix*, whose larva bores into the crown and leaf-stalks of the strawberry.



Strawberry-beetle (*Anthonomus signatus*).

a, adult from above; *b*, same from side; *c*, outline of egg; *d*, larva; *e*, strawberry spray showing work in bud and stem; *f*, open bud showing egg and punctures: *a*, *b*, *c*, and *d* greatly enlarged. (After Chittenden and Riley, U. S. D. A.)

strawberry-blight (strâ'ber-i-blīt), *n.* See ★*blight.*

strawberry-bug (strâ'ber-i-bug), *n.* **1.** An insect, *Lygus pratensis*, which produces the so-called buttoning of strawberries.—**2.** The flea-like negro-bug, *Corimelæna pulicaria.* See *negro-bug.*

strawberry-fern (strâ'ber-i-fèrn), *n.* See ★*fern*^{1}.

strawberry-mildew (strâ'ber-i-mil″dū), *n.* See ★*mildew.*

strawberry-slug (strâ'ber-i-slug), *n.* The larva of an American saw-fly, *Harpiphorus maculatus.* It eats the leaves of the strawberry. Also called *strawberry false-worm.*

straw-boss (strâ'bos), *n.* A subforeman in a logging-camp. [Colloq.]

straw-knife (strâ'nīf), *n.* A knife used for splitting and cutting straws.

straw-lily (strâ'lil″i), *n.* See ★*lily.*

straw-plait (strâ'plāt), *a.* Pertaining to or consisting of plaits or braids of straw; pertaining to the plaiting of straw into braids for the manufacture of bonnets and hats.

> [There is] an early reference to the *straw-plait* industry in Miss Agnes Strickland's 'Queens of Scotland,' where the story goes that Mary, Queen of Scots, imported the art into Scotland from Lorraine.
> *N. and Q.*, 10th ser., III. 413.

straw-plaiting (strâ'plā″ting), *n.* The trade of plaiting straw for bonnets, etc. See *Dunstable straw*, under *straw*^{1}.

straw-shoes (strâ'shöz), *n.* A man of straw. See *man of straw* (*b*), under *man.*

> An advocate or lawyer who wanted a convenient witness knew by these signs [a straw in one of the shoes] when to find one, and the colloquy between the parties was brief. 'Don't you remember?' said the advocate (the party looked at the fee and gave no sign; but the fee increased, and the powers of memory increased with it)—'To be sure I do!' 'Then come into court and swear it.' And *straw-shoes* went into court and swore it. Athens abounded in *straw-shoes.* *Bouvier*, Law Dict.

strawsonizer (strâ'so̤n-ī-zėr), *n.* [*Strawson*, the name of the inventor, + *-iz*(*e*) + *-er.*] A horse machine for distributing seeds, manures, insecticides, etc., operating by means of a strong blast from a fan. *H. J. Webb*, Advanced Agriculture, p. 38. [Eng.]

straw-worm, *n.*—**Barley straw-worm,** an American joint-worm, *Isosoma hordei*, which affects barley. See *joint-worm*, 2.

stray^{1}, *n.* **5.** In wireless telegraphy, a disturbance due to fluctuating differences of potential between the top of the antennæ of a receiving station and the earth which sometimes affects the recording instrument and interferes with signaling. Also called an *X.*

> This transforming device serves to effect an electrical connection between the open-circuit resonator and the local primary circuit, thus permitting the difference of potential between the upper strata of air at the top of the antennæ and that of the earth—always the cause of *strays* or "X's" in simple resonators—to equalize without giving rise to oscillations in the closed circuit, and therefore preventing false indications being registered on the tape.
> *Elect. World and Engin.*, Aug. 1, 1903, p. 173.

streak^{2}, *n.* **8.** In *turpentine-making*, the portion of a bled pine-tree from which the resin exudes.—**Dry streak.** Same as *dry* ★*face.*—**Medullary streak.** Same as *medullary furrow* (which see, under *medullary*).

streaked, *a.* **3.** In *geol.*, noting a flow-structure in some igneous rocks marked by parallelism of discontinuous layers. *Geikie*, Text-book of Geol., p. 131.—**Streaked thecla.** See ★*thecla.*

streak-plate (strēk'plāt), *n.* A small tablet, usually of unglazed porcelain, on which minerals are rubbed in order to show the color of the powder or streak. *Brush and Penfield*, Determ. Mineral. and Blowpipe Anal., p. 228.

stream, *n.*—**Hair stream,** the general pattern of the hair on an animal, mapped out by the direction of the hair as an ocean current is indicated on a chart.

> The constantly locomotive life of the horse does afford adequate reason for a reverse direction of the *hair-stream.*
> *Proc. Zool. Soc. London*, 1902, p. 148.

Molecular streams, streams of molecules thrown off from the cathode of a vacuum-tube and moving in straight lines.—**Self-purification of streams.** See ★*purification.*—**Stream jam,** in *lumbering.* Same as *center* ★*jam.*—**Stream terrace.** See ★*terrace*^{1}.—**Superglacial stream,** a stream of water flowing upon the surface of a glacier.

> The water [which flowed over the surface of the ice often formed more or less well-defined streams, which from their position are known as *superglacial streams.*
> *R. D. Salisbury*, in Geol. Surv. of New Jersey, 1891, [p. 87.

streamer, *n.* **1.** (*e*) In *elect.*, the visible brush-discharge emanating from parts of an electric circuit at very high potentials. Also called *corona.*

streamer-cloud (strē'mėr-kloud), *n.* The streamer of false cirrus from a thunder-head; the banner-cloud or smoky streamer from the summit of a high mountain-peak.

stream-piracy (strēm'pī″rạ-si), *n.* See ★*piracy*, 3.

streamway (strēm'wā), *n.* The course occupied by a stream of water.

streep^{2} (strāp), *n.* [D., a stripe, a streak: see *stripe.*] In Holland, the name given to the millimeter of the metric system. *C. H. Haswell*, Mech. and Engin. Pocket-book, p. 52.

Street virus. See ★*virus.*

street-lamp (strēt'lamp), *n.* A gas or other lamp used for illuminating a street.

street-sprinkler (strēt'spring″klėr), *n.* Same as *watering-cart*, 2.

street-washer (strēt'wosh″ėr), *n.* **1.** A faucet or tap on the outside of a dwelling or just inside its street-wall, to which a hose may be attached for washing the sidewalks or watering the roadway.—**2.** A cart or tank on wheels carrying a supply of water, which can be wheeled to desired parts of the street and there used for cleaning the pavement. In many forms the water is forced from a closed tank by means of air-pressure in order that it may flow with greater velocity from the nozles and remove dirt more effectively. It is used on asphalt, brick, or other impervious pavements.

stremma (strem'a̤), *n.* [NL., < Gr. *στρέμμα*, a twist, strain, sprain, < *στρέφειν*, twist, turn.] A sprain.

stremmatograph (strem'a̤-tọ̄-gråf), *n.* [Gr. *στρέμμα*(*τ*-), a twist, strain, + *γράφειν*, write.] A machine or apparatus designed to produce autographically a diagram which makes visible to the eye the deformations of a test-piece in a testing-machine or of a structure under stresses from its load; a strain-diagram apparatus. The ordinates are usually the deformations, and the abscissæ the stresses or loads. For structures the apparatus may be attached to the fixed ground, while the pencil or pen is attached to the part which deflects. For measuring small deflections, as in railway rails and in test-specimens, the deformations have to be greatly magnified.

> The *stremmatograph* was designed to record autographically the strains in the base of the rails under moving trains. A series of *stremmatograph* tests have been made under moving trains in service, principally upon the 80- and 100-pound rails, having three-tie points, of the New York Central & Hudson River Railroad.
> *Science*, May 8, 1903, p. 734.

strength, *n.* **13.** In *milling*, the bread-making quality of flour; the adhesive quality of the gluten in the flour. This, when the flour is made into dough, causes the dough to retain the carbonic-acid gas which results from the reaction of the yeast, and gives the dough greater power to rise and make a larger and finer loaf.

> This difference of price is due to the greater "*strength*" of the flour made from such foreign wheats, meaning by "*strength*" the capacity to make more and larger loaves for equal weights of flour used.
> *Knowledge*, March, 1904, p. 43.

Dielectric strength. Same as *disruptive* ★*strength.*—**Disruptive strength,** in *elect.*, the ability of an insulating material to withstand high electric pressures without puncture by an electrostatic spark and the loss of insulating quality caused thereby. The disruptive strength has no direct relation to the insulation resistance: many very perfect insulators, as air, have only moderate disruptive strength, while others, as mica and rubber, though of lesser insulation resistance, have far greater disruptive strength. Disruptive strength is tested by applying high voltage. Also called *dielectric strength.*—**Strength of a vortex,** the cross-section of the vortex multiplied by its angular velocity.—**Strength of field.** See ★*field.*—**Tensile strength.** See ★*tensile.*—**Transverse strength,** in a girder, lintel, joist, or the like, strength to resist a transverse strain. See *transverse strain*, under *transverse.*—**Ultimate tensile strength,** the tensile strength of a substance as measured by the load, in kilograms per square millimeter or tons per square inch, necessary to produce rupture.

strengthen, *v. t.*—**Strengthening card.** See ★*card*^{1}.

strepitant (strep'i-tant), *a.* [L. *strepitans* (*t*-), ppr. of *strepitare*, make a great noise.] Noisy; boisterous; impetuous. [Rare.]

> Three makes rejoinder, expansive, explosive;
> Four overbears them all, strident and *strepitant.*
> *Browning*, Master Hugues of Saxe-Gotha, xvi.

strepitus (strep'i-tus), *n.* [L. See *strepitous.*] A noise: noting any sound heard on auscultation of the chest.

strepsilin (strep'si-lin), *n.* [NL. *strepsilis* (see def.) + *-in*^{2}.] A substance found in the lichen *Cladonia strepsilis.* It becomes bright olive-green upon the addition of chlorid of lime.

streptobacilli (strep″tọ̄-ba-sil'ī), *n. pl.* [NL., < Gr. *στρεπτός*, twisted, bent, + NL. *bacillus.*] In *bacteriol.*, bacilli arranged in chains.

streptococcal (strep-tọ̄-kok'a̤l), *a.* [*streptococcus* + *-al*^{1}.] Pertaining to or caused by streptococci.

> We know that immunity to *streptococcal* infection is short and that second attacks are common. Many people exposed to scarlet fever infection get sore-throats repeatedly but not scarlet fever, and streptococcus scarlatinæ has been isolated from such cases.
> *Lancet*, April 4, 1903, p. 946.

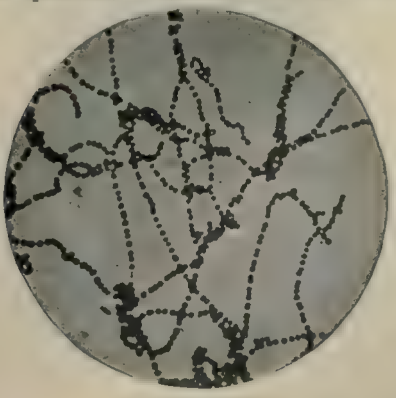
streptococcic (strep-tọ̄-kok'sik), *a.* [*streptococcus* + *-ic.*] Same as ★*streptococcal.*

> A similar method of treatment in cases of rheumatism arising from staphylococcic or *streptococcic* infection.
> *Lancet*, July 4, 1903, p. 24.

streptococcous (strep-tọ̄-kok'us), *a.* [*streptococcus* + *-ous.*] Same as ★*streptococcal.*

> The behaviour of the blood in *streptococcous* infections.
> *Encyc. Brit.*, XXXI. 558.

Streptococcus (strep-tọ̄-kok′us), *n.* [NL. (Billroth, 1874), ‹ Gr. *στρεπτός*, twisted, + *κόκκος*, a berry.] 1. A genus of bacteria belonging to the family *Coccaceæ*. The cells are spherical, frequently forming chains; flagella are wanting. Division is in but one direction. The species are mostly associated with pathogenic conditions of animal tissues. *S. pyogenes* is a common pus-forming species.



Streptococcus pyogenes.
Magnified 1000 times.
(From Buck's "Reference Handbook of the Medical Sciences.")

> In non-complicated cases I have found frequently a variety of *streptococcus* which generally, although not quite constantly, shows some characters different from the typical *Streptococcus pyogenes*.
> *A. Castellani*, in Jour. Trop. Med., June 1, 1903, p. 167.

2. [*l. c.*; pl. *streptococci* (-sī).] A bacterium of the genus *Streptococcus*.

> *Streptococci* characteristic of sewage and sewage-polluted waters apparently not hitherto reported in America. During the last few years the brilliant researches of bacteriologists connected with the Local Government Board of England have revealed two new organisms which, with the Bacillus coli communis, are likely to be of great service in tracing the history of water pollution. These are the Bacillus enteritidis sporogenes of Klein, and the sewage Streptococcus of Houston; so that now with three forms, all apparently characteristic of a sewage flora, the sanitary bacteriologist finds himself in a position to form a reliable opinion of the antecedents of any water submitted to him for examination.
> *Science*, May 23, 1902, p. 827.

streptocolysin (strep-tọ̄-kol′i-sin), *n.* [*streptoco*(*ccus*) + E. *lysin*.] A bacteriolysin which is directed against streptococci.

streptospirilli (strep″tọ̄-spī-ril′ī), *n. pl.* [NL., ‹ Gr. *στρεπτός*, twisted, + **spirilla* (see *Spirillum*), dim. of *spira*, a coil.] Spiral bacterial cells arranged in chains.

streptostylicate (strep-tọ̄-stil′i-kāt), *a.* Same as *streptostylic*.

streptothricial (strep-tọ̄-thrish′al), *a.* [Erroneously formed from *Streptothrix*. The normal form would be **streptotrichal*.] Relating to some form of *Streptothrix*.

> Examination of the pus revealed the presence of an abundant *streptothricial* growth in the form of mycelial tufts and scattered threads, some of which stained homogeneously by Gram's method and some of which showed a condition of segmentation or sporulation.
> *Lancet*, April 18, 1903, p. 1102.

stress^1, *n.* 6. In *elect.*, electromotive force; difference of potential; pressure: as, a *stress* of 2000 volts.—**Dielectric stress.** Same as *electrostatic* ★*stress*.—**Direct stress,** a simple stress; a simple tension, compression, or shear; a stress which acts directly without involving other stresses in the piece under consideration, such as would be involved, for instance, in the bending of a beam.—**Electrostatic stress,** the stress to which a dielectric is subjected when in an electrostatic field of force. Also called *dielectric stress*.—**Ellipse of stress.** See ★*ellipse*.—**Magnetic stress,** the stress exerted by a magnetic field upon iron or other matter within the field. The deformation due to magnetic stress is called *magnetostriction*.—**Maximum stress,** the greatest stress to which a body, used as a member in any mechanical structure, is to be subjected. The maximum stress, whether tensional, compressional, or shearing, bears a definite ratio to the breaking-stress, that ratio being the reciprocal of the factor of safety.—**Negative stress.** (*a*) A tensile stress: so called because tension is often indicated on a strain-sheet by a minus sign. (*b*) A stress in the direction opposite to the usual stress to which a piece in a structure is subjected. In this case the negative stress may be either tension or compression.—**Principal planes of stress,** the three planes in which the axes of the stress lie by pairs.—**Principal stress,** the stress along one of the three axes of the stress.—**Static stress,** the stress exerted by an electrostatic field.—**Stress-director-quadric,** the quadric surface the squares of whose axes are the principal stresses.—**Tensile stress.** See ★*tensile*.—**Unit stress,** the stress of unit force per unit area; in the c. g. s. system, one dyne per square centimeter. Thus, the pressure of the atmosphere is about 10^6 units of stress.—**Working stress,** the amount of stress to which any material may be subjected in every-day work and repeated strain, as determined by calculation and experiment. It is less than the stress at the elastic limit by an amount determined by the factor of safety selected.

stress-ellipsoid (stres′e-lip″soid), *n.* The ellipsoid whose axes are the principal stresses.

stressful (stres′fůl), *a.* Distressing; wearing; subject to severe stress and strain of any kind.

> Their life is hard, no doubt, but not *stressful*, and they suffer more from nerve-sluggishness than from any form of enforced psychical activity.
> *D. S. Jordan*, in Pop. Sci. Mo., May, 1901, p. 93.

stretch, *v. i.*—**Wet stretching,** a process of removing the stretch from belt leather by subjecting the skin to tension while it is wet. *C. T. Davis*, Manuf. of Leather, p. 409.

stretch, *n.* 12. The traverse of the spindle-carriage of a spinning-mule.—13. Capability of being stretched; elasticity; capacity for yielding.

> Some years ago I was talking with a Maine guide about snowshoes. This man made those he used and he said: "The trouble with the snowshoes you buy is that the *stretch* is not taken out of the filling as it should be."
> *Forest and Stream*, Feb. 21, 1903, p. 144.

stretch-bench (strech′bench), *n.* A device for thoroughly stretching hides used for lace-leather, and rendering them even in thickness. *C. T. Davis*, Manuf. of Leather, p. 544.

stretchberry (strech′ber″i), *n.* The bristly greenbrier or bamboo-brier, *Smilax Bona-nox*, so called in Texas from the elastic tissue contained in the pulp of the berries, which is put into chewing-gum to render it durable.

stretcher, *n.* 1. (*g*) In *hat-making*, a machine for working and stretching the felted cap used to make a felt hat, either to form the brim or to bring the crown to the right shape; a brim-stretcher or crown-stretcher.

stretcher-bar (strech′ėr-bär), *n.* A bar or beam over which hides are drawn to remove wrinkles and give an even thickness. *C. T. Davis*, Manuf. of Leather, p. 544.

stretcher-course (strech′ėr-kōrs), *n.* In *masonry*, a course in stones or bricks which are laid in the direction of the length of the wall; stretchers without headers.

stretching-frame, *n.* 3. A frame on which hides are tacked, so adjusted that the tension can be increased until the hide is thoroughly stretched. *C. T. Davis*, Manuf. of Leather, p. 441.

stretching-machine, *n.*—**Wet-stretching machine,** a machine for removing the stretch from belt leather while wet. *C. T. Davis*, Manuf. of Leather, p. 409.

stretching-mule (strech′ing-mūl), *n.* Same as *stretcher-mule*.

stria, *n.*—**Acoustic striæ.** Same as *striæ acusticæ* (which see, under *stria*).—**Conothecal striæ.** See ★*conothecal*.—**Stria mediale,** a white tract which passes longitudinally over the dorsal surface of the callosum. Also known as *nerve of Lancisi*.—**Stria terminalis** (tænia chorioidea, tænia semicircularis), a narrow light-colored band of tissue in the lateral ventricle between the nucleus caudatus and the optic thalamus. It is continuous with the white tissue of the roof of the descending cornu.

striate, *a.* 3. Of or pertaining to the corpus striatum.

striation, *n.*—**Striation of Baillarger,** in *neurol.*, a layer of nerve-fibers between the large and small pyramidal cells of the cerebral cortex. Also called *Baillarger's line*.—**Tabby-cat striation,** in *pathol.*, the presence of reddish streaks on a grayish foundation: noting an appearance sometimes seen in the heart-muscle and other tissues post-mortem.

> The left ventricle was pale, hypertrophied, and showed *tabby-cat striation*. *Lancet*, May 30, 1903, p. 1509.

striatodecurrent (strī-ā″tọ̄-dē̤-kur′e̤nt), *a.* Partly striate and partly decurrent, as the gills of certain agarics which extend down the stem for a short distance and gradually terminate in slight ridges.

stricken, *p. a.*—**Stricken field,** a fought battle.

> But do you not fear the consequences of being found with one whose very name whispered in this lonely street would make the stones themselves rise up to apprehend him—on whose head half the men in Glasgow would build their fortune as on a found treasure, had they the luck to grip him by the collar—the sound of whose apprehension were as welcome at the Cross of Edinburgh as ever the news of a *field stricken* and won in Flanders?
> *Scott*, Rob Roy, xxi.

Stricklandian code. See ★*code*.

strickle (strik′l), *v. t.*; pret. and pp. *strickled*, ppr. *strickling*. In *founding*, to sweep; form to a round surface by means of a templet or sweep.

stricture, *n.*—**Annular stricture,** a narrowing of the lumen of a tubular organ by a ring-shaped constriction.—**False stricture,** a narrowing of the lumen of a tubular organ by a localized muscular contraction.—**Organic stricture,** a permanent stricture due to contraction of the tissues which constitute the walls of the tube: distinguished from a *spasmodic stricture* (which see, under *spasmodic*).

stricturotomy (strik-tụ̄-rot′ọ̄-mi), *n.* [L. *strictura*, stricture, + Gr. *-τομια*, ‹ *ταμεῖν*, cut.] Operative treatment of a stricture by cutting.

stride, *n.*—**In his,** or **its, stride,** in *racing*, in the horse's natural pace; hence, figuratively, with ease.

> Acting on this opinion, Ostwald has introduced physical theories, applicable to chemical facts, "*in his stride*," as it were. *Nature*, Dec. 25, 1902, p. 171.

stridence (strī′dens), *n.* [*striden*(*t*) + *-ce*.] The character of being strident.

> For compound tones corresponding to the whole series, odd and even, there is in every case minimum intensity, brilliancy, and *stridence* with $\delta=\frac{3}{4}$, and maximum with $\delta=\frac{1}{4}$. *S. P. Thompson*, in Smithsonian Rep., 1890, p. 355.

stridency (strī′de̤n-si), *n.* Same as ★*stridence*.

stridulate, *v. i.*—**Stridulating apparatus.** Same as *stridulating-organ*.

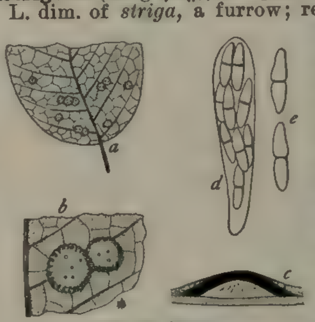
strigal (strī′ga̤l), *a.* [*strig*(*a*) + *-al*^{1}.] Of, pertaining to, or of the nature of, a striga.

strigil, *n.* 3. In *entom.*: (*a*) A pectinated spur on the legs of certain insects (bees, wasps, ants, bugs, etc.), used for removing foreign substances from the surface of the body. See *strigilis*. (*b*) A curious asymmetrical organ composed of rows of black, closely packed, comb-like plates found on one side of the dorsal surface of the terminal abdominal segments of the males of certain *Corisidæ*.

strigilation (strij′i-lā-sho̤n), *n.* [See *strigilate*.] Friction with a strigil or flesh brush; rubbing; scraping with a strigil.

strigovite (strig′ọ̄-vīt), *n.* [NL. *Strigov*(*a*) (‹ G. *Striegau*) + *-ite*^{2}.] A silicate of aluminium and iron, allied to the chlorites, which occurs in aggregates of dark-green hexagonal crystals, in Striegau, Silesia.

Strigula (strig′ụ̄-lạ̈), *n.* [NL. (Fries, 1821), ‹ L. dim. of *striga*, a furrow; referring to the furrows in the thallus of some species.] A genus of pyrenocarpous lichens, having the thallus small and crustaceous, the perithecia simple, hemispherical, and covered with the thallus, and the spores hyaline, fusiform, and several-celled. About 25 species are known, occurring on thick evergreen leaves in tropical and subtropical regions. *S. elegans* is a variable and widely distributed species, with a whitish or greenish furrowed thallus.



Strigula elegans.
a, thallus, less than half natural size; *b*, thallus, enlarged nearly three diameters; *c*, vertical section through perithecium; *d*, theca containing spores; *e*, spores.

Strigulaceæ (strig-ụ̄-lā′sē̤-ē), *n. pl.* [NL., ‹ *Strigula* + *-aceæ*.] A family of pyrenocarpous tropical lichens named from the typical genus *Strigula*.

strigulated (strig′ụ̄-lā-ted), *a.* [L. *strigula* for *strigilis*, a scraper. See *strigilis*.] In *entom.*, very finely strigose or strigate.

strike, *v.* I. *intrans.* 22. To crystallize: said of boiling sugar syrup.—**Striking velocity.** See ★*velocity*.—**To strike out.** (*e*) In *tanning*, to put out with a slicker. See *to put out* (*c*), under *put*^{1}, *v. t.*

II. *trans.* 43. In *masonry*, to regulate (a mortar joint) by removing with the trowel the superfluous mortar. A joint may be struck flush with the wall or at a certain angle.—44. To plant as a slip; to cause to strike in sense I., 16.

> Small plants 6 or 8 inches high with leaves to the pot, may be *struck* as late as August, and prove very effective.
> *Plant World*, Feb., 1903, p. 45.

45. Of tobacco, to take down from the laths after curing: sometimes with *down*.—**Struck up,** in *numismatics*, an expression which indicates the completeness with which the metal of a coin or medal fills the die.

> Sometimes the type is quite at the edge of the coin, sometimes it is confused and not fairly *struck up*.
> *Percy Gardner*, Types of Greek Coins, p. 21.

To strike below, to lower into the hold, as cargo.

> I remember one of the stevedores in London joking about them [heavy cases] when they were *struck below*.
> *Cutcliffe Hyne*, A Master of Fortune, ix.

To strike out. (*e*) To hoist up from the hold and out on the dock, as cargo.

> The winch chains sang as they *struck out* cargo, and from . . . New Orleans below and beyond, came tangles of smells. *Cutcliffe Hyne*, A Master of Fortune, xi.

strike, *n.* **20.** The discovery of a vein of ore, especially of a paying one. See *strike, v. t.*, 10.

This great *strike* further enhances the value of the mine and is one of the greatest *strikes* made in any copper property in recent years because of the self-fluxing character of the ore.
Circular, quoted in N. Y. Eve. Mail, Feb. 10, 1906.

Sympathetic strike, a cessation of work by a body of employees, not on account of grievances of their own against their employer, but for the purpose of bringing pressure to bear upon him or upon some other employer in behalf of other workmen who are on strike or have been locked out. Thus bricklayers sometimes strike because their employer receives bricks from a firm whose workmen are on strike.

strike-barrel (strīk′bar″el), *n.* A barrel in which fish are 'struck down,' that is, headed up and stored away. See *to strike down* (*b*), under *strike, v. t.*

strike-figure (strīk′fig″ụ̈r), *n.* Same as *percussion-figure* (which see, under *percussion*).

strike-joint (strīk′joint), *n.* In *geol.*, a joint in inclined beds which runs parallel with the strike: contrasted with ★*dip-joint. Geikie*, Text-book of Geol., p. 660.

strike-pinion (strīk′pin″yọn), *n.* A gear on a cotton-roving machine which alternately strikes into mesh with another gear, thereby regulating the traverse of the roving on the bobbin.

striker, *n.* **1.** (*j*) In *billiards*, the one whose turn it is to play. *W. Broadfoot*, Billiards, p. 327.
2. (*f*) The beveled plate on a door-jamb used to guide the latch.
5. In *leather-manuf.*, a solution applied after the leather is colored to fix or fasten the shade and give it a more uniform appearance. *Flemming*, Practical Tanning, p. 307.

strike-valley (strīk′val″i), *n.* In *phys. geog.*, a valley eroded along a belt of weak strata, and therefore following their trend or strike.

The second type of valley is of minor importance on account of slight development, and can be classed as *strike valleys*.
Geog. Jour. (R. G. S.), XV. 652.

striking, *n.* **3.** The taking down of the cured tobacco-plant from the tiers for stripping. See ★*stripping*, 10.

striking-circle (strī′king-sėr″kl), *n.* In *field-hockey*, the space in front of each goal made by drawing a line 4 yards long parallel to the goal-line and then drawing the ends of this line around in a curve, forming a quarter-circle, until they reach the goal-line at a point 15 yards from the center of the goal. This complete half-circle is the striking-circle.

striking-fork (strī′king-fôrk), *n.* A British term for the fork or V-shaped arrangement by which the sides of a belt are pressed to one side or the other so as to shift the belt from a fast to a loose pulley. Called in the United States a *belt-shifter. The Engineer* (London), March 1, 1901, p. 223.

striking-hammer (strī′king-ham″ėr), *n.* A hammer used by quarrymen for striking a rock-drill.

striking-knife (strī′king-nīf), *n.* A rough-faced hammer for pounding newly tanned hides.

striking-reed (strī′king-rēd), *n.* In *acoustics*, a reed set in vibration by impact; a percussion-reed.

striking-wheel (strī′king-hwēl), *n.* Same as ★*strike-pinion. Nasmith*, Cotton Spinning, p. 196.

string, *n.* **15.** A defect sometimes observable in articles of glass, arising from a small bit of solid glass which has fallen into the melting-pot, or been taken up at the end of the blowpipe, and failed to fuse and become uniformly mixed with the rest of the material, so that a slender ridge is formed on the surface of the blown article.—**16.** In *stair-building*, same as *string-piece*.—**One-string shift, two-string shift.** See *shifting* ★*pedal*.—**To follow the string,** to curve slightly with concave belly when unstrung: said of a bow. Long-continued use or inferior quality may cause a bow to follow the string.

string, *v. t.* **11.** To fool or deceive. [Slang.]—**To string a bet.** See ★*bet*^{2}.

string-alphabet (string′al″fạ-bet), *n.* An alphabet in which the letters are denoted by knots of various forms and combinations made in a string: used by the blind.

string-drill (string′dril), *n.* See ★*drill*^{1}.

stringer, *n.* **4.** (*b*) In *iron ship-building*, a longitudinal member built of plates and bars in the interior of a vessel which reinforces and supports the framing above the turn of the bilge. Similar members below the turn of the bilge are called *keelsons*. See ★*keelson*, 2.—**9.** In *geol.*, a narrow vein or dike.

Fossiliferous sandstone dikes are found to occur in basal Eocene clays in Tennessee and Kentucky. The dikes have no definite orientation. They vary in width from mere *stringers* to masses several feet in width.
Science, April 1, 1904, p. 522.

Bilge-stringer. See ★*bilge-stringer*.—**Deck-stringer,** the outer strake of plating forming the boundary of a deck at the sides. This plating is made heavier than the rest of the deck-plating (if there is any). It is scored out to permit the frame to pass through it and united to the outside plating by short angle-bars between the frames.—**Hold-beam stringer,** a heavy stringer analogous to a deck-stringer in vessels having widely spaced hold-beams instead of a lower deck.—**Hold-stringer** or **side-stringer,** one supporting the framing between the bilge and the lower deck. In vessels having ordinary frames, such stringers are usually composed of intercostal plates united to the outside plating by short angle-bars. The inner edges of the intercostal plates project beyond the frames and are united by continuous lines of longitudinal angle-bars, bulb-bars, or other shapes. In vessels having web-frames in the hold, the construction is somewhat different (see cut under ★*web-frame*).—**Panting-stringer,** one fitted in the bows to resist panting of the large flat surfaces of plating in that region.—**Side-stringer.** Same as *hold*-★*stringer*.

stringer-plate (string′ėr-plāt), *n.* In *ship-building*, a plate forming part of a stringer. See *stringer*, 4.

Sometimes, where a lower deck does not extend throughout the whole length, but is broken for some reason, its *stringer plate* is continued in order to form a stiffener.
White, Manual of Naval Arch., p. 366.

string-figure (string′fig″ụ̈r), *n.* A game played with a string which is generally tied in a loop and passed over the fingers of both hands. By means of complicated arrangements of the string, figures are made intended to represent various objects. The game of cat's-cradle is a kind of string-figure. Games of this kind are found over almost all the world.

We employ the term "*string-figures*" in those cases in which it is intended to represent certain objects or operations. The "cat's cradle" of our childhood belongs to this category. "Tricks" are generally knots or complicated arrangements of the string which run out freely when pulled. Sometimes it is difficult to decide which name should be applied. *Haddon and Rivers*, in Man, Oct., 1902, p. 146.

string-galvanometer (string′gal-vạ-nom″e-tėr), *n.* A sensitive form of galvanometer devised by Einthoven for the measurement of rapidly fluctuating currents such as occur in telephonic circuits. It consists of a very fine conducting fiber (sometimes a quartz fiber which has been silvered) stretched at right angles to the lines of force of a magnetic field. Movements of the fiber across the lines of force due to the action of the field are observed by means of a microscope or are photographed upon a moving film.

string-interrupter (string′in-tẹ-rup″tėr), *n.* A device for the rapid and periodic making and breaking of an electric circuit by means of a platinum point, or stylus, attached to a stretched string or wire and dipping into mercury at each vibration of the string.

string-line (string′līn), *n.* An imaginary line which crosses a billiard-table from second 'sight' to second 'sight,' and comprises one fourth (the head in most countries, but the foot in Great Britain), to serve as a balk.

Stringocephalus (string-gō-sef′ạ-lus), *n.* [NL., erroneously for **Strigocephalus*, < Gr. *στρίγξ* (*στριγ-*), an owl, + *κεφαλή*, head.] A genus of terebratuloid brachiopods which have shells of large size with a long loop following the margin of the dorsal valve, a median ventral septum, and a very long cardinal process. The genus is very characteristic of the Middle Devonian (*Stringocephalus* limestone) of Europe. See ★*limestone*.

string-proof (string′pröf), *n.* In *sugar-manuf.*, a method of testing boiling sugar syrup to ascertain when it reaches a condition in which it begins to strike, or crystallize, and the degree of crystallization at any stage of the process. A drop of the hot syrup is placed on the thumb, allowed to cool, and touched by the forefinger; then the finger and thumb are drawn apart. The syrup draws out into filaments, the degree of crystallization being indicated by the breadth, length, and consistency of the threads or strings. *Touch-proof* or *touch* is the same test applied to the syrup at another stage in the boiling, when, on separating finger and thumb, the syrup forms a thin film which, when examined by transmitted light, shows the size of sugar crystals suspended in the syrup.

string-pump (string′pump), *n.* See ★*pump*^{1}.

string-quartet (string′kwâr-tet″), *n.* **1.** A quartet of stringed instruments of the viol class, that is, usually, two violins, a viola, and a violoncello.—**2.** A composition for such a quartet.—**3.** All the viol instruments in an orchestra, collectively.

string-stop (string′stop), *n.* In *organ-building*, a stop with pipes which give tones suggesting those of bowed instruments, as the gamba, the violina, etc.

stringy, *a.* **5.** Said of cotton that is imperfectly scutched.

The cotton which is struck off by the beater blades of the scutcher should be removed away from the beater's course immediately; any delay at this stage may cause the fibres to become contorted into very curious shapes, and such cotton is then termed *stringy*. *Stringy* cotton is very difficult to work up in the subsequent processes.
Hannan, Textile Fibres of Commerce, p. 115.

striola (strī′ọ-lạ̈), *n.*; pl. *striolæ* (-lē). [NL., dim. of *stria*. See *stria*.] A delicate or faint stria.

The disk bears numerous transverse *striolæ*, which become deeper towards the sides.
Annals and Mag. Nat. Hist., May, 1903, p. 454.

striolate, *a.* **2.** In *biol.*, delicately or minutely striate. *Proc. Zool. Soc. London*, 1899, p. 860.

striolated (strī′ọ-lā-ted), *a.* Same as ★*striolate. Proc. Zool. Soc. London*, 1901, p. 38.

strip^{1}, *v. t.* **17.** To remove the mold from (an ingot) after casting the latter, in steel-making processes where fluid steel is cast in metallic molds with continuous walls. The heat of the fluid steel expands the molds from within, but the contraction of the steel is greater than that of the mold, and the latter can be stripped off the yellow-hot ingot after the solidification has gone far enough to allow this. If the ingot sticks to the mold, it is loosened by sledge-blows, or hydraulic pressure may be applied to a ram or stripper to force the ingot out while the mold is kept from moving.

The electric ingot-*stripping* crane is an important device used when the casting is done in molds upon the cars. *Sci. Amer. Sup.*, Dec. 20, 1902, p. 22542.

To strip down, to divest (a vessel) of some or all of her rigging. See *to* ★*strip to a gantline*.—**To strip to a gantline,** to unbend sail, unreeve the running gear, send down spars, and strip even the lower masts of their standing rigging, so that nothing in the way of shrouds, stays, or cordage remains with the exception of a whip or tackle from the deck to each lower masthead for convenience in getting into the tops when the vessel is to be re-rigged. This whip or tackle is sometimes called a *gritline* instead of a *gantline*.

strip^{1} (strip), *n.* That which is stripped off; specifically, the short fibers of cotton or wool removed, manually or mechanically, from the carding-surfaces of a carding-machine; a kind of waste. Also called *stripping*.

strip^{2}, *n.* **6.** One of the two sections of a tobacco-leaf left by the removal of the midrib: used mostly in the plural and opposed to *leaf*. See *stemmed* ★*tobacco* and quotation under ★*shipper*, 4.—**7.** *pl.* A commercial name for crude rubber cut into long, narrow sheets, or lump-rubber that has been sliced by machinery. See ★*rubber*^{1}, 3.—**Mexican strips,** a trade-name for a good grade of crude india-rubber, the product of *Castilloa elastica*, brought, in strips nearly black on the outside, from Mexico.—**Strip-covering machine.** See ★*strip-machine*.—**Strip method,** that method of conservative lumbering in which reproduction is secured on clean-cut strips by self-sown seed from the adjoining forest.—**Strip stand method,** in *forestry*, a modification of the stand method in which reproduction cuttings are not made simultaneously throughout the stand, but the stand is treated in narrow strips at such intervals that reproduction cuttings are generally going on in three strips at one time, one being in the removal stage, one in the seeding stage, and one in the preparatory stage.—**Strip survey.** See ★*valuation survey*.

striped, *a.*—**Striped gopher,** the thirteen-lined spermophile, *Spermophilus tridecimlineatus*: so named on account of its conspicuous white stripes.

strip-machine (strip′mạ-shēn″), *n.* In *paper box manuf.*, a machine for covering paper boxes with paper for decorative purposes. The machine feeds the strips of paper (one or two) from a roll, coats them on one side with glue, removes the surplus glue, dries them in part, guides them to the blank box, and, when by one revolution of the box they have covered each side and end, cuts them off and feeds them to the next box placed in the machine by the operator.

stripper, *n.* **1.** (*d*) A knife for cutting sugar-cane. (*e*) In *sheet-metal work*, an attachment to a press designed to strip off the blank after it has been perforated, punched, drawn, or otherwise treated, release it from the dies, and allow it to be removed or to fall by gravity out of the press. It is sometimes stationary and fixed to the press, and is sometimes connected directly with the mechanism of the press and moves with it.
2. A card so trimmed that it can be withdrawn from the pack at will.—**3.** In *dairying*, a cow that is about to run dry or cease giving milk.

Who has not seen the vicious old *stripper* that kept a score of her betters moving, out of a shed, or away from a feed-rack or watering-place, accommodations which, apart from the horns of this daughter of the devil, were ample for the well-being of all?
Rep. Kansas State Board Agr., 1901–02, p. 294.

Rotary stripper, a machine for harvesting grass-seed by stripping the seed-heads from the stalks.

> The seed is harvested during July, and in two ways—some still employ mowing machines, cutting the grass as hay and cocking or stacking after the grass is dry, while the new method is to harvest the seed by stripping with a *rotary stripper* like the one used for harvesting the blue-grass seed. *Yearbook U. S. Dept. Agr.*, 1901, p. 246.

stripper-comb (strip′ėr-kōm), *n.* A rapidly oscillating comb for stripping the accumulations of short fiber from the revolving-top flats of a cotton-carding machine.

stripping, *n.* 5. Same as ★*strip*¹.—6. In *textile-coloring* and *-finishing*, the process of removing color from material either to lighten the tint or to prepare the fabric to receive a different color.—7. In the preparation of raw silk for use, the removal of sericin or silk-gelatin from the surface of the fibers by working them for a longer or shorter time in soap solutions heated nearly to the boiling-point.—8. In the manufacture of toilet-soap, the reduction of stock soap in bars to thin ribbons or strips by passage through a slicing-machine and rubbing-rollers. These strips, dried and ground, are afterward compressed into bars or tablets, yielding what is known as *milled soap*.—9. In *electrotyping*, the removal of the wax mold from the copper duplicate it has produced, usually by the agency of heat on an iron table made for this purpose.—10. In the tobacco industry: (*a*) The operation of pulling the leaves from the stem and tying them in 'hands,' which takes place after drying but for which the material must be damp. (*b*) The same as ★*stemming*, 3.

stripping-table (strip′ing-tā″bl), *n.* In *electrotyping*, a flat iron table with an attachment for heating which gradually melts the wax mold that has formed the copper shell of an electrotype plate. A gutter at the end of the table returns the melted wax to the wax-kettle.

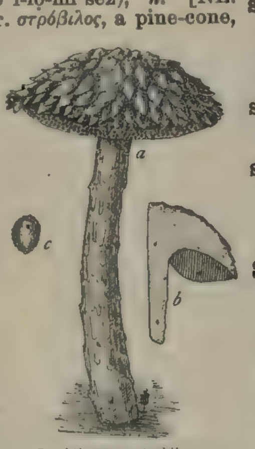
> After the cases have been used to make electrotype shells, they are put upon the *stripping tables* which melt the wax. The wax is collected in a gutter, which empties into the wax kettles. A variable temperature within moderate limits is desirable according to the amount of work to be done. *Elect. World and Engin.*, Jan. 9, 1904, p. 85.

strip-stitching (strip′stich″ing), *n.* In *sewing-machine work*, the sewing of a band or strip upon a fabric by means of a multiple-needle machine which makes two or more lines of stitching at the same time. In corset-making the strip is turned and folded at the edges automatically in advance of the stitching.

strisciando (strē-shē-än′dō), *a.* [It., ppr. of *strisciare*, creep, glide.] In *music*, creeping or gliding.

Strobic disk. See ★*disk*.

Strobilomyces (strob″i-lọ-mī′sēz), *n.* [NL. (Berkeley, 1851), < Gr. *στρόβιλος*, a pine-cone, + *μύκης*, fungus, referring to the cone-like scales on the pileus.] A genus of pore-fungi of the family *Boletaceæ*, having the pileus with a rather tough flesh and provided with floccose scales. The pores are uniform and white or gray, and the spores blackish. Only a few species are known. *S. strobilaceus* is an edible species frequently found in the forests of Europe and North America.



Strobilomyces strobilaceus.

a, single plant; *b*, section of a portion of the pileus and stem, showing the pores; *c*, single spore highly magnified.

strobograph (strob′ọ-gráf), *n.* [Gr. *στρόβος*, a whirling, + *γράφειν*, write.] An instrument which records observations made by means of a stroboscope (which see). The effects of the periodic variations in the motions under observation are reproduced for permanent record by photographing on a sensitized surface the phenomena caused by the intermittent or periodic recurrence of the reflection of light from the moving elements. The periodic illumination may be by a flashing light, or by the passage of openings in front of the photographic plate or film.

> Instruments for stroboscopic observation are called stroboscopes, and instruments which record stroboscopically are called *strobographs*. *Elect. World and Engin.*, April 9, 1904, p. 678.

strobographic (strob-ọ-graf′ik), *a.* [*strobograph* + *-ic*.] Pertaining to, or recorded by, a strobograph: applied to a record of, or to a method of recording, periodic phenomena by means of a series of regularly recurring instantaneous exposures. See ★*strobograph* and *stroboscope*.

Stroboscopic disk. See ★*disk*.

stroboscopical (strob-ọ-skop′i-kạl), *a.* Same as *stroboscopic*.

stroboscopy (strọ-bos′kọ-pi), *n.* [*stroboscop*(*e*) + *-y*³.] The study of periodic motion by means of a stroboscope.

stroke¹, *n.* 14. In *golf*, any movement of the ball caused by the player, except as provided for in the rule, or any downward movement of the club made with the intention of striking the ball.—15. In *function-theory*, a directed sect in an assigned plane. Two strokes are equal when they are of equal lengths and drawn along parallel lines in the same sense.—**Center stroke**, in *billiards*, a stroke in which the cue tip touches the striker's ball approximately at its center in avoidance of any false motion.—**Cutter-stroke**, a navy rowing-stroke, being a short, quick sweep of the oar, as used in a short, double-banked boat.—**Driving stroke**, in *billiards*, a stroke that sends the first object-ball to cushion and back for position with respect to the next and later shots.—**Drop stroke**, in *lawn-tennis*, a stroke by which the ball is caused to drop or curve downward.—**Fancy stroke**, a feathering and skipping of the flat part of the oar-blade over the surface of the water, possible only when the water is very smooth.—**Feathering stroke**, a stroke in which the blade of the oar is turned horizontal immediately after it leaves the water, and is kept so until it has been swept forward and is ready to be again dipped.—**Full stroke**, in *billiards*, the act of hitting an object-ball full with the cue-ball.—**Galley-stroke**, the stroke once used in the galleys of France and other European countries, in executing which the rowers rose to their feet as the oars were advanced, and sank back to their benches as the stroke was finished.—**Gig-stroke**, a long, sweeping stroke pulled with long oars in a single-banked boat. The stroke is followed by a two-second pause after the blade leaves the water, then the oar is swung forward and immediately dipped.—**Ground stroke**, in *tennis*, a stroke played on a bounding ball.—**Half a stroke**, in *golf*, a stroke given to a supposedly inferior player at every alternate hole.—**Half-cock stroke**, in *cricket*, a defensive stroke made by holding the bat halfway between the back and forward positions, that is, slightly in front of the popping-crease. *Hutchinson*, Cricket, p. 56.—**Long stroke**, one of very long sweep, such as is pulled in a gig.—**Man-o'-war stroke**, a rowing-stroke peculiar to the boats of naval vessels. See *cutter-* and *gig-* ★*stroke*.—**Penalty stroke**, in *golf*, a stroke added to the actual number of strokes played.—**Short stroke**, a short, quick rowing-stroke with no interval of rest when the blade leaves the water and is swung forward for a new stroke; a cutter-stroke.—**Spoon-stroke**, a rowing-stroke made with spoon-oars, the spooning part (consisting of the flats of the turned-up blades) being skimmed over the surface of the water when swept forward preparatory to a new dipping.—**Three-quarter stroke**, in *golf*, a stroke of less distance than a full stroke, but more than a half stroke.

stroke-hole (strōk′hōl), *n.* In *golf*, a hole at which, in handicapping, a stroke is given.

stroke-side (strōk′sīd), *n.* The side of the aftermost oar, which gives time to the others; the side of the after oar in single-banked boats, and always the starboard side in double-banked boats.

stromal (strō′mạl), *a.* [*strom*(*a*) + *-al*¹.] Relating to the stroma, or supporting tissue, of an organ.

stromatology (strō-mạ-tol′ọ-ji), *n.* [Gr. *στρῶμα*(*τ*-), a bed, + *-λογια*, < *λέγειν*, speak.] The history of successive geological formations: essentially the same as *stratigraphy*. [Rare.]

Strombolian (strom-bō′li-ạn), *a.* Pertaining to, or characteristic of, Strömboli or its eruptions.

> The fluidity of the basaltic magma of Stromboli is still great at the moment of eruption, although less than in the preceding case. The discharge of gases causes violent explosions, which throw into space fragments of the doughy magma, some of which fall upon the edges of the crater to flatten there, while other portions shape themselves in the air and fall as scoria, either in blocks or in fine dust. Rock fragments, already consolidated, caught in the magma, form elongated bombs. The ejected material shows its incandescence even in daylight, and at night forms admirable fireworks. Water vapor is often hardly apparent; when it is visible it forms white thin clouds. This type of explosion I designate with Mercalli the *Strombolian* type. *A. Lacroix*, in Smithsonian Rep., 1906, p. 224.

stromentato (strō-mān-tä′tọ), *a.* [It., < *stromento*, instrument. See *instrument*.] In *music*, with instrumental accompaniment. See *recitative*.

strong¹, *a.* 21. Tenacious, so that the particles when compressed separate with difficulty: used of molding-sand containing a large proportion of alumina or clay.—**Strong style**, in Greek pottery, the style of the black-figured vases which immediately preceded or was contemporaneous with the early red style. These vases have the fine drawing and technique of the red style. Red, white, and brownish purple are used with black.

strongbeam (strông′bēm), *n.* In *iron shipbuilding*, one of a number of extra strong widely spaced beams in the holds or machinery space of a merchant vessel to give support to the sides where there is great depth between the lowest deck and the turn of the bilge.

strongylhexactine (stron″jil-hek-sak′tin), *n.* [Gr. *στρογγύλος*, round, + *ἕξ*, six, + *ἀκτίς* (*ἀκτιν*-), a ray.] In the sponge-spicules, a hexactine with thick blunt arms.

strongylocephalus (stron″ji-lọ-sef′ạ-lus), *n.*; pl. *strongylocephali* (-lī). [NL., < Gr. *στρογγύλος*, round, + *κεφαλή*, head.] In *anthrop.*, a cranium spheroid in its general form, but narrowed in the region of the sphenoid fossa. *G. Sergi* (trans.), Var. of the Human Species, p. 36.

Strongyloides (stron-ji-loi′dēz), *n.* [NL., < Gr. *στρογγυλοειδής*, of round form or look, < *στρογγύλος*, round, + *εἶδος*, form.] A genus of parasitic worms. *S. intestinalis* is occasionally found in the human intestines.

strongyloidosis (stron″ji-loi-dō′sis), *n.* [NL. *Strongyloid*(*es*) + *-osis*.] Infection with nematoid worms of the genus *Strongyloides*, as Cochin China diarrhea in man. *Looss*, 1905.

strongylosis (stron-ji-lō′sis), *n.* [NL., < *Strongyl*(*us*) + *-osis*.] Infection with nematoid worms of the genus *Strongylus*.

Strongylus equinus, the type of the nematoid genus *Strongylus*; a round worm from 35 to 47 millimeters long, parasitic in the intestine of horses. Also called *palisade-worm*.

Strontia process. Same as *Scheibler's* ★*process*.

Strontium light. See ★*light*¹.—**Strontium process.** Same as *Scheibler's* ★*process*.

Strophalosia (strof-ạ-lō′si-ạ̈), *n.* [NL., < Gr. *στρόφαλος*, a top, < *στρέφειν*, turn.] A genus of protrematous brachiopods similar to *Productus*, but cemented by the umbo of the ventral valve, with both valves possessing a well-defined cardinal area. It occurs in the Paleozoic rocks from the Devonian to the Permian.

strophanthidin (strọ-fan′thi-din), *n.* [*strophanth*(*in*) + *-id* + *-in*.] A colorless compound, $C_{27}H_{38}O_7.2H_2O$, prepared by the action of dilute acids on strophanthin. It crystallizes in small needles which melt at 169–178° C. The anhydrous compound melts at 235° C.

strophe, *n.* 3. In *music*, one of the more or less complete divisions into which a piece in song or dance form is divided: analogous to *stanza* in verse.

Stropheodonta (strof″ē-ọ-don′tạ̈), *n.* [NL., < Gr. *στροφή*, a twist, + *ὀδούς* (*ὀδοντ*-), a tooth.] A genus of protrematous brachiopods with convexo-concave valves, generally much expanded, with cardinal areas bearing finely denticulate margins. It abounds in rocks of Silurian and Devonian age.

strophic, *a.* 2. In *music*, of a song or a piece in song form, having a similar treatment for successive stanzas. See ★*cyclical form*.

strophocephalus (strof-ọ-sef′ạ-lus), *n.*; pl. *strophocephali* (-lī). [NL., < Gr. *στροφή*, a turning, + *κεφαλή*, head.] A monster with misshapen and distorted head.

strophogenesis (strof-ọ-jen′e-sis), *n.* [NL., < Gr. *στροφή*, a turning, + *γένεσις*, generation.] The process of cell-multiplication by which the structure of the body of one of the higher organisms arises from a fertilized egg. *Haeckel* (trans.), Gen. Morphol., p. 104. [Rare.]

strophoid, *n.*—**Oblique strophoid**, the pedal of a parabola with regard to an arbitrary point of the directrix.

Strophomena (strof-ọ-mē′nạ̈), *n.* [NL., < Gr. *στροφή*, a twist, + *μήνη*, the moon, a crescent.] A genus of protrematous brachiopods having valves with reversed convexity, that is, the ventral concave, the dorsal convex, both broadly expanded, with well-developed cardinal area. The genus is now restricted, but has commonly included all forms with normal and with reversed convexity. It has been found only in the Lower Silurian rocks.

Strophulus albidus or **albus**, in *pathol.*, same as *milium*, 2.

struck, *p. a.* 2. Specifically, in *electrometal.*, thinly nickel-plated preparatory to the deposition of some other metal: said of a surface thus treated. *Houston*, Dict. Elect.

Structural chemistry, that branch of chemistry which treats of the arrangement or order of attachment of atoms in the molecules of compounds.

> *Structural chemistry*, moreover, is slowly acquiring the mastery over cholesterin by making use of the experience afforded by the synthetic study of the hydroaromatic substances. *Nature*, Oct. 24, 1907, p. 654.

Structural formula, iron, steel. See ★*formula*, etc.

structural-functional (struk″tṳ̄-ral-fungk′shọn-a̤l), *a.* In *psychol.*, pertaining both to the structure and to the functions of the mind: implying the points of view both of static and of dynamic psychology.

> The introduction contains an excellent discussion of general methodological subjects, including a fresh pronunciamento upon . . . the *structural-functional* psychology question. *Amer. Jour. Psychol.*, XII. 598.

structurality (struk-tṳ̄-ral′i̤-ti), *n.* Structural quality or character.

structure, *n.* **4.** (c) In *chem.*, the order of attachment of the atoms which constitute the molecule of a substance. It is expressed by a structural or constitutional formula. —**Bread-crust structure.** See ★*bread-crust.* —**Ellipsoidal structure**, in *geol.*, an original structure, preserved in certain ancient greenstones of volcanic origin, by virtue of which the rock tends to break up in ellipsoidal masses. Ellipsoidal differs from *spheroidal* structure in that it is an original structure of the lava, whereas the spheroidal is developed by weathering and is therefore secondary. This structure is common in the greenstones of the Lake Superior region.—**Eye-structure**, in *geol.*, a term descriptive of certain structures in foliated metamorphic rocks which exhibit the secondary minerals arranged in layers forking around much larger original grains. This lenticular structure suggests the name from its resemblance to the eye. The rocks are chiefly gneisses derived from porphyritic types, although the term is sometimes more widely applied. This is the 'augen'-structure of the German petrographers. See ★*augengneis*.—**Fan-shaped structure**, in *geol.*, the structure resulting from an eroded fan-shaped fold, that is, an anticline or syncline, so compressed that the strata form concentric loops, whose upper parts become eroded, leaving the strata radiating like the ribs of a fan.—**Flaser structure** [Prov. G. *flaser*, G. *flader*, streak, spot], in *petrog.*, a structure produced in metamorphic rocks by the development of small lenses of granular texture in a micaceous laminated mass.—**Fragmental structure**, in *geol.*, a term applied to those rocks which consist of fragments; a clastic structure, as in sandstones, shales, and volcanic tuffs.—**Onion structure**, in *petrog.*, a spheroidal parting or lamination of a rock whereby it separates into concentric layers like the parts of an onion. —**Spheroidal structure.** See *ellipsoidal* ★*structure.* —**Structure plane.** See ★*plane*^{1}.—**Vesicular structure**, in *petrog.*, the structure produced in lavas by the expansion of gas-bubbles, when the cavities are comparatively large, and fewer for a given volume of rock than in pumice.

struma, *n.*—**Struma suprarenalis**, an adenomatous tumor of the adrenal gland.—**Thymus struma**, persistence of the thymus gland beyond the age when it normally atrophies.

strumectomy (strö-mek′tọ-mi), *n.* [L. *struma*, a scrofulous tumor, + Gr. *ἐκτομή*, excision.] Excision of a goitrous tumor.

strumiprivous (strö-mi-prī′vus), *a.* [L. *struma*, a scrofulous tumor, + *privare*, deprive, + *-ous*.] Relating to or caused by destruction of the thyroid gland.

strumitis (strö-mī′tis), *n.* [NL., < L. *struma*, a scrofulous tumor, + *-itis*.] Inflammation of a goitrous tumor.

strumoderma (strö-mọ-dėr′mạ̈), *n.* [NL., < L. *struma*, a scrofulous tumor, + Gr. *δέρμα*, skin.] Same as *scrofuloderm*.

strumosis (strö-mō′sis), *n.* [L. *struma*, a scrofulous tumor, + *-osis*.] The condition of being affected with struma; scrofula.

Strumous cachexia. See ★*cachexia*.

strut^1, *n.* **4.** A condition (described in the quotation) of a freshly cut tobacco-plant, resulting from exposure to rain. [Southern U. S.]

> The plants also get in a "*strut*," — that is, they will not wilt, and if handled in such condition, great breakage of leaves ensues. *Killebrew and Myrick*, Tobacco Leaf, p. 313.

strut^2, *n.* **2.** In *iron ship-building*, a cast-steel or forged-iron support under water on each side at the stern of a twin-screw vessel close to the propeller. The strut usually has two arms resembling a V turned sidewise. At the apex of the V is a hub which contains a bearing through which the propeller-shaft passes, immediately abaft of which is the screw-propeller. The inner ends of the arms of the strut are riveted to the outside plating, or pass through it and are secured to the framing in the interior of the vessel. Also called *shaft-strut* and *shaft-bracket*.

strut-girder (strut′gėr″dėr), *n.* **1.** A girder or beam used as a compression-member in a structure.—**2.** A girder, usually of lattice form, of which the flanges are united by struts at right angles to the flanges and by diagonal braces: used commonly to resist both compression and a tendency to deflect under stress.

struthin (strö′thin), *n.* [Gr. *στρουθός*, soapwort, + *-in*^{2}.] An old name for *saponin*.

Struthiolithus (strö-thi-ol′i-thus), *n.* [NL., < Gr. *στρουθίων*, an ostrich, + *λίθος*, stone.] A generic term applied to struthious eggs, larger than those of living ostriches, which have been found in the superficial deposits of southern Russia and northern China.

strüverite (strö′vėr-īt), *n.* [J. *Strüver* + *-ite*^{2}.] A mineral, near rutile in crystalline form, consisting of titanium dioxid with ferrous niobate and tantalate. It is found in the pegmatite of Craveggia, northwest of Lake Maggiore.

strychninization (strik″nin-i-zā′shọn), *n.* [*strychnin(e)* + *-iz(e)* + *-ation*.] The process of bringing under the toxic influence of strychnine.

stryphnic (strif′nik), *a.* [Gr. *στρυφνός*, rough, harsh, astringent, + *-ic*.] Noting an acid, a pale-yellow compound, $C_4H_3O_2N_5$, prepared by the action of potassium nitrite and acetic acid on uric acid. It forms granular crystals.

stub, *n.* **8.** In *railroading*, any section or piece of track which ends at a station or a siding. The parallel tracks of the train-shed of a terminal station are *stub-tracks*.

stub-axle (stub′ak″sl), *n.* A short axle; specifically, the short axle fastened to one of the steering-knuckles on a motor-car.

stubbing-out (stub′ing-out″), *n.* The act of clearing a furnace before commencing another shift. *Phillips and Bauerman*, Elements of Metallurgy, p. 656. [British.]

stubble, *n.* **3.** Same as ★*stubble-cane*.

stubble-cane (stub′l-kān), *n.* Sugar-cane grown from the ratooning of the stubble, sometimes for several successive years. Opposed to *plant-cane* (see *sugar-cane*).

stubble-quail (stub′l-kwāl), *n.* See ★*quail*^{3}.

stuboy (stu-boi′), *exclam.* [*stub*, *st'*, arbitrary syl., + *boy*^{1}.] An exclamation used as a command to a dog to attack, and also in driving cattle or pigs, and the like. Also *stubboy*, *st'boy*. [U. S.]

> A gentleman of the generation preceding mine gave me this possible explanation. He says *stubboy* is a word he used to know on the farm, meaning to drive pigs. '*Stubboy, stubboy*,' says my informant, was the cry used in trying to force those obstinate beasts into the ways they should go. *N. Y. Sun*, Nov. 15, 1905.

stuboy (st-boi′), *v. i.* and *t.* [Also *stubboy*, *st'boy*: < *stuboy*, *exclam.*] To incite by the exclamation *stuboy!* as a dog to attack.

> Is "*st'boy*" truly rural? Well, so was Brooklyn once, and so is some of it still. Are there not even Brooklynites in remote green outskirts or dusty fringes of ambiguous suburbs who have *stubboyed* or still *stubboy!* At any rate, the word is a good, plain honest, robust fellow. *N. Y. Sun*, Nov. 15, 1905.

stub-track (stub′trak), *n.* See ★*stub*, 8.

stuck-finger (stuk′fing″gėr), *n.* Same as *trigger-finger*. *Buck*, Med. Handbook, IV. 526.

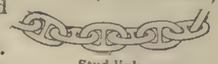
stud-bar (stud′bär), *n.* **1.** A bar or rod which acts as a stud, projecting from another machine-element or surface.—**2.** A bar which carries a stud, so that to the latter another machine-part may be attached.—**3.** A round bar or rod suitable for making studs.

stud-block (stud′blok), *n.* A rectangular or hexagonal block of steel or iron, resembling a nut of extra height. A hole is tapped through it, which fits the thread of studs of that diameter. Into that hole is screwed a set-screw or short bolt, which enters one half its depth. When the block is screwed on the end of a stud, it enters until the end of the stud bottoms on the end of the set-screw. Then a wrench or spanner on the outside of the block will screw the stud home, since the nut cannot turn farther on the stud. When the stud is home, the set-screw is backed off slightly, whereupon the block can be easily screwed off, leaving the stud in place. A stud-block of proper size will be required for each diameter of stud.

stud-bracket (stud′brak″et), *n.* A bracket or projecting element to support a stud; specifically, the projecting bridge, or part of a link in a reversing valve-gear, which forms the base for the stud by which the link is suspended.

studdingsail, *n.*—**Flying studdingsails**, extra studdingsails set between the masts: formerly used. They were also known as *save-all studdingsails*.—**Fore-studdingsail**, a sail set outside one of the square sails on the foremast.—**Studdingsail irons**, studdingsail-boom irons, which confine the boom to the yard: sometimes called *Pacific irons*.

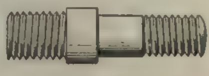
stud-link (stud′lingk), *n.* A link, of a chain, in which there is a stud which reinforces it.



Stud-link.

stud-nut (stud′nut), *n.* **1.** The nut which fits on a stud.—**2.** See ★*stud-block*.

stud-pin (stud′pin), *n.* **1.** A cylindrical pin projecting from a surface into which it is secured as a stud by being screwed. *D. K. Clark*, Steam Engine, II. 710. —**2.** A short bolt having two diameters, so as to form a shoulder. —**3.** A cylindrical pin having an enlarged round head.



Stud-pin.

stud-poker (stud′pō″kėr), *n.* A variety of poker in which the first card is dealt face down and then one face up. The 'down card' is then looked at, and the player having the highest card showing makes a bet if he chooses, and then the next on his left. Any player who refuses to 'see' this bet drops out. A third card is then dealt, and so on until each remaining in the pool has five. After the betting is brought to a call, the down cards are shown, and the best poker combination wins all.

stud-print (stud′print), *n.* A print to form a recess in a mold to receive the core required in the foundry-molding process, but which is attached to the pattern not by finishing nails or screws as is common. The print has formed a stud on the end by which it is attached to the pattern, and this stud fits a hole bored in the pattern at the desired point. It is obvious that a wide range of print sizes may be used provided only the stud is of the size to enter the hole in the pattern.

stud-screw (stud′skrö), *n.* **1.** A screw having a large cylindrical head so that the latter may act as a stud.—**2.** An English term for a set-screw.

stud-stay (stud′stā), *n.* Same as *stay-bolt*, except that the stud-stay may be secured by screwing at one end only. *W. S. Hutton*, Steam-Boiler Construction, p. 235.

stud-wheel (stud′hwēl), *n.* A wheel, pulley, or gear that turns on a stud-bolt. See ★*sun-wheel*, 2. *T. W. Fox*, Mechanism of Weaving, p. 63.

stuf, *n.*, *a.*, and *v.* A simplified spelling of *stuff*.

stuffing, *n.* **7.** In *textile-coloring*, the process of applying a mordant dyestuff to textile material that has not been previously mordanted. The color lake is subsequently formed, and fixed by an after-treatment or saddening with some mordanted principle.

stuffing-drum (stuf′ing-drum), *n.* A heated drum or wheel in which leather is placed with hot grease, which enters the leather. *C. T. Davis*, Manuf. of Leather, p. 221.

stuff-pump (stuf′pump), *n.* In *paper-manuf.*, a power-pump for lifting and conveying the mixture of water and fiber called 'stuff' from vats and other holders to the paper-machines; a stuff-handling pump.

stumba (stum′bạ̈), *n.* A waste product of the combings of schappe silk, forming the raw material of ★bourrette (which see).

stump, *n.* **14.** In a hinge which it is desired should fold in one direction only, the projecting lug on one half which engages with the face of the other and precludes the undesired motion.—**15.** The local name given to the tower of St. Botolph's Church, Boston, England. It is in perpendicular Gothic style, 288 feet high, and slightly resembles the tower of Antwerp Cathedral. *Architects' and Builders' Jour.*, May 20, 1908, p. 432.—**Middle stump.** See *stump*, 5.—**Stump age**, in *forestry*, the age of a tree as determined by the number of annual rings upon the face of the stump, without allowance for the period required for the growth of the tree to the height of the stump.—**Stump analysis.** See ★*tree analysis*.—**Stump height**, in *forestry*, the distance from the ground to the top of the stump, or from the root-collar when the ground-level has been disturbed. On a slope the average distance is taken as the stump height.—**To draw stumps.** See ★*draw*.

stumpage, *n.* **3.** The right to cut trees on the seller's land. Payment is based on the measurement of the logs as they are brought to the landing and piled ready for the drive. *Holman Day*, King Spruce, xi., note. [Maine.]

> A man who stole these lands at twenty cents an acre, buying tax titles, and has squat on his haunches and made himself rich sellin' *stumpage*, has got more 'n he deserved, even if half the timber is rottin' in the tops on the ground. *Holman Day*, King Spruce, p. 133.

II. *a.* Of or pertaining to stumps or stumpage; reckoned by stumps.

> The *stumpage* value of the above timber to the government, at an average of three cents gold per cubic foot, is

not far from three billion dollars, and it is easy to foresee that when the lumber industry reaches any considerable magnitude the receipts from it will form no inconsiderable part of the income of the government.
National Geog. Mag., April, 1905, p. 147.

stumper, *n.* 2. In *cricket:* (*a*) A fielder who stumps a batsman out, that is, one who, with ball in hand, puts down the wicket, if the striker, failing to hit the ball, is out of his ground. (*b*) A wicket-keeper. [Colloq.] *Hutchinson*, Cricket, p. 127.

stump-foot (stump'fu̇t), *n.* Same as *club-foot*, 1.

stump-jumper (stump'jum″pėr), *n.* An implement, used in Australia, for plowing cleared wheat-lands in which the stumps of trees have been left. Also *stump-jump plow*. *E. E. Morris*, Austral English.

stump-mast (stump'mȧst), *n.* A mast that has been broken off. Stump topgallant masts are masts which end close to the shoulder of the spar so that they are without poles.

stump-rooted (stump'rö″ted), *a.* Characterized by having a fleshy elongated root which is truncated below or terminates abruptly: as, *stump-rooted* carrots and parsnips. Sometimes (but improperly) also used in the sense of club-footed or club-rooted.

stump-turpentine (stump'tėr″pen-tīn), *n.* Same as ⋆*spiritine*.

Spirits of turpentine has, for many years, been made by the distillation of the refuse wood of the southern long-leaf pine tree. As much of it was made in a crude way and put on the market poorly refined, it is now . . . regarded as something different from spirits of turpentine and has received such names as wood spirits, spiritine, turpentine substitute, *stump turpentine*, etc.
Science, Feb. 17, 1905, p. 259.

stump-work (stump'wėrk), *n.* The peculiar high-relief embroidery made in England during the Stuart period. It had its origin in the raised work of Italy and Germany of the fifteenth and sixteenth centuries. Lace, brocade, satin, silver and silver-gilt thread, corals, feathers, and many other curious materials were carefully stitched together and raised on 'stumps' of wood, or wool pads in fantastic shapes. *Mrs. Head*, in Burlington Mag., IV. 168.

stun^1, *v. t.* 5. In *stone-cutting*, to injure by blows; bruise, as a stone, in such a way that splinters will drop off when the surface is cut or exposed to frost.

stun^1, *n.* 2. A patch on the surface of a block of stone where the material has been injured by a heavy blow. Compare ⋆*stun*^{1}, *v. t.*, 5.

Stundism (stu̇n'dizm), *n.* [*Stund*(*ist*) + *-ism.*] The teaching and practice of the Stundists.

Stundist (stu̇n'dist), *n.* [G. **stundist*, < *stunde*, hour. See *stound*^{1}. The name refers to their practice of Scripture-reading at stated hours during the week.] A member of a sect which sprang up among the South Russian peasantry about 1860, under the influence of German colonists. The sect has spread rapidly, and, despite persecution, has become a formidable power in affairs ecclesiastical and political. The members strive to get rid of the authority of both the state and the Orthodox Church, and, adopting the New Testament as their rule of faith, have rejected the priestly hierarchy, intercession of saints, image-worship, fasting, and the sacraments except baptism and communion. Manual labor is held to be necessary and is regarded almost as a religious act. Brotherly love is their one ruling doctrine. Tolstoi's teachings show the influence of the Stundists.

The legislation against the Protestant *Stundists* became almost as unbearable as that imposed on the Jews.
Encyc. Brit., XXV. 476.

stunt^1, *n.* 3. A feat; a performance of more or less difficulty, especially in athletics. [Colloq. or slang.]

Boys did some great *stunts* on and under water.
N. Y. Herald, Aug. 15, 1903.

stunt^2 (stunt), *n.* and *a.* [A corruption of E. *assistant.*] An assistant; assistant. [Anglo-Indian.]

Howbeit, do you, Sahib, take a pen and write clearly what I have said, that the Dipty Sahib may see, and reprove the *Stunt* Sahib . . . so young is he.
R. Kipling, Gemini, in Soldiers Three, p. 255.

Now there was an assistant commissioner—a *Stunt* Sahib, in that district, called yunkum Sahib.
R. Kipling, At Howli Thana, in Soldiers Three, p. 239.

stup (stup), *n.* [Also *stupp;* origin not ascertained; appar. < L. *stupa*, tow, etc.] 1. A pulverized mixture of clay and coke or coal.—2. The soot which deposits in the flues of furnaces for the extraction of mercury from cinnabar. It contains a considerable proportion of mercury, partly free and partly combined; it is therefore mixed with lime, molded into brick-like masses, and reburned to recover the metal.

stuporose (stū'pọ-rōs), *n.* Same as *stuporous*. *Buck*, Med. Handbook, V. 53.

sturgeon, *n.*—**Great sturgeon,** *Acipenser transmontanus*, a sturgeon of the Pacific coast from San Francisco northward, reaching a weight of 600 pounds.—**Oregon sturgeon.** Same as *white sturgeon*. See *sturgeon*.—**Sacramento sturgeon.** Same as *white sturgeon*. See *sturgeon*.

sturine (stū'rin), *n.* [ML. *stur*(*io*), sturgeon, + *-ine*^{2}.] A protamine, $C_{36}H_{69}O_7N_{10}$, similar in general properties to salmine. It is found in the testicles of the sturgeon.

stuttering, *n.*—**Labichoreic stuttering.** Same as ⋆*labichorea*.

stützite (stüt'zīt), *n.* [G. *stützit*, named (1878) after A. *Stütz*, who described in 1803 a mineral perhaps identical with this.] A silver telluride (perhaps Ag_4Te) occurring in hexagonal crystals of lead-gray color and metallic luster: probably obtained from Nagy-Ág, Transylvania.

stüvenite (stü've-nīt), *n.* [Named (1887) after E. *Stüven*, a mining engineer.] A hydrated sulphate of aluminium, magnesium, and sodium, occurring in slender acicular crystals. It is intermediate between mendozite and pickeringite and is found in Chile.

stycerin (stis'ẹ-rin), *n.* Incorrect for ⋆*stycerinol*.

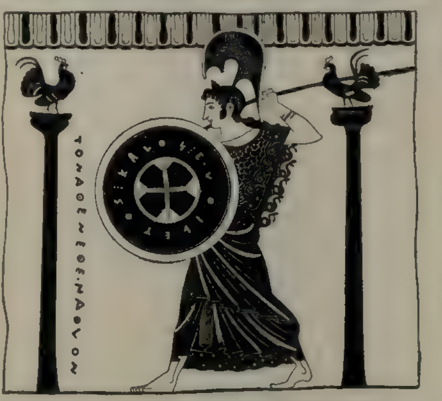
stycerinol (stis'ẹ-ri-nol), *n.* A bright-yellow, resinous, bitter compound, $C_6H_5CH(OH)CH(OH)CH_2OH$, prepared by the action of silver oxid and water on the corresponding dibromide.

Stygicola (sti-jik'ọ-lä), *n.* [NL., < Gr. Στύξ (Στυγ-), Styx, + L. *colere*, inhabit.] A genus of brotuloid fishes known only from cave streams in Cuba.

stylagalmatic (stī″la-gal-mat'ik), *a.* and *n.* [Gr. στῦλος, a pillar, + ἄγαλμα(τ-), a statue, + *-ic.*] **I.** *a.* In *arch.*, combining the figure of a statue with the duty of a supporting column.

II. *n.* A combined column and figure, either standing alone or engaged with a wall and carrying a weight of some kind on top of the figure, as a caryatid (which see).

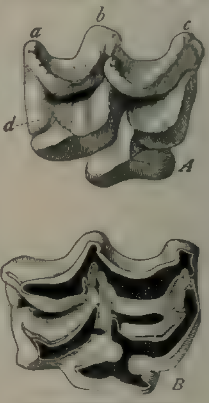
style^1, *n.* 2. (*b*) Specifically—(3) In certain phyllocarid and merostomatous crustaceans, the telson or caudal spine, which in the former is sometimes accompanied by two lateral spines, called *stylets* or *cercopods*. (*c*) Same as *stylet*, 2.



Athena from Black-figured Amphora, British Museum.

10. In *textile-printing*, the manner in which certain effects are produced. Thus, there are *pigment styles*, *discharge styles*, *resist styles*, *steam-mordant styles*, etc.—**A cappella style.** Same as *Palestrina* ⋆*style*.—**Black-figured style,** in the decoration of Greek vases, the practice of leaving the body of the vase in its natural color, or painting it white, cream-color, or red, and developing the decoration upon this in black varnish with occasional touches of brown, purple, or white. In the later 'red-figured' style a reverse method is followed. Black-figured vases may be dated between 600 and 450 B.C. For fifty years the two styles were practised side by side. It occasionally happened that both were used by the same painter. The black-figured decoration is retained in the Panathenaic amphoræ until 400 B.C. With the black-figured vases are sometimes included certain early wares of Naucratis, Cyrene, and especially Corinth, in which dark-colored decoration is used on a cream-colored ground, although these really belong to an archaic class by themselves.—**Caudal style,** one of the long processes borne by the anal segment of certain arthropods, as *Apus*.—**Chrome discharge style,** in *calico-printing*, a method (applicable to soluble dyestuffs) of padding the fabric with a dye and a chrome mordant, drying it, then printing it with the discharge (consisting of potassium ferrocyanide and an alkali, or mixtures of chlorates and bromates), and finally steaming it.—**Dyed style,** in *calico-printing*, the printing of cloth with certain metallic compounds, as red liquor or black liquor, which may be converted into insoluble coloring-matters, or lakes, by the application of dyestuffs.—**Empire style.** See ⋆*empire*.—**Extract style,** in *calico-printing*, the printing of a fabric with the mordant and coloring-matter in one operation, after which it is steamed in a suitable apparatus.—**Geometric style in Greek vases.** See ⋆*vase*.—**Le Gascon style,** in *bookbinding*, the style of Le Gascon, an eminent French binder, which is similar in framework to that of the Èves, but differs especially in the use of dotted instead of continuous lines for the detail. This produces a peculiarly soft, lace-like effect. *W. Matthews*, Modern Bookbinding, p. 76.—**Nouveau style.** See ⋆*art nouveau*.—**Palestrina style,** in *music*, a method or style of sacred composition similar to that perfected by Giovanni Pierluigi da Palestrina (died 1594), the famous Roman composer. This style is essentially vocal or a cappella, almost wholly contrapuntal or polyphonic, based on the medieval church modes and on subjects drawn chiefly from plain-song, and characterized not only by a profound sense of the words used, but by a studied exaltation of an ideal treatment of them. The style was in process of development before Palestrina's day and was successfully cultivated by several of his contemporaries, but is usually known by his name because of his intimate connection with the papal choir and of his conspicuous genius. In connection with discussions by the Council of Trent as to the purification of church music from various abuses, he is said to have successfully maintained the excellence of the polyphonic style by submitting examples that were generally approved. This style of music, as thus illustrated, and plain-song or the Gregorian style, are the only forms of music officially sanctioned in the Roman Catholic Church. Also *a cappella style*.—**Red-figured style.** See *black-figured* ⋆*style*.—**Steam style,** in *calico-printing*, a method of fixing by steam (upon the fiber of cotton, linen, and occasionally silk and woolen goods) adjective, or mordanted, colors used in the process of printing.—**Strong style.** See ⋆*strong*^{1}.—**Stuart style,** the name sometimes given to the artistic production of England which corresponds to the reign of the kings of the house of Stuart, James I. to James II. (1603-1688). The early part of the period continues the Elizabethan style, but is much affected by Dutch influences. The latter part of the century is characterized by the development of the English Palladian style. It comprehends all the activity of the architect Inigo Jones (1573-1652), and the early part of that of Sir Christopher Wren (1632-1723). It is a transition period rather than one having fixed motives and types.—**Turkey-red discharge style,** in *calico-printing*, a method of producing various colored patterns upon the cloth, previously dyed red, by printing it with colors which destroy the red in the parts printed, and leave upon those parts a different color.

style^2, *n.* 4. An elongated cusp or projection, lying on the periphery of a tooth and derived from outgrowths of the cingulum: often termed *pillar* or *buttress*. According to location these cusps have distinctive names. See ⋆*mesostyle*, ⋆*parastyle*, etc. See also cut at ⋆*tooth*, 1.



Molar Tooth of Horse.

A, unworn crown; *B*, worn crown; *a*, metastyle; *b*, mesostyle; *c*, parastyle; *d*, hypostyle.

Stylephoridæ (stī-le-for'i-dē), *n. pl.* [NL., < *Stylephorus* + *-idæ.*] A family of fishes based on a single specimen (preserved in the British Museum) taken in the West Indies in 1790.

Stylephorus (stī-lef'ọ-rus), *n.* [NL., irreg. < Gr. στῦλος, a pillar, + -φορος, < φέρειν, bear.] A genus of fishes of the family *Stylephoridæ*.

stylet, *n.* 3. Specifically—(*b*) Same as ⋆*cercopod*. Compare ⋆*style*^{1}, 2 (*b*) (3).—4. In fishes, one of the slender rays of bone on or above the base of the ribs; the epipleural. *Starks*, Synonymy of the Fish Skeleton, p. 525.

Stylina (stī-lī'nä), *n.* [NL., < Gr. στῦλος, a pillar, a stylus.] A genus of *Hexacoralla* growing in massive colonies, with corallites united by coalescent costæ and multiplying by costal gemmation. It is profusely abundant in the Triassic, Jurassic, and Cretaceous rocks.

Styliola limestone. See ⋆*limestone*.

stylion (stī'li-on), *n.*; pl. *stylia* (-ä). [NL., dim., < Gr. στῦλος, a pillar, a stylus.] In *craniom.*, the medial point on the base of the styloid process. *Von Török.*

stylization (stī-li-zā'shọn), *n.* [*stylize* + *-ation.*] The act or effect of stylizing.

The second notable characteristic of our group is a marked conventionality, not to say *stylization*.
H. S. Jones, in Jour. Hellenic Studies, XII. 377.

stylize (stī'līz), *v. t.*; pret. and pp. *stylized*, ppr. *stylizing*. [*style*^{1}, *n.*, + *-ize.*] To bring under the conditions of style; impress with the characteristics of style; conventionalize: in the decorative arts used to express the transformation which natural forms undergo in their adaptation to decorative motives, as in the use of the acanthus in Greek art, and the arum in Gothic.

These patterns are not numerous, and are in general a good deal *stylized*.
R. M. Dawking, in Jour. Hellenic Studies, XXIII. 252.

Linear ornament passes through vegetable to organic forms, mainly marine, which are finally *stylized* into heraldic conventions. . . . From first to last the persistent influence of a true artistic ideal differentiates Mycenaean objects from the hieratic or *stylized* products of Egypt or Phoenicia. *Encyc. Brit.*, XXXI. 58–59.

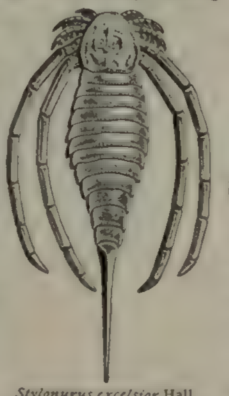
stylobation (stī-lọ̄-bā'shọn), *n.* [*stylobat(e)* + *-ion.*] The placing of a colonnade upon a continuous stylobate or pedestal.

stylolitic (stī-lọ̄-lit'ik), *a.* [*stylolite* + *-ic.*] In *petrog.*, containing or having the properties of stylolite. *Science*, April 8, 1904, p. 580.

stylomandibular (stī''lọ̄-man-dib'ū̦-lär), *a.* [*stylo(id)* + *mandibular.*] Noting a ligament or fibrous band which connects the angle of the lower jaw-bone with the styloid process of the temporal bone. *Proc. Zool. Soc. London*, 1897, p. 376.

stylometric (stī-lọ̄-met'rik), *a.* [*stylometer* + *-ic.*] Of or pertaining to the stylometer; measured by a stylometer.

Stylonurus (stī-lọ̄-nū'rus), *n.* [NL., irreg. < Gr. *στῦλος*, a pillar, a stylus, + *οὐρά*, a tail.] A genus of merostomatous *Crustacea* of the family *Eurypteridæ*, which often exceed one meter in length, and are characterized by their relatively small cephalothorax with large eyes and central ocelli, and their chelicerate preoral and five pairs of postoral appendages, of which the first bears pincers and the last two are greatly elongated, extending almost to the end of the long telson. The genus has been found in the Silurian and Devonian of Scotland and New York, and in the Catskill formation of New York and Pennsylvania.


Stylonurus excelsior Hall
(Restoration after Beecher.)

stylopid (stī'lọ̄-pid), *n.* and *a.* I. *n.* A member of the family *Stylopidæ*.

II. *a.* Having the characters of or belonging to the family *Stylopidæ*.

stylopine (stī'lọ̄-pin), *n.* [NL. *Stylop(horum)* + *-ine*¹.] A colorless alkaloid, $C_{19}H_{19}O_5N$, contained in yellow or celandine poppy, *Stylophorum diphyllum*. It crystallizes in needles and melts at 202° C.

stylopization (stī''lọ̄-pi-zā'shọn), *n.* The condition of being stylopized or penetrated by a stylops.

stylopterygium (stī''lop-te-rij'i-um), *n.*; pl. *stylopterygia* (-ä). [NL., < L. *stylus* (see *style*²) + NL. *pterygium.*] A hypothetical slender, simple limb-like appendage, without rays or appendages of any kind, supposed to be the first stage in the development of the vertebrate limb.

The earliest stage of the purely motor appendage was probably a simple styliform structure resembling the balancing organ of the Urodele or the limb of Lepidosiren, and from this *stylopterygium* had been derived along two divergent lines of evolution — the archipterygium and ichthyopterygium on the one hand and the cheiropterygium on the other.
Rep. Brit. Ass'n Advancement of Sci., 1901, p. 695.

stylus, *n.* 3. In a phonograph, a pointed part which rests on the diaphragm and is moved by the vibrations induced in the latter by sound-waves. It is used to produce the record of sounds upon the phonographic cylinders, and also to reproduce the sounds thus recorded.

stymie, *v.* and *n.* See ★*stimy*.

styphnic (stif'nik), *a.* Noting an acid, a sulphur-colored compound, $(\overset{1.\,3}{HO})_2C_6H(\overset{2.\,4\,6}{NO_2})_3$, prepared by the action of sulphuric and nitric acids on resorcinol. It forms large hexagonal crystals, melts at 175.5° C., and is a strong acid. Also called 2,4,6-*trinitroresorcinol* or 2,4,6-*trinitro*-1,3-*dihydroxybenzene*.

Stypodon (stip'ọ̄-don), *n.* [NL., < Gr. *στύπος*, a stump, + *ὀδούς* (*ὀδοντ-*), tooth.] A genus of cyprinoid fishes known from fresh-water streams of Mexico.

stypsis (stip'sis), *n.* [NL., < Gr. *στῦψις*, contraction, astringency, steeping in an astringent solution, < *στύφειν*, contract. See *styptic.*] The producing of a styptic effect; the effect produced.

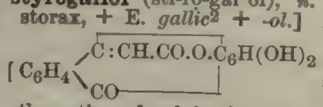
styptic, *n.*—**Chemical styptic,** a styptic which arrests hemorrhage by causing coagulation through chemical action, as iron subsulphate.—**Colloid styptic,** a solution of some styptic substance in a collodion-like liquid which is antiseptic and excludes the air when it has dried to a film; the collodium stypticum of the United States Pharmacopœia.—**Mechanical styptic,** a styptic which arrests hemorrhage by causing coagulation mechanically, such as punk or a pledget of cotton.—**Vascular styptic,** a styptic which arrests hemorrhage by inducing contraction of the wounded vessels, such as adrenal extract.

stypticin, stypticine (stip'ti-sin), *n.* [*styptic* + *-in*².] A trade-name of cotarnine hydrochlorid. It is used as a remedy for dysmenorrhea.

styracol (stī'ra̤-kol), *n.* [L. *styrax* (*styrac-*), storax, + *-ol.*] A substance obtained by the action of guaiacol on cinnamyl, used in the treatment of catarrhal troubles of the digestive and urinary tracts and in pulmonary diseases.

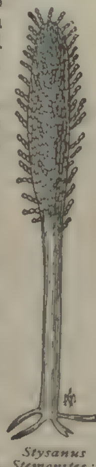
styrene (stī'rēn), *n.* [L. *styr(ax)*, storax, + *-ene.*] Same as *styrol*.

styrogallol (stī-rọ̄-gal'ol), *n.* [L. *styr(ax)*, storax, + E. *gallic*² + *-ol.*] A yellow dye,


$$\left[C_6H_4\begin{matrix}\diagup C:CH.CO.O.C_6H(OH)_2\\ \diagdown CO\end{matrix}\right.$$

, prepared by the action of sulphuric acid on a mixture of metahydroxybenzoic acid and cinnamic acid. It crystallizes in lustrous needles, melts at 260° C., resembles anthraquinone in appearance, and may be sublimed.

Stysanus (stī-sā'nus), *n.* [NL. (Corda, 1837).] A genus of hyphomycetous fungi, of the family *Stilbaceæ*, having the fertile hyphæ arranged in an erect, cylindrical, dark-colored stipe bearing mostly hyaline, catenulate, unicellular conidia. *S. Stemonites* is a common species on decaying herbaceous plants and is said to cause a rot of potatoes.


Stysanus Stemonites: enlarged.

suavastika, *n.* Same as *swastika*.

sub² (sub), *n.* [An abbreviation of *substitute.*] A substitute; specifically, one who is willing to serve as a substitute for a regular compositor on a newspaper. [Colloq.]

sub² (sub), *v. i.*; pret. and pp. *subbed*, ppr. *subbing*. [*sub*², *n.*] 1. To act as a substitute; specifically, to act as the substitute of another in a composing-room. [Colloq.] —2. To subirrigate. See ★*subbing*, 2.

sub. An abbreviation (*a*) of *subject*; (*b*) of *substitute*; (*c*) of *suburb*; (*d*) of *suburban*.

subacetabular (sub-as-e-tab'ū̦-lä̤r), *a.* Situated below the acetabulum.

The skiagraph revealed a hypertrophy of the acetabulum and the *subacetabular* region of the ilium.
Therapeutic Gazette, Jan., 1903, p. 53.

subadult (sub-a̤-dult'), *a.* [*sub-* + *adult.*] Nearly full grown; approaching the adult condition.

The October number of the Emu contains the photograph of a *subadult* Australian barn-owl in which large bunches of the nestling down are retained on the legs, thus communicating to the bird a most remarkable appearance. *Nature*, Dec. 3, 1903, p. 112.

subaërialist (sub-ạ̄-ē'ri-al-ist), *n.* In *geol.*, a supporter of the view that the processes of weathering, wind-erosion, etc., all primarily due to the atmosphere, are of paramount importance in earth-sculpture.

subaërially (sub-ạ̄-ē'ri-a̤l-i), *adv.* In a subaërial manner; by erosive processes acting on a land-surface or under the atmosphere.

It is not a typical "drowned valley." When compared with the exquisite valley-forms in south-west Ireland, which have been entered by the sea, it is seen that it is not a sufficient explanation to say that the channel is simply a *sub-aërially* carved valley depressed beneath the sea. *Geog. Jour.* (R. G. S.), IX. 537.

subalary (sub-ā'la̤-ri), *a.* [L. *sub*, under, + *ala*, wing, + *-ary.*] Situated below the wings.

subalate (sub-ā'lāt), *a.* [*sub-* + *alate.*] Somewhat wing-shaped; suggesting a wing: often applied to thin, triangular projections from a bone.

subandine (sub-an'din), *a.* Same as *subandean*. *Geog. Jour.* (R. G. S.), XVI. 189.

subantarctic (sub-an-tärk'tik), *a.* [*sub-* + *antarctic.*] Near, or just outside of, the Antarctic ocean.

Eleven others from the extralimital *subantarctic* waters are also considered. *Science*, Oct. 21, 1904, p. 536.

Subaqueous overwash plains. See ★*plain*¹.

subarid (sub''ar'id), *a.* [*sub-* + *arid.*] Climatically dry, but not in the extreme degree; moderately arid.

A situation typical of the *subarid* area known as the Great Plains. *Yearbook U. S. Dept. Agr.*, 1897, p. 92.

subarouse (sub-a̤-rouz'), *v. t.*; pret. and pp. *subaroused*, ppr. *subarousing*. In *psychol.*, to arouse in the form of an obscure disposition, rather than as a clear idea; predispose for. See the extract. [Rare.]

The exposure of the word "A" beginning a sentence *sub-arouses* many of its past associates, preferably substantives or descriptive adjectives.
Amer. Jour. Psychol., XII.

subarticular (sub-är-tik'ū̦-lä̤r), *a.* [L. *sub*, under, + E. *articular.*] Situated beneath an articulation or joint.—**Subarticular tubercle,** in *zoöl.*, a small prominence on the under side of the foot, at the point of articulation of the phalanges. The presence and arrangement of these tubercles are of importance in furnishing characters for the identification of some amphibians, especially tree-frogs. *Proc. Zool. Soc. London*, 1899, p. 67.

subastringent (sub-as-trin'je̤nt), *a.* Moderately astringent; suggesting astringency.

subatka (su-bat'kä̤), *n.* A name applied to *Alepisaurus æsculapius*, a fish found from Alaska southward to the coast of California.

subatom (sub-at'ọm), *n.* A definite part of an atom, if this assumed unit, for the most part looked upon as indivisible, is supposed capable under special conditions of undergoing division; a corpuscle. Also called *atomicule*. [Rare.]

The charged *sub-atoms* or particles of matter, . . . can . . . be made to circulate through a metallic tube or worm connected to earth. *Athenæum*, July 15, 1905, p. 85.

subatomic (sub-a̤-tom'ik), *a.* Of or pertaining to the relations of assumed particles or subdivisions of matter smaller than the atom: as, *subatomic* energy.

The cathode rays seem to consist of *subatomic* corpuscles, while such evidence as we have indicates that the positive electricity travels with particles of atomic magnitude, as in the case of electrolysis.
Astrophysical Jour., May, 1903, p. 259.

Experiments have been made with *sub-atomic* particles derived from one or other of these sources by a great number of physicists, such as Kaufman, Lenard, Simon, and Weichert in Germany, and Becquerel in France, with the result that Prof. Thomson's calculations as to the mass, charge, and speed of the moving particle, or, as we may now call it, the electron, have been independently and abundantly confirmed.
Athenæum, May 27, 1905, p. 661.

subatrial (sub-ā'tri-a̤l), *a.* Situated beneath the atrial cavity. *Parker and Haswell*, Zoology, II. 56.—**Subatrial ridge.** See ★*ridge*.

subattenuate (sub-a̤-ten'ū̦-āt), *a.* Somewhat attenuated, slender, thin, or delicate.

subauricular (sub-â-rik'ū-lä̤r), *a.* [L. *sub*, under, + E. *auricular.*] In *ornith.*, lying below the region of the ear: as, a *subauricular* spot of yellow.

subauriculate (sub-â-rik'ū̦-lạ̄t), *a.* Slightly auriculate or eared.

subbasal (sub-bā'sa̤l), *a.* Situated below the basal cell of a lepidopterous insect's wing.

The basal area of these wings irrorated with pearl-grey indicating two vague *subbasal* bands.
Proc. Zool. Soc. London, 1902, p. 48.

subbase (sub'bās), *n.* 1. A base or foundation-element, placed under the bottom of a machine or other apparatus, intermediate between the latter and the true foundation. It is used to lift the machine higher from the ground than it would be without it, and to do this without increasing the height of the masonry below, or making the machine itself inconveniently massive.

The whole turbine is complete in every detail, being mounted on an iron *sub-base*, has a pump for forcing lubrication through all the bearings, no oil being used in connection with the internal parts of the turbine.
Elect. Rev., Sept. 24, 1904, p. 489.

2. In general, anything going underneath a base or bed-plate.—3. A secondary base (of supplies) nearer or more accessible than the main base.

It is now stated that Mr. Peary's plan contemplates the construction of a strong wooden ship with powerful machinery, in which he will sail next July to Cape Sabine and, after establishing a *sub-base* there, force his way northward to the northern shore of Grant Land.
Science, Oct. 9, 1903, p. 478.

subbasement (sub'bās″mẹnt), *n.* A basement lower than the main basement of a building. In the largest modern buildings there are sometimes three or four of these, one below another.

A *sub-basement*, in which air circulates at a fairly uniform temperature, is also essential to dryness and constant temperature in the main basement where the larger permanent apparatus, for which stability is essential, is mounted. *Carnegie Inst. Yearbook*, 1902, p. 56.

subbifid (sub-bī'fid), *a.* Slightly forked, as is the tongue of a seal; somewhat bifurcate. *Parker and Haswell*, Zoology, II. 493.

subbing (sub'ing), *n.* 1. Acting as a 'sub.' [Colloq.]—2. Subirrigating. [Colloq.]

subbivalve (sub-bī'valv), *n.* An operculate univalve or gastropod shell.

subbrachycephal (sub-brak-i-sef'a̤l), *n.* In *craniom.*, a person with a subbrachycephalic head. *Deniker*, Races of Man, p. 316.

subbrachycephali (sub-brak-i-sef'a̤-lī), *n. pl.* Subbrachycephalic individuals or types. See *subbrachycephalic*. *Keane*, Ethnology, p. 179.

subbronchial (sub-brong'ki-a̤l), *a.* [L. *sub*, under, + E. *bronchial*.] In *ornith.*, situated beneath the bronchi.—**Subbronchial air-sacs**, a pair of air-sacs lying beneath the trachea.

subcæcal (sub-sē'ka̤l), *a.* Situated below the cæcum.

subcallosal (sub-ka-lō'sa̤l), *a.* Situated beneath the corpus callosum.—**Subcallosal layer.** See ★*layer*.

subcancellate (sub-kan'se-lāt), *a.* Somewhat cancellate or lattice-like.

subcapsuloperiosteal (sub-kap″sṳ-lō-per-i-os'-tẹ-a̤l), *a.* Situated beneath the capsule and the periosteum: noting a method of resection of a joint. *Buck*, Med. Handbook, VI. 909.

subcarbonaceous (sub-kär-bo̤-nā'shius), *a.* Having a somewhat brittle consistency resembling that of carbon (graphite): applied to the perithecia and stromata of various fungi.

subcarbonate (sub-kär'bo̤-nāt), *n.* A basic carbonate or one having the carbonic-acid radical partly replaced by oxygen or hydroxyl: as, bismuth *subcarbonate*, $Bi_2O_2(CO_3)$.

subcarbureted (sub-kär'bū-ret-ed), *a.* Combined with carbon in inferior proportion.

subcarinal (sub-ka-rī'na̤l), *a.* Situated below a carina. *Trans. Linn. Soc.*, Zool., June, 1902, p. 294.

subcarinate (sub-kar'i-nāt), *a.* Somewhat carinate or keeled. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 41.

Subcentral sulcus, an inconstant sulcus at the ventral end of the postcentral fissure. *Amer. Anthropologist*, 1901, p. 461.

subcerebellar (sub″ser-ẹ-bel'a̤r), *a.* Situated beneath the cerebellum. *Buck*, Med. Handbook, II. 250.

subcingulum (sub-sing'gṳ-lum), *n.*; pl. *subcingula* (-lä̤). 1. In medieval armor, a sash or belt worn under another. *Myrick*, Ancient Armor, Glossary.—2. A girdle formerly worn under the outer vestments by clerics, especially by bishops.

subcircular (sub-sėr'kṳ-lä̤r), *a.* Nearly, but not quite, circular.

In nearly every species the inceptive state is represented by a shell having a *subcircular* outline, with valves of slight convexity. *Amer. Jour. Sci.*, June, 1904, p. 415.

subclass, *n.* 2. In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*1), a division between class and order, based on the relative proportions of the two subgroups of the preponderant group of standard minerals.

subclass (sub'klȧs), *v. t.* To place in a *subclass* or secondary division of its class.

Accordingly the motive must be *subclassed* as sortilegic. *An. Rep. Bur. Amer. Ethnol.*, 1894–95, p. 72.

subcoastal (sub-kōs'ta̤l), *a.* In *phys. geog.*, of or pertaining to the shallow sea-bottom near the coast: as, *subcoastal* plains.

The *subcoastal* plains were described. They have a breadth of from 30 to 80 miles, or 300 miles off Newfoundland, reaching to a depth of 200 to 250 feet, with, in places, an outer terrace 200 feet lower. *Science*, Feb. 20, 1903, p. 298.

subconfluent (sub-con'flö-ẹnt), *a.* Partially united or fused: said of spots or other color-markings that have a tendency to run together. *Proc. Zool. Soc. London*, 1898, p. 431.

subconic (sub-kon'ik), *a.* Same as *subconical*.

subcontinental (sub-kon-ti-nen'ta̤l), *a.* Situated beneath a continent; of or pertaining to what underlies a continent.

Thus the *subcontinental* excess of temperature may make itself felt in regions where the rocks still retain a high temperature, and are probably not far removed from the critical fusion point. *W. J. Sollas*, in Nature, Sept. 13, 1900, p. 487.

subcontra (sub-kon'trä̤), *a.* In *acoustics*, lower than the contra-octave. See *subcontra* ★*octave*. *E. B. Titchener*, Exper. Psychol., I. i. 32.

subcoriaceous (sub-kō-ri-ā'shius), *a.* Somewhat or imperfectly coriaceous.

subcotyleal (sub-kot-i-lē'a̤l), *n.* [F. *subcotyléal*.] In *ichth.*, same as ★*angular*. *Starks*, Synonymy of the Fish Skeleton, p. 516.

subcruciform (sub-krö'si-fôrm), *a.* Somewhat cruciform; not perfectly cruciform. *Annals and Mag. Nat. Hist.*, Aug., 1903, p. 248.

subcrustal (sub-krus'ta̤l), *a.* In *geol.*, situated or operating below the earth's outer shell or crust: applied both to materials and to forces.

Volcanic outflow of *subcrustal* molten matter. *Geog. Jour.* (R. G. S.), XII. 545.

subcubical (sub-kū'bi-ka̤l), *a.* Nearly or somewhat cubical.

subcuboidal (sub-kū-boi'da̤l), *a.* Having somewhat the form of a cube; subcubical.

subculture (sub-kul'tṳr), *v. i.*; pret. and pp. *subcultured*, ppr. *subculturing*. In *bacteriol.*, to make a secondary culture in a new medium from an old culture.

Numerous colonies were obtained from the membrane on *sub-culturing*, while the milk below the membrane was sterile. *Nature*, quoted in Sci. Amer., Nov. 15, 1902, p. 326.

subcyaneous (sub-sī-ā'nẹ-us), *a.* Nearly cyaneous. *Annals and Mag. Nat. Hist.*, Dec., 1903, p. 612.

subdeltoid (sub-del'toid), *a.* 1. Same as *subdeltoidal*.—2. Situated beneath the deltoid muscle. *Buck*, Med. Handbook, VII. 205.

subdendroid (sub-den'droid), *a.* Slightly dendroid, or resembling or suggestive of a tree, in appearance. *Trans. Linn. Soc.*, Zool., June, 1902, p. 305.

subdental (sub-den'ta̤l), *n.* The anterior of the two large bones in the lower jaw of fishes, bearing the teeth; the dentary. *Starks*, Synonymy of the Fish Skeleton, p. 516.

subdeposit (sub-dẹ-poz'it), *n.* The lower one of two deposits.

subdepot (sub'de-pō″), *n.* *Mil.*, a secondary or branch depot, nearer the regiment than a depot.

To carry extra shoes upon the person is a considerable tax upon the soldier's strength, and *subdepots* for such supplies should be easily accessible. *Buck*, Med. Handbook, V. 796.

subdermic (sub-dėr'mik), *a.* Same as *hypodermic*. *Science*, Jan. 17, 1902, p. 117.

subdiaconate, *n.* II. *a.* Relating to the order or office of subdeacon.

subdiaphragmatic (sub-dī″a̤-frag-mat'ik), *a.* Same as *subphrenic*. *Buck*, Med. Handbook, I. 44.

subdiscal (sub-dis'ka̤l), *a.* Situated below the discal cell in the wing of a lepidopterous insect. *Proc. Zool. Soc. London*, 1902, p. 272.

subdiscoidal (sub-dis-koi'da̤l), *a.* Situated below the discoidal cell of an insect's wing. *Proc. Zool. Soc. London*, 1901, p. 228.

subdivide (sub'di-vīd″), *n.* In *phys. geog.*, a subordinate divide, as one between small streams in contrast with one between river systems.

When a plain or plateau or mountain region is well dissected numerous sharply defined *subdivides* are developed between the smaller rivers and their branches. *W. M. Davis*, Elem. Phys. Geog.

subdolichocephali (sub-dol″i-kō-sef'a̤-lī), *n. pl.* [NL.] Subdolichocephalic individuals or types. See *subdolichocephalic*. *Keane*, Ethnology, p. 179.

subdolichocephalism (sub-dol″i-ko̤-sef'a̤-lizm), *n.* The quality or condition of being subdolichocephalic.

The skull of the Chinese is, in fact, both longer and higher in proportion than those of all other yellow men. His cephalic index falls down to *subdolichocephalism* (the average indication of 142 skulls of the two sexes = 77.24) and its height slightly exceeds its width. *Smithsonian Rep.*, 1895, p. 515.

subdolichocephalous (sub-dol″i-kō-sef'a̤-lus), *a.* Same as *subdolichocephalic*. *Keane*, Ethnology, p. 321.

subdolichocephaly (sub-dol″i-ko̤-sef'a̤-li), *n.* Same as ★*subdolichocephalism*.

subdominant, *n.* II. *a.* Subordinate; submaximal or subnormal: said specifically of the stimuli which evoke marginal or obscure mental processes.

Those disturbances which are dominant become focal in consciousness, or the mind is fully conscious of such. Those that are *sub-dominant* bring about marginal or sub-conscious psychical states. *Buck*, Med. Handbook, III. 260.

Subdominant group. See ★*group*1.

subdrainage (sub-drā'nā̤j), *n.* 1. In *agri.*, drainage of water beneath the surface of the ground, in distinction from surface drainage.

The apple may be grown on almost any soil, but the best results are obtained on soils from which native forests have been cleared. Here the physical conditions are such as to afford both ample surface drainage and *subdrainage*, and the soils are well supplied with the various kinds of plant food essential for a healthy wood growth and finely developed, well-matured fruit crop. *Yearbook U. S. Dept. Agr.*, 1901, p. 594.

2. A subdivision of a drainage system.

More than three-fifths of Montana is drained by the Missouri and its tributaries. For statistical discussion this great basin is divided into four *subdrainage* basins. *U. S. Dept. Com. and Labor*, Bur. of Census, Bulletin [16, Irrig. in U. S., 1902, p. 60.

subdue, *v. t.*—**Subdued mountain.** See ★*mountain*.

subdurally (sub-dū'ra̤-li), *adv.* In a subdural manner; into the subdural space.

subecho (sub'ek″ō), *n.* In *whist*, a trump signal made after the partner has led trumps and the player has had no chance to complete a direct echo in the trump suit.

subelongate (sub-ẹ-lông'gāt), *a.* Somewhat elongate. *Annals and Mag. Nat. Hist.*, Feb., 1904, p. 103.

subencephalon (sub-en-sef'a̤-lon), *n.*; pl. *subencephala* (-lä̤). [NL., < L. *sub*, under, + Gr. ἐγκέφαλος, brain.] That portion of the brain which comprises the corpora quadrigemina, the pons Varolii, and the medulla oblongata.

subendymal (sub-en'di-ma̤l), *a.* Situated beneath the endyma, or membrane which lines the ventricles of the brain. *Buck*, Med. Handbook, II. 176.

subensiform (sub-en'si-fôrm), *a.* Somewhat ensiform. *Proc. Zool. Soc. London*, 1902, p. 95.

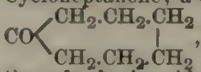
subentry (sub'en″tri), *n.* A subordinate entry; an entry made under another.

subependymal (sub-ep-en'di-ma̤l), *a.* Same as ★*subendymal*.

subepiglottic (sub-ep-i-glot'ik), *a.* Situated below the epiglottis.

subepiglottid (sub″ep-i-glot'id), *a.* Same as ★*subepiglottic*.

suberite (sū'bẹ-rīt), *n.* [NL. *suberites*, < L. *suber*, the cork-oak.] A sponge of the genus *Suberites* or of a related genus.

suberone (sū'bẹ-rōn), *n.* [*suber*(*ic*) + *-one*.] Cycloheptanone; a colorless oil, , prepared by the distillation of suberic acid with lime. It has an odor of peppermint and boils at 179–181° C.

subessive (sub-es'iv), *a.* [L. *sub*, under, + *esse*, be, + *-ive*.] In *gram.*, noting the case which expresses position *under*. *Amer. Anthropologist*, Jan.–March, 1903, p. 26.

subestuarine (sub-es'tṳ-a-rin), *a.* In *geol.*, partly estuarine: applied to deposits which were laid down in a coastal lagoon into which at times the ocean waters overran.

subexcite (sub-ek-sīt'), *v. t.*; pret. and pp. *subexcited*, ppr. *subexciting*. In *physiol.*, to predispose to activity; excite in a partial or nascent manner.

Pronunciation of an adjective . . . seems to *subexcite* association tracts representing substantives. *Amer. Jour. Psychol.*, IX. 580.

subextensibility (sub-eks-ten-si-bil'i̤-ti), *n.* A lessened degree of extensibility. *Buck*, Med. Handbook, IV. 515.

subfacies (sub-fā'shi-ēz), *n.*; pl. *subfacies*. [NL.] In *entom.*, the lower part of the facies.

subfalcate (sub-fal'kāt), *a.* Somewhat falcate.

subfibrous (sub-fī'brus), *a.* Imperfectly fibrous.

The mineral occurs commonly in long-bladed triclinic crystals and in bladed to *subfibrous* masses. *W. Tassin*, in Smithsonian Rep. (Nat. Mus.), 1900, p. 514.

subfissure (sub'fish″ṳr), *n.* A cerebral fissure which is concealed by the overlapping convolutions. *Buck*, Med. Handbook, II. 201.

subfix (sub'fiks), *n.* [*sub-* + *-fix* as in *suffix*, *affix*, etc.] A character written under another character or word; a subscript character.

As the *subfix* in plate LXIV, 48, is the character I have usually interpreted by u, this would give us some of the elements of the name Kukulcan and not Itzamna, as Seler and Schellhas suppose.
C. Thomas, in An. Rep. Bur. Amer. Ethnol., 1894–95, p. 225.

subflexuose (sub-flek'sụ̄-ōs), *a.* Somewhat or partly flexuose.

subfreshman (sub'fresh″man), *n.* A student who is nearly ready to enter college as a freshman. [U. S.]

Subfrontal fissure. Same as *inferofrontal* ★*fissure*.

subfunctional (sub-fungk'sho̤n-a̤l), *a.* Used to a certain extent: said of small or imperfectly developed parts that are of little use to the organism in which they are found, but correspond to full-sized useful organs in another species of animal or plant.

Hypohippus of the middle Miocene with *subfunctional* lateral digits . . . is an instance of arrested evolution owing probably to marsh dwelling habits which necessitated a spreading foot. *Amer. Nat.*, Jan., 1904, p. 6.

subgens (sub'jenz), *n.*; pl. *subgentes* (-jen'tēz). [NL.] A subdivision of a gens. In exogamic communities, members of various subgentes of the same gens are generally forbidden to intermarry. The subgens and gens differ from the gens and phratry in that the social and political function of the subgens is not as clearly differentiated from that of the gens as is the function of the gens from that of the phratry. The distinction is, however, only one of degree. In more complex forms of social organization, phratry, gens, and subgens may be found at the same time. In this case the subgens is a subdivision of the gens which may be more or less definitely differentiated from the whole gens.

subgerminal (sub-jėr'mi-na̤l), *a.* In *embryol.*, lying beneath the germ or embryo: said especially of cavities or structures in the yolk-laden eggs of birds and insects.—**Subgerminal cavity**, in *embryol.*, the cavity which lies beneath the developing embryo of vertebrates such as sharks, reptiles, birds, etc.

Subglacial till. See ★*till*^{4}.

subglobosely (sub-glọ-bōs'li), *adv.* Somewhat globosely. *Annals and Mag. Nat. Hist.*, April, 1904, p. 275.

subglobular, *a.* **2.** Same as ★*platycephalic*, 2. *Aitken Meigs.*

subgrad (sub'grad), *n.* [See ★*grad*.] In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*^{1}), a division of a grad based on the proportions of the chemical bases in the minerals used in forming a grad.

subgyre (sub'jīr), *n.* A cerebral convolution in a fissure concealed by other overlapping convolutions. *Amer. Anthropologist*, Oct.–Dec., 1903, p. 623.

subhedral (sub-hē'dra̤l), *a.* Having an imperfect crystalline form: said of phenocrysts in a rock which are intermediate between those having a well-developed form (*euhedral*) and those destitute of this (*anhedral*).

subhuman, *a.* **2.** Nearly or somewhat human.

Useful suggestions as to the origin of numerical concepts may be drawn from various *subhuman* animals.
W. J. McGee, in An. Rep. Bur. Amer. Ethnol., 1897–98, [p. 828.

subhumid (sub-hū'mid), *a.* Humid below the normal; having less than the normal or necessary amount of moisture. The subhumid region of the United States includes portions of North Dakota, South Dakota, Nebraska, Kansas, and Texas, where irrigation is sometimes necessary to successful farming.

The *subhumid* region is the strip of country running north and south between the arid region, where irrigation is absolutely necessary to the successful prosecution of agriculture, and those portions of the United States in which the rainfall is usually sufficient for agricultural purposes. It includes portions of North Dakota, South Dakota, Nebraska, Kansas, and Texas, and may be described as a region where irrigation is not always necessary, but where agricultural operations can not, with any assurance of success, be undertaken without it.
Yearbook U. S. Dept. Agr., 1896, p. 631.

subhyaline (sub-hī'a̤-lin), *a.* Somewhat hyaline. *Annals and Mag. Nat. Hist.*, Feb., 1904, p. 84.

subimposed (sub-im-pōzd'), *a.* Originated, as a river, in an underground, cavernous passage, and revealed by the erosion or falling in of the cover.

If a name were desired for this minor feature of the drainage of certain regions, it might be termed *subimposed*. *I. C. Russell*, Rivers of North America, p. 246.

subincandescent (sub-in-kan-des'e̤nt), *a.* Heated but not brightly luminous: said of the hydrogen forming the outer or coronal layer of the sun. *Geikie*, Text-book of Geol., p. 18.

subindex (sub'in-deks″), *n.* A specifying figure or letter following and slightly below a figure, letter, or symbol: as the 0 in x_0.

subindividual, *n.* **2.** One of a multitude of minute crystals of similar habit which unite, in parallel position, to form a large crystal or to coat the surface of a crystal of some other species.

subinfection (sub-in-fek'sho̤n), *n.* Secondary infection. *Jour. Exper. Med.*, Oct. 1, 1901, p. 642.

subinferior (sub-in-fē'ri-o̤r), *a.* In *ichth.*, lying toward, or slightly on, the under side: specifically applied to the position of the mouth which is subinferior when situated just below the most projecting part of the nose. In sharks the mouth is decidedly inferior. *Catalogue Fishes, British Museum*, I. 76.

subiniac (sub-in'i-ak), *a.* Lying beneath the inion; in *anthrop.*, relating or pertaining to that portion of the skull which is situated between the inion and the foramen magnum. *Amer. Anthropologist*, Jan.–March, 1901, p. 42.

subintegumental (sub-in-teg-ụ̄-men'ta̤l), *a.* Lying beneath the skin or outer covering of the body. *Buck*, Med. Handbook, IV. 318.

subintrant (sub-in'tra̤nt), *a.* [L. *subintrans*, ppr. of *subintrare*, enter into secretly, < *sub*, under, + *intrare*, enter. See *intrant*.] Anticipating: noting a malarial fever the paroxysms of which recur after progressively shortening intervals until at last a new one begins before the preceding one has fully run its course.

subirrigate (sub-ir'i-gāt), *v. t.*; pret. and pp. *subirrigated*, ppr. *subirrigating*. To irrigate beneath the surface of the ground. See ★*subirrigation*.

Where the subsoil transmits water freely, irrigation ditches may *subirrigate* large tracts of country without rendering them marshy. Thus farms may obtain an ample supply of water from ditches a half mile or more away without the necessity of distributing small streams over the surface. In the San Joaquin Valley of California, vineyards in certain localities are thus maintained in good condition, although water has not been visibly applied for many years. The closing of the ditches would, however, result in drying up the ground, and this obliges the farmers who are benefited by subirrigation to pay their share of the cost of maintaining the ditches, although they do not receive water directly.
Sci. Amer. Sup., Jan. 17, 1903, p. 22616.

subirrigation (sub-ir-i-gā'sho̤n), *n.* The application of water in such manner that it will reach the roots of agricultural crops without appearing at the surface. Under this term is also included natural subirrigation, or the occurrence of water beneath the surface (and of benefit to crops) due to natural causes. Subirrigation may be by percolation through sands or gravels, or through pipes or drain-tile suitably arranged. See the extract under ★*subirrigate*.

In one of the systems of *subirrigation* the water is carried through pipes 14 inches below the surface. These are broken every 10 inches and laid in beds of charcoal. These pipes run 20 feet apart east and west and are crossed every 280 feet by 4-inch water-tight supply pipes. At the junction of these pipes is a brick and cement box or pocket, into which all pipes empty. The bottom of this box is 21 inches below the surface, and the flow of the water is regulated by a system of plugs or cut-offs.
U. S. Dept. Com. and Labor, Bur. of Census, Bulletin [16, Irrig. in U. S., 1902, p. 25.

subj. An abbreviation (*b*) of *subject*; (*c*) of *subjective*; (*d*) of *subjectively*.

subject, *n.* **11.** In *geom.*, the figure cut by the picture-plane.

If the *subject* is an eject of an original, the cut of the *subject* is an image of the original.
Merriman and Woodward, Higher Mathematics, p. 72.

12. In *exper. psychol.*: (*a*) The observer or reactor; the person upon whom an experiment is made. (*b*) More correctly, the person, normal or abnormal in mental condition, who is subjected to a mental test or an examination of mental efficiency.

'Observer' should be the general term for the person on whom an experiment is tried. '*Subject*' should be used where this person is abnormal, and 'reactor' where some movement is required.
Jour. Philos. Psychol. Sci. Methods, April 28, 1904, p. [239.

Intermediate subject or **theme.** Same as *intervening subject* (which see, under *intervene*).—**Secondary subject** or **theme**, in *music*, either a counter-subject or the theme of an episode.—**Subject-catalogue.** See ★*catalogue*.

subjective, *a.* **4.** In *gram.*: (*a*) In Eskimo, noting the case expressing the subject of a transitive verb and the owner of an object. Also called *transitive*. (*b*) In other American languages, noting the case expressing the subject of a transitive or intransitive verb: used in languages in which these two forms are identical. Also called *agentialis*.—**Subjective utility.** See ★*utility*.

subjugular (sub-jö'gụ̄-lä̤r), *a.* Situated below the neck or jugulum: used in describing birds where a subjugular band may mark the boundary between neck and breast.

sublabial (sub-lā'bi-a̤l), *a.* In *herpet.*, noting one of the horny scales covering the lower lip. *Proc. Zool. Soc. London*, 1896, p. 615.

sublacustrine (sub-lạ-kus'trin), *a.* Situated or occurring beneath a lake.

The positions of the two *sublacustrine* cones were indicated, and it is clear from the soundings that a large mass of lava spread from the Wizard Island vent over the lake floor. *Science*, Feb. 7, 1902, p. 209.

sublamine (sub-lam'in), *n.* [*subl(imate)* + *(di)amine*.] A trade-name of ethylendiamine mercury sulphate. It has a red color, is readily soluble, and is used in surgery as a non-irritating substitute for mercuric chlorid.

sublaryngeal (sub-la-rin'jẹ̄-a̤l) *a.* Lying beneath the larynx. *Proc. Zool. Soc. London*, 1901, p. 281.

sublateral (sub-lat'e̤-ra̤l), *a.* In *entom.*, situated near the side of the body. *Proc. Zool. Soc. London*, 1902, p. 197.

sublethal (sub-lē'tha̤l), *a.* Not quite fatal: as, *sublethal* doses. *Philos. Trans. Roy. Soc.* (London), 1902, ser. B, p. 48.

sublibrarian (sub'lī-brā'ri-a̤n), *n.* An under librarian.

sublimant (sub'li-ma̤nt), *n.* [L. *sublimans* (*-nt-*), ppr. of *sublimare*, lift on high. See *sublimate*.] An agent which causes sublimation: thus, water, in the state of steam, brings other volatile substances with it from great depths in the rocks of the earth's crust.

The action of water [on lavas, rock, etc.] as a solvent and *sublimant*. *Geog. Jour.* (R. G. S.), XIV. 435.

Sublimation vein, in *geol.*, a vein filled in accordance with the sublimation theory. See *sublimation theory*, under *sublimation*.

subliminal, *a.* **2.** Subconscious; pertaining to the subliminal self or personality: as, a *subliminal* memory.

II. *n.* The subconscious; a supposed secondary self or consciousness below the level of the normal, waking life.

Of the *Subliminal*, he would say, we can give no ultra-simple account.
W. James, in Proc. Soc. Psychical Research, May, 1901, [p. 18.

sublimize (sub-lī'mīz), *v. t.*; pret. and pp. *sublimized*, ppr. *sublimizing*. [*sublim(e)* + *-ize*.] To elevate; etherealize; make sublime.

sublineate (sub-lin'ẹ̄-āt), *v. t.*; pret. and pp. *sublineated*, ppr. *sublineating*. [*sub-* + *lineate*. See *lineate*.] To underline.

sublineation (sub-lin-ẹ̄-ā'sho̤n), *n.* [*sublineat(e)* + *-ion*.] An underlining; the line so drawn: usually meaning an instruction to the printer to italicize a word so underlined.

Sublingual ganglion. Same as *submaxillary ganglion* (which see, under *ganglion*).

sublinguate (sub-ling'gwāt), *a.* Somewhat linguate or tongue-shaped.

sub-list (sub'list), *n.* [*sub*^{2}, *n.*, + *list*^{5}.] A list of 'subs,' or men who are willing to serve as substitutes for the regular compositors on a newspaper during their absence. [Colloq.]

sublittoral, *a.* **2.** Of or pertaining to the sea-bottom near the coast.

From a seismic map of the world, I should estimate that round the Pacific there are at least ten *sub-littoral* districts where earthquake-frequency may be about half that of Japan. *Milne*, in Geog. Jour. (R. G. S.), X. 133.

sublobule (sub'lob″ūl), *n.* A secondary division of a lobule. *Buck*, Med. Handbook, VII. 766.

subloreal (sub-lō'rē-a̤l), *a.* Lying below the lore: used especially in describing the markings of birds.

sublustrous (sub-lus'trus), *a.* Nearly but not perfectly lustrous. *Annals and Mag. Nat. Hist.*, Sept., 1903, p. 329.

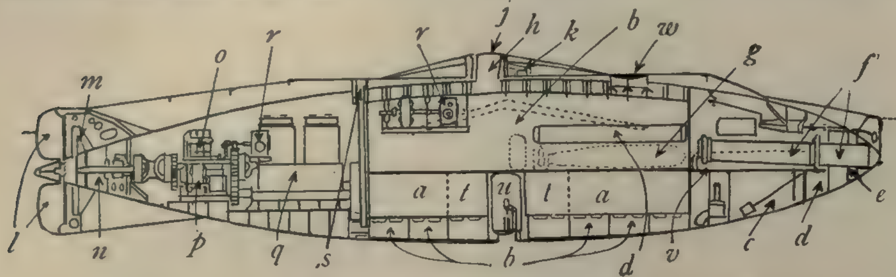
submain (sub'mān), *n.* In a system of drainage, a branch of a main which receives water from the minor drains. *James Muir*, Agriculture, p. 48.

submalleal (sub-mal'ē-a̤l), *n.* The posterior of the two bones in the lower jaw of fishes; the articulare. *Starks*, Synonymy of the Fish Skeleton, p. 515.

submanifold (sub'man″i-fōld), *n.* The selected elements of a partitioned manifold.

submarine. I. *a.*—**Submarine mine.** See ★*mine*2.

II. *n.* 2. A vessel designed to navigate either entirely under water or on the surface, with a crew contained within it and with its own motive power; specifically, a submarine torpedo-boat. The earliest submarine boats were moved by rowers in the interior, and descriptions of such boats are given in the seventeenth century. Numerous inventors have designed and built such boats, among them Bushnell and Fulton, but the first use of a submarine in actual warfare appears to have been during the American civil war. The Confederates built several boats called 'Davids,' one of which torpedoed the United States steamer Housatonic in 1864. Since then a number of submarine boats of various types have been constructed, but it was not until their construction was taken up in France about 1885 that such vessels began to be considered of real importance in naval warfare. Since then, the development of the submarine under the direction of the French Naval Administration has been continuous. In the United States, the Navy Department has adopted the type of boat developed by John P. Holland, of which 8 have been built and are in service (see cut); 4 improved submarines are under construction. Another type of boat has been invented by Simon Lake. In Great Britain, the boats first built were of the Holland type, which has since been developed further in that country. (See table showing submarines built and building in various navies under ★*navy.*) In all modern submarines, the boat, when under water, is propelled by an electric motor, the current for which is derived from storage-batteries. The means of propulsion at the surface are various: steam-engines and boilers fired with coke and with oil fuel have been used, and gasolene and petroleum engines are largely employed. The engines are also geared to electric generators in the boat, by means of which the storage-batteries can be recharged. In the smallest types of submarines electric propulsion is employed, both at the surface and beneath it, and the storage-batteries must be charged from shore or from another vessel. In the navigation of submarines, three conditions are recognized: (1) the *light condition*, when all the water-ballast is pumped out, hatches are open, and the vessel is propelled substantially as an ordinary boat; (2) the *awash condition*, when only the conning-tower is above water and the hatches and other openings are closed; (3) the *submerged condition*, when the boat is wholly under water except that the periscope may show at moderate depths of submergence. The passage from the light to the awash condition is effected by filling suitably arranged ballast-tanks with water. The total submergence and the regulation of the depth when submerged are now usually effected by a horizontal ★rudder (which see) at the stern, by which the vessel is inclined downward when under way and dives beneath the surface. In the Lake boat, so-called hydroplanes are used. These consist of a pair of horizontal rudders, forward and aft, on each side of the boat which, when inclined under way, cause the boat to submerge bodily. Screw-propellers on a vertical axis have also been used. The only offensive weapon carried by submarines at present is the automobile torpedo. Distinctions have been drawn between various types of submarines, as the *submersible* or *autonomous submarine boat*, also called *offensive submarine*; and the *submarine proper*, or *defensive submarine*. See ★*submersible*.



Submarine Torpedo-boat of the Holland Type.

a, a, storage-batteries; *b, b,* main ballast-tank; *c,* gasolene tank; *d,* torpedo compensating-tank; *e,* forward trimming-tank; *f,* torpedo-tube; *g, g,* torpedoes; *h,* conning-tower; *j,* water-tight hatch on top of conning-tower; *k,* steering-compass; *l,* ordinary steering-rudder, the horizontal diving-rudder not shown; *m,* screw-propeller; *n,* after trimming-tank; *o,* air-compressor; *p,* combined dynamo and motor; *q,* gasolene engine; *r, r,* periscope motors; *s,* ventilating-tube; *t,* auxiliary ballast-tank; *u,* adjusting ballast-tank; *v,* air-storage tanks; *w,* forward water-tight hatch.

submegacranous (sub-meg-a̤-krā'nus), *a.* In *craniom.*, having a skull of moderately large volume, from 1,960 to 2,110 cubic centimeters in males and from 1,740 to 1,840 cubic centimeters in females.

submegaprosopous (sub-meg″a̤-pro-sō'pus), *a.* In *craniom.*, having a skull which has a moderately large face the volume of which is from 650 to 710 cubic centimeters in males and from 535 to 575 cubic centimeters in females.

submergible (sub-mėr'ji-bl), *a.* and *n.* Same as *submersible*. [Rare.]

submersible, *a.* II. *n.* Something that may be submerged; specifically, a particular type of submarine boat. The term is derived from French usage and has been more or less vaguely employed. As generally understood, a submersible is a type of submarine torpedo-boat which can navigate for distances of several hundred miles with a considerable part of the hull out of water, using a steam or a gasolene engine, but which in action can be entirely submerged, and is then propelled by an electric motor. The storage-batteries can be recharged when exhausted by running the engine attached to a dynamo. The submarine proper is usually of comparatively small size, has only an electric motor for propulsion, and its storage-batteries must be recharged from shore or from another vessel. It has therefore a limited radius of action, and its function is defensive, while the submersible may be considered an offensive vessel; hence the names *offensive submarine* and *defensive submarine* sometimes used. See ★*submarine*.

For instance, a *submersible* of the "Narval" type and dimensions is for France not only a defensive, but an offensive weapon, and the partial sacrifice of submarine qualities in the design is warranted by the possibilities for offensive use. The same boat transferred to America would become purely defensive and would not be so well adapted to the conditions here as is the American type.
Sci. Amer. Sup., Feb. 7, 1903, p. 22658.

submesaticephalic (sub-mes″a̤-ti-se-fal'ik), *a.* In *anthrop.*, almost mesaticephalic.

submetamorphic (sub-met-a̤-môr'fik), *a.* Partially or incompletely metamorphosed. *Geikie*, Text-book of Geol., p. 906.

submeter (sub'mē-tėr), *n.* A small electric meter used to record separately the energy consumed in a portion of a circuit the whole energy of which is meantime measured by means of a larger instrument.

It is necessary either to instal duplicate wiring or to use *submeters*. *Nature*, Sept. 26, 1907, p. 554.

submicrocephalic (sub-mī″krọ-se-fal'ik), *a.* Approaching the conditions of microcephaly, particularly of pathological microcephaly.

submicrocephaly (sub-mī-krọ-sef'a̤-li), *n.* The condition of being submicrocephalic.

submicrocranous (sub-mī-krọ-krā'nus), *a.* In *craniom.*, having a skull of moderately small volume, from 1,640 to 1,800 cubic centimeters in males and from 1,510 to 1,600 cubic centimeters in females.

submicroprosopous (sub-mī″krọ-pro-sō'pus), *a.* In *craniom.*, having a skull which has a moderately small face the volume of which is from 520 to 570 cubic centimeters in males and from 440 to 475 cubic centimeters in females.

submolariform (sub-mọ-lar'i-fôrm), *a.* Having somewhat the shape or appearance of a molar tooth.

The third upper premolar has a broad internal cingulum, the fourth is *submolariform*.
Bulletin Amer. Mus. Nat. Hist., XVI. 197.

submorainic (sub-mọ-rā'nik), *a.* Pertaining to the surface or material under a moraine. *J. Geikie*, The Great Ice Age, p. 49.

submucosal (sub-mụ-kō'sa̤l), *a.* Lying beneath the mucosa or mucous coat of the intestine or other part. *Buck*, Med. Handbook, V. 638.

sub-Mycenæan (sub-mī-sẹ-nē'a̤n), *a.* Later than Mycenæan or the Mycenæan period.

It [bugelkanne] is found everywhere in the area, made of various local clays, and it long survived into the "Geometric" or *sub-Mycenaean* period.
Encyc. Brit., XXXI. 57.

submytiliform (sub-mī-til'i-fôrm), *a.* Having somewhat the form of the genus *Mytilus*.

subnacreous (sub-nā'krẹ-us), *a.* Somewhat nacreous.

subnasute (sub-nạ-sūt'), *a.* Slightly nasute, prolonged, produced, extended, or snouted.

subnodulose (sub-nod'ū-lōs), *a.* Somewhat nodulose. *Annals and Mag. Nat. Hist.*, Nov., 1903, p. 475.

subnotochordal (sub-nō'tọ-kôr-da̤l), *a.* Situated beneath the notochord.

subobsolete (sub-ob'sọ-lēt), *a.* In *descriptive zoöl.*, nearly obsolete.

Carina of the pronotum very slightly raised, *subobsolete* behind. *Proc. Zool. Soc. London*, 1902, p. 96.

suboctile (sub-ok'til), *n.* [L. *sub*, under (see *sub-*), + *octo*, eight, + *-ile.*] In *statistics*, a group containing one eighth of the total number of observations or observed objects arranged upon a curve of frequency: marked off as 'first' and 'last suboctile,' to the extreme right and the extreme left of the curve, beyond the first and last octiles respectively.

First *Suboctile.*—The image once seen is perfectly clear and bright. *E. B. Titchener*, Exper. Psychol., I. ii. 392.

subopaque (sub-ọ-pāk'), *a.* Nearly opaque. *Annals and Mag. Nat. Hist.*, Aug., 1904, p. 112.

subopercular, *a.* II. *n.* In *ichth.*, the suboperculum. *Starks*, Synonymy of the Fish Skeleton, p. 515.

suboptimal (sub-op'ti-ma̤l), *a.* [*suboptim(um)* + *-al*1.] In *biol.*, concerning or pertaining to a suboptimum.

This reaction is repeated as long as an effective supraoptimal or *suboptimal* temperature continues. The result is to prevent the organisms from entering regions of marked supraoptimal or *suboptimal* temperature, and to cause them to form collections in regions of optimal temperature. *Science*, Dec. 2, 1904, p. 751.

suboptimum (sub-op'ti-mum), *n.*; pl. *suboptima* (-mä). A somewhat lower temperature than that which is best suited for an organism or for a developing egg or seed. See *optimum*.

suborder, *n.* 3. In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*1), a division lower than order and higher than rang.

subordinationist (sub-ôr-di-nā'sho̤n-ist), *n.* [*subordination* + *-ist.*] One who holds the doctrine of subordinationism. The Eusebians or Semi-Arians were one kind of subordinationists.

suboxidation (sub-ok-si-dā'sho̤n), *n.* In *chem.*, oxidation in an incomplete or inferior degree. *Buck*, Med. Handbook, III. 234.

subpalatal (sub-pal'ạ-ta̤l), *a.* Situated below the fauces. *Scripture*, Exper. Phonetics, p. 305.

subpatellar (sub-pat'e-lä̤r), *a.* Situated beneath the patella.

subperforate (sub-pėr'fọ-rāt), *a.* Partially perforated. *Amer. Nat.*, March, 1904, p. 209.

subperiosteocapsular (sub-per-i-os″tẹ-ọ-kap'sụ-lä̤r), *a.* Same as ★*subcapsuloperiosteal*.

subpetaloid (sub-pet'a̤-loid), *a.* In the sea-urchins, or *Echinoidea*, noting ambulacra which are more elongated than the petaloid or circumscript ambulacra and in which the pairs of pores do not tend to close distally.

subphratric (sub-frā'trik), *a.* Of or pertaining to a subphratry. *Haddon*, Evolution in Art, p. 264.

subpiston (sub'pis″to̤n), *n.* An auxiliary piston, used for some purpose other than the receipt of the effort of the expanding or working fluid in a motor. Such are pistons by which compression is effected, clearances made to vary, pressures relieved from valves, weights of moving parts balanced, and the like.

The new steam motor of Leon Serpollet is designed much on the same principles of the straight line double cylinder gasoline engines. It is illustrated in Fig. 43 in part sectional elevation, plan view, end view and a section of the compression *sub-piston* and inlet port at the lower right hand corner of the cut.
Hiscox, Horseless Vehicles, p. 65.

subplanate (sub-plā'nāt), *a.* In *entom.*, nearly flat.

subplane (sub-plān'), *a.* Almost flat or plane.

subplatycnemia (sub-plat-ik-nē'mi-ä), *n.* [NL.] In *anthrop.*, a slight degree of platycnemia. *Amer. Anthropologist*, Jan.–March, 1901, p. 32.

subplatyhieric (sub-plat″i-hī-er'ik), *a.* In *anthrop.*, having a sacral index between 100 and 106. *Jour. Anthrop. Inst.*, 1900, p. 149.

subpodophyllous (sub-pod-ọ-fil'us), *a.* Lying beneath the fleshy leaves, or podophyllous tissue, within the wall of the horse's hoof.

Subpœna ad testificandum, in *law*, the ordinary subpœna in common law compelling the attendance of witnesses.

subpontine (sub-pon'tin), *a.* Situated beneath the pons Varolii.

subpotency (sub-pō'te̤n-si), *n.* The state of being subordinate in power; specifically, in *biol.*, the subordination of the influence of one parent to that of the other in inheritance.

The prepotencies or *subpotencies* of particular ancestors, in any given pedigree, are eliminated by a law that deals only with average contributions.
Encyc. Brit., XXXII. 210.

subpotent (sub-pō'te̤nt), *a.* Characterized by or exhibiting subpotency in inheritance.

subprone (sub-prōn′), *a.* Lying or extended almost horizontally.

Face *sub-prone*, protruding in a very marked beak-shaped projection of buccal orifice.
Jour. Roy. Micros. Soc., April, 1903, p. 130.

subprotector (sub-prō-tek′tọr), *n.* An officer in charge of the Australian aborigines, subordinate to the protector of aborigines.

Special magistrate and *sub-protector* of aborigines.
Geog. Jour. (R. G. S.), XIII. 325.

Subpubic angle, the angle formed by the meeting of the ischiopubic rami on each side at the lower extremity of the symphysis.

subpyriform (sub-pir′i-fôrm), *a.* Somewhat pyriform or pear-shaped. *Annals and Mag. Nat. Hist.*, April, 1904, p. 265.

subquadrately (sub-kwod′rạt-li), *adv.* Somewhat quadrately.

Head with a few very minute punctures, flavous, with four greenish spots placed *subquadrately.*
Proc. Zool. Soc. London, 1903, p. 33.

subradial (sub-rā′di-al), *a.* and *n.* **I.** *a.* In jellyfishes, such as *Aurelia*, situated between the adradial and the perradial or the interradial radii.

II. *n.* In the dicyclic *Crinoidea*, one of the upper series of calyx-plates. It includes basals and parabasals.

subradius (sub-rā′di-us), *n.*; pl. *subradii* (-ī). In *zoöl.*, a radius of symmetry midway between a perradius and an adradius or between an adradius and an interradius. See ★*radius of symmetry*. *Parker and Haswell*, Zoology, I. 129.

subrang (sub′rang), *n.* [See ★*rang*^{2}.] In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*^{1}), a division of a rang, based on the proportions of the chemical bases in the preponderant mineral group used in forming the rang.

subrectal (sub-rek′tạl), *a.* Situated below the rectum.

subregion, *n.*—**Europasian subregion.** See ★*Europasian*.—**Hawaiian subregion**, a zoogeographical region which includes only the Sandwich Islands.—**Manchurian subregion**, a zoögeographical division including Japan, the greater part of China, southern Manchuria, and Tibet, and extending across the Himalayas to the top of their southern slopes.—**Maorian subregion**, one of Sclater's zoögeographical divisions including New Zealand and the adjacent islands such as Norfolk, Chatham, Campbell, and Macquarie.—**Panarctic subregion**, a zoögeographical division which comprises that portion of the palearctic region which is included in northern Scandinavia, Russia, and Siberia. The fauna consists of typical northern animals. *Geog. Jour* (R. G. S.), X. 86.

subreptary (sub-rep′tạ-ri), *a.* [*sub-* + L. *reptare*, crawl.] Almost wholly adapted to crawling or creeping, as the foot of some pelecypod mollusks.

subrhombic (sub-rom′bik), *a.* Somewhat rhombic or rhomb-shaped.

Thus what would otherwise have been a single long chamber extending unobstructed from end to end, is divided into a large number of chamberlets. These are usually quite regular and have the shape of prisms with *subrhombic* section. *Amer. Jour. Sci.*, March, 1904, p. 234.

subrostral (sub-ros′trạl), *a.* Lying beneath the rostrum or beak, as in the shells of some *Mollusca* like the *Pelecypoda*, and in the *Brachiopoda*.

subrugulose (sub-rö′gụ-lōs), *a.* Somewhat rugulose. *Annals and Mag. Nat. Hist.*, May, 1903, p. 470.

subsagittate (sub-saj′i-tāt), *a.* Somewhat sagittate or arrow-shaped.

subscandent (sub-skan′dẹnt), *a.* In *bot.*, slightly climbing; of a habit approaching scandent.

In the latter there are two species of *Rhododendron*, one of *Gaultheria* (*subscandent !*) and eight of *Vaccinium* (mostly epiphytic !). *Science*, Nov. 15, 1907, p. 675.

subscaphocephaly (sub-skaf′ọ-sef-ạ-li), *n.* In *anthrop.*, a condition or form of the skull approaching scaphocephaly. *International Yearbook*, 1898, p. 236.

subselenodont (sub-sẹ-lē′nọ-dont), *a.* Noting the fact or condition of having the molar cusps or folds of enamel somewhat crescent-shaped or slightly resembling the condition found in the molar teeth of deer and cattle. See *selenodont*. *Proc. Zool. Soc. London*, 1902, p. 26.

subsellium, *n.* **2.** *pl.* In *Rom. law*, the lower seats where the judices and inferior magistrates sat in judgment.

subsept (sub′sept), *n.* A subdivision of a sept or of a tribal division.

subseptate (sub-sep′tāt), *a.* Having an incomplete septum.

subsequent, *a.* **4.** In *phys. geog.*, developed by headward erosion along a belt of weak strata: noting streams and their valleys that have been so developed.

That is, as a drainage system develops, streams originate, the directions of which are regulated by the hardness and solubility of the rocks. Such streams appear subsequently to the main topographic features in their environment, and are termed *subsequent* streams.
I. C. Russell, Rivers of North America, p. 185.

subserosa (sub-sẹ-rō′sä), *n.* [NL.] Subserous tissue. *Jour. Exper. Med.*, Nov. 29, 1901, p. 35.

subsesqui-. In *chem.*, a prefix in the names of some compounds, signifying the same as *sesquibasic*.

subset (sub′set), *n.* In *math.*, a proper part or the whole of the set: thus, a *subset* of S is a set every element of which belongs to S.

It may be possible to divide the set into a number of *subsets*, no two of which contain a common object.
Encyc. Brit., XXIX. 121.

Subsidiary coin. See ★*coin*^{1}.

subsilicate (sub-sil′i-kāt), *n.* A silicate in which, if it is viewed as a compound of silica with one or more basic oxids, the oxygen of the latter exceeds in amount that of the former, as silicious calamin ($Zn_2H_2SiO_5$ or $2ZnO.H_2O.SiO_2$), in which the oxygen ratio for $SiO_2 . 2ZnO + HO_2$ is 2 : 3.

subsimple (sub-sim′pl), *a.* Nearly simple; of plants, nearly without branches.

subsocial (sub-sō′shạl), *a.* Pertaining to that merely physical arrangement or grouping of organisms which is prerequisite to social life.

The dwelling together in a common habitat of a plural number of organisms of the same variety or species may be called a *Sub-Social* Grouping.
Giddings, Inductive Sociol., p. 5.

subsoil-plowing (sub′soil-plou″ing), *n.* See ★*plowing*.

subspinal (sub-spī′nal), *a.* Same as *subspinous*.—**Subspinal index.** Same as *infraspinous* ★*index*.

subspiracular (sub-spī-rak′ụ-lär), *a.* Situated below the spiracles. *Proc. Zoöl. Soc. London*, 1902, p. 304.

subsplintery (sub-splin′tėr-i), *a.* Imperfectly splintery in fracture. [Rare.]

The rich translucent green color, fine-grained *subsplintery* fracture, and brilliant luster when polished all strongly suggest jade. The polished surface shows minute pale streaks or flocculi, which still further heighten the resemblance.
Amer. Jour. Sci., Nov., 1903, p. 397.

substage, *n.* **2.** In *geol.*, one of the subdivisions of a stage or group.

substance, *n.*—**Contact substance.** See ★*contact*^{1}.—**Continuous substance**, in protoplasm, as an emulsion, the framework, matrix, or basis in which are relatively inert or passive objects of all sizes (*inclusions*); the ultimate protoplasm or real living substance. *G. F. Andrews*, Living Substance, p. 23.—**Depressor substance.** See ★*depressor*.—**Gray substance.** See ★*gray*.—**Hereditary substance** or **substance of heredity.** See ★*heredity*.—**Nissl substance**, the essential substance which composes the Nissl bodies of ganglionic cells. See *Nissl* ★*granules*.—**Substance of Schwann**, the sheath of myelin which surrounds the axis-cylinder of a nerve.

substandard (sub-stan′dạ̈rd), *a.* Less than the normal standard.—**Substandard risk**, insurance on the life of an individual the state of whose health is such as to impair his normal expectancy of life.

Substantia hyalina, the interstitial, more fluid portion of the cell protoplasm.—**Substantia opaca**, the reticulum of cell protoplasm: so called by Leydig.

Substantial compliance, in *law*, observance of the essentials of a law or rule without obeying all the formalities required.—**Substantial damages**, a sum awarded by the verdict of the jury as compensation for injuries proved, as opposed to nominal or punitive damages.

substantiality, *n.*—**Theory of substantiality**, in *psychol.*, the theory of a mind-substance; the view that the mind is a permanent being, and that mental states and processes are but the manifestations of its activity: opposed to the *actuality theory*, which defines the nature of mind as the immediate reality of these states and processes themselves. Also termed *substantialism*, *theory of mind-substance*. *J. M. Baldwin*, Dict. of Philos. and Psychol., II. 614.

substantiation, *n.* **2.** The production of material goods. [Rare.]

To designate those industries in which men engage for the purpose of producing kinds or substances, we need a technical term which will distinguish them from all other industries; for this purpose I use the word *substantiation*, which must here mean the artificial production of substances for human welfare. I have sought long and far for the best term.
J. W. Powell, in An. Rep. Bur. Amer. Ethnol., 1898-[99, p. xxxv.

substantify (sub-stan′ti-fī), *v. t.*; pret. and pp. *substantified*, ppr. *substantifying*. [*substanti*(*ve*) + *-fy*.] To convert into or use as a substantive. [Rare.]

substantive, *a.* **6.** In *biol.*, concerning or pertaining to the construction or constitution of the parts of the bodies of organisms, as contrasted with the symmetry or merism of these parts in relation to one another. *W. Bateson*, Study of Variation, p. 23.—**7.** *Milit.*, actual or real, as rank; having the actual rank of.

When *substantive* major, he was also granted the local rank of lieutenant-colonel, for which he subsequently passed the required examination.
Geog. Jour. (R. G. S.), XII. 530.

Substantive variation. See ★*variation*.

substation, *n.* **2.** A subsidiary station to supplement a main station.

This plant . . . has seven *substations* containing transforming machinery. The location of the main station, on the East River site, gives the best point for the equal distribution of power in moving cars.
Amer. Inventor, March 1, 1904, p. 104.

substillum (sub-stil′um), *n.* [L. *substillum*, a slight dropping, neut. of *substillus*, slightly dropping, < *sub*, under, + *stillare*, drip, < *stilla*, a drop.] A flowing by little drops.

substituent (sub-stit′ụ-ẹnt), *n.* [L. *substituens* (*-nt-*), ppr. of *substituere*, substitute.] That which substitutes; in *chem.*, an atom or atomic group which takes the place of another atom or group present in the molecule of the original compound. Thus in the compounds methane (CH_4) and methyl alcohol (CH_3OH), OH is said to be the substituent.

As with the mono-derivatives of benzol, so also with the disubstituted derivatives, the general rule holds true; wherever the *substituents* are groups well saturated, they will exert scarcely any retarding action upon the pulsations of the original molecule.
W. J. Hale, in Pop. Sci. Mo., Feb., 1908, p. 130.

substitute, *v. t.* **3.** In *chem.*, to replace (an atom or group) in the molecule of a compound by another atom or group. See ★*substituent*.

substitution, *n.* **8.** In *biol.*: (*a*) The assumption by one organ of a function which was at one time performed by another organ. Thus the swim-bladder in fishes shows "that an organ originally constructed for one purpose, namely, flotation, may be converted into one for a wholly different purpose, namely respiration." *Darwin*, Origin of Species, p. 148.

From what has been said, it is natural to expect that in some direction or another so vast an accumulation of facts must have extended the Darwinian teaching; and it is now quite clear that this has been the case with the two post-Darwinian principles known as '*Substitution*' and Isomorphism or 'Convergence.' The former may be exemplified by nothing better than the case of the Rays and Skates, in which, under the usurpation of the propelling function of the tail by the expanded pectoral fins, the tail, free to modify, becomes in one species a lengthy whiplash, in another a vestigial stump, etc.
Rep. Brit. Ass'n Advancement of Sci., 1902, p. 631.

(*b*) The acquisition by an organ of a secondary function which, at first performed incidentally, may gradually become the chief function if the primary function becomes useless or is performed by another organ. Thus "the little folds of skin which originally served as ovigerous frena, but which, likewise, very slightly aided the act of respiration, have been gradually converted by natural selection into branchiæ, simply through an increase in their size and the obliteration of their adhesive glands." *Darwin*, Origin of Species, p. 192.—**9.** (*a*) In *Scots law*, a technical enumeration of a series of heirs. (*b*) In *civil law*, the appointment, in a will, of a successor to a devisee or legatee; subrogation.—**Elliptic substitution**, a substitution of an idempotent group; that is, its powers make a group which may be infinite but which in that case is a group of infinitesimal substitutions, and at any rate returns into itself or tends to do so. An elliptic substitution with two fixed points is equivalent to multiplication by a root of unity, though this root may not be of any rational order. Opposed to *hyperbolic* and *loxodromic* ★*substitutions*.—**Fundamental substitution**, one of a set of independent substitutions which by their powers and products make up a group.—**Group of substitutions**, in *math.*, a set of distinct substitutions in which the product of any two is a substitution of the set.—**Homogeneous substitution**, the substitution for variable coördinates of new homogeneous coördinates.—**Homographic substitution**, a homographic transformation.—**Hyperbolic substitution**, a species of substitution in homographic transformation.—**Index of a substitution**, the sum of the exponents in its expression by a given set of fundamental substitutions.—**Infinitesimal substitution**, a substitution which removes a point to an infinitesimal distance only.—**Law of substitution.** See ★*law*^{1}.—**Loxodromic substitution.** If we invert the sphere into a plane by using a point of the sphere as center of inversion, the loxodrome becomes a double spiral; hence a substitution where z moves along an equiangular spiral and x moves along a double spiral is called *loxodromic*.—**Method of substitutions.** See ★*method*.—**Normal linear substitution**, a substitution $\left(z, \frac{az+b}{cz+d}\right)$ where $ad-bc = 1$.—**Parabolic substitution**, a linear transformation where the roots of the involved quadratic are equal.—**Real substitution**, in *math.*, one which could not convert a real into a neomonic, or the reverse.

substitution-vein (sub-sti-tū'sho̤n-vān), *n.* See ★*vein.*

substomatic (sub-stọ-mat'ik), *a.* Lying beneath the stoma: said of the space opening immediately into the stoma.

> For which reason also the possibility of representing *substomatic* and intercellular spaces was very much lessened. *F. E. Lloyd*, in Science, June 7, 1901, p. 888.

substration (sub-strā'sho̤n), *n.* [*substrat*(*um*) + *-ion.*] In *agri.*, a provided substratum. See *substratum*, 1.

> The contribution of nitrogen to the soil makes it more suitable as a *substration* for nitrophytes.
> *C. MacMillan*, Minn. Bot. Stud., Bulletin IX, p. 979.

subsulcus (sub″sul'kus), *n.*; pl. *subsulci* (-sī). A sulcus which is concealed within another.

subsulphate (sub-sul'fāt), *n.* A basic sulphate, or one in which the sulphuric-acid radical is partly replaced by oxygen or hydroxyl, as mercuric subsulphate or oxysulphate, $Hg_3O_2(SO_4)$.

subsulphid (sub-sul'fid), *n.* A basic sulphid, or one which contains sulphur in proportion less than normal.

subsuperficial (sub-sū-pėr-fish'a̤l), *a.* 1. Somewhat or partially superficial: said of the perithecia of fungi which are but partly buried in the surface of the matrix.—2. In *geol.*, beneath the surface of the earth.

> The superficial and *subsuperficial* temperatures.
> *Smithsonian Rep.*, 1899, p. 230.

subsutural (sub-sū'ṭụ-ra̤l), *a.* Situated below or near a suture: as, a *subsutural* spot. *Proc. Zool. Soc. London*, 1903, p. 37.

sub-Sylvian (sub-sil'vi-a̤n), *a.* Situated beneath the fissure of Sylvius. *Buck*, Med. Handbook, II. 137.

subtegminal (sub-teg'mi-na̤l), *a.* Lying beneath the tegmen, dome, vault, or disk of the crinoid calyx. See ★*disk*, 5 (*e*).

subtense, *n.*—**Bar-subtense,** an instrumental method in topographical surveying by which the unknown distance between two points may be calculated from the linear interval subtended, on a graduated rod or bar held at one of the points by the optical angle measured by an angular instrument placed at the other point.

> Then made a traverse of the valley on the *bar-subtense* method, working with a 6-inch theodolite, and checking all our measurements twice.
> *Geog. Jour.* (R. G. S.), X. 469.

Subtentacular canal. See ★*canal*^{1}.

subterrane, *n.* 2 In *geol.*, a terrane beneath an overlying terrane.

subterraqueous (sub-te-rā'kwē̤-us), *a.* In *geol.*, of or pertaining to that portion of the earth which lies below possible ground-water.

subtetanic (sub-tē̤-tan'ik), *a.* Not quite tetanic: noting convulsions similar to but less severe than those of tetanus. *Med. Record*, Feb. 7, 1903, p. 239.

subthalamic (sub-thal'a̤-mik), *a.* [L. *sub*, under, + *thalam*(*us*) + *-ic.*] Situated beneath the optic thalamus.

subthermal (sub-thėr'ma̤l), *a.* Below the normal body temperature.

> The valuable place of *subthermal* baths, given at temperatures below blood heat, has never been sufficiently emphasised as a mode of treatment at all the spas.
> *Nature*, June 13, 1907, p. 146.

subtotem (sub'tō″tem), *n.* A totem which is recognized by a portion or all of a clan, but which is of minor importance as compared to the true clan totem. *Haddon*, Evolution in Art, p. 264.

subtraction, *n.*—**Compound subtraction,** the subtraction of compound numbers.—**Geometrical subtraction,** the inverse of geometrical addition (which see, under *addition*).—**Vectorial subtraction,** the inverse of vectorial addition. See *addition of vectors*, under *addition.*

subtrapezoidal (sub-trap-ē̤-zoi'da̤l), *a.* Approximately trapezoidal.

subtremelloid (sub-trem'e-loid), *a.* Having a consistency somewhat of the nature of a fungus of the genus *Tremella.*

Subtrochanteric fossa. See ★*fossa*^{1}.

Sub-trolley conduit. See ★*conduit*^{1}.

subtruncate (sub-trung'kāt), *a.* Somewhat or almost truncate: specifically, in *ichth.*, said of a fish-fin.

subtuberant (sub-tū'be-ra̤nt), *a.* In *geol.*, noting areas of dome-shaped uplift produced by laccolithic intrusions below the surface. The word was coined by I. C. Russell on the analogy of the latter to the growth of tubers in the earth. *Volcanoes of North America.* p. 103.

subulipalp (sū'bụ-li-palp), *n.* and *a.* **I.** *n.* A member of the *Subulipalpi.*

II. *a.* Having the characters of or belonging to the *Subulipalpi.*

subumbilical (sub-um-bil'i-ka̤l), *a.* [L. *sub*, beneath, + *umbilic*(*us*) + *-al*^{1}.] Situated below the umbilicus. *Buck*, Med. Handbook, II. 499.

suburbanite (sub-ėr'ba̤n-īt), *n.* [*suburban* + *-ite*^{2}.] One who lives in the suburbs. [Colloq.]

> After passing the speed, temperature and insulation tests given above, a second insulation test, at from 3 to 5 turns the voltage, is given the motor while still warm, after which it is marked O. K. and goes forth to carry the *suburbanites*, and be submissive to the careless motorman.
> *Amer. Inventor*, May 1, 1904, p. 208.

suburbanize (sub-ėr'ba̤n-īz), *v. t.*; pret. and pp. *suburbanized*, ppr. *suburbanizing.* [*suburban* + *-ize.*] To render suburban in character. [Rare.]

> It is not surprising that this survival of Royal Enfield Chase should be abandoned, seeing that the district is rapidly becoming *suburbanised* and unfit for sport.
> *Daily Chronicle*, May 13, 1901, p. 5.

suburethral (sub-ụ-rē'thra̤l), *a.* [L. *sub*, beneath, + *urethra* + *-al*^{1}.] Situated beneath the urethra. *Buck*, Med. Handbook, I. 766.

subvitalized (sub-vī'ta̤l-īzd), *a.* Deficient in vitality; not normally vital.

subzonate (sub-zō'nāt), *a.* Somewhat zonate.

succah, succoth. See ★*sukkah.*

succession, *n.* 8. In *phytogeog.*, the sequence of one plant-formation upon another on the same ground in response to changes in the conditions. Successions result from a great variety of causes, such as the gradual enrichment of soil, the accumulation of humus in peat-bogs, volcanic action, etc., or human agency, as in deforestation, cultivation, etc. *F. E. Clements.*—9. In *hort.* and *agri.*, a continuous yield of the same crop, secured by planting either the same variety at intervals or different varieties requiring different periods for maturing at the same time. See ★*succession cane.*—**Impartible succession,** the custom, feudal in origin, by which tenements passed without division on the death of their holder to his heir or successor. *Maitland and Pollock*, Hist. English Law, II. 278.—**Perpetual succession,** in *law*, an unbroken but not necessarily unlimited succession; the continuing identity of a corporation however much the persons forming it may change.—**Succession cane,** stubble cane when continued two or more years from the same planting.

> It is doubtful whether one-half of the plant food applied to *succession canes* in commercial fertilizers, is recovered in the canes in the average season.
> *W. C. Stubbs*, Sugar Cane, p. 114.

Succession duty. See ★*succession tax.*—**Succession tax.** A succession tax is sometimes regarded as a tax on the right of succession and sometimes as a tax on the property transferred, the distinction being governed by the degree of consanguinity of the inheritor to the deceased. It varies in rate from one per cent. in the case of an infant, issue of the decedent, to ten per cent. in the case of an heir stranger to the blood; a husband or wife is not taxed. The age of the heir may also affect the rate of taxation, as may the amount of the estate. In New York an estate of less than $10,000 is untaxed. *Transfer tax* and *inheritance tax* are equivalent phrases. In Great Britain the terms *estate duty, legacy duty, death duty*, and *succession duty* are used.—**To grow in succession,** to plant at intervals for continuous supply.

> What is termed *growing* vetches "*in succession*" consists in making successive sowings so that the crops shall follow each other.
> *J. Wrightson*, Fallow and Fodder Crops, p. 208.

Successive light induction. See ★*induction.*

successoral (suk-ses'o̤r-a̤l), *a.* [*successor* + *-al*^{1}.] Of or pertaining to succession or inheritance, or to a successor or inheritor.

> It is natural in these epochs to consider the patrimony as the most sacred piece of property, worthy of being safeguarded in its integrity by tutelary laws, by *successoral* or feudal repurchase.
> *G. Tarde* (trans.), Laws of Imitation, p. 319.

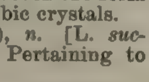
succinamic (suk-si-nam'ik), *a.* [L. *succinum*, amber, + *am*(*monia*) + *-ic.*] Pertaining to a chemical compound containing the group $H_2NCOCH_2CH_2CO$.—**Succinamic acid,** a colorless crystalline compound, $H_2NCOCH_2CH_2COOH$, prepared by the action of barium hydroxid solution on succinimide. It melts at 154° C.

succinctorium, *n.* Same as ★*subcingulum.*

succinellite (suk-si-nel'īt), *n.* [L. *succin*(*um*), amber, + *-ell* + *-ite*^{2}.] Succinic acid obtained by sublimation from amber in the form of white or colorless orthorhombic crystals.

succiniferous (suk-si-nif'e̤-rus), *n.* [L. *succinum*, amber, + *ferre*, bear.] Pertaining to an amber, or yielding it.

succinimide (suk-sin-ī'mid), *n.* [*succin*(*ic*) + *imide.*] A colorless compound,



$$\begin{matrix} CH_2.CO \\ | \\ CH_2.CO \end{matrix} \Big> NH,$$

prepared by the action of gaseous ammonia or succinic anhydrid. It crystallizes in rhombic octahedral plates, melts at 125–126° C., and boils at 287–288° C.

succinuric (suk-si-nū'rik), *a.* [*succin*(*ic*) + *uric.*] Noting an acid, a colorless compound, $H_2NCONHCOCH_2CH_2COOH$, prepared by the action of carbamide (urea) on succinic anhydrid. It crystallizes in small scales and melts at 203–205° C.

succisterene (suk-sis'te̤-rēn), *n.* [L. *succinum*, amber, + Gr. στερεός, solid, + *-ene.*] A colorless compound, $C_{15}H_{10}$, contained in the least volatile portions of the product obtained by the distillation of amber. It crystallizes in needles, melts at 160° C., and boils above 300° C.

succum, *v. i.* A simplified spelling of *succumb.*

succussatory (su-kus'a̤-tọ-ri), *a.* Possessing an up-and-down vibration of short amplitude, as if produced by a blow· descriptive of a variety of earthquake shock.

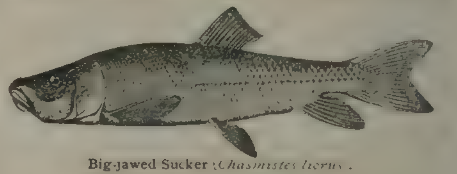
suche (sö'chā), *n.* [Peruv. Sp. *suche*, < Quichua *suki* (palatal *k*).] A name of a fish, *Trichomycterus dispar*, found in Lake Titicaca, Peru.

sucholotoxin (sū″kō-lọ-tok'sin), *n.* [L. *sus*, hog, + Gr. χολή, bile (see *cholera*), + E. *toxin.*] A slightly poisonous base found in cultures of the hog-cholera bacillus.

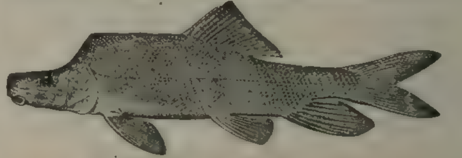
suckauhock, *n.* [Narragansett *suckáuhock* (Roger Williams), < *súcki*, black, + *hogki*, shell (Trumbull). Compare *sequannock* and *poquauhock.*] Black or dark-colored pieces of shell used by the Narragansett Indians for money; dark-colored or purple wampum.

sucker, *n.* 1. (*d*) (8) In New Zealand, a fish, *Diplocrepis puniceus*, of the family *Gobiesocidæ.*

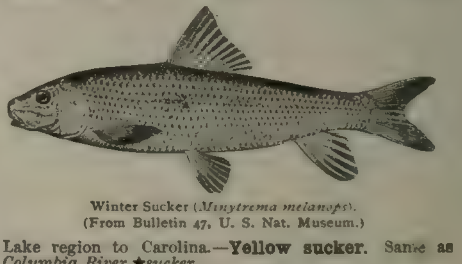
10. A lump of hard candy on the end of a stick.—**Big-jawed sucker,** a large-mouthed sucker, of the genus *Chasmistes*, found in the lakes of the great basins of Utah and Oregon, *C. liorus* of Utah Lake being the best-known species.—**Blue-headed sucker,** *Pantosteus delphinus*, found in the upper portion of the basin of the Colorado.—**Columbia River sucker,** *Catostomus macrocheilus*, of the Columbia River.—**Common sucker,** *Catostomus comersonii*, of the Great Lakes and west to Colorado.—**Eastern carp-sucker,** *Carpiodes cyprinus*, of streams of the Chesapeake Bay region.—**Fine-scaled sucker.** Same as *common* ★*sucker.*—**Flannel-mouthed sucker,** *Catostomus latispinnis*, of the Colorado river-basin.—**Humpbacked sucker.** Same as *razorback* ★*sucker.*—**Klamath Lake sucker,** *Chasmistes stomias*, of Klamath Lake, Oregon.—**Large-scaled sucker,** the golden red-horse.—**Long-nosed sucker,** *Catostomus catostomus*, of the Great Lakes, upper Missouri and Columbia rivers, and northward to Alaska.—**Lost River sucker,** *Deltistes luxatus*, of Klamath Lake and the Oregon River.—**Mountain sucker,** *Pantosteus jordani*, a sucker found only near Tempe, Arizona.—**Northern sucker.** Same as *long-nosed* ★*sucker.*—**Pedee sucker,** *Moxostoma pidiense*, found in the Great Pedee basin.—**Platte River sucker,** *Catostomus griseus*, of the upper Missouri River regions.—**Razorback sucker,** *Xyrauchen cypho*, of the Colorado river-basin.—**Red sucker.** Same as *long-nosed* ★*sucker.*—**Redfin sucker,** *Moxostoma crassilabre*, found in streams of North Carolina.—**Sacramento sucker,** *Catostomus occidentalis*, found in streams in California.—**Short-nosed sucker,** *Chasmistes brevirostris*, found in the Klamath lakes of Oregon.—**Tahoe sucker,** *Catostomus tahoensis*, of Lake Tahoe.—**Thick-cheeked sucker,** a fish of the Missouri River, *Moxostoma bucco*, belonging to the family *Catostomidæ.*—**White-nosed sucker,** *Moxostoma anisurum*, of the Ohio River and Great Lake region.—**Winter sucker,** *Minytrema melanops*, found from the Great Lake region to Carolina.—**Yellow sucker.** Same as *Columbia River* ★*sucker.*



Big-jawed Sucker (*Chasmistes liorus*).
(From Bulletin 47, U. S. Nat. Museum.)

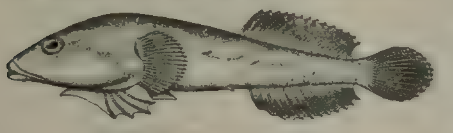


Razorback Sucker (*Xyrauchen cypho*).
(From Bulletin 47, U. S. Nat. Museum.)



Winter Sucker (*Minytrema melanops*).
(From Bulletin 47, U. S. Nat. Museum.)

suckfish, *n.* **3.** A common name of *Caularchus mæandricus*, of the family *Gobiesocidæ*, a fish found under rocks and in tide-pools on the Pacific coast of the United States.



Suckfish (*Caularchus mæandricus*).
(From Bulletin 47, U. S. Nat. Museum.)

suck-fly (suk′flī), *n.* A name given by Florida tobacco-growers to a capsid bug, *Dicyphus minimus*, which punctures tobacco-leaves and sucks the sap, causing them to wither. See ★*tobacco-bug*.

sucking (suk′ing), *n.* Specifically, in *ceram.*, absorption of the glaze from ware by the porous fire-clay saggar while in the kiln.

sucking-pad (suk′ing-pad), *n.* A small collection of fat over the buccinator muscle in each cheek of an infant, supposed to prevent the falling in of the cheeks when the child sucks.

sucoversed (suk-ọ̄-vėrsd′), *a.* [*su*(*b-*) + *coversed*.] Subcoversed.—**Sucoversed sine**, two minus the coversed sine; abbreviated *scs*; $scs\,\phi = 1 + \sin\phi$.

sucramine (sū-kram′in), *n.* [F. **sucramine*, < *sucre*, sugar, + *amine*.] A trade-name of the ammonium salt of saccharin.

sucrase (sū′krās), *n.* [F. **sucrase*, < *sucre*, sugar, + *-ase*.] A ferment which causes the inversion of sucrose.

sucrate (sū′krāt), *n.* [F. *sucre*, sugar, + *-ate*¹.] A general term applied, in organic chemistry, to compounds of metallic oxids with certain sugars such as glucose and saccharose. Also called *saccharate*, the more usual term.—**Calcium sucrate**, a compound of cane-sugar (sucrose) with lime. One molecule of sugar may unite with one, with two, or with three molecules of lime. The last of these compounds, $C_{12}H_{22}O_{11}.(CaO)_3$, is but slightly soluble in water, and hence its precipitation is utilized in working up molasses for the recovery of the cane-sugar it contains. Also called *calcium saccharate*.—**Copper sucrate.** See ★*copper*.

sucroclastic (sū-krọ̄-klas′tik), *a.* [F. *sucre*, sugar, + Gr. *κλαστός*, < *κλᾶν*, break.] A term applied to those ferments which cause the cleavage of disaccharides to simple sugars containing 6 atoms of carbon.

sucrol (sū′krol), *n.* [F. *sucre*, sugar, + *-ol*.] A trade-name for paraphenetol-carbamide, a colorless substance, crystallizing in shining needles, of intensely sweet taste, estimated as 200 times that of cane-sugar, without nutritive value, but used as a sweetening material to disguise the disagreeable taste of medicines. Also known as *dulcin* or *valzin*.

suction, *n.* **2.** The downward strain in a plow due to the depression given the share point in order to secure penetration. In a walking plow the suction is measured by the distance between the landside and a straight-edge touching the point of the share and the heel of the landside. Also *suck*.

suction-anemometer (suk′shọn-an-e-mom′e-tėr), *n.* A tube across the end of which the wind blows, producing a diminished pressure in the tube, the amount of diminution depending upon the shape and aspect of the opening. The measurement of this diminution leads to a knowledge of the velocity of the wind. The end of the tube is made in various shapes. Overduyn, Bourdon, and Arson use horizontal tubes of the Venturi pattern and measure the diminution of pressure at the contracted section (see *Venturi tube*). Fletcher, Hageman, and Abbe use vertical tubes and measure the diminution of pressure within the tube. Both Lind and Dines in their so called pressure-anemometers introduce suction in a subordinate capacity.

suction-basket (suk′shọn-bas″ket), *n.* The cylinder or cone with perforated sides, resembling the mesh of basketry, attached at the foot of a suction-pipe or -hose of a pumping-apparatus to act as a strainer.

suction-box, *n.* **2.** The chamber below the inlet-valves of a pump into which atmospheric pressure forces the water or other liquid when the pressure above the valves is made less by the suction stroke of pistons or plungers. The water or liquid goes through the inlet valves from the suction-box.

suction-hose (suk′shọn-hōz), *n.* Flexible hose or tubing, stiffened against collapse from external pressure by a helical wire, used as a suction-pipe for a fire-engine or other pump. Without the stiffening wires the sides would go together as soon as pressure within was less than the pressure without.

suction-inlet (suk′shọn-in″let), *n.* The mouth of a suction-pipe; the opening through which the charge of a pump or other machine is taken in.

suction-lift (suk′shọn-lift), *n.* The distance through which atmospheric pressure has to lift water for a pumping-apparatus on the suction side of the pistons or plungers. The limit is 32 feet at sea-level and usual barometer heights: but any leakage of air or any cause preventing the pressure on the water in the suction-pipe from being reduced to zero will reduce this limiting value. It is best not to count on much over 20 feet under practical conditions. *W. S. Hutton*, Steam Boiler Construction, p. 458.

suction-pump, *n.* **2.** As a piece of chemical apparatus, same as *filter-pump*.

suction-stroke (suk′shọn-strōk), *n.* The stroke of an engine or pump during which a charge is being drawn in; in an internal-combustion engine, the stroke during which the combustible charge is drawn in preparatory to being compressed before it is exploded.

Sudan I, II, III, G, and **R,** insoluble azo-compounds of a brown color, prepared from coal-tar derivatives. They are not used in textile coloring, but are used in coloring oils and varnishes, and as pigments.—**Sudan brown.** See ★*brown*, *n.*

sudcake (sud′kāk), *n.* In treating the waste liquors from wool-scouring, the residue left from hot-pressing the crude magma called "sake." Sudcake is used as a fertilizing material. See ★*sake*⁴, 2.

sudd, *n.* **2.** See ★*sadd*.

> To enclose the site of the permanent masonry dam, and to render it dry for the purpose of excavation and laying the masonry, temporary dams, known in Egypt as '*sudds*,' had to be formed both above and below the site of the permanent dam. At low Nile the river at the Assuan cataract divides itself into five channels, and this work was done in five sections. The down stream '*sudds*' were first made, and consisted of stones. After the rush of water had been thus stopped, the up-stream '*sudds*' were formed of bags of sand.
> *Rep. Brit. Ass'n Advancement of Sci.*, 1903, p. 763.

Sudis (sū′dis), *n.* [NL., < L. *sudis*, a kind of pike, lit. a stake.] A genus of fishes of the family *Paralepididæ*, found in deep waters of the Atlantic and Pacific.

sudoric (sū-dor′ik), *a.* [L. *sudor*, sweat, + *-ic*.] Of or pertaining to perspiration.—**Sudoric acid**, a compound, $C_5H_9O_7N$, said to be present in human perspiration. Also called *hidrotic* or *hidrotic acid*.

suds, *n. pl.* **3.** A manufacturers' name for various waste soap-liquors incidentally produced in the industries of wool- and silk-scouring, -bleaching, -dyeing, etc. These were formerly allowed to run off into river-courses, but, in view of their polluting effect on the water, measures are now adopted to at least partially prevent this pollution and recover some material of value from the suds. See *Yorkshire* ★*grease*, ★*sake*⁴, 2, and ★*sudcake*.

suède (swād), *a.* and *n.* [F., 'Swede.'] **I.** *a.* Of undressed kid: said of gloves.

II. *n.* Undressed kid. [Trade use.]

Suessonian (swes-sō′ni-an), *a.* and *n.* [L. *Suessones*, *Suessiones*, a people whose name survives in the modern *Soissons*.] In *geol.*, noting the lowest stage of the Eocene Tertiary in the northern Apennines.

suf., **suff.** Abbreviations of *suffix*.

Suffolk (suf′ọk), *n.* A breed of small, black pigs, named from the English shire in which it originated. The animals grow quickly and yield a large proportion of lean meat.

Suffolk Crag. See ★*crag*¹, 2.

suffragette (suf-rạ-jet′), *n.* [*suffrag*(*e*) + *-ette*.] A woman who advocates female suffrage. [Colloq.]

> March 20.—Seventy *suffragettes* are arrested for attempting to force their way into the British House of Commons.
> *Rev. of Revs.*, May, 1907, p. 539.

suffuze, *v. t.* An amended spelling of *suffuse*.

sugar, *n.*—**Corn-sugar.** Same as *glucose*.—**Hepatic sugar**, glycogen or animal starch.—**Leo's sugar**, a levorotatory sugar which was found in the urine of a diabetic patient: not identical with ordinary levulose. Also called *laiose*.—**Maize-sugar.** Same as *glucose*.—**Manna-sugar.** Same as *mannitol* or *mannite*.—**Pine-sugar.** Same as ★*pinite*2.—**Saffron-sugar.** Same as ★*crocose* or *glucose*.—**Wood-sugar.** Same as ★*xylose*.

sugar-almond (shụ̇g′ạ̈r-ä″mọnd), *n.* Almond praline. See *praline*.

sugar-ant (shụ̇g′ạ̈r-ant), *n.* The cosmopolitan little red ant, *Monomorium pharaonis*, common in houses and especially attracted by sugar.

sugar-beet (shụ̇g′ạ̈r-bēt), *n.* Any of the varieties of *Beta vulgaris*, the common beet, utilized for sugar manufacture. The qualities required are high sugar content, purity (relative freedom of the juice from mineral and organic substances other than sugar), and correctness of form. The beet should be of a long-conical shape, without branches, and should weigh about a pound, large sugar content and small size having been found to go together. Varieties in use yield 12 to 16 per cent. of sugar. Sugar-beets can be grown on nearly all kinds of soil, but require high fertility. The soil must be worked deeply to permit the descent of the tap-root. The sowing is in rows, preferably very early, followed by thinning when about four leaves have been put forth. The plants are first bunched by cutting across the rows, and the bunches are then thinned by hand. Close cultivation is required.—**Larger sugar-beet leaf-beetle.** See ★*leaf-beetle*.—**Sugar-beet belt**, that area in the United States over which temperature conditions are favorable to the production of the sugar-beet; namely, from southern New York and northern Pennsylvania to northern Nebraska and South Dakota, over large sections of Colorado, Utah, Wyoming, Montana, Idaho, Washington, and Oregon, and in California on the coast side. Large areas within the belt, however, are disqualified by local reasons.

sugar-bush, *n.* **3.** A pretty, flowering shrub, *Leucadendron melliferum*, native to South Africa. Its flowers are surrounded by a large involucre, which contains a honey-like liquor.

sugar-cane, *n.* In recent years sugar-cane has frequently been grown from seed and the seedlings, which present great variation, have been utilized for selection, but not for cropping.—**Sugar-cane agaric, borer, brand.** See ★*agaric*, ★*borer*, ★*brand*.

Sugar-coated liver, heart, etc., the presence of a thick fibrinous exudate on the serous surface of the liver, heart, etc., giving to the organ an appearance as if coated with icing.

sugar-color (shụ̇g′ạ̈r-kul″ọr), *n.* A trade-name of caramel in the form of a viscid concentrated solution in water of the consistence of very thick molasses.

sugar-food (shụ̇g′ạ̈r-föd), *n.* Same as ★*slop*¹, 6.

sugar-gum, *n.* **2.** See ★*gum*².

sugarine (shụ̇g′ạ-rin), *n.* [*sugar* + *-ine*².] A trade-name of methyl-benzoyl-sulphinide or methyl-saccharin.

Sugar-loaf sea, *naut.*, a pyramidal sea; a sea suggesting in form the old-fashioned sugar-loaf.

sugar-maple, *n.* **2.** See ★*maple*¹.

sugar-palm (shụ̇g′ạ̈r-päm), *n.* See ★*palm*².

sugar-pumpkin (shụ̇g′ạ̈r-pump″kin), *n.* One of several varieties of pumpkin (*Cucurbita Pepo*) highly prized on account of their sweet flesh; especially the small Nantucket sugar-pumpkin. Also called *negro squash* and *negro pumpkin*.

> Negro or Nantucket *Sugar Pumpkin*. The true old-fashioned black-warted, shelled pumpkin. It is a fine pumpkin for family use, the favorite for making pumpkin pies. It is a dark green when ripe, though the flesh is a rich orange yellow, very thick and sweet. It is an excellent winter sort, and will keep almost all the year round.
> *Trade Catalogue*, 1905.

sugar-sand (shụ̇g′ạ̈r-sand), *n.* **1.** An oil-drillers' name for a sandstone of saccharoidal or sugary texture. *Dialect Notes*, II. vi.—**2.** See the extract.

> In this connection there should be mentioned what is known among the farmers as "niter" or "*sugar sand*." This is a sand-like, gritty substance which is deposited during the process of evaporation of the sap [of the sugar-maple]; this deposition does not begin until the sap has been concentrated to a thin sirup of about eight pounds per gallon. This "niter" is removed from all good maple products by either allowing the sirup to settle or straining it through felt or other material; this should be done also if the sirup is to be concentrated for making sugar, otherwise the sugar will be gritty.
> *Jour. Franklin Inst.*, Oct., 1908, p. 265.

sugar-scale (shụ̇g′ạ̈r-skāl), *n.* The graduated scale of a polarimeter so evaluated as to give by direct reading the quantities of sugar corresponding to any given rotation of the plane of polarized light when a solution of the concentration required for the instrument is used.

sugar-water (shụ̇g′ạ̈r-wâ″tėr), *n.* A local term for the sweet sap drawn from a sugar-maple (which see, under *maple*¹).

Sugg burner. See ★*burner*.

suggestion, *n.*—**Collective suggestion**, in *psychol.*, a suggestion received similarly and simultaneously by a number of persons similarly situated.

> The principle of psychical action on which the above is based is one very familiar to students of psychology. It is that termed *collective suggestion*. This is the overmastering tendency to imitate the examples of others, to act in accordance with the ideas and feelings which we witness in those around us.
> *D. G. Brinton*, Basis of Social Relations, p. 38.

Simple suggestion, in *psychol.*, T. Brown's term for association of ideas: opposed to *relative suggestion*, which means judgment or comparison. *Brown*, Lectures on the Philos. of the Human Mind, p. 214.—**Terminal suggestion.** Same as *post-hypnotic suggestion.* *W. Wundt* (trans.), Outlines of Psychol., p. 273.

suicidigenous (sū″i-sī-dij′e-nus), *a.* [L. *suicidium*, suicide, + Gr. -γενής, -producing.] Marked by frequency of suicide. [Rare.]

> In the centre of Europe, from the northeast of France to the eastern borders of Germany, a *suicidigenous* area exists, where suicide reaches the maximum of its intensity, and around which it takes a decreasing ratio to the limits of the northern and southern states.
> *Buck*, Med. Handbook, VII. 551.

sui-mate (sū′ī-māt), *n.* [L. *sui*, of one's self, + E. *mate*^{2}.] See ★*self-mate.*

suit, *n.*—**Strong suit**, in *whist* and *bridge*, a suit in which a number of tricks can be made after the adverse trumps are out of the way.—**Suit of sails**, an outfit of sails; a set of sails.—**To bring suit**, to sue; seek a civil right by legal proceedings.—**To establish a suit**, to make all the remaining cards in a suit good for tricks, no matter who leads it.—**Union suit.** Same as ★*combination garment.*—**Weak suit**, in *card-playing*, a suit in which tricks are impossible or improbable.

suitcase (sūt′kās), *n.* A flat valise, light enough to be carried by hand, originally intended to contain a gentleman's evening clothes or 'dress-suit.' Also called a *dress-suit case.*

> Two *suitcases* filled to their limit with nearly 2000 bright silver Mexican half dollars, are now in the private office of . . . [the] Chief of Detectives.
> *N. Y. Times*, Dec. 24, 1905.

sukkah (sůk′ạ̈), *n.*; pl. *sukkoth* (sůk′ōt). [Also *succah*, pl. *succoth*: < Heb. *sukkah*, a booth.] A booth covered with branches: the plural stands for the Feast of Booths, or Tabernacles (Levit. xxiii. 42, 43; Deut. xvi. 13). See *Jewish* ★*festivals.*

sukkoth, *n.* Plural of ★*sukkah.*

suku (sö′kö), *n.* [Malay *sūkū*, a paw, leg, fourth part, *sūkū bangsa* ('fourth of a tribe'), a clan.] The clan or gens in Malay tribal society.

sulcal (sul′kạl), *a.* [*sulc*(*us*) + *-al*^{1}.] Of or pertaining to a sulcus. *Buck*, Med. Handbook, VII. 300.

sulcar (sul′kạ̈r), *a.* [*sulc*(*us*) + *-ar*^{3}.] Of or pertaining to a sulcus: as, the *sulcar* aspect of the body of anthozoans, which by some writers is called *ventral.* Compare ★*sulcular* and ★*asulcar.* *Trans. Linn. Soc.*, Zool., March, 1900, p. 527.

sulcular (sul′kụ-lạ̈r), *a.* [*sulcul*(*us*) + *-ar*^{3}.] Of or pertaining to a sulculus: as, the *sulcular* aspect of an anthozoan; dorsal. Compare ★*sulcar* and ★*asulcar.*

sulculus (sul′kụ-lus), *n.*; pl. *sulculi* (-lī). [NL., dim. of *sulcus*, a furrow.] In anthozoans, one of two ciliated grooves, the other being the sulcus, situated at the ends of the oval mouth.

> But one cannot speak of a sulcus and *sulculus* in this case, for the epithelium lining the tube is of the same character throughout.
> *G. C. Bourne*, in Trans. Linn. Soc., Zool., March, 1900, [p. 533.

sulcus, *n.* **2.** In anthozoans, one of two ciliated grooves situated at the ends of the oval mouth; a siphonoglyph. Compare ★*sulculus.*—**Ansate sulcus.** See *ansate* ★*fissure.*—**Anterior limiting sulcus.** Same as *fronto-orbital* ★*sulcus.*—**Coronal** or **sagittal sulcus**, according to G. Elliot Smith, a longitudinal fissure in the brain of the *Carnivora.* In the cephalic portion of its course it bends laterally at the level of the cruciate fissure. By most other observers this sulcus, or fissure, is termed the 'lateral fissure,' while the term 'coronal' is limited to a shorter fissure, anteriorly more or less vertical in direction, which may represent a disconnected portion of the lateral. *Trans. Linn. Soc.*, Zool., Jan., 1899, p. 336.—**Coronary sulcus**, a furrow on the surface of the heart which marks the location of the auriculoventricular septum.—**Cuneal sulcus**, a small sulcus usually present in the cuneus and lying parallel to the calcarine fissure.—**Diagonal sulcus.** Same as *fronto-orbital* ★*sulcus.*—**Ectosylvian sulcus**, a furrow or fissure forming, in some animals, the first arch around the Sylvian fissure. In many animals it disappears, having been merged with the Sylvian. *Trans. Linn. Soc.*, Zool., Feb., 1903, p. 399.—**Fronto-orbital sulcus**, a furrow which lies between the orbital sulcus and the lower end of the Sylvian fissure: very generally present in the brains of old-world monkeys, and occasionally found in American monkeys and in lemurs. Also called the *diagonal* and *anterior limiting sulcus.*—**General sulcus**, a small depression or fissure near the genu of the callosum.—**Infra-occipital sulcus**, a curved sulcus or fissure at the lower end of the simian sulcus in the brain of certain monkeys. Also known as *inferior occipital sulcus.* *Proc. Zool. Soc. London*, 1903, p. 18.—**Intercalary sulcus**, a furrow in the brain of mammals, situated above and parallel to the corpus callosum: of little morphological importance. *Trans. Linn. Soc.*, Zool., Feb., 1903, p. 332.—**Interhemispheral sulcus**, the space at the median line between the two cerebral hemispheres. Also known as the *longitudinal fissure.* *Proc. Zool. Soc. London*, 1903, p. 16.—**Intra-orbital sulcus**, an unimportant furrow, in the brains of certain mammals, homologized by Ziehen with the *presylvian* or *orbital sulcus* of other writers. *Trans. Linn. Soc.*, Zool., Feb., 1903, p. 406.—**Nasolabial sulcus**, the short groove or furrow on the median line from the nose to the upper lip.—**Parafloccular sulcus.** Same as ★*fissura flocculi.*—**Polar sulci**, a term used by Bolton to refer to the small and more or less semilunar fissures, which are nearly always found surrounding the posterior extremities of the calcarine fissure.—**Retrocentral sulcus**, a fissure of the brain behind and parallel to the fissure of Rolando.—**Sagittal sulcus.** See *coronal* ★*sulcus.*—**Sulcus frontomarginalis**, a sulcus on the mesal surface of the hemicerebrum. It is situated between the callosomarginal (supercallosal of Wilder) and the edge of the hemicerebrum. Beddard applies this term to a Y-shaped sulcus on the frontolateral aspect of the gorilla brain.—**Sulcus furcalis.** Same as ★*fissura prima.*—**Sulcus genualis**, a sulcus on the mesal aspect of the cerebrum near the genu of the callosum.—**Sulcus infrastriatus**, a sulcus in the occipital portion of the brain. It is also known as the *inferior occipital, lateral occipitotemporalis*, and the *later occipital.*—**Sulcus intrastriatus**, a term proposed by G. Elliot Smith for the post- or retrocalcarine fissure.—**Sulcus lacrymalis**, a depression in the lacrymal bone aiding in the formation of the lacrymal groove; also, a similar depression in the nasal process of the superior maxilla.—**Sulcus limitans.** (*b*) A furrow in the reptilian brain, separating the paraterminal body from the hippocampal formation. *G. Elliot Smith.*—**Sulcus lunatus**, a fissure in the human brain resembling the opercular or pomatic fissure in apes.

> In a recent number of the Anatomischer Anzeiger Prof. Elliott Smith published a most interesting forecast of an extensive work which he has in hand, dealing particularly with the occurrence in human brains of an occipital operculum; this occurrence had been considered previously as very exceptional, but Prof. Elliott Smith is able to show that this is far from being the case. The presence of such an occipital operculum implies the existence, in the cerebral hemisphere possessing it, of a sulcus, called by Prof. Elliott Smith the *sulcus lunatus*, which is strictly comparable to, if not absolutely identical with, the "Affenspalte" so typical of the brains of Simiidæ and Cercopithecidæ.
> *Nature*, Dec. 3, 1903, p. 105.

Sulcus of Monro, a groove in the wall of the third ventricle dividing the infundibulum from the optic thalamus.—**Sulcus postlateralis**, a small sulcus at the caudal end of the lateral fissure. It is sometimes independent and sometimes connected with the lateral fissure. It points toward the mesal surface. It is found in the brains of lemurs and *Carnivora.*—**Sulcus postnodularis**, an interlobar depression of the cerebellum between the nodule and the uvula.—**Sulcus postsylvius**, the postsylvian of Owen. Also termed the *parallel* or *supertemporal.*—**Sulcus prægracilis**, an unimportant fissure of the cerebellum.—**Sulcus præpyramidalis**, an interlobar depression of the cerebellum between the uvula and pyramid.—**Sulcus præstriatus**, a name proposed by G. Elliot Smith for the calcarine fissure.—**Sulcus primarius cerebelli.** Same as ★*fissura prima.*—**Sulcus rectus**, the ventral depression at the frontal portion of the base of the cerebrum in which rest the olfactory bulb and its crus. Also known as *olfactory fissure.*—**Sulcus suprasylvius.** See *suprasylvian* ★*sulcus.*—**Suprasylvian sulcus**, the second arched sulcus on the lateral surface of the cerebrum of *Carnivora.* Also termed *supersylvian.* Owen homologized it with the human parietal.

sulea (sö′lẹ-ạ̈), *n.* [E. Ind.] A fish, *Polynemus sele*, found in the Ganges and Bay of Bengal.

sulfate, *n.* and *v.* An amended spelling of *sulphate.*

sulfid, sulfide, *n.* See *sulphid.*

sulfinide, sulfoborite, sulfocerulic. See ★*sulphinide*, etc.

sulfosote (sul′fọ-sōt), *n.* [G. **sulfosot*, < *sulf*(*ur*) + (*creo*)*sote.*] A trade-name of a syrup consisting of a solution, in water, of 5 per cent. each of the potassium sulphonates of cresol and guiacol: used medicinally in cases of tuberculosis.

sulfur, *n.*, *a.*, and *v.* An amended (restored) spelling of *sulphur* (Latin *sulfur*).

sulfurate, sulfuret, sulfuric, etc. Amended spellings of *sulphurate*, etc.

suling (sö′ling), *n.* [Malay and Jav. *sūling.*] A Javanese direct flute or flageolet, usually having six holes.

sulla (sul′ạ̈), *n.* [Compare *soola* (clover): origin uncertain.] A clover-like plant, *Hedysarum coronarium*, cultivated for forage in southern Italy and northern Africa. In warm countries it is perennial. In the southern United States it has been less successful than alfalfa. See *Hedysarum.*

sulphamine (sul-fam′in), *n.* [*sulph*(*ur*) + *amine.*] The univalent radical $-SO_2NH_2$. The name is also used as a class name for compounds containing this group.

sulphaminol (sul-fam′i-nol), *n.* [*sulphamin*(*e*) + *-ol.*] A trade-name of a pale-yellow pulverulent compound prepared by the action of sulphur on certain compounds of the aromatic series: used in surgery as a substitute for iodoform.

sulphanilic (sul-fa-nil′ik), *a.* [*sulph*(*ur*) + *anil*(*ine*) + *-ic.*] Pertaining to sulphur and aniline, specifically to sulphanilic acid.—**Sulphanilic acid**, a colorless compound, $H_2\overset{1}{N}C_6H_4\overset{4}{S}O_3H.2H_2O$, prepared by the action of fuming sulphuric acid on aniline. It is deposited in monoclinic crystals, carbonizes at 280–300° C., and is also called *paraniline-sulphonic acid* or *paraminobenzene-sulphonic acid.*

sulphantimonate (sulf-an′ti-mọ-nạt), *n.* See ★*sulphantimonite.* Also *thio-antimonate.*

sulphantimonic (sulf″an-ti-mon′ik), *a.* [*sulph*(*ur*) + *antimon*(*y*) + *-ic.*] See ★*thio-antimonic.*

sulphantimonious (sulf″an-ti-mō′ni-us), *a.* See ★*thio-antimonious.*

sulphantimonite (sulf-an′ti-mọ-nīt), *n.* A salt of one of the assumed sulpho-acids of trivalent antimony, as Ag_3SbS_3 (also written $3Ag_2S.Sb_2S_3$), the mineral pyrargyrite, or $Pb_2Sb_2S_5$ ($= 2PbS.Sb_2S_3$), the mineral jamesonite. Compounds of this class are common among minerals, the metals usually present being silver, copper, lead, or mercury; similar compounds containing arsenic or bismuth, instead of antimony, are called *sulpharsenites* and *sulphobismuthites* respectively. Other related compounds of quintavalent antimony or arsenic are called *sulphantimonates* and *sulpharsenates*, as Cu_3AsS_4 ($= 3Cu_2S.As_2S_5$), the mineral enargite.

sulpharsenate (sulf-är′se-nāt), *n.* See ★*sulphantimonite.* Also *thio-arsenate.*

sulpharsenic (sulf-är-sen′ik), *a.* [*sulph*(*ur*) + *arsenic*, *a.*] Same as *thio-arsenic*, which is now the preferred term.

sulpharsenide (sulf-är′se-nid), *n.* [*sulph*(*ur*) + *arsen*(*ic*) + *-ide.*] A compound consisting of the sulphid and arsenide of one or more metals, as FeAsS ($= FeS_2.FeAs_2$), the mineral arsenopyrite or mispickel. Similar compounds containing selenium, tellurium, antimony, or bismuth, instead of arsenic, are called *sulphoselenides*, *sulphotellurides*, *sulphantimonides*, or *sulphobismuthides* respectively.

sulpharsenious (sulf-är-sē′ni-us), *a.* [*sulph*(*ur*) + *arsenious.*] See ★*thio-arsenious.*

sulpharsenite (sulf-är′se-nīt), *n.* [*sulph*(*ur*) + *arsen*(*ic*) + *-ite*^{2}.] See ★*sulphantimonite.*

sulphate, *n.*—**Conjugate sulphates**, certain aromatic principles, such as indoxyl, scatoxyl, and phenol, which appear in the urine in combination with mineral sulphates. Also called *ethereal* ★*sulphates.*—**Ethereal sulphates.** Same as *conjugate* ★*sulphates.*

sulphated (sul′fā-ted), *p. a.* Charged with or containing sulphates: as, a *sulphated* saline or *sulphated* aluminous mineral water.

sulphatine (sul′fạ̈-tin), *n.* [*sulphat*(*e*) + *-ine*^{2}.] A trade-name of a fungicide preparation consisting of sulphur, lime, and the sulphates of copper and calcium, intended for application to plants.

sulphating (sul′fā-ting), *n.* [*sulphat*(*e*), *v.*, + *-ing*^{1}.] In *electrochem.*, the formation of inert lead sulphate on the plates of a storage battery, which may occasion loss of power and damage to the battery.

sulphation (sul-fā′shọ̈n), *n.* Same as ★*sulphating.*

sulphatization (sul″fạ-ti-zā′shọ̈n), *n.* [*sulphat*(*e*) + *-iz*(*e*) + *-ation.*] Same as ★*sulphating.*

sulphato-. In *chem.*, a prefix to the name of a compound, signifying that it contains a sulphate as an ingredient, as the mineral leadhillite, a *sulphato*-carbonate of lead.

sulphaurate (sul-fâ′rāt), *n.* [*sulph*(*ur*) + L. *aurum*, gold, + *-ate*^{1}.] See ★*thio-aurate.*

sulphauric (sul-fâ′rik), *a.* [*sulph*(*ur*) + L. *aurum*, gold, + *-ic.*] See ★*thio-auric.*

sulph-hemoglobin (sulf″hem-ọ-glō′bin), *n.* [*sulph*(*id*) + *hemoglobin.*] A compound of hemoglobin and hydrogen sulphid.

sulphid, *n.*—**Double sulphid**, a compound in which sulphur is united to two different metals or radicals, as in the mineral chalcopyrite, a sulphid of copper and iron.—**Metallic sulphid**, a compound of a metal with sulphur. Many such compounds are found in nature (as the sulphids of lead, copper, mercury, zinc, etc.) and constitute valuable ores.

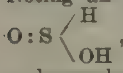
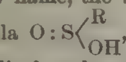
sulphid (sul′fid), *v. t.* [*sulphid*, *n.*] To convert into a sulphid, as in the case of silver tarnished by such conversion on the surface.

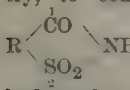
sulphidation (sul-fi-dā′shọ̈n), *n.* The replacement or impregnation of a rock with metallic sulphids. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. 204.

sulphimide (sulf-ī′mid), *n.* [*sulph*(*ur*) + *imide.*] A substance obtained along with sulphamide in the preparation of that compound. Its composition is represented by the formula SO_2NH, but it has not been procured in a perfectly pure state.

sulphinate (sul′fi-nāt), *n.* [*sulphin*(*ic*) + *-ate*^{1}.] A general name, in organic chemistry, of salts of sulphinic acid.

sulphine (sul'fin), *n.* [*sulph*(*ur*) + *-ine*^{2}.] A name given, in organic chemistry, to compounds containing the group R_3SX, where R is a hydrocarbon radical such as methyl, CH_3, and X a halogen atom or hydroxyl radical. The compounds are also called sulphonium derivatives, and resemble, in general constitution and properties, the corresponding derivatives of ammonium.

sulphinic (sul-fin'ik), *a.* [*sulphine* + *-ic.*] Noting an acid, a hypothetical compound,  $O:S\begin{cases}H\\OH\end{cases}$, with the same empirical formula as hyposulphurous acid, of which it may be considered a possible form. The term is used as a class name, the sulphinic acids having the formula  $O:S\begin{cases}R\\OH\end{cases}$, where R is a hydrocarbon radical such as methyl, CH_3.

sulphinide (sul'fi-nid), *n.* [Formerly *sulfinide*; *sulphine* + *-ide.*] 1. Same as *saccharin.*— 2. A class name applied, in organic chemistry, to compounds containing the group  $R\begin{cases}\overset{1}{C}O\\\underset{2}{S}O_2\end{cases}NH$, where R is a bivalent aromatic hydrocarbon radical such as phenylene, C_6H_4. The compounds are also called *orthoanhydrosulphamine-carboxylic acids.*

sulphiodide (sul-fī'ọ-did or -dīd), *n.* Same as ★*iodosulphid.*

sulphite, *n.*—**Acid sulphite,** a salt, $NaHSO_3$, obtained by supersaturating a solution of sodium carbonate with sulphur-dioxid gas. It appears in small shining crystals. It is sold for use in photography as a lye. For its preparation in such cases tartaric acid is added to sodium sulphite.—**Sulphite process.** See ★*process.*

sulphmethemoglobin, sulphmethæmoglobin (sulf"met-hē-mọ-glō'bin), *n.* [*sulph*(*ur*) + *methemoglobin.*] A compound of methemoglobin with hydrogen sulphid. Also termed *methemoglobin sulphid.*

sulpho-. In *chem.*, a prefix to the name of a compound, signifying the presence in it of sulphur as a constituent. In those cases in which sulphur is looked upon as replacing oxygen the prefix *thio-* is now generally preferred.

sulpho-arsenic (sul"fọ-är-sen'ik), *a.* Same as ★*sulpharsenic.*

sulphobismuthid (sul-fọ-biz'muth-id), *n.* See ★*sulpharsenide.*

sulphobismuthite (sul-fọ-biz'muth-īt), *n.* See ★*sulphantimonite.*

sulphoborite (sul-fọ-bō'rīt), *n.* A hydrated sulphate and borate of magnesium occurring in colorless prismatic crystals at the salt-mines of Westeregeln, Germany.

sulphocarbamide (sul-fọ-kär'ba̤-mid), *n.* Same as ★*thio-urea.*

sulphocarbolate (sul-fọ-kär'bọ-lāt), *n.* A salt of phenol-sulphonic acid, $C_6H_4.HO.HSO_3$. The sulphocarbolates of sodium and zinc are used medicinally as antiseptics.

sulphocarbolic (sul"fọ-kär-bol'ik), *a.* Same as ★*phenolsulphonic.*

sulphocarbonate (sul-fọ-kär'bọ-nāt), *n.* See ★*thiocarbonate.*

sulphocarbonic (sul"fọ-kär-bon'ik), *a.* Same as ★*thiocarbonic.*

sulphocerulic (sul"fọ-sẹ-rö'lik), *a.* Same as *sulphoindigotic.*

Sulphocyanic acid. Now preferably called *thiocyanic acid.*

sulphocyanine (sul-fọ-sī'a̤-nin), *n.* The name of several direct cotton coal-tar colors (*sulphocyanine G, GR, 3R, 5R,* etc.), of similar composition, which dye unmordanted cotton dark navy-blue shades from a salt bath.

sulphogermanate (sul-fọ-jėr'ma̤-nāt), *n.* A compound of sulphur and germanium with a more electropositive element than either of these, as the mineral argyrodite ($4Ag_2S.GeS_2$), in which germanium was first discovered.

sulpholeate (sul-fō'lẹ-āt), *n.* A salt of sulpholeic acid.

sulpholeic (sul-fō'lẹ-ik), *a.* [*sulph*(*ur*) + *-oleic.*] Pertaining to sulphuric and oleic acids. —**Sulpholeic acid,** a colorless compound, $C_{18}H_{33}CH(SO_4H)COOH$, prepared by the action of concentrated sulphuric acid on oleic acid. The sodium, potassium, and ammonium salts are used for the dyeing of cotton goods and in calico-printing under the trade-names *alizarin-oil, Turkey-red oil, red oil,* and *olein.* Also called *stearinsulphuric acid.*

sulphonalism (sul'fọ-na̤l-izm), *n.* [*sulphonal* + *-ism.*] Addiction to the use of sulphonal; also the morbid state resulting therefrom.

sulphonate (sul'fọ-nāt), *v. t.*; pret. and pp. *sulphonated*, ppr. *sulphonating.* [*sulphonate, n.*] To convert a substance into a sulphonate, generally by the action of fuming sulphuric acid on an organic substance, replacing one or more atoms of hydrogen by a corresponding number of units of the sulphonic radical, $HO.SO_2$. This process is extensively used in the manufacture of artificial dyestuffs. —**Sulphonated azo color.** See ★*color.*

sulphonazurine, sulphonazurin (sul-fōn-azh'ṳ̄-rin), *n.* A direct cotton coal-tar color of the disazo type, derived from benzidine-sulphone-disulphonic acid. It dyes unmordanted cotton from a neutral or soap bath. Also *sulphoneazurine.*—**Brilliant sulphonazurine,** a direct cotton coal-tar color which dyes unmordanted cotton a bright blue from a salt bath.

sulphone (sul'fōn), *n.* [*sulph*(*ur*) + *-one.*] One of a group of organic compounds containing the divalent SO_2 group, united with two hydrocarbon radicals. Thus $(C_2H_5)_2SO_2$ is diethyl sulphone and $(C_6H_5)_2SO_2$ diphenyl sulphone.—**Sulphone azurine.** See ★*sulphonazurine.* —**Sulphone black, brown, colors.** See ★*black*, etc.

sulphonium (sul-fō'ni-um), *n.* [NL., < *sulph*(*ur*) + *-onium.*] A hypothetical univalent radical, $-SH_3$. Derivatives in which the hydrogen is replaced by hydrocarbon radicals, such as methyl, CH_3, are known and resemble the corresponding ammonium compounds in constitution and general properties.

sulphoparaldehyde (sul"fọ-pa-ral'dẹ-hīd), *n.* [*sulph*(*ur*) + *paraldehyde.*] A crystallizing compound, $C_6H_{12}S_3$. It melts at 46° C. and is used in medicine as a hypnotic. The correct name is *trithioacetaldehyde.*

sulphophosphoric (sul"fọ-fos-for'ik), *a.* See ★*thiophosphoric.*

sulphoproteid (sul-fọ-prō'tẹ-id), *n.* One of a number of albumins which contain a considerable amount of sulphur in loosely combined form, such as the keratins.

sulphoricinate (sul-fọ-ris'i-nāt), *n.* [Also written *sulforicinate.*] A thick, clear liquid compound prepared by treating castor-oil with concentrated sulphuric acid, adding sodium chlorid, and neutralizing the product with sodium carbonate. It does not dissolve in water, but readily forms with it an emulsion; it easily dissolves large quantities of phenol, menthol, etc.; hence its use in pharmacy. Also known by the trade-names *solvin* and *polysolvol.*

sulphoricinoleate (sul"fọ-ris-i-nō'lẹ-āt), *n.* A salt of sulphoricinoleic acid.

sulphoricinoleic (sul"fọ-ris-i-nō'lẹ-ik), *a.* Noting an acid, a derivative of ricinoleic acid, containing the sulphonic radical $HO.SO_2$, obtained as a product of the action of strong sulphuric acid on castor-oil. It is the principal ingredient of the alizarin-oil or Turkey-red oil used by dyers.

sulphosaccharate (sul-fọ-sak'a̤-rāt), *n.* A general term which has been applied in chemistry to certain compounds of sulphates with sugar. The most important member is the copper compound, which is a fine bluish-white powder.

sulphosalicylic (sul-fọ-sal-i-sil'ik), *a.* Derived from sulphuric and salicylic acids. —**Sulphosalicylic acid,** a crystalline acid, $C_6H_3(OH)(COOH)(SO_3H)$, made by the action of sulphur trioxid, or concentrated sulphuric acid, on salicylic acid. It melts at 120° C.

sulphoselenide (sul-fọ-sē'len-id), *n.* See ★*sulpharsenide.*

sulphostannate (sul-fọ-stan'āt), *n.* See ★*thiostannate.*

sulphostannic (sul-fọ-stan'ik), *a.* See ★*thiostannic.*

sulphosteatite (sul-fọ-stē'a̤-tīt), *n.* Same as ★*fostite.*

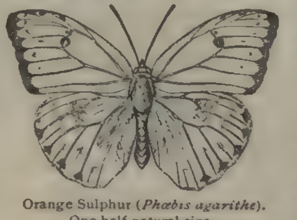
sulphotelluride (sul-fọ-tel'ụ-rid), *n.* See ★*sulpharsenide.*

sulphotungstate (sul-fọ-tung'stāt), *n.* See ★*thiotungstate.*

sulpho-urea (sul-fọ-ū'rẹ-ạ̈), *n.* Same as ★*thio-urea.*

sulphoxid (sulf-ok'sid), *n.* [*sulph*(*ur*) + *ox*(*ygen*) + *-id*^{1}.] A general name, in organic chemistry, of compounds of the formula R_2SO, where R is a hydrocarbon radical such as methyl, CH_3. They are formed by the oxidation of the thio-ethers with nitric acid.—**Tellurium sulphoxid,** a transparent red, amorphous, fusible, solid substance obtained by the direct union of tellurium and sulphur trioxid, decomposed by water with the formation of tellurium and sulphuric acid.

sulphur, *n.* 1. As an alchemistic term 'sulphur' had a general more or less vague meaning altogether distinct from that of the single substance brimstone. It seems, in large measure, to have carried with it the notion of what we now speak of as electronegative or acidifying character. Sulphuric acid was by some regarded as the sulphur philosophorum.—**Alcohol of sulphur,** an early name for carbon disulphid.—**Dainty sulphur.** See ★*dainty.*—**Lac sulphur** or **sulphur lac.** Same as *milk of sulphur* or *precipitated sulphur.*—**Lime, sulphur, and salt wash.** See ★*wash.*—**Little sulphur,** an American pierid butterfly, *Eurema euterpe*, occurring throughout the southern United States and rarely in southern New England, Ohio, and Wisconsin. Its larvæ feed on cassia and other leguminous plants.—**Neutral sulphur.** In certain sulphur bodies occurring in the urine the sulphur is not present in the form of sulphuric acid, namely, as a sulphate, but in organic combination. This fraction Salkowski designates as neutral, in contradistinction to the other or acid sulphur.—**Orange sulphur,** an American pierid butterfly, *Phœbis agarithe*, found in the southern United States. Its larvæ feed on cassia plants.—**Peroxid of sulphur,** sulphur heptoxid (S_2O_7), a substance produced by silent electrical discharge through a mixture of dry oxygen and sulphur dioxid and by other processes. It is a viscid, colorless liquid solidifying at 0° C., readily volatile and very unstable, decomposing into sulphur trioxid and oxygen when kept at ordinary temperature and quite rapidly on being heated. —**Red-barred sulphur,** an American pierid butterfly, *Callidryas philea*, of tropical distribution, and found also in Texas and the lower Mississippi valley.—**Sublimed sulphur.** Same as *flowers of sulphur.*—**Sulphur alcohol.** See ★*thio-alcohol.*—**Sulphur auratum** (properly *sulphur auratum antimonii*), antimony pentasulphid.—**Sulphur bacteria.** See ★*bacterium.*—**Sulphur base,** the sulphid of a more electropositive element or radical which by union with the sulphid of one more electronegative may form a sulphur-salt.—**Sulphur candle.** See ★*candle.*—**Sulphur-carrier,** a substance used to facilitate the taking up of sulphur by india-rubber in the process of vulcanization. Among the most useful of such materials are antimony pentasulphid and lead thiosulphate.—**Sulphur chlorid,** a compound of sulphur and chlorin. Three such compounds are known, S_2Cl_2, SCl_2, and SCl_4. Of these the first, sulphur monochlorid, is the most stable and most generally known. It is prepared by the direct action of gaseous chlorin upon heated sulphur, and appears as a yellow liquid of specific gravity 1.7, boiling at 138° C., fuming in the air, with irritant effect upon the eyes and nostrils, decomposed by water, and itself dissolving sulphur in large proportion: used in the vulcanization of india-rubber.—**Sulphur color.** See ★*color.*—**Sulphur dioxid.** Same as *sulphurous oxid.*—**Sulphur ether.** Same as ★*thio-ether.*—**Sulphur iodide.** See ★*iodide.*—**Sulphur trioxid,** sulphuric oxid or sulphuric anhydrid, SO_3. The production of this substance by passing sulphur dioxid and atmospheric oxygen over heated platinized asbestos, and its conversion into sulphuric acid by taking up the elements of water, form the basis of the recently developed 'contact process' for the manufacture of that important acid.



Orange Sulphur (*Phœbis agarithe*).
One half natural size.

sulphur, *v. t.*—**To sulphur up,** a manufacturers' term for the appearance, after a time, of an efflorescence of sulphur in microscopic globules on the surface of soft vulcanized india-rubber. Also known as *blooming.*

sulphur-acid (sul'fėr-as"id), *n.* Same as *thio-acid.*

sulphur-burner (sul'fėr-bėr"nėr), *n.* An apparatus for burning or oxidizing sulphur. It is only necessary to heat the sulphur to its igniting point in a blast of air.

sulphurea (sul-fū'rẹ-ạ̈), *n.* Same as ★*thio-urea.*

Sulphuric acid. See also ★*contact action.*

sulphur-salt, *n.* 2. A substance which may be regarded as made up of a sulphid of a relatively electropositive element or radical and a sulphid of one relatively electronegative, as the mineral zinkenite ($PbS.Sb_2S_3$). The term *thio-salt* is now preferred for such compounds.

Sulphuryl chlorid, a heavy colorless volatile liquid, SO_2Cl_2, obtainable by the interaction of sulphur dioxid and chlorin in sunlight, fuming in the air, and with strong irritant odor, decomposed by water with formation of sulphuric and hydrochloric acids.

sulphydro-. [*sulph*(*ur*) + *hydro*(*gen*).] In *chem.*, a prefix to the name of a compound, signifying that in it the radical SH may be viewed as replacing hydroxyl (OH). The prefix *thio-* is now preferred, as *thio*-glycolic acid instead of *sulphydro*-acetic acid.

sulvanite (sul'vā-nīt), *n.* [*sul*(*phur*) + *van*(*adium*) + *-ite*^{2}.] A sulphovanadate of copper occurring in bronze-yellow masses with metallic luster: found in South Australia.

sum^1, *n.*—**Arithmetical sum,** the result of uniting two or more quantities unchanged into one quantity.—**Sum in finite differences,** in *math.*, the sum of the values of a function obtained by giving to its argument successive values differing by unity, from the lower to the upper limiting value specified.—**Vectorial sum**, in *math.*, the vector from the beginning of the first to the end of the last of a set of vectors put end to end by translation without rotation.

sumac, *n.*—**Cape sumac**, a shrub or small tree of the sandalwood family, *Colpoon compressum*, native to Cape Colony and Natal. Its leaves are used locally for tanning light leathers and the heavy, fine-grained wood is used for fine cabinet work. See *Osyris*.—**Italian sumac**, a greenish powder made from the leaves of *Rhus coriaria*, used in tanning. *C. T. Davis*, Manuf. of Leather, p. 31.—**Spanish sumac.** Same as *Sicilian sumac*.—**Swedish sumac**, a substance prepared from the leaves of the bearberry, *Arctostaphylos uva-ursi*.—**Tyrol sumac**, a substance prepared from the leaves and stems of the wig-tree or smoke-tree, *Cotinus Cotinus*.—**Wig sumac.** Same as *wig-tree* and *Tyrol* ★*sumac*.

sumac, sumach (sū̱′mak), *v. t.*; pret. and pp. *sumaced*, *sumached*, ppr. *sumacing*, *sumaching*. [*sumac*, *sumach*, *n.*] In *leather-manuf.*, to treat with sumac. *C. T. Davis*, Manuf. of Leather, p. 216.

sumbody, *n.* An amended spelling of *somebody*.

Sumbul oleoresin. See ★*oleoresin*.

sumbulamic (sum-bū̱-lam′ik), *a.* Derived from sumbul oleoresin.—**Sumbulamic acid**, a yellow compound obtained from sumbul oleoresin. It crystallizes in yellow needles.

sumersault, *n.* An amended spelling of *somersault*.

sumerset, *n.* and *v.*. An amended spelling of *somerset*.

sumhow, *adv.* An amended spelling of *somehow*.

summarization (sum″a-ri-zā′shọn), *n.* [*summariz(e)* + *-ation*.] The act of summarizing or reducing to a concise statement; also, a summary; a compendium or abstract.

> In this week's 'Spectator' will be found a concise *summarization* of the present state of things in China.
> *Pall Mall Gazette*, Oct. 13, 1900, p. 1.

Summary court. See ★*court*.

summate (sum′āt), *v. t.*; pret. and pp. *summated*, ppr. *summating*. [L. *summatus*, pp. of *summare*, sum up.] To add; find the sum of a series; combine in a total: said of quantities.

> A change in one direction which is *summated* in proportion to the number of discs in the pile.
> *Nature*, July 26, 1900, p. 290.

summation, *n.*—**Summation theory**, a theory which derives any given phenomenon from the conjoint action of a number of less intensive (perhaps separately unnoticeable) phenomena of the same kind.

> If we are not satisfied with this '*summation' theory*, we may have recourse to a subsidiary hypothesis. We may suppose that the gaps in sensation are filled out by association. *E. B. Titchener*, Exper. Psychol., I. ii. 90.

Summation tone. Same as *resultant tone* (which see, under *resultant*).

summer¹, *n.*—**Old wives' summer, old women's summer**, a translation of the German *Altweibersommer*, the same as *St. Martin's summer*, a warm period in autumn in Europe, similar to the Indian summer of America.

summer-beam (sum′ėr-bēm), *n.* Same as *summer*², 2 (*c*), or *brest-summer*.

summit, *n.* **4.** In bivalves, the highest part of the shell; the region in which the hinge is situated.

summital (sum′it-ạl), *a.* [*summit* + *-al*¹.] Of or relating to a summit.

summit-opening (sum′it-ōp″ning), *n.* In the extinct *Blastoidea*, the open space at the summit of the calyx where the ambulacra meet. This area is paved with a number of minute calcareous plates, which may be regular or irregular in arrangement, but leave at each angle of the summit-opening a small passageway by means of which the ambulacra communicate with the peristome.

summons, *n.*—**Writ of summons.** Same as *summons*, 2.

summum jus (sum′um jus). [L. *summum*, highest, extreme, + *jus*, law.] Strict law or right, as distinguished from equity.—**Summum jus, summa injuria**, literally, extreme law is extreme wrong.

sump, *n.* **5.** In an electrolytic tank, a compartment separated from the rest by a low dividing-wall.

sumthing, *n.* and *adv.* An amended (restored) spelling of *something*.

sun¹, *n.*—**Elements found in the sun**, aluminium, antimony, arsenic, barium, bismuth, boron, bromine, cadmium, cæsium, calcium, carbon, cerium, chlorin, chromium, cobalt, copper, erbium, fluorin, gallium, germanium, glucinum, gold, holmium, hydrogen, indium, iodine, iridium, iron, lanthanum, lead, magnesium, manganese, mercury, molybdenum, neodymium, nickel, niobium, nitrogen, osmium, oxygen, palladium, phosphorus, platinum, potassium, praseodymium, rhodium, rubidium, ruthenium, scandium, selenium, silicon, silver, sodium, strontium, sulphur, tantalum, tellurium, terbium, thallium, thorium, thulium, tin, titanium, tungsten, uranium, vanadium, yttrium, zinc, zirconium.—**Equatorial acceleration of the sun.** See ★*acceleration*.—**Sun-and-planet motion.** Same as ★*jack-in-a-box motion*.—**Sun's way**, the path of the sun and solar system in space, directed approximately toward the constellation of Hercules. See *solar apex*, under *solar*¹.—**Sun thermometer.** See ★*thermometer*.—**The sun is high** (*naut.*), said of that body when it reaches the observer's meridian.

sun³ (sůn), *n.* [Jap. *szn*, < Chin. *ts'un*, the Chinese inch, regarded as equal to the middle joint of the finger.] A Japanese measure of length, equal to $\frac{1}{33}$ of a meter, or 1.19 inches.

sun⁴, *n.* An amended spelling of *son*¹.

sun-bed (sun′bed), *n.* A local name in England given to the hard upper limestone of the White Lias. Also called *Jews'-stone*.

sunburn, *n.* **3.** The injury to the leaves or bark of plants produced by the hot sun causing excessive or too rapid evaporation of the water content of the cells, and thus killing the tissues, which become brown. The tips and margins of rapidly growing leaves and the cambium layer of the bark of young trees are most frequently affected. Also called *sunscald*. Compare *heliosis*.

sunburst, *n.* **2.** Hence, a figure, or object, as in architectural ornamentation, jewelry, etc., resembling, or thought to resemble, the bursting forth of rays in all directions from the sun: as, a diamond *sunburst*.

> The most characteristic ornament of this architecture consists of the disks executed on flat surfaces, which appear upon the lintels of doors and windows and in many other places, upon churches, shops, private houses, and every other kind of building of every size, in all parts of the country. They are found in a thousand designs: some of them are symbolic and Christian, others are apparently only ornamental. The designs include *sunbursts*, five-, six- and eight-pointed stars, whorls, spirals, interwoven leaves and crosses of countless forms.
> *H. C. Butler*, Architecture and Other Arts, p. 32.

sun-cluster (sun′klus″tėr), *n.* A group or cluster of suns, that is, stars.

sun-cracking (sun′krak″ing), *n.* A trade-name for a defect in vulcanized india-rubber goods, due to atmospheric oxidation on exposure to light, and made evident by the appearance of cracks upon the surface.

sundang (sön-däng′), *n.* [Native, Phil. Islands.] A knife or bolo.

sundarband, *n.* See ★*sunderbund*.

Sunday, *n.*—**Advent Sunday**, the first Sunday in Advent.—**Cantate Sunday**, the fourth Sunday after Easter, so called from the introit of the mass of that day, beginning with the words, "Sing unto the Lord a new song."—**Reminiscence Sunday**, same as *Reminiscere Sunday*.—**Rorate Sunday**, the fourth Sunday in Advent, so called from the opening words of the introit of the day, "Rorate, cœli, desuper (Isa. xlv. 8).—**Rose Sunday**, the Sunday on which the Pope blesses the golden rose, the fourth Sunday in Lent.

sunderbund (sön′dėr-bönd), *n.* [Also *sundarband*; Anglo-Ind., from an undetermined Indian source.] **1.** *pl.* [*cap.*] The tract of intersecting creeks and channels and of swampy islands which constitutes the seaward part of the delta of the Ganges.—**2.** A distributary of a river on its delta; specifically, such a distributary of the Ganges or the Brahmaputra.

> Large and small streams or swampy *sûndarbands* of slowly moving waters. *Geog. Jour.* (R. G. S.), XVI. 238.

Sunderland luster. See *marbled* ★*luster*.

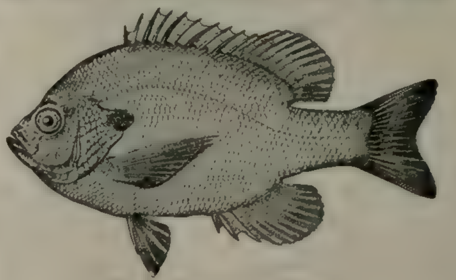
sundowner, *n.* **2.** A physician, holding some government office, who carries on a private practice in the afternoon when government office-hours are over. [Washington, D. C.]—**3.** One who lives toward the sundown or west. [Western U. S., slang.]

sun-dry (sun′drī), *v. t.* and *i.*; pret. and pp. *sun-dried*, ppr. *sun-drying*. To dry, or be dried, by the natural heat of the sun, without artificial heat.

> I must have the bed and bedclothes aired and put to *sun-dry*. *R. L. Stevenson*, Kidnapped, iii.

sundtite (sönt′īt), *n.* [Named after L. *Sundt*, a mining director.] Same as ★*andorite*.

sunfish, *n.*—**Banded sunfishes**, species of the genus *Mesogonistius*.—**Black-banded sunfish**, *Mesogonistius chætodon*, a sunfish found in fresh waters of the eastern United States. See cut under ★*Mesogonistius*.—**Blue sunfish**, a sunfish, *Lepomis pallidus*, one of the best known and most important, found in the Great Lakes, Mississippi valley, and elsewhere.—**Blue-spotted sunfish**, a common name of a small species of sunfish, *Apomotis cyanellus*, found from central Ohio to the Rio Grande.—**Common sunfish**, *Eupomotis gibbosus*, a sunfish found in the northern parts of the Mississippi valley, the Great Lake region to Maine, and southward east of the Alleghanies to Florida.—**Green sunfish.** Same as *blue-spotted* ★*sunfish*.—**Long-eared sunfish**, *Lepomis megalotis*, found from Michigan to Minnesota, South Carolina, and southwest to the Rio Grande.—**McKay's sunfish**, *Eupomotis euryorus*, known only from southern Michigan and northern Ohio and Indiana.—**Mud sunfish**, *Acantharcus pomotis*, found from New York to South Carolina. See cut at ★*Acantharcus*.—**Pygmy sunfish**, a fish of the family *Elassomidæ*.—**Red-eared sunfish**, *Eupomotis heros*, one of the sunfishes inhabiting streams from northern Indiana to Florida.—**Red-spotted sunfish**, *Lepomis humilis*, a fish found in fresh waters in Ohio and Kentucky and west to Texas and Dakota.—**Round sunfish**, a small sunfish, *Centrarchus macropterus*, found in the Mississippi valley.—**Scarlet sunfish**, *Lepomis miniatus*, a sunfish found in fresh waters from Texas to Florida.


Blue Sunfish (*Lepomis pallidus*).
(From Bulletin 47, U. S. Nat. Museum.)

Common Sunfish (*Eupomotis gibbosus*).
(From Bulletin 47, U. S. Nat. Museum.)

sung² (söng), *n.* [Chin. *sung*, in Canton *sung*, *tsung*, and *ts'ung*, the pine-tree.] The pine or fir, used as a decorative motive in Chinese art.

sungar, *n.* Same as ★*sangar*.

sun-glass, *n.* **2.** Same as ★*shade-glass*; a screen of colored glass attached to a sextant to diminish the apparent brightness of the sun.

Sung porcelain. See ★*porcelain*¹.

sunk-band (sunk′band), *a.* Noting the ordinary style of sewing books, in which the backs are sawed in three or five furrows to contain the bands of twine. The raised-band process is better, but more expensive. *W. Matthews*, Modern Bookbinding, p. 27.

sun-kiln (sun′kil), *n.* A vat for preparing potters' clay by exposing it to the action of the sun and the atmosphere, a process employed by English potters previous to the eighteenth century.

> Into the smaller vat a quantity of clay is thrown, and by a proper tool plunged in the water by agitation; . . . the fluid mass is next poured into a sieve, thro' which it runs into the largest vat, or *Sun Kiln*, until the whole surface is covered, to the depth of three or four inches, which is left to be evaporated by solar action.
> *Aiken*, quoted by S. Shaw, Hist. of the Staff. Potteries, [p. 18.

sunned (sund), *p. a.* Exposed to the sunlight, as for the purpose of toning down the harsh contrasts.

sun-pan (sun′pan), *n.* A pan or vat in which potters' clay is prepared. See ★*sun-kiln*.

sun-pillar (sun′pil″är), *n.* A parhelion or sun-dog having the form of a vertical column of light: seen usually in connection with other halo forms.

> This evening a *sun-pillar* was again visible at Swindon, not so brilliant or long-lived as that which recently attracted such widespread attention, but nevertheless quite definite. . . . It was of a clear yellow colour, and extended from the dull-red sun vertically upwards.
> *Nature*, April 10, 1902, p. 536.

sun-power (sun′pou″ėr), *n.* The amount of light radiated by a given star as compared with that radiated by the sun; or the brightness of the star compared with that of the sun, both being viewed from the same distance (easily calculated when the star's parallax is known).

In Fig. 2 the relative distances of all stars known to be within sixty light-years of our system are shown by placing the objects on a background formed by a map of the home counties, taking Greenwich as the point of departure, the "*sun-powers*" of the various stars being represented by a system of symbols. Fig. 3 similarly treats all those stars within 480 light-years, a map of N. W. Europe constituting the background. The scale employed for the stellar distances is an interesting one, which takes as its unit the distance of a star situated at one light-year from the solar system. Mr. Heath fortuitously discovered that by calling this unit one mile the sun's distance is almost exactly represented by one inch.
Nature, Sept. 28, 1905, p. 532.

sun-prism (sun'prizm), *n.* See ★*prism.*

sun-reflector (sun'rē-flek″tor), *n.* A large concave mirror or system of mirrors by means of which the sun's rays are focused upon the boiler of a solar engine. See cut under *solar engine.*

sun-scald, *n.* **2.** An injury to the bark caused by sudden exposure of a tree to strong sunlight. Also *scald.*—**3.** A burning of the skin due to exposure to the reflection of sunlight from the surface of smooth water.—**4.** Surfaces of water reflecting sunlight and causing sunscald. [Rare.]

There were days, though, clear and soft and warm, when it seemed a sin to do anything but loaf over the hand-lines and spank the drifting "*sun-scalds*" with an oar. *R. Kipling*, Captains Courageous, v.

5. Same as *scald-fish.*

sunset, *n.*—**Making sunset** (*naut.*), the ceremony performed at sundown of striking the colors.—**Red sunsets,** specifically, the remarkable red sky or red light that followed the regular twilight and preceded the morning during 1883–84, over the greater part of the north temperate zone, gradually fading away during 1885–86. They were demonstrated to be a direct consequence of the great volcanic eruption of Krakatua, between Sumatra and Java, by which an enormous mass of dust and vapor was projected into the upper atmosphere. Similar red sunsets followed an eruption of Skaptar Jökull, in Iceland, in 1783 and again in 1831, and, on a smaller scale, the eruptions of Pelée and Soufrière in the West Indies in 1902. They have also been seen in connection with other eruptions, as those of Vesuvius and Etna, and with the dusty winds of the Sahara. The red light was due to diffuse reflection of sunlight; the long continuance was due to the great altitude of this vapor, which allowed of the reflection of the light to the earth long after sunset.

sunshine, *n.*—**Bright sunshine,** specifically, in *meteor.*, sunshine bright enough to make a record on the Campbell-Stokes sunshine-recorder.

sunshine-receiver (sun'shīn-rẹ-sē″vėr), *n.* The platinum wire upon which the sun shines directly in using the Callendar sunshine-recorder.

sunshine-recorder, *n.*—**Callendar's sunshine-recorder,** a recorder in which the sun's rays fall directly upon the blackened absorbing surface of a resistance-coil. The resulting increase of temperature affects the transmission of an electric current, and therefore the position of the galvanometer needle and mirror.

sun-shower (sun'shou″ėr), *n.* A shower of rain from a passing cumulus cloud, without thunder or lightning and preceded and followed by full sunshine, on a warm summer day; a shower falling on a limited locality, while the surrounding country is evidently enjoying full sunshine.

sun-soap (sun'sōp), *n.* A term sometimes applied in the United States to soap made in a domestic way by mere exposure of the mixed fatty and alkaline materials to the heat of the sun's rays.

sun-spot, *n.* **2.** A freckle.—**3.** A spot on leaves produced by excessive heat of the sun. Compare *heliosis*, 1.—**Sun-spot curve,** a curve exhibiting the course of the rise and fall in the number and extent of sun-spots, and the dates of maximum and minimum since 1772.—**Sun-spot cycle,** the period of about eleven years in which the maximum frequency of sun-spots recurs.—**Wolf's relative sun-spot numbers,** the system of numeration devised by Professor R. Wolf of Zurich, to express the tendency to the formation of sun-spots. The number for any day is determined by adding together the number of spots visible on the sun and ten times the number of groups of spots. It is therefore an arbitrary number, but has been made the basis for many refined calculations as to the relation between sun-spot phenomena and terrestrial meteorology and magnetism.

sunstroke, *n.* **2.** Same as ★*folletage.*—**Electric sunstroke.** Same as *electric* ★*prostration.*

sun-tank (sun'tangk), *n.* A metallic tank in which castor-oil is exposed to the sun's rays in order to bleach it. *Sci. Amer. Sup.*, March 21, 1903, p. 22756.

sun-wheel, *n.* **2.** In *cotton-manuf.*, one of the gears or wheels of the 'differential' or 'equating' or 'jack-in-a-box' motion of a roving-machine, about the orbit of which other gears rotate. Also called a *stud-wheel.*

suovetaurilia (sū-ọ-vet-â-ril'i-ạ̈), *n. pl.* [L., < *sus*, pig, + *ovis*, sheep, + *taurus*, bull, + *-ilis*, neut. pl. *-ilia.*] In *Rom. antiq.*, a sacrifice offered to male deities, in which the victims were a boar, a ram, and a bull. The chief suovetaurilia were performed at the lustrum which followed the census every fifth year.

sup. An abbreviation (*a*) of *superfine*; (*b*) of *superior*; (*c*) of *superlative*; (*d*) of *supine*; (*e*) of *supplement*; (*f*) of *supra*; (*g*) of *supreme.*

Sup. Ct. An abbreviation (*a*) of *Superior Court*; (*b*) of *Supreme Court.*

super, *n.* **4.** One of the medium or middle sorts of a fleece of wool. *Hannan*, Textile Fibres of Commerce, p. 191.

super. An abbreviation (*a*) of *superior*; (*b*) of *superfine.*

superactivity (sū″pėr-ak-tiv'ị-ti), *n.* Extreme activity above that which is normal; hyperactivity.

The inhibition of the moto-neurones is on cessation of the stimulus followed by a *superactivity* in them accompanied by the discharge of impulses from them into the muscles they innervate, namely, the extensors.
Nature, Feb. 6, 1908, p. 333.

superalbal (sū-pėr-al'bạl), *a.* [L. *super*, above, + *alb*(*us*), white, + *-al*¹.] Situated in the upper portion of the white substance of the brain: noting certain veins. *Buck*, Med. Handbook, II. 258.

superalimentation (sū″pėr-al″i-men-tā'shọn), *n.* The giving of food in amount greatly exceeding that required to supply the normal waste of the tissues.

superaltar, *n.* **2.** A piece of oak wood about six inches square, having a cross on one side and the figure of a patron saint on the other. It was blessed and incased in gold or silver. It was, in the middle ages, covered with a purple pall during certain celebrations. *Maud R. Hall*, Eng. Church Needle-work, p. 39.

superambient (sū-pėr-am'bi-ẹnt), *a.* [L. *super*, above, + E. *ambient.*] Ambient or circulating above. [Rare.]

Damp soil serves to keep the *superambient* atmosphere damp. *Buck*, Med. Handbook, III. 265.

superb-dragon (sū-pėrb'drag″ọn), *n.* An Australian marine fish, *Phyllopteryx foliatus.* See ★*sea-dragon*, 3. *E. E. Morris*, Austral English.

supercalender (sū-pėr-kal'en-dėr), *v. t.* To give additional smoothness or glaze to (a fabric that has already received calendering).

A web of paper that has passed through the calenders attached to the paper-making machine is 'calendered' or 'machine-calendered.' When it is afterward passed through a gang of rapidly rotating cylinders alternately of iron and compressed paper, it is called 'super-calendered.'

supercalender (sū-pėr-kal'en-dėr), *n.* One of the rotating cylinders or rolls used in supercalendering paper. See ★*supercalender*, *v.*, and *supercalendered.*

supercapillary (sū-pėr-kap'i-lạ̄-ri), *a.* Noting passages in rocks or other solids which, if tubular, exceed .508 millimeters in diameter, and if sheet-like, .254 millimeters, and in which the ordinary laws of hydrostatics apply to the movement of water. *A. Daniell*, Textbook of Physics, p. 277.

supercarbonate (sū-pėr-kär'bọ-nāt), *a.* In reference to an alkaline carbonate, the same as *acid-carbonate* or *bicarbonate.*

supercarbonize (sū-pėr-kär'bọ-nīz), *v. t.*; pret. and pp. *supercarbonized*, ppr. *supercarbonizing.* To impregnate locally with carbon (a mass of steel) which should not elsewhere contain so high a percentage of carbon, or of carbon combined with the iron. This method is used in the case of armor-plates or other steel elements which must resist perforation, or impact, or abrasive attack on the surface exposed, but which would be inconveniently brittle if the hardening effect of a high percentage of carbon was operative all through the mass or thickness.

The plate in the course of manufacture is *supercarbonized*, that is, its face is impregnated with an additional amount of carbon, in a way similar to the well-known case-hardening process, whereby the outside face of the plate, when tempered in water, becomes intensely hard.
Sci. Amer., Dec. 12, 1903, p. 423.

supercarbureted (sū-pėr-kär'bụ-ret-ed), *p. a.* Combined with carbon in superior proportion.

supercentral (sū-pėr-sen'trạl), *a.* [L. *super*, above, + E. *central.*] Situated above the center; specifically, situated above the central sulcus of the brain. *Amer. Anthropologist*, Oct.–Dec., 1903, p. 623.—**Supercentral fissure.** See ★*fissure.*

supercerebellar (sū″pėr-ser-ẹ-bel'är), *a.* [L. *super*, above, + E. *cerebellar.*] Situated or occurring in the upper portion of the cerebellum. *Buck*, Med. Handbook, II. 249.

supercerebral (sū-pėr-ser'ẹ-bral), *a.* [L. *super*, above, + E. *cerebral.*] Situated or occurring in the upper portion of the cerebral hemispheres. *Buck*, Med. Handbook, II. 211.

Superciliary plate. Same as *superciliary shield.*

supercool (sū-pėr-köl'), *v. t.* To cool (a liquid) below its freezing-point without producing solidification. Also *overcool* and *undercool.*

The freezing point curve had been determined by Le Verrier, Le Chatelier, Campbell, and Guillet. All of these determinations had been made on cooling curves and there is considerable evidence of the effects of *supercooling.* *Jour. Phys. Chem.*, June, 1907, p. 425.

supercrust (sū'pėr-krust), *n.* [L. *super*, above, + E. *crust.*] The outer shell of the earth, consisting of sediments which have accumulated without undergoing metamorphism. *J. D. Dana*, Manual of Geol. (4th ed.), p. 441.

supercube (sū'pėr-kūb), *n.* In point-space of four dimensions, the regular supersolid whose faces are all squares.

A much better idea of the regular character of the "*super-cube*" or "eight-cell, as it is called by most writers, and of its connection with four-dimensional space can be acquired by choosing the plane of projection in such a way as to give the diagram a more symmetrical form, and by using two different stereoscopic projections instead of one. *Knowledge*, May, 1904, p. 92.

superdicrotic (sū″pėr-dī-krot'ik), *a.* Very markedly dicrotic. Also called *hyperdicrotic.*

superdistention (sū″pėr-dis-ten'shọn), *n.* Overdistention.

superenergetic (sū-pėr-en-ėr-jet'ik), *a.* Over-energetic; too energetic. [Rare.]

Dr. E. W. Scripture, in the Medical Record, May 11, 1907, describes a psychological and phonetic method of curing stuttering. He treats of *superenergetic* phonation, in which there is an excess of nervous discharge to the vocal organs, and tonic and clonic cramps at various points. *Alien. and Neurol.*, Nov., 1907, p. 495.

superenvironmental (sū″pėr-en-vī-rọn-men'tạl), *a.* [L. *super*, above, + E. *environmental.*] Being above or outside of the environment.

A broader axiom, however, applies to the general conditions of the universe which are *superenvironmental.*
Patten, Development of Eng. Thought, p. 402.

superessive (sū-pėr-es'iv), *a.* [L. *super*, above, upon, + *esse*, be, + *-ive.*] In *gram.*, noting the case expressing position *on.*

superextended (sū″pėr-eks-ten'ded), *a.* Distended beyond the normal. *Buck*, Med. Handbook, IV. 498.

superextensibility (sū″pėr-eks-ten-si-bil'i-ti), *n.* Capability of extreme extension. *Buck*, Med. Handbook, IV. 509.

superextensible (sū″pėr-eks-ten'si-bl), *a.* Capable of extreme extension. *Buck*, Med. Handbook, IV. 514.

superextension (sū″pėr-eks-ten'shọn), *n.* Extension beyond the normal line. *Buck*, Med. Handbook, IV. 496.

superfaced (sū'pėr-fāst), *a.* In *wool-manuf.*, highly finished, with a thick lustrous nap, as broadcloth. *C. Vickerman*, Woollen Spinning, p. 243.

superfatted (sū-pėr-fat'ed), *p. a.* Containing more fat than can combine with the amount of alkali present: noting certain soaps used for medicinal purposes. *Jour. Soc. Chem. Industry*, XI. 446.

superfeudation (sū″pėr-fū-dā'shọn), *n.* Same as ★*superinfeudation.*

superfissure (sū-pėr-fish'ụr), *n.* [L. *super*, above, + E. *fissure.*] A fissure of the brain resulting from the overlapping of one convolution by another. *Buck*, Med. Handbook, II. 179.

superfluent, *a.* **3.** In *geol.*, applied to a liquid which flows above something else, as fresh water upon salt at the mouth of the Amazon, or one lava-stream upon an older flow.

superfuse, *v. t.* **2.** To heat (a substance, such as a basaltic rock) far above its fusing-point, so that once in this condition it may remain long molten without cooling to solidification.—**3.** In *phys.*, to cool (a liquid) to a temperature below (its) melting-point without producing solidification; undercool.

It is generally possible to cool a liquid several degrees below its normal freezing-point without a separation of crystals, especially if it is protected from agitation, which would assist the molecules to rearrange themselves. A liquid in this state is said to be "undercooled" or "*superfused.*" *Encyc. Brit.*, XXVIII. 568.

superfusion (sū-pėr-fū'zhọn), *n.* [*superfuse* + *-ion.*] The act of superfusing or the state of being superfused. Specifically: (*a*) The state of being poured out or spread over. (*b*) The state of being heated above the fusing-point. (*c*) In *phys. chem.*, the state of a liquid which does not solidify, although cooled below the temperature at which the liquid and its solid phase are in equilibrium. An example is the cooling of water below the freezing-point without the formation of ice. See *supersaturated* ★*solution*. Also *surfusion*.

superglacial (sū-pėr-glā'shiạl), *a.* [L. *super*, above, + E. *glacial.*] Situated on or relating to the surface of a glacier; in *geol.*, of or pertaining to detritus, processes, etc., upon the surface of a glacier.

Eskers which have been formed by *superglacial* or englacial streams. *Bulletin Amer. Geog. Soc.*, XXX. 211.

superglacially (sū-pėr-glā'shiạl-i), *adv.* In a superglacial position; upon a glacier.

supergyre (sū'pėr-jīr), *n.* [L. *super*, above, + E. *gyre.*] Any cerebral convolution which overlaps another. *Buck*, Med. Handbook, II. 191.

superheat (sū'pėr-hēt), *n.* Excess of temperature of a vapor above the temperature at which it is saturated.

The economy at full load, with 64° F. *superheat*, . . . was 15·4 pounds per electrical horse power. *Engineering Mag.*, Feb., 1903, p. 756.

Supericornia (sū″pėr-i-kôr'ni-ä̤), *n. pl.* [NL., < L. *superus*, upper, + *cornu*, horn (antenna).] An old name for a series of heteropterous insects corresponding to the family *Coreidæ*, having the antennæ inserted on the upper parts of the sides of the head.

superimpose, *v. t.*—**Superimposed drainage**, in *geol.*, specifically, noting a system of drainage which has supplanted an older system, when the latter, having been extinguished, as, for example, by glacial drift, the former cuts down through the superficial deposits into the hard rocks beneath, and assumes directions without regard to the earlier system. These relations frequently occur within the region covered by the drift of the glacial epoch, and have little regard for the geological structure.

superinfeudation (sū″pėr-in-fū-dā'shọn), *n.* [L. *super*, above, + E. *infeudation.*] The creation of a new feudal estate out of another already established in feudal law.

superl. An abbreviation of *superlative*.

superlactation (sū″pėr-lak-tā'shọn), *n.* Secretion of an excessive quantity of milk.

superloreal (sū-pėr-lō'rē̤-ạl), *a.* [L. *super*, above, + E. *loreal.*] Placed above the lore. See *lore*^{4}, *n.*

superman (sū'pėr-man), *n.* [Trans. G. *uebermensch:* L. *super*, above, + E. *man.*] An imaginary superior being, the product of human evolution: conceived and vaguely characterized by Nietzsche: also used in a general sense. See the second extract.

We are left with the impression that the "satyr" or the "*superman*"—for they come to much the same thing—is an altogether sinister creation of a diseased mind. At no time is Nietzsche a Darwinian. With him it is never a struggle for life, but always for power. The love of power, however, may take strange forms, extending from the cruelty practised on others (whereof pity is a refined form) to "l'autocruauté de fakirs exaltés." The crowning development of this line of thought—if it can be called thought—is reached in the notion of a fury that has got beyond all consideration of an end, even of power. The "blond beast of prey" simply runs amuck. *Athenæum*, July 15, 1905, p. 73.

Relatively to the periods that precede, man is now in a recent epoch, prolonged as it may have been, in which a new story has been added to his nature, so that he is now a *super-man* to his ancient forebears. A new being is born out of and superposed on the old, and in a new sense the boy is father to the man, and far older. *G. S. Hall*, Adolescence, I. 47.

supermaxilla (sū″pėr-mak-sil'ä̤), *n.* The superior maxilla or upper jaw-bone.

supermystical (sū-pėr-mis'ti-kạl), *a.* Of extraordinary mystic significance.

They are as follows (the *super-mystical* numbers accentuated). *W J McGee*, in An. Rep. Bur. Amer. Ethnol., 1897–98, [p. 847.

supernally (sṳ̄-pėr'nạl-i), *adv.* In a supernal or supernatural manner; by supernormal means.

Glossolalia, singing, praying, poetizing, . . . acts all *supernally* motivated, were slowly subjected to a criticism. *G. S. Hall*, in Amer. Jour. Relig. Psychol. and Edu- [cation, May, 1904, p. 41.

supernational (sū-pėr-nash'ọn-ạl), *a.* [L. *super*, above, + E. *national.*] Above and beyond the merely national; belonging to humanity in general, not to men of any special nation.

supernatural, *n.* **2.** A supernatural being; a deity.

supernature (sū'pėr-nā″tụ̄r), *n.* [L. *super*, above, + E. *nature.*] That which is above nature; that which transcends the physical and material.

supero-anterior (sū″pe̤-rọ̄-an-tē'ri-ọr), *a.* Situated above and toward the front. *Proc. Zool. Soc. London*, 1903, p. 270.

superodorsally (sū″pe̤-rọ̄-dôr'sạl-i), *adv.* Above and toward the back: rarely used except in the case of animals which, like flounders, swim on one side. In most cases the superior side is the dorsal side. *Proc. Zool. Soc. London*, 1899, p. 1029.

supero-external (sū″pe̤-rọ̄-eks-tėr'nạl), *a.* Situated above and on the outer side. *Proc. Zool. Soc. London*, 1903, p. 269.

supero-internal (sū″pe̤-rọ̄-in-tėr'nạl), *a.* Situated above and within or toward the inner side.

superoposterior (sū″pe̤-rọ̄-pos-tē'ri-ọr), *a.* Situated above and behind. *Proc. Zool. Soc. London*, 1903, I. 270.

superordinate, *a.* **2.** In *zoöl.*, having the rank or value of a superorder; being above the rank of an order.

superorganism (sū-pėr-ôr'gạn-izm), *n.* [L. *super*, over, + E. *organism.*] In *sociol.*, a social organism. See the extract.

Many writers of late years have spoken of the social unit, the group or the nation, as an "organism." Some have further defined it as a "*superorganism*" or a "physio-psychic" organism. *D. G. Brinton*, Basis of Social Relations, p. 39.

superosculation (sū″pėr-os-kụ̄-lā'shọn), *n.* In *geom.*, the touching at more consecutive points than is usual for loci of the given order. *Science*, April 18, 1902, p. 625.

superoxid (sū-pėr-ok'sid), *n.* A term generally used in the same sense as 'peroxid,' signifying the presence of oxygen in more than normal proportion. Mendeléjeff has proposed to restrict the term 'superoxid' to compounds of the type of hydrogen dioxid, in which the oxygen atoms are assumed to be directly united to each other, thus distinguishing these from other peroxids.

superoxygenated (sū-pėr-ok'si-je-nā̤-ted), *p. a.* Containing oxygen in combination in larger proportion than is normal or than in previously known or referred-to compounds. *Amer. Chem. Jour.*, June, 1903, p. 579, note.

superpassage (sū-pėr-pas'ā̤j), *n.* Passage over or above; specifically, an overhead conduit or arrangement by which one irrigating canal or ditch is carried across over another. *H. M. Wilson*, Irrigation Engineering, p. 272.

superphosphate, *n.* **2.** (*b*) A trade-name of superphosphate of lime.—**Double superphosphate**, a trade-name of superphosphate of lime containing more than the usual proportion of soluble phosphate, made by treating the ordinary superphosphate with water, removing the undissolved calcium sulphate by filtration, and evaporating the solution, either alone or with addition of some easily acted on form of untreated phosphate. In this way as much as 80 or 90 per cent. of soluble phosphate may be secured, of course with an increase of cost, but with saving in carriage of the more concentrated material.

superradial (sū-pėr-rā'di-ạl), *a.* [L. *super*, above, + E. *radial.*] In some genera of the crinoids, such as *Haplocrinus*, where three out of five of the radial plates are transversely divided into two pieces, the upper of these pieces, to which the arm is attached.

superrostral (sū-pėr-ros'trạl), *a.* Lying above the beak or rostrum.

supersaturate, *v. t.*—**Supersaturated solution.** See ★*solution*.

supersecretion (sū″pėr-sē̤-krē'shọn), *n.* Same as *hypersecretion*.

supersedence (sū-pėr-sē'dẹns), *n.* [*supersede* + *-ence.*] The act of superseding.

supersedent (sū-pėr-sē'dẹnt), *n.* [L. *supersedens* (*-ent-*), ppr. of *supersedere*, supersede.] Any remedy the action of which on a part operates in a way to prevent or cure any morbid process in that part.

superseptal (sū-pėr-sep'tạl), *a.* [L. *super*, above, + *septum*, partition, + *-al*^{1}.] Situated above the septum: noting a brain-fissure above the tentorium cerebri.

supersession, *n.* **2.** The replacement of one thing by another.

It is not only to considerations of economy that the *supersession* of engraving by "process" is due. *Encyc. Brit.*, XXVIII. 266.

supersessive (sū-pėr-ses'iv), *a.* [L. *supersessus*, pp. of *supersedere*, forbear, omit, + *-ive.*] Superseding; rendering void.

For the supernatural, as commonly taken, denotes a cause or will outside as well as above Nature, opposed to it and *supersessive* of its laws. *Fairbairn*, Philosophy of the Christian Religion, p. 56.

supersilo (sū-pėr-sī'lō), *n.* [L. *super*, over, + E. *silo.*] A silo-cover with a deep outside rim, permitting it to sink with the settling of the silage. *Return of* [*British*] *Ensilage Commissioners* (1885), I. 6.

superspinous (sū-pėr-spī'nus), *a.* Lying above or over a spinous process.

superstandard (sū-pėr-stan'dä̤rd), *a.* Above the normal standard.—**Superstandard risk.** See ★*risk*^{1}.

supersuborder (sū″pėr-sub″ôr-dėr), *n.* In *zoöl.*, a division intermediate in grade between a suborder and an order. *R. W. Shufeldt*, in Amer. Nat., Jan., 1903, p. 33. [Rare.]

supersulphureted (sū-pėr-sul'fụ̄-ret-ed), *a.* Combined with sulphur in superior proportion.

supersulphurize (sū-pėr-sul'fụ̄-rīz), *v. t.*; pret. and pp. *supersulphurized*, ppr. *supersulphurizing*. To cause to combine with sulphur in superior, or more than usual, proportion.

supervacuation (sū″pėr-vak-ụ̄-ā'shọn), *n.* Evacuation of the bowels to an extreme degree: noting usually an intestinal flux.

supervenosity (sū″pėr-vē̤-nos'ị-ti), *n.* Excessive venous development, either local or general.

supervirulence (sū-pėr-vir'ọ̈-lẹns), *n.* Excessive and intensified virulence.

supervirulent (sū-pėr-vir'ọ̈-lẹnt), *a.* Of intensified virulence.

The immunity may be made to reach a very high degree by ultimately using cultures of intensified virulence, this "*supervirulent*" character being usually attained by the method of passage already explained. *Encyc. Brit.*, XXVI. 66.

Supervisors of election. See ★*election*.

supinate, *v.* **II.** *intrans.* To lie with the palm upward, as the hand; turn so that the palm is upward.

When we turn a screw . . . we always employ the *supinating* movement of the hand for the purpose. *Chambers' Encyclopædia*, V. 539.

suppedania (sup-ē̤-dā'ni-ä̤), *n. pl.* [NL., neut. pl. of *suppedaneus* (or LL. *suppedaneum*, a footstool), < L. *sub*, under, + *pes* (*ped-*), foot.] In *med.*, local applications made to the soles of the feet.

Suppl. An abbreviation of *supplement*.

supplement, *n.* **4.** In *alg.*, the supplement of any multiplicative combination E_m of the reference elements e_1, e_2 . . . e_n and of the mth order is that multiplicative combination E_{n-m} of the $(n-m)$th order which contains those reference elements omitted from E_m multiplied in such succession that $(E_m E_{n-m}) = 1$. The supplement of E_m is denoted by $|\,E_m$.

Supplementary determinant. See ★*determinant*.—**Supplementary twin.** See ★*twin*^{1}.

supply, *n.*—**Bureau of Supplies and Accounts.** See ★*bureau*.—**Compensation supply.** See ★*compensation*.

supply-pipe (su-plī'pīp), *n.* The pipe which conveys any fluid to the place where it is to be used, as distinguished from the discharge-, exhaust-, or drain-pipe which conducts fluid away; specifically, the pipe which takes steam to an engine, water to a house, gas to a burner, etc.

support, *n.* **11.** *pl.* In the *cloth trade*, blocking-boards or wrapping-boards.

supporter, *n.* **2** (*c*) An appliance which gives support to any part of the body, as the breasts or abdominal viscera.—**Supporter of combustion.** See ★*combustion*.

suppositor, *n.* **2** A tube with piston attachment, used for the introduction of suppositories into the rectum or vagina.

suppression, *n.* **5.** In *psychol.*, a phenomenon of binocular vision, consisting in the exclusive predominance of a single monocular image and the consequent disappearance of the other.

It may sometimes be observed that these phenomena of *suppression* do not extend to the entire image. *W. Wundt* (trans.), Human and Animal Psychol., p. 206.

suppurant (sup'ụ̄-rạnt), *n.* [L. *suppurans* (*-ant-*), ppr. of *suppurare*, form pus: see *suppurate.*] That which causes suppuration. *Buck*, Med. Handbook, II. 14.

Suppurative fever, pyemia, or any fever accompanying suppuration.

supra-acetabular (sū″prä̤-as-e-tab′ū̦-lär), *a.* Lying or situated above the acetabulum or cup-like socket for the head of the thigh-bone or femur.

supra-adoral (sū″prä̤-ad-ō′ra̤l), *a.* In echinoids or sea-urchins, situated above the adoral plates. See *adoral.*

supra-arytenoid (sū″prä-ar-i-tē′noid), *n.* A lateral process of the arytenoid cartilage, directed upward and backward. *Proc. Zool. Soc. London*, 1901, I. 284.

supra-associational (sū″prä̤-a̤-sō″ṣi-ā′sho̤n-a̤l), *a.* In *psychol.*, being above the level of association; apperceptive or conceptual.

> To assume a *supra-associational* intellectual activity . . . seems altogether unjustifiable.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 345.

Suprabranchial chamber. See ★*chamber.*

supracæcal (sū-prä̤-sē′ka̤l), *a.* Lying above the cæcum or cæca. *P. Chalmers Mitchell*, in Trans. Linn. Soc., Zool., Oct., 1901, p. 188.

supracaudal (sū-prä̤-kâ′da̤l), *a.* and *n.* **I.** *a.* Lying above the tail. *Proc. Zool. Soc. London*, 1890, p. 180.

II. *n.* The hindmost horny plate on the carapace of a turtle: the 'caudal' of some authorities.

supracellular (sū-prä̤-sel′ū̦-lär), *a.* Being outside of, beyond, or not connected with, the cell.

> Evolution . . . is not only a cellular or cytological, but a *supracellular* or organic process.
> *F. A. Lucas*, in Science, June 7, 1901, p. 910.

supracerebellar (sū prä̤-ser-ē̦-bel′är), *a.* Situated on the upper surface of the cerebellum. *Buck*, Med. Handbook, II. 259.

supracerebral (sū-prä̤-ser′ē̦-bra̤l), *a.* Situated on the upper surface of the cerebral hemispheres. *Buck*, Med. Handbook, II. 259.

suprachoroid (sū-prä̤-kō′roid), *a.* Same as ★*suprachoroidal.*

suprachoroidal (sū-prä̤-kō′roi-da̤l), *a.* Situated on the outer surface of the choroid coat of the eye. *Buck*, Med. Handbook, III. 62.

supraciliary, *a.*—**Supraciliary shield,** one of the horny plates lying just above the eye and below the supraorbitals: much used in describing lizards and snakes.

II. *n.* In *herpet.*, one of the small scales which lie just above the eye and below the supraoculars. They are attached to the eyelid.

> Frontal much narrowed posteriorly, longer than frontoparietals and interparietals together, in contact with the three first supraoculars; five supraoculars, first longest; 10 or 11 *supraciliaries*, first largest.
> *Proc. Zool. Soc. London*, 1903, p. 125.

supraclavicula (sū″prä̤-kla-vik′ū̦-lä̤), *n.*; pl. *supraclaviculæ* (-lē). Same as *supraclavicle. Starks*, Synonymy of the Fish Skeleton, p. 521.

supracommissure (sū-prä̤-kom′i-ṣūr), *n.* A small commissure of the brain, crossing transversely anterior to the pineal body.

Supracondylar bridge, in *anat.*, a bar of bone, on the anterior face of the tibia, just above the tibiotarsal articulation, beneath which pass the tendons.

supracoracoid (sū-prä̤-kor′a̤-koid), *a.* Situated above the coracoid.—**Supracoracoid foramen.** See ★*foramen.*

supracotyloid (sū-prä-kot′i-loid), *a.* Situated above the cotyloid cavity of the hip-joint. *Buck*, Med. Handbook, IV. 693.

supracranial (sū-prä̤-krā′ni-a̤l), *a.* Situated on the upper surface of the cranium.

supracricoid (sū-prä̤-krī′koid), *a.* Lying above the cricoid: applied to a small cartilaginous element in the larynx of man and homologous with the procricoid of carnivores and other animals. *Jour. Roy. Micros. Soc.*, June, 1904, p. 298.

supradiaphragmatic (sū″prä̤-dī″a̤-frag-mat′ik), *a.* Situated above the diaphragm. *Buck*, Med. Handbook, I. 109.

supradorsal, *a.* **II.** *n.* The ossification from which the neural spine is developed; the eparcuale.

supraduodenal (sū′prä̤-dū-ọ-dē′na̤l), *a.* Situated above the duodenum. *Trans. Linn. Soc.*, Zool., Oct., 1901, p. 184.

supradural (sū-prä̤-dū′ra̤l), *a.* Situated above the dura mater. *Buck*, Med. Handbook, II. 250.

supra-ethmoid (sū-prä̤-eth′moid), *n.* In *fishes*, a dermal bone overlying the ethmoidal cartilage. See *ethmoid.*

supraforaminal (sū′prä̤-fọ-ram′i-na̤l), *a.* Situated above a foramen, specifically above the foramen magnum: as, the *supraforaminal* ridge.

> The *supraforaminal* ridge is but ill-defined.
> *Proc. Zool. Soc. London*, 1903, p. 259.

supraglabellar (sū″prä̤-glạ-bel′är), *a.* In *anthrop.*, relating to that region of the skull which is situated over the glabella.

supraglacial (sū-prä̤-glā′shia̤l), *a.* Same as ★*superglacial.*

supraglenoid (sū-prä̤-glē′noid), *a.* Situated above the glenoid cavity: noting a roughened tubercle of bone to which is attached the long head of the biceps muscle.

suprahepatic (sū″prä̤-hẹ-pat′ik), *a.* Situated above or on the upper surface of the liver.

supra-infundibular (sū″prä̤-in-fun-dib′ū̦-lär), *a.* Situated above the infundibulum.—**Supra-infundibular commissure.** See ★*commissure.*

suprajugular (sū-prä̤-jö′gū̦-lär), *a.* Noting a small, splint-like bone, occurring in a few species of birds, and lying on the superior side of the maxillary in the lachrymonasal fossa. It is particularly characteristic of the cormorants and snake-birds. *Proc. Zool. Soc. London*, 1898, p. 83.

supralabial, *a.* **II.** *n.* One of the series of horny plates covering the edge of the upper lip in reptiles, such as snakes and lizards. Same as *upper labial* or *superior labial:* correlated with *infralabial.* See cut under ★*shield. Biol. Bulletin*, Nov., 1904, p. 293.

supraliminal (sū-prä̤-lim′i-na̤l), *a.* **1.** In *psychophys.*, lying above the stimulus limen or differential limen; more than just noticeable.

> Fechner's own experiments with grey glasses . . . fall in strictness under a rudimentary form of the method of *supraliminal* differences.
> *E. B. Titchener*, Exper. Psychol., II. ii. 103.

2. In *psychical research*, lying above the subliminal; pertaining to or characterized by clear or normal consciousness.

> The *supraliminal* region, as Myers calls it, the classic-academic consciousness, . . . figures in his theory as only a small segment of the psychic spectrum.
> *W. James*, in Proc. Soc. Psychical Research, May, 1901, [p. 16.

supralinear (sū-prä-lin′ē̦-är), *n.* A scale-like dermal bone attached to the outer surface of the post-temporal; the supratemporal. It probably always carries a neural tunnel. *Starks*, Synonymy of the Fish Skeleton, p. 520.

supramalleolar (sū-prä̤-mal′ē̦-ō-lär), *a.* Situated above a malleolus.

supramamma (sū-prä̤-mam′ä̤), *n.* [NL.] In *anat.*, a mamma occurring between the normal mamma and the axilla. *Amer. Anthropologist*, Jan.–March, 1902, p. 172.

supramarginal, *a.* **II.** *n.* A horny plate or scale, forming part of the covering of the carapace of a turtle, interposed between the marginals and vertebrals. Found in some extinct species.

supramastoid (sū-prä̤-mas′toid), *a.* Situated above the mastoid process of the temporal bone.—**Supramastoid crest.** See ★*crest.*

supramaximal (sū-prä̤-mak′si-ma̤l), *a.* Being above or more than the maximal (temperature).

> It may be observed in this place that death at the *supramaximal* or subminimal may be due to changes of a very definite nature; but as Vines has indicated, this means very little. To say that death at the *supramaximal* is due to the coagulation of an albuminoid as suggested by Kuehne is insufficient.
> *Science*, June 23, 1905, p. 948.

suprameatal (sū″prä̤-mē̦-ā′tal), *a.* Situated above a meatus, especially the auditory meatus.—**Suprameatal process,** a projection from the skull just above the opening of the passage leading to the internal ear.—**Suprameatal tubercle,** a small projection lying just above the opening of the ear in the skull of birds. *Proc. Zool. Soc. London*, 1899, p. 15.

supramolecular (sū″prä̤-mọ-lek′ū̦-lär), *a.* Composed of an aggregation of molecules; of greater complexity than a molecule.

supranasal, *a.* **II.** *n.* In *herpet.*, a scute or scale lying just above the nasal. It is not always present. *Proc. Zool. Soc. London*, 1903, p. 125.

supranormal (sū-prä̤-nôr′ma̤l), *a.* Same as *supernormal.*

> On this showing there is nothing "*supranormal*" in "telepathy," as it is called. *Encyc. Brit.*, XXXII. 51.

supranuclear (sū-prä̤-nū′klē̦-är), *a.* Situated over or above the nucleus of the cell: opposed to ★*infranuclear. Buck*, Med. Handbook, V. 182.

supra-occipitine (sū″prä̤-ok-sip′i-tin), *n.* In *ichth.*, same as *superoccipital. Starks*, Synonymy of the Fish Skeleton, p. 510.

supra-ocular (sū-prä̤-ok′ū̦-lär), *a.* and *n.* **I.** *a.* Situated above the eyeball.

II. *n.* One of a series of scales lying above the region of the eye in reptiles. The supraoculars cover a portion of the skull while the supraciliaries are attached to the eyelid. *Proc. Zool. Soc. London*, 1903, p. 125.

supra-optimal (sū-prä̤-op′ti-ma̤l), *a.* [*supra-optim(um)* + *-al*¹.] Of or pertaining to a supra-optimum; above the optimal.

> The response [of ciliate infusoria], on coming into a region where the temperature is above or below the optimum, is by backing and turning toward a structurally defined side, followed by a movement forward. This reaction is repeated as long as an effective *supraoptimal* or suboptimal temperature continues.
> *Science*, Dec. 2, 1904, p. 751.

supra-optimum (sū-prä̤-op′ti-mum), *n.* [L. *supra*, above, + *optimum* (neut. sing.), best.] In *biol.*, a higher temperature than that which is best suited for an organism or a developing egg or seed. See *optimum.*

supra-oral (sū-prä̤-ō′ra̤l), *a.* In *ichth.*, situated just above the mouth, as a barbel.

Supra-orbital fontanelle. See ★*fontanelle.*—**Supra-orbital groove,** a semicircular depression on the superior face of the skull, above the eye, and containing a large oil gland. It is eminently characteristic of diving birds, though lacking in such forms as the cormorants, which have no external nostrils.—**Supra-orbital ledge,** in *ornith.*, the thin, overhanging portion of the cranium, just above the eye. It is well developed in the gulls.—**Supra-orbital ridge.** Same as *superciliary ridge* (which see, under *superciliary*).

suprapontile (sū-prä-pon′til), *a.* Situated above the pons Varolii.

suprapygal, *a.* **II.** *n.* A horny plate, found in some turtles, lying between the pygal, or terminal plate, and the neurals. *Annals and Mag. Nat. Hist.*, Jan., 1903, p. 116.

supraquantivalence (sū″prä̤-kwon-tiv′a̤-le̤ns), *n.* Preponderance; over-equivalence.

> Thus occupation is very especially suited to produce a *supraquantivalence* of certain ideas, but at the same time their affective color is expressed, in that momentarily the person's preponderating interest is turned to his occupation. *Alien. and Neurol.*, Feb., 1903, p. 50.

supraquantivalent (sū″prä̤-kwon-tiv′a̤-le̤nt), *a.* Preponderating; more than equivalent.

> We had previously considered as the basis of the *supraquantivalent* idea the frequent repetition, possibly intentional practice of definite trains of thought, a process, which must be recognized as of the greatest influence in the education of an individual, for which of late the apt expression of preparing the way has been employed.
> *Alien. and Neurol.*, Feb., 1903, p. 50.

Suprarenal extract, a preparation made from the suprarenal gland of the sheep or other animal, employed to control bleeding and to arrest abnormal secretion from the mucous membranes. See ★*adrenal extract.*

suprarenalin (sū-prä̤-ren′a̤-lin), *n.* [L. *supra*, above, + *renalis*, renal, + *-in*².] A trade-name for a preparation of the active principle of the adrenal glands. See ★*adrenalin* and ★*epinephrin.*

suprarenin (sū-prä̤-rē′nin), *n.* Same as ★*suprarenalin.*

suprascapular, *a.* **II.** *n.* Same as *post-temporal.*

suprascript (sū′prä̤-skript), *a.* [L. *supra*, above, + *script(um)*, pp. of *scribere*, write.] Superscript: written or printed on a line over another (word or letter): as, a *suprascript* letter.

suprasensual (sū-prä̤-sen′ṣū̦-al), *a.* [L. *supra*, above, + E. *sensual.*] **1.** Above or inaccessible to the physical senses. *F. Ratzel* (trans.), The History of Mankind, I. 41.—**2.** Extremely sensual. [Rare.]

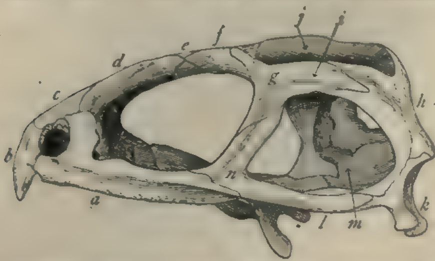
suprasensuous (sū-prä̤-sen′ṣū̦-us), *a.* Same as ★*suprasensual.*

Supraspinal vessel. See ★*vessel.*

suprasylvian (sū-prä-sil′vi-a̤n), *a.* and *n.* **I.** *a.* Situated above the Sylvian fissure.—**Suprasylvian fissure.** See ★*fissure.*

II. *n.* A suprasylvian process.—**Posterior suprasylvian.** Same as ★*postsylvian.*

supratemporal¹, *n.* **2.** A small neuromastic or dermal bone attached to the outer surface of the post-temporal in fishes. *Starks*, Synonymy of the Fish Skeleton, p. 520.—**3.** A bone of the cranium, lying back of the orbit, present in anomodont reptiles. Also called *prosquamosal*.—**Supratemporal arch**, the uppermost of the two bony arches, formed by the squamosal and postorbital, present in such a skull as that of *Hatteria* and some extinct reptiles. Its presence is the main character of the subclass *Diapsida*.—**Supratemporal fenestra, vacuity,** or **fossa**, the superior of the two openings present in such a skull as that of *Hatteria*. Correlated with *laterotemporal* or *infratemporal*.



Cranium of *Hatteria* (*Sphenodon punctatum*), showing the two temporal arches and two temporal fossæ.

(Drawn from the cranium of an old animal in which the teeth have become firmly united with the maxillary and then worn away.)

a, maxillary; *b*, premaxillary; *c*, nasal; *d*, prefrontal; *e*, frontal; *f*, postfrontal; *g*, postorbital; *h*, squamosal; *i*, supratemporal arch; *j*, supratemporal fossa; *k*, quadrate; *l*, laterotemporal or infratemporal arch; *m*, laterotemporal or infratemporal fossa; *n*, jugal.

supratemporal² (sū-prạ̈-tem′pọ-rạl), *a.* Above and exceeding earthly or temporal things; eternal.

supratonsillar (sū-prạ̈-ton′si-lạ̈r), *a.* Situated above the tonsil.

supratriangular (sū″prạ̈-trī-ang′gụ̄-lạ̈r), *a.* Situated above the triangular cell of a dragonfly's wing. *Proc. Zool. Soc. London*, 1902, p. 70.

Supratrochlear foramen. See ★*foramen*.

supraturbinal (sū-prạ̈-tėr′bi-nạl), *n.* The superior turbinate body.

supra-umbilical (sū″prạ̈-um-bil′i-kạl), *a.* Situated above the umbilicus.

supraxiphoid (sū-prạ̈-zī′foid), *a.* Lying above the xiphoid process.

Supt. An abbreviation of *superintendent*.

surahi (sö-rä′hē), *n.* [Also *surahe*; Pers. *ṣarāḥī*.] A Persian wine-bottle or carafe, usually of porcelain or pottery. *Marquand Cat.*, 1903.

suralimentation (sėr-al″i-men-tā′shọn), *n.* [F. **suralimentation*.] Same as ★*superalimentation*. *Med. Record*, July 11, 1903, p. 58.

suranal, *n.* **2.** A plate in the test of some echinoids, such as *Salenia*, lying in front of the anus.

surangular, *a.* **II.** *n.* A bone which takes part in the formation of each ramus of the lower jaw, lying on the outer side of the upper, posterior part of the jaw. It is found in vertebrates below mammals. *Amer. Nat.*, Feb., 1905, p. 61.

suranji (sö-rän′ji), *n.* [E. Ind.?] Same as ★*morindin*.

surcharge, *v. t.* **4.** To print or write officially a surcharge on the face of (a postage-stamp). See ★*surcharge, n.*, 6.

> I found the Major seated in a small room of the National Bank sorting out from a huge collection the stamps which were to be *surcharged*. For three hours I watched him, as with wonderful skill and discrimination he picked out bits of paper which were obsolete and which an accidental *surcharging* would have made of untold value, and set the whole world of collectors into a palpitating hysteria of speculation. *War's Brighter Side*, p. 436.

surcharge, *n.* **6.** Something, as a new valuation or status, officially printed on the face of a postage-stamp.

surd. I. *a.* **3.** (*b*) Containing or involving a surd: thus $[1 + (3)^{\frac{1}{2}}]^{\frac{1}{2}}$ is a surd expression but not a surd, since $1 + (3)^{\frac{1}{2}}$ is not a rational expression.

II. *n.* **1.** In *math.*: (*b*) An indicated root whose value is irrational, but whose radicand is rational, as $(2)^{\frac{1}{2}}$. A surd is *quadratic*, *cubic*, *of order n*, according as its exponent is $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{n}$.—**Similar surds**, those which are, or are reducible to, surds of the same order with their radicands exactly alike.

surdent (sėr′dent), *n.* [F. *surdent*, < *sur-* (< L. *super*), over, + *dent* (< L. *dens*), tooth.] A supernumerary tooth; one of the milk-teeth remaining after the appearance of the permanent teeth.

surdimutism (sėr-di-mū′tizm), *n.* [L. *surdus*, deaf, + *mutus*, mute, + *-ism*.] Same as *deaf-mutism*.

surdism (sėr′dizm), *n.* [L. *surdus*, deaf, + *-ism*.] Deafness in a child, of such a degree that he will probably be dumb.

surety, *n.*—**Surety for good behavior**, a pledge against future transgression of the law given with sureties by a petty offender to a magistrate.

surexcitation (sėr″ek-si-tā′shọn), *n.* [F. *surexcitation*, < L. *super*, over, + *excitare*, excite.] Excitation to an extreme degree; overexcitation.

> A *sur-excitation* of the imagination.
> *W. J. Sollas*, in Nature, Sept. 13, 1900, p. 484.

Surf barrier. See ★*barrier*.

surface, *n.*—**Acyclic surface.** See ★*acyclic*.—**Bifacial surface**, a surface with two sides or faces not running into one another, as contradistinguished from a *unifacial surface*, such as is produced by pasting together the two ends of a ribbon after a half-turn, so that from what was one side one now passes continuously to what was the other face without going over an edge.—**Bistellated surface**, a surface all the tangent planes of which pass through one or the other of two fixed points, as the surface of a cube.—**Caustic surface.** See ★*caustic*.—**Characteristic of a surface.** See ★*characteristic*.—**Clifford's surface** (unbounded, of finite extent and zero curvature), the locus of points at a constant distance from a given axis in simple elliptic Riemannian space.—**Connected surface**, a surface any two of the points of which can be joined by a continuous line which nowhere leaves the surface.—**Cuspidal point of a surface.** Same as *pinch point* (which see, under *pinch*).—**Cyclic surface.** (*b*) A surface upon which closed curves can be drawn that cannot contract to a point without leaving the surface.—**Doubly ruled surface**, in *geom.*, the ruled quadric surface.—**Energy surface.** See ★*energy*.—**Equidistantial surface.** See ★*equidistantial*.—**Homaloidal surface.** Same as *unicursal* ★*surface*. *Sylvester*.—**Index of a surface.** See ★*index*.—**Inextensible surface.** See *inextensible*.—**Isodynamic surface**, a curved surface imagined within a field of force connecting all points at which an equal force is exerted, but without regard to its direction of action.—**Möbius's surface**, an open, one-faced surface with only one edge: formed from a paper rectangle, ABCD, sufficiently long, the longer sides being AC, BD, by pasting the edge CD, after a half twist about the join of the mid-points of the sides AB, CD, so to the edge AB, that the point D coincides with A, and C with B.—**Monadelphic surface**, a simply connected surface.—**Multiply connected surface**, a surface not simply connected.—**Normal Riemann surface**, a Riemann surface stretched into the form of a sphere with handles.—**Octic surface**, a surface of the eighth degree or order.—**Osculating surface.** A surface whose equation contains *n* arbitrary parameters is said to osculate a given curve at a point, if it has there a contact of the highest order compatible with the number of arbitrary parameters. This order is at least $(n - 1)$.—**Polar reciprocal of a surface.** See ★*reciprocal*.—**Polar reciprocal surface.** Same as *polar surface* (which see, under *polar*).—**Rational surface**, a surface which can be brought into a one-to-one correspondence with a plane.—**Reflective surface**, in *phys.*, a surface, at which, on account of the difference in the indexes of refraction of the two media which it separates, reflection of light occurs.—**Surface-contact system**, a system of electric traction in which the current is transmitted to the cars through conductors on the surface of the roadway, sometimes through the rails themselves. In nearly all such systems the surface conductors are in short insulated sections and only that portion of the line which is immediately beneath the car is in circuit. Contact is automatically made with a set of concealed conductors under the surface as the car approaches and is automatically broken as the car leaves each section.—**Surface of symmetry**, in *geom.*, a surface with regard to which a figure is symmetrical.—**Topically ordinary surface.** See ★*ordinary*.—**Twist surface**, a surface on which the placing of a slender rod along the line of a plane section not only bends but twists the rod.—**Unicursal surface**, a surface of deficiency zero, the coördinates of whose points are expressible by rational functions of two parameters. Also called *homaloidal surface*. *Cayley*.—**Unifacial surface**, a surface on which it is possible to pass from one ray of a normal to the surface to the other ray without going through the surface or crossing its boundary. See *Möbius's* ★*surface*.—**Unilateral surface.** Same as *unifacial* ★*surface*.—**Warped surface**, a surface which may be generated by a straight line so moving that its consecutive positions are not coplanar.—**Weddle's quartic surface**, the locus of a seventh point through which pass quadric surfaces through six given points, when the eighth point through which these then must pass coincides with the seventh.

surface-beetle (sėr′fạ̄s-bē″tl), *n.* Any beetle of the family *Gyrinidæ*; a whirligig beetle.

surface-blow (sėr′fạ̄s-blō), *n.* A device in a steam-boiler or other inclosed vessel in which liquids are boiled under pressure, to enable the liquid to be blown off from the vessel at the surface where ebullition occurs. In steam-boilers which evaporate waters containing magnesia salts in solution, the chemical reactions under heat separate the base in the form of a hydrate which floats as a scum at or near the surface. To blow the water from the boiler from the bottom would not remove this floating material; oil from the lubrication of cylinders coming back to the boiler from the condensers and hot-well also floats, and should be blown to waste. The surface-blow is usually a pipe from the top or side of the shell, ending inside in a trumpet-shaped mouthpiece, and leading outward through the shell to drainage connections. By opening a valve in this pipe, the outrush into the mouthpiece entrains the surface water and any floating material. The trumpet shape enables the water to fall some inches in the boiler before the pipe is above the lowered water-line. Sometimes two or more such connections are used at different points of the length of the boiler. *Thurston*, Manual of Steam-Boilers, p. 446.

surface-bug (sėr′fạ̄s-bug), *n.* Any of the aquatic heteropterous insects found commonly on the surface of the water: applicable to the *Corixidæ*, *Notonectidæ*, *Nepidæ*, *Hydrometridæ*, and *Hydrobatidæ*.

surface-color, *n.* **2.** Color of bodies due to selective reflection. The ordinary colors of bodies are due to selective absorption, the light penetrating below the surface and being reflected from the interior. Light reflected from the surface is usually similar to the incident light; but in certain cases where the selective absorption is very marked there is great increase in the index of refraction for wave-lengths in the absorption-band and consequent increase in the reflecting power for these wave-lengths, and the body exhibits surface-color due to the preponderance of the rays thus strongly reflected. See ★*optical properties of metals*. *W. Watson*, Text-book of Physics, p. 564.

surface-fermentation (sėr′fạ̄s-fėr-men-tā″shọn), *n.* In *brewing*, the active fermentation, at a temperature of about 55° to 65° F., induced by the use of surface yeast. In it the greater part of the alcohol is produced, new yeast-cells are formed, and there is a rise of temperature, which must not be allowed to go too far. It is followed by the slower after-fermentation.

surface-flow (sėr′fạ̄s-flō), *n.* See ★*sheet*¹, 8.

surface-grinder (sėr′fạ̄s-grīn″dėr), *n.* A machine for producing truly plane surfaces by grinding. The piece is held firmly on a table or carriage moving on true-surface ways, and is passed back and forth under a rapidly revolving emery-wheel or other grinder. The truth of the ways on which the table moves is reproduced on the ground surface, in spite of varying hardness of the surface ground.

surface-planer (sėr′fạ̄s-plā″nėr), *n.* See *surface-plane*.

surface-plate (sėr′fạ̄s-plāt), *n.* A flat plate used by mechanics to test a surface which it is desired to make a true plane or perfectly flat.

surfacer, *n.* **2.** A rubbing- or polishing-machine used to finish the surface of a mosaic floor. It consists of a heavy horizontal disk, or rubber, supported upon a vertical shaft and operated by a small electric motor. The machine is mounted on a carriage, having rubber-tired wheels to prevent injury to the floor, and is fitted with a sand-box and water-tank, and with pipes for delivering the sand and water to the work. The machine is drawn over the floor by the operator.

3. One who produces a surface either truly plane or merely finished with a surfacing-machine.

surface-traction (sėr′fạ̄s-trak″shọn), *n.* **1.** Traction, as of street-railway cars, upon the surface of the ground: distinguished from *underground* traction.—**2.** In *math.*, the resultant, for any part of a surface bounding a portion of a body, of the stresses exerted on that portion by other portions of the body, or by portions of other bodies, in contact with it over the part of the surface.

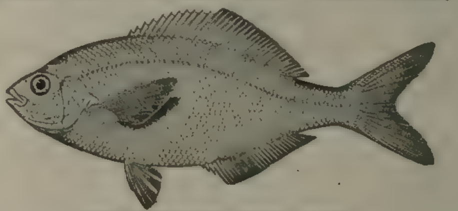
surfacing (sėr′fā-sing), *n.* **1.** In *mining*, the act of washing the 'dirt' on the surface of the ground for gold; gold-digging on the surface.

> I've been *surfacing* this good while, but quartz-reefin's the payinest game, now.
> *Mrs. Meredith*, Over the Straits, iv.

2. Wash-dirt or surface soil in which gold is supposed to be.

> They have been mopping up some rich *surfacing*.
> *Rolf Boldrewood*, Miner's Right, xv.

surf-fish, *n.*—**Common surf-fish**, *Embiotoca jacksoni*, a fish of the family *Embiotocidæ*, found from Vancouver Island to Todos Santos Bay.—**Striped surf-fish**, a name applied to *Tæniotoca lateralis*, a fish belonging to the family *Embiotocidæ*, found from Vancouver Island to San Diego.—**Wall-eyed surf-fish**, *Hyperprosopon argenteus*, a fish of the family *Embiotocidæ*, found on the Pacific coast of the United States.—**White surf-fish**, *Phanerodon furcatus*, an embiotocoid fish found on the coast of California.



White Surf-fish (*Phanerodon furcatus*).
(From Bulletin 47, U. S. Nat. Museum.)

surficial (sėr-fish′ạl), *a.* [*surface*, with form made to agree with *superficial*.] Of or pertaining to a surface; superficial; in *geol.*, relating to the phenomena of the land-surface, especially to the unconsolidated materials (drift, rock-waste) of the land-surface.

The term physiography, as generally applied in geological studies, has become associated with and is inclusive of glacial geology; and from the character of the

formations studied is sometimes referred to as superficial or *surficial* geology. The alternative use of the latter terms calls attention, also, to the fact that the field of its inquiries has not been generally regarded as extending deep into the earth's crust.
W. H. Hobbs, in Science, Oct. 23, 1903, p. 538.

The outflow from fissures may take place at any height on the mountain, and also beneath the sea level. If at the latter, the eruptions are submarine; if at the former, *surficial*, that is, subaerial.
J. D. Dana, Manual of Geol. (4th ed.), p. 272.

surficially (sėr-fish′al̤-i), *adv.* In a surficial manner. *J. D. Dana*, Manual of Geol. (4th ed.), p. 806.

surfit, *n.* and *v.* A simplified spelling of *surfeit*.

surf-perch (sėrf′pėrch), *n.* Same as *surf-fish*.

surfuse (sėr-fūz′), *v. t.*; pret. and pp. *surfused*, ppr. *surfusing*. In *phys.*, same as ⋆*superfuse*, 2.

surg. An abbreviation (*a*) of *surgeon*; (*b*) of *surgery*; (*c*) of *surgical*.

surge, *v.* **I.** *intrans.* **4.** In *elect.*, to oscillate violently: said of oscillatory rushes of current. *Trans. Amer. Inst. Elect. Engin.*, 1901, p. 746.

II. *trans.* To cause to rise and swell forth with a billowy motion.

Great organs *surged* through arches dim
Their jubilant floods in praise of him.
Lowell, A Parable, st. 4.

surge, *n.* **6.** In *elect.*, a sudden rush of current; specifically, the violent oscillations which may occur in alternating-current circuits when the conditions for resonance are fulfilled, or which may be set up in conductors by the inductive action of lightning.

surgeon, *n.*—**Blue surgeon**, *Teuthis cæruleus*, a fish of the West Indian fauna.—**Common surgeon**, *Teuthis hepatus*, a fish found from Florida to Bahia.—**Contract surgeon**, a surgeon without military rank, engaged to assist for a time in the medical department.

surgeon-major (sėr′jon̤-mā′jor̤), *n.* The senior surgeon in a regiment of the household troops of Great Britain.

surgery, *n.*—**Aseptic surgery**, surgery practised under conditions which prevent the admission of the micro-organisms of inflammation to the wound: distinguished from *antiseptic surgery*, in which germicides are used to destroy the micro-organisms already present.—**Bureau of Medicine and Surgery.** See ⋆*bureau*.—**Dental surgery**, operative dentistry.—**Major surgery**, the performance of capital operations (those requiring great skill or involving danger to life) and the treatment of very severe injuries.—**Minor surgery**, the performance of simple operations, bandaging, and other surgical procedures in the treatment of slight injuries or diseases that do not threaten life.—**Operative surgery**, the resort to cutting operations in the treatment of disease, as opposed to the use of mechanical devices, bandaging, or local applications of medicinal substances.—**Orificial surgery**, a system of surgical practice based on the assumption that many morbid states are due to reflexes originating at one of the orifices of the body, especially the anus.

Surg.-Gen. An abbreviation of *surgeon-general*.

surging, *n.* **2.** (*b*) The condition of resonance: applied to (1) electric circuits when capacity, inductance, and frequency are so related to one another that the capacity reactance neutralizes the inductive reactance and high currents may flow at destructive voltages; (2) synchronous apparatus when the electrical constants and the mechanical momentum are so related as to cause an oscillation of high amplitude and thereby an unsteady operation; (3) steam-engines when the periods of the swing of the governors are equal and the engines alternately take up and drop the load, thereby causing unsteadiness of operation of the electric machines driven by the engines. Also called *hunting*, *pumping*, and *resonance*.—**Surging of the atmosphere**, in *meteor.*, the general movement of the continental and oceanic subpermanent areas of high and low pressure to and fro about their mean positions. Such motions occupy several days, or even weeks, and determine the seasonal changes as well as the shorter periods of the weather.

Surinam cherry. (*b*) See ⋆*cherry*¹.

surinamine (sö-ri-näm′in), *n.* [*Surinam* + *-ine*².] Same as *ratanhine*.

surmise, *n.* **3.** (*a*) In *old Eng. law*, a suggestion. See *suggestion*, 5. (*b*) In *eccles. law*, an allegation in a libel.

suroxid (sėr-ok′sid), *n.* Same as ⋆*superoxid* or *peroxid*. [Rare.]

suroxidate (sėr-ok′si-dāt), *v. t.*; pret. and pp. *suroxidated*, ppr. *suroxidating*. In *chem.*, to superoxygenate or peroxidize. [Rare.]

surplus, *n.*—**Social surplus**, that part of the annual produce of nations which is in excess of requirements for maintaining the established plane of living, and may therefore be consumed in furthering progress. *Patten*, Heredity and Social Progress, p. 1.

surrender, *n.*—**Surrender of preference**, the turning into the general bankrupt estate of any assets one has received as a preferred creditor, for when the preference is voidable the creditor cannot otherwise prove his claim and share in the estate.

surrogate, *n.* **3.** Something that is substituted for another thing; something employed to serve the purpose or perform the functions of another.

It thus often happens that incomplete forms of money exist, which give the public much difficulty to classify and define. The expressions 'substitutes for money,' or '*surrogates*,' or 'representative money,' have arisen which depend for exactness upon the primary meaning assigned to the money on which they depend. The very functions of money need careful limitation.
Pop. Sci. Mo., July, 1905, p. 210.

4. Specifically, a substance used in industrial chemistry instead of some other of more or less similar properties and usually of greater value. Thus the product of the action of sulphur on colza-oil is sometimes used as a 'rubber surrogate' to mix with genuine vulcanized india-rubber.

The stearin left on the cloths in the filter press when the oil is refined is used for making butter and lard *surrogates* and candles.
U. S. Dept. Agr., The Cotton Plant, Bulletin, 1896, p. 372.

sursaturation (sėr″sat̤-ṳ̄-rā′shon̤), *n.* [F. *sursaturation*, < L. *super*, over, + *saturatio*(*n-*), saturation.] The condition of supersaturation in which a volume of gas or of space contains more vapor than is needed for complete saturation at the given temperature; a condition of unstable equilibrium as to the vapor tension.

sursum corda (sėr′sum kôr′dạ̈). [L., lit. "[lift] up [your] hearts."] In the *Rom. Cath. Ch.*, an invocation to the congregation by the priest in the mass just before the preface.

sursumduction (sėr-sum-duk′shon̤), *n.* [L. *sursum*, upward, + *ductio*(*n-*), drawing.] Upward movement of the eyeball. *Med. Record*, April 18, 1903, p. 610.

sursumversion (sėr-sum-vėr′shon̤), *n.* [L. *sursum*, upward, + *versio*(*n-*), version.] Same as ⋆*sursumduction*.

surtarbrand, *n.* See *surturbrand*. *Geog. Jour.* (R. G. S.), XIII. 488.

surtax, *n.* **2.** An additional or too great burden or strain, as on the nerves or other physical organs.

surv. An abbreviation (*a*) of *surveying* or *surveyor*; (*b*) of *surviving*.

survey, *n.*—**Biological survey.** See ⋆*biological*.—**Board of survey**, *naut.*, two or more officers appointed to survey property in order to ascertain its condition, and the cause, nature, and extent of damage. Should a merchant vessel put into port in a damaged condition, her master notifies the port authorities, and also his consul, if in a foreign port, and after noting a protest calls for an examination of his vessel and cargo in order that the damages may be appraised—this being known as a *survey*. Two shipmasters, or two other experienced men, are named to examine the hull, rigging, and hatches; and if the cargo is found in a damaged condition, two merchants familiar with the character of the cargo are named to examine it and to file a report as to whether it had been properly stowed and dunnaged. Should the vessel in question be a steamer, and the damage done affect only the boilers or machinery, the board of survey consists of at least a shipmaster and an engineer.—**Chained survey.** Same as *chain* ⋆*survey*.—**Chain survey**, a survey in which the linear measurements are made with a surveyor's chain.—**Coast survey.** (*a*) A hydrographic survey of a coast. (*b*) [*caps.*] The former name of the United States governmental bureau having charge of the national hydrographic and geodetic work. Now officially called the *United States Coast and Geodetic Survey*.—**Geological survey**, the investigation and description, usually with geological maps and sections, of a particular district, state, or country. The survey may be under private auspices or, as is usual, under a state or national government. As special branches of the government, surveys of this character are supported by nearly all the civilized nations, and are the most efficient and reliable means of acquainting the people with their mineral resources.—**Log-survey**, in hydrographic surveying, a survey in which the linear distances are determined by observing the interval of time in passing over the line to be measured by a boat or steamer whose speed is determined by log observations. *Geog. Jour.* (R. G. S.), X. 627.—**Running survey**, a continuous survey along a line, stream, or narrow strip of territory, made progressively while traveling or passing along a route or trip: usually also a rapid, and hence approximate, survey. *Geog. Jour.* (R. G. S.), XV. 202.—**Sanitary survey**, inspection of a region with a view to determine its sanitary condition and the presence or absence of factors influencing for good or ill the health of its inhabitants.

Epidemiology, bacteriology, sanitary chemistry and hydraulic engineering are called to assist in the solution of this problem, in conjunction with those physical data usually called a "*sanitary survey*."
Jour. Franklin Inst., Aug., 1905, p. 83.

Survey of a vessel. See *board of* ⋆*survey*.

surveying, *n.*—**Photographic surveying**, a method of surveying, particularly topographical surveying, in which the field data are secured or supplemented by measurements from one or more photographs of the same objects or series of points to be surveyed.

surveyor, *n.* **7.** A common name in Australia for a fish, *Serranus geometricus*.—**8.** Formerly an architect. [Eng.]

Among the four hundred persons and personages who composed the Prince's train, was a "*surveyor*" or, as we should say, an architect, named Inigo Jones.
W. J. Loftie, in Portfolio, N. S., XVI. 24.

Surveyors' compass, a surveying instrument mounted on a staff or tripod, in which sights or a telescope enable a line to be run at a desired angle with the magnetic meridian as given by a compass needle.

Surv.-Gen. An abbreviation of *surveyor-general*.

survivorship, *n.* **2.** (*b*) The probability that where several persons perished at practically the same time, as, by the same accident, one briefly outlived the others. This inference was based on medical science and, until recently, upon it was decided the disposition of rights or property affected. The rule of law now followed is that that person survives in whom the ownership vested at the time. A counterclaim must be proved. *Med. Record*, Feb. 28, 1903, p. 328.

susceptance (su-sep′tạns), *n.* In *elect.*, in alternating-current circuits, the wattless component of admittance defined as the ratio of the wattless current divided by the electromotive force. See ⋆*admittance*, 6.

susceptibility, *n.* **4.** In *med.*, an unusual predisposition toward infection or the attacks of infectious disease.

Susceptibility is very nearly allied to predisposition; it may perhaps be defined as acquired predisposition.
Lancet, April 4, 1903, p. 945.

5. In *elect.*, the ratio of the magnetization produced in a specimen of iron, or other material, to the magnetizing force.

The relation of the magnetization I to the magnetizing force H, and the ratio of I to H, which is called the *susceptibility* (*k*) of the material. *Encyc. Brit.*, XXVIII. 116.

suspender, *n.* **4.** In *Scotch law*, he who secures a suspension (which see).

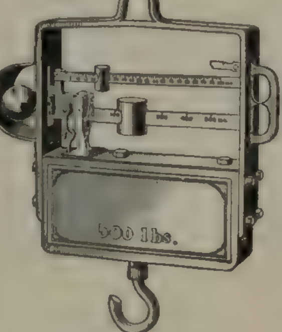
suspension, *n.* **7.** A fluid, containing bacteria or other cells, distributed in a more or less even manner.—**Eddying suspension**, suspension in the swirls or eddies of a stream of liquid.

Held floating for a time in *eddying suspension* and finally deposited. *Geog. Jour.* (R. G. S.), XVIII. 193.

suspension-link (sus-pen′shon̤-lingk), *n.* Same as ⋆*suspension-rod*.

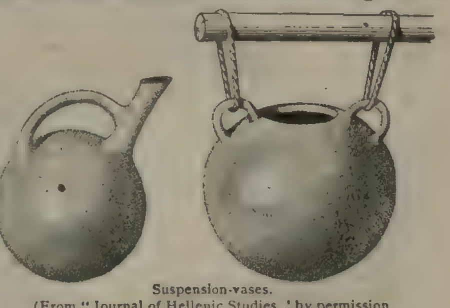
suspension-rod (sus-pen′shon̤-rod), *n.* A rod by which the weight of any fixed or movable mass is supported. Specifically: (*a*) One of the rods by which the floor or stiffening truss of a suspension-bridge is hung upon the supporting cables. (*b*) One of the rods by which the weights which close the valves of a Corliss steam-engine are connected to the arms on the valve-stems. (*c*) The link by which the weight of the slotted link is carried in the Stephenson link-motion valve-gear.

suspension-scales (sus-pen′shon̤-skālz), *n. pl.* Scales designed to be suspended from a traveling crane and used in weighing the load on the crane. They are very strong and massive and adapted to lifting and, at the same time weighing, heavy castings, machines, anchors, beams, and other parts of steel ships or buildings. They range in capacity from 500 to 40,000 pounds.



Suspension-scales.

suspension-vase (sus-pen′shon̤-vās), *n.* A vase with one or two handles so arranged that it may be hung without spilling its contents. Vases of this type are frequently found in Mycenæan excavations.



Suspension-vases.
(From "Journal of Hellenic Studies" by permission of the Council.

Suspensory bandage. (*b*) A bandage used to support any dependent part.—**Suspensory bones.** See ★*bone*1.—**Suspensory pharyngeal**, a small bone at the upper, inner end of the united branchial arches of a fish, from which run ligaments that connect the gill-arches with the cranium.

sussexite (sus′eks-īt), *n.* [*Sussex*, a county in New Jersey, + *-ite*2.] A hydrous borate of manganese, magnesium, and zinc (H(Mn,Zn,-Mg BO_4) occurring in white fibrous forms at Franklin Furnace, Sussex county, New Jersey.

sussultatory (su-sul′ta-tō̤-ri), *a.* [It. *sussultorio*, heaving, < L. *subsultare*, leap.] Exhibiting an up-and-down vibration of long amplitude, which causes a jumping movement: descriptive of a variety of earthquake shock.

Sustained working. See ★*working.*

sustainer, *n.* **2.** In *candle-making*, a little disk, usually of tin-plate or plaster of Paris, which serves to support in an upright position the wick of a night-light, and prevents its falling over when the light has nearly burned out.

Sustentacular cells. See ★*cell.*

sustoxin (sus-tok′sin), *n.* [Irreg. < L. *sus*, hog, + E. *toxin*.] A poisonous substance produced by the hog-cholera bacillus.

sutherly, suthern. Simplified spellings of *southerly, southern.*

suthron, *a.* and *n.* A simplified spelling of *southron.*

Sutton and Gull's disease. Same as *arteriosclerosis.*

suture, *n.*—**Circular suture**, a suture applied to the entire circumference of a divided organ, especially in the case of a divided intestine. *Stand. Dict.*—**Connell suture**, a form of suture for uniting two cut ends of intestine. The thread passes through all the coats of the gut and is tied in such a way that the knot lies within the lumen of the intestine.—**Czerny-Lembert suture**, a suture used for uniting the divided ends of the bowel after intestinal resection, made by stitching the serous coats of the two sections and then the mucous coats.—**Czerny suture**, a suture for uniting the divided ends of the bowel after an intestinal resection, made by passing the needle through the mucous coat only.—**Harelip suture**, a method of keeping the edges of a wound in apposition. A pin is passed through both lips of the wound, perpendicularly to the line of division, and then a thread is passed in figure-of-eight form over the free ends of the pin.—**Interrupted suture** or **stitches**, a suture in which each loop or stitch is tied separately, the thread not being continuous.—**Lembert suture**, a suture for closing a wound in the intestine. It is made by passing the needle in and out through the peritoneal and muscular coats of the bowel in a direction transverse to the long axis of the wound, across the wound, and then again in and out through the outer coats of the bowel, avoiding in all cases puncture of the mucous membrane.—**Nasopremaxillary suture.** See ★*nasopremaxillary.*—**Purse-string suture**, a suture passed in and out as a running stitch around the edge of a circular wound or opening. When passed, the two ends are drawn tight, closing the opening.—**Spheno-occipital suture**, the division between the basisphenoid and basioccipital bones. The condition of this suture, whether open or closed, is of considerable importance in determining whether a mammalian skull is adult or immature.

suturiform (sū-tṳ̄′ri-fôrm), *a.* [L. *sutura*, suture, + *forma*, form.] Resembling a suture. *Proc. Zool. Soc. London*, 1901, p. 227.

Suvio burner, Suvio heater. See ★*burner.*

s. v. An abbreviation (*b*) of the Latin *sub verbo*, under the word; (*c*) of the Latin *spiritus vini* or *vinosus*, spirit of wine; (*d*) [*caps.*] of the Latin *Sancta Virgo*, Holy Virgin; (*e*) [*caps.*] of the Latin *Sanctitas Vestra*, your Holiness; (*f*) [*caps.*] of *Sons of Veterans.*

svabite (sväb′īt), *n.* [Sw. *Svabit* (1891), named after A. von *Svab*.] A calcium arseniate from Sweden, analogous in composition to the calcium phosphate apatite, occurring in massive forms, also, rarely, in minute hexagonal prisms.

svastika, *n.* See *swastika.*

s. v. r. An abbreviation of the New Latin *spiritus vini rectificatus*, rectified spirit of wine.

s. v. t. An abbreviation of the Latin *spiritus vini tenuior*, proof-spirit.

S. W. An abbreviation (*a*) of *senior warden*; (*b*) of *southwest* or *southwestern*, specifically of *Southwestern Postal District*, London

Swab. An abbreviation of *Swabia* or *Swabian.*

swag, *v. i.* **3.** To tramp about in search of work, carrying one's swag. See *swagman*, 2. [Australia.]

> There was the solitary pedestrian, with the whole of his supplies, consisting of a blanket and other necessary articles, strapped across his shoulders — this load is called the '*swag*,' and the mode of travelling 'swagging it.'
> *T. McCombie*, Australian Sketches, p. 5, quoted in E.
> [E. Morris, Austral English.

swag-belly, *n.* **2.** The presence of a solid abdominal tumor.

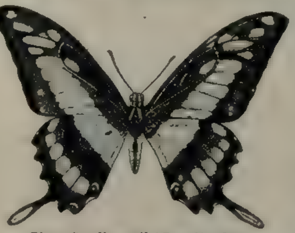
swaggie (swag′i), *n.* Same as *swagman*, 2.

swagsman (swagz′ma̤n), *n.*; pl. *swagsmen* (-men). Same as *swagman*, 2.

swallow2, *n.*—**Window swallow**, an English name for the common house-martin, *Chelidon urbica*, formerly much used.

swallow-fly (swol′ō-flī), *n.* Any one of several species of *Hippoboscidæ* which infest swallows, as *Stenopteryx hirundinis.*

swallowtail, *n.*—**Black swallowtail**, a large American papilionid butterfly, *Papilio polyxenes*, of wide distribution, whose larva feeds on the parsnip, caraway, and other umbelliferous plants. See ★*parsnip-butterfly.*—**Blue swallowtail**, an American papilionid butterfly, *Laertias philenor*, which has blackish-brown fore wings and hind wings with a bluish or greenish luster. It is widely distributed in the United States, and its larva feeds on black bindweed, Dutchman's-pipe, and Virginia snakeroot.—**Giant swallowtail**, *Papilio thoas*, a large black-and-yellow butterfly found in the southern United States, West Indies, and Central America. Its larvæ, known to the Florida orange-growers as *orange-dogs*, feed on the leaves of citrus-plants, prickly-ash, Lombardy poplar, and rue.—**Green-clouded swallowtail**, an American papilionid butterfly, *Papilio troilus*, which occurs in the Atlantic States and the Northwest Territories. Its larvæ feed on sassafras, spice-bush, and other plants.—**Zebra swallowtail**, a butterfly, *Iphiclides ajax*, a not uncommon species, greenish white with black bands, found in the Atlantic States.



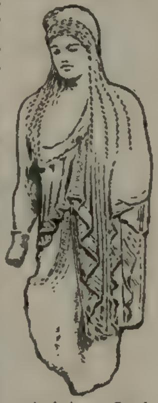
Giant Swallowtail (*Papilio thoas*).

swallow-tailed, *a.* **4.** In Greek female costume of the archaic period, noting the arrangement of the chiton or under garment, the plaits of which are so arranged that they fall in masses which resemble swallows' tails.

swamp1, *n.*—**Black-gum swamp, dark swamp.** See ★*black-gum.*—**Juniper swamp, light swamp.** See ★*juniper-swamp.*—**Swamp bay** (or **red bay**), **marl.** See ★*bay*1, ★*marl*1.—**Swamp sugar-pear.** Same as *grape-★pear* (*b*).

swamp1, *v. t.* **5.** In *lumbering*, to clear (the ground) of underbrush, fallen trees, and other obstructions preparatory to constructing a logging-road or opening out a gutter-road.—**To swamp it.** See the extract.

> Making a logging-road in the Maine woods is called "*swamping*" *it*, and they who do the work are called "swampers." I now perceived the fitness of the term. This was the most perfectly swamped of all the roads I ever saw.
> *Thoreau*, The Allegash and East Branch, in The Maine
> [Woods, p. 242.



Archaic Greek drapery. showing swallow-tailed arrangement.

swamp-cheeses (swomp′chēz″ez), *n.* Same as *honeysuckle-apple.*

swamp-clover (swomp′klō″vėr), *n.* See ★*clover.*

swamp-hawk (swomp′hâk), *n.* The New Zealand marsh-harrier, *Circus gouldi.*

swamp-hook (swomp′hu̇k), *n.* In *lumbering*, a large single hook used in handling logs, most commonly in skidding.

swampine (swom′pin), *n.* [NL. *swampina*, a former specific name, < E. *swamp* + L. *-ina*.] A pœcilioid fish, *Fundulus heteroclitus*, found on the Atlantic coast of the United States.

swamp-mallow (swomp′mal″ō), *n.* See ★*mallow.*

swamp-maple, *n.* **2.** The silver maple.—**3.** The mountain-maple.

swamp-millet (swomp′mil″et), *n.* See ★*millet*1.

swamp-mosquito (swomp′mus-kē″tō), *n.* See ★*mosquito.*

swamp-pheasant (swomp′fez″ant), *n.* The large Australian ground-cuckoo, *Centropus phasianellus*, which by its size, long tail, and spotted plumage suggests a pheasant. See ★*pheasant.*

swamp-pine, *n.* **2.** See *prickle-cone* ★*pine.*

swamp-sore (swomp′sōr), *n.* An ulcer of the leg sometimes seen in soldiers after long marching over swampy country.

swamp-turkey (swomp′tėr″ki), *n.* An Australian name for the large purple gallinule, *Porphyrio melanotus*, also known as the *swamp-hen.*

swan-hopper (swon′hop″ėr), *n.* One who hops or marks a privately-owned swan, so that its ownership can be recognized. Also *swan-upper, swan-marker.*

swan-neck (swon′nek), *a.* Bent or curved so that it somewhat resembles the S-shape of the curve of a swan's neck.

Swan's-down twill. Same as ★*cassimere-twill.*

swarm1, *n.*—**Buckwheat swarm**, in *apiculture*, a swarm of bees which issues when the buckwheat is in bloom.—**Maiden swarm.** Same as *virgin* ★*swarm.*—**Prime swarm**, a first swarm of bees; the swarm accompanied by the old queen.—**Virgin swarm**, a swarm of bees from a colony which has been a prime swarm in the same season.

swarm-catcher (swârm′kach″ėr), *n.* In *bee-keeping*, a woven-wire basket attached to a long handle, used to trap a swarm of bees which has escaped from a hive.

swarmer (swâr′mėr), *n.* **1.** One of a swarm.—**2.** Same as *swarm-spore.*

swarming-bag (swâr′ming-bag), *n.* A bag used like a ★swarming-basket.

swarming-basket (swâr′ming-bȧs″ket), *n.* A basket used for removing a swarm of bees to a new hive.

swarming-box (swâr′ming-boks), *n.* A box used like a ★swarming-basket.

swash1, *n.* **II.** *a.* See *swash-letters.*

> Printed . . . in a handsome italic font, with *swash* capitals and decorative initials.
> *Bookman*, Feb., 1906, p. 647.

swash-channel (swosh′chan″el), *n.* A channel between two sand-reefs or between a sand-reef and the mainland.

swastika, *n.* In the swastika proper the angles open to the right. In India, where the swastika has been most commonly used, and has been especially appropriated by several Buddhist sects, it is the symbol of general well-being, and may be applied to the sources of well-being, as the sun, the female generative principle, and fire. Its resemblance to certain primitive machines used to create fire make it probable that this is the origin of the symbol. The swastika is found in Tibet, China, Japan, and wherever Buddhism has gone in the Orient. It is found infrequently, if at all, in the remains of ancient Egypt, Chaldea, or Assyria. It is found throughout Europe from the earliest times until about the middle of the medieval period, possibly brought in by the Aryan migrations. In England and Scandinavia it takes the name 'fylfot' and in France, 'gammadion.' The use of the swastika was common during Mycenæan civilization in Greece, vast numbers having been found by Schliemann in the excavations at Hissarlik (the supposed site of ancient Troy). The appearance of the swastika among the aboriginal tribes of America strengthens the theory of their Asiatic origin.

> The makers and users of the *Swastika* in South and Central America and among the mound builders of the savages of North America, having all passed away before the advent of history, it is not now, and never has been, possible for us to obtain from them a description of the meaning, use or purpose for which the *Swastika* was employed by them.
> *T. Wilson*, in Smithsonian Rep. (Nat. Mus.), 1894, p. 957.

swat2 (swot), *v. i.* [Also *swot*: < *swat*3, *n.*] To work hard; toil; dig; grind. [Slang.]

> We had to *swot* rather during term. . . . Then there was the Summer term and we *swotted* more than ever.
> *E. Nesbit*, The Wouldbegoods, p. 4.

swat3 (swot), *n.* [Also *swot*: < *swat*1, sweat?] **1.** A difficult task; a hard job. [Slang.]

> I don't care for that way of writing very much. It would be an awful *swat* to keep it up.
> *E. Nesbit*, The Wouldbegoods, p. 292.

2. One who works hard; a dig; a grind. [School slang.]

swatty (swot′i), *n.* [*swat*3 + *-y*.] A soldier. [Slang.]

> A flat-faced *swatty* at Fort Johnson halted me. Now . . . for a full sized cowpuncher to be held up by a soldier is——. *H. W. Phillips*, Red Saunders, p. 4.

sway, *v. i.*—**To sway away**, *naut.*, to haul or pull so as to hoist or raise an object.—**To sway on end**, *naut.*, to raise to a perpendicular position.

sway-back (swā′bak), *n.* Excessive downward curvature of the spinal column in the dorsal region; lordosis: applied principally to horses.

sway-bar, *n.* **2.** A strong bar or pole, one of two which couple and hold in position the front and rear sleds of a logging-sled.

sway-brace (swā′brās), *n.* A diagonal bracing used to resist side- or swaying-strains.

swaybrace (swā′brās), *v. t.*; pret. and pp. *swaybraced*, ppr. *swaybracing*. To strengthen with a sway-brace.

> The two legs of the tower will be heavily *sway-braced*, and at the top they will be connected by deep lattice trusses and by a blunt arch designed to harmonize architecturally with the general treatment of the whole bridge.
> *Sci. Amer.*, Sept. 19, 1903, p. 202.

swaying (swā′ing), *n.* An act denoted by the verb 'sway': specifically, same as ★*sway-back.*

sweat, *n.* **9.** In *tobacco-manuf.* See ★*sweating,* 5.—**10.** Same as ★*chuck-luck* or ★*chucker-luck. Amer. Hoyle,* p. 458.—**Cold sweat.** (*a*) Perspiration with a sensation of chilliness. (*b*) A spontaneous fermentation of the tobacco leaf corresponding to the aging of wines. Where the ordinary sweating process has not been fully carried through this is intentionally maintained. See ★*sweating,* 5.

sweat, *v. i.* **7.** In *tobacco-manuf.,* to undergo the process of sweating. See ★*sweating.*—**To sweat out,** to win a game without taking any risks by waiting for the trifling points that fall to one's share: a term used especially in cinch and similar bidding games.

II. *trans.*—**Sweating the purser,** *naut.,* wasting the ship's stores. [Eng.]

sweat-bee (swet′bē), *n.* Any small bee of the family *Andrenidæ.*

The *sweat bees* of the genus Halictus and Andrena are very abundant and useful. At Washington, in the season of 1891, they far outnumbered all other insects [visiting pear-blossoms].
U. S. Dept. Agr., Div. Veg. Physiol. and Pathol., Bulletin 5, 1894, p. 79.

sweat-box, *n.* **3.** See the extract.

After the figs were dried they were placed in *sweat boxes* holding about 200 pounds each, where they were allowed to remain for two weeks, to pass through a sweat.
Yearbook U. S. Dept. Agr., 1900, p. 94.

sweating, *n.* **5.** Specifically, in the tobacco trade, the fermenting, in either the active or passive sense, of tobacco leaves, a process which follows that of curing or drying, and consists of further evaporation with chemical changes due, as shown by Loew, to the activity of two oxidizing enzymes. Three methods are recognized: (*a*) *Natural sweating* (or *sweat*) *in cases,* in which the material is packed in boxes and stored under cover without artificial heat, the process requiring about a year. (*b*) *Forced sweating* (or *sweat*) *in cases,* in which the tobacco is packed as before, but in which the temperature is kept at 100–110° F., the process requiring about six weeks. (*c*) *Sweating in bulk,* or *bulk-sweating,* in which the hands of leaves are laid in large piles which are repeatedly turned over during fermentation, covered only with blankets, the temperature being kept at 70–85° F.: this process also requires about six weeks. **6.** In the refining of paraffin from petroleum or bituminous shale, a process of fractional fusion in which the crude paraffin-scale in blocks is placed in a chamber heated by steam-pipes to a temperature a few degrees below the point at which the whole would melt, the more fusible part drained away, and the still solid portion afterward melted down at a higher temperature and decolorized by means of animal charcoal.

sweating-furnace (swet′ing-fėr″nās), *n.* A liquation-furnace used in metallurgy.

sweat-pad (swet′pad), *n.* A quilted pad worn under the round horse-collar to protect the horse's shoulder from injury.

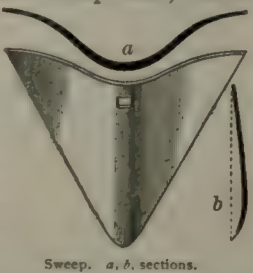
sweat-room (swet′röm), *n.* A room devoted to sweating tobacco. See ★*sweating,* 5.

swedge (swej), *v. i.* [Origin uncertain.] To depart; depart without paying; return nothing for value received: with *off.* [Sailor's slang, eastern U. S.]

"Seems kinder unneighbourly to let 'em *swedge off* like this," Salters suggested, feeling in his pockets.
"Hev ye learned French then sence last trip?" said Disko. . . .
"Let 's heave a dory over anyway."
R. Kipling, Captains Courageous, v.

Swedish clover. Same as ★*alsike.*—**Swedish cranberry.** See ★*cranberry.*—**Swedish gymnastics, movements.** See *Swedish* ★*movements.*

sweep, *v. t.* **11.** To form (a mold which has the profile made by a surface of revolution) by causing the profile, reproduced on the edge of a board, to revolve or sweep around an axis. See *sweep, n.,* 11.

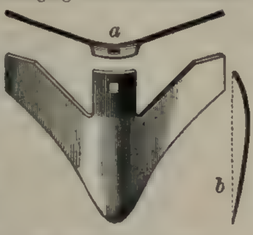


Sweep. *a, b,* sections.

sweep, *n.* **12.** (*a*) A light one-horse plow-stock equipped with a sweep blade, used in working cotton, etc. (*b*) A plow-shovel designed to destroy weeds and stir the surface of the soil between rows. It is of a triangular form. somewhat bent back at the sides, often expanded into wings (wing-sweep), sometimes to a breadth of 30 inches. The wings may be adjustable. [Southern U. S.]—**13.** In *thermodynam.,* any change in a material system, not in equilibrium, which brings it spontaneously into equilibrium; an irreversible process. Also called a *sweeping process.*—**Heel-sweep.** Same as *heel-*★*scrape.*—**Simple sweep,** in *thermodynam.,* the irreversible process by which a closed system settles into a state of thermal equilibrium.

The settling of a closed system to thermal equilibrium is called a *simple sweep.* Example.—The equilibrium of a mixture of oxygen and hydrogen in a closed vessel may be disturbed by a minute spark, and the explosion and subsequent settling of the aqueous vapor to a quiescent state without loss of heat constitute a *simple sweep.* The equilibrium of a gas confined under high pressure in one half of a two-chambered vessel may be disturbed by opening a cock which connects the two chambers, and the rush of gas into the empty chamber constitutes a *simple sweep.*
W. S. Franklin, in Science, Nov. 20, 1903, p. 647.

Steady sweep, in *thermodynam.,* an irreversible process undergone by a system subjected to a constant external disturbance incompatible with the establishment of thermal equilibrium.—**Trailing sweep,** in *thermodynam.,* an irreversible process by which a system tends toward a state of thermal equilibrium which it never reaches on account of continuously changing external conditions.—**Wing-sweep.** See definition 12 (*b*), above.



Wing-sweep. *a, b,* sections.

sweeper, *n.* **3.** One who or that which removes the scale of protoxid of iron from any plate or beam or other piece of steel or iron undergoing the process of rolling in the rolling-mill. If this scale were left on the surface of the piece, being cooler and harder than the hot metal it would be rolled into the surface at the next pass, or make a blister or pock-mark. In older practice, the scale was swept off by twig-brooms or besoms: water currents are much used with larger masses.

sweep-head (swēp′hed), *n.* The upper part or handle of a sweep. See *sweep,* 7.

Sweeping process. See ★*process.*

sweeping-table (swē′ping-tā″bl), *n.* A stationary buddle.

sweep-smelter (swēp′smel″tėr), *n.* One who collects the sweepings of precious metals from the shops where they are worked, and by melting and purification extracts the valuable residue.

sweet, *a.* **11.** In *mech.,* smooth; done without appearance of effort; easy; well-lubricated: as, a *sweet* run; a *sweet* cut.—**12.** In *mining,* free from deleterious gases.

sweetbread, *n.*—**Abdominal sweetbread,** the pancreas. See *sweetbread.*

sweet-bubby (swēt′bub″i), *n.* The sweet shrub, *Butneria florida.* See *Butneria.* [North Carolina.]

sweet-cup (swēt′kup), *n.* The fruit of any one of several species of *Passiflora,* especially *P. laurifolia* and *P. maliformis.* See *sweet calabash* and *water-lemon.*

sweeten, *v. t.* **8.** To wash (gold) with hot water after the parting process. *Phillips and Bauerman,* Elements of Metallurgy, p. 867.—**9.** See the extract.

But there 's more than engines to a ship. Every inch of her, ye 'll understand, has to be livened up and made to work wi' its neighbour—*sweetenin'* her, we call it technically.
R. Kipling, The Ship that Found Herself, in The Day's Work, p. 85.

sweet-grass, *n.* **2.** Same as *vanilla-grass.* [Northwestern U. S.]—**3.** Same as *sweet-flag.*

Sweetleaf family, the plant family ★*Symplocaceæ.*

sweetmeat, *n.*—**Gravesend sweetmeats,** a local name for shrimps. [Eng.]

sweet-roasting (swēt′rōs″ting), *n.* Same as ★*dead-roasting.*

sweetroot, *n.* **2.** The sweet-flag.

sweetsome (swēt′sum), *adv.* Sweetly; sweet. [Dial.]

She used to sing at church when she was a little gal, but I nivver h'ard her sing so *sweetsome* as she did then.
R. H. Groome, Aftermath: The Only Darter (ed. Mosher).

sweet-sucker, *n.* **2.** Same as *black-horse. Jordan and Everman,* Amer. Food and Game Fishes, p. 44.

sweet-water, *n.* **2.** In *sugar-manuf.,* exhaust-steam from the vacuum-pans which contains more or less entrained syrup.—**3.** A manufacturers' name for the aqueous solution of glycerin which is a by-product of the lime saponification of fats in preparing the fatty acids for candle-making.

swel, *v.* and *n.* A simplified spelling of *swell.*

swell, *v. t.*—**Swelled head,** self-conceit; abnormal self-esteem; 'big head.' [Slang.]

Mrs. Lane, conversing with "a great American editor," referred to what is known as the artistic temperament, whereupon he replied, "Artistic temperament! There is no such thing. It 's only another name for d—d bad manners and a *swelled head.*" "I was greatly interested," she says, "in this artless definition of the artistic temperament, and I went off deeply pondering as to what constitutes a *swelled head.* Now, *swelled head* and taking yourself seriously are much the same, only that *swelled heads* are common in all grades of society."
The Grand, Oct., 1905, p. 517.

swell-butted (swel′but″ed), *a.* Greatly enlarged at the base: applied to a tree. Also *bottle-butted* and *churn-butted.*

swelling, *n.*—**Calabar swelling,** a painless swelling about the size of a goose-egg, affecting the natives of Nigeria, which appears suddenly and disappears with equal rapidity without apparent cause.—**Giant swelling.** Same as ★*angioneurotic edema.*

swell-shark, *n.* **2.** *Catulus uter,* a California shark which has the peculiar habit of inflating its stomach with air when caught.

swerv, *v.* and *n.* A simplified spelling of *swerve.*

swet, *n.* and *v.* A simplified and former spelling of *sweat.*

swift[1], *n.*—**Whiskered swift,** *Macropteryx mystacea,* a large East Indian tree-swift having long curved white feathers on the sides of the head that suggest a mustache or whiskers.

swiften (swif′tn), *v. t.* and *i.* [*swift* + *-en.*] To make swift; become or grow swift or swifter. [Rare.]

swig[1], *v. i.* **3.** To pass through; slip along; swirl through.

And ebb of Yokohama Bay
Swigs chattering through the buoys.
R. Kipling, Rhyme of the Three Sealers, l. 8.

swill[1], *n.* **4.** Liquid in general; especially a liquid that leaks, gushes, or swills in. [Slang.]

The place was full of steam, too, from the *swill* slopping against the boiler fires.
Cutcliffe Hyne, McTodd, p. 94.

swilling-vat (swil′ing-vat), *n.* A trough, vessel, or vat in which a metal after treatment for some purpose is immersed to cleanse it, as the vat for washing plate after pickling, to be subsequently tinned.

swim[1], *v. i.* **7.** In *cricket,* to curve in the air: said of the ball. [Slang.]

swimmer, *n.* **7.** The light bag, usually cigar-shaped or fish-shaped, within an open net of cords, which incloses buoyant gas and is employed to support the machinery and crew of a dirigible balloon.

swimming-hair (swim′ing-hãr), *n.* One of the modified hairs on the legs of hydrachnid mites and certain aquatic insects.

swimming-paddle (swim′ing-pad″l), *n.* A long oar-shaped limb specially adapted for swimming, such as are found in sea-turtles and whales. They occur in their most typical form in those extinct reptiles the plesiosaurs and ichthyosaurs. *Parker and Haswell,* Zoology, II. 312.

swimming-plate, *n.* **2.** In ctenophorans, one of the combs or groups of large cilia fused at their proximal ends and arranged in meridional rows on the surface of the body. *Parker and Haswell,* Zoology, I. 200.

swine-chopped (swīn′chopt), *a.* Said of dogs in which the upper jaw protrudes beyond the lower: more commonly called *pig-jawed.*

swine-fever (swīn′fē″vėr), *n.* A term used indiscriminately in England for the two distinct diseases of swine which in the United States are separated under the names of *swine-plague* and *hog-cholera.*

swing, *v.* **I.** *intrans.* **7.** In *cricket,* to curve in the air: said of a ball. [Colloq.]—**8.** To be able to receive and operate upon, as a lathe or other tool in which the work must revolve without striking any part of the frame.—**9.** To be able to lift and transport, as a crane.

II. *trans.* **7.** To cause (a bowled ball) to curve in the air. [Colloq.]

swing, *n.* **11.** In *golf,* the manner in which the club is swung in the act of striking the ball.—**Yearly swing of the atmosphere,** the general accumulation of the atmosphere over the land in winter and over the ocean in summer as shown by changes in barometric pressure.

swing-bar (swing′bär), *n.* **1.** A bar fixed with a pivot so as to be easy of adjustment, as a bar that holds a gate or shutter in place.—**2.** A swingletree.

swing-cup (swing′kup), *n.* A porcelain wine-cup made by Chinese potters and decorated with figures of girls swinging.

swing-dingle (swing′ding″gl), *n.* In *lumbering*, a single sled with wood-shod runners and a tongue with lateral play, used in hauling logs down steep slopes on bare ground. Also called *loose-tongued sloop*.

swinge¹, *n.* **3.** The portion of a flail which falls upon the grain.

> That the threshing of oats and barley, or even of wheat, may be considerably expedited by having two *swinges* instead of one, put upon a flail.
> *T. Williamson*, Agricultural Mechanism, p. 296.

swing-faucet (swing′fâ″set), *n.* A faucet the valve of which is opened and shut by the moving of the faucet itself upon the supply-pipe in a horizontal rotary direction. When the faucet is swung inward above a basin or other receptacle, the valve opens; when it is swung back the valve closes.

swing-frame (swing′frām), *n.* A device on a roving-machine, centered upon the main driving-shaft, and sustaining the wheel or gear fixed to the bobbin driving-shaft.

swing-gate (swing′gāt), *n.* A swinging gate; specifically, a gate for drafting sheep: used in Australia. *E. E. Morris*, Austral English.

> Mr. Stangrove . . . has no more idea of a *swing-gate* than a shearing-machine.
> *Rolf Boldrewood*, Squatter's Dream, ix.

swing-hanger (swing′hang″ėr), *n.* In a car-truck, the bars which support the spring-plank and allow it to sway under the motion of the truck. See *car-truck*.

swinging-buoys (swing′ing-bois), *n. pl.* A collection of buoys placed in positions to assist the navigator or adjuster in turning a ship in a circle, this performance being known as 'swinging-ship.' It is undertaken to determine the errors of the compass on the different points.

swinging-rings (swing′ing-ringz), *n. pl.* Same as ★*flying-rings*.

swinging-valve (swing′ing-valv), *n.* A check-valve opening under pressure in one direction and closing under pressure from the other, in which the valve is hinged at one edge or side (usually the upper). When the valve hangs nearly vertical, its weight does not act to help to close it or to resist the pressure which opens it.

swinging-wheel (swing′ing-hwēl), *n.* Same as ★*sluing-gear*.

swingle-tow (swing′gl-tō), *n.* Same as *swingling-tow*.

swingle-wand (swing′gl-wond), *n.* Same as *swingle*¹, 1.

swing-rail (swing′rāl), *n.* A swinging rail. —**Swing-rail frog**, a railroad-track frog in which the stock- or line-rail is continuous and the siding-rail is in two parts, one part being free to swing sidewise over the line-rail until it meets the other part of the siding-rail. The siding-rail is raised above the line-rail and when in use carries the wheels of a car directly over the top of the line-rail. In its normal position the frog is clear of the line-rail, leaving it unbroken. The swing-rail of the frog is operated by the same mechanism that controls the switch. See *switch*, 2, and *frog*², 2.

swing-table, *n.* **2.** In *glass-manuf.*, a table on which plate-glass is cut and squared after it has been polished.

swing-team (swing′tēm), *n.* In a logging-team of six, the pair between the leaders and the butt team.

swipe, *v. t.* **3.** To snatch; steal by snatching; steal. [Slang.]

Swiss, *n.* **2.** A hireling soldier; more loosely, a hireling of any kind; a Switzer (which see).

> In the teeth of all the old mercenary *Swiss* of state; . . . in defiance of the whole embattled legion of veteran pensioners.
> *Burke*, American Taxation, p. 61.

switch, *n.* **2.** (*c*). In *elect.*, a device for opening or closing an electric circuit, for reversing the direction of the current in such a circuit, for shifting current from one branch of a circuit to another, or, in general, for making, breaking, or shifting electrical connections. Switches vary greatly in design according to the conditions to be met. In general a switch differs from a key (which is a device for the easy and rapid making or breaking of a circuit, as in telegraphic signaling) in that it is so constructed that the circuit when broken shall remain open and when made shall remain closed until the reverse operation is performed. A switch should be so constructed as to carry permanently without excessive heating the maximum current of the circuit in which it is placed, and the contacts should be of such low resistance that they will not become appreciably hot on the passage of the current. Good contact is sometimes secured by the use of a 'mercury-switch' in which the terminals of the lines to be connected are permanently attached to metallic capsules filled with mercury. When the circuit is to be closed connection between the mercury-cups is made by means of a short copper bar or link with ends bent downward so as to dip into the mercury. The volatilization of the mercury by the spark formed when the circuit is opened is a serious objection to mercury-switches and the 'knife-switch' is therefore more frequently used. It consists of a strip of copper, the knife, hinged at one end, or sometimes of two or more such knives mounted parallel to one another. The free end of the knife enters with considerable friction between the jaws of a copper clip when the circuit is to be closed, the friction serving to secure good contact between the metallic surfaces and to hold the knife in place. On high-tension circuits various devices are employed to prevent the formation of an arc when the circuit is open or to extinguish the arc when formed. One such device is the 'snap-switch,' in which, in order to make contact, a powerful spring is compressed and the switch is locked by a simple mechanism. When unlocked, the spring opens the switch with great suddenness, and the arc is of short duration. Sometimes a magnetic blow-out is used to extinguish the arc and sometimes an 'oil-break switch' is employed in which the opening of the circuit is made under oil. Automatic switches are frequently used in connection with electrical machinery. In the case of such switches the operation, whether it consist of the opening or closing of a circuit, the reversal of current, or the shifting of connections from one circuit to another, is done mechanically, either by the direct action of electromagnets or by mechanism released and set in motion by such magnets or otherwise.—**Air-break switch**, in *elect.*, any switch in which contact is made and broken in air, as distinguished from an 'oil-break switch,' in which contact occurs in oil.—**Double-break switch**, in *elect.*, a switch which, when opened, breaks the circuit, of which it forms a part, at two points instead of one.—**Double-pole switch.** Same as *double-break* ★*switch*.—**Double-throw switch**, in *elect.*, a switch so constructed as to close, at will, either of two circuits, according to the direction in which it is thrown.—**Facing-point switch**, on a double-track railroad, a switch or turnout so placed that the points of the switch or movable ends of the switch-rails point in the direction opposite to the motion of trains on that track: contrasted with *trailing-point* ★*switch*, in which the point of the switch or movable ends of the switch-rails point in the same direction as the movement of trains on that track.—**Feeder switch**, in *elect.*, a switch for opening or closing the circuit between a feeder and the bus-bars in an electric power or lighting station.—**Four-point switch**, in *elect.*, a switch which serves to make circuit through any of four lines connected to its contact points.—**Four-way switch.** Same as *four-point* ★*switch*.—**Jumping switch**, a form of self-acting switch used on mine-tracks.—**Knife-edge switch**, in *elect.*, a knife-switch. See ★*switch*, 2 (*c*).—**Mercury-switch**, in *elect.*, a switch in which the circuit is closed by immersing amalgamated metallic terminals in mercury-cups, thus insuring good contact, or in which the contacts are made between mercury and mercury. See ★*switch*, 2 (*c*).—**Multiple switch.** Same as *multiple* ★*switchboard*.—**Oil-break switch.** Same as ★*oil-switch*. See ★*switch*, 2 (*c*).—**On the switch**, by means of the electric switch: used of internal-combustion engines for motor-cars which can be started from rest by simply throwing in the switch upon the electric ignition circuit, with the spark-period adjusted so as to come late in the cycle. When the spark passes between the terminals in a compressed combustible mixture a working stroke is caused in that one cylinder, and aspiration and compression will be caused in the others, so that the motor starts without cranking by hand.

> The ability to start up a four-cylinder engine [of an automobile] *on the switch* is a great convenience, and a safeguard against damaged arms or wrists. It is not every time that a start is made that the engine is so obliging as to come into action on merely pressing over the switch.
> *Automobile Topics*, May 27, 1905, p. 482.

Plug-switch, in *elect.*, a switch in which connections are made by the insertion of metal plugs in holes between the switch-blocks, in a manner similar to that employed in many resistance-boxes.—**Reversing switch**, a switch for changing the direction of the current in an electric circuit. Reversing switches are usually arranged as in the diagram (Fig. 1), with the terminals of the line attached to *a* and *b* by changing the connection of *a* from + to –, and of *b* from – to +, the direction of the current in the circuit is reversed. Switches arranged as in Fig. 2 are also used. The points *a*, *a′* and *b*, *b′* are permanently connected as in the diagram. The switch allows simultaneous connection of *a* to + and of *b* to – or of *a′* to – and *b′* to +, thus reversing the current.—**Selector switch**, a switch used in telephone exchanges to connect automatically subscribers' lines.—**Stab-switch**, in *elect.*, a form of switch in which the poles are metal rings around the core of a hollow insulating cylinder. The circuit is closed by inserting a tapering rod of metal which makes contact with both rings.—**Swing-switch**, in *elect.*, a device used in the investigation of alternating currents for automatically making momentary circuit at an instant corresponding to any given point on the wave-curve.—**Three-point switch**, in *elect.*, a switch which serves to make circuit through any one of three lines connected to its contact-points.—**Tie-in switch**, in *elect.*, a switch for heavy currents used in central stations for connecting sets of bus-bars together.—**Tie-switch.** Same as *tie-in* ★*switch*.—**Time-switch**, in *elect.*, an automatic switch arranged so as to open or close a circuit at a given time, or to make some change in a circuit, such as the cutting out of resistance, after the lapse of a predetermined time.—**Trailing-point switch**, in *railroading*, a switch in which the switch-points, or movable points of the switch, are directed away from a coming train: contrasted with *facing-point switch*, in which the points are directed toward the train. See *switch*, 2 (*a*), and ★*crossover*, 2.—**Triple-pole switch**, in *elect.*, a switch designed for the opening or closing simultaneously of three separate circuits.—**Tumbler-switch**, in *elect.*, a switch with a metallic arm pivoted in the middle, or with two or more parallel arms thus pivoted, and making contact at either end by a rocking motion about the pivot.—**Two-point switch**, in *elect.*, a switch which serves to make circuit through either of two lines connected to its contact-points.—**Two-way switch.** Same as a *two-point* ★*switch*.

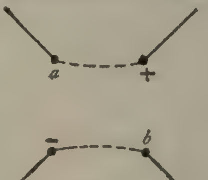


Fig. 1.

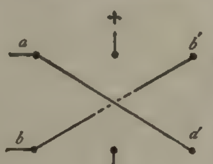


Fig. 2.

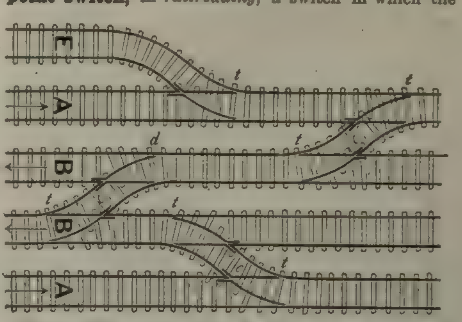


Diagram of four-track railroad with siding, showing trailing switches: *A*, *A*, tracks for east-bound trains; *B*, *B*, tracks for west-bound trains; *E*, siding; *t* - - *t*, trailing switches; *c*, *c*, *c*, crossovers connecting tracks; *d*, facing-point switch.

switch-blade (swich′blād), *n.* In *elect.*, the hinged strip of a metal in a knife-switch by the insertion of which between the jaws of the switch the circuit is completed. See ★*switch*, 2 (*c*).

switch-block (swich′blok), *n.* One of the two or more metal blocks between which the plugs of an electric switch are inserted to complete the circuit.

switchboard, *n.*—**Multiple switchboard**, in *telephony*, a form of switchboard for large exchanges which enables each operator to work independently of all the others in making any desired connection.

switch-clerk (swich′klėrk), *n.* A telephone operator. Also called *exchange clerk*.

switch-cord (swich′kôrd), *n.* In *telephony*, the flexible cord, to the ends of which metallic pegs are attached, used for making connections at the switchboard.

switch-gear (swich′gēr), *n.* **1.** The apparatus connected with or operating a switch upon an electric circuit.—**2.** The apparatus connected with or operating a railway switch, usually forming part of an interlocking mechanism.—**3.** A toothed wheel used to transmit motion or power to a switch of either of the above kinds.

switch-hole (swich′hōl), *n.* In *telephony*, one of the holes in the switchboard into which the connector pegs are inserted to bring two lines into communication.

switching, *n.* **4.** In *telephony*, the process by which the operator at the switchboard brings subscribers into communication.

switch-jack (swich′jak), *n.* The spring-jack, or switch-spring, used on telephone switchboards. It consists of a tube inserted in the switchboard and containing two springs with curved ends between which the connector peg enters.

switch-plate (swich′plāt), *n.* A form of switch apparatus for light cars such as are used in mines or factories, in which the wheels run on their flanges on a plate for a short distance at the diverging intersection of the tracks: the car can be directed by hand pressure to take one track or the other without movable point- or stub-rails, such as are required in a true switch.

switch-plug (swich′plug), *n.* A conical metal plug inserted between the blocks of certain forms of electric switch to complete the circuit. See ★*switch*, 2 (*c*).

switch-table (swich′tā″bl), *n.* A table or panel on which electric switch-terminals and -cables are secured, so that operators can be protected from risk or danger when making or breaking circuits.

> The generator *switchtable* and feeder panels may be noted in Fig. 2, while the ingenious method of protecting the attendants from the high-tension wires is illustrated in both views, at the switchboard gallery.
> *Elect. World and Engin.*, Nov. 7, 1903, p. 763.

switch-tower (swich′tou″ėr), *n.* In *railroading*, the cabin, building, or tower which contains the levers of a signaling-plant or the handles, buttons, etc., of an electric switch-system; a signal-tower (which see). See ★*signaling.*

swivel-anchor (swiv′l-ang″kor), *n.* An anchor provided with a swivel-ring in the upper end of the shank, so that the cable may have a tendency to keep itself clear and not get into kinks or turns.

swivel-frame (swiv′l-frām), *n.* 1. A frame for the axles of the truck-wheels of a locomotive which is fastened to the main frame only by a pin or swinging frame, thus allowing it to turn or swivel; the frame for a car-truck which is fastened to the car by a single bolt and hence can swivel.—2. In *swivel-weaving,* a movable frame for carrying a shuttle, attached to the front of the lay and raised and lowered by a cam, lever, or spring operated by a Jacquard.

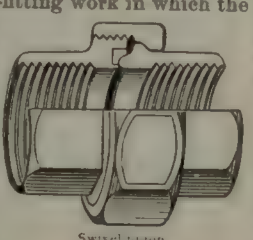
swivel-gate (swiv′l-gāt), *n.* In a gate-valve, a moving part which is secured at one edge so that it can swing across the opening through the valve on a pin or hinge, as distinguished from the moving part of such a valve which slides across the opening—the more common method.

swivel-pipe (swiv′l-pīp), *n.* A pipe so connected with another by a swivel-joint as to permit its being turned or swung around without interrupting the current of fluid flowing through it: used for fixed nozles of fire apparatus.

swivel-plate (swiv′l-plāt), *n.* A plate or surface forming a contact area, around which a second element may turn or swivel as a joint or reference area. *Thurston,* Manual of Steam-Engine, II. 672.

swivel-table (swiv′l-tā″bl), *n.* A table having a ball and socket or spherical joint with its support or pivot, so that it may have a universal motion for adjustment in any plane.

swivel-union (swiv′l-ū″nyon), *n.* A form of union-joint for pipe-fitting work in which the two halves forming the union may be screwed together in line, while the elements on the two pieces of pipe may be out of line. It is done by giving a spherical surface to the two parts which form the tight joint, while each half has an exterior spherical surface which adjusts itself to similar spherical surfaces in the parts of the nut.



Swivel union.

swivel-weaving (swiv′l-wē″ving), *n.* A method of weaving small weft-figures in a fabric by means of shuttles each one of which is driven by a rack and pinion. *T. W. Fox,* Mechanism of Weaving, p. 390.

swivel-weft (swiv′l-weft), *n.* Weft yarn used in the small shuttle in swivel-weaving. *T. W. Fox,* Mechanism of Weaving, p. 171.

sword[1], *n.* 6. (*b*) One of the standards upon which oscillates the slay or lathe of a loom. *R. Marsden,* Cotton Weaving, p. 66. (*c*) A bar or blade, in a measuring-machine, upon which cloths are rolled or wound.

sword-arm, *n.* 2. A parallel-sided arm or element on which fits a slider or block embracing the arm and bearing upon the outside edges: used to invert the construction of a slotted link, where the slider or block is within a slot, and the link embraces the block.

sword-dragonet (sōrd′drag″on-et), *n.* See ★*dragonet.*

sword-fern (sōrd′fėrn), *n.* See ★*fern*[1].

sword-grass. (*e*) In New Zealand, *Arundo conspicua.* See *New Zealand reed,* under *reed*[1]. (*f*) In Australia, *Cladium psittacorum.* See ★*cutting-grass.* (*g*) On the island of Guam, *Xiphagrostis floridula.* See ★*neti.*

sword-money (sōrd′mun″i), *n.* An early Chinese bronze coinage: so called from its form. Also called *knife-money.*

sword-stand (sōrd′stand), *n.* A receptacle for a sword; especially one intended to receive the city sword when the Lord Mayor of London attended one of the city churches. *Archæologia,* LIV. 58.

sword-weed (sōrd′wēd), *n.* On the island of Guam, the name of *Cassia occidentalis,* a low plant of the family *Cæsalpiniaceæ,* with sword-shaped pods. The seeds have been used as a substitute for coffee. See *negro coffee,* under *coffee.*

swot[2], *v.* and *n.* Same as *swat*[2].

swot[3], *n.* and *v.* See ★*swat*[3].

Syacium (sī-ā′si-um), *n.* [NL., < Gr. *σνάκιον,* dim. of *σύαξ,* a kind of fish.] A genus of flounders found chiefly in American and African waters.

sycamore, *n.*—**White sycamore.** (*b*) In Australia, *Polyscias elegans,* one of the trees called *native laurel.*

sychnodymite (sik-nod′i-mīt), *n.* [Gr. *συχνός,* many, + (*δι*)*δυμος,* twin, + *-ite*[2].] A sulphid of copper, cobalt, and nickel, $(Cu,Co,Ni)_4S_5$, occurring in steel-gray octahedral crystals, often twinned like polydymite: found in the Siegen mining district, Germany.

sycoceric (sik-ō-ser′ik), *a.* [*sycocer*(*yl*) + *-ic.*] Noting an acid, a colorless compound, $C_{17}H_{27}$-COOH, said to be formed by the oxidation of sycoceryl alcohol.

sycoceryl (sik-ọ-ser′il), *n.* [Gr. *σῦκον,* a fig, + *κηρός,* wax, + *-yl.*] In *organic chem.,* the term applied to the univalent radical $C_{18}H_{29}$, derived from sycoceryl alcohol or related compounds.—**Sycoceryl alcohol,** a colorless compound, $C_{18}H_{29}O$, contained, in combination, in the resin of *Ficus rubiginosa* from New South Wales. It is deposited in thin crystals and melts at 90° C.

sycocerylic (sik″ọ-sē-ril′ik), *a.* [*sycoceryl* + *-ic.*] Same as ★*sycoceric.*

sycoma (sī-kō′mạ̈), *n.*; pl. *sycomata* (-mạ-tạ̈). [Gr. *σύκωμα,* < *σῦκον,* a fig.] A pendulous growth from the skin having the shape of a fig.

syconoid (sī′kō-noid), *a.* [NL. *sycon* + *-oid.* See *Sycon.*] Resembling or having the characteristics of Haeckel's *Sycon* group of calcareous sponges; having no excurrent canals interpolated between the flagellated chambers and the gastral cavity: as, the *syconoid* type of canal system. Compare ★*leuconoid.*

sycose (sī′kōs), *n.* [Gr. *σῦκον,* fig, + *-ose.*] Same as *saccharin,* 2.

sycosis, *n.* 2. A fungous sore which resembles the pulp of a fig.

sydneium (sid-nē′yum), *n.* [NL., named for *Sydney,* Australia.] Same as ★*australium.*

syenite, *n.* 2. In the quantitative system of classification (see ★*rock*[1]), a proposed general field-term for a phaneric igneous rock composed of dominant feldspar of any kind, with subordinate amounts of mica, hornblende, pyroxene, or other minerals, and without a noticeable amount of quartz.—**Alkali syenite.** See *alkali* ★*granite.*—**Leucite-syenite,** a rare igneous rock, of granitoid texture and consisting of orthoclase and leucite, and of biotite, hornblende, or augite (one or several).

sylf, *n.* An amended spelling of *sylph.*

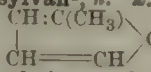
syllabic, *a.* II. *n.* See the extract.

> A determinative [attached to an ideographic sign] often indicates to the reader . . . radical change in the use of the sign. In this case the sign is said to be employed as a *syllabic.*
> *Encyc. Brit.,* XI. 800.

syllepsiology (si-lep-si-ol′ọ-ji), *n.* [Gr. *σύλληψις,* conception, pregnancy, + *-λογια,* < *λέγειν,* speak.] The physiology of conception or pregnancy.

syllepsology (sil-ep-sol′ọ-ji), *n.* Same as ★*syllepsiology.*

sylvan[1], *n.* 2. A colorless liquid compound,

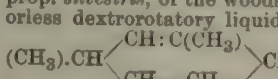


$$\left.\begin{array}{l} CH{:}C(CH_3) \\ | \\ CH{=\!=}CH \end{array}\right\rangle O$$

, produced by the distillation of pine-wood. It boils at 65° C. and quickly turns yellow in air. Also called 2- or *a-methyl furfurane.*

sylvan[2] (sil′vạn), *n.* Native tellurium.

sylvestrene (sil-ves′trēn), *n.* [L. *sylvestris,* prop. *silvestris,* of the woods, + *-ene.*] A colorless dextrorotatory liquid terpene, $H_2C{:}C$-



$$(CH_3).CH\left\langle\begin{array}{l} CH{:}C(CH_3) \\ CH_2{-}CH_2 \end{array}\right\rangle CH_2$$

, obtained from Swedish and Russian turpentine-oil. It boils at 176–177° C. Also called *active carvestrene.*

Sylvestrian[2], *n.* 2. A nun belonging to the order of the Sylvestrians in its flourishing period. See ★*Sylvestrian,* 3.—3. A member of a female order of Sylvestrians which exists in Perugia. The habit is composed of a gown, scapulary, cowl, and mantle of a dark-brown color.

II. *a.* Pertaining to the order of the Sylvestrians.

sylvical (sil′vi-kal), *a.* [Also, and properly, *silvical*; *sylvic, silvic,* + *-al*[1].] Same as *sylvic.*—**Sylvical rotation.** See ★*rotation,* 4.

sylvics (sil′viks), *n.* [Also, and properly, *silvics.* See *sylvic, a.*] 1. The science which treats of the life of trees in a forest.—2. The habit or behavior of a tree in a forest.

Sylvicultural rotation. Same as *sylvical rotation.* See ★*rotation,* 4.

sylviculturally (sil-vi-kul′tụ̈r-al-i), *adv.* In a way or manner relating to sylviculture. Also, and properly, *silviculturally.*

> *Silviculturally* of interest is the note that in a spruce stand undergrown with beech no beetles were found, although a neighboring stand was greatly damaged; the same immunity was found in a stand mixed with Tollkirsche.
> *Forestry Quart.,* Nov., 1903, p. 36.

sylvinite (sil′vi-nīt), *n.* 1. Same as *sylvine.*—2. A trade-name for an indefinite mixture of sylvine with common salt (halite).

sym. An abbreviation (*a*) of *symbol*; (*b*) of *symbolic.*

symbasic (sim-bā′sik), *a.* [*symbas*(*is*) + *-ic.*] Pertaining or relating to symbasis.

symbasis (sim′bạ-sis), *n.* [Gr. *σύν,* with, together, + *βάσις,* step (used in the sense of descent).] 1. The type of descent found in large groups of freely interbreeding organisms, such as natural species.—2. The normal biologic condition of free interbreeding among organisms of the same specific or subspecific group: distinguished on one side from too wide cross-breeding, and on the other from too narrow inbreeding. *O. F. Cook,* in Pop. Sci. Mo., May, 1903, p. 15.—3. Generation by the union of the sexual products of two individuals; cross-fertilization as distinguished from self-fertilization. [Rare.]

symbiosis, *n.*—**Mutualistic symbiosis,** that form of symbiosis in which two organisms, either plants or animals, live together in an intimate and reciprocally helpful relationship.—**Root-symbiosis.** See ★*root-symbiosis.*—**Theory of symbiosis,** the opinion that the nucleus and the cytoplasm of the cell are historically independent organisms which have found an advantage in commensalism or symbiosis: a term proposed by Watase.

symbiotical (sim-bī-ot′i-kạl), *a.* Same as *symbiotic.*

symbiotism (sim-bī′ọ-tizm), *n.* Same as *symbiosis.*

> The remarkable *symbiotism* between Algæ and Fungi.
> *Encyc. Brit.,* XXV. 272.

symblepharosis (sim-blef-ạ-rō′sis), *n.* Same as *symblepharon.*

symbol[1], *n.* 2. In *crystal.,* the *symbol of a face* is the mathematical expression defining its position with reference to the assumed crystallographic axes. The *symbols of Weiss* (1818) consist of the intercepts on the axes written out in full, as $a : nb : mc$ for the general case, the fundamental axial values being designated by a and b (lateral), and c (vertical): thus $a : \frac{3}{2}b : \infty c$ and $a : \frac{3}{2}b : 3c$ are special examples. The *Naumann symbols* (1830) are adapted from those of Weiss; the expression is abbreviated, the order is inverted, and certain distinguishing signs are added. For the examples given, Naumann's symbols are: general case, mPn (also $mP\bar{n}$, $mP\grave{n}$, etc.) or mOn (for the isometric system); further $\infty P\frac{3}{2}$, $3P\frac{3}{2}$. The *Dana symbols* (1850) are those of Naumann further abbreviated, as m-n (m-$\bar{n}$, m-$\grave{n}$ etc.), i-$\frac{3}{2}$, 3-$\frac{3}{2}$, etc. In the *Millerian system,* now generally adopted (introduced by W. H. Miller of Cambridge in 1852), the symbol consists of three indexes, which are either whole numbers or zero. For the general case, the symbol is hkl and the relation of the indexes h, k, and l to the axial intercepts is given by the full expression $\frac{1}{h}a : \frac{1}{k}b : \frac{1}{l}c$; this last can be derived from the symbol of Weiss if the coefficients are reduced to fractions having unity as their numerators. The Miller symbols for the special examples given above are 320, 321. Bravais (1866) suggested extending the Millerian system to hexagonal forms referred to four crystallographic axes; hence the *Bravais-Miller symbols* have the form $hkil$ (general), $11\bar{2}0$, $31\bar{2}1$, etc. When the indexes are included in brackets or parentheses, as {321}, (321), this expression is generally understood to be the *symbol of the form*—that is, to include all the faces which belong to it; thus the orthorhombic form {321} or (321) includes the eight faces 321, $\bar{3}21$, $\bar{3}\bar{2}1$, $3\bar{2}1$, $32\bar{1}$, $\bar{3}2\bar{1}$, $\bar{3}\bar{2}\bar{1}$, $3\bar{2}\bar{1}$: here as always in the Millerian system negative values are indicated by a sign placed over the index. The *zone-symbol,* from which the common relation of the indexes for all forms lying in the zone is deduced, is similar to that of a crystal form but is usually inclosed in square brackets: thus the zone-symbol $[11\bar{1}]$ means that for every face in the given zone the *zonal equation* $h + k = l$ holds good.—**Identity symbol.** See ★*identity.*—**Weierstrassian symbol,** the symbol p. The function

$$pu = \frac{1}{u^2} + \sum{}' \left[\frac{1}{(u-w)^2} - \frac{1}{w^2}\right]$$

is called the p-function.

symbolic, *a.* 4. Of or pertaining to ★*symbolism,* 4.

> In Daudet's latest work [La Petite paroisse, 1895] . . . here first he has adopted the *symbolic* method that . . . Ibsen also uses with such effect. The rhythmic recurrence of the little church marks every stage in the development of the theme over which it seems to preside.
> *B. W. Wells,* Modern French Lit., p. 485.

Symbolic geometry. See ★*geometry.*

symbolism, *n.* **4.** [*cap.*] The theories and practice of the Symbolist School. See ★*Symbolist, n.*, 2.

> In the series of plays which then followed he [Henrik Ibsen] anticipated the process of evolution which was to lead, both in France and Germany, through prosaic realism to an intensely imaginative treatment of everyday life, touched here and there with *symbolism*.
> *Encyc. Brit.*, XXVII. 520.

5. An abnormal mental state in which every occurrence is interpreted as a symbol of the subject's own sensations and thoughts.

symbolist, *n.* Specifically—**2.** [*cap.*] One of a group of French poets of which Verlaine was the most conspicuous member. The writers of this school undertook to express poetic sentiments indirectly by far-fetched metaphors, or even by the sound of words, and of letters, quite independently of their received signification. For instance, they asserted the suggestiveness of vowel-sounds as regards color, *o* suggesting red, according to some, while according to others it suggests blue. They also assumed a pre-established harmony between vowel-sounds and abstract ideas and between vowel-sounds and musical instruments, and dwelt much on the hidden influence which should exhale through "the inclosing envelope of the spoken word." See ★*decadent*. *B. W. Wells*, Modern French Lit., pp. 350–351.

> The Parnassians had borrowed from the plastic arts; the *Symbolists* aimed at the vagueness, mystery, suggestiveness of music, de la musique avant toute chose. The high priests of this movement were Paul Verlaine (1844–1896), remarkable much less for his theories than for his exquisite practice, in which he showed himself a lyric poet of the first order, comparable with Shelley and Heine, and not without certain affinities to the earliest French singers, such as Charles d'Orléans; and Stéphane Mallarmé (1842–1898), perhaps less remarkable for his practice than for his theory. . . . By far the most gifted of the disciples of the *Symbolist* school is M. Henri de Regnier (born 1864), the singer of Lendemains (1886), Aréthuse (1895), and Les Jeux rustiques et divins (1897).
> *Encyc. Brit.*, XXVIII. 497.

II. *a.* Of or pertaining to the Symbolists; characterized by symbolism.

> A reactionary movement, such as that which arose against the novel, appeared here also, and hence the *Symbolist* school came into being, which aimed at greater freedom, a less strict prosody, and a more musical poetry.
> *Encyc. Brit.*, XXVIII. 497.

symbolistic, *a.* **2.** Same as ★*symbolic*, 4.

> The poets, the pensive long-haired devotees of the *symbolistic* school.
> *F. B. Smith*, How Paris Amuses Itself, p. 42.

symbolophobia (sim″bọ-lọ-fō′bi-ạ̈), *n.* [NL., < Gr. *σύμβολος*, a symbol, + *-φοβία*, < *φοβεῖν*, fear.] A morbid dread lest one's every act may contain some hidden or symbolical meaning. *Baldwin*, Dict. of Philos. and Psychol., II. 296.

symcenter (sim-sen′tėr), *n.* [Irreg. < *sym-*(*metry*) + *center*.] A center of symmetry. One figure has a symcenter when, with regard to this point, every point on the figure has its symcentral point on the figure. Two figures have a symcenter when, with regard to this point, every point of each has its symcentral point on the other.

symcentral (sim-cen′tral̤), *a.* [*symcenter* + *-al*¹.] Having symcentry. *Halsted*, Elem. Synthetic Geom., p. 19.—**Symcentral figure,** a figure with a symcenter.—**Symcentral figures,** two figures capable of being so placed as to have a symcenter.—**Symcentral point** (to a given point with regard to a given symcenter), the point on the ray from the given point through the symcenter which ends the sect bisected by the symcenter.

symcentry (sim-sen′tri), *n.* [*symcenter* + *-y*³.] Symmetry with regard to a symcenter.

Symmachian, *n.* **II.** *a.* Pertaining to Symmachus, or to the sect of Ebionites supposed to have been named from him. See *Symmachian*.

symmachy (sim′a̤-ki), *n.* [*Symmach*(*us*) + *-y*³.] The doctrine of the Symmachians that the human body was created by the devil, not by God, and therefore should be subject to misuse. See *Symmachian*.

symmedian (si-mē′di-a̤n), *n.* and *a.* [*sym-* + *median*.] **I.** *n.* In a triangle, the isogonal to a median, that is, the straight line symmetrical to a median with regard to the angle-bisector.

II. *a.* In *geom.*, pertaining to symmedians.—**Symmedian point,** that point in which the three symmedians of a triangle concur.

symmelian (si-mē′li-a̤n), *a.* and *n.* [Gr. *σύν*, together, + *μέλος*, limb, + *-ian*.] **I.** *a.* Having the legs united and compounded on the middle line.

> In vertebrates such union is especially well known . . . producing the cyclopic, synotic, and *symmelian* conditions respectively.
> *W. Bateson*, Study of Variation, p. 458.

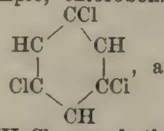
II. *n.* A vertebrate with the legs united and compounded on the middle line.

> The body of the *symmelian* ends posteriorly in an elongated lobe made up of parts of the posterior limbs compounded together by homologous parts.
> *W. Bateson*, Study of Variation, p. 459.

symmelus (sim′e-lus), *n.*; pl. *symmeli* (-lī). [NL., < Gr. *σύν*, together, + *μέλος*, limb.] A monster whose lower extremities are fused into one.

Symmetric equation. See ★*equation*.

symmetrical, *a.* **6.** In *organic chem.*, noting compounds which contain atoms or groups at equal relative intervals in the molecule: thus, for example, chlorobenzene, which has the formula



, and ethylene chlorid, $ClCH_2.CH_2Cl$, are both symmetrical compounds.

symmetry, *n.* **6.** In modern crystallography crystals are not only referred to certain systems (see *crystallography*) according to the relative lengths and inclinations of their assumed axes, but they are also further divided into classes, or groups, according to the kind and number of symmetry elements they possess. The *symmetry elements* are plane symmetry, axial symmetry, and centrosymmetry. A crystal has *plane symmetry*, or is symmetrical with reference to a certain plane, when every face, edge, and solid angle has a like face, edge, and solid angle similarly situated on the opposite side of this plane; or, in other words, when this plane divides the crystal into halves each of which is the mirror image of the other. A cube of galena has three like planes of symmetry parallel to and midway between each pair of opposite faces; it has also six other planes of symmetry, like among themselves, passing through each pair of opposite edges. A crystal has *axial symmetry*, or is symmetrical with reference to a certain line as an axis when the faces, edges, and solid angles are similarly placed about this line so that if the crystal be revolved through a certain angle about this axis all its parts again occupy the same position in space; this angle must be either one half (180°), one third (120°), one fourth (90°), or one sixth (60°) of a complete revolution. If the angle is 180°, or the crystal repeats itself twice in a complete revolution, it has *twofold* or *binary* symmetry and the axis is called a *dyad axis*; if 120°, or the crystal repeats itself three times, the symmetry is *threefold* or *ternary* and the axis is a *triad axis*; if 90°, or the crystal repeats itself four times, the symmetry is *fourfold*, *quaternary*, or *tetragonal*, and the axis is a *tetrad axis*; if 60°, or the crystal repeats itself six times, the symmetry is *sixfold* and the axis is a *hexad axis*. As already implied, fivefold symmetry, corresponding to a revolution of 72° about a *heptad axis*, is impossible among crystals. Symmetry with reference to a dyad axis is further distinguished as *digonal* or *di-digonal*, according to whether one pair or two pairs of like symmetry planes intersect in it. Similarly the symmetry with reference to a triad axis may be *trigonal* or *ditrigonal*, according to whether one or two sets of three like symmetry planes intersect in it; *tetragonal* and *ditetragonal* symmetry with reference to a tetrad axis, also *hexagonal* and *dihexagonal* symmetry with reference to a hexad axis, are similarly distinguished. Further, axial symmetry is sometimes distinguished (H. A. Miers) as polar, alternating, holoaxial, and equatorial. It is *polar* (also called *hemimorphic*, or *acleistous* (W. J. Lewis)) when there is no plane of symmetry normal to the symmetry axis. It is *alternating* when each pair of faces at an extremity of a crystal may be brought symmetrically above a similar pair at the other by a revolution of 60°, and yet the horizontal plane is not a symmetry plane. It is *holoaxial* when all the possible axes of symmetry are present but no planes of symmetry. It is *equatorial* if a plane of symmetry is normal to the axis of symmetry. Still further, a symmetry axis which is the only one of its kind, and one in which two or more symmetry planes intersect, is called a *principal axis* and a symmetry plane normal to it is a *principal plane*. A crystal has *centrosymmetry* when its faces, edges, and solid angles are symmetrical with reference to a central point; in other words, when every point on the surface of it has a similar point at an equal distance and on the opposite side from the center; this is true of ordinary triclinic crystals, as those of axinite. Entire want of symmetry, or *asymmetry*, is characteristic of one class of crystals only, belonging to the triclinic system. *Symmetry classes* or *symmetry groups*. Theoretical discussion has shown that all the possible types of crystals are included in thirty-two classes or groups; of these, twenty-three are represented among crystallized minerals and six more among crystallized artificial salts. As shown below, two of the symmetry groups belong to the triclinic system, three to the monoclinic system, three to the orthorhombic system, seven to the trigonal division of the hexagonal system (sometimes called the *trigonal system*), five to the hexagonal division (the hexagonal system proper), seven to the tetragonal system, and five to the isometric system. The thirty-two symmetry classes have been differently named by different authors. One method is to name each class after that form in it which has the general symbol (*hkl*), after Miller (see ★*symbol*¹, 2), as the hexoctahedral class of the isometric system; another method is to name each class after some prominent mineral species belonging to it, as the *galena class* or *galena type*. That class under each system which has the highest degree of symmetry and consequently the maximum number of faces belonging to a given form is often called the *holosymmetric* (or *normal*) *class* ('holosymmetric' here corresponds to the term 'holohedral' formerly in use). Each of the other classes of the system has a special grade of symmetry peculiar to itself and lower than that of the holosymmetric class, and, in consequence, it is also characterized by one or more peculiar types of crystal forms having either one half or one quarter of the faces belonging to the form having the same symbol in the holosymmetric (holohedral) class: hence these classes and the forms belonging to them were formerly called respectively *hemihedral* and *tetartohedral*, or in general *merohedral*. These terms are now but little used. The symmetry elements characteristic of each of the thirty-two symmetry classes are discussed in modern treatises on crystallography. In the following list the usual names of the classes are given, the classes being arranged, in general, in rising order, as to symmetry. *Triclinic system.* 1. Pediad, or asymmetric class; example, calcium hyposulphite (no representative among minerals). 2. Pinacoidal class (also normal); ex., axinite. *Monoclinic system.* 3. Domatic or clinohedral (also called gonioid); ex., clinohedrite. 4. Sphenoidal or hemimorphic; ex., tartaric acid. 5. Prismatic (also called normal and plinthoid); ex., gypsum. *Orthorhombic system.* 6. Bisphenoidal (also sphenoidal); ex., epsomite. 7. Pyramidal or hemimorphic (also acleistous pyramidal); ex., calamine. 8. Bipyramidal (normal); ex., barite. *Hexagonal system, trigonal division* (also called *trigonal system*). 9. Trigonal-pyramidal (acleistous trigonal, ogdohedral); ex., sodium periodate. 10. Trigonal trapezohedral (trapezohedral); ex., quartz. 11. Trigonal bipyramidal; no ex. 12. Ditrigonal-pyramidal (hemimorphic, acleistous ditrigonal); ex., tourmaline. 13. Ditrigonal bipyramidal (trigonotype); no ex. 14. Trigonal rhombohedral (rhombohedral, trirhombohedral, diplohedral trigonal); ex., dioptase. 15. Ditrigonal scalenohedral (scalenohedral, rhombohedral); ex., calcite. *Hexagonal system, hexagonal division.* 16. Hexagonal pyramidal (acleistous hexagonal, pyramidal hemimorphic); ex., nephelite. 17. Hexagonal trapezohedral (trapezohedral); ex., barium stibiotartrate and potassium nitrate. 18. Hexagonal bipyramidal (diplohedral hexagonal, pyramidal, tripyramidal); ex., apatite. 19. Dihexagonal pyramidal (acleistous dihexagonal, hemimorphic); ex., greenockite. 20. Dihexagonal bipyramidal (diplohedral dihexagonal, normal); ex., beryl. *Tetragonal system.* 21. Pyramidal (acleistous pyramidal, pyramidal hemimorphic); ex., wulfenite. 22. Bisphenoidal; no ex. 23. Scalenohedral (sphenoidal); ex., chalcopyrite. 24. Trapezohedral; ex., strychnine sulphate. 25. Tetragonal pyramidal (diplohedral tetragonal, pyramidal); ex., scheelite. 26. Ditetragonal, pyramidal (acleistous ditetragonal, hemimorphic); ex., iodosuccinimide. 27. Ditetragonal bipyramidal (diplohedral ditetragonal, normal); ex., zircon. *Isometric system.* 28. Tetrahedral pentagonal dodecahedral (tetrahedral tetartohedral); ex., ullmannite. 29. Pentagonal iscositetrahedral (plagihedral); ex., cuprite. 30. Diploidal (dyakisdodecahedral, pyritohedral); ex., pyrite. 31. Hexakistetrahedral (tetrahedral); ex., tetrahedrite. 32. Hexoctohedral (normal); ex., galena.—**Axial symmetry.** See ★*axial*.—**Central symmetry.** See ★*central*, 1.—**Cyclic symmetry,** in *alg.*, with respect to certain letters arranged in a given order, the property of being transformed into an identically equal expression when the first of these letters is replaced by the second, the second by the third, and so on, and the last by the first.—**Diagonal symmetry,** in diatoms, a condition of the valves in which the torsion amounts to 180°.—**Inverse symmetry,** in an individual organism, a race, or a species, a system of symmetry which is a mirror-image or reversed copy of that which is characteristic of the group that it represents. Læotropism in dexiotropic molluscan shells is the most familiar illustration of inverse symmetry.—**Major symmetry,** symmetry which includes all the parts of an organism in a single system.

> In Radial series, the *Major Symmetry* is built up by radial divisions of the first kind, producing segments whose adjacent parts are homologous, and related to each other as images. *W. Bateson*, Study of Variation, p. 89.

Minor symmetry, the sort of symmetry or merism in living bodies which is completed in a part of the body, such as the bilateral symmetry of one of the arms of a starfish.

> Patterns which are completed in the several organs or parts will be referred to as *Minor Symmetries*.
> *W. Bateson*, Study of Variation, p. 21.

Primary system of symmetry, the normal system of symmetry in an organism.

> [The] way in which such a Secondary system is related to the normal or *Primary system of Symmetry* of the body from which they spring, constitutes an instructive chapter in the study of Meristic Variation.
> *W. Bateson*, Study of Variation, p. 90.

Radius of symmetry. See ★*radius*.—**Secondary system of symmetry,** the abnormal repetition of parts in such a way that they lie outside the normal system of symmetry and are unbalanced by any parts within it.

> It will be shewn that such extra parts generally, if not always, make up a *Secondary system of Symmetry* in themselves. *W. Bateson*, Study of Variation, p. 90.

Surface of symmetry. See ★*surface*.—**Symmetry as to a plane,** when a sect from any point of the figure, if perpendicular to this plane and bisected by it, ends on the figure.

symmorph (sim′môrf), *n.* A character standing for the same notion as another but different in form.

sympathectomy (sim-pa̤-thek′tọ-mi), *n.* [Irreg. < *sympath*(*etic*) + Gr. *ἐκτομή*, excision.] Removal by a surgical operation of a section of the sympathetic nerve. *Med. Record*, May 30, 1903, p. 875.

sympathetectomy (sim-path-e-tek′tọ-mi), *n.* Same as ★*sympathectomy*.

> If *sympathetectomy* relieves intraocular tension, it does, as he asserts, through its influence on the circulation in the choroid and ciliary process, and the same may be said of iridectomy, which does not relieve tension immediately, showing that its influence is on the intraocular circulation. *Med. Record*, Aug. 3, 1907, p. 196.

Sympathetic strike. See ★*strike*.

sympathicectomy (sim″pa-thi-sek′tō-mi), *n.* [NL. *sympathicus*, sympathetic, + Gr. ἐκτομή, excision.] Same as ★*sympathectomy*. *Nature*, Dec. 11, 1902, p. 144.

sympathism (sim′pa-thizm), *n.* [*sympath*(*y*) + *-ism.*] An assumed occult influence of one mind upon another, inducing similarity of sensations and of emotions.

sympathy, *n.* – **Law of sympathy.** See ★*law*1.—**Organic sympathy,** in *psychol.*, sympathy as an inherited organic manifestation: opposed to *reflective* ★*sympathy*.

> The quick appearance of violent organic changes in the child, . . . the lack of any sufficient mental development, at the period when these reactions occur, to support a real sympathy of reflection,—all these indications serve to justify the opinion that we are dealing . . . with an inherited organic manifestation. . . . There is . . . an *organic sympathy* as well as a reflective sympathy.
>
> *J. M. Baldwin*, Social and Ethical Interpretations, p. [221.

Reflective sympathy, in *psychol.*, a form of sympathy which results from the growth of reflection; a social sympathy, conditioned upon the rise of the notion of self: opposed to *organic* ★*sympathy*.

> In organic sympathy, the relation is a matter of organic reaction due to natural selection, we may suppose; *reflective sympathy* reaffirms the social value of the reaction, utilizes it, and in discovering the relations of persons for itself, in a reflective and critical way, goes on to refine the reactions and embody them in the institutions of social life.
>
> *J. M. Baldwin*, Social and Ethical Interpretations, p. [224.

sympatric (sim-pat′rik), *a.* [*sympatr*(*y*) + *-ic.*] Of, pertaining to, or of the nature of, sympatry. See the extract under ★*sympatry*.

sympatry (sim-pat′ri), *n.* [Gr. σύν, with, together, + πάτρα, fatherland, native country.] See the extract.

> Finally there is a geographical distribution, of the utmost importance in the modification and origin of species and sub-species. Forms found together in certain geographical areas may be called Sympatric (συν, together; πατρα, native country). The occurrence of forms together may be termed *Sympatry*, and the discontinuous distribution of forms Asympatry.
>
> *Poulton*, Essays on Evolution, 1889–1907, p. 62.

Sympetalæ (sim-pet′a-lē), *n. pl.* [NL. (Alexander Braun, 1864). < Gr. σύν, with, together, + πέταλον, leaf, petal, + *-æ.*] A division of dicotyledonous plants embracing all those having a double floral envelop (calyx and corolla) with the parts of the inner (corolla) united, at least at the base. It is therefore coextensive with the *Metachlamydeæ*, because that series, unlike the series *Archichlamydeæ*, is not further subdivided, but it has a lower taxonomic rank, namely, that of a division. See ★*Metachlamydeæ* and *Gamopetalæ*.

symphilism (sim′fi-lizm), *n.* Same as ★*symphily*. *Nature*, Feb. 12, 1903, p. 351.

symphilous (sim′fi-lus), *a.* [Gr. σύν, together, + φίλος, friendly (see ★*symphily*), + *-ous.*] Of or pertaining to symphily. *Nature*, Feb. 12, 1903, p. 351.

symphily (sim′fi-li), *n.* [Gr. συμφιλία, mutual friendship, a false reading for συμφυλία (σύν, together, + φίλος, friendly), accordance, agreement, < σύμφυλος, of the same stock, cognate). See ★*symphilous*.] The occurrence in ant colonies of true guests which are tended by the ants and which usually give out a secretion of which the ants are fond. *Cambridge Nat. Hist.*, VI. 183.

symphonance (sim′fō-nans), *n.* [Gr. σύν, together, + φωνή, voice, + *-ance.*] Electric resonance. [Rare.]

symphonesis (sim-fō-nē′sis), *n.* [NL., < Gr. συμφώνησις, agreement, orig. agreement in sound, < συμφωνεῖν, agree, agree in sound: see *symphony*.] The 'ding-dong,' or onamatopœic, theory of language. *A. J. Ellis*, Philolog. Soc., 1872.

symphonetic (sim-fō-net′ik), *a.* [*symphonesis* (*-et-*) + *-ic.*] Pertaining to or exhibiting symphonesis.

symphony, *n.*—**Pastoral symphony,** in *music*, an instrumental movement, introduced into oratorios and cantatas dealing with the nativity of Jesus (as in Handel's "Messiah"), intended to suggest (the watch of the shepherds.—**Toy symphony,** a musical work like a symphony intended to be played on miniature or toy instruments. The best-known example was composed by Haydn in 1788.

symphorol (sim′fō-rol), *n.* [Gr. σύμφορος, beneficial, useful, + *-ol.*] A trade-name of sodium-caffein sulphonate. It is a colorless, odorless, bitter, pulverulent compound, and is used in medicine as a diuretic.

symphorol-lithium (sim′fō-rol-lith″i-um), *n.* A trade-name of lithium-caffein sulphonate. It is a colorless, odorless, bitter compound, and is used in medicine as a diuretic.

symphorol-sodium (sim′fō-rol-sō″di-um), *n.* A trade-name, same as ★*symphorol*.

symphorol-strontium (sim′fō-rol-stron″shi-um), *n.* A trade-name of strontium-caffein sulphonate. It is a colorless, odorless, bitter, pulverulent compound, and is used in medicine as a diuretic.

symphrase (sim′frāz), *n.* [Gr. σύν, together, + φράσις, speaking.] A word which, in origin or effect, is an agglutinated phrase or sentence; a word-sentence.

> The principles or canons governing the number, kind, and position of notional stems in *symphrases* or word-sentences. *Smithsonian Rep.*, 1893, p. 41.

symphrattic (sim-frat′ik), *a.* [*symphratt*(*ism*) + *-ic.*] Produced by pressure: a name suggested by A. W. Grabau for the regionally metamorphosed rocks.

> Dynamic or regional or pressure metamorphism (Druck metamorphose) i.e. symphrattism, resulting in the production of *symphrattic* rocks.
>
> *Amer. Geol.*, April, 1904, p. 238.
>
> Rocks of this type may be called *symphrattic* rocks.
>
> *Amer. Geol.*, April, 1904, p. 236, note.

symphrattism (sim-frat′izm), *n.* [Gr. συμφράττειν, press together, + *-ism.*] In *geol.*, the general process of regional metamorphism, which is largely due to pressure. *A. W. Grabau.*

Symphurus (sim′fū-rus), *n.* [NL. (Rafinesque, 1810), irreg. < Gr. συμφ(υής), grown together, + οὐρά, tail.] A genus of soles containing many species, rather widely distributed.

symphyllotriæne (sim-fil-ō-trī′ēn), *n.* [Gr. σύν, together, + φύλλον, a leaf, + τρίαινα, a trident.] In the sponge-spicules, a triæne in which the three similar arms are fused together into a disk.

symphyocephalus (sim″fi-ō-sef′a-lus), *n.*; pl. *symphyocephali* (-lī). [NL., < Gr. συμφυής, grown together, + κεφαλή, head.] A double monster which has a single head.

symphysia (sim-fiz′i-ä), *n.* [NL., < Gr. σύν, together, + φύσις, growth. Compare *symphysis*.] The union of parts normally separate.

symphysion (sim-fiz′i-on), *n.*; pl. ***symphysia*** (-ä). [NL., < Gr. σύμφυσις, a growing together. See *symphysis*.] In *craniom.*, the anterior upper terminal point of the symphysis of the lower jaw. *Von Török.*

symphysis, *n.*—**Mandibular symphysis,** the point of contact or of union of the two rami of the lower jaw or mandible. The rami may be merely in contact and the symphysis reduced almost to a point, as in *Echidna*, or the symphysis may extend for the greater portion of the jaw, as in the sperm-whale. Same as *symphysis mandibulæ*.

symphysodactylia (sim″fi-sō-dak-til′i-ä), *n.* [NL., < Gr. σύμφυσις, a growing together, + δάκτυλος, finger.] Fusion of two or more fingers.

Symphyta (sim′fi-tä), *n. pl.* [NL., < Gr. σύν, with, + φυτόν, a plant.] A series of hymenopterous insects including the phytophagous families.

sympiesospondyly (sim-pi-ē-sō-spon′di-li), *n.* [Gr. συμπίεσις, compression, + σπόνδυλος, vertebra, + *-y*3.] In *ichth.*, the abnormal crowding together and shortening of vertebræ. *Proc. Zool. Soc. London*, 1894, p. 100.

Symplocaceæ (sim-plō-kā′sē-ē), *n. pl.* [NL. (Miers, 1853), < *Symploc*(*os*) + *-aceæ.*] A family of dicotyledonous sympetalous plants of the order *Diospyrales*, the sweetleaf family, containing only the genus *Symplocos* (which see).

sympodial, *a.* 2. In *sociol.*, relating or pertaining to a process of irregular development of social groups analogous to the sympodial development in many plants.—**Sympodial classification.** See ★*classification*.

symposiac, *n.* 2. A convivial or humorous glee or catch.

sympsychograph (sim-sī′kō-gráf), *n.* [Gr. σύν, together, + E. *psychograph*.] A humorous and quasi-scientific term for an imaginary composite portrait, produced by the superposition of images of the same thing present at the same time in different minds. *D. S. Jordan*, in Pop. Sci. Mo., Sept., 1896, p. 601.

sympterygium (sim-te-rij′i-um), *n.*; pl. *sympterygia* (-ä). [NL., < Gr. σύν, together, + NL. *pterygium*.] The theoretical form, or type, from which the limbs of vertebrates have been derived.

symptom, *n.*—**Bechterew's symptom,** paralysis of the facial muscles for the automatic movements of expression, with retention of the power of voluntary motion.—**Localizing symptom,** a symptom, especially in disease of the brain or spinal cord, which serves to indicate the location of the lesion.—**Musset's symptom,** slight movements of the head synchronous with the pulsations of the heart. *Med. Record*, May 2, 1903, p. 713.—**Rational symptoms.** Same as *subjective symptoms*.—**Rumpf's symptom.** See *Rumpf's* ★*sign*.—**Trousseau's symptom,** the occurrence of a paroxysm when the motor nerve of a limb is compressed in tetany.

Symptomatic treatment. See ★*treatment*.

symptosis, *n.* 2. Progressive emaciation.

symtra (sim′trä), *n.*; pl. *symtræ* (-trē). [NL. *sym*(*me*)*tra*, fem. of *symmetrus*, < Gr. σύμμετρος, symmetric.] In *math.*, a symmetrical quadrilateral with a median as axis.

syn. An abbreviation of *synonym* or *synonymous*.

syn-2. In *chem.*, a prefix used to indicate that two groups or atoms in a compound are so situated in space that they can readily react with each other. See ★*anti-* (3).

synactic (sin-ak′tik), *a.* [Gr. συνακτικός, able to bring together, < συνακτός, brought together, < συνάγειν, bring together, < σύν, together, + ἄγειν, bring. The sense seems to imply association with *act*.] Same as *synergetic*.

synærema (sin-er′ē-mä), *n.* [NL., < συναίρεμα, equiv. to συναίρεσις, a drawing together, contraction. See *syneresis*.] Wrinkling or corrugation.

synæsthesia, *n.* 2. In Ribot's doctrine of sympathy, the agreement of emotional states. *Ribot* (trans.), Psychol. of Emotions, p. 231.

synagogual, *a.* See *synagogal*.

synalgic (si-nal′jik), *a.* [*synalg*(*ia*) + *-ic.*] Relating to or suffering from synalgia.

synangic (si-nan′jik), *a.* [*synang*(*ium*) + *-ic.*] Same as *synangial*. *Encyc. Brit.*, XXXI. 417.

synanthetic (sin-an-thet′ik), *a.* [*synanthesis* (*-thet-*) + *-ic.*] Pertaining to or exhibiting synanthesis.

synanthrin (si-nan′thrin), *n.* Same as *inulin*.

synanthrose (si-nan′thrōs), *n.* Same as *levulin*.

synaphymenitis (sin″a-fi-mē-nī′tis), *n.* [NL., < Gr. συναφής, connected, + ὑμήν, membrane, + *-itis.*] Same as *conjunctivitis*.

synaposematic (sin-ap″ō-sē-mat′ik), *a.* [*syn-* + *aposematic*.] In *biol.*, having the same aposematic or warning characteristics as other allied species; possessing common warning colors.

> In 1897 I pointed out that Müllerian resemblance is not true Mimicry at all, but rather an example of common Warning Colour, and with the assistance of Mr. Arthur Sidgwick the term *Synaposematic* was proposed as descriptive of it; the term Aposematic having been previously suggested for ordinary Warning Colours.
>
> *Poulton*, Essays on Evolution, 1889–1907, p. 223.

Synaposematic coloring, resemblance. See ★*coloring*, ★*resemblance*.

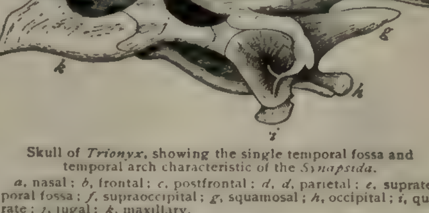
synaposematism (sin″ap-ō-sē′ma-tizm), *n.* [*synaposemat*(*ic*) + *-ism.*] The character of being synaposematic. See ★*synaposematic*.

> As a further illustration of what Poulton has aptly named "*synaposematism*," or the adoption of a common warning badge on the part of distasteful forms, we may take the wonderfully diverse assemblage that centres round the conspicuous and distasteful beetles belonging to the genus Lycus. This assemblage, in South Africa, contains wasps, Braconids, moths, a bug, and a two-winged fly, besides beetles belonging to three or four different families. I have myself seen several members of this group, heterogeneous in affinity though wonderfully similar in hue and pattern, on or about one tree at East London, in South Africa. Be it remarked that they were all conspicuous insects, and exposed themselves freely, so that there could be no question of a common cryptic coloration. The assemblage, beyond doubt, is mainly if not entirely synaposematic.
>
> *Nature*, Oct. 31, 1907, p. 676.

synapse (si-naps′), *n.* Same as ★*synapsis*. *Encyc. Brit.*, XXXI. 739.

synapsid (sin-ap′sid), *n.* and *a.* Same as ★*synapsidan*. *Amer. Nat.*, Feb., 1904, p. 102.

Synapsida (sin-ap′si-dä), *n. pl.* [NL., < Gr. σύν, together, + ἁψίς, an arch.] A subclass of *Reptilia* having the roof of the cranium solid, or with a single, large supratemporal



Skull of *Trionyx*, showing the single temporal fossa and temporal arch characteristic of the *Synapsida*.

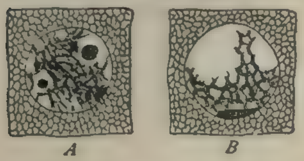
a, nasal; *b*, frontal; *c*, postfrontal; *d*, *d*, parietal; *e*, supratemporal fossa; *f*, supraoccipital; *g*, squamosal; *h*, occipital; *i*, quadrate; *j*, jugal; *k*, maxillary.

opening, the squamosal large, the quadrate reduced and fixed, and the coracoid and procoracoid separate or suturally united. Contrasted with *Diapsida*. *Osborn*, 1903.

synapsidan (si-nap′si-dạn), *a.* and *n.* Pertaining to, or having the characters of, the group of reptiles known as the *Synapsida*; a member of the *Synapsida*.

Synapsidan and mammalian types of shoulder-girdle. *Amer. Nat.*, Feb., 1904, p. 98.

synapsis (si-nap′sis), *n.* [NL., ‹ Gr. *σύναψις*, a joining, ‹ *συνάπτειν*, join, ‹ *σύν*, together, + *ἅπτειν*, touch.] **1.** Same as ★*mitapsis*.—**2.** The name originally applied by J. E. S. Moore, in 1892, to the contracted state of the nuclear skein occurring previous to the reduction of the chromosomes and to the formation of tetraspores, sperms, or eggs.—**3.** The anatomical connection between the processes or neuraxons of two or more nerve-cells. *Foster and Sherrington*, 1897.—**Late synapsis.** Same as ★*postsynapsis*.



Synapsis.

A, pollen mother-cell of a lily showing separation of chromosomes: *B*, the same cell after synapsis.

synaptic (si-nap′tik), *a.* [*synapsis* (*synapt-*) + *-ic*.] Of or pertaining to synapsis.

In the second, the identity of the original somatic chromosomes becomes lost during the *synaptic* rest, and these are then replaced by half the number of new ones, which, during their formation, become longitudinally split twice in planes at right angles to each other. *Nature*, Aug. 6, 1903, p. 335.

synaptically (si-nap′ti-kạl-i), *adv.* In a synaptic manner. *Encyc. Brit.*, XXV. 399.

synapticulum (sin-ap-tik′ụ̄-lum), *n.*; pl. *synapticula* (-lạ̈). [NL., ‹ Gr. *συναπτός*, joined, + L. dim. *-i-cŭlum*. Compare *synapticula*.] Same as *dissepiment*.

synaptiole (si-nap′ti-ōl), *n.* [Gr. *συναπτός*, joined, + *-i-ole*.] Same as *dissepiment*.

Synaptosauria, *n. pl.* It is within the subclass *Synapsida*; in it are included forms with a single temporal bar, as distinguished from the *Cotylosauria*, in which the temporal region is imperforate.

syncanthus (sin-kan′thus), *n.* [NL., ‹ Gr. *σύν*, with, + *κανθός*, the corner of the eye.] Immobility of the eyeball due to adhesion to the orbital structures.

Syncarpha (sin-kär′fạ̈), *n.* [NL. (De Candolle, 1810), ‹ Gr. *σύν*, together, + *κάρφος*, *κάρφη*, palet, chaff; in allusion to the cohesion of the chaff-scales of the receptacle in *S. gnaphaloides*.] A genus of suffruticose or herbaceous plants of the family *Asteraceæ*, characterized by their woolly stems and leaves and showy heads of flowers. The genus is related to *Helichrysum*, which it closely resembles in habit, but is distinguished by the plumose pappus of the flowers. Thirty-six species occur in temperate and tropical Australia, while twelve are found in the Cape region of South Africa.

syncephalic (sin-se-fal′ik), *a.* [*syncephalus* + *-ic*.] Of or relating to a syncephalus. *Buck*, Med. Handbook, VII. 685.

Synchirus (sin-kī′rus), *n.* [NL., ‹ Gr. *σύν*, together, + *χείρ*, hand.] A genus of cottoid fishes found off the northern Pacific coast of America.

synchisite (sin′ki-sīt), *n.* [Prop. **synchysite*, ‹ Gr. *σύγχυσις*, mixture, confusion, + *-ite*².] A fluocarbonate of the cerium metals and calcium, $CeFCa(CO_3)_2$, occurring in wax-yellow rhombohedral crystals. It is found in southern Greenland and is related to parisite.

synchondrosially (sin-kon-drō′si-ạl-i), *adv.* In a synchondrosial manner; by means of synchondrosis: said of bones that are attached to one another by cartilage. *Proc. Zool. Soc. London*, 1902, p. 291.

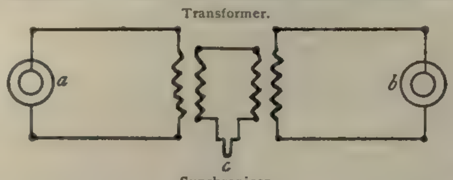
synchroneity (sin-krọ-nē′i-ti), *n.* [*synchron(ous)* + *-e-ity*.] Synchronism; the character or fact of being synchronous; specifically, in *geol.*, supposed synchronism in time of deposition of strata.

synchronic (sin-kron′ik), *a.* Same as *synchronical*.

synchronicity (sin-krọ-nis′i-ti), *n.* Synchronism. *Buck*, Med. Handbook, VIII. 152.

synchronistical (sin-krọ-nis′ti-kạl), *a.* Same as *synchronistic*.

synchronizer, *n.* **2.** In *elect.*, an apparatus for indicating when two alternating-current machines are revolving at the same speed. The device commonly employed consists of an incandescent lamp *c* simultaneously supplied with current from both machines, *a* and *b*, by means of a suitable stepdown transformer. See the diagram. The lamp pulsates in brightness so long as the machine differs in speed and the pulsations diminish in frequency as synchronism is approached. Another form called the *dial synchronizer* has a pointer on a dial which shows by its speed of revolution the departure from synchronism of the two machines. The speed of the pointer is equal to the difference in the frequencies of the machines and the point on the dial at which it comes to rest indicates the phase relations when synchronism is attained. The dial synchronizer also shows which of the two machines has the greater speed. *Trans. Amer. Inst. Elect. Engin.*, 1901, p. 918.



Synchronizer.

synchronizing-brake (sing′krọ-nī-zing-brāk″), *n.* A device for reducing the speed of an alternating-current motor so as to bring it into synchronism with other similar motors, or for regulating the speeds of such motors so as to maintain synchronism between them.

synchronizing-torque (sing′krọ-nī-zing-tôrk″), *n.* See ★*torque*.

synchronograph (sing′krọ-nọ-gráf), *n.* [Gr. *συγχονίξειν*, be of the same time, + *γράφειν*, write.] The apparatus used in the system of sine-wave telegraphy of Crehore and Squier. It includes a generator which gives an alternating current of sinusoidal wave-form and a frequency of several hundred reversals per second, and a synchronous transmitter which sends dots of the continental code by the suppression of single positive half waves, and dashes by the suppression of whole waves. *Sci. Amer. Sup.*, May 8, 1897, p. 17811.

synchronoscope (sing′krọ-nọ-skōp), *n.* [Gr. *σύγχρονος*, synchronous, + *σκοπεῖν*, view.] **1.** In *elect.*, same as ★*synchronizer*, 2.—**2.** An apparatus in which the principle of the revolving mirror is employed for the study of periodic phenomena.

synchronous, *a.* **2.** In *elect.*, in step with the alternations of the current.—**Synchronous converter, machine, vibrations.** See ★*converter*, 3, ★*machine*, ★*vibration*.—**Synchronous motor**, an alternating-current motor of a type that will maintain its motion only when in step with the current supplied to it. Such motors have therefore to be started and brought to the proper speed by some extraneous means.—**Synchronous transmitter**, a sending instrument used in sine-wave telegraphy. It consists of a make-and-break device in synchronism with the generator which supplies the signaling current. The adjustment is such that the circuit is opened and closed only at times of reversal when no current is flowing. See ★*synchronograph*.

synclase (sin′klās), *n.* [Gr. *σύν*, with, + *κλάσις*, a breaking.] A name suggested by A. Daubrée for small, obscure cracks in rocks produced by some internal mechanical or molecular action. *Geikie*, Text-book of Geol., p. 658.

Synclinal forms, petal-shaped forms in the solar corona, bounded by curved streamers which rise at different points on the solar surface and converge. *A. M. Clerke*, Problems in Astrophysics, p. 126.—**Synclinal line.** Same as *synclinal axis*.

synclinorial (sing-kli-nō′ri-ạl), *a.* [*synclinori(um)* + *-al*¹.] Pertaining to or connected with a synclinorium.

synclonus (sin′klō-nus), *n.* [NL., ‹ Gr. *σύν*, together, + *κλόνος*, violent confused motion.] Clonus involving several muscles.

syncope, *n.*—**Local syncope.** Same as *local asphyxia* or *Raynaud's disease*. *Jour. Exper. Med.*, Oct. 1, 1900, p. 104.

syncopism (sin′kọ-pizm), *n.* [*syncop(e)* + *-ism*.] Same as *syncope*, 1; especially syncope in which the omitted letters are represented by dots.

syncraniate (sin-krā′ni-āt), *a.* [Gr. *σύν*, together, + *κρανίον*, skull, + *-ate*.] Noting that type of skull in which certain vertebral segments are included: contrasted with *archæcraniate*, or that primitive type of skull in which vertebral segments take no part. *G. B. Howes*, in Smithsonian Rep., 1902, p. 591.

syncryptic (sin-krip′tik), *a.* [Gr. *σύν*, together, + *κρυπτός*, hidden, + *-ic*.] In *biol.*, pertaining to or of the nature of the resemblance between organisms that are concealed in the same way. See *syncryptic* ★*resemblance*.

syncytiolysin (sin-sit-i-ol′i-sin), *n.* [*syncytium* + *-o-* + *lysin*.] A lysin which causes the destruction of placental tissue. *Buck*, Med. Handbook, App., p. 539.

syncytioma (sin-sit-i-ō′mạ̈), *n.*; pl. *syncytiomata* (-mạ-tạ̈). [NL., ‹ *syncytium* + *-oma*.] A tumor composed of syncytial tissue. *Med. Record*, Oct. 5, 1907, p. 578.

syndactalia (sin-dak-tā′li-ạ̈), *n. pl.* [NL., ‹ Gr. *σύν*, together, + *δάκτυλος*, finger, digit, + *-alia*.] A comprehensive term for those birds, such as kingfishers and trogons, in which the proximal portions of two or more toes are united. It has no particular significance in classification.

syndactylia (sin-dak-til′i-ạ̈), *n.* [NL., ‹ Gr. *σύν*, together, + *δάκτυλος*, finger.] Same as *syndactylism*.

syndactylize (sin-dak′ti-līz), *v. t.*; pret. and pp. *syndactylized*, ppr. *syndactylizing*. [*syndactyl(ic)* + *-ize*.] To render syndactylic or syndactyl.

When two fingers are closely *syndactylised* the nails are also united. *Biometrika*, March, 1908, p. 27.

syndactyly (sin-dak′ti-li), *n.* [*syndactyl* + *-y*³.] Syndactylism.

It is characterized by symmetrical clefting of the feet, with complete *syndactyly* of the remaining two groups of toes, and an irregular though often symmetrical deformity of the hands. *Biometrika*, March, 1908, p. 37.

synderesis (sin-der′ẹ̄-sis), *n.* [Also *synteresis*, *sinteresis*; Gr. *συντήρησις*, preservation.] A technical term of the scholastic philosophy, signifying the innate principle in the moral consciousness of every man, which directs him to good and restrains him from evil. *Baldwin*, Dict. of Philos. and Psychol., II. 655.

syndesis (sin′de-sis), *n.* [Gr. *σύνδεσις*, a binding together.] The state or condition of being bound together; constriction.

syndesmectopia (sin″des-mek-tō′pi-ạ̈), *n.* [NL., ‹ Gr. *σύνδεσμος*, a ligament, + *ἔκτοπος*, out of place.] Dislocation, congenital or acquired, of a ligament.

syndesmitis (sin-des-mī′tis), *n.* [NL., ‹ Gr. *σύνδεσμος*, a ligament, + *-itis*.] Inflammation of a ligament.

syndesmoma (sin-des-mō′mạ̈), *n.*; pl. *syndesmomata* (-mạ-tạ̈). [NL., ‹ Gr. *σύνδεσμος*, a ligament, + *-oma*.] A tumor composed chiefly of connective tissue.

syndete (sin′dẹ̄-tē), *n.* [NL., ‹ Gr. *σύν*, together, + *δετή*, fagot, fem. of *δετός*, bound.] In alcyonarians, that region where the zoöids are joined together. Compare ★*apodete*. *G. C. Bourne*, in Trans. Linn. Soc., Zool., March, 1900, p. 522.

syndiagnostic (sin″dī-ag-nos′tik), *a.* [Gr. *σύν*, with, together, + E. *diagnostic*.] See the extract.

Forms having certain structural characters in common distinguishing them from the forms of other groups. Groups thus defined by the Linnæan method of Diagnosis may be conveniently called *Syndiagnostic* (*συν*, together; *διάγνωσις*, distinction). *Poulton*, Essays on Evolution, 1889–1907, p. 60.

syndiazo (sin-dī-az′ō), *a.* [*syn-* + *diazo*.] In *organic chem.*, noting those diazo derivatives which have the grouping $\begin{array}{r}\mathrm{R-N}\\ \|\\ \mathrm{XON}\end{array}$, where R is an aromatic hydrocarbon radical such as phenyl (C_6H_5), and X is hydrogen or an alkali metal.

syndicalism (sin′di-kạl-izm), *n.* [F. *syndicalisme*, ‹ *syndical*, relating to a *syndicat*, or trade-union.] The principles or methods of the syndicalists. See ★*syndicalist*.

The sudden rise of this new *syndicalism* precipitates what is perhaps only the inevitable evolution of all Socialism, peaceful or otherwise. It directly threatens the radicalism which has so long monopolized the political power of the French Republic for its own anti-clerical projects. Indeed, the new power is likely to prove of more immediate importance to the Republic than all the conflict of Parliament and government with Roman Catholic citizens, who have never known how to use either their votes or their legal rights of action. *S. Dewey*, in The Atlantic, Aug., 1907, p. 277.

syndicalist (sin′di-kạl-ist), *n.* [*syndical(ism)* + *-ist*.] See the extract.

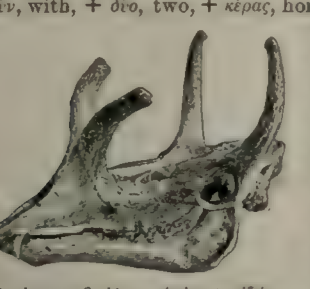
At the end of the twelve months, the *Syndicalist* movement—a sort of revolutionary, as distinguished from political, trade-unionism—has shown itself a power with which the State has to count for the future. The separate labor unions (*syndicats*), their regional and national federations, and the Bourses de Travail opened by the State for them in large cities, have realized an effective unity among themselves in one vast general labor confederation—Confédération Générale du Travail. This has grown so rapidly that already it directs rather than obeys the Socialist political party, of which indeed it vaunts its independence. It has succeeded in enlisting in its propaganda even the unions of government employees, such as school-teachers and postmen. *S. Dewey*, in The Atlantic, Aug., 1907, p. 276.

syndrome, *n.*—**Charcot's syndrome**, intermittent claudication (which see, under ★*claudication*).

syndromic (sin-drom′ik), *a.* [*syndrom*(*e*) + *-ic.*] Of or pertaining to the syndrome or aggregation of symptoms of any disease.

> The *syndromic* episodes, the extreme manifestations of dis-equilibrium, bring to light, by their exaggeration, the false psychic mechanicism which is found, though in less degree, among these degenerates.
> *Smithsonian Rep.*, 1890, p. 648.

Syndyoceras (sin-dī-os′e̤-ras), *n.* [NL., ‹ Gr. σύν, with, + δύο, two, + κέρας, horn.] A genus of extinct mammals, probably allied to the *Cervidæ*, bearing on its skull four curved horns in two pairs, the posterior rising above the orbits, the anterior resting on the nasalia, united at the base and curving outward. The canine teeth are far forward and strongly developed. Other parts of the skeleton are partly known. It is found in the *Daimonelix* beds of Miocene Tertiary in Nebraska.


Syndyoceras Cooki, one ninth natural size.

synecdochic (sin-ek-dok′ik), *a.* [Gr. συνεκδοχικός, ‹ συνεκδοχή, synecdoche.] Characterized by synecdochism; synecdochical.

> Thus incantation and sorcery through nail-parings, hair-combings, and other parts of the person (the *synecdochic* magic of Mason), and the wearing of scalps or fingers or teeth of slain enemies, first as charms and later as trophies, grow up as features in formal or ceremonial propitiation of mysterious powers.
> *An. Rep. Bur. Amer. Ethnol.*, 1894–95, p. 21.

synecdochism (si-nek′dō̤-kizm), *n.* [*synecdoch*(*e*) + *-ism.*] In *ethnol.*, the belief that part of an object or of a person is representative of the whole object or person, so that an act performed on the part has the same influence as the same act performed on the whole. Witchcraft by means of hair or parings of nails of the victim is an example of synecdochism.

> When, in the stage of amulet wearing and *synecdochism*, the warring tribesman slew an enemy, he sometimes mutilated the remains and even ate of the heart, not only in savage triumph, but mainly in order that he might gain the courage and strength of his quondam opponent; and partly as a trophy, but chiefly as a mystical talisman and constant invocation to the powers, he appended the scalp to his spear or belt, or strung the teeth in a necklace, or converted the erstwhile powerful hand into a gorget. *An. Rep. Bur. Amer. Ethnol.*, 1894-95, p. 23.

synechiological (si-nek″i-ō̤-loj′i-ka̤l), *a.* Of or pertaining to synechiology.

synechiology, *n.* **3.** In Herbartian philosophy, the metaphysical and epistemological doctrine of space and time.

synechism (sin′e-kizm), *n.* [Gr. συνεχής, continuous, + *-ism.*] That tendency of philosophical thought which insists upon the idea of continuity as of prime importance in philosophy and, in particular, upon the necessity of hypotheses involving true continuity. *Baldwin*, Dict. of Philos. and Psychol., II. 657.

synechologic, synechological (sin-e-kō̤-loj′ik, -i-ka̤l), *a.* Same as ⋆*synechiological.*

> Fechner's fourth point was connected with this inclusion of personal spirits in higher sparits and in the highest. It is his so-called "*synechological* view" of the soul
> *Encyc. Brit.*, XXX. 659.

synechology (sin-e-kol′ō̤-ji), *n.* Same as *synechiology.*

synecthry (sin′ek-thri), *n.* [Gr. σύν, together, + ἐχθρός, hostile, + *-y*^{3}.] The occurrence in ant-colonies of insects to which the ants are hostile, but which nevertheless succeed in maintaining their position as unwelcome guests: opposed to ⋆*symphily* (which see). *Cambridge Nat. Hist.*, VI. 183.

synepigonic (sin″ep-i-gon′ik), *a.* [Gr. σύν, with, together, + ἐπίγονος, descendant, + *-ic.*] See the extract.

> Forms which have been shown by human observation to be descended from common ancestors or from a common parthenogenetic or self-fertilizing ancestor. Such groups may be called *Synepigonic* (συν, together; ἐπιγονος, descendant). Breeding from common parents or from a common parthenogenetic or self-fertilizing parent may be spoken of as epigony or the production of Epigonic evidence.
> *Poulton*, Essays on Evolution, 1889–1907, p. 61.

synergastic (sin-ėr-gas′tik), *a.* [Gr. σύν, together, + ἐργαστικός, working.] Working together. See the extract.

> Another step in advance could be taken if we could accept Max Müller's *synergastic* or co-operative theory of language, which regards verbal roots as sounds which, in the infancy of civilization, were habitually uttered by numbers of men engaged in rowing, hammering, pile-driving, etc. If the first words of primitive man were such rhythmical accompaniments of arm and hand movements which, as we have seen, are directed chiefly by the left brain, the fact that the production of speech is governed by neighboring regions of the same hemisphere becomes less astonishing. I advance this hypothesis with some diffidence as I do not know how much vitality is retained by the co-operative theory which, I believe, has been abandoned by the majority of philologists.
> *H. Liepmann*, in Sci. Amer. Sup., Oct. 19, 1907, p. 251.

synergia (si-nėr′ji-ä̤), *n.* [NL. See *synergy.*] **1.** Same as *synergy.* Specifically—**2.** In *psychol.*, a coöperation of motor tendencies: opposed to *synæsthesia.* See the extract.

> If . . . we try to follow the evolution of sympathy, from its most rudimentary to its highest forms, we distinguish three principal phases. The first, or physiological, consists in an agreement of motor tendencies, a *synergia;* the second, or psychological, consists in an agreement of the emotional states, a synaesthesia; the third, or intellectual, results from a community of representations or ideas, connected with feelings and movements. *Ribot* (trans.), Psychol. of Emotions, p. 231.

synergic (si-nėr′jik), *a.* [Gr. συνεργός, working together, + *-ic.*] Same as *synergetic.* *Buck*, Med. Handbook, IV. 854.

synergist, *n.* **2.** One who or that which coöperates with another in the production of a certain effect. *Buck*, Med. Handbook, I. 597.

synergize (sin′ėr-jīz), *v. i.*; pret. and pp. *synergized*, ppr. *synergizing.* [Gr. συνεργός, working together, + *-ize.*] To act as a synergist. See ⋆*synergist*, 2. *Buck*, Med. Handbook, II. 15.

syngamic (sing-gam′ik), *a.* [*syngam*(*y*) + *-ic.*] Pertaining to or characterized by syngamy, in either sense of that word. *Poulton.* See the extracts under ⋆*syngamy*, 1 and 2.

syngamous (sing′ga̤-mus), *a.* [*syngam*(*y*) + *-ous.*] **1.** Same as ⋆*syngamic.*—**2.** Specifically, in *embryol.*: (*a*) Occurring at the time of the fertilization of the ovum. (*b*) Determined, as to sex, at the time when the ovum is fertilized.

syngamy (sing′ga̤-mi), *n.* [Gr. σύγγαμος, united in marriage, ‹ σύν, together, + γάμος, marriage.] **1.** Natural and fertile interbreeding.

> Forms which freely interbreed together. These may be conveniently called Syngamic (συν, together; γαμος, marriage). Free interbreeding under natural conditions may be termed *Syngamy;* its cessation or absence, Asyngamy (equivalent to the Amixia of Weismann).
> *Poulton*, Essays on Evolution, 1889–1907, p. 60.

2. The fertilization of the egg considered as a process of cellular or nuclear fusion. *Hartog*, 1903.

> Marcus Hartog points out that the term "fertilisation" as actually used is too ambiguous for scientific precision. In its first and older sense it denotes the starting into active cell-life and multiplication of a resting-cell, and should properly be regarded as one case of germination. In its second sense, regarded now-a-days as the "strict" sense, it denotes a process of cellular (or nuclear) fusion, and is better designated as "*syngamy.*"
> *Jour. Roy. Micros. Soc.*, Oct., 1904, p. 507.

syngenetic, *a.* **2.** In *geol.* See the extract.

> Two genetic terms have, however, found general acceptance after their recent introduction by Stelzner and Beck. The terms are *syngenetic* and epigenetic. The former comprise those deposits which originate simultaneously with the surrounding rocks either through the differentiation of magmas, through mechanical deposition, or through chemical precipitation in seas or lakes. In the epigenetic deposits, on the other hand, the ores formed by filling or metasomatic action are later than the encasing rocks.
> *Contrib. to Econ. Geol.*, U. S. Geol. Surv., Bulletin 213, [Dec., 1907, p. 750.

syngenic (sin-jen′ik), *a.* [Gr. συγγενής, born with, congenital, + *-ic.*] **1.** Same as *congenital.*—**2.** Same as *syngenetic.*

syngenism (sin′jē̤-nizm), *n.* [*syngen*(*ic*) + *-ism.*] The blending of egoism and sympathy, in devotion to a limited social circle or natural community rather than to all mankind. *Gumplovicz* (trans.), Outlines of Sociol., p. 155.

syngignoscism (sin-gig′nō̤-sizm), *n.* [Irreg. ‹ Gr. συγγιγνώσκειν, think with another, agree (‹ σύν, together, + γιγνώσκειν, know), + *-ism.*] Same as *hypnotism.*

synkaryon (sin-kar′i-o̤n), *n.*; pl. *synkarya* (-ä̤). [NL., ‹ Gr. σύν, together, + κάρυον, nut, kernel.] The paired nuclei which are found in certain stages of the life-cycle of the *Uredinales* and the higher *Basidiomycetes*, and whose union is regarded as an act of fertilization. Incorrectly *synkarion.* *R. Maire*, 1900.

> L. Petri reviews the work done on the basidiospore by Maire, Wager and other writers. He finds the two nuclei (the *synkarion*) present in the hyphæ of the trama, as described for other hymenomycetes; they are of extremely minute dimensions.
> *Jour. Roy. Micros. Soc.*, April, 1904, p. 222.

synkaryophyte (sin-kar′i-ō̤-fīt), *n.* [Gr. σύν, together, + κάρυον, nut, kernel, + φυτον, a plant.] The stage in the life-history of a fungus in which synkarya, or paired nuclei, are formed.

> We find here the first suggestion of that phase in the life-history, the *synkaryophyte*, which plays so important a part in the development in the Basidiomycetes.
> *Jour. Roy. Micros. Soc.*, Feb., 1904, p. 94.

synkinesis (sin-ki-nē′sis), *n.* [NL., ‹ Gr. συγκίνησις, motion together, commotion, ‹ σύν, together, + κίνησις, motion.] Synergetic movements of reflex origin.

synkinetic (sin-ki-net′ik), *a.* Of or pertaining to synkinesis.

synod, *n.*—**General synod.** (*a*) The first general organization of the synods of the Lutheran Church in the United States, formed in 1820. Membership was not dependent on strict adherence to the letter of the Augsburg Confession. (*b*) In the Reformed Dutch Church and in the Reformed German Church of the United States, a body composed of clerical and lay representatives from the classes, having complete supervision of the church and acting as the highest judicatory.—**Legatine synod,** a synod under the presidency of a papal legate.—**Particular synod.** (*a*) In the *Reformed Dutch Ch.*, a council of four ministers and four elders from each classis in a district, with supervisory powers. (*b*) In the *Lutheran Ch.*, the district council, composed of all the ministers and one lay representative from each congregation in the district. (*c*) In the *Reformed German Ch.*, a delegated body of ministers and elders from adjacent classes, subject to the general synod.

Synodical Conference. See ⋆*conference.*

synœcia^{1} (sin-ē′si-ä̤), *n. pl.* [Gr. συνοίκια, neut. pl., ‹ σύν, together, + οἶκος, house.] In *Gr. antiq.*, a public festival in Athens which commemorated the uniting by Theseus of all the towns of Attica under the leadership of Athens. Also *synoikia.*

synœcia^{2} (si-nē′shiä̤), *n.* [NL., ‹ Gr. συνοικία, a community.] A community; a body of people living together, as in a city or a city block: sometimes equivalent to the Latin *insula*, a city block.

synœcism (si-nē′sizm), *n.* [Gr. σύνοικος, living together, + *-ism.* See ⋆*synœcia*^{2}.] A living together in a community; a grouping together: a uniting.

> When the town was first formed in 470 B.C. by the "*synœcism*" of the neighbouring villages, the river Ophis flowed through the midst of it. *Encyc. Brit.*, XXX. 529.

> We would give much to know the details of the building of the city on the slopes of Ithome and the *synoecism* of Messenia.
> *J. F. Bury*, in Jour. Hellenic Studies, XVIII. 15.

synœcize (si-nē′sīz), *v. i.*; pret. and pp. *synœcized*, ppr. *synœcizing.* [*synœc*(*ism*) (see ⋆*synœcia*^{2}) + *-ize.*] To live together, or to cause to live together, in communities, cities, colonies, blocks, houses.

> If the only purpose of Megalopolis had been to *synoecize* the Maenalians and Parrhasians, a city one quarter as large again as Mantinea would have been ample for the need.
> *J. B. Bury*, in Jour. Hellenic Studies, XVIII. 16.

synorchism (sin-ôr′kizm), *n.* [Gr. σύν, together, + ὄρχις, testicle, + *-ism.*] A condition in which the two testicles are fused into one.

synotia (si-nō′ti-ä̤), *n.* [NL., ‹ Gr. σύν, together, + οὖς (ὠτ-), ear.] A monstrosity in which the face is absent, the two ears being united in the median line.

synotic (si-not′ik), *a.* [Gr. σύν, together, + οὖς (ὠτ-), ear, + *-ic.*] In *zoöl.*, pertaining to or exhibiting synotia, or the union and fusion of the ears on the middle line of the head, on either its upper or lower surface.

> A very similar series of variations occurs in regard to the ears of vertebrates, which in the *synotic* or cephalotic condition are compounded in the middle line to a varying degree. *W. Bateson*, Study of Variation, p. 458.

synovectomy (sin-ō̤-vek′tō̤-mi), *n.* [*synovia* + Gr. ἐκτομή, excision.] Excision of the synovial membrane of a joint. *Buck*, Med. Handbook, VI. 519.

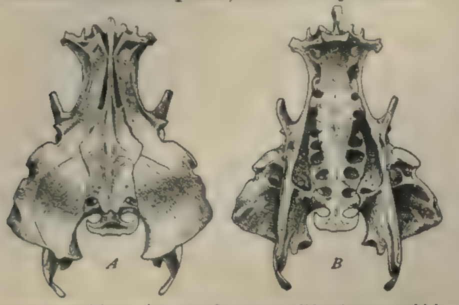
Synovial fringes. See *synovial folds*, under *synovial.*

synovin (si-nō′vin), *n.* [*synov*(*ia*) + *-in*^{2}.] A mucinous body found in the synovial fluid.

synrhabdosome (sin-rab′dō̤-sōm), *n.* [Gr. σύν, together, + ῥάβδος, rod, + σῶμα, body.] The composite colonial stock of the axonophorous graptolites, consisting of rhabdosomes. The typical form is the synrhabdosome of *Diplograptus*, where many rhabdosomes, each grown from a sicula, are arranged radially around the central organ.

synsacral (sin-sā'kral), *a.* [NL. *synsacrum* + *-al*¹.] Relating to, or forming part of, the synsacrum, or series of ankylosed vertebræ forming the so-called 'sacrum' of birds. See cut under ★*synsacrum*. *Proc. Zool. Soc. London*, 1903, p. 282.

synsacrum (sin-sā'krum), *n.*; pl. *synsacra* (-krä). [NL., < Gr. *σύν*, together, + NL. *sacrum*, sacrum.] 1. The composite sacrum in certain extinct reptiles, which may consist of any number of co-ossified vertebræ from three to ten. In the dinosaurs the number is greatest, while in the pterosaurs there are from three to six.—2. The mass of united vertebræ to which the pelvis is attached in birds. It consists of from ten to twenty vertebræ comprising dorsals, lumbars, true sacrals, and caudals, and is commonly termed the 'sacrum.'



Synsacrum of the road-runner, *Geococcyx californianus*, to which the ilia are attached.
A, dorsal view; *B*, ventral view.

> The most complete *synsacrum* is that of *Coua*, and is made up as follows: — 1 thoracic, 3 lumbar, 3 lumbo-sacral, 2 sacral, and 4 caudal, making 13 in all.
> *Proc. Zool. Soc. London*, 1903, p. 273.

Syntax china. See ★*china*¹.

syntaxis, *n.* 2. In *anat.*, same as *articulation*.

syntechnic (sin-tek'nik), *a.* [Gr. *σύντεχνος*, practising the same art, < *σύν*, together, + *τέχνη*, art.] Having or pertaining to functional similarity as leading to a sort of likeness between organisms. See *syntechnic* ★*resemblance*.

> Such likeness may be called *Syntechnic* Resemblance, incidentally produced by dynamic similarity, just as Syncryptic Resemblance is produced by static similarity.
> *Encyc. Brit.*, XXVII. 147.

syntectic, *a.* 2. See the extract.

> The sunken blocks must be dissolved in the depths of the original fluid, magmatic body, with the formation of a "*syntectic*" secondary magma. This very convenient name for a magma rendered compound by assimilation or by the mixture of melts, has been proposed by F. Loewinson-Lessing, Comptes Rendus, 7ᵉ session, Congrès géol. internat. St. Petersburg, 1899, p. 375.
> *Amer. Jour. Sci.*, July, 1908, p. 19.

synthermal, *a.* II. *n.* A line connecting places having the same temperature at the same moment of time; an isotherm based upon simultaneous observations, as distinguished from one based on synchronous local time observations.

synthesis, *n.* 3. In *Rom. antiq.*, a short garment, not known by any representations, worn instead of the toga at the Saturnalia and commonly at banquets.—**Asymmetric synthesis,** in *phys. chem.*, a synthesis of a compound containing an asymmetric carbon atom in such conditions that an excess of either the dextrorotatory or the levorotatory compound shall be formed. *Jour. Phys. Chem.*, Oct., 1904, p. 528.—**Synthesis of contiguity.** (*a*) Reduction of a dislocation, replacement of a hernia, or return to its normal position of a displaced organ. (*b*) In *chem.*, the union of two compound bodies to form a more complex one.

synthesizer (sin'the-sī-zėr), *n.* [*synthesiz*(*e*) + *-er.*] In *acoustics*, an instrument for the production of complex tones of predetermined composition. A form devised by Hallock consists of an electromagnetic arrangement for the production of fluctuating currents of the desired frequencies and for the simultaneous introduction of these into the circuit of a telephone.

synthetic, *a.* 4. In *chem.*, noting a substance made by artificial means, in the laboratory, in contradistinction to one produced without human agency, as in vegetables and animals. Thus indigo is produced from certain plants and may also be made artificially, or synthetically, from naphthalene.—5. In pictorial composition, noting an arrangement which tells a story or explains a situation.

> Pictures of the kind that used to be called "historic" and that we are now beginning to term "*synthetic.*"
> *C. Waern*, in Portfolio, XXVI. 15.

Synthetic division, in *alg.*, an abbreviated form of division, using, besides other contractions, detached coefficients.—**Synthetic touch,** simultaneous apprehension by touch of a number of impressions, as of a number of points in the Braille alphabet for the blind.

> The right finger precedes and apprehends a group of points simultaneously (*synthetic touch*), the left finger follows somewhat more slowly and apprehends the single points successively (analytic touch).
> *W. Wundt* (trans.), Outlines of Psychol., p. 108.

Synthetic type, an animal which combines characters of several groups. The extinct *Chalicotherium*, for example, has the teeth and general structure of an ungulate combined with clawed digi'ˢ somewhat like those of a sloth. See *Tillodontia*.

Synthetical variation. See ★*variation*.

synthetism (sin'the-tizm), *n.* [Gr. *συνθετισμός*, a putting together (of bones), < *σύνθετος*, put together. See *synthetic.*] In *surg.*, the complete treatment of a fracture from its reduction to the removal of the splints and restoration of the function of the limb.

synthetograph (sin-thet'ọ-gräf), *n.* [Gr. *σύνθετος*, compound, + *γράφειν*, write.] A composite drawing from two or more specimens of a new species.

synthol (sin'thol), *n.* [*synth*(*etic*) + *-ol.*] 1. A trade-name of a photographic developer said to be *diamino-orcinol hydrochlorid*, $\overset{1}{C}H_3C_6H(\overset{3.5}{O}H)_2(NH_2)_2.HCl$. — 2. A trade-name of a substance used as a substitute for alcohol.

syntonic² (sin-ton'ik), *a.* [Gr. *σύν*, together, + *τόνος*, tension, tone, + *-ic.*] In *elect.*, swinging together, or in resonance with each other, as the sender and the receiver in selective wireless telegraphy; pertaining to, or exhibiting, syntonism.

> I call this experiment pregnant, because it affords a hint of another possibility, namely, that of signaling inductively from one area to another, and using around those areas not merely circuits of wires, but *syntonic* circuits, which, therefore, are necessarily much more sensitive in their response one to the other.
> *S. P. Thompson*, in Smithsonian Rep., 1898, p. 241.

Syntonic telegraphy, wireless telegraphy by means of transmitters and receivers which are adjusted or tuned with reference to each other, so that the transmitters will affect receivers thus adjusted and no others and the receivers will respond only to oscillations of the particular frequency sent out by the transmitters in question.

syntonically (sin-ton'i-kal-i), *adv.* In a syntonic manner; in resonance with one another.

syntonism (sin'tọ-nizm), *n.* [*synton*(*ic*) + *-ism.*] The property of being syntonic or tuned or adjusted so as to respond only to electric oscillations of a selected frequency. Electric resonators or receivers for wireless telegraphy thus adjusted are said to be in syntonism.

> It seems to be not improbable that signals can be sent any distance, so long as the sending station can develop sufficient energy. The question of '*syntonism*,' by which it is proposed to assure the secrecy of messages, appears to be still sub judice, but is undergoing further investigation. *Rep. Brit. Ass'n Advancement of Sci.*, 1903, p. 761.

syntonization (sin"tọ-ni-zā'shọn), *n.* [*syntoniz*(*e*) + *-ation.*] The act or process of syntonizing; the adjustment of two electric circuits, as to frequency, so that the one will respond to electric oscillations set up in the other; electric tuning.

> Trustworthiness, clearness, the design of circuits and apparatus, and the possibility of successful *syntonisation* are factors of greater importance.
> *Nature*, July 16, 1903, p. 247.

syntonize (sin'tọ-nīz), *v. t.* [*synton*(*ic*) + *-ize.*] To adjust to syntonism; render syntonic. See ★*syntonism*. *Trans. Amer. Inst. Elect. Engin.*, Jan.–July, 1902, p. 575.

syntonizer (sin'tọ-nī-zėr), *n.* [*syntoniz*(*e*) + *-er.*] A device for the electric tuning or adjustment to resonance of circuits used in producing and receiving electric oscillations. See ★*syntonism* and ★*syntonic*².

> If we want to hear the Japs call, disconnecting ground wire entirely from *syntoniser* of the receiver brings them in strong; while with the ground wire on, as in receiving our stuff, the Japs come very faintly.
> *Nature*, June 16, 1904, p. 158.

syntony (sin'tọ-ni), *n.* [*synton*(*ic*) + *-y*³.] Same as ★*syntonism*.—**Electrical syntony,** the process of tuning the receiver of the apparatus for the transmission of electric waves, by adjustment of its capacity and inductance, so that it will respond by electric resonance to waves of a given frequency and to no others. See ★*syntonic telegraphy*.

syntoxoid (sin-tok'soid), *n.* [Gr. *σύν*, together, + E. *toxoid.*] A toxoid which has the same affinity for the corresponding antitoxin as the toxin proper.

syntropical (sin-trop'i-kal), *a.* Same as *syntropic*.

syntropy (sin'trọ-pi), *n.* [*syntrop*(*ic*) + *-y*³.] The condition of being syntropic; a condition in which several objects of a series are turned in the same direction, as the ribs of either side.

syntype (sin'tīp), *n.* [Gr. *σύν*, together, + *τύπος*, type.] In the nomenclature of types in natural history, any specimen of the original series (from which a species has been described and named) when there is no holotype: same as ★*cotype*.

Synxiphosura (sin-zī-fọ-sū'rä), *n. pl.* See *Synziphosura*.

sypher (sī'fėr), *v. t.* To make a sypher-joint between (parallel strips or planks).

syphering (sī'fėr-ing), *n.* Same as *sypher-joint*.

syphilelcosis (sif"i-lel-kō'sis), *n.* [NL., < *syphilis* + Gr. *ἕλκωσις*, ulceration.] Syphilitic ulceration.

syphilidography (sif"i-li-dog'ra-fi), *n.* [NL. *syphilis* + Gr. *-γραφια*, < *γράφειν*, write.] The description of syphilis: same as *syphilography*.

syphilitic, *a.* II. *n.* One who suffers from syphilis. *Med. Record*, Feb. 7, 1903, p. 228.

syphilized (sif'i-līzd), *p. a.* [*syphil*(*is*) + *-ized.*] Infected with syphilis, by heredity, accidentally, or experimentally.

syphilodermatous (sif-i-lọ-dėr'ma-tus), *a.* [*syphiloderma*(*t-*) + *-ous.*] Relating to or having a syphilitic lesion of the skin.

syphilomania (sif"i-lọ-mā'ni-ä), *n.* [NL. *syphilis* + Gr. *μανία*, mania.] Same as *syphiliphobia*.

syphilopathy (sif-i-lop'a-thi), *n.* [NL. *syphilis* + Gr. *πάθος*, disease.] Any syphilitic manifestation.

Syr. An abbreviation (*a*) of *Syria*; (*b*) of *Syriac*; (*c*) of *Syrian*.

Syracuse salt. See *Salina* ★*beds*.

syrigmus (si-rig'mus), *n.* [NL., < Gr. *συριγμός*, a piping sound, a ringing in the ears, < *συρίζειν*, pipe, hiss, ring. See *syringe.*] The sensation of ringing in the ears.

syringadenoma (si-ring"gad-e-nō'mä), *n.*; pl. *syringadenomata* (-ma-tä). [NL., < Gr. *σῦριγξ*, a pipe, + NL. *adenoma.*] Adenoma affecting the ducts of the sweat-glands.

syringe, *n.* 3. (*b*) In the head of a hemipterous insect, a chamber beneath the pharynx and extending to the grooves of the setæ in the beak. The salivary ducts open into it, and it is supposed to propel the product of the salivary glands toward the tips of the setæ.

syringe-engine (sir'inj-en"jin), *n.* A form of hand-pump used formerly as a fire-extinguisher, where a nozle at the end of the barrel was directed toward the fire, and the piston was forced inward, as a large syringe would be worked.

syringenin (si-rin'je-nin), *n.* [*syring*(*in*) + *-en* + *-in*².] An amorphous, bright rose-red compound, $(\overset{2}{C}H_3\overset{6}{O})_2C_6H_2(\overset{1}{O}H)\overset{4}{C}H:CH.CH_2OH$, prepared by the action of dilute acids on syringin.

syringobulbia (si-ring-gọ-bul'bi-ä), *n.* [Gr. *σῦριγξ* (*συριγγ-*), pipe, fistula, + *βολβός*, a bulb, + *-ia.*] A disease marked by the formation of cavities in the substance of the medulla oblongata. *Jour. Med. Research*, March, 1908, p. 127.

syringocystoma (si-ring"gọ-sis-tō'mä), *n.*; pl. *syringocystomata* (-ma-tä). [Gr. *σῦριγξ* (*συριγγ-*), pipe, fistula, + NL. *cystoma.*] A nodular tumor caused by overgrowth of the epithelium of the hair-follicles. *Jour. Med. Research*, March, 1908, p. 163.

syringomeningocele (si-ring"gọ-mẹ-ning'gọ-sēl), *n.* [Gr. *σῦριγξ*, a pipe, + *μῆνιγξ*, membrane, + *κήλη*, tumor.] A form of spina bifida.

syringomyelic (si-ring-gọ-mi-el'ik), *a.* Relating to syringomyelia.

> The report of the Clinical Research Association showed that the growth was of the nature of a central gliomatosis of the *syringomyelic* type, its features pointing rather to the acquired and rapidly developing variety than to the congenital form. *Lancet*, June 25, 1904, p. 1795.

syringomyelocele (si-ring-gọ-mī'e-lọ-sēl), *n.* [Gr. *σῦριγξ*, pipe, + *μυελός*, marrow, + *κήλη*, tumor.] A form of spina bifida in which the tumor contains a layer of spinal-cord matter pushed out by the fluid in the dilated central canal.

syringomyelus (si-ring-gọ-mī'e-lus), *n.* [NL., ‹ Gr. *σύριγξ*, pipe, + *μυελός*, marrow.] Dilatation of the central canal of the spinal cord with fibrous degeneration of the cord substance. *Lancet*, April 4, 1903, p. 942.

Syringopora (sir-ing-gop'ọ-rạ̈), *n.* [NL., ‹ Gr. *σύριγξ*, pipe, + *πόρος*, pore.] A genus of extinct tabulate corals composed of clusters of cylindrical corallites united at intervals by hollow connecting processes or horizontal expansions, and with rudimentary septa and funnel-shaped tabulæ. It abounds in Silurian, Devonian, and Carboniferous rocks.

Syringothyris (sir-ing-goth'i-ris), *n.* [NL., ‹ Gr. *σύριγξ*, pipe, + *θυρίς*, a door, a window.] A genus of spire-bearing telotrematous brachiopods, very similar to *Spirifer*, but having an internal tube or syrinx developed from the delthyrium. See ★*syrinx*, 6. It occurs in the Carboniferous rocks.

syrinx, *n.* 6. In some of the brachiopods, like *Syringothyris*, a split tubular structure developed from the deltidial plates, lying within the umbonal region of the ventral valve, and inclosing or forming a passage for the pedicle.

Syro-Arabian (sī″rọ-a-rā'bi-ạn), *a.* and *n.* Syrian and Arabian (Syriac and Arabic): a group-name in a classification of Semitic languages.

Syro-Chaldaic (sī″rọ-kal-dā'ik), *a.* and *n.* Same as ★*Syro-Chaldean.*

Syro-Chaldean (sī″rọ-kal-dē'ạn), *a.* and *n.* **I.** *a.* Relating to both Syriac and Chaldaic; Aramaic.

II. *n.* A person speaking both Syriac and Chaldaic.

syrphus-fly, *n.*—**Corn-feeding syrphus-fly**, an American syrphid fly, *Mesograpta polita*, which occurs commonly in the eastern United States and in the West Indies. Its larvæ feed on the pollen and leaves of corn. —**Root-louse syrphus-fly**, an American syrphid fly, *Pipiza radicum*, whose larva feeds on the woolly root-louse of the apple, *Schizoneura lanigera*.

syrup, *n.* 3. In *cookery*, a boiled solution of sugar and water in which fruits are often cooked.—**Compound syrup of licorice**, an aromatized syrup of licorice used to disguise the taste of quinine and other bitter medicines.—**Golden syrup**, a trade-name for a syrup for table use, produced from the molasses of sugar-refining by moderate dilution, filtration through animal charcoal, and reconcentration. It has a bright golden-yellow color, said to be sometimes improperly enhanced by the addition of chlorid of tin.—**Refiners' syrup** or **sugar-house syrup**, the uncrystallizable product left in the process of refining raw sugars. When of standard quality it should contain not more than 25 per cent. of water and not more than 6.5 per cent. of mineral matter (ash on burning).—**Syrup of lime**, a transparent, pale-yellow, alkaline syrup containing calcium hydroxid.

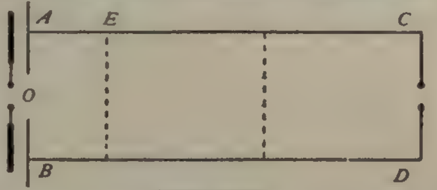
syrupous (sir'up-us), *a.* [*syrup* + *-ous.*] Of the consistence of syrup. *Buck*, Med. Handbook, VI. 412.

syst. An abbreviation of *system*.

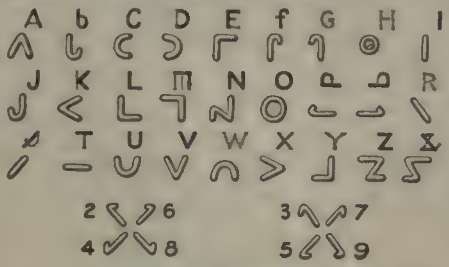
systatic, *a.* 2. Affecting several of the sensory faculties simultaneously.

II. *n.* A disease that involves several of the sensory faculties, or the several parts of the same faculty, as, for example, the organ of hearing and the auditory center in the brain

system, *n.*—**Ardois signal system.** See ★*signal.*—**Bertillon system**, a system of identification invented by Alphonse Bertillon, used principally for the identification of criminals. A number of uncorrelated measurements of the body, together with the color of the eyes, are recorded. The chance that any two individuals should have the same combination of values of these measurements is so slight that any individual can be recognized by the series of his measurements. The records of criminals are classified in relation to each of these measurements as *large*, *medium*, and *small*, and are arranged in the form of a catalogue, giving the class to which the individual belongs in a fixed order. In this manner each individual can be located, and then a new set of measurements of a suspect can be compared in detail with existing records, thus leading to proof or disproof of identity. —**Briovarian system**, in *geol.*, a division of Precambrian rocks in Brittany.—**Case system.** See ★*case*1.—**Central nervous system.** See ★*nervous.*—**Chevé system**, a method, much used in France, of teaching the rudiments of vocal music from numerical signs for the tones instead of from notes. The key-note of the scale is always 1, the dominant 5, and so on. These numerals are used only to guide the mind, as the singer names them by the syllable-names *do*, *re*, *mi*, etc. The inventor was Galin (d. 1821), but since the system was extended and advocated later by Paris and Chevé, it is often called the *Galin-Paris-Chevé system*. The method is closely similar to the English tonic sol-fa (which see), which borrowed some features from it.—**Compartment system.** See *stand* ★*method.*—**Constrained system.** See ★*constrain.*—**Culture system.** See ★*culture.*—**Galin-Paris-Chevé system.** Same as *Chevé* ★*system.* —**Geocentric system.** See ★*geocentric.*—**Gondwana system**, in *geol.*, an immense series of rocks of fluviatile origin south of the Marbada River in India. It is regarded as representing continuous deposition through successive periods of geologic time as expressed in other regions and even as bridging the almost world-wide hiatus between the Paleozoic and Mesozoic rock systems. The lower beds or Talchir conglomerates, consisting in considerable part of striated boulders believed to be of glacial origin, are regarded as of Carboniferous age. The Karharbari and Damuda beds, overlying, carry a *Glossopteris* or Permian fauna. The Chidra group is transitional in fauna from the Paleozoic to the Mesozoic, while the Panchet series, which succeeds, is probably Triassic, and the overlying beds at the top of the system are of Jurassic age. The Gondwana system extends into Afghanistan and probably also to eastern Africa.—**Haversian system**, the Haversian canals and their branches, with the Haversian lamellæ surrounding them. See *Haversian canal* and *Haversian lamellæ.*—**Intermediary systems**, the lamellæ of bone forming the interspaces or intervals in the Haversian system. See *lamella.*—**Lamb's system** (*naut.*), a method of arranging all of the outside plating of a vessel directly next to the frames, and fitting seam-straps on the outside of the plating in order to connect the various strakes.—**Lecher system**, in *elect.*, a system of wires used in the study of electric waves. It consists of two parallel wires of equal length, *AC* and *BD*, connected at one end to an oscillator, *O*. When the length of the wires is some multiple of a quarter wavelength, *AE*, of the electric oscillations, standing waves are set up in the system with well-marked nodes and loops. —**Marconi system**, the system of wireless telegraphy invented by Marconi. See *wireless* ★*telegraphy.*—**Moon system**, a form of alphabet for the blind invented by the Rev. William Moon about 1868. The forms of the letters and numerals are shown in the cut.—**Multiple-voltage system.** Same as ★*multivoltage system.*—**Multivariant system**, in *phys. chem.*, a thermodynamic system possessing more than two degrees of freedom, or in which more than two conditions may be changed independently. Compare ★*degree of freedom* (*b*) and ★*bivariant system.*—**Open system**, in wireless telegraphy, a system in which there is no attempt at syntonism or tuning of the apparatus —**Ordinal system**, in *math.*, an assemblage with the following properties: (1) of any two of its elements, one precedes and the other follows; (2) of two given elements, we can always determine which precedes; (3) if of any three elements, *a* precedes *b*, and *b* precedes *c*, then *a* precedes *c*.—**Orthogonal system of lines**, a combination of two systems of lines such that every line of either system is at right angles to all those of the other.—**Orthogonal system of surfaces**, a combination of systems of surfaces such that every surface of either system cuts all those not in that system at right angles.—**Participating system**, in tuning keyboard instruments, same as *equal temperament* (see *temperament*, 5): so called because two or more theoretical tones are represented by or participate in the same practical tone.—**Pennine system**, in *geol.*, a name of geographic significance proposed by Williams to supplant that of Carboniferous, and based upon the argument that the original Carboniferous system of Conybeare was founded upon the series of rocks which forms the Pennine mountain-chain of north England. As thus defined the Pennine system would include the Old Red Sandstone (basal and Devonian), mountain limestone, millstone-grit and associated shales, and the coal-measures. See *carboniferous.*—**Periodic system**, in *chem.*, the elements classified in the order of their atomic weights, in accordance with the periodic law of Mendeléjeff.—**Planetary system.** See *solar system*, under *solar*1.—**Rank of a system.** See ★*rank*2.—**Régie contract system.** See ★*régie.*—**Ruled system**, in *math.*, a regulus.—**Seed system**, one of the three great systems of forest management. Under it, reproduction is obtained from seed. Also called *high* or *seedling forest system.*—**Sexagesimal system**, a system in which each unit is sixty times the next smaller unit.—**Takaka system**, in *geol.*, the representative of the Silurian system in New Zealand, comprising lower shales with graptolites forming the Wanaka series, and an upper series of slates, sandstones, and limestones with Upper Silurian molluscan fauna forming the Baton River series. Both series are cut by eruptive rocks.—**Ternary system**, a triple star the components of which are physically connected.—**Three-wire system**, a system of electric wiring in which two constant-potential distributing lines have a common return-wire, thus effecting a considerable saving in the amount of copper used. The system is supplied by two generators in series, the positive terminal of one and the negative terminal of the other being connected to the outer mains. The other terminals are joined together and connected to the third or neutral wire.—**Tricyclic system**, in *chem.*, an arrangement of atoms in the molecule of a substance involving the union of three rings or closed chains of atoms, as in the case of anthracene, which may be viewed as the result of the condensation of three benzene rings.—**Universal system**, in the rating of stops or diaphragms for lenses, a system in which the number assigned to a stop indicates the square of the time of exposure for which it is designed.—**Vancouver system**, a name proposed by the Geological Survey of Canada for the great system of uplifts beginning at the south in the Olympic mountains, Washington, and extending northward through Vancouver and Queen Charlotte islands, and attaining its greatest development on the coast in southern Alaska, and finally terminating at the west in the Aleutian islands. *I. C. Russell*, Glaciers of North America, p. 32.—**Vigesimal system**, a system of counting or enumeration in which 20 is the base, the higher units being multiples of 20. The vigesimal system is always built up of groups of five and is derived from counting the fingers and toes. The term for twenty often signifies 'one man,' that is, the fingers and toes of one man.—**Wanganúi system**, in *geol.*, the representatives of the Pliocene Tertiary formation in New Zealand.



[Lecher System.



Moon System.

systematy (sis'te-mạ̈-ti), *n.* [*systemat*(*ic*) + *-y*3.] In *biol.*, same as *systematics*, *taxonomy*, or *classification*. *Annals and Mag. Nat. Hist.*, Nov., 1903, p. 534.

Systemic heart. See ★*heart*.

system-player (sis'tem-plā″ėr), *n.* One who plays against a banking game by following a systematic method of betting, instead of placing his money according to his fancy.

Systena (sis'tẹ̄-nạ̈), *n.* [NL. (Chevrolat, 1834), ‹ Gr. *σύστενος*, narrowing to a point.] 1. A genus of chrysomelid beetles comprising a number of species and confined to the western hemisphere. *S. frontalis* is an enemy to the grape in the United States and Canada.—2. [*l. c.*] A beetle of this genus.—**Red-headed systena**, an American chrysomelid beetle, *Systena frontalis*, which eats grape-leaves in the northern United States and Canada.

syzygy, *n.*—**Line of syzygies.** See ★*line*2.

szelong (shel'ong), *n.* [Pol. *szelang* = Russ. *shelegŭ*, etc., ‹ Goth. *skilliggs*, etc., = E. *shilling*.] The Polish solidus, first of silver or billon and subsequently of copper.

szmikite (shmik'īt), *n.* [G. *szmikit* (1887), named after I. *Szmik*, from whom it was received.] Hydrous manganese sulphate ($MnSO_4 + H_2O$) which occurs in whitish or reddish amorphous stalactitic forms: from Felsö-bánya, Hungary.

T 3. An abbreviation (*f*) of *territory*, *Testament*, *Thursday*, *Titus* (a book of the New Testament), *Tuesday*, *Turkish*; (*g*) in *med.*, of *tension of the eyeball*; (*h*) [*l. c.*] of *tome*, *ton*, *town*, *township*, *transitive*, *tun*, *tungsten*, and of the Latin *tempore*, in the time (of).

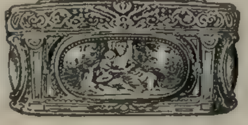
taal (täl or tâl), *n.* [D. *taal*, language, speech. See *tale*¹.] In South African Dutch territory, 'the language,' namely, the colonial form of Dutch there spoken.

tab² (täb), *n.* [Ar. *ṭāb.*] A game something like backgammon, popular in Egypt and Palestine, played with four sticks.

tabacosis (tab-a̤-kō'sis), *n.* [NL., < *tabacum*, tobacco, + *-osis.*] Chronic tobacco-poisoning caused by the inhalation of tobacco-dust.

tabasco (ta-bas'kō), *n.* [*Tabasco*, a state of Mexico.] 1. The trade-name given to a pungent sauce and to a catsup made from a variety of *Capsicum annuum* (see pepper) and said to be prepared by extracting the pulp of the ripe fruit and so treating it as to retain its flavor, strength, aroma, and color.—2. A name which has been applied by seedsmen to various forms of *Capsicum annuum.* The plant yielding the fruit from which the original tabasco sauce was made is described as 2½ feet high, with an erect, spreading habit; leaves often 4 inches long and 2½ inches wide, dark green, usually pubescent along the veins; fruit extremely pungent, oblong cylindrical, about an inch long, obtuse or acute, usually compressed at the base by the calyx, deep red when ripe, the unripe ones often drying to an orange color, frequently borne in twos. See ★*sauce.* *Rep. Missouri Bot. Garden*, 1898.

tabatière (tä-bä-tyãr'), *n.* [F.] 1. A snuff-box.—2. [F. *fosse tabatière*, 'snuff-box depression.'] A depression between the tendons of two extensor muscles of the thumb, noticed when the thumb is extended.


Tabatière.

tabbigan (tab'i-ga̤n), *n.* [Aboriginal Australian.] See ★*bullhead*, 1 (*f*).

Tabby-cat striation. See ★*striation.*

tabby-moth (tab'i-môth), *n.* Same as ★*grease-moth.*

tabellogram (tā̤-bel'ọ̄-gram), *n.* [L. *tabella*, a table, + Gr. *γράμμα*, a writing.] In *statistics*, a colored graphic table. *Philos. Trans. Roy. Soc.* (London), 1895, ser. B, p. 810.

tabergite (tab'ėr-gīt), *n.* [Sw. *Taberg* (see def.) + *-ite*².] A bluish-green chlorite allied to penninite: from Taberg, Vermland, Sweden.

Tabetic foot, neuritis. See ★*foot*, ★*neuritis.*

tabetiform (tā̤-bet'i-fôrm), *a.* [*tabet(-ic)* + L. *forma*, form.] Resembling tabes dorsalis or locomotor ataxia. *Buck*, Med. Handbook, V. 42.

tabi (tä'bẹ̄), *n.* [Jap.] A low sock of white or blue cotton worn by the Japanese. It has a thick sole and a separate part for the great toe.

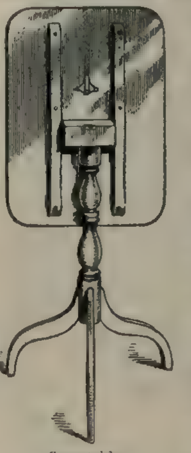
tabification (tā"bi-fi-kā'sho̤n), *n.* [L. *tabes*, a wasting, + *facere*, make, + *-ation.*] Emaciation.

tabl (tä'bl), *n.* [Ar. *ṭabl*: see *atabal.*] A small drum with one head, usually beaten with the hand: common in Mohammedan countries. See *atabal.*

table, *n.*—**Chronometer tables.** See ★*chronometer.*—**Harlequin table**, a name given to one of the complicated pieces of furniture invented in England in the eighteenth century.

> A magical table rightly called "*Harlequin*" has a sliding nest of drawers or "till" which can be raised to any height by means of intricate machinery.
> *K. W. Clouston*, Chippendale Period in Eng. Furniture, [p. 144.

Laying-on table, in *printing*, the inclined table that holds a pile of sheets of paper before printing. Better known in the United States as the *feed-board.* [Eng.]—**Periodic table**, in *chem.*, a classification in tabular form of the elements in accordance with the periodic law.—**Present-yield table**, in *forestry*, a tabular statement of the amount of wood at present contained in given trees upon a given area.—**Snap-table**, a table with the top hinged to a single support so that it may be placed in a horizontal or vertical position at pleasure.—**Stand table.** See ★*stand.*—**Thousand-legged table**, the name sometimes given to old-fashioned folding- or extension-tables which appear to have many supports.


Snap-table.

> On this account they are nowadays sometimes called *thousand-legged tables.*
> *J. W. Lyon*, Colonial Furniture of New England, p. 199.

Traveling table, a table or moving platform mounted on rollers or wheels and moving upon a track or around a center: used in manufacturing processes where a number of different men and processes are to operate upon one object of mass sufficient to make it troublesome or costly to move it from man to man. Thus a mold or flask can be made to pass from man to man as the table moves, ultimately reaching the furnace from which metal is poured to fill it.

> At the Baltimore works Walker's *travelling tables* present the moulds in rotation to the pouring ladle.
> *Encyc. Brit.*, XXVII. 237.

table-base (tā'bl-bās), *n.* Same as *water-table*, 1.

table-chair (tā'bl-chãr), *n.* An old English or Colonial piece of furniture which was used as a table or chair, the top turning back to a vertical position on a hinge. Also *chair-table.* *Lyon*, Colonial Furniture, p. 197.

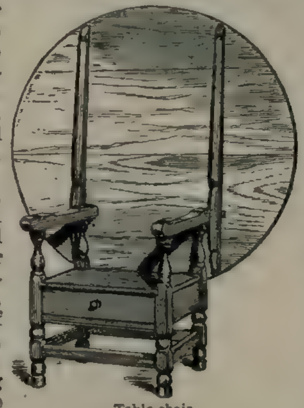


Table-chair.

table-cloth, *n.* 2. A horizontal sheet of cloud spreading over the top of Table Mountain, southwest of Cape Town, South Africa, and hanging down over the precipitous cliffs of the northeast front of the mountain. Its formation is due to the fact that the southwest winds bring just enough moisture to form cloud when they are pushed up to the height of the table-land that forms the summit of the mountain; and as these winds descend on the northeast front, the warming of the air, by compression or otherwise, evaporates the cloudy particles and gives a definite outline to the lower edge of the cloud.

table-engine (tā'bl-en"jin), *n.* A name for what is commonly called the direct vertical engine, in which the cylinder stood on a base-plate or table with the piston-rod going out at the top and imparting motion to the crank and fly-wheel shaft above, the latter being supported on frames resembling the letter A rising from the table or base.

table-feed (tā'bl-fēd), *n.* 1. That detail in the design of a machine-tool by which the work secured to a holding-chuck on a table is moved, in the feeding process, against or toward the path of the tool which is fixed relatively to the frame.—2. In *sheet-metal work*, an automatic feed-motion employing a table which slides on ways. The sheets to be punched are clamped to the table, and the table is timed to pass under the dies of the perforating-press at the speed required to meet the dies at every stroke, or at a variable speed where the perforations are distributed over irregular distances on the plate.

table-key (tā'bl-kē), *n.* A form of two-way switch used in telephony for making certain connections at the switchboard.

Table-land of erosion, a plateau which has been formed by the processes of uplift and erosion.

tableman, *n.* 3. A workman in a rolling-mill who has charge of the operation of the feeding-table by which the piece is delivered or fed to the rolls; or, one who works in connection with such a table.

table-plain (tā'bl-plān), *n.* A mesa within the valley of a river and carved out of the confluent alluvial fans of its tributaries by the sapping of the river itself and by the erosion of its affluents.

> Climatic conditions with which most of us are not very familiar are chiefly responsible for many of the bold and unusual relief effects that characterize the region through which the Rio Grande flows. The valley mesas, or *table-plains*, are among the most instructive of all of these topographic features. *Amer. Jour. Sci.*, Dec., 1907, p. 468.

table-stakes (tā'bl-stāks), *n.* A variety of poker in which no player can bet more than he has on the table in front of him when the cards are dealt, the betting limit of the game being what is on the board in front of the better.

Tablet triturate. See *triturate.*

table-tennis (tā'bl-ten"is), *n.* The game of tennis played upon a table, with smaller balls, nets, rackets, etc. Compare ★*ping-pong.*

table-vise (tā'bl-vīs), *n.* A general name for the form of vise which is attached to a bench or table by means of bolts or of a screw by which it can be permitted to swivel; a bench-vise: distinguished from a leg-vise, the older form now less in use.

tablier, *n.* 2. In *anat.*, the peculiar formation brought about by the large size of the labia minora of the vulva, which hang down between the small labia majora: found particularly among the Hottentots and Bushmen.

Tabora black. See ★*black.*

Tabular gemmation. See ★*calycinal gemmation.*

tabulator, *n.* 2. An attachment to a type-writer for so controlling the feed-motion of the carriage that it will stop automatically at certain prearranged positions or points in its traverse, the object being to enable the operator to arrange the print in vertical lines, as in drawing up a tabulated statement of accounts. By its use, tables of quantities, prices, and other items can quickly be arranged in columns for ready reference. The tabulator can be either fastened to the type-writer or may be an integral part of the machine, different methods being employed in different types of machines. The essential parts of the tabulator are a rack, having teeth spaced to correspond to the spacing of the letters made by the type-writer, and movable margin-stops which are controlled by a supplementary keyboard attached to the type-writer. A number of different types of tabulators are in use, all based on the general principle of controlling the traverse of the carriage of the type-writer in such a way that a key of the tabulator, when touched, automatically feeds the carriage a fixed distance and saves all the labor that would otherwise be spent in feeding the carriage the same distance step by step by means of the space-key. See ★*margin-stop* and ★*type-writer.*

taccaceous (ta-kā'shius), *a.* [NL. *Taccace(æ)* + *-ous.*] Belonging or pertaining to the *Taccaceæ.*

tachistoscope (ta-kis'tọ̄-skōp), *n.* [Gr. *τάχιστος*, superl. of *ταχύς*, swift, + *σκοπεῖν*, view.] In *exper. psychol.*, an apparatus which exposes to view, for a brief and accurately variable time, an object or small group of objects (letters, short words, etc.).

> Simple forms of the *tachistoscope* are the 'instantaneous' shutter; the falling screen which, in dropping,

allows a momentary view through its window of the objects arranged behind it; the swinging screen attached to a pendulum; and the rotating disk with adjustable slit or open sector. Wirth's mirror *tachistoscope* permits, in addition to the ordinary momentary exposure, the partial variation of a continuously presented object; a permanently visible virtual image is replaced, at stated intervals, by a real image which occupies precisely the same apparent position in space. Dodge's mirror *tachistoscope* employs the principle of total reflection to secure the direct superimposition of exposure field upon pre-exposure field, without visible movement.
E. B. Titchener, Exper. Psychol., I. ii. 200.

tachogram (tak′ọ̄-gram), *n.* [Gr. *ταχύς*, swift, + *γράμμα*, a writing.] The record of angular velocities, of a machine or engine, obtained by means of a tachograph.

tachograph (tak′ō-gråf), *n.* [Gr. *τάχος*, swiftness, + *γράφειν*, write.] A recording tachometer applied to shafting or wheels to register rotation-speed; a speed-indicator. Also *tachegraph*. *Nature*, Nov. 26, 1903, p. 95.

tachoscope (tak′ọ̄-skōp), *n.* [Gr. *τάχος*, swiftness, + *σκοπεῖν*, view.] An instrument which registers the number of revolutions made by a shaft in a certain time. It consists of a revolution-counter combined with a time-piece, there being an automatic cut-out for the revolution-counter.

tachyaphaltite (tak″i-a-fal′tīt), *n.* [Gr. *ταχύς*, swift, quick, + *ἀφαλτος*, springing off or back, + *-ite*^{2}. It flies to pieces when the gangue is struck.] An altered and hydrated form of a mineral resembling zircon, but containing considerable quantities of thorium: from Kragerö, Norway.

tachycardia, *n.*—**Essential tachycardia**, rapid heart-action not due to any discoverable organic disease. *Med. Record*, Feb. 7, 1903, p. 204.—**Reflex tachycardia**, rapid heart-action due to disturbances in other systems than the circulatory.

> Where, on the other hand, no clinical or pathological disease-changes are manifested in the structure of the heart, and where its rapid action is apparently due to causes outside the cardiac territory, whether those depend upon changes in the nervous system or passing temporary disturbances in the alimentary tract, the name *reflex* should be applied to the *tachycardia*.
> *Med. Record*, Feb. 7, 1903, p. 205.

tachydrite, *n.* See *tachhydrite*.

tachygen (tak′i-jen), *n.* [Gr. *ταχύς*, swift, + *-γενης*, -producing.] In *biol.*, a plant or animal organ which has developed suddenly or rapidly during the phylogenetic history of the species.

tachygenesis (tak-i-jen′e-sis), *n.* [NL., < Gr. *ταχύς*, swift, + *γένεσις*, genesis.] In *biol.*, the inheritance of a characteristic at an earlier stage of individual development than that at which it first appeared; acceleration of development. According to the theory of tachygenesis, new characteristics are first acquired by adult organisms; are inherited at earlier and earlier periods in the lives of their descendants; and, finally, the older characteristics are crowded out and dropped from the beginning of the embryonic history, thus making room for the new characteristics which are continually being added on to the organism during its adult life.

> This is in conformity with the law of *tachygenesis*, or acceleration in development, which is the key to the understanding of the taxonomic values of shell characters in gastropods. *Amer. Nat.*, Dec., 1902, p. 921.

tachygenetic (tak″i-jẹ̄-net′ik), *a.* Of or pertaining to tachygenesis; tachygenic.

tachygenic (tak-i-jen′ik), *a.* Same as ★*tachygenetic*.

> The sudden or *tachygenic* appearance of temporary structures, such as hatching spines, various setæ, spines, respiratory organs, so characteristic of dipterous larvæ, and of the protective colors and markings of caterpillars.
> *A. S. Packard*, Text-book of Entom., p. 708.

tachymetric (tak-i-met′rik), *a.* Relating to tachymetry; measured or ascertained by the tachymeter or by tachymetry.

tachyphore (tak′i-fōr), *n.* [Gr. *ταχ ς*, swift, + *οίρειν*, bear.] A name of a proposed system of electric traction in which the car is drawn forward by the magnetic action of a series of solenoids. The passing car automatically completes and then breaks the circuit through each of these in turn. Also known as the *port-electric railway system*. *Houston*, Dict. Elect.

tachyphrasia (tak-i-frā′ẓiạ̈), *n.* [NL., < Gr. *ταχύς*, swift, + *φράσις*, speaking.] Very rapid and voluble speech.

tachypnœa (tak-ip-nē′ạ̈), *n.* [NL., < Gr. *ταχίς*, swift, + *-πνοια*, < *πνεῖν*, breathe.] Very rapid respiration.

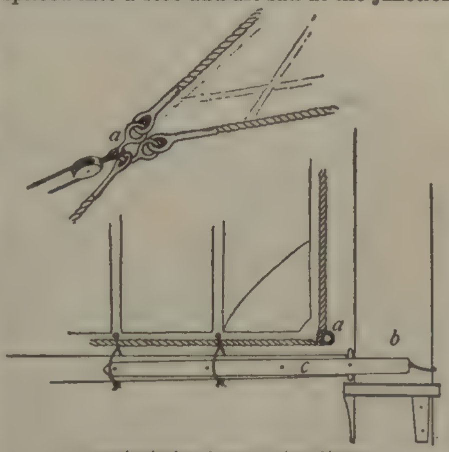
Tachysurinæ (tak″i-sū-rī′nē), *n. pl.* [NL., < *Tachysurus* + *-inæ*.] A subfamily of siluroid fishes characterized by having the nostrils close together and neither of them with a barbel.

Tachysurus (tak-i-sū′rus), *n.* [NL., irreg. < Gr. *ταχύς*, swift, + *οὐρά*, tail.] A genus of siluroid fishes. Most of them are from Central America.

tachythanatous (tạk-i-than′ạ-tus), *a.* [Gr. *ταχύς*, swift, + *θάνατος*, death.] Rapidly fatal. [Rare.]

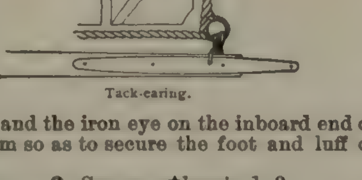
tack^1, *n.* **10.** Side: said of a speculator's relationship to the market. *Stand. Dict.*—**Midship tack**, an additional tack found on the middle foot of some courses, and used in calms and light airs to keep the foot of the sail standing forward, so as to prevent it from slapping back and chafing itself against the mast.—**Port tacks on board**, said of the tacks of the courses when the vessel is on the wind on the port tack.—**Slant tack**, the tack on which the long leg is made when sailing close-hauled.—**Starboard tack.** A vessel is said to be on the starboard tack when the wind is blowing against her starboard side, and to be on the port tack when the wind is blowing against her port side. When a square-rigged vessel is on the starboard tack, the starboard tacks of her courses are boarded to starboard, and when on the port tack the port tacks of her courses are boarded to port. In the case of schooners, sloops, etc., the terms 'starboard tack' and 'port tack' are borrowed, since such vessels have no tacks to board—the tacks of fore-and-aft sails always being against the after side of the respective masts, independent of the tack that the vessel is on.—**Starboard tacks on board**, said of the tacks of the courses when the vessel is on the wind on the starboard tack.—**To board a tack.** See ★*board*.—**To haul aboard the tack.** Same as *to haul aboard* (which see, under *aboard*^{1}).—**To make a tack** (*naut.*), to sail a leg; to make a board.—**To split tacks**, said of a vessel when in a race, on the wind, she goes about in order to pursue a different course from her opponent.

tack-cringle (tak′kring″gl), *n.* An iron ring spliced into a fore-and-aft sail at the junction of the foot and luff; also, the iron shapes spliced into the lower corners of square sails.



a, *a*, tack-cringles; *b*, mast; *c*, jaw of boom.

tack-earing (tak′ēr″ing), *n.* A length of rope passed several times through the tack-cringle and the iron eye on the inboard end of the boom so as to secure the foot and luff of a sail.



Tack-earing.

tacking, *n.* **2.** Same as ★*barring*^{1}, 2.

tacking-machine (tak′ing-ma-shēn″), *n.* In *shoe-manuf.*, a machine, allied to the nailing-machine, for cutting, twisting, corrugating, and bending wire into nails, tacks, and staples, driving the nails into shoe-heels and soles, and also tacking soles and uppers together. It is made in various forms.

tack-iron (tak′ī″ėrn), *n.* The iron bolt to which is shackled the block through which the tack is rove. The tack-irons for the main course are found to port and starboard in the deck; but the tack-irons for the fore course are found sometimes on the cat-heads, and again on bumpkins under the bows.

tackle, *n.*—**Boom-jigger tackle**, usually a small double and a single block, used for rigging studding-sail booms in and out on a lower yard.—**Boom-tackle**, a double purchase, as a rule, used in fore-and-aft vessels to guy out the spanker-boom when running free, so as to prevent that spar from jibing.—**Fore-and-aft tackle** (*naut.*): (*a*) Any kind of tackle that is used in the line of the keel. (*b*) A watch-tackle purchase used for stretching the backbone of an awning.—**Forestay tackle** (*naut.*), a tackle used in hoisting things in and out of a vessel.—**Half-watch tackle**, a watch-tackle. There is no difference in meaning between the two terms, both signifying a purchase composed of a double and a single block. The former was sometimes used because the power derived was considered equal to that of half the watch in hauling and hoisting.—**Hatch-tackle**, a double and single block (watch-tackle) used for hoisting articles from the store-rooms of a vessel.—**Jeer-tackle**, a heavy purchase which is used for sending lower yards up and down.—**Jigger-tackle**, a handy-billy (watch-) tackle used for various purposes about decks and aloft.—**Mast-head tackles** (*naut.*), tackles led from the mastheads to some external point when a vessel is in dock, to prevent it from falling over in the event of accident to the bilge-blocks and shores.

> The practical method of guarding against such accidents of course consists in carefully shoring, using *mast-head tackles*, or otherwise supporting the vessel externally, in order to prevent her from upsetting.
> *White*, Manual of Naval Arch., p. 125.

Sail-tackle, a purchase used for hoisting one of the upper sails from the deck to its yard, preparatory to bending. This is usually a double and a single block, which constitutes a watch-tackle.—**White's tackle**, a system of pulley-blocks in which the sheaves are of different diameters so computed that the varying path or speed of the rope in the successive passage from sheave to sheave shall cause each sheave to turn at the same number of revolutions in a given time. This makes the pins or bushings wear uniformly, so far as space traversed is responsible for such wear. Named from the designer.

tack-mold (tak′mōld), *n.* A mold, usually of copper, for casting the flat lugs used by plumbers to fasten pipe to a flat surface and known as tacks.

tack-puller (tak′pu̇l″ėr), *n.* A tool for drawing out tacks or small nails; a tack-claw.

tack-tackle, *n.* It is the purchase which is hooked into the hauling part of the tack, and by means of which the clue of the course is boused down toward the deck, and kept forward on the windward side when the ship is close-hauled.

tacky^2, *n.*—**Tacky party**, a social gathering of persons dressed in the rough serviceable clothes of ordinary wear. [Southern U. S.]

II. *a.* **1.** Unkempt; rough; shabby; ill-fed: said of persons or animals.—**2.** Bad; poor; miserable. [Slang.]

> That was the *tackiest* time I ever had and the tea was jay. *Town Topics*, March 27, 1902, p. 13.

Taconian (tā-kō′ni-an), *n.* In *geol.*, a name proposed by T. S. Hunt for what he supposed to be the uppermost member of the Archæan system of Precambrian rocks. The Taconian series of Hunt is now known to be in part of Paleozoic age, and the term is no longer used. See *Taconic system*, under *system*.

Taconic limestone. See ★*limestone*.

taconite (tā′kọ-nīt), *n.* [*Taconic* + *-ite*^{2}.] In *petrog.*, a name proposed by H. V. Winchell (1896) for cherty or jaspery rock, in places calcareous or quartzitic, associated with the hematites of the Masaba Range, Minnesota.

tactic, *a.* **2.** Of or pertaining to the motions of organisms in relation to external agents; exhibiting taxis.

Tactical unit. See ★*unit*.

tactics, *n.*—**Naval tactics**, the art and practice of manœuvering a fleet or squadron of war-ships.

tactil, *a.* A simplified spelling of *tactile*.

tactile, *a.* (*d*) In *art criticism*, noting the quality of solidity in nature, which is perfectly apprehended only by the sense of touch, and which is better represented by certain painters than by others. 'Tactile' in this sense is a translation of the German *taktisch*, used by Riegl in 1893.

> It is the *tactile* quality of the subject, rather than its illusionist possibilities, which has attracted the artist.
> *Eugénie Strong*, Roman Sculpture, p. 66.

Tactile cone. See ★*cone*.—**Tactile disks**, disk-shaped terminations of tactile nerves in certain locations; also, same as *Grandry corpuscles* (which see, under *corpuscle*).—**Tactile space.** See ★*space*.

tactilogical (tak-ti-loj′i-kạl), *a.* [*tacti(le)* + *logical*.] Tactual; pertaining to touch: as, *tactilogical* sensations. *Amer. Jour. Psychol.*, XIII. 578. [Rare.]

tactualist (tak′tụ̄-ạl-ist), *n.* [*tactual* + *-ist*.] **1.** One who holds that touch (including kinæsthesis) is the spatial sense *par excellence*, and that sight alone cannot acquaint us with the size or shape or distance or direction of objects. *G. M. Stratton*, Exper. Psychol. and its Bearing upon Culture, p. 128.—**2.** One who is motor-minded; that is, one who thinks, remembers, imagines, etc., predominantly in terms of kinesthetic sensations. [Rare.]

tactual-verbal (tak′tụ̄-ạl-vėr″bạl), *a.* **1.** Tending to think, remember, imagine, etc., in verbal ideas, and to experience these ideas in tactual, motor, or kinesthetic terms: as, the *tactual-verbal* type of mind.—2. Tending to represent words mentally in terms of kinesthetic sensations.

> The visual-verbal mind sees, the auditory-verbal hears, the *tactual-verbal* 'feels,' what words are coming.
> *E. B. Titchener*, Exper. Psychol., I. i. 197.

3. Having a verbal form, with tactual or kinesthetic contents: as, a *tactual-verbal* idea.

tactual-visual (tak′ṭū-ạl-viz″ụ-ạl), *a.* Compounded of sensations of touch and sight; noting a concurrence or association of visual and tactual impressions.

> Localisation may also be *tactual-visual*. *O* opens his eyes, as soon as he has heard the telephone click, and points with the rod in the direction from which he thinks that the sound comes.
> *E. B. Titchener*, Exper. Psychol., I. i. 180.

tadjerite (taj′ėr-īt), *n.* See ★*meteorite*.

tæniate, *a.* 2. Having narrow, ribbon-like markings running lengthwise of the body. [Rare.]

tænicidal (tē′ni-sī-dl), *a.* [L. *tænia*, tapeworm, + *-cida*, ‹ *cædere*, kill, + *-al*1.] Destructive to tapeworms. *Buck*, Med. Handbook, I. 446.

Tænioceras (tē-ni-os′ẹ-ras), *n.* [NL., ‹ Gr. *ταινία*, band, fillet, + *κέρας*, horn.] A genus of Carboniferous nautiloid cephalopods with discoidal shells the volutions of which have a trapezoidal section. Improperly written *Tænoceras* and *Tainoceras*.

tæniole (tē′ni-ōl), *n.* Same as *tæniola*.

> Four muscles, which extend up the *tænioles*, are the agents for contracting the stalk, while the margin is contracted by a circular muscle which passes round outside the insertion of the tentacles, and in contracting pulls the margin well over the tentacles, leaving only a hole in the centre, through which the tips of some of the tentacles appear. *Annals and Mag. Nat. Hist.*, Jan., 1904, p. 64.

Tæniotoca (tē-ni-ot′ō-kạ̈), *n.* [NL., ‹ Gr. *ταινία*, band, fillet, + NL. (*Embio*)*toca*.] A genus of embiotocoid fishes found on the western coast of the United States.

tæniotoxin (tē″ni-ọ-tok′sin), *n.* [Gr. *ταινία*, tapeworm, + E. *toxin*.] A poisonous substance occurring in tapeworms.

Taffeta ribbon. See ★*ribbon*.—**Tufted taffeta,** a silk fabric of taffeta (foundation) weave with a shaggy pile.

tahil (tä′hil), *n.* [Malay *tāhil*. See *tael*.] A unit of weight in the Straits Settlements, equal to one sixteenth of a catty, or about 1⅛ ounces avoirdupois.

tahsil (tä′sēl), *n.* [Hind., ‹ Ar. *taḥsīl*, collection.] In India, a subdivision of a district; the ultimate unit of administration. *Encyc. Brit.*, XII. 769.

tahsildar (tä-sēl-där′), *n.* [Also *tahseeldar*; Hind., ‹ Pers. *taḥsīldār*, ‹ Ar. *taḥsīl*. See ★*tahsil*.] In India, the chief (native) revenue officer of a subdivision of a district. *Yule and Burnell*, Hobson-Jobson.

tahuari (tä-hwä′rē), *n.* [S. Amer.] See ★*llanchama*.

taiaha (tī′ä-hä), *n.* [Maori.] A sort of club or staff about six feet long, carved at one end and frequently ornamented with feathers. It was used by Maori chiefs as a badge of office, and sometimes for fighting.

taihoa (tī′hō-ạ̈), *adv.* [Maori.] Presently; by and by; some time later; wait a bit. [New Zealand.]

tail1, *n.* 3. (*h*) The end of the fiber that is combed last on a combing-machine. *Thornley*, Cotton Combing Machines, p. 283.—10. The players on a side who are not counted on for runs, and who are consequently sent last to bat. *Hutchinson*, Cricket, p. 411.—**Tail hold.** See ★*hold*1.—**Tail of a gale.** See ★*gale*2.

tail1, *v. t.*—**To tail out,** to wind up the sale of gradually, or with prices tapering down, as in selling cattle. [Colloq.]

> Every intelligent feeder knows the value of uniformity; it enables him to sell his product without *tailing out* a lot at inferior price.
> *Rep. Kansas State Board Agr.*, 1901–02, p. 177.

tail-back (tāl-bak′), *v. i.* To move backward, as from the head to the tail: specifically, noting the rush of the flame of burning gas in a current of air backward against the flow of the current. This happens in any confined combustible mixture of gas and air when the rate of propagation of the flame in the mixture is faster than the velocity of flow in the duct or tube which confines and directs it. In Bunsen or other heating-burners it is called "back-firing," the flame retreating in the mixing-tube until it reaches the jet of gas.

tail-beam (tāl′bēm), *n.* In *flooring*, a piece of timber which is framed into a header; the third member in a piece of framing around a chimney or the like. Also called *tail-joist*.

tail-block, *n.* 2. The supporting block or end-piece for that end of the work which is farthest from the head-end or driving-mechanism, as in a lathe, or the carriage for logs, in a saw-mill.

tail-chain (tāl′chān), *n.* In *lumbering*, a heavy chain bound around the trailing end of logs, as a brake, in slooping on steep slopes.

tail-cord (tāl′kôrd), *n.* One of two pieces of cord on a Jacquard loom connecting hooks of the Jacquard with neck-twines operating heddles. *R. Marsden*, Cotton Weaving, p. 150.

tail-cutter (tāl′kut″ėr), *n.* A curved beveling-machine for cutting off and beveling the ends of stereotype plates. *Elect. World and Engin.*, Jan. 16, 1904, p. 139.

taildown (tāl′doun), *v. t.* To roll (logs) on a skidway to a point on the skids where they can be quickly reached by the loading-crew.

tailed1, *a.*—**Tailed cirrus,** small cirrocumuli or altocumuli from which snowflakes or fine rain-drops are falling slowly and drifting behind in the lower wind: analogous to the rain-streaks from larger cumuli.

tail-fan (tāl′fan), *n.* In macrurous crustaceans, the telson together with the appendages of the preceding segment. Also *tail-fin*.

tail-fin, *n.* 2. In crustaceans, same as ★*tail-fan*.

tail-head (tāl′hed), *n.* The base or root of the tail.

> The lines on each side of the back should be carried true to the last rib, with a loin thick, preferably inclined to raise some, followed by hooks well covered and smooth, and a long hind quarter, ending in a level *tail-head* and wide pin-bones.
> *Rep. Kansas State Board Agr.*, 1901–02, p. 89.

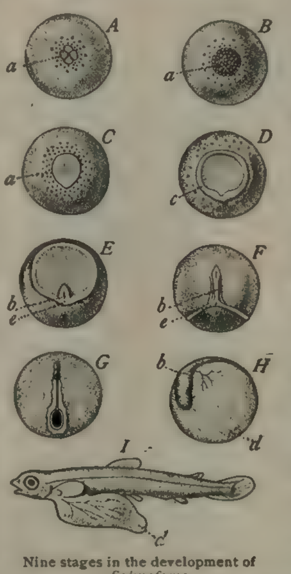
tail-hook, *n.* 2. Same as ★*dog*, 9 (*m*).

tail-house (tāl′hous), *n.* In *mining*, the building in which tailings are treated.

tailing1, *n.* 5. In *elect.*: (*a*) In *teleg.*, especially through cables, the discharge current due to the capacity of the line which continues to flow for an appreciable time after the signaling impulse has been received and modifies the character of the latter. *Trans. Amer. Inst. Elect. Engin.*, 1897, p. 95. (*b*) In *automatic teleg.*, a mark, on the recording-tape of a receiving instrument, which is not caused by the signaling impulse proper but by the discharge current from the line.—6. In prospecting for coal, the outcrop of a carbon-carrying stratum at the surface of the ground. Called also *smut* and *blossom*. The vein peters out at the surface, or tails away to nothing, but leaves a stain under weathering. [Eng.]

tail-joist (tāl′joist), *n.* See ★*tail-beam*.

tail-knob (tāl′nob), *n.* A small swelling consisting of an aggregation of cells at the posteromedian point of the blastodisc, or germ-ring, in the young fish embryo.



Nine stages in the development of *Salmofario*.

A–H, before hatching; *I*, shortly after hatching; *a*, blastoderm; *b*, embryo; *c*, thickened edge of blastoderm; *d*, yolk-sac; *e*, tail-knob. (*A–G* after Henneguy.)

(From Parker and Haswell's "Zoology.")

taille, *n.* 6. (*b*) Also applied to the tenor voice and to the tenor species of wind-instruments: as, *taille de basson*, the tenor oboe or tenoroon.

tail-light (tāl′-līt), *n.* Same as *tail-lamp*.

tail-lock (tāl′-lok), *n.* A crest of erect, stiff hairs on the center of the upper part of the tail: occurring more or less frequently in horses in their winter coat.

tail-mill (tāl′-mil), *n.* Same as ★*tail-house*.

tailor, *n.* 2. (*c*) A name in New South Wales of the fish *Pomatomus saltatrix*. It is called *skipjack* in Melbourne, a name by which it is also known in America, where it is more commonly called *bluefish*.

tailorage (tā′lọr-āj), *n.* 1. The products of tailoring, collectively.—2. The fit, general finish, and effect of the work of a tailor.

tailorize (tā′lọr-īz), *v. i.* and *t.*; pret. and pp. *tailorized*, ppr. *tailorizing*. 1. To follow the business of a tailor; fit as a tailor; fit closely and somewhat stiffly.—2. To make conventional; conventionalize. [Rare.]

tailor-made, *a.* Hence—2. Somewhat stiff and formal; conventional. [Rare.]—**A tailor-made girl,** a young woman who affects the tailor cut in clothes and is somewhat stiffly and mannishly dressed. [Colloq.]

tailor-shad (tā′lọr-shad), *n.* Same as *gizzard-shad*.

tail-piece, *n.* 1. (*f*) In *lock-making*, a sliding piece connecting the hub and the bolt and transmitting motion from one to the other. (*g*) In *printing*, a decorative design at the end of a chapter that has a short page: usually in the form of a reversed pyramid. (*h*) A casting or hollow chamber below the suction-valves of a large pump to which the several suction-pipes leading to the sinks or sumps may be bolted by flanged joints.

tail-rock (tāl′rok), *n.* Same as *tailings*. See *tailing*1, 3.

tail-rod (tāl′rod), *n.* A rod attached to the piston of an engine or pump and projecting through the head of the cylinder away from the crank. Such a rod helps to support and steady the piston, especially in an engine having a very long stroke.

> There are several novel features in regard to the power station, among them the method of making joints and piping, and an arrangement for recovering the cylinder oil from the water of condensation. The experiment has been tried of equipping one engine with *tail rods* and the other without *tail rods*. The experience with the *tail rods* indicates that it is possible to work the engine equipped with them at about 10 per cent. greater capacity. *Elect. World and Engin.*, Dec. 26, 1903, p. 1064.

tail-shaft (tāl′shȧft), *n.* 1. Any shaft working at the end of the series farthest from the head, or from the end, where the power is primarily applied.—2. In marine practice, the last or sternmost length of the propeller-shaft, or the portion which projects aft through the hull and to which the propeller is fastened.

tail-sheave (tāl′shēv), *n.* The sheave or drum at the bottom or inner end of a mine-haulage system or an inclined plane, on which the cars are operated by an endless rope. At the opposite end is the *head-sheave*, when the cars are operated partly by gravity.

tail-spindle (tāl′spin″dl), *n.* The spindle carrying the dead-center of the engine-lathe and located in the tail-stock farthest from the head.

tail-stem (tāl′stem), *n.* Same as *tail-piece*, 1 (*b*).

tail-twisting (tāl′twis″ting), *n.* The act of torturing an animal by twisting its tail; hence, the act of tormenting, in general; nagging. [Slang.]

> The Colonel's Wife talked and prayed by turns till she was tired, and went away to devise means for chastening the stubborn heart of her husband. Which, translated, means in our slang, '*tail-twisting*.'
> *R. Kipling*, Watches of the Night, in Plain Tales from [the Hills, p. 82.

tail-vise, *n.* 2. A leg-vise, or one which is supported partly upon an iron foot or leg reaching to the floor and partly by being secured to the edge of a bench: used by blacksmiths and others for rougher classes of work. Known also in Great Britain as the *standing vise*. [Eng.]

tainiolite (tī′ni-ọ-līt), *n.* [Gr. *ταινία*, band, + *λίθος*, stone.] A kind of lithium-mica occurring in colorless crystals having the form of strips or bands: its relations to the better-known species have not been determined: found in southern Greenland.

taipo (tī′pō), *n.* [Maori?] A New Zealand word for 'devil,' often applied by settlers to a vicious horse or as a name for a dog. *E. E. Morris*, Austral English.

takadiastase (tak-ạ-dī′ạ-stās), *n.* [*Taka*(*mine*), a Japanese chemist who first prepared it, + E. *diastase*.] A trade-name for a digestive ferment obtained by the action of *Aspergillus oryzæ* on rice. It is used in cases of starchy indigestion.

> The following ferments were used: *taka-diastase*, pancreatin, rennin, myrosin, invertin, emulsin, pepsin in acid solution, pepsin in alkaline solution, ingluvin, malt, and papain. *Jour. Med. Research*, July, 1907, p. 385.

Takaka system. See ★*system*.

Takatori pottery. See ★*pottery*.

take, *v. t.*—**To take a stand.** See ★*stand*.—**To take ground.** See ★*ground*1.—**To take harbor,** to put in to a harbor.

> We resolved *to take harbour*.
> *Defoe*, Captain Singleton, p. 37.

To take land (more, less, too much, etc.) in plowing, to increase, diminish, etc., the width of the furrow-slice: said of the plow or the plowman. [Eng.]—**To take the air.** (*e*) To measure the flow of air for ventilating or other uses in a duct or passage. (*d*) To receive the quantity of air intended, or to deliver it: used more commonly in the negative form of "not taking the air," when the apparatus is working poorly. Both terms are used specifically with regard to the operation of mines requiring artificial ventilation by fans or other devices.—**To take the back track.** See ★*track*2.—**To take up bees,** to kill bees, generally with burning sulphur, to get the honey. *Stand. Dict.*

take, *n.* 4. In *pathol.*, a successful inoculation or vaccination. [Colloq.]

> Ninety-eight per cent of "*takes.*"
> *Phil. Med. Jour.*, Jan. 31, 1903.

taker, *n.* 2. A cylinder on a wool-carding machine for taking the fibers from the feed-rolls to the main cylinder. Also called *licker-in* or *taker-in*.

taker-in (tā″kėr-in′), *n.* The cylinder, covered with card-clothing, which takes the fibers of wool or cotton from the feed-rolls to the main cylinder, or drum, of a carding-machine; a taker.

> The fibres of the lap sheet are combed or struck off by the *taker-in*, and carded or combed as they pass through the carding engine. When the fibres have been carded, they are combed from the doffer in a thin gauze-like web, and adhere to one another with a gossamer-like attachment, which holds the fibres together for the drawing processes. *Hannan*, Textile Fibres of Commerce, p. 116.

takin (tä′kin), *n.* [Native name.] A goat-like antelope, *Budorcas taxicolor*, related to the Rocky Mountain goat, found at a high altitude in the eastern Himalayas.

takkag (täk′äg), *n.* A Siamese three-stringed lute or guitar similar to the Burmese patola.

takosis (ta-kō′sis), *n.* [For **tekosis*, irreg. < Gr. τήκειν, melt, waste away, + *-osis*.] A contagious disease of goats, characterized by anemia and rapid emaciation, usually terminating fatally.

> At last a disease has been found that will kill a goat. . . . The new disease is called "*takosis.*" This is a new name for a new disease.
> *Kansas City Daily Times*, Oct. 26, 1903.

takyr (tä′kir), *n.* [Turki **takir*, Chagatai *taḳir*, < *taḳ*, smooth, plane.] In Turkestan, a flat clayey tract covered with water in the spring, but in the summer dry, with scant vegetation; a playa; a sebka.

> There are also wide spaces (*takyrs*), nearly horizontal, covered with clay, upon which water accumulates in the spring; in the summer they are muddy first, but later quite dry, and merely a few Solaneæ and bushes grow on their surface. *Encyc. Brit.*, XXX. 15.

tala2 (tä′lạ̈), *n.* [Native name.] An Argentine tree of the elm family, *Momisia pallida*, yielding a valuable wood used for making tool handles, casks, and barrels.

talæporiid (tal-ẹ̄-pō′ri-id), *n.* and *a.* I. *n.* A member of the lepidopterous family *Talæporiidæ*.

II. *a.* Having the characters of or belonging to the family *Talæporiidæ*.

talalgia (tạ-lal′ji-ạ̈), *n.* [L. *talus*, heel, + Gr. ἄλγος, pain.] Pain in the heel.

talang (tä′läng), *n.* [Philippine name.] See ★*mabolo*.

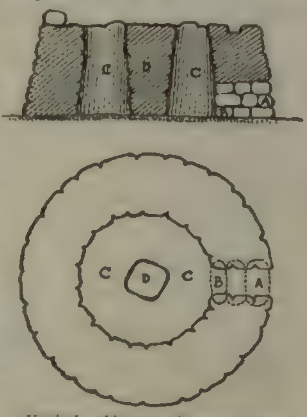
talangtalang (tä-läng-tä′läng), *n.* [Philippine name.] See ★*duguan*.

talara (tä′lạ-rạ̈), *n.* [Pol., also *talera* = Russ. *talerŭ*, < G. *taler*, *thaler*. See *thaler*, *dollar*.] A silver coin of Poland.

talaro (tä′lä-rō), *n.* [It. *talaro*, < G. *taler*, *thaler*. See *thaler*, *dollar*.] The designation of the Maria Theresa dollar of 1780, which is, or was, periodically restruck for the commerce of the Levant and Abyssinia.

Talavera pottery. See ★*pottery*.

talayot (tä-lä′yōt), *n.* [Balearic.] A name given by the natives of the Balearic Islands to certain prehistoric stone towers found in those islands. These towers are round or square with slightly sloping sides, but they are in such a ruined condition that the structure of their upper portion is doubtful. The interior was usually a simple chamber, but sometimes more complex. Their use is not known.



Vertical and horizontal cross-sections of a talayot.
A, *B*, entrance gallery; *C*, *C*, interior crypt; *D*, central pillar.

> There are no true dolmens in Sardinia, where they are replaced by the Nuraghi, abodes not of the dead but of the living, though possibly modelled on long vanished cromlech prototypes. To the same category belong the so-called *Talayots*, or "watch-towers" of the Balearic Islands, which date also from prehistoric times, and which are generally supposed to have been erected by the same race that built the Sardinian Nuraghi.
> *Keane*, Ethnology, p. 126.

Talbot's law, the Talbot-Plateau law. See ★*law*1.

talbotype (tâl′bō-tīp), *v. t.*; pret. and pp. *talbotyped*, ppr. *talbotyping*. To produce (a photographic image) on the surface of sensitized paper according to the talbotype method. See *talbotype*, *n.*

> To *talbot-type*.—To produce a photographic image on the surface of paper chemically prepared.
> *N. and Q.*, 9th ser., VII. 263.

talc-chlorite (talk′klō″rīt), *n.* An imperfectly defined mineral from Traversella in Piedmont, occurring in large hexagonal plates, perhaps a mixture of ripidolite and talc. Also applied to another mineral in the same locality, perhaps the same as leuchtenbergite.

talcium† (tal′si-um), *n.* [NL., < E. *talc*.] An early name for magnesium.

tale1, *n.*—**Canterbury tale,** a long and tedious tale or story; a fable; a cock-and-bull story: from Chaucer's "Canterbury Tales." *N. E. D.*

talebraric (tal-ẹ̄-brar′ik), *a.* Noting an acid, a pale-yellow crystalline compound, contained in the lichen *Lepraria latebrarum*.

talent1, *n.*—**All the talents,** a nickname given to the British ministry in office in 1806, which was conspicuous for its want of a man of genius, while including those possessed of "all the talents."

talent1 (tal′ẹ̈nt), *v. t.* To endow with talents. [Rare.]

> That Care and Zeal wherewith he hath Employed in his peculiar Opportunities, with which the Free Grace of Heaven hath *Talented* him to do Good unto the Publick.
> *C. Mather*, Magnalia, iv. § 6.

taligrade (tal′i-grād), *a.* [L. *talus*, ankle, + *gradi*, walk.] Walking on the outer side of the foot. The ant-eaters walk thus with their fore feet, while the extinct ground-sloths walked on the outer sides of their hind feet.

talipedic (tal-i-ped′ik), *a.* [NL. *talipes* (*ped-*) + *-ic*.] Clubfooted, as a person; twisted and distorted by club-foot, as a foot.

talipes, *n.*—**Talipes arcuatus,** a deformity of the foot marked by the presence of an exaggerated arch.—**Talipes calcaneocavus,** a combination of talipes calcaneus with talipes cavus.—**Talipes calcaneovarus,** a combination of talipes calcaneus with talipes varus.—**Talipes equinocavus,** a combination of talipes equinus with talipes cavus.—**Talipes equinovalgus,** a combination of talipes equinus with talipes valgus.—**Talipes plantaris,** a form of talipes cavus in which flexion of the foot is markedly restricted.—**Talipes planus,** flatfoot; a condition in which the arch of the foot is broken down.—**Talipes valgocavus,** a combination of talipes valgus with talipes cavus.—**Talipes varocavus,** a combination of talipes varus with talipes cavus.

talipomanus (tal″i-pom′ạ̈-nus), *n.* [NL., irreg. < *talipes* + *manus*, hand.] Club-hand; a deformity of the hand analogous to club-foot.

Talismania (tal-is-mā′ni-ạ̈), *n.* [NL., < E. *talisman*.] A genus of deep-sea fishes of the family *Alepocephalidæ*.

tallant (tal′ạ̈nt), *n.* The upper part of a rudder.

tall-boy, *n.* 2. Another name for a high-boy, a high chest of drawers. See *high-boy*, 2.

Tallerman treatment. See ★*treatment*.

tallingite (tal′ing-īt), *n.* [Named after R. *Talling*, who collected it.] A hydrated copper chlorid occurring in bright-blue incrustations: found in Cornwall, England.

tallochlor (tal′ọ̄-klōr), *n.* The green coloring-matter of Iceland moss, *Cetraria Islandica*.

tallow, *n.*—**Borneo tallow,** a solid fat obtained in Borneo from any one of several species of trees belonging to the family *Dipterocarpaceæ*, especially *Shorea aptera* and *Isoptera Borneensis*. It is used by the natives for cooking and is exported to Europe for lubricating purposes.—**Chinese tallow.** See *vegetable tallow*.—**Piney tallow.** See *piny*1.—**Whale tallow,** the still soft mass of imperfectly purified spermaceti obtained by the first pressing of the head matter from the cachelot whale.

tallow-cup, *n.* Tallow is much less used for lubrication than before the use of mineral oils became general. A goblet-shaped cup of cast-brass, with a cock in the part corresponding to the goblet-stem, was screwed into the cylinder-cover. When steam was shut off, and the engine running by its inertia, the cock could be opened, and on the aspiration stroke of the piston the pressure below the cock would be enough less than that of the atmosphere to cause the latter to press the tallow, softened by heat, down into the cylinder. In condensing-engines the lubrication could be done when the engine had steam on, provided the cock was opened on the exhaust stroke on that side of the piston.

tallow-weed (tal′ọ̄-wēd), *n.* A native forage plant, *Tetraneuris linearifolia*, of southern and western Texas. It is a low composite with narrow leaves and yellow heads, and springs up in January, when other feed is scarce. Its name is due to its remarkable fattening quality.

Tally4 (tal′i), *n.*; pl. *tallies* (-iz). [(*I*)*tali*(*an*).] An Italian: as, the *Tallies* are working on the railroad. *Dialect Notes*, II. vi. [Slang.]

tally-board (tal′i-bōrd), *n.* A smooth thin board used by a scaler to record the number or volume of logs.

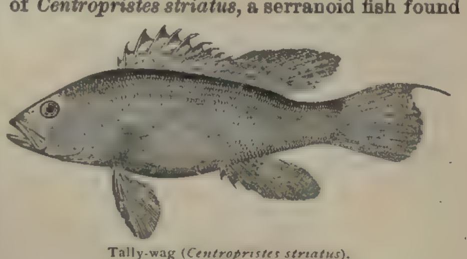
tally-card (tal′i-kärd), *n.* Any card on which a record is kept, especially of the scores in a game or of the coups in banking-games.

tallygalone (tal″i-gạ-lōn′), *n.* [Also *talleygalaun*, *tallagallan*: an aboriginal name.] A fish of New South Wales, *Myxus elongatus*, a genus of the family *Mugilidæ* (the gray mullets). Also called *sand-mullet*. *E. E. Morris*, Austral English.

tallying-machine (tal′i-ing-mạ-shēn″), *n.* A counting-machine used in counting or keeping tally of the number of passengers entering a boat, the number of parcels delivered or received at a warehouse or freight-yard, etc. It is held in the hand, a lever pressed by the thumb causing the machine to register on a dial the total number at each stroke of the lever.

tallyman, *n.* 5. In *forestry*, a man who records or tallies the measurements of logs as they are called by the scaler.

tally-wag (tal′i-wag), *n.* 1. A common name of *Centropristes striatus*, a serranoid fish found on the Atlantic coast of the United States.—2. A fish, *Centropristes ocyurus*, of the Gulf of Mexico. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 397.



Tally-wag (*Centropristes striatus*).
(From Bulletin 47, U. S. Nat. Mus.)

Talma's disease. See ★*disease*.

talofibular (tā-lō-fib′ụ̄-lär), *a.* [*talus* + *fibula* + *-ar*3.] Relating to the astragalus and the fibula: noting a ligament.

talonic (ta-lon′ik), *a.* [A metathesis of (*ga*)*la*(*c*)*tonic*.] Noting an acid, a colorless levorotatory crystalline compound, $C_6H_{12}O_7$, prepared by the action of pyridine on galactonic acid.

talonid (tal′ọn-id), *n.* [*talon* + *-id*2.] The shelf-like heel developed at the posterior part of the crown of the lower molar teeth of mammals. An analogous structure occurs in the premolars. The talonid is least modified and may be most readily recognized in the lower molar of carnivorous and insectivorous mammals. The homologous structure in the upper teeth is called the talon.

talus-glacier (tā′lus-glā″shiėr), *n.* A body of loose debris that sometimes assumes a sort of slow flowing motion on a steep mountain-slope. *Chamberlin and Salisbury*, Geol., I. 221.

talus-slope (tā′lus-slōp), *n.* The slope formed by the talus or broken and fallen rock which gathers at the foot of a cliff and produces a surface of high inclination. *Geikie*, Text-book of Geology, p. 52.

tam (tam), *n.* [Abbrev. of *tam-o'-shanter*.] A knit or crocheted cap for outdoor wear, without a brim and usually with a ball or tuft of wool in the center of the crown: sometimes imitated in straw or cloth. See *tam-o'-shanter*.

Tam. An abbreviation of *Tamil*.

tamacoari (tä-mä-kō-ä-rē′), *n.* [Tupi *tamacuari*, *tàmacoarée*.] In northern South America, *Caraipa fasciculata*, a forest-tree of British Guiana and the upper Amazon belonging to the family *Clusiaceæ*, with glossy feather-veined leaves and clusters of fragrant white flowers. It yields the tamacoari ★balsam (which see).

tamal (tä-mäl′), *n.*; pl. *tamales* (tâ-mä′lās, E. pron. tạ-mä′liz). [Sp. Mex. and Cuban *tamal* (pl. *tamales*), < Carib *taumali*, *taomali*, the inner parts of a crab, or any piquant meat or sauce (1666, Davies); see *tomalley.*] A Mexican dish made of Indian corn and meat, seasoned with red peppers, wrapped in husks and roasted or steamed.

tamanous, *n.* See ★*tamanowus.*

tamanowus (tä-mä′nọ-wus), *n.* [Also *tamahnowus, tamanous;* Chinook jargon, < Chinook Indian *itamanoas*, supernatural power.] Among the Chinook and other Indians of Washington and British Columbia, a supernatural spirit or power; the power of the medicine-man; magic.

tamarao, *n.* Same as ★*tamarau.*

tamarau (tim-ä-rou′), *n.* [Phil.] A small wild buffalo, *Bos mindorensis*, found in the island of Mindoro, Philippines. Also *tamarao.*

Tamaricaceæ (tam″a̤-ri-kā′sẹ̄-ē), *n. pl.* [NL. (Lindley, 1836), < *Tamarix* (*Tamaric-*) + *-aceæ.*] A family of dicotyledonous choripetalous plants of the order *Hypericales*, the tamarisk family, typified by the genus *Tamarix* (which see) and the order *Tamariscineæ.*

tamariscineous (tam″a̤-ri-sin′ẹ̄-us), *a.* [NL. *Tamariscine*(*æ*) + *-ous.*] Belonging or pertaining to the *Tamariscineæ.*

tamarite (tam′a̤-rīt), *n.* [Cornish *Tamar*, a river so named in Huel Tamar, ‘Tamar mine,’ a locality in Cornwall.] A mineral occurring in green rhombohedral crystals in Cornwall, Saxony, and Hungary, a hydrated basic copper arseniate. Also known as *chalcophyllite.*

tamas (tä′ma̤s), *n.* [Skt. *támas*, darkness: see *tenebræ.*] In *Hindu philos.*, darkness, as one of the three gunas, or fundamental qualities incident to creation.

Tamashek (tam′a̤-shek), *n.* The Hamitic languages of the Sahara or Mauretania. *Keane*, Ethnology, p. 384.

tambaroora (tam-ba̤-rö′rạ̈), *n.* In Queensland, a game played with dice for a pool into which each player puts a sum agreed upon. Generally known as “A shilling in and the winner shouts.” *E. E. Morris*, Austral English.

> The exciting game of *tambaroora*. . . . Each man of a party throws a shilling, or whatever sum may be mutually agreed upon, into a hat. Dice are then produced, and each man takes three throws. The Nut who throws highest keeps the whole of the subscribed capital, and out of it pays for the drinks of the rest.
>
> *A. J. Boyd*, Old Colonials, p. 63, quoted by E. E. Morris, [Austral English.

tambo¹ (täm′bō), *n.* [Peruvian Sp., < Quichua *tampu.*] A building along the wayside for the use of travelers, sometimes furnishing both food and shelter, but usually only shelter. [Peru.]

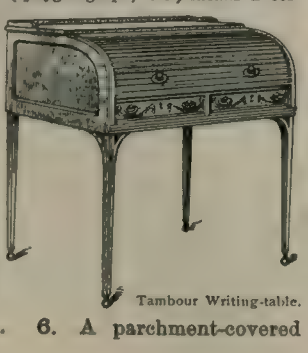
> One of the most interesting topics of study is the trails along which the seasonal and annual migration of tribes occurred, becoming in Peru the paved road, with suspension bridges and wayside inns or *tambos.*
>
> *Encyc. Brit.*, XXV. 377.

tambo² (tam′bō), *n.* Short for *tambourine:* referring to an end-man in a negro minstrel-show who plays on that instrument.

tambour, *n.* 6. An instrument for recording pulsations, consisting of a membrane stretched over a drum-like cylinder, or a ring, to which is attached a recording-needle.

> The respiratory movements were recorded by the *tambour* method; two *tambours* . . . were strapped to the animal's chest.
>
> *Philos. Trans. Roy. Soc.* (London), 1899, ser. B, p. 223.

Marey's tambour, in *physiol.* and *exper. psychol.*, an auxiliary recording-instrument implying the use of the graphic method with air-transmission. The tambour consists essentially of a very shallow metal funnel, the mouth of which is closed by a thin and tightly stretched sheet of rubber, while its smaller end is connected by thick-walled rubber tubing to a sphygmograph, dynamograph, pneumograph, plethysmograph, or the like. A light disk of metal, cemented to the rubber sheeting, carries a writing-lever, which is applied to the smoked surface of a kymograph drum. The whole recording system thus consists of an air column contained in a rigid tube which is bounded at both ends by elastic rubber membranes. A push upon the membrane of the particular instrument in use (sphygmograph, etc.) means a corresponding push upon the membrane of the tambour and a consequent rise of the writing-lever, which accordingly traces a pulse-curve, strength-curve, breathing-curve, etc., as the drum revolves.—**Tambour writing-table**, the name given by Hepplewhite to the roll-top desk, invented in France about 1750.



Tambour Writing-table.

tambourine, *n.* 6. A parchment-covered racket, resembling a battledore, with which the ball is thrown in the game of ★tamburello (which see).

tamburello (tam-bö-rel′ō), *n.* [It., a small drum.] A game of lawn-tennis played with tambourines or parchment-covered rackets resembling battledores. *N. and Q.*, 9th ser., XII. 434.

tamis-bird (tam′is-bėrd), *n.* [So called in allusion to the netted appearance of the bird's plumage: see *tamis.*] An English name for the guinea-fowl, *Numida meleagris.*

tamlung (tam′lung), *n.* [Siamese *tamlung, ta′mleung.*] A Siamese gold coin on which is stamped the picture of a pagoda, equivalent to 4 ticals or about $1.12 in United States gold.

Tam o'Shanter jug. See ★*jug*¹.

tampicin (tam′pi-sin), *n.* [*Tampico* + *-in*².] A resinous glucoside, $C_{34}H_{54}O_{14}$, contained in Tampico jalap, the root of *Ipomæa simulans*, from Mexico. It melts at 130° C.

tamping-bar, *n.* 2. A long iron bar for pressing or tamping the ballast under the ties of a railway-track. It has a heavy square flat head set at an angle on a curved stem and a pointed top or handle.

tamping-pick (tam′ping-pik), *n.* A track-layers' pick which has one arm finished like the end of a tamping-bar. See ★*tamping-bar.*

tampon, *n.*—**Tracheal tampon**, an inflatable rubber bag surrounding a tracheotomy-tube, used to occlude the trachea and so prevent the entrance of blood in operations on the mouth or upper air-passages.

tamure (tam′ö-rạ̄), *n.* [Maori.] A New Zealand fish, the ★schnapper (which see).

Tamworth (tam′wėrth), *n.* An English breed of pigs, having long legs and skull and a deep body. The general color is red, with some darker spots. Named from a town in Staffordshire where the breed originated.

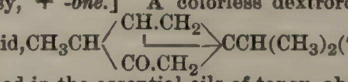
tan¹, *n.* 1. The term is often used to mean spent bark which has served for the manufacture of leather and is spread over streets to deaden the sound of vehicles, or over the floor of a riding-school or circus to diminish the danger of falls, or applied to clay land as a loosening material. It is also commonly used as fuel in tanneries.

tan⁶ (tän), *n.* [Chin. *tan*, a large earthen jar capable of holding a picul.] A Chinese unit of weight, a picul, equal to 133⅓ pounds avoirdupois.

tan⁷ (tän), *n.* [Jap.] A Japanese measure of surface, equal to .245 of an acre. *Hering*, Conversion Tables, p. 44.

tanacetin (tan-as′e-tin), *n.* [NL. *tanacetum*, tansy, + *-in*².] A bitter amorphous compound, $C_{11}H_{16}O_4$, contained in the leaves and flowers of the tansy, *Tanacetum vulgare.*

tanacetone (tan-as′e-tōn), *n.* [NL. *tanacetum*, tansy, + *-one.*] A colorless dextrorotatory liquid,



$$CH_3CH\left\langle\begin{matrix} CH.CH_2 \\ CO.CH_2 \end{matrix}\right\rangle CCH(CH_3)_2(?)$$

contained in the essential oils of tansy, absinthe, thuja, and sage. It boils at 203° C. Also called *thujone.*

Tanach, *n.* Same as ★*Tanak.*

tanago (tä′nä-gō), *n.* [Japanese name.] The surf-fish of Japan, *Ditrema temminckii*, of the family *Embiotocidæ.*

Tanagræan (tan-a̤-grē′a̤n), *a.* Same as ★*Tanagrine*².

Tanagrine² (tan′a̤-grin), *a.* [*Tanagra*, in ancient Bœotia, + *-ine*².] Of or pertaining to Tanagra in ancient Bœotia: usually applied to Greek terra-cotta figurines of which the most notable have been found in excavations on the site of Tanagra. See cut at *Tanagra figurine* under *figurine.*

Tanak, Tanach (tä′nak), *n.* The common name of the Hebrew Old Testament. The word is formed, with assistant vowels, from the Hebrew initial consonants of the names of the three divisions of the Old Testament, namely, *Torah*, the law (the Pentateuch), *Nebiim*, the prophets, and *Ketubim*, writings (Hagiographa).

tanana (ta-nä-nä′), *n.* [S. Amer.] A native name of a singing grasshopper in the valley of the Amazon. *Cambridge Nat. Hist.*, V. 319.

tanchord (tan′kôrd), *a.* [*tan*(*gent*) + *chord.*] Consisting of or relating to a tangent and a chord.—**Tanchord angle.** See ★*angle*³.

Tancredia (tan-krē′di-ạ̈), *n.* [NL.] A genus of teleodesmacean pelecypods with small *Donax*-like shells which are obliquely truncated posteriorly and attenuated anteriorly: found in the Triassic, Jurassic, and Cretaceous formations.

tandan (tan′dan), *n.* [Aboriginal Australian.] A catfish (see ★*catfish*, 7) or eelfish, *Copidoglanis tandanus.* *E. E. Morris*, Austral English.

tandem, *n.*—**In tandem.** (*a*) One behind the other. (*b*) In *elect.*, in series. *Electrochem. Industry*, April, 1904, p. 134.—**Tandem cart**, a dog-cart.—**Tandem play**, in *foot-ball*, a play in which a player running with the ball is guarded in front or behind, or both, by players of his own side.

tandem-compound (tan′dem-kom″pound), *a.* Noting a form of compound engine in which the cylinders are in line so that the pistons are fastened to one piston-rod. When the axis of the cylinders is vertical this arrangement is often called *steeple-compound.*

tang¹, *n.* 1. (*a*) (2) In *paleon.*, the stem of an arrow-head which is inserted into the shaft.

tang³, *n.*—**Black tang**, one of the brown seaweeds, *Fucus vesiculosus.*

tang⁶ (tang), *n.* [Origin undetermined.] A fish belonging to the family *Teuthididæ*, *Teuthis hepatus*, of the West Indian fauna.—**Blue tang**, a species of tang or surgeon-fish, *Teuthis cœruleus*, common from Key West to Bahia, differing from the others in its bright-blue color.—**Ocean tang**, a common name of *Teuthis bahianus*, a fish of the West Indian fauna.

tanga (tan′gạ̈), *n.* [Pg. *tanga*, Turki *tanga*, Marathi *tānk*, etc., < Skt. *ṭaṅka*, a weight (of silver), a stamped coin.] A current coin of Portuguese India, equal to 60 reis and one tenth of a rupee, equivalent to 2.03 United States cents.

tang-chisel (tang′chiz″el), *n.* Any chisel in which the tang of the blade is driven into the handle.

tangelo (tan′je-lō), *n.* [*tang*(*erine*) + (*pom*)*elo.*] A class of hybrids of the tangerine orange and the grape-fruit or pomelo. At least three of these hybrids have been secured by the United States Department of Agriculture.

tangent, *n.* 3. (*b*) One of the keys or finger-levers of the hurdy-gurdy.—4. In *railroading*, a straight piece of track beginning and ending at a curve.—**Cuspidal tangent**, the tangent at a cusp of a plane curve.—**Hyperbolic tangent**, hytan $x \equiv$ tanh $x = \frac{e^x - e^{-x}}{e^x + e^{-x}}$.—**Logarithmic tangent**, the logarithm of the natural tangent. Often, to avoid negative characteristics, the characteristic of the logarithm is printed 10 too large.—**Tangent balance.** (*b*) Same as *tangent galvanometer.*—**Tangent scale.** (*b*) In *phys.*, a scale graduated to read tangents of the angles of deflection of a galvanometer or similar instrument.—**Tangent screw.** (*b*) See ★*screw*¹.

tangential, *a.* 3. In *geol.*, specifically applied to strains in the earth's crust which are applied in a direction tangential to its surface.

> A study of the general structure shows a differential yielding of the strata at this point to the *tangential* stresses that produced the deformation of the Appalachian province. *Science*, June 3, 1904, p. 856.

tangentometer (tan-jen-tom′e-tėr), *n.* [*tangent* + *-o-* + Gr. μέτρον, measure.] A simple mechanical device for the approximate measurement of tangents and other trigonometric functions. *Nature*, Dec. 12, 1907.

tanghinin (tan′gi-nin), *n.* [*tanghin* + *-in*².] The active principle, in crystalline form, of tanghin (which see), the judicial poison of the Malagasies. Its analysis leads to the formula $C_{27}H_{40}O_8$. It produces the effects of a cardiac poison of the same class with ouabain and strophanthin.

tangi (tän′gi), *n.* [Maori *tangi*, cry, lament.] A Maori dirge or lamentation.

> Perhaps some old woman did a quiet *tangi* over his grave.
>
> *J. L. Campbell*, Poenamo, p. 191, quoted in *E. E.* [*Morris*, Austral English.

Tangible point, writing. See ★*point*¹, 31, ★*point system*, and ★*point-writing.*

tanginin, *n.* See ★*tanghinin.*

tangle-bar (tang′gl-bär), *n.* An apparatus made up of a series of hempen swabs attached to a bar, used in exploring the sea-bottom, and drawn over it by the movement of the vessel. The hemp-fibers entangle in them samples of the bottom growths.

> The *tangle-bar*, to sweep over rocky bottoms on which the other instruments would foul and often be lost. It is in effect a series of long swabs that will entangle in its hempen fibers almost anything from coral rock to fishes. It is probably the most effective all-around instrument for general work, and the least likely to fail or be lost. We found it invaluable in West Indian waters of moderate depths. *Science*, May 31, 1901, p. 843.

tangle-blade (tang′gl-blād), *n.* In *bot.*, same as *tangle*¹, 1.

tanglefoot, *n.* 2. Same as ★*bauera*, 2.

tanglement (tang'gl-mẹnt), *n.* An entanglement: the act of tangling or entangling; the knot or mixture of things thus tangled.

tanh. An abbreviation of *hyperbolic tangent.* See ★*tank*^{4}.

tania (tä'nẹ̄-ạ̈), *n.* [Native name.] See *tannier.*

taniwha (tä'nē-hwä), *n.* [Maori *taniwha* = Samoan *tanifa* = Fijian, a large shark.] A mythical Maori monster of some kind, especially a water-monster, often described as a huge fish of hideous aspect.

tank^1, *n.* **4.** In *glass-manuf.*, same as *tank-furnace* (which see, under *furnace*).—**5.** The stomach. [Slang.]

> I ain't no bloomin' Camomile [camel] . . . to tap me *tank* [stomach].
>
> *Sir Gilbert Parker*, Donovan Pasha, p. 333.

McGlashan's ballast-tank, an arrangement of side water-ballast tanks, named after the inventor, which extend about half the length amidships, and are formed by the extension of the inner bottom plating to a considerable height on the sides of the vessel.—**McIntyre tank,** in *iron ship-building*, a system of construction of a double bottom or ballast-tank adopted in early iron vessels and still sometimes used in small vessels: named from its designer. In this system the ordinary frame floors are retained and the side keelsons above the floors are increased in height and number so as to form fore and aft girders, to the upper flanges of which the tank-top, equivalent to the inner bottom plating, is riveted.—**Septic tank,** a tank, usually built of brickwork, masonry, or concrete, and large enough to hold something like 50,000 gallons, in which sewage is allowed to undergo putrefactive fermentation under the influence of anaërobic bacteria, a large part of the organic matter present being thus destroyed in the course of a day or two, and the remaining liquid prepared for further purification by filtration.

> The "*septic tank*-system" was devised by Cameron of Exeter in 1896. It consists in providing . . . a closed chamber or tank through which the sewage passes and in which the organic matters in the sewage are brought into solution by anaërobic organisms.
>
> *Encyc. Brit.*, XXIX. 379.

Water-tempering and -measuring tank, a device used in bakeries, generally attached to the wall near a dough-mixer, by which water can be measured and heated to any degree for use in the mixer.

tank^1, *v.* **II.** *intrans.* To fill up (with liquor); hence, to be drunk: usually with *up*. [Slang.]

> Bowlaigs would reepair back ag'in [with the bottle] to the Major, when they'd both *tank up* ecstatic.
>
> *A. H. Lewis*, Wolfville Nights, xv.

tank^4. An oral abbreviation for *hyperbolic* ★*tangent* (which see), being an accommodated pronunciation of the written abbreviation *tanh.*

tankage, *n.* **3.** The undissolved solids which settle to the bottom of the tank in which animal garbage is boiled with water, the grease being removed by skimming and the tank-water drawn off. (See ★*tank-water.*) Tankage is used in the manufacture of mixed fertilizers.

> Tank water, as is well known, is a by-product of rendering establishments produced in cooking, under pressure, the scraps of meats, bone, sinews, lungs, intestines, and other nitrogenous matter containing more or less fat; such cooking being continued for several hours, until the substances in the tank are decomposed to a great extent and the fat liberated. A large part of the nitrogenous matter remains in solution in the liquid produced from the solids introduced into the tank and from the condensed steam. The fats rise to the surface, while the undissolved matter, to a great extent, settles to the bottom of the tank. The liquid lying between the fat and the solids, or "*tankage,*" in the bottom of the tank is known as "tank water."
>
> *Census Bulletin* 190, June 16, 1902, p. 13.

tank-boiler (tangk'boi″lėr), *n.* A type of marine boiler in England in which the water and steam were contained in a single large enveloping shell of cylindrical shape or of a shape derived from the cylinder. The name was used to distinguish this type from the sectional or coil types, made up of tube units of small diameter.

tank-conductor (tangk'kọn-duk″tọr), *n.* A person who has charge of the crew which operates a sprinkler or tank, and who regulates the flow of water, in icing logging-roads.

tank-epiphyte (tangk'ep″i-fīt), *n.* See ★*epiphyte*, 1.

tanker (tang'kėr), *n.* Same as ★*tank-vessel.*

tank-head (tangk'hed), *n.* The end of a vessel used as a tank. When such tanks are cylindrical and must withstand pressure, the tank-head is often convex on one end and concave on the other. The convex end offers no tendency to deform under pressure, and the concave end can be more readily riveted or welded in place to close the vessel up.

tank-heater (tangk'hē-tėr), *n.* A sheet-iron cylinder extending through a tank or sprinkler, in which a fire is kept to prevent the water in the tank from freezing, while icing logging-roads in extremely cold weather.

tanking, *n.* **2.** The act of hauling water in a tank to ice a logging-road.

tank-liquor (tangk'lik″ọr), *n.* The first crude solution of carbonate of soda obtained by leaching in tanks the 'black ash' of the Leblanc process for making soda from common salt.

tank-plate (tangk'plāt), *n.* **1.** A form of cast-iron plate used in building up sectional tanks for holding water. The plates are thin, and are cast with stiffening ribs and with flanges, by which latter they are bolted together to form the sides and bottom. The plates may be of greater thickness and with more massive ribs where higher pressures are to be withstood, as in the bottom layers of deep tanks.—**2.** An inferior grade of wrought-iron plates, intended for use in tanks for water, oil, or similar liquids which are not to be exposed to heat or to high pressure. This quality should not be used for boilers. Less care is used in the selection of the stock and in its manufacture by faggoting and rolling, less frequent re-rollings are called for, so that the cinder is less completely expelled, and the thorough welding of the layers is less certain.

tank-runner (tangk'run″ėr), *n.* A common East Indian name for one of the jacanas, *Hydrophasianus chirurgus*, which frequents the 'tanks' or reservoirs.

tank-ship (tangk'ship), *n.* Same as ★*tank-vessel.*

tank-station (tangk'stā″shọn), *n.* A stopping-place on a railroad, provided with a tank for supplying locomotives with water. It is often detached from a regular way-station and outside the yard limits. [U. S.]

tank-steamer (tangk'stē″mėr), *n.* A tank-vessel propelled by steam. See ★*tank-vessel.*

> Oil from Baku, which was sent by *tank-steamer* on the Caspian to Petrovsk. *Geog. Jour.* (R. G. S.), XVI. 366.

tank-toggle (tangk'tog″l), *n.* A device for lifting tanks or other similar vessels in which is a hole of a diameter less than that of the tank, and where it is sought to avoid the use of slings around the outside. A bar of a length greater than the greatest diameter of the hole (for safety it should be more than twice) is attached at or near its middle point to a hook or chain. It can be inserted into the hole by making the bar nearly parallel to the chain, but when released it falls at right angles across the hole, and the tank can be safely hoisted.

tank-valve (tangk'valv), *n.* **1.** A valve admitting liquid to a tank.—**2.** A valve in the bottom or side of a tank by opening which the tank can be emptied; specifically, the valve in a railway water-tank for supplying locomotive-tenders by which the supply to the drop-pipe is controlled.

tank-vessel, *n.* The interior structure is made up of water-tight transverse and longitudinal bulkheads arranged to form a number of compartments or tanks in which oil, molasses, or other fluids can be carried in bulk. The top of the tanks is a water-tight deck, above which and opening into the tanks are ★expansion-trunks (which see). The fluid is pumped into and out of the tanks by a system of pipes and steam-pumps. In tank-steamers the machinery and boilers are separated from the oil tank-compartments by a coffer-dam formed by two complete transverse bulkheads about 4 feet apart, which is frequently filled with water. Also colloquially called *tanker.*

tank-waste (tangk'wāst), *n.* Same as ★*alkali waste.*

tank-water (tangk'wâ″tėr), *n.* The water containing solid matter in solution which is obtained on boiling meat scraps, slaughter-house offal, and mixed city garbage containing such materials, the melted grease being skimmed off from the surface and the undissolved solids allowed to deposit at the bottom of the tank. The residue left on evaporating *tank-water* is called *stick.* See ★*stick*^{2}, 4, and ★*tankage*, 3.

> The liquid lying between the fat and the solids, or "tankage," in the bottom of the tank is known as "*tank water.*" After the fat has been skimmed off, the water is drawn off from the tankage and disposed of in various ways. This *tank water* was for many years discharged into the sewers, although it is known to contain valuable nitrogenous matter, and even at the present day it is thus disposed of in almost all houses of small capacity.
>
> *Sci. Amer. Sup.*, Nov. 22, 1902, p. 22479.

tannage, *n.*—**Chrome tannage,** a method of manufacturing leather by 'tawing' the skins with a solution of a chromium salt, most commonly potassium bichromate, sometimes chrome-alum, along with common salt and a mineral acid, followed by exposure to the reducing action of a sulphurous acid bath. *C. T. Davis*, Manuf. of Leather, p. 282.—**Combination tannage,** a tannage made of two or more tanning-liquors, in which one supplements the other. *Flemming*, Practical Tanning, p. 70.—**Electric tannage,** treatment by an astringent liquor in connection with an electric current which hastens the process.—**Union tannage,** tannage by the use of a mixture of hemlock and oak bark. *C. T. Davis*, Manuf. of Leather, p. 34.

tannal (tan'al), *n.* [*tann-ic* + *-al*^{3}.] A trade-name of a basic aluminium tannate, $Al_2(OH)_4(C_{14}H_9O_9)_2.10\,H_2O$. It forms a brownish yellow powder and is used in surgery for dusting wounds.—**Soluble tannal,** a trade-name of a compound prepared by dissolving tannal in tartaric acid: used medicinally.

tannalbin (tan'ạl-bin), *n.* [*tann-in* + *alb(umin)* + *-in*^{2}.] A light brown odorless and tasteless powder obtained by precipitating a solution of egg-albumin with a solution of tannin, and washing and drying the precipitate: used as an intestinal astringent.

tannaspidic (tan-as-pid'ik), *a.* [*tann(ic)* + *Aspid(ium)* + *-ic.*] Noting a tannic acid which was formerly supposed to exist in the male fern.

tannate, *n.*—**Iron tannate,** a tannate which occurs with iron gallate in common writing-ink. The iron is generally present in both the ferrous and ferric states of combination.

Tanne graywacke. [*Tanne*, name of a town in the Harz Mountains.] In *geol.*, a member of the Lower Silurian series of the Harz Mountains of Germany.

tannenite (tan'ẹ-nīt), *n.* [G. *Tannen(baum)* + *-ite*^{2}.] A mineral found at the Tannenbaum Mines in Saxony and at some other localities, a bismuth and copper sulphid. Also known as *emplectite.*

Tanners' wool, wool that is removed by scraping, or otherwise, from the pelt of a sheep.

tannergram (tan'ėr-gram), *n.* [*tanner*^{2} + *-gram.*] In New Zealand, a telegram: so called on the reduction of the price to sixpence (a 'tanner') for twelve words. *E. E. Morris.* See the extract. [Slang.]

> *Tannergrams* is the somewhat apt designation which the new sixpenny telegrams have been christened in commercial vernacular.
>
> *Oamaru Mail*, June 13, 1896, quoted in E. E. Morris, [Austral English.

tannigen (tan'i-jen), *n.* [*tanni(n)* + *-gen.*] A trade-name of acetyl-tannin, a yellowish-gray powder without smell or taste, used medicinally as an astringent remedy by both external and internal application.

Tannin color. Same as *basic* ★*color.*

tanning, *n.*—**Combination tanning,** tanning by the use of a combination tannage. *Sadtler*, Handbook of Indust. Chem., p. 331.—**Mineral tanning,** the manufacture of leather from skins by treating them with certain metallic salts, principally those of aluminium and chromium.—**Still tanning,** tanning in which the skins are allowed to remain quiet instead of being agitated by paddles. Still tanning makes plumper leather. *Flemming*, Practical Tanning, p. 299.—**Tanning extracts,** concentrated preparations manufactured on a large scale for tanners' use by treatment, with water, of various kinds of bark or other vegetable materials containing tannin, removing the woody fiber or other inert solid matter, and evaporating the infusion or decoction to dryness or to the condition of a thick paste. Catechu is a product of this kind, and hemlock-bark extract, chestnut-bark extract, and others are extensively used.

tanning-drum (tan'ing-drum), *n.* A revolving drum or wheel in which hides or skins are tanned. *C. T. Davis*, Manuf. of Leather, p. 221.

tannite (tan'īt), *n.* [*tann(in)* + *-ite*^{2}.] A general name applied to compounds of metals with tannins.

tannoform (tan'ọ̄-fôrm), *n.* [*tann(ic)* + *form(aldehyde).*] Methylene ditannin, a loose reddish powder obtained by the condensation of gallotannic acid and formaldehyde. It is a dusting-powder and intestinal astringent.

tannol (tan'ol), *n.* [*tann(in)* + *-ol.*] A combining form used in organic chemistry to indicate a relationship to tannin.—**Asaresinol tannol.** Same as ★*asaresinotannol.*

tannopin (tan'ọ̄-pin), *n.* [*tann(in)* + *op(ium)*(?) + *-in*^{2}.] A brown slightly hygroscopic powder obtained by the condensation of tannin with hexamethylene-tetramine: used as an intestinal astringent and disinfectant.

tannosal (tan'ọ̄-sal), *n.* [*tann(in)* + *-ose* + *-al*^{3}.] Same as ★*creosal.*

tannose (tan'ōs), *n.* [*tanni(n)* + *-ose*, for *-osis*, implying disease.] An abnormal or diseased condition of certain plants characterized by an excessive production of tannin.

tanolin (tan'ọ̄-lin), *n.* A trade-name for a preparation, containing the chlorids of chromium and sodium, used in mineral tanning.

tanque (tän′kā), *n.* [Amer. Sp., = Pg. *tanque*, a pool, pond, tank. See *tank*^{1}.] A small pool or pond; also, a tank or large trough.

> The entire group at Costa Rica in 1894 were on good behavior. . . . They came to the *tanque*, usually in groups, rarely alone, always alert.
> *An. Rep. Bur. Amer. Ethnol.*, 1895–96, p. 155.

Tantalid (tan′ta-lid), *n.* [Gr. Τανταλίδης, son of Tantalus.] In *Gr. myth.*, a descendant of Tantalus, especially his son Pelops.

> The Greek legend, was that the *Tantalid* Pelops came over from his Lydian fatherland to Greece.
> *L. M. Mitchell*, Hist. of Ancient Sculpture, p. 154.

tantalofluoride (tan″tạ-lọ̄-flö′ọ̄-rid), *n.* [*tantalum* + *fluoride.*] Same as ★*fluotantalate.*

tantalum, *n.* Knowledge of this metal has been much increased by recent research. Brought to the elementary state by heating together sodium and an alkaline tantalofluoride and fused in an electric furnace, it appears as a solid of grayish-white color and metallic luster, like platinum, of specific gravity 16.64. It combines in a most remarkable way intense hardness with a high degree of ductility, so that it can be drawn into wire .05 millimeters in diameter having a resisting tensile stress ranging up to 93 kilos., or for fine wire 150 or 160 kilos., per square millimeter before breaking. It melts at 2,250–2,300° C., resists all the ordinary acids and alkaline solutions, is attacked by hydrofluoric acid and by fused caustic alkalis, and as thin wire burns, when heated in oxygen, with a bright white light.

> Henri Moissan has succeeded in reducing *tantalum* acid in the electric furnace with powdered carbon and has obtained *tantalum* in a fused state. Hitherto the metal had been known only as a more or less pure powder with a density of 10.50. The electrical product has a brilliant metallic appearance, and a density of 12.79. It is very hard, easily scratching glass and quartz, has a crystalline fracture, and is infusible in the oxyhydrogen blowpipe. Certain reactions class it with the metalloids rather than with the metals proper.
> *Sci. Amer.*, Sept. 19, 1903, p. 203.

Tantalus, *n.* **2.** [*l. c.*] A case containing decanters. It is locked so that the decanters are in plain sight, yet the contents cannot be removed without the owner's key.

tap^1, *n.* **5.** A tanners' pit, usually sunk below the surface of the tan-yard, in which bark is extracted with water and the process of tanning is carried out. Also called *leach* or *latch.* —**6.** The hole bored and threaded in a street-main of a water-works system, so that the service-pipe of the customer may be connected thereto.—**7.** In *elect.*, a branch line which taps the main circuit so as to divert a portion of the current; a shunt.

> It sometimes occurs that there is additional resistance at $x = o$, due to protective coils or lamps in the battery *taps.* *Elect. World and Engin.*, Feb. 6, 1904, p. 263.

Arents tap, an arrangement for drawing molten lead out of the crucible of a shaft-furnace. It is a channel running from the lowest part of the crucible wall inside to the top on the outside, where it is enlarged into a basin from which the lead is ladled into molds without disturbing the furnace. Also called *siphon-tap.*—**Tap-sized hole.** See ★*hole*^{1}.

tap^1, *v. t.* **4.** To cut an internal screw-thread in with a screw-cutting tool, hob, or tap: as, to *tap* a nut or a hole.—**5.** In *elect.*, to divert a portion of (the current) from a circuit by means of a branch circuit or shunt; to make electrical connection with (a circuit) at any point.—**To tap a buoy,** to empty a buoy of water that has leaked into it.—**To tap off,** to draw off by means of tapping: said of a furnace.

tapayagua (tä-pä-yä′gwä), *n.* [Central Amer.] A violent southwest wind, with rain and thunder, in Nicaragua and San Salvador.

tape^1, *n.*—**Circumference tape,** a measuring-tape marked in the same manner as the circumference scale and used for the same purpose. See ★*scale*^{3}.—**Wire tape.** (*a*) A measuring-tape in which the woven fabric is replaced by a thin, flat steel wire or strip, capable of being wound upon a reel and graduated as desired. (*b*) A measuring-tape which has one or more flexible wires woven into its length so that stretching may be prevented when the tape is used out of doors in wet weather. The steel tape has replaced this.

tape-check (tāp′chek), *n.* A plain-woven fabric in which two counts of yarn, fine and coarse, are used in the warp, and the same in the weft, arranged in such an order as to form corded checks. *R. Marsden*, Cotton Weaving, p. 108.

tapeinocephalism (tạ̄-pī-nọ̄-sef′ạ-lizm), *n.* [*tapeinocephal(y)* + *-ism.*] Same as *tapeinocephaly.*

tapeless (tāp′les), *a.* [*tape*^{1} + *-less.*] Without tape: noting a printing-machine that does not make use of tapes to sustain the sheet under impression or in process of delivery. Tapeless delivery of printed sheets is now done by many different methods. See *tape*^{1}, 3.

tape-machine (tāp′mạ-shēn″), *n.* A tape-sizing machine.

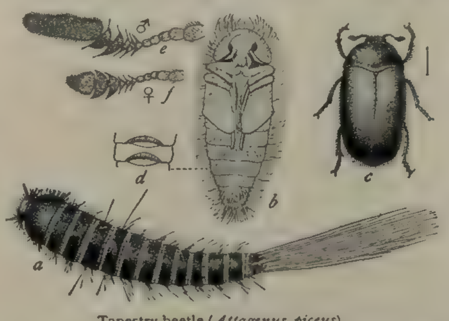
taper^2, *n.* **2.** A gradual decrease of power or capacity.

> Motor field rheostats of very high resistances and large *taper* in ampere capacity have become standard.
> *Elect. World and Engin.*, Feb. 18, 1905, p. 357.

tape-sizer (tāp-sī″zėr), *n.* One who attends a tape-sizing machine. *Webb*, Indust. Democracy, II. 478.

tapestry, *n.*—**Beauvais tapestry,** tapestry made at the royal factory in Beauvais, France, which was established by Louis XIV. in 1664, soon after the Gobelins in Paris. Beauvais tapestry is made by the basse-lisse method. See *basse-lisse.*—**Tapestry school.** See ★*school*^{1}.

tapestry-beetle (tap′es-tri-bē″tl), *n.* A cosmopolitan beetle, *Attagenus piceus*, of the family *Dermestidæ.* Its larva is a general feeder, destroying woolen goods, bird-skins, and insect collections, and also feeding on flour, meal, and seeds. Also called the *black carpet-beetle.*



Tapestry-beetle (*Attagenus piceus*).
a, larva; *b*, pupa; *c*, adult; *d*, dorsal abdominal segments of pupa; *e*, male antenna; *f*, female antenna: all enlarged.

tapeworm, *n.*—**Armed tapeworm,** the pork tape, *Tænia solium* (which see, under *tapeworm*).—**Double-pored dog-tapeworm,** *Dipylidium caninum* (Linnæus, 1758), a very common tapeworm of dogs, and occasionally found in children: characterized by the presence of a double set of organs for each segment. The fleas and lice of dogs form the intermediate hosts.—**Dwarf tapeworm,** *Hymenolepis nana* (Siebold, 1852), the smallest tapeworm found in man. It measures from 5 to 45 millimeters in length and is supposed (probably erroneously) to be identical with a species found in rats. It is especially common in children. Often incorrectly written *Hymenolepsis.*—**Fat tapeworm,** *Tænia saginata* (Goeze, 1782), the most common of the larger tapeworms of man: contracted through eating beef infected with beef-measles (*Cysticercus bovis*).—**Flavopunctate tapeworm,** *Hymenolepis diminuta* (Rudolphi, 1819), one of the smaller tapeworms from 10 to 60 millimeters long, common in rats, and occasionally found in man. The larval stage lives in meal-moths (*Asopia farinalis*), earwigs (*Anisolabis annulipes*), and certain beetles.—**Lanceolate tapeworm,** *Hymenolepis lanceolata* (Bloch, 1782), a common tapeworm in ducks and geese, but very rare in man.

tap-gate (tap′gāt), *n.* A small gate or opening arranged to tap or take water from an irrigating-ditch. *L. M. Wilcox*, Irrigation Farming, p. 408.

tap-grooving (tap′grö″ving), *n.* The cutting of the fluting or grooves in screws which are to be used as taps, so as to create cutting edges at various points in the helical surfaces.

taphephobia (taf-ẹ̄-fō′bi-ạ̈), *n.* [NL., irreg. < Gr. ταφή, burial, + -φοβια, < φοβεῖν, fear.] A morbid dread of being buried alive. Also *taphiphobia.* *Buck*, Med. Handbook, I. 141.

tap-holder (tap′hōl″dėr), *n.* A grip or clutch in a machine, or a special form of two-handled wrench, to receive and hold the square heads of taps when they are to be used in tapping and threading.

taphosote (taf′ọ̄-sōt), *n.* [*ta(nnic)* + *pho(sphoric)* + *(creo)sote.*] A trade-name of a grayish syrupy liquid containing tannic acid, creosote, and phosphoric acid: used in medicine, chiefly in cases of pulmonary tuberculosis.

taping (tā′ping), *n.* **1.** The sizing or dressing of cotton warp-yarn on a tape-machine.—**2.** In *sewing-machine work*, a method of sewing in which a tape is fed to a gaiter or other article and is stitched down. It is done on a two-needle machine (which see, under ★*sewing-machine*).

tapis^1, *n.*—**Tapis vert,** in *landscape gardening*, a closely clipped lawn; usually, in French gardens, a limited lawn cut to a definite figure.

tapis^2 (tä′pēs), *n.* [Tagalog and Bisaya *tapis.*] In the Philippine Islands, a broad sash of cotton or silk, about one yard wide and two yards long, worn by Tagalog and other Filipino women wrapped around the waist over the saya.

tapper^2, *n.* (*c*) A hammer for striking a bell or chime. (*d*) A device for restoring a coherer to its normal resistance, after this has been affected by electric oscillations, by means of a series of slight mechanical shocks.

> Mr. Marconi, in his original receiving instruments, placed an electromagnet under the coherer tube with a vibrating armature like an electric bell. This armature carries a small hammer or tapper, which, when set in action, hits the tube on the under side, and various adjusting screws are arranged for regulating exactly the force and amplitude of the blows. This *tapper* is actuated by the same current as the Morse printer, or other telegraphic recorder, so that when the signal is received and the metallic filings tube passes into the conductive condition and closes the relay circuit, this latter in turn closes the circuit of the Morse printer or other recorder, and, at the same time, a current passes through the electromagnet of the *tapper* and the tube is tapped back.
> *Pop. Sci. Mo.*, Sept., 1903, p. 450.

tapper^3 (tap′ėr), *n.* [*tap*^{1}, *n.*, + *-er*^{1}.] One who or that which operates a screw-cutting tap for threading holes.

tapper-back (tap-ėr-bak′), *n.* In *wireless teleg.*, a decoherer; a tapper. See ★*tapper*^{2} (*d*).

> In 1894 he [Sir Oliver Lodge] exhibited at Oxford his first "*tapper-back*," or automatic system of decohering the iron filings after each impulse. It was this ingenious discovery which has rendered it possible to develop wireless telegraphy to its present advanced stage of perfection.
> *Sci. Amer.*, Dec. 26, 1903, p. 483.

tappet^2, *n.*—**Negative tappet,** a form of tappet for operating a warp-harness of a loom one way only, either to lift it up or to pull it down. *T. W. Fox*, Mechanism of Weaving, p. 45.—**Positive tappet,** a form of tappet for operating a heddle-harness, either by lifting it up or by pulling it down, without the aid of secondary appliances. *T. W. Fox*, Mechanism of Weaving, p. 49.

tappet-bevel (tap′et-bev″el), *n.* A bevel on a loom-tappet that is employed in the heddle-shedding mechanism of a loom. *T. W. Fox*, Mechanism of Weaving, p. 49.

tappet-bowl (tap′et-bōl), *n.* A roller at the end of a tappet-arm for working the mechanism of a loom which propels the shuttle.

tappet-pin (tap′et-pin), *n.* Same as *tappet*^{2}.

tappet-plate (tap′et-plāt), *n.* A tappet or cam in a loom for operating the warp-harnesses. *T. W. Fox*, Mechanism of Weaving, p. 45.

tappet-wheel (tap′et-hwēl), *n.* A wheel provided with spurs or projections for intermittently acting on some other mechanism. *T. W. Fox*, Mechanism of Weaving, p. 52.

tapping-clay (tap′ing-klā), *n.* A form of loam or plastic clay used to close or plug the tapping-hole in a furnace through which the molten metal has been drawn.

tapping-hole, *n.* **2.** A hole, drilled in metal, of such a diameter that a full screw-thread may be tapped within it, the tapping cutting away only the metal required to form such a thread. Its diameter is therefore smaller than the nominal diameter of the tap or the screw to be inserted, by twice the depth of the thread.

tapping-pot (tap′ing-pot), *n.* A pot for the liquid metal received on tapping a furnace. *Phillips and Bauerman*, Elements of Metallurgy, p. 641.

tappoon (ta-pön′), *n.* [Sp. *tapon*, cork, plug, = OF. *tapon.*] A small movable dam of metal, wood, or cloth used temporarily to obstruct the flow of water in irrigation laterals or distributing-ditches, forcing the water to adjacent fields. *F. H. Newell*, Irrigation in U. S., p. 197.

tap-wire (tap′wīr), *n.* A wire connected at any point to an electric circuit to divert a portion of the current: as, the *tap-wires* of a trolley-line which at various points along the line convey current from the feeders to the trolley-wire.

tar^1, *n.*—**Acid tar.** See ★*acid.*—**Anhydrous tar,** tar which has been boiled to expel the water. It is mixed with burnt dolomite to form a paste for the lining of basic Bessemer converters. *Lockwood*, Dict. Mech. Engin. Terms.—**Beech tar,** a dark-colored tar-like liquid of strong creosote odor, obtained by the dry distillation of the wood of the beech (*Fagus sylvatica*). It is one of the sources of creosote.—**Black tar.** Same as *vitriol* ★*tar.* —**Blast-furnace tar,** tar obtained by cooling the waste gases from blast-furnaces in which bituminous coal is used as fuel.—**Coke-oven tar,** tar obtained in the working of those forms of coke-oven which provide for the condensation and recovery of the volatile products, such as the Jameson and the Simon-Carvé's ovens.—**Green tar,** a name given to tar from a petroleum-spring in Barbados because of its color. Also known as *Barbados tar.*—**Stockholm tar,** wood-tar produced by the smothered combustion of resinous pine-wood in conical pits with a covering of earth. It is the variety of tar most commonly used in connection with ship-building and for the preservation of cordage.— **Tar acne.** See ★*acne.*— **Tar camphor.** Same as *naphthalene.*— **Vitriol tar,** the black viscid material which settles to the bottom of a mass of the heavier distillate from shale-tar when it has been agitated with concentrated sulphuric acid and allowed to stand. Also called *black tar.*

tar⁴ (tär), *n.* [Also *tarr, tare,* Pg. *tara,* < Malayalam *tāram,* a copper coin.] A small silver coin formerly current on the Malabar coast, especially at Tellicherri and Calicut. Sixteen tars of Calicut equal one fanam; one tar of Tellicherri is equivalent to four reas, and one hundred tars equal one rupee.

Taractes (ta-rak'tēz), *n.* [NL., < Gr. ταράκτης, a disturber, < ταράσσειν, stir, stir up, disturb.] A genus of fishes of the open sea belonging to the family *Bramidæ.*

taragma (ta-rag'mạ̈), *n.* [NL., < Gr. τάραγμα, disquietude, < ταράσσειν, stir, stir up, disturb.] Same as *taraxis.*

tarakihi (tä-rä-kē'hẹ̄), *n.* [Maori.] See ★*morwong.*

taranakite (ta-ran'ạ-kīt), *n.* [*Taranaki* (see def.) + *-ite*².] A hydrated aluminium phosphate resembling wavellite: found in Taranaki, New Zealand.

tarand (tar'and), *n.* [See *tarandus.*] Same as *tarandus,* 1.

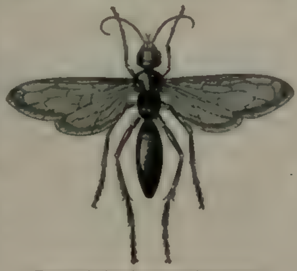
> A *tarand* is an animal as big as a bullock, having a head like a stag, or a little bigger, two stately horns with large branches, cloven feet, hair long like that of a . . . bear — and a skin almost as hard as steel armour.
>
> *Urquhart and Le Motteux,* tr. of Rabelais, Gargantua [and Pantagruel, iv. 2.

Tarandean (ta-ran'dẹ̄-ạn), *n.* [NL. *tarandus,* reindeer, + *-e-an.*] In *geol.,* a late division of paleolithic deposits in the postglacial series in France, characterized by the association of reindeer and human remains.

Tarandichthys (tar-an-dik'this), *n.* [NL., < *tarandus,* reindeer, + ἰχθύς, fish.] A genus of cottoid fishes of the deep waters of the North Pacific.

tarantula-hawk (ta-ran'tụ̄-lạ̈-hâk), *n.* A large pompilid wasp, *Pepsis formosa,* which inhabits the southwestern United States and Mexico. It stings the large tarantulas and stores them away in its burrows as food for its young.

tarantulism (ta-ran'tụ̄-lizm), *n.* [*tarantula* + *-ism.*] Same as *tarantism.*



Tarantula-hawk (*Pepsis formosa*).

tarapacaite (tä-rä-pä-kä'īt), *n.* [*Tarapacá* (see def.) + *-ite*².] A bright-yellow mineral consisting essentially of potassium chromate and occurring with the deposits of soda niter at Tarapacá, Chile.

taraspite (ta-rasp'īt), *n.* [*Tarasp* (see def.) + *-ite*².] A variety of dolomite from Tarasp, Switzerland.

tarata (tä'rä-tä), *n.* [Maori.] A small evergreen tree, *Pittosporum eugenioides,* of New Zealand, bearing masses of fragrant pale-yellow flowers, and yielding a tough white wood used in turning. Also called *lemon-wood, mapau,* and *maple.* See *hedge-laurel.*

tarau (tạ-rou'), *n.* Same as ★*thro*⁴.

taraxacerin (ta-rak-sas'e-rin), *n.* [NL. *tarax-ac(um)* + *(glyc)erin?*] A colorless crystalline compound, $C_8H_{16}O$, contained in the root of the dandelion (*Taraxacum*).

tarbuttite (tär'bu-tīt), *n.* [After Mr. Percy C. *Tarbutt* + *-ite*².] A basic zinc phosphate, $Zn_3P_2O_8.Zn(OH)_2$, which occurs in triclinic crystals, colorless or of pale tint, also in crystalline aggregates: found at the Broken Hill mines, Rhodesia.

tare⁴, *n.* **3.** The weight of a motor-vehicle without its load of cargo or passengers; also, the weight of the vehicle empty, without its fuel-supply or necessary equipment.

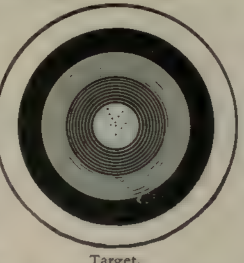
> It is in the direction of the *tare* limit, or weight [motor vehicles] when unladen, that the greatest difficulties have been found by manufacturers. *Encyc. Brit.,* XXXI. 17.

tarentola, *n.* **3.** A common name of the fish *Synodus saurus,* of the coasts of southern Europe, and also recorded from the Bermudas.

target, *n.* **2.** In *archery,* the five circles count as follows: gold center, 9; red, 7; inner white or blue, 5; black, 3; outer white, 1.

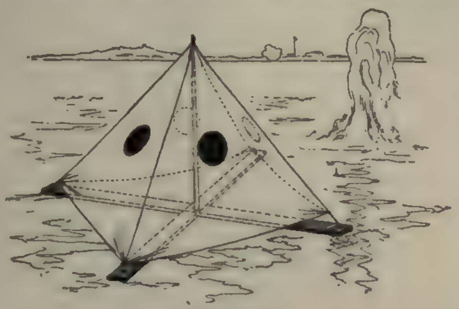
target-base (tär'get-bās), *n.* A line upon which targets are placed in an archery-ground. See ★*archery-ground.*

target-day (tär'get-dā), *n.* In *archery,* a day fixed by an archery club for shooting-contests: as, all Thursdays are *target-days.*



Target.

target-frame (tär'get-frām), *n.* Boards laid horizontally and crossed at right-angles, with a mast about twelve feet high secured to the center of this frame. The latter is stayed by ropes leading from the head of the mast to each one of the four corners of the crossed boards, and four triangular shapes of canvas are stretched from stay to stay, creating a pyramidal target.— **Small-arm target-frame,** a shape of sheet-iron painted with several inclosed squares as a target for rifle-firing.



Target-frame.

target-lantern (tär'get-lan'tėrn), *n.* Same as *target-lamp.*

target-list (tär'get-list), *n.* In *archery,* a list showing at what target each archer is to shoot in a shooting-match.

target-paper (tär'get-pā'pėr), *n.* In *archery,* a score or record of the entire performance at a shooting-match of all the archers assigned to a particular target. The records of all the target-papers are copied on a general record. See ★*transfer,* 7.

target-plate (tär'get-plāt), *n.* A plate so constructed and mounted with suitable backing that it may be used as a target for the heavy projectiles of guns of large caliber. Such plate must resist the impact effect of the projectile and absorb its living force, and must also withstand the disintegrating effect from heat and penetration.

target-practice (tär'get-prak'tis), *n.* Formal practice, under prescribed regulations, in shooting at a target with cannon or small arms.

target-range (tär'get-rānj), *n.* Same as *range,* 7 (*b*).

target-rifle (tär'get-rī'fl), *n.* A small arm made with care and accuracy to be used with special sights for shooting at a target in matches.

target-shyness (tär'get-shī'nes), *n.* In *archery,* nervousness which causes a shooter to discharge his arrow before his aim is perfected; inability to hold. See ★*hold*¹, 6 (*b*).

tarif, *n.* and *v.* A simplified spelling of *tariff.*

tariff, *n.*— **Dingley tariff** (named from Nelson *Dingley,* Jr., chairman of the Ways and Means Committee), a United States tariff established by the act of 1897.— **Wilson tariff** (from William L. *Wilson,* chairman of the Ways and Means Committee), a United States tariff established by the act of 1894. It made the average rate of duties somewhat lower than that which resulted from the McKinley tariff. The most important provision of the act was the free importation of raw wool. It became a law without the signature of President Cleveland.— **Zone tariff.** See the extract.

> In Hungary, Austria, and Russia a *zone-tariff* system is in operation, whereby the country is mapped out into zones, and the traveller pays according to the number of these he passes through, and not simply according to the number of miles he is conveyed.
>
> *Encyc. Brit.,* XXXII. 153.

tariric (tä-rir'ik), *a.* [*tariri* + *-ic.*] Noting an acid, a compound, $C_{18}H_{32}O_2$, contained, in combination with glycerol, in the oil from the fruit of certain plants of the genus *Picramnia* from Guatemala.

tariri-oil (tä-rē'rē-oil), *n.* A fixed oil obtained from the seeds of tariri, a Guatemalan shrub. It contains as glyceride the radical of tariric acid, isomeric with linoleic acid.

Tarletonbeania (tärl-tọn-bē'ni-ạ̈), *n.* [Named for *Tarleton* H. *Bean,* an American ichthyologist.] A genus of deep-sea fishes of the family *Myctophidæ.*

tar-lime (tär'līm), *n.* The impure lime, chiefly carbonate, mixed with bituminous empyreumatic impurities, which is present in crude brown calcium acetate obtained in the manufacture of pyroligneous or acetic acid by the destructive distillation of wood.

tar-macadam (tär'mak-ad'ạm), *n.* See ★*macadam.*

taro², *n.* **2.** A gold coin (*a*) of the Arab emirs of Sicily of the tenth and eleventh centuries; (*b*) of the Lombard dukes of the seventh century; (*c*) of the Two Sicilies under Norman rule in the fourth century; (*d*) of Amalfi in the eleventh century.

tarocco (tä-rōk'kō), *n.* [It.] An old Italian game of cards. There are seventy-eight cards in the pack: four suits of fourteen cards each, twenty-one independent cards or 'tarots,' which distinguish this game from all others, and one card called the 'matto' or 'fool,' from the figure which it bears. Beautifully illuminated packs of these cards are to be found in Italian collections.

tarpum (tär'pum), *n.* Same as *tarpon.*

tarsalgia (tär-sal'ji-ạ̈), *n.* [NL., < *tarsus* + Gr. ἄλγος, pain.] Pain in the region of the tarsus.

tarsectopia (tär-sek-tō'pi-ạ̈), *n.* [NL., < *tarsus* + Gr. ἔκτοπος, out of place.] Dislocation of one or more of the tarsal bones.

tarsitis (tär-sī'tis), *n.* [NL., < *tarsus* + *-itis.*] Inflammation of the edges of the eyelids.

tarsophyma (tär-sō-fī'mạ̈), *n.*; pl. *tarsophymata* (-ma-tä). [NL., < *tarsus* + Gr. φῦμα, a swelling.] **1.** Tumor of the tarsal region of the foot.— **2.** Tumor of the edges of the eyelids.

tarsoplasty (tär'sō-plas-ti), *n.* [NL. *tarsus* + Gr. πλαστός, formed, + *-y*³.] Plastic surgery of the eyelids.

tar-still (tär'stil), *n.* See ★*still*².

tartar¹, *n.*— **Vitriolized tartar,** an obsolete name for potassium sulphate.

Tartaric-acid print. See ★*print.*

tartarlithine (tär-tạ̈r-lith'in), *n.* [*tartar* + *lithium* + *-ine*².] A trade-name of an effervescent preparation of lithium hydrogen tartrate, LiOCOCH(OH)CH(OH)COOH. It is used in medicine as a solvent for uric acid.

tartralic (tär-tral'ik), *a.* [*tart(a)r(ic)* + *-al*³ + *-ic.*] Noting an acid, a colorless, amorphous, very deliquescent compound, $C_8H_{10}O_{11}$, prepared by heating tartaric acid, of which it is an anhydrid, at 140–150° C. Also called *ditartrylic acid.*

tartramic (tär-tram'ik), *a.* [*tart(a)r(ic)* + *am(monia)* + *-ic.*] Pertaining to ammonia and tartaric acid.— **Tartramic acid,** a colorless syrupy compound, $H_2NCOCH(OH)CH(OH).COOH$, prepared by the action of aqueous ammonia on diethyl tartrate.

tartramide (tär-tram'id), *n.* [*tartram(ic)* + *-ide.*] A colorless compound, $H_2NCOCH(OH)$-$CH(OH)CONH_2$, prepared by saturating ethyl tartrate with ammonia. It forms rhombic crystals.

tartrated (tär'trā-ted), *a.* [*tartrate* + *-ed*².] Containing or combined with tartaric acid.

tartrazin (tär'tra-zin), *n.* [*tart(a)r(ic)* + *azo-* + *-in.*] An artificial dyestuff, the sodium salt of disulphonated phenyl-osazone-dioxytartaric acid. It produces a bright-yellow color on wool, and may also be used on mordanted cotton.

tartrelic (tär-trel'ik), *a.* [*tart(a)r(ic)* + *-el* + *-ic.*] Noting an acid, a deliquescent crystalline compound, $C_4H_4O_5$, prepared by heating tartaric acid rapidly to 180° C. It is a monobasic acidic anhydrid of tartaric acid.

tartronic (tär-tron'ik), *a.* [*tart(a)r(ic)* + *-one* + *-ic.*] Noting an acid, a colorless compound, $HOCOCH(OH)COOH.\frac{1}{2}H_2O$, prepared by the reduction of mesoxalic acid. It crystallizes in prisms, when anhydrous sublimes at 110–120° C., and melts and decomposes at 185–187° C. Also called *hydroxymalonic acid.*

tartrophen (tär'trọ-fen), *n.* [*tart(a)r(ic)* + *phen(yl).*] A trade-name of a preparation of phenetidine and tartaric acid. Its medicinal use is similar to that of citrophen.

tartrovinic (tär-trọ-vin'ik), *a.* [*tart*(*a*)*r*(*ic*) + L. *vinum*, wine, + *-ic.*] Pertaining to ethyl tartaric acid or ethyl hydrogen tartrate. — **Tartrovinic acid**, a colorless, very deliquescent compound, $HOCOCH(OH)CH(OH)COOC_2H_5$, prepared by boiling tartaric acid with alcohol. It forms rhombic crystals and melts at 90° C. Also called *ethyl hydrogen tartrate* or *ethyl tartaric acid.*

taruca (tä-rö'kä), *n.* [Sp., < Quichua and Aymará of Peru and Bolivia *taruca;* also much used in the Spanish of those countries.] The deer of the Andes, *Cervus antisiensis.*

tarweed, *n.* 2. A viscid rosaceous plant, *Chamæbatia foliolosa*, with feathery leaves and strawberry-like blossoms, abundant in California. It fills the air with a not very pleasant balsamic odor. Also called *mountain misery* and *bear-clover.*

tarwhine (tär'hwin), *n.* [Aboriginal name in Australia.] A common name in Australia of *Chrysophrys hasta* and *Sparus sarba*, both sparoid fishes.

tarwood (tär'wůd), *n.* In New Zealand, the manoao, *Dacrydium Colensoi.* See ★*manoao.*

tasajo (tä-sä'hō), *n.* [Sp. *tasajo* = Pg. *tassalho*, appar. connected with the equiv. Cat. *tasco ;* origin uncertain.] Jerked beef; beef cut into strips and dried. [Spanish America.]

> The increase in the herds of recent years has caused the owners of saladero establishments in Argentina and Uruguay to try the working of factories in Paraguay for the preparation of *tasajo* (jerked beef) and the manufacture of extract of meat. *Encyc. Brit.*, XXXI. 461.

tashlik, tashlich (täsh'liċh), *n.* [Heb., < *shālak*, to cast or throw away.] An orthodox Jewish custom of shaking the skirts, on the afternoon of New-Year's day (Rash-ha-shanah), on the shores of a stream, river, or sea. One of the three verses (Micah vii. 18–20) recited at the performance of this custom has the word *ve-tashlik*, literally, "and thou wilt cast away (our sins)," hence the name.

tasimetry (tạ-sim'e-tri), *n.* [Gr. τάσις, stretching, tension, + -μετρια, < μέτρον, measure.] The art of measuring pressure ; the use of the tasimeter.

Tasm. An abbreviation of *Tasmania.*

Tasmanian bluebell. See ★*bluebell.*— **Tasmanian box.** Same as *native* ★*box.* See ★*box-thorn*, 2.— **Tasmanian bur, whip-tail.** See ★*bur*1, ★*whip-tail.*

tassel-fish (tas'l-fish), *n.* A name applied to fishes of the family *Polynemidæ*, from the fact that the lower rays of the pectoral fin are detached and filamentous. They are found in most warm seas.

> Several species of the *tassel fish* (Polynemus macrocohoir), from which isinglass is procured, have been taken by fishermen. *Encyc. Brit.*, XXXII. 110.

taste-beaker (tāst'bē"kėr), *n.* A taste-bud or taste-bulb; the end-organ of taste. *Taste-beakers* are oval bodies, formed of long fusiform cells which are arranged in cortical and medullary groups; the latter, into the one pole of which nerve-fibres have been traced, project through an opening left at the opposite pole between the cortical cells. They are most prominently distributed along the sides of the trenches round the circumvallate papillæ. *E. B. Titchener*, Exper. Psychol., I. i. 64.

taste-cup (tāst'kup), *n.* In *entom.*, one of the minute cups or pits found on the epipharynx of an insect. It has a peg in the center and is the termination of a nerve.

> The structure and armature of the epipharyngeal surface even besides the taste-pits, *taste-cups*, and rods, is very varied, the setæ assuming very different shapes. *A. S. Packard*, Text-book of Entom., p. 45.

taste-hair (tāst'hãr), *n.* Any one of the setæ or bristles in or near the mouth of an insect or other arthropod which are supposed to be gustatory in function. *Jour. Roy. Micros. Soc.*, April, 1905, p. 180.

taste-pit (tāst'pit), *n.* Same as ★*taste-cup. A. S. Packard*, Text-book of Entom., p. 45.

tastoanes (tä-stō-ä'nās), *n. pl.* [Sing. *tastoan:* an Amer. Sp. corruption of Nahuatl *tlatoani*, masters.] A sort of drama or play sometimes performed by the Indians of certain parts of Mexico. The performers are all masked, and the name of the play is derived from a certain class of performers called tastoanes. *Jour. Amer. Folk-lore*, April–June, 1902, p. 73.

tatami (tä-tä'mē), *n.* [Jap.] 1. A floor-mat about two inches thick, made of rice-straw bound together and covered on the upper surface with matting. The edges are usually bound with cloth.—2. A Japanese measure of surface, that of a mat 6 shaku in length by 3 shaku in width, or nearly 6 feet by 3 feet.

tatching-end, *n.* Same as *taching-end.*

tatil (ta-tēl'), *n.* [Hind. Ar. *ta'ṭīl*, a vacation, a holiday.] Locally in India, the period during which water may be used: employed in connection with the system of rotation or division of water according to short periods of time. *H. M. Wilson*, Irrigation Engineering, pp. 59, 60, 287.

tatouy, *n.* Same as *tatouay.*

tattoo3 (tat'ö), *n.* [Hind. *taṭṭū.*] In India, a native-bred pony or small horse. Also, by abbreviation, *tat.* See *tat*7.

> An' I heard a shout, an' thin I saw a horse an' a *tattoo* latherin' down the road, hell to shplit, under women . . . an' Dinah came. . . . The colonel's lady had lint her the *tattoo.*
> *R. Kipling*, "Love-o'-women," in Many Inventions, [p. 318.

tauari (tä-wä'rē), *n.* [Native name.] See ★*llanchama.*

tauidion (tâ-id'i-ọn), *n.* ; pl. *tauidia* (-ạ̈). [NL., < Gr. ταῦ, tau, the letter T, + dim. -ιδιον.] In the anatomy of the Devonian fish *Palæospondylus*, an element or region lying on the ventral surface of the skull just behind the ampyx, having the form of a T.

tauric2 (tâ'rik), *a.* [NL. *tauricus*, < Gr. ταῦρος, a bull. See *steer*2.] 1. Of or pertaining to bulls or steers.—2. [*cap.*] Of or pertaining to the constellation Taurus.

> The ancient Median calendar is next dealt with. Its starting-point seems to have been about B.C. 3000, when the sun was in Taurus at the vernal equinox. The adoption of this by the conquering Assyrians was probably the cause of their fondness for *Tauric* symbolism and our present familiarity with the Assyrian bull. *Nature*, Oct. 22, 1903, p. 593.

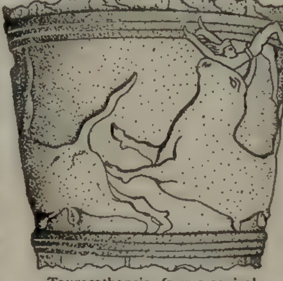
tauriscite (tâ'ris-īt), *n.* [G. *tauriszit*, named from L. *Taurisci*, an Alpine tribe which anciently inhabited the locality.] A doubtful mineral species stated to have the form of epsomite and the composition of melanterite: found in Switzerland.

taurite (tâ'rīt), *n.* [*Taur*(*ien*), southern Russia, + *-ite*2.] In *petrog.*, an ægirite-bearing soda-rhyolite having a spherulitic or micrographic texture in the ground-mass: occurring in the Crimea. *Lagorio*, 1897.

taurocarbaminic (tâ"rọ-kär-bạ-min'ik), *a.* [Gr. ταῦρος, bull, + E. *carbaminic.*] Noting an acid, an organic sulphur body, $C_3H_8N_2O_4S$, which has been found in urine.

taurocathapsia (tâ"rō-ka-thap'si-ä), *n. pl.* [Gr. ταυροκαθάψια.] A bull-fight or game with bulls.

> Two scenes refer to the *Taurokathapsia* — in the first a man who has apparently missed his grasp, is seen above a magnificently galloping bull, in the second he lies prostrate below the lower outline of another. *An. Brit. School at Athens*, VII. 102.


Taurocathapsia, from a conical Cretan vase.

taurocephalous (tâ-rọ-sef'ạ-lus), *a.* [Gr. ταῦρος, bull, + κεφαλή, head, + *-ous.*] Having the head of a bull; bull-headed: applied to rivers which, in Greek mythology, were represented with the heads of bulls.

taurylic (tâ-ril'ik), *a.* [Gr. ταῦρος, bull, + *-yl* + *-ic.*] Noting an acid, a compound, $C_7H_{14}O$, apparently a cresol, said to be present in human urine and in that of oxen and horses.

taushent (tâ'shent), *n.* [Also *torshent;* said to be of Massachusetts Algonkian origin.] The youngest child: a term of endearment. *Collections of the Mass. Historical Society*, VIII. 97. [Local, New England.]

Tautoga (tâ-tō'gạ̈), *n.* [NL., < E. *tautog.*] A genus of labroid fishes inhabiting the Atlantic coast of the United States.

tautogeneity (tâ-tọ-jẹ-nē'ị-ti), *n.* [Gr. ταὐτό, the same, + γένος, race, kind, + *-ity.*] In *biol.*, the fact or condition of the existence of a fixed or exact relation in form or size between two or more parts. [Rare.]

> *Tautogeneity*, a word introduced by Prof. Rolleston as a more correct term in this connection than 'correlation.' *Proc. U. S. Nat. Mus.*, XIII. 295.

tautogenize (tâ-toj'e-nīz), *v. i.*; pret. and pp. *tautogenized*, ppr. *tautogenizing.* [See ★*tautogeneity.*] In *biol.*, to bear an exact or fixed relation of size or form, as one part or organ to another. [Rare.]

Tautogolabrus (tâ"tọ-gọ-lā'brus), *n.* [NL., < *Tautoga* + *Labrus.*] A genus of labroid fishes of the Atlantic coast of North America from Labrador to Sandy Hook.

tautomer (tâ'tō-mėr), *n.* [Gr. ταὐτό, the same, + μέρος, part.] A substance which bears a tautomeric relationship to another. See ★*tautomerism* and ★*desmotropism. Amer. Chem. Jour.*, May, 1903, p. 406.

tautomeric (tâ-tọ-mer'ik), *a.* [*tautomer* + *-ic.*] Of or pertaining to ★*tautomerism* (which see): specifically applied to compounds which exhibit the phenomenon of reacting as if they had more than one constitution.

> There are ten possible *tautomeric* formulas for this phenylacetylurazole, and four possible positions for the acetyl group. *Amer. Chem. Jour.*, Dec., 1904, p. 606.

tautomerism (tâ-tom'ẹ-rizm), *n.* [*tautomer*(*ic*) + *-ism.*] In *organic chem.*, the phenomenon exhibited by certain compounds of reacting as if they possessed two different constitutions, that is, as if they consisted of two substances each structurally different from the other. For example, many compounds containing the group $-CH_2CO-$ behave as ketones toward some reagents, but act toward others as if they were unsaturated alcohols, $-CH:COH-$. In many cases both forms can be isolated. *Nature*, Sept. 17, 1903, p. 476. — **Virtual tautomerism**, in *organic chem.*, the phenomenon exhibited by tautomeric compounds of which the two forms cannot be isolated, and hence the valencies of the atoms concerned in the tautomerism appear to oscillate, as, for example, in the group XN : RNHY and XNH.R : NY. Also called *phasotropy.*

tautomery (tâ-tom'ẹ-ri), *n.* Same as ★*tautomerism.*

> It is not unfrequently the case that no constitutional or structural formula can be given to a substance which shall express all the pairs of radicals possible in its interactions, of which the best-studied example is that of ethyl acetoacetate. This state of things, known as *tautomery*, admits of no other interpretation than that there are really two substances existent, of which one only is known, the other or so-called "pseudoform" requiring the assumption of its existence as a transition-substance only. *E. Divers*, in Nature, Sept. 18, 1902, p. 503.

tautomorphous (tâ-tọ-môr'fus), *a.* [Gr. ταὐτό, the same, + μορφή, form, + *-ous.*] Of like shape: used specifically of two complementary crystal forms (see ★*form*2) one of which can be placed in the position of the other by a revolution of 180°. *W. J. Lewis*, Crystallography, p. 210.

tautonomy (tâ-ton'ọ-mi), *n.* [*tautonym* + *-y*3.] The use of tautonyms ; the fact of being tautonyms.

> Of the seven cases he would throw out from my list of twenty-one generic changes made necessary by the first species rule, Spinus may be saved by the rule of *tautonomy. J. A. Allen*, in Science, May 24, 1907, p. 827.

tautonym (tâ'tọ-nim), *n.* [Gr. ταὐτό, the same, + ὄνομα, ὄνυμα, name.] A name formed by repeating one word : as, *kiwi-kiwi*, the apteryx; *taro-taro*, the Orinoco bittern ; *awa-awa*, the milk-fish of Hawaii; specifically, in zoölogical and botanical nomenclature, a name in which the generic and specific names are the same : as, *Scomber scomber*, the mackerel ; *Cardinalis cardinalis*, the cardinal redbird ; *Vulpes vulpes*, the European red fox. These various animals were originally placed — mainly by Linnæus — each in a genus comprising species now regarded as belonging to different genera ; in establishing new genera the old specific name was applied to the new genus and a new specific name given ; this, by the rules of modern nomenclature, has been restored, the resulting name being a tautonym.

tautonymic (tâ-tọ-nim'ik), *a.* [*tautonym* + *-ic.*] Of or pertaining to a tautonym.

tavistockite (tav'is-tok-īt), *n.* [*Tavistock* + *-ite*2.] A hydrous phosphate of aluminium and calcium occurring in minute white acicular crystals in Tavistock, Devonshire.

taw4 (tou), *n.* [Heb. *tāw*, Gr. ταῦ. See *T* and *tau.*] The twenty-second and last letter (ת) of the Hebrew alphabet, corresponding to the English *t.* Its numerical value is 400.

tawhiri (tä'hwẹ-rẹ), *n.* [Maori.] A small tree, *Pittosporum tenuifolium*, which yields a soft, tough wood, and bears a profusion of white, fragrant flowers. Called *black mapau* by the settlers. [Australia.]

tawite (tä'vīt), *n.* [*Taw*(*ajok*), a locality on Kola peninsula, Finland, + *-ite*2.] In *petrog.*, a phaneric igneous rock with granular texture, composed of pyroxene and sodalite. *Ramsay*, 1894.

tawkee† (tâ'kẹ), *n.* [Also *tawkie, tawkim, tawko. tuckah*, etc. ; prob. first in Swedish of New Jersey (?), from a dialect of the Delaware group, Delaware (Lenâpé) *p'tukwi* or *p'tukqueu*, a round mass, = Cree *pittikwow*, round, globular.] The goldenclub, *Orontium aquaticum*; also, the Virginia wake-robin, *Peltandra Virginica*. *Jour. Amer. Folk-lore*, Oct.-Dec., 1902, p. 261. [New Jersey and parts of Pennsylvania.]

tax, *n.*—**Betterment tax**, an assessment imposed upon real property benefited by a public improvement, in proportion to the benefit received.—**Direct tax.** (*a*) See *tax*, 2. (*b*) Same as *collateral-inheritance tax*. See *collateral* and ★*death-duty*.—**Faculty tax**, one levied with a view to the earning capacity in a profitable profession or employment of the person taxed.—**Hospital tax** (*naut.*), a tax of 40 cents per month exacted by law from every person belonging to the crew of an American documented vessel, for the support of the marine hospital service. The law was repealed in 1884.—**Personal tax**, a tax, applying alike to persons and to corporations, upon personal rather than real property: not the same as poll-tax, which has no reference to property.—**Stamp tax**, a tax collected by the sale of revenue stamps to be affixed to the article to be made or sold.—**Tax bond**, a form of bond issued by a state or municipality in order to obtain funds for current expenses before the annual taxes fall due, when the bonds are retired. Such bonds are made a legal tender in payment of taxes.—**Tax certificate.** Same as *tax deed* or *tax lease* (which see, under *tax*); like them, it conveys the property sold or leased for unpaid taxes subject to redemption within a fixed time.—**Tax lien.** See ★*lien*^{2}.

taxaceous (tak-sā'shius), *a.* [NL. *Taxace*(*æ*) + *-ous*.] Belonging or pertaining to the *Taxaceæ*. *Jour. Roy. Micros. Soc.*, Feb., 1904, p. 78.

taxad (tak'sad), *n.* [L. *taxus*, the yew, + *-ad*^{1}.] A tree or shrub of the *Taxaceæ*. *Encyc. Brit.*, XXIX. 187.

taxameter (tak-sam'e-tėr), *n.* Same as ★*taximeter*.

Taxation of costs, in *law*, the fixing of the items and amount of costs in an action. They are included then in the judgment.

taxicab (tak'si-kab), *n.* [*tax* (for G. *taxe*, legal charge or fare) + *-i-* + *cab*.] A public 'cab' or carriage which carries a fare-indicator. See ★*taximeter*.

taximeter (tak-sim'e-tėr), *n.* [*tax* (for G. *taxe*, legal charge or fare) + *-i-* + Gr. *μέτρον*, measure.] A commercial name of an instrument for automatically recording and mechanically computing the tax or charge to be made for the use of a hired vehicle in accordance with a determined tariff for such charges.

> A metallic case incloses a dial, behind which the actuating mechanism is connected to a wheel of the vehicle, whose revolutions it counts and records. If the payment is to be by distance traversed, the reading-dial has figures which are the multiples of the distance at the agreed or legal rate of so many monetary units per mile or per kilometer. The dial therefore reads directly the charge to be made, and no record is made of such time as the wheels are not turning. If the rate is so much per hour of use, the distance-measuring mechanism is disconnected by a lever in the case, and a clock is thrown into gear with another reading-dial, which multiplies the elapsed time by the rate per hour, and both driver and passenger can read clearly the amount due under either system.
> *Sci. Amer.*, Oct. 15, 1904, p. 260.

taxinomic (tak-si-nom'ik), *a.* Same as *taxonomic*.

taxinomist (tak-sin'ọ-mist), *n.* Same as *taxonomist*.

taxinomy (tak-sin'ọ-mi), *n.* Same as *taxonomy*.

taxis, *n.* 6. The orientation, locomotion, or migration of a cell or of an organism in relation to an external substance or form of energy. *Positive taxis* is motion toward and *negative taxis* motion away from an exciting agent. In loose usage 'taxis' is included in 'tropism,' but in a stricter usage 'tropism' is restricted to growth, and 'taxis' is applied to locomotion. Both tropism and taxis are exhibited by animals and by plants, but taxis is more frequently observed in animals and tropism in plants. Different forms of taxis are designated by the character of the stimulating agent: such are *chemotaxis*, *phototaxis*, *thermotaxis*, *electrotaxis*, *rheotaxis*, *stereotaxis*, etc. Compare ★*tropism*.

> Some writers have used instead of tropism the word *taxis*. *M. F. Washburn*, The Animal Mind, p. 57.
>
> The mechanical interpretations of the tropisms and *taxes* as held by Loeb, Bethe and Uexkull.
> *Science*, Oct. 14, 1904, p. 487.

taxite (tak'sīt), *n.* [Gr. *τάξις*, arrangement, + *-ite*^{2}.] In *petrog.*, a name suggested by Loewinson-Lessing (1891), for lavas having a brecciated or schlieric appearance, due to parts having different colors, textures, or composition. When banded or streaked the texture is *eutaxitic*; when brecciated, it is *ataxitic*.

taxitic (tak-sit'ik), *a.* [Gr. *τάξις*, order, arrangement, + *-ite*^{2} + *-ic*.] In *petrog.*, having the characters of a taxite.

Taxocrinus (tak-sok'ri-nus), *n.* [NL., < Gr. *τάξις*, arrangement, + *κρίνον*, a lily (see *crinoid*).] A genus of flexible crinoids of the family *Ichthyocrinidæ*, common in all formations from the Silurian to the Subcarboniferous.

taxodont (tak'sọ-dont), *a.* [*Taxodont*(*a*).] In *conch.*, having the hinge-teeth of equal size, disposed in one or two rows: a condition found in some bivalve shells. The primitive hinge in most bivalves is taxodont, but the condition disappears with growth.

> A series of vertical crenulations or *taxodont* denticles.
> *Science*, Nov. 27, 1896, p. 771.

Taxodonta (tak-sọ-don'tạ̈), *n. pl.* [NL., < Gr. *τάξις*, arrangement, + *ὀδούς* (*ὀδοντ-*), tooth.] A group of prionodesmacean pelecypod *Mollusca* in which the hinge consists of alternating similar teeth and sockets arranged in a long series, as in the genera *Arca* and *Leda*.

taxometer (tak-som'e-tėr), *n.* Same as ★*taximeter*.

Taxonomic variation. See ★*variation*.

taxt, *p. a.* A simplified spelling of *taxed*.

tax-ward (taks'wârd), *n.* An annual payment made to a superior in Scotland, instead of the duties due to him under the tenure of ward-holding: now abolished. *Wharton*.

taylorite (tā'lộr-īt), *n.* [Named after W. J. *Taylor*, who analyzed it.] Sulphate of ammonium and potassium ($5K_2SO_4.(NH_4)_2SO_4$), occurring in yellowish-white crystalline lumps in the guano-beds of the Chincha islands.

Taylor's circle. See ★*circle*.

tayote (tī-ō'tạ̄), *n.* [Mex. *chayotl*.] In Porto Rico, a name for *Chayota edulis*.

tazewellite (tāz'wel-īt), *n.* See ★*meteorite*.

tazia (tä-zē'ạ̈), *n.* [Also *tazeea*: *ta'ziya*, mourning for the dead.] In India, the taboot or representation, in flimsy material, of the tombs of Hussein and Hassan, which are carried about in the Muharram processions. *Yule and Burnell*, Hobson-Jobson.

> The Mohurrum, the great mourning-festival of the Muhammadans, was close at hand. . . . Gilt and painted presentations of their [the martyrs, Hasan and Hussain] tombs are borne with shouting and wailing, music, torches and yells, through the principal thoroughfares of the City, which fakements are called *tazias*.
> *R. Kipling*, On the City Wall, in Soldiers Three, p. 313.

Tb. A symbol sometimes used for the chemical element terbium. *Tr.* is more common.

T-beam (tē'bēm), *n.* An iron beam whose cross-section resembles the letter T. See *girder*^{1}, 2, fig. *q*.

T-bit (tē'bit), *n.* In the island of Trinidad, in 1811, the central piece cut from the ring-dollar and stamped with a T: circulated as a shilling current.

T-bolt (tē'bōlt), *n.* A bolt having a head which is only as wide as the stock or shank of the bolt in one direction, though it may be of any width at right angles to this direction.

T-box (tē'boks), *n.* In *electric wiring*, a metal box inclosing the T-joint made at any point where a single wire is connected to one of the mains.

TC. [Abbreviation of *tuberculin contagious*.] A symbol proposed by Von Behring to designate a curative principle derived from the tubercle bacillus. This substance is taken up by the cells of the body and there transformed into an integral part of these cells: in this form it is termed ★*TX*. *Science*, Oct. 3, 1905, p. 476.

tc. An abbreviation of *tierce*.

tcharka, tscharka, *n.* See *charka*.

tchaviche, tchawytcha, *n.* See *chavicha*.

tche (che), *n.* [Chin.] An ancient Chinese flute having both ends closed and the embouchure in the middle, with three holes on each side of it.

> A curious ancient Chinese instrument, the *Tche*, described by Amiot, closed at both ends with an embouchure at the middle and holes symmetrically placed on each side dividing the whole length into thirds, quarters, and sixths; so, if the whole length is called 12, the mouth hole is at 6 and the finger holes at 2, 3, 4, 8, 9, and 10.
> *Smithsonian Rep.* (Nat. Mus.), 1900, p. 427.

tchetverik, tschetverik, *n.* See *chetverik*.

tchetvert, tschetvert, *n.* See *chetvert*.

tchetvertka, tschetvertka, *n.* See *chetvertka*.

tchung-kee, *n.* Same as *chunk*^{2}.

T-connection (tē'kọ-nek"shọn), *n.* In *elect.*, a device for obtaining a three-phase current by means of a generator or transformer having only two-phase coils, in which one terminal of one of the coils is connected to the middle point of the other while the three line-wires are attached to the three free ends of the coils.

T-connector (tē'kọ-nek"tọr), *n.* In *elect.*, a binding-post or connector for electrically joining three wires together where two of these wires are in line with each other and the other joins them at a right angle.

tcs. An abbreviation of *tierces*.

T. D. (tē-dē'), *n.* A white clay pipe with the initials T. D. on the bowl. Said to be due to a legacy left by the eccentric "Lord" Timothy Dexter of Newburyport, Mass., in order to perpetuate his name. By extension, *T. D.* means clay pipe. *Dialect Notes*, III. iii. [New England.]

Te. 2. In *med.*, an abbreviation of *tetanic contraction*.

T. E. An abbreviation of *topographical engineer*.

tea^{1}, *n.*—**American tea**, tea produced in the United States, at present almost exclusively on or near the Pinehurst estate at Summerville, South Carolina. Experiments conducted since 1889 by Dr. Charles U. Shepard seem to prove not only that large crops of good leaf can here be grown but that medium grades of both black and green tea can be manufactured at a profit. Negro children are successfully trained as pickers, and the manufacture at least of black tea is conducted by machinery, which is now asserted to be possible in the case of green tea also. A characteristic flavor of the Pinehurst tea is styled by experts "South Carolina."—**Basket-fired tea**, Japan green tea finished by firing (drying) over a charcoal fire in a deep round basket with a wicker bottom. This is essentially the old Chinese method, in India called *dholing*, the baskets being there known as *dholes*.—**Billy tea**, in Australia, tea made in a billy or tin kettle such as is used by the Australian bushmen.—**Black tea**, the most common type of tea, dark-colored from oxidation (fermentation), the encouragement of which both before and after rolling is the distinctive feature of the black-tea process. The essential operations are: *withering*, during which fermentation begins; *rolling* of the now flaccid leaf to burst its cells; *fermentation*, in which the now exposed cell-contents are left at proper temperature to oxidize; and *firing* or drying. The Chinese process includes two rollings before and two after fermentation, two pannings (warming in an iron vessel) alternating with the later rollings, and a sunning prior to firing, all of which, except one rolling, have, in India, been found dispensable. Hot-air drying has also been substituted for dholing or basket-firing (see ★*sirocco*, 2, *basket-fired* ★*tea*), and in fact the whole essential process is carried through by machinery. For kinds of black tea see *bohea*, *Ceylon* ★*tea*, *congou* ★*tea*, *India* ★*tea*, ★*pekoe*, ★*souchong*.—**Bush tea.** (*b*) Same as *billy* ★*tea*.—**Cape Barren tea**, in Tasmania, a rutaceous plant, *Correa alba*, the leaves of which have been used as a substitute for tea.—**Caravan tea**, a fine souchong formerly put up at Hankow for the Russian trade and transported by caravan to Nijni Novgorod as a distributing center.—**Ceylon tea.** (*b*) The tea produced in Ceylon, in character like the Indian, but of higher quality. Since 1870 the production has rapidly enlarged, amounting about 1900 to two thirds that of Hindustan.—**China tea**, tea grown in China, the original seat of tea-culture. China (including Formosa) still produces two thirds of the world's export and a much larger amount for domestic consumption.—**Congou tea**, the name of a large group of China black teas forming the chief part of the native consumption, theoretically corresponding to the congou leaf (see *tea*^{1}, 2). The leaf is smaller and thicker than in souchong and the flavor is characterized as 'fruity.' The extremely numerous varieties are divided into *kaisow* or *red-leaf*, *moning* or *black-leaf* (for one of which see *oopak*), and *new district* teas (those later known to commerce).—**Dragon's-pool tea**, a choice green tea prepared by sun-drying from the leaf of a celebrated garden near Hangchow called Loong Tsin ('dragon's pool' or 'well'). This is obtainable only locally and at a high price. Seed secured by the United States consul at Ningpo and planted by Dr. Shepard (see *American* ★*tea*) afforded a thrifty growth of bushes. Also *hyson pekoe*.—**Faced tea**, tea artificially colored, etc. See ★*face*^{1}, 7.—**Formosa tea**, the tea-product of the island of Formosa, consisting mainly of oolongs.—**Green tea**, tea manufactured by a process in which oxidation is excluded. Instead of being withered (see ★*withering*) the leaf is subjected to steaming (either in its own juice (roasting) or over water), this destroying the enzym and rendering the leaf flaccid for rolling. See ★*rolling*, 6. Steaming and rolling are sometimes alternated. The drying, which promptly follows, is either by basket-firing (see *basket-fired* ★*tea*) or in Japan also by ★pan-firing. The once-current belief that green teas are fired in copper pans has long been discredited. The flavor of green tea is technically styled 'pungent.' Green teas are much less produced than black, but are popular in the United States. They are known in trade by many district names (see *Moyune* ★*tea*, *Sunglo* ★*tea*): for classes based on character see *dragon's-pool* ★*tea*, *gunpowder tea*, under *gunpowder*, *hyson*, *hyson* ★*tea*, *imperial* ★*tea*.—**High-fired tea**, tea dried (fired) with a high (usually excessive) degree of heat.—**Hop tea**, an article prepared in England from the hop, used chiefly to blend with common tea.—**Hyson tea.** See *hyson*. Both hyson and young hyson appear to be made from the same pluckings, the former from the larger and less succulent leaves, which curl less in the rolling process, and young hyson from the smallest tender leaves, which yield a fine closely curled product. The name young hyson, however (Chinese *yu-chien*, before the rains), expresses literally a very early picking, while hyson suggests a picking in full spring.—**Imperial tea**, a green tea similar in make and quality to gunpowder tea, but prepared from the older leaves of the pickings and coarser grained; hence sometimes called *big gunpowder* and *pea-leaf*: also called *imperial* as used by the imperial household and wealthy Chinese.—**India tea**, tea produced in British India, in commercial quantity since about 1860, and in amount now next to China tea. There are eleven districts in which tea is grown, and which give their names to the varieties used and to the product; among them are Assam, Kumaon, Darjeeling, and Cachar and Kangra. The native Assam variety is found in hot jungles, growing sometimes 20 feet high and bearing a large, thin, pale green, or yellowish leaf, now said to produce the finest-flavored tea. The Assam plant, however, is usually hybridized with hardier China varieties or the coarser *Munipuri* indigenous. Unaltered China teas are also grown and there is a Cachar indigenous partly resembling Munipuri. India teas are mainly black, in general resembling Chinese congous and yielding a large tannin content. For the process of manufacture see *black* ★*tea.*—**Japan tea,** tea produced in Japan. Tea-culture in Japan dates from the ninth century and extends all over the islands, a considerable export being absorbed mainly by the United States and Canada. Japan teas are mainly green, yielding a light-colored liquor strong in thein rather than tannin, in the finer grades of a delicate, rich, peculiar quality. A close-twisted wiry leaf is largely aimed at (see *needle* ★*tea, spider-leg* ★*tea*). The product is classed under numerous names of localities and according to manufacture is mainly either pan-fired (including sun-dried) or basket-fired (see these terms under ★*tea*), with 'nibs' and 'dust' or 'siftings' as secondary categories. Minor quantities of green and black teas in various Chinese styles are exported.—**Kumo tea.** See *spider-leg* ★*tea.*—**Mandarin tea,** an aristocratic Chinese tea, with a very small dark, crisp, and tender leaf, lightly fired and highly scented.—**Moyune tea,** Chinese green tea grown on the plains of Mo-yuen near Sunglo, including the bulk of the best green tea exported. Local varieties are known as 'Nankin,' 'Pakeong,' and 'Oochaine.' Also called *garden teas,* as opposed to *hill teas.* Cf. *Sunglo* ★*tea.*—**Needle tea,** tea rolled into a needle-like form, as often in Japan.—**Pan-fired tea,** tea dried by the process called ★*pan-firing.*—**Post-and-rail tea,** bush tea: so called because large bits of the tea, or supposed tea, float about in the billy, which are compared by a strong imagination to the posts and rails of the wooden fence so frequent in Australia. *E. E. Morris,* Austral English.—**Russian tea,** tea served (hot or cold) with lemon and sometimes arrack or rum.—**Scented tea.** Scented teas form a distinct group containing both black and green kinds. They include fine teas, as pekoes, and caper-tea (see the latter and *mandarin* ★*tea*), and also low-grade teas meretriciously improved. The flowers used for scenting are those of the fragrant olive (see *Osmanthus*), the chulan, the cape jasmine (see *Gardenia*), and true jasmines (*Jasminum Sambac* and *J. officinale*).—**Spider-leg tea,** a fine grade of Japan basket-fired tea of needle-shaped make. Also called *kumo.*—**Sun-dried tea,** a class of Japan teas fired by hot panning (see ★*pan-firing*), but peculiarly colored from being previously dried in the sun.—**Sunglo tea,** Chinese green tea produced in the hill region of Sunglo, the original seat of green-tea production, where, however, the industry has greatly declined. Known to the trade as 'hill' or 'high-district' tea. See *moyune* ★*tea.*—**Tablet tea.** See *brick-tea.*—**Tea plant-bug.** See ★*plant-bug.*—**Tea-seed oil.** Same as *tea-oil.*

tea-ball (tē'bâl), *n.* A perforated ball, usually of silver, in which tea-leaves are placed to be immersed in boiling water, in preparing tea.

tea-biscuit (tē'bis″kit), *n.* See *biscuit,* 2.

tea-blight (tē'blīt), *n.* Any one of several Oriental heteropterous insects of the genus *Helopeltis,* as *H. theivora, H. bradyi, H. romundei,* and *H. antonii.*

tea-broom (tē'bröm), *n.* Same as ★*manuka.*

tea-cup, *n.*—**A tempest in a tea-cup.** Same as *a tempest in a tea-pot.*

tea-drier (tē'drī″ėr), *n.* An apparatus for extracting the moisture from tea-leaves or 'firing' them in the process of manufacture.

tea-dust (tē'dust), *n.* Finely comminuted tea as an incident of manufacture. See ★*tea-fannings.*

tea-fannings (tē'fan″ingz), *n. pl.* Tea in small scraps coarser than tea-dust but often included in that grade.

tea-hill (tē'hil), *n.* A hill on which tea grows or is growing.

> At I Bang there are three *tea-hills,* and from six to eight qualities of tea to each hill.
> *Geog. Jour.* (R. G. S.), XV. 489.

teaism (tē'izm), *n.* Same as *theism*^{2}.

> All suggests that excessive *teaism,* coffeeism, etc., predilection for tidbits, condiments, and desserts, to the prejudice of appetite for plain, wholesome nutritives, and all the special dislikes for standard foods now so common, if not themselves signs of arrest, at least jeopard the highest maturation of powers.
> *G. S. Hall,* Adolescence, II. 14.

Tea-kettle policy. See ★*policy*^{1}.

Tealby beds. See ★*bed*^{1}.

teallite (tē'līt), *n.* [Named after Dr. J. J. Harris *Teall,* director-general of the Geological Survey of Great Britain and Ireland.] A sulphostannate of lead ($PbSnS_2$) occurring in blackish-gray, inelastic, flexible folia, in Bolivia.

teamland (tēm'land), *n.* Same as *plow-land.* *N. and Q.,* 10th ser., I. 354.

team-man (tēm'mạn), *n.* A teamster. [Eng.]

> E—— D—— 17, *teamman,* was charged with taking twenty-seven partridge eggs out of nests on land.
> *The Field,* June 1, 1901, p. 761.

team-play (tēm'plā), *n.* In *foot-ball, basket-ball, hockey,* and similar sports, the art or practice of mutual assistance by members of one side.

tean^2, *n.* See *teen*^{1}.

Younger than spring, without the faintest trace
  Of disappointment, weariness, or *tean*
Upon the childlike earnestness and grace
  Of the waiting face.

W. V. Moody, Poems, p. 98.

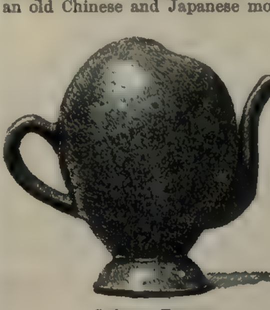
tea-party, *n.* **2.** Any disquieting occurrence or happening. [Colloq.]

> "No, my lad, but we've got a precious heap of disturbing to do on our own account before we've squared up for this *tea-party* [an attack by natives in Africa]. I'm going to drop down stream to somewhere quiet where we can fill up with wood."
> *Cutcliffe Hyne,* A Master of Fortune, iii.

3. Something easy to do or accomplish. [Colloq.]

> All the croquet players—except Mabel, who was winning—converged on Chatteris with cries of welcome. Mabel remained in the midst of what I understand is called a *tea-party,* loudly demanding that they should see her "play it out." *H. G. Wells,* The Sea Lady, v.

tea-pot, *n.*—**Cadogan tea-pot,** a tea-pot copied from an old Chinese and Japanese model, said to have been introduced into England by the Hon. Mrs. Cadogan, and extensively reproduced at Swinton in the latter part of the eighteenth century. It is almost egg-shape, somewhat flattened at the sides, having a closed top and no lid. A spiral tube passes through an opening at the base and extends to within half an inch of the top. The pot could be filled only by inverting it, and when reversed the contents could be emptied only through the spout.—**Tea-pot tail,** the tail of a setter when carried in a drooping manner like that of a collie: probably so styled as suggesting the handle of a tea-pot.



Cadogan Tea-pot.
(In the Pennsylvania Museum, Philadelphia.)

tear^2, *n.* **3.** (*c*) One of the masses of the gum resin which exude from *Balsamea Myrrha.* They are semi-transparent and reddish-brown, and range in size from small grains to that of an egg.

5. *pl.* The gum-disease of citrous trees; psorosis. [Colloq., Florida.]

tear-bottle (tēr'bot″l), *n.* The popular name for small antique glass bottles most of which were probably used to contain ointment. See *lacrymatory.*

tear-drop, *n.* **2.** A small air-cavity blown into glass.

> Immediately under the bowl at the top of the stem is an air cavity, known as a *tear-drop* . . . a frequent form of decoration. *C. H. Wylde,* in Burlington Mag., IV. 141.

tear-fault (tãr'fâlt), *n.* A differential or compound fault produced, during folding, by the sliding upon one another of several adjacent beds or strata. Each component movement is called a *lag-fault.* *J. E. Marr,* in Quar. Jour. Geol. Soc., 1906, p. lxxvi.

tear-grass (tēr'gràs), *n.* Same as *Job's-tears.*

teart (tē'ärt), *a.* A dialectal form of *tart*^{1}; as applied to land, sour.

> This disease, known as parasitic enteritis, is found to be persistently associated with certain pastures (called "*teart*" lands in the West of England) upon heavy moisture-retaining soils, the larvæ, in fact, living in the damp earth of these pastures, in mud, etc., and being thence transferred to the stomachs of their definitive hosts.
> *Lancet,* June 6, 1903, p. 1590.

tea-sifter (tē'sif″tėr), *n.* **1.** One who or that which separates the leaves of tea in accordance with their size, by passing them through sieves.—**2.** A sieve or strainer used in sifting dry tea-leaves or sorting them according to size.

tea-sorter (tē'sôr″tėr), *n.* An inspector of tea, by whom the varying qualities of tea-leaves are separated into groups and the proportion of the various sorts in any consignment is determined.

tea-tasting (tē'tās″ting), *n.* The occupation of a tea-taster. It involves fine discrimination of flavors, which are favorably described as 'aromatic,' 'fragrant,' 'fruity,' 'malty,' 'mealy,' 'mellow,' 'nosey' (fragrant), 'nutty,' 'piquant,' 'pungent,' 'toasty'; and unfavorably (at least in excess) as 'baked,' 'brassy,' 'burnt,' 'coarse,' 'earthy,' 'fishy,' 'grassy,' 'grippy,' 'herby,' 'metallic,' 'mousey,' 'raw,' 'smoky,' 'soapy,' 'sour,' 'tarry,' 'weedy,' 'wild,' 'woody.' Textures are described as 'crapy,' 'crispy,' 'satiny,' 'silky,' 'velvety,' etc.

tea-tree, *n.*—**Coast tea-tree,** *Leptospermum lævigatum,* a shrub common along the seacoast of Victoria and New South Wales, useful for arresting the progress of drifting sand. Also called *sandstay.*—**Mountain tea-tree,** *Pentagonaster peduncularis* (*Kunzea peduncularis* of F. von Mueller), a small tree of Victoria and New South Wales, the wood of which is used by the aborigines for their spears, waddies, and boomerangs.

tecalli (tā-kä'lẹ̄), *n.* [Nahuatl.] A very handsome banded alabaster, opaque, translucent, and sometimes transparent, found in the state of Puebla in Mexico, and largely worked into artistic objects for sale and export.

tech. An abbreviation (*a*) of *technical;* (*b*) of *technically;* (*c*) of *technology.*

Technical rotation. See ★*rotation.*

technocausis (tek-nọ̄-kâ'sis), *n.* [Gr. τέχνη, art, + καῦσις, a burning.] The use of the actual cautery as distinguished from that of chemical caustics.

technogeography (tek″nọ̄-jẹ̄-og'rạ-fi), *n.* [Gr. τέχνη, art, + γεωγραφία, geography.] The study of the effect of geographical environment on the technic arts of man.

technographer (tek-nog'rạ-fėr), *n.* One who is versed in technography or has a thorough and scientific knowledge of the details of an art, invention, etc.

> There are two ways of looking at human inventions, the one ethnographic, the other technographic. The ethnographer makes his home among tribesmen and tells the story of their industrial lives; the *technographer* pursues a single art over time and place until he knows it thoroughly.
> *Amer. Anthropologist,* Jan.–March, 1900, p. 164.

technographic (tek-nọ̄-graf'ik), *a.* [*technography* + *-ic.*] Of or pertaining to technography; having a systematic knowledge of the terms and details of an art or invention. See the extract under ★*technographer.*

technography (tek-nog'rạ-fi), *n.* [Gr. τέχνη, art, + -γραφια, < γράφειν, write.] The description and study of arts and industries in their ethnic distribution and historic development. *Smithsonian Rep.* (Nat. Mus.), 1899, p. 526.

technol. An abbreviation (*a*) of *technological;* (*b*) of *technology.*

technolithic (tek-nọ̄-lith'ik), *a.* [Gr. τέχνη, art, + λίθος, stone, + *-ic.*] In *anthrop.,* denoting stone implements shaped by man in accordance with definite designs. See ★*protolithic.* *J. W. Powell,* in An. Rep. Bur. Amer. Ethnol., 1895–96, p. lxvi.

> The use of objects without designed modification, like the Seri stone implements, has been studied by Mr. McGee, and he calls such unmodified implements protolithic, while the modified stone implements he calls *technolithic.* *An. Rep. Bur. Amer. Ethnol.,* 1897–98, p. xxi.

technologue (tek'nọ̄-log), *n.* Same as *technologist.*

> After defining the "*technologue*" as an intermediary between the savant and the mechanic, translating the discoveries of the former into the uses of the latter, Prof. Bovey tries to ascertain the controlling ideas common to all technical experts. *Nature,* April 6, 1905, p. 548.

tecolote (tā-kō-lō'tạ̄), *n.* [Nahuatl *tecolotl,* an owl.] A Nahuatl name for the owl, used in the southwestern United States, Mexico, parts of Central America, and other Spanish-speaking regions.

tecoretin, *n.* See ★*tekoretin.*

Tectobranchi (tek-tọ̄-brang'kī), *n. pl.* [NL. See *tectibranchiate.*] Applied by Gadow to those fishes in which the gills are covered by a bony flap or operculum: practically synonymous with *Teleostomi.*

tectocephaly (tek-tọ̄-sef'ạ-li), *n.* [L. *tectum,* roof, + Gr. κεφαλή, head, + *-y*^{3}.] The quality or condition of being tectocephalic. See *scaphocephaly.*

tectochrysin (tek-tọ̄-kris'in), *n.* [Gr. τηκτός, melted, molten, + χρυσός, gold, + *-in*^{2}.] A sulphur-colored compound, $C_{15}H_9O_3OCH_3$, prepared by the action of methyl iodide on chrysin and found in poplar-buds. It forms thick crystals and melts at 164° C. Also called *chrysin methyl ether* or *1,3-methoxyhydroxyflavone.*

tectonic, *a.* **2.** In *geol.,* relating to structure; structural: as, *tectonic* geology (structural geology); *tectonic* valleys, valleys due to geologic structure rather than to erosion.

> The *tectonic* line of the Andes is then apparently bent suddenly southward and reappears in Graham Land. It is probably continued round the southern Pacific, meeting the known end of the New Zealand line near Mounts Erebus and Terror. *Pop. Sci. Mo.,* Jan., 1902, p. 216.

> He lays particular stress on the violent earthquake which agitated the whole of Nicaragua in April, 1898, as to which he quotes the opinion of Dr. Sapper that its character was purely *tectonic,* as against the view of Major Dutton, that earthquakes in this region are mere incidents of the volcanic activity.
> *Geog. Jour.* (R. G. S.), XV. 648.

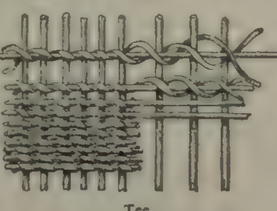
Tectospondyli (tek-tọ̄-spon'di-lī), *n. pl.* [NL., < Gr. τέκτων, a builder, + σπόνδυλος, vertebra.] A suborder of cyclospondylous sharks, found in most warm seas, and having characters between those of the sharks and those of the rays.

tectum (tek'tum), *n.*; pl. *tecta* (-tä̤). [L. *tectum*, a roof.] Same as *tectorium*. *Baldwin*, Dict. of Philos. and Psychol., I. 142.

tee^4, *n.* 2. (*d*) In *lumbering*, a strip of iron about 6 inches long, with a hole in the center, to which a short chain is attached: passed through a hole in a gate-plank, turned crosswise, and so used to hold the plank when tripped in a splash-dam.

tee^4 (tē), *v. t.*; pret. and pp. *teed*, ppr. *teeing*. [Also *T*; *tee*^{4}, *n.*] In *naval tactics*, to manœuver (a fleet) so as to place it across the head of the enemy's column of vessels, thus enabling the guns to be concentrated on the leading vessels of the enemy, who cannot reply effectively.

tee^6 (tē), *n.* [Pomo (Indian of California).] A method of making baskets applied by some California Indians; a twined lattice weave consisting of four elements—an upright warp of rods, a horizontal warp crossing these at right angles, and a regular plain twined weaving of two elements, holding the warps firmly together. The horizontal warp is on the outside of the basket.



Tee.
(Rep. U. S. Nat. Museum, 1902.)

> The lattice twined weaving, so far as the collections of the United States National Museum show, is confined to the Pomo Indians, of the Kulanapan family, residing on Russian river, California. Dr. Hudson calls this technic *tee*. This is a short and convenient word and may be used for a specific name.
> *Amer. Anthropologist*, Jan.–March, 1901, p. 117.

tee-bar, *n.* Same as *T-bar*.

teeing-ground (tē'ing-ground), *n.* In *golf*, a space marked out within the limits of which the ball must be teed.

tee-shot (tē'shot), *n.* In *golf*, any stroke played from a teeing-ground. *W. Park, Jr.*, Game of Golf, p. 7.

Teeswater cattle. The original shorthorn cattle which were the result of experiments in breeding carried on by the Colling Brothers in the Tees district, England.

> These *Durham*, *Teeswater*, or *Shorthorn* cattle, as they were variously called, were soon eagerly sought after.
> *Encyc. Brit.*, I. 387.

teet (tēt), *n.* [Appar. another spelling and sense of *teat*.] In *bee-keeping*, same as *pipe*^{1}, 5.

teeter, *v. i.* Hence—2. To move about foolishly and aimlessly.

> A quorum of the committee is away *teeterin'* about in their own affairs. *A. H. Lewis*, Wolfville Nights, xvii.

teetotum^2 (tē-tō'tum), *n.* [Made from *teetotal*.] See the extract.

> Even the newest form of peoples' café, the *Tee-to-tums*, are conducted so that expenses are covered. The unique institutions . . . combine the features of a coffee-house, supplying a variety of good food and non-alcoholic drinks, with those of a club, having numerous facilities for improvement and recreation. The patrons of each *Tee-to-tum* are organized by skilled social workers, who direct their amusements.
> *R. A. Woods*, in Scribner's Mag., April, 1892, p. 423.

teetsook (tēt'sök), *n.* [Amer. Ind.] A saddle-bag. [Western U. S.]

tegmen, *n.* 6. In crinoids, same as ★*disk*, 5 (*e*).—**Tegmen antri**, a thin plate of bone covering over the mastoid cells.

tegmentum, *n.* 3. The outer porous layer of the shell of polyplacophorous mollusks or chitons, which covers the inner porcelanous articulamentum.—**Tegmentum tympani.** Same as *tegmen tympani*. See *tegmen*, 4.

tegumental, *a.*—**Tegumental gland**, a gland lying in, or formed by modification of, the integument, as are the poison-glands of the catfish *Malapterurus*.

Teichmann's crystals. See ★*crystal*.

teichopsia (tī-kop'si-ä̤), *n.* [NL., < Gr. τεῖχος, a wall, + ὄψις, appearance.] The appearance as of zigzag lines before the eyes, a subjective visual disturbance occurring in migraine and other morbid states.

Tejon series. See ★*series*.

tekkana (te-kä'nä̤), *n.* [Aram. and Heb., < *tākkan*, make straight, mend.] A rabbinical ordinance, remedy, or regulation adding or abrogating certain laws for the religious well-being of the community.

tekoretin, tecoretin (te-kor'e-tin), *n.* [Gr. τήκειν, melt, + ῥητίνη, resin.] A fossil or semi-fossil resin, extracted by solution in alcohol from pine-wood found in marshes near Holtegaard in Denmark. It is colorless, crystallizable, and apparently identical with or closely allied to fichtelite.

tel^2, *v.* and *n.* A simplified spelling of *tell*^{1}.

tel. An abbreviation (*a*) of *telegram*; (*b*) of *telegraph*; (*c*) of *telegraphic*.

telæscin (te-les'in), *n.* A glucoside, $C_{18}H_{30}O_7$, prepared by the hydrolysis of the glucoside escinic acid.

telangioma (tel-an-ji-ō'mä̤), *n.*; pl. *telangiomata* (-ma̤-tä̤). [NL., < Gr. τέλος, end (?), + ἀγγεῖον, vessel, + *-oma*.] A tumor formed of a mass of dilated arterioles and capillaries.

telangiosis (tel-an-ji-ō'sis), *n.* [NL., < Gr. τέλος, end (?), + ἀγγεῖον, vessel, + *-osis*.] Any disease of the minute blood-vessels.

telautogram (tel-â'tọ-gram), *n.* [Gr. τῆλε, afar, + αὐτός, self, + γράμμα, a writing.] The facsimile record of writing or drawing produced by the receiving apparatus of the telautograph.

telautography (tel-â-tog'ra̤-fi), *n.* [*telautograph* + *-y*^{3}.] The process of transmitting writing or drawings in facsimile; the use of the telautograph.

> *Telautography.*—When handwriting or drawings are to be transmitted, they are executed with non-conducting ink on metal foil, which is laid around an insulating cylinder of the same dimensions as the receiving cylinder.
> *Elect. World and Engin.*, July 9, 1904, p. 61.

Telchines (tel'ki-nēz), *n. pl.* [Gr. pl. of Τελχίν.] In *Gr. myth.*, primitive workers in metal and magicians who were supposed to have been the first inhabitants of Crete and Rhodes.

> Strange demoniacal and superhuman beings, the Kyclops, the Dactyli, and *Telchines*.
> *L. M. Mitchell*, Hist. of Ancient Sculpture, p. 140.

teleautograph, *n.* Same as *telautograph*.

telecentric (tel-ẹ-sen'trik), *a.* [Gr. τῆλε, afar, + κέντρον, center, + *-ic*.] In *optics*, having its exit-pupil or entrance-pupil at an infinite distance: said of a lens system of which the aperture, or stop, is at a principal focus. *P. Drude*, Theory of Optics, p. 75.

telechirograph (tel-ẹ-kī'rọ-gràf), *n.* [Gr. τῆλε, afar, + χείρ, hand, + γράφειν, write.] A form of autographic telegraph, the photographic receiving instrument of which records messages in the handwriting of the sender. *Elect. World and Engin.*, June 20, 1903, p. 1055.

teleclexis (tel-e-klek'sis), *n.* [Gr. τέλος, end, completion, + ἔκλεξις, selection.] Artificial or intentional, as distinguished from unconscious or natural, selection. *L. F. Ward*, Pure Sociol., p. 361.

telecryptograph (tel-ẹ-krip'tọ-gràf), *n.* [Gr. τῆλε, afar, + κρυπτός, secret, + γράφειν, write.] 1. A form of printing telegraph, invented by Malcotti for use on private lines or on ordinary telephone lines, in which the sending device is operated by pressing lettered keys like those of the type-writer and the message at the receiving station is automatically recorded in printed characters. As the name implies, the device is intended further to permit of secret communication between stations.—2. A high-speed automatic printing telegraph brought out by Siemens and Halske in Berlin.

telectroscope (te-lek'trọ-skōp), *n.* [Gr. τῆλε, afar, + ἤλεκτρον (for 'electricity') + σκοπεῖν, view.] An electrical device proposed and experimented upon by Szczepanik for the production at a distant station of visible images of objects located at the transmitting station. See ★*telelectroscope*. *Sci. Amer. Sup.*, July 30, 1898, p. 18889.

teleëlectroscopy (tel"ẹ-ē-lek-tros'kọ-pi), *n.* [Gr. τῆλε, afar, + ἤλεκτρον (for 'electricity') + -σκοπια, < σκοπεῖν, view.] A seeing or photographing at a distance. A selenium cell, which conducts the current best when exposed to light, is connected by one or more wires with suitable apparatus for recording variations in intensity. Also *telephotoscopy*. *Wall*, Dict. of Photog., p. 233.

telefocal (tel"ẹ-fō'kal), *a.* [Gr. τῆλε, afar, + E. *focal*.] Relating to the focusing of distant objects: applied to lenses. [Rare.]

> As to the "*tele-focal*" powers of the new lens (if I may use the term), a comparison of the two views, marked A and B, will give some idea of its scope.
> *Jour. Franklin Inst.*, Sept., 1893, p. 216.

telefone, telefonic. Amended spellings of *telephone, telephonic*.

teleg. An abbreviation (*a*) of *telegram*; (*b*) of *telegraph*; (*c*) of *telegraphic*; (*d*) of *telegraphy*.

telegonic (tel-ẹ-gon'ik), *a.* Same as ★*telegonous*.

telegonous (tẹ-leg'ọ-nus), *a.* [Gr. τῆλε, afar, + -γενης, -producing, + *-ous*.] Pertaining to or illustrative of, or supposed to be due to, telegony.

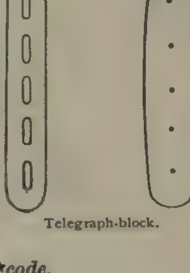
telegony (tẹ-leg'ọ-ni), *n.* [NL. **telegonia*, < Gr. τηλέγονος, born far away (from one's father or fatherland) (used as a person's name), < τῆλε, afar, + -γονος, -born.] In *biol.*, the supposed influence of a first sire upon the progeny subsequently borne by the mother to other sires. Most breeders are believers in telegony, although careful experiments have failed to show any scientific basis for their opinion.

> At present the scientific evidence is so distinctly unfavourable to belief in the occurrence of *telegony*, that to discuss suggested explanations or criticisms seems unnecessary. *Encyc. Brit.*, XXXII. 215.

telegraf, telegrafic, telegrafy. Amended spellings of *telegraph, telegraphic, telegraphy*.

telegraph, *n.* 3. In *cricket*, the score-board upon which numbers indicating the progress of the game are displayed. [Colloq.]—4. In *ship-building*, an apparatus for transmitting and receiving orders mechanically. An *engine-telegraph* consists of a dial on a stand on the bridge or pilot-house having a handle with a pointer attached which, by movement of the handle, is pointed to the desired order on the dial, as 'ahead full speed,' 'stop,' 'astern half speed,' etc. By a line of wires, a pointer on a similar dial in the engine-room is made to point to the same order and ring a gong. The engineer then manipulates a handle with its pointer to point to the same order on the engine-room dial, and by another line of wires a pointer on the dial on the bridge is moved, and if the order has been correctly received, it points to the same order as the pointer on the handle of the bridge-dial. A similar apparatus fitted for giving orders for steering from the bridge to the steering-engine room, or other steering-station, is called a *steering-telegraph*. 5. A chute or trough, usually of sheet-steel, by which coal or ore or refuse is carried by gravity from screens or other dressing machinery to the desired point of disposal. *Coal and Metal Miners' Pocket-book*. [Eng.]—**Postal telegraph**, in Great Britain and her dependencies, a telegraph service carried on by the government through the general post-office. A telegram posted with an ordinary post-office stamp upon it is taken, at the next collection, to the nearest telegraph-office. *Encyc. Brit.*, XIX. 577.—**Rowland's telegraph**, a multiplex printing telegraph with keyboard transmitters and automatic type-printing receivers invented by H. A. Rowland. In this system the so-called sine-wave method of transmitting is used and by means of a four-part commutator four messages are simultaneously sent over a single wire.—**Space-telegraph**, a wireless telegraph. See *wireless* ★*telegraphy*.—**Steering-telegraph.** See ★*telegraph*, 4.—**Type-printing telegraph**, an apparatus for telegraphing in which the message at the receiving station is automatically delivered in printed characters. *Sci. Amer.*, Nov. 7, 1903, p. 325.—**Wireless telegraph.** See ★*wireless telegraphy*.

telegraph-block (tel'ẹ-gràf-blok"), *n.* A number of small sheaves in a narrow, long shell, used for the purpose of making signals, so that several flags may be hoisted at one time.



Telegraph-block.

telegraphese (tel"ẹ-gràf-ēs'), *n.* [*telegraph* + *-ese*.] A very terse style, such as that in which telegrams are commonly written; a style marked by very short sentences. [Rare.]

> We rather relish the leisurely semicolons and sentences of the eighteenth century after being confronted with the "*telegraphese*" of many a modern stylist.
> *Athenæum*, Oct. 7, 1905, p. 469.

Telegraphic code. See ★*code*.

telegraphone (tẹ-leg'ra̤-fōn), *n.* [Gr. τῆλε, afar, + γράφειν, write, + φωνή, sound.] The magnetic phonograph, telephonograph, or magneto-phonograph of Poulsen. See *telephonograph*. *Nature*, Aug. 16, 1900, p. 371.

> The "*telegraphone*' is a "recording telephone," that is to say, a telephone that records and reproduces messages spoken into it.
> *Sci. Amer.*, April 25, 1903, p. 317.

telegraph-spoon (tel'ẹ-gràf-spön"), *n.* See ★*post-spoon*.

telegraphy, *n.*—**Electric space-telegraphy**, a name proposed by Lodge for wireless ★telegraphy.

> The general principles of *electric space-telegraphy*—or wireless telegraphy as it seems to wish to be called.
> *Sir Oliver Lodge*, in Jour. Brit. Inst. Elect. Engin., [1898, p. 799.

Electric-wave telegraphy. Same as *wireless ★telegraphy.*—**Induction telegraphy,** telegraphy by means of induced currents in parallel circuits, as in the systems for communicating with moving trains, where a line-wire is installed parallel to the track and the inductive effect of fluctuating currents in this wire operates a receiving apparatus on the train, and vice versa.—**Magnetic space-telegraphy,** a type of wireless telegraphy, devised by Lodge, in which the transmitting apparatus is a condenser in an oscillatory circuit of low frequency consisting of a horizontal coil of very large area. The receiver is a similar coil and condenser of like frequency with a telephone in the circuit.—**Ray telegraphy,** a system of wireless telegraphy in which short electromagnetic waves are focused upon a distant point by means of lenses having a high dielectric constant. *Sci. Amer. Sup.*, May 9, 1903, p. 22866.—**Space-telegraphy.** See *electric space-★telegraphy.*—**Spark telegraphy,** in *elect.*, a name sometimes used for *wireless ★telegraphy* (which see).—**Spherical telegraphy,** telegraphy by means of spherical waves through the free ether; wireless telegraphy.—**Weather telegraphy,** the systematic reporting by telegraph, and usually by cipher despatches, of weather conditions over any considerable region of country. *Nature*, March 31, 1904, p. 518.—**Wireless telegraphy,** the transmission of signals between points not connected by electrical conductors; specifically, the transmission of signals through space by means of electric waves; a system of telegraphy based upon the researches of Heinrich Hertz, who demonstrated that the oscillatory discharge of an electric circuit acting as a transmitter produces electric waves which are capable of setting up an oscillatory discharge in a similar receiving circuit. A method of utilizing these waves for the transmission of signals was devised by Guglielmo Marconi. His experiments were first made in Bologna in 1895, and they were continued in England from July, 1896, under the auspices of the British Postoffice. In March, 1899, communication was established across the English Channel between Dover, England, and Wimereux, France, a distance of 32 miles, the rate of transmission being about 20 words a minute. Signals were first successfully sent across the Atlantic ocean from Poldhu, Cornwall, to St. Johns, Newfoundland, on Dec. 12, 1901. In the meantime numerous other inventors and electricians entered the field, many of whom have contributed greatly to the development of the art. An important feature of most systems of wireless telegraphy is the use, both at the transmitting- and receiving-stations of aerial conductors (commonly called antennæ) supported by a mast or tower. On shipboard the aërial conductors usually consist of a group of parallel wires strung horizontally between the top masts and thence down to a deckhouse containing the sending- and receiving-apparatus. The distance to which signals can be transmitted depends upon the amount of energy radiated by the antennæ in the form of electrical oscillations of suitable wave-length (from 100 to 5000 meters). The transmitting-device, of which there are many modifications, usually consists of a power-circuit and an oscillatory circuit. The power-circuit contains an alternater, *a* (Fig. 1), sometimes of 50 kilowatts or more, and the primary coil, *p*, of a step-up transformer. The oscillatory circuit consists of the secondary coil, *s*, of this transformer, a condenser, *c*, and spark-gap, *g*, in multiple, and the aërial conductors, *o*. When the capacity and the inductance, *l*, of this circuit are properly adjusted, powerful oscillations of high frequency are set up and electric waves are sent out through space from the conductors. At the receiving-station electrical oscillations are set up by these waves in a similar set of aërial conductors, and although they are of very feeble intensity compared with those at the transmitting-station, they suffice to operate some one of the sensitive forms of receiving-apparatus employed. The receiver originally used by Marconi was the *coherer*, an instrument devised by Branly (1890) and based on the discovery by Munk (1835) that a mass of filings or other small metallic bodies so loosely packed as to be non-conducting became conducting under the action of the discharge from a Leyden jar. The coherer has since been almost entirely replaced by numerous more manageable devices, such as the various *electrolytic detectors* of Neugschwender, Aschkinass, Schlömilch, De Forest, Fessenden, Vreeland, and Brown; the *magnetic detectors* of Rutherford and Marconi; the *microphone* of Hughes; the *barretter* of Fessenden; the *audion* of De Forest; the *thermo-electric detector* of Austin; and the *carborundum detector* of Brandes. The detector is sometimes directly in circuit between the antennæ and the earth, as in Fig. 2, in which *o* is the set of antennæ, *d* is the detector, *e* is the earth, *b* a battery, and *t* a telephone; sometimes in the secondary circuit of a transformer the primary coil of which is in the circuit between the antennæ and the earth. The detector, whatever its form, serves as a sort of delicate relay to alter the current flow in a local circuit containing a battery and some convenient form of telegraphic receiving-instrument or a telephone. The electric waves from the antennæ of a station for wireless telegraphy are not all of the same frequency, but have a range of an octave or more. The intensity is greatest for a certain frequency, that of the so-called principal wave of the oscillatory circuit, and diminishes rapidly for longer or shorter waves. If, for example, the principal wave has a length of 600 meters the accompanying waves of 500 meters and 700 meters may have only one tenth of the intensity of the principal wave. By adjusting the frequency to which the receiving-circuit best responds to agreement with that of the transmitting-circuit,—a process termed *syntony*, which is analogous to the tuning of musical instruments,—the distance at which signals may be heard is greatly increased, while other instruments at nearer stations or on shipboard in the neighborhood of the sending-station will, if tuned to other frequencies, be comparatively undisturbed.

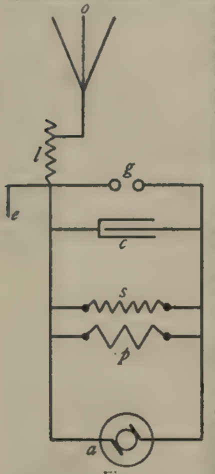


Fig. 1.

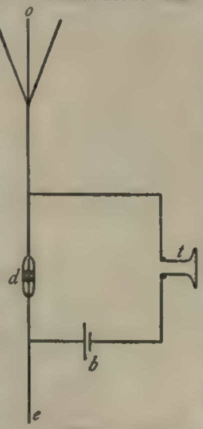


Fig. 2.

teleiochrysalis (te-lī-ọ-kris'ạ-lis), *n.* [NL., < Gr. τέλειος, complete, + χρυσαλλίς, chrysalis.] The hypopal stage of a trombidiid mite. Same as *hypopus*.

teleiophan (te-lī'ọ-fan), *n.* [Gr. τέλειος, complete, + -φανης, < φαίνεσθαι, appear.] Same as ★*teleiochrysalis*.

telekin (tel'ẹ-kin), *n.* [F. *telekin*, < Gr. τῆλε, afar, + κίν(ησις), motion.] A device for the electrical control of machinery from a distance; a telelectric regulator.

> The *telekin* is the name applied . . . to an apparatus by which the movements of a machine may be regulated from a distance, either by means of an ordinary electric telegraph or by electric waves impelled through the air without the aid of wires. The inventor distinguishes between a simple *telekin*, wherein only a single motion is considered, and a multiple *telekin*, which permits of a complexity of motions.
> *Sci. Amer. Sup.*, May 6, 1905, p. 24539.

telelectric (tel-ẹ-lek'trik), *a.* [Gr. τῆλε, afar, + E. *electric*.] Noting any device for producing mechanical motions or effects at a distance by electrical means: as, an organ with a *telelectric* attachment by means of which it may be played from a keyboard at a distance from the instrument.

> The advantages of an electrically equipped household were strikingly set forth in the exhibition of a model apartment. . . . In the parlor . . . was a piano automatically played by a *Tel-Electric* player, and, whenever desired, orchestral music furnished by the Telharmonic system could be had by closing a switch.
> *Sci. Amer.*, Oct. 12, 1907, p. 255.

telelectroscope (tel-ẹ-lek'trọ-skōp), *n.* [Gr. τῆλε, afar, + ἤλεκτρον (for 'electric') + σκοπεῖν, view.] A name proposed for electrical devices for the seeing of distant objects, in which radiation from the object at the transmitting-station is converted into electrical action of some sort, which in turn produces at the receiving-station a visible semblance of the object. No really practical scheme for these transformations has as yet been perfected although numerous methods have been proposed and some have been tried with partial success. See ★*telectroscope*.

telemetacarpal (tel-ẹ-met-ạ-kär'pạl), *a.* [Gr. τῆλε, afar, + E. *metacarpal*.] Possessing vestiges only of the distal portions of the first and fifth metacarpals: applied to certain deer: contrasted with ★*plesiometacarpal*. See ★*Telemetacarpi*.

> The fact of the plesiometacarpal and *telemetacarpal* limb characters so closely corresponding with the distribution of the Cervidæ in the Old and New Worlds would, in itself, have convinced me of their fundamental importance. *Proc. Zool. Soc. London*, 1878, p. 887.

Telemetacarpi (tel-ẹ-met-ạ-kär'pī), *n. pl.* [NL., < Gr. τῆλε, afar (distal), + NL. *metacarpi*, pl. of *metacarpus*.] A division of the deer family in which the distal portions of the first and fifth metacarpals are present, but there are no vestiges of the proximal ends: contrasted with ★*Plesiometacarpi*.

telemetrical (tel-ẹ-met'ri-kạl), *a.* [*telemeter* (*-metr-*) + *-ic* + *-al*¹.] Of, pertaining to, or produced by means of, the telemeter; telemetric.

> The peculiar long-range *telemetrical* measurement of each side of the polygonal perimeter.
> *Geog. Jour.* (R. G. S.), XVI. 330.

telemetrograph (tel-ẹ-met'rọ-gråf), *n.* [Gr. τῆλε, afar, + μέτρον, measure, + γράφειν, write.] An instrument for drawing plans, measuring distances, etc.

telemicroscope (tel-ẹ-mī'krọ-skōp), *n.* [Gr. τῆλε, afar, + E. *microscope*.] A magnifying instrument, invented by the Abbé Deschamps, for the observation of small objects, such as insects, from a distance. Its optical system consists of an objective composed of two achromatic lenses that are separated by a distance less than the principal focal distance of the most convergent lens, and therefore act as a single lens, and of a Dollond ocular with four plano-convex lenses. The eye-glass is made as convergent as possible to increase magnification and field without diminishing the definition.

telencephalon (tel-en-sef'ạ-lon), *n.* [Gr. τέλος, end, + ἐγκέφαλος, brain.] Same as *prosencephalon*.

telenegative (tel-ẹ-neg'ạ-tiv), *a.* [Gr. τῆλε, afar, + E. *negative*.] See the extract and *telephotographic* ★*lens*.

> As the human eye, in order to see better from a distance, uses telescopes, any ordinary photographic objective can be made to produce enlarged views of an object by the addition of a magnifying lens. This lens, called "*tele-negative*," need not be connected permanently with the ordinary objective (which is called "tele-positive"), a loose connection by means of a removable short tube being quite sufficient. Then the objective can be used at will both in connection with ordinary views and with telephotographs.
> *Sci. Amer. Sup.*, Sept. 30, 1905, p. 24861.

teleobjective (tel″ẹ-ob-jek'tiv), *a.* and *n.* [Gr. τῆλε, afar, + E. *objective*.] **I.** *a.* In *optics*, having an object-glass adapted to the photography of distant objects: as, a *teleobjective* camera. *P. Drude*, Theory of Optics, p. 94.

II. *n.* In *optics*, an objective for the photography of distant objects. It consists of a combination of a convergent with a divergent system so arranged as to obtain great focal length in a compact instrument.

teleodesmaceous (tel″ẹ-ọ-des-mā'shius), *a.* Pertaining to or having the characters of the *Teleodesmacea*.

teleodont (tel'ẹ-ọ-dont), *a.* [Gr. τέλος (τελεο-), completion, + ὀδούς (ὀδοντ-), tooth.] 1. Having mandibles of the highest development: said of certain stag-beetles.—**2.** Of or pertaining to the *Teleodonta*.

Teleodonta (tel″ẹ-ọ-don'tạ̈), *n. pl.* [NL., < Gr. τέλος (τελεο-), completion, + ὀδούς (ὀδοντ-), tooth.] In Dall's classification, a group of teleodesmacean pelecypod *Mollusca* presenting the most highly perfected type of hinge, comprising the superfamilies *Veneracea*, *Tellinacea*, *Solenacea*, *Mactracea*, *Myacea*, and *Adesmacea*.

teleogyrous (tel-ẹ-ọ-jī'rus), *a.* [Gr. τέλος (τελεο-), end, + γῦρος, circle, gyre, + *-ous*.] In *ornith.*, noting the fact or condition of having the free ends of the intestinal loops coiled into spirals.

> Lastly, the distal portion of any loop originally straight may be coiled up into a spiral, while the rest of the loop remains straight. This feature may be termed *teleogyrous*. *H. Gadow*, in Newton, Dict. of Birds, p. 144.

Teleological proof. See ★*proof*.

teleomitosis (tel″ẹ-ọ-mī-tō'sis), *n.* [Gr. τέλος (τελεο-), end, + NL. *mitosis*.] Complete or typical mitosis, or karyokinesis.

Teleoplacophora (tel″ẹ-ọ-plạ-kof'ọ-rạ̈), *n. pl.* [NL., < Gr. τέλος (τελεο-), completion, + NL. *Placophora*.] A suborder of polyplacophoran *Mollusca* characterized by the presence of pectinated teeth on the insertion-plates of the valves. It includes the genus *Chiton* and its allies of Tertiary and recent age.

teleoptile (tel'ẹ-op-til), *n.* [Gr. τέλεος, complete, + πτίλον, down (feathers).] One of the feathers that succeed the first down of a young bird. See ★*neossoptile* and ★*mesoptile*.

> *Teleoptiles*, whether Contour-feathers or Downs, are each originally preceded by a Neossoptile, the base of which is in direct continuity with the tips of the rami of its succeeding final feather.
> *H. Gadow*, in Newton, Dict. of Birds, p. 243.

teleoscope (tel'ẹ-ọ-skōp), *n.* [F. *téléoscope*, < Gr. τῆλε, afar, + σκοπεῖν, view.] An apparatus for vision at a distance by electrical means, proposed by Dussand in 1898, in which the change in the resistance of selenium when subjected to light was to be utilized for transmission. *Sci. Amer. Sup.*, July 2, 1898, p. 18793.

teleosteous (tel-ẹ-os'tẹ-us), *a.* Of or pertaining to the teleost fishes.

Teleotremata (tel″ẹ-ọ-trē'mạ-tạ̈), *n. pl.* See ★*Telotremata*.

telepath (tel′ẹ-path), *v. i.* and *t.* [*telepath*(*y*).] **I.** *intrans.* To communicate with another mind otherwise than through the senses. See *telepathy.* [Rare.]

> Just as the humble peasant, . . . puts herself in spiritual communication with a higher power, so may we not find a way to *telepath* to minds that are attuned to ours?
> *Sci. Amer. Sup.*, May 9, 1903, p. 22863.

II. *trans.* To communicate (a message or thought) to another mind without the intermediation of the senses.

telepath (tel′ẹ̄-path), *n.* [*telepath*(*ist*).] A believer in, or student of, the doctrine of telepathy; a telepathist.

> The book . . . contains . . . a chapter headed "The Spirit Rappers, the *Telepaths* and the Galvanometer."
> *Nature*, Jan. 7, 1904, p. 219.

telepathize (tẹ̄-lep′ạ̈-thīz or tel′ẹ̄-path-īz), *v. i.* and *t.*; pret. and pp. *telepathized*, ppr. *telepathizing.* [*telepath*(*y*) + *-ize.*] **I.** *trans.* To impress on or communicate to another mind by telepathy.

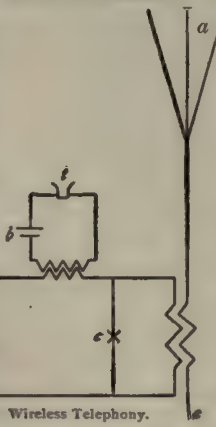
II. *intrans.* To use telepathy.

telephone, *n.*—**Exchange-telephone,** the form of telephone used by operators at the switchboard, as distinguished from the ordinary forms of receiver.—**Long-distance telephone.** (*a*) A telephone transmitter designed with special reference to use between distant stations, as distinguished from the instruments for local service. (*b*) An interurban telephone system.—**Reaction telephone,** a telephone the action of which is enhanced by currents induced in a coil attached to the diaphragm.—**Telephone exchange,** the office of a telephone system, where all the various lines are brought to a central switchboard and communication between subscribers is effected. In the case of automatic systems the term is sometimes applied to the switchboard itself, which is termed an 'automatic exchange.' *Preece*, Telephony, p. 56. **Telephone lock,** a device for the prepayment of telephone calls, in which the hook-switch must be unlocked by the insertion of the proper coin in a slot provided for that purpose, before communication with the central station can be obtained.—**Telephone theory,** a theory of audition, according to which complex vibrations are not analyzed in the cochlea but are translated into correspondingly complex nerve-impulses, just as in a telephone the sound-vibrations are translated by plate and magnet into corresponding electrical movements. *Baldwin*, Dict. of Philos. and Psychol., I. 448.—**Triple telephone,** a form of combined transmitter and receiver fitted to the head of the operator and having two earpieces and a mouthpiece.

Telephonic probe, relay. See ★*probe*, ★*relay*¹.

telephonograph (tel-ẹ̄-fō′nọ̄-gráf), *n.* [Gr. τῆλε, afar, + E. *phonograph.*] An apparatus devised by Valdemar Poulsen, of Copenhagen, for the recording and subsequent reproduction of musical tones or of speech transmitted through a telephone. It differs from other phonographic devices in that the record is made by the local transverse magnetization of a steel tape or wire which passes between two electromagnets placed in the electric circuit of the transmitter. These local regions of magnetization correspond to the mechanical impressions in the recording surface of the ordinary phonograph. When the tape or wire is passed again between the electromagnets in the same direction and at the same speed, it in turn induces currents in the circuit of which the electromagnets form a part and these currents produce movements of the telephonic disk. The sounds uttered by the disk in consequence of the motions are a faithful reproduction of those which actuated the disk in the process of recording and are free from the disturbances due to mechanical contact between the stylus and the indented surface of the cylinder or record-disk of the usual phonographic apparatus. The record, moreover, is free from deterioration by wear and may be utilized for reproduction almost indefinitely. A record may however be completely expunged by demagnetization of the tape or wire, which is then ready for further use. In a later and somewhat modified form the apparatus is known as the *telegraphone.* Also *magneto-phonograph.* *Smithsonian Rep.*, 1901, p. 308.

telephony, *n.*—**Light-telephony,** a system of telephonic transmission in which the rays of an arc-lamp are made to fluctuate by sending through the arc the undulatory current from a carbon transmitter. The light of the arc is focused upon a selenium-cell at the receiving-station, which may be at a distance of several kilometers. The resistance of this cell varies with the illumination received from the arc and an undulatory current corresponding with that of the transmitting circuit is thus sent through the receiving telephone.—**Multiplex telephony,** a system of telephony by which several messages are sent simultaneously in opposite directions over one wire. **Radio-telephony.** Same as *wireless* ★*telephony.*—**Wireless telephony** telephonic communication without the use of a conducting circuit or line between the transmitting- and receiving-stations. Wireless telephony, like wireless telegraphy, depends on the transmission of electric waves between aërial conductors, termed antennæ, which are mounted on masts or towers or otherwise suspended at a considerable height above the ground at the two stations. In telegraphy, however, the signals consist of interrupted groups of waves, while in telephony a sustained train of waves is maintained between the stations and the intensity of these is made to fluctuate continuously in consonance with the voice of the speaker at the transmitting-station. Ruhmer found that when an arc was placed in the oscillatory circuit at the transmitting-station a microphonic transmitter in a secondary circuit as shown in the figure produced fluctuations in the oscillatory circuit and antennæ which followed the voice and were sufficiently marked to affect the oscillations in the receiving antennæ. When a detector was placed in the ground circuit of the antennæ at the receiving-station (see Fig. 2 under *wireless* ★*telegraphy*), speech uttered in the transmitter at the other station could be heard in the telephone placed in shunt with the detector. In practice several arcs are sometimes placed in series in the oscillatory circuit. It is also possible to produce the fluctuations in the oscillatory circuit by speaking to the arc directly through a megaphone, as is done in the installations for wireless telephony in the United States navy (De Forest system). Fessenden produces the sustained train of waves by an alternater of about 80,000 cycles per second and impresses the fluctuations corresponding to speech upon this oscillatory current by the use of a microphonic transmitter and special form of relay, which greatly magnify the telephonic currents.

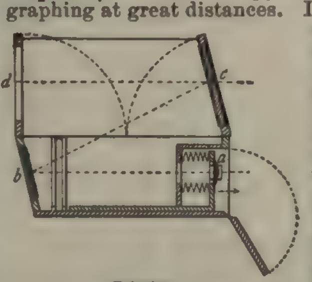


Wireless Telephony.

a, antennæ; *b*, battery; *t*, telephone; *c*, arc; *e*, earth.

telephot, *n.* Same as ★*telephote*, 2.

telephote, *n.* **2.** An apparatus for photographing at great distances. It consists of a camera with telescopic lens. Light passing through this is reflected from two plane mirrors before reaching the sensitive plate. The double reflection compensates for the focal length of the lens, reducing the camera to small dimensions. The instrument may be converted into a terrestrial or astronomical telescope. Also *telephot.* *Sci. Amer.*, June 27, 1903, p. 486.



Telephote.

a, objective; *b*, plane mirror; *c*, second mirror; *d*, photographic plate. The rays of light follow the dotted lines.

(From "Scientific American.")

telephoto (tel-ẹ̄-fō′tō), *a.* and *n.* [*telephoto*(*graphic*).] **I.** *a.* Of or pertaining to the process of photographing distant objects; telephotographic: as, a *telephoto* lens, an objective giving a large image of a distant object, in a camera of special design. See ★*telephote*, 2, and *telephotographic* ★*lens.*

II. *n.* A telephotographic lens or camera.

telephotograph, *n.* **2.** A photograph of a distant object taken with a telephotographic camera.

> Good *telephotographs* have been obtained at a distance of over forty miles, and those taken beyond artillery range (ten miles) are on a sufficiently large scale to be of practical use.
> *Army and Navy Jour.*, July 14, 1900, p. 1097.

telephotographer (tel″ẹ̄-fọ̄-tog′ra-fėr), *n.* One who takes pictures of distant objects with a telephotographic camera.

telephotographic (tel″ē-fō-tọ̄-graf′ik), *a.* [*telephotograph*(*y*) + *-ic.*] Of, pertaining to, or designed for use in telephotography, or the art of photographing distant objects by means of telescopic lenses: as, a *telephotographic* ★*lens* (which see); a *telephotographic* camera. See ★*telephote*, 2.

> This [treatise] gives full particulars of the theory of the *telephotographic* lens, and instructions for its use.
> *Geog. Jour.* (R. G. S.), XV. 676.

> The *telephotographic* combination consists of a quick-acting portrait lens, or an anastigmatic doublet of large aperture and relative intensity, varying in focus from 6 to 10 inches, fitted at one end of a tube, in which slides a smaller tube carrying a properly corrected negative system, which may vary in focus from 1 to 5 inches, but must be of shorter focus than the positive (usually about half); the shorter the focus the greater the magnifying power for a given extension of camera.
> *Encyc. Brit.*, XXXI. 697.

telephotography, *n.* **2.** The art of photographing distant objects by means of telescopic lenses and a camera specially designed for the purpose. See ★*telephote*, 2, and *telephotographic* ★*lens.*

> *Telephotography* is the art of taking, by a special and variable long focus telescopic lens, optically adjusted to the lens of a good photographic camera, photographs of objects a long distance off as if the operator were comparatively close to them. Consequently, an object five or ten miles away, which, by ordinary photography, would cover on the photograph a space an inch square, can be made to cover, by *telephotography*, a space sixteen, thirty-two, or sixty-four inches square, depending on the magnifying power of the lens and the size of the camera used. The advantage of this is apparent, for a telephotograph of an enemy's position gives a commanding officer a bird's-eye view of the ground, of the enemy's forces and their positions, of his trenches and gun emplacements, all accurately drawn to scale and on a sheet of a size convenient for study and reference. The range of such a lens is practically unlimited, and useful photographs are readily obtained at distances beyond gun range; moreover balloons can be utilized for obtaining views from above the surface of the earth.
> *Army and Navy Jour.*, July 14, 1900, p. 1097.

telephotoscopy (tel″ẹ̄-fọ̄-tos′kọ̄-pi), *n.* [Gr. τῆλε, afar, + φῶς (φωτ-), light, + -σκοπια, < σκοπεῖν, view.] Same as ★*teleëlectroscopy.*

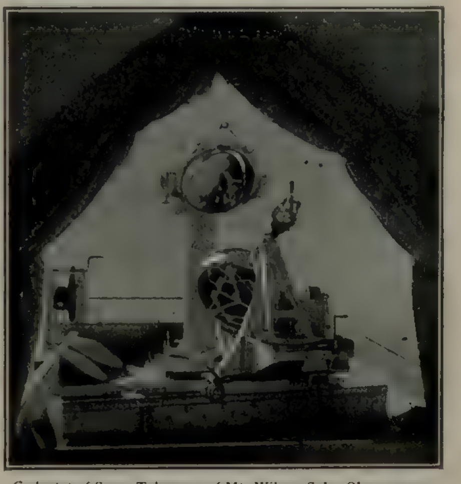
teleplastic, *a.* **2.** In *elect.*, noting a device for the production, at a distance, by electrical means, of the facsimile of a figure or object in relief.

telepositive (tel-ẹ̄-poz′i-tiv), *a.* [Gr. τῆλε, afar, + E. *positive.*] See the extract under ★*telenegative* and *telephotographic* ★*lens.* *Sci. Amer. Sup.*, Sept. 30, 1905, p. 24861.

telepost (tel′ẹ̄-pōst), *n.* [Gr. τῆλε, afar, + E. *post.*] A name given to a system of machine or automatic telegraphy invented by Delany in which messages are prepared for transmission by means of properly spaced perforations of tape. *Jour. Franklin Inst.*, March, 1908, p. 173.

telerythrin (tel-er′i-thrin), *n.* [Gr. τέλος, end, + ἐρυθρός, red, + *-in*².] A derivative of orsellic ether, itself obtained from the dyers' lichen, *Roccella tinctoria.* When dissolved in aqueous ammonia and exposed to the air, it assumes a dark wine-red color.

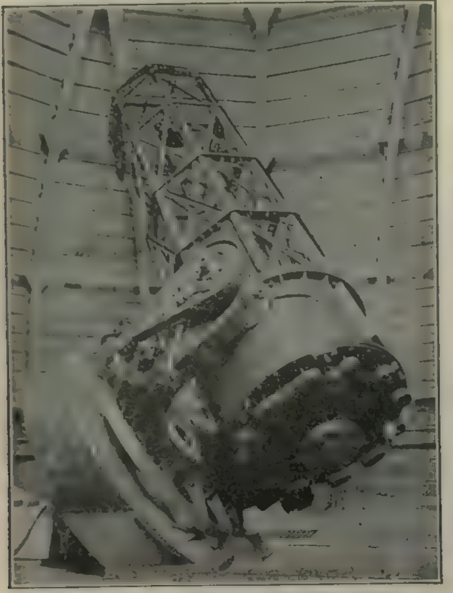
telescope, *n.*—**Amici's telescope,** a prismatic telescope of low power, consisting of two of Brewster's teinoscopes, with their planes of refraction perpendicular to each other.—**Astronomical telescope,** a telescope especially designed for astronomical use: the eyepiece inverts the image: opposed to *terrestrial telescope.*—**Dumb telescope,** the lensless tube belonging to the sextant, which gives a direct line of sight into the horizon-glass.—**Féry's thermo-electric telescope,** a device for determining the temperature of incandescent bodies. It consists of an observing-telescope with a thermo-electric junction in the eyepiece.—**Horizontal telescope,** a telescope mounted permanently in a horizontal position and into which the shifting celestial object is reflected by a system of plane mirrors which automatically counteract the diurnal motion of the celestial object and make it apparently remain stationary.—**Panoramic telescope,** a telescope which by an ingenious mechanism and combination of prisms enables the observer, without moving his eye, to turn his view horizontally in any direction and to see objects erect and magnified just as if he were looking through an ordinary field-glass.—**Photographic reflecting telescope,** a reflecting telescope specially arranged for stellar photography. Also called *photographic reflector.*—**Prismatic telescope,** a telescope in which long focus is combined with compactness of form by repeated total reflections of the beam between the objective and eyepiece by means of a system of prisms within the telescope tube. The prismatic system employed is usually that devised by Porro. See *Porro's* ★*prisms.*—**Pyrometric telescope,** an instrument for determining the temperature of incandescent or glowing bodies by measuring the length of the



Cœlostat of Snow Telescope of Mt. Wilson Solar Observatory: viewed from inside the canvas house.

In this particular form of horizontal telescope, the tube is replaced by a long, narrow canvas house, within which, near one end, is situated the concave mirror which forms the image; at the other end, outside, the system of mirrors called the cœlostat or heliostat, according to its mode of operation. In the illustration, the lower mirror (cœlostat proper) revolves by clockwork about an axis parallel to the axis of the earth, at a rate one half as fast as the earth revolves; as a result of this motion, the beam which the mirror reflects remains stationary. The upper mirror may be so shifted and adjusted as to intercept the stationary beam and reflect it into the concave mirror at the other end of the canvas house.

waves of light given off by them, or the amount of the polarizing effect, upon this light, of optical crystals.—**Reflecting telescope.** In both the Gregorian and the Cassegrainian forms (see *telescope*, 1) the observer looks toward the object just as with a refractor. In the Newtonian form, which is the most used, the small mirror is plane, and is set at an angle of 45°, so that the rays are reflected out at the side of the tube. Finally, in the front-view or Herschelian form the small mirror is dispensed with, the speculum being slightly tilted so as to throw the image to one side of the mouth of the tube. This saves the loss of light due to the second reflection, but involves some injury to the definition, unless, indeed, the speculum is now ground and polished with the axis or vertex of its paraboloidal figure at one edge, instead of at the center of the speculum as in the other forms; or unless the focal length of the instrument is very great as compared with its aperture, as in the case of the great horizontal reflecting telescope recently constructed at the Yerkes Observatory. Although the reflecting telescope is entirely free from chromatic aberration, nevertheless, as constructed in the past, it has failed to give as perfect definition, when used for visual observations, as the best refracting telescopes give. In astronomical photography and spectroscopy, however, the perfect achromatism of the reflecting telescope is of supreme importance; recently the most remarkable and perfect photographs of nebulæ and star-clusters which have yet been secured have been made with reflecting telescopes. It is certain that this type of telescope is only now being developed to the state of refinement which has already been attained in the case of the refractor. The speculum is perhaps easier and certainly much less costly to construct than an achromatic object-glass of the same aperture; hence, the largest telescopes ever made have been reflectors. At the head of the list stands the six-foot "leviathan" of Lord Rosse, erected in 1845, and still in use; it is of the Newtonian form. The five-foot silver-on-glass Cassegrainian reflector of Mr. Common, erected in 1889, stands next, and there are in existence a number of smaller instruments with apertures of three and four feet. Herschel's great telescope, erected in 1789, but long since dismantled, was 48 inches in diameter and 40 feet long. The magnifying power of the telescope depends upon the ratio between the focal length of the object-glass or speculum and that of the eyepiece. (See *eyepiece*.) It can therefore be altered at pleasure by merely exchanging one eyepiece for another. As a rule, the highest power practically available with the best object-glasses, and under the best circumstances, is from 75 to 100 to every inch of aperture. The illuminating power is proportional, other things being equal, to the area of the object-glass or the speculum; so that a telescope of 12 inches aperture ought to give four times as much light as one with a 6-inch lens; practically, however, the larger lenses, on account of the increase in thickness of the glass, do not reach their theoretical performance. A modern reflecting telescope of moderate size, with its silvered-glass mirrors or specula in good condition, is about equal in light-gathering power to a refractor of the same aperture. While in refracting instruments the difficulties due to imperfect achromatism, as well as the percentage of light lost in transmission, increase rapidly with increase of size of the objective, in the case of the reflector a large instrument is as perfectly achromatic as a small one, and the percentage of light lost by absorption and reflection does not increase with increase of aperture. This advantage of the reflector must become more and more important as larger and larger telescopes are made. With the present great improvements in glass-making, in optical work, and in the materials and methods of modern mechanical construction, it is difficult to assign a limit to the possible size of the modern reflecting telescope. In the new 60-inch reflector of the Carnegie Observatory, on Mt. Wilson, designed and constructed by Ritchey, and erected in 1908, all details of the optical work, telescope mounting, dome and building have been carried out with a degree of refinement and completeness never before attempted in either reflector or refractor.—**Submarine telescope.** Same as *water-telescope* (*a*) (which see, under *telescope*).—**Thermal telescope,** a reflecting telescope with a thermo-electric pile adjusted at its focus, devised by Joseph Henry, in 1845, for measuring the heat radiated from distant objects such as clouds and solar spots.—**Tower telescope,** a reflecting telescope the objective of which is fixed, light from any desired direction being reflected to it from a plane mirror or cœlostat mounted at the top of a vertical tower. *Science*, Jan. 31, 1908, p. 167.



Five-foot Reflecting Telescope of Mt. Wilson Solar Observatory.

The characteristic features are: the rigid skeleton steel tube supporting the mirror which reflects back the converging beam of light; the counterpoising weights which float the large mirror; the massive steel fork which supports the telescope in such a way as to give it free play in declination; and the large, hollow steel drum which, floating in a tank of mercury, supports the greater part of the twenty odd tons of weight, thus relieving the right ascension axis and allowing the telescope to move with a free, smooth motion as it follows the diurnal motion of the stars. The massive base of the telescope, the axis, and the driving mechanism are beneath the floor of the dome.

telescope-boiler (tel′e-skōp-boi″ler), *n.* A boiler having a shell with telescopically arranged sheets.

telescope-joint (tel′e-skōp-joint), *n.* A joint in which the external surface of one pipe or tube, or of a rod, is made to slide within the internal surface of another tube, as the tubes of a telescope move on one another.

telescope-sight, *n.* The line of collimation marked by cross-wires in the telescope is the line of sight. The telescope is mounted on a horizontal axis so as to provide the necessary elevation for the line of sight corresponding to the range. All recent naval guns are fitted with telescope-sights.

telescope-word (tel′e-skōp-wėrd), *n.* A word containing parts of two or more words 'telescoped' together, forming a humorous compound: for example, 'Shakonian,' composed of 'Shak(sperian)' and '(Bac)onian.' See ★*portmanteau-word*.

Telescopic pipe. See ★*pipe*¹.

telescriptor (tel′ẹ-skrip-tọr), *n.* [F. *telescripteur*; < Gr. τῆλε, afar, + L. *scriptor*, writer.] 1. A form of printing-telegraph with keyboard transmitter and an automatic machine receiver of the revolving type-wheel pattern.—2. An instrument devised for the automatic recording, at the receiving station, of telephone messages.

teleseism (tel′ẹ-sīsm), *n.* An earth tremor, as recorded on a seismograph, which has its origin in some disturbance remote from the recording station.

teleseme, *n.* 2. A range-finder, invented by a Dutch military officer, used in the Dutch army.

telesis (tel′ẹ-sis), *n.* [NL., < Gr. τελεσι-, a combining form of the verb τελεῖν, bring to completion, taken as the stem of an abstract noun *τέλεσις, completion.] Progress consciously planned and produced by intelligently directed effort. *L. F. Ward*, Outlines of Sociol., p. 181.—**Collective telesis,** adaptation of means to ends by society. *L. F. Ward*, Outlines of Sociol., p. 186.—**Individual telesis,** the conscious adaptation of conduct by an individual to the achievement of his own consciously apprehended ends. *L. F. Ward*, Outlines of Sociol., p. 190.—**Social telesis,** the intelligent direction of social activity towards the achievement of a desired and understood end. *L. F. Ward*, Outlines of Sociol., p. 190.

telesmeter (tẹ-les′me-tėr), *n.* [Irreg. *teles*(*cope*) + (*tele*)*meter*.] A special form of telemeter which has a micrometer in the telescope to measure the angular distance between the fixed marks on the rod at the distant station.

telethermogram (tel-ẹ-thėr′mọ-gram), *n.* [Gr. τῆλε, afar, + E. *thermogram*.] A record of variations in temperature made automatically by a telethermograph.

teletype (tel′ẹ-tīp), *n.* [*tele*(*graph*) + *type*.] A type-printing telegraph.

teletypic (tel-ẹ-tip′ik), *a.* [*teletyp*(*e*) + *-ic*.] Of or pertaining to teletypes or printing-telegraphs. *Sci. Amer.*, Sept. 17, 1904, p. 193.

teletypograph (tel-ẹ-tī′pọ-gråf), *n.* A form of synchronous machine telegraph, devised by Tavernier, in which the message is recorded at the receiving station by perforating a tape. This perforated tape operates an automatic type-setting machine by which means the message is prepared for printing.

teleutosorus (tẹ-lū-tọ-sō′rus), *n.*; pl. *teleutosori* (-rī). [NL., < Gr. τελευτή, completion, + σωρός, a heap.] A single fertile hyphal mass producing teliospores or teleutospores in uredineal fungi.

> The nearest approach to a specific term analogous to æcidium is *teleutosorus*, and to a collective term analogous to uredo is teleutostage. *Bot. Gazette*, XXXIX. 219.

teleutosporic (tẹ-lū-tọ-spor′ik), *a.* Pertaining to or characterized by teleutospores.

> Seven species of rusts were successfully cultivated and the connection between the æcidial and *teleutosporic* generations established. *Science*, Feb. 20, 1903, p. 307.

telial (tē′li-al), *a.* [*teli*(*um*) + *-al*¹.] Of or pertaining to a telium or teleutosorus.

telics (tel′iks), *n.* [Plural of *telic*. See *-ics*.] A division of sociology which deals with consciously planned and directed progress. *L. F. Ward*, Outlines of Sociol., p. 180.—**Individual telics,** the study or science of the conscious adaptation of individual conduct to the achievement of individual ends. Compare *individual* ★*telesis*. *L. F. Ward*, Outlines of Sociol., p. 190.—**Social telics,** a division of social science concerned with social telesis (see *social* ★*telesis*). *L. F. Ward*, Outlines of Sociol., p. 190.

telini-fly (te-lē′nẹ-flī), *n.* An East Indian and Chinese cantharid beetle, *Mylabris cichorii*.

teliochordon (tē″li-ō-kôr′don), *n.* [Gr. τέλειος, perfect, + χορδή, chord.] A form of enharmonic harpsichord or pianoforte, invented by Clagget of Dublin in 1788, in which each digital of the keyboard was capable of producing any one of three slightly different tones at will.

teliospore (tel′i-ọ-spōr), *n.* [Gr. τέλειος, finished, + σπορά, seed (spore).] Same as *teleutospore*.

telium (tē′li-um), *n.*; pl. *telia* (-ạ̈). [NL. *telium*, < Gr. τέλειον, neuter of τέλειος, complete, perfect.] The name given by Arthur to the teleutosorus of uredineal fungi.

teller, *n.* 3. One of the successive strokes on a church bell rung to tell the sex and age of a person who has just died. [Eng. dial.]

> In our villages it is the practice, at the moment of death, to call up the sexton who then goes to the church. . . . First of all he rings what are called the *Tellers*; then after a pause he continues to toll slowly on his great bell. [Newcastle-upon-Tyne.] *N. and Q.*, 10th ser., I. 350.

telltale, *n.*—**Rudder-telltale.** Same as ★*helm-indicator*.

telluradiometer (tel″ū-rā-di-om′e-tėr), *n.* [L. *tellus* (*tellur-*), earth, + NL. *radius*, ray, + Gr. μέτρον, measure.] An instrument that measures the radiation of heat from the ground or the equivalent surface of a black-bulb thermometer; specifically, the Dawson telluradiometer, which is essentially a sunshine-recorder.

tellurhydric (tel-ụr-hī′drik), *a.* [*tellur*(*ic*) + *hydr*(*ogen*) + *-ic*.] Noting an acid, telluretted hydrogen, H_2Te, which behaves as a feebly acid substance, precipitating sundry metals as tellurides from solutions of their salts when the gas is passed through such solutions. Also called *hydrotelluric acid*.

Telluric climate, line. See ★*climate*, ★*line*².

telluride, *n.* 2. An ore of a precious metal (gold or silver) which contains tellurium as a constituent in notable proportion, the presence of this element entailing certain changes in the usual course of metallurgical treatment.

tellurion, *n.*—**Orthogonal tellurion** (or **tellurium**), an apparatus for exhibiting the mathematical relations of the earth, in which the principles of orthogonal projection are applied. *Nature*, Sept. 14, 1905, p. 493.

tellurism, *n.* 2. A supposed relation of soil to disease.

tellurist (tel′ụ-rist), *n.* [*tellur*(*ism*) + *-ist*.] 1. A believer in tellurism as a vital principle spread throughout nature and circulating in all bodies. See *tellurism*, 1.—2. One who has a disease of supposed telluric (soil) origin.

tellurium, *n.* 2. [NL.] Same as *tellurion*.—**Radioactive tellurium.** Same as *Marckwald's* ★*rods*.—**Tellurium dioxid,** a white solid substance produced by burning tellurium in the air or by ignition of the nitrate. It is fusible and volatile without decomposition, and has feebly basic properties, forming salts with some acids, but in the main behaves as an acid oxid, forming salts with the stronger bases. Its formula is TeO_2.—**Tellurium sulphoxid.** See ★*sulphoxid*.—**Tellurium tetrachlorid,** a white substance obtained by the action of chlorin in excess on gently heated tellurium. It melts at 224° C., is decomposed by water, and forms double salts with a number of metallic chlorids.—**Tellurium trioxid,** an orange-yellow crystalline substance produced by moderate heating of crystallized telluric acid. At a higher temperature it is decomposed into oxygen and tellurium dioxid. Its formula is TeO_3.—**White tellurium,** an ore of white or yellowish-white color, in foliated crystals, found at Nagy-Ag in Transylvania; a telluride of gold and silver, containing in small proportion antimony and lead, perhaps only as impurities. It may be only a variety of sylvanite (which see). Also called *müllerine*.

tellursulphur (tel′ụr-sul-fėr), *n.* An orange-red variety of sulphur from Japan, containing a small amount of tellurium.

telmatological (tel″ma-tọ-loj′i-kal), *a.* [*telmatolog*(*y*) + *-ical*.] Of or pertaining to telmatology or the study of swamps.

telmatology (tel-ma̤-tol′ọ-ji), *n.* [Gr. τέλμα (τελματ-), swamp, + *-ology*.] The scientific study of the organic contents and the formation of post-glacial swamp-deposits, as peat-bogs.

> A brief review of the methods for collecting, preserving and examining the plant-remains in recent deposits,

as these methods are now generally employed by paleobotanists, with a few additions from the writer's experience in the study of *telmatology*.
Amer. Nat., Nov., 1903, p. 785.

Telmatotherium beds. See ★*bed*1.

teloblast (tel′ọ-blȧst), *n.* [Gr. τέλος, end, + βλαστος, germ.] In *embryol.*, one of the large cells situated at the posterior growing end of the body in certain annelids and arthropods and budding forth anteriorly a row of cells which proliferates to form one of the definitive series of organs such as the nerve-chain, nephridia, and mesoblastic somites. *Whitman*, 1887.

teloblastic (tel-ọ-blas′tik), *a.* [*teloblast* + *-ic*.] Of or pertaining to teloblasts.

telodendrion (tel-ọ-den′dri-ọn), *n.*; pl. *telodendria* (-ạ̈). [Gr. τέλος, end, + δενδρίον, dim. of δένδρον, tree.] In *neurol.*, the ultimate brush-like or tree-like termination of the axon of a nerve-cell.

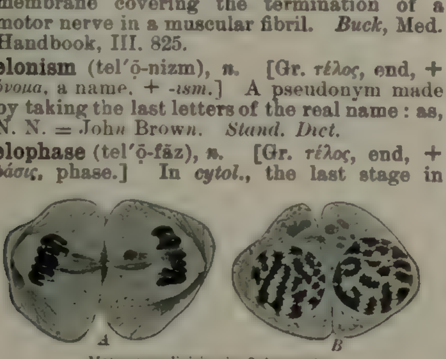
Telodynamic transmission, a system of transmitting power over considerable distances by means of endless wire ropes over pulleys, originating with C. F. Hirn in Germany. The basal idea was to run light wire cables at a linear velocity so great that the strain in pounds should be light. Speeds of 100 to 130 feet per second have been used. When the distance between sheaves is over 1,000 feet intermediate or supporting sheaves are introduced at about 400 feet intervals. In very long transmissions, to diminish cable weight and lateral pull on the bearings, a relay pair of transmitting sheaves is introduced. Two pulleys side by side and forming one on a common axis receive one cable from one direction and send the power forward by a second.

telokinesis (tel″ọ-ki-nē′sis), *n.* [Gr. τέλος, end, + κίνησις, motion.] The closing phases of karyokinesis, or mitosis: same as ★*telophase*.

telolemma (tel-ọ-lem′ạ̈), *n.*; pl. *telolemmata* (-ạ-tạ̈). [Gr. τέλος, end, + λέμμα, husk.] The membrane covering the termination of a motor nerve in a muscular fibril. *Buck*, Med. Handbook, III. 825.

telonism (tel′ọ-nizm), *n.* [Gr. τέλος, end, + ὄνομα, a name, + *-ism*.] A pseudonym made by taking the last letters of the real name: as, N. N. = John Brown. *Stand. Dict.*

telophase (tel′ọ-fāz), *n.* [Gr. τέλος, end, + φάσις, phase.] In *cytol.*, the last stage in karyokinesis, or mitosis, just preceding the reconstitution of the nuclei in the daughter-cells that have resulted from the division of the mother-cell. *Amer. Nat.*, May, 1904, p. 369.



Maturation-division in *Salamandra*.
A, telophase; *B*, ensuing pause.
(From Wilson's "The Cell.")

Telosporidia (tel-ọ-spọ-rid′i-ạ̈), *n. pl.* [NL., < Gr. τέλος, end, + NL. *sporidium* (which see).] A group of sporozoans in which the reproductive phase of the life-cycle is distinct from, and follows after, the trophic phase.

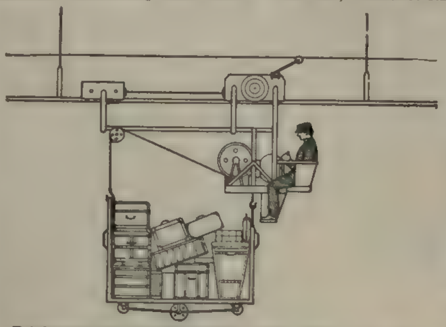
Telotremata (tel-ọ-trē′mạ-tạ̈), *n. pl.* [NL., < Gr. τέλος, end, accomplishment, + τρῆμα, a hole.] In Beecher's classification, an order of articulate brachiopods in which the pedicle-opening is shared by both valves in nepionic and neanic stages, confined to the ventral valve in later stages, and usually more or less inclosed by deltidial plates in ephebic (adult) stages. The order contains the superfamilies *Rhynchonellacea*, *Terebratulacea*, and *Spiriferacea*, the genera of which are distributed throughout all formations from the Cambrian to recent age. Also *Teleotremata*.

telotrematous (tel-ọ-trē′mạ-tus), *a.* Pertaining to or having the characters of the *Telotremata*.

telpher, *a.* **II.** *n.* The motor employed in hauling the carriers of a telpherage system.

> It is the preparation of the load for the horse's services which runs up transportation cost. Even though the price of the horse should be pitted against that of the *telpher*, advantage would be in favor of the latter on account of the greatly accelerated speed of movement.
> *Jour. Franklin Inst.*, Oct., 1904, p. 267.

telpherage, *n.* Telpherage lines are formed of steel cables suspended by brackets from poles or buildings and by various devices in crossing streams, turning corners, etc. Such lines may pass through or over buildings, under or over bridges, railroads, streams, or streets, and surmount considerable grades. A telpherage system may include single or double tracks, sidings, crossovers, branch lines, loops, and switches, or any other arrangements required by the business in which it is to be used. To supply current to the telphers, one or, usually, two wires are suspended over each track, every telpher taking its current by means of a trolley. The telphers may run alone, every one carrying a load suspended beneath it, or may have one or more trailers carrying a part of the load or other loads, and two or more telphers may, with their trailers, be made up into a train. The load, whatever its character, is suspended under the telpher or trailer on a platform, or in a bucket, car, or cage, or it may be carried in a sling or net or by means of barrel-hooks. Nearly all telpherage systems now include an electric or mechanical hoist with each telpher, so that the load can be lifted from the ground to the elevated trackway, and may then be transported to its destination and again lowered to the ground, or to a wagon or freight-car, or to the hold of a vessel. The operation of a telpherage line may be almost completely automatic and managed from one station, or it may be controlled by an operator, called a *telpherman*, who rides with the load as it travels on the line. The automatic lines may be controlled from either end of the line, the movement of one electric switch causing the hoist on the telpher to lift the load to the trackway, and also causing the telpher to proceed to its destination with the load, and, in the case of freight in bulk, to dump it and return empty to the starting-point. Automatic lines also employ carriers that may be loaded by hand, hoisted to the trackway, despatched to any point on the line or branch line, and lowered to the car, floor, or storage-place, ready to be unloaded by hand.



Telpherage line, showing telpher, trolley, trailer, and load, the operation being controlled by a telpherman.

telpher-carrier (tel′fėr-kar″i-ėr), *n.* A car or other vehicle used to transport the loads in a telpherage system. See *telpherage* and ★*telpherage*.

telpher-line (tel′fėr-līn), *n.* A line or route for transport by ★telpherage (which see).

telpherman (tel′fėr-mạn), *n.* The operator in charge of the machinery of a telpherage system.

> With a machine and an assistant, a *telpherman* can convey 250 tons per day over a distance of 1,000 feet.
> *Jour. Franklin Inst.*, Oct., 1904, p. 266.

telpher-railway (tel′fėr-rāl″wā), *n.* A line or way for the transfer of material in suspended cars. See ★*telpherage*.

telpher-road (tel′fėr-rōd), *n.* Same as *telpher-way*.

Telugu, *n.* **2.** One who speaks the Telugu language. The Telugus number some 20,000,000, and are one of the most important of the half-civilized Dravidian tribes of southern India. They occupy a considerable stretch of country north and northwest of Madras. Also called *Telingas*.

telum (tē′lum), *n.*; pl. *tela* (-lạ̈). [NL., < L. *telum*, dart.] Meinert's name for the chief piercing organ of the dipterous moth; the hypopharynx.

> Meanwhile the hypopharynx, the largest of all the trophi (omnium trophorum maximus), constitutes the chief piercing organ (*telum*) of Diptera.
> *A. S. Packard*, Text-book of Entom., p. 78.

tembe (tem′be), *n.* [E. African.] A village built in the form of a large rectangular court surrounded and inclosed by a continuous row of mud huts which open upon it.

> In most of the new villages there is no protecting wall round the huts. But the old villages are what are called *tembes*: they have two mud walls, some 6 feet apart; these are divided into rooms, and have a mud roof all the way round.
> *Geog. Jour.* (R. G. S.), XI. 623.

temblor (tem-blōr′), *n.* [Sp.] A trembling; specifically, an earthquake (*temblor de tierra*).

temibility (tem-i-bil′ị-ti), *n.* [Irreg. < It. *temere* (L. *timere*), to fear.] The impressibility of the criminal disposition by fear.

> Garofalo's new term and principle of '*temibility*' is perhaps of great service. He would thus designate the quantum of evil feared that is sufficient to restrain criminal impulsion.
> *G. S. Hall*, Adolescence, I. 408.

Temnospondyli (tem-nọ-spon′di-lī), *n. pl.* [NL., < Gr. τέμνειν, cut, + σπόνδυλος, a vertebra.] A suborder of stegocephalian *Amphibia* in which the vertebræ are composed of several pieces, usually of the rachitomous type, sometimes embolomerous: occurring in rocks from the Carboniferous and the Lower Trias. The basioccipital region is usually, and the carpus and tarsus are always, ossified. The teeth have radially infolded walls.

temnospondylous (tem-nọ-spon′di-lus), *a.* [NL. *Temnospondyl*(*i*) + *-ous*.] **1.** Pertaining to or having the characters of the suborder *Temnospondyli*.—**2.** Having the vertebræ composed of several pieces, in a manner comparable to that of some of the ganoid fishes.

temp. An abbreviation (*b*) of *temperature*; (*c*) of *temporal*; (*d*) of *temporary*.

temper, *v. t.* **11.** In *leather-manuf.*, to apply to (hides) a process in which the hides, after they are practically finished, are dampened, covered in piles, and allowed to stand and season, the drier hides absorbing moisture from the damper ones, and vice versa. *Modern Amer. Tanning*, p. 163.

temper, *n.* **10.** A metal or alloy added to another to produce certain physical properties; specifically, (*a*) an alloy of one part of copper and two of tin to be added to pure tin to produce a fine grade of pewter; (*b*) an alloy containing arsenic with lead sometimes added to the molten metal to give hardness to shot. *Thorpe*, Dict. of Applied Chem., III. 805.—**Carbon temper**, a term used to indicate the proportions of carbon in steel. The more carbon steel has the harder will it become when suddenly cooled from a cherry-red heat.

temperament, *n.*—**Unequal temperament**, in *music*, any form of temperament not based on equal semitones.

temperature, *n.*—**Corpuscular temperature.** See ★*corpuscular*.—**Critical temperature.** (*a*) See *critical point* (*b*), under *critical*. (*b*) In *phenol.*, the temperature below which the germination of the seed and the growth of the plant do not take place.—**Critical temperature of solution.** See ★*solution*.—**Cryohydric temperature.** See ★*cryohydric*.—**Cumulative temperature**, the sum total of the day-degrees of growing-temperatures counted above 42° F. as the point at which the growth of plants may be supposed to begin. The summation begins with the first of January, the first of December, or the date of sowing the seed, according to special crop or plant.—**Effective temperatures**, in *phenol.*, the temperatures at which vegetative processes proceed at an appreciable rate; specifically, all temperatures above 43° F.—**Eutectic temperature.** Same as *eutectic* ★*point*.—**Hering's theory of temperature-sensations** or **of the temperature-sense.** See ★*sensation*.—**Inversion of temperature**, increase, instead of decrease, of temperature with altitude above the ground.—**Optimum temperature**, in *phenology*, the temperature of the air or soil most advantageous to the development of any specific seed or plant; it varies with the plant and the phase of development.—**Potential temperature**, the temperature of a mass of gas under a given standard condition as to pressure and volume. For any other pressure and volume the potential temperature is calculated by the adiabatic formula.—**Pump-handle type of temperature**, a temperature showing rapid oscillations of rise and fall through several degrees. *Buck*, Med. Handbook, II. 413.—**Scale of absolute temperatures.** See *thermometric* ★*scale*.—**Sensible temperature**, the temperature recorded by the wet-bulb thermometer, which is assumed to be the temperature felt by the nerves of the skin. *M. W. Harrington*.—**Temperature coefficient, constant.** See ★*coefficient*, ★*constant*.—**Temperature correction**, the numerical quantity added to or subtracted from any physical measurement or instrumental reading to correct the same for the influence of temperature.—**Temperature gradient.** See ★*gradient*.—**Temperature of condensation**, in *meteor.*, the temperature to which the atmospheric vapor must be cooled in order to saturate any given volume and begin the process of precipitation and the formation of haze, fog, dew, or frost; the dew-point.—**Temperature sense**, a general name for the senses of warmth and cold. *W. Wundt* (trans.), Human and Animal Psychol., p. 111.—**Temperature wind-rose.** See ★*wind-rose*.—**Thermodynamic scale of temperatures.** See *thermometric* ★*scale*.

temperature-curve, *n.* **2.** A curve showing the variations of body temperature at definite intervals in the course of a fever.

temperature-spot (tem′pėr-ạ̈-tụ̄r-spot″), *n.* A general name for the cutaneous 'spots' or unit-areas sensitive to warmth and cold. *E. B. Titchener*, Exper. Psychol., I. i. 54.

tempering-machine (tem′pėr-ing-mạ-shēn″), *n.* A heating-machine having reels which support trays on which needles and other small steel articles are placed to be tempered, or a furnace with a spiral conveyer or a tumbling-barrel. The aim is to expose the steel pens, screws, buttons, saw-teeth, or other objects to the action of heat and the mechanical action of hot sand or other cleaning material in some form of agitator.

tempering-pit (tem′pėr-ing-pit″), *n.* The circular pit or box in which a tempering-wheel works.

tempering-tank (tem′pėr-ing-tangk″), *n.* In a bakery, a steam-heated tank for warming or tempering the water used in making dough. It measures and delivers any desired quantity of water at any required temperature through a pipe to the mixing-machine.

tempering-vat (tem'pėr-ing-vat″), *n.* A tank for holding milk or cream while it is being tempered to bring it to the right temperature for churning or other treatment: used in creameries. It consists of two tanks, one within the other, the outer containing water which is heated by steam-pipes or cooled by ice and the inner holding the milk or cream. It is provided with thermometers for indicating temperatures in both tanks, and with gages, draining- and emptying-cocks, etc.

temper-lime (tem'pėr-līm), *n.* Slaked lime added in small proportion to the juice of the sugar-cane prior to its evaporation, in order to neutralize any acidity and thus prevent the formation of uncrystallizable sugar, and also to aid in the clarification. *Sadtler*, Handbook of Indust. Chem., p. 129.

tempête (toṅ-pāt'), *n.* [F., lit. 'tempest': see *tempest.*] 1. A recent form of quadrille or country-dance.—2. The music for this dance, which is in duple rhythm.

temple¹, *n.*—**Temple money**, brass, copper, and bronze tokens and medals resembling coins, cast in China and Japan, with magical devices and inscriptions: employed as amulets.

temple³, *n.*—**Trough-and-roller temple**, in *weaving*, a self-acting temple consisting of a semicircular iron trough or tube which extends across the cloth in the loom so as to keep it at full width: an old form of temple for light- and medium-weight fabrics. *T. W. Fox*, Mechanism of Weaving, p. 462.

temple-mound (tem'pl-mound), *n.* A variety of flat-topped or truncated mound, usually with a graded way to the top, and often with terraced sides, found in the eastern United States. Some of them are supposed to have been the sites of rude temples, but their use is not definitely known. *Keane*, Ethnology, p. 369.

templet, *n.* 6. In *ship-building*, a skeleton framework made of thin strips of wood (or occasionally of thin sheet-metal) used to form the outline of any part, as of a plate or bar which is to be fitted to a particular place in the structure. The templet is formed and marked from the parts already erected in place; it is then taken and laid flat on the plate or bar to be used, and the outlines and rivet-holes are transferred to the plate or bar, which can then be sheared, punched, and curved so as to fit the place into which it is to go.

templet (tem'plet), *v. t.* To make or fit by a templet. Also *template.*

> The outside or over-lapping plates are then worked, and are *templated* from the place they are intended to occupy on the ship. *Encyc. Brit.*, XXXII. 597.

tempo¹, *n.* 1. More general directions are *tempo moderato, ordinario*, or *commodo*, at a moderate, ordinary, or convenient pace (though *tempo ordinario* originally meant simply in common or quadruple rhythm), and also *tempo giusto*, in strict time or rhythm.

temporal². I. *a.*—**Temporal crest.** See ★*crest.*—**Temporal shield**, in *herpet.*, a good-sized horny plate, lying just back of the eye.—**Temporal sign.** See ★*sign.*

II. *n.* 2. In *ichth.*: (*a*) Same as *hyomandibular.* (*b*) Same as ★*pterotic. Starks*, Synonymy of the Fish Skeleton, p. 510. (*c*) Same as ★*sphenotic*, 2. *Starks*, Synonymy of the Fish Skeleton, p. 509.

temporalism (tem'pọ-ra̤l-izm), *n.* [*temporal* + *-ism.*] The theory or system of the temporal power of the papacy.

temporalist (tem'pọ-ra̤l-ist), *n.* [*temporal* + *-ist.*] An adherent of the theory or system of the temporal power of the papacy. *Outlook*, Nov. 18, 1899, p. 663.

temporofrontal (tem″pọ-rō-fron'ta̤l), *a.* Relating to both the temporal and the frontal bones or regions.

> In the Homo above alluded to the *temporo-frontal* suture is 20 mm. long, and the sphenoido-frontal 11 mm. *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 652.

temulentic (tem-ụ-len'tik), *a.* [NL. (*Lolium*) *temulent*(*um*) + *-ic.*] Pertaining to temuline.—**Temulentic acid**, an acid obtained from the alkaloid temuline.

temuline (tem'ụ-lin), *n.* [(*Lolium*) *temul*(*entum*) + *-ine*².] A narcotic poisonous alkaloid, $C_7H_{12}ON_2$, contained in *Lolium temulentum*: sometimes found in flour, because of the growth of the parent plant in wheat-fields.

ten. An abbreviation (*b*) of *tenor.*

tenalgia (te-nal'ji-a̤), *n.* [NL., < Gr. *τέν*(*ων*), tendon, + *ἄλγος*, pain.] Pain in a tendon.

tenancy, *n.*—**Cottier tenancy.** See ★*cottier.*

tenant¹, *n.*—**Cottier tenant.** See ★*cottier.*

ten-a-penny (ten'a̤-pen″i), *n.* A soldiers' nickname for the pompom gun.

> A Ballade of *Ten-a-penny*. . . . Alas! for a tune on the gay Pom-pom. *J. H. M. A.*, in War's Brighter Side, xxi.

To give (something) **ten-a-penny**, to fire a pompom at it.

> A fellow Pom-pom in the Opposing Army . . . catching the Field-battery crossing a Donga gave it *Ten-a-penny* for two Minutes to the Confusion of all concerned. *R. Kipling*, in War's Brighter Side, xii.

tench²† (tench), *n.* [A corruption of '*tent*(*iary*), an abbreviation of *penitentiary.*] A penitentiary. [Australia.]

> Prisoners' barracks, sir—us calls it *Tench*. *Caroline Leakey*, The Broad Arrow, II. 32, quoted in [E. E. Morris, Austral English.

Tendency theory, in *theol.*, the theory of the Tubingen school that the books of the New Testament, apparently artless productions, were put together for the purpose of upholding current opinions, and that they thus have a 'tendency.' See *Tübingen school*, under *school*¹.

tendential (ten-den'sha̤l), *a.* [L. *tendens*(*-t-*) + *-ial.* See *tendency.*] Having a tendency; of the nature of tendency; exhibiting a tendency or bias.

> It means greater suggestibility to the circle of ideas the subject is intent upon realizing, and deliverance, if not from the presence, at least from the power, of those other *tendential* ideas against which he has been struggling. *Amer. Jour. Relig. Psychol. and Education*, May, [1904, p. 75.

tendinitis (ten-di-nī'tis), *n.* [NL., < L. *tendo* (*tendin-*), tendon, + *-itis.*] Inflammation of a tendon.—**Tendinitis of the horse**, an inflammation of the tendons of horses, principally the flexor tendons, which results from strain or wrenching and produces great tenderness of the parts, with more or less severe lameness.

Tendinous ring of Arnold. Same as *annulus tendinosus.*—**Tendinous sensation.** See ★*sensation.*

tendon, *n.*—**Tendon-grafting**, an operation for joining the tendon of a paralyzed muscle to one of a normal muscle, which is thus made to perform the work of its weakened fellow.—**Tendon sensation.** See ★*sensation.*

tendon-sense (ten'do̤n-sens), *n.* In *psychol.*, one of the kinesthetic senses, endowed in all probability with but one sense quality, that of strain. *E. C. Sanford*, Exper. Psychol., p. 25

tendosynovitis (ten-dọ-sin-ọ-vī'tis), *n.* [NL., < L. *tendo* (*tendin-*), tendon, + NL. *synovia* + *-itis.*] Same as ★*tenosynovitis.*

tendovaginal (ten-dọ-vaj'i-na̤l), *a.* [L *tendo* (*tendin-*), tendon, + *vagina*, sheath, + *-al*¹.] Relating to a tendon and its enveloping sheath.

tendovaginitis (ten-dọ-vaj-i-nī'tis), *n.* [NL., < L. *tendo* (*tendin-*), tendon, + *vagina*, sheath, + *-itis.*] Inflammation of the sheath of a tendon.

tendril-climber, *n.* According to H. Schenck (followed by Schimper), tendril-climbers include all lianas which are supported by irritable organs curling around the support. They are divisible, therefore, into *leaf-climbers, leaf tendril-climbers, branch-climbers, hook-climbers, watchspring climbers*, and *stem tendril-climbers.*—**Branch-climber.** See ★*branch-climber.*—**Hook-climber.** See *hook-climber.*—**Leaf-climber.** See ★*leaf-climber.*—**Leaf tendril-climber**, a liana in which the supporting organ is a leaf or part of a leaf modified to a curling filament, as in the common pea, vetches, etc.—**Stem tendril-climber**, one of a large class of lianas with climbing organs which often closely resemble those of leaf tendril-climbers, but are shown to be axial by their position, also by the presence of rudimentary leaves, as in the grape-vine.—**Watchspring climber.** See ★*climber*¹.

tendrons de veau (toṅ-drôṅ' dẹ vō'). [F., 'gristle of veal': see *tendron* and *veal.*] The gristles from the breast of veal stewed in stock: served as an entrée.

tenebrionid (tẹ-neb'ri-ọ-nid), *n.* and *a.* I. *n.* One of the coleopterous family *Tenebrionidæ.*

II. *a.* Having the characters of or belonging to the family *Tenebrionidæ.*

Tenebrosi (ten-e-brō'sē), *n. pl.* [It., pl. of *tenebroso*, < L. *tenebrosus*, dark: see *tenebrous.*] A school of realistic painters in Italy in the seventeenth century who indulged in excessive effects of light and shade. The center of the movement was in Naples and the chief masters were Ribera and Caravaggio.

tenectomy (tẹ-nek'tọ-mi), *n.* [Gr. *τέν*(*ων*), tendon, + *ἐκτομή*, excision.] Excision of a portion of a tendon. *Lancet*, June 18, 1904, p. 1727.

teneramente (ten-ā-rä-män'tā̤), *adv.* [It., < *tenero*, tender.] In *music*, with tenderness: compare *dolcemente.*

tenial (tē'ni-a̤l), *a.* [*tænia* + *-al*¹.] Relating to a tænia in any sense, but especially to one of the bands of white nerve-matter in the brain which are so designated. *Buck*, Med. Handbook, II. 165.

tenicide, *n.* See *tænicide.*

tenifuge, *n.* See *tænifuge.*

Tenn. An abbreviation of *Tennessee.*

tennis-net (ten'is-net), *n.* A light cotton netting, used as a ball-stop or boundary in the game of lawn-tennis.

tenon, *n.* 2. A portion of a block of stone from which a work of sculpture is cut, allowed to remain as a temporary or permanent support.

tenonostosis (ten″on-os-tō'sis), *n.* [NL., prop. **tenontosteosis*, < Gr. *τένων*, tendon, + *ὀστέον*, bone, + *-osis.*] Same as ★*tenostosis.*

tenontagra (ten-on-tag'ra̤), *n.* [NL., < Gr. *τένων* (*τενοντ-*), tendon, + *ἄγρα*, a taking (seizure).] Gout in the tendons.

tenontitis (ten-on-tī'tis), *n.* [NL., < Gr. *τένων* (*τενοντ-*), tendon, + *-itis.*] Inflammation of a tendon; tendinitis.

tenontophyma (ten″on-tọ-fī'ma̤), *n.*; pl. *tenontophymata* (-ma̤-ta̤). [NL., < Gr. *τένων* (*τενοντ-*), tendon, + *φῦμα*, a tumor.] A tumor springing from a tendon.

tenoplasty (ten'ọ-plas-ti), *n.* [Gr. *τένων*, tendon, + *πλάσσειν*, form, mold.] Plastic surgery of the tendons.

Tenore buffo, a tenor singer in comic opera.

tenostosis (ten-os-tō'sis), *n.* [Gr. *τένων*, tendon, + *ὀστέον*, bone, + *-osis.*] Ossification of a tendon.

tenosynovitis (ten-ọ-sin-ọ-vī'tis), *n.* [Gr. *τένων*, tendon, + NL. *synovia* + *-itis.*] Inflammation of a tendon with its enveloping sheath.

tenotomist (tẹ-not'ọ-mist), *n.* [*tenotom*(*y*) + *-ist.*] One who performs tenotomy.

Tensile strain, the deformation caused in any material by a stress which tends to separate the particles or elements which compose it by a pull in the direction of their length.—**Tensile strength**, the resistance offered by any material to a stress or pull in the direction of the length of the piece, or to one which tends to cause it to fail by pulling apart.—**Tensile stress**, the effort or pull exerted on a bar or structure which tends to make it fail by pulling apart.—**Ultimate tensile strength.** See ★*strength.*

tensimeter (ten-sim'e-tėr), *n.* An instrument for measuring the vapor tension of the water vapor from a salt containing water of crystallization.

tension, *n.* 8. In *phytogeog.*, same as ★*tension-line.*—**Center of tension.** See ★*center*¹.—**Solution tension**, the tension or pressure by virtue of which the particles of a dissolving substance are driven into solution. When the solution tension equals the osmotic pressure, equilibrium is established, the dissolving substance ceases to diminish, and the concentration of the solution becomes constant.—**Tension rupture.** See ★*rupture.*

tension-beam (ten'sho̤n-bēm), *n.* A beam or roller in a loom, designed to keep the warp-threads taut.

tension-brace (ten'sho̤n-brās), *n.* A term incorrectly used to describe a tension-member such as a tie-rod or bar intended to offer resistance to a tension stress. A brace is properly a compression-member used as a stiffening element to resist a tendency to deform.

tension-carriage (ten'sho̤n-kar″ā̤j), *n.* A small four-wheeled car which travels on a short piece of track and carries a pulley having a hollow face to receive and support a traveling endless wire-rope cable. Such a cable, used in a cable-road or elevator or as the traveling cable of a wire-rope cableway, wire-rope tramway, or transporter, must be kept at a certain tension and is carried round the pulley of the tension-carriage. Where the carriage moves upon a horizontal track, a weight, suspended in a well at the end of the track by a rope attached to the car and passing over a pulley at the top of the well, serves to maintain the required tension by drawing the carriage along the track, the carriage moving forward or backward on its track and raising or lowering the weight under variations in the strain upon the cable caused by changes in the load. Where the carriage moves upon a vertical track its own weight maintains the required tension on the cable.

tension-clip (ten'sho̤n-klip), *n.* A device which, by a stress of hauling or pulling, is caused to grip a moving element, while a release of the tension causes the grip also to release: used in cable-railways or continuous wire-rope elevators. The usual principle is that of an oblique pull on the clip, which causes it to cant sidewise and bring a side pressure against the moving element sufficient to cause friction and prevent slipping when the effort comes on.

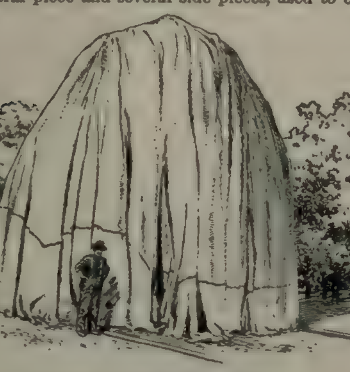
tension-fault (ten'sho̤n-fâlt), *n.* A fault produced by the pulling apart of the sides of a fissure in the earth's crust. As the fissure is almost always inclined, the upper side slips down on the lower. It is a normal or gravity-fault.

tension-line (ten′shọn-līn), *n.* In *phytogeog.*, the neutral border between two competing types of vegetation. Same as ★*ecotone.* Also called *line of tension.* *C. MacMillan.*

tent[1], *n.* **5.** The web of a colony of tent-caterpillars.—**6.** A tent-shaped cover.

> When the parts to be treated are all covered, the diluted acid is placed under the *tent*, the cyanide of potassium is dropped in, and the *tent* immediately closed. The gas is exceedingly poisonous, and should not be inhaled. *E. G. Lodeman*, The Spraying of Plants, p. 149.

Sheet-tent, a large octagonal sheet of duck, consisting of a central piece and several side pieces, used to cover citrus trees for fumigation with hydrocyanic-acid gas against scale-insects. *Yearbook U. S. Dept. Agr.*, 1896, p. 229.—**Tent of meeting**, a Jewish tabernacle.

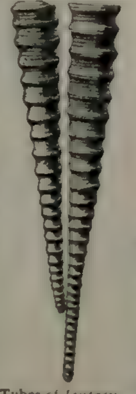


Sheet-tent in position for fumigation.

tentacle, *n.*—**Primary tentacle**, in some hydromedusans, the tentacle at the base of a radial canal. *Biol. Bulletin*, Jan., 1904, p. 89.

Tentacular canal. (*b*) See ★*canal*[1].

Tentaculites (ten-tak-ụ̄-lī′tēz), *n.* [NL., < L. *tentaculum*, tentacle, + *-ites.*] A genus of small elongated conic shells of circular section, the outer surfaces of which are marked by strong regular transverse ridges and by fine longitudinal striæ on the spaces between the ridges. They are confined to the Paleozoic and are extremely abundant in many Silurian and Devonian formations. They have usually been regarded as the shells of pelagic *Pteropoda*, but many authorities consider them as annelidan tubes.



Tubes of *Tentaculites ornatus.*

tentaculoid (ten-tak′ū-loid), *a.* [NL. *tentaculum*, a feeler, + *-oid.*] Relating to the peculiar processes which protrude through the umbo-like structures of the gelatinous investment of diatoms.

tentadura (tän-tä-dö′rä), *n.* [Sp. *tentadura*, < *tentar*, try, test: see *tempt.*] An assay made to ascertain the proportion of amalgam in an amalgamating heap; an assay made by concentrating the metallic portion of a mineral which remains after the earthy portions have been washed out. *Phillips and Bauerman*, Elements of Metallurgy, p. 743.

tentage, *n.* **2.** The number or supply of tents.

tent-caterpillar, *n.*—**Apple-tree tent-caterpillar**, the larva of an American lasiocampid moth, *Malacosoma americana.* Also called *tent-caterpillar of the orchard.* See *tent-caterpillar.*

tentering-frame (ten′tėr-ing-frām″), *n.* Same as *tenter*[2], 1.

tenth, *n.*—**Saladin's tenth**, a tax laid in England and France, in 1188, by Pope Innocent III. for the crusade of Richard I. and Philip Augustus against Saladin, Sultan of Egypt, then going to besiege Jerusalem. Gibbon considers it the foundation of the ecclesiastical tithing system. *Wharton.*

tenth-meter (tenth′mē″tėr), *n.* In *phys.*, a unit of length equal to 10^{-10} meters, or one ten-millionth of a meter.

tenth-normal (tenth′nôr″mạl), *a.* In *analyt. chem.*, said of a solution or of the strength of a solution prepared by diluting one volume of normal strength to make ten volumes. Also written $\frac{N}{10}$. See ★*normal*, 5 (*b*).

> *Tenth-normal* nitrous acid was prepared by adding an excess of pure silver nitrite to a known amount of N/10 hydrochloric acid and filtering off the silver chloride.
> *Amer. Chem. Jour.*, March, 1904, p. 197.

tentillum (ten-til′um), *n.*; pl. *tentilla* (-ä). [NL., < L. *tent*(*aculum*) + *-illum.*] One of the fine, lateral tentacles on the dactylozoöids of some siphonophorans.

tenting[2] (ten′ting), *n.* The process of stretching, or holding to a desired width, as cloth in the process of drying.

tentorial, *n.*—**Tentorial plane**, a straight line drawn through the tentorium, or division between the cerebrum and cerebellum.

tenuit (ten′ụ̄-it), *n.* [L., he (she) held.] In *common law*, a term defining the tenure in an action for waste done after the termination of the tenancy.

tenure, *n.*—**Horn tenure**, in *feudal law*, tenure by cornage. It was the duty of the vassal to wind a horn upon the approach of an enemy to give notice thereof.—**Survey tenure**, in India (Bombay Presidency), a tenure of land by which occupation is preceded by a survey. Each field is measured and assessed according to the quality of the soil and the crop. This assessment holds good without any modification for a term of thirty years; it is in fact a rent charge liable to change once in thirty years. In the Northwestern Provinces and the Punjab a somewhat similar tenure prevails. *Encyc. Brit.*, XII. 771.

tenurial (te-nū′ri-ạl), *a.* [*tenur*(*e*) + *-ial.*] Having the nature of, or pertaining to, a tenure or holding of property.

tenurially (te-nū′ri-ạl-i), *adv.* In a tenurial manner; as regards tenure.

ten-wheeler (ten′hwē″lėr), *n.* An American type of locomotive engine having six driving-wheels and four supporting-wheels in the truck. The three drivers on each side are the same as in the Mogul type, but the extra two wheels in the truck make possible an engine with a longer boiler and greater steam-making surface, and which is somewhat safer as regards tendency to become derailed.

teocote (tā-ọ̄-kō′tạ̄), *n.* [Nahuatl *teocotl*, sacred pine, < *teotl*, god, + *ocotl*, pine.] A lofty pine (*Pinus Teocote*), with spreading ascending branches, indigenous to the mountains of Mexico. The leaves, 3 in a sheath, are from 12 to 20 centimeters long, rigid, compressed-triangular in cross-section, with scabrous edges and a sharp apex. The cones are from 4 to 8 centimeters in length and from 2 to 2.5 centimeters in diameter. This tree was highly esteemed by the ancient Aztecs as the source of an aromatic incense, which could be used only by the nobles and dignitaries.

tepejilote (tā-pä-hē-lō′tạ̄), *n.* [Nahuatl *tepetl*, mountain, + *xilotl*, ear of green corn.] The unexpanded flower-spikes of several species of palms of the genus *Nunnezharia.* Some of the species have been in cultivation by the natives for centuries; they use the flower-spikes for food.

tepetate (tā-pā-tä′tạ̄), *n.* [Nahuatl *tepetl*, mountain, + *tlatatl*, mud.] A material existing in enormous quantities (from 5 to 500 feet thick) over the greater portion of the surface of Mexico, and supposed to be consolidated volcanic mud. It is also found less extensively in Central and South America.

tepidamente (tep″i-dä-män′te), *adv.* [It.] In *music*, in a lukewarm, listless manner.

Ter. An abbreviation (*a*) [*l. c.*] of *terrace*; (*b*) of *territory.*

teraconic (ter-a-kon′ik), *a.* [*ter*(*ebate*) + *acon*(*ite*) + *-ic.*] Noting an acid, a colorless compound, $\mathrm{HOCOC(CH_2COOH):C(CH_3)_2}$, prepared by the action of sodium on ethyl terebate. It forms lustrous prisms or large triclinic crystals, and melts and decomposes at 161–163° C.

teracrylic (ter-a-kril′ik), *a.* [*ter*(*ebate*) (?) + *acrylic.*] Noting an acid, a colorless liquid, $C_7H_{12}O_2$, prepared by the distillation of terpenylic acid. It has an odor of valeric and capric acids, and boils at 218° C.

teraglin (ter′ạ-glin), *n.* [Said to be aboriginal Australian.] A fish of New South Wales, *Otolithus atelodus.* Sometimes called *jewfish.* *E. E. Morris*, Austral English.

terat. An abbreviation of *teratology.*

teratism (ter′ạ-tizm), *n.* [Gr. *τέρας* (*τερατ-*), monster, + *-ism.*] Monstrosity.

teratogenesis (ter″ạ-tọ̄-jen′e-sis), *n.* [Gr. *τέρας* (*τερατ-*), a monster, + *γένεσις*, production.] The production of monsters.

teratol. An abbreviation of *teratology.*

teratosis (ter-ạ-tō′sis), *n.* [NL., < Gr. *τέρας* (*τερατ-*), monster, + *-osis.*] Same as ★*teratism.*

terbia (tėr′bi-ạ̈), *n.* [NL., < *terbium.*] Terbium oxid, the earth originally called *erbia.* As obtained by ignition it has a dark-orange color, probably due to the presence of a little of a higher oxid; after heating in hydrogen it is white. It is very doubtful whether it has been obtained free from admixture with other oxids of the same group presenting properties which have been referred to mosandrium, philippium, and the Zα and Zβ of De Boisbaudran. Terbia is strongly basic; its salts are colorless and give a spark-spectrum but no absorption-spectrum.

terbic (tėr′bik), *a.* [*terb*(*ium*) + *-ic.*] Containing terbium as a constituent: as, a *terbic* salt.

terbine (tėr′bin), *n.* [*terbia* + *-ine*[2].] An early form of the name of the rare earth terbia.

terchlorid (tėr-klō′rid), *n.* [*ter-* + *chlorid.*] A compound containing three atoms of chlorin in combination, as the terchlorid of antimony ($SbCl_3$) (also called *butter of antimony*).

terdiurnal (tėr-dī-ėr′nạl), *a.* [*ter-* + *diurnal.*] Happening three times daily.

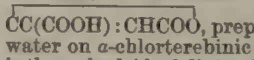
> Professor Hann has shown that at the earth's surface three regular periodic variations are established by observation, viz., the diurnal, semi-diurnal, and *terdiurnal.* *Encyc. Brit.*, XXX. 719.

terebenic (ter-ẹ̄-ben′ik), *a.* Same as *terebic.*

terebenthene (ter-ẹ̄-ben′thēn), *n.* [Also *terebentine* (It. *terebentina*), < *tereb*(*inth*) + *-ent* (with *-ent* as in *turpentine*) + *-ene.*] Same as *levopinene.* See ★*pinene.*

terebentic (ter-ẹ̄-ben′tik), *a.* [*terebent*([*h*]*ene*) + *-ic.*] Pertaining to terebenthene.—**Terebentic acid**, a colorless crystalline compound, $C_9H_{14}O_5$, prepared by the action of lead oxid on turpentine.

terebentilic (ter″ẹ̄-ben-til′ik), *a.* [*terebent*(*ic*) + *-il* + *-ic.*] Noting an acid, a colorless compound, $C_8H_{10}O_2$, prepared by passing the vapor of terpin over soda-lime at 400° C. It crystallizes in small needles, sublimes in plates, melts at 90° C., and boils at 250° C.

terebilenic (ter″ẹ̄-bi-len′ik), *a.* Noting an acid, a colorless compound, $(CH_3)_2$- $\mathrm{(CH_3)_2\text{-}CC(COOH):CHCOO}$, prepared by the action of water on *a*-chlorterebinic acid at 140° C. It is the anhydrid of diaterebilic acid, and is deposited from alcohol in lustrous transparent trimetric crystals which melt at 162–163° C., and from water it yields prisms melting at 168° C. It may be sublimed.

terebilic (ter-ẹ̄-bil′ik), *a.* Same as *terebic.*

terebinthic (ter-ẹ̄-bin′thik), *a.* [*terebinth* + *-ic.*] Of or pertaining to terebenthene.

Terebratella (ter″ẹ̄-brạ-tel′ạ̈), *n.* [NL. See *Terebratula.*] A genus of telotrematous terebratuloid brachiopods of the subfamily *Magellaninæ*, represented by species ranging through Jurassic to recent formations.

Terebratulina (ter″ẹ̄-brat-ụ̄-lī′nạ̈), *n.* [NL., < *Terebratul*(*a*) + *-ina*[1].] A subgeneric division, of doubtful value, of the genus *Terebratula*, having shells with striate surface and the brachidium consisting of a small annulus. It is represented by species ranging from Jurassic to recent time.

terebratuloid (ter-ẹ̄-brat′ụ̄-loid), *a.* [*terebratula* + *-oid.*] Having the aspect or characters of the brachiopod genus *Terebratula.*

terecamphene (ter″ẹ̄-kam-fēn′), *n.* [*tere*(*binth*) + *camphene.*] See ★*camphene*, 1.

terella (te-rel′ạ̈), *n.* [NL., dim. of L. *terra*, earth.] A magnetized globe of steel, or a spherical lodestone, with poles diametrically opposite each other so as to represent in miniature the distribution of terrestrial magnetism.

terephthalic (ter-ef-thal′ik), *a.* Noting an acid, a colorless compound, $C_6H_4(\overset{1}{C}O\overset{4}{O}H)_2$, prepared by the oxidation of various paradisubstitution derivatives of benzene. It crystallizes in needles and sublimes without melting. Also called *paraphthalic acid.*

tergiversant (tėr′ji-vėr-sạnt), *a.* Tergiversating; shifty; evasive.

terlina (ter-lē′nä), *n.* [It.] A billon coin of Louis XII. of France, struck at Asti.

terlinguaite (tėr-lin′gwạ-īt), *n.* [*Terlingua* + *-ite*[2].] An oxychlorid of mercury, Hg_2ClO, occurring in yellow to green or brown monoclinic crystals: found with other mercury minerals at Terlingua, Texas.

term, *n.*—**At term**, at the end: noting specifically the birth of a child at the period of the normal termination of pregnancy. *Amer. Nat.*, April, 1904, p. 304.—**Disjunctive term**, a term formed by a combination of terms united by a conjunction equivalent to 'or.'—**General term.** (*b*) In *math.*, a term which by substitution of successive numbers for a letter it contains will give successive terms of a series.—**Principal term of a set M**, any term of M which is the limit of some fundamental set in M.—**Probatory term**, the time within which the parties to a suit are required to take their evidence.—**Term for years**, in *law*, an estate of fixed period in realty. It is commonly created by deed and is a chattel real.—**Term of a determinant.** See ★*determinant.*

termen (tėr'men), *n.*; pl. *termina* (-mi-nä). [NL., < L. *termen*, a collateral form of *terminus*, end: see *terminus*.] In *entom.*, the outer edge of the wing between the apex and the anal or inner angle. *A. S. Packard*, Text-book of Entom., p. 122.

terminal. I. *a.*—**Terminal artery, curvature.** See ★*artery*, ★*curvature*.—**Terminal velocity.** (*b*) See *critical* ★*velocity*.

II. *n.* **4.** A terminus, as of a railroad. —**Primary terminals.** See ★*primary*.

terminalis (tėr-mi-nā'lis), *a.* and *n.* [NL.: see *terminal*.] In *gram.*, noting the case which expresses direction toward. Also called *transitional*.

terminated (tėr'mi-nā-ted), *p. a.* Having a terminus or end; ended; specifically, in *mineral.*, having the extremity completed by one or more crystalline faces: said of a crystal. See *termination*, 9.

termination, *n.* **10.** In *ins. law*, the end of the voyage of a vessel, namely, when it has been safely moored at the dock of its destination for twenty-four hours. The risk on the cargo is not ended by this fact.

terminative, *a.* **2.** In *gram.*, noting direction toward, as a case.

> Besides a general locative some of the most frequently occurring are inessive, superessive, introessive, ablative, and *terminative*. Besides these, comitatives, similatives, partitives, and suffixes expressing similar ideas, are found. *Amer. Anthropologist*, Jan.–March, 1903, p. 13.

terminize (tėr'mi-nīz), *v. t.*; pret. and pp. *terminized*, ppr. *terminizing*. [L. *termin*(*us*), term, + *-ize*.] To supply with terms or terminology, as a science; form the special nomenclature of. [Rare.]

> The fact that yachting has entered France by way of England accounts for the adoption of so many English words, a condition that is paralleled in the *terminizing* of sports, such as football and bicycling, which crossed the Channel southward.
> *Army and Navy Jour.*, Aug. 19, 1899, p. 1221.

termite, *n.*—**Neoteinic termite,** one of the reserve individuals in a termite colony which may be substituted for the royal pair at any time and carry on their functions, although retaining the juvenile condition in certain respects. *Cambridge Nat. Hist.*, V. 362.

termitid (tėr'mi-tid), *n.* and *a.* **I.** *n.* A member of the isopterous family *Termitidæ*.

II. *a.* Having the characters of or belonging to the family *Termitidæ*.

termitophagous (tėr-mi-tof'a-gus), *a.* [NL. *termites*, termite, + Gr. *-φαγος*, < *φαγεῖν*, eat.] Eating or feeding on termites, or white ants.

ternary. I. *a.* **2.** In *math.*, having three variables.—**3.** In *old chem.*, applied by Dalton to substances consisting of three atoms—either A + 2 B or 2 A + B.—**Ternary alloy,** an alloy of three elements: used especially for alloy steels. —**Ternary symmetry.** See ★*symmetry*, 6.—**Ternary system.** See ★*system*.

II. *n.* **2.** A trinity.

> The infinite goodness of the Almighty *Ternarie*.
> *Dr. John Dee*, Pref. to Euclid.

ternstrœmiaceous (tėrn"strem-i-ā'shius), *a.* [NL. *Ternstrœmiace*(*æ*) + *-ous*.] Belonging or pertaining to the *Ternstrœmiaceæ* (properly the *Theaceæ*); theaceous.

terpan (tėr'pan), *n.* [*terp*(*entine*) + *-an*.] Same as ★*cineol*.

terpanol (tėr'pa-nol), *n.* [*terpan* + *-ol*.] Same as *menthol*.

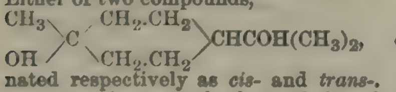
terpentic (tėr-pen'tik), *a.* [*terpent*(*ine*) + *-ic*.] Same as ★*terpenylic*.

terpenylic (tėr-pe-nil'ik), *a.* [*terpen*(*tine*) + *-yl* + *-ic*.] Pertaining to turpentine.—**Terpenylic acid,** a colorless compound, $(CH_3)_2CHCHCH(COOH)O.COCH_2$, prepared by the oxidation of oil of turpentine by means of potassium bichromate and sulphuric acid. It is deposited in large triclinic crystals or in plates, melts at 90° C., and sublimes at 130–140° C. It is the anhydrid of diaterpenic acid.

terpilene (tėr'pi-lēn), *n.* Same as ★*terpinene*.

terpilenol (tėr-pil'ẹ-nol), *n.* Same as ★*terpineol* or ★*menthenol*.

terpin (tėr'pin), *n.* [*terp*(*entine*) + *-in*^{2}.] Either of two compounds,



$$\begin{array}{l}\mathrm{CH_3}\\\mathrm{OH}\end{array}\!\!\Big\rangle\mathrm{C}\Big\langle\!\!\begin{array}{l}\mathrm{CH_2.CH_2}\\\mathrm{CH_2.CH_2}\end{array}\!\!\Big\rangle\mathrm{CHCOH(CH_3)_2},$$

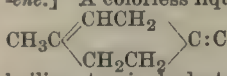
designated respectively as *cis-* and *trans-*. They are space isomers, the latter being the more important. It is prepared from transcineol-hydrobromide, and crystallizes in highly lustrous short prisms or plates melting at 156–158° C. and boiling at 263–265° C. Also called *terpin hydrate*.

terpinene (tėr'pi-nēn), *n.* [*terpin* + *-ene*.] A volatile liquid compound, $C_{10}H_{16}$, of cymol odor, contained in cardamom-oil and marjoram-oil.

terpineol (tėr-pin'ẹ-ol), *n.* [*terpin* + *-e-* + *-ol*.] **1.** A levorotatory, viscid liquid, $C_{10}H_{18}O$, prepared by the dehydration of terpin hydrate. It solidifies at −50° C., melts at 33° C., and boils at 218° C.—**2.** The term formerly used to designate a mixture of isomeric alcohols, $C_{10}H_{17}OH$.

terpinol (tėr'pi-nol), *n.* [*terpin* + *-ol*.] A trade-name of a mixture of terpineol and three terpins. It is an oily liquid used medicinally as a bronchial stimulant and also as an antiseptic and deodorizer.

terpinolene (tėr-pin'ọ-lēn), *n.* [*terpinol* + *-ene*.] A colorless liquid,



$$\mathrm{CH_3C}\Big\langle\!\!\begin{array}{l}\mathrm{CHCH_2}\\\mathrm{CH_2CH_2}\end{array}\!\!\Big\rangle\mathrm{C{:}C(CH_3)_2},$$

prepared by boiling terpin hydrate, terpilenol, or cineol with dilute sulphuric acid. It boils at 183–185° C.

terr. An abbreviation (*a*) of *terrace*; (*b*) of *territory*.

terra, *n.*—**Terra catechu.** Same as *catechu*.—**Terræ absorbentes,** in *old chem.*, a name applied to lime and magnesia (and later to baryta and strontia when these analogous substances were discovered) to distinguish them from earths proper, such as alumina, the former having the property of taking up water or slaking. In place of this term ('absorbent earths') that of 'alkaline earths' came later into use.—**Terra foliata tartari,** an early chemical name (no longer in use) for potassium acetate.—**Terra mercurialis.** See ★*terra pinguis*.—**Terra miraculosa,** an early name for bole.—**Terra muriatica,** an early name for magnesia as obtained from sea-water.—**Terra pinguis,** a name given by Becher, in the seventeenth century, to one of three essential principles which he called 'earths' and assumed to be present in various proportions in all substances—terra mercurialis, terra vitrea, and terra pinguis. This last was looked upon as the essence of combustibility, the 'phlogiston' of the next century, and was supposed to escape or be lost when a substance burned.—**Terra rossa.** [It., 'red earth.'] A residual deposit formed by the weathering and partial solution of various rocks, especially limestone, as in southern Europe.—**Terra sigillata,** a peculiar clay of the island of Lemnos, supposed to possess medicinal properties, made into tablets to be eaten, or fashioned into vessels which usually bear a stamped or impressed design. See *Lemnian earth*.—**Terra vitrea.** See ★*terra pinguis*.

terrace^1, *n.*—**Alluvial terrace,** in *geol.*, a terrace along the sides of the valley of a main stream, formed by the alluvial fans, often confluent, of its tributaries. It is constructional, as contrasted with other terraces which are carved out.—**Built terrace,** a terrace formed offshore by the outwash of beach sand and mud through the combined action of currents, tide, and undertow. Abandoned shore-lines, such as those of Lake Bonneville, Utah, show many terraces of this type. More commonly known as *wave-built terrace*.—**Cut terrace,** a bench or terrace worn in a slope by former wave-action, in contrast to a built terrace, which is formed of detritus laid upon a slope. —**Geyserite terrace,** a step-like deposit of tufaceous opaline silica from the waters of hot springs or geysers. See *geyserite*.—**Glacial terrace,** a deposit of drift washed into a space between a valley-side and a melting glacier or ice-mass, and thus retaining the form of a bench after the ice disappears.—**Kame terrace,** a terrace of glacial sands formed between a valley glacier and the valley-walls.

> The manner in which the roughnesses of topography were brought about is also similar to the manner in which the roughnesses of kame topography are often produced. In both cases it was deposited about ice, or against rough faces of ice, or in hollows or re-entrants in the edge of the ice. Since these rude terraces have much in common with kames, both in the matter of topography, constitution and genesis, they might appropriately be designated *kame terraces*. A *kame terrace*, therefore, is a terrace of glacial sand and gravel, deposited between a valley ice lobe (generally stagnant) and the bounding rock slope of the valley.
> *R. D. Salisbury*, in Geol. Surv. New Jersey, 1893, p. 156.

Land-slip terrace. See ★*land-slip*.—**River terrace,** a bench or portion of an ancient flood-plain remaining on a valley-side when a stream has eroded the valley-floor to a lower level. *Geikie*, Text-book of Geol., p. 507.—**Shore terrace,** in *phys. geog.*, a terrace formed on the border of a sea or lake by waves, and now revealed by the withdrawal of the water.—**Slender terrace,** a local term for one of the wave-cut terraces in the upper Ohio basin, of somewhat irregular distribution, of moderate relief, and evidently produced by the temporary ponding of the river waters. *W. G. Tight*, U. S. Geol. Surv., Prof. Paper 13, p. 88.—**Stream terrace,** in *phys. geog.*, a bench, or portion of an ancient flood-plain, remaining on a valley-side when a stream has eroded the valley-floor to a lower level.—**Terrace epoch.** See ★*epoch*.—**Terrace of construction.** Same as *alluvial* ★*terrace*.—**Terrace period,** a name applied by Dana to the last epoch of Quaternary time, characterized by a moderate elevation of land with the extensive formation of river-terraces subsequent to his 'Champlain' period of depression.—**Wave-cut terrace,** a terrace formed by the erosive action of waves. *R. D. Salisbury*, in Geol. Surv. New Jersey, 1892, p. 128.

terrace-garden (ter'ās-gär-dn), *n.* A garden arranged in various levels, or terraces, as are many in Italy.

terraciform (te-ras'i-fôrm), *a.* [*terrace*^{1} + *-form*.] Having the outline of a terrace or of a series of terraces.

> Along the rivers of the Middle Atlantic slope the formation is sometimes fashioned into terraces; and some of its best developments in the District of Columbia (from which the name is taken) are *terraciform*.
> *Smithsonian Rep.*, 1890, p. 72.

terracing (ter'ạ-sing), *n.* A terrace; terraces collectively.

> With but two exceptions, Santa Catalina is devoid of any evident *terracing* from one end to the other, and in this respect contrasts greatly to the adjacent land areas.
> *Geog. Jour.* (R. G. S.), XI. 73.

Terrain cure. See ★*cure*.

terral (te-räl'), *n.* [Sp. *terral*, < *tierra* (< L. *terra*), land.] A dry land-wind blowing from the Spanish peninsula outward in all directions toward the ocean; a cool, strong descending wind in clear weather.

terrapin-bug (ter'ạ-pin-bug), *n.* Same as *cabbage-bug*.

terrazzo (te-rät'sō), *n.* [It., terrace, balcony: see *terrace*^{1}.] A trade-name for a kind of concrete pavement made of broken stone and hydraulic cement.

> Teak and maple are found to be the best wood for the floors. Wood has been superseded by *terrazzo*, but this in practice proves to be unsatisfactory, owing to its liability to crack when used for hospital purposes.
> *Encyc. Brit.*, XXIX. 340.

terre de Lorraine (tãr dẹ lo-rān'), *n.* A variety of potters' clay found in Lorraine, of which Lunéville was once the capital. See *Lunéville* ★*pottery*.

terrene^1, *n.* **2.** The surface of the earth.

terricole, *a.* **2.** In *zoöl.*, living upon or in the ground; terricolous. *Proc. Zool. Soc. London*, 1899, p. 715.

terrier^1, *n.*—**Airedale terrier,** a variety of terrier somewhat similar to the Irish terrier, but larger, with a rougher coat and darker in color.—**Bedlington terrier,** a moderate-sized breed, having a straight, rather long muzzle; large, fine ears fringed with silky hair and lying close to the head; short, arched body; and long, straight legs. The coat is hard and bluish, liver, or sandy-colored. —**Boston terrier,** a breed of dogs supposed to be a cross between the English bulldog and terrier. It originated in Boston, Massachusetts.—**Irish terrier,** a breed with a long flat head, narrow between the ears, and a moderately long body clothed in straight, wiry hair of a red, yellow, or gray color. It stands from 14 to 18 inches high and weighs from 20 to 24 pounds. It is active and intelligent. —**Yorkshire terrier,** a short-legged, long-bodied dog, clothed in silky hair so long that it sometimes reaches the ground; the color is golden tan on the head and bluish or silvery on the body.

terrigene (ter'i-jēn), *a.* [L. *terrigena*, one born of the earth, < *terra*, earth, + *-genus*, -born.] Same as *terrigenous*.

terrigenous, *a.* **2.** In *geol.*, derived from the land: said of sediments on the sea-bottom.

terrometal (ter'ọ-met-al), *n.* [Irreg. < L. *terra*, earth, + *metallum*, metal.] A composition of several clays possessing, when baked, peculiar hardness: introduced by Mr. Peake, a potter of Burslem, England. It is principally employed for making tiles. *E. H. Knight.*

terrometallic (ter"ọ-me-tal'ik), *a.* Pertaining to or consisting of terrometal.

terror, *n.*—**Day terrors.** See ★*day*^{1}.

tersulphate (tėr-sul'fāt), *n.* [L. *ter*, thrice, + E. *sulphate*.] A salt containing three combining units of the radical of sulphuric acid, as tersulphate of iron or ferric sulphate ($Fe_2(SO_4)_3$).

tersulphid (tėr-sul'fid), *n.* [L. *ter*, thrice, + E. *sulphid*.] A compound of a relatively electropositive element or radical with three atoms of sulphur, as, for instance, tersulphid of antimony (Sb_2S_3).

tersulphuret (tėr-sul'fụ-ret), *n.* Same as ★*tersulphid*.

tertia (tėr'shiạ̈), *n.* [L. *tertia* (sc. *pars*), a third part.] One of three divisions; a third: for a special use, see the extracts.

> A foot regiment was composed of equal numbers of pikemen and shot-men . . . [they] were formed in solid square battalions ten deep, called *tertias*, the pikes in the centre, and the musketeers on either flank.
> *Sir C. R. Markham*, Life of the Great Lord Fairfax, vii.

> The King [Charles I.] rode to every brigade of horse, and to all the *tertias* of foot, and spoke to them with great courage and cheerfulness.
> *J. H. Shorthouse*, John Inglesant, viii.

teruelite (tā-rö-el'īt), *n.* [*Teruel* (see def.) + *-ite*^{2}.] A variety of dolomite occurring in dark-colored crystals, often resembling octahedrons, found at Teruel, Spain.

tervalence (tėr'vạ-lens), *n.* [L. *ter*, thrice, + E. *valence*.] In *chem.*, combining power equivalent to that of three univalent or monad atoms of hydrogen. Also, but less correctly, *trivalence*.

tervalent (tėr′vā̤-le̤nt), *a.* [L. *ter*, thrice, + *valens* (*valent-*), having power.] In *chem.*, having combining power equivalent to that of three univalent or monad atoms of hydrogen. Nitrogen is tervalent in ammonia (NH_3). Also, but less correctly, *trivalent.* *Athenæum*, Jan. 3, 1903, p. 22.

terzdecimole (terts′dets-i-mō″le), *n.* [G., < *terz*, third (< L. *tertius*, third), + *decimole*, decimole.] In *music*, a group of thirteen notes to be performed in the time of eight, twelve, or sixteen. Compare *decimole.*

terzflöte (terts′flė-te̤), *n.* [G., < *terz*, third, + *flöte*, flute.] 1. A flute whose normal pitch is a third above that of the usual form.—2. In *organ-building*, same as *tierce*, 5 (*b*). Also called *third-flute.*

teschemacherite (tesh′e̤-mäċh-ėr-īt), *n.* [Named after E. F. *Teschemacher*, who discovered it.] Acid ammonium carbonate, HNH_4CO_3, occurring in white or yellowish crystalline masses: found in guano deposits.

Tesla coil, a form of transformer for the production of oscillatory currents of high frequency and high voltage. See ★*transformer.*—**Tesla discharge.** See ★*discharge.*

tessaraglot (tes′a-ra̤-glot), *a.* [Gr. τέσσαρες, four, + γλῶττα (Attic form of γλῶσσα), tongue.] Written or printed in four languages; speaking four languages.

> It was a *tessaraglot* grammar, a strange old book, printed somewhere in Holland, which pretended to be an easy guide to the acquirement of the French, Italian, Low Dutch, and English tongues. *Borrow*, Lavengro, xiv.

tessellate, *a.* 2. Having the appearance of a mosaic pavement; made up of elements of such forms and arrangement as to produce the appearance of a mosaic pavement, as in the case of spicules of sponges and spines of echinoids which have their distal ends enlarged, flattened, of polygonal form, and closely arranged.

II. *n.* Something having a tessellated appearance.—**Variegated tessellate,** an American hesperiid butterfly, *Hesperia montivaga*, occurring in Florida, Mexico, and the Rocky Mountains.

tessera, *n.* 5. In *zoöl.*, a small, squarish plate of bone such as those forming the carapace of armadillos and glyptodons.

tesseral, *a.* 3. In *math.*, pertaining to or dividing into quadrilaterals.—**Tesseral function.** See ★*function.*

test^1, *n.* 6. There is a distinction between a 'test' and a 'reaction,' though these terms are often used indiscriminately. A test is a trial of any substance by placing it under determinate conditions and observing its behavior. A reaction is a trial of the mutual effects upon each other of the substance in question and some other known substance. Thus an observation of the specific gravity or the melting-point of lead may be used as a test for that metal if an unknown specimen is supposed to be lead, but this involves no reaction. An observation of the effects of heating lead in contact with the air, or of bringing it into contact with nitric acid, considers the reaction in each such case, and may of course be resorted to as a test in reference to a substance suspected to be lead. **Acetylation test.** See ★*acetylation.*—**Acid-test,** in *dairying*, a method of ascertaining the proportion of acid in milk by means of an alkaline solution slowly added to the milk until it becomes pink. The proportion of solution added defines the acidity of the milk.—**Agglutination test.** See ★*agglutination.*—**Babcock test,** in *dairying*, the process of finding the proportion of fat in milk by the aid of chemical reagents in connection with the Babcock milk-tester.—**Bakers' sponge test,** a mode of determining the bread-making value of flour by observation of the quantity of water taken up by a sample and the volume of the sponge or dough produced.—**Becchi test,** an alcoholic solution of silver nitrate. Heated with pure olive-oil, it produces no coloration, but if cotton-seed oil is present as an adulterant a reddish-brown color appears.—**Blavier's test,** in *elect.*, a test in which the location of a fault in a line or cable is determined by comparing the resistance as measured from one end when the other end is insulated with the resistance when the other end is grounded.—**Böttger's test,** a (bismuth) reduction-test for glucose and similar reducing agents.—**Brandes's test for quinine,** chlorin water followed by liquid ammonia, each in limited quantity, the result being a bright-green color if quinine is present.—**Cold test.** See ★*cold.*—**Control-test,** an experiment, devised and performed for the purpose of checking the results of a scientific investigation, in which some crucial factor is varied in such a way as to test the validity of the interpretations made. See *control-experiment.*—**Eggertz carbon test,** a method of determining the combined carbon in iron and steel by means of the intensity of the brown color produced by the hydrocarbon formed when the metal is dissolved in nitric acid, as compared with that of a standard solution of known composition, or a series of them.—**Elaidin test.** See ★*elaidin.*—**Eschka's test,** a delicate test for metallic mercury. The mercury is volatilized and the vapor condensed upon a surface of gold-foil, which it whitens.—**Fehling's test,** a (copper) reduction-test for glucose and similar reducing agents.—**Flame-test,** the application to the detection of particular substances, as lithium, barium, etc., of the colors which these give to a flame, usually that of a Bunsen gas-lamp.—**Fleitmann's test,** a modification of Marsh's test for arsenic, substituting for dilute sulphuric acid a strong aqueous solution of caustic potash or soda.—**Fresenius and Babo's test for arsenic,** a test consisting in heating arsenic sulphid with potassium cyanide and sodium carbonate in a current of carbon-dioxid gas, thus obtaining a mirror-like deposit of metallic arsenic in the colder part of the glass tube used.—**Gellé's test,** a method of determining the presence or absence of disease of the middle ear by conveying the vibrations of a tuning-fork directly to the drum-membrane, excluding bone conduction.—**Gmelin's test,** a test for the coloring-matter of bile when occurring in urine. The urine is cautiously poured upon nitric acid containing nitrogen tetroxid, so as to form a separate layer. If bile-pigments are present there appears at the surface of contact of the two liquids a play of colors—violet, blue, green, etc.—**Griess's test,** the addition, in succession, of dilute hydrochloric acid, sulphanilic acid, and α-naphthylamine hydrochlorate to a solution supposed to contain nitrous acid or a nitrite. If nitrous acid or a nitrite is present an intense rose-red color results. This test is frequently used in the sanitary examination of drinking-water.—**Günzburg's test,** a test for free hydrochloric acid, used in the analysis of the contents of the stomach. If a few drops of the contents (filtered) are slowly evaporated with a few drops of Günzburg's reagent (2 grams of phloroglucin and 1 gram of vanillin dissolved in 30 cubic centimeters of absolute alcohol), a more or less intense red color develops in the presence of hydrochloric acid in the free state.—**Halphen's test,** a test used to determine the presence or absence of cotton-seed oil in lard.—**Heller's test.** (*a*) The cold nitric-acid test used in testing for albumin in the urine. If albumin is present a milky turbidity develops at the zone of contact between the two fluids. (*b*) A test for blood in the urine. On boiling with caustic alkali, the resultant precipitate of phosphates will present a red color.—**Hemin test,** a test for blood pigment based upon the formation of crystals of hemin. See ★*hemin.*—**Henner's test,** a test for formaldehyde. The liquid to be examined is mixed with very dilute carbolic acid and superimposed upon concentrated sulphuric acid. In the presence of formaldehyde a rose-violet ring develops at the zone of contact.—**Holmgren's test,** a test of color-blindness devised by A. F. Holmgren of Upsala in 1876. It is based upon the similarity, to the color-blind eye, of various-colored worsteds which to those of normal vision appear to differ greatly in color. See ★*color-blindness.*—**Hydrostatic test,** a test to determine whether, in the case of a dead infant, life was extinguished before or after birth. The lungs are removed from the body and placed in water; if they float it is an evidence that the child has breathed and that it was therefore born alive.—**Kelling's test,** a test for lactic acid. An almost colorless solution of ferric chlorid turns a bright yellow in the presence of lactic acid.—**Kongo-red test,** a test to determine the presence of acids in the free state in the contents of the stomach, as contrasted with acids in combination with albumins or acid salts. Free acids cause a solution of Kongo red to turn blue.— —**Livache's test,** a means of estimating the comparative value of samples of linseed-oil or other drying-oils, and detecting adulteration in such materials, which consists in moistening finely divided metallic lead with the oil to be tested, exposing it to the air, and determining from day to day the gain in weight due to the absorption of oxygen. On this absorption the 'drying' of the oil depends.—**Loop test,** in *elect.*, a test for locating a fault in a cable or line, in which a metallic return is employed. **Maddox test,** a test for heterophoria by means of the Maddox rods.—**Mallein test,** a test employed for diagnosing glanders in horses. An injection of mallein under the skin is followed, in glandered horses, by a characteristic rise and subsequent fall of body temperature.—**Marsh's test,** a method proposed by Marsh, in 1836, for the detection of arsenic in minute quantity, as in cases of poisoning by compounds of this element. Pure zinc and pure dilute sulphuric acid are brought together in a flask, the hydrogen gas thus produced being carried through a drying-tube and thence to a small jet, where the gas is ignited. If now arsenious oxid or any soluble compound of arsenic is added to the contents of the flask and a piece of white porcelain is brought down upon the flame, a spot of brown or black color, consisting of metallic arsenic, is formed upon the surface of the porcelain. By moving the latter other spots may be obtained. These deposits may be further identified as arsenic by the application to them of other tests.—**Maumené's test.** (*a*) For fatty oils, mixture, in definite proportion by volume, with concentrated sulphuric acid, and observation of the rise of temperature which results: this varies in the case of oils from different sources. (*b*) For glucose, as in urine, a strip of white woolen cloth steeped in a 1:3 solution of stannous chlorid in water and dried. Such a test strip, dipped into the suspected liquid and then heated to 130° C., turns brown if glucose is present.—**Murexide test,** a test for uric acid depending upon the formation of murexide.—**Nessler test,** the reaction obtained by adding the Nessler solution to any liquid containing ammonia or one of its salts. If the quantity of the latter is considerable, a brownish-orange precipitate is formed; but if mere traces of ammonia are present, the liquid remains apparently clear and is colored to an extent dependent on the minute amount of ammonia. Much use is made of this test in connection with the sanitary examination of drinking-water.—**Nylander's test,** a reduction-test for glucose with Almen's solution.—**Open test,** the determination of the flash-point of a hydrocarbon oil, such as ordinary kerosene, by heating it in an uncovered vessel and noting the lowest temperature at which vapor is given off that will flash or catch fire on momentary application of a light.—**Otto test,** a test for strychnine which consists in the development of a beautiful but transient violet color produced in the action of various oxidizing agents by means of concentrated sulphuric acid and bichromate of potash. It is probably the best form of this color-test.—**Over-lap test,** in *elect.*, a test in which the location of a fault in a line or cable is determined by comparing the resistances as measured from each end separately, when the other end is insulated, with the resistance of the whole line or cable when intact.—**Ozone test,** the reaction of potassium iodide with ozone, which has been much used to detect the latter in the atmosphere. It cannot be depended upon for this purpose, since potassium iodide is also decomposed by other substances, as by nitrous acid, which undoubtedly occurs in the air as a result of electrical discharges. Hydrogen dioxid has in all probability often been confounded with ozone, the existence of which in the air under natural conditions cannot be considered as fully established.—**Pettenkofer's test,** a delicate reaction for the detection of the characteristic acids of bile. A minute quantity of cane-sugar is added to the liquid to be examined, and then concentrated sulphuric acid in gradually increased amount, with moderate rise of temperature. If biliary acid is present a rich crimson or cherry-red color is developed.—**Reichert-Meissl test,** a slightly modified form of the Reichert test for volatile fatty acids.—**Reichert test,** a process for determining the proportion of volatile fatty acids obtainable from a particular fat or oil, as from butter. This affords the means of distinguishing butter from oleomargarin.—**Reichl test,** a test for glycerol (glycerin) consisting in heating to about 120° C. a mixture of the suspected substance with phenol and strong sulphuric acid, cooling, and adding ammonia. In the presence of glycerol a fine carmine-red color is produced.—**Rinné's test,** a method of determining whether the cause of deafness is in the middle ear or in the labyrinth, by noting whether bone conduction or air conduction is the better.—**Robiquet's test,** a test for morphine which depends on the production of an indigo-blue color by contact of this alkaloid with a solution of ferric chlorid.—**Sachs's test,** a method of detecting starch by the use of a solution containing free iodine. The color produced varies from blue to black, depending on the quantity of material present.—**Schwabach's test,** application of a vibrating tuning-fork to the skull, in order to distinguish between middle-ear disease and disease of the labyrinth, the sound being heard longer in the former case than in the latter.—**Sedimentation test,** the addition of the blood serum of a person ill of a fever to a pure culture of bacteria. If the bacteria are the same as those to the action of which the person's illness is due, the addition of the blood serum will cause them to become bunched together or agglutinated. *Jour. Trop. Med.*, Jan. 15, 1903, p. 25.—**Teichmann's test,** a test for blood, depending upon the fact that a minute quantity of blood mixed with glacial acetic acid and a trace of sodium chlorid and allowed to evaporate at ordinary temperature upon a slip of glass develops microscopic crystals of hemin, or hematin hydrochlorate (the so-called *Teichmann crystals*), of easily recognizable form.—**Test case.** See ★*case*^{1}.—**Töpfer's test,** a test for free hydrochloric acid in the contents of the stomach. The reagent is an 0.5 per cent. alcoholic solution of dimethylamino-azobenzol; a few drops of this added to a solution of the acid in the free state gives rise to a cherry-red color.—**Trommer's test,** in *chem.*, one of the forms in which the reduction of cuprous oxid is employed as a test for glucose in urine. One or two drops of a solution of cupric sulphate are added to the suspected liquid, then a little of a solution of sodium carbonate, and finally the liquid is heated to the boiling-point. A yellow, orange, or red precipitate of cuprous oxid is formed if glucose is present in any considerable amount.—**Valenta's test,** a method proposed by Valenta for distinguishing certain fixed oils from each other by their different degrees of solubility in glacial acetic acid. The results are not sufficiently uniform and consistent to give the test much general value, but in some special cases it may be used with advantage.—**Villavecchia test,** a test for the detection of sesame-oil as an adulterant of olive-oil. A sample of the oil under examination is agitated with a very small quantity of a weak alcoholic solution of furfural and with hydrochloric acid, the production of a red color indicating the presence of sesame-oil.—**Von Kobell's test,** a test for bismuth consisting in heating the suspected substance on a piece of charcoal by a blowpipe flame, having added a mixture of equal parts of potassium iodide and sulphur. If bismuth is present a scarlet-red deposit makes its appearance on the charcoal outside of the part heated.—**Warren's sulphur-chlorid test,** a test used to distinguish certain drying-oils and to detect their adulteration. It consists in mixing with the oil of sulphur chlorid and carbon disulphid, and observation of the amount and solubility of the 'vulcanized' products formed.—**Weber's test.** (*a*) A method for determining the seat of trouble in deafness, based upon the fact that bone conduction is better on the affected side when the disease is in the middle ear. (*b*) A test for the presence of blood in the intestinal discharges, determined by the production of a blue-violet color on treatment with guaiac and turpentine.—**Widal test** or **reaction,** in *bacteriol.*, a reaction used in diagnosing typhoid fever, depending upon the fact that serum from the blood of a typhoid patient will usually cause the motile typhoid bacilli to become agglutinated or clumped. See *serum* ★*diagnosis.*—**Worsted test,** the employment of skeins of wool of various colors in testing for color-blindness. See ★*color-blindness.*—**Zeisel test,** in *chem.*, a method of ascertaining the presence of, and quantitatively determining, the methoxyl group—$O.CH_3$—in volatile oils or essences. It consists in heating with hydriodic acid the substance to be examined, volatilizing the methyl iodide formed, and determining the amount of iodine therein as silver iodide.

Testamentary capacity, cause. See ★*capacity*, ★*cause.*

testatum, *n.* 2. In *common law*, a writ issued out of the court of one county to the sheriff of another, reciting a previous unsatisfied writ, saying "it is testified that the defendant lurks or wanders in your bailiwick." The previous writ and its citation are now generally dispensed with. *Blackstone*, Com., III. 283. In Great Britain it was abolished in 1852.

test-bar (test′bär), *n.* A sample bar of form and size convenient to be used in testing-machines to determine the physical properties of the material from which it was taken. In cast metals, such as steel or cast-iron, the test-bar is often a small ingot cast in a special mold from the ladleful that furnished the articles to be sampled. From completed structures or members, the test-bars are cut. The specifications for an important work always describe the method of getting the sample or test-bars, the nature of the tests to which they are to be subjected, and the limits of results of such tests within which the work will be accepted, and outside of which it will be rejected. When the importance of the work justifies it, a modern requirement is for a test of the full-sized member with sufficient frequency, and not of the test-bars only.

test-board (test′bōrd), *n.* In *telephony*, a special switchboard to which the terminals of all lines entering an exchange are attached and from which connections to the operating switchboard are made.

test-boiler (test′boi″lėr), *n.* 1. A form of steam-boiler so designed and installed in its setting that it may be used as a testing-device to determine the evaporative capacity of different fuels, the efficiency of furnace types, the effects of changes in the rate of combustion, and the value of steam-making devices and apparatus of various sorts. Most experimental laboratories of institutions for the education of engineers are equipped with such an experimental boiler.—2. A boiler capable of withstanding a high internal pressure so that pressure from it may be used to test the strength of other boilers.—3. A boiler specially constructed to test some principle or claim.

test-cock (test′kok), *n.* 1. A cock or valve through which a sample of a fluid may be drawn from a vessel or chamber for examination or test.—2. On steam-boilers, a try-cock or gage-cock by which the level of the water in the boiler may be observed.

tester[1], *n.*—**Geneva tester**, a form of germinator for testing the vitality of seed, first used at the Agricultural Experiment Station at Geneva, N. Y. It consists of an oblong pan with a copper or glass cover, containing a cloth with numerous pockets for as many samples, each being kept moist by a flap falling into water. *Yearbook U. S. Dept. Agr.*, 1894, p. 404.—**Saybolt tester**, an apparatus, with open oil-cup, for determining the flash-point of kerosene or other mineral oils.—**Tagliabue tester**, an open-cup apparatus for testing the flash-point of illuminating oils. It was of simple construction, but has been pretty generally superseded by more accurate instruments.

test-furnace (test′fėr″nās), *n.* A reverberatory refining-furnace, for silver-bearing alloys, in which the baser metals are eliminated by oxidizing or by volatilization, leaving the precious metals behind in the hearth or cupel.

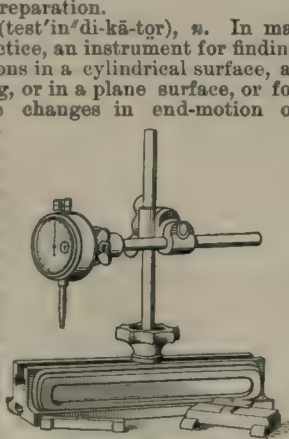
test-hole (test′hōl), *n.* A hole, as in a furnace, through which a test specimen or sample may be drawn or inspected.

testimonial, *a.*—**Testimonial evidence**, such declarations by a witness as are positive and direct as to given facts, as distinguished from circumstantial evidence. *Wigmore*, Evidence, §§ 25, 475.—**Testimonial privilege**, the right of a witness under examination to withhold certain evidence, such as trade and official secrets and what are known as privileged communications. The secrecy of a political ballot is respected, and a witness may not be compelled to testify to what incriminates him. *Wigmore*, Evidence, § 2197.—**Testimonial qualifications**, such facts regarding a witness as render his evidence inadmissible in the case at hand. Among them are infancy, personal interest, insanity, criminal character, and marital relationship.—**Testimonial recollection**, remembrance of past acts sufficiently clear and certain — and sometimes revived by accounts, memoranda, etc. — to give credence in court to the witness' statements concerning them. *Wigmore*, Evidence, § 725.

testimonium (tes-ti-mō′ni-um), *n.* [L.: see *testimony*.] The usual concluding clause of an instrument or legal document, beginning "In witness whereof" and followed by the signatures and seals of the party or parties. Also *testimonium clause*.

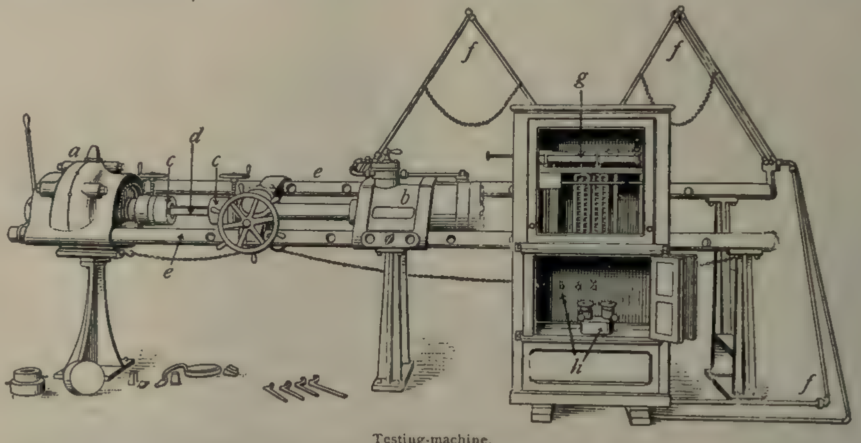
testin (tes′tin), *n.* [L. *testis*, testicle, + *-in*[2].] The dried and powdered testicles of the ox: a commercial preparation.

test-indicator (test′in″di-kā-tọr), *n.* In machine-shop practice, an instrument for finding minute variations in a cylindrical surface, as that of shafting, or in a plane surface, or for finding minute changes in end-motion or lateral deflection between two surfaces. In some instruments the differences or variations are merely indicated; in others the error of motion or form is indicated in thousandths of an inch on a dial.—**Lathe test-indicator**, a test-indicator specially adapted for finding the center of a face-plate or of any piece of work to be correctly centered in a lathe. It is made in several forms, of which the illustration shows one in general use in testing plane surfaces. It can also be used to test the thickness of sheet-metal. Test-indicators are universally used in erecting and inspecting machine-tools.



Lathe Test-indicator.

testing-machine (tes′ting-mạ-shēn″), *n.* 1. A machine or apparatus for ascertaining by experiment or test the resistance offered by a material to a stress which tends to deform or break it. The machine may be adapted to cause failure by tension or pulling apart; by compression or crushing; by bending or flexure; or by torsion or twisting. One machine may be adapted for any of the first three methods by simple change. The torsion machine is usually specially designed, and any of the others may be so. The elements of such a machine are: (*a*) the grips or holding apparatus; (*b*) the straining apparatus for applying load; (*c*) the apparatus for observing, measuring, or recording the intensity of the applied load; (*d*) the apparatus for observing or recording the deformations under applied load. The grip or holder for tension-tests is usually a form of wedge which moves in slots with converging sides. These wedge-grips are borne in holders, one of which is part of the straining mechanism and moves with it, while the other is borne by the table or platform to which the levers of the weighing mechanism are attached. When the specimen is placed between these two sets of holders, a movement of the straining mechanism to separate the two holders transmits its effort through the test-piece to the weighing levers, and thus to the graduated weigh-beam, on which a poise of known weight can be moved out until the stress in the specimen is just balanced by the weight on the beam. The stress can be gradually increased up to the capacity of the weighing beam to record it, or until the test-piece parts; the reading of the poise on the graduated beam then gives the breaking-load, which is reduced to unit load by dividing the test-load by the measured area of the test-piece. The weighing or reducing levers may be simple or compound; the fulcrums may be knife-edges, or thin flexible plates may be used as fulcrums (A. H. Emery's system). The plate-fulcrums do not have a friction increasing with the load in an unknown or variable ratio, as is the case in knife-edge fulcrums. The straining effect may be produced by geared screws, or by hydraulic cylinder action for large machines; in small ones a simple lever action is possible. In some forms the travel of the weighing poise is made automatic by electric or mechanical detents, so that with the lift of the beam the poise is caused to travel, and on its drop the travel stops. For measuring deformations, either a micrometric or vernier pair of scales is used, one element being attached to the specimen near the grip at one end, and the other element being similarly attached near the other. As the two ends are separated by the straining effort, one scale passes by the other and the stretch is measured for any load. The change in rate of stretch with equal increments of load indicates the elastic limit; when the stretch begins to increase steadily the yield-point is passed. An easy extension of this principle enables the moving scale to trace on a paper attached to the fixed scale a diagram in which the abscissas are deformations and the ordinates the load applied. Valuable facts and principles as to ductility, modulus of elasticity, and other properties can be deduced from such records. The ordinary capacities of testing-machines vary from 100,000 to 300,000 pounds. Unusual capacities are 900,000 and 1,200,000 pounds. Early testing-machines were made by Fairbairn and Kirkaldy in Great Britain, and later by Wicksteed. Early American types were devised by Richards, Miller, Riehlé, Thurston, and officers of the United States Ordnance Board. Thurston's torsional machine has been one of the best known of its class. Every important steel manufacturer uses the testing-machine, and most specifications demand its use before a consignment of product is accepted. Special forms are also in extensive use for cement, springs, wire, textile products, twine, paper, and all material in which strength is an important factor. Special types of testing-machines have also been devised to test the abrasive resistance of brick for paving, the lubricating quality of oils and greases, resistance to frequently applied loads, etc.



Testing-machine.

a, abutment or support to resist the effort to deform the test-piece; *b*, hydraulic-press cylinder applying the effort to deform and break the test-piece; *c*, *c*, jaws or grips to hold the test-piece; *d*, test-piece held between the jaws; *e*, *e*, frame of the machine tying *a* and *b* together, and supporting and guiding the latter: it has holes for pins to adjust the distance between *a* and *b* for the length of the specimen; *f*, *f*, *f*, jointed pipes conveying water, alcohol, or oil from a pressure-pump to operate the plunger of the hydraulic press *b*; *g*, scale-beam with weights for measuring the stress on the test-specimen; *h*, *h*, valves and levers for applying the load on the beam and taking up the mechanical deformation as it occurs.

2. Any machine used to test an isolable quantity or property in a substance.

testitis (tes-tī′tis), *n.* [NL., < L. *testis*, testicle, + *-itis*.] Same as *orchitis*.

test-lead (test′led), *n.* Pure granulated lead used in silver assays.

test-letters (test′let″ėrz), *n. pl.* Same as *test-types*.

test-log (test′log), *n.* A record of observations made during a test, as the log-book at sea is used to record observations and occurrences.

> Fig. 1 shows a typical *test-log* upon a 550-hp engine of the three-cylinder vertical type, employing the four-stroke cycle. The thermal efficiency shown is the true or "kinetic" efficiency, namely, the ratio of the input to the output, or the thermal equivalent of the work done to the thermal value of the gas.
>
> *Elect. World and Engin.*, Jan. 9, 1904, p. 90.

testone, *n.* 2. A Portuguese silver coin of 100 reis.

test-piece (test′pēs), *n.* A piece of material adapted by size and shape to be tested in a testing-machine to determine its physical properties, such as strength, elastic limit, deformation under load, etc.; a test-bar.

test-ratio (test′rā″shiō), *n.* The ratio of the *n*th term of a series to the preceding term.

test-ring (test′ring), *n.* A ring-shaped sample of iron, steel, or other magnetic material used in the determination of the permeability, hysteresis, or other magnetic properties of the metal of which the ring is made.

Test-tube clamp. See ★*clamp*[1].

test-tube (test′tūb), *v. i.*; pret. and pp. *test-tubed*, ppr. *test-tubing*. [*test-tube*, *n.*] The use of the test-tube in chemistry. [Rare.]

> Unintelligent "*test-tubing*" according to analytical tables was the prevalent mode of instruction.
>
> *Athenæum*, Dec 30, 1905, p. 900.

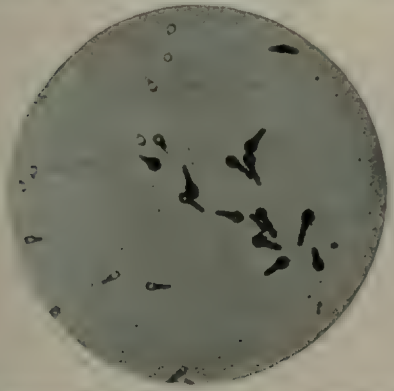
Testudinoidea (tes-tū-di-noi′dẹ-ạ̈), *n. pl.* [NL., < L. *testudo* (*-din-*), a tortoise, + *-oidea*.] A superfamily of cryptodiran turtles. The skull is without parietosquamosal arch, and the squamosal is separated from the postorbitofrontal bone; there is a foramen palatinum between the maxilla and the palatine; the articular faces between the sixth and seventh cervical vertebræ are not plane, and two of the cervicals are biconvex; the nuchal is without well-developed costiform processes, and the series of inframarginals is incomplete. This superfamily includes the *Eurydidæ* (marsh-turtles) and the *Testudinidæ* (land-tortoises).

test-weights (test′wāts), *n. pl.* In *exper. psychol.*, a set of cylinders, of like appearance but different weight, used for the determination of the differential sensitivity (passive pressure or lift). The hollow cylinders may be made of brass (in which case the weights are lifted in wooden trays, to avoid complication by temperature sensations), hard rubber, wood, or cardboard. They are packed with shot, wax, cotton-wool, paper, etc., to secure the required difference in weight. The set of weights ordinarily includes two cylinders, of identical weight but of markedly different size, for demonstration of the size-weight illusion. In work of investigation it is usual to employ a set of weight-holders, all of the same weight and appearance, in which various weights may be placed. *Baldwin*, Dict. of Philos. and Psychol., I. 611.

tetanolysin (tet-a-nol′i-sin), *n.* [*tetanus* + *lysin*.] A toxin produced by the tetanus bacillus, to which the hemolytic action of tetanus poison is due.

tetanospasmin (tet″a-nō-spaz′min), *n.* [*tetanus* + *spasm* + *-in*[2].] A poison produced by the tetanus bacillus, to which the tetanic convulsions are due.

tetanus, *n.* **1.** It is an acute infectious disease, caused by the presence and growth in the tissues of the tetanus bacillus. The characteristic symptom is a tonic spasm of the muscles, more particularly those of the neck and face. The muscles of the jaw are especially affected, whence the common name, lockjaw. The spasms are caused by a toxin, excreted by the bacillus, which passes by way of the nerves to the spinal cord. The bacillus may gain admission through any wound, however trivial, but inoculation occurs usually in deep jagged wounds or punctured wounds made by rusty nails or dirty splinters of wood. Preventive treatment consists in freely opening the wound, since the bacillus does not grow when exposed to the air, and disinfecting it. The injection of tetanus antitoxin will often prevent the development of the disease, but is ineffectual as a curative measure when once the affection is established.—**Acoustic tetanus.** See ★*acoustic.*—**Infantile tetanus.** Same as *trismus nascentium.*—**Ritter's tetanus,** tonic muscular contraction occurring when the electrical current is broken.—**Tetanus bacillus,** the specific micro-organism of tetanus, or lockjaw. It occurs in the form of slender rods 2 to 4 μ in length, having a rounded spore at one extremity, giving them the appearance of short round-headed pins. The bacilli are anaerobic and do not grow when exposed to the air, but the spores are extremely resistant and may retain their vitality for many years in the soil and elsewhere.



Tetanus Bacillus, from agar culture. Magnified 1,000 times.
(From Buck's "Reference Handbook of the Medical Sciences.")

tetany, *n.*—**Gastric tetany,** recurring attacks of tonic convulsions of mild form, associated with dilatation of the stomach.

tetarcone (tet′ä̤r-kōn), *n.* [Gr. *τέταρτος*, fourth, + *κῶνος*, a cone.] The postero-internal cusp of an upper premolar.

tetartohedron (te-tär-tọ̄-hē′drọn), *n.*; pl. *tetartohedra* (-drä̤). [NL., < Gr. *τέταρτος*, fourth, + *ἕδρα*, seat, base.] A tetartohedral crystal: a form having only one fourth as many faces as the corresponding holosymmetric (holohedral) form. See ★*symmetry*, 6.

tetartoid (te-tär′toid), *n.* [Gr. *τέταρτος*, fourth, + *-oid.*] The twelve-faced solid of the tetartohedral class of the isometric system. It corresponds to the hexoctahedron of the holosymmetric class.

teth (tāt), *n.* [Heb. *ṭēth, ṭēt.*] The ninth letter (ט) of the Hebrew alphabet, pronounced somewhat like the English *t*. Its numerical value is 9.

tether, *n.*—**At the end of one's tether,** or **to the length of one's tether,** at the limit of discretion; as far as one can go without being checked by public opinion or by circumstances.

> Meanwhile Mr. Rodney was being terribly de trop. Mrs. Verulam had now come to what is called *the end of the tether.* *R. Hichens*, The Londoners, iv.

tether-ball (teᴛʜ′ėr-bâl), *n.* **1.** A lawn-game played by two players with rackets and a ball which is hung, or 'tethered,' by a cord to the top of a pole. The object of the game is to wind the string that holds the ball around the pole by striking the ball with the racket, the opponent endeavoring to do this in the opposite direction.—**2.** The ball used in this game.

tethery (teᴛʜ′ėr-i), *a.* [*tether* + *-y*^{1}.] Clinging: said of long-stapled wool, the fibers of which overlap and cling to one another, hindering their proper working in the processes of manufacture. *C. Vickerman*, Woollen Spinning, p. 167.

tetlatia (tā-tlä′tẹ̄-ä), *n.* [Mex. Sp. *tetlatia*, < Nahuatl *tetl*, stone, + *tlatla*, burn.] In Mexico, the poison-oak (*Rhus Toxicodendron*) and *Comocladia Engleriana*, plants with an acrid juice which causes an eruption of the skin. Also called *guao*.

tetrabasic (tet-ra-bā′sik), *a.* [Gr. *τετρα-*, four, + E. *base*^{2} + *-ic.*] In *chem.*: (*a*) Noting an acid which contains four atoms of hydrogen replaceable by more electropositive elements or radicals, as pyrophosphoric acid, $H_4P_2O_7$.

> From the variation of the conductivity with the dilution, the author concludes that casein is a *tetrabasic* acid with a molecular weight equal to 4540. *Nature*, Oct. 23, 1902, p. 637.

(*b*) Noting a salt which contains electropositive elements or radicals replacing four atoms of hydrogen.

tetraboric (tet-ra̤-bō′rik), *a.* [Gr. *τετρα-*, four, + E. *bor*(*on*) + *-ic.*] Containing four atoms of boron.—**Tetraboric acid,** a glassy, amorphous solid, obtained by regulated heating of orthoboric acid. Its formula is $H_2B_4O_7$, containing four atoms of boron, hence the name; but it is more commonly called *pyroboric acid.* Common borax is its sodium salt.

tetrabrachys (tet-ra̤-brak′is), *n.* Same as *tetrabrach.*

tetrabromfluorescein (tet″ra̤-brōm-flö-ọ̄-res′ẹ̄-in), *n.* [Gr. *τετρα-*, four, + E. *brom*(*ine*) + *fluoresc*(*e*) + *-e-in.*] An artificial dyestuff commonly called *eosin* (which see).

tetrachlorid (tet-ra-klō′rid), *n.* [Gr. *τετρα-*, four, + E. *chlorid.*] A chlorid which contains four atoms of chlorin: as, tin *tetrachlorid*, $SnCl_4$.

tetrachloromethane (tet″ra-klō-rọ̄-meth′ān), *n.* [Gr. *τετρα-*, four, + E. *chlor*(*in*) + E. *methane.*] See ★*carbon tetrachlorid.*

tetrachromatic (tet″ra̤-krọ̄-mat′ik), *a.* [Gr. *τετρα-*, four, + E. *chromatic.*] Pertaining to, or characterized by, four colors: said, especially, of normal daylight-vision, as contrasted with the monochromatic vision of total color-blindness. *Baldwin*, Dict. of Philos. and Psychol., II. 793.

tetrachromic (tet-ra̤-krō′mik), *a.* [Gr. *τετρα-*, four, + *χρῶμα*, color, + *-ic.*] Relating to four colors; noting the color-blind who are able to see only four colors.

> Normal sighted persons see six colours, some even seven; the second class of the colour-blind see five, four, three, two or one colour, according to the degree of their defect, and are called pentachromic, *tetrachromic*, &c. *Nature*, Nov. 19, 1903, p. 71.

Tetracladina (tet″ra̤-clā̤-dī′nä̤), *n. pl.* [NL., < Gr. *τετρα-*, four, + *κλάδος*, a twig.] A suborder of lithistid sponges which have skeletons composed of four-rayed spicules. It contains a number of genera ranging from Cambrian to recent time.

tetraclone (tet′ra̤-klōn), *n.* [Gr. *τετρα-*, four, + *κλών*, a twig. See *clon, clone.*] In the nomenclature of the skeletal elements of the sponges, a four-rayed spicule or calthrop with the ends branched or radiciform.

tetracoral (tet′ra̤-kor-al), *n.* [Gr. *τετρα-*, four, + *κοράλλιον*, coral.] One of the *Tetracoralla* (which see).

tetracosane (tet-ra̤-kō′sān), *n.* [Gr. *τετρα-*, four, + (*εἴ*)*κοσι*, twenty, + *-ane.*] A colorless hydrocarbon of the methane series, $CH_3(CH_2)_{22}CH_3$, prepared by the action of hydriodic acid and phosphorus on the dichlorid $C_{24}H_{48}Cl_2$. It melts at 51.1° C., and boils at 243° C. under 15 millimeters pressure.

tetracotylean (tet-ra̤-kot-i-lē′a̤n), *a.* [Gr. *τετρα-*, four, + *κοτύλη*, cup.] Having four cup-shaped or hemispherical organs of adhesion on the scolex, as the common tapeworm.

tetractine (te-trak′tin), *n.* [Gr. *τετρα-*, four, + *ἀκτίς* (*ἀκτιν-*), a ray.] In the sponge-spicules, a four-armed element derived from either the tetraxon or the triaxon.

tetrad, *n.* **4.** In *cytol.*, a group of four chromosomes formed by the division of a single chromosome; a quadripartite chromosome. *Wilson.*—**Tetrad axis of symmetry.** See ★*symmetry*, 6.

tetradactyly (tet-ra̤-dak′ti-li), *n.* [Gr. *τετρα-*, four, + *δάκτυλος*, finger, + *-y*^{3}.] The condition of having four digits on the hand or foot: said of certain mammals.

> The most generalized condition of feet and limbs ranging from the ancestral canid Cynodictis of the Oligocene and lower Miocene, in which both manus and pes are pentadactyl, though with functionless pollex, to Lycaon in which structural *tetradactyly* prevails. *Amer. Nat.*, Jan., 1904, p. 3.

tetradecane (tet-ra̤-dek′ān), *n.* [Gr. *τετρα-*, four, + *δέκα*, ten, + *-ane.*] A colorless hydrocarbon, $CH_3(CH_2)_{12}CH_3$, of the methane series, prepared by the action of hydriodic acid and phosphorus on myristic acid. It melts at 5.5° C. and boils at 252.5° C.

Tetradium (te-trā′di-um), *n.* [NL., < Gr. *τετράδιον*, also *τετραδεῖον*, a set of four, < *τετράς*, the number four. See *tetrad.*] A genus of fossil tabulate corals allied to *Chætetes*, the delicate branching coralla of which are common in the Lowville limestone of the New York Silurian series, and which, when cut in transverse section, form the calcareous spots to the presence of which that rock owes its former name of 'bird's-eye limestone.'

Tetragonal symmetry. See ★*symmetry*, 6.

tetragonidium (tet″ra̤-gọ̄-nid′i-um), *n.*; pl. *tetragonidia* (-ä̤). [NL., < Gr. *τετρα-*, four, + NL. *gonidium.*] Same as *tetraspore.*

Tetragonites (te-trag-ọ̄-nī′tēz), *n.* [NL., < Gr. *τετράγωνος*, rectangular, + *-ites.*] A genus of leptocampylous ammonoid cephalopods with smooth, discoidal, involute shells having a rounded venter and flattened sides, and few lobes and saddles in the sutures. It occurs in Cretaceous rocks.

Tetragonopterinæ (te-trag-ọ̄-nop-te̤-rī′nē), *n. pl.* [NL., < *Tetragonopterus* + *-inæ.*] A subfamily of characinoid fishes.

Tetragonopterus (te-trag-ọ̄-nop′te̤-rus), *n.* [NL., < Gr. *τετράγωνος*, rectangular, + *πτερόν*, wing. The name was originally *Tetragonoptrus*, 'rectangular in appearance.'] A genus of fishes inhabiting fresh waters of the warmer parts of America, one of the species entering the United States. It belongs to the family *Characinidæ.*

Tetragonuridæ (te-trag-ọ̄-nū′ri-dē), *n. pl.* [NL., < *Tetragonurus* + *-idæ.*] A family of fishes, of doubtful relationships, found in the open Atlantic.

Tetragonurus (te-trag-ọ̄-nū′rus), *n.* [NL., < Gr. *τετράγωνος*, rectangular, + *οὐρά*, tail.] A genus of fishes belonging to the family *Tetragonuridæ*, found in the open Atlantic.

tetragram, *n.* **2.** In *geom.*: (*b*) A system of four straights with their six fans.

Tetragraptus (tet-ra̤-grap′tus), *n.* [Gr. *τετρα-*, four, + *γραπτός*, written (see *graptolite*).] A genus of graptolites of the suborder *Axonolipa*, characterized by four branches.

Tetrahedral class. See ★*symmetry*, 6.—**Tetrahedral complex.** See ★*complex.*—**Tetrahedral kite.** See ★*kite*^{1}.—**Tetrahedral theory,** a hypothesis, formulated by Lowthian Green, in accordance with which the solid earth is believed to approximate the shape of a tetrahedron, the oceanic waters filling it out to a spheroid. An attempt is thus made to explain the continental areas and the oceanic abysses.

> The *tetrahedral theory* does not regard the world as a regular tetrahedron with four plane faces; it considers that the lithosphere has been subjected to a slight tetrahedral deformation, to an extent indeed only faintly (if at all) indicated by geodetic measurements, but yet easily recognizable owing to its influence on the distribution of land and water. *Geog. Jour.* (R. G. S.), XIII. 237.

tetrahedric (tet-ra̤-hē′drik), *a.* [*tetrahedron* + *-ic.*] Related to, or shaped like, a tetrahedron. *Smithsonian Rep.*, 1890, p. 367.

tetrahedroid, *n.* **II.** *a.* Resembling a tetrahedron.

> Producing tetrahedral, or *tetrahedroid*, deformation. *Geog. Jour.* (R. G. S.), XIII. 251.

tetrahedron, *n.*—**Six-faced tetrahedron,** a hexakistetrahedron (hextetrahedron).

tetrahydrated (tet-ra-hī′drā-ted), *a.* [Gr. *τετρα-*, four, + *ὕδωρ* (*ὑδρ-*), water, + *-ate*^{1} + *-ed*^{2}.] Containing four molecules of water, as crystallized cadmium nitrate, $Cd(NO_3)_2.4H_2O$.

tetrahydrobenzoic (tet″ra̤-hī-drọ̄-ben-zō′ik), *a.* Derived from benzoic acid and hydrogen.—**Tetrahydrobenzoic acid,** the name of two acids, $C_6H_9CO_2H$, known respectively as Δ^1- and Δ^2-tetrahydrobenzoic acids. The former boils at 235° C.; the latter boils at 240–243° C. and melts at 29° C.

tetrahydrogen (tet-ra̤-hī′drọ̄-jen), *a.* [Gr. *τετρα-*, four, + E. *hydrogen.*] Containing four atoms of hydrogen in combination: as, *tetrahydrogen* calcium orthophosphate, $CaH_4(PO_4)_2$, which occurs in the superphosphate of lime of commerce.

tetrakisazo (tet″ra̤-kis-az′ọ̄), *a.* [Gr. *τετράκις*, four times, + E. *azo.*] Pertaining to a chemical compound that contains four azo groups.—**Tetrakisazo type,** a type of coal-tar coloring-matters characterized by the presence of four azo groups.

tetraleioclone (tet-ra̤-lī′ọ̄-klōn), *n.* [Gr. *τετρα-*, four, + *λεῖος*, smooth, + *κλών*, a twig.] In the sponge-spicules, a tetraclone with smooth arms.

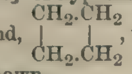
Tetralophodon (tet-ra̤-lof′ọ̄-don), *n.* [NL., < Gr. *τετρα-*, four, + *λόφος*, a crest, + *ὀδούς* (*ὀδοντ-*), a tooth.] A subdivision (subgenus) of the genus *Mastodon* in which the last milk-molar and first and second true molars (the so-called intermediate molars) each bear four transverse ridges on the grinding surface of the crown.

tetramere (tet′ra̤-mēr), *n.* [Gr. *τετρα-*, four,

+ *μέρος*, a division.] In the reticular skeleton of the hexactinellid sponges, a division or mere of the fourth order. See ★*mere*^{6}.

tetrametaphosphate (tet-ra̤-met-a̤-fos'fāt), *n.* [*tetrametaphosph(oric)* + *-ate*^{2}.] A salt of metaphosphoric acid in the molecule of which four atoms of phosphorus are present: as, sodium *tetrametaphosphate*, $Na_4P_4O_{12}$.

tetramethyl (tet-ra̤-meth'il), *n.* [Gr. *τετρα-*, four, + E. *methyl.*] In *organic chem.*, a name given to compounds each molecule of which contains four methyl groups: also used as a combining form.

tetramethylene (tet-ra̤-meth'i-lēn), *n.* [*tetramethyl* + *-ene.*] A hypothetical organic chemical compound,  $\begin{array}{l}CH_2.CH_2\\ |\quad\;\; |\\ CH_2.CH_2\end{array}$, many derivatives of which are known.

tetramine (te-tram'in), *n.* [Gr. *τετρα-*, four, + E. *amine.*] An organic compound containing four amino (NH_2) groups.

tetramorphism (tet-ra̤-môr'fizm), *n.* [Gr. *τετράμορφος*, four-shaped, + *-ism.*] The property of crystallizing in four independent forms. This is characteristic of magnesium metasilicate ($MgSiO_3$), which may exist as a monoclinic pyrogene, as enstatite, as kupfferite, and as a monoclinic amphibole.

tetramyrmeclone (tet-ra̤-mėr'mẹ̄-klōn), *n.* [Gr. *τετρα-*, four, + *μυρμη(κιά)*, wart, + *κλών*, a twig, branch.] In the sponge-spicules, a tetraclone in which the arms are covered with tubercles.

tetranephric (tet-ra̤-nef'rik), *a.* [Gr. *τετρα-*, four, + *νεφρός*, kidney.] Having four urinary or Malpighian tubes. *A. S. Packard*, Textbook of Entom., p. 355.

tetraphenol (tet-ra-fē'nol), *n.* [Gr. *τετρα-*, four, + E. *phen(yl)* + *-ol.*] A former name for ★*furfurane.*

tetraphosphide (tet-ra̤-fos'fid), *n.* [Gr. *τετρα-*, four, + NL. *phosph(orus)* + *-ide*^{1}.] A compound of a supposedly more electropositive element or radical with four atoms of phosphorus: as, sulphur *tetraphosphide*, SP_4, a substance which, however, has been shown to be merely a solution of sulphur in phosphorus.

tetraphosphorus (tet-ra̤-fos'fọ̄-rus), *n.* [NL., < Gr. *τετρα-*, four, + NL. *phosphorus.*] Noting a compound with four atoms of phosphorus in the molecule.—**Tetraphosphorus trisulphid**, a compound of four atoms of phosphorus with three atoms of sulphur, P_4S_3, a yellow crystallizable solid, easily taking fire in the air, and slowly decomposed by boiling water.

tetraplous (tet'ra̤-plus), *a.* [Gr. *τετραπλοῦς*, fourfold.] Fourfold. [Rare.]

> Down the center of the back is a series of *tetraplous* bright red spots. *Proc. Zool. Soc. London*, 1899, p. 684.

Tetrapoda, *n. pl.* **2.** Credner's name for all vertebrates save fishes, since they have, as a rule, four well-defined limbs.

> The vertebræ of the Urodela and those of the Apoda differ from those of all the other *Tetrapoda* by possessing no special centra or bodies.
> *H. Gadow*, Amphibia and Reptiles, p. 11.

tetrapolar (tet-ra̤-pō'lä̤r), *a.* [Gr. *τετρα-*, four, + *πόλος*, pole, + *-ar*^{3}.] In *cytol.*, of or pertaining to an abnormal karyokinetic figure with four instead of two poles, the condition found in a tetraster. *Encyc. Brit.*, XXXI. 514.

tetraprionidian (tet″ra̤-prī-ọ̄-nid'i-a̤n), *a.* [Gr. *τετρα-*, four, + *πρίων*, saw, + *-ιδιον*, dim. suffix, + *-an.*] Having four monoprionidian (single-rowed) polyparies attached by their posterior edges to a common central canal to form a four-flanged colony, as in the graptolite genus *Phyllograptus.*

tetrapropionate (tet-ra̤-prō'pi-ọ̄-nāt), *n.* [Gr. *τετρα-*, four, + E. *propion(ic)* + *-ate.*] In *organic chem.*, a name given to a compound which contains four univalent propionic acid radicals, CH_3CH_2COO-, in its molecule. Such substances are usually classed as salts.

tetraptych (tet'trap-tik), *n.* [Gr. *τετρα-*, four, + *πτύξ, πτυχή*, fold.] An altar-piece, or other arrangement of pictures, in four compartments. See *triptych.*

tetrapylon (tet-ra̤-pī'lon), *n.* [Gr. *τετρα-*, four, + *πυλών*, gateway.] A quadruple arch marking, and covering, the intersection of two avenues in an old Roman city.

> All of them are conjectured to have been vaulted *tetrapylons* at the crossing of thoroughfares.
> *H. C. Butler*, Architecture and Other Arts, p. 393.

tetrapyramid (tet-ra̤-pir'a̤-mid), *n.* [Gr. *τετρα-*, four, + E. *pyramid.*] A name sometimes given to that form of the triclinic system each of whose two faces intercepts the three crystallographic axes.

tetrarch^1, *n.* **3.** One of any group of rulers or chiefs.

> The Parnassian school . . . chose as their *tetrarchs* and judges Théophile Gautier, Leconte de Lisle, Baudelaire, and Banville. *Encyc. Brit.*, XXVIII. 496.

tetrarch^2 (tet'rärk or tē'trärk), *a.* and *n.* [Gr. *τετρα-*, four, + *ἀρχή*, a beginning.] **I.** *a.* In *bot.*, having four centripetally developed xylem plates: said of some radial vascular cylinders.

II. *n.* A stele which has four plerome strands.

tetrasalicylide (tet-ra̤-sal'i-sil-id), *n.* [Gr. *τετρα-*, four, + E. *salicyl(ic)* + *-ide*^{1}.] A crystalline polymerization-product of salicylic acid, $(C_7H_4O_2)_4$, made by heating its solution in toluene with phosphorus oxychlorid. Concentrated alkali slowly changes it into salicylic acid. It melts at 260–261° C. Also called *salicylide.*

tetraseme (tet'ra̤-sēm), *n.* and *a.* [Gr. *τετρα-*, four, + *σῆμα*, sign.] **I.** *n.* In *pros.*, a foot equal to four moræ. See *mora*^{1}, 1.

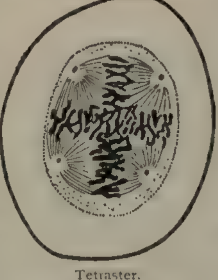
II. *a.* Having the length of four moræ.

tetraskele, tetrascele (tet'ra̤-skēl, -sēl), *n.* [Gr. *τετρασκελής*, four-legged, quadruped, < *τετρα-*, four, + *σκέλος*, leg.] A figure composed of four branches radiating from a center; specifically, the true swastika or fylfot, having four branches in distinction from the triskelion, which has only three. See *triskele*, *swastika*, and *fylfot.*

tetraskelion (tet-ra-skē'li-ọn), *n.*; pl. *tetraskelia* (-ä̤). [NL. See ★*tetraskele.*] Same as ★*tetraskele.* *Haddon*, Evolution in Art, p. 213.

tetraspheric (tet-ra̤-sfer'ik), *a.* [Gr. *τετρα-*, four, + *σφαῖρα*, sphere, + *-ic.*] In *geom.*, of or pertaining to four spheres.

tetraster (te-tras'tėr), *n.* [Gr. *τετρα-*, four, + *ἀστήρ*, star.] In *cytol.*, an abnormal karyokinetic figure with four instead of two astrospheres.



Tetraster.
(From Wilson's "The Cell.")

tetrastim, *n.* See *tetrastigm.*

Tetrastyle in antis, said of a classic façade in which four columns are placed between antæ. *H. C. Butler*, Architecture and Other Arts, p. 358.

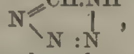
tetrastylic (tet-ra-stil'ik), *a.* [*tetrastyl(e)* + *-ic.*] Same as *tetrastyle.*

tetrathionate (tet-ra-thī'ọ̄-nāt), *n.* [*tetrathion(ic)* + *-ate*^{1}.] A salt of tetrathionic acid: as, potassium *tetrathionate*, $K_2S_4O_6$.

tetratricontane (tet″ra̤-trī-kon'tān), *n.* [Gr. *τετρα-*, four, + *τρι-*, three, + *(τριά)κοντα*, thirty, + *-ane.*] A colorless crystalline hydrocarbon, $CH_3(CH_2)_{32}CH_3$, of the methane series, contained in Pennsylvania petroleum. It melts at 71–72° C.

tetravalence (te-trav'a̤-lẹns), *n.* [Gr. *τετρα-*, four, + E. *valence.*] Same as ★*quadrivalence.*

tetravalent (te-trav'a̤-lẹnt), *a.* [Gr. *τετρα-*, four, + E. *valent.*] Same as *quadrivalent.*

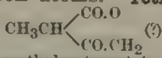
tetrazole (te-traz'ōl), *n.* [Gr. *τετρα-*, four, + E. *azole.*] A colorless compound,  $N\begin{array}{l}\diagup\!\!\!\diagup CH.NH\\ \qquad\quad |\\ \diagdown N:N\end{array}$, prepared from aminophenyltetrazole-carboxylic acid. It has acidic properties, crystallizes in lustrous prisms or plates, melts at 155° C., and may be sublimed.

tetrazone (te-traz'ōn), *n.* [Gr. *τετρα-*, four, + E. *azone.*] In *organic chem.*, a name given to a class of compounds derived from the hypothetical compound $H_2N.N:N.NH_2$. They are prepared by the oxidation of alkylphenylhydrazines or of diphenylhydrazines.

tetrazoöid (tet-ra̤-zō'oid), *n.* [Gr. *τετρα-*, four, + E. *zoöid.*] One of the four zoöids which arise from the stolon of a parent *Pyrosoma* zoöid and give rise by budding to the adult colony.

tetrevangelium (te-trē-van-jē'li-um), *n.*; pl. *tetrevangelia* (-ä̤). [NL., < Gr. *τετρα-*, four, + LL. *evangelium.* See *evangel.*] The four Gospels brought together in one work.

> The two books, then, so far as the Greek text is concerned, must have been in circulation by themselves; and hence Codex Bezæ goes back not into a *tetrevangelium*, but into a detached collection, not necessarily of one period, in which the Lucan writings were a separate factor, unconnected with the rest.
> *New York Independent*, Jan. 27, 1898.

tetrinic (te-trin'ik), *a.* [Gr. *τετρα-*, four, + *-in* + *-ic.*] Pertaining to a compound with four carbon atoms.—**Tetrinic acid**, a colorless compound,  $CH_3CH\begin{array}{l}\diagup CO.O\\ \diagdown CO.CH_2\end{array}$ (?), prepared by heating ethyl brommethylacetoacetate. It crystallizes in long needles or triclinic prisms and melts at 189° C.

tetrobol (te-trob'ol), *n.* Same as ★*tetrobolon.* *G. F. Hill*, in Jour. Hellenic Studies, XVII. 81.

tetrobolon (te-trob'ọ̄-lon), *n.*; pl. *tetrobola* (-ä̤). [Gr. *τετρώβολον*, < *τετρα-*, four, + *ὀβολός*, an obolus.] A Greek silver coin of the value of 4 obols (about 12 cents).

tetrode (tet'rōd), *n.* [Gr. *τετρα-*, four, + *ὁδός*, way (or *-ωδης*, *-ο-ειδης*, < *εἶδος*, form?).] Among the sponge-spicules, one with four equal rays in the same plane.

tetrodonic (tet-rọ̄-don'ik), *a.* [*Tetrodon* + *-ic.*] Derived from fishes of the genus *Tetrodon*: applied to an acid, a poisonous substance obtained from the roe of these fishes, probably the cause of a form of fish-poisoning which is common in Japan.

tetrodonin (tet-rọ̄-don'in), *n.* [*Tetrodon* + *-in*^{2}.] A crystalline base which has been obtained, together with tetrodonic acid, from the roe of fishes of the genus *Tetrodon*: like tetrodonic acid, it is probably the cause of a form of fish-poisoning common in Japan.

tetrol (tet'rol), *n.* [Gr. *τετρα-*, four, + *-ol.*] In *organic chem.*, a hypothetical hydrocarbon, C_4H_4, of which some derivatives are known.

tetrolic (te-trol'ik), *a.* [*tetrol* + *-ic.*] Containing four carbon atoms.—**Tetrolic acid**, a crystalline acid, $CH_3C{\vdots}CCO_2H$, formed by the action of potassium hydroxid on chlorcrotonic acid. It melts at 76° C.

tetronal (tet'rọ̄-na̤l), *n.* [Gr. *τετρα-*, four, + *-on* + *-al*^{3}.] A trade-name of diethylsulphonediethylmethane, $(C_2H_5SO_2)_2C(C_2H_5)_2$, prepared, in a similar manner to sulphonal, from diethylketone and ethylmercaptan. It crystallizes in lustrous plates or leaves, melts at 85° C., and is a more powerful hypnotic than sulphonal.

Tetronarce (tet-rọ̄-när'sẹ̄), *n.* [NL., < Gr. *τετρα-*, four (four-cornered), + *νάρκη*, numbness, deadness (equivalent to *Torpedo*).] A genus of electric rays (*Narcobatidæ*) found on both coasts of the Atlantic and on the eastern Pacific coast.

tetronerythrin (tet″ron-e-rith'rin), *n.* [Gr. *τετρα-*, four, + *-on* + Gr. *ἐρυθρός*, red, + *-in*^{2}.] A reddish lipochrome occurring in invertebrates.

tetrose (tet'rōs), *n.* [Gr. *τετρα-*, four, + *-ose.*] In *organic chem.*, the class-name applied to those sugars which contain four atoms of carbon in the molecule.

tetroxid (te-trok'sid), *n.* [Gr. *τετρα-*, four, + E. *oxid.*] An oxid which contains in its molecule four atoms of oxygen. Very remarkable examples are presented by ruthenium and osmium tetroxids, RuO_4 and OsO_4, readily volatile compounds of two of the least fusible and volatile metals.

tetter, *n.*—**Honeycomb tetter.** Same as *favus*, 2.

tettigoniid (tet-i-gō'ni-id), *n.* and *a.* **I.** *n.* A member of the homopterous family *Tettigoniidæ.*

II. *a.* Having the characters of or belonging to the family *Tettigoniidæ.*

teucrin (tū'krin), *n.* [*Teucr(ium)* (see def.) + *-in*^{2}.] A colorless glucoside, $C_{21}H_{24}O_{11}$ or $C_{21}H_{26}O_{11}$, contained in *Teucrium fruticans.* It crystallizes in needles, melting at 228–230° C.

Teut. An abbreviation (*b*) of *Teuton.*

Teuto-Celtic (tū″tọ̄-sel'tik), *a.* Teutonic and Celtic; of mixed Teutonic and Celtic blood.

Teutonomania (tū″tọn-ō-mā'ni-ä̤), *n.* [L. *Teutones*, Germans, + Gr. *μανία*, mania.] Excessive partiality for the Germans or for German ideas and ways.

> Ministers . . . will do no good by tampering with Mr. Chamberlain's exploded *Teutonomania.*
> *Herbert Paul*, in Nineteenth Century and After, Nov., [1905.

Teutophile (tū'tọ̄-fil), *a.* [L. *Teutones*, Germans, + Gr. *φιλεῖν*, love.] Partial to the Germans; having a liking for German ideas and ways.

> Nevertheless, the work of John Venn, 'Principles of Empirical or Inductive Logic,' London, 1889, is such an

independent rendering of Mill as to be worthy of more attention than it receives in the current *Teutophile* philosophy.
Jour. Philos. Psychol. and Sci. Methods, Feb. 4, 1904, [p. 58.

Teutophobe (tū′tọ̄-fōb), *n.* [L. *Teutones*, Germans, + Gr. *-φοβος*, < *φοβεῖν*, fear.] One who fears the Germans or the increase of German power and influence; one who dislikes German ideas and ways.

> One of those professors whom the English *Teutophobes* have accused of wishing to "educate" Germany up to the point of attacking England.
> *N. Y. Evening Post*, Aug. 14, 1905.

tewfikose (tū′fi-kōs), *n.* [*Tewfik*, name of the khedive of Egypt, + *-ose*.] A sugar found in the milk of the Egyptian buffalo, *Bos bubalus*. It yields glucose when hydrolyzed.

Tex. An abbreviation (*a*) of *Texas*; (*b*) of *Texan*.

texas, *n.* Hence—2. The elevated gallery, resembling a louver or clearstory, in a grain-elevator.

Texas bead-tree. See ★*bead-tree*.—**Texas cattle-fever.** Same as *Texas fever*.

text, *n.*—**Golden text**, a short passage of Scripture used in Sunday-school leaflets, embodying the main thought of each week's lesson.

text-blindness (tekst′blīnd″nes), *n.* Same as *word-blindness*.

text-letter (tekst′let″ėr), *n.* 1. A name given (with qualifying term) to many kinds of pointed black-letter used in engrossing or printing special documents or books, being retained or imitated from the text of late medieval manuscripts or early printed books: as, church *text*, chancery *text*, etc.—2. The style or face of any letter or type selected for the text of a book.

text. rec. An abbreviation of the Latin *textus receptus*, the received text.

texture, *n.*—**Anisometric texture.** See ★*anisometric*.—**Bread-crust texture.** See ★*bread-crust*.—**Graphic texture**, in *petrog.*, a fabric or texture produced by the intergrowth of two minerals, commonly quartz and feldspar, in such a manner that one acts as a matrix for the other, which appears in section as detached, more or less regularly shaped inclusions with like crystallographic orientation. The texture is well known in graphic granite, and is sometimes called *pegmatitic* or *implication texture* and *graphic intergrowth*.—**Isometric texture.** See ★*anisometric texture*.

texture, *v. t.* 2. To give the appearance of a certain texture to. See the extract.

> The textile markings so often seen on the exterior surfaces of vases are not, however, impressions of baskets employed in modeling and molding, but of pliable fabrics and cords used, possibly, in supporting the vessel while in the process of construction, but in most cases as a means of shaping, *texturing*, and ornamenting the surface, and applied by successive imprintings or malleations. *An. Rep. Bur. Amer. Ethnol.*, 1898–99, p. 50.

texture-counter (teks′t̤ūr-koun″tėr), *n.* A small magnifying-glass of low power, used in counting the number of threads, within a given space, in the texture of a fabric.

t. f. An abbreviation of *till forbidden*.

t. g. An abbreviation of *type genus*.

Th. 2. In *chem.*: (*b*) a symbol for *thallium*: better *Tl*.

Thackerayana (thak″ẹ-ri-ā′nạ̈), *n. pl.* [*Thackeray* + *-ana*.] Items, details, collections of all kinds, and bibliography relating to William Makepeace Thackeray.

Thalamencephalic velum, a plexus of blood-vessels which in the brains of some animals dips into the third ventricle from the roof of the thalamencephalon (diencephalon) or optic thalamus.

thalassal (thạ̄-las′al), *a.* Same as *thalassic*.

thalassin (thạ̄-las′in), *n.* [Gr. *θάλασσα*, sea, + *-in*².] A poison found in the tentacles of actiniæ.

thalassocrat (thạ̄-las′ọ̄-krat), *n.* [Gr. *θάλασσα*, sea, + *-κρατης*, ruler, < *κρατεῖν*, rule.] A ruler of the sea. [Rare.]

> But one day war came to Knossos, and the dominion of the proud Minoan *thalassocrats* disappeared in the smoke of the burning Labyrinth. *Nature*, Nov. 20, 1902, p. 58.

thalassographical (thạ̄-las-ọ̄-graf′i-kal), *a.* [*thalassograph*(*y*) + *-ic* + *-al*¹.] Pertaining to the ocean; oceanographical.

> The speedy completion of the concluding volume of the great Challenger work. This 'standard work' will remain for all time the foundation for all biological and *thalassographical* investigations, in relation to Plankton and Benthos alike, especially of the deep sea.
> *Smithsonian Rep.*, 1893, p. 370.

Thalassoma (thạ̄-las′ọ̄-mạ̈), *n.* [NL., < Gr. *θάλασσα*, the sea, + *σῶμα*, body.] A genus of labroid fishes.

thalassophobia (thạ̄-las-ō-fō′bi-ạ̈), *n.* [NL., < Gr. *θάλασσα*, the sea, + *-φοβια*, < *φοβεῖν*, fear.] A morbid fear of the ocean or of any large body of water. *Ribot* (trans.), Psychol. of Emotions, p. 213.

Thalassophryne (thạ̄-las-ọ̄-frī′nē), *n.* [NL., < Gr. *θάλασσα*, the sea, + *φρύνη*, a toad.] A genus of toad-fishes found on both coasts of South America.

thalassotherapy (thạ̄-las-ọ̄-ther′ạ-pi), *n.* [Gr. *θάλασσα*, the sea, + *θεραπεια*, cure.] Treatment of disease by sea-bathing, a residence at the seashore, or a sea voyage. *Med. Record*, June 27, 1903, p. 1058.

thalenite (tä′le-nīt), *n.* [Named after Professor R. *Thalen*.] A silicate of yttrium occurring in flesh-red monoclinic crystals of tabular habit: found in Sweden.

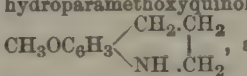
thaler, *n.*—**Beichlinger thaler**, a denomination of coin current in Poland. There is one of Augustus II., dated 1702.—**Jubiläumsthaler**, a commemorative thaler.—**Kaiserthaler**, a silver thaler, without date, of Maximilian I. (1493–1519), with his portrait on the obverse.—**Pyramidthaler**, a silver thaler of the Saxon series, struck to commemorate a death, with an inscription in the form of a pyramid on the reverse.—**Salvatorthaler**, a Swedish silver coin of the sixteenth and seventeenth centuries, with the effigy of the Saviour on one side.

thalictrine (thạ̄-lik′trin), *n.* [*Thalictrum* + *-ine*².] A crystalline alkaloid contained in *Thalictrum macrocarpum*. It resembles aconitin in physiological properties, but is less poisonous.

thallate (thal′āt), *n.* [*thall*(*ic*) + *-ate*².] A salt corresponding to thallic hydroxid, $Tl(HO)_3$, assumed at one time to be capable of acting as a weak acid. It has been shown, however, that no such salts are obtainable.

thallene (thal′ēn), *n.* [*thall*(*ic*) + *-ene*.] A greenish-yellow, highly fluorescent hydrocarbon, possibly isomeric with anthracene, contained in the highest boiling portion of Pennsylvania crude petroleum. It forms small acicular crystals.

thalleoquin (thal′ẹ̄-ọ̄-kwin), *n.* A greenish resinous mass obtained by treating an aqueous solution of quinine sulphate of proper strength with chlorin or bromine and then adding ammonia in excess. This is an identity-test for quinine.

thalline, *a.* II. *n.* A trade-name of tetrahydroparamethoxyquinoline,  $CH_3OC_6H_3\left\langle\begin{array}{l}CH_2.CH_2\\ \quad\quad\ \ |\\ NH\ .CH_2\end{array}\right.$, a colorless compound prepared by the reduction of the corresponding quinoline derivative. It crystallizes in thick trimetric prisms, melts at 42–43° C., and boils at 283° C. In the form of its sulphate and other salts it is used in medicine as an antipyretic.

Thallium light. See ★*light*¹.

thallium-green (thal′i-um-grēn″), *n.* The color of the bright-green line, .5350 μ, in the spectrum of thallium vapor.

thallochlore (thal′ọ̄-klōr), *n.* [Gr. *θαλλός*, branch, + *χλωρός*, green.] An old term which was applied to the green coloring-matter of lichens.

thallophori (tha-lof′ọ̄-rī), *n. pl.* [NL., < Gr. *θαλλός*, branch, + *φέρειν*, bear.] In an ancient Greek procession, men carrying branches, as in the frieze of the Parthenon. *A. S. Murray*, The Sculp. of the Parthenon, p. 147.

thallostrote (thal′ọ̄-strōt), *n.* [Gr. *θαλλός*, a branch, + *στρωτός*, strewn.] In *phytogeog.*, a plant distributed by root-sprouts, runners, or other offshoots. *F. E. Clements*.

thalpotasimeter (thal″pọ̄-tạ̄-sim′e-tėr), *n.* [Gr. *θάλπος*, heat, + *τάσις*, tension or intensity, + *μέτρον*, measure.] 1. An apparatus for observing, measuring, or recording the intensity of high heats: a form of pyrometer for high heats. Specifically—2. An apparatus of the kind which uses the tension of a vapor as a means of observing the heat, as that of the vapor of ether for lower ranges, and that of the vapor of mercury for greater. The vapor-tension moves a gage-needle over a dial, or a recording-lever may be moved across a moving disk or band of paper. *Engin. Mag.*, April, 1904, p. 112.

Thamnastræa (tham-nas-trē′ạ̈), *n.* [NL., < Gr. *θάμνος*, a bush, + *ἀστήρ*, a star.] A genus of perforate *Anthozoa*, typical of the family *Thamnastræidæ*, having a composite, laterally expanded, pedunculate coralla and no distinct walls to the individual corallites, which are united by costal septa: abundant in formations from the Triassic to the Oligocene.

Thamnastræidæ (tham-nas-trē′i-dē), *n. pl.* [NL., < *Thamnastræa* + *-idæ*.] A family of perforate madreporarian corals having simple or composite, basally expanded or massive colonies, the individual corallites of which have numerous septa composed of trabeculæ arranged in fan-shaped or vertical rows. The family comprises several genera, abundantly represented in Mesozoic rocks and less common in Tertiary and recent formations.

Thamnidium (tham-nid′i-um), *n.* [NL. (Link, 1809), < Gr. *θάμνος*, a bush.] A genus of zygomycetous fungi, of the family *Mucoraceæ*, having two kinds of conidial sporangia, of which the primary is terminal and provided with a columella, and the secondary lateral and without a columella. About 10 species are known. *T. elegans* is a common species found on dung and various decaying substances.

Thamniscus (tham-nis′kus), *n.* [NL., < Gr. *θάμνος*, a bush, + dim. *-ισκος*.] A genus of fenestellid cryptostomatous *Bryozoa* with freely bifurcating flattened branches united by few dissepiments: found in formations from Silurian to Permian.

thamuria (tha-mū′ri-ạ̈), *n.* [NL., < Gr. *θαμύς*, frequent, + *οὖρον*, urine.] Frequent passing of urine.

thana (thä′nạ̈), *n.* See *tana*¹.

> Within lay the six rifles and the big Police-book of the *Thana* of Howli!
> *R. Kipling*, At Howli Thana, in Soldiers Three, p. 243.

thanadar (thä′nạ̈-där), *n.* Same as *tanadar*.

thanatism (than′ạ̈-tizm), *n.* [Gr. *θάνατος*, death, + *-ism*.] The view that death means not only an arrest of all physiological functions, but also the definite disappearance, cessation, or destruction of the human mind or soul. Thanatism is opposed by Haeckel to ★*athanatism*, the belief in man's personal immortality. *Primary thanatism* is the original absence of the dogma of immortality in certain primitive uncivilized races; *secondary thanatism* is the later outcome of a rational knowledge of nature in the civilized intelligence. *Haeckel* (trans.), Riddle of the Universe, p. 192.

thanatist (than′ạ̈-tist), *n.* [*thanat*(*ism*) + *-ist*.] One who holds the doctrine of thanatism. [Rare.]

> All the monistic philosophers of the century (Strauss, Feuerbach, Büchner, Spencer, etc.) are *thanatists*.
> *Haeckel* (trans.), Riddle of the Universe, p. 194.

thanatol (than′ạ̈-tol), *n.* [Gr. *θάνατος*, death, + *-ol*.] Same as ★*ajacol*.

thanatophobia (than″ạ̈-tọ̄-fō′bi-ạ̈), *n.* [NL., < Gr. *θάνατος*, death, + *-φοβια*, < *φοβεῖν*, fear.] A morbid fear of death. *Alien. and Neurol.*, May, 1903, p. 170.

thanatosis (than-ạ̈-tō′sis), *n.* [NL., < Gr. *θάνατος*, death, + *-osis*.] In *pathol.*, local death; gangrene.

Thanetian (thạ̈-nē′shiạn), *n.* [*Thanet* + *-ian*.] In *geol.*, the basal stage of the Lower Eocene of northern France and Belgium, correlated with the Thanet sands of the London basin. It comprises sands which are often glauconitic, and limestone, both containing a marine fauna.

thao (tä′ọ̄), *n.* [Chinese, from a dialect not determined; Ningpo *diao*, seaweed.] A gelatinous substance extracted from seaweed in Oriental countries. It is nearly pure gelose (agar-agar), mixed with some easily removed mechanical impurities. It is soluble in water at high temperatures, and in thin layers is very flexible, and hence has been found a valuable dressing for silks and calicoes. Also termed *Chinese* or *Japanese isinglass*. The pure form, which is known as *agar-agar*, is used as a gelatinizing substance in the preparation of nutritive media, in bacteriological work.

tharandite (tar′an-tīt), *n.* [G. *Tharand*, *Tharandt* (see def.), + *-ite*².] A variety of crystallized dolomite from Tharandt, near Dresden, in Saxony, containing one molecule each of calcium and magnesium carbonates and about four per cent. of ferrous carbonate.

thatch, *n.*—**Broom-thatch.** See ★*ippi-appa*.

thatch-cloak (thach′klōk), *n.* A rain-coat made of dried grasses or palm-leaves, used by the Indians of Mexico and by many peoples of eastern Asia.

thatchwood (thach′wu̇d), *n.* Small branches of wood, twigs, underbrush, etc., arranged as if for thatching.—**Thatchwood work.** See *thatchwood-work*.

Thaumantian (thâ-man′ti-ạn), *a.* [Gr. *Θαύμας* (*θαυμαντ-*) + *-ian*.] Pertaining to Thaumas, the sire of Iris and the harpies, in Greek mythology; by allusion, wonder-working; thaumaturgic. [Rare.]

> What meant these azure-shafted arrows, this sudden glare into darkness, this Iris message; *Thaumantian*;—miracle-working? *Ruskin*, Modern Painters, ix. 11.

Theaceæ (thē-ā′sē-ē), *n. pl.* [NL. (Mirbel, 1813), < *Thea* + *-aceæ*.] A family of dicotyledonous, chiefly choripetalous plants, the tea family, of the order *Hypericales*. It is characterized by usually bisexual and racemed flowers with numerous stamens. See *Ternstrœmiaceæ*.

theaceous (thē-ā′shius), *a.* [NL. *Theace(æ)* + *-ous*.] Belonging or pertaining to the *Theaceæ*.

theanthropos (thē-an′thrō-pos or thē-an-thrō′-pos), *n.* [MGr. Θεάνθρωπος (7th and 9th centuries), < Gr. Θεός, God, + ἄνθρωπος, man.] The God-man, that is, Christ, as uniting the divine and human natures.

> Thou great *Theanthropos* that giv'st and crown'st
> Thy gifts in dust. *Quarles*, Emblems, I. Invocation.

theater, *n.*—**Saloon theater**, in the seventeenth and eighteenth centuries, a theater in connection with a tavern, in which the public could enjoy the drama together with smoking and light refreshments: the forerunner of the modern music-hall.

> The *saloon theatres* rarely offended the patent houses, and when they did the law was soon put in motion to show that Shakespeare could not be represented with impunity. *Encyc. Brit.*, XXXI. 46.

theatricable (thē-at′ri-kạ-bl), *a.* Capable of being made effective on the stage. [Nonce-word.]

> It is the subordinate affair of the actor to adapt himself to the poet's conception, and find it *theatricable*.
> *W. D. Howells*, in N. A. Rev., CLXXII. 798.

theatricality, *n.* **2.** A theatrical, showy, or stagy action or thing.

> A piece of *theatricality* built to suit a personality, and very badly built at that.
> *The Academy*, Jan. 27, 1906, p. 93.

theatricism (thē-at′ri-sizm), *n.* [*theatric* + *-ism*.] The character of being calculated for display: theatricality; artificiality; a theatrical appearance. [Rare.]

> The preposterous *theatricism* of the Paris Commune.
> *J. McCarthy*, Our Own Times, IV. 357.

theatricize (thē-at′ri-sīz), *v. i.* and *t.*; pret. and pp. *theatricized*, ppr. *theatricizing*. To assume a theatrical manner; play a part; dramatize (something).

theatrophile (thē-at′rō-fil), *n.* [Gr. θέατρον, theater, + φιλεῖν, love.] One who is fond of the drama and of theaters. [Rare.]

> A point for *theatrophiles*. Sarah Bernhardt claims that she holds the world's record for congratulations from the audience. *Referee*, May 26, 1901.

theatrophone (thē-at′rō-fōn), *n.* [Gr. θέατρον, theater, + φωνή, sound, voice.] An arrangement of telephonic apparatus by means of which subscribers at a distance may listen to performances given on the stage of an opera-house or theater.

> I recently found a talking newspaper system being run in connection with the supplying of music, and talking from the theatres by means of the "*theatrophone*." During the day the subscribers were constantly being informed of the latest news of importance. This service, which supplied many thousands of subscribers, was independent of the regular telephone service.
> *W. J. Hammer*, in Smithsonian Rep., 1901, p. 311.

thebaicine (thē-bā′i-sin), *n.* [*theba(ia)* + *-ic* + *-ine*^{2}.] An amorphous alkaloid, $C_{18}H_{19}NO_3$, formed, together with thebenine, by the action of dilute acids on thebaine.

thebaism (thē-bā′izm), *n.* [*theba(ia)* + *-ism*.] The morbid state produced by the habitual use of opium.

thebenine (thē′be-nin), *n.* [*theb(aine)* + *-ene* + *-ine*^{2}.] An amorphous alkaloid, CH_3-$O(OH)C_{11}H_{15}ON$, prepared by the action of hydrochloric acid on thebaine from opium.

theca, *n.* 1. (*d*) (6) In the graptolites, one of the receptacles of the zoöids.—**Brachial thecæ**, the thecæ which compose the branches of the composite *Graptoloidea*, in distinction from the stolonal thecæ. They remain the abodes of zoöids, while the latter frequently become incorporated into stems.—**Stolonal thecæ**, the thecæ which compose the stems of the composite *Graptoloidea*, in distinction from the brachial thecæ.

Thecal cyst. Same as *ganglion*, 3 (*a*).

Thecidea (thē-sid′ē-ạ̈), *n.* [NL.] Same as *Thecidium*.

thecitis (thē-sī′tis), *n.* [NL., < *theca* + *-itis*.] Inflammation of any theca, specifically of a tendon sheath.

Thecla, *n.* **2.** [*l. c.*] An insect of this genus.—**Hop-vine thecla**, an American lycænid butterfly, *Uranotes* (formerly *Thecla*) *melinus*, wide-spread in the United States. Its larvæ damage the pods and seeds of hop, hawthorn, hounds'-tongue, and St.-John's-wort. Also called *gray hairstreak*.—**Streaked thecla**, an American lycænid butterfly, *Thecla liparops*, of wide distribution, which feeds in the larval state on the oak, willow, plum, blueberry, and shadbush.

thecodontosaurian (thē-kō-don-tō-sâ′ri-ạn), *a.* and *n.* **I.** *a.* Pertaining to or having the characters of the genus *Thecodontosaurus*.

II. *n.* A member of the genus *Thecodontosaurus*.

thecostome (thē′kō-stōm), *n.* [Gr. θήκη, case, + στόμα, mouth.] The orifice of the hydrotheca in calyptoblastic hydroids. *Challenger Rep.*, VII. xx. 7. *Encyc. Dict.*

theft, *n.*—**Constructive theft**, such a wrongful use of goods, rightfully taken, as amounts, in law, to larceny.

theism^1, *n.*—**Cosmic theism**, the religious doctrine taught by John Fiske in his early work 'Outlines of Cosmic Philosophy,' Part III. chap. iii. It differs considerably from his later views.

thelalgia (thē-lal′ji-ạ̈), *n.* [NL., < Gr. θηλή, nipple, + ἄλγος, pain.] Pain in the nipple.

Theligonaceæ (thē-lig-ō-nā′sē-ē), *n. pl.* [NL. (Gillet and Magne, 1862), < *Theligonum* + *-aceæ*.] A family of dicotyledonous apetalous plants of the order *Chenopodiales*, containing the genus *Theligonum* only. See ★*Theligonum*.

Theligonum (thē-lig′ō-num), *n.* [NL. (Linnæus, 1753).] A genus of plants constituting the family *Theligonaceæ*: spelled more correctly *Thelygonum* by many writers. See *Thelygonum*.

Thelodus (thel′ō-dus), *n.* [NL., < Gr. θηλή, nipple, + ὀδούς, tooth.] An extinct genus of fishes of the subclass *Ostracodermi*, of the family *Cœlolepidæ*, characterized by small, quadrangular, and nearly uniform dermal tubercles, by a small dorsal fin near the base of the heterocercal tail, and by the absence of enlarged ridge-scales: from the Ludlow bone-bed and Oesel limestone of the Upper Silurian and the Lower Old Red Sandstone.

theloncus (thē-long′kus), *n.*; pl. *thelonci* (-lon′sī). [NL., < Gr. θηλή, nipple, + ὄγκος, mass.] A tumor or swelling of the nipple.

thelorrhagia (thel-ō-rā′ji-ạ̈), *n.* [NL., < Gr. θηλή, nipple, + (αἱμ)ορραγία, hemorrhage.] Hemorrhage from the nipple.

Thelotremaceæ (thel″ō-trē-mā′sē-ē), *n. pl.* [NL., < *Thelotrema* + *-aceæ*.] A family of gymnocarpous lichens named from the genus *Thelotrema* (which see).

thelyotokous, thelyotoky. Erroneous forms for *thelytokous*, ★*thelytoky*.

thelytoky (thē-lit′ō-ki), *n.* [Gr. θηλυτοκία, < θηλυτόκος, bearing females.] That kind of parthenogenesis in which only female offspring are produced.

thematic, *a.* **3.** Of or relating to a theme of discourse.

theme, *n.* **10.** In *astrol.*, a figure of nativity.—**Motive theme**, in *music*. Same as *subject*, 8.

thense, *adv.* An amended spelling of *thence*.

theobromic (thē-ō-brō′mik), *a.* [*Theobrom(a)* + *-ic*.] Derived from *Theobroma Cacao*: as, *theobromic* acid.

theocin (thē′ō-sin), *n.* Same as ★*theophylline* or ★*dimethylxanthin*: a trade-name.

theodidact (thē′ō-di-dakt), *a.* [Gr. Θεός, God, + διδακτός, taught.] Taught of God.

> [St.] Francis of Assisi is pre-eminently the Saint of the Middle Ages. Owing nothing to church or schools he was truly *theodidact*.
> *Sabatier* (trans.), St. Francis of Assisi, p. xvi.

theodolite-goniometer (thē-od′ō-līt-gō-ni-om″e-tėr), *n.* Same as *two-circle* ★*goniometer*.

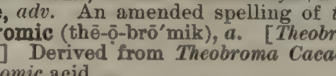
theol. An abbreviation (*c*) of *theologian*.

theoline (thē′ō-lin), *n.* Same as ★*thioline*.

theologastric (thē-ol-ō-gas′trik), *a.* and *n.* [*theologaster* + *-ic*.] Of or pertaining to a theologaster, or theological quack, or to his works. *Froude*, Erasmus, p. 70.

theology, *n.*—**Pectoral theology**, theology in which the emotional element, the religious experience of the individual, predominates.

Theophronian (thē-ō-frō′ni-ạn), *n.* A member of a sect of the Eunomians, followers of Theophronius of Cappadocia, who added to the Eunomian heresy the practice of baptizing in the name of Christ alone, instead of in that of the Trinity. Also called *Eunomio-Theophronians* or *Agnoëtæ*. See *Agnoëtæ*, 1.

theophylline (thē-of′i-lin), *n.* [NL. *thea*, tea, + Gr. φύλλον, leaf, + *-ine*^{2}.] A colorless alkaloid,  $\mathrm{CO}\left\langle\begin{array}{l}\mathrm{N(CH_3).CO.C.NH}\\ \qquad\qquad\qquad\;\; \| \\ \mathrm{N(CH_3)}\text{——}\mathrm{C.N}\end{array}\right\rangle\mathrm{CH.H_2O}$, contained in tea-leaves and prepared synthetically from 1-methylxanthin. It crystallizes in thin monoclinic plates or in needles, melts at 264° C., and acts on the muscles. Also called 1,3-*dimethylxanthin* or 1,3-*dimethyl*–2,6-*dioxypurin*.

theor. An abbreviation of *theorem*.

theorem, *n.*—**Algebraical addition theorem**, a theorem stating that an algebraical equation subsists between ϕx, ϕy, and $\phi(x + y)$, independent of the value of the variables and having coefficients into which the variables in no way enter.—**Archimedes's theorem**, the proposition that the volume of a sphere equals two thirds the volume of the circumscribed cylinder.—**Barbarin's theorem**, the theorem that each of the three spaces, Euclidean, Lobachevskian, Riemannian, contains surfaces of constant curvature of which the geodesic lines have the metric properties of the straight lines of the three spaces.—**Bobillier's theorem**, the proposition that if two sides of a given but movable triangle touch always two fixed circles, the envelop of the third is also a circle.—**Brahmegupta's theorem**, the theorem that if the diagonals of a cyclic quadrilateral are at right angles, the perpendicular from their cross on to one side bisects the opposite side.—**Dirichlet's theorem**, the theorem that every unlimited arithmetical progression, the first term and difference of which are prime to one another, contains infinitely many prime numbers.—**Existence theorem**, a theorem to the effect that under a given hypothesis something of a certain description will exist.—**Parmer's theorem**, the statement that the light obtained from illuminating-gas is proportional to the square of the quantity burned. This relation is approximately true only for a small range of variation, the efficiency of a given burner increasing rapidly, at first, as the gas is turned on, and reaching a maximum when the supply of gas is that to which the burner is best adapted.—**Hadamard's theorem**, a proposition for determining the radius of convergence.—**Harnack's theorems**, two theorems in the theory of the potential given by A. Harnack in 1886. The first is as follows: if a harmonic function u has at the limit of any region T only positive (or only negative) values, U, and if the value of u at any point in that region equals the product of a determinate finite quantity δ with a finite quantity E, then for every other point within T the value of u is representable as the product of δ with a finite quantity E′. The other theorem is: if for any finite region T an endless series of harmonic functions u_1, u_2, u_3, etc., are given, having the same sign throughout that region, and if the series $u_1 + u_2 + u_3 +$ etc. is convergent for any point in T, it is convergent for all points in T and is a harmonic function.—**Hart's extension of Feuerbach's theorem**, the theorem that the inscribed circles of a spherical triangle and its colunar triangles are all four touched by a fifth small circle. *Sir Andrew Hart*, 1861.—**Hermite's theorem**, in *geom.*, the proposition that the number of irreducible conditions under which a surface of the nth order can be passed through a curve of the μth order has for upper limit the number $n\mu + 1$. For a curve of zero deficiency it is precisely $n\mu + 1$. For a curve of deficiency one it is $n\mu$. *Crelle*.—**Heron's theorem**, the proposition that for the area of a triangle in terms of its sides, $\Delta = [s(s-a)(s-b)(s-c)]^{½}$, where $s = (a+b+c)/2$.—**Liouville's theorem**, the proposition that if the modulus of a function remains always within finite limits, it is constant.—**Mannheim's theorem.** (*b*) If the vertex of a triangle and its incircle be given, the envelop of the circumcircle is a circle.—**Möbius's theorem**, the theorem that an anharmonic ratio is unchanged by a bilinear transformation: given by A. F. Möbius (1790–1868) in 1855.—**Negative theorem**, a theorem which expresses the idea that a proposition may be true.—**Salmon's theorem**, the theorem that the distances of any two points from the center of a circle are proportional to the distance of each from the polar of the other.—**Sophie Germain theorem**, the proposition that except 5 no number of the form $a^4 + 4$ is prime.—**Sturm's theorem.** (*b*) In *optics*, the proposition that all the rays constituting a small pencil emanating from a luminous point will, after any number of refractions, pass through two focal lines which are at right angles to each other and to the middle ray of the pencil.—**Theorem of finite increments**, the theorem that $Fa - Fb = (a-b)\,F'\xi$, where ξ is intermediate in value between a and b.—**Theorem of Le Chatelier**, in *phys. chem.*, the theorem that any change of one of the factors of the equilibrium of a thermodynamic system disturbs the system in that direction which imparts to the given factor a change whose algebraic sign is opposite to that of its original change.—**Theorem of Snell**, the equation $u_{2n} = (U_{2n} . u_n)^{½}$, where u_n is the perimeter of the inscribed n-gon, U_{2n} that of the circumscribed $2n$-gon. *Cyclometria*, 1621.—**Theorem of the gnomon**, the proposition that the complements of the parallelograms which are about the diameter of any parallelogram are equal to one another. *Euclid*, I. 43.—**Theorem of undetermined coefficients**, in *alg.*, the theorem that if the series $A + Bx + Cx^2 + Dx^3 + \ldots$ is equal to the series $a + bx + cx^2 + dx^3 + \ldots$, for all values of x which make both series convergent, then the coefficients of like powers of x in the two series must be equal; that is, $A=a$, $B=b$, $C=c$, etc.—**Torricelli's theorem**, the theorem that the velocity of efflux is the velocity which a freely falling body would have on reaching the orifice after having started from a state of rest at the surface: $v = (2gh)^{½}$. See *Torricelli's* ★*law*.—**Trotter's theorem**, in *photom.*, the statement that the light from the crater of an electric arc, emitted in any given direction, is directly proportional to the apparent area of the crater as viewed from that direction.—**Weierstrass's theorem.** (*b*) The proposition that near an essential singularity, which is isolated as regards other essential singularities, a one-valued analytic function, fx, approaches as near as we please to an arbitrarily given value f.—**Weill's theorem**, the proposition that if a variable polygon is inscribed in one circle and circumscribed about another, the mean center of the points of tangency with the latter is constant.

theoretical, *a.* **4.** In *chem.*, indicating the analytical values or other properties which should be obtained from a compound provided the correct conception (theory) of its composition has been formed.

theoria (thē-ō′ri-ạ̈), *n.* [NL., < Gr. θεωρία, the sending of ambassadors, lit. a seeing, going to see. See *theory.*] 1. In *Gr. antiq.*, an embassy sent on a mission of state associated with religion, such as an appeal to an oracle.—2. Philosophic speculation: used by Ruskin to express the higher moral appreciation of beauty, as distinguished from *æsthesis*, which stands for the sensual appreciation. See the extract.

> But the Christian *theoria* seeks not, though it accepts, and touches with its own purity, what the Epicurean sought. *Ruskin*, Modern Painters, II. iii. 17.

theory, *n.*—**Action theory.** See ★*action.*—**Actuality theory.** See ★*actuality.*—**Aggregation theory.** See ★*aggregation.*—**Assemblage theory.** See ★*theory of assemblages.*—**Berzelian theory,** the theory that certain substances induce chemical reactions by their simple presence without taking any part themselves in the process.—**Boscovich's theory,** in *optics*, the hypothesis presented by Boscovich, in 1758, to account, under the emission theory, for the simultaneous reflection and refraction of light. According to this theory the luminous corpuscles rotate, presenting alternately faces capable of reflection and of transmission.—**Calycinal theory.** See ★*calycinal.*—**Carbon theory.** See ★*carbon.*—**Cataclysmic theory.** See ★*cataclysmic.*—**Cell theory.** See ★*cell.*—**Condensation theory,** in *meteor.*, the theory developed by Espy and Ferrel, according to which rain is formed by the dynamic cooling due to the ascent of moist air; the theory that the general phenomena and motions of storms depend principally on those conditions that favor the formation of rain or snow.—**Conscious automaton theory,** a theory, either metaphysically grounded or adopted as a working hypothesis in psychology and biology, of the relation of mind and body; that form of the theory of psychophysical parallelism which regards mind as epiphenomenal.

> At this point we may again for a moment turn aside to consider the so-called *Conscious Automaton Theory.* According to Professor Huxley, the best known modern exponent of this theory, "our mental conditions are simply the symbols in consciousness of the changes that take place automatically in the organism. *Encyc. Brit.*, XXXII. 68.

Double aspect theory, the theory that mental and bodily processes are but two aspects of the same reality: a metaphysical form of the theory of psychophysical parallelism.

> A favourite mode of stating psychophysical parallelism is that known as the *Double Aspect Theory* *Encyc. Brit.*, XXXII. 67.

Dynamical theory of heat. See ★*heat.*—**Dynamic theory of the formation of rain.** See ★*rain*^{1}.—**Dzierzon theory,** the theory according to which the unfertilized eggs of the honey-bee give rise to males, or drones, whereas the fertilized eggs give rise to the queens and workers. *Science*, Dec. 25, 1903, p. 831.—**Espy's theory of storms.** See ★*storm.*—**Faye's theory,** a general theory as to the origin and movement of storms, according to which they begin as whirls in the upper strata of the atmosphere, grow thence downward to the earth's surface, and bring the upper air down with them.—**Ferrel's theory of cyclones.** See ★*cyclone.*—**Glacial theory.** See ★*glacial.*—**Hering's theory of color vision,** or **visual sensation.** See ★*color.*—**Isoglyceride theory,** the assumption by certain chemists that a substance isomeric but not identical with glycerin might form esters with the radicals of the fatty acids different from the ordinary glycerides of the same acids. There seems to be no good ground for any such supposition.—**James-Lange theory,** in *psychol.*, a theory of emotion propounded independently, in somewhat similar terms, by W. James (1884) and C. Lange (1885), to the effect that what is commonly called the expression of emotion is in reality not a consequence, but the cause, of the emotive state. The emotion is regarded as "the effect of the organic changes, muscular and visceral, of which the so-called 'expression' of the emotion consists. It is thus not a primary feeling, directly aroused by the exciting object or thought, but a secondary feeling, indirectly aroused; the primary effect being the organic changes in question, which are immediate reflexes following upon the presence of the object.' As first stated by James, the theory required us to believe that "we feel sorry because we cry, angry because we strike, afraid because we tremble": the situation aroused, reflexly, these organic changes, and the feeling of the changes as they occurred was the emotion. In later writing James appears to admit the possibility of a primary feeling, and maintains merely that the "general seizure of excitement,' which constitutes the body of an emotion, is the effect of the organic changes by which we reflexly meet the situation. In this milder form the theory has found almost universal recognition. Even those who insist most strongly on the primary character of the feeling, and on the invariability of an ideational (associative) content in emotion, admit that the James-Lange theory has called attention, in a needed way, to the part played in the emotive constitution by 'organic reverberation.' In its original and exclusive form, on the other hand, the theory aroused much criticism; and no attempt has been made to apply it to the 'subtler' emotions, the esthetic, etc., sentiments. The theory is sometimes known as the *peripheral theory* or the *effect theory of emotion.* In germ, it goes back, at any rate, as far as Descartes; and hints of it, more or less explicit, have been found in various later writers.—**Laplace's theory of capillarity.** See ★*capillarity.*—**Marx-Engels theory,** the theory of society, of history, and of socialism, formulated by Karl Marx, and developed and expounded by his disciple, Frederick Engels. *Kidd*, Social Evolution, p. 214.—**Mechanical-esthetic theory,** in *psychol.* and *esthetics*, a view propounded by Lipps of Munich in 1891, to the effect that "the optical and the esthetic impressions that a geometrical form makes upon us are merely two sides of one and the same thing, having their common root in ideas of mechanical activities." A similar theory was suggested, independently, by Lee and Anstruther-Thomson in the *Contemporary Review*, Oct.-Nov., 1897.—**Mechanicophysical theory of evolution.** See ★*evolution.*—**Mendel's theory,** the doctrine or opinion that the facts of ancestral inheritance first described by Mendel show that the germ-cells that are produced by cross-bred organisms may, in respect of given characters, be of the two pure parental types, and, on the average, be present in the reproductive organs in equal numbers. See *ancestral* ★*inheritance.*—**Molecular theory of vital currents.** See ★*current*^{1}.—**Mosaic theory of development.** See ★*development.*—**Mutation theory,** the theory that species originate through mutation. See ★*mutation*, 8.—**Pelmatozoic theory.** See ★*pelmatozoic.*—**Pentactæa theory.** See ★*Pentactæa.*—**Plateau's theory** in *psychophys.*, the ratio-hypothesis of Weber's Law, that equal stimulus-ratios correspond to equal sensation-ratios: first propounded by Plateau in 1872.

> The medium stimulus, thus experimentally determined, corresponds neither to the arithmetical mean, as required by *Plateau's theory*, nor to the geometrical mean, as required by Fechner's theory. *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 61.

Recapitulation theory. See ★*recapitulation doctrine.*—**Spiral theory.** See ★*spiral.*—**Tetrahedral theory.** See ★*tetrahedral.*—**Theory of aggregates.** See ★*aggregate.*—**Theory of assemblages.** Same as *theory of sets.* See ★*set*^{1}.—**Theory of combinations.** See ★*combination.*—**Theory of communal intensity.** See *communal* ★*intensity.*—**Theory of manifolds.** Same as *theory of sets.* See ★*set.*—**Theory of Ochsenius,** a theory formulated by Prof. C. Ochsenius of Halle, to explain beds of rock-salt of great thickness. Estuaries of salt water are believed to have existed, cut off from the ocean by shallow bars. The brine concentrated upon the bar by the sun flows down the inner slope and deposits its salt in the depths under the physical conditions there prevailing. Also called *bar theory.*—**Theory of sets.** See ★*set.*—**Theory of symbiosis.** See ★*symbiosis.*—**Theory of types,** in *chem.*, the assumption of a particular number and arrangement of atoms as common to several or many different substances, giving them a common general character, while the nature of these atoms may be varied by replacement. This general idea originated with Dumas in 1839, was expanded and modified later by Laurent, Gerhardt, Williamson, Hofmann, and Wurtz, and led up to the more general conceptions of valence and modern structural chemistry put forward by Frankland and Kekule between 1852 and 1858.—**Theory of von Kries,** in *physiol. optics*, the theory of vision according to which color-perception is due to the action of light upon the cones of the retina, while the rods form a special apparatus adapted to vision by very feeble light and affording only the hazy sensation, devoid of color, known as *rod-white.*—**Tridimensional theory,** in *psychol.*, a name given to Wundt's theory of the simple feelings (1896), according to which there are three dimensions or directions of the affective life, pleasantness-unpleasantness, strain-relaxation, and excitement-depression.—**Tritubercular theory,** the doctrine or opinion that the molar teeth of all mammals are modifications of a tricuspid or tritubercular tooth.

> In reference to the Mammalia, one of Cope's most remarkable generalizations was his so-called "*Tritubercular Theory,*" explaining the origin of the cusps in the molar teeth. *Nat. Sci.*, June, 1897, p. 380.

Unitary theory, method, or **system of chemistry,** the name given by Gerhardt to his system of chemistry, in which the molecular weights of all substances were determined by comparison with one standard molecule (water) by means of one typical form of reaction (double decomposition). Since Berzelius's earlier theory was a dualistic theory, in that it regarded molecules as dual or bipolar in structure, it seems sometimes to be imagined that the unitary theory is one which regards the molecules of a compound as unitary in structure and as acting as units.

> I give the name *unitary method* to the body of principles which I have applied to the study of chemistry, and which are founded on the selection of a unit molecule and of a unit [single] reaction for the comparison of the chemical functions of substances. *Gerhardt.*

Van der Waal's theory. Same as *Van der Waal's* ★*equation.*—**Vasomotor theory,** in *psychol.*, any theory which explains mental occurrence by reference to vasomotor changes: as, the *vasomotor theories* of sleep, a *vasomotor theory* of fluctuation of attention. *Amer. Jour. Psychol.*, XII. 150.—**Welter's theory,** an assumption, now known to be erroneous, that in the combustion of fuel containing both carbon and hydrogen the heat evolved is in direct proportion to the amount of oxygen consumed.

Theos. An abbreviation of *theosophical, theosophist*, or *theosophy*.

theoscopic, theoscopical (thē-ọ-skop′ik, -i-kal), *a.* [*theoscop(y)* + *-ic, -i-kal.*] Pertaining to or of the nature of theoscopy.

theoscopy (thē-os′kō-pi), *n.* [Gr. Θεός, God, + σκοπεῖν, behold.] The beholding of God.

theosis (thē-ō′sis), *n.* [Gr. Θεός, God, + *-osis*, implying fulness.] See the extract.

> The return of the soul to the universal Intellect is designated by Erigena as *Theosis*, or Deification. In that final absorption all remembrance of its past experiences is lost. *J. W. Draper*, Hist. of Conflict between Religion and [Science, v.

theoteleological (thē″ọ-tel″ẹ-ọ-loj′i-kal), *a.* Of or pertaining to, or of the nature of, theoteleology. *L. F. Ward*, Pure Sociol., p. 465.

theoteleology (thē-ọ-tel-ẹ-ol′ọ-ji), *n.* [Gr. Θεός, God, + E. *teleology.*] The doctrine of a divine direction of nature toward a divinely appointed end.

> As far back as Plato we find the germs of a doctrine that afterwards took the name of teleology, but this doctrine would be better called *theoteleology*, since it simply postulates a power outside of nature directing it toward some end. *L. F. Ward*, Pure Sociol., p. 465.

theotokarion (thē″ọ-tō-kā′ri-on), *n.*; pl. *theotokaria* (-ä). [MGr. θεοτοκάριον.] A collection of theotocia. Also *theotocarion. J. M. Neale*, Hist. Eastern Church, I. 832, note.

theotokion (thē-ọ-tō′ki-on), *n.*; pl. *theotokia* (-ä). [Also *theotocion*; < MGr. θεοτόκιον, also θεοτόκος, 'the mother of God.' See *Theotocos.*] The name given in Greek hymnology to the final troparion or strophe of an ode: so called because it ascribes praise to the mother of the Lord (Theotocos).

> The *theotokion* is simply a sticheron or troparion addressed to the Mother of God. *J. M. Neale*, Hist. Eastern Church, I. 832, note.

ther^3, *n.* Same as *thar*^{3}.

therap. An abbreviation of *therapeutic* or *therapeutics*.

therapeutics, *n.*—**Rational therapeutics,** a treatment of disease based upon a knowledge both of the disease itself and of the action of the remedies employed: opposed to *empiricism*.

Theraps (thē′raps), *n.* [NL., < Gr. θέραψ, slave.] A genus of fishes, of the family *Cichlidæ*, found on the west Central American coast.

therapy, *n.*—**Bacterial therapy.** Same as *opsonic* ★*therapy.*—**Opsonic therapy,** the treatment of an infectious disease by means of inoculation with devitalized cultures of the causative microbe. The object of this procedure is to stimulate the production of opsonin, a substance in the blood-serum which promotes phagocytosis by rendering the micro-organisms attractive to the phagocytes.—**X-ray therapy,** the treatment of disease by means of the Röntgen rays.

there, *adv.*—**To have been there,** to have knowledge of something through actual experience; know all about it. [Slang.]

there-beside (thãr′bẹ-sīd″), *adv.* Beside the object named or in mind; close by it.

therevid (ther′e-vid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Therevidæ*.

II. *a.* Having the characters of or belonging to the family *Therevidæ*.

therianthropism (thē-ri-an′thrọ-pizm), *n.* [Gr. θηρίον, a wild beast, + ἄνθρωπος, man, + *-ism.*] The belief that animals are men capable of assuming animal forms, endowed with the powers of both the animal and the human being, and, therefore, more powerful than man.

theriatrics (thē-ri-at′riks), *n.* [Gr. θήρ, a beast, + ἰατρικός, pertaining to medicine. See *iatric.*] Veterinary medicine.

Theridomyidæ (thē″ri-dọ-mī′i-dē), *n. pl.* [NL.] A family of extinct rodents of small size, related to the squirrels and anomalures, based on specimens from the Lower Eocene of Europe. *Alston*, 1876.

theriodic (thē-ri-od′ik), *a.* [Gr. θηριώδης, like a wild beast, savage (< θηρίον, a wild beast, + εἶδος, form), + *-ic.*] Malignant.

theriolatry (thē-ri-ol′ạ-tri), *n.* [Gr. θηρίον, a wild beast, + λατρεία, worship.] The worship by primitive man of wild or venomous beasts. *Tarde* (trans.), Laws of Imitation, p. 274.

theriomimicry (thē″ri-ọ-mim′i-kri), *n.* [Gr. θηρίον, a wild animal, + E. *mimicry.*] Imitation of an animal.

Theriosuchus (thē″ri-ọ-sū′kus), *n.* [NL., < Gr. θηρίον, a wild beast, + σοῦχος, a crocodile.] An extinct genus of crocodiles of the family *Goniopholidæ*, characterized by having the supratemporal vacuities smaller than the orbits, teeth irregular and tumid, and a short mandibular symphysis. The dorsal scutes overlap, and are also united at their outer margins by peg-and-socket articulations. The ventral scutes are polygonal and united by sutures only. The total length is less than 0.5 meter, and the general form approaches that of modern crocodiles. It is found in the Purbeckian beds of Dorsetshire.

theriotheism (thē″ri-ọ-thē′izm), *n.* [Gr. θηρίον, a beast, + θεός, god, + *-ism.*] The worship of or belief in gods in the form of beasts: a term somewhat more precise than *zoötheism*, in this sense.

theriozoic (thē″ri-ọ-zō′ik), *a.* [Gr. θηρίον, a wild beast, + ζῷον, animal, + *-ic.*] Pertaining to the period preceding the domestication of animals.

> This slow and gradual decay, in which bones and shells . . . were exposed to rain and snow, and faded and weathered away, have left us only shreds of the former life in certain fortunate localities, and there is apparently a considerable gap in our evidence, which compels us to separate the *theriozoic* beds into two series. *Sir H. H. Howorth*, in Nat. Sci. April, 1898, p. 269.

therm^2, *n.* **3.** A unit of thermal capacity variously defined as the equivalent of the gram-calory, the kilogram-calory and one thousand kilogram-calories. Of these values the one commonly accepted is that which makes the therm equal to one gram-calory.

The unit which I suggest is 1,000 kilogram calories, for which I propose the designation *Therm.* The word *therm* has already been proposed as the equivalent of the small or gram calorie, but does not appear to have come into general use. Following the analogy of the calorie, we may write the unit here proposed with a capital and use the capital or full-face **T** as a convenient abbreviation. The relation of the units would then be

1 therm (t) = 1 gram-calorie (cal.)
1,000 cals. = 1 kilogram-calorie (Cal.)
1,000 Cals. = 1 Therm (T).

H. P. Armsby, in Science, Nov. 15, 1907, p. 671.

Thermal actinometer. See ★*actinometer.*—**Thermal belt** or **zone,** a band of vegetation, nearly horizontal and several hundred feet in vertical height, peculiar to valleys in the Appalachian Mountain region of North and South Carolina and Virginia, and also found in a few valleys in the Rocky Mountain region, Carinthia, and India, where frost is rarely or never known, although common in the valley below. The freedom from frost is apparently due to the steady flow of cool air down the sides of the mountains and the rising of the warm air to the level of the thermal zone. Also called *frostless zone* and *verdant zone.*—**Thermal charts, conductivity, constant,** etc. See ★*chart*, etc.—**Thermal diffusion.** See *diffusion of heat.*—**Thermal stratum,** that layer of air between 10,000 and 15,000 meters above sea-level in which air-temperatures cease to diminish with altitude and even rise slightly; the inversion layer; the warm layer. —**Thermal value,** the value of a combustible as a means of producing heat. It is measured by the capacity of one unit of weight of the combustible to raise units of weight of water through a given temperature-range. If the units are British, it is the number of heat units given to water by one pound of the combustible on complete combustion. The thermal value is the same as the calorific power and is independent of the rate of combustion. When hydrogen is an element of the fuel, burning to H_2O or water, the thermal value has a higher and a lower figure, according as the heat required to make this water into steam is allowed for, or deducted from the weight of water raised in temperature by the combustion.

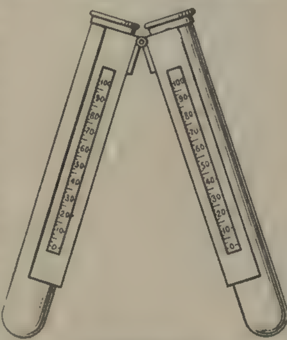
thermanæsthesia (thėr″man-es-thē′si-ä), *n.* [NL., < Gr. *θέρμη*, heat, + NL. *anæsthesia.*] An absence of the sense of temperature: observed under certain pathological conditions involving the integrity of the central nervous system. *Buck*, Med. Handbook, I. 137.

thermeleometer (thėr″mel-ē-om′e-tėr), *n.* [Gr. *θέρμη*, heat, + *ἔλαιον*, oil, + *μέτρον*, measure.] A piece of apparatus for determining the rise of temperature produced by mixing concentrated sulphuric acid with different fixed oils.

thermesiid (thėr-mē′si-id), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Thermesiidæ.*

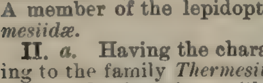
II. *a.* Having the characters of or belonging to the family *Thermesiidæ.*

thermesthesiometer (thėr-mes-thē-si-om′e-tėr), *n.* [Gr. *θέρμη*, heat, + E. *esthesiometer.*] In *exper. psychol.*, an esthesiometer arranged for work upon the temperature senses (warmth and cold). In simple form, the instrument consists of two glass tubes filled with water, the temperature of which is regulated, and held in a transverse handle. By setting the tubes down upon the skin, simultaneously or in succession, one may determine the subjectively equivalent temperatures for two areas of the organ, or the differential limen of a single area. The apparatus may be carried to any desired degree of refinement, and fine metal points may be used for the investigation of the isolated sensations derived from the temperature spots. *Buck*, Med. Handbook, I. 136.



Thermesthesiometer.

thermin (thėr′min), *n.* [Gr. *θέρμη*, heat, + *-in*^{2}.] A trade-name of tetrahydro-*β*-naphthylamine hydrochlorid,



$$C_6H_4\langle{}^{CH_2.CH_2}_{CH_2.CHNH_2.HCl}$$

, prepared by the action of sodium and fusel-oil on *β*-naphthylamine. It crystallizes in lustrous pearly tetragonal plates and melts at 237° C. It is used in medicine as a mydriatic.

thermit, thermite (thėr′mit, -mīt), *n.* [G. **thermit*? < Gr. *θέρμη*, heat, + *-ιτης*, E. *-ite*^{2}.] The trade-name of a mixture of metallic aluminium in a very finely divided condition (so-called 'aluminium bronze powder'), with the oxid of one or more metals, which on being ignited gives rise to an extremely high temperature as the result of combustion of the aluminium which unites with oxygen abstracted from the oxid used. This oxid was originally oxid of iron and the mixture was applied by its inventor, Goldschmidt, to the melting of holes through plates of iron or steel, and the welding of iron rails and pipes; but other oxids may be substituted, sodium dioxid being particularly effective. (See ★*aluminothermics.*) The thermit is ignited by a primer consisting of a mixture of barium superoxid and aluminium, and the temperature obtained is estimated at over 3,000° C.

thermo-æsthesia (thėr″mō-es-thē′si-ä), *n.* [NL., < Gr. *θέρμη*, heat, + *αἴσθησις*, perception.] The sense of heat-perception.

thermo-anæsthesia (thėr″mō-an-es-thē′si-ä), *n.* [NL., < Gr. *θέρμη*, heat, + NL. *anæsthesia.*] Loss of the sense of heat-perception. *Buck*, Med. Handbook, I. 282.

thermo-call (thėr′mō-kâl″), *n.* An automatic electric telltale or alarm for indicating when a predetermined temperature has been attained.

thermochemically (thėr-mō-kem′i-kal-i), *adv.* By means of thermochemistry or of its principles.

thermochroic (thėr-mō-krō′ik), *a.* [Gr. *θέρμη*, heat, + *χρόα*, color, + *-ic.*] Of or pertaining to the differences in wave-length of heat-waves, and to the phenomena resulting therefrom; relating to thermochrosy.

thermocline (thėr′mō-klīn), *n.* [Gr. *θέρμη*, heat, + *κλίνειν*, incline.] A layer within a large body of water sharply separating portions of it which differ in temperature, so that the temperature-gradient through the layer is very abrupt.

At the surface and throughout the circulating water above the *thermocline*, oxygen was abundant, but carbonic acid was absent. *Nature*, Nov. 6, 1902, p. 16.

thermodiffusion (thėr″mō-di-fū′zhon), *n.* Same as *diffusion of heat.* See also *thermal* ★*diffusivity.*

thermodin (thėr′mō-din), *n.* [Gr. *θερμώδης*, warmish, lukewarm, < *θέρμη*, heat, + *εἶδος*, form.] A trade-name of acetyl-parethoxy-phenyl-urethane, $C_2H_5OC_6H_4N(COCH_3)$-$COOC_2H_5$, a colorless pulverulent compound used in medicine as an antipyretic, antiseptic, and analgesic.

Thermodynamic engine. See ★*engine.*—**Thermodynamic scale of temperatures.** See *thermometric* ★*scale.*

thermodynamist (thėr″mō-dī′na-mist), *n.* [*thermodynam*(*ic*) + *-ist.*] One who is versed in the science of thermodynamics; a thermodynamicist. *Thurston*, in Smithsonian Rep., 1901, p. 267.

thermodynamometer (thėr-mō-dī-na-mom′e-tėr), *n.* [Gr. *θέρμη*, heat, + *δύναμις*, power, + *μέτρον*, measure.] A sensitive thermometer, devised by Pictet and Cellerier, in which the thermometric substance is the saturated vapor of some volatile liquid in the closed end of a manometric tube. The temperature of the vapor is shown by the height of the mercurial column supported by it.

thermo-elastic (thėr″mō-ē-las′tik), *a.* [Gr. *θέρμη*, heat, + E. *elastic.*] Of or pertaining to the behavior of bodies under the combined action of heat and stress. *Science Abstracts*, VI. 130.

thermo-electric, *a.*—**Féry's thermo-electric telescope.** See ★*telescope.*—**Thermo-electric diagram,** a diagram upon which are indicated the thermo-electric powers of various pairs of metals when used to form thermo-elements.—**Thermo-electric inversion, power.** See ★*inversion*, ★*power*^{1}. -**Thermo-electric series.** The following table gives the principal metals and their thermo-electric powers, with lead as the standard of reference:

Tellurium	+	502.	Tin	+	0.1
Antimony	+	22.6	Lead	·	0.
Iron	+	17.5	Aluminium	—	0.68
Copper	+	3.8	Palladium	—	6.9
Zinc	+	3.7	German silver	—	11.7
Cadmium	+	3.5	Nickel	—	15.5
Silver	+	3.0	Cobalt	—	22.0
Gold	+	1.2	Bismuth	—	89.
Platinum	+	0.9	Silicon	—	400.

thermofocal (thėr-mō-fō′kal), *a.* [Gr. *θέρμη*, heat, + E. *focal.*] Of or pertaining to changes of focal length which result from the heating of a lens.

Attention was called to the necessity of a study of the *thermo-focal* changes in long focus lenses, to be used in eclipse work. *Science*, Feb. 27, 1903, p. 333.

thermogage (thėr′mō-gāj), *n.* [Gr. *θέρμη*, heat, + E. *gage*^{2}.] An instrument for measuring temperature; specifically, an optical pyrometer devised by Morse. See *optical* ★*pyrometry.*

thermogalvanometer (thėr-mō-gal-va-nom′e-tėr), *n.* [Gr. *θέρμη*, heat, + E. *galvanometer.*] A device for measuring small electric currents, consisting of a Boys's radiomicrometer and a fine wire or metallic strip placed near the lower junction of that instrument. The current to be measured heats the wire or strip, which in turn heats the thermojunction by radiation, thus producing a deflection of the radiomicrometer. *Nature*, May 19, 1904, p. 71.

thermogeny (thėr-moj′e-ni), *n.* [Gr. *θέρμη*, heat, + *-γενεια*, < *-γενης*, -producing.] The production of heat, specifically by living matter; thermogenesis.

thermogeographical (thėr-mō-jē-ō-graf′i-kal), *a.* [Gr. *θέρμη*, heat, + E. *geography* + *-ic* + *-al*^{1}.] Of or pertaining to temperature in its relation to geography; noting the thermal relations of the atmosphere or the ground to the geography of the same region.

The *thermo-geographical* problem is here made to include, not only the analytical determination of the normal mean yearly temperature of a place of given geographical position, but also of the annual movement in temperature, as defined by the corresponding normal mean monthly temperatures.

Geog. Jour. (R. G. S.), XII. 618.

thermograph, *n.*—**Soil-thermograph.** As devised by Professor William Hallock, this consists of a large bulb buried in the ground, containing kerosene or other liquid that will not solidify at ordinary low temperatures. A capillary tube joins this bulb to an expansion-chamber similar to the vacuum-box of an aneroid barometer. The distention of this chamber depends on the underground temperature, and is recorded on a revolving cylinder. In the analogous soil-thermograph devised by Professor A. Sprung of Berlin the large buried bulb is filled with dry air or other gas.

thermohydrometer (thėr″mō-hī-drom′e-tėr), *n.* [Gr. *θέρμη*, heat, + E. *hydrometer.*] An instrument-makers' name for a hydrometer with a thermometer inclosed, so that the density and temperature of a liquid may be read off at the same time.

thermohygrograph (thėr-mō-hī′grō-gráf), *n.* [Gr. *θέρμη*, heat, + E. *hygrograph.*] A thermograph to which a self-registering hygrometer is added. The record is usually made on an enlarged scale by a pencil on paper attached to a revolving drum: in the Kew apparatus a wet-bulb thermometer and a dry bulb are placed near each other and their mercurial columns photographed continuously.

thermohygroscope (thėr-mō-hī′grō-skōp), *n.* [Gr. *θέρμη*, heat, + E. *hygroscope.*] An instrument designed to indicate the absolute moisture in the air. It consists essentially of a metallic thermometer combined with a hair-hygrometer.

thermohyperæsthesia (thėr″mō-hī″pėr-es-thē′si-ä), *n.* [NL., < Gr. *θέρμη*, heat, + NL. *hyperæsthesia.*] Abnormal acuteness of the sense of heat-perception.

thermo-isopleth (thėr-mō-ī′sō-pleth), *n.* [Gr. *θέρμη*, heat, + E. *isopleth.*] **1.** A diagram of isopleths in which the coördinates are time of day and day of year.

An interesting figure shows the '*thermo-isopleths*' for Berlin, these lines indicating, in one drawing, both the diurnal and the annual march of the air temperature.

Pop. Sci. Mo., Dec., 1901, p. 186.

2. A diagram of isopleths in which the coördinates are time of day and altitude above ground.

thermojunction, *n.* There are two such points in the circuit of a thermo-element. It is upon the difference of temperature of the two junctions for a given pair of metals that the electromotive force of the element depends.

thermolabile (thėr-mō-lab′il), *a.* [Gr. *θέρμη*, heat, + L. *labilis*, slipping, perishable. See *labile.*] Subject to destruction or loss of activity through the action of moderate heat: noting especially certain toxins and ferments. Opposed to ★*thermostable.*

Moreover, the digestive ferment of these organs in solution is, as stated by Metchnikoff, *thermolabile* at 56° C.; the entire extract, which is, in reality, partly a solution of organ ferments, and partly an emulsion of organ particles, is *thermolabile* at slightly higher temperatures (58.5°–62° C.), owing to the relative inaccessibility of the solid particles to heat.

Jour. Med. Research, May, 1907, p. 288.

thermoluminescence (thėr″mō-lū-mi-nes′-ens), *n.* [Gr. *θέρμη*, heat, + E. *luminescence.*] Luminescence produced by heating a body which exhibits phosphorescence. Many bodies that glow in the dark after exposure to light show a sudden temporary increase of phosphorescence if heated. Such bodies are said to be *thermoluminescent.* The effect may sometimes be produced a long time after the ordinary phosphorescence has disappeared. See ★*luminescence.*

But though it is only in comparatively few cases that the change produced by the cathode rays shows itself in

> such a conspicuous way as by a change of color, there is a much more widely spread phenomenon, which shows the permanence of the effect produced by the impact of these rays. This is the phenomenon called by its discoverer, Prof. E. Wiedemann, *thermoluminescence*.
> *J. J. Thomson*, in Smithsonian Rep., 1897, p. 158.

thermoluminescent (thėr″mọ̄-lū-mi-nes′ẹnt), *a.* [Gr. θέρμη, heat, + E. *luminescent.*] Of or pertaining to the luminescence produced by heating a body; exhibiting thermoluminescence.

Thermolytic center. See ★*center*¹.

thermometamorphism (thėr-mọ̄-met-ạ-môr′-fizm), *n.* [Gr. θέρμη, heat, + E. *metamorphism.*] In *petrog.*, metamorphism produced by heat. See *metamorphism*. *Van Hise*, in U. S. Geol. Surv., Monograph, XLVII. 39.

thermometer, *n.*—**Aspirated thermometer.** Same as *aspiration thermometer* (which see, under *thermometer*).—**Avitreous thermometer,** a trade-name for an English form of thermometer for clinical use, in shape like a small watch, with a dial and index to show temperature. It contains a small tube bent in circular form, one of the ends of which is fixed and the other free, and connected by a fine spring to the shaft which carries the index. Filled with highly expansible liquid, the tube is by slight changes of temperature caused to expand and to move the index on the dial. The name is not well chosen, since glass is used in the construction of the instrument, which aims, however, to avoid the fragility of the exposed glass tube and bulb of the common clinical thermometer.—**Black-bulb thermometer.** See *solar-radiation thermometer*, under *thermometer*.—**Callendar's gas-thermometer,** a hydrogen thermometer in which special provision is made for the reduction of the waste space to a minimum.—**Callendar's platinum thermometer,** a device for the accurate determination of temperatures, especially of very high and very low temperatures, by means of the change of resistance of a wire of pure platinum.—**Chemical thermometer,** a mercurial thermometer in which the scale is engraved on the glass stem, which may have a lens-shaped front to magnify the column of mercury and facilitate reading. It is a form of thermometer in general use in chemical laboratories.—**Dry-bulb thermometer,** an ordinary thermometer used in conjunction with one the bulb of which is wetted. See *psychrometer*.—**Helium thermometer,** a gas-thermometer containing helium, used in the determination of temperatures below the boiling-point of hydrogen.—**Hydrogen thermometer,** a gas-thermometer containing hydrogen. On account of the low point of liquefaction of hydrogen, this thermometer is available for temperatures even below that of liquid air.—**Mirror-thermometer,** a barometer or thermometer having a small mirror moved by the mercury, which enables readings to be taken by reflected light.—**Moist thermometer,** a thermometer the bulb of which is covered with muslin wetted with water from a reservoir.—**Nitrogen thermometer,** a gas-thermometer containing nitrogen.—**Normal thermometer,** a thermometer in which the mercury is inclosed in a special glass made at Jena and called 'normal glass.'—**Outflow thermometer,** a thermometer in which the mercury above a certain point of temperature escapes from the mercury-tube either into a smaller tube where its volume may be measured, or into an open vessel in which it may be weighed.—**Pentane thermometer,** a thermometer for the measurement of very low temperatures, in which pentane is substituted for mercury or alcohol because of its low freezing-point. Such thermometers may be used for temperatures down to about −200° C.—**Petroleum-ether thermometer,** a thermometer for low temperatures in which the contained liquid is petroleum ether.—**Platinum thermometer,** an instrument for the measurement of temperatures by means of the change of electrical resistance (or of length) of metallic platinum under the influence of heat.—**Resistance-thermometer,** an instrument for measuring temperatures through the change in electrical conductivity of wires at varying degrees of heat.

> In the redetermination a platinum *resistance thermometer* was substituted for the mercury thermometers and an entirely different method adopted for supporting the quartz apparatus within the oven.
> *Physical Rev.*, Jan., 1905, p. 31.

Reversing thermometer. Same as *upsetting thermometer* (which see, under *thermometer*).—**Scale of the gas-thermometer.** See *thermometric* ★*scale*.—**Scale of the hydrogen thermometer.** See *thermometric* ★*scale*.—**Scale of the platinum thermometer.** See *thermometric* ★*scale*.—**Sèvres thermometer,** a constant-volume thermometer filled with pure dry hydrogen under a pressure of one meter of mercury at the temperature of melting ice. It consists of two essential parts, a reservoir and a manometer. The reservoir is made of a platinum-iridium tube whose volume is 1.03899 liters at the temperature of melting ice. Its length is 1.10 m. and its outer diameter 0.036 m. It is attached to the manometer by a capillary tube of platinum 0.7 mm. in diameter. The rise in pressure of the invariable gaseous mass due to rise in temperature is measured by means of the manometer and reading-telescopes.—**Siemens' electrical thermometer,** a resistance-coil of fine wire connected with a galvanometer, a battery, and a Wheatstone bridge. The resistance of the coil at any moment is determined by manipulating the bridge, and from this is determined the temperature of the coil. Siemens' deep-sea electrical thermometer is essentially the same arrangement, except that a second coil is added to the circuit. This is kept at the observing station and is immersed in water the temperature of which can be changed so that the current through one coil balances that through the other.—**Sun thermometer,** a thermometer used in measuring rise of temperature caused by the sun's rays, and giving data for determining the energy of its radiation; a form of actinometer.—**Toluol thermometer,** a thermometer for low temperatures in which toluol is used instead of mercury. The lower range of such instruments extends to about −100° C.—**Walferdin's metastatic thermometer,** a thermometer in which the bore of the stem has a very small diameter along a certain small range of temperature, for the purpose of causing a degree on the scale to be much larger than for higher and lower temperatures.

thermometer-well (thėr-mom′e-tėr-wel), *n.* A small well or closed tube used in taking the temperature of a substance. It can either be immersed in the substance and the thermometer kept dry, or be filled with the substance and the thermometer kept wet.

thermometric, *a.*—**Coefficient of thermometric conductivity.** See ★*coefficient*.—**Normal thermometric scale.** See ★*scale*³.—**Thermometric conductivity.** Same as *thermal* ★*diffusivity*.—**Thermometric heat, standard, ventilation.** See ★*heat*, ★*standard*, ★*ventilation*.

thermoneurosis (thėr″mọ̄-nụ̄-rō′sis), *n.*; pl. *thermoneuroses* (-sēz). [Gr. θέρμη, heat, + νεῦρον, nerve, + *-osis.*] 1. Fever due to nervous action, and not to the presence of toxins in the blood.—2. A disease of the nervous system induced by exposure to a high temperature.

thermoneutrality (thėr″mọ̄-nụ̄-tral′ị-ti), *n.* [Gr. θέρμη, heat, + E. *neutrality.*] Neutrality as regards change of temperature; specifically, the property exhibited by salt solutions (see below) in consequence of which they may be mixed without producing appreciable change of temperature.—**Law of thermoneutrality,** in *phys. chem.*, the law that there is no production of heat on mixing solutions of two salts of strong acids and strong bases, provided no insoluble or volatile product is formed. Another statement is that the heat of neutralization of a strong acid by a strong base is the same, whatever the acid or the base.

thermophile (thėr′mọ̄-fil), *a.* Same as ★*thermophilic*.

thermophilic (thėr-mọ̄-fil′ik), *a.* [Gr. θέρμη, heat, + φιλεῖν, love.] In *bacteriol.*, heat-loving: applied to the bacteria which require high temperatures for their development.

> Excluding the well-known *thermophilic* group of bacteria, it has generally been considered that an exposure to a temperature of 65° C., or frequently to a lower temperature than this, is rapidly fatal to all non-sporing forms of bacterial life. *Nature*, Aug. 28, 1902, p. 423.

Thermophilic bacteria. See ★*bacterium*.

thermophilous (thėr-mof′i-lus), *a.* [Gr. θέρμη, heat, + φιλεῖν, love, + *-ous.*] Living in, or adapted for life in, warm places; thermophilic.

> The author . . . has investigated five *thermophilous* bacteria from the hot water of the thermal springs of the island of Ischia.
> *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 539.

thermophore (thėr′mọ̄-fōr), *n.* [Also *thermophor*; < Gr. θέρμη, heat, + φέρειν, bear.] A device to prevent undue cooling of the masks used in the administration of ether. For this purpose ample provision is made for the conduction of heat, through a metallic attachment, to the surfaces cooled by evaporation.

> In the Section of Gynæcology, the conservative treatment by bath cures, mud poultices, hot baths, *thermophor*, &c., was forcibly advocated as yielding complete success.
> *Nature*, Nov. 6, 1902, p. 22.

thermopile, *n.*—**Differential thermopile,** a thermopile designed to measure small differences in the temperatures of two bodies.

thermoplegia (thėr-mọ̄-plē′ji-ạ̈), *n.* [NL., < Gr. θέρμη, heat, + πληγή, stroke.] Heat-stroke.

thermopsychrophorus (thėr″mọ̄-sī-krof′ọ̄-rus), *n.* [NL., < Gr. θέρμη, heat, + ψυχρός, cold, + -φορος, < φέρειν, bear.] An apparatus to illustrate the formation of cloud by cooling due to ascent and expansion consequent on a slight warming.

thermoregulator, *n.* **2.** A regulator depending upon the action of metals when exposed to heat, and used either to control heat or some other action. Usually they depend on one of two principles: either direct expansion, which lengthens a bar when heated, or the use of two bars of different expansion-coefficients, so that when heated to the same temperature one will be longer than the other, thus causing a compound bar of these two metals, when fixed at one end, to deflect laterally at the other. *The Engineer* (London), 1902, p. 469.

thermoscope, *n.*—**Aneroid thermoscope,** a combination of aneroid face and thermometer-bulb showing on a large scale the changes of temperature. See *soil-*★*thermograph*.—**Differential thermoscope,** a thermoscope which shows the difference in temperature of two bodies.

thermoscopic, *a.* **2.** Of or pertaining to spectacles which protect the eyes from heat and glare. *Nature*, Feb. 5, 1903.—**Thermoscopic eye.** See ★*eye*¹.

thermostabile (thėr-mọ̄-stab′il), *a.* [NL. **thermostabilis.*] Same as ★*thermostable*. See the quotation under ★*thermolabile*.

thermostability (thėr″mọ̄-stạ̄-bil′ị-ti), *n.* [NL. **thermostabilis* (see ★*thermostable*) + *-ity.*] The character of being thermostable; the stability of a substance subjected to a change in temperature.

> The high stability of opsonins against desiccation and the high *thermostability* of dried opsonins are very striking. *Science*, Sept. 13, 1907.

thermostable (thėr-mọ̄-stā′bl), *a.* [NL. **thermostabilis*, < Gr. θέρμη, heat, + L. *stabilis*, stable.] Unaltered in composition or activity by a moderate degree of heat: noting especially certain toxins and ferments. Opposed to ★*thermolabile*.

> Calmette discovered the important fact, destined to have very far-reaching consequences, that one of the venom activating principles is *thermostable*, the other being of the nature of the usual serum complements.
> *Jour. Exper. Med.*, April 25, 1905, p. 192.

thermostat, *n.*—**Electropneumatic thermostat,** an instrument which utilizes the expansibility of a gas to open or close an electric circuit.

thermosynthesis (thėr-mọ̄-sin′the-sis), *n.* [Gr. θέρμη, heat, + σύνθεσις, synthesis.] Chemical combination brought about by the action of heat.

thermotactic (thėr-mọ̄-tak′tik), *a.* [*thermotaxis* (*-tact-*) + *-ic.*] Of or pertaining to the movement of organisms in relation to heat; exhibiting thermotaxis.

thermotaxis, *n.* **2.** In *biol.*, the movement of organisms in relation to heat: movement toward a higher temperature is *positive thermotaxis* and that toward a lower temperature *negative thermotaxis*.

> They [cases of unilateral directive stimulation] have been designated, according to the direction in which they occur in relation to the source of the stimulus, as positive or negative Chemotaxis, Phototaxis, *Thermotaxis*, Galvanotaxis, and so forth. *Encyc. Brit.*, XXXI. 715.

thermotension (thėr-mọ̄-ten′shọn), *n.* [Gr. θέρμη, heat, + E. *tension.*] In *mech.*, tension applied to a substance which is at the same time subjected to a given temperature, for the purpose of determining the tensile strength at the temperature in question.

thermotherapy (thėr-mọ̄-ther′ạ-pi), *n.* [Gr. θέρμη, heat, + θεραπεία, medical treatment.] The use of heat, either moist or dry, in the treatment of disease. *Lancet*, July 11, 1903, p. 104.

thermotor (thėr′mō-tộr), *n.* [Gr. θέρμη, heat, + L. *motor*, a mover.] The trade-name of a special form of thermo-electric battery, with automatic control of the supply of gas used for heating the alternate junctions. The opening and closing of the gas-valve is effected by the contraction and expansion of the frame that supports the battery. *Sci. Amer. Sup.*, May 6, 1905, p. 245.

thermotropic, *a.* **2.** In *biol.*, of or pertaining to the growth or bending of organisms in relation to heat; exhibiting *thermotropism*. *G. S. Hall*, Adolescence, I. 160.

thermotropism, *n.* **2.** In *biol.*, the bending or growing of organisms in relation to heat.

thermotypic (thėr-mọ̄-tip′ik), *a.* [Gr. θέρμη, heat, + τύπος, type, + *-ic.*] Concerning the development of a printing-surface by application of heat.

thermovoltaic (thėr″mọ̄-vol-tā′ik), *a.* Pertaining to the heating effect of the electric current, or to phenomena of a combined thermal and electric character.

Therocephalia (thē″rọ̄-se-fā′li-ạ̈), *n. pl.* [NL., < Gr. θήρ, a wild beast, + κεφαλή, head.] An extinct order of carnivorous reptiles, so named from the resemblance of the skull to that of mammals. There are usually 5 pointed incisor teeth in each premaxillary. In the maxillary there are usually 2 canines (sometimes 3) and a series of small pointed molars varying in number from 1 to 11. With slight modification, the palate is like that of *Procolophon* and *Pareiasaurus*. The internal nasal opening is beside the canines and there is no trace of a secondary palate. Four bones are present in the mandible. There is a well-developed quadrate and a single occipital condyle. The limb-bones are long and slender. The order is found in the lower rocks of the Karoo formation of South Africa and the Permian of Russia. The best-known South African therocephalians are *Ælurosaurus*, *Ictidosuchus*, and *Titanosuchus*, animals varying in size from that of a cat to that of a horse. The best-known Russian therocephalians are *Deuterosaurus* and *Rhopalodon*.

therocephalian (thē″rọ̄-se-fā′li-ạn), *a.* and *n.* **I.** *a.* Pertaining to or having the characters of the *Therocephalia*. *Science*, Dec. 6, 1907, p. 796.

II. *n.* A member of the *Therocephalia*. *Amer. Nat.*, Feb., 1904, p. 103.

therocrotaphous (thē-rọ̄-krot′ạ-fus), *a.* [Gr. θήρ, a wild beast, + κρόταφος, side of the forehead, + *-ous.*] Having the condition of the temporal fossæ similar to that found in mammals. Contrasted with ★*stegocrotaphous.*

> The plesiosaurs have a larger temporal vacuity than is to be found in any other reptiles of the *therocrotaphous* (I coin the word) type.
> *Williston*, in Proc. U. S. Nat. Mus., 1907, p. 488.

theromorphism (thē-rọ-môr′fizm), *n.* Same as *theromorphia.*

theromorphological (thē-rọ-môr-fọ-loj′i-kạl), *a.* [Gr. *θήρ*, wild beast, + E. *morphological.*] Characteristic of animals lower than man. Contrasted with *anthropomorphic.* [Rare.]

> Virchow and W. Gruber have agreed in representing this frontal process as *theromorphological* — that is, as characteristic of the lower animals and more especially of apes. *R. Hartmann*, Anthropoid Apes, p. 111.

therosaur (thē′rọ-sâr), *n.* [NL. *Therosaur*(*us*).] An individual of the dinosaurian genus *Therosaurus.*

therosaurian (thē-rọ-sâ′ri-ạn), *a.* and *n.* **I.** *a.* Pertaining to or having the characters of the genus *Therosaurus.*

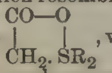
II. *n.* An individual of the genus *Therosaurus.*

Therosaurus (thē-rọ-sâ′rus), *n.* [NL., < Gr. *θήρ*, a wild beast, + *σαῦρος*, a lizard.] A genus of predentate dinosaurs regarded by Von Zittel as synonymous with *Iguanodon* (which see).

Thespesius (thes-pē′si-us), *n.* [NL., < Gr. *θεσπέσιος*, awful, wonderful.] A genus of predentate dinosaurs of the family *Iguanodontidæ*, possessing an elongated depressed skull with broad beak-like snout, very large nostrils, subrectangular orbits, and long, narrow temporal vacuities. The premaxillæ are edentulous. The teeth are arranged in an alveolar groove opening inward. The dorsal vertebræ are opisthocœlous, the caudals amphiplatyan. The genus has been found in the Upper Cretaceous of New Jersey, Dakota, and Montana. It is regarded as synonymous with *Trachodon* and *Hadrosaurus*, and may possibly be identical with ★*Claosaurus.*

Thess. An abbreviation of *Thessalonians.*

theta, *n.* As used in formulæ of mathematics and engineering, theta (θ) usually denotes: (*a*) the entropy, or thermodynamic function or factor by which the absolute temperature is to be multiplied to indicate an amount of heat energy. (*b*) The angle, in angular measure, or at the center, through which a radius vector has swept from a zero position, or through which a line has swept in a rotation. — **Double theta function,** a theta function of two variables.

thetine (thē′tin), *n.* [Gr. *θῆτα*, the letter theta, + *-ine*².] In *organic chem.*, the class-name of cyclic sulphinic anhydrids which resemble the betains and contain the group  $\begin{matrix}CO—O\\ |\quad\quad |\\ CH_2.SR_2\end{matrix}$, where R is a hydrocarbon radical such as methyl (CH_3).

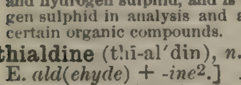
Thetis's hair. See ★*hair*¹.

theveresin (thev-e-rez′in), *n.* [*theve*(*tin*) + *resin.*] A colorless, highly poisonous pulverulent compound, $C_{48}H_{70}O_{17}.2H_2O$, prepared by the action of dilute acids on thevetin. It melts at 140° C.

thevetin (thev′e-tin), *n.* [*Theveti*(*a*) (see def.) + *-in*².] A very bitter narcotic, highly poisonous levorotatory compound, $C_{54}H_{84}O_{24}.3H_2O$, contained in the seeds of *Thevetia Thevetia.* It crystallizes in small leaflets and melts at 170° C.

thiacetic (thī-a-set′ik), *a.* [Gr. *θεῖον*, sulphur, + E. *acetic.*] Pertaining to sulphur and acetic acid.— **Thiacetic acid,** a colorless liquid, CH_3COSH, prepared by the action of phosphorus pentasulphid on acetic acid. It boils at 93° C., has an odor of acetic acid and hydrogen sulphid, and is used in the place of hydrogen sulphid in analysis and as an acetylating agent for certain organic compounds.

thialdine (thī-al′din), *n.* [Gr. *θεῖον*, sulphur, + E. *ald*(*ehyde*) + *-ine*².] A colorless compound,



$$CH_3CH\begin{cases}S.CH(CH_3)\\ S.CH(CH_3)\end{cases}NH$$

, prepared by the action of hydrogen sulphid on aldehyde ammonia. It forms monoclinic crystals melting at 43° C.

thialol (thī′ạ-lol), *n.* [Gr. *θεῖον*, sulphur, + *-al*³ + *-ol.*] A colorless oil, $(C_2H_5)_2S_2$, prepared by the distillation of a mixture of potassium ethyl sulphate, potassium disulphid, and water. It boils at 152.8–153.4° C. under 730 millimeters pressure and has an odor of garlic. Also called diethyl sulphid.

thiamide (thī-am′id), *n.* [Gr. *θεῖον*, sulphur, + E. *amide.*] A class-name applied in organic chemistry to compounds containing the group $RCSNH_2$, where R is a hydrocarbon radical such as phenyl (C_6H_5). The compounds are prepared by the addition of the elements of hydrogen sulphid to the nitriles.

thiamine (thī-am′in), *n.* [Gr. *θεῖον*, sulphur, + E. *amine.*] A class-name applied in organic chemistry to compounds containing the group RNHSH, where R is a hydrocarbon radical such as ethyl (C_2H_5).

thiazin (thī-az′in), *n.* [Gr. *θεῖον*, sulphur, + E. *azin.*] A class-name applied in organic chemistry to compounds containing a cyclic nucleus consisting of one atom of nitrogen, one atom of sulphur, and four atoms of carbon. Three arrangements of these are possible, namely, $\begin{matrix}C.C.N\\ C.C.S\end{matrix}$, $\begin{matrix}C.N.C\\ C.C.S\end{matrix}$, and $\begin{matrix}C.N.C\\ C.S.C\end{matrix}$. The derivatives are respectively termed *ortho-*, *meta-*, and *parathiazins.*

thiazol (thī-az′ol), *n.* [Gr. *θεῖον*, sulphur, + E. *az*(*ote*) + *-ol.*] A colorless liquid having the formula C_3H_3NS. In structure it is equivalent to the benzene ring with three CH groups replaced, two with a nitrogen atom and one with a sulphur atom. An important group of coal-tar colors is related to it.— **Thiazol yellow.** See ★*yellow.*

thibaude (tẹ-bōd′), *n.* [F., < *Thibaud* (E. *Theobald*, *Tibbald*, *Tibalt*), a name conventionally applied to shepherds.] Cow-hair cloth; haircloth.

thicket, *n.* **2.** Specifically, in *forestry*, a stand of saplings.

thicknee, thick-nee, *n.* Same as *thickknee.*

thickness, *n.* **5.** In *mining*, the distance at right angles to the drift or adit measured from the roof or hanging wall to the foot wall in a lode vein or lens.

thief-detector (thēf′dẹ-tek″tọr), *n.* A delicate microphone designed for seismological studies, but so arranged by Milne that it gives notice of tremors produced by the gentlest footstep in its neighborhood.

Thielavia (tē-lā′vi-ạ̈), *n.* [NL. (Zopf, 1876), < Dr. F. von *Thielau*, a German botanist.] A genus of parasitic perisporiaceous fungi which have spherical brown perithecia without appendages or ostiole. The ascospores are unicellular and brown. Two forms of conidia are produced, one endogenous and the other borne in chains. The single species, *T. basicola*, is parasitic on the roots of various plants, especially legumes.

thienol (thī′e-nol), *n.* [*thi*(*oph*)*ene* + *-ol.*] A hypothetical compound, HOC_4H_3S, which has the same relation to thiophene that phenol has to benzene. A number of derivatives are known.

thienyl (thī′e-nil), *n.* [*thi*(*oph*)*ene* + *-yl.*] A class-name applied in organic chemistry to compounds containing the univalent thiophene radical $-C_4H_3S$.

thiev, *v.* A simplified spelling of *thieve.*

thigmotactic (thig-mọ-tak′tik), *a.* [*thigmotaxis* (*-tact-*) + *-ic.*] In *biol.*, of or pertaining to the locomotion of cells or of organisms in relation to contact with foreign solid bodies; exhibiting thigmotaxis.

> One is the *thigmotactic* reaction. Starting with the moving infusorian, we find that it reacts to contact with solid bodies of a certain physical texture by suspending part of the usual ciliary motion.
> *Amer. Jour. Psychol.*, XII. 141.

> The ventral surface of planarians is strongly positively *thigmotactic*, whereas the dorsal surface is negatively *thigmotactic*; hence, when turned over so that the dorsal surface is in contact with a solid, the animal immediately rights itself by an extension of the edge of the body which is in contact with the solid.
> *Science*, May 8, 1903, p. 738.

thigmotactically (thig-mọ-tak′ti-kạl-i), *adv.* In a thigmotactic manner; by or with thigmotropism.

> A definite rat-hole consciousness that acts, as it were, *thygmotactically.* *Amer. Jour. Psychol.*, XII. 229.

thigmotaxis (thig-mọ-tak′sis), *n.* [NL., < Gr. *θίγμα*, touch, + *τάξις*, disposition.] In *biol.*, the movement of cells and of organisms in relation to contact with foreign solid bodies. It is *negative* when away from the solid, and *positive* when toward it. Once in contact with a sufficiently attracting surface, certain organisms (as the spermatozoa of a cockroach) may move to and fro over it, but can hardly leave it. It is as though the spermatozoa were attracted by a magnet. *C. B. Davenport*, Exper. Morphol., p. 108.

> The sensation of thirst is compared with the hydrotaxis of the Mycetozoa, and Davenport's example is followed in regarding as rheotaxis the behaviour of fish in swimming against the stream, the only position in which they are able to breathe. Finally, the "*Thigmotaxis*" exhibited by an oxytricha moving round a spherical egg, unable to leave its surface, is compared with the retreat of a cat into the corner as a dog approaches, or to the preference shown by many people for those seats in a restaurant which have their backs to the wall!
> *Nature*, Aug. 31, 1905, p. 426.

thigmotropic (thig-mọ-trop′ik), *a.* [Gr. *θίγμα*, touch, + *τρόπος*, a turning, + *-ic.*] Of or pertaining to the movement or growth of organisms in relation to contact with foreign bodies; stereotropic. See ★*thigmotropism* and ★*thigmotaxis.*

thigmotropism (thig-mot′rọ-pizm), *n.* [*thigmotrop*(*ic*) + *-ism.*] In *biol.*, the movement or growth of an organism in relation to contact with a foreign body; stereotropism. See ★*thigmotaxis.* *M. F. Washburn*, The Animal Mind, p. 57.

thilanin (thī′lạ- or thil′ạ-nin), *n.* [Gr. *θεῖον*, sulphur, + E. *lan*(*ol*)*in.*] A trade-name of a substance of indefinite composition prepared from sulphur and lanolin: used medicinally in certain cutaneous affections.

thimble, *n.* **2.** (*b*) A ring or oval, made of steel with a concave section on the outside, and convex within, used to form the eye in the end of a wire rope when the latter is bent round the ring and the end spliced into the main part.— **4.** A cone of fat-free paper used in a fat-extraction apparatus. *Jour. Exper. Med.*, March 25, 1901, p. 515.— **5.** A cup-shaped metal support for the handle of a tool in dental operations: it rests in the palm of the hand and is attached to a ring on the middle finger.— **6.** *pl.* A trade-name for crude india-rubber from the lower Kongo and Loanda in small balls of a gray color, darker outside.

thimble-plating (thim′bl-plā″ting), *n.* See ★*plating.*

thimble-roller (thim′bl-rō″lėr), *n.* A hollow roller; a roller which turns on a shaft which it does not fit closely.

thimble-surface (thim′bl-sėr″fạ̄s), *n.* In *ceram.*, a groundwork on the surface of Parian jugs, vases, etc., produced by closely pitting the interior of a mold, which produces in the cast piece a surface of raised dots, usually in blue or white.

thin¹, *a.* **14.** In *art*, characterized, in composition, by few and widely separated elements, by absence of serious interest, or by lack of body and force in technique.

> Next is the "Garden Tulip" pattern, which consists of a tulip spray strongly accentuated by the slight and almost *thin* treatment of the background.
> *Vallance*, William Morris, p. 67.

thingamajig (thing′ạ-mạ-jig″), *n.* A thingumbob. *Dialect Notes*, III. iii. [Colloq.]

thingvalla (ting′vä-lạ̈), *n.* [Icel. *thing-völlr* (gen. sing. *-vallar*, gen. pl. *-valla*), < *thing*, assembly, parliament, + *völlr*, field.] The place where a thing or assembly is held.

Thinite (thī′nīt), *a.* [*Thin*(*is*) (see def.) + *-ite*².] Pertaining to the two earliest Egyptian dynasties, which began about 3400 B.C. with Menes, who came from Thinis (This), near Abydos.

> Early in the thirtieth century B.C. the *Thinites* were finally dislodged from the position of power which they had maintained so well for over four centuries.
> *Breasted*, Hist. of Egypt, p. 111.

thinner, *n.* **2.** Specifically, a liquid used in thinning down a paste paint. Liquids so used are linseed-oil, Japan drier, and turpentine. A keg of lead bought by a painter is a paste paint. It is dry white lead ground in linseed-oil in the proportion of 92 pounds of dry lead to 8 pounds of oil. The painter then adds thinners until the paint will work under his brush. *Jour. Franklin Inst.*, July, 1904, p. 17.

thinning (thin′ing), *n.* Specifically, in *forestry*, the removal of a part of the trees in order to improve a stand without inviting natural reproduction.— **Accretion thinning.** See ★*accretion.*— **Improvement thinning,** usually, the first thinning made when a forest is put under management, to prepare it for the application of a regular system. Also called *improvement cutting.*— **Preliminary thinning.** Same as *improvement* ★*thinning.*

thio-. [Gr. *θεῖον*, sulphur.] In *chem.*, a prefix now restricted to the names of substances in which sulphur may properly be viewed as replacing oxygen. In the older names for such substances the prefix *sulpho-* was often used.

thio-acetic (thī″ō-a-set′ik), *a.* Same as ★*thiacetic.*

thio-albumose (thī-ō-al′bụ-mōs), *n.* [Gr. *θεῖον*, sulphur, + E. *albumose.*] One of the deutero-albumoses, characterized by its large sulphur content.

thio-alcohol (thī-ō-al′kọ-hol), *n.* [Gr. *θεῖον*, sulphur, + E. *alcohol.*] A substance, belonging to the class of alcohols, in which sulphur may properly be viewed as replacing oxygen in the structure of an ordinary hydroxy-alcohol, as in the case of mercaptan ($C_2H_5.SH$), corresponding to common or ethyl alcohol ($C_2H_5.$-OH). The name of this first-discovered thio-alcohol is often used generically for any substance of the class in question.

thio-aldehyde (thī-ọ-al′dẹ-bīd), *n.* [Gr. *θεῖον*, sulphur, + E. *aldehyde.*] A class-name applied in organic chemistry to compounds containing the group RCHS, where R is any hydrocarbon radical. They are rather unstable substances with highly offensive odors, and are formed by the action of hydrogen sulphid on aldehydes.

thio-antimonate, thio-antimoniate (thī-ọ-an′ti-mọ-nạt, thī-ō-an-ti-mō′ni-āt), *n.* [Gr. *θειον*, sulphur, + E. *antimonate.*] In *chem.*, a compound which may be viewed as formed by the union of antimonic sulphid with the sulphid of a more electropositive metal, as sodium *thio-antimonate*, Na_3SbS_4. Formerly called *sulphantimonate.*

thio-antimonic (thī-ọ-an-ti-mon′ik), *a.* [Gr. *θειον*, sulphur, + E. *antimonic.*] Pertaining to *thio-antimonic acid.*—**Thio-antimonic acid,** a hypothetical acid, H_3SbS_4, not actually obtainable, corresponding to the salts, thio-antimonates. See ★*thio-antimonate.* Formerly called *sulphantimonic acid.*

thio-antimonious (thī-ọ-an-ti-mō′ni-us), *a.* [Gr. *θειον*, sulphur, + E. *antimonious.*] Pertaining to *thio-antimonious acid.*—**Thio-antimonious acid,** in *chem.*, a hypothetical acid, $HSbS_2$, not actually obtainable, corresponding to the salts, thio-antimonites. See ★*thio-antimonite.* Formerly called *sulphantimonious acid.*

thio-antimonite (thī-ọ-an′ti-mọ-nīt), *n.* [Gr. *θειον*, sulphur, + E. *antimonite.*] In *chem.*, a compound which may be viewed as formed by the union of antimonious sulphid with the sulphid of a more electropositive metal: as, sodium *thio-antimonite*, $NaSbS_2$. The *thio-antimonites* are sometimes called *livers of antimony* when produced in an impure condition by fusing antimonious sulphid with an alkali or an alkaline carbonate.

thio-arsenate, thio-arseniate (thī-ọ-är′se-nāt, thī′ọ-är-sē′ni-āt), *n.* [Gr. *θειον*, sulphur, + E. *arsenate.*] In *chem.*, a compound which may be viewed as formed by the union of arsenic sulphid with the sulphid of a more electropositive metal. There are three classes of these salts, represented by the general formulæ M_3AsS_4, $M_4As_2S_7$, and $MAsS_3$. Formerly called *sulpharsenate.*

thio-arsenious (thī′ọ-är-sē′ni-us), *a.* [Gr. *θειον*, sulphur, + E. *arsenious.*] Pertaining to thio-arsenious acid.—**Thio-arsenious acid,** a hypothetical acid, H_3AsS_3, $H_4As_2S_7$, or $HAsS_2$. Formerly called *sulpharsenious acid.*

thio-arsenite (thī-ọ-är′sē-nīt), *n.* [Gr. *θειον*, sulphur, + E. *arsenite.*] In *chem.*, a compound which may be viewed as formed by the union of arsenious sulphid with the sulphid of a more electropositive metal. There are three classes of these salts, represented by the general formulæ M_3AsS_3, $M_4As_2S_5$, and $MAsS_2$. Formerly called *sulpharsenite.*

Thiobacteria (thī″ō-bak-tē′ri-ạ̈), *n. pl.* [Gr. *θειον*, sulphur, + NL. *bacteria.*] A name proposed by Migula to include the *Beggiatoaceæ* and other sulphur and iron bacteria mostly inhabiting soils and sea-water. Most of the species are known only from the studies of Winogradsky. Compare *sulphur* ★*bacteria.*

thiocarbamic (thī ọ-kär-bam′ik), *a.* [Gr. *θειον*, sulphur, + E. *carbamic.*] Pertaining to thio-urea or to thiocarbamic acid.—**Thiocarbamic acid,** a hypothetical acid, $SC(NH_2)SH$, known only in the form of its salts and other derivatives.

thiocarbonate (thī-ō-kär′bọ-nāt), *n.* [Gr. *θειον*, sulphur, + E. *carbonate.*] In *chem.*, a compound derived from the union of carbon disulphid with the monosulphid of a strongly electropositive metal or radical: as, potassium *thiocarbonate*, K_2CS_3, analogous to potassium carbonate, K_2CO_3, but containing sulphur in place of oxygen. This salt has been used in the treatment of vines infested by the *Phylloxera.* Formerly called *sulphocarbonate*, a term now applied to a salt of analogous character, but in which only one third of the oxygen of a carbonate is replaced by sulphur.

thiocarbonic (thī″ọ-kär-bon′ik), *a.* [Gr. *θεῖον*, sulphur, + E. *carbonic.*] Pertaining to sulphur and carbonic acid or thiocarbonic acid. —**Thiocarbonic acid,** a dark yellow, strongly smelling, unstable, oily compound, $SC(SH)_2$, prepared by the action of dilute hydrochloric acid on potassium thiocarbonate. Also called, less correctly, *sulphocarbonic acid.*

thiocarbonyl (thī-ọ-kär′bọn-il), *n.* [Gr. *θεῖον*, sulphur, + E. *carbon* + *-yl.*] A name of the bivalent organic radical CS. The term is used as a combining-form in the names of compounds containing the thio group.

thiocarbylamine (thī-ọ-kär-bil-am′in), *n.* [*thiocarbyl* + *amine.*] Same as ★*isothiocyanic acid.*

thiocol (thī′ọ-kol), *n.* [Gr. *θεῖον*, sulphur, + *κόλλα*, glue.] A guaiacol preparation used in tuberculosis and other affections of the lungs.

thiocresol (thī-ọ-krē′sol), *n.* [Gr. *θεῖον*, sulphur, + E. *cresol.*] Three compounds, CH_3-C_6H_4SH, with this name are known. The 1,2- or ortho-derivative is prepared by the reduction of 4-brom-2-toluene-sulphonic chlorid. It crystallizes in leaflets or silky, lustrous needles, melts at 15° C., and boils at 193° C. The 1,3- or meta-derivative is prepared, in a similar manner, from metatoluene-sulphonic chlorid, and is a liquid which boils at 195–205° C. The 1,4- or para-compound is prepared, in the same manner, from paratoluene-sulphonic chlorid. It crystallizes in large plates, melts at 43° C., and boils at 194° C.

thiocyanate (thī-ọ-sī′ạ-nāt), *n.* [Gr. *θεῖον*, sulphur, + E. *cyanate.*] In *chem.*, a salt analagous in composition to a cyanate, but containing sulphur in place of oxygen, as potassium *thiocyanate*, KCNS, which is produced by the direct union of sulphur with potassium cyanide. Ammonium thiocyanate occurs in coal-gas liquor. Ferric thiocyanate forms a deep blood-red solution, resorted to as a test in analytical chemistry. Mercuric thiocyanate is the material for making the toy "Pharaoh's serpents." Formerly called *sulphocyanate* or *sulphocyanide* or *rhodanide.*

thiocyanic (thī″ọ-sī-an′ik), *a.* [Gr. *θεῖον*, sulphur, + E. *cyanic.*] Pertaining to sulphur and cyanic acid or to thiocyanic acid.—**Thiocyanic acid,** a colorless, strongly smelling liquid, NCSH, prepared by heating mercuric thiocyanate in a current of hydrogen sulphid. It crystallizes at a low temperature. Also called *sulphocyanic acid.*

thiocyano (thī-ō-sī′ạ-nō), *n.* [Gr. *θεῖον*, sulphur, + *cyan(ic).*] The radical CNS contained in thiocyanic acid.

thiocyanogen (thī″ō-sī-an′ọ-jen), *n.* [Gr. *θειον*, sulphur, + E. *cyanogen.*] The radical —SCN of thiocyanic acid. Also called *rhodan.*

thioform (thī′ọ-fôrm), *n.* [Gr. *θεῖον*, sulphur, + E. *form(aldehyde).*] A trade-name of bismuth dithiosalicylate, $HOBi(SOCC_6H_4OH)_2$, applied externally as an antiseptic to wounds and excoriations.

thiogenic (thī-ọ-jen′ik), *a.* [Gr. *θεῖον*, sulphur, + *-γενης*, -producing.] Producing sulphur: applied to certain bacteria, as *Beggiatoa* and *Thiothrix*, which are capable of oxidizing sulphureted hydrogen and producing free sulphur.

thiogenol (thī′ọ-je-nol), *n.* [Gr. *θεῖον*, sulphur, + *-γενης*, -producing, + *-ol.*] A trade-name of a solution of sodium sulphonate used in medicine as a wash.

thiol (thī′ol), *n.* [Gr. *θεῖον*, sulphur, + *-ol.*] A trade-name for a substance made by the action of sulphur on the paraffin-oils from the distillation-products of peat. It resembles ichthyol in medicinal properties.

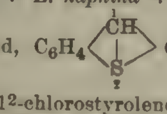
thiolactic (thī-ọ-lak′tik), *a.* [Gr. *θεῖον*, sulphur, + E. *lactic.*] Pertaining to sulphur and lactic acid.—**Thiolactic acid,** an oily compound, $CH_3CH(SH)COOH$, prepared by the action of hydrogen sulphid, hydrochloric acid, and zinc on pyruvic acid. It has an unpleasant smell and may be distilled under reduced pressure. Also called *a-thiolactic acid.*

thiolin (thī′ọ-lin), *n.* [Gr. *θεῖον*, sulphur, + L. *linum*, flax.] A trade-name of a dark-green semisolid substance, prepared by the action of sulphur on linseed-oil, used in medicine. Also called *thiolinic acid.*

thioline (thī′ọ-lin), *n.* [Gr. *θεῖον*, sulphur, + *-ol* + *-ine*^{2}.] A trade-name of crude abietene. Also written *theoline.*

thiolinic (thī-ọ-lin′ik), *a.* [*thiolin* + *-ic.*] Pertaining to sulphur and linseed-oil, specifically to thiolin.

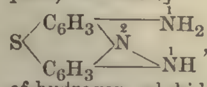
thionaphthene (thī-ō-naf′thēn), *n.* [Gr. *θεῖον*, sulphur, + E. *naphtha* + *-ene.*] A colorless compound,



prepared from 2-amino-1^2-chlorostyrolene. It crystallizes in plates, melts at 30–31° C., and is volatile with steam.

thionic (thī-on′ik), *a.* [Gr. *θεῖον*, sulphur, + *-ic.*] Of or pertaining to sulphur: used specifically, in chemistry, to indicate that in the molecule of the original substance oxygen has been replaced by sulphur.

thionine (thī′ọ-nin), *n.* [Gr. *θεῖον*, sulphur, + *-ine*^{2}.] A brownish-black dye,



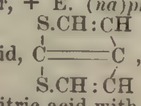
prepared by the action of hydrogen sulphid and ferric chlorid on orthophenylene-diamine-hydrochlorid. It crystallizes in plates, gives with alcohol a violet to violet-red solution with a reddish-brown fluorescence, and is largely used for staining microscopic objects. Also called *amimino-thiodiphenylimine*, *phenylene violet*, and *Lauth's violet.*

thionyl (thī′ọ-nil), *n.* [Gr. *θεῖον*, sulphur, + *-on* + *-yl.*] The radical consisting of a single atom each of sulphur and oxygen, SO.—**Thionyl chlorid,** a colorless heavy liquid with irritating odor, fuming in the air, produced by the interaction of sulphur dioxid and phosphorus pentachlorid, decomposed by water. Its formula is $SOCl_2$.

thiophenol (thī-ō-fē′nol), *n.* [Gr. *θεῖον*, sulphur, + E. *phenol.*] A colorless liquid, C_6H_5SH, prepared by the reduction of benzene-sulphonic chlorid. It boils at 172.5° C. and has the odor of garlic.

thiophosphoric (thī″ọ-fos-for′ik), *a.* [Gr. *θειον*, sulphur, + E. *phosphoric.*] Pertaining to thiophosphoric acid.—**Thiophosphoric acid,** in *chem.*, a substance which may be viewed as ordinary phosphoric acid in which one atom of oxygen has been replaced by one of sulphur. It is not known in the free state, but salts corresponding to it have been produced, and also salts corresponding to acids in which two and three atoms of oxygen of phosphoric acid are replaced by sulphur. All are easily decomposed. Formerly called *sulphophosphoric acid.*

thiophthene (thī′of-thēn), *n.* [Gr. *θεῖον*, sulphur, + E. *(na)phtha* + *-ene.*] A colorless liquid,



prepared by the distillation of citric acid with phosphorus trisulphid. It boils at 224–226° C.

thioresorcin (thī″ọ-rẹ-sôr′sin), *n.* [Gr. *θειον*, sulphur, + E. *resorcin.*] Same as ★*thioresorcinol.*]

thioresorcinol (thī″ọ-rẹ-sôr′si-nol), *n.* [Gr. *θειον*, sulphur, + E. *resorcinol.*] A yellowish-gray compound, $C_6H_4(\overset{1,3}{SH})_2$. It melts at 27° C., boils at 243° C., and is used in medicine as a substitute for iodoform.

thiosalicylic (thī″ọ-sal-i-sil′ik), *a.* [Gr. *θεῖον*, sulphur, + E. *salicylic.*] Pertaining to sulphur and salicylic acid, and specifically to thiosalicylic acid.—**Thiosalicylic acid,** a brownish-yellow, amorphous compound, HOC_6H_4COSH, prepared by the action of potassium hydrogen sulphid on salicylyl chlorid. It is used in medicine as an antiseptic like salicylic acid.

thio-salt (thī′ō-sâlt), *n.* [Gr. *θεῖον*, sulphur, + E. *salt.*] A compound, having the general character of a salt, which may be regarded as formed by the union of a more electropositive with a more electronegative sulphid, or as derived from an oxy-salt by the substitution of sulphur for oxygen.

thiosapol (thī-ọ-sap′ol), *n.* [Gr. *θεῖον*, sulphur, + L. *sapo*, soap, + *-ol.*] A trade-name of a soda (hard) soap containing about 10 per cent. of sulphur in chemical combination: used medicinally in the treatment of certain skin-diseases.

thiosavonal (thī-ọ-sav′ọ-nal), *n.* [Gr. *θεῖον*, sulphur, + F. *savon*, < L. *sapo(n-)*, soap, + *-al*^{3}.] A trade-name of a potash (soft) soap containing sulphur in chemical combination. Its uses are similar to those of thiosapol.

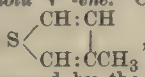
thiosinamine (thī″ọ-sin-am′in), *n.* [Gr. *θεῖον*, sulphur, + *σίν(απι)*, mustard, + E. *amine.*] A colorless compound, $SC(NH_2)NHCH_2$-$CH:CH_2$, prepared by the action of aqueous ammonia on allyl isothiocyanate (allyl mustard oil). It forms monoclinic or rhombic crystals and melts at 78.4° C. Also called *allylthio-urea* or *allylthiocarbamide.*

thiostannate (thī-ọ-stan′āt), *n.* [Gr. *θεῖον*, sulphur, + E. *stannate.*] In *chem.*, a compound which may be viewed as formed by the union of stannic sulphid with the sulphid of a more electropositive metal: as, potassium *thiostannate*, K_2SnS_3. Formerly called *sulphostannate.*

thiostannic (thī-ō-stan′ik), *a.* [Gr. *θεῖον*, sulphur, + E. *stannic.*] Pertaining to thiostannic acid.—**Thiostannic acid**, an acid, H_2SnS_3, corresponding to the salts, thiostannates. The acid has apparently been obtained in the free state, but of doubtful purity. See ★*thiostannate.* Formerly called *sulphostannic acid.*

thiosulphate, *n.*—**Sodium thiosulphate**, formerly called *hyposulphite*, is manufactured upon a large scale for use in photography, in the metallurgical extraction of silver in the liquid way, as an antichlor in connection with the bleaching of paper-pulp, and as an analytical reagent.

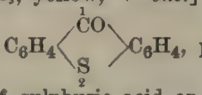
Thiothrix (thī′ọ̄-thriks), *n.* [NL. (Winogradsky, 1887), ‹ Gr. *θεῖον*, sulphur, + *θρίξ*, hair.] A genus of bacteria of the family *Beggiatoaceæ*. It includes non-motile filamentous forms surrounded by an inconspicuous sheath and containing sulphur granules. All are found in sulphur water. *T. nivea* is the best known species. Compare *sulphur* ★*bacteria.*

thiotolene (thī-ọ̄-tō′lēn), *n.* [Gr. *θεῖον*, sulphur, + E. (?) *tolu* + *-ene.* Cf. *toluene.*] A colorless liquid,  $$S\left\langle\begin{matrix}\mathrm{CH:CH}\\ |\\ \mathrm{CH:CCH_3}\end{matrix}\right.$$, contained in coal-tar and prepared by the distillation of sodium pyrotartrate with phosphorus trisulphid. Also called *β-methyl-thiophene.*

thiotungstate (thī-ọ̄-tung′stāt), *n.* [Gr. *θεῖον*, sulphur, + E. *tungstate.*] In *chem.*, a compound which may be regarded as formed by the union of tungsten trisulphid with the sulphid of a more electropositive metal, as potassium *thiotungstate*, K_2WS_4. Formerly called *sulphotungstate.*

thiotungstic (thī-ọ̄-tung′stik), *a.* [Gr. *θεῖον*, sulphur, + E. *tungstic.*] Pertaining to thiotungstic acid.—**Thiotungstic acid**, an hypothetical acid corresponding to the salts, thiotungstates. See ★*thiotungstate.* Formerly called *sulphotungstic acid.*

thio-urea (thī-ọ̄-ū′rẹ̄-ä), *n.* [NL., ‹ Gr. *θεῖον*, sulphur, + NL. *urea.*] A colorless compound, $SC(NH_2)_2$, prepared by the fusion of ammonium thiocyanate. It crystallizes in thick rhombic prisms, melts at 172° C., and is also called *sulpho-urea, sulphocarbamide*, and more correctly *thiocarbamide.*

thioxanthone (thī-ok-san′thōn), *n.* [Gr. *θεῖον*, sulphur, + *ξανθός*, yellow, + *-one.*] A yellow compound,  $$C_6H_4\left\langle\begin{matrix}\overset{1}{\mathrm{CO}}\\ \underset{2}{\mathrm{S}}\end{matrix}\right\rangle C_6H_4$$, prepared by the action of sulphuric acid on phenylthiosalicylic acid. It crystallizes in needles, melts at 209° C., and boils at 371–373° C. under 715 millimeters pressure.

thioxene (thī-ok′sēn), *n.* [Gr. *θεῖον*, sulphur, + E. *ox*(*ygen*) + *-ene.*] A general name applied in organic chemistry to the various dimethyl-thiophenes, $(CH_3)_2C_4H_2S$. They are all liquids and can be prepared synthetically.

third[1], *n.* **6.** In *golf*, a handicap allowance equivalent to one stroke at every third hole; an allowance of six strokes in eighteen holes.—**Slurred third.** In *music*, see ★*tierce coulée.*

third-flute (thėrd′flöt), *n.* Same as ★*terzflöte.*

thirdness (thėrd′nes), *n.* **1.** The character of being third; the third position in an ordinal series considered as a character of the object occupying it.—**2.** The mode of being of that which is such as it is by virtue of a triadic relation which is incapable of being defined in terms of dyadic relations.

thirst, *n.* **3.** A waterless region. [S. Africa.]

thirty, *a.* and *n.* **I.** *a.*—**To feel** or **look like thirty cents**, or, **to make one look like thirty cents**, to look or feel exceedingly small; take one down; give one a small opinion of oneself; feel or to make one feel 'mean.' [Slang.]

> "I say old chap what does that mean? *Make* [a man] *look like thirty cents.* It's awfully queer you know."
> In his most sepulchral tone the actor volunteered:
> "I'll tell you old chap. That is merely a colloquial expression indicative of the acme of mediocrity."
> *N. Y. Times*, Dec. 28, 1902.

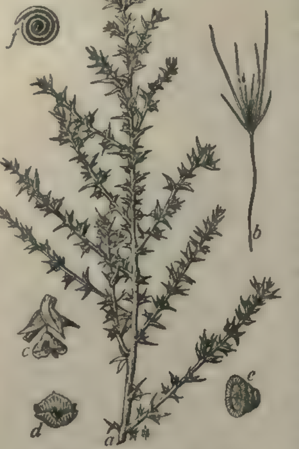
II. *n.* **3.** In *printing* and *teleg.*, the last sheet, word, or line of copy or of a despatch.—**Half thirty**, in *tennis*, one stroke given to a supposedly inferior player at the beginning of the first game, two at the beginning of the second, and thus alternately in the subsequent games of the set.

Thiry-Vella fistula. See ★*fistula.*

thishow (this′hou), *adv.* In this way; in this particular manner.

> What's this then, which proves good yet seems untrue? . . .
> Are means to the end, themselves in part the end?
> Is fiction which makes fact alive, fact too?
> The somehow may be *thishow.*
> *Browning*, Ring and Book, i. 706.

thistle, *n.*—**Napa thistle**, a yellow-flowered star-thistle, *Centaurea Melitensis*, abundantly introduced as a weed in California, apparently diffused from Napa. Also *tocalote.*—**Russian thistle**, an annual weed, *Salsola Tragus*, closely related to the common saltwort of the seashore (see *Salsola*), in recent times troublesome in the Dakotas and adjoining States. It is at first a tender herb available for forage, but matures into a rounded mass of small-leafed, woody, and spiny branches, becoming at length a most effective tumbleweed. An ordinary individual grows 2 to 3 feet in diameter and is estimated to yield 20,000 to 30,000 seeds. These are dropped as the plant rolls, and, being winged by the papery flower parts, may be still further transported (over snow) by the wind. It is unlike a thistle except in being spiny. It was introduced into South Dakota in flaxseed from southeastern Russia in 1873 or 1874, and in twenty years had spread over an area of 35,000 square miles. Its ravages at first caused alarm, but it has been found possible to control it by close cultivation aided by sheep pasturing. Also called *Russian cactus, Russian saltwort*, and *Tatar thistle.*—**Tatar thistle.** Same as *Russian* ★*thistle.*—**Texas thistle.** See ★*star-thistle.*



Russian Thistle (*Salsola Tragus*).

a, branch of mature plant; *b*, seedling about two weeks old — both less than one third natural size; *c*, flower detached from the axil and remaining suspended by minute hairs, in the ordinary inverted position on a rolling plant — slightly under natural size; *d*, flower viewed from above and in front, showing the calyx-lobes connivent into a cone-shaped body, and the large membranaceous spreading wings — slightly under natural size; *e*, seed with flower parts removed — enlarged; *f*, embryo removed from the seed — more enlarged.

(After L. H. Dewey, U. S. D. A.)

thistle-dollar, *n.* **2.** A silver coin of Charles II. of England, struck in 1676: so called from emblems on the reverse.

thistle-saffron (this′l-saf″rọn), *n.* See ★*saffron.*

thiuret (thī′ụ̄-ret), *n.* [Gr. *θεῖον*, sulphur, + *-uret.*] A trade-name of a light odorless powder, $C_8H_7N_3S_2$, used in surgery as a substitute for iodoform.

thlakusk (thlak′usk), *n.* [*Thlinkit* (Tlinkit) of northwestern N. America.] A name given by the Thlinkit Indians to the red seaweed, *Porphyra laciniata*, which is of considerable value as food in southeastern Alaska. See *Porphyra* and *laver*[2].

thola, *n.* See *tola*[2].

tholos (thō′los), *n.* Same as *tholus.*

tholus, *n.* **2.** A round excavated tomb lined with masonry. See ★*beehive tomb.*

> The evidence suggests that *tholos* burial was introduced in Eastern Crete toward the close of the Minoan period.
> *R. C. Bosanquet*, in An. Brit. School at Athens, VIII. [305.

thomäite (tō′mạ̄-īt), *n.* [Named after Prof. Carl *Thomae.*] Ferrous carbonate, probably identical with siderite, but stated to occur in pyramidal crystals.

Thomas (tom′ạs), *v. i.* To beg on St. Thomas's Day, Dec. 31. This is still done in some parts of England by villagers, who go about in procession begging money for the Christmas revels, especially in the district of Almondsbury and Huddersfield: as, to go about *Thomasing. N. and Q.*, 9th ser., VII. 263.

Thomson's law. See ★*law*[1].

thon (ᴛʜōn), *pron.* [*th*(*at*) + *one.*] A word coined, in 1858, by C. C. Converse, as a pronoun of the third person and of common gender designed to be substituted for the locutions 'him or her,' 'his or hers,' etc. It has been but little used.

> Each member of a family, each family of a clan, and each clan of a tribe has a fixed place in the group to which he or she is kept by *thon's* own memory and constrained by the consensus of associates.
> *Rep. Bur. Amer. Ethnol.*, 1897–98, p. 831.

Thoracic choke. See ★*choke*[1].

thoracicolumbar (thọ̄-ras″i-kọ̄-lum′bä̤r), *a.* Same as ★*thoracolumbar.*

thoracocentesis (thō″rạ-kọ̄-sen-tē′sis), *n.* [NL., ‹ Gr. *θώραξ* (*θωρακ-*), chest, + *κέντησις*, puncture.] Same as *thoracentesis.*

thoracocyllosis (thō″rạ-kọ̄-si-lō′sis), *n.* [NL., ‹ Gr. *θώραξ* (*θωρακ-*), chest, + *κύλλωσις*, a crooking, ‹ *κυλλοῦν*, make crooked, ‹ *κυλλός*, crooked.] Distortion of the chest.

thoracocyrtosis (thō″rạ-kọ̄-sėr-tō′sis), *n.* [NL., ‹ Gr. *θώραξ* (*θωρακ-*), chest, + *κύρτωσις*, curvature.] Barrel-shaped deformity of the chest.

thoracodynia (thō″rạ-kọ̄-din′i-ạ̈), *n.* [NL., ‹ Gr. *θώραξ* (*θωρακ-*), chest, + *ὀδύνη*, pain.] Pain in the chest.

thoracogastroschisis (thō″rạ-kọ̄-gas-tros′ki-sis), *n.* [NL., ‹ Gr. *θώραξ* (*θωρακ-*), chest, + *γαστήρ* (*γαστρ-*), belly, + *σχίσις*, fissure.] Congenital fissure of the chest and abdominal wall.

thoracolumbar (thō″rạ-kọ̄-lum′bä̤r), *a.* Relating to the thoracic and lumbar vertebræ considered collectively.

thoracomyodynia (thō″rạ-kọ̄-mī-ọ̄-din′i-ạ̈), *n.* [NL., ‹ Gr. *θώραξ* (*θωρακ-*), chest, + *μῦς*, muscle, + *ὀδύνη*, pain.] Pain in the muscles of the chest-wall.

thoracopagous (thō-rạ-kop′a-gus), *a.* [NL. *thoracopag*(*us*) + *-ous.*] Relating to that form of a double monster known as a thoracopagus, in which the thoraces are united to a considerable extent.

thoracopathy (thō-rạ-kop′ạ-thi), *n.* [Gr. *θώραξ* (*θωρακ-*), chest, + *πάθος*, disease.] Any disease of the thoracic organs, especially of the lungs.

thoracoscope (thō′rạ-kọ̄-skōp), *n.* [Gr. *θώραξ* (*θωρακ-*), chest, + *σκοπεῖν*, view.] A stethoscope.

thoracoscopy (thō-rạ-kos′kọ̄-pi), *n.* [Gr. *θώραξ* (*θωρακ-*), chest, + *-σκοπια*, ‹ *σκοπεῖν*, view.] In *med.*, physical examination of the thoracic organs.

thoracostenosis (thō″rạ-kọ̄-stẹ̄-nō′sis), *n.* [NL., ‹ Gr. *θώραξ* (*θωρακ-*), chest, + *στένωσις*, narrowing.] Narrowness of the chest.

thoria, *n.* The name was first given by Berzelius to a supposed new earth announced by him in 1815 as present in xenotime and other Swedish or Norwegian minerals. He afterward proved that this material was in fact yttrium phosphate. In 1828 he discovered a really distinct earth in the mineral thorite, and applied to it the same name (from the god Thor of Scandinavian mythology), and in this sense the word is used. This earth the oxid of thorium, forms the principal part of the mantles of Welsbach incandescent gas-lamps The material used has been varied, with a view to securing as white a light as possible, but is said to be commonly about 99 per cent. of thorium oxid and 1 per cent. of cerium oxid.

thorianite (thō′ri-ạ-nīt), *n.* [*thori*(*um*) + *-an* + *-ite*[2].] A mineral found in alluvial gravel near Kondurugala, in the province of Sabaragamuwa, and in the Galle district, Ceylon. It occurs in small roughly cubical crystals, of brownish-black color and resinous luster, of specific gravity 9.5-9.7, of hardness nearly 7, infusible before the blowpipe, easily pulverized, and then readily soluble in strong nitric acid. The mineral is strongly radioactive and consists essentially of the oxids of thorium, uranium, the rare earths, and lead. Two varieties have been described, the one containing 78 per cent. of thorium dioxid and 12 per cent. of uranium oxid, the other containing about 60 per cent. of thorium dioxid and over 30 per cent. of uranium oxid. Both varieties contain a relatively high proportion of helium, the former on solution setting free something over ten cubic centimeters of this rare gas. The mineral can properly be classed as a variety of uraninite or pitchblende.

thorite[2] (thor′īt), *n.* [Appar. an independent formation from *Thor* + *-ite*[2], with reference to the strength of the explosive, and not associated, like *thorite*[1], with *thorium.*] An explosive of the ammonium-nitrate class once experimented with as a bursting charge for shell.

thorium, *n.* In 1900 Brauner announced his belief that thorium, as generally known, is separable into two different elements. A little later Baskerville, working by a different method, came to the same conclusion, and in 1903 claimed to have effected its separation into three components, for two of which he proposed the new names *carolinium* and *berzelium*, retaining the name *thorium* for the third component. Later he found for this new or purified thorium an atomic weight of 220.1-220.6. In 1905 R. J. Meyer and A. Gumperz published the results of a careful revision of the previous work on this subject, which they found did not afford any evidence in support of the earlier claims of the separability of thorium. Thorium is a radioactive element and is the parent of a series of radioactive products of which eight separate members have already been identified. These are known as *mesothorium* 1, *mesothorium* 2, *radiothorium*, *thorium X*, *thorium emanation*, *thorium A*, *thorium B*, and *thorium C*, and are ordinarily present in thorium compounds. Thorium and its products appear to constitute a separate radioactive group or family, distinct from the uranium group, of which actinium, ionium, radium, and polonium are members, although generally found associated with it in minerals. Thorium itself emits only α-rays, but, owing to the presence of thorium disintegration-products, β- and γ-rays are also given out by thorium compounds.—**Nitrate of thorium**, a salt of the rare metal thorium, a few years ago found only in very small quantities in the collections of chemical laboratories, now an article of commerce and used in the production of mantles for Welsbach incandescent gas-lamps.—**Thorium emanation,** a highly radioactive gaseous disintegration-product of thorium, freely evolved by certain compounds of thorium, and having but a very brief independent existence. In the course of a few minutes it undergoes almost complete disintegration and is transformed into solid radioactive products known as *thorium A, B,* and *C.* See ★*emanation*, 5.—**Thorium X,** a radioactive disintegration product of thorium which can be separated from the latter by precipitating the thorium as hydroxid from an aqueous solution of the nitrate. After removing the hydroxid the liquid is evaporated to dryness, the residue is ignited to expel ammonium salts, and a slight residue containing the thorium X, but consisting chiefly of impurities, is obtained. This residue may be several thousand times more radioactive than an equal weight of thorium oxid and evolves correspondingly greater amounts of thorium emanation. This activity is gradually lost, however, owing to the disintegration of the thorium X, which disappears at a rate corresponding to the transformation of half of the total amount present in a period of about four days. Thorium X has been found to be the immediate parent from which the thorium emanation is produced.

thorn^1, *n.*—**Black thorn.** Same as *Western* ★*haw.*—**Large-fruited thorn.** Same as *dotted* ★*haw.*—**Wait-a-bit thorn.** (*b*) The hackthorn, *Acacia detinens.* See ★*hackthorn.*

thornback, *n.* 1. (*b*) In Australia, one of the sting-rays, *Raja lemprieri* or *Raja rostata,* of the family *Rajidæ.* *E. E. Morris,* Austral English.

thorn-locust (thôrn′lō″kust), *n.* The honey-locust.

thorogummite, *n.* This mineral, like other native compounds of thorium and uranium, has marked radioactive properties.

thought-consciousness (thât′con″shus-nes), *n.* The disposition of consciousness during the process of thought; the mind as it is when reasoning, arguing, solving a problem, etc. *E. B. Titchener,* Exper. Psychol., I. i. 1.

thought-reading (thât′rē″ding), *n.* Same as *mind-reading.*

thought-writing (thât′rī″ting), *n.* Any endeavor to record ideas by means of signs, pictures, or ideographs, rather than by means of phonetic symbols.

> The monographs on sign language and pictography, having as their text the attainments of the North American Indians in those directions, may contribute to the understanding of similar exhibitions of evanescent and durable *thought-writing,* whether still employed in other parts of the world or now only found in records of material remains. *Smithsonian Rep.,* 1890, p. 50.

thousand-jacket (thou′zand-jak″et), *n.* In New Zealand, the ribbonwood, *Hoheria populnea,* so called from the many layers of its inner bark. See ★*houhere* and *ribbonwood.*

Thracian, *n.* 2. The language (any language) spoken in ancient Thrace. From the scanty remains of the Thracian dialects (chiefly proper names) it is inferred that they belonged to the Indo-European family.—3. In *geol.,* the uppermost stage of the Pliocene Tertiary series in the Vienna basin of Austria, represented by conglomerates, gravels, and sands containing bones of large mammals and shells of *Unios* and, in locally distributed fresh-water limestones, the shells of *Helix* and *Planorbis.* The Thracian beds lie on the Congeria beds of the Lower Pliocene.

thrasher^2, *n.*—**Bahama thrasher,** a bird, *Harporhynchus plumbeus,* related to the familiar brown thrasher, but peculiar to the Bahama Islands.—**Palmer's thrasher,** the bow-billed thrasher, *Harporhynchus curvirostris palmeri.*

thread, *n.* 12. *pl.* A defect in glass articles: same as ★*string,* 15.—**Axial thread.** See ★*axial.*—**British Association thread,** a screw-thread for bolts and nuts proposed by a committee of the British Association for the Advancement of Science in 1882. It has rounded tops and bottoms, similar to the Whitworth, and is taken from Professor Thury's Swiss system.—**Conjunctive threads,** in *biol.,* the achromatic filaments of the nuclear spindle.—**Eve's thread.** Same as *Adam's needle and thread.*—**Floating thread,** in *weaving,* a thread that passes over several other threads without interlacing with them.—**Male thread,** the thread of a bolt, in distinction from the thread of a nut, which latter is called a *female thread* or *internal thread.*—**Metal thread,** a fine metallic wire which can be woven or used for textile purposes, made from gold, silver, copper, or a similar metal.—**Müller's thread,** the common terminal thread of all the ovarian tubes in an insect's ovary.—**Nuclear thread,** an indefinite term applied sometimes to the elements of the achromatic linin network of the cell-nucleus, sometimes to elements of the chromatin reticulum or to the chromosomes.—**Thread blight.** See ★*blight.*—**Whitworth thread,** the British standard for bolts, nuts, and taps. The angle of the helices is 55° instead of 60°, as in the American or United States standard, and the depth of the thread is 0.96 of the pitch instead of ⅞ths. The points and roots are rounded off to about ⅙ of the depth each instead of using a flat top or the sharp angle used in the United States. It was proposed and adopted by Sir Joseph Whitworth of Manchester and by him impressed upon English engineering and manufactures.

thread, *v. t.* 5. In *elect.,* to pass through and link with, as the lines of force of the magnetic field of a D'Arsonval galvanometer pass through the suspended coil of the instrument.

thread-board (thred′bōrd), *n.* A board directly over the spindles of a ring-spinning machine, for holding guide-wires for the thread. *Nasmith,* Cotton Spinning, p. 328.

thread-fish, *n.* 3. A common name of *Alectis ciliaris,* a carangoid fish ranging northward from the tropics on both American coasts to Mazatlan and Cape Cod.

thread-gage, *n.* 2. A gage used to determine the accuracy of screw-threads, cut by machine, as to depth, pitch, and conformity to standard. If the thread is cut with a taper, as on taps and pipes, a thread-gage is used to test the accuracy of these elements also.—**Worm-thread gage,** a special form of screw-gage for measuring the threads of worm-gears.

thread-guide, *n.* 2. In a ring-spinning machine, a wire device for guiding the thread to the spindle.

threading (thred′ing), *p. a.* [*thread, v.,* 5.] Forming a link with the windings of an electric circuit: said lines of force of a magnetic circuit passing through a coil of wire.

threadlet (thred′let), *n.* [*thread* + *-let.*] A delicate or minute thread.

thred, *n.* and *v.* A simplified spelling of *thread.*

three, *a.*—**Three-circle goniometer.** See ★*goniometer.*—**Three-point problem,** a problem employed in surveying for determining a certain point when three signals are in view.—**Three-wire system.** See ★*wire*^{1}.

three-bagger (thrē′bag″ėr), *n.* In *base-ball,* a hit which enables the striker to run three bases; a three-base hit. [Slang.]

three-birds, *n.* 2. Same as ★*nodding-cap.*

three-color (thrē′kul″or), *a.* Characterized by the use of three colors; specifically, printed in three colors. See ★*three-color process,* below.

> The novelty of reproducing the author's very effective paintings by means of the "*three-colour*" process. *Geog. Jour.* (R. G. S.), XV. 193.

Three-color process, the process of producing pictorial prints from three plates or printing-surfaces, made by photography, that respectively convey to the print the three primary colors yellow, blue, and red. Secondary and tertiary colors are produced by successive overlappings of the prints of primary colors. A fourth plate of black is sometimes added when the outlines of form are indistinct or when shading is not enough marked. To improve the general effect a special engraving of parts of each plate is often required. The three-color process is applicable to the methods used in typographic, lithographic, and gelatin printing.

three-crank (thrē′krangk), *a.* Having three cranks on one shaft: an arrangement used with engines or pumps having three cylinders to secure even distribution of turning effect, or, in pumping liquids, a steady flow from the pumps. *Norris and Morgan,* High-speed Steam-engine, p. 22.

Three-fold symmetry. See ★*symmetry,* 6.

three-line (thrē′līn), *n.* A trigram; a system of 3 coplanar straights.

three-on (thrē-on′), *a.* Said of an arrangement of pages for presswork by which three copies in triplicate can be printed together on the same sheet by the same operation. See ★*two-on.*

three-phase (thrē′fāz), *a.* In *elect.,* pertaining to or employing a system of electric distribution in which are used three alternating currents differing in phase from one another by one third of a period, so that they reverse in direction successively at equal intervals of time: that is, first current 1, then current 2, then 3, then again 1, etc., reverses.

> The electric energy is generated by *three-phase* machines at 20,000 volts. *Nature,* April 23, 1903, p. 588.

Three-phase alternater, a generator for the production of the three alternating electric currents of different phase for use on a three-phase circuit.—**Three-phase circuit,** an electric circuit supplied with three alternating currents differing in phase from one another by one third of a cycle.—**Three-phase generator.** See ★*generator.*—**Three-phase system,** a system for the production and distribution of three alternating electric currents differing from one another by a third of a cycle, and the utilization of such currents.—**Three-phase transformer.** See ★*transformer.*

three-phaser (thrē′fā″zėr), *n.* In *elect.,* a three-phase alternating-current generator or motor. *Jour. Brit. Inst. Elect. Engin.,* 1902–1903, p. 751.

three-rhythm (thrē′riᴛʜm), *n.* 1. A rhythm of which the unit is trimembral; dactylic or anapestic rhythm.

> The dactyl is undoubtedly the simplest *three-rhythm.* *Amer. Jour. Psychol.,* XII. 540.

2. A bimembral, iambic or trochaic, rhythm as estimated in terms of time (one long syllable = two short syllables).

> No circumstance in the history of æsthetics is so curious as the overpowering passion of the English ear for 3-rhythm. *S. Lanier,* Sci. of English Verse, p. 141.

threesome, *a.* II. *n.* In *golf,* a match in which one player, playing his own ball, plays against two opponents with one ball, each opponent playing alternate strokes.

> In a *threesome* or foursome the partners shall strike off alternately from the teeing-grounds, and shall strike alternately during the play of the hole. *Encyc. Brit.,* XXIX. 26.

three-stringed (thrē′stringd), *a.* Having three strings: said of musical instruments: as, a *three-stringed* viol.

three-throw (thrē′thrō), *a.* Having three cranks. Usually these cranks are at 120° with each other so as to produce or consume more evenly distributed turning effect. In a three-throw pump or engine each crank is connected to its own cylinder.

> At present the current from the turbine is taken to a Riedler pump at the shaft bottom, and to a small *three-throw* pump. This takes up less than half the power available, and that in reserve will be used to duplicate the shaft pump or for haulage purposes. *Elect Rev.,* Sept. 24, 1904, p. 535.

Three-way cock or **valve.** See ★*cock*^{1}.

thresh *v. t.* 3. In *wire-drawing,* to raise (a wire rod or bar of small section) high in the air and throw it heavily against a flat smooth plate on the ground in order to straighten it or to loosen the scale and dirt. *Stand. Dict.*

thresherman (thresh′ėr-man), *n.* One who pursues the occupation or business of threshing; a thresher.

> But there is no need for the *thresherman* to be victimized by such mis-statements. *Threshermen's Rev.,* June, 1906, p. 11.

threshold, *n.*—**Absolute threshold of difference.** See ★*absolute.*—**Discriminative threshold.** See *discriminative* ★*limen.*

threshold-plate (thresh′ōld-plāt), *n.* A threshold or saddle made of metal, as brass or cast-iron.

thret, threten. Simplified spellings of *threat, threaten.*

thril, *v.* and *n.* A simplified spelling of *thrill.*

thriller (thril′ėr), *n.* [*thrill, v.,* + *-er.*] 1. Something which thrills or affects with a tingling sensation of pleasure or, occasionally, pain; a shocker; specifically, a shilling shocker. [Colloq.]

> The British-Boer spectacle, "Best of Friends' and . . . home-made *thriller,* "The Evil Men Do," have shared alike in the disfavor of the below-Fourteenth-Street masses, whose fancy remains true to such unfailing heart-wringers as "No Wedding Bells for Her." *The Forum,* Jan.–March, 1904, p. 415.

2. One who thrills others; specifically, a writer of 'thrillers' or shilling shockers. [Colloq.]

> Come, then, ye gentles and geniuses, ye poets, . . . ye *thrillers* and movers with the pen. *J. Ralph,* War's Brighter Side, vii.

thrimes (thrim′es), *n.* [AS.] Same as ★*trimes.*

thripid (thrip′id), *n.* and *a.* I. *n.* A member of the family *Thripidæ.*

II. *a.* Having the characters of or belonging to the thysanopterous family *Thripidæ.*

Thrissops (thris′ops), *n.* [NL., < Gr. *θρίσσα,* a fish, + ὤψ, eye.] A genus of rather large teleostean fishes found in Jurassic and Cretaceous rocks of Europe.

thro^4 (thrō), *n.* A Burmese viol with three silk strings, a flat elliptical body, and a carved head, in general appearance curiously resembling the violin; also *tarau.*

throat, *n.* 3. (*n*) Any passage from large to small cross-section, as in a pipe which leads off from a main, where in the neck of the joint the area is enlarged to give easy flow and smooth curves. (*o*) The top or head opening of a shaft or blast-furnace through which the charges of ore fuel and flux are dumped by gravity. (*p*) The curve where the flange of railway car-wheels joins the straight cylindrical or conical part of the tread. This throat part bears against the upper corner of the head of the rail. (*q*) In *geol.,* the upper portion of a volcanic conduit, which is adjacent to the crater.

> As soon as the *throat* of the crater is thoroughly cleared, and the climax of the eruption is reached, a mass of incandescent lava rises and wells over. *Nature,* Aug. 21, 1902, p. 406.

(*r*) The front part of the mold-board of a plow.

> That part which perforates the soil . . . and which is usually termed the *throat* or breast. *Rees,* Cyclopedia, article 'plough.'

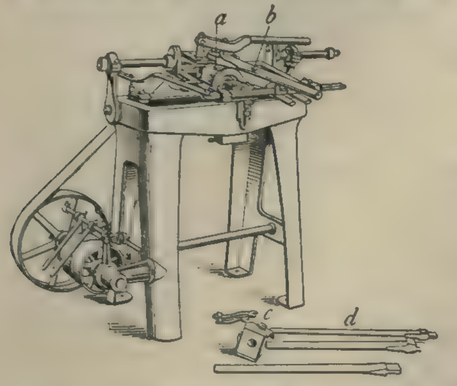
Hospital sore throat, ulcerative pharyngitis.

throat-fringe (thrōt′fring), *n.* A line of very long hair running lengthwise on the throat of a mammal.

> In the winter coat the narrowness and banded coloration of the *throat-fringe* must likewise be noted as a well-marked feature. *Proc. Zool. Soc. London,* 1896, p. 932.

throating-line (thrō'ting-līn), *n.* Same as *cutting-down line.*

throating-machine (thrō'ting-mạ-shēn″), *n.* In *wood-working*, a machine for shaping the throat of a wagon- or carriage-wheel spoke. Small machines employ a horizontal cutter-head having suitable cutters, and must be fed by hand, the tenoned spoke being held in the machine by the operator until the throat, or tapering abutment that forms the base of the spoke when in place in the wheel, is shaped out. Large machines are self-feeding and automatically shape the throat to any required pattern. The capacity is 15,000 spokes a day. It is sometimes combined with other machines, as in the tenoning-, mitering-, and throating-machine.



Throating-machine.

a, cutter; *b*, spoke in position for work; *c*, extra cutter for spoke of different size; *d*, sample of throated spokes.

throatlatch, *n.* 2. The upper under-part of a horse's throat, around which the throatlatch of the harness passes: used in describing the characters or 'points' of a horse.

throat-piece, *n.* 2. The wooden part of a tennis-racket where the frame or rim is bent together to meet the handle.

throat-plate (thrōt'plāt), *n.* The exterior plate of a locomotive fire-box, which is fastened to the lower segment of the cylindrical barrel. Its upper edge is flanged forward to receive the barrel-plate and the sides are flanged backward to receive the sides of the water-legs.

throat-ring, *n.*—**Waldeyer's lymphatic throat-ring**, the faucial, pharyngeal, and lingual tonsils, which form a broken ring of lymphoid tissue encircling the beginning of the respiratory tract. Also called *Waldeyer's tonsillar ring. Med. Record*, Feb. 7, 1903, p. 228.

thrombase (throm'bās), *n.* [Gr. *θρόμβος*, a lump, clot, + *-ase.*] The ferment which causes the clotting of blood; thrombin: same as *fibrin ferment.*

thrombin (throm'bin), *n.* [Gr. *θρόμβος*, a lump, clot, + *-in*^{2}.] The fibrin ferment which causes the coagulation of the blood; thrombase.

thrombocystis (throm-bọ-sis'tis), *n.* [NL., < Gr. *θρόμβος*, a lump, clot, + *κύστις*, bladder, cyst.] A cyst-like inclosure of the blood effused into a soft tissue such as the brain.

thrombogen (throm'bọ-jen), *n.* [Gr. *θρόμβος*, a lump, clot, + *-γενης*, -producing.] A substance assumed to be present in the blood-plates which converts fibrinogen into fibrin; the proenzym of the fibrin ferment. *Amer. Jour. Clin. Med.*, Oct., 1907, p. 1227.

thrombogenic (throm-bọ-jen'ik), *a.* [As *thrombogen* + *-ic.*] Inducing coagulation.

thromboid (throm'boid), *a.* [Gr. *θρομβοειδής*, full of clots, clotty, < *θρόμβος*, a clot, + *εἶδος*, form.] Resembling a blood-clot or a thrombus.

thrombokinase (throm-bọ-kin'ās), *n.* [Gr. *θρόμβος*, a clot, + E. *kinase.*] A kinase found in the tissues and the formed elements of the blood, which in the presence of a calcium salt activates the proenzym of the fibrin ferment, thrombogen.

thrombolite (throm'bō-līt), *n.* [Gr. *θρόμβος*, a clot, + *λίθος*, a stone.] An amorphous emerald-green mineral occurring with malachite at Rézbánya, Hungary. It contains the oxids of copper and antimony, with water, but its homogeneity is doubtful.

thrombosin (throm'bō-sin), *n.* [Gr. *θρόμβος*, a clot, + *-ose* + *-in*^{2}.] According to Lilienfeld's conception of the process of coagulation, the substance formed on the decomposition of fibrinogen by ★leuconuclein (which see). This substance combines with a calcium salt and then constitutes fibrin.

thrombosis, *n.*—**Puerperal thrombosis**, intravenous coagulation of blood occurring occasionally after childbirth.

thrombus, *n.*—**Marasmic thrombus**, a clot formed within a blood-vessel, due to stagnation of the circulation from weakness of the heart or general debility.—**Milk thrombus.** See ★*milk-thrombus.*—**Thrombus neonatorum.** Same as *cephalæmatoma.*

throne-room (thrōn'röm), *n.* In a royal palace, the chief audience-room where the throne is placed.

> It was upon this example that the restoration of the *Throne-room* at Knossos was based.
> *Th. Fyfe*, in Jour. Roy. Inst. of Brit. Architects, X. 114.

throscid (thros'id), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Throscidæ.*

II. *a.* Having the characters of or belonging to the family *Throscidæ.*

throstle-spinning (thros'l-spin-ing), *n.* The spinning of yarn on a throstle or fly-frame. *Webb*, Indust. Democracy, I. 424.—**Throstle spinning-machine.** Same as *throstle*, 2.

throstle-yarn (thros'l-yärn), *n.* Yarn made on a throstle spinning-machine.

throttle, *v. t.* 4. In *elect.*, to reduce (the flux in a magnetic circuit) by diminishing the cross-section of the iron traversed by the lines of force, or by the introduction of joints or air-gaps.

> Every such *throttling* of the magnetic circuit will directly produce a diminution of the mean flux of induction. *H. Du Bois*, The Magnetic Circuit, p. 168.

throttle-governor (throt'l-guv″ėr-nọr), *n.* A governor which regulates the speed of an engine by throttling the steam admitted to the cylinder, thus changing the pressure on the piston.

throttle-pipe (throt'l-pīp), *n.* The vertical pipe leading from the dry pipe of a locomotive to the throttle-valve.

throttling-bar (throt'ling-bär), *n.* A metal bar, of uniform width and varying thickness, placed on the inside of the hydraulic cylinder of a gun-carriage to limit the recoil of the gun by varying and gradually closing the orifice in the piston-head. *Jour. U. S. Artillery*, Nov.–Dec., 1903, p. 297.

through^1, *adv.*—**Through-and-through**, noting a system of mining the softer bituminous coal, when no pretense is made to sizing the lumps. The product is known in the United States as 'run of mine' coal. [British.]

through^1, *a.* **II.** *n.* In plowing and other field-work, a single passage across the field; half of a bout.

> The entire width of the cut of the gang is twenty-four inches, from which can be computed the number of "*throughs*" necessary to clean a row.
> *Catalogue John Deere Plow Co.*, 1905–06, p. 121.

through-key (thrö'kē), *n.* A key or pin the hole for which goes entirely through the element to be fastened, so that, if desired, the key may also go through and protrude on the side opposite the head. *Whitham*, Const. Steam Engin., p. 81.

through-rod (thrö'rod), *n.* A rod which runs from end to end of the structure of which it is a part, or which comes out at both ends of such a structure in order to be fastened there. *Whitham*, Const. Steam Engin., p. 81.

throw^1, *v.* **I.** *trans.*—**To throw a fit**, to suffer from an epileptic seizure; hence, to act in an excited way. [Slang.]—**To throw down.** (*c*) In *chem.*, to precipitate; separate in solid form from a solution, either by chemical action or by the addition of a liquid miscible with the solvent, but incapable of holding in solution the solid which is separated. Thus, silver may be thrown down as silver chlorid from a solution in water of silver nitrate by the addition of common salt, or camphor may be thrown down from a solution of it in alcohol by the addition of water. *Philos. Trans. Roy. Soc.* (London), 1899, ser. B, p. 218.—**To throw in.** (*e*) In *printing*, to distribute composed type, throwing, with rapid motion of the hand, each type in its proper box. See *distribute, v. i.*, 2.

II. *intrans.*—**To throw over**, in a steam-engine, to run over; to turn in such a direction that the crank-pin will rise when it moves from the dead-center next to the cylinder: said only of horizontal or inclined engines.—**To throw under**, in a steam-engine, to run under; to turn in such a direction that the crank-pin will descend when it moves from the dead-center next to the cylinder: said only of horizontal or inclined engines.

throw^1, *n.* 10. A crank. [Eng.]—11. The length or lever-arm of a crank.—12. In *elect.*, the angular movement or swing of the needle of a galvanometer, with incompletely damped motion, measured from the zero-point to the turning-point of its first excursion. *H. Hertz* (trans.), Electric Waves, p. 190.

throw-disk (thrō'disk), *n.* A crank-disk (see ★*throw, n.*, 10). Such a disk may be, in design, a plain disk-crank or wrist-plate, or it may be slotted and with the pin adjustable in the slot by a screw. This latter arrangement is much used in slotting-machines and for reciprocating feed-motions, where the element driven by the pin should have a throw or travel of varying or adjustable length.

Thrower's wheel, a potter's wheel.

throwing-board (thrō'ing-bōrd), *n.* See ★*spear-thrower.*

throwing-club (thrō'ing-klub), *n.* A weapon somewhat like a club which is thrown at the enemy.

throwing-iron (thrō'ing-ī″ėrn), *n.* A peculiar knife-like weapon used for throwing: found among certain tribes of Central Africa. *Ratzel* (trans.), Hist. of Mankind, III. 68.

throwing-knife (thrō'ing-nīf), *n.* A knife used as a weapon and intended to be thrown at the enemy. Such knives are common in parts of Africa, especially among the Mombuttus, and are of various shapes, often with a number of secondary projections or arms on the principal blade. *Ratzel* (trans.), Hist. of Mankind, III. 72.

throwing-machine (thrō'ing-mạ-shēn″), *n.* 1. A machine for forming threads by twisting filaments, as in silk manufacture.—2. A form of simple weaving-machine in which the shuttle is thrown athwart the warp-threads.—3. A primitive form of lathe for rough turning.—4. A potter's wheel, usually driven by mechanical power.

throwing-net (thrō'ing-net), *n.* A net designed to be thrown by the hand, as from the shore or a boat; a casting-net.

> The *throwing*- or casting-*nets*, circle-nets, sweep-nets, modified trammel-nets, long nets like those for sand-eels with a median pocket, push-nets, conical wicker traps, elaborate weirs of stones which closely resemble those at present in use in Japan, besides baited and unbaited hooks, show how varied these methods [used on the Nile] are.
> *Nature*, Nov. 7, 1907, p. 10.

throw-line (thrō'līn), *n.* Same as ★*trip-line.*

throw-out (thrō'out), *n.* Same as ★*frog*^{2}, 4 (*b*).

thru, *prep.*, *adv.*, and *a.* A simplified spelling of *through.*

thrum^1, *n.* 7. The character of being thrum-eyed.

> Short style or "*thrum*" is a dominant—with a complication. *Nature*, Aug. 25, 1904, p. 412.

thruout, *adv.* and *prep.* A simplified spelling of *throughout.*

thrush^1, *n.*—**Austral thrush.** Same as *Port Jackson* ★*thrush.*—**Fen thrush**, a local English name for the mistlethrush, *Turdus viscivorus.*—**Native thrush**, the Australian thick-headed shrike, *Pachycephala olivacea.*—**Port Jackson thrush**, the best known species of Australian shrike-thrushes, the *Colluricincla harmonica* of Latham.—**Whistling-thrush**, an East Indian bird of the genus *Myiophoneus*, belonging to the family of babblers, *Timeliidæ.*

thrust^1, *n.* 6. In *geol.*, a compressive strain in the crust of the earth, which, in its most characteristic development, produces reversed or thrust faults.

> Horizontal differential movements had occurred, and local *thrusts* and shear slips took place again, fragmenting the previous thrust-masses and igneous intrusions.
> *Nature*, Feb. 12, 1903, p. 359.

7. In *marine engin.*, the force exerted endwise on a propeller shaft to drive a vessel ahead. An *indicated thrust* is a fictitious thrust which would be exerted if the whole indicated horse-power of the engine was used to drive the vessel ahead at a speed equivalent to the rate of advance of the screw turning in a solid block instead of in water. An *effective thrust* is the real thrust equal to the resistance which the vessel opposes to motion through the water.

8. Abbreviation of *thrust-bearing*, ★*thrust-block*, or *thrust-box.*

> For each wheel is provided a 24-in. high-pressure gate valve, with roller bearing *thrusts.*
> *Elect. World and Engin.*, April 11, 1903, p. 646.

9. See the extract.

> In one of these [mines] 19,000 "shots" or "*thrusts*" have been made by four machines in 12 months, which yielded 40,000 tons of coal. [Hydraulic mining cartridge.]
> *Sci. Amer. Sup.*, Feb. 21, 1903, p. 22700.

Horseshoe thrust, a form of thrust-bearing used for taking the end thrust of a shaft. It consists of a series of U-shaped blocks against which collars on the shaft bear.

thrust-bearing, *n.*—**Ball thrust-bearing.** Same as ★*ball-thrust.*

thrust-block (thrust'blok), *n.* A massive bearing for the propeller-shaft of a marine engine, constructed so as both to support the shaft and to resist motion in the direction of its length. Whatever force the propeller exerts to drive the vessel forward must be opposed by an equal reaction in the hull, and the thrust-block is designed to provide this. In the older and common form, there was formed on the length of shaft just aft of the engine a series of rings or collars greater in external diameter than the shaft. These collars fitted into corresponding grooves in the box or bearing, and the surfaces of these collars or rings, which were at right angles to the length of the shaft, received and resisted the thrust. If for any reason they wore unequally the area for thrust resistance was proportionately reduced and at once the bearing began to heat, necessitating devices for cooling the contact-surfaces. The bearing-surfaces of the box are usually cast with hollow channels so that water can easily be circulated through them. To enable worn areas to be easily and cheaply replaced, a modern design makes the contacts removable elements, having somewhat a horseshoe form, which fit into recesses in the bearing and can be taken out easily to enable new ones to be put in. Roller thrust-bearings, in which the rolling friction of balls or rollers in a suitable track replaces the sliding friction of the other type, are coming into favor. Thrust-bearings are also used in which a fluid, such as oil or water, is forced under pressure between the contact-areas of shaft-collar and bearing-groove, so as to prevent these from coming together for metallic contact and preserving a condition of fluid friction where the pressure of the thrust is exerted. Thrust-bearings of all types are also used for vertical shafts to support their weight.

thrust-collar (thrust′kol″ạr), *n.* See ★*thrust-block.*

thrust-fault (thrust′fâlt), *n.* In *geol.*, a reversed fault; a fault along an inclined fissure whose upper side has been forced by compressive strain to slide up on its lower.

> The overfolding and repetition of strata by *thrust-faults* are well shown in numerous sketches and diagrams. *Nature*, Aug. 20, 1903, p. 375.

thrusting, *n.* **3.** In *geol.*, the development of reversed faults by compression or thrust.

> The structure of the Basin ranges is believed to be the result of crustal movements of uplift and subsidence accompanied by faulting, *thrusting*, and erosion at different stages of Paleozoic time. *Science*, Jan. 2, 1903, p. 26.

thrust-post (thrust′pōst), *n.* A post, either fastened in the ground or forming a part of a structure, so arranged as to take the thrust from a load or force.

thrust-ring (thrust′ring), *n.* A collar turned on a thrust-shaft and in the thrust-bearing. *Whitham*, Const. Steam Engin., p. 102.

thrust-screw (thrust′skrö), *n.* A screw, with or without the power of end-long adjustment, which takes the thrust of a revolving spindle. *Lockwood*, Dict. Mech. Engin. Terms.

thrust-shaft (thrust′shȧft), *n.* That portion of a propeller-shaft on which are the thrust-bearings.

thrypsis (thrip′sis), *n.* [NL., ‹ Gr. θρίψις, a breaking in pieces, ‹ θρύπτειν, break in pieces.] In *surg.*, comminution of the bone in fracture.

Thuja, *n.* See *Thuya.*

thujetin, thujigenin, thujin, thujone. See ★*thuyetin*, ★*thuyigenin*, ★*thuyin*, ★*thuyone.*

Thujopsis (thū-jop′sis), *n.* [NL. (Siebold and Zuccarini, 1844), ‹ *Thuja* + Gr. ὄψις, appearance, resemblance.] A monotypic coniferous genus, comprising *T. dolobrata*, a Japanese tree sometimes planted for ornament. It is closely related to *Thuya*, being distinguished chiefly by having 4 to 5 ovules, rather than 2, under each scale. It is a handsome tree for lawn planting, hardy in southern New England, bearing glossy green leaves marked with a white band beneath. There are horticultural forms. See *Thuyopsis*

thulia (thū′li-ạ̈), *n.* [NL.] The oxid of thulium.

Thulite stone. See ★*stone.*

thulium, *n.* The name was given in 1879, by Cleve, to a supposed new element present in the compounds of Mosandu's erbium extracted from gadolinite. The evidence of its existence was found in an examination of the absorption-spectra of products of the fractionation of erbium salt solutions, but it is very doubtful whether the separation is complete and whether thulium is to be considered as a distinct and single element.

thum², *n.* and *v.* A simplified spelling of *thumb*¹.

thumb¹, *n.* **6.** In *geol.*, a columnar projection of eruptive rock.

> In how far the structures may or may not be identical only a new study of the Indian field can positively determine; but I believe that the Indian figures will be found to represent the extremely acute '*thumbs*' and pinnacles which surmount the trap plateau of different parts of Greenland (Omenak Promontory, Disko Island), whose origin through erosion can not be questioned. *Science*, May 20, 1904, p. 803.

thumb¹, *v. t.* **4.** To cover with the thumb, as the vent of a muzzle-loading cannon.

thumb-fingered (thum′fing″gėrd), *a.* Having the 'fingers all thumbs'; being as awkward in delicate manipulations as if using the thumb only.

> Tridectomy must be skilfully and delicately performed. No *thumb-fingered* tyro need attempt it with hope of success, for in care and delicacy and expertness lie the hopes of brilliant achievement here. *Med. Record*, Feb. 28, 1903, p. 335.

thumb-index (thum′in″deks), *n.* An index, especially an alphabetical one, placed on the outer edges of the pages of a book and so arranged (by cutting away a small portion of the over- or underlying margins) that each letter is visible when the book is closed: the book can be opened at the place desired by placing a 'thumb' or finger upon the proper exposed letter of the index.

thumb-lancet (thum′lȧn″set), *n.* The usual form of lancet, having a broad two-edged blade. *Med. Record*, May 30, 1903, p. 853.

thumb-loose (thum′lös), *n.* The method of loosing the string of a bow with the thumb.

thumb-mark, *n.* **2.** The imprint of the ball of the thumb used as a means of identification, as in the case of a criminal. It is used also as a seal and as the signature of an illiterate, "his mark." See ★*thumb-print.*

thumb-mold (thum′mōld), *n.* In *ceram.*, a small plaster or clay mold, usually bearing intaglio designs, in which the plastic clay is pressed with the thumb in making ornaments for the decoration of ware.

thumb-nail (thum′nāl), *n.* and *a.* **I.** *n.* **1.** The nail of the thumb.—**2.** Hence, figuratively, something as small as the nail of the thumb; something quite small, as a sketch or a volume.

II. *a.* As small as the nail of the thumb; hence, quite small: as, a *thumb-nail* sketch; a *thumb-nail* series of books.

> He shaded his eyes, he stepped backward and forward; he gave, as it were, a *thumb-nail* sketch of a professional critic at a private view. *John Oliver Hobbes*, Flute of Pan, p. 62.

thumb-plane (thum′plān), *n.* A cabinet-makers', joiners', or piano-builders' plane, four or five inches long, with an iron an inch wide or less, used for light work where larger tools cannot be handled: so called from its diminutive size. [Eng.]

thumb-print (thum′print), *n.* The impression or mark of the inner surface of the terminal joint of the thumb, made upon any receptive surface; especially, the print formed by inking this surface of the thumb and pressing it on paper. Such impressions or prints show the arrangement of the lines on the surface of the skin, which vary in different persons, and are thus valuable for purposes of identification. See ★*finger-print.*

thumb-ring, *n.* **3.** A ring worn on the thumb in archery.

> *Thumb ring*, a ring worn on the thumb in archery by those peoples that use the Mongolian release; called sefin by the Persians. *Smithsonian Rep.*, 1893, p. 637.

thumb-wheel (thum′hwēl), *n.* **1.** A small hand-wheel with projecting pins against which the thumb of the operator may press to turn the valve-spindle attached to the wheel.

> The spark-lead-controlling lever is at the right of the driver's seat, while on the left of his seat is a *thumb-wheel* for regulating the supply of gasoline. *Sci. Amer.*, Jan. 17, 1903, p. 43.

2. A wheel or segment attached to and forming part of a larger hand-wheel, and so arranged that it can be turned by the thumbs of the hands which are controlling the larger wheel: used in motor-car practice.

thump, *n.* **2.** *pl.* Beating of the chest in horses due to spasmodic contractions of the diaphragm. It is similar to hiccough in man. *U. S. Dept. Agri.*, Rep. on Diseases of the Horse, 1903, p. 140.—**3.** In machinery, the dull sound caused by lost motion at some joint where the stress is alternately in one direction and another, and the hole is slightly larger than the pin from wear or mal-adjustment.

thunder-cloud, *n.*—**Kick of the thunder-cloud.** See ★*kick.*

thunder-squall (thun′dėr-skwâl), *n.* A squall of wind accompanied by thunder.

thunder-storm, *n.*—**Thunder-storm belt** a long area within which thunder-storms occur almost simultaneously, and which advances broadside on, for one or more days, steadily southeastward or northeastward. Within this belt the storms may die out during the day or night and revive again on the next day farther eastward.

Thunnus (thun′us), *n.* [NL., ‹ L. *thunnus*, ‹ Gr. θύννος, a tunny. See *tunny.*] A genus of scombroid fishes, of the open seas, which attain a great size.

Thur., Thurs. Abbreviations of *Thursday.*

thuribuler (thū-rib′ų-lėr), *n.* [LL. *thuribularius*, ‹ *thuribulum*, a censer. See *thurible.*] Same as *thurifer.*

Thuringian, *n.* **2.** The dialect of German spoken in Thuringia.—**3.** In *geol.*, the upper third of the Permian system, which is typically developed in Thuringia, Germany. Same as *Zechstein.*

thuro, *prep.* and *adv.*, *a.* and *n.* An amended spelling of *thorough.*

Thursday, *n.*—**Black Thursday.** See ★*black.*

thutter (thut′ėr), *v. i.* [Onomatopœic.] To make a dull, vibrating sound. See the extract. [Rare.]

> Suddenly, . . . there boomed out of the dark a *thuttering*, shaking roar, that swelled to a shriek and died away—the voice of the great steam foghorn of the Skakit Light. *J. C. Lincoln*, Partners of the Tide, vii.

thuyetin (thū′yẹ-tin), *n.* [Also *thujetin;* ‹ *Thuya, Thuja,* + *-et* + *-in*².] A yellow compound, $C_{14}H_{14}O_8$, prepared by the action of dilute acids on thuyin.

thuyigenin (thū-yij′e-nin), *n.* [Also *thujigenin;* ‹ *Thuya, Thuja,* + *-gen* + *-in*².] A colorless compound, $C_{14}H_{12}O_7$, contained in small quantity in the green parts of *Thuja occidentalis*, and prepared from thuyin by the action of dilute acids. It crystallizes in microscopic needles.

thuyin (thū′yin), *n.* [Also *thujin;* ‹ *Thuya, Thuja,* + *-in*².] A lemon-colored glucoside, $C_{20}H_{22}O_{12}$, contained in the green parts of *Thuja occidentalis.* It crystallizes in microscopic quadratic plates.

thuyone (thū′yōn), *n.* [Also *thujone;* ‹ *Thuya, Thuja,* + *-one.*] Same as ★*tanacetone.*

thwart², *n.* **2.** See the extract. [Rare.]

> The Christian cross is unique in its conception. Prehistoric crosses are the same in form, but different in interpretation. The difference in meaning is important. For the sake of distinguishing between the two, let us call the figure of intersecting lines a *thwart*, and reserve the word cross for its original significance, viz., a martyr instrument. *Science*, Jan. 24, 1902, p. 126.

thwarter, *n.* **2**†. One who crosses or goes athwart.

> Xenomanes the great traveller and *thwarter* of dangerous ways. *Motteux*, trans. of Rabelais' Pantagruel, iii. xlix.

thwartwise (thwârt′wīz), *a.* Athwart; being at right angles to the line of sight: as, *thwartwise* motion. Such motion of a star is deducible from the star's proper motion when its parallax is known.

> Thus the rate of the solar translation through space, valued little better than conjecturally from the proper, or *thwartwise* motions of the stars, can be derived securely and at once from their radial motions. *A. M. Clerke*, Problems in Astrophysics, p. 4.

T. H. W. M. An abbreviation of *Trinity high-water mark.*

Th. X. An abbreviation of *thorium X.* See ★*thorium.*

Thyestes (thī-es′tēz), *n.* [NL., ‹ Gr. θυέστης, a pestle.] An extinct genus of fishes belonging to the subclass *Ostracodermi*, of the family *Cephalaspidæ*, characterized by the presence of three or four series of dorsolateral scales fused into a continuous plate behind the head-shield. The body is depressed, and ovoid in cross-section. From the Upper Silurian and Lower Old Red Sandstone.

Thyiades (thī′i-a-dēz), *n. pl.* [Gr. Θυιάδες, pl. of Θυιάς, ‹ Θυία, Thyia, who was said to have been the first who sacrificed to Dionysus. Otherwise θυιάς is defined as a mad or inspired woman, a bacchante, ‹ θύειν, sacrifice, or θύειν, rush, storm, rage.] In *Gr. antiq.*, daughters of Thyia, the mother of Delphus; women who went yearly to Mount Parnassus to celebrate the Dionysiac orgies.

thylacitis (thī-lạ-sī′tis), *n.* [NL., ‹ Gr. θύλακος, a bag, + *-itis.*] Acne rosacea.

thylacothere (thī′lạ-kō-thēr″), *n.* [Gr. θύλακος, a bag, + θηρίον, a wild beast.] An individual of the genus *Thylacotherium*, a minute, presumably marsupial animal from the Great Oölite (Jurassic) of Stonesfield, near Oxford, England. It is known only from the lower jaw.

thymacetin (thī-mas′e-tin), *n.* [*thym*(*ol*) + *acetin.*] A trade-name of acetaminothymol or acetparaminothymol ethyl ether, $C_2H_5\overset{1}{O}C_6H_1$-$(\overset{4}{N}HOCCH_3)(\overset{2}{C}H_3)\overset{5}{C}H(CH_3)_2$. It is a colorless crystalline compound, used in medicine as a hypnotic.

Thymallidæ (thī-mal′i-dē), *n. pl.* [NL., ‹ *Thymallus* + *-idæ.*] A family of fishes commonly known as the graylings, inhabiting rivers of cold or arctic regions.

Thyme camphor. See ★*camphor.*

thymectomize (thī-mek′tọ̄-mīz), *v. t.*; pret. and pp. *thymectomized*, ppr. *thymectomizing.* [NL. *thymus*² + Gr. ἐκτομή, excision, + *-ize.*] To operate upon by removing the thymus gland.

thyme-dodder (tīm′dod″ėr), *n.* See ★*dodder*[1].

thymela (thim′e-lä), *n.* See *thymele.*

thymeleaceous (thim″e-lē-ā′shius), *a.* [NL. *Thymeleace(æ)* + *-ous.*] Belonging or pertaining to the *Thymeleaceæ.*

thymelic (thi-mel′ik), *a.* Of or pertaining to the thymele.

thymene (thī′mēn), *n.* [Gr. θύμον, thyme, + *-ene.*] A terpene from oil of thyme, identical with levopinene.

thymetic (thi-met′ik), *a.* [Gr. θυμός, soul.] See the extract. [Rare.]

> His [Jesus'] anabasis of resurrection from the depths of humiliation, renunciation, and self-immolation to Deity itself is the Eternal Gospel, for it shows that human nature, in what Reischle calls its *thymetic* core, is sound, resilient, positive, and can not be overwhelmed.
> *G. S. Hall*, Adolescence, II. 338.

thymic, *a.* **2.** Noting an acid, a colorless compound, $C_{16}H_{25}O_{12}N_3P_2$, obtained by the action of water on thymus-nucleic acid.

thymine (thī′min), *n.* [*thym(ic)* + *-ine*[2].] A colorless crystalline compound, $C_5H_6N_2O_2$, prepared by the action of dilute sulphuric acid on thymic acid. It may also be obtained synthetically. It sublimes in plates and melts above 250° C. Also called 5-*methyluracil.*

thyminic (thī-min′ik), *a.* Noting an acid, a derivative of the nucleinic acids. On decomposition it gives rise to a carbohydrate complex, thymine, phosphoric acid, and other still unknown bodies. The formula of its barium salt is given as $C_{14}H_{23}N_3O_{12}P_2Ba$.

thymitis (thī-mī′tis), *n.* [NL., < *thymus* + *-itis.*] Inflammation of the thymus gland.

thymoform (thī′mọ-fôrm), *n.* [*thym(ol)* + *form(aldehyde).*] A yellowish, tasteless antiseptic powder of faint thymol odor, obtained by the condensation of thymol and formaldehyde.

thymolize (thī′mọ-līz), *v. t.*; pret. and pp. *thymolized*, ppr. *thymolizing.* [*thymol* + *-ize.*] To add thymol to (a solution) as a preservative.

> The urine should be *thymolized* as soon as passed to prevent fermentation and the precipitation of phosphates.
> *Jour. Exper. Med.*, Oct. 1, 1900, p. 30.

thymonucleinic (thī″mọ-nū-klẹ̄-in′ik), *a.* [NL. *thymus* + *nucleus* + *-in* + *-ic.*] Noting an organic acid, $C_{25}H_{36}N_9P_3O_{20}$, belonging to the group of nucleinic acids, obtained from the cells of the thymus gland.

thymopathy[1] (thī-mop′ạ-thi), *n.* [Gr. θυμός, mind, + πάθος, disease.] Any mental disorder.

thymopathy[2] (thī-mop′ạ-thi), *n.* [Gr. θύμος, a glandular excrescence (thymus), + πάθος, disease.] A disease of the thymus gland.

thymotal (thī′mọ-tạl), *n.* [*thym(ol)* + *-ote* + *-al*[3].] A trade-name of thymol carbonate, a colorless crystalline compound, used in medicine. Also called *tyratol.*

thynnid (thin′id), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Thynnidæ.*

II. *a.* Having the characters of or belonging to the family *Thynnidæ.*

thyreal (thī′rē-ạl), *n.* [*thyr(oid)* + *-e-* + *-al*[1].] A hypobranchial; one of the lowest paired bones of the gill-arches of fishes. *Starks,* Synonymy of the Fish Skeleton, p. 518.

thyreo-antitoxin (thī″rẹ-ọ-an-ti-tok′sin), *n.* [*thyreo(id), thyro(id),* + *antitoxin.*] The component or components of the thyroid gland to which the supposed action of this gland in neutralizing certain poisonous products formed during normal metabolism is due. The term, however, is misleading and might better be abandoned in this sense.

thyreoglobulin (thī″rẹ-ọ-glob′ụ-lin), *n.* [*thyreo(id), thyro(id),* + *globulin.*] The essential albuminous principle of the thyroid gland. Together with another albuminous substance belonging to the nucleoproteids it forms the colloid substance of the gland. It is an iodized product and on decomposition yields Baumann's iodothyrin or thyroiodine, which was formerly regarded as the active principle of the thyroid gland. The specific properties of the organ are referable to the globulin in question.

thyreoidin (thī-rẹ-oi′din), *n.* [*thyreoid* + *-in*[2].] **1.** A whitish dry powdered extract of the sheep's thyroid gland, having six times the strength of the fresh gland: an alterative and an antifat.—**2.** Same as ★*iodothyrin.* See also ★*thyreoglobulin.*

thyreolytic (thī″rẹ-ọ-lit′ik), *a.* [*thyreo(id)* + *lytic.*] Causing the destruction of thyroid cells by specific lysins.

thyreoproteid (thī″rẹ-ọ-prō′tẹ-id), *n.* [*thyreo(id)* + *proteid.*] A nucleoproteid found in the colloid material of the thyroid gland in association with thyreoglobulin. The proteid contains no iodine and is physiologically inert.

thyreoprotein (thī″rẹ-ọ-prō′tẹ-in), *n.* [*thyreo(id)* + *protein.*] The specific albumin found in the thyroid gland. See ★*thyreoglobulin.*

thyreotoxic (thī″rẹ-ọ-tok′sik), *a.* [*thyreo(id)* + *toxic.*] Same as ★*thyreolytic.*

thyreotoxin (thī″rẹ-ọ-tok′sin), *n.* [*thyreo(id)* + *toxin.*] A specific cytotoxin directed against the glandular cells of the thyroid.

thyridium (thī-rid′i-um), *n.*; pl. *thyridia* (-ä̤). [NL., < Gr. θυρίς (θυριδ-), a door, a window.] A whitish spot marking a break in the cubital vein of the fore wing of *Trichoptera*; also, any one of several similar spots on the wing-veins of certain saw-flies and earwigs.

Thyrina (thi-rī′nä̤), *n.* [NL. So called from the translucent air-bladder, which shows through the skin; < Gr. θύρα, a door (θυρίς, a window), + *-ina*[1].] A genus of fishes belonging to the family *Atherinidæ,* found on the west coast of Mexico.

Thyris (thī′ris), *n.* [NL. (Laspeyres, 1803), < Gr. θυρίς, a window (?).] **1.** A genus of moths typical of the family *Thyridæ.*—**2.** [*l. c.*] A moth of this genus.—**Mournful thyris,** an American moth, *Thyris lugubris,* dark brown in color, with yellowish translucent spots. Its larvæ feed on the grape.—**Spotted thyris,** an American thyrid moth, *Thyris maculata.*

thyrocele (thī′rọ-sēl), *n.* [*thyro(id)* + Gr. κήλη, tumor.] Bronchocele or goiter.

thyrocricoid (thī-rọ-krī′koid), *n.* [*thyroid* + *cricoid.*] The thyroid and cricoid cartilages considered collectively. *Proc. Zool. Soc. London,* 1901, I. 286.—**Thyrocricoid muscle,** a fibrous muscle running from the thyroid cartilage to the cricoid cartilage and upper laryngeal rings.

thyrogenic (thī-rọ-jen′ik), *a.* [*thyro(id)* + Gr. -γενης, -producing, + *-ic.*] Originating in the thyroid gland or occurring as a result of an altered secretion of that gland. *Buck,* Med. Handbook, V. 143.

thyroglossal (thī-rọ-glos′ạl), *a.* [*thyro(id)* + Gr. γλῶσσα, tongue, + *-al*[1].] Relating to the thyroid body or cartilage and the tongue: noting especially a duct existent in fetal life. See *thyroglossal* ★*duct.*

thyroid, *n.*—**Accessory thyroid,** a mass of glandular tissue identical with the thyroid, but separated from it, not infrequently found at the base of the tongue.—**Thyroid cachexia.** Same as *exophthalmic goiter* (which see, under *exophthalmic*).—**Thyroid extract,** a substance obtained from the thyroid gland of the sheep, employed in the treatment of cretinism, myxedema, and other conditions in which it is known or assumed that there is a deficient secretion by the thyroid gland.—**Thyroid treatment.** See ★*treatment.*

thyroidectin (thī-roi-dek′tin), *n.* [*thyroidect(omize)* + *-in*[2].] A preparation of the blood of thyroidectomized animals, which is used in the treatment of exophthalmic goiter.

thyroidectomize (thī-roi-dek′tọ-mīz), *v. t.*; pret. and pp. *thyroidectomized,* ppr. *thyroidectomizing.* [*thyroid* + Gr. ἐκτομή, excision, + *-ize.*] To operate upon for removal of the thyroid gland. *Med. Record,* Feb. 28, 1903, p. 339.

thyroidin (thī′roi-din), *n.* [*thyroid* + *-in*[2].] See ★*thyreoidin.*

thyroidism (thī′roi-dizm), *n.* [*thyroid* + *-ism.*] The aggregate of symptoms—rapid pulse, insomnia, headache, etc.—following an overdose of thyroid extract, or produced by overaction of the thyroid gland.

> As to the etiology of *thyroidism,* he said that there were three theories usually advanced, the first having for its basis the belief that the nerves were entirely responsible; the second, that it was due to the absorption of thyroid material; and the third, that it was a sort of fibrin ferment condition induced by the absorption from the hæmatoma. *Med. Record,* May 30, 1903, p. 875.

thyroiditis (thī-roi-dī′tis), *n.* [*thyroid* + *-itis.*] Inflammation of the thyroid gland.

thyro-iodine (thī-rọ-ī′ọ-din), *n.* [*thyro(id)* + *iodine.*] Same as ★*iodothyrin.* See also ★*thyreoglobulin.*

thyrolingual (thī-rọ-ling′gwạl), *a.* [*thyro(id)* + L. *lingua,* tongue, + *-al*[1].] Same as ★*thyroglossal.* *Annals of Surgery,* Jan., 1903, p. 63.

thyrolytic (thī-rọ-lit′ik), *a.* [*thyro(id)* + Gr. λυτικός, loosing, dissolving.] Destructive of thyroid tissue: having reference to an immune serum with cytolytic properties which are directed toward thyroid tissue. *Buck,* Med. Handbook, App., p. 539.

thyrophyma (thī-rọ-fī′mä̤), *n.*; pl. *thyrophymata* (-mạ-tä̤). [*thyro(id)* + Gr. φῦμα, a tumor.] A tumor or enlargement of the thyroid gland.

thyroprival (thī-rọ-prī′vạl), *a.* [Irreg. < *thyro(id)* + L. *privare,* deprive, + *-al*[1].] Relating to a removal or loss of function of the thyroid gland.

thyroproteid (thī-rọ-prō′tẹ-id), *n.* See ★*thyreoproteid.*

thyroptosis (thī-rop-tō′sis), *n.* [NL., < *thyro(id)* + Gr. πτῶσις, a falling.] A downward displacement of the thyroid gland.

thyrotherapy (thī-rọ-ther′ạ-pi), *n.* [*thyro(id)* + *therapy.*] Treatment of disease by preparations made from the thyroid gland of the sheep.

> He regretted that *thyrotherapy* had been neglected in the treatment of skin diseases, and pointed to the fact that remedies useful in chronic urticaria were also useful in functional disorders of the thyroid gland.
> *Med. Record,* Oct. 5, 1907, p. 584.

thyrotoxic (thī-rọ-tok′sik), *a.* Same as ★*thyreotoxic.* *Nature,* Feb. 18, 1904, p. 375.

Thyrsitinæ (thėr-si-tī′nē), *n. pl.* [NL., < *Thyrsites,* a genus, + *-inæ.*] A subfamily of fishes, the escolars or family *Gempylidæ.*

thyrsocephalic (thėr″sọ-se-fal′ik), *a.* [Gr. θύρσος, a stalk, thyrsus, + κεφαλή, head, + *-ic.*] In *anthrop.,* having that short and high form of skull which results from premature synostosis of the coronal suture. Compare ★*trochocephalic.*

> When the union is of the coronal suture, the skull becomes short and high, or *thyrsocephalic.*
> *Encyc. Brit.,* XXV. 398.

Thysanocrinus (this-ạ-nok′ri-nus), *n.* [NL., < Gr. θύσανος, tassel, + κρίνον, a lily (see *crinoid*).] A genus of camerate crinoids having a deep calyx with dicyclic base, and from 10 to 20 biserial arms, represented by species in Silurian rocks.

thysanurid (this-ạ-nū′rid), *n.* and *a.* Same as *thysanuran.*

T. I. An abbreviation of *Thrice Illustrious.*

Tiarechinus (tī-ar-e-kī′nus), *n.* [NL., < Gr. τιάρα, a tiara, + ἐχῖνος, a hedgehog.] A genus of very small regular perischoëchinoid sea-urchins with a flat ventral and subhemispherical dorsal surface. Each plate of the ventral surface has a single large tubercle; all the other plates of the dorsal surface are granulated. A single species is known in the Triassic rocks of St. Cassian, in Tyrol. This genus has been considered a synthetic type combining the characters of the *Blastoidea* and *Echinoidea.*

Tiaroga (tī-ạ-rō′gä̤), *n.* [NL., a made word.] A genus of minnows known only from the San Pedro, a tributary of the Gila river, Arizona.

tib[2] (tib), *v.* Used in the following phrase.—**To tib out,** to go out of bounds. [Eng. school (Charterhouse) slang.]

> Blacking his master's shoes with perfect readiness, till he rose in the school, and the time came when he should have a fag of his own; *tibbing out* and receiving the penalty therefor; bartering a black eye, per bearer, against a bloody nose drawn at sight, with a schoolfellow.
> *Thackeray,* Newcomes, I. ii.

Tibeto-Burman (tib″e-tọ-bėr′mạn), *a.* and *n.* Ranging from Tibet to Burma, or including the Tibetan and Burmese languages: applied specifically to a group of languages, belonging to the Indo-Chinese family, spoken in central and southeastern Asia, especially in Tibet, Assam, and Burma. Cust ("Sketch of the Modern Languages of the East Indies," pp. 88–116) enumerates 87 languages and 84 dialects of this group.

tibia, *n.* **5.** (*b*) In *organ-building,* a stop of the open diapason species, with pipes of an exceptionally broad scale, giving a full, powerful tone. Different varieties are known by specific names, as *tibia plena, tibia profonda,* etc.

Tibial aponeurosis, a fibrous membrane attached to the tibia and enveloping the muscles of the leg.

tibiella (tib-ị-el′ä̤), *n.*; pl. *tibiellæ* (-ē). [NL. dim. of L. *tibia,* shin-bone, pipe. See *tibia.*] In the nomenclature of the sponge-spicules, a long, slender, sometimes arcuate, monaxial rhabd with slightly swollen extremities.

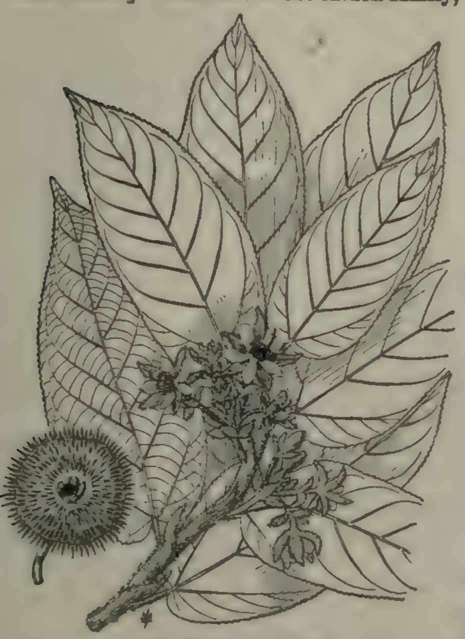
tibigaro (tē-bē-gä′rō), *n.* [Native name.] In Colombia and Venezuela, same as ★*gateado.*

tibiofibula (tib′i-ō-fib″ụ-lä̤), *n.*; pl. *tibiofibulæ* (-lē). A bone which, in the tailless amphibians, is formed by the coalescence of the tibia and fibula. *Parker and Haswell,* Zoology, II. 254.

tibionavicular (tib″i-ō-na-vik′ụ-lär), *a.* [*tibia* + *navicular.*] Relating to both the tibia and the scaphoid bone.

tibor (tē-bōr′), *n.* [Philippine Sp. (Morga), of untraced origin (perhaps Chinese).] An ancient earthenware jar or vase of a peculiar kind, usually glazed and ornamented exteriorly, occasionally found in certain regions in the Philippine Islands. These jars are of Japanese origin and are highly valued, especially by the Japanese.

tibourbou (tē-bör-bö′), *n.* [A F. spelling of the Carib name.] A tall tree of the linden family, *Apeiba Tibourbou*, of Venezuela, Guiana, and Brazil, which yields a fiber resembling Russian bast. Its spiny fruits resemble a chestnut-bur, for which reason it is called *erizo* (hedgehog) in Venezuela and Colombia.



Apeiba Tibourbou, with fruit.

tiburon (tib-ö-rōn′), *n.* [Sp. *tiburón* (Acosta), *tebura* (Oviedo), from a Taino or Carib name.] A shark of West Indian or Central American waters; in a present use (Mexican), *Carcharinus fronto*, a shark found on the Pacific coast of Mexico.

tic[1], *n.*—**Bowing** or **nodding tic.** Same as *salaam convulsion* (which see, under *salaam*).—**Convulsive tic,** an affection, apparently hysterical in nature, of children, marked by attacks of muscular jerkings of the face and arms, accompanied sometimes by a cry. Also called *Giles de la Tourette's disease.*—**Diaphragmatic tic,** a spasmodic contraction of the diaphragm accompanied by considerable pain.—**Motor tic,** a rhythmical twitching of certain muscles, involuntary in character, and present even during sleep.—**Nodding tic.** See *bowing* ★*tic.*—**Psychic tic,** a spasmodic muscular contraction, which recurs at irregular intervals, ceases during sleep, and is more or less controllable by an effort of the will.—**Rotatory tic,** wryneck due to spasmodic contractions of the muscles of the neck.—**Tic non-douloureux,** a habitual involuntary contraction of one or more of the facial muscles, such as winking, drawing up or down of the corners of the mouth, etc. Also called *habit spasm, habit chorea, facial chorea.*

ticca, tikka (tik′ä̤), *a.* [Also *ticker*; < Hind. *ṭhīka*, hire, fare.] To be hired by the job or on contract: applied to both persons and things. [Anglo-Indian.]—**Ticca gharry,** a hired carriage.

> Kim swallowed his disappointment, while the Colonel bundled him into a *ticca gharri* with his small belongings and despatched him alone to St. Xavier's.
>
> *R. Kipling*, Kim, vii.

tice[2] (tīs), *n.* In *cricket*, a yorker, whether underhand or overhand. *N. and Q.*, 9th ser., VIII. 284. [Obsolete.]

tick[2], *n.*—**Black-pitted tick,** a name given in South Africa to the ixodid *Rhipicephalus simus*, which occurs on several species of warm-blooded animals.—**Blue tick,** a South African ixodid, *Rhipicephalus decoloratus*, allied to the American *R. annulatus*, and said to carry the causative organisms of a disease of cattle (African Coast fever) similar to the Texas fever.

> Mr. Lounsbury publishes an interesting account of the experiments by which he proved that the infection was carried by the common brown cattle tick of South Africa (Rhipicephalus appendiculatus). He failed in ten experiments to convey it through the *blue tick*, which Koch says is partly responsible for the transmission.
>
> *Nature*, July 28, 1904, p. 310.

Bont-leg tick, *Hyalomma ægyptium* Audouin, a common tick in South Africa.—**Bont-tick.** See ★*bont-tick.*—**Brown tick,** a name given in South Africa to the injurious cattle-tick *Rhipicephalus appendiculatus*, which carries the causative organisms of a disease highly fatal to cattle. See extract under *blue* ★*tick.*—**Castor-bean tick,** a tick common to Europe and the United States, *Ixodes ricinus*, and found on sheep, goats, cattle, horses, dogs, and cats. Numerous cases of septicemia are recorded as having resulted from its bite.—**Full as a tick,** drunk. [Slang.]—**Lone Star tick,** a common American ixodid, *Amblyomma americanum.*—**Red tick,** the name given in South Africa to the ixodid *Rhipicephalus evartsi*. It is the immediate host of the *Piroplasma equi*, the direct cause of biliary or swamp fever of equines, a disease resembling in many respects the Texas fever of cattle in America.—**Senegal tick,** a common African tick, *Hyalomma ægyptium*, also known as the *bont-tick.*—**Tick heart-water.** Same as ★*heart-water.*

tick-bird (tik′bėrd), *n.* **1.** An African bird of the genus *Buphaga* which frequents the backs of cattle and rhinoceroses to devour ticks. Also called *rhinoceros-bird* and *oxpecker.*—**2.** In the West Indies and parts of South America the ani, *Crotophaga ani*, one of the cuckoos.

ticket, *n.* **7.** Commission; papers showing or entitling to appointment, rank, or rating. [Slang.]

> I 'm Captain of the whole of this show now, by your making, and I intend to be respected as such, and hold a full captain's *ticket.*
>
> *Cutcliffe Hyne*, A Master of Fortune, i.

ticket-chopper (tik′et-chop″ėr), *n.* In *railroading:* (*a*) A machine for chopping to pieces or otherwise destroying the tickets deposited by passengers on entering a platform or waiting-room. It consists of a wooden box having a hopper of wood and glass at the top, combined with some simple form of knife for tearing or chopping to pieces or otherwise destroying a ticket dropped in the hopper. Larger machines of somewhat different construction are used to destroy canceled and used tickets collected by the conductor of a railroad-train. (*b*) The man at the gate where such a machine is used, who works the machine as the tickets are dropped into it.

ticket-scalper (tik′et-skal″pėr), *n.* See *scalper*[1], *n.*, 3.

tickey, *n.* Same as ★*ticky*, 3.

tick-fever (tik′fē″vėr), *n.* Any fever transmitted through the agency of ticks. Some of these fevers attack man, as the so-called spotted fever of the Rocky Mountains; others cattle, as Texas fever. They are due to the presence in the blood of some form of micro-organism, the species varying with the different diseases.

> A disease which was causing much heavier direct losses than pleuro-pneumonia, and which was almost equally feared by cattle owners, was known by the local name of Texas, or Spanish, fever. This disease, which has numerous popular and local names, has more recently been called by different writers splenetic fever, Southern fever, and *tick fever.* *Yearbook U. S. Dept. Agr.*, 1897, p. 240.
>
> Dr. C. Christy read a paper "Ornithodoros moubata, and *Tick Fever* in Man." He came across the disease first at Toro in Uganda, and subsequently found that it was fairly common in Buddu, Busoga, Uganda, Unyoro, and also on the Nile. The tick which caused the disease was called Bibo by the natives. Mr. Pocock, of the British Museum, recognized it as identical with that which has long been known to be pathogenic in the Zambesi valley, the Ornithodoros moubata. Dr. Christy described the symptoms of the disease, which he was able to examine in one of his own servants. He always took the precaution of encamping far from native habitations, and was never bitten. Indeed, throughout his travels, this precaution was the reason that he did not suffer a single day's illness. *Jour. Trop. Med.*, Aug. 15, 1903, p. 259.

Coast tick-fever. Same as *African Coast* ★*fever.*—**Rhodesian tick-fever.** Same as *African Coast* ★*fever.*

tickle[1], *v.* **I.** *trans.*—**To tickle a trout,** to catch a trout by hand by stealing behind it as it lies quietly basking, or with its head under something, tickling or soothing its sides, getting the hand as far as its gills, and then grasping it firmly.

> He keeps it at the end of his line, runs it up the stream and down the stream, till at last he brings it to hand, *tickles the trout*, and so whips it into his basket.
>
> *Farquhar*, Beaux' Strategem, iii. 2.
>
> This is the tamest *trout* I ever *tickled.*
>
> *Beau. and Fl.*, Humourous Lieutenant, iii. 5.

II. *intrans.*—**To tickle for trout.** See *to* ★*tickle trout.*

tickle[2], *n.* [Prob. < *tickle*[1], *a.*, difficult, perilous.] A narrow passage or entrance to a harbor.

> The most favorable spot for determining the nature of the deposit was found at the ragged cliffs on the west side of the northern "*tickle*" or channel affording entrance to Kirpon Harbor. *Amer. Geol.*, Aug., 1903, p. 66.

tickly-benders (tik′li-ben-dėrz), *n. pl.* Same as *kittly-benders.*

tickomeg (ti-kō′meg), *n.* [Prob. Amerindian.] The common whitefish, *Coregonus clupeiformis*, found in the Great Lakes and neighboring waters.

ticky[2] (tik′i), *a.* Full of ticks or other vermin.

> I 'm 'ere in a *ticky* ulster an' a broken billycock 'at,
> A-layin' on to the sergeant I don't know a gun from a bat.
>
> *R. Kipling*, Back to the Army Again, st. 1.

ticky[3] (tik′i), *n.* [Origin obscure.] Threepence; a threepenny bit. Also *tickey.* [Eng. mil. slang.]

> The humble private, to whom a three-pence (a "*ticky*," as it is called in Africa) sometimes appears as big as a cart-wheel. *J. Ralph*, War's Brighter Side, vi.

ticky-ticky (tik″i-tik′i), *n.* [Native name in Jamaica.] A cyprinodont fish, *Fundulus melapleurus*, found in streams of Jamaica.

t. i. d. An abbreviation of the Latin *ter in die*, thrice a day.

Tidal constants. A set of tide-tables is published yearly by the United States Coast Survey Office, which gives the computed times of high water for the important ports of the United States, and constants, in the way of a quantity of time, to apply to such calculations in order to obtain the hour of high-water at neighboring ports.—**Tidal day, eddy, equations, load, register.** See ★*day*[1], etc.—**Tidal evolution,** the assumed evolution of the present orbits of planets, satellites, and binary stars by the tidal reactions between the movable portions of the bodies concerned which caused them to recede from each other and to increase the eccentricity of their orbits up to limits attained when they constantly turn the same faces toward one another. This theory was first proposed and mathematically developed by G. H. Darwin in 1881, with special reference to the moon and earth.

tiddledewinks (tid′l-dẹ̄-wingks″), *n.* A trivial game in which the players try to make small counters jump into a box, by pressing on their edges with another counter.

tiddly-benders (tid′li-ben″dėrz), *n. pl.* Same as *kittly-benders.*

tiddlywink, *n.* **3.** *pl.* See ★*tiddledewinks.*

tide[1], *n.* **9.** In *forestry*, a freshet. In the Appalachian region logs are rolled into a stream and a 'tide' is awaited to carry them to the boom.—**Acid tide,** the increase in acidity of the urine occurring in one fasting or during sleep.—**Age of the tide.** Same as *retard of the tide* (which see, under *retard*).—**Alkaline tide,** a temporary decrease in the acidity of the urine occurring after the taking of food.—**Head tide,** a current flowing directly opposite to the course of the vessel.—**Head to tide.** See ★*head.*—**High tide,** the highest elevation of the tide on its flood.—**Inferior tide,** the high tide that is produced in the hemisphere away from the moon.—**Low tide,** low water; the lowest point of the tide.—**Maiden tide,** a tide of such a nature that no vessel can enter or leave a dock or harbor.

> Hull.—There was today a *maiden tide*, no vessel being able either to enter or to leave, owing to the storm and flood. *Daily Telegraph*, Nov. 10, 1897. *N. E. D.*

Primary tide, the high tide which is supposed to be produced in the Pacific Ocean daily by the passage of the moon.—**Semidiurnal tide,** the theoretical tide which occurs every twelve hours and twenty-six minutes.—**Solar tide,** the tide produced by the sun. The period of the solar tide is 12 hours and its height about ⅓ that of the lunar tide.—**Tide and half tide.** In channels where the tide-stream continues to flow up for three hours after it is high-water, it is said to make a *tide and half tide.*—**Tide barge.** See ★*barge*[1].—**Tide-raising force.** See ★*force*[1].—**To make a tide and a quarter tide,** said of a tide-stream when it continues to flow up channel for an hour and a half after high water.—**True tide,** the normal movement of tidal waters, when not diverted or turned by headlands or islands.

tide-indicator (tīd′in″di-kā-tọr), *n.* An apparatus by which the state of the tide is shown at any moment by an index, usually a vertical staff, but sometimes a circular dial-plate.

tide-meter, *n.* Any arrangement for measuring tidal oscillations; specifically, the pneumatic tide-meter of A. Mensing, in which a volume of air is compressed under the varying pressure of the water.

tide-race (tīd′ rās), *n.* A strong tidal current in a strait or inlet.

> The bottom action is wholly shoreward, and the intensity of motion which is attained in the sea except in *tide-races.* *Geog. Jour.* (R. G. S.), XI. 535.

tide-register (tīd′rej″is-tėr), *n.* **1.** A marigraph; any apparatus that registers the rising and falling tide either at regular intervals or continuously: a notch or mark showing the highest and lowest stages of water.—**2.** The record of tides made by a tide-register.

Tide-water glacier. See ★*glacier.*

tids (tidz), *n. pl.* An abbreviation of ★*tiddly-benders.*

tie[1], *v.* **I.** *trans.*—**Tied house.** See ★*house*[1].

II. *intrans.*—**To tie to,** or **to tie up to,** to attach oneself to for protection; depend upon; rest with confidence on; follow as a guide. [Slang.]

tie[1], *n.* **13.** The binding down of the skin over the backs of fat cattle by connective-tissue fibers which pass through the thick fatty layer from the subcutaneous tissue.

> In thick-fleshed cattle, as they ripen the hide raises uniformly over the back. In some cases the gristly strings hold the hide down, thus making what is known as the "*tie.*"
>
> *Rep. Kansas State Board Agr.*, 1901–02, p. 168.

14. In *mining*, a support in tension for the roof or hanging-wall of a mine. It is usually attached to the braced structure of a rib.—**Oxford tie,** a smart low shoe tied with wide laces.

tie-back (tī′bak), *n.* **1.** Braces of rope, or a stay-rod, attached to the tower of a mine-head on the side opposite to the lead of the hoisting-rope, to hold the tower from being swayed by the drag of the cable.—**2.** A beam having a function like that of a fend-off beam, but on the opposite side of the shaft or incline. *Coal and Metal Miners' Pocket Book.* [British.]

tie-bolt (tī′bōlt), *n.* **1.** A long rod, threaded at both ends, with a nut and washer-plate, or with a fixed head at one end, used to connect two or more parts of a structure or frame or truss and resist tension. In England used as a synonym for 'through-stay,' employed in boilers or similar structures exposed to internal pressure, to tie two parallel surfaces together.

tie-boom (tī′böm), *n.* **1.** A wooden member or beam used to resist tension as in the timber guy of a boom-derrick. *London Engineer*, 1903, p. 258.—**2.** A local name for a log-boom in rivers carrying logs to sawmills where the boom does not control the entire channel.

tie-chain (tī′chān), *n.* A chain used in place of a rod, in any structure, to resist tension or to bind together parts which tend to separate.

Tiedemann's body or **vesicle.** See *racemose* ★*vesicle.*

tie-plant (tī′plant), *n.* A plant some part of which, as the leaves, is used for tying.

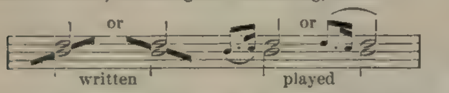
> Bear-grass is used all over the South in a rude way as a "*tie-plant*," the twisted leaves being employed for hanging hams, and in other similar uses.
> *U. S. Dept. Agr.*, Rep. No. 5, p. 70.

tie-plate, *n.* **2.** A casting placed under the nut of a bolt or tie-rod to distribute the pressure and protect the wood.—**3.** In railroad construction, a broad flat steel or iron plate, sometimes corrugated, placed on a tie and under the base of a rail to distribute the load and prevent the rail from cutting into the face of the tie.—**4.** In *iron ship-building*, a narrow longitudinal or diagonal plate on top of the beams of a deck not having a complete metal deck.

tier[2], *n.* **3.** A range of mountains. [Tasmania.]

> Two chains of mountains, the eastern and western *tiers*, run through it nearly north and south.
> *W. B. Wildey*, Australasia and Oceanic Region, p. 320, [quoted in E. E. Morris, Austral English.

Tierce coulée, an old grace or embellishment in harpsichord music, consisting of a rapid run leading to two principal notes separated by a third: a slurred third. It had two forms, ascending and descending, thus—



Tierce de Picardie, in *music*, the major third in the final chord of a minor piece or passage, or the effect that it produces.—**Tierce minor,** in *whist*, any sequence of three cards which is not the best in the suit. See *tierce major.*

tier-pole (tēr′pōl), *n.* One of the poles or small scantlings with which a tobacco-barn is furnished to support the laths or strings, reaching from one to another, by which the plants or leaves are hung up. The space between two poles with its contents forms a tier. See ★*tobacco-barn.*

tierse, *n.* An amended spelling of *tierce.*

tiersman (tērz′man), *n.*; pl. *tiersmen* (-men). In Tasmania, one who lives in the tiers or mountain ranges; a mountaineer.

> Splitters, or, as they are commonly called, *tiersmen*, reside in the forest of stringy bark.
> *F. Lancelott*, Australia as it is, II. 115, quoted in E. E. [Morris, Austral English.

tieute (ti-yö′tē), *n.* [A nominal NL. spelling of a native name in Java (not found in Javanese?).] The seeds of *Strychnos Tieute* of Java, similar in appearance to nux vomica, though smaller. The root-extract is used in the manufacture of the poisonous upas tieute or upas radja. See *chettik.*

tie-wall (tī′wâl), *n.* A connecting wall which binds other walls together.

> Towards the northern end a *tie-wall* has been inserted coincident with the upper 6 ft.
> *Jour. Hellenic Studies*, XII. 86.

tie-wire (tī′wīr), *n.* A wire used to fasten the line-wire of an electric circuit to an insulator. *Elect. World and Engin.*, Feb. 6, 1904, p. 272.

tie-wrench (tī′rench), *n.* A special form of wrench employed in securing line-wires of an electric circuit to the insulators upon which they are mounted. *Elect. Rev.*, Sept. 3, 1904, p. 328.

tiff[4] (tif), *n.* [Origin obscure.] A local name for the calcite occurring with the zinc and lead deposits of Joplin, Missouri.

tiffanyite (tif′a-ni-īt), *n.* [Named after Charles Lewis *Tiffany* (1812–1902), a jeweler of New York.] The variety of diamond that appears steel-colored or steel-blue in color, possesses the property of emitting light in the dark after exposure to sunlight, electric light, or ultra-violet rays, and is unusually sensitive to radium, the Röntgen rays, polonium, and actinium. This property is due to the coloring-matter, evidently a phosphorescent hydrocarbon, or one of the rare earths. *Kunz.*

tiffin (tif′in), *v. i.* [*tiffin, n.*] To lunch; take tiffin.

> Pack had been *tiffining* by himself . . . and had heard everything.
> *R. Kipling*, The Bisara of Pooree, in Plain Tales from [the Hills, p. 258.

tiffy (tif′i), *n.*; pl. *tiffies* (-iz). [*(ar)tifi(cer)*.] In the English navy, a reduction of *artificer.*

> I 'll teach you to come alongside properly, if I keep you '*tiffies* out all night.
> *R. Kipling*, Steam Tactics, in Traffics and Discoveries, [p. 168.

tiger, *n.* **10.** In *poker*, a hand which is seven high and deuce low, without a pair, sequence, or flush. When played, it beats a straight and loses to a flush. Sometimes called a *little dog.*—**11.** In Central and South America the jaguar, *Felis onca*, whose black and yellow coat suggests the Asiatic tiger.—**Blind tiger.** See ★*blind*1.—**Native tiger,** a local Tasmanian name for the zebra-wolf or thylacine, *Thylacinus cynocephalus.*—**Tasmanian tiger.** Same as ★*native tiger.*

tiger-cat, *n.* **2.** In Tasmania and parts of Australia, the spotted dasyure, *Dasyurus maculatus*, a marsupial of carnivorous habits.

tiger-heart (tī′gėr-härt), *n.* A form of fatty degeneration in which, on post-mortem examination, the substance of the heart shows alternate streaks of yellow (fat) and red color (normal muscular tissue). *Buck*, Med. Handbook, IV. 588.

tiger-lily, *n.*—**Dwarf tiger-lily.** Same as *blackberry lily* (which see, under *lily*).

tiger-mosquito (tī′gėr-mus-kē″tō), *n.* Any striped or banded mosquito of the genus ★*Stegomyia* (which see).

> It is in this genus (Stegomyia) that we find special predilection for settling, when at rest, on dark objects and clothing. They have been popularly known as "*tiger-mosquitoes*" on account of their banded and striped appearance; but a glance at the synoptic table will show that that name is misleading as many members of the genus are unbanded or unstriped.
> *Jour. Trop. Med.*, Aug. 1, 1903, p. 237.

tiger-python (tī′gėr-pī″thon), *n.* The common Indian python, *Python molurus*, whose markings suggest the stripes of a tiger.

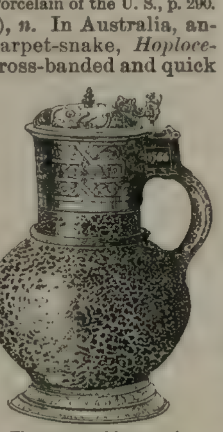
tiger-salamander (tī′gėr-sal″a-man-dėr), *n.* A book-name of the common large western salamander, *Ambystoma tigrinum.*

tiger's-eye, *n.* **2.** In *ceram.*, a crystalline glaze containing streaks of luminosity resembling gold or the iris of a tiger's eye: used in a variety of earthenware produced at Rookwood Pottery, Cincinnati, Ohio.

> The highest achievements in glazing are the so-called *tiger's-eye* and gold-stone, which glisten in the light with a beautiful auriferous sheen.
> *E. A. Barber*, Pottery and Porcelain of the U. S., p. 290.

tiger-snake (tī′gėr-snāk), *n.* In Australia, another name for the carpet-snake, *Hoplocephalus curtus*, which is cross-banded and quick in its movements.

tiger-ware (tī′gėr-wãr), *n.* In old English pottery, a stoneware with a spotted glaze. The jugs are frequently mounted in silver-gilt.

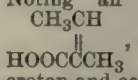


Tiger-ware, with mount in silver-gilt.

tight[1], *a.* **12.** In *billiards*: (*a*) Noting balls that are fast, or frozen to each other. (*b*) Noting pockets that are small for the diameter of the balls.—**13.** See the extract. [Art slang.]

> In his first style he [Corot] painted traditionally and "*tight*"—that is to say, with minute exactness, clear outlines, and with absolute definition of objects throughout.
> *Encyc. Brit.*, XXVII. 252.

tightening-screw (tīt′ning-skrö″), *n.* A screw, in a joint, by means of which more or less friction can be caused when the movable elements are made to slide on one another. Used in drafting-instruments, surveyors' apparatus, machinists' calipers, and the like.

tiglic (tig′lik), *a.* [*(Croton) Tigl(ium)* + *-ic.*] Noting an acid, a colorless compound,  $\begin{matrix}\mathrm{CH_3CH}\\ \parallel\\ \mathrm{HOOCCCH_3}\end{matrix}$, contained, in combination, in croton and certain other oils. It crystallizes in triclinic plates or rods, has an odor of benzoic acid, melts at 64.5° C., and boils at 198.5° C. Also called *methyl-crotonic acid.*—**Tiglic aldehyde,** a colorless liquid, $CH_3CH:C(CH_3)CHO$, extracted from guaiac resin and prepared by the action of sodium acetate on a mixture of acetaldehyde and propionic aldehyde. It boils at 115.5° C. and has an odor of benzaldehyde. Also called *guaiol.*

tiglinic (tig-lin′ik), *a.* [*(Croton) Tigl(ium)* + *-in* + *-ic.*] Relating to croton-oil (expressed from the seeds of *Croton Tiglium*); also, noting an acid derived therefrom.

Tigoma (tī-gō′mä), *n.* [NL., a made word.] A subgenus of cyprinoid fishes under the genus *Leuciscus.*

Tigré (tē-grā′), *n.* [Tigré name.] See ★*Abyssinian languages* (*b*).

Tigriña (tē-grēn′yä), *n.* [Tigriña name.] See ★*Abyssinian languages* (*b*).

tigroid (tī′groid), *a.* and *n.* [Gr. *τιγροειδής*, like a tiger, spotted, < *τίγρις*, tiger, + *εἶδος*, form.] **I.** *a.* Spotted like a tiger.

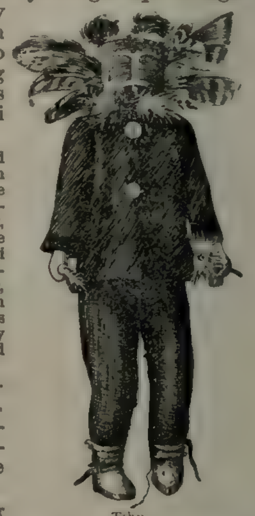
II. *n.* Same as *Nissl* ★*substance.* See also *Nissl* ★*granules.* *Buck*, Med. Handbook, II. 338.

tigrolysis (tī-grol′i-sis), *n.* [NL., < *tigro(id)* + Gr. *λύσις*, dissolution.] In *pathol.*, a breaking down of the tigroid, or Nissl substance, in the nerve-cell. *Buck*, Med. Handbook, VI. 264.

tigrolytic (tī-grō-lit′ik), *a.* Of or pertaining to tigrolysis. *Buck*, Med. Handbook, VI. 264.

tihu (tē′hö), *n.* [Hopi.] A sort of doll or effigy representing certain mythological personages or katcinas, made by the men and given by the women to the children during certain ceremonies among the Hopi Indians.

> The figurines produced by the Hopi men and given by the mothers to the children during the Niman, or Farwell ceremony, and known as *tihus*, are objects found in all Hopi collections, but as a matter of fact these *tihus*, which represent certain mythological personages called Katcinas, are only reproduced for a limited number of characters.
> *Science*, Feb. 8, 1901, p. 222.



Tihu.
(In Field Museum of Natural History, Chicago.)

Tiki (tē′kē), *n.* [Maori.] **1.** A Polynesian deity, generally regarded as the creator of man.

> *Tiki*, n. Maori name for the Creator of man, and thence taken to represent an ancestor. The Maoris made large wooden images to represent their *Tiki*, and gave the name of *Tiki* to these images. Later they were made in miniature in greenstone, and used as neck-ornaments.
> *E. E. Morris*, Austral English.

2. [*l. c.*] A carved image or representation of the god Tiki, especially one of the large carved wooden pillars set up at the tombs of chiefs and influential men. *Keane*, Man Past and Present, p. 379.

tikka, *a.* See ★*ticca.*

til, *prep.* and *conj.* A simplified spelling of *till*[2].

tilaite (til′a-īt), *n.* [*Tila* (see def.) + *-ite*[2].] In *geol.*, a variety of olivin gabbro exceptionally rich in diopside. The name was given by L. Duparc and F. Pearce and is derived from a locality in the northern Urals.

tilasite (til′a-sīt), *n.* [Named after Daniel *Tilas*, a Swedish mining engineer.] A fluoarsenate of calcium and magnesium ($(MgF)\text{-}CaAsO_4$), analogous in composition to adelite and occurring in gray cleavable masses: found in Sweden. Also called *fluoradelite.*

tile[1], *n.*—**Embossed tile,** an ornamental tile with relief designs which has been pressed in a mold and (usually) covered with a tinted glaze or enamel. Wall-tiles of this variety are extensively made by American manufacturers.—**Inlaid tile.** Same as *mosaic* ★*tile* (which see).—**Mathematical tile,** a tile decorated with a geometrical or conventional design.—**Mosaic tile,** tile made by Malkin's ★process (which see), in which the brass or paper stencils are cut in patterns of minute squares, resembling mosaic-work. When pressed, the colored tessellated designs are inlaid in the body of the tile to the depth of about one eighth of an inch.

tile¹, *v. t.* 2. To provide with tile-drains, as land. *W. J. Chamberlain*, Tile Drainage, p. 72.

tile-drain (tīl′drān), *v. t.* To drain with tiles, as land.

> Why do we *tile-drain* land?
> *W. J. Chamberlain*, Tile Drainage, p. 28.

tile-fish, *n.* In 1882 vessels arriving at New York and Boston reported having sailed through miles of dead and dying tile-fish. For several years following no tile-fish were taken, and the species was supposed to have become extinct. It was not until 1892 that the United States Fish Commission steamer *Grampus* captured a few. Since that time more have been taken each year, and the fish appears now to have thoroughly reëstablished itself and may become an important food-fish. The tile-fish reaches a length of three feet and inhabits depths of from 70 to 80 fathoms at the edge of the Gulf Stream.

tile-pipe (tīl′pīp), *n.* Pipe made of cement or clay and used for chimney-pots, drains, flues, etc.

tile-press (tīl′pres), *n.* A machine for making tiles from dampened clay-dust, having a die between a push-up and plunger for shaping and pressing the tiles.

tiler, *n.* 5. A cat which makes music on the roofs (or tiles) at night. [Slang.]

> In London . . . a nice *tiler* and mouser would be more appropriate . . . than a blue Persian.
> *V. Hunt*, Autobiography of a Cat, p. 108.

tilhemic (til-hem′ik), *a.* [*t*(*itanite*) + *il*(*menite*) + *hem*(*atite*) + *-ic.*] In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*¹), having equal or nearly equal proportions of tilic minerals (normative titanite, ilmenite, perofskite, rutile) and hemic minerals (normative magnetite and hematite), that is, within the limits $\frac{T}{M} < \frac{5}{3} > \frac{3}{5}$.

tiliadin (til′i-a̤-din), *n.* [L. *tilia*, linden, + *-ad* + *-in*².] A colorless dextrorotatory compound, $C_{21}H_{32}O_2$, contained in the bark of the linden-tree. It crystallizes in plates resembling cholesterol and melts at 228–229° C.

tilic (til′ik), *a.* [*t*(*itanite*) + *il*(*menite*) + *-ic.*] In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*¹), having the characters of, or pertaining to, the titaniferous femic minerals, titanite, ilmenite, perofskite, rutile.

tilkerodite (til′ke-rọ̄-dīt), *n.* [G. *Tilkerode*, a locality in the Harz Mountains, Germany.] A variety of clausthalite containing cobalt.

till⁴, *n.*—**Upper till**, till supposed to be derived from the interior or the surface of an ice-sheet.

tillage, *n.*—**Intercultural tillage**, in *agri.*, tilling the land between growing plants rather than tilling the entire area when no plants are growing on it; ★intertillage (which see). *E. L. Sturtevant.* See quotation under *intercultural*.

tiller-comb (til′ėr-kōm), *n.* In marine hardware, a quadrant rack or comb having a single row of shallow teeth: designed to be secured to the deck of a boat immediately under the tiller. A short blade called the *knife* is fastened to the under side of the tiller, and to hold it in any desired position, in sailing or at anchor, th^ tiller is dropped until the knife falls between two teeth of the comb.

Tilletiaceæ (ti-lē-shi-ā′sẹ̄-ē), *n. pl.* [NL., < *Tilletia* + *-aceæ.*] A family of smut-fungi of the order *Ustilaginales*, named from the genus *Tilletia*, and having the promycelium non-septate.

tillite (til′īt), *n.* [*till*⁴ + *-ite*².] Consolidated till.

> Individual specimens of facetted pebbles might sometimes be difficult of identification as to origin; but a collection of a score or two of pebbles, one set from a district of wind-work, the other set from a bed of till or of *tillite* (consolidated till), would be easily distinguished.
> *Amer. Jour. Sci.*, Feb., 1907, p. 150.

tillot (til′ọt), *n.* A case or sack made of highly glazed muslin, used to cover broadcloth, etc., as a protection against dust and injury from handling.

tilt¹, *v. i.* 6. In *seismology*, to tip; incline from the vertical as the result of a movement of the earth's crust.

> A pair of heavy horizontal pendulums, which record with ink on a metal cylinder, and which have a sensibility for *tilting* three or four times that of the Milne apparatus.
> *Nature*, Oct. 8, 1903, p. 552.

tilt¹, *n.* 8. In *seismology*, that component of an earth-tremor which throws upright objects out of the vertical plane.

> The chief differences in the records obtained from these two types of instruments are the ratios of the recorded amplitudes. These differ so widely that it may be inferred that "the dominant feature of the movements in the majority of disturbances does not indicate *tilt*."
> *Nature*, Oct. 8, 1903, p. 552.

9. A see-saw; a plank tilting on a narrow support in the middle. [U. S.]

> The neck-yoke or portage bar, so often seen on ancient Egyptian walls, or the plank resting on a narrow support, the delightful seesaw of children, called in America a "*tilt*," in Germany a "wippe," constitutes a ready-made equal-armed balance as soon as anybody thinks of putting it to that use.
> *H. Sökeland*, quoted in Smithsonian Rep., 1900, p. 552.

tilt², *n.* 2. One of the small log-huts of the Labrador hunters. They are about 6 by 8 feet, have low ceilings, no windows, and a small hole for entrance and exit. They are built along a hunting path, and are situated about 10 miles apart.

tilt-board (tilt′bō•d), *n.* In *exper. psychol.*, a horizontal board, pivoted at the center upon a transverse axis in such a way that the subject, lying at full length upon it, may be tilted up or down: used in the study of the kinesthetic senses. See ★*rotation-chair*. Also called *tilting-board*. *E. C. Sanford*, Exper. Psychol., p. 39.

tilt-chair (tilt′chãr), *n.* In *exper. psychol.*, a chair the seat of which is so pivoted upon a transverse axis that the subject, seated in it, may be tilted backward or forward: used in the study of the kinesthetic senses. See ★*rotation-chair*.

tilting (til′ting), *n.* The act denoted by the verb *tilt*, in *seismology*, any motion of the earth's crust which produces an inclination of objects from the vertical position.

tilting-furnace (til′ting-fėr″nạ̄s), *n.* A furnace which can be tilted; specifically, an open-hearth furnace so arranged that it can be tilted to facilitate tapping. In the Campbell furnace the tilting is accomplished by means of a hydraulic ram, the body of the furnace being mounted on strong curved girders, which rest on a series of rollers running on a curved bed. The tap-hole is above the level of the metal when the furnace is in a horizontal position, and the slag is above the tap-hole when the furnace is tilted. The Wellman furnace is mounted on two curved rockers, which roll on strong steel standards, the rolling movement being accomplished by two hydraulic cylinders. Also called *rolling-furnace*.

tilting-hammer (til′ting-ham″ėr), *n.* Same as *tilt-hammer*.

tilting-lever (til′ting-lev″ėr), *n.* Same as ★*tilt-lever*.

tilt-lever (tilt′lev″ėr), *n.* A lever used to tilt or tip something, as a bolt or block from which shingles are being sawed.

tilt-roof (tilt′röf), *n.* [*tilt*² + *roof.*] A roof which has a generally semicircular section inside and out. The thing and the word are both rare.

tilt-steel (tilt′stēl), *n.* The name for a grade of steel, no longer made, or only to a very limited extent for a few special uses. The pure iron bar was carbonized by the cementation process (which see) and then welded under a tilt-hammer (which see) at first: later the steam-hammer was always used.

tilt-table (tilt′tā″bl), *n.* 1. In *exper. psychol.*, same as ★*tilt-board*.—2. A table or carriage used in sawing-machinery, hinged at one end so that the projection of the revolving saw above the upper or working face may be varied in cutting gains, or plowing, or similar work.—3. A table, or carriage, or frame in a sawing-machine, so constructed that the angle of the plane of its top or working-face may be varied to that of the saw-blade or cutting-plane: used in machines for sawing shingles to give the desired taper and thickness alternately, and for cutting clapboards from the log.

Tim. An abbreviation of *Timothy*, a book of the New Testament.

tima (tē′mä̤), *n.* [Also *timma*; < Malay *tīma*, tin, lead, or zinc, also a coin (see def.).] A tin coin of Malacca worth one tenth of a doit.

timarau, *n.* See ★*tamarao*.

timbal, *n.* 2. The membrane of the sound-making apparatus of a cicada.

timbe (tim′bā), *n.* [Mexican name.] A name applied in Mexico to certain barks and roots used in the manufacture of pulque. They have a bitter, astringent taste and abound in tannic acid. Among the plants from which timbe is obtained are *Acacia filicioides*, a shrub or small tree of the mimosa family, and a sumac, *Rhus pacchyrrhachis*. Also called *timbre*. See *pulque*.

> The *timbe* bark, after having been toasted and pounded, is added to the sap about four hours after the fermentation has begun. It has the effect of precipitating the greater portion of mucilaginous substances held in solution, undoubtedly owing to the action of the tannic acid in the bark upon the proteids, which, if let alone, would cause the liquid to putrify or turn sour.
> *W. E. Safford*, in Science, Jan. 22, 1909, p. 160.

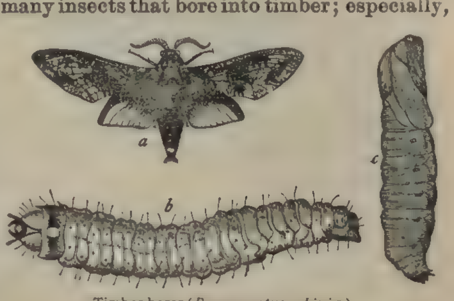
timber¹, *n.* 9. In *cricket*, the stumps; the wickets: usually in the plural. [Colloq.]—10. In *mining*, a local name for a braced frame forming the roof and side-supports of a gallery or drift. The bottom horizontal element or sill receives two side uprights, usually converging toward the top, and these support the head-piece or lintel under the roof. Planking may go in behind the heavy frame.—**Blue timber**, timber which has been attacked by the fungus *Ceratostomella pilifera*, which causes it to assume a blue color.

> The pine girdled by the bark beetles is first attacked by a fungus, *Ceratostomella pilifera* (Fr.) Winter, feeding on the medullary rays, wood parenchyma and cell contents, but not affecting the woody fibres of the stem at all. This "*blue*" *timber* has been impregnated with zinc chloride and used for ties in the trying climate of the Southwest to test its wearing qualities.
> *Forestry Quart.*, Feb., 1904, p. 80.

Round timber, pine-trees which have not been turpentined.—**Timber and room.** See ★*room*¹.—**Timber-belt beds.** See ★*bed*¹.—**To take to timber**, or **high timber**, to take to the woods; hide in among thick forest trees: often used of any refuge. [Colloq.]

timber¹, *v. t.* 2. To furnish (a tunnel, drift, gallery, or other excavation) with braced frames of logs or squared timbers which support the roof and resist the caving in or crushing at the sides.

timber-borer (tim′bėr-bōr″ėr), *n.* Any one of many insects that bore into timber; especially, a member of either of the coleopterous families *Cerambycidæ* and *Buprestidæ*, or one of certain members of the lepidopterous family *Cossidæ*.



Timber-borer (*Prionoxystus robiniæ.*)
a, adult; *b*, larva; *c*, pupa. (Redrawn from Riley.)

Timber Creek formation. See ★*formation*.

timber-dresser (tim′bėr-dres″ėr), *n.* See ★*planing-machine*.

timberello (tēm-be-rel′lō), *n.* [Appar. It. dial.] A name given, in the Adriatic region, to *Auxis thazard*, the frigate-mackerel, found in all warm seas.

timber-land (tim′bėr-land), *n.* Forest land. See ★*forest*.

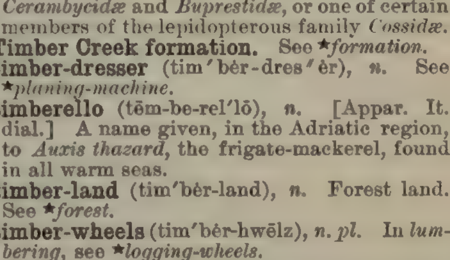
timber-wheels (tim′bėr-hwēlz), *n. pl.* In *lumbering*, see ★*logging-wheels*.

timbo (tēm-bō′), *n.* [Tupi *timbó* (in comp.).] 1. In eastern Argentina, Paraguay, and southern Brazil, a very large tree of the mimosa family, *Enterolobium contortisiliquum* (*E. Timbouva* of Martius), sometimes reaching a height of 90 feet and a diameter of 6 feet. Its wood is red in color, light and easily worked, and is much used for carpentry, furniture, and the interiors of houses. The Indians of eastern Argentina make canoes of one piece by hollowing out a large log of this tree. The bark is astringent, and the pods, called negro's-ear, contain saponin. The tree is called *pacara* in western Argentina. See ★*pacara*.
2. In Brazil, a climbing shrub, *Paullinia pinnata*, of the family *Sapindaceæ*, the root-bark of which contains a bitter principle and is used in medicine and for stupefying fish.

timbouva (tēm-bō-ö′vä), *n.* [Native name in Argentina; cf. Tupi *timbó*.] Same as ★*timbo*, 1.

timbre (tim′brạ̄), *n.* Same as ★*timbe*.

Timbrel arch, an arch in which the elements, usually flat tile or brick, are laid with their largest surfaces at right angles to the radii of the centering, and not in the direction of the radii as in voussoir arches. A timbrel arch must have two or more layers of elements, and depends for its strength on the cohesive power of the cement or mortar used.



Timbrel Arch.

time¹, *n.* 20. One of the four or five grand divisions of geologic history, namely, Archæan, Paleozoic, Mesozoic, and Cenozoic *time:* by some a fifth division, Psychozoic *time*, is added. In more recent usage 'era' has been substituted for 'time.'—**Dead time**, time during which the active work of accomplishing a purpose is not going on, although preparations for it may be in progress. Such, in pile-driving, is the time occupied in lifting the hammer.—**Fechnerian time error.** See ★*error.*—**Geologic time,** the time embraced in geologic history and suggested by the evidence recorded and interpreted by geologists.—**Habitual time,** in *psychophys.*, a reaction-time which, by the routine of the experiment, has become a matter of habit, independent of the specific conditions of the particular tests.

> A series of puzzle tests . . . was accordingly planned to discover whether *B* was influenced by some *'habitual-time'* tendency, analogous to an 'optimal-time' influence. *Amer. Jour. Psychol.*, XIII. 232.

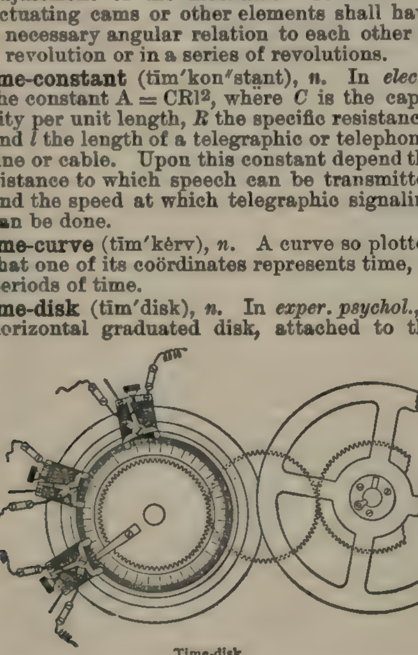
International time system, the system now adopted by many nations in accordance with which a railroad and frequently a whole community regulates the time shown by its clocks and watches to agree with that of the Greenwich meridian or with that of some meridian exactly one hour distant therefrom (see *standard time*). The civil day begins with midnight on the adopted meridian, and the hours of the day should be numbered consecutively from zero or naught at midnight to naught at the end of twenty-four hours. This international time system is that recommended by the International Time and Meridian Conference held at Washington in 1884.—**Mean solar time,** time measured by the motion of the mean sun. Navigating chronometers carry mean solar time.—**Mean sun time.** Same as *mean solar* ★*time.* See *mean sun*, under *mean*3.—**Periodic time,** in *physics*, the time required for a vibrating particle to pass through one complete set of its values. See *natural* ★*period. E. W. Scripture*, Exper. Phonet., p. 2.—**Principle of least time.** Same as *Fermat's* ★*law.*—**Septuple time.** See *septuple* ★*rhythm.*—**Simple time.** See *simple* ★*rhythm.*—**Standard time.** See *international* ★*time system.*—**Time and marching.** See ★*march*2.—**Time ensemble.** See ★*ensemble.*—**To make time.** (*a*) To secure time for the doing of a certain thing by omitting another or others. (*b*) To gain time by extra speed, as a train or boat. (*c*) With qualifiers, to maintain a certain speed: as, we *made good time*; the motor-car *made poor time* up the hill.

time, *v. t.* **5.** To adjust the elements of (a motor or other machine) so that the succession of events in a cycle, or a revolution, or a process shall take place at the desired intervals, or in the desired sequence. It involves an adjustment of the mechanism so that the actuating cams or other elements shall have a necessary angular relation to each other in a revolution or in a series of revolutions.

time-constant (tīm'kon″stant), *n.* In *elect.*, the constant $A = CRl^2$, where C is the capacity per unit length, R the specific resistance, and l the length of a telegraphic or telephonic line or cable. Upon this constant depend the distance to which speech can be transmitted and the speed at which telegraphic signaling can be done.

time-curve (tīm'kėrv), *n.* A curve so plotted that one of its coördinates represents time, or periods of time.

time-disk (tīm'disk), *n.* In *exper. psychol.*, a horizontal graduated disk, attached to the Baltzar kymograph for work upon the time-sense: contacts and releases, arranged about the periphery, are actuated as the kymograph drum revolves.



Time-disk.

> The most useful appliance for investigation is, probably, Meumann's 'time-sense' apparatus, consisting of Baltzar kymograph, *time-disc*, set of contacts, and sound-hammers. *E. B. Titchener*, Exper. Psychol., I. ii. 338.

time-displacement (tīm'dis-plās″mẹnt), *n.* In *exper. psychol.*, the acceleration or retardation of the perception of one of two or more objectively simultaneous stimuli, due to a preferential direction of the attention; the positive or negative displacement of the complication experiment.

> Later experiments with a more adequate technique have shown that the magnitude and direction of this *time-displacement* are conditioned in the most various ways.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 271.

time-equation (tīm'ē-kwā″shọn), *n.* Same as *equation of time. Sci. Amer.*, Aug. 20, 1904, p. 125.

time-experience (tīm'eks-pē″ri-ẹns), *n.* Conscious duration; experience as based upon the temporal attribute and relations of mental processes.

> An hour is just as much an hour of space-experience as an hour of *time-experience.* Space gives us our only means of measuring time, and time our best means of measuring space.
> *W. Wundt* (trans.), Human and Animal Psychol., p. 19.

time-expired (tīm'eks-pīrd″), *a.* Having completed one's term of enlistment or service.

> The American Government had taken precautions as early as January looking to possible hostilities, and had telegraphed to the naval commanders-in-chief abroad to hold *time-expired* men. *Encyc. Brit.*, XXXII. 767.

> But whin I 've served my time I 'm a Reserve man, an' the Articles av War have n't any hould on me. An orf'cer can't do anythin' to a *time-expired* savin' confinin' him to barracks. *R. Kipling*, The Big Drunk Draf'.

time-glass (tīm'glȧs), *n.* An hour-glass or sand-glass.

time-lag (tīm'lag), *n.* The interval of time between the application of a force and the effect: said of recording instruments in which the inertia of moving parts causes a certain retardation of action, of electromagnets in which the full magnetization lags behind the magnetizing force, and of all cases in which the response to any stimulus follows the latter after an appreciable interval.

timelian (ti-mē'li-ạn), *a.* [NL. *Timelia* + *-an.*] Relating to or resembling the *Timeliidæ*, a group of old-world birds of debatable extent and affinities, but agreeing in having short, rounded wings; timeliine.

time-marker (tīm'mär″kėr), *n.* In *physiol.* and *exper. psychol.*, an instrument which traces the time-line, or indicates the time of application of a stimulus, etc., upon the smoked paper of the kymograph. The time-marker may consist of a writing lever actuated by an electromagnet vibrating in connection with a tuning-fork; of a bristle attached directly to a tuning-fork tine; of a writing lever attached to the escapement of a clock (Jacquet chronometer); etc. *Amer. Jour. Psychol.*, XIII. 221.

timepiece, *n.*—**Equation timepiece.** See ★*equation.*

time-recorder (tīm'rẹ̄-kôr″dėr), *n.* A person who records, or any apparatus for recording, the time of arrival or departure of workmen to and from their work, the time expended in the performance of specified work, or the like. Mechanical time-recorders are, for the most part, clocks combined with recording-mechanism. *Engin. Mag.*, July, 1904, p. 617.

Time-sense apparatus, in *psychol.*, an apparatus for the study of the discrimination and comparison of time-intervals. It consists essentially of a metal disk furnished at the periphery with electrical contacts, which are closed or opened by a revolving metal radius; the contacts are in connection with a sound-hammer, the strokes of which mark off the times to be compared.—**Time-sense instrument.** See ★*instrument.*

time-service (tīm'sėr″vis), *n.* The work of astronomical observatories in furnishing correct time to the community by telegraph. *Smithsonian Rep.*, 1890, p. 160.

time-sheet (tīm'shēt), *n.* **1.** A slip of paper with printed headings or columns and blank spaces, on which workmen in a shop or factory may fill in the number of hours they have worked and the jobs or orders on which they have been employed. These are collected and handed to the time-keeper and cost-clerk.—**2.** The sheet summarized from these slips (def. 1.) on which the amount and kinds of work done on any job or order are brought together for computing cost.—**3.** The blank on which the time-keeper records the hours per week of work done by each workman, for use in making up a weekly pay-roll.

time-stamp (tīm'stamp), *n.* An instrument controlled by clock-mechanism by which the time of day at which letters, documents, etc., are sent, received, or recorded is stamped upon them. It is usually a date-stamp also. *Engin. Mag.*, July, 1904, p. 605.

time-verse (tīm'vėrs), *n.* Verse recited in a scanning fashion, with regard to the temporal values of the syllables.

> Neither in intensity-verse nor *time-verse* are the lengths of feet ever exactly equal.
> *Scripture*, Exper. Phonetics, p. 538.

time-worker (tīm'wėr″kėr), *n.* One who does time-work. *Webb*, Indust. Democracy, I. 412.

time-zone (tīm'zōn), *n.* One of the twenty-four regions or divisions of the globe approximately coinciding with meridians at successive hours from Greenwich Observatory. Within each region or zone the railroads and telegraphs and, generally, the people adopt as "local standard time" the mean solar time proper to the nearest meridian exactly an integral number of hours distant from Greenwich meridian; the local date is also reckoned so as to agree with the Greenwich date. This system does away with the former methods of computing "local mean time" proper; it also does away with "apparent time" so far as that is legal. It is "clock time" as distinguished from "sun time." It was explained and recommended in a report of Professor Cleveland Abbe to the American Metrological Society in May, 1878, was urged by Mr. H. A. Allen, chairman of the Committee on Official Railroad Time-tables, was adopted in 1883, and went into effect October 1, 1884, in the United States. It was recommended by the International Meridian and Time Convention, Washington, October, 1884, and has now been adopted for popular use by all civilized nations except France.

timing-valve (tīm'ing-valv), *n.* A valve, in an internal-combustion motor, which opens at such a period in the cycle of the operations in the cylinder that ignition of the compressed mixture of gas and air takes place just before the piston reaches the dead center, or point of maximum compression. *F. E. Hutton*, Gas Engine (2d ed.), p. 202.

timon, *n.* **2.** A pole, sometimes of square steel tubing, rigidly attached to a plow-beam, designed to regulate the depth of the plowing and made adjustable.

> The *timon* is hitched to the yoke when in use.
> *Trade Catalogue*, 1905–06.

timothy, *n.*—**Apache timothy,** the southern canary-grass, *Phalaris Caroliniana.* See ★*canary-grass.*—**Mountain timothy,** *Phleum alpinum*, a lower, stouter, and more leafy species than the common timothy, found in mountain regions northward in both hemispheres.—**Southern timothy.** See ★*canary-grass.*—**Wild timothy.** (*a*) A satin-grass, *Muhlenbergia racemosa*, with somewhat the appearance of timothy, found in moist ground from New England to the Rocky Mountains, northward and southward. It is not valued in the eastern United States, but is esteemed a good hay-grass in the Northwest and in Texas. (*b*) Same as ★*slough-grass.* [Nevada.]

timucu (tim'ū-kū), *n.* [NL. *timucu*, prop. *timuçu*, < Tupi *timuçu.*] A fish, *Tylosurus timucu*, of the family *Esocidæ*, found from the Florida Keys to Brazil.

tin, *n.* **5.** In *cricket*, a sheet of metal bearing painted numbers, exhibited in a conspicuous place to indicate the score of the match to spectators. *Hutchinson*, Cricket, p. 97. [Colloq.]—**Alluvial tin,** stream-tin, or disintegrated tin ore found in river gravels and on the bed-rock.—**Boiling of tin,** a method of refining metallic tin by stirring it, in the melted state, with sticks of green wood. The escape of steam from the sap in the wood agitates the melted metal and brings fresh portions to the surface, where the impurities are oxidized and converted into dross by the action of the air.—**Disease of tin.** See *tin* ★*pest.*—**Feathered tin,** metallic tin which has been granulated by melting and pouring into cold water, and has therefore assumed various irregular forms, some of them suggesting the appearance of feathers. It is applied to the preparation of stannous chlorid for dyers' use.—**Head tin,** the tin ore which lies on the surface of the mass after washing. It corresponds to the heads of the concentration process.—**Malacca tin,** tin produced in Malacca or Banca. It is made from very high-grade ore. Also called *Straits tin.*—**Phosphide of tin.** Same as ★*phosphor-tin.*—**Straits tin.** Same as *Malacca* ★*tin.*—**Tin chlorid.** See ★*stannic* and ★*stannous chlorid.*—**Tin crystals,** stannous chlorid in crystals: used by dyers as a mordant.—**Tin-pickling machine.** See ★*machine.*—**Tin spirits.** See ★*spirit.*

tina (tē'nä), *n.* [Sp. *tina*, large earthen jar, vat.] An amalgamating-pan differing from the Washoe pan chiefly in that its bottom and muller are made of an alloy of copper and tin instead of cast-iron. The copper assists in the chemical reactions whereby the minerals are decomposed and the silver amalgamated.—**Tina cargadera,** the first tank into which the metalliferous mud from the torta is charged to be washed, in patio amalgamation. See *patio process*, under *process. Phillips and Bauerman*, Elements of Metallurgy, p. 745.

tinamine (tin'ạ-min), *a.* [*tinamou* + *-ine*2.] Relating to or having the characters or appearance of the tinamous, a group of birds peculiar to Central and South America.

tinction, *n.* **2.** In *histol.*, the process or result of staining.—**3.** In *pharm.*, the addition of a flavoring or coloring agent to the ingredients of a prescription.

Tinctorial chemistry. See ★*chemistry.*

tinctumutation (tingk″ṭụ-mū-tā'shọn), *n.* [L. *tinctus* (*tinctu-*), coloring, + *mutātio*(*n*), change.] The change of color which is exhibited by certain animals, such as the chameleon, anoli, and many cephalopods.

> In 1883, while studying *tinctumutation* or the color-changing function in certain animals, I reared a large number of newts, or salamanders, from the eggs. The eggs were placed in shallow vessels which were covered by colored glasses, blue, orange, green, and red.
> *Sci. Amer. Sup.*, Nov. 22, 1902, p. 339.

tincture, *n.*—**Churchill's tincture of iodine**, an aqueous solution of iodine containing 120 grains of iodine and 240 of potassium iodide to 1 fluid ounce of water; Churchill's iodine caustic.—**Tincture of steel.** See ★*steel*1.

tinder-box, *n.*—**Pistol tinder-box**, an old form of tinder-box which had the handle and lock of a pistol without the barrel.

tinder-fungus (tin′dėr-fung″gus), *n.* Same as *amadou.*

tine^1, *v. t.* **2.** To close. [Prov. Eng.]

> "Well, Shepherd Oak, and how 's lambing this year, if I may say it?" inquired Joseph Poorgrass.
> "Terrible trying," said Oak. . . . "Cainy and I have n't *tined* our eyes to-night."
> *T. Hardy*, Far from the Madding Crowd, xv.

tine^7, *n.*—**Royal tine**, the third tine from the base of a deer's antler. Also *tine-royal.*

Tinea imbricata, a form of ringworm marked by scaly patches of ring shape. It occurs chiefly in the tropics, is contagious, and is due to the presence in the skin of a parasitic fungus.—**Tinea tarsi**, inflammation of the edges of the eyelids, accompanied by much itching and occasionally by ulceration.

tineine (tin′ẹ-in), *a.* and *n.* **I.** *a.* Having the characters of or belonging to the group *Tineina.*

II. *n.* One of the *Tineina.*

tineoid (tin′ẹ-oid), *a.* and *n.* **I.** *a.* Having the characters of or belonging to the lepidopterous superfamily *Tineoidea.*

II. *n.* One of the *Tineoidea.*

Tineoidea (tin-ẹ-oi′dē-ä), *n. pl.* [NL., < *Tinea* + *-oidea.*] The old lepidopterous family *Tineidæ* considered as a superfamily: same as *Tineina.*

tin-frame (tin′frām), *n.* A frame or buddle for concentrating a tin ore and separating valuable particles of the metal from the gangue or worthless material.

t'ing (ting), *n.* [Chin.] In China, a pavilion; a kiosk.

> The most general model of Chinese buildings is the *t'ing.* This consists essentially of a massive roof with recurved edges resting upon short columns. The curvilinear tilting of the corners of the roof has been supposed to be a survival from the days of tent dwellers, who used to hang the angles of their canvas pavilions on spears; but this is carrying it back to a very dim antiquity, as we have no records of the Chinese except as a settled agricultural people. The roof is the principle feature of the building and gives to it when finished its qualities of grandeur or simplicity of strength or grace. To vary its aspect the architect is induced occasionally to double, or even to triple, it. *Smithsonian Rep.*, 1904, p. 677.

tingible (tin′ji-bl), *a.* [L. **tingibilis*, < *tingere*, tinge.] In *cytol.* and *pathol.*, capable of taking a stain; stainable: said of cells or tissues; chromophil.

> The adjacent *tingible* substances in the nucleus.
> *Jour. Exper. Med.*, Nov. 29, 1901, p. 58.

tingid (tin′jid), *a.* and *n.* Same as ★*tingitid.*

tingitid (tin′ji-tid), *n.* and *a.* **I.** *n.* A member of the homopterous family *Tingitidæ.*

II. *a.* Having the characters of or belonging to the family *Tingitidæ.*

tin-glazed (tin′glāzd), *a.* Coated with tin-glaze or enamel. See *stanniferous* ★*enamel.*

tinguaite (ting′gwa-īt), *n.* [Serra de *Tingua*, Rio Janeiro, Brazil, + *-ite*^{2}.] In *petrog.*, a name given by Rosenbusch (1887) to a phonolite composed of alkali feldspar and nephelite with abundant ægirite as the distinguishing characteristic.

tinguoid (ting′gwoid), *a.* [*tingu(aite)* + *-oid.*] In *petrog.*, resembling tinguaite in mineral composition and texture.

tinker, *n.* **13.** A playfully abusive epithet for a child.

Tinmen's solder. See *soft* ★*solder.*

tinner, *n.*—**Tinners' stove.** (*a*) It is a cylinder of sheet-iron with a convenient base, fitted with a grate near the bottom and an opening for air below the grate; it is used by tinsmiths and plumbers for heating soldering-irons and melting solder. Often called a *furnace*, and usually burning charcoal as fuel. (*b*) A form of gasolene-stove burning a mixture of gasolene-vapor and air as a fuel, fitted specially to heat and melt the solder used by plumbers and other workers in soft metal under the general name of 'lead.'

tin-pickling (tin′pik″ling), *n.* The dipping of the thin steel sheets which are the basis of tin-plate in a bath of dilute acid, in order to remove grease and oxid of iron, previous to dipping them in the bath of melted tin.

tin-scum (tin′skum), *n.* The material removed by skimming from the surface of melted tin in the process of refining. It contains in a partially oxidized condition some tin and a large proportion of the foreign metals originally present as impurities.

tinsel^2, *n.* **4.** In *elect.*, fine threads of copper or bronze wire used in making up flexible stranded conductors for portable and other fixtures.

> The stranded conductors are universally made of very fine copper or copper bronze wire, or what is technically called *tinsel*, and the finer and more numerous the threads the better. *Elect. World and Engin.*, Aug. 29, 1903, p. 341.

tinsel^2, *v. t.* **2.** Specifically, to embellish (ceramic ware) with metallic effects.

tint^1, *n.*—**Neutral tint**, an artists' pigment of a gray color, a mixture of black and white with a small proportion of blue.—**Tint of passage.** See ★*passage.*

tinto (tin′tō), *n.* [Pg.] Same as *tent*^{5}, *n.*

tintometric (tin-tọ-met′rik), *a.* [*tintometr(y)* + *-ic.*] Relating to tintometry or the determination of shades of color by comparison with a standard. See *tintometer.* *Buck*, Med. Handbook, II. 58.

tintometry (tin-tom′e-tri), *n.* [*tintometer* + *-y*^{3}.] The scientific use of the tintometer (which see).

tip^1, *n.* **7.** A horseshoe which covers only the front half of the hoof, with the branches tapered to an edge. *U. S. Dept. of Agr.*, Rep. on Diseases of the Horse, 1903, p. 379.

tip^2, *v. t.* **8.** To throw up (wool or cotton) so that it will fall in bunches.—**To tip the grampus**, *naut.*, to dash a bucket of water over a look-out man caught asleep on his watch.

tip-burn (tip′bėrn), *n.* A disease of the potato-leaf, caused by dry, hot weather and other unfavorable conditions, which affects the tips of the leaves, especially turning them brown.

tipiti (tē-pē-tē′), *n.* [Tupi.] A long tubular cylinder woven of strips of the jacitara-palm, used for extracting the poisonous juice of the cassava. The cassava-roots are cut up and placed in the cylinder, which is suspended from a beam, while its lower end is pulled down by means of a lever. The elongation of the plaited cylinder produces a contraction of its diameter, and by the strong pressure thus obtained the poisonous juice is pressed out of the roots.

tipolo (tē′pō-lō), *n.* [Philippine.] Same as ★*antipolo.*

tiponi (tẹ-pō′nẹ), *n.* [Hopi.] Among the Hopi Indians of Arizona, the badge of a religious fraternity or of a chief priest. It usually consists of an ear of corn wound with cotton thread and ornamented with feathers, pieces of shell, turquoise, etc.

> There were no stone fetishes along the rear of the sand picture, nor stone implements or sticks in pedestals on that side. The *tiponi* was placed back of the extreme right-hand corner, and was separated by a considerable space from the sand picture.
> *An. Rep. Bur. Amer. Ethnol.*, 1894–95, p. 279.

tipping-bucket (tip′ing-buk″et), *n.* One of a pair of buckets used in a tipping-bucket gage. See the following phrase.—**Tipping-bucket gage**, a gage having a pair of small buckets upon the two ends of a lever (or a single bucket divided into two portions) so arranged that the rain or other material to be measured flows into one bucket until its weight bears down that end of the lever and brings the other bucket into action while the former is being emptied. Each tip of the lever is recorded.

tippler^1, *n.* **2.** A breed of domesticated pigeons, derived from and very closely resembling the tumblers. They do not, however, 'tumble' when on the wing and fly but poorly.

tipstaf, *n.* A simplified spelling of *tipstaff.*

tip-truck (tip′truk), *n.* A truck or car so constructed that by tipping the body on the frame the contents can be dumped. The body may either tip lengthwise, and toward the rear, as in horse-drawn trucks for bricks and other building material, or sidewise, as in trucks which are run on rails and handled in trains by a motor. *Jour. Brit. Inst. Elect. Engin.*, 1901–02, p. 535.

tipulid (tip′ụ-lid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Tipulidæ.*

II. *a.* Having the characters of or belonging to the family *Tipulidæ.*

tipulideous (tip-ụ-lid′ẹ-us), *a.* Of or pertaining to the dipterous family *Tipulidæ.*

tirage (tẹ-räzh′), *n.* [F., < *tirer*, draw, pull, print.] A new edition or reprinting of a book: usually accompanied by the number of the edition or reprint.

tirata, *n.* Same as *tirade*, 3.

tire^7, *n.*—**Clincher tire**, a form of double pneumatic rubber tire in which there is on each edge of the outer case a clinch or rim by which it is held in the channel-iron or metal tire.—**Cushion tire**, a form of rubber tire, for bicycles or other light vehicles, in which the hollow tube usual in the pneumatic form is filled with shreds or small masses of rubber, making a tire less elastic and heavier than the inflated pneumatic tire, but less inconvenient in case of cut or puncture.—**Flat tire**, in a locomotive, a tire of a driving-wheel which is flat or without a flange; a blank or flangeless tire used to allow lateral play to the wheel on the rail in passing a curve.—**Pneumatic tire**, a tire consisting of a tube made of some strong and durable fabric, generally coated with rubber and inflated with air, used on bicycles, etc. In the double tire an inner air-tight tube of thin rubber is protected by a strong, unelastic outer tube. Various devices have been used to prevent puncturing.

tire-glass (tīr′glȧs), *n.* A tiring-glass; a toilet hand-glass.

tire-room (tīr′röm), *n.* A dressing-room; a tiring-room.

tires (tīrz), *n.* [Pl. of *tire*^{1}, *n.*?] The milk-sickness.

tire-screw (tīr′skrö), *n.* A tire-bolt; a conical-headed screw countersunk in the metal of a tire and passing radially through the felly, and held up by a nut on the inside over a curved washer-plate. It is intended to hold the tire in place sidewise and lengthwise, when the wheel is so light that a powerful shrinkage of the tire on the rim causes the wheel to go out of shape.

tire-setter, *n.*—**Hydraulic tire-setter.** (*a*) A machine for placing tires on the wheels of cars or locomotives, in which the tire is heated by gas-flames in a horizontal position until sufficiently expanded, when the center is lifted (or lowered) into the tire by hydraulic pressure on a ram or plunger. (*b*) A machine for forcing tires on wheels of cars or locomotives, in which the wheel-center is forced into the tire by hydraulic pressure without use of heat to expand the tire.

tire-steel (tīr′stēl), *n.* A mild steel from which are made the tires of locomotive and railway-carriage wheels. To resist abrasion it is made rather harder than structural steel, usually containing about .5 or .6 per cent. of carbon. To secure toughness and resistance to shock, it should not contain phosphorus in more than very minute quantity.

tiresum, *a.* An amended spelling of *tiresome.*

tire-tête (tēr-tāt′), *n.* [F.] Any instrument employed in childbirth to make traction on the fetal head.

tiring-glass (tīr′ing-glȧs), *n.* A mirror used in dressing.

Tirolian (ti-rō′li-an), *a.* and *n.* [*Tirol* + *-ian.*] In *geol.*, noting the basal series of the upper pelagic Trias, typically developed in Tyrol, western Austria, and widely expanded throughout the Mediterranean Jurassic basin into India, northern Asia, and western South and North America. It comprises the Ladinian stage below and the Carnian stage above. Also *Tirolic.*

T-iron, *n.* **2.** An iron plate with slots planed in it having the section of an inverted T so as to receive bolt-heads.—**3.** A T-shaped rest, used by tinsmiths and other metal-workers.

tiru (tē′rö), *n.* [It. dial. (?).] A fish, *Synodus saurus*, of the coasts of southern Europe and neighboring islands.

Tirynthian (ti-rin′thi-an), *a.* and *n.* **I.** *a.* Relating to, or found at, Tiryns, a city of Ancient Greece thought to have been destroyed about the fifth century B.C.: as, *Tirynthian* pottery. See the extract below.

II. *n.* An inhabitant of Tiryns.

> It was suggested long since by Prof. Mahaffy in Schliemann's 'Mycenæ' that this ignorance of Æschylus points to a very old destruction of Mycenæ and Tiryns, and he even predicted to Schliemann that the excavation of Mycenæ would disclose no coins or inscriptions of the fifth century B.C. The *Tirynthians* in question may even have been descendants of the slaves who seized the deserted fort, and held it against Argos for some time.
> *Athenæum*, Feb. 21, 1903.

tisic, *a.* An amended, and former, spelling of *phthisic.*

tisis, *n.* An amended, and former, spelling of *phthisis.*

tissue, *n.*—**Conjunctive tissue**, in *bot.*, the fundamental tissue within the stele.—**Differentiated tissue**, a circumscribed mass of tissue which has a distinct and separate character from that of the tissues by which it is surrounded. *C. S. Minot*, in Science, March 29, 1901, p. 497.—**Dotted tissue.** Same as *bothrenchyma.*—**Ground tissue**, in *bot.*, the tissue of the pith, medullary rays, and cortex.

tissue, *v. t.* **3.** Figuratively, to weave; construct; elaborate. [Rare.]

> 'Dream and Reality' is *tissued* from a series of such metaphors—quitting the valley, ascending to the heights, descending into the market-place, and so forth.
> *Athenæum*, May 6, 1905, p. 556.

tissue-lymph (tish′ö-limf), *n.* Lymph derived from the tissues and not formed directly from the blood. *Nature*, May 26, 1904, p. 88.

tit^1, *n.* **2.** In *mech.*, a round projection on a tool or other piece to serve as a guide. A tit is usually made on the end of a counterbore, so that the hole made by it shall be concentric with the hole which it is desired to enlarge.

tit^{2}, *n.*—**California least tit.** Same as *brush-tit.*

> In southern California . . . the *California least tit* feed[s] extensively on the destructive olive scale.
> *Yearbook U. S. Dept. Agr.*, 1901, p. 109.

tit. An abbreviation (*a*) of *title;* (*b*) [*cap.*] of *Titus* (a book of the New Testament).

tita (tē'tä̤), *n.* See ★*ais.*

titanation (tī-ta̤-nā'sho̤n), *n.* [*titanat*(*e*) + *-ion.*] The production of a titanate by the union of titanic acid with a base or by its substitution for another acid in a compound already formed. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. 204.

titani-. See ★*titano-.*

Titanic oxid. See ★*oxid.*

Titanichthys (tī-ta̤-nik'this), *n.* [NL., < Gr. Τιτάν, a Titan, + ἰχθύς, a fish.] An extinct genus of arthrodiran fishes, of the family *Coccosteidæ*, with very large cranial shield and much reduced edentulous, probably horn-sheathed jaw-elements. The dorsomedian plate is without an inferior longitudinal keel and is deeply emarginate in front. The antero- and postero-dorsolaterals are fused, articulated to the cranial shield by a long hinge, and overlapped by the large claviculars. The genus is found in the Cleveland shale (Upper Devonian) of Ohio.

titanifluoride (tī-ta̤-ni-flö'o̤-rid), *n.* Same as ★*titanofluoride.*

titanism (tī'ta̤n-izm), *n.* [*Titan* + *-ism.*] The character of a Titan; titanic force, or the like. [Rare.]

> Life is now polarized, oriented, and potentialized. The soul is filled with a *Titanism* that would achieve a vita nuova upon a higher plateau, where the music of humanity is no longer sad but triumphant.
> *G. S. Hall*, Adolescence, II. 123.

titanium, *n.* As obtained by Moissan in the fused condition by means of an electric furnace, although not quite free from carbon, metallic titanium is not unlike silicon, but whiter, lustrous, very hard, but brittle, of specific gravity 4.87. It burns when heated in the air, and is attacked by the common mineral acids.

titanium thermit (tī-tā'ni-um-thėr''mit), *n.* A mixture of finely divided metallic aluminium with the oxids of titanium and iron, one of the varieties of so-called 'thermit,' which on ignition develops an exceedingly high temperature and produces a fused alloy of iron and titanium. It has been used in steel-making with the expectation of removing any iron nitride present. See ★*aluminothermics.*

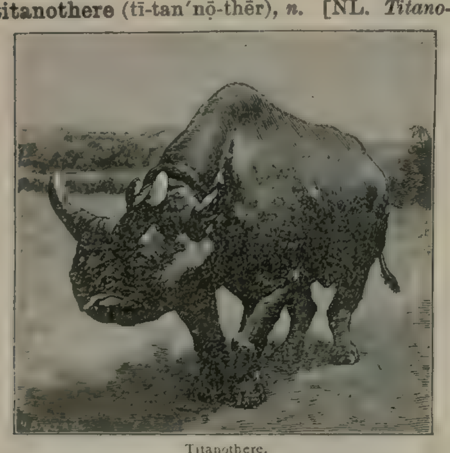
titano-. In *chem.*, a prefix to the name of a compound signifying the presence of titanium as a constituent, as potassium titanofluoride (K_2TiF_6). Sometimes written *titani-.*

titanofluoride (tī''ta̤-nō̤-flö'o̤-rid), *n.* Same as ★*fluotitanate.*—**Hydrogen titanofluoride.** Same as ★*fluotitanic acid.*

Titanosaurus (tī-tā-nō̤-sâ'rus), *n.* [NL., < Gr. Τιτάν, a Titan, + σαῦρος, a lizard.] A genus of sauropod dinosaurs with procœlous posterior caudal vertebræ: reported from the Middle Cretaceous of India, the Cretaceous and Wealden of England, and the supposed Cretaceous of Patagonia. The genus is very imperfectly known.

titanosilicate (tī''ta̤-nō̤-sil'i-kāt), *n.* A silicate into which titanium enters as a prominent constituent.

titanothere (tī-tan'nō̤-thēr), *n.* [NL. *Titanotherium.*] Any individual of the genus *Titanotherium* or member of the family *Titanotheriidæ* or superfamily *Titanotheroidea.* The titanotheres are extinct rhinoceros-like animals belonging among the odd-toed ungulates. The upper molar teeth are bunoselenodont with two outer crescents and two inner cusps. The lower molars are selenolophodont. In some forms the nasals bear horn-cores. There are four functional digits in the manus and three in the pes. Found in the Tertiary formation (Eocene and Lower Oligocene of North America and Miocene of Europe).



Titanothere.

(From a water-color sketch, based on mounted skeleton and skulls, in the American Museum of Natural History, New York.)

titanotheriid (tī-tā-nō̤-thē'ri-id), *n.* and *a.* **I.** *n.* One of the *Titanotheriidæ.*

II. *a.* Pertaining to or having the characters of the *Titanotheriidæ.*

titanous (tī'ta̤-nus), *a.* [*titan*(*ium*) + *-ous.*] In *chem.*, containing titanium as a constituent with apparently dyad valence, as titanous sulphate ($Ti_2(SO_4)_3$).

titel (tē'tel), *n.* A species of antelope, *Bubalis mauritanica*, allied to the hartebeest, but much smaller, standing about 3 ft. 6 in. high at the shoulder. It is the smallest member of the genus and the only one not confined to Africa, occurring in Arabia and Syria.

titer^{2}, **titre** (tē'tėr), *n.* [F. *titre*, title, standard of fineness. See *title, n.*, 10.] **1.** In *chem.*: (*a*) The strength of a standard solution used in titration in volumetric chemical analysis. (*b*) Inaccurately, the amount of a standard solution required in a given analysis.

> The solution was kept cooled to 15°. One cc. was removed at intervals (5 cc. in all), and the "immediate" *titer* was found to gradually decrease from its original value of 6.4 to 1.2 in about one-half hour, the total active oxygen content of the solution remaining the same (decreased slightly by the dilution with acetic anhydride).
> *Amer. Chem. Jour.*, March, 1903, p. 188.

2. See ★*number*, 17.

titfish (tit'fish), *n.* A name given in northern Australia to the sea-slug or trepang, because the appearance of its tentacles suggests the teat of a cow. *E. E. Morris*, Austral English.

tithe, *n.*—**To set out tithe,** to mark every tenth shock in the row in a field of corn, for tithe; the first shock being chosen by the setter-out without previous arrangement with the owner, to prevent fraud, since he might have made the tenth shocks smaller than the rest if he had known which would be marked. The same process held with cocks of hay, the mark in each instance being a small green branch. The process was in use till the early part of the nineteenth century, if not later. *N. and Q.*, 10th ser., II. 349, 454, 493.

titi^{2}, *n.*—**Black titi.** Same as *buckwheat-tree.*—**Red** or **white titi.** Same as ★*leatherwood*, 3.

titi^{3} (tē'tē), *n.* [Aymará of Bolivia.] A species of wildcat indigenous to Bolivia and found also around Lake Titicaca. The name of the lake is derived from a rock on the island of Titicaca which bears natural marks resembling heads of cats. In the valleys of the eastern Bolivian Andes the titi is called *mulu-mulu* in Aymará.

titivation (tit-i-vā'sho̤n), *n.* [*titivat*(*e*) + *-ion.*] The act of titivating, or dressing or sprucing up; the adding of small attractions to the toilet.

> All efforts to enhance his charms by the *titivation* of his person were useless, he was and remained a clumsy lout. *J. Brander*, The Camp on the North Fork, i.

title, *n.*—**Binder's title.** See ★*binder.*—**Brief of title.** Same as *abstract of title.*—**Document of title.** See ★*document.*—**Doubtful title,** a title which an alleged purchaser cannot be compelled to take, in a suit for the specific performance of a contract to purchase real property, by reason of some defect in the title, or some claim upon it, which, though not necessarily rendering it bad, may put the purchaser to expense or litigation in clearing it.—**Good title,** such a title as gives a legal right to property and to the possession of the same. The term is usually employed with reference to real property, and does not necessarily mean a perfect or a marketable title.—**Naked title,** in *law*, a title to land, without possession, or without right of immediate possession.—**Paper title,** a title to land that is evidenced by one or more deeds or other documents which give 'color of title.' The term usually implies that the title is not substantial.—**Presumptive title,** a title to lands founded only on the rebuttable presumption that the possessor is the owner. It is the most imperfect title recognized in law.—**Requisitions of title.** See ★*requisition.*—**Short title,** the brief alternative title of a statute. It is given in the statute itself with such words as 'this act shall be known as,' etc.—**Slander of title.** See ★*slander.*—**Title by occupancy,** in *law*, the right of ownership acquired by occupying land or possessing property before occupied or possessed by nobody. It is the root of individual ownership, more recognized in the civil than in the common law. See *occupancy.* It is a legitimate title, not questionable as is the squatter's. See *squatter.*—**Title of a cause,** in *law*, the designation of a case. The entire title usually consists of the name of the court, the venue, the parties to the action, or a brief description of the subject-matter of a special proceeding. The title as commonly used is generally abbreviated to the names of one plaintiff and one defendant in an action, or to the name of a particular party to a special proceeding, as 'White v. Jones,' et al., meaning that there are other defendants, 'Matter of Smith,' etc., not stating the subject.—**To quiet title,** to bring an action in equity to remove clouds upon, or to determine the validity of, a title to real estate.—**Trespass to try title,** in *law*, the name of the suit brought in South Carolina, to settle a disputed title to land.

titman (tit'ma̤n), *n.*; pl. *titmen* (-me̤n). [*tit* + *man?*] **1.** The smallest and weakest of a litter of pigs, puppies, or the like; a runt. [New Eng.]—**2.** Hence a man who is stunted, physically and mentally.

> We are a race of *tit-men*, and soar but little higher in our intellectual flights than the columns of the daily paper. *Thoreau*, Walden, p. 169.

titoki (tē'tō̤-kē), *n.* [Maori.] A New Zealand tree, *Alectryon excelsum*, of the soapberry family, which bears large panicles of reddish flowers. From the hardness of the wood and its crooked growth it is called *New Zealand oak*, and from its resemblance in foliage and the toughness of its wood *New Zealand ash.*

titoxin (ti-tok'sin), *n.* [(*an*)*titoxin.*] One of two substances which, according to the doctrine of Arrhenius and Madsen, are formed during the interaction between toxin and antitoxin, the other being termed *toxinan.* During the interaction between toxoid and antitoxin titoxin is also formed, but in the place of toxinan another product results which is termed *toxoinan.*

titre, *n.* See ★*titer*^{2}.

titri (tē'trē̤), *n.* [Austral Eng.] A spelling of *tea-tree*, from the notion that it is of Maori or aboriginal Australian derivation. The Maori name *ti* refers to an entirely different tree. See *tea-tree* and *ti*^{1}.

titrimetric (tit-ri-met'rik), *a.* [*titrimetr*(*y*) + *-ic.*] In *analyt. chem.*, involving the use of measured volumes of reagent solutions of determined strengths: same as *volumetric* in relation to liquids and to solids in solution.

> In a recent article, a method for the *titrimetric* estimation of nitric acid or nitrates was described. It consisted, briefly, in the measurement of the amount of ferrous salt oxidized in the reduction of the nitric acid to nitric oxide by an excess of ferrous sulphate in the presence of hydrochloric acid. *Amer. Jour. Sci.*, March, 1904, p. 201.

titrimetry (ti-trim'e-tri), *n.* [F. *titre*, standard of fineness, + Gr. *-μετρια*, < μέτρον, measure.] Same as *titration* or *volumetric analysis* as applied to liquids or to solid substances in solution. See *titration.* *E. von Meyer* (trans.), Hist. of Chem., p. 201.

tit-screw (tit'skrö), *n.* A screw the point or end of which is formed either into a cone, like a nipple, or into a cylinder with a reduced diameter for a short distance. The purpose is to have the tit enter a groove or depression and prevent end-motion while permitting the element into which it projects to revolve: or the tit may prevent both revolution and side-play without straining or marring the second element as a set-screw would do. *Cycle and Autotrade Jour.*, Dec., 1904, p. 120.

tjemoro (che-mō'rō), *n.* [D. spelling, answering to an Eng. spelling **chemoro*, of a Malayan or Jav. name.] A tree, *Casuarina montana.* which forms exclusive xerophilous forests at moderate altitudes in the mountains of eastern Java. The tjemoro forest, classed by Schimper as a peculiar form of savanna forest (see *savanna* ★*forest*), passes in places into tjemoro savanna. *A. F. W. Schimper* (trans.), Plant-Geog., p. 726.

tlacochtli (tlä-kōch'tli), *n.* [Nahuatl.] A dart or small lance used by the ancient Mexicans.

> Clavigero describes the Mexican *tlacochtli* or dart, a small lance of otalli or some other strong wood, the point of which was hardened by fire or shod with copper, or itzli, or bone, and many of them had three points.
> *Smithsonian Rep.*, 1900, p. 220.

tlalcapolin (tläl-kä-pō̤-lin'), *n.* [Nahuatl *tlalcapolin*, < *tlalli*, ground, + *capolin*, a cherry-like fruit.] In Mexico, a shrub, *Karwinskia Humboldtiana*, belonging to the buckthorn family, the fruit of which is attractive and cherry-like, but poisonous to man and animals. The leaves and root have purgative properties, and in many parts of Mexico, including the peninsula of Lower California, they are used medicinally. Also called *tullidora.*

Tm. The chemical symbol of *thulium.*

tn. An abbreviation of *ton.*

T. O. An abbreviation (*a*) of the Latin *tinctura opii*, tincture of opium; (*b*) of *turn over;* (*c*) of *Topographical Office* (of the Ordnance Survey of England). In the last sense also written *T-O.*

toad, *n.*—**Holy-Cross toad.** Same as *Catholic* ★*frog.*—**Panther toad, pantherine toad,** *Bufo mauritanica* or *B. pantherina*, a pretty African species, buff-colored above, with brown or olive markings.

toad-bug (tōd'bug), *n.* Any member of the family *Galgulidæ* (which see). *L. O. Howard*, Insect Book, p. 281.

toad-fish, *n.* **5.** In New Zealand, a scarce marine fish of the family *Cottidæ*, *Neophrynichthys latus*. *E. E. Morris*, Austral English. **—6.** In Australia, *Tetraodon hamiltoni* and various other species of *Tetraodon*, of the family *Gymnodontes*. *E. E. Morris*, Austral English.—**Poison toad-fish,** any fish of the genus *Thalassophryne*, having the spines of the dorsal fin and opercles each with a longitudinal tunnel which leads into a poison-sac at its base. When pressure is brought to bear at the tip of the spine the poison is ejected. The arrangement is similar to that of the fangs of the rattlesnake.

toad-frog (tōd'frog), *n.* A book-name of the tailless amphibians of the genus *Pelobates* which have teeth in the upper jaw, the processes of the sacral vertebræ expanded, and the ends of the toes simple. The typical representative is the brown toad-frog, *Pelobates fuscus*, of Europe.

> The fifth family . . . comprises eight genera, which may be collectively termed *toad-frogs*, since they come neither under the designation of toads or frogs.
> *R. Lydekker*, New Nat. Hist., V. 283.

toad-mug (tōd'mug), *n.* A cup in old Staffordshire ware on the bottom of which was modeled a toad, usually in red clay with white slip eyes. This was uncovered as the drinker neared the bottom. *R. L. Hobson*, in Burlington Mag., II. 67.

tob (tōb), *n.* [Ar. *tōb*, a loose gown, a roll of such material.] A loose gown (or a roll of cotton for the purpose) worn by native women in Egypt under the habara or cloak.

Tob. An abbreviation of *Tobit*, an apocryphal book of the Old Testament.

tobacco, *n.* **2.** There are five leading types of tobacco grown in the United States, namely: seed-leaf or cigar, white Burley, heavy shipping or export yellow, and perique. See the phrases below and ★*perique*. In growing tobacco ★topping, suckering (see *sucker*, *v.t.*, 1), and ★worming are regularly practised, and priming (see ★*prime*, *v. t.*, 3 (*a*)) sometimes. In harvesting yellow tobacco, the leaves are often stripped from the standing stalk; in general the leafy stalks are cut. These are either scaffolded (see ★*scaffolding*, 5) or immediately housed. In the barn they are hung for curing, usually upon laths or other strips of wood, to which they are attached by pegging, spearing, or splitting (see these terms) or by means of twine or wire. The strips rest upon tier-poles. Curing is mainly either air- or pole-curing (see ★*pole-cure*, *v.*), flue-curing (see ★*flue-cure*, *v.*), or open-fire curing (see ★*fire-cure*, *v.*). For another method see ★*perique*. Curing is followed by stripping (see ★*stripping*, 10) and tying into hands (see *hand*, 13 (*c*)). These are bulked (see ★*bulk*^{1}, *v. t.*, 2) either for sweating in bulk or to be packed for sweating by other methods (see ★*sweating*, 5). Much export tobacco undergoes stemming (see *stemmed* ★*tobacco*). For cigar and plug tobaccos the principal grades are wrapper (the best) and filler (see these terms). For other grading terms see *export* ★*tobacco*, *white Burley* ★*tobacco*, and *yellow* ★*tobacco*.—**Air-cured tobacco.** Same as *pole-cured* ★*tobacco*.—**Bright tobacco,** any leaf of a conspicuously light color, most often the lemon-yellow of North Carolina, etc.—**Broad-leaf tobacco,** a cigar tobacco of Connecticut origin, there grown only in one small area (hence called *East Hartford broad-leaf*), and thence introduced into New Hampshire, Vermont, and several Western States. The leaves are very broad, sweet-tasting, thin, elastic, silky, and small-veined, and are used mainly for cigar binders and wrappers. Generally known to the trade as *seed-leaf*.—**Colonial tobacco,** in Australia, tobacco manufactured in the colonies, whether from imported American leaf or from home-grown leaf of the ordinary tobacco.—**Connecticut tobacco,** tobacco of the seed-leaf type grown in Connecticut or disseminated thence. See *broad-leaf* ★*tobacco*, *Havana* ★*tobacco*, *Cuban* ★*tobacco*.—**Cuban tobacco,** a type of cigar tobacco valued for flavor, aroma, smooth taste, and other qualities. In Cuba the best and the largest amount is produced in the low districts (Vuelta Abajo) near Havana, but large amounts are also grown elsewhere. In the United States Cuban tobacco is grown in shade (Connecticut valley) for cigar wrappers and unshaded (Florida, Texas, Ohio, Georgia) for fillers.—**Dappled tobacco.** See *spangled* ★*tobacco*.—**Export tobacco,** in the United States, any tobacco sold abroad; a shipping tobacco or "shipper"; specifically, a class of tobaccos largely preferred by foreign purchasers, spoken of as *dark*, *heavy shipping*, or *export tobacco*, and characterized by a dark-colored, heavy-bodied, gummy leaf of high nicotine content (sometimes even 6 per cent.). These tobaccos are mainly cured over open wood fires. They are grown in northern and western Tennessee, Kentucky (outside of the white Burley district), and central Virginia. The leaves are assorted into five principal grades, 'selections' being the highest and 'lugs' the lowest. Other tobaccos exported are the Maryland 'smoking,' in considerable part, one third to one half the 'yellow,' a smaller amount of the 'white Burley,' and part of the 'perique.' The American surplus goes widely over the world, the bulk, however, to Europe, Great Britain taking far the largest amount, followed by Germany, France, Italy, etc. See ★*régie contract system*. For examples of English shippers see *bird's-eye*, *n.*, 2, *navy* ★*plug*, *Scotch elder* ★*tobacco*, *spinning-leaf* ★*tobacco*. See also *olive-green* ★*tobacco*, *shag*^{1}, 4, and ★*saucer*^{2}.—**Flake tobacco,** cake (plug) tobacco cut into slices one twentieth to one fourteenth of an inch thick. [Eng.]—**Florida tobacco.** (*a*) Before the Civil War, a type grown exclusively in that State yielding beautifully spotted wrappers, now known as 'old Florida': no longer produced. (*b*) For types now raised in Florida, see *Cuban* ★*tobacco*, *Sumatra* ★*tobacco*.—**Granulated tobacco,** leaf first cut into flakes, then reduced by a special machine to grains for pipe-smoking.—**Havana tobacco,** nearly the same as Cuban ★tobacco, Havana being the chief emporium and seat of manufacture. *Connecticut Havana*, or *Havana seed*, is a variety thought to be derived by selection from a cross of Connecticut broad-leaf and Cuban stock, grown in the Connecticut valley and somewhat westward, especially in Wisconsin. The leaves are smaller than those of the broad-leaf, thin, and of a fine texture and delicate flavor, and are used for cigar wrappers and binders, the top leaves for fillers.—**Indian tobacco.** (*b*) The wild tobacco, *Nicotiana rustica*. (*c*) The mouse-ear everlasting, *Antennaria plantaginifolia*.—**Kite-foot tobacco,** a variety with a broad, short leaf grown in two counties in Indiana, used for making common cigars.—**Little Dutch tobacco,** a variety from German seed grown chiefly in Ohio for cigar fillers, with an aroma resembling that of the Cuban yara. See ★*yara*.—**Mahogany tobacco,** a subtype with a mottled yellow and brown leaf grading into the proper yellow tobacco. The best qualities are used for wrappers of plug tobacco ('mahogany wrappers'). The term, however, is also applied to other tobaccos of a reddish color.—**Maryland tobacco,** in trade, chiefly a light smoking tobacco grown in Maryland and somewhat in Pennsylvania and Virginia. The yield is partly manufactured domestically, partly exported. See also *spangled* ★*tobacco*.—**Native tobacco.** (*a*) In Australia generally, a true tobacco, *Nicotiana suaveolens*, readily eaten as a forage by stock and formerly manufactured. (*b*) In Queensland, the name is also applied to the pituri, *Duboisia Hopwoodii*. See ★*pituri*. (*c*) In Tasmania, a shrub of the aster family, *Cassinia spectabilis*.—**Olive-green tobacco,** a subtype of heavy export tobacco required by the English trade, not forming a separate commercial class. The leaves are harvested less ripe than for other sorts.—**Oregon tobacco,** *Valeriana edulis*. See *valerian*^{1}, 1.—**Piebald tobacco,** any tobacco with a spotted leaf; somewhat specifically, the Virginia 'dappled' export tobacco. See *spangled* ★*tobacco*.—**Pole-cure tobacco.** See ★*pole-cure*, *v.*—**Red Burley tobacco.** (*a*) A variety classed with the dark export tobaccos. See *white Burley* ★*tobacco*. (*b*) A commercial subdivision of the white Burley (see below) consisting of the darker, heavier leaves.—**Returns of tobacco.** (*a*) In the British excise law. See the extract.

> *Returns of tobacco* . . . may fairly be said to consist of the dust, "smalls" (fragments), siftings, scraps, waste pieces, and rejected portions arising in the manufacture of tobacco and snuff, and include the fragments and refuse portions of unmanufactured tobacco.
> *A. E. Tanner*, Excise Tobacco Laws, p. 135.

(*b*) Sometimes a brand of tobacco (see *return*^{1}, *n.*, 5). One such is known as *bird's-eye returns*. [Eng.]—**Root-rot of tobacco.** See ★*root-rot*.—**Scotch elder tobacco,** a type of tobacco very popular in England and Scotland, having a large capacity for absorbing water, hence advantageous to dealers in view of the import duty. It forms a grade of American shipping tobacco.—**Seed-leaf tobacco,** in the United States, a class of tobaccos with broad leaves, suited by this and other qualities for making cigars. For the included types see *broad-leaf* ★*tobacco*, *Connecticut Havana* (under *Havana* ★*tobacco*), and *Sumatra* ★*tobacco*.—**Shipping tobacco.** See *export* ★*tobacco*.—**Shoestring tobacco,** a narrow-leaved variety of heavy tobacco much grown for shipping.—**Spangled tobacco,** piebald or spotted tobacco: chiefly a form of the Virginia export, better known locally as 'dappled,' and a related form grown in western Maryland, West Virginia, and Ohio.—**Spinning leaf tobacco,** leaf or strips suited for spinning into roll tobacco; a 'spinner.' Spinning tobaccos are exported to Great Britain and Germany. See *roll tobacco* (under *tobacco*).—**Stemmed tobacco,** a leaf from which the midrib has been removed, leaving the two halves (sometimes called *wings*) separate. Tobacco exported to England (except for bird's-eye: see *bird's-eye*, *n.*, 2) is sent largely in this state, and known as *strips*. See ★*strip*, 2, *n.*, 6, and *strip-leaf*.—**Sumatra tobacco,** a seed-leaf variety esteemed solely for the production of high-grade cigar wrappers: in the United States (chiefly in western Florida) grown in the shade of slats or cloth. See quotation under *wrapper*, 1 (*b*).—**Sun-cured tobacco,** a commercial name of certain Virginia tobaccos formerly left on the scaffold from four to seven days before removal to the barn: at present air-cured, by the ordinary method.—**Tobacco extract,** a material of pasty consistence made by dissolving out the soluble constituents of refuse tobacco and tobacco-stems with water and evaporating the liquid. It is extensively manufactured for use as an agricultural insecticide, especially as an application to the skin of sheep (a so-called 'sheep-dip').—**Tobacco fermentation, leaf-miner.** See ★*fermentation*, ★*leaf-miner*.—**Tobacco-seed oil.** See ★*oil*.—**Tobacco-stalk flour,** tobacco stalks or stems ground to be changed by fermentation into snuff.—**Tobacco stems** or **stalks,** in the trade, the midribs of the leaves (not the stem or stalk of the plant) discarded in cutting the leaves for wrappers and in *stemming* (see *stemmed* ★*tobacco*). These have been utilized abroad for making cheap snuff and chewing-tobacco and serve also as a protection against vermin and as a fertilizer.—**Tobacco white fly.** See ★*fly*^{2}.—**To drink tobacco.** See *drink*, *v. t.*, 5.—**White Burley tobacco,** a light-colored variety which originated from a sport of the red Burley in Brown county, Ohio, in 1864, now grown extensively in southern Ohio and north-central Kentucky, and elsewhere, and used more largely than any other in domestic manufacture. It is highly absorbent of 'sauces.' Its nicotine content is at most about 3 per cent. The leaves are thus classified: lowest two, 'fliers'; next two, 'common lugs' ('trash' apparently the same); these followed by 'good lugs,' 'bright leaves,' 'long red,' 'short red,' and 'top leaves.' The fliers are used for pipe tobacco, the heavy-bodied top leaves for plug and twist fillers, and the best leaves for cigarettes, plug and twist wrappers, and cut tobacco. See *red Burley* ★*tobacco* (*a*) and (*b*).—**Wild tobacco.** (*c*) A small-flowered uncultivated tobacco, *Nicotiana attenuata*, common as a weed of cultivated and waste land in California and Arizona.—**Yellow tobacco,** a type of tobaccos derived from the native Maryland and Virginia plant, characterized by a leaf grading from bright lemon-yellow to mahogany. This tobacco was first produced as a crop in Caswell county, North Carolina, in 1852, but is now extensively grown in the Piedmont region of North and South Carolina, in southern Virginia, and elsewhere. The product (flue-cured) is made domestically into plug and smoking tobacco and cigarettes, and is also largely exported. Yellow tobaccos are graded as wrappers (see *plug* ★*wrapper*), fillers, smokers, and cutters, these grades being also much subdivided. The lighter shades are spoken of as *bright yellow tobacco*. Cf. *mahogany* ★*tobacco*.—**Zimmer Spanish tobacco,** a variety thought to be a hybrid of broad-leaf and Cuban, considerably grown, especially in the Miami valley, Ohio, for use as a cigar filler.

tobacco-barn (tọ̄-bak'ō-bärn), *n.* A structure for storing tobacco during the curing process. The log buildings (chinked or unchinked) of earlier days have largely given way to frame buildings carefully adapted to their purpose. The plants or leaves are hung in tiers, of which there are several in a vertical rank, the ranks being separated by spaces (in the South called 'rooms'). For air-curing, means of regulating the access of air are provided, and for flue-curing (see ★*flue-cure*, *v.*), the requisite appliances. Also *tobacco-shed* or *-house* and *curing-house*. [U. S.]

tobacco-bug (tọ̄-bak'ō-bug), *n.* A small American capsid bug, *Dicyphus minimus*, which damages the leaves of tobacco in Florida. Also called *suck-fly*.

tobacco-clipper (tọ̄-bak'ō-klip″ėr), *n.* An implement for cutting the stems of standing tobacco-plants. It consists of a pair of shears having one serrated edge and operated by means of long wooden handles set at an angle of 45°.

tobacco-cricket (tọ̄-bak'ō-krik″et), *n.* The snowy tree-cricket, *Œcanthus niveus*. See *tree-cricket*.

tobacco-flea (tọ̄-bak'ọ̄-flē), *n.* The tobacco flea-beetle, *Haltica ignita*.

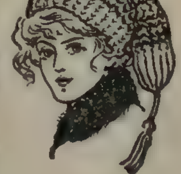
tobacco-prize (tọ̄-bak'ō-prīz), *n.* An arrangement of levers used to press tobacco in hogsheads for shipping. A screw also is used for this purpose.

tobacco-shears (tọ̄-bak'ō-shērz), *n. pl.* A tool for cutting ripe tobacco-plants, consisting of a pair of short shears, having long handles that enable the operator to cut the plant close to the soil.

tobacco-thrips (tọ̄-bak'ō-thrips), *n.* A thysanopterous insect, *Thrips tabaci*, possibly of European origin. It damages tobacco in southern Europe, and in the United States is found commonly on onions and many low-growing plants, as well as in the flowers of the orange, lemon, and other fruit-trees, especially in the South.

Tobin bronze. See ★*bronze*.

toboggan-cap (tọ̄-bog'a̤n-kap), *n.* A knit woolen cap, made in a long, bag-like form, the top of which falls down over the head: now commonly called a *toque*.



Toboggan-cap.

tobogganing, *n.*—**Water-tobogganing,** the sport of sliding on a toboggan down a smooth decline leading into the water, over which the toboggan glides.

> Within the last few years the sport known as "*water-tobogganing*," the invention of which is said to be due to the ingenuity of Paul Boynton, the swimmer, has become quite a summer fad in Boston and other cities, of the East especially.
> *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 262.

toby, *n.* **2.** A kind of cheap cigar. [U. S.]

tocalote (tō-kä-lō'tā), *n.* [A corruption of Mex. *chicalote*, < Nahuatl *chicalotl*, a spiny plant of the genus *Argemone*.] Same as *Napa* ★*thistle*.

toccato (tok-kä'tọ̄), *n.* [It. See *tucket*^{1}.] In old music for the trumpet, a bass part made up of detached or reiterated tones like those of a drum, or the performance of such a part.

tochka (tōch'kä), *n.* [Russ. *tochka*, a point.] A Russian measure of length, equal to the hundredth part of an inch.

tocogenetic (tō″kọ̄-jẹ̄-net'ik), *a.* [Gr. τόκος, breed, offspring, + γένεσις, generation.] Pertaining to the evolutionary process in which the higher terms are generated by the lower through creative synthesis, and are thus affiliated upon them. *L. F. Ward*, Pure Sociol., p. 96.

tocogony (tọ̄-kog'ọ̄-ni), *n.* [Gr. τόκος, offspring, + -γονια, < -γονος, -born.] Generation by sexual reproduction. *Encyc. Dict.* [Rare.]

tocological (tō-kọ̄-loj'i-ka̤l), *a.* [*tocolog*(*y*) + *-ic* + *-al*^{1}.] Same as *obstetrical*. *L. F. Ward*, Pure Sociol., p. 70.

tocologist (tọ̄-kol'ọ̄-jist), *n.* [*tocolog*(*y*) + *-ist*.] An obstetrician. *Amer. Anthropologist*, Oct.–Dec., 1902, p. 739.

tocomania (tō-kọ-mā′ni-ạ̈), *n.* [Gr. τόκος, bringing forth, + μανία, madness.] Puerperal insanity.

tocornalite (tọ-kôr′nạ-līt), *n.* [Named after A. *Tocornal*, of Santiago University.] An iodide of silver and mercury which occurs in massive granular forms of pale-yellow color: found in Chañarcillo, Chile.

tod-boat (tod′bōt), *n.* A Dutch fishing-boat.

toddy-cat (tod′i-kat), *n.* The palm-civet, *Paradoxurus musanga*, so named from its fondness for palm juice, or toddy, which is gathered by the natives for the manufacture of arrack.

toe, *n.* **8.** In *mach.*: (*c*) A form of cam by which the valve-rods are lifted in the Stevens valve-gear for vertical river-boat engines. (*d*) In a car-wheel, the outer edge of the flange.—**9.** The pointed end of the foot of an organ-pipe.—**10.** In *golf*, the nose of a club. See ★*nose*¹, 5.—**Morton's painful toe**, a neuralgic state of the nerves of the plantar surface of the toes, especially the fourth.

toe, *v. t.* **3.** In *golf*, to strike (a ball) off the toe of the club.—**4.** To drive (nails or heavy steel pins) obliquely through a piece or element of a frame to secure it to another placed at an angle with it. The nails, entering both pieces, fasten them together against light stresses laterally, and the necessity for tenon and mortise is avoided.

toe-board (tō′bōrd), *n.* A curved piece of board which marks the limits within which the contestants must stand when putting the shot or throwing the weight, hammer, or discus. Also *stop-board*.

toe-crack (tō′krak), *n.* In *vet. surg.*, a crack or fissure in the anterior part or toe of a horse's hoof: similar to quarter-crack, except for its position. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 405.

toe-nail (tō′nāl), *v. t.* Same as ★*toe*¹, *v. t.*, 4.

> The braces are *toe-nailed* in place to prevent the possibility of their becoming loosened and dropping down.
> *Yearbook U. S. Dept. Agr.*, 1900, p. 443.

toe-narrow (tō′nar″ō), *a.* Noting an abnormal standing position of the horse in which the phalangeal bones slant downward and inward from the fetlock, causing the fore feet to stand too close together. The foot-axis from in front is broken outward at the fetlock-joint. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 560.

toe-out (tō′out), *n.* An outward bend in any line of a diagram; a sharp change in the curvature of a line, making it bend outward. [Colloq.]

toe-ragger (tō′rag″ėr), *n.* [Of Maori origin.] In Australia, especially in the bush, a good-for-nothing, worthless, contemptible fellow. [Austral Eng.]

> The bushie's favorite term of opprobrium, a '*toe-ragger*, is also probably from the Maori.
> *Truth* (Sydney), Jan. 12, 1896, quoted in E. E. Morris, [Austral English.

toe-ring, *n.* **2.** The heavy ring or ferule on the end of a cant-hook. It has a lip on the lower edge to prevent slipping when a log is grasped.

toeroe (tŏ-rŏ′), *n.* [A D. spelling, also *toeroe-toeroe* and *troetroe*, of a native name in Guiana.] A common name of *Cynoscion acoupa*, a sciænoid fish found on the Atlantic coast of South America.

toe-step (tō′step), *n.* Same as *foot-step*. *Lockwood*, Dict. Mech. Engin. Terms.

toe-wide (tō′wīd), *a.* Noting an abnormal standing position of the horse in which the phalangeal bones slant downward and outward from the fetlock, causing the fore feet to stand too far apart. The foot-axis from in front is broken inward at the fetlock-joint. *U. S. Dept. Agr.*, Rep. on Diseases of the Horse, 1903, p. 560.

Toga candida, the white toga worn by candidates for public office in Rome.

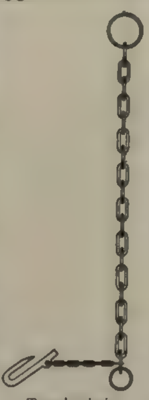
togetherness (tọ̈-geᴛʜ′ėr-nes), *n.* The state of being together; the state of being reciprocally related; juxtaposition.

> The unique *togetherness* that combines different qualities in a single presentation or simultaneous state of mind should be clearly grasped.
> *H. Nichols*, Cosmology, I. § 237.

toggle, *n.* **3.** A bar spanning (within) an opening in a tank or other structure, to which a lifting chain or sling can be secured in order to lift the structure. Also *toggle-pin*.

toggle, *v. t.* **2.** To fasten (skins) together with wooden pins. *Modern Amer. Tanning*, p. 112.—**3.** To lift or attach to a hoisting chain by means of a cross-bar inserted in a hole or angle. The bar or toggle is inserted in the hole by passing it in parallel to the lifting chain. When in place it is turned at right angles and spans the hole or opening, and receives the stress of lifting. The toggle-bar must be longer than the diameter of the hole, or the space across the span of the opening used.

toggle-chain (tog′l-chān), *n.* A short chain, with a ring at one end and a toggle-hook and ring at the other, fastened to the sway-bar or bunk of a logging-sled and used to regulate the length of a binding-chain. Also called *bunk-chain*.



Toggle-chain.

toggle-hook (tog′l-hůk), *n.* A grab-hook with a long shank, used on a toggle-chain.

tohunga (tō′höng-ạ̈), *n.* [Maori.] A wise man; a native priest or medicine-man. [New Zealand.] *Nature*, May 14, 1903, p. 36.

toil², *n.*—**In the toils**, ensnared; captured.

toilet, *n.* **8.** A room designed as a dressing-room, especially one provided with facilities for bathing; in a restricted sense, a bath-room or water-closet.

toilet-paper (toi′let-pā″pėr), *n.* A manila tissue-paper, readily soluble in water, for use in toilet-rooms.

toilet-room (toi′let-röm), *n.* Same as ★*toilet*, 8.

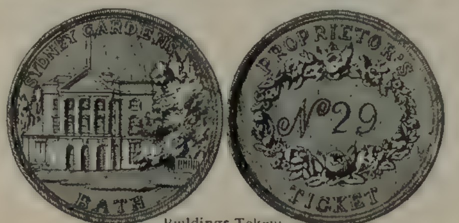
toilsum, *a.* An amended spelling of *toilsome*.

toke (tōk), *n.* [Origin obscure.] A piece or a bit, as of tobacco or bread. [Eng. slang.]

> The aged gentleman snuffed himself with tremulous fingers that spilled half, and offered Matt the box. The young man took a pinch for exhilaration.
>
> A strayed sparrow hopped dolefully amid the grains of snuff on the floating platform in futile quest of seeds.
>
> "It would be 'appier stuffed," the aged gentleman declared. "I mean with tow, not *toke*." And he laughed wheezingly. *I. Zangwill*, The Master, ii. 9.

tokelau (tō′ke-lou), *n.* A parasitic fungous skin disease occurring in the South Sea islands, formerly attributed to *Trichophyton*, but caused, according to Wehmer, by *Aspergillus Tokelau*.

token, *n.*—**Buildings tokens**, the name given to a series of tokens (private or traders' coinage) struck in the eighteenth century for local trade in several English cities, which contain, on the reverse, excellent illustrations of notable local monuments. The earliest series was made by Kempson of Birmingham to illustrate that city. The most important series illustrates the architecture of Bath and was probably made there. These tokens were equivalent in value to the halfpenny, and were beautifully executed. *M. A. Green*, Eighteenth Century Architecture of Bath, p. 231.—**Granby token, Higley token**, a copper token struck by John Higley of Granby, Connecticut (1737–39).—**Hard-times tokens**, private tokens struck in the United States and circulated as money, in lieu of copper cents, during the periods of stringency of a circulating medium prior to the Civil War.

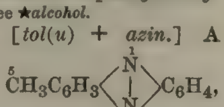


Buildings Tokens.
(From M. A. Green's "Architecture of Bath.")

tokocyte (tō′kọ̄-sīt), *n.* [Gr. τόκος, birth, + κύτος, hollow (cell).] A general term for the reproductive cells of sponges. They may be either gemmule cells or sexual cells. Also *tococyte*. Compare ★*archæocyte*.

tolane (tō′lān), *n.* [*tol*(*u*) + *-ane*.] A colorless compound, $C_6H_5.C\vdots CC_6H_5$, prepared by the action of alcoholic potassium hydroxid on stilbene chlorid or bromide. It crystallizes in large plates or rods, melts at 60° C., and may be distilled. Also called *diphenyl-acetylene*.—**Tolane alcohol.** See ★*alcohol*.

tolazin (tōl-az′in), *n.* [*tol*(*u*) + *azin*.] A colorless compound,



$$\overset{5}{C}H_3C_6H_3\left\langle\begin{matrix}\overset{1}{N}\\|\\\underset{2}{N}\end{matrix}\right\rangle C_6H_4,$$

prepared by the action of 3,4-toluylenediamine on pyrocatechol. It crystallizes in needles, melts at 117° C., boils, with some decomposition, at about 350° C., and may be sublimed. Also called 2-*methylphenazin* and *toluphenazin*.

tolderia (tōl-dā-rē′ä), *n.* [S. Amer. Sp., < *toldo*. See ★*toldo*.] A village or settlement of the Indians formed of toldos.

> About an hour later Manuel arrived, accompanied by another chief, and said Cacique Sumaye had his *tolderia* about 2 miles further down the river.
> *Geog. Jour.* (R. G. S.), XV. 606.

toldo (tōl′dō), *n.* [Sp. Pg. *toldo*, an awning, a shelter.] A skin tent or shelter used by the Indians of the pampas region of South America.

> Saw various signs of Indians and several abandoned "*toldos*" in the forenoon.
> *Geog. Jour.* (R. G. S.), XV. 606.

tolene (tō′lēn), *n.* [*tol*(*u*) + *-ene*.] A colorless liquid hydrocarbon, $C_{10}H_{16}$, obtained by the distillation of tolu balsam with water. It boils at 170° C. and readily absorbs oxygen from the air.

tolerance, *n.* **5.** The capacity of a tree to endure shade.—**6.** In *mech.*, an allowable amount of variation in the dimensions of a machine or part. A tolerance of .00025 of an inch is allowed above or below the exact dimension in fine machine parts.

tolerism (tol′ėr-izm), *n.* [*toler*(*ation*) + *-ism*.] Toleration; universal toleration. [Rare.]

> Thou wouldst be sadly out of place in these days of cold philosophic latitudinarian doctrine, universal *tolerism*, and half-concealed rebellion. *Borrow*, Lavengro, iii.

tolidine (tol′i-din), *n.* [*tol*(*u*) + *-id* + *-ine*².] One of various isomeric compounds, of which the ortho derivative, $H_2\overset{4}{N}\overset{1}{C}_6H_3(\overset{3}{C}H_3).\overset{1}{C}_6H_3$-$(\overset{3}{C}H_3)\overset{4}{N}H_2$, is the most important. It is prepared by the reduction of the corresponding dinitroditolyl, crystallizes in lustrous laminæ, melts at 128° C., and readily yields a number of valuable azo dyes which are used for cotton goods. The compound bears the same relation to toluene that benzidine does to benzene.

tolidol (tol′i-dol), *n.* A trade-name of a photographic developer of unpublished composition.

tolipyrin (tol-i-pī′rin), *n.* [*tol*(*u*) + (*ant*)*i-pyrin*.] A trade-name of dimethyl-tolyl-pyrazolone, $C_3H(CH_3)(C_6H_4CH_3)N_2O$, a colorless crystalline compound prepared like antipyrin, which it resembles in general chemical and physiological properties: used in medicine. Also called *methylantipyrin*.

tollage, *n.* **2.** A sum of money paid for the temporary use of land as a place in which to buy and sell. See *toll*¹, 1, *n.* *N. and Q.*, 10th ser., I. 126–232.

toll-board (tōl′bōrd), *n.* A switchboard at which connections are made with the toll-lines entering a telephone exchange.

> A *tollboard* of ten stations is also in service, demonstrating the manner in which toll connections are given to users of automatic telephones.
> *Elect. World and Engin.*, June 25, 1904, p. 1213.

toll-gin (tōl′jin), *n.* A public cotton-gin, established for the convenience of small farmers who are unable to bear the expense of a private gin.

> With the subdivision of farms an almost new industry was developed in the way of *toll gins*. The old plantations had each its own ginhouse, but the small farms could not bear the expense of such a plant, and public gins became a necessity.
> *U. S. Dept. Agr.*, The Cotton Plant, Bulletin, 1896, p. [357.

toll-line (tōl′līn), *n.* In *telephony*, a long-distance or suburban line for the use of which toll is charged.

toll-room (tōl′röm), *n.* In a telephone exchange, a room in which long-distance and toll-line connections are made.

> Adjoining the switchroom is the long-distance or *toll-room*, where all toll line connections are made.
> *Elect. World and Engin.*, July 16, 1904, p. 90.

Tolstoian (tol′stoi-ạn), *a.* [*Tolstoi* (see def.) + *-an*.] Of or pertaining to the eminent Russian writer Count Lyeff (Leo) Nikolaievich Tolstoi (1828 O. S.–).

> He has an almost *Tolstoian* eye and memory for details, and will tell you vividly enough how any one of his contemporaries of fifty years ago looked and spoke.
> *Athenæum*, Jan. 6, 1906, p. 22.

toluide (tol′ụ̄-id), *n.* [*tolu* + *-ide*¹.] A class-name applied, in organic chemistry, to compounds containing the univalent group $-CONHC_6H_4.CH_3$. They are prepared by the removal of the elements of water from a salt of any of the three toluidines with an organic acid, and correspond exactly to the anilides, which they closely resemble in general properties.

toluidine (tọ-lū'i-din), *n.* [*toluid*(*e*) + *-ine*².] A name of three compounds, $CH_3C_6H_4NH_2$, formed by the reduction of the corresponding nitrotoluenes. They are all colorless, and are used in the regeneration of vulcanized rubber and in the preparation of certain so-called aniline dyes. The ortho- (1,2-) and the meta- (1,3-) derivatives are liquids, boiling at 197° C. and 199° C. respectively. The para- (1,4-) derivative crystallizes in plates, melts at 45° C., and boils at 198° C.

Toluifera (tol-ū-if'ẹ-rä), *n.* [NL. (established by Linnæus, 1753), < *tolu* + L. *ferre*, to bear.] A genus of small trees or shrubs belonging to the family *Flacourtiaceæ*. See *Myroxylon*.

toluric (tọ-lū'rik), *a.* [*tolu* + *-r-* + *-ic*.] Noting two acids, colorless crystalline compounds, $CH_3C_6H_4CONHCH_2COOH$. They are found in the urine after the administration of the corresponding toluic acids, and are prepared by the action of sodium hydroxid and glycin on the respective toluic chlorids. The ortho- (1,2-) derivative is crystalline and melts at 162.5° C. The meta- (1,3-) derivative is deposited in thin plates melting at 139° C.

tolusaffranine (tol-ụ-saf'rạ-nin), *n.* [*tolu* + *saffranine*.] A dye, $C_{21}H_{21}N_4Cl$, prepared by oxidizing a mixture of paratoluylene-diamine and toluidine. See ★*saffranine*.

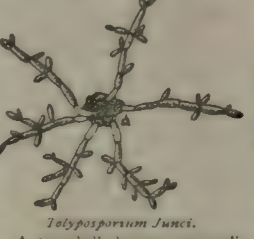
toluylene (tọ-lū'i-lēn), *n.* [*tolu* + *-yl* + *-ene*.] A colorless compound, $C_6H_5CH{:}CHC_6H_5$, prepared by the action of lead oxid on toluene vapor. It crystallizes in large monoclinic plates, melts at 124° C., and boils at 306–307° C. Also called *stilbene, symmetrical diphenylethylene*, and *tolylene*.—**Toluylene brown G, R.** See ★*brown*.—**Toluylene red.** Same as *neutral* ★*red*.

toluylene-diamine (tọ-lū"i-lēn-dī-am'in), *n.* A name of six possible compounds, $CH_3C_6H_3(NH_2)_2$, only two of which ($CH_3{:}NH_2{:}NH_2 = 1,2,4$ or $1,2,5$) are of much importance. They are used in place of the corresponding phenylene diamines in the manufacture of certain dyes and are formed by the reduction of the corresponding nitro-compounds. The first or α-derivative crystallizes in needles, melts at 99° C., and boils at 283–285° C. The second or γ-derivative crystallizes in colorless rosettes consisting of plates, melts at 65° C., and boils at about 280° C.

tolyl (tol'il), *n.* [*tol*(*u*) + *-yl*.] A name given, in organic chemistry, to the univalent radical $-C_6H_4CH_3$, which bears the same relation to toluene that phenyl does to benzene. Three classes of derivatives are possible, according to the relative position of the methyl group and the one combining with the tolyl radical. The resulting compounds are termed *ortho-* (1,2-), *meta-* (1,3-), or *para-* (1,4-), respectively. The word is also used, with the same meaning, as a combining-form.

tolylene (tol'i-lēn), *n.* [*tolyl* + *-ene*.] In *organic chem.*, the bivalent radical $CH_3C_6H_3$. It bears the same relation to toluene that phenylene does to benzene.

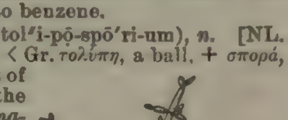
Tolyposporium (tol"i-pọ-spō'ri-um), *n.* [NL. (Woronin, 1882), < Gr. τολύπη, a ball, + σπορά, spore.] A genus of smut-fungi of the family *Ustilaginaceæ*, having the spores united in subspherical masses. The germinating spores produce promycelia bearing both lateral and terminal sporidia. Nine species are known, occurring as parasites on various glumaceous plants. *T. Junci* attacks the flowers and culms of *Juncus bufonius*, producing gall-like outgrowths. *T. bullatum* is found on the ovaries of the barn-yard grass, *Echimochloa Crus-galli*, in North America.



Tolyposporium Junci.

A spore-ball showing promycelia bearing sporidia: highly magnified.

tolysal (tol'i-sal), *n.* [*toly*(*l*) + *sal*(*icylate*).] A trade-name of 1-paratolyl-2,3-dimethyl-pyrazolone salicylate,



$$\mathrm{CO}\left\langle\begin{matrix}\mathrm{CH{:}C(CH_3)}-\\ \overset{4}{\mathrm{N}}(\mathrm{C_6H_4}(\overset{1}{\mathrm{C}}\mathrm{H_3})\end{matrix}\right\rangle\mathrm{NCH_3}.\text{-}\mathrm{C_6H_4}(\overset{1}{\mathrm{O}}\mathrm{H})\overset{2}{\mathrm{C}}\mathrm{OOH}.$$

It is an almost colorless crystalline compound, melts at 101–102° C., is closely related to antipyrin, and is used in medicine as an antineuralgic, antirheumatic, and antipyretic.

tom¹, *n.*—**Mad tom,** a catfish, *Schilbeodes insignis*, found in fresh water from Pennsylvania to South Carolina. The name is also applied to other species of the same genus.—**Tom of Lincoln,** an alloy composed of 22 per cent. of tin and 78 per cent. of copper. It is named after the big bell ('Tom of Lincoln') in Lincoln Cathedral.—**Tough tom,** in *ceram.*, a refractory sandy clay used in England for making molds, crucibles, and glass-pots. Also called *Stourbridge clay* and *clunch* (which see).

tom. An abbreviation of *tome* (volume).

tomahawk, *v. t.* **2.** Specifically, to cut sheep when shearing them. *E. E. Morris.* [Austral English.]

tomato, *n.*—**Black rot of tomato.** See *black* ★*rot*.—**Gooseberry-tomato.** Same as *cape gooseberry* (which see, under *gooseberry*).

tomato-blight (tọ-mä'tō-blīt), *n.* **1.** See ★*blight*.—**2.** Tomato-scab. See ★*scab*.—**3.** Potato late blight. See ★*blight*.

tomato-rot (tọ-mä'tō-rot), *n.* See ★*rot*.

tomato-scab (tọ-mä'tō-skab), *n.* See ★*scab*.

tomb, *n.*—**Beehive tomb.** See ★*beehive*.

tombac, *n.*—**White tombac,** a name for any white brass of the copper-zinc series of alloys, to which the white color is given by adding antimony or arsenic.

tombolo (tọm'bọ-lō), *n.* [It. *tombolo*, a cushion.] A sand-reef by which an island is connected with the mainland. See the extract. [Rare.]

> The writer [F. P. Gulliver] has proposed to call all such island-tying bars *tombolos*, taking the name from the characteristic forms uniting Monte Argentario with the coast of Italy. *Geog. Jour.* (R. G. S.), IX. 540.

Tom Collins (tom kol'inz). A drink made of gin and club-soda and lemon or lime-juice, and sweetened.

Tomes's fibers or **fibrils.** See ★*fiber*¹.

tomin¹, *n.* **2.** A silver coin of Bolivia, equivalent to one fifth of a boliviano; also, a coin of Paraguay, equivalent to two reales.

tomin² (tō'min), *n.* [Ar. *tāmin*, the eighth, *tamān*, eight.] A measure of length used in Morocco, equal to an eighth of a derah or drah, or to 2.8 inches.

tommy, *n.* **8.** [*cap.*] Short for *Tommy Atkins*,' a nickname for the British private soldier.

> The *Tommies* enjoyed the fun, and — Oh, yes, there was one *Tommy* who was the bard of the detachment.
> *R. Kipling*, Conference of the Powers, in Many Inventions, p. 36.

tommy-ax (tom'i-aks), *n.* A popular corruption of *tomahawk*. See *tom-ax*. [Austral English.]

tommy-store (tom'i-stōr), *n.* Same as *tommy-shop*.

tomomania (tō-mọ-mā'ni-ạ̈), *n.* [Gr. τομή, a cutting, a surgical operation, + μανία, madness.] **1.** An immoderate tendency to perform surgical operations.—**2.** A morbid desire to be operated upon.

tomotocia (tō-mọ-tō'si-ạ̈), *n.* [NL., < Gr. τομή, a cutting, + τόκος, birth, offspring.] Extraction of the fetus by Cæsarean section.

tompkin (tomp'kin), *n.* A corruption of *tompion*¹ or *tampion*.

tompong (tom'pong), *n.* [E. Ind. (Malayan?).] A tin coin of Selangor, 8 of which equal a dollar.

tom-tate (tom-tāt'), *n.* [Also *Tom Tate*; origin obscure.] A common name of a fish of the family *Hæmulidæ, Bathystoma rimator*, found from Cape Hatteras to Trinidad. *Jordan and Evermann*, Fishes of N. and M. America, p. 1308.

tom-toe (tom'tō), *n.* [*Tom* (abbreviation of *Thomas*), in the sense of big.] The great toe. [Colloq.]

tom-tom, *n.* **3.** A circular dye-vat constructed in such a way that a series of upright mallets may be made to pound upon the material placed within it and thus work the dye-liquor well into the fiber. Largely used in hosiery-dyeing, particularly in the application of aniline black.

ton¹, *n.*—**Cornish mining ton,** a weight equal to 2,352 pounds avoirdupois, or 21 hundredweight of 112 pounds each.—**French ton,** the metric ton, or millier, equal to 2,204.6 pounds avoirdupois. See *metric system*.—**Gross ton,** the ton of 2,240 avoirdupois pounds. Often called *long ton*.—**Metric ton,** a measure of weight equal to 1,000 kilograms, or 2,204.6 pounds.—**Net ton,** the short ton of 2,000 pounds, as distinguished from the gross ton of 2,240 pounds. *C. Hering*, Conversion Tables, p. 58.—**Shipping ton,** a unit of volume used in transportation by sea. A shipping ton in the United States and Great Britain is 40 cubic feet or 1.1327 cubic meters.

tonal, *a.* **3.** Of or pertaining to muscular tonicity.

> The amount of tonus can often be measured by a *tonal* dynamometer. *Scripture*, Exper. Phonetics, p. 383.

tonalist (tō'nạl-ist), *n.* [*tonal* + *-ist*.] In *painting*, one who aims at a prevailing tone of color, or a harmonious color scheme, produced by effects of light and shade in their relation to the principal light rather than by contrasts of color.

> The collection is one of colorists and *tonalists* without the aid of any of the more notable open-air landscape painters. *N. Y. Times*, Jan. 31, 1903.

tone¹, *n.* **15.** In *philol.*, a distinctive quality or pitch forming in some languages a fixed feature of the pronunciation of words, as in Chinese, Swedish, etc. Such tones in Chinese (called *sheng*) serve to distinguish, theoretically, eight phases of a given monosyllable. These tones have been supposed to represent a former chanting or singsong utterance; but they represent, rather, the faint phonetic relics of otherwise vanished syllables, kept in the process of monosyllabizing because they serve to differentiate what would otherwise be indistinguishable homonyms. So in Russian and French a vanished final vowel ('silent *e*') has left a phonetic effect upon the preceding consonant. In Chinese these reliquial effects have come to be conventionally regulated into a kind of musical system similar to that which in English utterance is purely rhetorical and therefore variable.

16. In telephonic testing, the humming noise produced by the introduction of an alternating or rapidly alternating current into the line.—**Affective tone.** See ★*affective*.—**Cavity tone,** a tone produced in a cavity, as the mouth or a tube. *Scripture*, Exper. Phonetics, p. 293.—**Choral tone.** See *choir-pitch*.—**Gallery tone,** in *painting*, the brown tone which age brings upon an oil-picture after it has hung long in a gallery.

> Though the oil painting does not change in drying, or in weeks or months, it changes inevitably in decades and centuries, and always in the same way, by assuming a general yellowish brown cast, called the "*gallery tone*." *Sci. Amer.*, April 15, 1905, p. 299.

Ground tone, in *acoustics*, the tone of lowest pitch uttered by a vibrating body; a fundamental tone.—**Hedonic tone,** in *psychol.*, the pleasant or unpleasant coloring of any mental state or process; algedonic tone. For those psychologists who reduce the affective elements to pleasantness and unpleasantness, 'hedonic tone' is identical with 'affective tone'; for those who accept a pluralistic affective theory, 'hedonic tone' is the narrower term, referring only to one pair of affective opposites.—**Intermittence tone, interruption tone,** in *psychophys.*, a tone produced by rapid interruption of a given tone, and having a pitch-number corresponding to the frequency of interruption.

> P. considers this to be disproved by the *intermittence tones* obtained by K., who rotated a disc perforated with 128 holes before tuning forks of different pitches, and obtained the same *tone of intermittence* whatever was the pitch of the fork.
> *Helmholtz* (trans.), Sensations of Tone, p. 533.

Root tone. Same as *fundamental tone*. *Helmholtz* (trans.), Sensations of Tone, p. 294.—**Tone of intermittence.** See *intermittence* ★*tone*.

tone¹, *v. t.* **5.** In *printing*, to grade or soften with a graver, or roulette, or by etching certain parts (especially the edges) of (an illustration, usually an electrotype), as an aid in reducing the quantity of ink caused by pressure in printing.

toned, *a.* **2.** Having distinctive tones as a fixed feature of the pronunciation of a word, as in Chinese. See ★*tone*¹, 15.

> The more isolating and *toned* languages of Indo-China.
> *Keane*, Ethnology, p. 326.

tone-deafness (tōn'def"nes), *n.* Inability to hear musical sounds. Also called *amusia*.

tone-determination (tōn'dẹ-tėr-mi-nā"shọn), *n.* In *musical acoustics*, the science, theory, or process of fixing the exact size of musical intervals, usually by means of certain intervals taken as units of measurement. See especially under *third-*★*step, fifth-*★*step*, etc.

tone-formation (tōn'fôr-mā"shọn), *n.* Same as ★*voice-building* or ★*voice-production*.

tonelada (tō-nä-lä'dạ̈), *n.* [Sp. Pg., < *tonel*, a cask, an ancient measure. See *tunnel, ton*¹.] **1.** A Spanish and Spanish-American unit of weight equal to 2000 local pounds, or about 2032.2 pounds avoirdupois. It is now applied also to the metric ton of 2204.6 pounds avoirdupois.—**2.** A dry measure, in Portugal over 40 bushels, in Argentina 29.2 United States bushels.—**3.** A liquid measure, in Portugal about 224 gallons, in Spain about 256 gallons, and in Brazil about 264 gallons, United States measure.

tone-picture (tōn'pik"tụ̈r), *n.* A descriptive or pictorially suggestive piece of music.

tone-placing (tōn'plā"sing), *n.* Same as ★*voice-placing*.

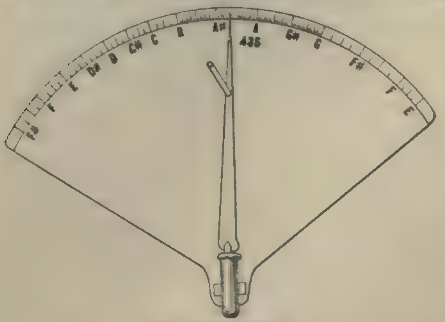
tone-poem (tōn'pō"em), *n.* In *music*, a term somewhat loosely applied to an instrumental composition in which is expressed such a train of sentiments or images as might be or are contained in a poem. Compare *symphonic poem*.

> At a recent Ysaye concert at Brussels two orchestral novelties by Flemish composers were produced: a 'Homeric' Symphony, by L. Mortelmans, and a symphonic *tone-poem*, 'Lalla Rookh,' by J. Jongen.
> *Athenæum*, Jan. 6, 1906, p. 29.

tone-poet (tōn'pō"et), *n.* An original or imaginative composer of music, especially of the modern school: occasionally applied also to an instrumental performer.

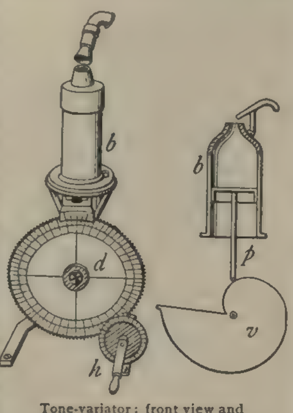
tone-production (tōn′prǫ-duk″shǫn), *n.* The act, process, or manner of producing musical tones: used both of instruments and of the voice. See ★*voice-production* and ★*voice-building.*

tone-tester (tōn′tes″tėr), *n.* In *exper. psychol.*, a tonometer, or instrument for determining the differential sensitivity for tones. In simple form, the tone-tester consists of an adjustable pitch-pipe with an index-arm moving over a large scale. *Yale Psychol. Studies*, 1893, p. 81.



Gilbert's Tone-tester.
(From "Yale Psychological Studies.")

tone-variator (tōn′vā″ri-ā-tǫr), *n.* In *exper. psychol.*, an instrument which permits of the variation (continuous or discrete) of the pitch of an approximately pure tone by known amounts and at uniform rate. In its original form, the *tone-variator* consisted essentially of a blown bottle of which the pitch could be varied by the continuous introduction or withdrawal of mercury. Since the pitch of the bottle-tone changes, in siren fashion, more quickly in the higher than in the lower regions, and a uniform rate of tonal change is desired, the bottle was connected with a variator trough, so constructed that the rise and fall of the mercury in the variator furnished the necessary correction to the movement of mercury in the bottle. In the most recent form of the instrument the bottle is of brass and the mercury has been replaced by a tightly fitting piston-head connected to a metal cam (the variator) cut to the shape of the required curve. Readings of tonal change (in terms of rate of vibration) are made from a circular scale placed in front of the variator cam. *E. B. Titchener*, Exper. Psychol., II. ii. 139.



Tone-variator: front view and mechanism.

b, bottle with blowing-tube; *p*, piston; *v*, variator, turned by handle *h*; *d*, graduated disk indicating pitch of tone.

tone-wave (tōn′wāv), *n.* The sound-wave to which a musical tone is due. *Wundt* (trans.), Human and Animal Psychol., p. 77.

tonga^2 (tong′gä), *n.* [Fijian.] A mixture of several barks said to consist principally of *Premna Taitensis* and *Epiprennum mirabile:* used by the Fiji Islanders as an antineuralgic. It has been introduced into the United States.

tonging, *n.* **2.** In *lumbering,* handling logs with skidding-tongs.

tongue, *n.* **6.** (*q*) *pl.* A commercial name of crude rubber in long, narrow, tongue-shaped pieces. See ★*rubber*^{1}, 3.—**Blue tongue,** an infectious disease of sheep in Cape Colony caused by an ultramicroscopic, filterable organism, and characterized by a short incubation period, high fever, with edema and eruption about the mouth and discharge from the nose, followed by an eruption about the feet and great emaciation. It is very deadly in young, poorly nourished animals. Also called *malarial catarrhal fever of sheep.* *Nature*, Sept. 14, 1905, p. 503.—**Geographical tongue,** a disease of the dorsum of the tongue, consisting of patches of desquamation which increase at the periphery and overlap, the raised edges forming various figures (fancifully compared to maps) on the surface.—**Parrot tongue,** a shriveled, dry condition of the tongue occurring in human beings as a symptom of typhus.—**Stamp-lickers' tongue,** inflammation of the surface of the tongue, due to irritation and subsequent infection from licking postage-stamps.

tongue, *v. t.* **5.** To insert the tongue or spindle in (a weft-cop or bobbin) to hold it in the loom-shuttle. *T. W. Fox*, Mechanism of Weaving, p. 283.

tongue-bar (tung′bär), *n.* In *Balanoglossus* and *Amphioxus*, a downgrowth of the dorsal wall of a gill-slit more or less completely subdividing the latter: so named from its resemblance to the tongue of a jews'-harp.

> The *tongue-bar* is the essential organ of the gill-slit in Balanoglossus, and exceeds the septal bars in bulk, while in Amphioxus the reverse is the case.
> *Encyc. Brit.*, XXVI. 85.

tongue-curve (tung′kėrv), *n.* A graphic representation of the positions and movements of the tongue in speech or song.

> The accumulation of phonograms, palatograms, breath records, *tongue curves*, etc., etc., from an individual year by year under the influence of a certain environment or internal condition would indicate the results of such conditions. *Scripture*, Exper. Phonetics, p. 469.

tongue-key (tung′kē), *n.* In *exper. psychol.*, a reaction-key which is opened or closed by movement of the tongue. *Baldwin*, Dict. of Philos. and Psychol., II. 419.

tongue-pipe (tung′pīp), *n.* In musical instruments, especially the organ, same as *reed-pipe.*

tongue-tambour (tung′tam″bör), *n.* In *phonet.*, an instrument for registering the elevation of the tongue. An artificial palate is converted into a tambour by covering it with a sheet of thin rubber and attaching an outlet tube. *Scripture*, Exper. Phonetics, p. 335.

tongue-twister (tung′twis-tėr), *n.* A sentence or verse constructed with a view to test the enunciation or dexterity of a speaker. The following is an example: Theophilus Thistle, thistle-sifter, sifted a sieveful of unsifted thistles, etc. [Colloq.]

tongue-worm, *n.* **3.** A parasitic worm-like arachnid, *Pentastomum tænioides*, occurring in the viscera of cattle, sheep, and other animals, and in the nostrils and frontal sinuses of dogs and wolves.

> The *Tongue-worm* is found encysted in the viscera of cattle, sheep, and other animals. It is about a quarter of an inch long, and when eaten by dogs grows to be 2 to 5 inches long, inhabits the nasal cavities, and produces numerous eggs, which are transmissible to man as well as to the domesticated animals.
> *Yearbook U. S. Dept. Agr.*, 1896, p. 161.

tonic, *a.* **5.** Characterized by distinctive tones. Same as ★*toned*, 2. See ★*tone*^{1}, 15.

> A far more important feature than the length of the words is their *tonic* utterance, the origin and nature of which was necessarily misunderstood so long as these languages were supposed to represent a primitive condition of speech. It is now clear that tone gives no support to the theory of a supposed primitive singsong utterance, but that it is a compensating element unconsciously introduced to distinguish the numerous homophones resulting from the ravages of phonetic disintegration. "Thus the monosyllable pa will be toned in six or more different ways to represent so many original dissyllables, pada, paka, pana, pasa, pata . . ., and some of the Chinese and Shan dialects have, in fact, as many as ten or twelve such tones, which unless correctly uttered lead at once to the greatest confusion, and to all kinds of misunderstandings. Hence these languages are now called isolating and *tonic* rather than isolating and monosyllabic." *Keane*, Ethnology, p. 325.

Tonic accent. See ★*accent.*

tonicity, *n.* **1.** (*b*) In *zoöl.*, occasionally employed to denote the quality of dead, as well as living, tissue.

> Yet in slightly macerated specimens of C[arolin] brevicauda the incision disappears, showing that it is a character which is dependent upon *tonicity* and not on any distinctive structural peculiarities.
> *H. Allen*, in Proc. U. S. Nat. Mus., XIII. 295.

toning, *n.* **2.** Delicate variations of light and shade on a photograph.

> The *tonings* brought out in photographs of the disc [of the sun]. *A. M. Clerke*, Problems in Astrophysics, p. 70.

Platinum toning, in *photog.*, the tinting of silver positives by the use of a bath containing platinic chlorid, whereby metallic silver is removed and platinum takes its place.

tonite, *n.* Standard tonite, as manufactured in the United States, is an explosive consisting of 52.5 per cent. of pulverulent guncotton and 47.5 per cent. of barium nitrate. These materials are moistened and intimately incorporated under edge-rollers until a uniform paste is produced, which is then formed into cartridges covered with paraffined paper. A specially heavy detonator is required to fire this explosive. Also known as *cotton-powder No.* 1.

tonitruone (to-nit′rǫ̈-ōn), *n.* [L. *tonitruum*, thunder.] A percussive musical instrument devised in 1908 by Ignace Paderewski to suggest the sound of distant thunder. It consists of a large plate of resonant metal hung from a frame, and hence is essentially a species of gong or tam-tam. *Program Boston Symphony Orchestra.* 1908-1909, p. 11.

ton-kilometer (tun′kil″ǫ-mē-tėr), *n.* A unit of accounts used by railroads, which represents the transportation of one ton of freight the distance of one kilometer.

ton-mile (tun′mīl), *n.* A unit of railroad accounts which represents the transportation of one ton of freight the distance of one mile.

> Freights have risen on the most frequented roads [in Persia] from 3d. per *ton-mile* in 1880 to 10d., and even 13d., per ton-mile now. *Encyc. Brit.*, XXXI. 622.

ton-mileage (tun′mīl″ā̤j), *n.* Charge per ton-mile; also amount in ton-miles.

> Many valuable curves showing the relations between *ton-mileage*, total weight, useful load, &c., are given, and the paper is, on the whole, a valuable contribution on the subject. *Nature*, Jan. 29, 1903, p. 304.

tonnage, *n.* **2.** The *tonnage under the tonnage deck* is the interior volume in tons of 100 cubic feet under the tonnage-deck (which see) measured in accordance with the Moorsom system. The *between-deck tonnage* is that included between the tonnage deck and the highest complete deck on the vessel considered. The *under-deck tonnage* is the sum of that under the tonnage-deck and the between-deck tonnage. The tonnage above the highest deck includes all covered in and inclosed spaces, such as inclosed poop and forecastle or deck erections available for cargo, stores, or for accommodation of passengers or crew. This added to the under-deck tonnage constitutes the *gross registered tonnage*, usually called *gross tonnage.* The *net registered tonnage* is obtained from the gross by making certain deductions according to rules which differ in some respects among certain nations. The deductions generally allowed are as follows: the tonnage of spaces specifically appropriated to the officers and crew of the vessel; spaces exclusively for the working of the helm, for anchor-gear, for the charts and instruments of navigation, for the boatswain's stores, and for the donkey-engine and boiler; for a ship propelled by sails, space exclusively for storage of sails. In addition, for a paddle-steamer in which the actual space occupied by the boilers and machinery, but excluding coal-bunkers, is between 20 and 30 per cent. of the gross tonnage, a deduction of 37 per cent. may be made; for ships propelled by screws, in which the tonnage is between 13 and 20 per cent., the deduction is 32 per cent. of the gross; in paddle-steamers in which the actual space occupied by the propelling machinery is less than 20 per cent. or over 30 per cent., the allowed deduction is $1\frac{1}{2}$ times the actual space. In screw-steamers in which the actual space is less than 13 per cent. or over 20 per cent., $1\frac{3}{4}$ times the actual space is deducted. All these deductions having been made from the *gross tonnage*, the remainder is the *net registered tonnage.* The term *register-tonnage* or *registered tonnage* used alone means net registered tonnage.—**Breadth for tonnage.** See ★*breadth.*—**Custom-house tonnage,** the legal tonnage of a vessel determined by the commissioner of navigation.—**Displacement tonnage.** See ★*displacement-tonnage.*—**Register tonnage.** See ★*tonnage*, 2.—**Suez Canal tonnage,** the net tonnage fixed by the rules of the Suez Canal for payment of tolls in passing through the canal. The gross tonnage is substantially as above (see ★def. 2), but the deductions include only the following: spaces occupied or used exclusively by officers and crew (but not including the space occupied by the captain), the chart-room, and spaces for working the helm and anchor gear; but the total deduction for all these spaces cannot exceed 5 per cent. of the gross. The deductions for machinery may be made by taking the actual space occupied by engines, boilers, and the permanent coal-bunkers, or alternatively by the *Danube rule*,—that is, $1\frac{3}{4}$ times the actual machinery space, exclusive of bunkers, for screw-steamers, and $1\frac{1}{2}$ times the actual machinery space for paddle-steamers. The total deduction for machinery cannot exceed 50 per cent. of the gross tonnage.—**Tonnage length,** in *ship-building*, the length of a vessel upon which is based the calculation of its gross register tonnage. "Measure the length of the vessel in a straight line along the upper side of the tonnage-deck, from the inside of the inner plank, average thickness, at the side of the stem to the inside of the plank on the stern timbers, average thickness, deducting from this length what is due to the rake of the bow in the thickness of the deck, and what is due to the rake of the stern timber in the thickness of the deck, and also what is due to the rake of the stern timber in one third of the round of the beam." (*U. S. Revised Statutes*, §4153.) In the old rule for tonnage by 'builders' old measurement,' the length taken along the deck from the stem to the after side of the stern-post was reduced three inches for every foot of draft of water. From the length thus obtained was deducted three fifths of the breadth for tonnage. (See ★*breadth.*) The remainder was the *length for tonnage*, now obsolete.

tonnage-duty (tun′ā̤j-dū-ti), *n.* A tax of so much per ton levied upon vessels by the customs authorities under certain conditions.

tonnage-rent (tun′ā̤j-rent), *n.* The rent of a mine or quarry when it takes the form of a royalty on each ton of mineral obtained.

tonne^2 (ton), *n.* [F., a ton. See *ton.*] The metric ton or millier of the metric system, equal to 2204.6 pounds avoirdupois. Also *tonneau.*

tonneau (to-nō′), *n.* [F. *tonneau*, a cask, a tub, a tun. See *tunnee.*] **1.** A tub.

> When a proper slope cannot be had, we must of necessity fall back upon either the earth closet, *tonneau*, or pail system for the collection of excreta.
> *Buck*, Med. Handbook, IV. 767.

2. A name given by French builders of motor-cars to the rounded or cask-like rear body of the vehicle. The barrel form has gradually changed to a molded shape, and entrance is gained through side-doors. This form gives larger seating-capacity at the back than the ordinary back seat of the surrey or carryall, as the rounding sides can be utilized. Tonneau backs can accommodate two, three, or five persons. The tonneau is often made removable, leaving either a box back or a sloping surface behind the front seat, or it can be replaced by a rumble or tiger's seat. The name 'toy-tonneau' has been applied to a form of rear-seat arrangement for two passengers only, in which the seat-backs are much lower than in the standard type. If doors of entry are omitted, the name tonneau ceases to apply.

The prevailing type was the gasoline-propelled vehicle modeled generally after the foreign *tonneau* form, though here and there were new shapes distinctively American in their idea. *Sci. Amer.*, Jan. 31, 1903, p. 80.

3. See ★*tonne*².

tonneaued (to-nōd′), *p. a.* Furnished with a tonneau. [Rare.]

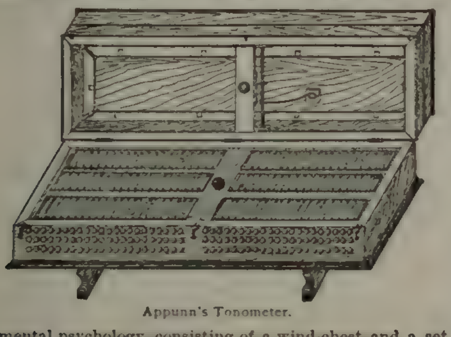
It was a big, black, black-dashed, *tonneaued* twenty-four horse Octopod [motor-car].
R. Kipling, Steam Tactics, in Traffics and Discoveries, [p. 185.

tonobole (ton′ọ-bōl), *n.* [Gr. *τόνος*, a stretching, + *βόλος*, a throw, < *βάλλειν*, to throw.] In *phytogeog.*, a bolochore in which propulsion results from the resilience of the calyx or involucre. *F. E. Clements.*

tonogram (tō′nọ-gram), *n.* [Gr. *τόνος*, tension, + *γράμμα*, a writing.] The record made by a tonograph.

tonograph (tō′nọ-grȧf), *n.* [Gr. *τόνος*, tension, + *γράφειν*, write.] A recording tonometer.

tonometer, *n.* **2.** (*b*) An instrument for determining the degree of intravascular blood-pressure.—**3.** An instrument for measuring strains within a liquid. A thermometer with very thin elliptical bulb may be used, as the pulling forces distend the bulb, causing the mercurial column to descend.—**Appunn's tonometer,** a form of tonometer, frequently used in experimental psychology, consisting of a wind-chest and a set of reeds. The instrument generally employed has 129 reeds between the limits of 512 and 1024 vibrations, so that each reed differs from its neighbor in the series by 4 vibrations.


Appunn's Tonometer.

tonometric (tō-nọ-met′rik), *a.* [*tonometr*(*y*) + *-ic.*] Of or pertaining to the measurement of musical tones, specifically of their pitch or frequency. *Encyc. Brit.*, XXX. 61.

tonoplast (tō′nọ-plȧst), *n.* [Gr. *τόνος*, a stretching, + *πλαστός*, formed.] One of the vacuoles of the plant-cell, having a distinct wall and dividing like a true cellular organ, such as a chromosome, chromatophore, etc. *Went* (1888).

tonotactic (tō-nọ-tak′tik), *a.* [*tonotaxis* (*-tact-*) + *-ic.*] Same as ★*osmotactic.*

tonotaxis (tō-nọ-tak′sis), *n.* [NL., < Gr. *τόνος*, tension, tone, + *τάξις*, disposition.] Same as ★*osmotaxis.*

tonsillitis, *n.*—**Lacunar tonsillitis,** a form of inflammation of the tonsils in which the crypts or follicles are clogged with a whitish deposit.

tonsillolith (ton-sil′ọ-lith), *n.* [L. *tonsillæ*, tonsils, + Gr. *λίθος*, stone.] A concretion in the substance of the tonsil. *Buck*, Med. Handbook, VI. 599.

tonsol (ton′sol), *n.* A trade-name of a substance which gives a red color with potassium nitrate. It is used to develop meteorological records traced with potassium-nitrate solution by automatic instruments, at temperatures below the freezing-point of ink.

Since ink would freeze at great elevations the trace is made by a pen containing a solution of saltpeter, which writes on the disc coated with lampblack, treated with a solution of "*tonsol.*" The chemical reaction gives a red trace that can not be obliterated by handling nor by immersion in water.
U. S. Monthly Weather Rev., July, 1902, p. 359.

Tonto group. See ★*group*¹.

tonus, *n.* **3.** A condition of preparedness in an organ or tissue to perform its normal function as soon as the customary stimulus is applied.

A continuous lesser "change" or stream of changes sets through the neuron, and is distributed by it to other neurons in the same direction and by the same synapses as are its nerve impulses. This gentle continuous activity of the neuron is called its *tonus.*
Encyc. Brit., XXXI. 740.

Reflex tonus, in *physiol.*, muscular tonicity reflexly maintained by constant or recurrent peripheral stimulation.

The single transient reflex process is superinduced upon a *reflex tonus.*
W. Wundt (trans.), Physiol. Psychol., I. 244.

Tonus peregrinus, the Gregorian melody or tone in the ninth or Æolian mode, regularly used for Psalm cxiv., beginning with the words "In exitu Israel" (whence the name).—**Tonus regius,** the Gregorian melody or tone in the sixth or Hypolydian mode, regularly used for the antiphon in connection with the prayer for the reigning sovereign often inserted at the end of the mass (whence the name).

took² (tök), *n.* See the extract. [Prov. Eng.]

The common practice in this country of protecting the banks of rivers by means of little piers or "*tooks*" to throw the water off them, and into the middle of the bed of the stream, generally results in failure, because the piers cause eddies, and deep pools endangering the banks are frequently dug out by these eddies.
Nature, Dec. 12, 1907, p. 127.

tookytook (tůk′i-tůk″), *n.* [A New Zealand abbreviation of Maori *kotukutuku.*] In New Zealand, the native fuchsia or kotukutuku, *Fuchsia excorticata*, or its fruit. See ★*konini* and ★*kotukutuku.*

tool¹, *n.*—**Laying-on tool,** an instrument used by edge-gilders which consists of a light wooden frame having three sides and covered with crape, for laying on covers, and a pad covered with Canton flannel.—**Pneumatic tool,** in its widest sense, any tool which is operated by compressed air, as the pneumatic rock-drill, broom, air-jack, and air-hoist; specifically, a self-contained combined motor and interchangeable tool operated by compressed air. Such machines are either reciprocating motors, as the pneumatic hammer, or rotary motors, as the pneumatic drill, and are made in a number of forms named after the tools used in them.—**Portable tool,** any tool or small machine which may be moved about by hand or by means of a traveling crane and operated by power, as distinguished from an ordinary hand-tool. Portable tools may be self-contained, as, for example, a shaper or a milling-machine to which an electric motor is attached. Such a machine is portable in the sense that it can be disconnected from its feed-wire, moved to another place, and again connected with a wire conveying a current to its motor. Any pneumatic tool, hammer, chisel, or drill, that can easily be moved within the limits of its air-hose, or any drill, grinder, emery-wheel, polishing-wheel, tapping-, reaming-, or boring-machine, operated by means of flexible shafting, may be said to be portable.—**Spring tool,** a turning tool used in an engine or machine-lathe for taking a finishing cut along a piece of work already roughed down nearly to size. It is curved or arched upward and downward just behind the cutting edge in side view, and has a curved line in plan for the cutting edge. Hence it has a slight amount of elasticity or spring, which, though not conducive to accuracy in sizing, produces a smooth and polished surface. *Lockwood*, Dict. Mech. Engin. Terms.

tool-board (töl′bōrd), *n.* A board attached to or near a machine-tool such as a lathe or milling-machine, to receive and display for easy access the tools or cutters or gears used on such a machine.

tool-box (töl′boks), *n.* **1.** Any box which is used to contain workmen's tools. Pattern-makers' tools are kept in a chest suitably fitted with trays and drawers; molders' tools in an open rectangular box without any trays or partitions, and furnished only with a cross handle bridging over the top. Fitters and turners keep their tools in drawers or in plain boxes. For outdoor work the erectors' tools, as spanners, ratchet-braces, etc., are put in strong iron-clamped packing-boxes. *Lockwood*, Dict. Mech. Engin. Terms.

2. An English term for the holder of the steel cutting-tool on the carriage of machine-tools, such as lathes, planers, shapers, slotters, etc. It is often used to cover all parts having a feed-function above the saddle which runs on the ways of the bed of the machine.

tool-clamp (töl′klamp), *n.* A device for holding a tool in a fixed desired position on a tool-carriage or -holder, or in the revolving spindle or percussion element in boring-machines or rock-drills.

tool-grab (töl′grab), *n.* A device or grip to seize and raise from the bore of a well a tool or piece of apparatus which has broken off and fallen to the bottom.

tool-grinder (töl′grīn″dėr), *n.* A machine for shaping or sharpening tools for the machine- or other work-shop, by exposing the surface to be treated to an abrading wheel driven at high speed. Such wheels, if of small diameter, are of emery or corundum; large grinders may use a true grindstone. The grinder often has special holders, or holders with special motions, designed to present the surface to be ground at the correct and best angles for subsequent use as cutters.

tooling, *n.*—**Blank tooling, dumb tooling.** Same as *blind tooling* (which see, under *tooling*).

tool-plate (töl′plāt), *n.* The tool-holder in a machine-tool. The tool-bar is clamped by bolts and straps to a surface or plate on the tool-carriage which is fitted with T-slots for the purpose. Also called *tool-box. The Engineer* (London), 1903, p. 571. [Eng.]

tool-rest, *n.*—**Capstan tool-rest,** a circular or polygonal revolving head having radial holes in which the shanks of various tools can be inserted, mounted on the tail-stock of a lathe. The axis of this head is vertical, and the various tools carried by it can each be brought into service by swinging the head around. Other machines for doing similar work are made with revolving heads that turn on horizontal axes: such machines are called *cross turret-lathes* or *chucking-machines*, depending on whether the axis runs across the bed or lengthwise of it.

tool-room (töl′röm), *n.* A department in a well-ordered machine-shop in which tools, jigs, and gages, etc., are made, ground, or otherwise kept in order, and whence they are handed out to the men. *Lockwood*, Dict. Mech. Engin. Terms.

tool-smith (töl′smith), *n.* A blacksmith whose business consists in forging, hardening, and tempering the steel tools used by machinists. *Lockwood*, Dict. Mech. Engin. Terms.

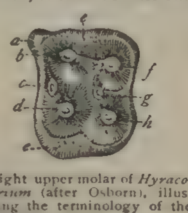
tool-steel (töl′stēl), *n.* Steel of the composition and manufacture which render it suitable for use in machine-tools for the cutting of metals. Such steel must be tough and yet hard enough to resist the abrasion and heat of the cutting process. It was formerly steel high in carbon (one per cent. or over), capable of being hardened and tempered. Recently steels with alloying percentages of manganese, tungsten, vanadium, titanium, and chromium have been introduced, having the property of self-hardening, or of not losing their hardness and ability to cut if the point or edge becomes red-hot from the severity of the cutting duty. *Trans. Amer. Inst. Elect. Engin.*, 1903, p. 511.

toondah (tön′dä), *n.* See ★*oyster-whelk.*

tooral-looral (tö′ra̤l-lö′ra̤l), *n.* See ★*ture-lure.*

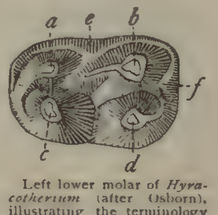
tooshqua (tösh′kwä̤), *n.* [Amerind. of British Columbia.] A common name used in British Columbia for *Ophiodon elongatus*, a fish related to the cottoids and found on the Pacific coast of North America.

tooth, *n.* **1.** The topography of the tooth, as now described, is shown in the cuts.



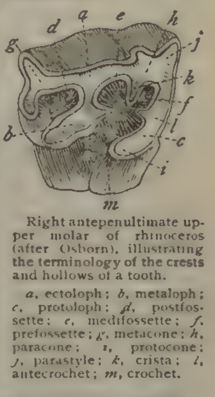
Right upper molar of *Hyracotherium* (after Osborn), illustrating the terminology of the upper molar cusps.

a, parastyle; *b*, paracone; *c*, protoconule; *d*, protocone; *e*, *e*, cingulum; *f*, metacone; *g*, metaconule; *h*, hypocone.



Left lower molar of *Hyracotherium* (after Osborn), illustrating the terminology of the lower molar cusps.

a, protoconid; *b*, hypoconid; *c*, metaconid; *d*, entoconid; *e*, cingulum; *f*, hypoconulid.



Right antepenultimate upper molar of rhinoceros (after Osborn), illustrating the terminology of the crests and hollows of a tooth.

a, ectoloph; *b*, metaloph; *c*, protoloph; *d*, postfossette; *e*, medifossette; *f*, prefossette; *g*, metacone; *h*, paracone; *i*, protocone; *j*, parastyle; *k*, crista; *l*, antecrochet; *m*, crochet.

11. A roughened surface, as of a paper prepared for pastels.—**12.** In *masonry*, one of the several projecting ends of stones or bricks already built into a wall and left at an unfinished end of it to facilitate the fitting of another piece of wall to the first one.—**Block teeth.** See ★*block*¹.—**Giant tooth,** an abnormally large but not deformed tooth.—**Hutchinson's teeth,** upper incisor teeth in which the cutting edge is notched: occurring in the subjects of hereditary syphilis.—**Pacinotti tooth,** in *elect.*, one of the radial projections upon the core of a Pacinotti ring or armature. See *Pacinotti* ★*ring.*—**Palatine tooth,** a tooth situated on one of the palatine bones, as in fishes: sometimes, but wrongly, applied to any tooth on the roof of the mouth. *Parker and Haswell*, Zoology, II. 302.—**Pavement teeth,** large, rounded teeth, closely set together and suggesting a cobblestone pavement. Such teeth were common in many extinct sharks, are found in the existing Port Jackson shark, and are well shown in the pharyngeal teeth of the drum.

On either side of the palate and on the dentary are three large rectangular *pavement teeth.*
Zittel (trans.), Text-book of Palæon., II. 188.

V-tooth, a form of tooth for a gear, having an appearance, in side view, of an inverted V: used in clockwork for actuating the hammer of alarm-clocks, in some old forms of escape-wheels, and in saw-teeth for cutting metals by a revolving blade.

toothake, *n.* An amended (and former) spelling of *toothache.*

tooth-ax (töth′aks), *n.* A stone-cutters' ax the edges of which are divided into blunt teeth.

tooth-block (töth′blok), *n.* A part of a machine designed to form the mold for casting iron gear-wheels in sand. The toothed rim is not formed complete by a wooden pattern, but only a segment is carefully shaped, having the space between two teeth and these two teeth themselves shaped upon a block. This has the depth of the face desired and is about nine inches long, parallel to the tangents of the rim, and four inches radially. This is the tooth-block. It is borne on an arm, turning on a central vertical stem, and fitted with a tangent screw and train of gears, so that with the latter combination the circumference of the gear can be carefully and exactly divided into equal aliquot parts. The sand is carefully molded round the tooth-block, when the latter is raised vertically, and by the dividing-gear swung horizontally through the required angle to locate the next tooth. The tooth-block is again lowered, and the next tooth molded. All shrinkage defects and warping of gear-patterns are eliminated, the expense of making all teeth, and on many patterns, is avoided, and storage of patterns is simplified.

tooth-chisel (töth′chiz″l), *n.* A stone-masons', or stone-dressers', chisel having a wide cutting edge which is serrated or cut with spaces resembling a V-tooth.

tooth-cleaner (töth′klē″nėr), *n.* A form of gear-tooth milling- or planing-cutter, or a grinding-wheel of special profile section, adapted to dress or finish the spaces between the teeth of a gear-wheel on face and flank.

toothing-press (töth′ing-pres), *n.* A stamping-machine for cutting out the interdental spaces and forming the teeth of band-saws.

toothing-stone (töth′ing-stōn), *n.* See *toothing.*

tooth-plane (töth′plān), *n.* A plane with V-shaped notches or serrations in its edge, used in scoring the under surface of a veneer or other wood surface, to form grooves within which the glue shall be received when the surfaces are glued and pressed together, or when cloth is to be fastened to the surface of the wood; a toothing-plane.

tooth-shell, *n.* **2.** A small marine mollusk, *Marinula pellucida*, whose shell is used in Australia for necklaces. *E. E. Morris*, Austral English.

tooth-stop (töth′stop), *n.* In *exper. phonet.*, a part of Atkinson's bent-wire instrument for obtaining the position of a point on the surface of the tongue. It consists of a small coil of wire, which may be slid along the principal (exploring) wire or locked in place, and which is set in the depression between the two front teeth. *Scripture*, Exper. Phonetics, p. 331.

top¹, *n.*—**Military top** (*naut.*), a mast-top encircled by a breastwork of steel, behind which machine-guns are worked when the vessel is in action, and by means of which a plunging fire is obtained. See *military mast*, under *mast*¹.—**Top on**, in *cricket*, a vertical spin imparted to the ball by the bowler, which causes it to increase its pace from the pitch. *Hutchinson*, Cricket, p. 88.

top¹, *v. t.* **12.** In *golf*, to strike (a ball) above its center.—**To top out**, to complete at the top, as a chimney.—**To top up.** (*b*) To bestow the finishing touches upon; bring to the best condition. [Colloq.]

As graziers' beasts Welsh cattle are well known in the midland counties of England, where, under the name of Welsh runts, large herds of bullocks are fattened upon the pastures, or "*topped up*" in the yards in winter.
Encyc. Brit., XXV. 191.

top³, *n.*—**Artificial spectrum top**, in *psychophys.*, a rotating disk of black and white which, under certain conditions, gives rise to sensations of color.—**Chameleon top**, a color-top so constructed that the arrangement of colors can be altered by interrupting its motion, thus changing in a striking manner the blended tints produced by its rotation.

topalgia (tọ-pal′ji-ä̤), *n.* [NL., ‹ Gr. τόπος, place, + ἄλγος, pain.] A localized neuralgic pain.

topaz, *n.*—**Brazilian topaz**, the true yellow topaz, found at Ouro Preto, Minas Geraes, Brazil.—**Fiery topaz**, a humming-bird, *Topaza pyra*, so called from its brilliant crest which glows like a coal of fire. The throat is yellow.—**Indian topaz**, a name for the rich sherry-colored topaz found in Ceylon and rarely in Brazil.—**Saxon topaz**, a name originally applied to the true topaz found at Schneckenstein, Saxony, in the eighteenth century. At present the name is applied solely to the pale yellow, decolorized variety of smoky quartz commonly sold as topaz by the jeweler.

top-buggy (top′bug″i), *n.* A buggy with a cover or top. See *buggy.*

And had brought his *top-buggy* along, so 's he could fly high and have a big time with the girls.
Fursman, Sanctified Town, p. 212.

top-card, *n.* **2.** An indicator-card taken by a steam-engine indicator from the end of the cylinder above the piston, in Cornish pumping-engines operating with a beam. This was quite different from the card taken below the piston (or bottom-card), since the work of lifting the massive pump-rods was done on the lifting stroke, with steam pressure from the boiler on top of the piston. The bottom-card showed only the equalizing and the condenser pressures.

top-chain, *n.* **2.** A chain used to secure the upper tiers of a load of logs after the capacity of the regular binding-chains has been filled.

top-dry (top′drī), *a.* Same as *stag-headed.*

top-dyeing (top′dī″ing), *n.* The process of dyeing worsted tops. Dyeing-machines of special construction are used, in which the dye-liquor is forced back and forth through the material.

tope³, *n.* **2.** An Australasian shark, *Galeus australis.* It differs somewhat from *Galeus galeus*, the tope of Great Britain. In Australia also called *school-shark.* *E. E. Morris*, Austral English.

topek (tō′pek), *n.* Same as ⋆*tupik.*

top-flask (top′flȧsk), *n.* The upper part of a foundry molding-box or flask, when the latter is made in two parts for the convenient molding of surfaces of revolution by parting them through the meridian section, or the section of maximum area. Same as the *cope* or *nowel*, when the lower part is called the *drag.*

Tophaceous gout. See ⋆*gout*¹.

top-hat (top′hat), *n.* A tall silk hat; a dress hat, a 'chimney pot.' [Colloq.]

Rouse up the best hatter in the royal borough, buy a *top-hat* of that size and bring it back as fast as the horse can gallop. *R. Hichens*, The Londoners, x.

toph-stone (tōf′stōn), *n.* [See *tophus.*] Same as ⋆*tophus*, 2.

tophus, *n.* **2.** Calc tufa.

The curiously shaped hill "Cuerno del Diablo" (the Devil's Horn), of some 6500 feet, near the top of which volcanic *tophus* with alternate layers of lava and basaltic conglomerate have been found.
Geog. Jour (R. G. S.), XVI. 35.

Dental tophi, deposits of calcareous material on the roots of the teeth, occurring in gouty subjects.

tophyperidrosis (tof-i-per-i-drō′sis), *n.* [NL., ‹ Gr. τόπος, place, + NL. *hyperidrosis.*] Local excessive sweating.

topiarius (tō-pi-ā′ri-us), *n.*; pl. *topiarii* (-ī). [L. See *topiary.*] In *Rom. antiq.*, one skilled in ornamental gardening.

topic, *n.* **4.** *pl.* In *geom.*, topology. See ⋆*topics*, 2.

Topical geometry. Same as ⋆*topics*, 2.—**Topical song,** a song (as in a comic opera) containing jesting allusions to persons and events in the place where it is sung.

topics (top′iks), *n.* [Gr. τοπικά, the title of Aristotle's treatise on this subject. See *topic.*] **1.** That branch of logic or rhetoric which treats of topics in the sense of *topic, n.*, 1.—**2.** The most general, fundamental, and naturally elementary branch of geometry, which neither considers lengths, areas, or volumes in their character of being measurable, nor distinguishes straight from curved or crooked lines, nor plane from curved or bent surfaces, but studies only the manner in which the parts of places are continuously connected. Although topics is of its own nature the easiest kind of geometry, yet, owing to its having been neglected, geometers have not been at home in the subject and have found great difficulty in demonstrating its theorems. It is often called *topology.*

top-iron (top′ī″ėrn), *n.* The slightly curved upper iron used in carpenters' and joiners' smoothing- or jack-planes which have wooden faces. It stiffens the plane-iron by a pressure applied close to and along the length of the cutting edge, and if very close to the latter may help to break the shaving in brittle woods.

topit (top′it), *n.* A sort of brace-head fastened by screwing to the top of boring-rods when the latter are being withdrawn from the bore of the well or shaft. [Prov. Eng.]

top-lift (top′lift), *n.* The outside or last piece of sole-leather put on to complete the heel of a shoe or boot. In cheap shoes the rest of the heel is of pasteboard and scrap-leather.

top-line (top′līn), *n.* The profile of the back from the center of the shoulders to the end of the hip-bones: used in describing cattle.

toploader (top′lō-dėr), *n.* In *lumbering*, one who works on the top of a load of logs.

But the *toploader* is the man who runs the greatest risks, for he has little room in which to work and he is liable at any time to be caught and crushed between the logs, or to lose his footing, or to be knocked off the load and thrown to the ground, perhaps with a log on top of him. *Amer. Inventor*, April 15, 1904, p. 184.

top-notcher (top-noch′ėr), *n.* One who or that which is at the top notch or highest point of excellence. [Colloq.]

As a matter of course there are not a sufficient number of "*top-notchers*" to go around, the result being—as was the case during the Bates craze—the use of many inferior specimens and the neglect of good cattle of other blood. *Rep. Kansas State Board Agr.*, 1901–02, p. 64.

topo (tō′pọ), *n.* [Properly *tupu;* Aymará of Bolivia and Peru.] The pin or pins of copper, silver, or gold by means of which the Indian women of Peru and Bolivia fasten their wraps over the breast. The pin is part of the aboriginal dress and ornament of the mountain Indians, but was also used on the Peruvian coast. The Quichua name is *tumi.*

topochemical (top-ọ-kem′i-ka̤l), *a.* [Gr. τόπος, place, + E. *chemical.*] Of or pertaining to the antennary sense in certain insects, such as the ants, in which a sense of touch or contact is combined with an olfactory sense.

topog. An abbreviation (*a*) of *topographical;* (*b*) of *topography.*

topografer, topografy. Amended spellings of *topographer, topography.*

Topographic adjustment, adolescence, engineer, infancy. See ⋆*adjustment*, etc.—**Topographic old age, reconnaissance.** See ⋆*age*, ⋆*reconnaissance.*

Topographical climatology. See ⋆*climatology.*—**Topographical engineering.** Same as *topographical surveying* (which see, under *surveying*).

topographize (tọ-pog′ra̤-fīz), *v. i.*; pret. and pp. *topographized*, ppr. *topographizing.* [*topograph*(*y*) + *-ize.*] To study and describe in detail the natural features of a region or locality. *Southey*, Doctor, interchap. xiv.

topography, *n.*—**Immature topography.** Same as *topographic* ⋆*infancy.*—**Knob-and-hollow** or **knob-and-basin topography.** See the extract.

The *knob-and-hollow* type of irregularity which represents, in reverse, the irregularities of the surface of the ice, against which the sand and gravel of the plain were deposited.
R. D. Salisbury, in Geol. Surv. of New Jersey, 1893, p. [312.

Mature topography, a land-surface in which the processes of dissection or sculpture have produced the greatest possible variety and strength of relief.—**Medical topography.** (*a*) The topography of a country with reference to the prevailing diseases. (*b*) Regional anatomy. See *topography*, 4.—**Step-and-platform topography,** in *phys. geog.*, a phrase occasionally used to describe a land-surface eroded on alternately strong and weak (nearly) horizontal strata, and therefore possessing a series of flat benches separated by steep escarpments. *Geog. Jour.* (R. G. S.), IX. 666.

topologic (top-ọ-loj′ik), *a.* [*topolog*(*y*) + *-ic.*] Of or pertaining to topology.

topological (top-ọ-loj′i-ka̤l), *a.* [*topolog*(*y*) + *-ical.*] Of or referring to topology.

topology, *n.* **3.** The study and description of the localities in a particular district. *Encyc. Dict.*

topomorph (top′ọ-môrf), *n.* [Gr. τόπος, place, + μορφή, form.] One of a group of organisms limited to a particular district and characteristic of it.

The vast majority of natural groups of animals being "topo-politan," i.e. restricted to more or less definite areas on the Earth's surface, it follows that these various areas are characterized by the presence of certain forms of animal life which do not occur elsewhere. These forms it is proposed to call "*topomorphs.*" Thus the giraffe is a "*topomorph*" of the Æthiopian region (Africa south of the Atlas); the sloths and anteaters are *topomorphs* of the neotropical region (South and Central America).
P. L. Sclater, in Geog. Jour. (R. G. S.), IX. 673.

toponarcosis (top″ọ-när-kō′sis), *n.* [NL., ‹ Gr. τόπος, place, + νάρκωσις, a benumbing. See *narcosis.*] Localized anæsthesia.

toponym, *n.* **2.** In *biol.*, a scientific name antedated by another name based on the same type.

A name is rejected when there is an older valid name based on the same type (*toponym*).
Code of Bot. Nomenclature, p. 258.

toponymy, *n.* **2.** In *geog.*, see the extract. Compare *toponomy.*

Toponymy, M. Wauters explains, is a new science which takes up the names of places and studies them with a view to elucidating history and geography.
Geog. Jour. (R. G. S.), XI. 207.

topophobia (top-ọ-fō′bi-ä̤), *n.* [NL., ‹ Gr. τόπος, place, + -φοβια, ‹ φοβεῖν, fear.] A morbid dread of certain special localities.

topopolitan (top-ọ-pol′i-ta̤n), *a.* [Gr. τόπος, place, + πολίτης, citizen, + *-an.*] Inhabiting only a definite region or restricted area of the earth, as the giraffe or the sloth; not cosmopolitan.

The sloths and anteaters are confined to tropical America, and the polar bear to the North Polar lands. Such animals may be called "*topo-politan*" (τόπος, locus, and πολίτης, civis) in contradistinction to those that are universally distributed, or "cosmo-politan."
P. L. Sclater, in Geog. Jour. (R. G. S.), IX. 673.

topotype (top′ọ-tīp), *n.* [Gr. τόπος, place, + τύπος, type.] In the nomenclature of types in natural history, a specimen of a named species from the locality of the original or holotype.

T.l. (Type-locality): The place from which the holotype or the specimen figured as standard of reference came, so that it may be known what are *topotypes*, for they are of the greatest importance, next to types, for specific determination.
Annals and Mag. Nat. Hist., Dec., 1904, p. 390.

topotypic (top-ọ-tip′ik), *a.* [*topotyp*(*e*) + *-ic.*] Pertaining to or of the nature of a topotype.

topotypical (top-ọ-tip′i-ka̤l), *a.* Same as ⋆*topotypic.* *Proc. Zool. Soc. London*, 1900, p. 405.

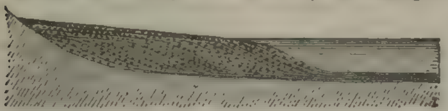
topper, *n.* **5.** An exceptionally high sea or wave.

topping, *n.* **6.** Specifically, in tobacco-growing, the removal of the budded or blossoming summit of the plant in order that its strength may be thrown into the leaves.

topsail, *n.*—**Half topsails under,** said of a vessel when it is so distant that only the spars and sails from the middle of the topmast up are visible above the horizon.

topsawyer, *n.* 4. A member of a crew who is always in the lead when work is going on either on deck or aloft.

top-set (top′set), *a.* In *geol.*, noting the upper and shoreward layers of a delta, consisting of the coarser sediment dropped as the inflowing stream is checked.



Top-set.

These *top-set* beds are laid down in a nearly horizontal position, and their seaward margin is gradually extended.
Chamberlin and Salisbury, Geol., I. 191.

top-spindle (top′spin″dl), *n.* Same as *elastic* ⋆*spindle*.

top-turnip (top′tėr″nip), *n.* Same as *kohlrabi*.

top-twist (top′twist), *n.* In *tennis*, a twist put on the ball to cause it to drop more rapidly than usual.

top-yeast (top′yēst), *n.* See *yeast*.

toque, *n.* 5. See ⋆*toboggan-cap*.

tora¹, *n.* See *torah*.

tora² (tō′rä̤), *n.* [Native name.] A large antelope, *Bubalis tora*, of northeastern Africa, very similar to the hartebeest.

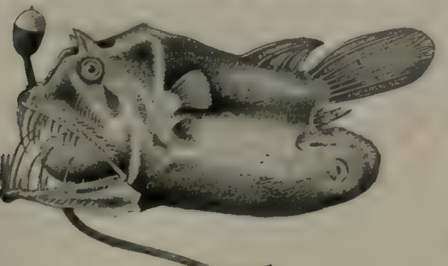
Torbay group. See ⋆*group*¹.

torberite (tôr′bėr-īt), *n.* [G. *torberit* (1793), after *Torbern* (*Torber-n*) Olof Bergmann, who first examined it.] Same as *torbernite*.

torcel (tôr-sel′), *n.* [S. Amer. Sp. ?] The larva of a South American bot-fly, *Dermatobia cyaneiventris*, which sometimes attacks human beings.

torch¹, *n.*—**Alcohol torch,** a simple form of lamp burning alcohol, used in plumbing and other trades requiring a small, very hot, portable flame: sometimes used with a blowpipe. See *paint-burner*.—**Gasolene torch.** (*a*) A simple form of portable gasolene-vapor burner designed to give a large, bright flame, for use in shops and outdoor work, such as track-repairing. It consists of a flat tank which may be hung against a wall, a pipe, and a vapor-burner. (*b*) A similar torch used in plumbing, gas-fitting, electric-wiring, etc., for giving a heating flame wherever a condensed hot flame is required. It is made in many forms. Where air-pressure is used it is called a *gasolene blow-torch*. It is sometimes used as a paint-burner. (*c*) A lamplighters' torch using gasolene.

torch-fish (tôrch′fish), *n.* A name applied to a deep-sea pediculate fish, *Linophryne lucifer*, taken off Madeira. The first dorsal spine carries a luminous bulb above the eye like a torch. *Discovery*, Oct., 1907, p. 120.



Torch-fish (*Linophryne lucifer*).
(From a drawing by Dr. R. W. Shufeldt.)

torch-holder (tôrch′hōl-dėr), *n.* A device or fixture for holding a torch; also, a lamp fixture or bracket for gas or electric-lighting systems representing a supported torch.

tordrillite (tôr-dril′īt), *n.* [*Tordrillo* Range, Alaska, + *-ite*².] In *petrog.*, aphanitic or glassy igneous rocks, which may or may not be porphyritic, characterized by equal amounts of quartz and alkali feldspar; the porphyry equivalent of alaskite. *Spurr*, 1900.

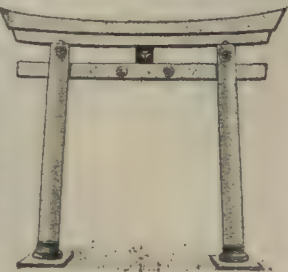
torea (tō′rā̤-ä̤), *n.* [Maori.] The native name of the oyster-catcher (*Hæmatopus longirostris* and *H. unicolor*) of New Zealand.

Torenia (tọ-rē′ni-ä̤), *n.* [NL. (Linnæus, 1751–1753), named in honor of Olof *Toren*, a Swedish traveler and pupil of Linnæus.] A genus of plants of the family *Scrophulariaceæ*. They are perennial or annual herbs with simple and opposite leaves, tubular 2-lipped flowers in terminal or axillary small racemes, 4 stamens all perfect, and many very small seeds. There are twenty species, chiefly of tropical Asia and Africa, of which three are cultivated as tender garden annuals, *T. flava* having mostly yellow flowers, *T. Fournieri* and *T. Asiatica* having mostly blue or white flowers.

toric (tō′rik), *a.* [*tor*(*us*) + *-ic*.] Of or pertaining to a torus: used in optics in reference to a lens the surface of which is a portion of that of a torus, or solid of revolution generated by rotating a circle about any axis in its plane. See ⋆*torus*, 5.

A concave or a convex *toric* lens surface.
Buck, Med. Handbook, I. 595.

torii (tō′ri-ē), *n.* [Jap. *tori-i*.] A form of decorative gateway or portal found in Japan. It consists of two upright wooden posts connected at the top by two horizontal cross-pieces, the lower straight and usually terminating with the supports, and the other curved gracefully and resting upon and overhanging the supports. The torii is associated with Shinto worship, and is found at the entrance to Shinto temples. The Japanese suppose that it was intended originally as a roosting-place of the sacred fowls which gave warning of daybreak. The type is common in the East, appearing in the toran of India, the pailoo of China, and the red-arrow gate of Korea. *Trans. Jap. Soc.*, IV. 82.



Torii.

tormentilla, *n.* 3. The astringent rhizome of *Potentilla Tormentilla*, a plant belonging to the rose family and native to Europe and Asia.

tormentil-tannic (tôr″men-til-tan′ik), *a.* Derived from tormentil-root and resembling tannin.—**Tormentil-tannic acid,** the particular variety of tannic acid extracted from tormentil-root.

tornado-cave (tôr-nā′dō-kāv), *n.* A hole in the ground, a cellar, a vault, or a stone structure, built as a place of refuge from tornadoes.

tornado-lamp (tôr-nā′dō-lamp), *n.* See ⋆*tornado-lantern*.

tornado-lantern (tôr-nā′dō-lan″tėrn), *n.* A form of portable or fixed lantern in which the air for the combustion of the illuminant oil is conducted to the wick through tubular air-passages having bends or elbows, instead of allowing air to reach the combustion point directly from outside. The flame is much less likely to be blown out in a wind or gale. If the circuitous passages can further be heated by the flame so that the air is preheated before delivery to the flame, the latter is hotter, and gives more light and less smoke.

tornal (tôr′nạl), *a.* [*torn*(*us*) + *-al*¹.] Of or pertaining to the tornus. *Proc. Zool. Soc. London*, 1897, p. 76.

tornese (tōr-nā′se), *n.*; pl. *tornesi* (-si). [It., lit. 'of Tours,' where the coin was first struck; F. *Tours*, L. *Turones*.] A subsidiary coin of the Two Sicilies, $\frac{1}{300}$ of a ducat, equivalent to $\frac{27}{100}$ of a United States cent.

tornesello (tōr-nā-sel′lō), *n.* [It., dim. of *tornese*. See ⋆*tornese*.] A bronze coin introduced into Venice by the Doge Barbarigo (1486–1501).

tornhexactine (tôrn-hek-sak′tin), *n.* [Gr. τόρνος, compasses, + ἕξ, six, + ἀκτίς (ἀκτιν-), ray.] In the sponge-spicules, a hexactine with the arms abruptly and sharply pointed.

tornus (tôr′nus), *n.*; pl. *torni* (-ni). [L. *tornus*, < Gr. τόρνος, a turners' wheel, lathe, also compasses. See *turn*.] The inner or anal angle of an insect's wing: used especially to denote the anal angle of the hind wing of a tineine moth.

Hind wing with the medial area striated with brown; a postmedial line incurved at discal fold; an indistinct silvery subterminal line; a fiery red terminal band irrorated with silver from apex to discal fold, where there is a small ocellus with semicircular black mark on its outer edge; a fiery red stigma on termen near *tornus*.
Annals and Mag. Nat. Hist., Sept., 1904, p. 176.

toro (tō′rō), *n.* [Sp. *toro*, bull, < L. *taurus*, < Gr. ταῦρος, bull. See *steer*², *n.*] A common name of *Caranx hippos*, a carangoid fish found on both coasts of tropical America.

toroid (tō′roid), *a.* and *n.* [*tor*(*us*) + *-oid*.]
I. *a.* Same as *toroidal*.

II. *n.* A surface or solid of revolution determined by revolving any closed-plane contour about an axis in its plane which does not intersect it.

Each reflecting surface, according to this plan, would be part of a parabolic *toroid*.
Astrophysical Jour., Dec., 1903, p. 339.

Toroidal coil, a solenoid closed upon itself so as to form a circular ring.

torpedo, *n.*—**Boom-torpedo,** a torpedo fastened to the outer end of a boom projecting from a torpedo-vessel. When attacking, the end of the boom was lowered under water. [Obsolete.]—**Brennan torpedo, Maxim torpedo,** two similar types of dirigible torpedoes named from their inventors, in which two large reels of wire in the interior are geared to screw-propellers. After the torpedo is launched the wire is pulled off the reels by a steam-engine ashore which causes the reels to rotate and turn the screws, thus propelling the torpedo ahead.—**Dirigible torpedo,** a torpedo in which the lateral steering remains under the control of an operator, on a ship or on shore, during the whole length of its run, by means of electric or other wires forming a connection between the torpedo and the operating station.—**Drifting torpedo,** a torpedo which is dependent for its motion on the tide or the current of a stream.—**Howell torpedo,** an automobile torpedo used in the United States navy. It is propelled by a fly-wheel weighing about 100 pounds, which is made to revolve at a high rate of speed just before the torpedo is discharged.—**Lay torpedo,** a dirigible surface torpedo, the motive power of which is an engine driven by compressed carbonic acid gas carried in a reservoir in the interior.—**Oil-well torpedo,** a cylindrical metallic case or shell which contains a heavy charge of nitroglycerin, used, in sinking petroleum-wells, to fracture by explosion the rock at the bottom of the well and so produce or increase the flow of petroleum.—**Schwartzkopff torpedo,** an automobile torpedo made in Germany, substantially the same as the Whitehead except that it is made of a special bronze instead of steel.

torpedo, *v. t.* 2. In sinking oil-wells in a petroleum district, to explode a charge of nitroglycerin at the bottom of (the drilled well) in order to shatter the rock and increase the flow of oil. Charges of from 20 to 80 quarts of the explosive are frequently used, and are contained in tin-plate cases, which are carefully lowered into position and exploded by the dropping of a heavy iron cylinder from above.

torpedo-boat, *n.*—**Submarine torpedo-boat.** See ⋆*submarine*, 2.—**Torpedo-boat destroyer,** a vessel of extremely high speed (from 25 to 35 knots), built on the general lines of a torpedo-boat but larger, running from 300 to 700 tons displacement. It carries torpedo-tubes and guns and is designed especially for chasing and destroying torpedo-boats or for itself acting as a torpedo-boat against the enemy's large ships on the high seas. Commonly, by abbreviation, *destroyer*.—**Torpedo-boat stern.** See ⋆*stern*².

torpedo-director (tôr-pē′dō-di-rek″tọr), *n.* An instrument by which to determine the direction in which an automobile torpedo should be fired to hit the enemy or a target. The relative speed and direction of motion of the enemy, with reference to the vessel on which the director is placed, and the speed of the torpedo to be fired being known, these data are set on certain bars of the instrument. When the sight-bar is pointed at the enemy, the instrument shows the angle at which the torpedo should be fired to strike the target.

torpedo-fuse (tôr-pē′dō-fūz), *n.* A fuse designed for exploding the charge in the head of a torpedo.

torpedo-stern (tôr-pē′dō-stėrn), *n.* Same as *torpedo-boat* ⋆*stern*.

torque, *n.* 3. A proposed unit for the measurement of the moment of forces; one dyne acting with a lever-arm of one centimeter. See *unit of* ⋆*torque*.

In the French system the absolute unit of moment would be the moment of a force of one dyne about a point at one centimetre distance from its line of action; this unit we shall call one *torque*.
Jude, Physics, Experimental and Theoretical, I. 33.

Synchronizing torque, in *elect.*, the torque acting upon the armature of an alternating-current machine which tends to bring the machine into synchronism with others in the same circuit and to hold it in synchronism.—**Unit of torque,** a unit of force acting at the end of an arm of unit length, where the force is perpendicular to the arm and to the axis of revolution. In physics, the unit of torque is the torque of one dyne at the end of an arm one centimeter in length: in engineering, where forces are measured as weights, the unit of torque is the pound-foot or kilogram-meter respectively. These terms although similar in form to the 'foot-pound' and 'kilogrammeter' are not to be confused with them.

torrefication (tor′ē-fi-kā-shọn), *n.* Same as *torrefaction*.

Torrejon group. See ⋆*group*¹.

Torrens system, a method of government registration and guarantee of land-titles, named from its author, Sir Robert Richard Torrens, of South Australia, where the Torrens Land Transfer Act was passed in 1858. It established land registry offices, where, after examination of his title to a given property by a public examiner, a proprietor might have his title registered with a description of the property, and so officially guaranteed. Subsequent purchasers, mortgagees, or lease-holders are likewise protected, on registration of their transactions regarding the property. Certificates of title are issued by the registration office to each party in interest on the surrender of conflicting certificates. The system passed rapidly from South Australia to other British colonies, and is now, with some modification, in use in parts of England and Canada, and in several of the United States. In most jurisdictions its use is optional.

Torrentaria (tor-ẹn-tā′ri-ä̤), *n.* [NL., < L. *torrens*, a torrent: see *torrent*.] A subgenus of fishes of the genus *Etheostoma* under the family *Percidæ*.

Torrential cone. (*a*) See ⋆*cone*. (*b*) Same as ⋆*fan*¹, 9.

torrent-portion (tor′ẹnt-pôr″shọn), *n.* That middle portion of a river's course which is marked by swift currents. Above it, nearer the sources in the steep mountains, is the *cascade-portion*, while below it, in the flood-plain region, is the *river-portion*. *J. D. Dana*, Manual of Geol. (4th ed.), p. 181.

Torridonian (tor-ı-dō′ni-ạn), *a.* In *geol.*, relating to the Torridon sandstone, a Precambrian formation in the north of Scotland. The Precambrian strata are divided into the Torridonian sandstone above and the Lewisian gneiss below. *Geikie*, Text-book of Geol., p. 890. **Torridonian group.** See ★*group*¹.

torsiometer (tôr-si-om′e-tėr), *n.* [L. *torsio(n-)*, torsion, + Gr. *μέτρον*, measure.] An instrument for measuring the degree of torsion; specifically, one for measuring the amount of rotation of the eyeball on the visual axis; also, one for testing the twisting of a revolving shaft, as in a steam-driven vessel.

> This has been a serious obstacle in the path of ship designers, but it appears to have been overcome by taking indicators of the torsion of the shafting through which power is conveyed from the turbine to the propeller. . . . In the Denny and Johnstone *torsiometer* is an electrical method in which a telephone is used, whilst in Mr. Gibson's instrument recourse is had to a flash of light deflected by a mirror.
> *Nature*, March 28, 1907, p. 523.

torsion, *n.*—**Antidromal torsion.** See ★*antidromal.*—**Moment of torsion.** See ★*moment.*—**Torsion couple.** See ★*couple.*

Torsional strain. See ★*torsional strength.*—**Torsional strength,** the capacity of a bar, or shaft, or structure to resist an effort to twist it. The effort to twist is called the 'torsional stress'; the angle through which the bar or shaft is deformed by the twisting process is the 'torsional strain'; the relation of the angular deformation to the moment producing it is the 'torsional stiffness.' Torsional stiffness is a requisite for steady transmission of power by a shaft, since otherwise a torsional vibration would be present, occasioning loss of power.—**Torsional stress.** See ★*torsional strength. Lockwood*, Dict. Mech. Engin. Terms.

torsion-curve (tôr′shọn-kėrv), *n.* In *geol.*, the curved trace of an outcropping stratum due to torsional deformation of dipping formations.

torsion-head (tôr′shọn-hed), *n.* A clamp or support to which one end of a rod or wire is fastened, and which, by revolution about an axis coincident with that of the rod or wire, serves to twist the latter through any desired angle. Angular movements of the torsion-head are usually indicated upon a divided circle mounted with its center in the axis of rotation.

torsion-permeameter (tôr′shọn-pėr-mẹ-am″e-tėr), *n.* See ★*permeameter.*

torsion-rod (tôr′shọn-rod), *n.* The rod used in motor-car construction to resist the tendency of the driving gear or chain to rotate the housing of the driving axle, and also the tendency of obstacles to rotate the spring and axle around the attachment of the former to the frame. Either tendency throws the driving elements out of line, and brings side-stress on the fastenings. The torsion-rod is often attached to the frame with spiral springs between the end of the rod and the lug on the frame, to give elasticity to such joint and lessen the intensity of the shock on it when the rod comes into action. *Cycle and Automobile Trade Jour.*, Dec., 1904, p. 81.

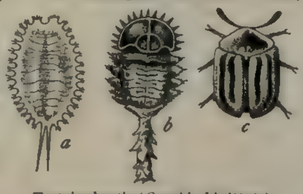
torsion-spring (tôr′shọn-spring), *n.* A spiral wire spring designed to resist a strain of torsion. It is essentially a compression spring in which the strain to which it is submitted tends to unwind the spiral by pulling the two ends in opposite directions. It is used for door- and hinge-springs and in many other places where the pressure or strain to be resisted is at a right angle with the point where the end of the spring is fastened.

tort-feasor, *n.*—**Joint tort-feasors,** in *law*, two or more persons who together commit the same tort. They are jointly and severally liable for the injury.

torticone (tôr′ti-kōn), *n.* [L. *tortus*, twisted, + *conus*, a cone.] Any tetrabranchiate cephalopod shell which is closely or loosely coiled in an asymmetrical depressed or elevated spiral. Such shells among the *Nautiloidea* are distinguished as trochoceracones, and among the *Ammonoidea* as turriliticones. In all cases they present phylogerontic stages of the particular races of which they are the terminals.

tortoise, *n.* 3. An American nymphalid butterfly, *Eugonia j-album*: more fully called the *Compton tortoise.*—4. Same as *tortoise-beetle.*—**Compton tortoise,** an American nymphalid butterfly, *Eugonia j-album*, which ranges throughout Canada and the northern United States east of the Rocky Mountains. Its larvæ feed on the willow and white birch. See *white* ★*J.*—**Five-dotted tortoise,** an American chrysomelid beetle, *Physonota unipunctata*, which feeds on the leaves of the wild sunflower. It has five black dots on the prothorax, of which four are sometimes wanting. The specific name was originally given to one of the one-spotted specimens.—**Greaved tortoise,** a South American fresh-water turtle of the genus *Podocnemis*: so named from the large plates on the front legs.—**One-dotted tortoise,** an American tortoise-beetle, *Physonota unipunctata.* It is yellow in color, with one or five black dots on the prothorax, and feeds on sunflower-leaves.—**Painted tortoise.** See *painted terrapin*, under *terrapin.*

tortoise-beetle, *n.*—**Two-striped tortoise-beetle,** an American chrysomelid beetle, *Cassida bivittata*, which feeds, both as larva and as adult, on the leaves of the sweet-potato and morning-glory vines.



Tortoise-beetle (*Cassida bivittata*).
a, larva; *b*, pupa; *c*, adult: all enlarged.
(Redrawn from Riley.)

Tortoise-shell fish. Same as *handfish.*

tortola (tôr′tọ-lä), *n.* [Sp. *tórtola*, a turtle-dove. See *turtle*¹.] A stamped cut-money of the Virgin Islands, struck in 1801, and so called from the stamp.

Tortonian (tôr-tō′ni-an), *a.* and *n.* [*Tortona* (see def.) + *-ian.*] In *geol.*, noting the upper member in Mayer-Eimar's classification of the Miocene Tertiary of France and Mediterranean Europe, which lies between the Helvetian below and the Messinian-Pontian Pliocene above. It is typically developed about Tortona, in northern Italy, and consists of marls and sands containing marine and fresh-water shells and of local deposits in fissures of Jurassic limestone; the latter are of terrestrial origin and contain abundant fossil mammals.

tortricid, *n.*—**Oak ugly-nest tortricid,** *Archips fervidana*, a species whose larvæ roll together wads of oak-leaves in which they live, several in a nest.

tortuosity, *n.* 3. In *geom.*, the quality of being non-plane.

torup (tor′up), *n.* [Origin uncertain.] The common snapping turtle, *Chelydra serpentina.* [Local, U. S.]

> The small edible tortoise has a name and a fame; it is the terrapin. But whence that name? Not from terra, earth. Farmers and sailors call the big "snapper" the *torup* or torop—however one should spell it. . . . Early travellers in North America describe and figure this creature, noting that it was considered a toothsome dish; but the writer has not seen its name given. There can be no doubt that it is an Indian name originally, and the root whence terrapin was developed by a derivative suffix.
> *The Critic*, Oct. 27, 1894, p. 268.

torus, *n.* 5. In *geom.*, a tore or anchor-ring. See *tore*⁵, 2. *Astrophysical Jour.*, Dec., 1903, p. 335.—**Torus occipitalis,** a slight projection occasionally present on the upper portion of the occipital bone.—**Torus palatinus,** a projection sometimes present at the point of crossing of the palatomaxillary and intermaxillary sutures on the palate.

torymid (tor′i-mid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Torymidæ.*

II. *a.* Having the characters of or belonging to the family *Torymidæ.*

Tosa fowl, a Japanese breed of domesticated fowls, named from the province of Tosa, characterized by the extremely long sickle-feathers of the male. These reach a length of from six to fourteen feet.

Tosafist, *n.* See ★*Tosaphist.*

Tosafoth, *n.* See ★*Tosaphoth.*

Tosaphist, Tosafist (tō-sä′fist), *n.* One of the rabbis who composed the additional commentary on the Talmud called ★*Tosaphoth* (which see).

Tosaphoth, Tosafoth (tō-sä′fōt), *n.* [Heb., < *Yāsaph*, add.] Literally, addition, increase: a name for critical annotations on the Talmud. Most of the composers of the Tosaphoth were Hebrew scholars from Germany and France in the twelfth and thirteenth centuries. The two principal commentaries on the Talmud, Rashi and Tosaphoth, are always printed around the text. The Tosaphists were the immediate followers of Rabbi Solomon ben Isaac (Rashi), and many important interpretations of difficult passages in the text were added by them to those of their predecessor. Five of the foremost Tosaphists were two sons-in-law and three grandchildren of Rashi: contracted from the initials of his full name, *R̊abbi S̊helomoh Itzhaki.*

toscanite (tos′kạ-nīt), *n.* [It. *Toscana* (Tuscany) + *-ite*².] In *petrog.*, a name given by H. S. Washington (1897) to a group of lavas in Tuscany characterized by the presence of lime-soda feldspar and orthoclase with some quartz: related to vulsinites and ciminites. Equivalent to ★*dellenite.*

toss, *v. t.* 11. In *cricket*, to bowl (a full-pitch). [Obsolescent.]—12. To refine (tin) by fusing it and then causing the molten metal to fall in thin filaments through the air. Oxidizable impurities acted on by the air are separated out and form a scum which is skimmed off, after the stream has come to rest in the receiving vessel.—**Toss up the bunt,** an order to the sail-furlers to roll the bunt of the sail on to the top of the yard.

toss, *n.* 7. In *cricket*, a ball bowled so as to reach the batsman before touching the ground; a full-pitch. [Obsolescent.]

tossing, *n.* (*b*) In the refining of metallic tin, the dipping up of the melted metal in ladles and pouring it back into the pot whence it came, thus by exposure to the air causing oxidation of the foreign metals and other impurities which accumulate as a scum on the surface of the refined tin.

tostão (tos-toun′), *n.* [Pg. *tostão* (= Sp. *toston*), variant of *testão*, a teston. See *teston.*] A silver coin of Brazil and Portugal, equivalent to 100 reis. Compare ★*toston.*

tosto (tōs′tō), *a.* [It., also adv., soon, = OSp. OPg. *tosto* = Cat. Pr. *tost* = OF. *tost*, F. *tôt*; origin undetermined; prob. < L. *tostus*, toasted, hot, hence quick: see *toast*, *v.*] In *music*, quick; rapid. Compare *presto.*

toston (tos-tōn′), *n.* [Sp., = Pg. *tostão.* See ★*tostão.*] A silver coin of Bolivia, Guatemala, Mexico, Peru, and Venezuela, equivalent to four reals.

total, *a.*—**Absolutely total motion.** See ★*motion.*—**Total buoyancy.** See ★*buoyancy.*—**Total heat of steam, or of evaporation.** Steam, like all condensable vapors, has a sensible heat for each pressure, measurable by a thermometer or other temperature-measuring device. In addition, it has the heat necessary to change water at that temperature into steam at that temperature, called the 'latent heat.' And thirdly, it has the heat corresponding to the work of overcoming the mechanical resistance or external work due to its tendency to increase its volume or change its state. These latter two factors are revealed upon cooling a weight of steam by absorbing its heat in water. The total heat is sometimes expressed as the sum of: [the heat of the liquid] + [heat of vaporization] + [heat corresponding to external work in increasing volume].—**Total increment,** in *forestry*, the total volume of wood produced by the growth of a tree or stand up to the time it is cut.

tote⁵, *v. t.* 2. To haul (supplies) to a logging-camp.

tote-bag (tōt′bag), *n.* [*tote*⁵, *v.*, + *bag.*] A bag for the use of hunters and others. See the extract. [New Eng.]

> The . . . *Tote Bag*, . . . the best thing for hunting, tramping and fishing trips; for carrying coat, camera, blanket, lunch, etc., made of stout canvas with draw-rope mouth or entrance to bag and with flaps to protect its contents from rain. It is to be carried on the back the same as a knapsack.
> Quoted in *N. and Q.*, 10th ser., II. 162.

tote-box (tōt′boks), *n.* See ★*shop-pan.*

totem-animal (tō′tem-an″i-mạl), *n.* An animal that is the totem of a clan.

totem-badge (tō′tem-baj), *n.* A badge which represents or indicates the totem of the clan to which the owner belongs. *Haddon*, Evolution in Art, p. 118.

totem-clan (tō′tem-klan), *n.* A clan which possesses a totem.

totem-kin (tō′tem-kin), *n.* The kinsfolk of a metronymic clan possessing a totem. *Giddings*, Prin. of Sociol., p. 167.

totem-pole (tō′tem-pōl), *n.* A post erected in front of an Indian house, carved so as to represent totem-animals, ancestral figures, or a series of figures that illustrate a clan legend. Totem-poles are used by the Indians of the coasts of Alaska and British Columbia. See *totem.*

totem-stock (tō′tem-stok), *n.* A group having the same totem. *Ratzel* (trans.), Hist. of Mankind, I. 125.

totem-stone (tō′tem-stōn), *n.* In *prehistoric archæol.*, a stone with peculiar markings believed to represent totems.

tote-team (tōt′tēm), *n.* [*tote*⁵, *v.*, + *team.*] A team which is used to haul or 'tote' supplies to a logging-camp.

> A tote road is cut through the woods to the camp-site, over which the necessary boards, supplies, etc., are hauled. . . . The team which is used in drawing provisions is called the *tote-team.* *Dialect Notes*, II. vi.

totipotence (tō-tip′ọ-tẹns), *n.* [*totipoten(t)* + *-ce.*] In *biol.*, the capacity to generate or regenerate the whole. An egg or a bud which may become a complete organism, or a fragment of the leaf of a begonia which may give rise to a complete plant, is an illustration of totipotence or the potency of the whole. *T. H. Morgan*, Regeneration, p. 243.

totipotent (tọ-tip′ọ-tẹnt), *a.* [L. *totus*, all, + *potens*, powerful.] Exhibiting or characterized by totipotence.

> It appears in Planaria lugubris that while the material at every level has the double potency of producing a head

or a tail according to which end of the piece it comes to lie at, yet in very short pieces from the middle and posterior regions of the body a double-tailed form may arise. We must suppose, therefore, on our hypothesis, that while in this species also the material is *totipotent*, yet when the determining influence of the polarity is removed the stronger teudency is to produce a tail, while in Planaria maculata, as we have seen, the stronger tendency is in the other direction.

Amer. Nat., July–Aug., 1904, p. 504.

totitive, *n.*—**Prime totitive**, a totitive with respect to 1.—**S-totitive of *k***, or totitive of a number *k* with respect to a divisor, *s*, of it, a number as small as *k* and having no factor in common with *k* not also a factor of *s*.

Totonacan (tō-tō-nä′kan), *a.* and *n.* **I.** *a.* Of or pertaining to the Totonacs, a tribe living principally in the state of Vera Cruz, Mexico.

II. *n.* An American linguistic family of which the language of the Totonacs is the sole representative.

totora (tō-tō′rä), *n.* [Aymará of Bolivia.] A reed, *Typha Dominguensis*, growing in shallow places in Lake Titicaca and other mountain lakes of the Andes of southern Peru and Bolivia. The balsas on Lake Titicaca are made of these reeds. The Indians eat the sprouts as a vegetable.

totuava (tō-tö-ä′vä), *n.* [Native name.] A large food-fish, *Cynoscion macdonaldi*, of the family *Sciænidæ*, found in the Gulf of California.

tou (tō′ö), *n.* [Polynesian; Hawaiian *kou.*] Same as ★*banago.*

touart, *n.* Same as *tooart.*

toucan, *n.*—**Red-billed toucan**, *Rhamphastos erythrorhynchus*, a species having the lower mandible and the sides of the upper mandible bright red. The rump and throat are yellow.—**Toco toucan**, *Rhamphastos toco*, a large species, about two feet in length, with an orange-colored bill, tipped with black. The plumage is black, with a white throat and red rump.

touch, *v.* **I.** *trans.* **27.** To ask from; borrow or obtain from: as, to *touch* an acquaintance for a dollar. *Grose*, 1785. [Obsolete or colloq.]

They have *touched* citizens B. B. and Harvey Dixon for a few hundreds.

Lecky, England in the Eighteenth Cent., VIII. 191, note.

II. *intrans.*—**Touch and stay.** See ★*stay*^{2}.

touch, *n.* **26.** In *med.*, palpation, especially examination of the cavities of the body by the finger.—**27.** In *sugar-manuf.*, see ★*string-proof.*—**28.** A theft; pocket-picking. [Slang.]

"You 'll see thot this berg ain't backward with its *touches*. . . ." With all respect to this man's statement, my own observation is that more big "*touches*' take place in Chicago than in New York.

Josiah Flynt, in McClure's Mag., XVI. 574.

Active touch, in *psychol.*, perception by means of cutaneous sensations in combination with the organic sensations (muscular, tendinous, articular) involved in movement. See the extract.

Most psychologists have distinguished *active touch* from sensations of pressure as differing in kind. But so far as we do not introduce other sensations connected with the movement of the organ, the difference is one of degree only.

G. T. Ladd, Psychol. Descript. and Explan., p. 112.

Field of touch, in *psychol.*, the extent of cutaneous surface which, at any given time, is furnishing sensations of touch in response to adequate stimulation: a phrase formed, loosely, on the analogy of 'field of vision.' *J. M. Baldwin*, Dict. of Philos. and Psychol., I. 382.—**Separate-touch**, a name sometimes given to the method of making permanent magnets commonly known as *double-touch*. See *magnet*.—**To make a touch**, to pick a pocket, etc., successfully. [Slang.]

If I *make a touch* here in town and the holler 's big, they [the police] 'll land me if they can.

Josiah Flynt, in McClure's Mag., XVI. 573.

Touch in goal, in *foot-ball*, any one of the spaces at the corners of the field formed by the touch-lines and goal-lines extended.

touch-back (tuch′bak), *n.* In *foot-ball*, the act (of a player guarding his own goal-line) of touching the ball to the ground on, over, or behind the goal-line, the ball so touched being declared dead by the referee, provided the impetus which sent it to or across the line was given by an opponent.

touch-cell (tuch′sel), *n.* A dermal nerve-cell found at the termination of a sensory nerve. *Parker and Haswell*, Zoology, II. 100.

touche (tösh), *n.* [F., < *toucher*, touch.] In musical instruments, a key or digital of any sort.

toucher, *n.* **2.** See the extract.

Nor has the Scottish doctrine of "*touchers*' proved generally acceptable south of the Cheviots. A bowl which, during its original course, touches the jack is called a *toucher*, and counts in the game even should it run into the ditch, or be driven in by another bowl.

Encyc. Brit., XXVI. 328.

touch-line, *n.* **2.** Either of the two lines which bound the sides of a foot-ball field.

touch-proof (tuch′pröf), *n.* See ★*string-proof.*

Tough pitch. Tough-pitch copper should show a silky fracture of light color and a close grain, and the cast ingot must be free from any depression on the surface, as this would indicate an excess of dissolved oxid, due to insufficient poling. In tough-pitch copper the impurities present should all be in the oxidized condition, but no oxid of copper should be present. See ★*overpole*, also ★*wire-bar pitch* and ★*plate-pitch.*—**Tough Tom.** See ★*tom*^{1}.

toughen, *v. t.* **2.** Specifically, of copper, in its metallurgy, the elimination of the foreign metals as oxids and of copper oxid itself, changing the qualities of the cast from brittleness to ductility.

tough-ingot (tuf′ing″got), *n.* An ingot of tough-pitch copper. *Phillips and Bauerman*, Elements of Metallurgy, p. 419.

touloucouna-oil (tö-lọ̈-kö′nạ̈-oil), *n.* [F. spelling of a native name in Guiana (?).] See ★*oil.*

toulouron-oil (tö-lọ̈-ron′oil), *n.* [F. spelling of a native Senegal name.] A brownish-yellow fatty oil from the body of *Pagurus latro.*

Tounatea (tọ̈-nā′tẹ̄-ạ̈), *n.* [NL. (Aublet, 1775), from *tounou*, or *tunu*, the Carib name of *Tounatea guianensis.*] A genus of plants belonging to the family *Cæsalpiniaceæ.* See *Swartzia.*

touradon (tö-rä-doṅ′), *n.* [F. dial.] A hillock of sand and humus formed about a pioneer plant on shore-land mainly withdrawn from the sea and increasing each year in breadth and plant-content.

The *touradons*, thanks to the matting of the roots and stolons, already possess considerable powers of resistance.

A. F. W. Schimper (trans.), Plant-Geog., p. 187.

tourbillion, *n.* **2.** The point near the vertex around which the hair grows radially in different directions. *Deniker*, Races of Man, p. 73.

toure-loure, *n.* See ★*ture-lure.*

touring (tör′ing), *v. n.* and *a.* [*tour*^{2}, *v.*] **I.** *n.* The act of making a tour or journey; traveling; specifically, travel in a motor or other vehicle which lasts for several days, as distinguished from a drive or simple excursion out and back in one day or a very few days.

II. *a.* Designed for use in making tours or considerable journeys: as, a ★*touring*-car (which see).

touring-car (tör′ing-kär), *n.* A form of motor-car, designed for four, five, or six passengers in addition to the driver. Such cars were originally named from the fact that they were designed for touring purposes, with provision for carrying luggage and tourists' necessities and luxuries. The name is now used for a type of motor vehicle (whether designed or used for touring purposes or not) in which more than one seat is provided, and the rear portion is in tonneau form.

Tourist car, a plainly fitted car for the use of excursionists or emigrants; also, a private car designed to be chartered by a party of tourists.—**Tourist sleeping-car**, a special type of plainly furnished sleeping-car for the use of emigrants or excursionists.

touristry (tör′ist-ri), *n.* [*tourist* + *-ry.*] The occupation or sport of touring. [Nonce-word.]

tourmalin, *n.* A yellowish-green variety from Ceylon is known as Ceylonese peridot or Ceylonese chrysolite.

tourmalinize (tör′mạ-lin-īz), *v. t.* [*tourmalin* + *-ize.*] To charge with tourmalin; render tourmalin-bearing.

Along the margin of this intrusive body, the granite is often strongly *tourmalinized.*

Amer. Jour. Sci., April, 1908, p. 323.

tournament, *n.* **4.** In *billiards*, tournaments are of two kinds. Adhering to the import of the word, which is *turnabout*, one kind requires all contestants to play with one another; the other dismisses contestants as fast as they individually lose either two games or three. The first is the original plan, adopted professionally in America in 1860 and never deviated from by professionals in that country. It was adopted in England in 1874 75 and is still known there as the 'American plan,' and was adopted in France in 1879. The other was first introduced in England.

tournamental (tör-nạ-men′tạl), *a.* [*tournament* + *-al*^{1}.] Of or pertaining to a tournament. *Modern Billiards*, p. 305. [Rare.]

tournee (tör-nā′), *n.* [A German form of the F. *tournée*, fem. of *tourné*, turned.] One of the bids in skat, in which the trump is turned up, as distinguished from *solo*, in which it is declared. See ★*skat*^{2}. Also *tourné.*

tovera (tō-vā′rạ̈), *n.* [Sp. *tovera, tobera*, = F. *tuyère.* See *tuyere.*] The twyer of a smelting-furnace. *Coal and Metal Miners' Pocketbook.*

tow^{3} (tō), *v. t.* [*tow*^{3}, *n.* Less prob. another use of *tow*^{1}, *v. t.*, pull.] To make fluffy by picking to pieces, as hair.

tow-car (tō′kär), *n.* A trail-car or trailer. See *trail-car.*

towel-pattern (tou′el-pat″ėrn), *n.* In *wood-carving* and *joinery*, same as *linen-scroll.*

tower^{1}, *n.* **8.** In *chem.*: (*a*) Same as ★*distilling-tube.*

The solution was then filtered from the spongy zinc and distilled, using a *tower*. The acetone was recovered intact, boiling at 54.7° to 55.0° C. under a pressure of 738.8 mm. *Jour. Phys. Chem.*, Oct., 1904, p. 487.

(*b*) A drying-apparatus of cylindrical shape: same as *calcium-chlorid* ★*tube.*

Ammonia (evolved by heating lime mixed with ammonium chloride and dried by passing through a *tower* of lime and one of dry pumice covered with phosphorus pentoxide) is passed into the solution.

Nature, Nov. 13, 1902, p. 42.

9. In a railroad, a building in which are assembled the levers which control a system of switches and signals; a signalman's cabin. Signal-towers are usually two stories high, to give the signalman a view of the tracks and signals under his control. See ★*switch-tower* and ★*signaling.*—**10.** In *geol.*, a columnar protrusion of eruptive rock, such as the famous spine of Pelée on Martinique. See ★*cumulo-volcano.*

Sir Richard Strachey has, indeed, called attention (in *Nature*) to numerous '*towers*' or fingers occurring over the trap-flows of the Dekkan plateau, and he likens these (observed and sketched by him the better part of seventy years ago) to the Pelée excrescence.

Science, May 20, 1904, p. 801.

Angel Tower, also called **Bell Harry Tower**, the great central tower of the cathedral of Canterbury in England. It was completed by Prior Selling, who held office in 1472, and contains the great bell weighing three and one half tons. It derived its name from a gilded angel which once decorated one of the corner pinnacles. It is in the early perpendicular style.—**Cooling-tower**, a tower or stack of pipes, trays, or openwork of brick or terra-cotta, over which the hot condensing-water from a steam-engine condenser is allowed to flow or trickle in order to cool it and thus permit its repeated use as condensing-water: used only where cooling- or condensing-water is difficult or expensive to procure.—**Emmerling tower**, a type of absorption-tube. See ★*absorption-tube.*—**Gay-Lussac tower**, a tower, from 4 to 6 feet in diameter and from 25 to 50 feet in height, forming a part of the lead-chamber plant for the manufacture of sulphuric acid. It usually consists of a timber framework supporting a casing of heavy sheet-lead lined with glazed tiles, and filled with coke or other suitable porous material, over which strong sulphuric acid is caused to trickle, while the waste gases from the chambers pass upward through the mass and escape from the top of the tower to the chimney. The acid absorbs the valuable oxids of nitrogen, which are subsequently recovered and returned to the chambers, while the atmospheric nitrogen, which is valueless, is carried off by the chimney.—**Glover tower**, an important part of the modern plant for making sulphuric acid by the lead-chamber process. Introduced into use about 1860, it has taken the place of the previously used denitrating tower of Gay-Lussac, not only doing its work of recovering from the 'nitrous vitriol' the oxids of nitrogen which have been taken up in the Gay-Lussac absorbing-tower, but also reconcentrating this vitriol so that it is ready to be used again, and employing for this concentration the otherwise waste heat of the gases from the sulphur- or pyrites-burners. See *denitrificator.*—**Porcelain tower**, an octagonal tower, about 260 feet high, built during the fifteenth century at Nanking, China. The outer walls were cased with bricks of white porcelain. Each of its nine stories was provided with overhanging eaves covered with green glazed porcelain tiles, and from them hung numerous bells and lanterns. The tower was destroyed by the Taipings in 1853.—**Solvay tower**, in the working of the Solvay process for making sodium carbonate, the cylindrical tower in which brine containing ammonia in solution is acted upon by carbon-dioxid gas pumped in at the bottom. It consists of some 15 superimposed cylinders of boiler-plate, separated by concave plates perforated by small holes.—**Spode's tower**, a decorative pattern which originated at the Spode factory, Stoke-on-Trent, England, toward the middle of the nineteenth century, and was later revived by W. T. Copeland & Sons. It was printed, usually in blue, on white ware and porcelain.

tower-crane (tou′ėr-krān), *n.* A crane placed on a portable tower and used in the construction of buildings to dispense with scaffolding.

tower-liquor (tou′ėr-lik″ọr), *n.* See ★*liquor.*

towerman (tou′ėr-mạn), *n.* In *railroad signaling*, the man in charge of a railroad switch-and-signal tower. See ★*tower*^{1}, 9, and ★*signaling.*

towhead, *n.* **4.** A shoal or other obstruction in a stream-bed, perceptible through rippling or other movement at the surface. [Local, U. S.]

towing-lights (tō′ing-līts), *n. pl.* White lights carried by a vessel engaged in towing other vessels or boats. [U. S.]

town, *n.*—**On the town.** (*a*) On the list of the town's poor; supported by the town. (*b*) Earning a living on the town, as a prostitute.—**Town warrant** or **town order**, an official order on a town treasurer for the payment of a certain sum of money from the town treasury.

tow-netter (tō′net-ėr), *n.* One who uses a tow-net or towing-net.

There are two schools of *tow-netters*: the old-fashioned method here employed, by which the nets are towed horizontally; and the new method, by which an opening and closing net is let down as vertically as may be, and hauled in open through a given vertical area and then closed. *Geog. Jour.* (R. G. S.), XIII. 153.

tow-netting (tō′net-ing), *n.* **1.** The material (zoölogical specimens, etc.) obtained by the use of the towing-net.

Plaice eggs have been present in every gathering since that date off both the Welsh and the Lancashire coasts. The Port Erin *tow-nettings* later than January have not yet been examined in detail.
Nature, March 24, 1904, p. 488.

2. The act of using a towing-net.

The serial tow-nets were towed on several occasions to get the silk properly seasoned, and the sounding-gear, accumulators, etc., were carefully overhauled. In the first of these preliminary *tow-nettings*, off the North Foreland, a few miles from land, coccospheres were obtained. *Geog. Jour* (R. G. S.), XIII. 148.

town-musician (toun′mū-zish″ạn), *n.* In Germany, especially from the sixteenth to the eighteenth centuries, a musician, usually a player upon some instrument, employed by a town or city to superintend or take part in official or municipal music. Such musicians constituted small licensed gilds, receiving municipal patronage. As a title, *town-musician* denotes a municipal organist or band- and chorus-leader. See ★*town-organist* and ★*town-piper*.

town-organist (toun′ôr″gạn-ist), *n.* In Germany, a town-musician whose duties included playing the organ in one or more of the churches of the municipality. See ★*town-musician*.

town-piper (toun′pī″pėr), *n.* In Germany, a town-musician whose duty was to play a wind-instrument in the municipal band, especially at festivals and merrymakings. See ★*town-musician*.

town-reeve (toun′rēv), *n.* A reeve having jurisdiction in a town or township, as in Canada. See *reeve*¹, 1.

town-site (toun′sīt), *n.* The site of a town; specifically, a tract of land set apart to be occupied by a town; such a tract surveyed and laid out with streets, etc., for this purpose. [U. S. and Canada.]

town-tallow (toun′tal″ọ̄), *n.* Animal fat collected from the refuse of household cookery, used chiefly in soap-making. Practically the same as *kitchen-stuff* or ★*pot-grease*.

towny, *n.* **2.** A fellow-townsman. [Slang.]

He wa′n't no outlandish man neither; he was a born and bred *towney* of ourn. *G. S. Wasson*, The Green Shay, vii.

3. An interpreter.

They [an Eng. regiment in India] enjoyed a fine full flesh meal in the middle of the day, and then threw themselves down on their cots and sweated and slept till it was cool enough to go out with their "*towny*,' whose vocabulary contained less than six hundred words and the Adjective, and whose views on every conceivable question they had heard many months before.
R. Kipling, In the Matter of a Private, in Soldiers [Three, p. 120.

tow-team (tō′tēm), *n.* In *lumbering*, an extra team stationed at an incline in a logging-road to assist the regular teams in ascending with loaded sleds.

tox (toks), *n.* [Gr. τόξον, a bow.] In the sponges, a skeletal element or spicule of monaxial type, which has the form of a double-curved rod or Cupid's bow.

tox. An abbreviation of *toxicology*.

toxalbumic (tok-sal-bū′mik), *a.* [*toxalbum(in)* + *-ic.*] Relating to, or caused by, toxalbumin. *Buck*, Med. Handbook, V. 33.

toxalbumose (tok-sal′bụ-mōs), *n.* [*tox(ic)* + *albumose.*] A poisonous albumose from whatever origin — for example, the active principle of snake-venom.

Such a powder gives a proteid reaction, and is no doubt largely composed of albumoses, hence the name *toxalbumoses* has been applied. *Encyc. Brit.*, XXVI. 64.

toxic, *a.* **3.** Of or relating to a toxin.—**Toxic albumin, albumose, insanity, neuritis.** See ★*albumin*, etc.

toxication (tok-si-kā′shọn), *n.* [NL. *toxicatio(n-)*, < ML. *toxicare*, poison. See *toxicate.*] Poisoning.

toxicity, *n.*—**Venom toxicity,** the poisonous property of snake-venom.

Venom-toxicity. For the study of the toxic principles copperhead venom was chiefly employed. The animal selected for these experiments was the guinea-pig. The method of procedure was the following: We first determined for the particular sample of venom to be used the minimal lethal dose. This was found to be 0.3 mg. for a guinea-pig weighing from 250 to 300 grammes, death resulting within 24 hours. A dose of 0.6 mg. caused death in from two to three hours, and of 0.9 mg. in from 30 to 45 minutes.
Jour. Exper. Med., March 17, 1902, p. 291.

toxicodendric (tok″si-kọ̄-den′drik), *a.* [*Toxicodendr(on)* + *-ic.*] Derived from *Toxicodendron*: applied to an acid. See ★*toxicondric*.

toxicodendrol (tok′si-kō-den′drol), *n.* [*Toxicodendr(on)* + *-ol.*] The non-volatile, oily, active constituent of poison-ivy and similar plants. It is insoluble in water and cannot, therefore, be removed from the skin by washing. Alcohol readily dissolves it, and it is quickly destroyed by an alcoholic solution of lead acetate (sugar of lead).

The poison is in reality a nonvolatile oil. In January, 1895, Dr. Franz Pfaff, of the Harvard University Medical School, announced this discovery. The oil has since been purified and named *toxicodendrol*. It is found in all parts of the plant, even in the wood after long drying. Like all oils, it is insoluble in water, and can not therefore be washed off the skin with water alone. It is readily removed by alcohol.
U. S. Dept. Agr., Bulletin 20, Botany, p. 37.

toxicogenic (tok″si-kọ̄-jen′ik), *a.* [Gr. τοξικόν, poison, + -γενης, -producing, + *-ic.*] Forming poison. *Buck*, Med. Handbook, IV. 184.

toxicohemia, toxicohæmia (tok″si-kọ̄-hē′mi-ạ̈), *n.* Same as *toxemia*.

toxicol. An abbreviation of *toxicology*.

toxicomaïne (tok-si-kō′ma-in), *n.* [*toxic* + *(pt)omaine.*] Same as ★*phosphoptomaïne*.

toxicondric (tok-si-kon′drik), *a.* An abbreviation of ★*toxicodendric*.—**Toxicondric acid,** an acid derived from *Rhus Toxicodendron* and *R. Vernix*. Same as *acetic acid*.

Pfaff proved beyond a doubt that the so-called "*toxicondric acid*' of Maisch is acetic acid, and that the active principle is an oil, which has as yet not been analyzed. Pfaff extracted the "*toxicodendric acid*" out of the fresh leaves with steam, prepared the baryum salt of the watery solution of the *toxicodendric acid* and proved by analyses that the acid was acetic acid.
Med. Record, May 30, 1903, p. 855.

toxicophagous (tok-si-kof′ạ-gus), *a.* [Gr. τοξικόν, poison, + φαγεῖν, eat.] Addicted to eating poisons.

The famous *toxicophagous* Sultan Mahmúd Begara (1459–1511).
H. Yule, Marco Polo (2nd ed.), III. xxv., note 5.

toxicophagy (tok-si-kof′ạ-ji), *n.* [Gr. τοξικόν, poison, + φαγεῖν, eat.] The habit of eating poisons.

toxicophobia (tok″si-kọ̄-fō′bi-ạ̈), *n.* [Gr. τοξικόν, poison, + -φοβια, < φοβεῖν, fear.] A morbid dread of being poisoned.

toxiferous (tok-sif′ẹ-rus), *a.* [Gr. τοξι(κόν), poison, + L. *-fer*, < *ferre*, bear, + *-ous.*] Carrying poison.

toxignomic (tok-sig-nom′ik), *a.* [Gr. τοξι(κόν), poison, + γνώμη, opinion, judgment.] Characteristic of the toxic action of a substance.

toxi-infectious (tok″si-in-fek′shius), *a.* [*toxi(n)* + *infectious.*] Due to infection with the toxic products of a micro-organism.

The statement of Dide, who asserts that there is a diminution in alexin in patients suffering from the "*toxi-infectious*" forms of insanity, notably dementia præcox and general paralysis.
Jour. Med. Research, Dec., 1907, p. 352.

toxin, *n.* **2.** A specific poison of albuminous character, immunization with which leads to the production of a specific antitoxin. The toxin molecule, according to Ehrlich's doctrine, consists of two molecular groups, one toxophoric, to which the poisonous properties of the substance are due, the other haptophoric, which effects the union with the cell, against which the action of the toxin is directed. Soluble toxins have been found only in a limited number of infections, namely, in diphtheria, tetanus, and botulism. See ★*immunity*.

toxinan (tok′si-nan), *n.* [*toxin* + *-an.*] See ★*titoxin*.

toxinemia, toxinæmia (tok-si-nē′mi-ạ̈), *n.* [NL., < *toxin* + Gr. αἷμα, blood.] The circulation of toxins in the blood.

The different *toxinæmias* induced by the infectious diseases — diphtheria and typhoid or typhus fever.
Buck, Med. Handbook, I. 284.

toxin-immunity (tok′sin-i-mū″nị-ti), *n.* Immunity produced by the injection of toxins; hence, a form of active immunity. See ★*immunity*, 5.

In the development of *toxin-immunity* the doses, small at first, are gradually increased in successive inoculations.
Encyc. Brit., XXVI. 66.

toxin-toxoid (tok′sin-tok″soid), *n.* A mixture of toxin and toxoid, as in filtrates of old diphtheria cultures.

Cobbett has recently published a paper on the question whether the normal horse's serum contains diphtheric antitoxin. To solve the problem of the identity or non-identity of the protective substance with antitoxin he attacks it experimentally, basing his work and conclusions upon an acceptance of the *toxin-toxoid* composition of diphtheria-culture filtrates as set forth by Ehrlich.
Jour. Exper. Med., Oct. 1, 1900, p. 62.

toxiphoric (tok-si-for′ik), *a.* Same as ★*toxophoric*. *Science*, Oct. 24, 1902, p. 665.

toxocampid (tok-sọ̄-kam′pid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Toxocampidæ*.

II. *a.* Having the characters of or belonging to the family *Toxocampidæ*.

Toxochelys (tok-sok′e-lis), *n.* [NL., < Gr. τόξοι, a bow, + χέλυς, tortoise.] An extinct genus of turtles of the family *Chelydridæ*, distinguished from the other representatives of the family by having the tympanic ring open and the caudal vertebræ procœlous, with well-developed chevron-bones: from the Upper Cretaceous of the United States.

toxoid (tok′soid), *n.* [*tox(in)* + *-oid.*] A toxin which has lost its toxophoric group, but has retained the haptophoric group, so that it can still unite with the corresponding antitoxin. Such bodies result from the toxins by heat and age. They can be utilized in immunization, as though the toxophoric group were present.

Ehrlich was led to this belief in the complex nature of the toxin molecule through the very curious fact that diphtheria toxin may under a variety of conditions lose its toxicity but still retain its capacity of neutralizing antitoxin and also of uniting with cells, and thus inducing the formation of antitoxin in the animal body. Such toxin molecules deprived of the toxophorous group are called *toxoids*. *Med. Record*, Feb. 14, 1903, p. 243.

toxoinan (tok′sọ̄-i-nan), *n.* Same as ★*toxinan*.

toxoinfectious (tok″sọ̄-in-fek′shius), *a.* Same as ★*toxi-infectious*.

The original cause of the lack of coagulation may be *toxoinfectious*, or due to marked congestion.
Med. Record, Aug. 17, 1907, p. 279.

toxon², toxone (tok′son, -sōn), *n.* [*tox(in)* + *-on(e).*] A substance of the same general character as a toxoid, which, however, has not resulted from the toxin by age, but has been present in the culture bouillon from the start. The post-diphtheritic palsies are referable to the action of such bodies.

In my second research, 'Ueber die Constitution des Diphtheriegiftes,' I supposed that we had to do with a primary secretive product of the diphtheria bacillus which I called '*toxon*.' The *toxon* possesses the same haptophore groups as the 'toxin,' but a lower affinity for the antitoxin. The main difference lies in the toxophore groups, in that the *toxon* even in very large doses does not cause death, but paralysis which only comes on after a long incubation of fourteen days or more.
Jour. Med. Research, Dec., 1906, p. 470.

toxonoid (tok′sọ̄-noid), *n.* [*toxon*² + *-oid.*] A variety of toxon which is capable of binding antitoxin but is not toxic.

toxopeptine (tok-sọ̄-pep′tin), *n.* [*tox(in)* + *peptine.*] A somewhat poisonous substance found by Petri in cultures of the bacillus of Asiatic cholera.

toxopeptone (tok-sọ̄-pep′tōn), *n.* [*tox(in)* + *peptone.*] **1.** A poisonous albuminous substance of peptone character found in cultures of the cholera bacillus.—**2.** Same as *peptotoxin*.

toxophil (tok′sọ̄-fil), *a.* [*tox(in)* + Gr. φιλεῖν, love.] Having an affinity for a toxin. *Vaughan and Novy*, Cellular Toxins, p. 182.

toxophilous (tok-sof′i-lus), *a.* Same as ★*toxophil*.

toxophore (tok′sọ̄-fōr), *a.* [*tox(in)* + Gr. -φορος, < φέρειν, bear.] Toxin-bearing: referring to a special group of the toxin-molecule to which its poisonous properties are due.

The intermediary body, therefore, carries two sets of combining or haptophore groups: one for the cells and the other for the complement (complementophilic group). The complement possesses in addition to such a corresponding haptophore group, another group which exhibits fermentative properties (zymotoxic or *toxophore* group), through the action of which solution of cells takes place.
Jour. Exper. Med., March 17, 1902, p. 282.

toxophoric (tok-sọ̄-for′ik), *a.* [*toxophore* + *-ic.*] Pertaining to that group of the toxin-molecule to which its poisonous properties are due.

In antitoxic neutralization direct union between the toxin and antitoxin occurs; while in bacteriolysis and other forms of cytolysis there is conclusive evidence that, although the intermediary body unites first with the cells, this substance by itself can not bring about injury or solution, but after its union with the cells the substance called 'complement,' normally present in the blood, is capable of being brought into action, whence the injury is inflicted. The action of the complement depends upon its possession of properties designated zymotoxic and *toxophoric*, through the influence of which hæmoglobin is set free from red corpuscles, various organic cells are dissolved, bacteria are disintegrated, and ciliar and flagellar motions are suppressed. *Science*, July 3, 1903, p. 11.

toxophorous (tok-sof′ọ̄-rus), *a.* [*toxophore* + *-ous.*] Same as ★*toxophoric*.

In the molecule of toxin there are at least two chief atom groups — one, the "haptophorous," by which the

> toxin molecule is attached to the cell protoplasm; and the other the "*toxophorous*," which has a ferment-like action on the living molecule, producing a disturbance which results on the toxic symptoms. *Encyc. Brit.*, XXVI. 65.

toxophylaxin (tok sọ-fi-lak′sin), *n.* [*tox*(*in*) + Gr. φύλαξις, defense, + -*in*^{2}.] A defensive proteid in the sense of an antitoxin.

toxosozin (tok-sọ-sō′zin), *n.* [*tox*(*in*) + Gr. σώζειν, save, + -*in*^{2}.] A defensive albuminous substance, in the sense of an antitoxin.

Toxylon (tok′si-lon), *n.* [NL. (Rafinesque, 1818), < Gr. τόξον, a bow, + ξύλον, wood; in allusion to the use of the wood by the American aborigines for bows.] A monotypic genus of trees of the family *Moraceæ*. The species, *T. pomiferum*, is the Osage orange, long known as *Maclura aurentiaca*. See *Maclura*.

toy, *n.* **10.** A domesticated pigeon of small size, bred for certain color-markings. The toys resemble the tumblers in general build and are among pigeons what bantams are among fowl.

tp. An abbreviation of *township*.

T-pipe (tē′pīp), *n.* See ★*pipe*^{1}.

tr. An abbreviation (*f*) of *transactions*; (*g*) of *treasurer*; (*h*) of the Latin *tribunus*, tribune; (*i*) of *trustee*; (*j*) of the Latin *tinctura*, tincture.

trabacole (tra′ba̤-kōl), *n.* [It. *trabaccolo*, < ML. **trabaculum*, dim. of L. *trabs*, a ship, a beam, a tree, etc.] A ship of moderate size, with two or three masts and squaresails, used on the Adriatic.

trabeculation (tra̤-bek-ụ-lā′shọn), *n.* [*trabecul*(*æ*) + -*ation*.] The formation of trabeculæ in an organ or part. See *trabecula*.

> David C. Hilton discusses the early morphogenesis and histogenesis of the liver in the pig, with notes on the development of the ventral pancreas. The most interesting deviation of the results of this research from those of other investigators concerns the relations of the vascular system in the septum transversum to the *trabeculation* of the glandular structures derived from the primitive "protonic" wall. *Jour. Roy. Micros. Soc.*, Dec., 1904, p. [636.

trabeculopalatine (tra̤-bek″ụ-lọ-pal′a̤-tin), *n.* That portion of the skull of the Devonian cyclostome fish *Palæospondylus* which lies beneath the trabeculæ cranii in the region corresponding more or less closely to the palate in other vertebrate animals.

trace^1, *v. t.* **10.** To mark out upon the ground the lines of a field-work.

trace^1, *n.* **4.** In reporting the results of a chemical analysis, a trace of a particular substance is generally understood to mean enough of such substance to verify the fact of its presence, but not enough to be weighed with the balance in ordinary use.

8. (*b*) The original position or place of a figure after that figure has been supposed to move: thus a circle is the closed line which will slide in its *trace*. (*c*) The intersection of a surface by a given line or surface: as, the *trace* of a line is a point; the *trace* of a surface is a line.—**10.** In *angling*, a short line or a length of gut by which the hook is attached to the reel-line; a snell; a snood; a leader.—**Horizontal trace**, in *descriptive geom.*, a trace on the horizontal plane of projection.—**Vertical trace**, in *descriptive geom.*, a trace on the vertical plane of projection.

tracer, *n.* (*f*) In *ordnance*, an attachment to a projectile for use at night, provided with a burning composition by means of which, when the projectile is fired from a gun, its path through the air is rendered visible.

tracery, *n.*—**Geometric tracery**, the geometrical patterns employed in decoration: the most striking peculiarity of Mohammedan or Saracenic art.

trachea^1, *n.*—**Book-leaf trachea**, the respiratory sac with leaf-like divisions characteristic of many arachnids.—**Capillary tracheæ**, in *entom.*, the minute tracheal endings or interosculations. *A. S. Packard*, Text-book of Entom., p. 655.

Tracheal sac. See ★*sac*^{2}.—**Tracheal commissure**, a tube uniting the main branches of the trachea.—**Tracheal tugging**, rhythmical downward movement of the laryngeal prominence in the neck, synchronous with the cardiac contraction, sometimes noted in aneurism of the arch of the aorta.—**Tracheal twig**, one of the smaller branches of the trachea.

trachelhematoma (trā-kel-hem-a̤-tō′mạ̈), *n.*; pl. *trachelhematomata* (-ma̤-tạ̈). [NL., < Gr. τράχηλος, neck, + NL. *hematoma*.] A blood-cyst in the neck.

trachelian (tra̤-kē′li-a̤n), *a.* [Gr. τράχηλος, neck, + -*ian*.] Same as *cervical*.

trachelitis (trā-kẹ-lī′tis), *n.* [Gr. τράχηλος, neck, + -*itis*.] Same as *cervicitis*.

trachelocyllosis (tra̤-kē″lō-si-lō′sis), *n.* [NL., < Gr. τράχηλος, neck, + κύλλωσις, a crooking.] Wryneck.

trachelocyrtosis (tra̤-kē″lō-sėr-tō′sis), *n.* [NL., < Gr. τράχηλος, neck, + κύρτωσις, hump-backed condition.] Same as ★*trachelokyphosis*.

trachelodynia (tra̤-kē-lọ-din′i-ạ̈), *n.* [NL., < Gr. τράχηλος, neck, + ὀδύνη, pain.] Pain in the neck.

trachelokyphosis (tra̤-kē″lō-kī-fō′sis), *n.* [NL., < Gr. τράχηλος, neck, + κύφωσις, humping. See *kyphosis*.] Kyphosis of the cervical spine.

trachelomyitis (tra̤-kē″lō-mī-ī′tis), *n.* [NL., < Gr. τράχηλος, neck, + μῦς (μυ-), muscle.] Inflammation of one or more of the neck muscles.

tracheloplasty (tra̤-kē′lō-plas-ti), *n.* [Gr. τράχηλος, neck, + πλαστός, formed, < πλάσσειν, form, + -*y*^{3}.] Plastic surgery of the neck of the womb.

tracheloschisis (trā-kẹ-los′ki-sis), *n.* [NL., < Gr. τράχηλος, neck, + σχίσις, fissure.] Congenital fissure in the neck.

trachelotomy (trā-kẹ-lot′ọ-mi), *n.* [Gr. τράχηλος, neck, + -τομια, < ταμεῖν, cut.] Amputation of the neck of the womb.

tracheobronchitis (tra̤-kē″ọ-brong-kī′tis), *n.* [NL., < Gr. τραχεῖα, trachea, + βρόγχος, bronchus, + -*itis*.] Inflammation of the mucous membrane of both trachea and bronchi.

tracheolar (tra̤-kē′ọ-lạ̈r), *a.* [*tracheol*(*e*) + -*ar*^{3}.] Of or pertaining to the tracheoles.

> Now that it is proved that the tracheæ do not so end, but merely pass over into the *tracheolar* network, the name "transition cells," as used by Holmgren ('96), is far preferable. *Amer. Nat.*, Feb., 1904, p. 134.

tracheolaryngotomy (tra̤-kē″ọ-lar-ing-got′ọ-mi), *n.* [Gr. τραχεῖα, trachea, + E. *laryngotomy*.] Same as *laryngotracheotomy*.

tracheole (trā′kẹ-ōl), *n.* [NL. *tracheola*, dim. of *trachea*.] One of the delicate ultimate branches of a trachea in insects.

> The term *tracheoles*, which is used elsewhere in insect histology to designate fine tracheal branches not possessing spiral thickening, is preferable to "tracheal capillaries." *Amer. Nat.*, Feb., 1904, p. 134.

tracheophony (trā-kẹ-of′ọ-ni), *n.* [Gr. τραχεῖα, trachea, + φωνή, voice.] The sound of the voice as heard through the stethoscope applied over the trachea.

tracheopyosis (tra̤-kē″ō-pī-ō′sis), *n.* [NL., < Gr. τραχεῖα, trachea, + πύον, pus, + -*osis*.] Suppurative inflammation of the tracheal mucous membrane.

tracheoschisis (trā-kẹ-os′ki-sis), *n.* [NL., < Gr. τραχεῖα, trachea, + σχίσις, fissure.] Congenital fissure in the neck opening into the trachea.

Trachichthyidæ (trak-ik-thī′i-dē), *n. pl.* [NL., < *Trachichthys* (a genus) + -*idæ*.] A family of berycoid fishes of the deep sea.

Trachidermis (trak-i-dėr′mis), *n.* [NL., < Gr. τραχύς, rough, + δέρμα, skin.] A genus of cottoid fishes found in mountain streams of Japan, China, and the Philippines.

Trachinocephalus (trak″i-nọ-sef′a̤-lus), *n.* [NL., < Gr. τραχύς, rough, + κεφαλή, head.] A genus of fishes, of the family *Synodontidæ*, widely distributed in the tropical seas.

Trachinoidea (trak-i-noi′dẹ-ạ̈), *n. pl.* [NL., < *Trachinus* + -*oidea*.] A large group of transitional fishes, some of them of doubtful relationship, showing affinities with the *Percoidea* on the one hand and with the *Batrachoididæ* and *Blennioidea* on the other.

Trachinoidei (trak-i-noi′dẹ-ī), *n. pl.* [NL.] Same as ★*Trachinoidea*.

Trachinops (trak′i-nops), *n.* [NL., < *Trachinus* + Gr. ὤψ, eye.] A genus of serranoid fishes found on the eastern and southern coasts of Australia.

Trachinotinæ (trak-i-nō-tī′nē), *n. pl.* [NL., < *Trachinotus* + -*inæ*.] A subfamily of carangoid fishes including the pampanos.

Trachinotus (trak-i-nō′tus), *n.* Same as *Trachynotus*.

trachiole, *n.* Same as ★*tracheole*.

Trachoma of the vocal bands, an affection of the larynx marked by the appearance of nodular swellings on the vocal cords. Also called *singers' nodes*.

Trachonurus (trak-ọ-nū′rus), *n.* [NL., irreg. < Gr. τραχύς, rough, + οὐρά, tail.] A genus of deep-water fishes of the family *Macrouridæ*.

trachorheite (trā-kọ-rē′īt), *n.* [Gr. τραχύς, rough (see *trachyte*), + ῥοία, flow, + -*ite*^{2}.] In *petrog.*, a name proposed by Endlich (1873) as a collective designation for the igneous rocks propylite, andesite, trachyte, and rhyolite.

trachy-. [*trachyte*.] In *petrog.*, a prefix used with the name of a rock to form the name of an intermediate variety between trachyte and the rock named: as, *trachy*andesite, a lava intermediate in composition between trachyte and andesite; *trachy*dolerite, a lava between trachyte and basalt, or having minerals characteristic of both rocks, basic plagioclase, orthoclase, pyroxene, and olivin. *Trachy*rhyolite is a lava intermediate between trachyte and rhyolite.

trachyacanthid (trak″i-a̤-kan′thid), *n.* [Gr. τραχύς, rough, + ἄκανθα, thorn, + -*id*.] A hypothetical stage, in the phylogeny of the fishes, in which the dentition was plate-like and permanent and the dermal armor was gradually becoming reduced in transition from the plated Paleozoic fishes to the shagreen-coated sharks. Trachyacanthids have also been supposed to occupy a position intermediate between sharks and chimæroids.

trachyandesite (trak-i-an′dẹ-zīt), *n.* Effusive rocks intermediate between trachytes and andesites. Used by H. S. Washington for trachytes which have also much acidic plagioclase (andesin to oligoclase). *Jour. of Geol.*, V. 351.

Trachyceras (tra̤-kis′e̤-ras), *n.* [NL., < Gr. τραχύς, rough, + κέρας, horn.] A genus of discocampylous ammonoid cephalopods with involute shells having tuberculated surfaces: found in the Triassic rocks of Europe.

trachychromatic (trak″i-krọ-mat′ik), *a.* [Gr. τραχύς, rough, + χρῶμα(τ-), color, + -*ic*.] Strongly staining: originally applied to certain myelocytes occurring in the bone-marrow, the nucleus of which stains well with basic dyes, in contradistinction to the nucleus of another type which stains feebly and is hence said to be *amblychromatic*.

trachydolerite (trak-i-dol′e̤-rīt), *n.* A name suggested by Abich for a group of rocks intermediate between the trachytes and basalts. H. S. Washington uses the word to mean a trachyte with considerable basic plagioclase (labradorite to anorthite). *Jour. of Geol.*, V. 351.

Trachypoma (trak-i-pō′mạ̈), *n.* [NL., < Gr. τραχύς, rough, + πῶμα, lid.] A genus of serranoid fishes inhabiting the South Pacific.

Trachypora (tra̤-kip′ọ-rạ̈), *n.* [NL., < Gr. τραχύς, rough, + πόρος, pore.] A genus of favositid corals growing in dendroid colonies with cylindrical stems, represented by numerous species in the Devonian formations.

Trachyrinchinæ (trak″i-ring-kī′nē), *n. pl.* [NL., < *Trachyrinc*(*h*)*us* + -*inæ*.] A subfamily of macruridoid fishes.

Trachyrincus (trak-i-ring′kus), *n.* [NL., prop. **Trachy*(*r*)*rhynchus*, < Gr. τραχύς, rough, + ῥύγχος, snout.] A genus of deep-sea fishes of the family *Macruridæ*.

trachyte, *n.*—**Acmite-trachyte**, in *petrog.*, a kind of trachyte characterized by the soda-bearing pyroxene acmite. The rock is rich in soda and its dominant feldspar is anorthoclase, a soda feldspar. It is closely related to phonolite.

Trachytic andesite. See ★*asperite*.—**Trachytic texture**, rock texture characterized by abundance of tabular alkali feldspars, with or without parallel arrangement (flow-structure).

tracing-slate (trā′sing-slāt), *n.* Same as *transparent* ★*slate*.

track^2, *n.*—**Decauville track**, a portable railway much used in France for the contractors' light trains of cars which convey dirt and rock from excavations on railways, canals, etc. Named from the French manufacturer who designed and built the cars and track.—**On track**, in transit, as cattle or grain in cars.—**To take the back track**, to return; retrace one's steps.—**Tracks of approach**, in a railroad terminal yard, the switches, cross-overs, and ladder-tracks used to connect the line-tracks with the waiting-tracks of the train-shed. They form a fan-shaped system of tracks in front of the station and are used to distribute the incoming traffic and concentrate the outgoing traffic.

track^2, *v.* **II.** *intrans.* **1.** To follow a track, or to proceed along a certain definite route.

> The effused blood had *tracked* down between the coats of the œsophagus into the wall of the stomach where it had burst through the mucous membrane into the cavity of the stomach. *Lancet*, April 18, 1903, p. 1102.

2. To tow.

> Following the advice of Mr. Moberly, of the Hudson Bay Company's service, I "*tracked* up the McLeod river," and thence westward into the mountains some way to the south of "Jasper's House."
>
> *Geog. Jour.* (R. G. S.), XIII. 547.

trackable (trak′a̤-bl), *a.* Admitting of tracking or towing. *Stand. Dict.* [Rare.]

> A single whale-line will sometimes force the brig into a barely perceptible crevice, enlarging it into a '*trackable*' canal. *Kane*, in U. S. Grinnell Exped., p. 88.

trackage, *n.*—**Trackage contract**, an agreement between two railroad companies by which one has the use of tracks belonging to the other.

track-athletics (trak'ath-let″iks), *n.* Athletics conducted on a track, as running, hurdling, walking, and bicycling. Sometimes used in an enlarged sense to include jumping, shot- and hammer-throwing, pole-vaulting, etc.

track-brake (trak'brāk), *n.* A brake which is arranged to rub on the track of a railroad to stop the train instead of being applied to the wheels, as is commonly done; specifically, an automatic device for stopping a car at a fixed point on a road, independently of the car-brake. It consists of two short sections of rails, curved at each end, resting on slide-rails on the ties and held by springs against the inside of each track-rail. The flanges of a car entering the brake press the spring-rails back until the pressure of the springs overcomes the momentum of the car and causes it to slow up or to stop. Used on industrial ★railways (which see). *Science Abstracts,* VI., sec. B, p. 57.

track-channeler (trak'chan″el-ėr), *n.* A channeler mounted on a car or truck which runs on a track.

track-chisel (trak'chiz″el), *n.* A track-layers' hammer which has a peen in the form of a flat or double-faced chisel.

tracker^{1}, *n.*—**Tracker action,** in *organ-building.* See *action,* 11 (*b*).

tracker^{2}, *n.* **3.** One who finds or shows a track or path; a guide.

> Abdulla, our taciturn Midgan guide and *tracker,* points across a long dull-red depression, evidently in better times of rain a water-pan. *Geog. Jour.* (R. G. S.), XI. 41.

Black tracker. See ★*black.*

track-leveler (trak'lev″el-ėr), *n.* In *railroading,* a double-share plowing-car for leveling and crowning the top of a newly filled track. It consists of a flat car to the sides of which are hinged broad wings or shares, that can be raised and lowered by means of chains suspended from a frame erected on top of the car and operated by compressed air. When not in use the shares are folded back against the car and raised above the track. When gravel or other road material has been dumped along the road, the shares are lowered and securely braced. The leveler is then drawn along by a locomotive, sweeping the gravel away on each side and leaving the road slightly crowned and in a finished condition. The leveler, when in use, is weighted by filling tanks on the car with water.

track-scraper (trak'skrā″pėr), *n.* See ★*snow-plow.*

tract^{1}, *n.*—**Frontopontine tract,** a tract of fibers which originates in the pons Varolii and passes anteriorly to form a portion of the crus or peduncle of the cerebrum. *Philos. Trans. Roy. Soc.* (London), 1898, ser. B, p. 38.—**Loewenthal's tract.** Same as *Marchi's* ★*tract.*—**Marchi's tract,** the motor (descending anterolateral) tract in the spinal cord.—**Optic tract.** (*b*) That portion of an insect's brain directly connected with the eyes.—**Urinary tract.** Same as *urinary* ★*passages.*

traction, *n.* **6.** In recent use, traffic by means of railroads; railroads, and especially street-railroads, collectively; the interests and rights represented by such railroads. [Colloq.]

> Any effort to block the building of subways by private capital will simply be playing into the hands of the present *traction* syndicate, which desires that no further or additional independent subway facilities be permitted to compete with its present monopoly.
> *N. Y. Evening Post,* Jan. 7, 1909.

Pneumatic traction, the use of compressed air as a motive power. See the extract.

> With a more extensive use of compressed air for power purposes has come a corresponding broadening of the scope of its employment as a transportation agent, and indeed it has been conclusively proven that *pneumatic traction* has decided advantages over all other forms of mechanical haulage for a large variety of operations.
> *Sci. Amer.,* Dec. 13, 1902, p. 408.

Tangential traction, a proposed system of electric traction in which power is continuously applied by the inductive action of a set of stationary windings extending at intervals the entire length of the road, between the rails, upon a moving part corresponding to the rotor of an alternating-current machine. This moving part of the system is called the 'propeller' and to it the car is attached. A three-phase current in the stationary coils creates a moving magnetic field in the direction in which the car is to travel and the propeller is thus drawn along. *Elect. World and Engin.,* Sept. 26, 1903, p. 530.—**Traction diverticulum.** See ★*diverticulum.*—**Traction increaser,** in locomotives, a system of levers used to transfer a part of the weight of the engine from the trailing truck, under the cab and fire-box, to the driving-wheels; it is under the control of the engineer and is operated by compressed air: used to secure better adhesion to the rails in starting heavy trains and upon steep grades.—**Traction of adhesion.** Same as *friction of rolling.*

traction-engine, *n.* **1.** It is usually steam-driven, the boiler, of locomotive type, forming the frame in part, and supporting the engine and transmission machinery. To give adhesion and adequate support upon the softer ground, and to diminish injury to the road-surfaces, the tires are made very wide. The front axle is made to serve as means of steering by a wheel. It differs from a railway locomotive in being lighter and capable only of low speeds. Usually the load to be hauled is placed in several wagon-bodies on their own wheels, the whole forming a train. It is used in hauling logs, mineral, and similar heavy masses.

2. A semi-portable stationary engine, capable of motion on its own wheels, when self-propelled from place to place, and used for hauling plows in gangs across a field. The plows are attached to a frame by steel ropes which are led by pulleys to a drum or windlass driven by the tractor, doing the work of many horses or oxen, and in much less time.—**3.** A locomobile engine, capable of running on highways or on the ground and dragging behind it the plant or machinery for threshing grain. When the desired point is reached, the threshing plant is set up, and the engine in the tractor is used to drive the thresher by means of belting. Sawmills of small size can be used instead of a thresher.

traction-load (trak'shon-lōd), *n.* **1.** The weight of the locomotive engine which presses vertically downward upon the driving-wheels. Such weight causes adhesion of the smooth tire of the wheel to the top smooth surface of the rail, or by the friction of such contact resists the tendency of the drivers to slip when the effort of the steam is applied to revolve the wheel in either direction.

2. The similar weight of the motor vehicle which presses the tire of the driving-wheels upon the ground. When this is too small, the wheel slips.

traction-splint (trak'shon-splint), *n.* In *surg.,* a splint provided with an attachment for pulling upon the limb.

Tractive force, power. See ★*force*^{1}, ★*power.*

tractor, *n.* **2.** A traction-engine for use on streets and highways. Such tractors may be used to drag loaded vehicles, to drag plows in a gang, or to haul artillery-wagons and field-pieces.

> Hancock seems to have made considerable advance in the construction of boilers and engines suitable for vehicles, a number of which were built extending over the time from 1830 to 1840, carriages, omnibuses and *tractors* being seen on the roads about London.
> *Hiscox,* Horseless Vehicles, p. 41.

3. The frame and steel rope by which a gang of plows is drawn across a field by a traction-engine.

trade^{1}, *n.* **13.** Commodities designed for use in trading.

> The mountaineers carried no clubs, but had spears and some tomahawks and half-axes which formed part of the *trade* forsaken by Anthony's expedition.
> *Geog. Jour.* (R. G. S.), XVI. 284.

Board of Trade unit. See ★*unit.*—**Bureau of Trade Relations.** See ★*bureau.*—**Open trade,** a trade which does not prescribe such rules of apprenticeship, fees, or other conditions of admission of members as would give to its present members a quasi-monopoly of their field of employment. *Webb,* Indust. Democracy, II. 474.—**Régie trade.** See ★*régie.*—**Restraint of trade.** See ★*restraint.*—**Silent trade.** See the extract.

> In an interesting chapter devoted to early trade, the "*silent trade*" mentioned by the old writers is discussed, and accounted for—in West Africa—by the influence of fetish. . . . Many other accounts of dumb trading might have been added to Miss Kingsley's list, *e.g.* of the old writers, those of Pliny, Cosmas Indicopleustes, the Periplus of the Erythæan sea, Ibn Batuta, and John de Marignolli. The earliest intercourse of the Russians with the Chukches is said to have been carried on in this fashion, while in modern times the Poliars of the Pulney hills are said to adopt the practice. The modern form seen by Miss Kingsley in West Africa is also mentioned by Mr. Millson (*Proc. R. G. S.,* n.s. xiii. 582).
> *Geog. Jour.* (R. G. S.), XIII. 420.

Trade board. See ★*board.*

trade-cumulus (trād'kū″mū-lus), *n.* The small cumulus of the trade-wind region during the daytime, rarely developing any rain. See *trade-wind.*

trade-fixture (trād'fiks-tūr), *n.* Anything that a tenant, for the pursuit of the trade or business for which he has leased property, has attached to the property, as shelving, machinery, or an engine-house. Such things may be removed at the tenant's option, and belong to him.

trade-school (trād'sköl), *n.* A school in which instruction in one or more trades is given.

trades-waste (trādz'wāst), *n.* Factory refuse; waste materials incidentally produced in the course of industrial processes. The utilization of such materials whenever possible, and in any case the avoidance of danger to public health or comfort arising from them, constitute important problems of modern civilized life.

> The bare fact that in the majority of cases *trades waste* is likely to be strongly acid or strongly alkaline, or, worse still, charged with chemicals of an antiseptic character, has deterred many from even entertaining the idea of resort to bacterial methods of treatment in connection therewith. *Sci. Amer. Sup.,* Feb. 28, 1903, p. 22713.

trading-stamp (trā'ding-stamp), *n.* A small coupon or certificate used in a commercial scheme for increasing retail sales. The usual method is as follows: A number of merchants agree with the publisher of a subscribers' directory that on his printing their names therein and circulating an agreed number of copies they will buy of him a quantity of trading-stamps which they give to their customers as premiums with purchases. The customers paste a certain number of stamps in the directories and may then exchange the latter for certain articles stocked by the publisher. The scheme has been adjudged to be a gambling device and illegal.

traffic-taker (traf'ik-tā″kėr), *n.* An official of a railway, or other concern engaged in the business of transportation, who compiles traffic-returns (which see).

trag. An abbreviation of *tragedy* or *tragic.*

tragelaph (trạ-jel'af), *n.* [NL. *Tragelaph*(*us*).] A member of the tragelaphine section of antelopes, comprising the nilgaus and kudus. *Sir Harry Johnston,* The Nile Quest, p. 5. [Rare.]

tragophony (trā-gof'ọ-ni), *n.* [Gr. *τράγος,* goat, + *φωνή,* voice.] Same as *ægophony.*

trah (trä), *n.* [Malay *trā, terā,* a stamp, seal.] A tin coin of the Malay Peninsula.

trahira (trä-hē'rä), *n.* [S. Amer. (?).] A common name of *Macrodon microlepis,* a fish of the family *Erythrinidæ* found in fresh waters from Panama to Ecuador.

trail^{1}, *n.* **6.** A local term in southern England for confused deposits of glacial debris resting upon soft sands, clays, etc., which latter have been crumpled and squeezed by ice-pressure. *O. Fisher,* in Quart. Jour. Geol. Soc., XXII. 533.—**Warp and trail,** unsorted glacial or related deposits containing human implements and resting upon a preglacial surface in southern England called the 'Palæolithic floor.' See ★*trail*^{1}, 6. *J. Geikie,* The Great Ice Age, p. 639.

trail^{1}, *v.* **I.** *trans.* **7.** To fasten (as wagons) one behind the other so as to form a train. [Western U. S.]

II. *intrans.* **7.** In *casino,* to play a card which neither builds nor takes in anything.

trail-bar (trāl'bär), *n.* A wooden bar by which the trail of a howitzer carriage is turned and the piece pointed.

trailer, *n.* **1.** (*d*) A dog that follows or tracks by scent.

> They [bloodhounds] are not at all superior to the fox-hound as *trailers.*
> *Forest and Stream,* Jan. 24, 1903, p. 74.

4. *pl.* Several logging-sleds hitched one behind another and pulled by from 4 to 8 horses, driven by one man, thus saving teamsters' wages.

trailing-switch (trā'ling-swich), *n.* See ★*switch.*

trailing-weight (trā'ling-wāt), *n.* **1.** That part of the weight of a locomotive engine which is supported upon the pair of wheels which are behind the main driving-wheels, or which trail behind them when the engine moves forward. Such weight does not increase the tractive power of the engine since the wheels are not drivers but are only present to steady the engine and eliminate a tendency to see-saw around the axis through the center of gravity.

2. That part of the weight of the locomotive engine which rests upon the rear pair of driving-wheels. [Rare.]

trail-lever (trāl'lev″ėr), *n.* A trailing lever hinged to the spindle-carriage of a spinning-mule. *Nasmith,* Cotton Spinning, p. 270.

trail-rope (trāl'rōp), *n.* Same as *prolonge.*

trail-spade (trāl'spād), *n.* A projection at the lower end of the trail of a field-artillery carriage. See ★*spade*^{1}, 5.

> The carriage . . . upon which the barrel is mounted, permits of checking the recoil without undue strain on the parts, through a *trail-spade* provided with an elastic joint. *Sci. Amer.,* May 21, 1904, p. 402.

train^{1}, *n.*—**Armored train,** a locomotive and cars covered with armor of sufficient thickness to keep out small-arms and shrapnel bullets: of occasional use in military operations for moving troops on a railway in the presence of an active enemy.—**Corridor train.** See ★*corridor.*—**Gravel trains,** elongated bodies of glacial gravel, running parallel with the rivers of southeastern Ohio, but south of the limit of the continental glacier. They have been brought from the terminal moraines by torrential currents and have been incised and eroded by later stream developments.

> As the basin lies entirely beyond the glaciated area, there are within it no deposits directly attributable to the action of land ice. The glacial deposits consist of two classes; first, the *gravel trains,* which extend throughout the valleys of the through-flowing streams.
> *W. G. Tight,* in U. S. Geol. Surv., Prof. Paper 13, p. 90.

Incident train, the sound that produces an echo, as distinguished from the echo itself.

> In some cases of echo, when the original sound is a compound musical note, the octave of the fundamental tone is reflected much more strongly than that tone itself. . . . Hence the octave, though comparatively feeble in the *incident train,* may predominate in the scattered reflection constituting the echo. *Encyc. Brit.,* XXV. 49.

Long train, a train that runs a long distance: opposed to *short train,* which runs only a short distance.—**Optical train,** the system of lenses, prisms, or other devices employed in an optical instrument.—**Three-high train,** in a rolling-mill, three rolls arranged one above another in the same housing. The rolls revolve continuously in one direction, and the piece passes first through under the middle roll and then back above the same roll. This saves time over the two-high train, in which either the rolls must be reversed after each passage of the piece or else the piece is passed between the rolls and then handed back for another pass in the same direction.—**Train de luxe,** a railway-train with luxurious fittings; a 'limited train, that is, one in which the number of passengers is limited and the fare may be higher than on ordinary trains.—**Two-high train.** See *three-high* ★*train.*

train-brake (trān'brāk), *n.* See ★*air-brake, continuous brake, vacuum-brake.*

train-despatcher (trān'des-pach″ėr), *n.* In *railroading,* the officer in immediate charge of the running of trains on a railroad. His duty is to maintain an office in telegraphic communication with every station of the division over which he has control. In this office, usually placed at one end of a division, he receives, day and night, reports of the departure, arrival, or passing of every train at every station of the division. These reports, as fast as received, are entered upon a time-sheet or train-sheet, which, when filled for the day, presents a complete record of the progress of each and every train making a trip during that day. Under normal conditions, when all trains are on schedule time, the train-despatcher has a general oversight of the progress of all the trains. When a train stops by reason of an accident to the train or any obstruction on the line, he assumes immediate control by telegraph of all trains approaching the point where the delay has occurred. With the train-sheet before him he is enabled so to order the movements of all the trains that the delay will be as brief as possible. He can side-track or delay locals or freight-trains to allow express and fast-freight trains to pass, can use any track at will for miles up and down the line, can divert traffic to a loop or to a connecting road, and can, when the obstruction is removed, set all trains again in motion and restore the traffic to its normal conditions, all these exceptional movements of trains being recorded on the train-sheet as fast as made. See ★*train-sheet.*

trainer, *n.* 5. *Naval,* a member of a gun's crew or turret crew whose duty it is to keep his gun, or the axis of the turret, in lateral train exactly on the target. Also called *training-pointer.* In modern practice the tendency is to have two persons engaged in keeping the gun on the target, the *training-pointer* and the *firing-pointer.* See ★*gun-pointer.*

> The turrets are trained by one man, the *trainer;* and each gun is pointed by another man, the pointer, who fires the gun. *Sci. Amer.*, June 18, 1904, p. 475.

training-college (trā'ning-kol″ej), *n.* A normal school: a training-school. [Eng.]

training-gear (trā'ning-gēr), *n.* The combination of cranks, shafts, pinions, racks, etc., by means of which a large cannon with its carriage may be pointed in direction.

training-school, *n.*—**Manual training-school.** See ★*manual.*

train-oil, *n.*—**Doegling train-oil.** Same as *doegling* ★*oil.*

train-pipe (trān'pīp), *n.* In a continuous train-brake or power brake for railway-trains, the pipe which connects the source of power or stored energy on the locomotive with the brake elements under each car. In the air-brake it is the pipe connecting the compressing air-pump on the locomotive with the storage air-tanks under each car, by means of which the engineman in the locomotive sets and releases the brakes by causing variations of pressure in the pipe and on the face of the piston in the triple valve on each car. Now called *brake-pipe.* See *triple* ★*valve.*

train-robber (trān'rob-ėr), *n.* One who robs a railway-train.

train-shed (trān'shed), *n.* A protection for a platform, or for several platforms, at which passenger-trains stop, consisting of a roof supported by posts; an open structure in which trains stop, or from which they start, as distinguished from the more completely inclosed station or depot. [U. S.]

> "Now, don't over-eat," warned Ernestine Penwell, as she said good-bye to her husband in the *train-shed* at Chicago. "You know, dear, how careful you have to be." *The Reader*, May, 1904, p. 646.

train-sheet (trān'shēt), *n.* In *railroading,* a printed sheet of paper on which are recorded the movements of trains: used for the guidance and convenience of the train-despatcher. The sheet is ruled in horizontal and vertical lines, the spaces between the horizontal lines representing the stations along the lines and the spaces between the vertical lines being devoted to the records of the movements of trains, one space to each train. The names of the stations are printed on the sheet, and the number of each train and the name of the engineer are written in at the top of the space assigned to that train. When the time (usually eight hours) which the sheet is designed to cover begins, the sheet is spread before the telegraph operator in the train-despatcher's office, and the operator enters upon the sheet the departure and time of passing of every station as fast as received by wire from the stations along the line. When finished the sheet presents a graphic statement of the progress of each and every train in motion during the time represented. When, for any reason, a train is stopped and the traffic thrown into confusion, the train-sheet becomes of great value in enabling the train-despatcher to restore the traffic to its normal conditions with the least possible delay.

train-signal (trān'sig″nal), *n.* A method of signaling from the cars of a train to the engine by means of a small pipe under each car which is connected by hose with the engine and the other cars. In the engine is a connection, through a pipe and reducing-valve, with the compressed-air reservoir of the air-brake system which supplies air to the signal-pipes. In each car is a valve controlled by a lever to which is attached a short cord. When the cord is pulled, a discharge-pipe on the outside of the car (under the hood) shows that the signal has operated and at the same time a whistle is blown in the engine-cab. If the train breaks or any injury is done to the signal-pipes or hose, the whistle sounds.

train-wrecker (trān'rek″ėr), *n.* One who wrecks or destroys a railroad train, by placing obstructions on the track or by other means, for the purpose of robbing it, or from some other criminal motive.

Trajanic (trā-jan'ik), *a.* Of or relating to the Roman emperor Trajan or to the style of art characteristic of his reign.

> The *extispicium* scene probably represents the nuncupatio votorum before Trajan set out on his Dacian campaign, and is *Trajanic* in style. *Athenæum*, Jan. 27, 1906, p. 113.

traject, *n.* 4. A projected alinement or course for a railway or other line of transportation.

> As to the new Bagdad line, two different *trajects* were proposed. The first, which was explored and recommended by Major Von Moltke, started from Angora, passed by Sivas, Diar-Bekir, and followed the valley of the Tigris to Bagdad and Bassorah. *Sci. Amer. Sup.*, March 5, 1904, p. 23553.

tram^1, *n.* 9. See ★*tramway,* 2.

tram^3 (tram), *v.* [*tram(mel).* See *tram*^{3}, *n.*] To use a trammel or distance gage in order to get two shafts, or other axes, parallel to one another, or at right angles to another axis to which both are to be perpendicular. Used of railway axles or those of locomotive drivers; of a millstone spindle in relation to the plane in which the stone or mill is to revolve; and of the shafts of engines relatively to the bed-plate, etc.

tram^4, *n.*—**Milanese tram,** the poorer quality of silk raised about Milan in northern Italy, suitable only for tram or weft.

tram-crane (tram'krān), *n.* A crane mounted on a car and running upon rails. (See *railway-*★*crane.*) When such a crane is driven by its own motor it has been called an *automotor crane.* When the motor is driven by gasolene or some derivative of petroleum it has been called a *petro-automotor crane.*

tram-horse (tram'hôrs), *n.* A horse suitable for drawing a street-car; a trammer.

trammer (tram'ėr), *n.* [*tram*^{1}, *v.*, + *-er.*] A tram-horse; a horse suitable for drawing a street-car. [Colloq.]

> *Trammers* are very little different from bussers except that they are rather plainer, an inch or two smaller in size and correspondingly lighter, but they should have as much weight as possible for their height. They are used on the tramways of European cities. *U. S. Dept. Agr.*, Bur. Animal Industry, Bulletin 37, 1902, [p. 21.

tramp, *v.* I. *trans.* 4. To run (a tramp steamer), taking on merchandise at one port and selling it wherever possible or carrying freight anywhere desired. [Colloq.]

> Dear Captain Kettle,—
> Having noted from your cables and reports you are making a good thing for us out of *tramping* the Parakeet. *Cutcliffe Hyne*, A Master of Fortune, x.

II. *intrans.* 3. To sail on a tramp steamer. [Colloq.]

> It flashed through his mind that it was she who had ordered those grisly heads to be stuck above the water-gate, and he heartily wished himself away back on the steamer, *tramping* for cargo. *Cutcliffe Hyne*, A Master of Fortune, viii.

Trampan (tram'pan), *n.* [Las *Trampas* creek, Cal.] In *geol.*, a stage of the Lower Berkeleyan series of late Tertiary strata in the Coast ranges of California. The name was suggested by A. C. Lawson, and was applied to 2000 feet of marine shales, sandstones, and pebbly conglomerates.

tramper, *n.* 4. A device, in a cotton-baling press, for compacting cotton to the desired density for baling.

tramping-card (tram'ping-kärd), *n.* A certificate entitling a member of a trade-organization to maintenance while traveling in search of work.

> It [Mutual Insurance] includes also what are often termed "trade" benefits; grants for replacing tools lost by theft or fire, and "out-of-work pay," from the old-fashioned "*tramping card*" to the modern "donation" given when a member loses his employment by the breakdown of machinery. *Webb*, Indust. Democracy, I. 153.

tramping-machine (tram'ping-ma̤-shēn″), *n.* An apparatus, similar in construction to a fulling-stock, for rendering pelts of sheep and goats soft and pliable.

> Tubbing is gradually giving way in a greater or less extent to the "*tramping machine,*" whenever anything less than the very best work will suffice. This machine is adapted from the French apparatus for fulling wool stock. It consists of two wooden hammers, which are moved alternately back and forth or up and down in a suitable receptacle, agitating the skins slowly and constantly, turning them over and over each other, and developing by friction the necessary heat, thus rendering the pelts soft and pliable. *Sci. Amer. Sup.*, Feb. 27, 1904, p. 23534.

trampous, trampoose (tram'pus, tram-pös'), *n.* [*trampous, v.*, which see.] A tramp; a long walk.

> I was with him in one of his *trampooses*, and the youngster was risky enough, for he brought us so near the enemy that rifles began to talk. *Cooper*, Pathfinder, viii.

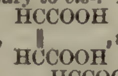
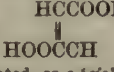
tram-rail (tram'rāl), *n.* 1. A special form of rail, suitable for laying in streets for street railways. The vertical depth is considerable so that in paved streets the stones may be laid above the plane of the cross-stringers or ties. On macadam thoroughfares the depth of the rail is greater than the thickness of the road material. The bearing surface for the wheels is on the top of the upper chord or flange.
2. A rail suspended in a shop, factory, or warehouse on which a trolley or truck may run, so that loads suspended from the trolley may easily be transported from one part of the building to another in the same plane.

tramway, *n.* 2. A light or temporary railroad, as for the transportation of logs, often with wooden rails and operated by horse-power.—3. A gutter attached to a pool-table, designed to save time in gathering the dead or pocketed balls. It is now, in improved form, attached to the under side of tables used in other pocket games. *W. Broadfoot*, Billiards, p. 323. [Eng.]—**Aërial tramway,** a cableway.

trance-coma (trȧns'kō″mä̤), *n.* A comatose condition induced by hypnosis.

trance-speech (trȧns'spēch), *n.* The utterances of a 'medium' during hypnosis or other trance-state: supposed by some to show evidence of supernormal knowledge, to predict the future, etc.

> Post-hypnotic suggestion, crystal-gazing, automatic writing and *trance-speech*, the willing-game, etc., are now . . . instruments of research. *W. James*, in Proc. Soc. Psychical Research, May, [1901, p. 17.

trans-. 2. A combining-form used, in organic chemistry, to indicate that two radicals are on opposite sides of the plane of union of two carbon atoms, or on opposite sides of the plane of the ring in a cyclic compound. It is, therefore, complementary to *cis-*. Thus maleic acid is a cis-derivative,  $\begin{array}{c}\text{HCCOOH}\\ \| \\ \text{HCCOOH}\end{array}$, and fumaric acid a trans-compound,  $\begin{array}{c}\text{HCCOOH}\\ \| \\ \text{HOOCCH}\end{array}$.

> This case is more complicated, as a '*cis*' and '*trans* isomerism of cyclic compounds is involved as well as the optical difference. *Science*, Oct. 14, 1904, p. 406.

transaccidentation (trȧns-ak″si-den-tā'sho̤n), *n.* The notion that in the sacrament the accidents of the bread and wine are transmuted into the accidents of the body and blood of Christ: an idea widely held by ignorant persons in the middle ages and sometimes confused with the doctrine of transubstantiation. *G. S. Hall*, Adolescence, II. 275.

transafrican (trȧns-af'ri-ka̤n), *a.* [*trans-* + *African.*] Crossing Africa; extending across Africa: as, a "*transafrican* railway." *Geog. Jour.* (R. G. S.), XV. 204.

transbaikalian (trȧns-bī-käl″i-an), *a.* [*trans-* + *Baikalian*, relating to Lake Baikal.] Across or beyond Lake Baikal.

> The *Transbaikalian* branch of the Siberian railway. *Geog. Jour.* (R. G. S.), XVI. 223.

transboard (trȧns-bōrd'), *v. t.* [*trans-* + *board, v. t.*] To transfer directly from one vessel to another.

> No sooner has the "ticker" reported the Campania or other big liner "off Fire Island" than a veteran of the transportation department . . . hastens to the foot of Cortlandt Street and boards the "Postmaster-General," the flag-ship of the post-office fleet. The boat was built for this service, and is equipped with spacious mail-

rooms, chutes for *transboarding* sacks, and other expediting appliances. Steam is up, and she is off down the bay to meet the big steamer. She makes fast to her sides, and the mails are received aboard through the chutes.
Scribner's Mag., July, 1899, p. 69.

transcaspian (trȧns-kas'pi-an), *a.* [*trans-* + *Caspian.*] Across or beyond the Caspian Sea; specifically, east of the Caspian.

transcaucasian (trȧns-kâ-kā'sian), *a.* [*trans-* + *Caucasian.*] Across or beyond the Caucasus Mountains or Caucasia; specifically, [*cap.*] of or pertaining to Transcaucasia, the southern division of the Russian government of the Caucasus.

transcendent, *a.* 5. In *math.*, indefinable by any combination of a finite number of equations with rational integral coefficients.

Such numbers are said to be transcendental. Hermite first completely proved the *transcendent* character of *e*. Lindemann, by a similar method, proved the transcendence of π *Encyc. Brit.*, XXXI. 287.

Transcendental irrational, number. See ★*irrational*, ★*number*.

transcession (trȧn-sesh'ọn), *n.* [L. as of **trancessio*, < **transcedere*, < *trans*, across, + *cedere*, yield.] See the extract.

Transcession . . . is the interchange of lip and throat vowels across the vowel scale, as between U and I in food, feed; O, E, in English snow, German schnee.
S. S. Haldeman, Analyt. Orthog., p. 56.

transcondyloid (trȧns-kon'di-loid), *a.* [*trans-* + *condyloid.*] Across or through the condyles.

[The amputation] of Carden being known as the *transcondyloid* operation. *Buck*, Med. Handbook, I. 263.

transcortical (trȧns-kôr'ti-kạl), *a.* [*trans-* + *cortical.*] Across or through the cortical region of the brain: noting any condition, such as aphasia, caused by a lesion destroying a cross-section of the cerebral cortex. *Buck*, Med. Handbook, I. 410.

transe, *n.* and *v.* An amended and former spelling of *trance*.

transect (trȧn'sekt), *n.* [*transect*(*ion*).] In *phytogeog.*, a cross-section (or representation of one) of the vegetation of a station or larger unit. A *line transect* records the species as they occur along a chosen line. A *belt transect* shows the occurrence and the arrangement of plants in a strip, say one decimeter wide. Either of these may be *permanent*, that is, marked for observation year after year with only the natural change; or *denuded*, that is, cleared of vegetation after charting to observe the invasion of new plants. A *layer transect* is a vertical cut through a layered formation as a forest, showing the species occurring in a line and their height. *F. E. Clements.*

transempirical (trȧns-em-pir'i-kạl), *a.* [*trans-* + *empirical.*] Metempirical; noumenal; transcending human experience.

A conclusion supposed to flow from the intrinsic absurdity of *transempirical* objects.
W. James, in Jour. Philos., Psychol. and Sci. Methods, [Dec. 20, 1906, p. 712.

transequatorial (trȧns"ē-kwạ-tō'ri-ạl), *a.* [*trans-* + *equatorial.*] Across or beyond the equator.

The Southern, Australian, or *trans-equatorial* land of our hemisphere. *Geog. Jour.* (R. G. S.), XV. 381.

transf. An abbreviation of *transferred*.

transfer, *n.* 7. *pl.* In *archery*, sheets upon which the hits, score, and golds of every archer in a shooting-match are copied from the several target-papers after each distance is shot. The transfers are the official record from which the prize-list is made up.—**Collodion transfer.** See ★*collodion.*—**Transfer agent**, one who passes upon the evidence of the transfer of title to stock of a corporation and issues new certificates therefor. This office is usually performed by trust companies.—**Transfer chamber**, a chamber or space where two bodies can exchange certain of their physical properties, as where steam by losing heat can be changed into water, or where air by transfer of its heat to some cooler mass, as of metal cooled by water, can be reduced in volume or pressure by loss of some of its intrinsic energy. *Norris and Morgan*, High-speed Steam Engine, p. 16.—**Transfer tax.** See ★*succession tax.*

transferor, *n.* Same as *transferrer*: common in legal use.

transferring-lathe (trȧns-fėr'ing-lāᴛʜ), *n.* A lathe equipped with a lever or pantograph attachment for guiding the tool in order that a design may be reproduced either larger or smaller than the model.

transferrotype (trȧns-fėr'ẹ-tīp), *n.* [L. *transferre*, transfer, + Gr. τύπος, type.] In *photog.*, a transfer-print obtained from a gelatinobromide emulsion film. *Woodbury*, Encyc. Dict. of Photog., p. 499.

transfer-station (trȧns'fėr-stā"shọn), *n.* A point, either at a station or in the street, where railroad transfer-tickets are given and where passengers are transferred from one line of cars to another.

transfer-table (trȧns'fėr-tā"bl), *n.* 1. In a railroad repair-shop, a long platform-car supported upon wheels placed at a right angle with its length, and running upon rails laid in a sunken pit between the ends of parallel tracks. On it is laid a section of track. It is operated by a small motor, and is used to transfer cars from one track to another or from one shop to another.—2. A platform-car for drilling electric cars. It consists of a flat-car hung between and below two four-wheel trucks, each wheel running on one of four parallel rails that cross all the tracks of a storage-yard or car-barn. On this transfer-table, at a right angle with its travel, is a section of standard track, and at each end are inclined rails held by springs, when not in use, just clear of the yard-tracks. When a car is to be transferred, it is run upon the transfer-table, its wheels pressing the spring-rails down on the track to form an incline up which the car moves until it rests on the table, which can then be moved by its own motor to connect with the yard-tracks.

transfinite (trȧns-fī'nīt), *a.* Beyond the finite.

The next part is necessarily based largely on the work of Cantor. To readers unacquainted with the "Mengenlehre," the introduction of *transfinite* numbers must appear rather startling, but this is perhaps partly due to an unusual weakness in the English language. It must be remembered that by a *transfinite* cardinal number is meant a certain kind of infiniteness of aggregate, the same number belonging to different aggregates which are similar in the preceding sense; and a *transfinite* ordinal number is another name for a type of infinite series, or of generating relation. *Nature*, Sept. 3, 1903, p. 411.

Least transfinite cardinal, in *math.*, the number of finite numbers. This number G. Cantor denotes by the Hebrew aleph with the suffix 0 ($\aleph_0$).—**Transfinite cardinal number.** See ★*number*.

transfix, *v. t.* 2. In *geom.*, to cut by a fixed straight, m, a subject composed of planes, a, β, γ, that is, to construct the passes $m \cdot a$, $m \cdot \beta$, $m \cdot \gamma$.

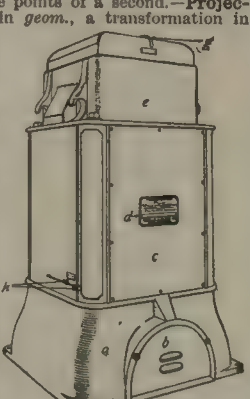
transfluvial (trȧns-flö'vi-ạl), *a.* [*trans-* + *fluvial.*] Across or beyond a stream. [Rare.]

transform (trȧns-fôrm'), *n.* [*transform*, *v.*] In *math.*, the figure or function or operator which results from performing the operation of transformation.

transformation, *n.* 4. (*d*) In *geom.*, an operation which replaces a given figure by a second figure.—10. In *elect.*, change in the voltage of an alternating-current circuit by means of a transformer or other device. *Elect. World and Engin.*, March 28, 1903, p. 533.—**Bilinear transformation.** (*b*) The most general is $w = (az + b) / (cz + d)$. It contains four constants, but only three ratios. We may therefore assume any relation between a, b, c, d. The most suitable one is $ad - bc = 1$.—**Biuniform transformation**, a transformation such that every point must have one transformed point, and only one, and be the transformed point of one point, and of only one.—**Contact transformation.** See ★*contact.*—**Cremona transformation.** (*b*) A birational or one-to-one transformation by which one point of a figure is depicted by one, and only one, point of its transform.—**Double points of a homographic transformation.** See ★*point*1.—**Equations of the transformation.** See ★*equation.*—**Euclidean transformation**, a transformation which replaces a given figure by a congruent or similar figure.—**Isogonal transformation**, orthomorphic transformation.—**Line-sphere transformation**, a transformation which makes a sphere correspond to a straight line, and permits, consequently, the connecting of every proposition relative to straights with a proposition relating to spheres, and vice versa.—**Orthomorphic transformation**, in *math.*, an angle-true transformation; the transformation in conformal depiction.—**Point transformation**, a transformation which replaces the points of one figure by the points of a second.—**Projective transformation**, in *geom.*, a transformation in which corresponding costraight points have the same cross-ratio.—**Ratio of transformation.** See ★*ratio.*

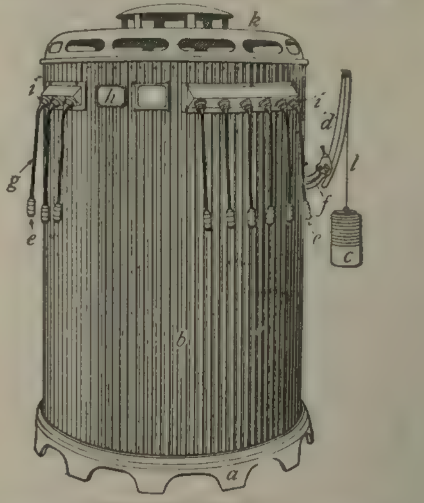
transformation-myth (trȧns-fọr-mā'shọn-mith), *n.* See ★*creation-myth* and ★*myth*.

transformer, *n.*—**Air-blast transformer**, in *elect.*, a transformer cooled by an air-blast.—**Constant-current transformer**, a transformer changing an alternating current of constant or approximately constant voltage into an alternating current of constant intensity, but a voltage varying with the load. It consists of one or two primary coils and one or two secondary coils, which can approach closer to the primary coils, with increasing load, or separate therefrom, and are balanced by a weight acting on a system of levers: used very largely for series arc-lighting.—**Core-transformer**, a transformer in which the coils surround a core of laminated iron, the latter sometimes forming a closed circuit and sometimes consisting of a straight laminated bar, as in the hedgehog transformer, the induction-coil, and other open-circuit transformers.—**Hedgehog-transformer.** See ★*hedgehog-transformer.*—**Impulse transformer**, a type of transformer, designed by Ryan, in which the greater portion of the time-integral of secondary electromotive force is compressed into a very small part of the time of an alternation. A series of sudden electrical impulses are thus obtained which occur at the instant when the primary current passes through zero.—**Leakage current of transformer.** See ★*current*1.—**Multiple transformer.** (*a*) In *elect.*, a transformer the secondary coils of which are so arranged as to supply two or more multiple circuits. (*b*) A transformer designed for use in multiple with other transformers on the same circuit.—**Oil-transformer**, an alternating-current transformer the coils of which are submerged in oil.—**Oscillation transformer**, in *elect.*, a transformer for the production of the electric waves or oscillations employed in wireless telegraphy.—**Phasing-transformer**, in *elect.*, a transformer for shifting the phase of an alternating current.—**Pilot-transformer**, a small portable transformer for determining the voltage at any given point of an alternating-current circuit.—**Polar transformer**, in *elect.*, a transformer the magnetic circuit of which is open and which therefore has poles and an air-space.—**Polyphase transformer**, a transformer with one primary and one secondary coil for each phase of a polyphase circuit.—**Raising transformer.** Same as *step-up* ★*transformer.*—**Rectifying transformer**, a device for converting an alternating current into a direct current; a rectifier.—**Resonance transformer**, in *wireless teleg.*, a transformer of variable frequency used to bring the transmitter and receiver of a wireless system into syntonism. *Elect. World and Engin.*, May 14, 1904, p. 919.—**Rotary transformer**, in *elect.*, a term formerly used for *rotary converter*. See ★*converter*, 3.—**Series-transformer**, one connected in series with the circuit.—**Shell-transformer**, in *elect.*, an alternating-current transformer in which the coils are surrounded by a mass of laminated iron, instead (as in the *core-transformer*) of surrounding a central core of iron.—**Static transformer.** (*a*) A transformer for alternating currents which has no moving parts as distinguished from a rotary transformer. (*b*) A name sometimes given to the dynamostatic machine of Elihu Thomson.—**Step-down transformer**, an alternating-current transformer with more turns in the primary winding than in the secondary, so that the secondary voltage is lower than that of the primary circuit.—**Step-up transformer**, an alternating-current transformer in which the number of turns in the secondary winding is greater than in the primary and the secondary voltage therefore higher than that of the primary circuit.—**Tesla transformer**, a form of induction-coil for the production of alternating currents of very high frequency and high voltage, devised by Nikola Tesla. It consists of a vertical helix of large diameter having only one layer of well insulated wire which constitutes the secondary coil. About this the primary coil, consisting of a few turns of heavier wire, is placed with an intervening air-space between the two coils. No iron core is used. The primary coil is placed in the secondary circuit of an ordinary step-up transformer which has an adjustable spark-gap and condenser in parallel with the Tesla transformer. Under favorable arrangement of the circuits frequencies of many thousands of alternations per second and differences of several hundred thousand volts may be attained in the secondary circuit of the Tesla transformer.—**Three-phase transformer**, a transformer giving in the secondary circuit three alternating currents having a difference of phase of one third of a cycle.—**Tube-transformer**, a small transformer used as a regulator on alternating-current arc-lamps.—**Two-phase transformer**, an alternating-current transformer the secondary windings of which furnish two-phase currents.



Air-blast Transformer.

a, base-casting; *b*, hand-hole cover; *c*, sheet-iron casing; *d*, name-plate; *e*, top-casting; *f*, lifting-lugs; *g*, coil-cooling shaft-indicator; *h*, core-cooling shaft-handle and indicator.



Constant-current Transformer.

a, base-casting; *b*, sheet-iron casing; *c*, counterweight; *d*, adjustable lever arm; *e*, couplings; *f*, secondary leads; *g*, primary leads; *h*, name-plate; *i*, porcelain bushings; *k*, ventilating cover; *l*, counterweight suspending wire.

transformism, *n.* 2. [It. *trasformism.*] In *Italian history*, the parliamentary situation and the financial and administrative policies and methods which marked the premiership of Agostino Depretis (1876–86). See the extract.

Towards 1884 [Minghetti] joined Depretis in creating the parliamentary phenomenon known as "*Transformism*," which consisted in bringing Conservative support to Liberal cabinets. *Encyc. Brit.*, XXX. 761.

transformist, *n.* 2. A supporter of (political) transformism.

II. *a.* Of or pertaining to transformism, in either sense.

A few weeks before his death he repented of his *transformist* policy, and again included Crispi and Zanardelli in his Cabinet. *Encyc. Brit.*, XXVII. 419.

transfrontal, *a.* 2. In *entom.*, across the forehead: as, a *transfrontal* ridge.

transfusion-cell (trȧns-fū′zhọn-sel), *n.* A cell occurring in the endodermis (inner layer of bark) of a root, which retains its thin walls when those of other cells have thickened and permits the passage of water. *Strasburger*, (trans.), Text-book of Bot., p. 115.

transfuze, *v. t.* An amended spelling of *transfuse.*

transgredient (trȧns-grē′di-ẹnt), *a.* [L. *transgrediens* (*-ent-*), ppr. of *transgredi*, step across.] Passing across or beyond; objective. [Rare.]

Pragmatism, thus conceived, is purely individualistic. It yields assurance and individualistic success, but it guarantees no objective or social certainty. Its standards are lacking in the essential character of a standard — *transgredient* reference and verifiability. *Jour. Philos., Psychol. and Sci. Methods*, 1904.

transgression, *n.* 2. In *geol.*, the process which produces overlap. Thus a shore-line, with one series of strata recently formed beneath the neighboring waters, may subside and allow the sea, bringing new sediments, to encroach farther and farther upon the land, away from the old series, and deposit new and overlapping beds by transgression.

The depression in southern Ohio, where the outcrop of the Corniferous limestone and the Corniferous-Hamilton is concealed by the *transgression* of the shale, probably included the arch and allowed its deposition over the edges of some of the older strata. *Amer. Geol.*, Aug., 1903, p. 91.

transilition (trȧn-si-lish′ọn), *n.* [LL. *transilitio*(*n-*), < L. *transilire*, leap over. See *transilient.*] A skipping; a leap from one thing to another. See the extract.

Transilition or over skipping of number by rule and order, as from 1 to 3, 5, 7, and 9 [in a verse]. *T. Watson*, Century of Love, lxxx.

transilluminate (trȧns-i-lū′mi-nāt), *v. t.*; pret. and pp. *transilluminated*, ppr. *transilluminating.* To shine through; illuminate by transmitted light.

A small glow-lamp is held in the closed mouth, in a darkened room, and by a comparison of the shadows on the two sides of the face, thus *trans-illuminated*, an exact diagnosis can often be obtained as to the presence or absence of pus in this central cavity. *Encyc. Brit.*, XXXIII. 85.

transit, *n.* — **Inferior passage** or **transit,** in *astron.*, the passage or transit of a star across the meridian at the point opposite to the point of culmination. In the case of a circumpolar star it is often called *lower culmination* or *transit sub polo.* — **Local transit of the moon,** the passage of the moon across the meridian of the observer. — **Lower transit of the moon,** the passage of the moon across the meridian 180 degrees distant from its upper transit. — **Mine transit,** a surveying instrument for use in mines and so constructed as to permit of sighting at very steep gradients. — **Rapid transit,** quick transportation for passengers in a city and its suburbs: specifically now applied to elevated and subway roads; originally to electric trolleys and other surface methods.

transit, *v. t.* 2. On a surveyors' transit, to turn (the telescope) over so as to make it point in the opposite direction.

Some surveyors prefer not to *transit* the telescope, but to read alternately the true bearing and the true bearing + 180°; the results obtained are the same, but the method is less mechanical than the other. *Encyc. Brit.*, XXXIII. 89.

transitable (trȧn′sit-ạ-bl), *a.* That may be used as a means of transit; that may be passed over or through. [Rare.]

The efforts which have been made to open a *transitable* road to [the valley of the Rio Grande de Terraba] from the north, ever since the time of the Spanish conquest, have proven futile. *Geog. Jour.* (R. G. S.), X. 63.

transite (trȧn′sīt), *n.* [L. *trans*, across, + *-ite*².] A trade-name for a plastic material containing asbestos, intended to replace wood in some of its applications, having the advantage of incombustibility. *Elect. World and Engin.*, Aug. 22, 1903, p. 288.

transiter (trȧn′sit-ėr), *n.* [*transit* + *-er*¹.] A name given by Snyder to his apparatus for making a wire traverse the field of a transit-instrument with a uniform motion adjustable to the speed of a star, keeping the star continually bisected, automatically registering its passage across certain definite points in the field of view, and so eliminating the personal equation of the observer. *Science*, May 2, 1902, p. 693.

Transition form, in *biol.*, a form showing structural characters intermediate between two other forms either in ontogenetic or phylogenetic development. — **Transition point.** Same as *multiple* ★*point.* — **Transition resistance.** (*b*) See ★*resistance.* — **Transition zone.** See *life* ★*zone.*

transitional, *a.* — **Transitional series.** See ★*series.*

II. *n.* In *gram.*, the case expressing direction toward. Also called *terminalis. A. S. Gatschet*, Gram. of the Klamath Lang., p. 484.

transitive, *a.* 3. (*b*) In *Eskimo gram.*, noting the case expressing the subject of a transitive verb and the owner of an object. Also called *subjective. Barnum*, Innuit Language, p. 12. — 5. In *math.*, having the quality or power of transmutation, transmission, or transition: as, a group *transitive* in respect of a set of objects.

If S is any operation of the group, and O any one of the objects, then O. S is an object occurring in the set. If it is possible to find an operation S of the group such that O. S is any assigned one of the set of objects, the group is called *transitive* in respect of this set of objects. When this is not possible the group is called intransitive in respect of the set. *Encyc. Brit.*, XXIX. 121.

transitman (trȧn′sit-mạn), *n.* In *surveying*, one who uses the transit.

transit-micrometer (trȧn′sit-mī-krom″e-tėr), *n.* A filar micrometer with fixed and movable wires placed in the optical focus of the telescope of a transit-instrument. *Science*, July 1, 1904, p. 17.

transit-pass (trȧn′sit-pȧs), *n.* See the extract.

The foreign nations, in order to obviate these difficulties, have arranged with the Chinese Government to permit foreign articles destined for the interior to pay a single tax of two and a half per cent. to the Imperial Maritime Customs and then to receive what is called a '*transit pass*' entitling the goods to pass the interior likin stations without further charge. *Pop. Sci. Mo.*, Dec., 1900, p. 196.

transit-time (trȧn′sit-tīm), *n.* The time when a transit occurs, as of a star over the middle wire of a transit-instrument, or of a spot on the disk of a planet over its central meridian.

But when the disc is outlined with vivid sharpness and the details stand out boldly, as they often do in the comparative absence of atmospheric ebullition, the aspect of the planet seems to have been transformed, and a crowd of interesting features immediately present themselves for examination. On special occasions of this kind, it is possible to take between fifty and a hundred *transit-times* of well-defined marks in the course of a few hours. *Nature*, Feb. 5, 1903, p. 329.

transl. An abbreviation of *translation.*

translate, *v. t.* 12. In *mech.*, to move (a solid body), or to cause (it) to be moved, in such a way that all lines which join different points (of it) are always parallel to the lines which joined these points when it was at rest.

translation, *n.* — **Simple translation,** motion of translation unaccompanied by rotation. — **Translation of light,** in *horary astrol.*, a term used to describe the act of a planet separating from one that is slower than itself and overtaking another, by either conjunction or aspect.

Translucent-disk photometer. See ★*photometer.*

translumination (trȧns″lū-mi-nā′shọn), *n.* [*trans-* + *lumination.*] Same as *transillumination.*

transmarine, *a.* 2. Crossing the sea.

The recent dispatch of a train from Miami, Florida, to Knights Key marks the completion of the greater part of the remarkable *transmarine* railroad which is under construction from the mainland of Florida to Key West. *Sci. Amer.*, Feb. 15, 1908, p. 106.

transmental (trȧns-men′tạl), *a.* and *n.* [*trans-* + *mental*¹.] Independent of, or an existence or reality that is independent of, or apart from, subjective human experience.

Should the reply be that some sort of *transmental* is implied, I would gladly recant, even though Professor James should still insist that the nature of that *transmental* is irrelevant to all human interests. *Jour. Philos., Psychol. and Sci. Methods*, Jan. 17, 1907, [p. 45.

transmissibility, *n.* 2. In *phys.*, transmitting power, specifically for radiation, of a substance or medium; perviousness or diathermancy.

The decrease in the *transmissibility* of the air this year as compared with the last is so marked that some local effect on climate and vegetable growth might seem to be probable. Whether the unusual coolness of the summer, reported both in America and abroad, is connected with it may be a subject for speculation. *S. P. Langley*, in Nature, Nov. 5, 1903, p. 5.

transmission, *n.* 4. The apparatus and mechanism for transmitting (with transformation) the revolutions of the motor-shaft in a motor-car to the driving-wheels. The motor should turn faster than the driving-wheels; it should turn at a uniform speed, while the wheels should have a varying speed; and the motor-shaft must turn in one direction, in internal-combustion motors, while the motion of the car must on occasion be reversed. The transmission may be by shafting and gears and clutches, or by sprocket-wheels and chains. The change of speed may be by a train of gears made variable by sliding one set lengthwise upon a short counter-shaft, so that the ratio of driving to driven gear will be different when different pairs are in gear; or the so-called planetary gear may be used, an epicyclic train or several of them, which go into action when the motion of the supporting casing which carries the rolling gears is constrained by a brake; or a multiplicity of clutches may be employed, with the teeth of the gears constantly in mesh; or a frictional transmission is possible. Reversing of the wheels is effected in an irreversible motor by throwing an additional idle or transmitting wheel into the train. The steam-motors do not require so much transformation mechanism, since they are always reversible and have in themselves a wide flexibility as to speed of the crank-shaft. In large cars, however, it is of advantage to have a high gear and a low gear, the latter for hill-climbing on bad roads and for other cases where high speed of the vehicle is undesirable and yet the power of the motor should not be unduly throttled. In the transmission is also usually included the compensating gear, enabling the two driving-wheels to traverse a different length of roadway, as on curves, without slipping at the contact of wheel and road surface. — **Individual-clutch transmission,** an arrangement of the power-transmission device in motor-cars or other machines whereby a separate clutch is provided for each speed or set of gears. — **Planetary transmission,** a form of gearing for a motor-car, placed between the motor- and the driving-axle, by which varying speed of the latter may be produced from a sensibly constant speed of the motor-shaft. The transmission is made by epicyclic trains of rolling gears of varying ratios, carried each on its own mounting-disk. When the motion of any disk is restrained by applying a brake-pressure to it, this train begins to turn the axle. When the brakes are loose, the train rolls on the pitch-surfaces of the teeth, but no motion of the axle takes place. As all teeth are in mesh at all times, there is no shock or jar in changing speed, and the sliding of the brake in starting any gear precludes sudden shock even in careless hands. The levers must be so designed that it will be impossible to apply the restraining brake to more than one disk at the same time. — **Sliding-gear transmission,** a combination of toothed wheels on parallel shafts, in a motor-car, whereby the motor-shaft may turn at nearly constant speed and cause different speeds for the driving-axle or driving-wheels. This is done by having toothed wheels of differing diameters on one shaft, and on the other complementary gears which may slide lengthwise on the shaft and come in line with the desired wheel on the first shaft. — **Social transmission,** the acquisition, by social animals, of the customs of their kind, through imitation or instruction; social heredity. *J. M. Baldwin*, Development and Evolution, p. 39. — **Transmission efficiency, grating.** See ★*efficiency*, ★*grating.*

transmission-gear (trȧns-mish′ọn-gēr), *n.* In motor-vehicles, the arrangement or device for transmitting the power from the engine or motor to the driving-wheels: sometimes applied specifically to the gears for changing speed. See ★*transmission*, 4.

transmissionist (trȧns-mish′ọn-ist), *n.* and *a.* [*transmission* + *-ist.*] **I.** *n.* One who accepts the doctrine or opinion that the effects of habits, practice, use and disuse, and the direct action of the conditions of life, are transmitted to descendants; a Lamarckian.

II. *a.* Pertaining to or characterizing the doctrine of the transmissionists.

transmissive, *a.* 2. Of or pertaining to transmission; transmitting: as, the *transmissive* power of the atmosphere (for light).

The effect of a slight change in the *transmissive* coefficient of the atmosphere, in altering the equator-poleward temperature-gradient, is very great. *Geog. Jour.* (R. G. S.), XVIII. 522.

transmitter, *n.* (*c*) See ★*indicator*, 1 (*j*). — **Double current transmitter,** in *teleg.*, an instrument for sending signaling currents alternating as to direction on the line; a pole-changer. — **Octuple transmitter,** a telegraphic apparatus for the simultaneous sending of eight messages over a single wire.

It is said that after prolonged experiments in sending four telegraphic messages each way simultaneously over a single wire, the German postal department has accepted the *octuple transmitter* invented by the late Professor Henry A. Rowland, of the Johns Hopkins University. The experiments were conducted between Berlin and Hamburg. Between 300 and 350 words were transmitted a minute. It is understood that the German postal department intends to introduce the Rowland system between Berlin, Hamburg, Cologne, Leipzig and Frankfort. *Science*, April 11, 1902, p. 599.

Reverse-current transmitter, a form of telephone transmitter with carbon buttons on either face of the diaphragm, instead of behind it only, as in the usual type. *Elect. World and Engin.*, Jan. 23, 1904, p. 180. — **Rotary transmitter,** in *elect.*, a device consisting either of a motor-generator or of a machine with one armature wound with separate motor and generator coils, by means of which an alternating current is converted into direct current; a rotary transformer. Rotary transmitters are frequently employed where it is desired to obtain direct currents for electric trolley service and the like from an alternating circuit.

transmitter-hood (trȧns-mit′ėr-hůd), *n.* In *elect.*, a metallic box surrounding a telephone-transmitter with a mouthpiece so arranged as to permit the transmitter to be used without the voice of the speaker being overheard. *Elect. World and Engin.*, May 21, 1904, p. 987.

transmundane (trȧns-mun′dān), *a.* [*trans-* + *mundane.*] Beyond this world or the things of this world. *G. S. Hall*, Adolescence, I. vi.

transocular (trȧns-ok′ụ̄-lär), *a.* [*trans-* + *ocular.*] In *ornith.*, drawn longitudinally through the eye: applied to a stripe or color marking.

transom, *n.* **9.** One of the cross-ties or sleepers laid under the longitudinal sills of a permanent way for a street railway, or for any railway laid on this system, as in a mine. [Eng.]

transom-bar (tran′sum-bär), *n.* The transom, as over a door: from the extended use of transom to denote the window or light at the head of a door.

transom-frame (tran′sum-frām), *n.* See ★*frame*, 5 (*b*).

transom-lifter (tran′sum-lif″tėr), *n.* An apparatus for controlling, opening, closing, locking, and holding in position a transom over a door. It is essentially a sliding rod placed at the side of the door and operating an adjustable lever fixed to the transom.

transonance (trȧn′sọ̄-nạns), *n.* [L. *trans*, across, + *sonans*, sounding, + *-ce.*] In *med.*, the transmission of a sound produced in one organ through the substance of another, as when the sounds of the heart-valves are heard through the overlying lung.

transpacific (trȧns-pạ-sif′ik), *a.* [*trans-* + *Pacific.*] Crossing the Pacific; also, across or beyond the Pacific.

> The U. S. S. Albatross, surveying the Monterey submerged valley with a view to its possible termination for a *transpacific* cable, found 868 fathoms sixteen and one half miles from shore. *Science*, Jan. 10, 1902, p. 59.

Transpanamic subregion, a term applied by Sclater to a zoögeographical division comprising the low-lying and southern parts of Mexico and Central America as far south as the Isthmus of Panama.

transparency, *n.*—**Thermal transparency**, the property of transmitting the heat-waves of the spectrum; diathermancy.

transperitoneally (trȧns-per″i-tọ̄-nē′ạ-li), *adv.* In a manner involving passage through the peritoneum. *Lancet*, June 6, 1903, p. 1591.

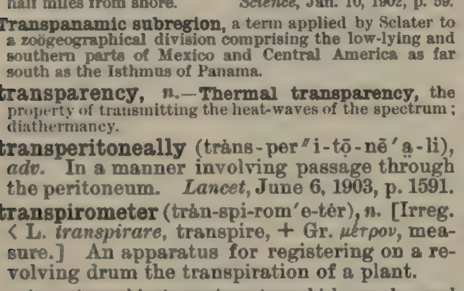
transpirometer (trȧn-spi-rom′e-tėr), *n.* [Irreg. < L. *transpirare*, transpire, + Gr. *μέτρον*, measure.] An apparatus for registering on a revolving drum the transpiration of a plant.

> An autographic *transpirometer*, which can be used with any balance sensitive to a gram, and which records precisely on a drum the transpiration of a plant for a week. *Science*, March 11, 1904, p. 424.

transplant (trȧns-plant′), *n.* **1.** The act or process of transplanting; specifically, the carrying of bacterial organisms from one medium to another for purposes of culture.

> A number of trials at both temperatures were made. Both microorganisms failed to survive the exposure, *transplants* failing to produce a growth on broth and on kidney. The second method, prolonged cultivation from kidney to kidney, the *transplants* being made after three days' growth at 37° C., we were led to believe would succeed. *Jour. Exper. Med.*, Oct. 25, 1900, p. 173.

2. That which is transplanted; specifically, in *forestry*, a seedling which has been transplanted once or several times.



Transplanter.

transplanter, *n.* **4.** A horse-power machine used in setting out tobacco or other field plants. It consists of a carriage supporting a small plow for opening the ground, rollers for pressing the soil against the plants, and a water-tank and pipes for watering each plant as soon as it is set out. It is operated by a driver and two boys, who ride behind and drop the plants in the furrow as the machine moves over the ground.

transport, *n.* **6.** Means of transportation; animals and vehicles used in transportation.

> The Political Resident, Captain Le Mesurier, to whom the party were indebted for the most valuable aid in arranging their *transport*. *Geog. Jour.* (R. G. S.), XV. 642.

Transport number. See ★*number*.

transportation, *n.* **5.** In *geol.*, the movement of land-waste by rivers, glaciers, waves, currents, wind, etc.

> The movement of land waste from one place to another by various agents (streams, currents, winds, waves, etc.) is called *transportation*. The process of laying down land waste on valley floors, in lake basins, and on sea floors is called deposition. *W. M. Davis*, Elem. Phys. Geog.

6. Railway tickets or other permits for traveling. [U. S.]

transporter, *n.* **2.** A trade-name of a special type of derrick-boom. It may be an I-beam, the lower flange of which serves as a track for a traveling hoisting-carriage, or a hollow beam having a track suspended from the under side; and it can be used as a derrick-boom, or may be suspended from a gallows-frame or from another derrick. It employs a traveling hoisting-carriage resembling one used in a cableway.—**3.** In *mach.*, in general, any carrying device, as one used for transporting coal from one vessel to another.

transporter-bridge (trȧns-pōr′tėr-brij), *n.* A bridge over a navigable waterway, placed, by the aid of towers, high enough to avoid interference with navigation. The bridge has a track for the passage back and forth of a trolley or traveler, from which is suspended a car at the level of the roadway or approaches below. The trolley is propelled back and forth along the elevated bridge-track by motors controlled from the car beneath, which thus can be made to transport the traffic from one approach to the other. *Sci. Amer.*, May 28, 1904, p. 420.

transportive, *a.* **2.** Having the power to transport or move from one place to another; transporting.

> As the declivity increased the cutting and *transportive* power of the drainage increased, and as the dissection of the land proceeded, the water level was lowered and the effective zone of atmospheric contact augmented. *T. E. Chamberlin*, in Jour. of Geol., Oct.-Nov., 1899.

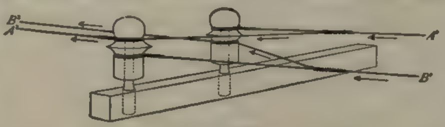
transport-riding (trȧns′pōrt-rī″ding), *n.* In South Africa, the business of a public carrier.

> Philip Hadden was engaged for several years in *transport-riding*—that is, in carrying goods on ox-waggons from Durban or Maritzburg to various points in the interior. *H. R. Haggard*, Black Heart and White Heart, i.

transpose, *v. t.* **7.** In *elect.*, to interchange as to position (the two parallel wires) of an electric circuit, specifically of a telephone circuit, so as to reduce inductive action from neighboring circuits. See ★*transposition*, 7.

transposing (trȧns-pō′zing), *n.* **1.** In *music*, the act or process of changing a piece or passage from one tonality to another; transposition.—**2.** In *elect.*, the shifting, with reference to each other, of line-wires so as to reduce inductive action. See ★*transposition*, 7.

transposition, *n.* **6.** In *geom.*, any motion other than revolution.—**7.** In *elect.*, arrangement of the wires of a power-transmission, telegraph-, or telephone-line so that after a certain distance the wires change places with each other, for the purpose of reducing the disturbing effect of the line on other lines or of other lines on the former, which may occur by induction, electromagnetic or electrostatic.—**Transposition insulator**, in *elect.*, an insulator especially constructed to facilitate the crossing of the wires of an electric circuit without danger of contact where transposition is to be made.—**Transposition joint**, in *elect.*, a particular form of joint made in transposing line-wires. Such joints are placed where the wires are tied to the transposition insulators.



Transposition.

transpower (trȧns′pou-ėr), *n.* [*trans*(*mission*) + *power.*] The time-rate of transmission of energy. Usually modified by a term which denotes the form of energy transmitted; as, *heat-transpower*. *The Engineer*, London, 1903, p. 35. [Rare.]

transpulmonary (trȧns-pul′mọ̄-nạ̄-ri), *a.* [*trans-* + *pulmonary.*] Acting through the lungs, as in birds, where the lungs are connected with large air-sacs into, and out of which, the air passes through the lungs.

> He [Huxley] had already instituted comparison with the Crocodiles, and was clearly coming to the conclusion that the arrangement in the bird is but the result of extreme specialisation of a type common to all Sauropsida with a 'cellular' lung. The respiratory process in the bird may be defined as *transpulmonary*, and it is an interesting coincidence that, as I write, there comes to hand a memoir, supporting Huxley's conclusion, and establishing the fact that there is a fundamental principle underlying the development and primary differentiation of all types of vertebrate lung. *Rep. Brit. Ass'n Advancement of Sci.*, 1902, p. 624.

transradiable (trȧns-rā′di-ạ-bl), *a.* [*trans-* + *radiable.*] Same as ★*radiable*.

transriverine (trȧns-riv′ėr-in), *a.* [*trans-* + *riverine.*] Across or on the other side of the river.

> "The town [Birkenhead] was projected at first simply as a residential *trans-riverine* suburb of Liverpool." *Athenæum*, Dec. 22, 1900, p. 824.

transsaharan (trȧns-sa-hä′rạn), *a.* [*trans-* + *Saharan.*] Crossing or traversing the Sahara: as, a *transsaharan* railway; also, across or beyond the Sahara.

transsegmental (trȧns-seg-men′tạl), *a.* [L. *trans*, beyond, + *segmentum*, segment, + *-al*^{1}.] Passing beyond the limits of a segment: noting, in *anat.*, nerves or blood-vessels traversing one segment of a limb to terminate in another.

transsiberian (trȧns-sī-bē′ri-ạn), *a.* [*trans-* + *Siberian.*] Crossing or traversing Siberia: as, the *transsiberian* railway.

> In Siberia, along the line of the *Transsiberian* Railway, the climate is very severe. Great mountains shut off this region from the moderating influences of the oceans to the east and south, and from October until late in the spring it is exposed to the sweep of cold winds from the Arctic Ocean. *U. S. Monthly Weather Rev.*, March, 1904, p. 124.

transsolid (trȧns-sol′id), *a.* [*trans-* + *solid.*] Noting a physical condition beyond or distinct from that of solidity. [Rare.]

> Geologic facts in a vast system lead to the induction that the centrosphere does not exist in the solid state; if it is metallic the weight reduces it to a *trans-solid* condition. *J. W. Powell*, Truth and Error, p. 43.

transsubjective (trȧns-sub-jek′tiv), *a.* Of or pertaining to reality beyond the sphere of direct experience or of immediate knowledge.

> From this epistemology he derives the metaphysical conclusion that the things we know are indeed independent of my consciousness and of yours, taken individually, or, to use a new phrase, are "*trans-subjective*." *Encyc. Brit.*, XXX. 668.

transuranian (trȧns-ū-rā′ni-ạn), *a.* [*trans-* + *Uranian.*] Situated beyond the planet Uranus.

> Further observations placed beyond a doubt that this 8th magnitude star was in reality the *trans-Uranian* planet. *Chambers*, Descriptive Astronomy, p. 158.

Transvaaler (trȧns-väl′ėr), *n.* A Transvaal Boer.

> In Natal the Boers (*Transvaalers*) have occupied Newcastle without opposition, and have advanced beyond it to Danhauser, nearly two-thirds the way from Newcastle to Dundee and only twelve miles from the latter place. *N. Y. Tribune*, Oct. 17, 1899.

transvaalite (trȧns-väl′īt), *n.* [*Transvaal* (see def.) + *-ite*^{2}.] A mineral, consisting mainly of black oxid of cobalt, found at a cobalt-mine north of Middleburg in the Transvaal, South Africa. It seems to be a product of the alteration of cobalt arsenide.

transverberation (trȧns-vėr-bẹ-rā′shọn), *n.* [*transverberat*(*e*) + *-ion.*] The act of transverberating, or of being transverberated or pierced through. *G. C. Graham*, Santa Teresa, I. 178.

transversal. I. *a.*—**Transversal comparator**, a comparator with fixed microscopes and a bed-plate carrying the standards of length to be compared, the motion of the bed-plate being at right angles to the line joining the axes of the microscopes.

II. *n.* **3.** In *optics*, the line in which the plane of polarization of a beam of light intersects the wave-front.

transversale^2 (troṅs-ver-säl′), *n.* [F., fem. of *transversal*. See *transversal.*] In *roulette*, a bet placed at the end of any three numbers, taking them horizontally.—**Transversale six**, a bet placed on the line, taking in six numbers horizontally, three above and three below the line.

transversan (trȧns-vėr′san), *a.* [L. *transversus*, transverse, + *-an.*] Placed transversely: used only in the following phrase.—**Transversan plane**, the plane which passes through the center of a diatom frustule vertical to the pervalvar axis. *O. Müller.*

transverse, *n.* **2.** In *math.*, a transverse axis. [Rare.]

tranter, *n.* **2.** Specifically, a seller of fish; a name applied to a boatman who visits vessels in harbor for the purpose of supplying them with fish. [Eng.]

trap^{3}, *n.*—**Dekhan traps,** vast flows of basaltic rocks of Cretaceous age, estimated to cover 200,000 square miles in southern India.—**White trap,** a local name in the south Staffordshire coal-field for a white decomposed basaltic rock intruded in narrow veins into the coal and bituminous shales.

Trapaceæ (tra-pā'sẹ̄-ē), *n. pl.* [NL. (Dumortier, 1827), < *Trapa* + *-aceæ.*] A family of dicotyledonous choripetalous plants, the water-nut family, of the order *Myrtales*, consisting of the single genus *Trapa*, the water-nut, water-chestnut, or water-caltrop. See *Trapa.*

trap-board (trap'bōrd), *n.* In *weaving*, a perforated board on a Jacquard that takes the place of a griffe. *T. W. Fox*, Mechanism of Weaving, p. 143.

trap-crop (trap'krop), *n.* A crop planted for the purpose of protecting another crop from an attack of a fungous or insect enemy. The plant used for the trap-crop must be one which is especially susceptible to attack by the fungus or insect from which the main crop is to be protected. See ★*crop.*

The points to remember are: the *trap-crop* should consist of some plant readily susceptible to the disease it is intended to catch, and that after becoming diseased it should be removed before spores or sclerotia are produced.
Massee, Plant Diseases, p. 26.

trap-door, *n.* **2.** In *mining*, a door designed to direct air-currents in ventilating systems, or to prevent surface wind from deranging the normal direction of air-currents.

trap-drummer (trap'drum"ėr), *n.* A street musician who plays upon several instruments simultaneously by means of levers and cords worked by the hands, feet, elbows, and head.

Trap-drummer's neurosis, a hitherto undescribed occupation-disease. *Med. Record*, Feb. 14, 1903, p. 268.

trapezitæ (trap-e-zī'tē), *n. pl.* [NL., < Gr. *τραπεζίτης*, a money-changer.] Greek money-changers, or bankers. They sat at tables and exchanged the many forms of Hellenic money.

The difficulties of exchange would have been endless, but for the class of *Trapezitae*, which existed in all Greek cities. *P. Gardner*, Types of Greek Coins, p. 11.

trapezium, *n.* **1.** In *geom.*: (*b*) Any quadrilateral not a parallelogram. *Todhunter*, Euclid, p. 5. (*c*) A trapezoid.

Some writers propose to restrict the word *trapezium* to a quadrilateral which has two of its sides parallel.
Todhunter, Euclid, p. 5.

3. [*cap.*] An irregular quadrangle in the nebula of Orion, formed by its four brightest stars.

trapezohedral, *a.*—**Trapezohedral symmetry.** See ★*symmetry*, 6.

trapezoid, *n.* **3.** In *anthrop.*, a type of cranium with somewhat flattened vertex and basal region which are approximately in parallel planes. *G. Sergi* (trans.), Var. of the Human Species, p. 41.

trapiche (trä-pē'chā), *n.* [Sp.] A sugar-mill; a cane-mill; a small sugar plantation; also, in Chile, a rude form of grinding-mill for ores.

The *trapiche* or sugar-cane press of the chief. Here two huge wooden rollers set close together pressed the cane stalks and large metal vessels received the juice. Distilling pots were placed conveniently near.
National Geog. Mag., VII. 242.

trap-lid (trap'lid), *n.* A hinged door or lid, in the top of a box or case, which is provided with a spring or snap fastening to hold it in place when closed.

These precision instruments are enclosed in a walnut casing with a *trap-lid* which serves as protection during transportation.
Elect. World and Engin., Oct. 1, 1904, p. 563.

trap-light (trap'līt), *n.* A light connected with a device for trapping insects which the light attracts.

In view of these facts, Mally, during his two summers' investigations, made extensive experiments with *trap lights* for the moths.
U.S. Dept. Agr., The Cotton Plant, Bulletin 1896, p. 331.

trap-mold (trap'mōld), *n.* A mold in which the curved shapes of the plumbers' traps (see *trap*, 4) can be cast in lead or brass or other metal or material.

trappy^{2} (trap'i), *a.* [*trap*^{3} + *-y.*] Same as *trappean.*

trap-shooter (trap'shö"tėr), *n.* One who practises trap-shooting.

Western Pennsylvania *Trapshooters'* League.
Forest and Stream, Feb. 21, 1903, p. 158.

Designed especially for duck shooters, *trap shooters*, etc., but suitable for all out-door purposes.
Forest and Stream, Jan. 24, 1903 (advt.).

trap-shooting (trap'shö"ting), *n.* The sport of shooting live birds released from a trap, or inanimate targets thrown into the air from a trap. See *trap*^{1}, 2. *Forest and Stream*, Jan. 31, 1903, p. 98.

trap-tree, *n.* **2.** A tree deadened or felled at a time when destructive bark-beetles will enter the bark. The bark is then peeled and either burned or buried.

trascoro (träs-kō'rō), *n.* [Sp., < *tras-*, L. *trans-*, beyond, + *coro*, choir. See *choir.*] In Spanish churches, a space at the back of the choir; one part of the inclosed space for the clergy and altar-ministrants, when that space is divided. The Spanish terms *coro* and *trascoro* correspond to *choir* and *farther choir*. See ★*back-choir* and ★*capilla mayor.*

trash^{1}, *n.* **5.** A low grade of tobacco-leaf. See *white Burley* ★*tobacco.*—**Corn trash.** See ★*corn*^{1}.

trash^{1}, *v. t.* **2.** To discard. [Colloq.]—**3.** To remove the outer leaves from (growing cane). See *cane-trash*, 2.

The ancient practice of *trashing* ratoons, i.e. stripping them of their outward leaves, being of late very generally and justly exploded.
Bryan Edwards, A Hist. of the British W. Indies, II. 257.

trashy, *a.* **2.** Encumbered with trash, that is, with the growth of the previous season.

The high curve of the beam prevents fouling in *trashy* land. *Trade Catalogue*, 1905–06.

Traube's corpuscles. See ★*corpuscle.*

traumatize (trâ'ma-tīz), *v. t.*; pret. and pp. *traumatized*, ppr. *traumatizing.* [Gr. *τραυματίζειν*, wound, < *τραῦμα*, a wound. See *traumatism.*] In *surg.*, to inflict an injury upon.

In spite of the general insensibility the orifices retain their sensibility, the patient struggling when they are *traumatized*, though he will preserve no recollection of this. *Therapeutic Gazette*, Feb. 15, 1903, p. 100.

traumatol (trâ'ma-tol), *n.* [Gr. *τραῦμα(τ-)*, a wound, + *-ol.*] A trade-name of an iodo-orthocresol, $HOC_6H_4CH_2I$. It is a reddish, insoluble, pulverulent compound, used in surgery as an antiseptic, deodorizer, and drying-powder.

traumatosis (trâ-ma-tō'sis), *n.* [NL., < Gr. *τραῦμα(τ-)*, wound, + *-osis.*] Same as *traumatism.*

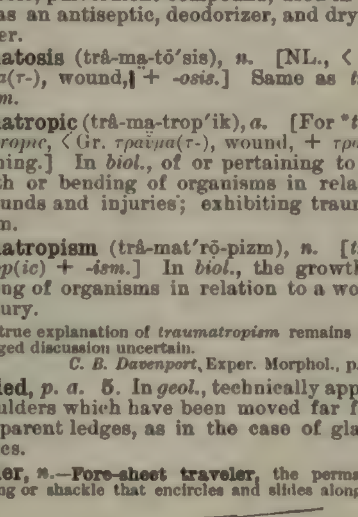
traumatropic (trâ-ma-trop'ik), *a.* [For **traumatotropic*, < Gr. *τραῦμα(τ-)*, wound, + *τροπος*, a turning.] In *biol.*, of or pertaining to the growth or bending of organisms in relation to wounds and injuries; exhibiting traumatropism.

traumatropism (trâ-mat'rọ̄-pizm), *n.* [*traumatrop(ic)* + *-ism.*] In *biol.*, the growth or bending of organisms in relation to a wound or injury.

The true explanation of *traumatropism* remains after prolonged discussion uncertain.
C. B. Davenport, Exper. Morphol., p. 386.

traveled, *p. a.* **5.** In *geol.*, technically applied to boulders which have been moved far from their parent ledges, as in the case of glacial erratics.

traveler, *n.*—**Fore-sheet traveler,** the permanent iron ring or shackle that encircles and slides along the iron span or bar which is bolted through the deck so that it sets in athwartships direction under the after end of the fore-boom. The fixture in the deck upon which the ring or shackle slides is known as a *horse*, and the *traveler* secures to the lower end of the lower one of the sheet-blocks under the boom.—**Shop traveler,** a form of traveling-crane for indoor use, in which the carrying girders or cross-beams are supported upon the side walls, leaving the floor space free. Such cranes can receive and deliver their load from and at any point in the rectangle described by the longitudinal and transverse motion of the hoisting hook.—**Traveler wheels,** the wheels of a buggy or trolley running back and forth upon a stretched cable or aërial tramway for conveying material or men; specifically, such a trolley used in stretching or laying the wires for a suspension or wire-cable bridge. *Elect. World and Engin.*, May 14, 1904, p. 917.



Fore-sheet Traveler.
a, traveler; *b*, horse; *c*, *c*, sheet-blocks; *d*, *d*, buffers.

traveler-iron (trav'el-ėr-ī"ėrn), *n.* See *fore-sheet* ★*traveler.*

traveler's-grass (trav'el-ėrz-gràs"), *n.* Same as ★*settler's-twine.*

Traveling bridge, crane. See ★*bridge*^{1}, *crane*^{2}, 1.—**Traveling guys,** portable jib-boom guys sometimes used as additional supports for the jib-boom (sideways) when under a press of sail. These are also known as *preventer guys.*—**Traveling martingale,** a portable martingale once used on small English sailing-vessels and yachts, but only when a jib-boom was rigged out in order to carry a greater spread of head-sail in a race, etc.—**Traveling staircase.** See ★*escalator.*—**Traveling table.** See ★*table.*

traveling-rings (trav'el-ing-ringz), *n. pl.* Same as ★*flying-rings.*

travers^{2} (tra-vers'), *n.* [F.] In the *manège*, a sidewise movement of the horse with the forehand a little in advance of the croup.

traverse. **I.** *a.*—**Traverse motion.** See ★*motion.*—**Traverse wind,** a wind which blows into a harbor, requiring a vessel to tack out.

II. *n.*—**Boat's traverse,** in *naval ordnance*, one of the athwartship pieces upon which the tracks for a field carriage are placed.—**Common traverse,** in pleading, a direct and unqualified denial of the allegations of the adverse party, and a demand for a trial upon the issues thus joined.—**Differential traverse,** a motion on a cotton-roving machine for minimizing the wear of the draft-rollers.—**General traverse,** in *law*, a pleading in which all the allegations set forth in the last preceding pleading of the opposite side are denied.—**Special traverse,** a traverse or denial beginning with the words *absque hoc* followed by the substance of the allegation it denies. It is preceded by new matter explanatory of the denial, and therein it differs from the common traverse which simply denies.—**To make a traverse** (*naut.*), to sail an irregular track by beating against the wind.

traverse, *v.* **I.** *trans.* **8.** To cause to move across; propel.

These [movable eccentric grate bars] automatically *traverse* the material forward into the furnace.
Encyc. Brit., XXVII. 425.

traverse-map (trav'ėrs-map), *n.* A rough map generally prepared by pacing, without other instruments than compass and aneroid barometer.

Where there are neither Geological Survey sheets nor accurate county maps it is almost impossible to carry on the soil survey except through the cooperation of State institutions which will undertake to make a *traverse map.* *Yearbook U. S. Dept. Agr.*, 1901, p. 121.

traversing (trav'ėr-sing), *n.* The motion of the cutting tool in a machine: strictly, it denotes the motion across the work, but is popularly extended to mean the same as 'travel' (of the tool or its carriage). Originally, it was the horizontal angular motion of a gun-carriage.

traversing-gear (trav'ėr-sing-gēr), *n.* Machinery designed to adjust the carriage of a gun laterally for sighting; also, feed motions to cause the traverse or travel of a tool-carriage.

traversing-screw (trav'ėr-sing-skrö"), *n.* A screw used to produce the traverse or travel of a tool-carriage. The screw does not move endwise, as a rule, but as it revolves the element driven is made to travel as a nut on the screw.

travertinous (trav'ėr-tin-ous), *a.* [*travertin* + *-ous.*] Of or resembling travertin, the common building stone of Rome.

A block of yellow *travertinous* rag-stone.
Jour. Hellenic Studies, XVI. 186.

travois, *n.* **2.** See ★*dray*^{1}, 3.

travoise (tra-vwos'), *n.* [F.] Same as *travois.*

On the plains they will have horses dragging *travoises*, dogs with *travoises*, women and children loaded with impedimenta, a colt or two running loose.
J. Ralph, in Harper's Mag., March, 1892, p. 508.

trawley (trâ'li), *n.* A small truck used in mining: same as *trolley.*

trawling-ground (trâl'ing-ground), *n.* A locality where trawling is carried on.

The Natal coast is by no means promising for trawling, and as much money had been spent on previous occasions with no good results, and the recent trip proved equally unsatisfactory, the Government was advised to devote its attention to the development of line fishing, and to rely on the Cape *trawling-grounds* for its supply of soles.
Nature, Nov. 26, 1903, p. 91.

tre^{2} (trā), *a.* [It., < L. *tres*, three.] In *music*, three: as, *a tre*, for three voices or instruments, and *tre corde*, with three strings. See ★*tutte corde.*

Treacle Bible. See ★*Bible.*

tread, *v. i.* **5.** To form puddles under the tread of horses: said of the ground. *W. J. Malden*, Tillage and Implements, Glossary.

tread, *n.* 16. Any horizontal element in a floor upon which the walker treads or presses, and so gives an alarm or makes a signal. *Elect. Rev.*, Sept. 17, 1904, p. 498.

treadle-press (tred′l-pres), *n.* A small printing-press, made for job-work and operated by a treadle.

treas. An abbreviation (*a*) of *treasurer*; (*b*) of *treasury*.

treasury, *n.*—**Treasury day.** See ★*day*^{1}.

treat^{1}, *v. t.* 11. In *elect.*, in the making of glow-lamps, to coat (the filament) with a deposited layer of carbon. This is done by bringing the filament to intense incandescence in an atmosphere of hydrocarbon vapor. The process is termed *flashing* and the product a *treated filament*. The layer of semi-metallic carbon thus deposited on the surface of the filament reduces the resistance of the latter, increases its life and improves its efficiency as a source of luminous radiation.

> In the manufacture of carbon-filament lamps a process is very generally applied to the carbon which is technically termed "*treating*." *Encyc. Brit.*, XXVIII. 89.

treat^{2} (trēt), *n.* [Also *trete*; ‹ OF. *trait*, *tret*, a drawing (in many uses), ‹ L. *tractus*, drawing. See *tract*^{1}, *n.*] A plaster or a salve made of wax, lard, etc., spread on cloth; a cerate. *Halliwell.*

treatis, *n.* A simplified spelling of *treatise*.

treatment, *n.*—**Causal treatment**, treatment of disease directed toward removal of the continuing cause.—**Flechsig treatment**, the administration of opium for a definite period before beginning that of the bromides in epilepsy.—**Mixed treatment**, the treatment of syphilis by potassium iodide and corrosive sublimate in combination.—**Nauheim treatment**, a method of treatment of certain forms of heart-disease by means of baths in water which contains carbonic-acid gas, and of suitable exercises: first employed at Bad Nauheim, Germany.—**Salisbury treatment**, a dietary treatment of disease by the almost exclusive employment of finely divided underdone beef and hot water.—**Specific treatment**, the employment of a remedy having a definite curative action upon the disease present, as quinine in malaria or the special antitoxin in diphtheria or tetanus.—**Symptomatic treatment**, the use of measures designed to relieve the symptoms of a disease rather than to remove the cause.—**Tallerman treatment**, treatment of local affections of the limbs, especially joint diseases, by hot air.—**Thyroid treatment**, the employment of preparations made from the thyroid gland of the sheep in the treatment of various diseases.—**Woodbridge treatment**, the administration of small but frequently repeated doses of calomel and various antiseptics in the treatment of typhoid fever.

treaty, *n.*—**Personal treaty**, in *international law*, a treaty which relates solely to the persons of the parties thereto, for example, a treaty by which the throne is guaranteed to a particular sovereign and his family; a treaty entered into with the sovereign in his individual capacity and dying with him.

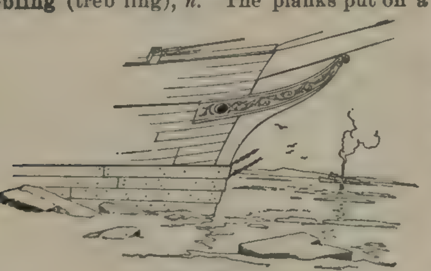
> International law is not concerned with so-called *personal treaties*. *Hall*, Internat. Law (5th ed.), p. 361.

Real treaty, in *international law*, one which relates solely to the subject-matter of the treaty, without reference to the persons of the parties to it, and which will still be binding upon the states irrespective of changes in constitutions or rulers.—**Treaty of cession.** See ★*cession*.

treaty-port (trē′ti-pōrt), *n.* A sea- or river-port of one country opened by treaty to the trade and commerce of another. The term is applied more particularly to certain ports of those countries of the far East—for example, China, Korea, and Japan—which at the time of making the treaties were more or less opposed to commercial or any intercourse with other nations. The first treaty-ports of China were opened in accordance with the Anglo-Chinese treaty of Nanking (1842); the first in Japan by Townsend Harris, acting for the United States, in 1858; and the first in Korea by treaty with Japan in 1876.

Trebizond date. See ★*date*^{3}.

trebling (treb′ling), *n.* The planks put on a vessel's bow as strengthening pieces to enable it better to withstand the pressure of ice.



Trebling.

trecena (trā-thā′nạ̈), *n.* [Sp., fem. of *treceno*, thirteenth, ‹ *trece*, ‹ L. *tredecim*, thirteen.] A group of thirteen days in the Mexican calendar. See *Mexican* ★*calendar*. *Amer. Anthropologist*, Jan.–March, 1900, p. 145.

trecentismo (trā-chen-tēs′mō), *a.* [It., ‹ *trecento*, three hundred. Compare *cinquecento*, etc.] Of the fourteenth century. Compare ★*seicentismo*.

trecherous, trechery. Simplified spellings of *treacherous*, *treachery*.

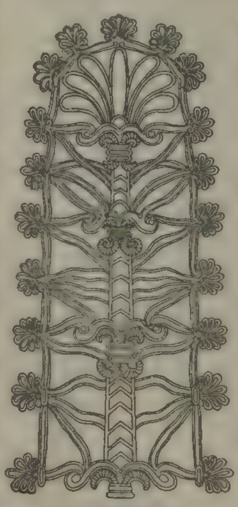
trechmannite (trek′mạ̈n-īt), *n.* A rare mineral, which occurs in red rhombohedral crystals in the dolomite of the Binnenthal. It contains arsenic and silver and is probably a sulpharsenite of silver.

tred, *v.* and *n.* A simplified spelling of *tread*.

tredle, *n.* and *v.* A simplified spelling of *treadle*.

tree, *n.*—**Burn-nose tree.** Same as *bonace-tree*.—**Green-tree ant**, a common, apparently undetermined, Queensland ant, which is said to live in small colonies in rude nests between the green leaves of shady trees.—**Leichhardt's tree.** [*Leichhardt*, an Australian explorer.] (*a*) In Australia, the Indian mulberry, *Morinda citrifolia*. (*b*) In Queensland, same as ★*bangkal*.—**Metallic tree**, in earlier *chem.*, a crystalline deposit in arborescent form of one metal upon another immersed in a solution of a salt of the former. Such a deposit of lead upon a strip of zinc immersed in a solution of lead acetate or nitrate used to be called the *lead-tree*. See ★*lead-tree*, 2.—**Single-tree method.** See ★*method*.—**To wedge a tree.** In *forestry*. See ★*wedge*^{1}.—**Tree analysis**, in *forestry*, a series of measurements and observations upon a felled tree made to determine its growth and life-history. Tree analyses vary with their purpose and may include all or a part of the following details, or may require additions to meet special needs. The usual measurements comprise the length of each section, the diameter inside and outside the bark, the total age, the age and width of the sap-wood, the diameter growth at given periods on the upper end of each section, the diameter breast-high, the total height, and the clear, used, and merchantable lengths. The observations determine the class, form, and condition of the tree. Although a tree analysis may include many combinations of the above measurements, two important classes are distinguished: *stump analysis*, which includes measurements of the diameter growth at given periods upon the stump only, no matter what other measurements it may comprise; and *section analysis*, which includes measurements of the diameter growth at given periods upon more than one section. When, in a stump or section analysis, the measurement of the diameter growth at given periods covers only a portion of the total diameter growth, the analysis is a *partial stump analysis* or a *partial section analysis*.—**Tree and pillar cult**, the widespread association of tree and pillar, or sacred stone, in the symbolism of early religions. It appears in India and in the sacred tree and dolmen of the Druids. The most important development of the type is in early Mycenæan civilization, especially in Crete.—**Tree of Diana**, a fanciful name given by the earlier chemists to an arborescent crystallization of metallic silver as separated from a solution of one of its salts by mercury.—**Tree-of-life motive**, a plant pattern which appears frequently in decoration. It is most clearly defined in Assyrian sculpture and in Oriental rug designs. Traces of it appear also in Greek, Roman, and Renaissance art. It is characterized by a peculiar cone-like fruit and horn-like stems highly conventionalized. Birdwood (Industrial Arts of India, p. 336) identifies it with the hom or soma of the Sanskrit myths; Goodyear (Grammar of the Lotus, p. 179), with the Egyptian lotus.—**Weed tree**, in *forestry*, a tree of little or no economic value.

> In a full-grown piece of woodland each tree has a value, even the *weed trees*, as soil cover.
> *Yearbook U. S. Dept.* [*Agr.*, 1894, p. 487.



Tree-of-life Motive.

tree-beard, *n.* 2. A lichen, *Usnea barbata*, having a thallus with numerous small pendulous branches. See *Usnea* (with cut).

tree-burial (trē′ber″i-ạ̈l), *n.* The custom of depositing bodies in the branches of trees, practised by many primitive people—for instance, in North America and Malaysia.

tree-chafer (trē′chā″fėr), *n.* Any one of the scarabæid beetles of the group containing the genus *Melolontha*, to which the common cockchafer and its allies belong. *Kirby and Spence*, Entomology, p. 413. [Eng.]

tree-cult (trē′kult), *n.* The religious worship of trees. *Ratzel* (trans.), Hist. of Mankind, II. 481.

tree-dweller (trē′dwel″ėr), *n.* One who lives in a hut placed in the branches of a tree. Such huts are used by some of the Malay tribes.

> The *tree-dwellers* of Malaya.
> *Rev. of Revs.*, XXVII. 485.

tree-dwelling (trē′dwel″ing), *n.* A hut erected in the branches of a tree: used by some Malay tribes. *Ratzel* (trans.), Hist. of Mankind, I. 108.

tree-fern, *n.*—**Silver tree-fern**, *Cyathea dealbata*, a variable New Zealand fern, with a stem from 10 to 15 feet high, the fronds borne in a close crown and conspicuously glaucous-farinose on the under surface.

tree-haw (trē′hâ), *n.* See ★*haw*^{2}.

tree-hopper, *n.*—**Apple-tree hopper**, either *Ceresa bubalus* or *Ceresa taurinus*, two membracids which injure apple-twigs by puncturing them for oviposition.—**Black-backed tree-hopper**, a tree-hopper, *Acutalis dorsalis*, of the family *Membracidæ*, greenish white in color, with a large black spot on its back: found commonly on grape-vines in the United States in midsummer.—**Single-striped tree-hopper**, an American tree-hopper, *Thelia univittata*, found on grape-leaves in July and August.—**Thorn-bush tree-hopper**, a common American tree-hopper, *Thelia cratægi*, which feeds on apple, cratægus, and other rosaceous plants.—**Two-spotted tree-hopper**, an American tree-hopper, *Enchenopa binotata*, found commonly on grape-stems, but also on redbud and on *Ptelea trifoliata*.

tree-hornbill (trē′hôrn″bil), *n.* Any one of the hornbills which belong to the subfamily *Bucerotinæ*, as distinguished from the two African hornbills of the genus *Bucorvus*, which frequent the ground.

tree-house (trē′hous), *n.* A house or dwelling built in the branches of a tree.

tree-huckleberry (trē′huk″l-ber-i), *n.* Same as *farkleberry*.

tree-lichen (trē′lī″ken), *n.* Any lichen which grows upon trees.

tree-lizard, *n.* 2. A lizard of the genus *Calotes*, which comprises a number of small, beautiful species from southern Asia.

tree-lucerne (trē′lụ̄-sėrn″), *n.* See ★*lucerne*.

tree-martin (trē′mär″tin), *n.* *Progne tapera*, a South American relative of the house-martin, but plainer in color, being glossy brown above and white below. The name is sometimes applied also to the tree-swallow, *Hirundo bicolor*.

tree-partridge, *n.* 2. A common name for about fifteen species of game-birds of the genus *Arboricola* found in southern Asia and some of the adjacent islands.

tree-rat, *n.* 2. The common wild rat of India, *Mus rufescens*, which frequents the roofs of houses

tree-runner (trē′run″nėr), *n.* One of several Australian birds of the genus *Sitella*, related to and having the habits of the nuthatches.

tree-scribe (trē′skrīb), *n.* Same as ★*scratcher* (*e*).

tree-stool (trē′stöl), *n.* The stump of a tree. Same as *stool*, 6.

> The deeply submerged peats and *tree-stools* indicated, again as in the north, that the post-glacial recovery brought the land-level almost to normal pre-glacial conditions. *Geog. Jour.* (R. G. S.), XI. 431.

tree-sugar (trē′shůg″ạ̈r), *n.* Sugar obtained from the sap of trees, as maple-sugar.

tree-village (trē′vil″ạ̄j), *n.* A village consisting of huts built in the branches of trees. Such villages are found in some parts of Malaysia.

trefa (tref′ạ̈), *n.* [Heb., ‹ *taraf*, rend, tear to pieces.] 1. An animal torn to pieces by wild beasts.—2. Something (meat or utensil) not prepared in accordance with rabbinical law, and therefore unfit for Jewish consumption. See *kosher* and *tref*.

trefoil, *n.* 6. In *anat.*, the triangular area which forms the front part of a molar tooth; the protocone, paracone, and metacone lying at the angles. Same as ★*trigon*^{1}, 6.

> The tooth is very large (8·1 × 4·7 mm.), high, and complicated, the anterior *trefoil* well developed.
> *Ann. and Mag. Nat. Hist.*, June, 1904, p. 409.

trehalase (trē-hal′ās), *n.* [*trehala* + *-ase*.] A ferment, obtained from an *Aspergillus*, which will cause the cleavage of trehalose (a sugar obtained from Syrian manna) into two molecules of dextrose.

trehalum (trē-hal′um), *n.* [NL., ‹ *trehala*.] A colorless carbohydrate, $C_{24}H_{42}O_{21}$, obtained, together with trehalose, from trehala manna. It crystallizes in microscopic prisms.

trek, *n.*—**The great trek**, the movement of the Boers, in large numbers, northward from Cape Colony, during the years 1833 and 1836, due to dissatisfaction with the policy of the British government, especially with its liberal treatment of the natives.

> When *the Great Trek* occurred, two courses obviously lay before the British authorities: either to let the Trek Boers go, and give them their blessing and liberty, or to repudiate and discourage the trek from the outset. The action taken by the British authorities was one of vacillation between these two courses.
> *Encyc. Brit.*, XXXII. 717.

trekker, *n.* 2. Specifically, one of the Boers who took part in the great ★trek (which see).

Tremanotus, *n.* See ★*Trematonotus*.

Trematis (trem′a̤-tis), *n.* [NL., ‹ Gr. *τρῆμα(τ-)*, a hole.] A genus of small neotrematous brachiopods typical of the family *Trematidæ*, with rounded shells, having pitted or punctate quincuncial or radial ornamentation. They occur in Lower Silurian rocks.

Trematonotus (trem″a̤-tọ̄-nọ̄′tus), *n.* [NL., ‹ Gr. *τρῆμα(τ-)*, a hole, + *νῶτος*, back.] A genus of rhipidoglossate gastropods having large involute shells with flaring apertures, wide-open umbilicus, and median longitudinal row of siphonal slits, found in the Silurian rocks. Incorrectly written *Tremanotus*.

Trematopora (trem-a̤-top′ọ̄-rä̤), *n.* [Gr. *τρῆμα(τ-)*, a hole, + *πόρος*, pore.] A genus of trepostomatous *Bryozoa* common in Silurian rocks.

trembler, *n.* **4.** See *electric* ★*ray*.

tremellaceous (trem-e-lā′shious), *a.* Same as *tremellineous*.

Tremellales (trem-e-lā′lēz), *n. pl.* [NL., ‹ *Tremella*, the type genus, + *-ales*.] An order of the higher basidiomycetous fungi mostly of a gelatinous texture and included chiefly in the family *Tremellaceæ*. Two other small families occur in the tropics.

tremelline (trem′e-lin), *a.* Same as *tremelloid*.

tremogram (trem′ọ̄-gram), *n.* [L. *tremere*, shake, ‹ Gr. *γράμμα*, a writing.] See the extract.

> The curious marginal irregularities which accompany and seem to a certain degree to characterize the handwriting of each writer, which I have called "*tremograms*." In studying those of different individuals it will be observed that these irregularities differ (1) in general appearance; (2) in the margin of the ink line on which the greater number of them occur; (3) in the number of these to a unit of length in the ink line; (4) in the rapidity with which lines joining the apexes of the angles on the two margins oscillate up and down from horizontality in a given length of ink line.
>
> *P. Frazer*, in Jour. Franklin Inst., April, 1907, p. 263.

tremograph (trem′ọ̄-gråf), *n.* [L. *tremere*, shake, + Gr. *γράφειν*, write.] In *physiol.*, an instrument for the recording of involuntary muscular tremor. See the extract.

> The *tremograph*, a thimble attached to a pivoted lever, moving freely in all directions, showed that children could not hold the index-finger still for half a minute.
>
> *G. S. Hall*, Adolescence, I. 145.

tremor, *n.* **4.** In colonial furniture, a sort of hood or head-piece found on high cupboards and the like: probably derived from a French type. *J. W. Lyon*, Colonial Furniture of New England, p. 49.—**Metallic tremor**, a tremor occurring as a symptom of chronic poisoning by lead, mercury, arsenic, etc.—**Tremor cordis**, palpitation of the heart.

tremor-disk (trem′o̤r-disk), *n.* The telescopic image of a star, as apparently enlarged by the tremors of the instrument and the atmosphere. These tremors spread the light, which would otherwise be condensed to a point, over a surface of some extent, thus rendering the image fainter and less effective on a photographic plate, or on the slit of a spectroscope. *Athenæum*, April 29, 1905, p. 534.

tremorous (trem′o̤r-us), *a.* [*tremor* + *-ous*.] Marked by tremors; vibrating rapidly. *E. Berliner*.

trench-brace (trench′brās), *n.* A telescope screw-brace used to hold up the side walls or the sheet-piling of a trench. It has plates at each end, with universal joints to fit the irregular surface of the walls, and a windlass for turning the screw and extending the brace until it touches both sides of the trench, preventing caving.

trenchmaster† (trench′mȧs-tėr), *n.* In *mil.*, an officer commanding a body of pioneers. See the extract.

> He [Henry VIII.] also added to the organization a body of pioneers under *trenchmasters* and a master *trenchmaster*.
>
> *Encyc. Brit.*, XXVIII. 173.

trench-planting (trench′plan″ting), *n.* A method of planting on dry ground, in which the seeds of young trees are set in pits or trenches. Also called *pit-planting*.

trench-plowing (trench′plou″ing), *n.* See ★*plowing*.

trepanning-bar (trẹ̄-pan′ing-bär″), *n.* The cutting- or boring-bar of a trepanning-machine. *Jour. Brit. Inst. Elect. Engin.*, 1902–03, p. 955.

trepanning-machine (trẹ̄-pan′ing-ma̤-shēn″), *n.* A machine for cutting a hole lengthwise in an ingot or forging, leaving a solid core which is not reduced to chips in the boring process. A trepanning-bar, carrying several cutters at its end, is driven by a machine resembling a boring-machine, and the work is fed against the cutting surfaces. The bar is hollow, so that an annular cavity is made, as by an end-milling cutter. For boring large holes, as the bore of a gun from the solid metal, less power and time are required than if the drilling process is used: but the solid core is of little practical value, since it is usually the least solid section of the casting. *Jour. Brit. Inst. Elect. Engin.*, 1902–03, p. 955.

trepha, *n.* See ★*trefa*.

trephination (tre-fi-nā′shọn), *n.* [*trephin(e)* + *-ation*.] Same as *trepanning*.

> Fortunately the way in which barbaric and savage people think is coming to be understood; and the light thus given illumines fairly, though at some points faintly, the wonderful course of development of the art of *trephination*.
>
> *An. Rep. Bur. Amer. Ethnol.*, 1894–95, p. 20.

trepidancy (trep′i-da̤n-si), *n.* [**trepidance* + *-y*³. See *trepidation*.] Same as *trepidation*. [Rare.]

> In the manner of my friend I was at once struck with an incoherence, an inconsistency; and I soon found this to arise from a series of feeble and futile struggles to overcome an habitual *trepidancy*, an excessive nervous agitation.
>
> *Poe*, Fall of the House of Usher.

trepidate (trep′i-dāt), *v. i.*; pret. and pp. *trepidated*, ppr. *trepidating*. [L. *trepidatus*, pp. of *trepidare*, be agitated. See *trepidation*.] To suffer from trepidation or alarm; be agitated by fear or apprehension. [Rare.]

> It sounded rather appalling to be engaged in a glee for three voices, with two performers such as these; and I *trepidated* a little as I went up stairs, having previously understood that the great man was already come.
>
> *De Quincy*, Literary Reminiscences, Sir Humphry Davy, [p. 38.

Treponema (trep-ọ̄-nē′mä̤), *n.* [NL., ‹ Gr. *τρέπειν*, turn, + *νῆμα*, a thread.] A genus of parasitic flagellates. The best-known species is *T. pallidum*, the supposed pathogenic micro-organism of syphilis, formerly called *Spirochæte pallida*.

> Before the appearance of this paper by Schaudinn, Vuillémin had already suggested the name Spironema, which Schaudinn accepted. Stiles and Pfender pointed out that this name had been preempted by a genus of Mollusca, and put forward the name Microspironema. However, before the appearance of their publication, Schaudinn had also discovered the incorrectness of the name Spironema, and proposed the name *Treponema*.
>
> *Jour. Med. Research*, Dec., 1907, p. 376.

Trepostomata (trep-ọ̄-stō′ma̤-tä̤), *n. pl.* [NL., ‹ Gr. *τρέπειν*, turn, + *στόμα(τ-)*, mouth.] A suborder of gymnolæmatous *Bryozoa* characterized by direct superposition of the zoœcia to form long tubes which are intersected by straight or curved partitions representing the floors and covers of successive layers. The zoœcial covers have small and usually subcentral apertures. Monticules or maculæ with larger or more elevated cells are scattered regularly over the surface of the colony (zoarium). The suborder includes the *Monticuliporidæ* and other allied families abundantly represented in the Silurian and Devonian formations. Properly written *Treptostomata*.

trepostomatous (trep-ọ̄-stō′ma̤-tus), *a.* Pertaining to or having the characters of the *Trepostomata*.

Treptostomata, *n. pl.* See ★*Trepostomata*.

tres. An abbreviation of *tierces*.

trescone (trās-kō′ne), *n.* [It., ‹ *tresca*, a romp, ‹ *trescare*, romp, play.] In Italy, a lively dance for one couple.

tresette (trạ̄-set′tạ̄), *n.* [It.] An Italian game of cards for four players with a forty-card pack. There are no trumps. The cards rank: 3, 2, A, K, Q, J, 7, 6, 5, 4. Each player receives ten, dealt five at a time. Three points are scored for holding and showing trey-deuce-ace of any suit, or three treys, deuces, or aces. Four of a kind count four. Tricks taken in play have no value in themselves; but at the end the side that has taken in three treys or deuces scores a point. Each ace and the last trick scores a point. Ten points is game.

tresis (trē′sis), *n.* [NL., ‹ Gr. *τρῆσις*, a perforation, ‹ *τετραίνειν*, perforate.] In *surg.*, perforation from without.

trespassory (tres′pa̤-sọ̄-ri), *a.* [*trespass*.] Pertaining to or of the nature of trespass.

tressilate (tres′i-lāt), *v. i.*; pret. and pp. *tressilated*, ppr. *tressilating*. [F. *tressaillir*, be agitated.] To be suddenly agitated; be a-quiver. [Rare.]

> The ladies *tressilated* deliciously. The crime began to take an air of romance. The gardener slept in the basement of the house for its extra safety, and the local officer was pampered to keep a special eye upon the premises. With these precautions the feminine inmates of the house felt no more sense of danger than was just agreeable.
>
> *D. C. Murray and H. Murray*, A Dangerous Catspaw, [xiv.

tresson (tre-sôṅ′), *n.* [F., ‹ *tresse*, tress.] An ancient ornamented head-dress for women.

tressure, *n.* **2.** In *numis.*, the ornamental inclosure containing the type found on many coins, especially gold, in the French, Anglo-Gallic, and English series. *W. C. Hazlitt*.

T-rest (tē′rest), *n.* The rest for the hand-tool in speed-lathes for turning wood or metal. It is shaped like the capital letter T, with the upright carried in a pillar upon the carriage or base of the rest, and the horizontal member giving a long bearing parallel to the revolving work upon which the tool may be steadied as the operator holds it to its work. The T-arms may be longer or shorter for work of differing lengths.

> The hand rest is provided with short and long *T-rests*, the rest socket and saddle are locked to the bed by a cam-locking device and the *T-rest* is held in its socket.
>
> *Elect. World and Engin.*, Feb. 13, 1904, p. 335.

trestine (trēz′tīn), *n.* [L. *tres*, three, + E. *tine*.] The third tine from the base in such an antler as that of the red deer and wapiti. It lies just below the terminal tine, or tine royal, and may be known by its position in the many species in which the second, or big tine, is lacking. Known also as *tine royal* and *trez tine*. *Lydekker*.

trestle¹, *n.*—**Birago trestle**, an old type of portable bridge-trestle, used only in the construction of military bridges: invented by Carlo, Baron of Birago (1792–1845), an Italian engineer.

trevally (tre-val′i), *n.* [Also *trevalli*, *trevalla*, *travale*; perhaps a corruption of *cavalli*, *cavally*.] A large food-fish of the family *Carangidæ*, *Caranx georgianus*, common in the markets of eastern Australia. In various localities the name is applied to several fishes, most of which are of the family *Carangidæ*. See *cavally*.—**Black trevally**, *Siganus nebulosus*, of the family *Siganidæ*. [New South Wales.]—**Mackerel trevally**, *Neptomenus dobula*, of the family *Carangidæ*. [Tasmania.]—**Silver trevally**, *Caranx georgianus*.—**Snotgall trevally**. (*a*) *Neptomenus travale*. [Victoria.] (*b*) *Neptomenus brama*. [Tasmania.]—**White trevally**. (*a*) *Caranx georgianus*, of the family *Carangidæ*. [New South Wales, New Zealand, and Tasmania.] (*b*) *Siganus jarus*, of the family *Siganidæ*.

Trevelyan effect, the musical tone produced by a Trevelyan rocker.—**Trevelyan rocker**, in *physics*, a device consisting of a block of copper deeply corrugated on one side and a bar or slab of lead. When the copper is heated and while still very hot it is placed upon the cold lead in such a position that it rests only on the thin edges of the corrugations, rapid vibrations of the masses of metal are set up and a distinct musical tone is heard.

trezure, trezurer, trezury. Amended spellings of *treasure*, *treasurer*, *treasury*.

T. R. H. An abbreviation of *Their Royal Highnesses*.

tri-. (*b*) Specifically, in *chem.*, a prefix to the names of compounds containing three atoms or combining units of some particular element or radical, as sulphur trioxid, SO_3, and triethylamine, $N(C_2H_5)_3$.

triacetin (trī-as′e-tin), *n.* A colorless liquid, $CH_3COOCH_2CH(OCOCH_3)CH_2OCOCH_3$, contained in the seed of *Euonymus Europæus* and prepared from tribromhydrin. It is the triacetate of glycerol and boils at 258° C.

triactine (trī-ak′tin), *n.* [Gr. *τρεῖς* (*τρι-*), three, + *ἀκτίς* (*ἀκτιν-*), ray.] In the sponge-spicules, an element with but three arms, generally derived from the hexactine by suppression of one half of each axial arm.

triad, *n.* **8.** [*cap.*] *pl.* See *the* ★*Triad Society*.—**Triad axis of symmetry.** See ★*symmetry*, 6.—**The Triad Society** (of China), a secret society or fraternity whose ritual and ceremonies resemble in some points those of freemasonry. Its Chinese name is *San Ho Hwui*, the "union of the three" powers or forces of nature, viz., heaven, earth, and man. It is also sometimes called *T′ien Ti Hwui*, or the "heaven and earth society." It seems to have been founded during the first part of the eighteenth century in the reign-period called Yung Ching, the third of the present Tatar dynasty, against which it is leveled. Hence it is strictly forbidden by the government, and membership in it is a capital offense. It exists wherever there are Chinese. Its membership is very large.—**Under triad**, in *music*, a triad reckoned downward from a given tone exactly as a major triad is reckoned upward, that is, first a major third and then a minor third. Thus, while the major triad of C is C-E-G, the *under triad* of C is C-A♭-F. See ★*undertone*, 4.

triæne, *n.* **2.** In the sponge-spicules, a tetraxon in which one arm is different from the other three.

triænostrongyle (trī-ē-nọ̄-stron′jīl), *n.* [Gr. *τρίαινα*, a trident, + *στρογγύλος*, rounded.] In the sponge-spicules, a triæne in which the main arm is blunt at the extremity.

triænostyle (trī-ē′nọ̄-stīl), *n.* [Gr. *τρίαινα*, a trident, + *στῦλος*, pillar.] In the sponge-spicules, a triæne in which the main ray is sharp.

triænotyle (tri-ē′nọ̄-tīl), *n.* [Gr. *τρίαινα*, a trident, + *τύλη*, a cushion.] In the sponge-spicules, a triæne in which the main arm is blunt and rounded.

triakaidekaphobia (trī-a̤-kī″dek-a̤-fō′bi-ä̤), *n.* [NL., ‹ Gr. *τρεῖς*, *τρία*, three, + *καί*, and, + *δέκα*, ten, + *-φοβια*, ‹ *φοβεῖν*, fear.] Superstitious fear of the number thirteen. *Ribot* (trans.), Psychol. of Emotions, p. 213.

Triakis (trī′a̤-kis), *n.* [NL., ‹ Gr. *τριάκις*, three times, ‹ *τρεῖς* (*τρι-*), three.] A genus of requiem sharks found in the Pacific and Indian oceans.

trial, *n.*—**Elimination trial**, a process of elimination; specifically, a competitive process for removing by previous trial any competitors in races or tournaments whose performance would be comparatively unsatisfactory, so that in the final trial or real competitive event only the few best contestants shall appear: used, in races and athletic tournaments, of men, horses, motor-cars, etc. — **To stand trial**, to be brought to trial, not pleading guilty. **Trial and error.** (*a*) In *comp. psychol.*, the empirical method of attacking a problem by repeated trial of habitual reactions: opposed to the rational method of using one's previous knowledge to indicate a mode of solution. See the extract.

> The expression was first used by Lloyd Morgan to distinguish between the human method of solving a problem and the dog's method, the latter being called "*trial and error.*" Morgan meant that the dog does not attempt to reason the matter out beforehand, making use of his previously acquired knowledge before beginning to act; but that he attacks it at once in some manner derived from individual experience or racial inheritance. If this method fails, he tries another similarly derived, and so on until one method proves successful.
>
> *M. F. Washburn*, The Animal Mind, p. 206.

(*b*) The process of obtaining accuracy in mechanical undertakings, whereby the result is attained by successive approximations. The first operation is tested and the error ascertained: then this error is corrected, and other trials made. Used in centering rough-finished work for the lathe operations, for the turning and boring of cast-pulleys, in making of face-plates, straight edges, valves, bearings, and the like.— **Trial by witnesses**, the usual form of trial, under the civil law, in which witnesses were examined and the parties or their advocates were heard and decision was rendered by the judge.— **Trial per pais.** See *per pais*.— **Writ of trial**, in *English law*, a writ by which an action brought before a superior court was removed for trial to an inferior or county court The writ was superseded in 1867 by the County Courts Act.

trial-bar (trī′ạl-bär), *n.* A cuboid used by turners for testing the inclination of planes.

trial-frame (trī′ạl-frām), *n.* A metal frame of spectacle shape into which trial-glasses are set.

triamide (trī-am′id), *n.* [*tri-* + *amide.*] A class-name applied, in organic chemistry, to compounds containing in their molecule three amido groups, $-CONH_2$. The word is sometimes used, by mistake, for triamine.

triamine (trī-am′in), *n.* [*tri-* + *amine.*] A class-name applied, in organic chemistry, to compounds containing in their molecule three amino groups, $-NR_2$, where R may be hydrogen or any hydrocarbon radical such as methyl, CH_3.

triangle, *n.* **13.** A triangular box-fish, as *Sectophrys trigonus*, of the family *Ostraciidæ* of the West Indies.— **14.** In *angling*, an arrangement of three fish-hooks bound together with the points outward, forming a triangle. —**Antipodal triangles**, spherical triangles whose respective vertices are diametrically opposite to one another in pairs.— **Autopolar triangle.** Same as *self-conjugate triangle.* See *self-conjugate*.— **Brocard's first triangle**, the triangle whose vertices are the perpendicular projections of the circumcenter on the Lemoine parallels.— **Brocard's second triangle**, the triangle whose vertices are the perpendicular projections of the circumcenter on the symmedians.— **Carotid triangles**, in *anat.*, two triangular areas in the neck where an incision is made, in surgery, in order to reach the carotid artery: the triangles are called the *inferior* and the *superior*.— **Cervical triangles.** See *anterior triangle of the neck* and *posterior triangle of the neck*, under *triangle*.— **Coaxial triangles**, ABC, A′B′C′, if the points of intersection of BC and B′C′, of CA and C′A′, and of AB and A′B′ lie in one straight line: this straight line is called the axis of the two triangles, or the axis of either triangle with respect to the other.— **Colunar triangles**, the spherical triangles ABC, A′BC, when A and A′ are opposites.— **Copedal triangle**, a triangle whose vertices are one of the vertices of a primitive triangle, and the feet of perpendiculars from the others upon the opposite sides.— **Diagonal triangle of a complete quadrilateral**, the triangle formed by the three diagonals of the quadrilateral.— **Flying triangle**, a triangle of fish-hooks mounted on a swivel, used in spinning.— **Geometry of the triangle**, the Lemoine-Brocard geometry. It dates from 1873.— **Gergonne point of a triangle**, the cointersection point of the joins of the points of contact of the in-circle with the opposite vertices.— **Heronic triangle**, a triangle whose sides and area are expressible by whole numbers.— **Invariable triangle**, the triangle formed by the three invariable points of three similar figures. It is a perspective with every triangle whose vertices are homologous points.— **Medioscribed triangle**, a triangle having as vertices the mid-points of the sides of another triangle.— **Metaharmonic triangles**, ABC and $G_1G_2G_3$, where G_1 is the cross of the circumcircle (O) of ABC with the straight AG, where G is centroid of ABC. —**Orthocentric triangle**, the triangle whose vertices are the feet of the altitudes of the original triangle. —**Pascal's triangle.** Same as *arithmetical triangle*. —**Pedal triangle**, a triangle whose vertices are the feet of transversals onto the sides of the original triangle ABC through a designated point and the vertices of ABC.— **Perpendicular of a triangle**, an *altitude of a triangle* (which see, under *triangle*).— **Prime triangle**, a triangle the three sides of which have no common divisor. —**Principal triangle**, in *elliptic geom.*, a triangle with each side less than $\frac{1}{2}\pi\gamma$, where γ is the numerical constant, real or imaginary, used in defining distance.— **Rational triangle**, a triangle whose sides and area are expressible by whole numbers.— **Suprameatal triangle**, an area bounded by the posterior wall of the external auditory meatus, the bony crest above the mastoid process, and a line drawn between the posterior and inferior portion of this meatus and this crest.— **Triangle of accelerations.** See ★*acceleration*.— **Triangle of similitude**, the triangle formed by the three centers of similitude of pairs of three directly similar figures.— **Triangle of velocities**, a vector diagram for the composition or resolution of velocities. See ★*polygon of vectors*.— **Triangle winding**, in *elect.*, a three-phase winding of armatures in which the free ends of the coils are connected pairwise to the collector rings.— **Wire triangle**, three bits of wire, generally either iron or platinum, twisted together so as to form a triangle, with the twisted ends forming arms projecting at the angles, used in chemical laboratories to support crucibles and evaporating-dishes over a lamp flame. Iron wire is often protected from burning by bits of tobacco-pipe stem or other fire-clay coating.

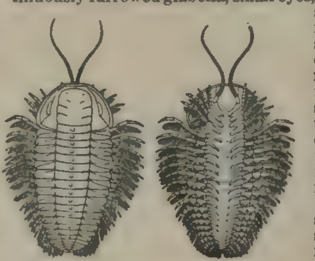
Triangular number. See ★*number*.

triannulate (trī-an′ụ̄-lāt), *a.* [*tri-* + *annulate.*] Consisting of three annuli, as certain segments of the body in some species of earthworms.

> The fourth and fifth segments are each divided into two by a median furrow; the sixth is *triannulate*.
>
> *Proc. Zool. Soc. London*, 1901, p. 197.

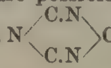
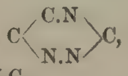
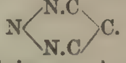
triarch, *a.* **2.** In *bot.*, having three centripetally developed xylem plates: said of vascular cylinders.

Triarthrus (trī-är′thrus), *n.* [NL., < Gr. τρι-, three, + ἄρθρον, a joint.] A genus of opisthoparian trilobites. They have a carapace of depressed elliptical form; a semicircular cephalon with large discontinuously furrowed glabella, small eyes, and rounded genal angles; 14–16 thoracic segments; and an entire pygidium with 6 axial rings. This genus is represented by a few species in the Silurian rocks, one of which, *Triarthrus becki*, is of great interest in connection with Beecher's researches upon its structure. Perfectly preserved specimens from the Utica shale near Rome, New York, have one pair of flagellate antennæ rising from the sides of the hypostome, and a pair of biramous limbs on each segment of the thorax and pygidium. The cephalon carries four limbs in addition to the antennæ, the proximal joints of which are enlarged to form gnathobases. The thoracic and abdominal limbs are longer, with jointed endopodites that served as crawling-legs, and exopodites furnished on their posterior sides with filiform lamellæ that served both as swimming and respiratory organs.



Triarthrus becki, dorsal and ventral aspects.
(From Zittel's "Palæontology.")

triaster (trī-as′tėr), *n.* [Gr. τρεῖς (τρι-), three, + ἀστήρ, a star.] In *cytol.*, an abnormal karyokinetic spindle having three instead of two poles or astrospheres. *W. Bateson*, Study of Variation, p. 430.

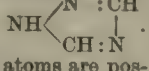
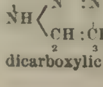
triazin, triazine (trī-az′in), *n.* [*tri-* + *azin.*] The general term applied, in organic chemistry, to compounds the molecules of which contain a cycloid group consisting of three nitrogen and three carbon atoms. Three such arrangements are possible, termed *symmetrical* or *cyanidine*,  *asymmetrical* or *a*-,  and *vicinal*, *osotriazin*, or *β*-, 

triazo-. A combining form sometimes used, in organic chemistry, to indicate the presence of three atoms of nitrogen in the molecule of a compound.

triazoate (trī-az′ọ-āt), *n.* [*triazo*(*ic*) + *-ate*¹.] A salt of triazoic or hydrazoic acid: as, sodium *triazoate*, NaN_3.

triazobenzene (trī-az″ọ-ben′zēn), *n.* Same as ★*diazobenzene imide*.

triazoic (trī-a-zō′ik), *a.* Noting an acid, the same as hydrazoic acid, HN_3. See ★*hydrazoic*.

triazole (trī-az′ōl), *n.* [*tri-* + *az*(*o*) + *-ole.*] A class-name applied, in organic chemistry, to compounds containing in their molecule a cyclic group consisting of three nitrogen and two carbon atoms, such as . Various arrangements of these atoms are possible.— **1,2,3-triazole**, a colorless oily compound, , prepared by heating the corresponding dicarboxylic acid. It boils at 208–209° C.

tribade (tri-bäd′), *n.* [F., < Gr. τριβάς (τριβαδ-), a woman who practises lewdness with other women.] A woman who is addicted to tribady.

> The tattoo designs among prostitutes are usually of this character; and such emblems are common among pæderasts and *tribades*.
>
> *H. H. Ellis*, The Criminal, p. 106.

tribadism (trib′ạ-dizm), *n.* Same as ★*tribady*. *Mann*, Forensic Medicine, p. 115.

tribady (trib′ạ-di), *n.* [F. *tribadie*, < *tribade.*] Carnal union of females with females; gratification of the sexual desire of females in an unnatural way; sapphism.

tribe, *n.*— **The lost tribes**, the ten tribes of Israel carried into exile by Shalmaneser, King of Assyria, to Lahlah and Habor. According to the Talmud, the ten tribes will never return. The literature on their identity and location is considerable, and many fanciful identifications have been made.

triblastic (trī-blas′tik), *a.* [Gr. τρεῖς (τρι-), three, + βλαστός, germ, + *-ic.*] Same as *triploblastic:* opposed to *diploblastic*.

> A possible basis for a division of the '*triblastic*' animals into two parallel but independent series.
>
> *Science*, Dec. 6, 1901, p. 891.

Triblemma (trī-blem′ạ̈), *n.* [NL. (a name invented by Robert Brown, published by Sprengel, 1830), < Gr. τρεῖς (τρι-), three, + βλέμμα, look, eye; in allusion to the appearance of the three-valved capsule.] A genus of plants of the family *Melastomaceæ*, natives of Brazil, of dwarf, sometimes creeping habit. The garden forms have membranous 5- to 7-nerved leaves; flowers 5-petaled, rose-colored, and arranged in scorpioid racemes or spikes. The genus includes about 9 species. They are essentially fanciers' plants. *T. marmoratum* (*Bertolonia marmorata* of Naudin), *T maculatum* (*Rhexia maculata* of Bonpland), and *T. Houtteanum* (*Bertolonia Houtteana* of Van Houtte) are some of the best-known forms.

triboluminescent (trib-ọ-lū-mi-nes′ẹnt), *a.* [Gr. τριβή, rubbing, friction, + E. *luminescent.*] Capable of excitation to luminescence by friction; exhibiting or capable of triboluminescence. *Science*, May 27, 1904, p. 827.

Tribonema (trī-bọ-nē′mạ̈), *n.* [NL. (Derbes and Solier, 1856), appar. < Gr. τριβή, rubbing, + νῆμα, thread.] A genus of grass-green filamentous algæ, the *Conferva* (which see) of some authors.

tribophosphorescence (trib-ọ-fos-fọ-res′ẹns), *n.* [Gr. τριβή, rubbing, + E. *phosphorescence.*] Phosphorescence excited by friction; that type of triboluminescence which outlasts the exciting cause. See ★*luminescence*.

tribophosphorescent (trib-ọ-fos-fọ-res′ẹnt), *a.* [Gr. τριβή, rubbing, + E. *phosphorescent.*] Capable of becoming phosphorescent by friction. *Science*, May 27, 1904, p. 826.

tribophosphoroscope (trib-ọ-fos′fọ-rọ-skōp), *n.* [Gr. τριβή, rubbing, + E. *phosphoroscope.*] An instrument for the investigation of tribophosphorescence. *Science*, May 27, 1904, p. 826.

tribromsalol (trī-brōm-sal′ol), *n.* [*tri-* + *brom*(*ine*) + *sal*(*icylic*) + *-ol.*] A trade-name of tribromphenyl salicylate, $H\overset{1}{O}C_6H_4\overset{2}{C}OOC_6H_2Br_3$, prepared by the action of tribromphenol on salicylic acid. It is a colorless powder and is used in medicine as a hypnotic and hemostatic. Also called *cordol*.

tribulum (trib′ụ̄-lum), *n.*; pl. *tribula* (-lạ̈). [L. *tribulum*. See *tribulation*.] An ancient Roman sledge for threshing; a broad, heavy board set with many teeth of stone or iron. The tribulum is still in use in northern Africa.

tribunal, *n.* **4.** [Sp. pron. trē-bö-näl′.] In villages in the Philippines, a kind of town-hall or common house, used as a meeting-place by the head men of the village, for the entertainment of travelers, and for other purposes of general interest.— **Mixed tribunal**, a name given to any of the courts established in Egypt in 1876 for the administration of civil justice between Egyptians and foreigners or between foreigners of different nationalities. They have slight criminal jurisdiction. They are composed of foreign and native judges, the former predominating. The Christian powers of Europe and the United States are represented. Also called *International Tribunals* or *Courts* and *Mixed Courts*.

> The jurisdiction of the Mixed Courts extends over all civil cases between Europeans and Egyptians, . . . also over civil cases between Europeans of different nationalities. *Cromer*, Modern Egypt, II. 318.

> The Mixed Tribunals or International Courts of Egypt constitute a unique institution.
>
> *Farman*, Egypt and its Betrayal, xxiv.

tributist (trib'ū-tist), *n.* [*tribut*(*e*) + *-ist.*] One who pays tribute. [Rare.]

Capitalists, landowners, inventors, Cornish *tributists* . . . are all brought under the stimulating influence of self interest. *Encyc. Brit.*, VI. 218.

tributyrin (trī-bū'ti-rin), *n.* [*tri-* + *butyrin.*] A colorless compound, $C_3H_5(OCOCH_2CH_2CH_3)_3$, contained in cows' butter and formed from glycerol and butyric acid. It boils at 285° C.

trica (trī'kạ̈), *n.*; pl. *tricæ* (-sē). [NL., irreg. < Gr. *θρίξ*, the hair (?).] A button-like apothecium in the lichen genus *Gyrophora*.

tricalcic (trī-kal'sik), *a.* Same as ⋆*tricalcium*.

tricalcium (trī-kal'si-um), *a.* Containing three atoms of calcium: as, *tricalcium* orthophosphate, $Ca_3(PO_4)_2$, the phosphate of calcium, which occurs in the mineral apatite, in animal bones and teeth, etc.—**Tricalcium phosphate.** Same as *tricalcic phosphate.* See ⋆*calcium phosphate.*

tri-car (trī'kär), *n.* [*tri-* + *car.*] A motor-vehicle having three wheels. One form is the motor-tricycle. *Cycle and Auto-trade Jour.*, Jan., 1905.

tricarballylic (trī'kär-ba̤-lil'ik), *a.* Having three carboxylic groups.—**Tricarballylic acid,** a colorless compound, $HOCOCH_2CH(COOH)CH_2COOH$, contained in unripe beet-roots and prepared from aconitic acid. It forms rhombic crystals and melts at 166° C.

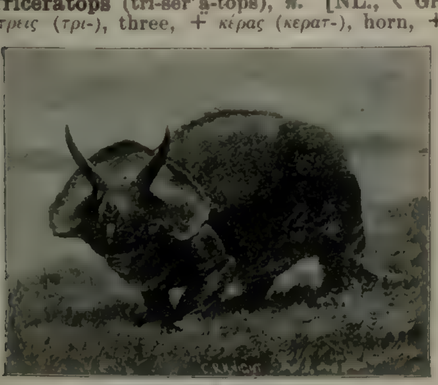
tricarbimide (trī-kär'bi-mid), *n.* Fulminic acid, $(HN:CO)_3$, a hypothetical compound of which various derivatives are known.

tricarinate (trī-kar'i-nāt), *a.* [*tri-* + *carinate.*] Having three ridges or keels, as does the carapace of the three-keeled emys, *Emys trijuga*. *Proc. Zool. Soc. London*, 1897, p. 198.

Triceps reflex. See ⋆*reflex*.

triceptor (trī-sep'tor), *n.* [*tri-* + *ceptor.*] In *physiol. chem.*, an intermediary body having three combining groups. *Vaughan and Novy*, Cellular Toxins, p. 132.

Triceratops (trī-ser'a̤-tops), *n.* [NL., < Gr. *τρεις* (*τρι-*), three, + *κέρας* (*κερατ-*), horn, + *ὤψ*, eye, face.] A genus of predentate dinosaurs belonging to the family *Ceratopsidæ*. It is characterized by a strong nasal horn-core, a pair of large pointed horn-cores above the orbits, a sharp cutting-beak, and an enormous cape-like bony frill extending over the neck from the hinder portion of the skull and having its margin studded with a row of sharp prominences. The brain is proportionately smaller than in any other reptile. The animal is quadrupedal, the pes having three-hoofed digits. The dermal armor is not observed. From the Laramie formation of Montana, Wyoming, and Colorado. See cut at ⋆*ceratopsid*.



Triceratops, one of the *Ceratopsidæ*.
(After a restoration by Knight.)

tricerium (tri-sē'ri-um), *n.*; pl. *triceria* (-ạ̈). Same as *tricerion*.

trichalcite (trī-kal'sīt), *n.* [*tri-* + *chalcite.*] Hydrous copper arsenate ($Cu_3As_2O_8 + 5H_2O$) occurring in radiated groups of a verdigris green color and in dendritic forms.

trichauxis (tri-kâk'sis), *n.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + *αὔξη*, for *αὔξησις*, increase.] Increase in number and thickness of the hairs.

trichesthesia (trik-es-thē'si-ạ̈), *n.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + *αἴσθησις*, perception.] A form of paræsthesia in which there is a sensation as of a hair on the skin. *Nature*, Aug. 7, 1902, p. 360.

trichi (trik'i), *n.*; pl. *trichies* (-iz). [An abbreviation of *Trichinopoli.*] A cheroot or cigar made at Trichinopoli. [Slang.]

Mon Jock, ye smoke the *trichi* coarse,
For ye are short o' cash.
An' best Havannahs couldna leave
Sae white an' pure an ash.
R. Kipling, The Fall of Jock Gillespie.

trichinophobia (tri-kī"nọ-fō'bi-ạ̈), *n.* [NL., < *trichina* + Gr. *-φοβια*, < *φοβεῖν*, fear.] Morbid and unreasonable fear of contracting trichinosis.

trichite, *n.* **3.** One of the minute acicular crystals of which the starch-grains of plants are supposed to consist.

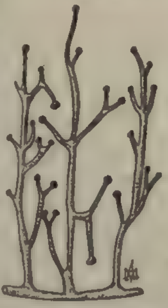
trichitis (tri-kī'tis), *n.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + *-itis.*] Inflammation of the hair-bulbs.

trichlorid (trī-klō'rid), *n.* [*tri-* + *chlorid.*] A compound containing three atoms of chlorin united to a more electropositive element or radical: as, phosphorus *trichlorid*, PCl_3.

trichobacteria (trik"ọ-bak-tē'ri-ạ̈), *n. pl.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + NL. *bacteria.*] All filamentous forms of bacteria, such as *Beggiatoa* and related genera. *A. Fischer.* Compare ⋆*haplobacteria.*

trichocephaliasis (trik"ọ-sef-a̤-lī'a̤-sis), *n.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + *κεφαλή*, head, + *-iasis.*] Infection with intestinal whipworms belonging to the nematode genus *Trichuris* (*Trichocephalus*), as *Trichuris trichiura*, one of the most common intestinal parasites of man.

Trichoderma (tri-kọ-dėr'mạ̈), *n.* [NL. (Persoon, 1796), < Gr. *θρίξ* (*τριχ-*), hair, + *δέρμα*, skin.] A genus of hyphomycetous fungi forming somewhat effuse, loose, pulvinate masses with branched conidiophores bearing unicellular hyaline or bright-colored conidia. About 13 species are known. *T. lignorum* is the most common and widely distributed species, forming small dark green masses on decaying wood throughout Europe and North America.



Trichoderma lignorum, showing conidiophores bearing conidia: much magnified.

Trichodiodon (trik-ọ-dī'ọ-don), *n.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + NL. *Diodon.*] A genus of porcupine-fishes (*Diodontidæ*) of uncertain habitat.

trichoëpithelioma (trik-ọ-ep-i-thē-li-ō'mạ̈), *n.*; pl. *trichoëpitheliomata* (-ma̤-tạ̈). [NL., < Gr. *θρίξ* (*τριχ-*), hair, + NL. *epithelioma.*] A tumor formed by overgrowth of the epithelium of the hair-follicles.

In view of its follicular origin the name given it by Jarisch—*trichoepithelioma*—is most appropriate, and should be used to the exclusion of the many others used. *Jour. Med. Research*, March, 1908, p. 163.

trichoid (trik'oid), *a.* [Gr. *θρίξ* (*τριχ-*), hair, + *-oid.*] Having the form or appearance of a hair; hair-like.

Tricholoma (trik-ọ-lō'mạ̈), *n.* [NL. (Fries, 1821), < Gr. *θρίξ* (*τριχ-*), a hair, + *λῶμα*, a fringe, referring to the veil which sometimes remains as a fibrous fringe on the margin of the pileus.] A large genus of fleshy, white-spored, central-stemmed agaricaceous fungi. The stem is fleshy and the gills sinuate behind. The species grow upon the ground in woods or open places and many are edible. *T. personatum* is a common edible species found in Europe and North America.

trichomania (trik-ọ-mā'ni-ạ̈), *n.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + *μανία*, madness.] Same as ⋆*trichotillomania*.

trichomatous (tri-kom'a̤-tus), *a.* Same as *trichomatose*.

trichonosus (tri-kon'ọ-sus), *n.* [Gr. *θρίξ* (*τριχ-*), hair, + *νόσος*, disease.] Any disease of the hair. —**Trichonosus versicolor.** Same as *ringed* ⋆*hair.*

trichophagia (trik-ọ-fā'ji-ạ̈), *n.* [Gr. *θρίξ* (*τριχ-*), hair, + *φαγεῖν*, eat.] The habit of biting off the ends of the hairs of the beard or mustache.

trichophyllous (tri-kof'i-lus), *a.* [Gr. *θρίξ* (*τριχ-*), hair, + *φύλλον*, leaf, + *-ous.*] In *bot.*, having the leaves hair-like or composed of hair-like divisions.

trichophytosis (trik"ọ-fi-tō'sis), *n.* [NL., < *Trichophyton* + *-osis.*] Any disease due to the presence of a species of *Trichophyton*; specifically, ringworm of the scalp caused by *Trichophyton tonsurans*. *Med. Record*, Oct. 12, 1907, p. 621.

Trichopsetta (trik-op-set'ạ̈), *n.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + *ψῆττα*, flounder.] A genus of flounders found in the Gulf of Mexico.

trichoptilar (tri-kop'ti-lạ̈r), *a.* [*trichoptile* + *-ar*³.] Pertaining to, or having the structure of, a trichoptile.

trichoptile (trī-kop'til), *n.* [Gr. *θρίξ* (*τριχ-*), hair, + *πτίλον*, down.] Any one of the long, hair-like structures which form part of the downy covering of the young of some birds: typically present in the nestling of *Centropus sinensis*. The trichoptiles are prolongations of the horny sheath of the developing feather. *R. Shelford.*

trichorrhexis, *n.* See *trichorexis*.

Trichosphæria (trik-ọ-sfē'ri-ạ̈), *n.* [NL. (Fuckel, 1869), < Gr. *θρίξ* (*τριχ-*), hair, + *σφαῖρα*, a ball.] A genus of pyrenomycetous fungi having subglobose, superficial, pilose perithecia and hyaline 1- or 2-septate ascospores. About 40 species are known. They occur chiefly on decaying wood. *T. pilosa* is frequently found in Europe and North America and *T. Sacchari* is regarded as a wound parasite of sugar-cane; it does considerable damage, especially in the West Indies.

Trichostomata (trik-ọ-stō'ma̤-tạ̈), *n. pl.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + *στόμα*, mouth.] A large order of ciliate protozoans. They have the mouth usually open, the pharynx tubular and open, and the edges of the mouth provided with undulating membranes which are continued into the pharynx, or the latter is provided with cilia. Food is usually brought to the neighborhood of the mouth in a whirlpool produced by the cilia. *Bütschli.* Compare ⋆*Gymnostomata.*

trichostomatous (trik-ọ-stō'ma̤-tus), *a.* [Gr. *θρίξ* (*τριχ-*), hair, + *στόμα* (*στοματ-*), mouth, + *-ous.*] Having the mouth and pharynx provided with undulating membranes or having cilia in the pharynx, as certain ciliate protozoans.

Trichothecium (trik-ọ-thē'ṣi-um), *n.* [NL. (Link, 1809), < Gr. *θρίξ*, a hair, + *θήκη*, receptacle.] A genus of hyphomycetous fungi having erect, simple septate conidiophores and two-celled hyaline or bright colored apical conidia. *T. roseum* is a cosmopolitan species forming pinkish masses on decaying plant and animal substances.

trichotillomania (trik"ọ-til-ọ-mā'ni-ạ̈), *n.* [NL., < Gr. *θρίξ* (*τριχ-*), hair, + *τίλλειν*, pluck, + *μανία*, madness.] The habit of continually pulling out hairs from the beard, at the nasal orifices, etc.

trichroism, *n.* **2.** In *biol.*, trimorphism in the coloring of a species.

trichromatism (trī-krō'ma̤-tizm), *n.* [Gr. *τρι-*, three, + *χρῶμα*(*τ-*), color, + *-ism.*] **1.** The condition of having or exhibiting three colors: said, specifically, of certain birds and insects which, apart from coloration due to age or sex, appear under three different color-phases. —**2.** The condition produced by the combination of three fundamental colors or pigments.

trickett (trik'et), *n.* [From the name of a noted oarsman of New South Wales.] A long drink of beer. *E. E. Morris*, Austral English. [Australian slang.]

Triconodonta (trī-kon-ọ-don'tạ̈), *n. pl.* [See *Triconodontidæ.*] The family *Triconodontidæ* and its allies considered as a suborder. *Osborn*, 1893.

triconodonty (trī-kon-ọ-don'ti), *n.* [*triconodont* + *-y*³.] The fact or condition of being trichonodont, or of having teeth with three long cusps in line with one another, such as are found in most of the earless seals. *Proc. Zool. Soc. London*, May, 1899, p. 571.

tricosane (trī'kọ-sān), *n.* [Gr. *τρι-*, three, + *εἴκοσι*, twenty, + *-ane.*] A colorless hydrocarbon, $CH_3(CH_2)_{21}CH_3$, of the methane series. It is contained in paraffin from shale and in petroleum, and may be prepared by the action of hydriodic acid and phosphorus on the chlorid, $C_{23}H_{46}Cl_2$. It crystallizes in lustrous leaflets, melts at 47.7° C., and boils at 234° C. under 15 millimeters pressure.

tricresol (trī-krē'sol), *n.* [*tri-* + *cresol.*] A trade-name of the mixture from the three cresols from coal-tar. It is used as an antiseptic and disinfectant.

tricurvate (trī-kėr'vāt), *a.* [L. *tri-*, three, + *curvus*, curve, + *-ate*¹.] Having three curves or a threefold curve.

Tricuspid insufficiency. See *valvular* ⋆*insufficiency*.

tricyanide (trī-sī'a̤-nid), *n.* [*tri-* + *cyanide.*] A compound containing three combining units of the radical cyanogen united to a relatively electropositive element or radical: as, arsenic tricyanide, $As(CN)_3$.

tricyclic (trī-sik'lik), *a.* [Gr. *τρι-*, three, + *κύκλος*, circle, + *-ic.*] In *chem.*, consisting of three rings or closed chains of atoms (usually of carbon) united together, with any other atoms united to those of such rings. See *tricyclic* ★*system*.

tridecane (trī-dek′ān), *n.* [*tri-* + *decane.*] A colorless liquid hydrocarbon, $CH_3(CH_2)_{11}CH_3$, of the methane series, prepared by the action of hydriodic acid and phosphorus on tridecylic acid. It melts at −6.2° C. and boils at 234° C.

tridecatoic (trī″dek-ạ-tō′ik), *a.* [Gr. τρι-, three, + δεκα, ten, + *-t-* + *-o-* + *-ic.*] Noting an acid, the same as tridecylic acid. See ★*tridecylic.*

tridecylic (trī-dẹ-sil′ik), *a.* [Gr. τρι-, three, + δέκα, ten, + *-yl* + *-ic.*] Noting a colorless crystalline compound, $CH_3(CH_2)_{11}COOH$, of the acetic-acid series, prepared by the oxidation of methyl tridecyl ketone. It melts at 40.5° C., and boils at 236° C. under 100 millimeters pressure.

trider (trī′dėr), *n.* [Gr. τρίδειρος, three-necked, ‹ τρι-, three, + δειρή, neck.] In the sponge-spicules, a tetraclon in which one arm differs from the rest in length or shape.

Tridimensional analyser. Same as ★*movement analyser.*

tridimensionality (trī″di-men-shọn-al′ị-ti), *n.* [*tridimensional* + *-ity.*] The property or quality of being tridimensional. *E. B. Titchener*, Exper. Psychol., I. i. 138.

triennium (trī-en′i-um), *n.*; pl. *triennia* (-ạ̈). [L. See *triennial.*] A period of three years.

trier, *n.* 3. A tool used in trying, testing, or sampling.

> These samples are drawn by means of a "*trier*," or clover-seed sampler, which is thrust through the bag, allowing the seed to run out at the open end of the *trier*.
> *Yearbook U. S. Dept. Agr.*, 1901, p. 237.

triethylamine (trī-eth-il-am′in), *n.* [*tri-* + *ethylamine.*] A colorless oil, $(C_2H_5)_3N$, prepared by the action of ethyl iodide on ammonia. It has an odor of ammonia and boils at 88.8° C.

triferous (trif′e-rus), *a.* [L. *trifer*, bearing thrice, ‹ *tri-*, three, + *ferre*, bear, + *-ous.*] Bearing fruit three times a year: said of plants. *Encyc. Dict.*

triferrin (trī-fer′in), *n.* [L. *tri-*, three, + *ferrum*, iron, + *-in*^{2}.] An iron compound of paranucleinic acid, said to contain 22 per cent. iron and 2½ per cent. phosphorus. It is hematinic.

trificial (trī-fish′ạl), *a.* [L. *tri-*, three, + *facies* (in comp. *-ficies*), face, + *-al*^{1}.] In *anat.*, same as *trifacial*. *Encyc. Dict.*

trifilar (trī-fī′lạr), *a.* [L. *tri-*, three, + *filum*, thread, + *-ar*^{3}.] Consisting of three threads or filaments: said of a form of suspension used in some physical instruments in which the suspended part is held up by three threads or wires attached at symmetrically placed points.

> The chairman referred to an inertia table designed by Prof. Perry in which an aluminium ring was supported by a *trifilar* suspension. *Nature*, Feb. 5, 1903, p. 334.

trifluormethane (trī″flö-ọr-meth′ān), *n.* [*tri-* + *fluor* + *methane.*] Same as ★*fluoroform.*

triformol (trī-fôr′mol), *n.* [*tri-* + *form*(*aldehyde*) + *-ol.*] Same as ★*paraformaldehyde.*

trig^{3} (trig), *v. i.* [*trig*^{3}, *n.*] To act as an obstacle or check; act as a brake. See ★*trig*^{3}, *n.*, 3. [Local.]

> Put the swale hay to the rest of the pitches. It will *trig* better than gravel. Don't let them put a chain round a runner. You want to keep your road so smooth that every load of logs will go down there like a boy down a barn rollway. *Holman Day*, King Spruce, xxv.

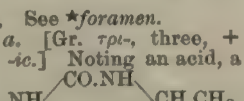
trig^{3}, *n.* 3. Material, such as gravel or hay, placed on a slippery declivity on a road to check the motion of a sled passing over it. [Local.]

> Twenty rods further on they struck the hay, spread thickly for the *trig* — the checking of the runners. And the sled-runners, biting it, jerked and halted, the bind-chains creaked, the chafing logs groaned — and they were stopped! *Holman Day*, King Spruce, xxvi.

trig. An abbreviation (*a*) of *trigonometrical*; (*b*) of *trigonometry.*

triga (trī′gạ̈), *n.*; pl. *trigæ* (-jē). [L.] In *Rom. antiq.*, a chariot rigged for three horses. See *biga* and *quadriga.*

Trigeminal foramen. See ★*foramen.*

trigenic (trī-jen′ik), *a.* [Gr. τρι-, three, + -γενης, -producing, + *-ic.*] Noting an acid, a colorless compound, 
$NH\left\langle\begin{matrix}CO.NH\\CO.NH\end{matrix}\right\rangle CH.CH_3$, prepared by the action of cyanic acid on aldehyde. It crystallizes in small prisms and decomposes when heated. Also called *ethylidenebiuret.*

trigger-block (trig′ėr-blok), *n.* That element of the mechanism in a Corliss valve-gear by which the valve-stem is released from the rod which actuates it, permitting the valve to close suddenly by gravity or a spring or both. The trigger is released by a push or pull from a rod connected to the governor of the engine, whereby the speed is made to determine the point at which the trigger is pulled, and the admission of steam cut off. *D. K. Clark*, Steam Engine, III. 58.

Triglops (trig′lops), *n.* [NL., ‹ *Trigla* + Gr. ὤψ, eye (appearance).] A genus of cottoid fishes found in the northern Atlantic and Pacific.

Triglopsis (trig-lop′sis), *n.* [NL., ‹ *Trigla* + Gr. ὄψις, sight, appearance.] A genus of cottoid fishes found in deep waters of the Great Lakes.

trig-meat (trig′mēt), *n.* Shell-fish. [Eng. sailors' slang.]

trigon^{1}, *n.* 6. The prominent anterior portion of an upper molar tooth forming a triangular area at whose angles are the three principal cusps — the protocone, paracone, and metacone. The study of the Mesozoic mammals has left no doubt that the upper and lower triangles, or 'trigon' and 'trigonid,' were derived from the reptilian protocone by the addition of lateral cusps. See cut under ★*tooth*, 1.

trigon. An abbreviation (*a*) of *trigonometrical*; (*b*) of *trigonometry.*

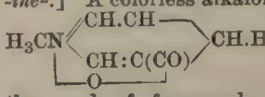
Trigonal symmetry. See ★*symmetry*, 6.

trigonalid (trī-gon′ạ-lid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Trigonalidæ.*

II. *a.* Having the characters of or belonging to the family *Trigonalidæ.*

trigonalyid (trig-ọ-nal′i-id), *n.* and *a.* Same as ★*trigonalid.*

trigone, *n.* — **Cerebral trigone.** Same as *fornix cerebri.*

trigonelline (trig-ọ-nel′in), *n.* [*Trigonella* + *-ine*^{2}.] A colorless alkaloid,  contained in the seed of fenugreek, *Trigonella Fænum-græcum*, and prepared artificially from nicotinic acid. It crystallizes in prisms and melts at 130° C.

trigonid (trī-gon′id), *n.* [*trigon*^{1}, 6, + *-id.*] The anterior portion of a lower molar tooth, forming a prominent triangular area, at whose angles lie the three principal cusps, the protoconid, paraconid, and hypoconid: correlated with ★*trigon*^{1}, 6.

trigonitis (trig-ọ-nī′tis), *n.* [NL., ‹ *trigone* + *-itis.*] Inflammation of the bladder confined to the region of the trigone.

trigonocephalic (trig″ọ-nọ-se-fal′ik), *a.* [Gr. τρίγωνος, triangular, + κεφαλή, head, + *-ic.*] In *anthrop.*, having that form of head which results from premature closing of the medio-frontal suture and which is characterized by flat sides of the head which converge in an angle toward the medial line of the frontal bone.

> If the halves of the frontal unite before birth, it is wedge-shaped or *trigonocephalic.*
> *Encyc. Brit.*, XXV. 398.

Trigonocephalus, *n.* 2. [*l. c.*] A trigonocephalic skull or person.

trigonocephaly (trig″ọ-nō-sef′ạ-li), *n.* [*trigonocephal*(*ic*) + *-y*^{3}.] The character or condition of being trigonocephalic.

> The strange cranial deformation known as *trigonocephaly*, in which the forehead is constricted and more or less pointed, and the temporal region and the base of the skull are broadened. *Nature*, March 26, 1903, p. 498.

Trigonoceras (trig-ọ-nos′e̤-ras), *n.* [NL., ‹ Gr. τρίγωνος, triangular, + κέρας, horn.] A genus of orthochoanitic nautiloid cephalopods having gyroceraconic shells the volutions of which are triangular or tricarinate in section, with surface ornamented by longitudinal ribs. It occurs in Carboniferous rocks.

trigonodont (trī-gon′ọ-dont), *a.* [Gr. τρίγωνον, a triangle (see ★*trigon*^{1}, 6), + ὀδούς (ὀδοντ-), tooth.] Having molars whose anterior primitive cusps are so arranged that lines drawn between them would form a triangle.

> '*Trigonodont*' is most appropriate because the first step in molar morphology is to identify the primitive triangle. *Amer. Nat.*, Dec., 1897, p. 1002.

Trigonometric ratios. See ★*ratio.*

trigonometry, *n.* — **Analytic trigonometry**, the body of doctrine in which the algebraic relations of the trigonometric functions are developed. — **Plane trigonometry**, trigonometry which comprises the solution of plane triangles and investigations of plane angles and their functions. — **Spherical trigonometry**, the application of goniometry or angular analysis to spherical geometry. It treats principally of the solution of spherical triangles.

Trigonum interpedunculare, a space between the peduncles of the crura of the cerebrum. *Baldwin*, Dict. of Philos. and Psychol., I. 143. — **Trigonum olfactorium**, a triangle bounded by the external and internal roots of the olfactory nerve and forming the base of the olfactory tubercle. See *caruncula mammillaris.*

trigram, *n.* 2. A geometrical form consisting of three elements, like a triangle, a triskele, a heart, etc. — 3. In *geom.*, three coplanar, non-copunctal straights.

> The swastika itself merely represents two superposed *trigrams*. *An. Rep. Bur. Amer. Ethnol.*, 1897–98, p. 842.

Diagonal trigram, in *projective geom.*, the trigram determined by the three diagonals of a tetragram.

trihedral, *a.* **II.** *n.* The figure determined by three non-coplanar rays from a point.

trihedron (trī-hē′drọn), *n.*; pl. *trihedra* (-drạ̈). [Gr. τρι-, three, + ἕδρα, base.] In *geom.*, a figure having three faces or sides.

trihemitonion (trī″hem-i-tō′ni-on), *n.*; pl. *trihemitonia* (-ạ̈). [Gr. τριημιτόνιον, ‹ τρι-, three, + ἡμιτόνιον, a half-tone.] In *anc. Greek music*, an interval equal to three hemitones; a minor third.

trihydrated (trī-hī′drā-tėd), *a.* [*tri-* + *hydrate* + *-ed*^{2}.] Containing in combination three molecules of water, as crystallized copper nitrate, the composition of which is $Cu(NO_3)_2.3H_2O$.

trike (trīk), *n.* and *v.* A contraction of *tricycle.* [Slang.]

> "Bike" is familiar, but displeasing to the present reviewer, who has not heard "*trike*" for tricycle ventured often. *N. and Q.*, 10th ser., II. 359.

triker (trī′kėr), *n.* [*trike* + *-er.*] One who rides a tricycle. [Slang.]

> I was further gratified with the intimation that the peccant *triker* had been discovered, and that there would be a nuisance the less upon the London street-ways from that date. *Pall Mall Gazette*, May 15, 1901, p. 1.

trikosane (trik′ọ-sān), *n.* Same as ★*tricosane.*

trikresol (trī-krē′sol), *n.* Same as ★*tricresol.*

tril, *v.* and *n.* A simplified spelling of *trill.*

trilby (tril′bi), *n.* [From the name *Trilby.* See def.] A foot: from the beautiful left foot of the heroine of Du Maurier's story 'Trilby,' of which it was said that there was only one in Paris to match it and that was Trilby's other foot. [Humorous slang.]

> Lovely eyes, and all the rest of it; splendid figure; . . . and awfully pretty *Trilbys*. *Clyde Fitch*, Two Letters.

trillo^{2} (trēl′yō), *n.* [Appar. Sp. *trillo*, a harrow used in threshing grain, ‹ *trillar*, thresh grain.] A trade-name for the 'beard' which covers valonia, the acorn-cups of *Quercus Ægilops*. This beard, which is easily separated in handling, is richer in tannin than the cup itself. See *valonia.*

trilobe (trī′lōb), *v. t.*; pret. and pp. *trilobed*, ppr. *trilobing*. [L. *tres* (*tri-*), three, + E. *lobe.*] To divide into three lobes.

> The evagination has become *trilobed* by the anterior and the anterior ventral depressions.
> *Trans. Amer. Micros. Soc.*, Nov., 1903, p. 64.

Triloburus (trī-lọ-bū′rus), *n.* [NL., ‹ Gr. τρι-, three, + λοβός, lobe, + οὐρά, tail.] A subgenus of *Centropristis*, a serranoid fish of the Atlantic coast of the United States.

trilophous (tril′ọ-fus), *a.* [Gr. τρεῖς (τρι-), three, + λόφος, crest, + *-ous.*] In sponge-spicules, having three rays forked or branched. Compare ★*monolophous.*

trim, *v.* **I.** *trans.* 11. In *elect.*, to replace the burned-out carbons or electrodes of (an arc-lamp) by new ones.

II. *intrans.* 2. To be in a given condition of trim. — **To trim by the head**, to have a greater draft at the bow than at the stern. — **To trim by the stern**, to have a greater draft at the stern than at the bow.

trim, *n.* 2. (*b*) The difference in draft at the bow of a vessel from that at the stern. *White*, Manual of Naval Arch., p. 5.

trimachy (trim′ạ-ki), *n.* [Gr. τρεῖς (τρι-), three, + μάχη, fight.] A contest in which three are engaged; a contest among three. [Rare.]

trimellic (trī-mel′ik), *a.* [L. *tri-*, three, + *mel* (*mell-*), honey, + *-ic.*] Same as ★*trimellitic.*

trimellitic (trī-mẹ̄-lit′ik), *a.* Noting an acid, a colorless compound, $C_6H_3(\overset{1.\,2.\,4}{\mathrm{COOH}})_3$, prepared by the oxidation of colophony by means of nitric acid. It forms warty crusts and melts and evolves water at 216° C. Also called *asymmetrical benzene tricarboxylic acid.*

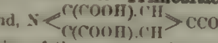
trimere (trī′mēr), *n.* (Gr. *τριμερής*, having three parts. See *trimerous.*] In the reticulum or supporting skeleton of the hexactinellid sponges, a mesh of the third order. See ★*mere*6.

Trimerella (trim-ẹ-rel′ạ̈), *n.* [NL., < Gr. *τριμερής*, having three parts, + L. dim. *-ella.*] A genus of atrematous brachiopods having thick calcareous biconvex shells of ovate outline, with prominent cardinal areas. The interiors of the valves are provided with long, narrow, doubly vaulted platforms extending forward from the hinge-plates. The genus is represented in the Upper Silurian dolomites of the Baltic region of Europe and in the Guelph dolomites of similar age in North America.

Trimeroceras (trim-ẹ-ros′ẹ-ras), *n.* [NL., < Gr. *τριμερής*, having three parts, + *κέρας*, horn.] A genus of orthoceraconic cephalopods having short stout shells, the apertures of which are trilobate. It occurs in the Silurian formations.

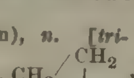
trimes (trim′es), *n.* [AS. *trimes, trymes*, also (with a leaning on *threó, thrȳ*, three) *thrymes*, < LL. *tremis*, a coin, the third part of an aureus, < *tres, tri-*, three, formed after the analogy of LL. *semis*, a coin, half an aureus, L. *semis*, half, half of a unit, < *semi-*, half, + *as*, a unit: see *as*4.] In Anglo-Saxon use, the name of a coin: (*a*) used to translate Latin *as* and Latin-Greek *stater*; (*b*) in England, a coin of the value of threepence (in this use found only in gen. pl. *thrimsa, thrymsa*).

trimesic (trī-mē′sik), *a.* [Gr. *τρι-*, three, + (?) *μέσος*, middle, + *-ic.*] Noting an acid, a colorless compound, $C_6H_3(\overset{1\,3\,5}{\mathrm{COOH}})$, prepared by the oxidation of the corresponding triethylbenzene. It crystallizes in thick prisms, melts above 300° C., and sublimes at a lower temperature. Also called *symmetrical benzene tricarboxylic acid.*

trimesitic (trī-mẹ̄-sit′ik), *a.* [Gr. *τρι-*, three, + *μεσίτης*, a mediator (lit. being in the middle), + *-ic.*] 1. Pertaining to trimesitic acid.—2. Incorrect form for ★*trimesic.*—**Trimesitic acid.** (*a*) A colorless compound,  $N{<}^{\mathrm{C(COOH).CH}}_{\mathrm{C(COOH).CH}}{>}\mathrm{CCOOH}$, prepared by the oxidation of the corresponding trimethylpyridine. It crystallizes in long plates or needles, and melts at 227° C. Also called *symmetrical pyridine tricarboxylic acid.* (*b*) Incorrect form for *trimesic acid.* See ★*trimesic.*

trimetaphosphate (trī″met-a-fos′fāt), *n.* [*tri-* + *metaphosphate.*] A salt which may be viewed as arising from the polymeric union of three molecules of a monometaphosphate: as, sodium *trimetaphosphate*, $Na_3P_3O_9$.

trimethyl (trī-meth′il), *a.* [*tri-* + *methyl.*] In *organic chem.*, a term noting the presence, in the molecule of a compound, of three methyl groups, CH_3. It is also used as a combining form.

trimethylene (trī-meth′i-lēn), *n.* [*tri-* + *methylene.*] A colorless gas,  $CH_2{<}^{CH_2}_{CH_2}$, prepared by the action of zinc-dust and alcohol on trimethylene bromide. It melts at −126° C. Also called *cyclopropane.*

trimethylenediamine (trī-meth″i-lēn-dī-am′-in), *n.* [*tri-* + *methyl* + *di-*2 + *amine.*] A poisonous ptomaïne obtained from cultures of the cholera bacillus in bouillon.

trimmer, *n.* 1. (*f*) In *wood-working*, a large power-saw table for trimming lumber. The surface of the table has a series of feed-chains that bring the lumber laid on the table to a gang of saws placed in a row at the back of the table. Each saw is hung on a balanced frame called a *ladder*, and in the normal position is idle under the table. Each ladder is controlled by a foot-pedal, and to use the machine two or more pedals are touched, bringing a group of saws into action above the top of the table. The lumber to be trimmed is then laid on the feed-chains and is carried to the saws, cut, and delivered at the outboard side of the table. To trim to other dimensions other groups of saws are brought into action, the number of combinations being sufficient for a large range of work. A ten-saw machine is 7 feet 6 inches wide and 22 feet long. Another type of machine employs saws suspended above the table and is called an *over-cut trimmer.* (*g*) In *elect.*: (1) One who renews the carbons in arc-lamps and adjusts the lamps for further service. *Elect. Rev.*, Sept. 3, 1904, p. 332. (2) An implement for cutting the worn ends of metallic dynamo brushes.—**Over-cut trimmer.** See ★*trimmer*, 1 (*f*).—**Two-saw trimmer**, a trimmer employing only two saws on a fixed arbor.

trimmer-beam (trim′ėr-bēm), *n.* A short beam framed into two others, at right angles, by tenons which fit mortises in the latter: used to receive and support the ends of shorter beams or joists parallel to the main supporting beams, to form a well or interruption of the series of main-beams where they cannot be continuous from wall to wall. Such wells and trimmer-beams occur when stairways or hearths are to be provided, and around elevator-wells or -shafts, hoistways, and the like. In light work such trimmers are often fastened by nails: or they may be suspended by iron clamps or stirrups.

trimming-machine, *n.*—**Trimming-and-beading machine.** See ★*beading-machine.*

trimming-spout (trim′ing-spout), *n.* A delivery-spout from a grain-elevator or a coal-pocket, or from a conveyer delivering sand, coal, broken stone, or other material in bulk to a car or boat, and designed to deliver the material in different directions at will to place it evenly or in such a way as to trim the vessel and keep it upon an even keel, or to distribute the load to the car in such a manner that the larger part of the weight shall come over the trucks and prevent uneven strains in the floor of the car. It is so jointed that the open end can be slued in any direction while delivering the material.

trimming-tank (trim′ing-tangk), *n.* In *ship-building*, a deep watertight compartment, in the bow or in the stern, which can be filled with water-ballast to trim the vessel down at the bow or the stern respectively. See also ★*deep-tank.*

trimorph (trī′môrf), *n.* [Gr. *τρίμορφος*, having three forms.] In *crystal.*, a substance which exhibits trimorphism, or one of the three forms which such a substance presents: thus the term may be applied to titanium dioxid, or to rutile, one of its three forms of crystallization.

Trin. An abbreviation of *Trinity.*

Trinacrian (tri-nā′kri-an), *a.* Of or relating to Trinacria (an ancient name of Sicily); Sicilian.

> Far less abhorr'd than these
> Vex'd Scylla, bathing in the sea that parts
> Calabria from the hoarse *Trinacrian* shore:
> Nor uglier follow the night-hag, when call'd
> In secret riding through the air she comes.
> *Milton*, Paradise Lost, ii. 661.

trineural (trī-nū′ral), *a.* [Gr. *τρι-*, three, + *νεῦρον*, nerve, + *-al*1.] Relating to three nerves.—**Trineural fascicle** or **fasciculus.** See ★*fascicle.*

T-ring (tē′ring), *n.* A ring the cross-section of which has the shape of a capital letter T; specifically, a ring for piston-packing in an engine-cylinder, which has a T-section. The head of the T gives a larger contact-area against the bore and the stiffness of the upright resists tendency to deform radially; there is also less weight or mass than if the ring were of full rectangular or square section. *Power*, April, 1904, p. 212.

trinitride (trī-nī′trid), *n.* [*tri-* + *nitride.*] A hydrazoate or salt of hydrazoic acid.

trinitrocellulose (trī-nī-trọ-sel′ụ̄-lōs), *n.* [*tri-* + *nitro*(*gen*) + *cellulose.*] A name often, though improperly, applied to guncotton under the assumption that the formula of cellulose or pure cotton fiber is $C_6H_{10}O_5$ and that the action of nitric acid converts it into $C_6H_7O_5(NO_2)_3$: but this latter formula should be written $C_6H_7O_2(NO_3)_3$, since the product is not a nitro compound but a true nitrate, and the molecule of cellulose contains many times the number of atoms assumed in the above formula, which merely serves to indicate the relative proportions of the constituents.

trinitrocresol (trī-nī-trọ-krē′sol), *n.* A substance obtained by the action of concentrated nitric acid on cresol from coal-tar. It forms yellow needle-like crystals, sparingly soluble in cold water, melting at about 100° C., burning when ignited by a flame, but exploding violently from the shock of a heavy detonating fuse. It has been used in France as an explosive agent under the name *cresilite*, and its ammonium salt similarly in Austria as *ecrasite.* It has been to a limited extent applied in medicine as an antiseptic.

trinitronaphthalene (trī-nī-trọ-naf′thạ-lēn), *n.* A substance produced by the action of concentrated nitric acid on naphthalene from coal-tar, forming yellow crystals which may be caused to explode by sufficiently sudden heating. It has been used as an ingredient of *grisonnite*, a French explosive agent.

trinitrophenol (trī-nī-trọ-fē′nol), *n.* [*tri-* + *nitro*(*gen*) + *phenol.*] A substance, $C_6H_2.HO.(NO_2)_3$, produced by the action of concentrated nitric acid on phenol or carbolic acid from coal-tar, and obtainable also by several other reactions. It forms yellow crystals, which are sparingly soluble in cold water, melt at 122° C., burn on the application of flame, and explode by the shock of a detonating fuse. It is more generally known as *picric acid.* This acid and its salts are used under various names as explosives, *melinite* and *lyddite* being examples. It is also extensively used in dyeing wool and silk, and has been met with as an adulterant of beer, giving a bitter taste which simulates that due to the use of hops.

Trinity formation, lily. See ★*formation*, ★*lily.*

trinucleate (trī-nū′klẹ̄-āt), *a.* [*tri-* + *nucleus* + *-ate*1.] In *cytol.* and *pathol.*, having three nuclei: said of certain cells and abnormal eggs.

> Binucleate eggs are not uncommon, *trinucleate* eggs are more rare. *Bot. Gazette*, May, 1903, p. 344.

Trinucleus (trī-nū′klẹ̄-us), *n.* [NL., < L. *tri-*, three, + *nucleus*, a kernel.] A genus of small blind hypoparian trilobites, typical of the family *Trinucleidæ*, with relatively large crescentic cephalic shield provided with prominent tumid glabella and cheeks, broad pitted border, and long sharp genal spines, thorax with six segments, and a small pygidium. The genus is indicial of Lower Silurian formations.

triobolon (tri-ob′ọ̄-lon), *n.*; pl. *triobola* (-lạ̈). [Gr. *τριώβολον*, < *τρι-*, three, + *ὀβολός*, obolus.] A Greek silver coin, the hemidrachm, of the value of 4½ pence.

triod, *n.* (*b*) An abnormal or derived form of the 4-rayed spicule.

triœcism (trī-ē′sizm), *n.* [Gr. *τρι-*, three, + *οἶκος*, house, + *-ism.*] In *bot.*, a condition in which the same species has staminate, pistillate, and hermaphrodite flowers, all on different plants. Sometimes called *cœnodiœcism.*

trional, *n.* It is diethyl-sulphone-methyl-ethyl-methane, $CH_3C(C_2H_5)(C_2H_5SO_2)_2$, prepared in a similar manner to sulphonal, which it resembles in general properties. It crystallizes in lustrous plates melting at 76° C.

triose (trī′ōs), *n.* [*tri-* + *-ose.*] 1. A class-name applied, in organic chemistry, to carbohydrates containing three atoms of oxygen in their molecules, such as glycerose (OCH.CH-(OH)CH_2OH).—2. A combining-form to indicate the combination into one molecule of three carbohydrate radicals, as in raffinose (melitriose), which is a saccharotriose.

trioxymethylene (trī″ok-si-meth′i-lēn), *n.* [*tri-* + *oxy*(*gen*) + *methylene.*] Same as ★*paraformaldehyde* and *metaformaldehyde.* Some authorities apply the name only to the latter, but no satisfactory distinction between the two substances seems to have been established.

trioxypurin (trī″ok-si-pū′rin), *n.* [*tri-* + *oxy*(*gen*) + (?) *pus* (*pur-*), pus, + *-in*2.] Same as *uric acid.*

Trioxys (trī-ok′sis), *n.* [NL., < Gr. *τρι-*, three, + *ὀξύς*, sharp.] 1. A genus of braconid insects.—2. [*l. c.*] An insect of the genus.—**Red-legged trioxys**, an American braconid insect, *Trioxys testaceipes*, parasitic on the orange-aphis and other plant-lice.

trip1, *n.* 11. The set of mine cars run into or out of the mine as a unit or train. [Eng.]—**Trip valve-gear.** See ★*valve-gear.*

tripalmitin (trī-pal′mi-tin), *n.* [*tri-* + *palmit*(*ic*) + *-in*2.] A colorless compound, $C_3H_5(C_{16}H_{31}O_2)_3$, contained in all fats which yield palmitic acid when hydrolyzed and prepared by heating glycerol with palmitic acid. It forms ill-defined crystals melting at 62° C.

tripara (trip′ạ-rạ), *n.* [NL., < L. *tri-*, three, + *-para*, < *parere*, bring forth.] A woman who has borne three children.

trip-catch (trip′kach), *n.* The detent which engages the trip or releasing-element in a Corliss valve-gear and holds it until, by the action of the governor, the catch is thrown out, or the release is tripped, and the valve stem is permitted to return to its position when closed. *Uhland*, Corliss Engines, p. 193.

trip-coil (trip′koil), *n.* Same as ★*tripping-coil. Trans. Amer. Inst. Elect. Engin.*, 1903, p. 657.

trip-engine (trip′en″jin), *n.* An engine having a valve-gear which is tripped, released, or disconnected to cut off the admission of steam, as opposed to an engine in which the valve is at all times directly actuated by the eccentric. The Corliss engine is an example of a trip-engine.

tripeptide (trī-pep′tid), *n.* [*tri-* + *pept*(*ic*) + *-ide*¹.] A condensation-product resulting from the union of three amino-acid radicals, as alanyl-leucyl-glycin. Products of this order are possibly formed during proteolytic digestion. See ★*digestion products.*

triphase (trī′fāz), *a.* [Gr. τρι-, three, + φάσις, phase.] In *elect.*, same as ★*three-phase. Jour. Brit. Inst. Elect. Engin.*, 1901–02, p. 67.

triphasic (trī-fā′zik), *a.* [*triphas*(*e*) + *-ic.*] Occurring in three phases.

> In the frog's heart the variation shown by the capillary electrometer is diphasic. For the human heart the later work seems to show a *triphasic* current.
> *Buck*, Med. Handbook, III. 105.

triphenetol (trī-fē′ne-tol), *n.* [*tri-* + *phenetol.*] A general name, in organic chemistry, for compounds containing, in their molecule, three phenetol radicals ($C_2H_5OC_6H_4-$).

triphenin (trī-phē′nin), *n.* [*tri-* + *phen*(*yl*) + *-in*².] A trade-name of ethoxypropionylaniline, $C_2H_5OC_6H_4NHCOCH_2CH_3$. It is a colorless crystalline compound, and resembles phenacetin in general properties and medicinal uses. It differs from this substance in containing a propionyl instead of an acetyl group.

triphenyl (trī-fē′nil), *n.* [*tri-* + *phenyl.*] A term applied, in organic chemistry, to compounds containing, in their molecule, three phenyl radicals (C_6H_5). It is also used as a combining-form.

triphenylated (trī-fē′ni-lā-ted), *a.* [*tri-* + *phenyl* + *-ate* + *-ed*².] Containing three combining-units of the radical phenyl (C_6H_5).

triphenyl-methane (trī-fē″nil-meth′ān), *n.* [*triphenyl* + *methane.*] A colorless compound, $(C_6H_5)_3CH$, prepared by the action of aluminium chlorid and benzene on chloroform. It is trimorphous, forms rhombic crystals, melts at 92° C., boils at 359° C., and is the parent substance of many valuable dyes.

triphenyl-methyl (trī-fē″nil-meth′il), *n.* [*triphenyl* + *methyl.*] A colorless crystalline compound, $((C_6H_5)_3C)_2$, prepared by the action of zinc on triphenyl-chlormethane. It combines with great ease with oxygen and the haloids, and for this reason was at first supposed to have the formula $(C_6H_5)_3C$. It is probably hexaphenylethane, $(C_6H_5)_3C\text{-}C\text{-}(C_6H_5)_3$, but may exist in part in an isomeric form and it dissociates readily into two molecules of $(C_6H_5)_3C$.

triphenyl-rosaniline (trī-fē″nil-rọ-zan′i-lin), *n.* [*triphenyl* + *rose*¹ + *aniline.*] An aniline dye, $C_{20}H_{18}N_3(C_6H_5)_3O$. Also called *aniline blue.*

trip-hook (trip′hu̇k), *n.* An instrument of torture of some kind. See the extract. [Rare.]

> Ah, they come! Fly you, save yourselves, you two
> The dead back-weight of the beheading axe!
> The glowing *trip-hook*, thumbscrews and the gadge!
> *Browning*, A Soul's Tragedy.

Triphragmium (trī-frag′mi-um), *n.* [NL. (Link, 1825), < Gr. τρεῖς (τρι-), three, + φράγμα, a partition.] A genus of rust-fungi having three-celled teleutospores and uredospores on the same host. Six species are known. *T. Ulmariæ* is frequently found on *Filipendula Ulmaria* in Europe, and *T. echinatum* on umbelliferous plants in North America.

triple. **I.** *a.*—**Triple crown.** (*c*) In *horse-racing* in England, the three prizes known as the 'Two Thousand Guineas,' the 'Derby,' and the 'St. Leger': as, "he is one of the select few horses who have won the *triple crown*." *Spirit of the Times*, cxxxvi. 421.—**Triple-effect evaporation.** See *multiple-effect* ★*evaporation.*—**Triple first,** an honor-man, in the University of Cambridge, England, who obtains a first in three Triposes; the threefold honor thus obtained.—**Triple root, union, valve.** See ★*root*¹, etc.

II. *n.* **3.** In *geom.*: (*a*) A triad of points. (*b*) A triad of systems of orthogonal surfaces.—**Weingarten triple,** in *geom.*, a triad of systems of orthogonal surfaces in which one system is of pseudospheric surfaces of the same radius (or also of surfaces of constant positive curvature).

triple-expansion (trip″l-eks-pan′shọn), *a.* Having the expansion from initial to final pressure in three steps or stages: used of steam in a steam-engine or of an engine itself in which the steam expands continuously in three cylinders of successively increasing volume, or in which more than three cylinders cause the steam to expand progressively, the exhaust from one being the driving steam for the next in series, in three such processes of expansion.

triple-geared (trip′l-gērd), *a.* **1.** Noting a combination of gear-wheels in a train for driving the spindle of a tool or other axle (where resistance is to be overcome) so designed that the reduction in speed is effected by a reduction in two steps, or with three parallel axes for the gear, from the driving source of power to the driven part: as in large lathes, drills, and the like which are electrically driven.—**2.** Fitted with three trains of gear- or toothed wheels, whereby with a given driving speed the speed of the driven axis may be one of three differing speeds for varying resistances.—**3.** Fitted with a train of gears between the driving and driven axles such that the speed of the driver is three times that of the driven, or the gain in power is threefold.

triplegia (trī-plē′ji-ạ̈), *n.* [NL., < Gr. τρι-, three, + πληγή, stroke.] Hemiplegia with paralysis of one limb of the other side. *Med. Record*, July 18, 1903, p. 116.

triple-riveted (trip′l-riv″et-ed), *a.* Riveted, as a plate, with three rows of rivets parallel to the edge: usually with the rows staggered, or with the third row (the farthest from the edge) specially spaced.

triple-screw (trip′l-skrö), *a.* Having three screws, one of which is in the center line: restricted to war-ships and turbine-driven steamers.

triplet, *n.* **8.** A bicycle for three riders.

trip-lever (trip′lev″ėr), *n.* **1.** A lever for operating a stop or throw-out device; a lever which is caught or tripped; a lever which releases some part.

> The arm, B, is mounted on a horizontal movable stem which projects outside of the cylinder. On this stem is fixed a *trip lever*, C, which holds B against A by the spring, D. *Sci. Amer. Sup.*, July 23, 1904, p. 23880.

2. Specifically, a lever used in many forms of releasing valve-gear, in which the valve stem or spindle is not positively connected to the mechanism which actuates the valve, so as to follow the motion of the latter in both directions. As the lever moves a certain distance a detent or trip attached to the valve-stem and carried by the motion of the lever is released from the latter, and the valve closes suddenly by gravity or spring, or both. This is a feature of the Sickles and Corliss valve-gear. See ★*trigger-block*, ★*trip-catch*, *Corliss* ★*valve.*

triplex, *n.* **II.** *a.* Three-fold; triple; specifically, having three elements or working parts: used of pulleys with three sheaves, of pumps with three plungers, of steam-engines with three cylinders, etc.

triplexity (trī-plek′si-ti), *n.* Same as *triplicity.* [Rare.]

trip-line (trip′līn), *n.* **1.** In *lumbering*, a light rope attached to a dog-hook, used to free it when employed in breaking a jam or a skidway.—**2.** See ★*haul-back.* Also called *throw-line.*

triplopia (trip-lō′pi-ạ̈), *n.* [NL., < Gr. τριπλόος, triple, + ὤψ, eye.] Perception of three images of the same object; triplopy.

triplumbic (trī-plum′bik), *a.* [L. *tri-*, three, + *plumbum*, lead, + *-ic.*] Containing three atoms of lead, as triplumbic oxyacetate ($Pb_3(C_2H_3O_2)_2O_2$), the solution of which constitutes the Goulard lotion used in medicine.

Triply orthogonal. See ★*orthogonal.*

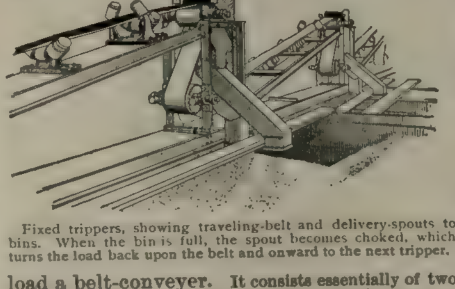
tripod, *n.* **5.** In the sponge-spicules, a three-rayed element having the arms of equal length and sloping from the point of union.

tripod-compass (trī′pod-kum″pạ̈s), *n.* See ★*compass.*

Tripodic walk, a method of walking, common in certain insects, in which two legs of one side and one of the other are moved at the same time.

tripolith (trip′ọ̄-lith), *n.* [*tripo*(*li*) + Gr. λίθος, stone.] Same as *tripoli.*

tripper, *n.* **5.** A machine used to trip or unload a belt-conveyer. It consists essentially of two rolls placed one over the other in a suitable frame or support. The traveling-belt, guided upward by rollers supported by the frame of the tripper, passes over the upper roll, turns abruptly downward and backward and under the lower roll, and then onward in a horizontal direction. The load, which rests on the traveling-belt, is carried over the upper roll, when the sudden change in the direction of the belt throws it off into a spout which leads it away to the bins or other storage-places. The tripper may be fixed at one point, or it may travel on rails placed on each side of the conveyer for convenience in unloading at different points. The fixed tripper may be arranged to discharge into a bin and to stop automatically when the bin is full. See ★*conveyer*, 4.



Fixed trippers, showing traveling-belt and delivery-spouts to bins. When the bin is full, the spout becomes choked, which turns the load back upon the belt and onward to the next tripper.

tripping-coil (trip′ing-koil), *n.* The coil of an electromagnet the armature of which, by its movement, releases the escapement of any mechanical device, such as the spring of a circuit-breaker. *Trans. Amer. Inst. Elect. Engin.*, 1903, p. 1162.

tripping-lever (trip′ing-lev″ėr), *n.* Same as ★*trip-lever.*

tripping-relay (trip′ing-rẹ̄-lā″), *n.* See ★*relay*¹.

trippkeite (trip′ke-īt), *n.* [Named after Dr. P. *Trippke* (died 1880).] An arsenite of copper occurring in bluish-green tetragonal crystals: found in Chile.

tripple (trip′l), *v. i.* [D. *trippelen*, mince one's steps.] To amble: said of a horse; also, to ride at this gait. [South Africa.]

tripple (trip′l), *n.* [*tripple*, *v.*] An amble. [South Africa.]

tripsill (trip′sil), *n.* A timber placed across the bottom of the sluiceway in a splash-dam, against which rest the planks by which the dam is closed.

tripuhyite (tri-pö′i-īt), *n.* [*Tripuhy* (see def.) + *-ite*².] An iron antimoniate, $Fe_2Sb_2O_7$, occurring in greenish-yellow fragments in the cinnabar-bearing gravels of Tripuhy, Minas Geraes, Brazil.

tripus (trī′pus), *n.*; pl. *tripi* (-pī). [Gr. τρίπους, three-footed. See *tripod.*] A monster having three feet.

tripyramidal (trī-pi-ram′i-dạ̈l), *a.* [*tripyramid* + *-al*¹.] Characterized by the presence of three types of pyramids, as that class of the hexagonal system to which apatite belongs. See ★*symmetry*, 6.

triquadrantal (trī-kwod-ran′tạ̈l), *a.* [*tri-*, three, + *quadrant* + *-al*¹.] In *spherics*, made by three quadrants: as, a *triquadrantal* triangle. *Crockett*, Trigonometry, p. 126.

triquaternion (trī-kwạ̈-tėr′ni-ọn), *n.* [*tri-* + *quaternion.*] In *math.*, an expression of the form $q_1 + \omega q_2 + \mu q_3$, where q_1, q_2, q_3 are quaternions, and where the symbols ω and μ are commutative with quaternions, and where $\omega^2 = 0$, and $\mu^2 = 1$, and $\mu\omega = -\omega\mu = \omega$. *G. Combebiac*, 1902.

triquetrum, *n.* **2.** An instrument used by ancient and medieval astronomers for measuring altitudes of heavenly bodies; the parallactic rules of Ptolemy. It consisted of three rods: one vertical, the second jointed to it at the top and carrying sights, the third jointed to the first at the bottom. The second and third were graduated.

> With the Copernican "*triquetrum*" the measured apparent intervals between any two of the heavenly bodies could be depended upon to within ten minutes; with the new Repsold heliometer the error of a single observation is less than one-tenth of a second of arc.
> *Smithsonian Rep.*, 1891, p. 120.

triradiation (trī″rā-di-ā′shọn), *n.* [*tri-* + *radiation.*] Threefold radiation; radiation in three directions.

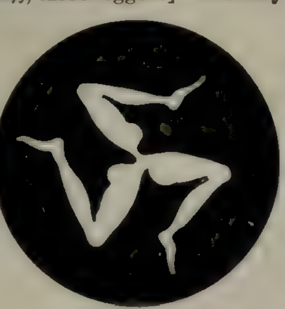
> The callosal eminence . . . , the hippocamp, and the occipital eminence form an irregular *triradiation.*
> *Buck*, Med. Handbook, II. 177.

trirhombohedral (trī-rom-bō-hē′drạ̈l), *a.* [*tri-* + *rhombohedral.*] In *mineral.*, characterized by the presence of three types of rhombohedrons, as that class of the trigonal division of the hexagonal system to which phenacite belongs. See ★*symmetry*, 6.

trisectrix (trī-sek′triks), *n.*; pl. *trisectrices* (-trī′sēz). [NL., < L. *tri-*, three, + NL. *sectrix.*] A curve employed in the trisection of an angle.—**Maclaurin's trisectrix,** the curve whose equation is $x(x^2 + y^2) = \frac{r}{2}(y^2 - 3x^2)$.

trisilicate (trī-sil′i-kāt), *n.* [*trisilic*(*ic*) + *-ate*¹.] A salt corresponding to the hypothetical trisilicic or polysilicic acid, $H_4Si_3O_8$, which may be viewed as the product of the union of three molecules of silicon dioxid and two molecules of water ($2H_2O + 3SiO_2$).

triskelion (tris-kē'li-on), *n.*; pl. *triskelia* (-ạ̈). [NL., < Gr. *τρισκελής*, three-legged.] A widely distributed symbolic device composed of three arms or branches radiating from a center. It does not seem to be connected with the swastika, which has four arms. It first appears in a simple form in the coinage of Lycia. In antiquity it was the national symbol of Sicily. The three legs appear in the Sicilian coinage and upon vases. They also compose the armorial emblem of the Isle of Man. See *triskele*.


Triskelion.

trisnitrate (tris-nī'trāt), *n.* Same as *trinitrate*.

trisoctahedron, *n.* This name is usually limited to the isometric form having triangular faces, formerly called a *trigonal trisoctahedron*.

trisplanchnia (trī-splangk'ni-ạ̈), *n.* [NL.] Same as ⋆*trisplanchnitis*.

trisplanchnitis (trī-splangk-nī'tis), *n.* [NL., < Gr. *τρι-*, three, + *σπλάγχνα*, bowels, + *-ιτις*.] An obsolete name for cholera.

trisquare (trī'skwãr), *a.* [*tri-* + *square*.] Three-square; having three equally wide plane faces.

tristetrahedron (tris"tet-rạ-hē'dron), *n.*; pl. *tristetrahedra* (-drạ̈). [Gr. *τρίς*, thrice, + E. *tetrahedron*.] A twelve-faced solid of the tetrahedral class of the isometric system, the faces being arranged in groups of three so that the crystal resembles a tetrahedron. The name is usually given to the form having equal triangular faces and corresponding to the trapezohedron of the holosymmetric class, but it is also extended to that having trapeziform faces and corresponding to the trisoctahedron. The latter is then called a *tetragonal tristetrahedron* and the former a *trigonal tristetrahedron*.—**Tetragonal tristetrahedron.** Same as *deltoid* ⋆*dodecahedron*.

tristich (tris'tik), *n.* [Gr. *τρεῖς* (*τρι-*), three, + *στίχος*, row.] In *pros.*, a group of three lines; a three-line stanza.

tristigm (trī'stim), *n.* [Gr. *τρι-*, three, + *στίγμα*, a point.] In *geom.*, three non-costraight points, with their three connectors. Also *tristim*.—**Codot tristigm.** See ⋆*codot*.

tristim, *n.* Same as ⋆*tristigm*.

Tristychius (trī-stik'i-us), *n.* [NL.: properly *Tristichius*; < Gr. *τρίστιχος*, in three rows, < *τρι-*, three, + *στίχος*, row.] A genus of Carboniferous sharks, of the family *Cestraciontidæ*, in which the dorsal fin-spines have a few sharp longitudinal ridges distally.

trisubstituted (trī-sub'sti-tụ̄-ted), *a.* In *chem.*, noting compounds having in their molecule three atoms or radicals which have been introduced in place of three other atoms or radicals in the molecule of the parent substance. Thus chloroform ($CHCl_3$) is a trichlorsubstituted methane.

> Fatty acids and their derivatives show increasing polymerization with increasing concentration when dissolved in phenol. While the position and nature of the substituting groups affect the apparent molecular weight, *trisubstituted* acids are less associated than disubstituted acids, and these latter less than the monosubstituted acids. *Jour. Phys. Chem.*, April, 1904, p. 298.

trisulphate (trī-sul'fāt), *n.* [*tri-* + *sulph*(*ur*) + *-ate*¹.] A salt containing three combining-units of the radical of sulphuric acid (SO_4).

trisulphid (trī-sul'fid), *n.* [*tri-* + *sulphid*.] A compound containing three atoms of sulphur united to a relatively electropositive element or radical, as arsenic *trisulphid*, As_2S_3 (orpiment).

trisulphone (trī-sul'fōn), *n.* [*tri-* + *sulph*(*ur*) + *-one*.] A class-name applied, in organic chemistry, to compounds containing in their molecule three bivalent sulphone groups ($>SO_2$).

trisulphonic (trī-sul-fon'ik), *a.* [*trisulphon*(*e*) + *-ic*.] In *organic chem.*, noting compounds containing in their molecule three sulphonic-acid radicals ($-SO_3H$).

Triteleia (trit-e-lĕ'ạ̈), *n.* [NL. (Douglas, 1830), < Gr. *τρεῖς*, three, + *τέλειος*, perfected: because of the remarkable symmetry in the ternary arrangement of the floral organs.] A genus of small bulbous plants of the family *Liliaceæ*, natives of South America and western North America. From *Milla* the genus is distinguished by having the stamens inserted in two series in the tube of the perianth rather than in one series in its throat. From *Hookera* it is separated by the absence of articulation at the apex of the pedicel. *T. uniflora* (known also as *Milla uniflora*), a grassy-leaved, lilac-flowered plant, is grown in pots and sometimes in the hardy border. See ⋆*Brodiæa*.

trithiophosphate (trī"thī-ọ-fos'fāt), *n.* [Gr. *τρι-*, three, + *θεῖον*, sulphur, + E. *phosphate*.] A salt corresponding to the hypothetical trithiophosphoric acid, H_3PS_3O, which may be viewed as ordinary phosphoric acid having three of its four atoms of oxygen replaced by sulphur. This acid is not itself known in the free state.

triticality (trit-i-kal'i-ti), *n.* [*tritical* + *-ity*.] Triteness; a trite utterance or expression.

> Our Ex-Chancellor has been promulgating *triticalities* (significant as novelties, when he with his wig and lordhood utters them) against the Aristocracy; whereat the upper circles are terribly scandalized.
> *Carlyle*, in Correspondence of . . . Carlyle and . . . [Emerson, I. 71.

triticin (trit'i-sin), *n.* [L. *tritic*(*um*), wheat, + *-in*².] An amorphous hygroscopic carbohydrate contained in the rhizome of *Agropyron repens* or couch-grass.

tritocerebral (trī-tọ-ser'ẹ-brạl), *a.* [*tritocerebrum* + *-al*¹.] Of or pertaining to the tritocerebrum of an insect's brain.—**Viallanes' tritocerebral lobes of the brain.** See ⋆*brain*.

tritocerebron (trī-tọ-ser'ẹ-bron), *n.* Same as ⋆*tritocerebrum*.

tritocerebrum (trī-tō-ser'ẹ-brum), *n.*; pl. *tritocerebra* (-brạ̈). [NL., < Gr. *τρίτος*, third, + L. *cerebrum*, brain.] The third segment of an insect's brain, comprising the esophageal lobes. *A. S. Packard*, Text-book of Entom., p. 231.

tritocone (trī'tọ-kōn), *n.* The postero-external cusp of an upper premolar tooth. *Proc. Zool. Soc. London*, 1896, p. 563.

tritopene (trī'tọ-pēn), *n.* [Gr. *τρίτος*, third, + *ὄπιον*, opium, + *-ene*.] A colorless alkaloid, $C_{42}H_{54}O_7N_2$, contained in opium. It crystallizes in prisms or plates, melts at 182° C., and closely resembles laudanine and laudanosine in reactions and constitution.

tritor (trī'tôr), *n.* [NL., < L. *tritor*, a rubber, a grinder, < *terere*, rub, grind. See *trite*¹.] A specially white and hard part of the teeth of some fishes. In the *Chimæra* it appears as a slightly raised and rounded elevation of the dental plates. *Parker and Haswell*, Zoology, II. 178.

tritotoxin (trī-tō-tok'sin), *n.* [Gr. *τρίτος*, third, + E. *toxin*.] A derivative of a toxin which has the least marked affinity for the corresponding antitoxin, as compared with proto- and deuterotoxin.

tri-tri (trē'trē), *n.* [W. Indian.] A fish, *Sicydium plumieri*, belonging to the family *Gobiidæ*: found in fresh waters of the West Indies.

> The "*tri-tri*" or West Indian whitebait (Sicydium plumieri), although of small size, is one of the important food fishes of these islands. It is an inhabitant of the mountain streams, and occurs in the quiet pools and eddies formed by the back-water from rapids, from the lowlands well up into the highlands. Its range is about the same on St. Vincent as that of the "trout" (Agonostomus monticola), and, like that fish, it is absent from certain of the rivers. *Amer. Nat.*, May, 1905, p. 335.

Tritubercular theory. See ⋆*theory*.

Trituberculata (trī-tụ̄-bėr-kū-lā'tạ̈), *n. pl.* [NL.: see *trituberculate*.] A division of the polyprotodont marsupials containing those with trituberculate molars. It includes among extinct species *Amphitherium*, and among living forms the dasyures and opossums.

trituberculist (trī-tụ̄-bėr'kū-list), *n.* [*trituberculy* + *-ist*.] One who believes in the tritubercular theory of the origin of the molar cusps in mammals. [Rare.]

> What I desire to point out is that there is no evidence to show that this type of upper molar arose in the way suggested by *trituberculists*.
> *Proc. Zool. Soc. London*, 1896, p. 590.

trituberculosectorial (trī-tụ̄-bėr'kụ̄-lō-sek-tō"ri-ạl), *a.* [*tritubercular* + *sectorial*.] Said of a molar tooth adapted for cutting flesh, but having its principal cusps arranged in a definite triangular pattern. [Rare.]

trituberculy (trī-tụ̄-bėr'kụ̄-li), *a.* [*tritubercul*(*ar*) + *-y*³.] Noting that condition of the molar teeth in which they have three cusps or prominences. *Proc. Zool. Soc. London*, 1897, p. 714.

tritural (trit'ụ̄-rạl), *a.* [See *triturate*.] Adapted for grinding or triturating. [Rare.]

> The roof of the mouth between this *tritural* border is raised into a dome with the concavity downwards.
> *Proc. Zool. Soc. London*, 1901, I. 172.

trityl (trī'til), *n.* [?Gr. *τρίτος*, third, + *-yl*.] An old name for propyl.

triumf, triumfal, triumfant. Amended spellings of *triumph*, etc.

triumphator (trī-um-fā'tọr), *n.* [L., < *triumphare*, triumph.] In *Rom. antiq.*, a general to whom a triumph was accorded.

triungulin, *n.* **2.** The first larval stage of a stylopid insect.

> The behaviour of stylopised wasps towards their parasites is usually friendly, although it is probable that the males are attacked by the wasps whenever they attempt to copulate with the females. Their distribution and occurrence are erratic; due apparently to the fact that as "*triungulins*" they do not readily become transferred from one wasp to another and consequently to other nests. *Jour. Roy. Micros. Soc.*, Aug., 1903, p. 494.

triungulus (trī-ung'gụ̄-lus), *n.*; pl. *triunguli* (-lī). [NL., < L. *tri-*, three, + *ungula*, claw.] Same as ⋆*triungulin*, 2.

Triuridales (trī-ụ̄-ri-dā'lēz), *n. pl.* [NL. (Engler, 1897), < *Triuris* (*Triurid-*) + *-ales*.] An order of monocotyledonous plants containing the family *Triuridaceæ* only.

trivariant (trī-vā'ri-ạnt), *a.* [*tri-* + *variant*.] In *phys. chem.*, having a variance equal to three. The variance (V) of a chemical system is expressed by the equation $V = C + 2 - \phi$, where C is the number of independent components and ϕ is the number of phases in which the system may exist.

> By removing one of the *n*-phases of the bivariant system we can form *n* different *trivariant* systems. Each of these systems can be in equilibrium at a series of temperatures and under a series of pressures. The temperature and the pressure can be chosen independently, but then the state of equilibrium of the *trivariant* system is completely determined.
> *Jour. Phys. Chem.*, Oct., 1904, p. 486.

trivirgate (trī-vėr'gāt), *a.* [*tri-* + *virgate*.] Marked with three transverse bands, or cross-stripes.

trocha (trō'chä), *n.* [Sp.] **1.** A narrow path.—**2.** *Milit.*, a strategic line of defenses, such as blockhouses or other fortifications across a given territory.

> A cordon of troops was stationed from north to south of the island [Cuba] between Mariel and Majana, trenches were thrown up, entanglements laid down, and blockhouses erected at short intervals. A corps of 20,000 men was stationed on this *trocha* or military cordon, and 10,000 troops were dispatched to Pinar del Rio, to march through the province and force a fight with the followers of Maceo whenever possible. *Encyc. Brit.*, XXVII. 306.

trochalopod (trọ-kal'ọ-pod), *n.* and *a.* **I.** *n.* A member of the *Trochalopoda*.

II. *a.* Having the characters of or belonging to the *Trochalopoda*.

Trochalopoda (trok-ạ-lop'ọ-dạ̈), *n. pl.* [NL., < Gr. *τροχαλός*, round, + *πούς* (*ποδ-*), foot.] One of the two main groups of the *Heteroptera*. It includes all of the terrestrial families except the *Saldidæ*, and it also includes the *Nepidæ* of the aquatic series. The posterior coxæ are nearly globose, partly embedded in cavities, and have a rotary motion.

trochalopodous (trok-ạ-lop'ō-dus), *a.* Pertaining to or having the characters of the *Trochalopoda*.

trocheidoscope (trō-kī'dọ-skōp), *n.* [Gr. *τροχός*, wheel, + *εἶδος*, form, + *σκοπεῖν*, view.] A rotating disk having colored sectors, used to exhibit combinations of colors.

trochelminth (trọ-kel'minth), *n.* [Gr. *τροχός*, wheel, + *ἕλμινς* (*ἑλμινθ-*), worm.] One of the *Rotifera*, or wheel-animalcules.

trochiferous (trọ-kif'ẹ-rus), *a.* [Gr. *τροχός*, wheel, + L. *ferre*, bear, + *-ous*.] In *zoöl.*, wheel-bearing; having a wheel-like organ, as many rotifers.

trochleariform (trok-lẹ̄-ar'i-fôrm), *a.* [NL. *trochlearis*, of a pulley, + L. *forma*, form. The proper form would be **trochleiform*.] Pulley-shaped; trochlear.

trochoblast (trok'ọ-blȧst), *n.* [Gr. *τροχός*, a round cake, a wheel, + *βλαστός*, germ.] In *embryol.*, one of the cells or blastomeres which give rise to the prototroch of the trochophore larva in marine annelids.

> In the details of the cleavage there is a striking agreement with that of the polychætous annelids. Cells arising from the first quartette identical in origin with the "primary *trochoblasts*" of the annelids, together with cells derived from the first and second quartettes, make up a cell row which very probably forms at least a part of the second ciliated band situated on the head of the adult, in a position corresponding with that of the prototroch of the annelid larva.
> *Amer. Nat.*, July-Aug., 1904, p. 500.

trochocephalic (trok-ọ-se-fal'ik), *a.* [*trochocephal*(*y*) + *-ic*.] In *anthrop.*, having that round form of skull which results from premature synosteosis of the middle part of the coronal suture.

trochocephaly (trok-ọ̄-sef′ạ-li), *n.* [Gr. *τροχός*, a round cake, a wheel, + *κεφαλή*, head, + *-y*³.] A state in which the head is spherical in shape, owing to early bony union of the parietal and frontal bones.

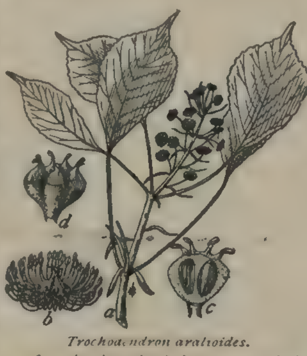
trochoceracone (trok-ọ̄-ser′ạ-kōn), *n.* [NL., < Gr. *τροχός*, a round cake, a wheel, + *κέρας*, horn, + *κῶνος*, a cone.] A nautiloid cephalopod shell which is loosely coiled in depressed asymmetrical spirals, as in the genus *Trochoceras*.

trochoceran (trọ̄-kos′ẹ-ran), *a.* Having the characters of the shell of *Trochoceras*, that is, of a loosely coiled depressed spiral nautiloid.

Trochoceras (trọ̄-kos′ẹ-ras), *n.* [NL., < Gr. *τροχός*, a round cake, a wheel, + *κέρας*, horn.] A genus of nautiloid cephalopods with shell loosely coiled in an asymmetrical depressed spiral. The coils are rounded or oval in section in adult and gerontic stages, and show traces of an impressed zone in nepionic and neanic stages. The surface is usually ornamented by oblique ribs or striations. The genus occurs in Silurian rocks.

Trochodendraceæ (trok″ọ̄-den-drā′sẹ̄-ē), *n. pl.* [NL. (Prantl, 1888), < *Trochodendron* + *-aceæ*.] A small family of dicotyledonous archichlamydeous (achlamydeous) plants of the order *Ranales*, typified by the genus ★*Trochodendron* (which see). There are four genera, trees or shrubs chiefly of China and Japan. *Eucommia ulmoides* yields the Chinese medicinal bark tu-chung. See *Cercidiphyllum*.

Trochodendron (trok-ọ̄-den′dron), *n.* [NL. (Siebold and Zuccarini, 1835), < Gr. *τροχός*, a wheel, a circle, + *δένδρον*, a tree. The name alludes to the circular grouping of the anthers and the insertion of the leaves in whorls.] A genus of plants, type of the family *Trochodendraceæ*. It contains but one species, *Trochodendron aralioides*, a Japanese tree with evergreen poplar-like leaves in whorls of four, and flowers in terminal racemes, devoid of calyx and corolla, with about 40 stamens and a 5- to 8-celled many ovuled ovary ripening into a capsule.



Trochodendron aralioides.

a, flowering branch; *b*, flower; *c*, vertical section of fruit; *d*, fruit.

trochoid, *n.* 1. In *geom.*: (*b*) The curve described by any point on a radius of the rolling circle, or on a radius produced when two circles are tangent either externally or internally and, while one of them remains fixed, the other rolls upon it without sliding.—**Common trochoid**, one neither curtate nor prolate.

trochoidal, *a.*—**Trochoidal theory of deep-sea wave.** See ★*wave*¹.

trochoides (trọ̄-koi′dēz), *n.* Same as *trochoid*, 2.

Trocholites (trok-ọ̄-lī′tēz), *n.* [NL., < Gr. *τροχός*, a wheel, a hoop, + *-l-* + *-ites*, E. *-ite*².] A genus of nautiloid cephalopods which have closely coiled shells with broad volutions and distinct impressed zone: found in the Silurian rocks of America.

Trochonema (trok-ọ̄-nē′mạ̈), *n.* [NL., < Gr. *τροχός*, a wheel, a hoop, + *νῆμα*, a thread.] A genus of rhipidoglossate gastropods which have pyramidal or turbinate, deeply umbilicate, carinate shells with striated surfaces and round apertures. They occur in the Silurian formation.

trochophore (trok′ọ̄-fōr), *n.* [Gr *τροχός*, a wheel, + *-φορος*, < *φέρειν*, bear.] A larval type found in many invertebrates and exhibiting many points of resemblance to an adult trochelminth or rotifer. Also termed *trochosphere*.

> Numerous features, e.g. a transitory metamerism of the mesoblastic bands, and of the nerve-cord in the *trochophore*, indicate close relationship between the Sipunculids and Annelids.
> *Jour. Roy. Micros. Soc.*, Feb., 1904, p. 64.

troctolite (trok′tọ̄-līt), *n.* [Gr. *τρώκτης*, a gnawer, a sea-fish (see *trout*), + *λίθος*, stone, = *-lite*².] In *petrog.*, a name given by von Lasaulx (1875) to a variety of gabbro composed of lime-soda feldspar and olivin, with a little diallage. Bonney has applied the name especially to the more or less serpentinized forms. Compare ★*forellenstein*.

trof, *n.* and *v.* An amended spelling of *trough*.

troglodytine (trog-lod′i-tin), *a.* [*Troglodytinæ*.] Resembling or having the characters of the wrens, or *Troglodytinæ*.

trogonine (trō′gọ̄-nin), *a.* [*trogon* + *-ine*².] Resembling or having the characters of the trogons, or *Trogonidæ*.

trogositid (trō-gọ̄-sit′id), *n.* and *a.* **I.** *n.* A member of the coleopterous family *Trogositidæ*.

II. *a.* Having the characters of or belonging to the family *Trogositidæ*.

troll-drum (trōl′drum), *n.* [*troll*² + *drum*.] A drum used by northern magicians in rites associated with trolls.

> In Lapland, where designs of this character ornamented the *troll-drums* of the magicians.
> *Jour. Hellenic Studies*, XIV. 270.

trolleite (trol′ẹ̄-īt), *n.* [Named after H. G. *Trolle*-Wachmeister, a Swedish chemist.] A hydrated aluminium phosphate occurring in pale-green compact forms.

trolley, *n.* 5. Hence, a street-railway car propelled electrically by current taken by a trolley from a conductor. [Colloq.]

> The service first performed by the *trolley* was purely local. It operated only in the streets of cities and their immediate suburbs. *N. Y. Tribune*, Dec. 23, 1901.

6. A hand-car used on the rails by workmen on a railroad.

> Fetch my *throlly*, an' six of the jildiest [smartest] men, and run me up in shtyle.
> *R. Kipling*, The Big Drunk Draf', in Soldiers Three, p. 52.

Bow trolley, a current-collecting device for electric railways employing the overhead supply, which uses instead of the revolving trolley-wheel a bow-like structure sliding along the overhead wire. *Trans. Amer. Inst. Elect. Engin.*, 1901, p. 111.—**Underground trolley**, a rolling-contact device used, on electric railways provided with an underground insulated trolley-wire, for conveying current to the motors of a moving car.

trolley, trolly (trol′i), *v. t.* and *i.*; pret. and pp. *trolleyed*, *trollied*, ppr. *trolleying*, *trollying*. **I.** *trans.* To convey by a trolley, as by a truck or car running upon a rail and driven mechanically or electrically.

> The same windlass that *trolleyed* the cars across the rivers was used to tow out the sediment gage cars.
> *Sci. Amer.*, Feb. 1, 1902.

II. *intrans.* To ride in an electrically-propelled car using the trolley system to transmit current to the motors.

trolley-car (trol′i-kär), *n.* A car used on an electric trolley-road.

trolley-hanger (trol′i-hang″ėr), *n.* In *elect.*, a device for supporting and properly insulating trolley-wires. *Houston*, Dict. Elect.

trolley-harp (trol′i-härp), *n.* The support or holder, at the free end of a trolley-pole, between the arms of which the trolley-wheel is supported. *Elect. World and Engin.*, June 18, 1904, p. 1167.

trolley-head (trol′i-hed), *n.* In *elect.*, the support which carries the trolley-wheel of an electrically driven car.

trolley-line (trol′i-līn), *n.* A line of electric cars run on the trolley system.

trolley-rail (trol′i-rāl), *n.* In *elect.*, a rail forming the trolley-circuit of an electric railway; a rail which serves to convey current to the motors of an electric railway. *Trans. Amer. Inst. Elect. Engin.*, 1897, p. 355.

trolley-scale (trol′i-skāl), *n.* See ★*abattoir scales*.

trolley-wheel (trol′i-hwēl), *n.* A metal wheel at the free end of the trolley-pole of an electric railway-car, by means of which contact with the overhead feed-wires is maintained.

tromomania (trom-ọ̄-mā′ni-ạ̈), *n.* [NL., < Gr. *τρόμος*, trembling, + *μανία*, madness.] Delirium tremens.

tromometrical (trom-ọ̄-met′ri-kạl), *a.* Same as *tromometric*.

tromometry (trọ̄-mom′e-tri), *n.* [Gr. *τρόμος*, trembling, + *-μετρια*, < *μέτρον*, measure.] The measurement of vibrations of the earth's crust; the scientific use of the tromometer.

Tromoptera (trọ̄-mop′tẹ-rạ̈), *n. pl.* [NL., < Gr. *τρόμος*, trembling, + *πτερόν*, wing.] A superfamily of dipterous insects including the families *Nemestrinidæ*, *Acroceridæ*, *Bombyliidæ*, *Therevidæ*, and *Scenopinidæ*.

trompe², *n.* 2. Same as *horn*, 4 (*b*) and (*c*).

trompette (trom-pet′), *n.* [F., a trumpet. See *trumpet*.] In the hurdy-gurdy, the highest of the open strings, usually tuned to middle C or to the D above it.

Trona red. Same as ★*dianthine*.

troostite, *n.* 2. A transition form between austenite and pearlite, in steel. See ★*sorbite*, 2.

> Austenite, *troostite*, sorbite, and other constituents [of iron] have also been described. *Encyc. Brit.*, XXIX. 572.

troostitic (trös-tit′ik), *a.* [*troostit*(*e*) + *-ic*.] Of or pertaining to troostite; resembling troostite; containing or composed of troostite.

trop. An abbreviation of *tropic*, *tropical*, or *tropically*.

tropacocaine (trō-pạ-kō′kạ̈-in), *n.* An alkaloid obtained from coca leaves and also formed synthetically; its properties are similar to those of cocaine, but it is far less poisonous. *Alien. and Neurol.*, Nov., 1907, p. 521.

Tropæolaceæ (trọ̄-pē-ọ̄-lā′sẹ̄-ē), *n. pl.* [NL. (Lindley, 1847), < *Tropæolum* + *-aceæ*.] A family of dicotyledonous choripetalous plants, the nasturtium family, of the order *Geraniales*, containing only the genus *Tropæolum* (which see).

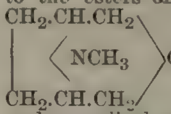
tropæolaceous (trō″pẹ̄-ọ̄-lā′shius), *a.* [NL. *Tropæolace*(*æ*) + *-ous*.] Belonging or pertaining to the plant family *Tropæolaceæ*.

tropæum, tropaion (trọ̄-pē′um, trō-pī′on), *n.*; pl. *tropæa*, *tropaia* (-ạ̈). See *trophy*, 1.

tropaxis (trop-ak′sis), *n.* [Gr. *τρόπος*, a turn, + L. *axis*.] In *bot.*, a theoretical transverse section of a stem at the point (not structurally marked) between upward and downward growth. *C. A. White*, in The Amer. Nat., Jan., 1908, p. 14.

tropeic (trọ̄-pē′ik), *a.* [Said to be (if so, irreg.) < Gr. *τρόπις*, a keel, < *τρέπειν*, turn.] Relating to or describing the ventral fold under the belly of the frilled shark and other sharks.

tropeine (trō′pẹ̄-in), *n.* [*trop*(*ine*) + *-e-* + *-ine*².] In *organic chem.*, a class-name applied to the esters of tropine and organic acids,



$$\left.\begin{array}{l} CH_2.CH.CH_2 \\ \qquad NCH_3 \\ CH_2.CH.CH_2 \end{array}\right\rangle CHOCOR$$

where R is a hydrocarbon radical such as methyl (CH_3). These substances are basic crystalline compounds which resemble atropin in constitution and some of them have a similar physiological action.

tropesis (trọ̄-pē′sis), *n.* [NL., < Gr. *τροπεῖν*, secondary form of *τρέπειν*, turn.] The unconscious will or inclination to which Haeckel attributes the activities of atoms.

> The different relation of the various elements towards each other, which chemistry calls "affinity," is one of the most important properties of ponderable matter; it is manifested in the different relative quantities or proportions of their combination in the intensity of its consummation. Every shade of inclination, from complete indifference to the fiercest passion, is exemplified in the chemical relation of the various elements towards each other, just as we find in the psychology of man, and especially in the life of the sexes. . . . It [this fundamental unity of affinity in the whole of nature] receives empirical confirmation from the interesting progress of cellular psychology. . . . On these phenomena we base our conviction that even the atom is not without a rudimentary form of sensation and will, or, as it is better expressed, of feeling (aesthesis) and inclination (*tropesis*)—that is a universal "soul" of the simplest character.
> *Haeckel* (trans.), Riddle of the Universe, p. 225.

trophæum (trọ̄-fē′um), *n.*; pl. *trophæa* (-ạ̈). See *trophy*, 1.

trophal (trō′fạl), *a.* [*trophus* + *-al*¹.] Of or pertaining to the trophi.

> The appendages of the posterior three, or *trophal*, segments become the parts of the mouth.
> *Encyc. Brit.*, XXIX. 500.

trophically (trof′i-kạl-i), *adv.* In a trophic manner.

trophilegic (trof-i-lej′ik), *a.* [Irreg. < Gr. *τροφή*, nourishment, + *λέγειν*, collect.] In *biol.*, pertaining to means for procuring nourishment.

trophocyte (trof′ọ̄-sīt), *n.* [Gr. *τροφή*, nourishment, + *κύτος*, a hollow (a cell).] One of the cells which together with the œnocytes make up the fatty or adipose tissue of adult insects.

> Imaginal adipose tissue in Muscidæ.—Ch. Pérez has made a study of this tissue, which consists of two kinds of elements—*trophocytes* and œnocytes. Their history shows that they are not due to old migratory elements nor to muscle-nuclei, but that, like other imaginal organs, they arise from independent and from the first specialised primordia. *Jour. Roy. Micros. Soc.*, Oct., 1904, p. 527.

trophology (trọ-fol'ọ-ji), *n.* [Gr. *τροφή*, nourishment, + *-λογια*, < *λέγειν*, speak.] The branch of science which deals specially with the nutrition of the body.

trophonema (trof-ọ-nē'mä̤), *n.*; pl. *trophonemata* (-ma-tä̤). [NL., < Gr. *τροφή*, nourishment, + *νῆμα*, thread.] One of the glandular villi which in viviparous sharks arise from the mucosa of the uterus and nourish the embryo.

> There arise from the whole surface of the mucosa of the uterus those glandular villi which are now destined to supply a new nutriment to the embryo, and which have been named *trophonemata*. *Encyc. Brit.*, XXIX. 396.

Trophonian cave, the cave of the oracle of Zeus Trophonius at Lebadeia, which inspired such awe that those who entered were said never to smile again; hence, a grave and serious person is said to have visited the cave of Trophonius.

trophonosus (trọ-fon'ọ-sus), *n.*; pl. *trophonosi* (-sī). [Gr. *τροφή*, nourishment, + *νόσος*, disease.] Any trophic disease, or disease resulting from disordered nutrition.

trophoplasm (trof'ọ-plazm), *n.* [Gr. *τροφή*, nourishment, + *πλάσμα*, anything formed.] In *biol.*, according to Nägeli, the passive matter of an egg, of a cell, or of an organism, as contrasted with its idioplasm (which see).

> The *trophoplasm* . . . is not really alive, but is the nutritive material upon which the idioplasm draws in order to grow and to make good its waste. *Buck*, Med. Handbook, VI. 647.

trophoplasmic (trof-ọ-plaz'mik), *a.* Of or pertaining to trophoplasm.

> Everything seems to point to the ooplasm as *trophoplasmic* in character, first from the gathering of substance around the coenocentrum and second from the effect of this structure on nuclei in the vicinity. *Bot. Gazette*, May, 1903, p. 340.

trophospongial (trof-ọ-spon'ji-a̤l), *a.* Of or pertaining to the trophospongia.

trophotaxis (trof-ọ-tak'sis) *n.* [NL., < Gr. *τροφή*, nourishment, + *τάξις*, disposition.] In *biol.*, the movement of organisms or of cells in relation to a source or supply of food. See the extract.

> Chemotaxis is, therefore, in some cases a response to the stimulus afforded by substances which can be employed by the organism as food; under which circumstances it can be called *Trophotaxic*. *C. B. Davenport*, Exper. Morphol., p. 89.

trophotropic, *a.* 2. In *biol.*, of or pertaining to the growth or bending of organisms in relation to a source of food; exhibiting trophotropism.

trophotropism, *n.* 2. In *biol.*, the growth or movement of organisms in relation to a source or supply of food; a form of chemotropism.

trophozoite (trof-ọ-zō'īt), *n.* [Gr. *τροφή*, nourishment, + *ζῷον*, animal, + *-ite*.] In sporozoans, as *Monocystis*, an individual parasite in the stage of development in which it is absorbing nourishment from its host and growing rapidly. When the trophozoite is ripe for reproduction it is called a *sporont*, or *gametocyte*.

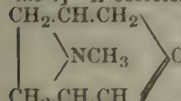
tropic[1], *a.* 2. Pertaining to or of the nature of the growing, bending, or moving of organisms in relation to external agents; exhibiting tropism.

> Another instinct that appears to be due to a *tropic* response is the definite time of day at which some marine animals deposit their eggs. *T. H. Morgan*, Evol. and Adapt., p. 399.

tropic[2] (trō'pik), *a.* [*trop*(*ine*) + *-ic*.] Related to tropine.—**Tropic acid**, a colorless compound, $C_6H_5CH(CH_2OH)COOH$, prepared by the action of barium hydroxid on atropin. It crystallizes in prisms or plates, melts at 117–118° C., and is physiologically inactive.

tropical, *a.* 5. In some radiolarians, as the *Acanthonida*, noting the position of certain spines which project in the region between the poles and the equator of the skeleton.—**Tropical botany, circulation.** See ★*botany*, ★*circulation*.—**Tropical region.** See *life* ★*zone*.—**Tropical ulcer.** See ★*ulcer*.

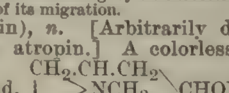
tropidine (trō'pi-din), *n.* [*trop*(*ine*) + *-id* + *-ine*[2].] A colorless oily alkaloid,



$$\begin{array}{l}CH_2.CH.CH_2\\ \mid \quad >NCH_3\\ CH_2.CH.CH\end{array}\!\!> CH$$

prepared by the action of dilute acids on tropine. It boils at 162–163° C.

Tropidoleptus (trop'i-dọ-lep'tus), *n.* [NL., erroneously formed < Gr. *τρόπις* (stem *τροπι-*, not *τροπιδ-*), a keel, + *λεπτός*, slender.] A genus of telotrematous, terebratelloid brachiopods which have planoconvex plicated shells with long, straight, narrow cardinal area and internal loop fused with the median septum. The genus first appears in the Lower Devonian of western Europe, occurs regularly in early Devonian stages in South Africa and South America, and does not appear in the New York region till the Middle Devonian, when it culminates and continues its existence to near the close of Devonian time, thus indicating by its successive appearances the course of its migration.

tropine (trō'pin), *n.* [Arbitrarily detached from *atropine*, atropin.] A colorless hygroscopic alkaloid,  $\begin{array}{l}CH_2.CH.CH_2\\ \mid \quad >NCH_3\\ CH_2.CH.CH_2\end{array}\!\!> CHOH$, prepared by the decomposition of many of the *Solanum* alkaloids. It crystallizes in plates, melts at 63° C., and boils at 233° C.

tropism (trō'pizm), *n.* [Nominally < Gr. *τροπή*, a turning, + *-ism*. But the word arose rather from compounds in *-tropism* (*-trop-ism*), as *chemotropism*, *geotropism*, *heliotropism*, etc.] 1. In *biol.*, growth, bending, orientation, or locomotion of organisms, or of parts of organisms, in relation to external agents. *Positive tropism* is growth or motion toward and *negative tropism* away from the external agent. Tropisms are physiological reactions called forth by an agent working locally and resulting in a definite orientation. In this wide sense *tropism* includes *taxis*, and the various terms designating forms of tropism (see extract under def. 2) are often used where strict usage would require the corresponding term ending in *-taxis*.

> Among the elements which compose these complicated instincts, the *tropisms* (heliotropism, chemotropism, geotropism, stereotropism) play an important part. These *tropisms* are identical for animals and plants. *J. Loeb*, Comp. Physiol. of the Brain, p. 7.

2. In a stricter use, the growing or bending of organisms, or of parts of organisms, in relation to external agents. Tropisms are reactions to agents that act from one side and produce modifications of direction of growth. Different forms of tropism are designated, not by the differences in the organs that are stimulated, whether sense-organs or simple protoplasm, but by the nature of the exciting agent. See the extract.

> All cases of pure *tropism* are cases of response to stimuli, such are chemotropism, hydrotropism, thigmotropism, traumatropism, rheotropism, geotropism, electrotropism, phototropism and thermotropism. *C. B. Davenport*, Exper. Morphol., p. 480.

Tropitida (trọ-pit'i-dä̤), *n. pl.* [NL., < *Tropites* + *-ida*.] A division of ammonoid cephalopods including costate and tuberculate *Anarcestes*-like shells with elongated sutures and completely digitated saddles and lobes. It includes the families *Tropitidæ* and *Haloritidæ* of Triassic formations.

tropometer (trọ-pom'e-tėr), *n.* [Gr. *τροπή*, a turning, + *μέτρον*, measure.] 1. An instrument for measuring the degree of rotation or of torsion in a part; one form is used to determine the amount of rotation of the eyeball, another to measure the torsion in one of the long bones.—2. In *horology*, a chronometer the dial of which is graduated according to a decimal system of time-notation.

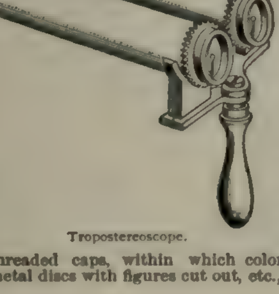
tropophil (trop'ọ-fil), *a.* Same as ★*tropophilous*. *Encyc. Brit.*, XXV. 439.

tropophilous (trọ-pof'i-lus), *a.* [Gr. *τροπή*, turning, change, + *φιλεῖν*, love.] In *phytogeog.*, adapted to a climate which has a season first moist, then dry or (which is physiologically equivalent) cold. See ★*tropophyte*. *A. F. W. Schimper*.

tropophyte (trop'ọ-fīt), *n.* [G. *tropophyte*, < Gr. *τροπή*, turning, change, + *φυτόν*, plant.] In *phytogeog.*, a plant suited to a climate alternately damp and dry or cold (the effect of cold being similar to that of dryness): used by Schimper (1898) in place of *mesophyte* (Warming), but with different connotation.

> In addition to the generally accepted classes of "hygrophytes" and "xerophytes," Schimper recognizes a third or intermediate type, which he calls "*tropophytes*." *Nature*, Oct. 13, 1904, p. 573.

tropostereoscope (trop-ọ-ster'ẹ-ọ-skōp), *n.* [Gr. *τρόπος*, a turn, + E. *stereoscope*.] A tube-stereoscope in which the stereograms may be rotated for conversion of relief.



Tropostereoscope.

> In Ludwig's *tropostereoscope* two metal tubes, blackened within, are attached to a handle in such a way that the near or open ends may be brought together or moved apart. The remote ends of the tubes are supplied with threaded caps, within which colored glass diagrams, metal discs with figures cut out, etc., may be fitted. The caps are geared together, so that the diagrams can be brought into the required stereographic positions, their relief converted, etc. The instrument requires far fixation. *E. B. Titchener*, Exper. Psychol., I. ii. 272.

trot-rope (trot'rōp), *n.* A rope securely fastened to the ground at each end and on which is a loose traveling-ring to which a horse is tethered. The sliding ring enables the horse to graze along the length of the rope. [U. S.]

trouble, *n.*—**To borrow trouble.** See ★*borrow*[1].

trouble-man (trub'l-man), *n.* An expert, familiar with the working of any apparatus or process, who is able to locate the cause of 'trouble' (unsatisfactory operation) and remedy it. [Colloq.]

trough, *n.* 7. In *mining*, an oblong tank of boards or metal in which ores are washed for the separation of metal and gangue; a rocker, serving as a hand-buddle.—8. In *coal-mining*, a passage cut through a supporting pillar of coal to connect one opened chamber with another. Also called *thirling*. [Eng.]—9. In *geol.*, the lowest portion of a synclinal fold.—**Connecticut trough**, in *phys. geog.*, the broad, shallow synclinal valley of southern New England, now occupied by the Connecticut river and extending to Long Island Sound.—**Hudson-Champlain trough**, the depression in which now lie Lake Champlain and the Hudson river from Fort Edward south. It is marked by Paleozoic strata, in contrast to the Archæan of the Adirondacks, and was a very early area of sedimentation.—**Mercury-trough.** See ★*mercury-trough*.—**Teeming trough**, a sluice or trough into which the water is delivered from a mine-drainage pump. [Eng.]—**Trough of a cyclone.** See ★*cyclone*.—**Trough roof.** See ★*roof*[1].

troughing (trôf'ing), *n.* A system of troughs; troughs collectively.

> The lines to the distributing mains are three-core, paper-insulated, steel-armored feeder cables, laid in wooden *troughing*, filled in with refined Trinidad bitumen, and covered with tiles. *Elect. Rev.*, Feb. 14, 1903, p. 247.

trouncer (troun'sėr), *n.* An old name for a waister on a British man-of-war.

trout[1], *n.*—**Blackiston's trout**, a large trout of the rivers of Japan, *Hucho perryi* (*Salmo blackistoni* Hilgendorf), named for Captain Blackiston, an English naturalist.—**Blue-backed trout of Crescent Lake**, *Salmo beardsleei*, of Crescent Lake, Washington.—**Coast Range trout**, *Salmo irideus*, found in coastwise streams of the western United States.—**Colorado River trout**, *Salmo mykiss pleuriticus*, of the Colorado river-basin.—**Columbia River trout**, *Salmo clarkii*, of coastwise streams from Puget Sound to northern California.—**Dublin Pond trout**, *Salvelinus fontinalis agassizii*, of Dublin Pond, New Hampshire.—**Golden trout.** (*b*) A small trout found in Volcano or Whitney Creek, near the head-waters of Kern river in California, chiefly restricted to the district above the waterfall known as Agua Bonita. It is remarkable for the brilliant orange color of its belly and lower fins; the scales are small and scarcely overlapping. The scientific name of the fish is *Salmo irideus agua-bonita*.—**Green-backed trout**, *Salmo clarkii stomias*, of the head-waters of the Arkansas and South Platte rivers.—**Jordan's trout**, *Salmo jordani*, of Lake Southerland, west of Puget Sound.—**Kamloops trout**, *Salmo gairdneri kamloops*, of the Fraser and upper Columbia rivers.—**Kern River trout**, *Salmo irideus gilberti*, of the Kern river.—**Lac de Marbre trout**, *Salvelinus oquassa marstoni*, of Lac de Marbre, Quebec.—**Long-headed trout**, a trout, *Salmo bathæcetor*, found in Crescent Lake, Washington.—**Mountain-trout.** (*c*) A species of *Galaxias*, small cylindrical fishes inhabiting the colder rivers of Australasia, southern Chile, Magellan Straits, and the Falkland Islands. *E. E. Morris*, Austral English.—**Nissuee trout**, *Salmo irideus stonei*, a trout of the Sacramento river-basin.—**Red-throated trout**, the cutthroat trout of the Columbia river region, *Salmo clarkii*.—**Speckled trout of Lake Crescent**, *Salmo gairdneri crescentes*, found in Crescent Lake, Washington.—**Sunapee trout**, *Salvelinus alpinus aureolus*, of certain ponds and lakes of New Hampshire and Maine.—**Truckee trout**, *Salmo clarkii henshawi*, of Lake Tahoe, Pyramid Lake, Humboldt river, and streams of the eastern slope of the Sierra Nevada range.—**Utah trout**, *Salmo mykiss virginalis*, found in the waters of the Great Basin.—**Von Behr trout**, *Salmo fario*, the brown trout of northern Europe, which has been introduced into the United States.—**Western Oregon brook-trout**, *Salmo masoni*, found in coastwise streams of Oregon and Washington.—**Yellow-finned trout**, *Salmo mykiss macdonaldi*, of Twin Lakes, Colorado.

trout-lily (trout'lil″i), *n.* See ★*lily*.

trouveur (trö-vėr'), *n.* [F., finder, inventor, < *trouver*, find. See *trouvère*.] An occasional synonym of *trouvère*.

trove (trōv), *n.* [An abbreviation of *treasure-trove*, which see.] Something of value found; a find.

trowel, *n.* 4. A surgical instrument of approximately trowel shape, used to push back protruding parts from the field of operation. *Buck*, Med. Handbook, IV. 829.

trowel-gage (trou'el-gāj), *n.* An instrument for setting the nippers on a cotton-combing machine at the proper distance from the cylinder- or combing-needles. *Thornley*, Cotton Combing Machines, p. 151.

trowlesworthite (troulz′wėr-thīt), *n.* [*Trowlesworth*, England, + *-ite*^{2}.] In *petrog.*, a granite, altered by fumarole action, composed of fluorite, orthoclase, tourmalin, and some quartz. The fluorite occupies the place of quartz in ordinary granite. *Worth*, 1884.

truantry (trö′ant-ri), *n.* Same as *truancy.* [Rare.]

> Well, now that I had found the boat, you would have thought I had had enough of *truantry* for once; but in the meantime I had taken another notion
> *R. L. Stevenson*, Treasure Island, xxii.

trucha (trö′chä), *n.* [Sp. *trucha*, < L. *tructa*, a trout. See *trout.*] A common name of *Agonostomus nasutus*, a mullet found in rivers on both coasts of Central America.

truck^{1}, *n.*—**To have truck with**, to have intercourse with; to have any sort of give and take with: usually in the negative. [Colloq.]

> A powerful bad thing is an ayah. Don't you niver *have* any *thruck wid* wan.
> *R. Kipling*, The God from the Machine, in Soldiers [Three, p. 20.

Truck economy, an economic system in which barter is the prevailing mode of exchange: contrasted with *money economy*, in which exchanges are, as a rule, effected by the use of money.

truck^{2}, *n.*—**Aërial truck**, a form of apparatus for the rescue of persons from burning buildings by means of ladders, which do not have to rest against the walls. It is a heavy four-wheeled vehicle, similar to the truck used in carrying fire-ladders, near one end of which is fitted a frame with powerful lever equipment by which extension-ladders can be quickly raised from their horizontal position on the truck and extended from 50 to 90 feet into the air. When the ladders are operated by air-pressure instead of by screws and gear, they are also known as *pneumatic extension-ladders* or *telescopic aërial ladders.*

truck^{2}, *v.* **II.** *intrans.* To drive or use a truck; transport goods by means of a truck.

> The management of the Metropolitan Street railways have complained, and with very good reason, that a prolific cause of the crowding of the cars on the main thoroughfares is the interference of *trucking* with the running of cars. *Sci. Amer.*, Jan. 10, 1903, p. 19.

truck-farming (truk′fär″ming), *n.* Market-gardening on a large scale, especially for distant markets; trucking. In the United States a large trucking industry has grown up in the way of supplying large cities with garden produce, often from remote points possessing some advantage, particularly that of earliness. The Atlantic coast from Massachusetts to southern Florida is lined with truck-farms supplying successively, according to latitude, the wants of Eastern cities, and a similar business exists inland and on the Gulf coast, where it is rapidly developing. [U. S.]

truck-garden (truk′gär″dn), *n.* A vegetable-garden, particularly one devoted to market-gardening. [U. S.]

truck-gardening (truk′gär″dn-ing), *n.* Market-gardening; the growing of truck or vegetables for market, particularly on a rather large scale; trucking; truck-farming. [U. S.]

truck-horse (truk′hôrs), *n.* A strong, heavily built horse, specially adapted for hauling heavy loads; a draft-horse.

trucking^{1} (truk′ing), *n.* [*truck*^{1} + *-ing*^{1}.] **1.** Exchanging; bartering; barter.—**2.** The selling of small commodities; petty trade.—**3.** The selling of garden-truck; truck-farming. [U. S.]

> The country about Norfolk was one of the first in this belt to adopt the *trucking* industry on a large scale.
> *U. S. Nat. Herb.*, V. 463.

trucking^{2} (truk′ing), *n.* [*truck*^{2} + *-ing.*] The act or the business of conveying goods by trucks or wagons.

truck-land (truk′land), *n.* Land given up to the cultivation of early vegetables and garden-truck. [U. S.]

truck-light (truk′līt), *n.* An electric signaling apparatus on United States war-ships fitted at the masthead on top of the truck. It consists of a double lantern, the upper half containing a red and the lower a white electric lamp. By suitable switches on deck, either the red or the white light can be shown and by successive displays (in a system similar in principle to the Morse telegraph code) letters and signals can be made. *Army and Navy Register*, XXIV. 277.

truck-patch (truk′pach), *n.* An area, particularly a circumscribed one, on which vegetables are grown; a truck-garden. [U. S.]

trucks (truks), *n. pl.* Trousers. [Eng. slang.]

truddo (tröd′dō), *n.* [It. dial., prob. Sardinian (cf. Sardinian *trudda* for It. *trulla*, pitcher). See *trullo.*] Same as ★*trullo.*

trudgen (truj′en), *n.* [So named after *Trudgen*, an English swimming amateur (1873).] In *swimming*, the double over-arm stroke.

> Another method of swimming which has helped to increase speed rates, especially over short distances, is that known as the "*Trudgen*," or double over-arm stroke. It is a modification of a style peculiar to Indians and those who get their living on surf-beaten shores, and was first brought into special prominence in England by an amateur named Trudgen in 1873.
> *Encyc. Brit.*, XXXIII. 120.

True, public, and notorious, in *eccles. law*, an expression formerly used at the end of each several article in the libel as descriptive of the charges therein contained.—**True-wool hair.** See ★*hair*^{1}.

true, *v. t.*—**To true up**, to true; adjust or fit accurately.

> The boring and mounting of the different cast-iron wheels is about equivalent to the "*truing up*" of the steel wheel. *Jour. Franklin Inst.*, May, 1904, p. 336.

Truing-up machine. See ★*machine.*

truffle, *n.*—**Black truffle**, a name sometimes applied to *Tuber griseum*, according to Hobbs.

truffle-beetle (truf′l-bē″tl), *n.* A European silphid beetle, *Anistoma cinnamomea*, whose subterranean larvæ feed on the truffle. *Cambridge Nat. Hist.*, VI. 222.

truffle-dog (truf′l-dog), *n.* A small dog trained to scent out truffles.

truistic (trö-is′tik), *a.* Of the nature of a truism; trite; commonplace.

> To a trained psychologist this statement looks *truistic* and commonplace, but definite quantitative tests are necessary to convince the mind biassed with the philosophy of natural science, and these tests are here provided.
> *Athenæum*, Jan. 11, 1902, p. 52.

truller (trul′ėr), *n.* [*trull*^{1} + *-er.*] One who trulls or trundles (a barrow); specifically, in Cornwall, one who wheels ore in a barrow.

trullo (tröl′lō), *n.* [It. dial. (appar.) the same as ML. *trullus*, *trullum*, a dome-shaped building, < L. *trulla*, a scoop, ladle. See *Trullan.*] A kind of prehistoric stone structure found in southern Italy.

trumbash (trum′bash), *n.* [Also *trombash*; African.] A throw-stick of hard wood, shaped somewhat like a boomerang, but which does not return to the thrower: used by certain tribes of the Sudan.

> There is a curious weapon, the *trombāsh*, that is used by these people [Tokrooris, a Negro tribe of Darfur], somewhat resembling the Australian boomerang; it is a piece of flat, hard wood, about two feet in length, the end of which turns sharply at an angle of about 30°. They throw this with great dexterity, and inflict severe wounds with the hard and sharp edge; but, unlike the boomerang, the weapon does not return to the thrower.
> *Sir S. W. Baker*, Nile Trib. Abyssinia, p. 528.

> The Africans have developed the slashing projectile in two forms, the bladed arrow and the thrown knife or *trumbash.* *Smithsonian Rep.*, 1893, p. 621.

trump^{3}, *n.*—**Losing trump**, a trump which is not the best, when only one or two remain in the adversaries' hands.

trumpet, *n.*—**Humming-birds' trumpet.** Same as *California* ★*fuchsia.*—**Respiratory trumpet**, one of two trumpet-shaped respiratory tubules on the thorax of the pupa of a mosquito or an allied dipterous insect.

trumpeter, *n.*—**Bastard trumpeter.** (*a*) A fish, *Latris ciliaris*, of the family *Latrididæ*, found in Australian waters. (*b*) In Tasmania, *Latris forsteri*, a fish belonging to the family *Cirritidæ.*—**Real trumpeter.** Same as *trumpeter*, 6.

trumpeter-whiting (trum′pet-ėr-hwī″ting), *n.* An Australian fish, *Sillago bassensis.*

trumpet-guide (trum′pet-gīd), *n.* Same as *trumpet*, 5.

trumpet-hypha (trum′pet-hī″fạ̈), *n.* The hypha-like cell of certain brown seaweeds which expands or bulges at each cross-wall.

truncate, *v. t.*—**Truncated cone** or **pyramid.** (*b*) The portion included between the base of a cone or pyramid and a plane meeting all the lateral edges or elements.—**Truncated cylinder**, the portion between a base and a non-parallel section.

truncoconical (trung″kọ̄-kon′i-kạ̈l), *a.* [L. *truncus*, trunk, + *conus*, cone.] Resembling a truncated cone.

> Experimental Studies on the Resonance of Conical, *Trunco-Conical* and Cylindrical Air-Columns.
> *Science*, May 24, 1901 (advt.).

truncule (trung′kūl), *n.* [L. *trunculus*, a bit cut off, dim. of *truncus*, stock, trunk. See *trunk.*] A very small branch of the main stem of a system, itself giving off ramifications.

trundle, *v. i.* **3.** In *cricket*, to bowl. *Hutchinson*, Cricket, p. 253. [Colloq.]

trundler (trun′dlėr), *n.* In *cricket*, a bowler. *Hutchinson*, Cricket, p. 80. [Colloq.]

trunk, *n.* **14.** A long conduit or system with grids through which cotton is forced to be cleared of dust and refuse in its passage from the opener to the scutcher or picker.—**15.** In *ship-building*, a large inclosed duct or passage through the decks or bulkheads of a vessel for coaling, ventilation, passing ammunition, etc.

> It may be added that, in all cases where openings have to be made in a watertight deck or platform, either watertight covers must be fitted to the openings; or watertight *trunks*, carried to a sufficient height above the load-line, must be built around them.
> *White*, Man. of Naval Arch., p. 31.

16. A trunk-line.—**Trunk hatchway**, a line of hatches united by a casing between the decks to form a trunk separating the hatchways from the deck space in the vicinity. See also ★*expansion-trunk.*—**Vascular trunk**, in the *Brachiopoda*, one of two main vascular sinuses which traverse the mantle from the perivisceral chamber to the anterior margin of the valves and which are much branched in their course. These frequently leave impressions in the substance of the shell which are retained in the fossil state. See *Brachiopoda.*

II. *a.* Chief; main; principal: as, the *trunk* mains of a system of water or gas distribution; a *trunk* railway line. *W. J. Dibdin*, Public Lighting, p. 442.—**Trunk valley**, the valley of a main stream.

> In dealing with the Pleistocene glaciation (chapter ii.), Mr. Gilbert discusses the origin of the "hanging valleys" so abundant in this region, and accepts the view that the discordance of level between the *trunk* and tributary *valley* is in most cases due to the deeper glacial excavation of the main trough. *Nature*, July 7, 1904, p. 217.

trunk-deck (trungk′dek), *n.* See ★*deck*, 2.

trunk-fish, *n.*—**Spotted trunk-fish.** Same as ★*chapin.*

trunking-jack (trung′king-jak), *n.* Same as ★*trunk-jack.*

> The new board [switchboard] is made up in any capacity, ranging from the small village sizes to those of one thousand lines, the larger equipments being provided with the necessary trunking, or transfer, systems, which may consist of the common method of equipping the various sections with *trunking jacks* and order-wire keys, or the more elaborate equipment of flash lights, trunking cords. *Elect. World and Engin.*, Feb. 6, 1904, p. 286.

trunk-jack (trungk′jak), *n.* In *telephony*, one of the jacks which form the terminals of trunk-lines. Also called ★*trunking-jack.*

trunk-leg (trungk′leg), *n.* In crustaceans, a leg or locomotor appendage attached to the thoracic region.

> Of the corresponding pairs of appendages thirteen belong to the head and trunk, two pairs of antennæ, one pair of mandibles, two pairs of maxillæ, followed by three which may be all maxillipeds or may help to swell the number of *trunk-legs* to which the next five pairs belong.
> *Encyc. Brit.*, XXX. 479.

trunklet (trungk′let), *n.* [*trunk* + *-let.*] In *anat.*, a branch of the main trunk of a nerve or blood-vessel which itself gives off branches, but proceeds some distance before losing its identity. *Buck*, Med. Handbook, II. 255.

trunk-lichen (trungk′lī″ken), *n.* Same as ★*tree-lichen.*

trunk-limb (trungk′lim), *n.* In crustaceans, as the *Isopoda*, a limb attached to the thorax or pereion.

trunk-line, *n.* **2.** In *elect.*, lines or wires which connect two telephone-exchanges, as distinguished from the wires which connect an exchange with its subscribers.

trunk-machine (trungk′mạ-shēn″), *n.* In *cotton-manuf.*, a pipe or conduit for the passage of cotton from one machine to another in the preparatory processes. See ★*trunk*, *n.*, 14.

trunk-plunger (trungk′plun″jėr), *n.* A plunger for a pump, in which the connecting-rod which actuates it is connected to a pin below the outer end, while for the vibratory motion of the latter a hole is left in the axis of the plunger, as in the trunk-engine. See *trunk*, 9.

trunk-valve (trungk′valv), *n.* A valve in which the ports of entrance to the two ends of the cylinder are near the heads of the latter, and the valve itself is of two pieces in effect joined together by the hollow tube which is called the trunk. The modern form of this valve is the hollow piston valve, in which the two pistons forming the valve proper are connected by a hollow rod. Also called *Murdock's slide-valve.*

trunnel-head (trun′l-hed), *n.* Same as *trundle-head*; specifically, in coke-making or metallurgy, the cast-iron or other ring which forms the keystone of the oven or the head of the furnace, serving as an opening for charging and for control of the operations within it.

> The *trunnel-head*, or ring, is a much more important part of a coke oven than most people imagine. It should be accurately gauged to the capacity of the oven. If the ring be too small, the draft of the oven will be choked; and if it be too large, there will be a great loss of heat.
> *Amer. Manuf.* LXII. 626.

trunnion, *n.*—**Trunnion ledge and level,** a small shelf on the trunnion of a large gun which was placed in a horizontal position by means of a spirit level so that the degree of elevation or depression might be indicated.

trunnion-band (trun′yo̤n-band), *n.* The band or hoop of a built-up cannon on which the trunnions of the cannon are formed in manufacture.

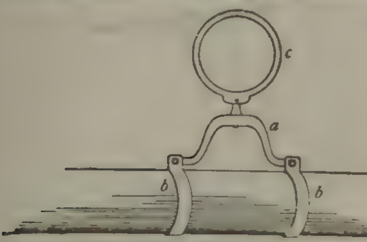
trunnion-level (trun′yo̤n-lev″el), *n.* A level placed on the trunnion of a gun to aid in ascertaining and adjusting its elevation for a required range.

trunnion-rule (trun′yo̤n-röl), *n.* A rule for measuring the distance from the trunnions to the base-ring of a gun.

trunnion-square (trun′yo̤n-skwãr), *n.* An instrument for determining whether the axis of the trunnions is perpendicular to the axis of the bore of the gun.

truqueur (trö-kėr′), *n.* [F., < *truquer*, fabricate antiquities.] One who fabricates so-called antiquities.

truss, *n.*—**Bridge truss,** an articulated frame or truss which forms or resembles one of the two or more trusses of a truss-bridge.—**Main trusses,** the iron arms which confine the main lower yard and the main lower topsail-yard to the mast. See *main-yard* ★*truss*.—**Main-yard truss,** the iron arms which hold the main lower yard to the mainmast, and on which the yard may be swung horizontally by the braces or vertically by the lifts.



a, truss ; *b*, *b*, truss-bands ; *c*, truss-parrel

trusser, *n.* **2.** Specifically, a machine for binding or trussing together the staves of a keg or barrel and giving to the latter its bulging form and to the former the deformation which shall keep the hoops tight in place. *Sci. Amer. Sup.*, Sept. 10, 1904, p. 23982.

truss-hoop, *n.* **2.** In *mast-making*, a heavy iron band placed about the mast, and to which the after end of the truss is confined.

truss-parrel (trus′par″el), *n.* That part of the truss-mechanism which encircles a mast; the iron band which goes about the mast, and to which the truss is secured.

trust[1], *n.* **7.** The term refers to the employment of trustees (see *voting* ★*trust*) in the original formation of trusts. As to the looser use of the word, see the following extracts.

> This broad use of the word "*trust*" to describe combinations which are not in the trust form, producing confusion and sometimes unwarranted prejudice, should be avoided.
>
> *Noyes*, Intercorporate Relations (1909), p. 555.

> A *trust* has been defined as a contract, combination, confederation, or understanding, express or implied, between two or more persons to control the price of a commodity or services for the benefit of the parties thereto, and to the injury of the public, and which tends to create a monopoly. . . . It seems that such unlawful combination may be formed orally, and that writing is not necessary to its illegality.
>
> *West Virginia Rep.* (1906), LX. 520.

Anti-trust law, or **Sherman anti-trust law,** a federal statute approved July 2, 1890, by which "every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several states, or with foreign nations" was declared to be illegal and parties engaged in such to be liable to fine and imprisonment. The act further embraces monopoly of any part of interstate or foreign commerce. The Wilson Bill (Aug. 27, 1894) extended this definitely to monopoly of importations.—**Commercial trust,** one in which the possession of tangible property of any species is committed to others for management or disposal. *Anderson.*—**Corporate trust,** a combination of different corporations of similar character made by the majority of stockholders in each giving the power of their stock by assignment or proxy to a trustee or (trustees) to another corporation. See *trust*.—**Dry trust.** Same as *naked trust*.—**Presumptive trust.** Same as *resulting trust*; strictly, a trust created by the reverting of an estate to the grantor. The term is loosely applied to trusts that are implied in equity.—**Trust for value,** in *law*, a trust based upon a valuable consideration.—**Voluntary trust,** a trust created solely as a gift.—**Voting trust,** an accumulation, in the hands of an individual trustee or of a committee, of the stock of several shareholders in a corporation to the end that the aggregate vote of these holdings, used by the trustee, may control the corporation and direct it. Negotiable trust certificates are generally given to the original holders in return for their stock, retaining to them the beneficial value. It has been held to be against public policy that a stockholder irrevocably, for a stated period, part with his voting power, and that therefore any original holder may at will withdraw from a voting trust.

trust-buster (trust′bus″tėr), *n.* One who makes a business of breaking up or trying to break up trusts or industrial combinations in restraint of competition. [U. S. polit. slang.]

trust-busting (trust′bus″ting), *n.* The breaking up of 'trusts' or industrial combinations; the activities of a trust-buster. [U. S. polit. slang.]

> A blizzard had blanketed Kansas with snow, and the rural citizen had leisure to read the "*trust-busting*" literature left at his door every day by his mail-carrier.
>
> *Outlook*, May 6, 1905.

trust-company (trust′kum″pa̤-ni), *n.* **1.** A financial corporation organized under State laws, general or special, or both, to exercise the functions of a trustee. This power was first granted by special act in 1822 to the Farmers' Fire Insurance and Loan Company, of New York, the act authorizing the corporation to receive and take by deed or devise any effects and property both real and personal which might be left or conveyed to it in trust and to assume and execute any trust created or declared by the deed or devise.

2. Such a corporation with added financial and other functions, varying in character and extent with the statutes of the different States and with the individual charter of the corporation. Not all trust-companies have all the powers indicated in the following citation: "Trust-companies exercise, among other powers, those of trustee, executor, administrator, guardian, committee, receiver, assignee, transfer agent, registrar, investment agent, fiscal agent, promotor, underwriter, etc. They do also a guarantee, safe deposit and general banking business." *Cator*, Trust-Companies of the United States, p. 20. To these powers may be added those of depositary and escrow holder; also those of a savings-bank, usually exercised under the title "savings-fund department": but whether they have such a department or not trust-companies generally allow interest on considerable sums left on deposit for stated periods and a minimum interest on running balances. Except in a savings-bank department, trust-company interest is lower than that of savings-banks. The savings-fund feature is more common in the West than in the East. In the early companies their business as trustees was incidental to that of life-insurance and annuities, both of which have now nearly disappeared, and the examination and insurance or guarantee of real-estate titles have taken their place and become an important business. Fidelity insurance is also issued by many companies, which act as bondsmen for trustees and for officers and responsible employees, public and private. The later growth of trust-companies has been along the lines of banking and corporation trust business. In their banking business they are subject to the laws of the various States in the matter of official examinations, but they have greater freedom in the making of loans, and in most States are not required to hold as large cash reserves as banks are compelled to have. As bankers they are not, in many States, compelled to deposit security with the State officials, but the double liability law applies to their stockholders in nearly all States where it applies to bank stockholders. The tendency of legislation is to put banks and trust-companies acting as banks on the same footing. Trust-companies issue bills of exchange and letters of credit, but do not issue bank-notes. Usually, States allow within their borders the fiduciary business of trust-companies chartered by other States, though not always, but not their banking and other business. A trust-company may establish branches throughout its own State and also in foreign countries, and in the dependencies of the United States. Among the other countries besides the United States where the trust-company is encouraged are Canada, Mexico, Argentine Republic, Germany, France, Japan, South Africa, Australia, and New Zealand. In these latter the title 'trustee-company' prevails. The trust-company is the product of the increased scope of business enterprise as well as of the desire for responsible corporate, as against individual, care and investment of trust funds. It is not in any way to be confounded with the trust, which is an aggregation of business interests of a common character, for common profit. Following the first step taken in 1822, trust-companies were formed in Boston, Philadelphia, and New York. Statistics of 1875 showed 35 companies in the United States, all in the East, with resources of over $122,000,000. In 1889 the number had increased to 120, which were scattered among 14 States, east and west, and had resources of $441,000,000. In 1895 the total number was 569, in 42 States and territories, having aggregate resources of $962,000,000. In 1905, complete returns of 1115 companies showed resources and liabilities amounting to $3,802,000,000. The statistics of September, 1908, from 2240 companies showed resources and liabilities of $4,580,000,000.

Truth of being. See ★*being*.

trutine (trö′tin), *n.* [L. *trutina*, < Gr. *τρυτάνη*, a balance. See *trutinate*.] A balance.—**Trutine of Hermes,** in *astrol.*, a method of rectifying a nativity by ascertaining the place of the moon at the conception, which is supposed to indicate the degree ascending at birth.

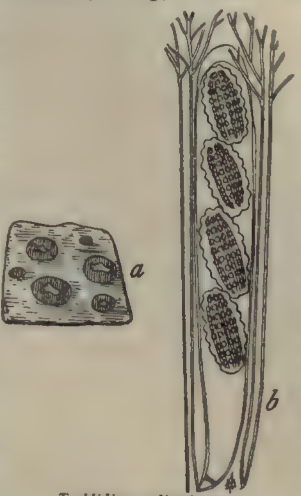
truxene (truk′sēn), *n.* [*trux*(*illine*) + *-ene*.] A colorless compound, $\begin{array}{l} C_6H_4C{:}C.CH_2 \\ \vert \qquad\qquad\quad \vert \\ CH_2{-}C{:}C.C_6H_4 \end{array}$, prepared by the action of phosphoric anhydrid on hydrindone. It crystallizes in plates and melts above 360° C.

truxillic (truk-sil′ik), *a.* [*truxill*(*ine*) + *-ic*.] Related to truxilline.—**Truxillic acid,** isatropic acid.

truxilline (truk-sil′in), *n.* [*Truxillo* (see def.) + *-ine*[2].] Any one of three compounds, $C_{38}H_{46}O_8N_2$, distinguished as *α*-, *β*-, and *γ*-. They are contained in coca from Truxillo, Peru, and may be prepared by the action of methyl alcohol and either one of the truxillic anhydrids on ecgonine. They are all amorphous, and melt at 80°, 45°, and 63° C. respectively. Also called *γ*-isotropyl-cocaine or cocamine, *δ*-isotropyl-cocaine or isococamine, and *ε*-isotropyl-cocaine.

Tryblidiaceæ (trī-blid-i-ā′sẹ-ē), *n. pl.* [NL., < *Tryblidium* + *-aceæ*.] A family of brown or black coriaceous discomycetous fungi named from the genus *Tryblidium*.

Tryblidium (trī-blid′i-um), *n.* [NL., < Gr. *τρύβλιον*, a cup, + dim. *-ιδιον*.] **1.** A genus of fossil patelloid gastropods with depressed oval shells which have anterior beaks, thick walls, horseshoe-shaped area with numerous muscular scars, and concentrically lamellate exterior surface. It occurs in Silurian rocks.—**2.** A genus of discomycetous fungi having black coriaceous ascocarps which are at first sunken in the substratum and closed, but finally rupture more or less irregularly. The spores are hyaline or yellowish and muriform. About 20 species have been described, most of which occur on the bark of trees. *T. cucurbitaria* is found on the white oak in North America and *T. caliciiforme* on beech in Europe. *Rebentisch*, 1805.



Tryblidium caliciiforme.

a, ascocarps on beech-bark; *b*, ascus with spores and paraphyses, highly magnified.

try-gun (trī′gun), *n.* A gun with an adjustable stock, used by some manufacturers of sporting arms to determine by trial the exact length and shape of stock which a purchaser may desire. *Forest and Stream*, Feb. 21, 1903.

tryker, *n.* Same as *tricerion*.

trypanolytic (trip-a̤-nọ-lit′ik), *a.* [NL. *Trypano*(*soma*) + Gr. *λυτικός*, that looses or dissolves.] Referring to or effecting the destruction of trypanosomes. *Nature*, Oct. 31, 1907, p. 680.

trypanon (trip′a̤-non), *n.*; pl. *trypana* (-nä̤). [Gr. *τρύπανον*, a borer, < *τρυπᾶν*, bore. See *trepan*[1].] In *Gr. antiq.*, a borer turned by hand or with a string.

> In a natural state, as we know, people, through laboriously acquired skill, kindle a fire by rubbing together two pieces of wood; in other words, they set free to that tension work, heat. The old Greeks used for the purpose the pyreion, the under piece of which, called the eschara, contained a bore, in which the rubbing piece, the *trypanon* or borer, was inserted and then turned by twisting the hands.
>
> *Smithsonian Rep.*, 1890, p. 716.

Trypanoplasma (trip-a̤-nọ-plas′mä̤), *n.* [NL., < Gr. *τρύπανον*, a borer, + *πλάσμα*, something formed. See *plasm*.] A genus of hæmoflagellates, of the family *Trypanosomatidæ*, parasitic in fishes, as the minnow, carp, and loach.

Trypanosoma fever. See ★*fever*[1].

trypanosomal (trip″a̤-nọ-sō′mal), *a.* [NL. *Trypanosom*(*a*) + *-al*[1].] Pertaining to, of the nature of, or caused by, trypanosomes. See ★*trypanosomiasis*.

> To obtain a knowledge of the prevalence of *trypanosomal* infection in any given district it is only necessary to examine the cervical glands of the domestic animals indigenous to the district to come to a positive or negative conclusion in regard to the prevalence of the disease.
>
> *Lancet*, May 2, 1908, p. 1285.

trypanosomatic (trip″a̤-nō-sọ-mat′ik), *a.* Relating to *Trypanosomata*; noting any disease caused by their presence.

> The cultivation of the organisms causing *trypanosomatic* diseases.
>
> *Science*, July 22, 1904, p. 112.

trypanosomatosis (trip″a̤-nọ-sō-ma-tō′sis), *n.* [NL., < *trypanosoma*(*t*-) + *-osis*.] Same as ★*trypanosomiasis*.

> It [chimpanzee] spontaneously suffers from ankylostomiasis, filariasis, and *trypanosomatosis*.
>
> *Lancet*, April 4, 1903, p. 945.

trypanosome (trip′a̤-nō̤-sōm), *n.* [NL. *Trypanosoma*.] An infusorian of the order *Trypanosomata*. See ★*trypanosomiasis*.

The *trypanosome* was shown by the last-named observers to be identical with the trypanosoma Gambiense and they also showed that the tsetse fly, glossina palpalis, is the principal transmitter of the disease. That other flies of this species, glossina fusca and glossina longipennis, are also capable of conveying the disease is certain, but so far the glossina palpalis is chiefly incriminated.
Lancet, May 2, 1908, p. 1285.

trypanosomiasis (trip″a̤-nō̤-sō̤-mī′a̤-sis), *n.* [*Trypanosom(a)* + *-iasis*.] A general term proposed by Salmon and Stiles (1902) to denote any infection of any warm- or cold-blooded animal by any species of the flagellate protozoan family *Trypanosomatidæ*. Such are the sleeping-sickness of man in Africa, caused by *Trypanosoma gambiense*; surra of horses and other animals in India and the Philippines, caused by *T. evansi*; nagana of horses in Africa, caused by *T. brucei*; mal-de-caderas of horses in South America, caused by *T. equinum*; rat trypanosomiasis, caused by *T. lewisi*. The parasites live in the blood-plasma and destroy the red blood-corpuscles; they are transmitted by insects.

In a letter addressed to Sir Alfred Jones by the expedition sent by the Liverpool School of Tropical Medicine to investigate the newly-discovered parasite of human *trypanosomiasis*, it is stated that a number of natives had been examined, but that the parasite had not been found in any. In two horses, however, a trypanosome was found, and it is stated that another horse had been infected with the human trypanosome. In a common species of horse fly that had fed on this last horse, numerous trypanosomes were found in the stomach. The letter was sent from McCarthy Island, 150 miles in the interior of Gambia.
Nature, April 23, 1903, p. 590.

trypanosomic (trip-a̤-nō̤-som′ik), *a.* [NL. *Trypanosom(a)* + *-ic*.] Relating to, or infected with, trypanosomes.

This water is then inoculated with the otherwise sterile *trypanosomic* blood.
Jour. Med. Research, July, 1906, p. 125.

Trypetheliaceæ (trip-ē-thē-li-ā′sē̤-ē), *n. pl.* [NL., < *Tripethelium*, the type genus, + *-aceæ*.] A family of pyrenocarpous lichens, named from the genus *Trypethelium*, having a crustaceous thallus and the perithecia united in a stroma.

trypethelioid (trip-ē̤-thē′li-oid), *a.* [NL. *Trypetheli(um)* + *-oid*.] Pertaining to, or resembling, lichens of the genus *Trypethelium*.

trypetid (trip′e-tid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Trypetidæ*.

II. *a.* Having the characters of or belonging to the family *Trypetidæ*.

trypsinogen (trip-sin′ō̤-jen), *n.* [*trypsin* + Gr. -γενης, -producing.] A substance excreted by the pancreas which becomes converted during intestinal digestion into trypsin.

The intestinal juice contains two other ferments which are engaged in the process of proteolysis, enterokinase, and erepsin. The former activates the pancreatic juice by transforming *trypsinogen* into trypsin.
H. W. Bettmann, in Med. Record, Aug. 3, 1907, p. 171.

Tryptic digestion, digestion (hydrolytic cleavage) of protein through the action of trypsin. This action of trypsin is similar and complementary to that of pepsin: trypsin, however, acts in slightly acid, neutral, or markedly alkaline solutions, while pepsin acts only in acid media.

tryptonemia (trip-tō̤-nē′mi-ä̤), *n.* [NL., < E. *tryptone* + Gr. *αἷμα*, blood.] A condition in which tryptone is present in the blood.

tryptophan (trip′tō̤-fan), *n.* [Gr. τριπτός, rubbed, + φαίνειν, appear.] Same as ★*proteinochromogen*.

trysail, *n.*—**Main trysail**, a fore-and-aft sail set on the main lower mast during heavy weather.

t. s. An abbreviation (*b*) of *till sale*.

tsavoah (tsä-vō′ä̤), *n.*; pl. *tsavaoth* (tsä-vä-ōt′). [Modern Heb., < *tsāvah*, command, charge, order.] 1. A will.—2. A charge or ethical will, among the Jews, of a father to his children or a rabbi to his congregation. It has almost fallen into disuse. Some of the tsavoath are excellent codes of ethics and piety. The letter of Rabbi Elias of Vilna to his son and the tsavoah of Rabbi Abraham of Danzig (1738–1821) are the most renowned. Pious young Jews in Russia commit them to memory.

tschawytscha, *n.* A German spelling of *chavicha*.

tschego, *n.* Same as *nschiego*.

Tscherkess (cher-kes′), *a.* and *n.* [A G. spelling of Russ. *Cherkesŭ*: see *Circassian*.] Same as *Circassian*.

tschernozom, **tschornosem**, *n.* German spellings of the Russian original of *chernozem*.

tserin, *n.* Same as *dzeren*.

Tsetse-fly disease. See ★*disease*.

Tsiganologist, *n.* Same as ★*Zinganologist*.

T-slot (tē′slot), *n.* A groove or slot cast or planed in the upper surface of a table, or plate, with an undercut below the plane of the table, or plate, which gives to the slot a section resembling in end view an inverted block-letter capital T. The form of this section enables square-headed bolts to be slid into the slot from the end; or T-headed bolts may be used which can be passed into the slot at any point and then turned through an angle of 90°. The slots instead of being continuous may be in short lengths and may be both longitudinal and transverse.

On the floor at the base of the tower is a massive plate 15 ft. square with a number of *T-slots* across its surface resembling those of a planer bed. To this the hoist to be tested may be quickly bolted.
Elect. World and Engin., Oct. 31, 1903, p. 734.

T. S. O. In the *Eng. postal service*, an abbreviation of *town suboffice*.

tsubaki (tsṳ-bä′kē), *n.* [Jap. *tszbaki*.] The *Camellia Japonica*, used extensively in Japanese decorative art. See *Camellia*.

tsubo (tsṳ′bō), *n.* [Jap. *tszbo*.] A Japanese measure of surface, being a square ken, or 35.6 square feet. *C. Hering*, Conversion Tables, pp. 44, 172.

Tsugaru lacquer. See ★*lacquer*.

tsunami (tsṳ-nä′mē), *n.* [Jap. *tsznami*.] A great tidal disturbance which may be caused by earthquakes, volcanic eruptions, or barometric depressions.

The great *tsunamis* which so often devastate the shores of Japan, in the greater number of instances proceed from the near-lying deep of the Pacific, which is known as Tuscarora Deep.
W. H. Hobbs, Earthquakes, pp. 253, 254.

tsung (tsöng), *n.* Same as ★*sung*².

Tsung-li-yamen. See *yamun*.

tsupa (tsö′pä̤), *n.* Same as *tsuba*.

tswam (tswäm), *n.* [Northwestern American.] A native name of *Chasmistes copei*, a minnow of the Klamath Lakes.

T. T. L. An abbreviation of *to take leave*.

Tu. 1. An abbreviation of *Tuesday*.—2. A chemical symbol (*a*) for tungsten, which, however, is much more commonly represented by W (from the name, *wolfram*, of the mineral in which tungsten chiefly occurs); (*b*) for thulium, for which, however, *Tm* is more common.

tuan (tū′an), *n.* [Native name.] The native name of the so-called 'flying-squirrels' of Australia, small marsupials, of the genus *Belideus*, which resemble flying-squirrels in form and habits.

tub, *n.* 8. (*d*) A lining for a mine-shaft made of staves of wood or steel. See *tubbing*.

tuba¹, *n.* 4. An ancient Roman trumpet with a straight tube of metal, like the Greek salpinx.

tuba² (tö′bä), *n.* [Malayan *tūba*.] 1. In the Philippine Islands, Guam, and the west coast of Mexico, the sap obtained from the immature inflorescence of the coconut, which is allowed to ferment and is used as a beverage, and from which a distilled liquor called *vino*, or *aguardiente*, is obtained.

He climbed a coconut-tree near the house and brought in a bamboo joint full of *tuba*, delicious as cider just beginning to turn sharp, which, after putting across the top some leaves to strain it, he offered us with the manner of a Spanish caballero.
W. E. Safford, in Amer. Anthropologist, 1902, p. 728.

2. In the peninsula of Malacca and the Malay Archipelago, a name applied to a number of fish-intoxicants, especially to *Deguelia elliptica*, and in the Philippine Islands to *Croton Tiglium*, *Jatropha Curcas*, and *Cocculus Cocculus*, used for the same purpose.

tubboe (tub′ō), *n.* [Prob. of African origin.] Frambœsia or yaws.

tub-butter (tub′but″ėr), *n.* Butter packed in tubs.

tube, *n.* 9. A city subway in the form of a tunnel. [Eng.]

Of *tube* railways with electric traction there are three now working in London, two between the City and the south side of the River Thames, using the ordinary two wire 500 volts continuous current system, and another (the Central London) extending from the City to Shepherd's Bush, using the composite system. This railway conveyed during the year 1902 no fewer than 45 million passengers. There are eight other *tube* railways now in course of construction in London. The recent terrible catastrophe in Paris must serve as a warning in the future equipment of such lines where currents at high tension are employed, and where short-circuiting may bring about disastrous results.
Nature, Sept. 24, 1903, p. 508.

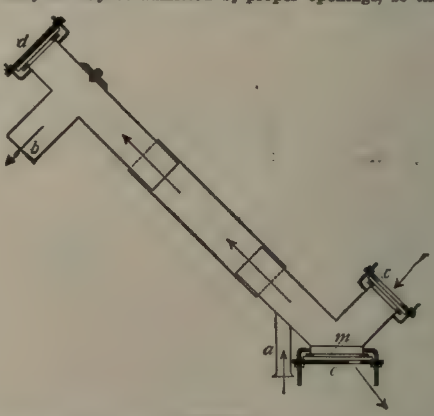
Acoustic tubes. See ★*acoustic*.—**Bourdon tube**, a coiled, elastic metallic tube which tends to straighten out when pressure is applied within it. The straightening in an elastic tube being proportional to the internal pressure, such a tube can be used for a pressure-gage, the motion of a free end being registered on a dial.

The Richard thermograph, with Teisserenc de Bort's insulating device, should be used, and the Hergesell instrument having a tube of German silver, instead of the *Bourdon tube* filled with alcohol, was also recommended on account of its sensitiveness and durability.
Nature, Dec. 11, 1902, p. 140.

Braun tube, a vacuum-tube designed for the investigation of cathode rays. The rays which proceed from the cathode sealed into one end must pass through an annular anode and a perforated screen before reaching the glass at the other end of the tube. A phosphorescent screen is sometimes placed within the tube to receive the rays. As the path of the rays is made quite long, the effect of static electricity or of a magnet on the rays may be readily studied.

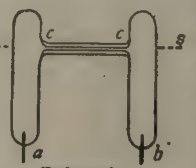
In the course of the experiments, however, it appeared that better results could be obtained by means of the *Braun tube*, and after making simultaneous determinations by the two methods the heat measurements were for the time being discontinued.
Physical Rev., May, 1904, p. 322.

Calcium-chlorid tube, a glass vessel, of varying shape, filled with porous calcium chlorid, an absorbent of watery vapor. The increase in weight shows the water absorbed. It is also used for drying gases. Modifications in form carry the names of the inventors, as Peligot, Schmitz, Wolf, etc.—**Color-tube**, a tube into which vapor and dusty air may be admitted by proper openings, so that one may study the colors of cloudy condensation; specifically, the color-tube devised by Carl Barus. *C. Barus*, U. S. Weather Bur., Bulletin 12, pp. 31–33.—**Conning-tower tube.** See ★*conning-tower*.—**Coronoidal tube.** See ★*coronoidal*.—**Critical tube**, a Röntgen-ray (Crookes) tube of moderately low vacuum which differentiates clearly between substances of unequal density.—**Crookes tubes.** See *vacuum-tube*.—**Desiccating tube.** See ★*desiccate*, *v. t.*—**End-on tube**, a vacuum-tube, for spectrum work, in which the glowing gases throughout the entire length of the capillary tube traversed by the electric discharge are brought into the field of the spectroscope. The discharge between the terminals (*a*, *b*) passes through the capillary tube (*cc*), and the line of sight (*ss*) is along the axis of the latter.—**Esmarch tube.** See *roll* ★*culture*.—**Faraday's tubes**, thick-walled tubes of well annealed glass, carefully sealed by fusion, as used by Faraday in his early experiments in the liquefaction of gases.—**Fractionating tube**, in *chem.*, a tube to be attached to a flask, which is designed to facilitate fractional distillation.—**Glinsky tube**, a glass tube having a number of bulbs blown upon it, each with a glass bead which serves as a valve between the successive bulbs, for use in the fractional distillation of liquids in the chemical laboratory.—**Hard tube**, in *elect.*, a Röntgen tube the vacuum of which is relatively high, so that the X-rays emanating from it possess great penetrating power.—**Hempel's palladium tube**, a glass tube of U shape containing either finely divided palladium, palladium sponge, or asbestos coated with pal-

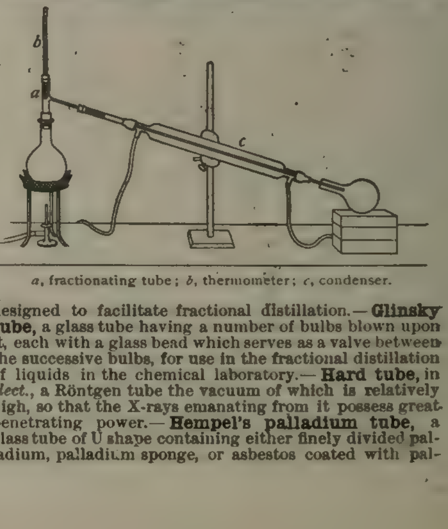


Color-tube.

Steam enters small tube *a* and passes out at *b*; the observer looks through clear plate of glass, *c*, at light coming through ground-glass plate *d*; a mirror is placed at *e* and a thin plate of water is parallel to the mirror at *m* to prevent clouding of the mirror. (After C. Barus, U. S. Weather Bureau.)

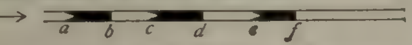


End-on tube.



a, fractionating tube; *b*, thermometer; *c*, condenser.

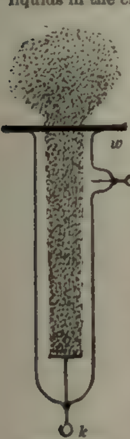
ladium. It is used in gas-analysis for the absorption of hydrogen. It also causes a mixture of oxygen and hydrogen gases passed over it to unite slowly — **Intertentacular tube.** Same as *intertentacular organ of Farre* (which see, under *intertentacular*).—**Jamin's tube,** a capillary tube containing a large number of detached drops of liquid. Since each drop transmits a smaller pressure than it receives, an enormous difference of pressure can exist between the ends of the tube without any appreciable movement of the drops along the tube.



Jamin's Tube.

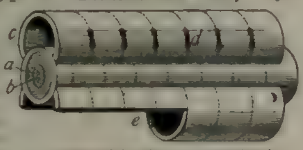
ab, *cd*, and *ef* are three consecutive drops along the tube; owing to the different curvatures of *ab* at *a* and *b*, the pressure in the air at *a* is greater than at *b*; the same is true of all other drops in the tube.

—**Lebel and Henninger tube,** a glass tube with a number of bulbs blown upon it, each containing a little basket of platinum-wire gauze, which serves to delay the passage of vapor: for use in the fractional distillation of liquids in the chemical laboratory.—**Lenard tube,** a special form of vacuum-tube, so constructed as to permit cathode rays generated within to pass through an aluminium diaphragm into the outer air. This form of tube was devised by Professor Philip Lenard for the study of the transmission of cathode rays by air at atmospheric pressure. It consists of a glass tube with a cathode (*k*) at one end and the other end closed by a sheet of aluminium (*w*), through which some of the rays pass out into the air. See *obscure* ★*rays*.—**Mercury-tube.** (*a*) A vacuum-tube which contains vapor of mercury and gives the spectrum of that metal when traversed by an electric discharge. (*b*) A glass tube which contains mercury *in vacuo* and emits a flash of light when shaken.—**Miescher's tube,** the earliest stage of a sarcosporidian parasite, *Sarcocystis*, found within the substance of a muscle fiber in the form of an elongated body.—**Morris tube,** a small-bore rifle-barrel capable of being inserted in a large-bore rifle or shot-gun for shooting practice: patented in 1881: named for its inventor, Richard Morris. *N. E. D.*—**O'Dwyer's tube,** a tube employed in intubation of the larynx.—**Palladium tube,** a glass tube which contains finely divided metallic palladium, used for the absorption of hydrogen in the volumetric analysis of gaseous mixtures.—**Peligot tube,** a glass tube having bulbs blown in its course and usually bent to a U: used in analytical work for the absorption of various elementary groups, as water, carbon dioxid, etc. *Amer. Chem. Jour.*, March, 1906, p. 232.



Lenard tube.

—**Perichordal tube,** a layer of cells which in craniote vertebrates incloses the chorda or notochord in the form of a tube, which sometimes, as in sharks, becomes cartilaginous. The perichordal tube in the higher vertebrates is replaced by the vertebral centra, which encroach on and all but completely obliterate the chorda.

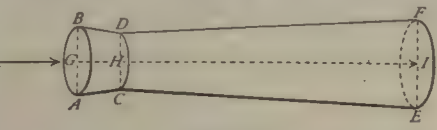


a, perichordal tube; *b*, notochord; *c*, neural tube; *d*, intervertebral foramen; *e*, hemal tube. Dotted lines indicate segmentation into vertebræ.
(From Parker and Haswell's "Zoology.")

—**Phosphorescent tube,** a glass tube containing mercury but exhausted of air. When shaken a phosphorescent glow fills the tube, due to frictional electricity. It is very old, being mentioned by Boerhaave.—**Pine-leaf tube-builder.** See ★*pine*1.—**Plücker tube.** (*a*) In spectrum analysis, a vacuum-tube with capillary bore. (*b*) A form of Geissler tube designed to exhibit certain phenomena of the electric discharge through high vacua.

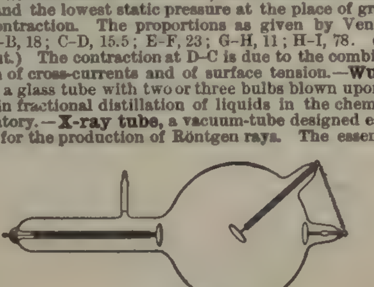
Plücker Tube.

—**Polarization tube,** a tube, usually of glass, of accurately determined length, closed at the ends by flat glass plates of uniform thickness, and having a small connecting tube at the side, through which can be introduced any liquid to be examined as to its rotatory-effect upon the plane of polarization of light. —**Puluj tube,** in *phys.*, a vacuum-tube of the same order as the Geissler and Crookes tubes, used for experiments upon radiant electrode-materials. Like the Geissler tube, the Puluj tube is often used in physiological and psychological experiments in which momentary light-stimulus is required.—**Reflex zenith-tube.** See *reflex*. It consists of a vertical tube permanently fixed, carrying at the upper end a large object-glass and at the lower a basin of mercury. The image of the star, after reflection, is formed at the upper surface of the object-glass (which is perforated in some instruments) upon the reticule wires, which are firmly attached to the lens. A small diagonal prism enables the observer to see them through an eyepiece at one side of the tube.—**Röntgen tube,** a vacuum-tube for the production of X-rays; an X-ray ★tube.—**Schroetter's tubes,** hollow tubes of graduated sizes, used for dilatation of the larynx in cases of adhesion of the vocal cords.—**Segmental tube.** Same as *nephridium*.—**Simple tube,** in musical instruments, a tube or pipe without valves or crooks.—**Soft tube,** in *radiography*, an X-ray tube with low vacuum and emitting in consequence rays of low penetrating power.—**Southey's tubes,** small hollow needles which are thrust into dropsical tissues and left there to drain away the fluid.—**Soxhlet tube,** a Soxhlet extractor made of glass and on a small scale, for laboratory use. **Sprengel tube.** Same as *Sprengel* ★*pipette*.—**Tube of flow,** in *phys.*, an imaginary tubular surface in any field of force made up of a series of stream-lines drawn through each point in a closed curve. The flux through the walls of a tube of force is zero, and the flux through the tube is therefore everywhere the same. A tube through which the flux is unity is called a *unit tube*. Tubes of force (of an electric or magnetic field) are special kinds of tubes of flow.—**Tube of force.** See ★*tube of flow*.—**Tube of induction.** See ★*induction*.—**Twopenny tube,** a subway railway in which the ordinary fare is twopence; specifically, the Central London Railway (underground). The name is said to have been first applied to it in a journal called the Londoner, June 30, 1900. *N. and Q.*, 9th ser., VII. 375. [Colloq., London.]—**Unit tube of force, flux,** or **induction.** See ★*tube of flow*.—**Vector tube,** one of a system of imaginary tubes by means of which the distribution of a vector in space is described. The vector tubes are considered as fitted together so as to entirely fill the space, and as having for the generating lines of their surfaces the vector lines.—**Ventral tube,** a curious ventral organ in the *Collembola* whose function is not understood. It may be a simple papilla on the venter of the first abdominal segment, or it may be a double organ protecting two long delicate tubes capable of protrusion.—**Venturi tube,** a tube whose internal dimensions correspond to the outer surface of a jet of water issuing horizontally under considerable pressure from the thin vertical wall of a reservoir; the tube that gives the maximum rate of flow, the maximum contraction, and the lowest static pressure at the place of greatest contraction. The proportions as given by Venturi are A–B, 18; C–D, 15.5; E–F, 23; G–H, 11; H–I, 78. (See the cut.) The contraction at D–C is due to the combined action of cross-currents and of surface tension.



Venturi Tube.

—**Wurtz tube,** a glass tube with two or three bulbs blown upon it, used in fractional distillation of liquids in the chemical laboratory.—**X-ray tube,** a vacuum-tube designed especially for the production of Röntgen rays. The essential features of X-ray tubes consist of a concave cathode which concentrates the cathode stream upon the face of a metallic target consisting usually of a sheet of platinum mounted in the center of a nearly spherical bulb of glass. The target sometimes serves likewise as the anode of the tube. The target when bombarded by the cathode stream becomes a source of X-rays, and these pass out through the walls of the tube in a divergent beam into the outer air. To prevent undue heating under the action of the cathode rays the target is frequently made of massive metal faced with a layer of platinum. The pressure in all vacuum-tubes in which cathode rays are generated gradually decreases during operation until the resistance becomes too great to permit of the passage of the current. To counteract this tendency various devices for the control of the vacuum are employed.



X-ray or Röntgen Tube.

tube-case (tūb'kās), *n.* A box or chamber which contains tubes, or to which tubes are connected or attached; specifically, in the surface-condenser of a steam-engine, the chamber or part of the condenser into which the tubes which form the cooling or condensing surface are all fastened air-tight, and into which the circulating water is passed by the pump in order that it may thence flow through the tubes. *D. K. Clark*, Steam Engine, IV. 683.

tube-condenser (tūb'kọn-den″sėr), *n.* A condenser in which the cooling surface is made up of tubes, either cylindrical or prismatic. Cooling may be by water or by air. The cooling medium more frequently passes within the bore of the tube and the material to be cooled over the external surface. *D. K. Clark*, Steam Engine, I. 641.

tube-drawing (tūb'drâ-ing), *n.* **1.** The manufacture of tubes from a solid ingot by drawing out the metal over a mandrel and without a longitudinal seam or joint. A central hole is drilled in the solid ingot, or is made in the casting by a core; the ingot is then rolled to reduce its thickness and give desired length; and, finally, the tube is finished to size and gage by drawing the metal through a plate. **2.** The manufacture of tubes by forcing a semifluid material through a die, with a mandrel or triblet in place to form the bore.—**3.** The removal of the tubes from a multitubular boiler for inspection and renewal. [Eng.]

tube-former (tūb'fôr″mėr), *n.* A forming-machine using small and often tapering rolls for making speaking-tubes, small cones, and other small pipes. See *forming-machine*.

tube-funnel (tūb'fun″el), *n.* Same as ★*funnel-tube*.

tube-furnace (tūb'fėr″nạs), *n.* See *electric* ★*furnace*.

tube-ignition (tūb'ig-nish″ọn), *n.* A method of igniting the combustible mixture of fuel and air in the cylinder of an internal-combustion motor, by which the mixture was allowed to enter by a timing-valve into a tube which communicated with the combustion- or compression-chamber. This tube was kept hot by an external flame and was able to raise the mixture within it to the temperature of ignition. The flame resulting from such local ignition was at once propagated through the entire mass, and the expansion of volume and increase of pressure caused the working stroke. The point or time of ignition can not be varied over wide limits by this system, and with lean mixtures it was not always reliable. The convenience of ignition by an electric spark has caused this latter system to predominate. *F. R. Hutton*, Gas Engine, p. 250.

tube-mill (tūb'mil), *n.* **1.** A building or plant where tubes are manufactured.—**2.** (*a*) A rolling-mill for rolling tubes, as by the Mannesmann process, which produces a tube with the fibers running in a helix so as to withstand internal pressures. (*b*) A grinding- or pulverizing-mill used for pulverizing cement clinker. It consists of a revolving tube in which is placed the material to be ground, together with a quantity of pebbles. As the tube turns, the action is very similar to the grinding of pebbles on a beach.

tuberaceous (tū-bẹ-rā'shius), *a.* [NL. *Tuberace(æ)* + *-ous*.] Belonging or pertaining to the *Tuberaceæ*.

tube-railway (tūb'rāl″wā), *n.* See ★*railway*.

Tuberales (tū-bẹ-rā'lēz), *n. pl.* [NL., < *Tuber* (see *Tuber*, 2) + *-ales*.] An order of tuber-like, subterranean ascomycetous fungi named from the genus *Tuber* and commonly known as 'truffles.' Written *Tuberineæ* by E. Fischer.

tubercle, *n.*—**Chassaignac's tubercle.** Same as *carotid tubercle* (which see, under *carotid*).—**Dorsal tubercle,** the tubercle formed in the pharynx of ascidians by the folding of the terminal dilatation of the duct which leads from the subneural gland to the cavity of the pharynx.—**Hippocampal tubercle,** an expansion of the hippocampus at its lower extremity, separating the fascia dentata from the fimbria. *Trans. Linn. Soc.*, Zool., Feb., 1903, p. 331.—**Marginal tubercle,** in medusoids, one of the slight prominences on the body-wall, frequently containing a prolongation of the cœlenteron, and often pigmented and provided with cnidoblasts.—**Mucous tubercle.** Same as *condyloma*.—**Nuchal tubercle,** the prominence formed by the spinous process of the vertebra prominens, or seventh cervical vertebra, in man.—**Nuptial tubercle,** horny tubercles developed on the head of the males of many cyprinoid fishes during breeding-time.

> Snout rounded, strongly projecting beyond the mouth, with numerous *nuptial tubercles*.
> *Proc. Zool. Soc. London*, 1903, p. 23.

Rabic tubercles, circumscribed collections of round cells around the nerve-cells, occurring in rabies.

> To these pericellular and perivascular focal accumulations of small round cells, more especially to the former, Babes has given the name of "*rabic tubercles*" or nodules, and he considers that these are so characteristic of rabies that, when due attention is given to their intensity and distribution, they can serve as a diagnostic criterion of the disease.
> *Jour. Exper. Med.*, Oct. 1, 1901, p. 582.

Root tubercle. See ★*root-tubercle*.—**Tubercle bacillus.** See ★*bacillus*.—**Tubercles of Montgomery,** elevations in the areola surrounding the nipple, marking the site of glands secreting a sebaceous material.

tuberculariaceous (tū-bėr-kū-lā-ri-ā'shius), *a.* Belonging or pertaining to the *Tuberculariaceæ*, a family of fungi.

tubercularization (tụ-bėr″kụ-lär-i-zā'shọn), *n.* Same as *tuberculization*.

tuberculide (tụ-bėr'kụ-lid), *n.* [L. *tuberculum*, tubercle, + *-ide*.] Any skin-lesion of tuberculosis.

> Is Lupus Erythematoides a *Tuberculide?*— A. Gunselt negatives this question and reports a case of disseminated lupus erythematoides in which, upon autopsy, no tuberculous lesions were found to be present anywhere in the body. *Med. Record*, March 28, 1903, p. 511.

Tuberculin test. When tuberculin is injected into a non-tuberculous subject no unusual symptoms develop. In tuberculous persons (or animals), however, a distinct elevation of temperature occurs within the twenty-four hours following the inoculation. This reaction is specific and serves as one of the most valuable methods of diagnosing the disease. The test is extensively utilized in the examination of cattle.

> The *tuberculin test* came into existence through the most careful and thorough scientific experimentation. In practice it is applied by first taking the temperature of the animal to be tested, at intervals of about two hours, a sufficient number of times to establish the normal temperature of the body under the ordinary conditions of life. The proper dose of tuberculin is then injected under the skin with a hypodermic syringe. The injection is generally made late in the evening, and the temperature is taken every two hours the following day, beginning early in the morning and continuing until

late in the evening, if the fullest information is desired. From average temperatures calculated by de Schweinitz in 1896 of about 1,600 tests of tuberculous cows, it appears that in general the rise of temperature begins from five and one-half to six hours after the tuberculin is injected, reaches its greatest height from the sixteenth to the twentieth hour, and then gradually declines, reaching the normal again by the twenty-eighth hour.
Yearbook U. S. Dept. Agr., 1901, p. 582.

tuberculinic (tụ-bėr-kụ-lin′ik), *a.* [*tuberculin* + *-ic.*] Noting an acid substance extracted from tubercle bacilli, which is regarded as a nucleinic acid.

tuberculitis (tụ-bėr-kụ-lī′tis), *n.* [NL., < L. *tuberculum*, tubercle, + *-itis.*] Inflammation of tubercles.

tuberculocide (tụ-bėr′kụ-lọ-sīd), *n.* [L. *tuberculum*, tubercle, + *-cida*, < *cædere*, kill.] Anything destructive to the tubercle bacillus. *Buck*, Med. Handbook, I. 461.

tuberculocidin (tụ-bėr″kụ-lọ-sī′din), *n.* [*tuberculocide* + *-in*^{2}.] An albumose obtained from tuberculin and used in the same manner as the latter: supposedly the active principle of tuberculin.

tuberculoderma (tụ-bėr″kụ-lọ-dėr′mạ̈), *n.* [L. *tuberculum*, tubercle, + Gr. δέρμα, skin.] Tuberculosis of the skin.

tuberculoma (tụ-bėr-kụ-lō′mạ̈), *n.*; pl. *tuberculomata* (-mạ-tạ̈). [NL., < L. *tuberculum*, tubercle, + *-oma.*] Any tumor caused by the presence of the tubercle bacillus, or an abscess of tuberculous origin.

tuberculome (tụ-bėr′kụ-lōm), *n.* Same as ⋆*tuberculoma*.

> If the tuberculous abscess or *tuberculome* is not too large, a cure may be effected by a simple washing with an antiseptic liquid containing iodoform, creosote, ether and olive oil. *Nature*, March 5, 1903, p. 431.

tuberculo-opsonic (tụ-bėr″kụ-lō-op-son′ik), *a.* Referring to the opsonin of the tubercle bacillus.

> In two cases the diagnosis was doubtful; in one of these the *tuberculo-opsonic* index was from normal to 0.7 below normal. *Med. Record*, Dec. 14, 1907, p. 987.

tuberculophobia (tụ-bėr″kụ-lọ-fō′bi-ạ̈), *n.* [NL., < *tuberculo(sis)* + Gr. -φοβια, < φοβεῖν, fear.] A morbid dread of tuberculosis. [Rare.]

> As Professor Brouardel observed in his address before the Tuberculosis Congress in London, "*tuberculophobia* must not be produced, the patient must not be made a pariah." *Lancet*, July 11, 1903, p. 76.

tuberculoplasmin (tụ-bėr″kụ-lọ-plas′min), *n.* [L. *tuberculum*, tubercle, + E. *plasm* + *-in*^{2}.] The protoplasm of tubercle bacilli, obtained by crushing a mass of bacilli mixed with sand. *Buck*, Med. Handbook, I. 692.

tuberculosamine (tụ-bėr″kụ-lọ-sam′in), *n.* [*tuberculos(is)* + *amine.*] A substance obtained from tubercle bacilli, which is possibly a protamine.

tuberculosectorial (tụ-bėr″kụ-lọ-sek-tō′ri-al), *a.* [L. *tuberculum* + E. *sectorial.*] Noting a type of molar characteristic of many of the existing *Carnivora*, the *Insectivora*, and the carnivorous marsupials, as well as many fossil forms, in which the constituent cusps of the crowns of the molar teeth are high, more or less conical, and trenchant.

> The quinquetubercular, or *tuberculosectorial* type of inferior molars is equally widely spread.
> *Proc. Zool. Soc. London.*, 1893, p. 197.

tuberculosis, *n.* It is a specific infectious disease, usually chronic in course. Any organ or tissue of the body may be the seat of the disease, but in the adult the lungs are the most frequently attacked. This form (pulmonary tuberculosis or consumption) is marked by emaciation, cough and expectoration, fever of a hectic character, rapid pulse, night sweats, and sometimes the expectoration of blood. The larynx may also be involved, in which case hoarseness or loss of voice and pain on swallowing are added symptoms. In children tuberculosis frequently invades the lymphatic glands of the neck, the spine (constituting Pott's disease), or one or more of the joints, especially the hip or the knee. This form, being often amenable to treatment by mechanical or operative measures, is called *surgical tuberculosis*. Tuberculosis of the skin is known as *lupus*. In the treatment of pulmonary and other forms of tuberculosis, the main reliance is upon fresh air, the patient passing the greater part of the day in the open air and sleeping at night by an open window or actually out of doors, sheltered from rain or snow by an awning. A dry but dustless climate at an elevation of 1000 to 3000 feet is beneficial, but is not essential. Rest is an important factor in the treatment, especially when fever is present. The food should be of the most nourishing character, consisting largely of eggs and milk, and it is important that the diet should include a large amount of fat. To avoid the dissemination of infection, the sputum (which usually contains large numbers of the tubercle bacilli) should be received in a pasteboard box or paper napkin and immediately burned. Care should be taken also, when coughing, to hold a paper napkin before the mouth to catch the droplets of moisture which almost always contain the bacilli of the disease. The acute form of the disease is called *miliary tuberculosis*, which see, under *tuberculosis*. —**Acute cestode tuberculosis.** See ⋆*beef-measles.*—**Basal tuberculosis,** tuberculosis involving the lower portion of the affected lung.—**Lymphoid tuberculosis,** a form of tuberculous infection in which the microscope reveals an embryonal cell-infiltration in lieu of the ordinary histological appearances.

> The typical histological features of tubercle tissue are often absent; in lieu thereof there may exist a diffuse embryonal cell infiltration, at times capable of simulating sarcoma (Pilliet); Courtillier applies the name "*lymphoid tuberculosis*" to the same condition.
> *Jour. Exper. Med.*, Nov. 29, 1901, p. 44.

Olive tuberculosis, a disease of the olive in which knots or galls of various sizes are formed on the twigs. It is attributed to *Bacillus Oleæ.*—**Surgical tuberculosis,** tuberculosis of the bones, joints, or other parts accessible to the knife of the surgeon.—**Tuberculosis cutis,** tuberculous disease of the skin, such as lupus vulgaris.—**Tuberculosis verrucosa cutis,** a skin-disease marked by wart-like growths and pustules on brownish patches of varying size.

tuberculotropic (tụ-bėr″kụ-lọ-trop′ik), *a.* [L. *tuberculum*, tubercle, + Gr. -τροπος, < τρέπειν, turn.] Having the property of turning toward and entering into chemical combination with the tubercle bacillus.

Tuberculum acusticum. Same as *acoustic tubercle* (which see, under *acoustic*).—**Tuberculum impar,** a slight prominence, the rudiment of the tongue, in the middle line of the pharynx in the embryo. See cut under ⋆*furcula.*—**Tuberculum Loweri,** a small tubercle occasionally found in the right auricle of the heart between the upper and the lower venæ cavæ.—**Tuberculum posterius,** the greater tuberosity of the humerus. See cut under *humerus.*—**Tuberculum retrolobulare of His,** a small projection or tubercle on the lower and back part of the external ear.—**Tuberculum supratragicum,** a slight prominence occasionally observed in the external ear just above the tragus.

tuberin (tū′bėr-in), *n.* [*tuber* + *-in*^{2}.] A globulin found in potatoes.

> The Connecticut State Agricultural Experiment Station has made a special study of the proteids of potatoes as well as of many other vegetable products. According to these investigations, the potato contains two proteids, a globulin, to which the name "*tuberin*" is given, and a proteose, the latter occurring only in very small amounts.
> *Yearbook U. S. Dept. Agr.*, 1900, p. 340.

tuberosity, *n.*—**Malar tuberosity,** the prominence of the malar bone.

tube-stay (tūb′stā), *n.* See ⋆*stay-tube.*

tube-union (tūb′ū″nyọn), *n.* The union or threaded metal collar used to connect the tube of a microscope or telescope with the eyepiece or object-lens.

tube-well, *n.*—**Abyssinian tube-well,** a driven pipe-well: so called in England because used in the Abyssinian campaign.

tube-wheel (tūb′hwēl), *n.* The plate, or wheel, that carries the sliver-tube of the coiler of a cotton-combing machine. *Thornley*, Cotton Combing Machines, p. 246.

tube-works (tūb′wėrks), *n.* A factory where tubes or pipes are made.

Tubicola (tụ-bik′ọ-lạ̈), *n. pl.* [NL., < L. *tubus*, tube, + *colere*, inhabit.] In *paleon.*, a group of indeterminate value comprising all the fossil tube-dwelling worms found in geological formations. These fossil worm-tubes are variously shaped, straight, curved, spirally coiled, and turreted, and are made up of cemented sand or mud particles or of membranous, leathery, or calcareous matter secreted by the worms. They are found in rocks of all ages, and the best known among them are included in the genera *Serpula*, *Terebellum*, *Spirorbis*, *Autodetus*, *Conchiolites*, and *Cornulites*.

tubigan (tö-bē′gan), *n.* [Tagalog, < *túbig*, water.] In the Philippine Islands, irrigated land.

tubinarine (tū-bi-nā′rin), *a.* Same as *tubinarial*.

tubing, *n.* 3. Specifically, a thin steel pipe or tube used to line the bore of a deep well for water, gas, or air to prevent the bore from getting out of line or caving in, and to keep water and other foreign matter from getting into the well from the sides of the hole. It is thinner in gage than boiler-tube or pipe.

tub-race (tub′rās), *n.* A race in which the contestants use tubs in the place of boats.

> The *tub race* evoked much laughter and amusement, there being about a dozen contestants who spared no effort to win, but victory was easy for Lewis Bonds, with W. Bowser a good second.
> *N. Y. Herald*, Aug. 15, 1903.

Tubular cancer. Same as *cylindroma*.

tubulate, *v. t.*—**Tubulated crucible.** See ⋆*crucible.*

tubule, *n.*—**Convoluted tubule,** one of the minute uriniferous tubules of the kidney.—**Miescher's tubules.** Same as *Miescher's* ⋆*tubes.*—**Respiratory tubule,** one of the breathing-tubes of an air-breathing, aquatic, dipterous larva or pupa. Each tube has at its tip a spiracle which enables the insect to breathe when the tube is thrust through the surface-film of the water in which it lives.

tubulosaccular (tū″bụ-lọ-sak′ụ-lạ̈r), *a.* [L. *tubulus*, tubule, + *sacculus*, a sack, + *-ar*^{3}.] Both tubular and saccular. *Buck*, Med. Handbook, VII. 10.

tubulostriate (tū″bụ-lọ-strī′āt), *a.* Having the surface striated with hollow ribs, as on some brachiopod and molluscan shells.

Tubulous boiler. Same as *water-tube boiler* (which see, under *water-tube*).

tubulus, *n.* 4. Same as *tubulure.*

> 100 c.c. of the liquid are introduced into a 200 c.c. flask, connected with a Liebig's condenser, the lower end of which communicates by an air-tight joint with a small tubulated receiver, from the *tubulus* of which a tube, bent twice at right angles, is in air-tight communication with one limb of a bulbed U-tube.
> *Buck*, Med. Handbook, IV. 784.

tuch, *v.* and *n.* A simplified spelling of *touch*.

tuchy, *a.* A simplified spelling of *touchy*.

tuck^1, *n.* 10. Same as ⋆*tang*^{6}.

tuckahoe, *n.* 3. [*cap.*] An inhabitant of lower Virginia.—4. The poor land in lower Virginia. *Bartlett*, Dict. Americanisms.

tucker^2, *n.*—**Best bib and tucker.** See ⋆*bib*2.

tuckernuck (tuk-ėr-nuk′), *n.* [Appar., like *Tuckernuck*, an island off Nantucket, of Amerindian origin. Cf. ⋆*squantum*, a picnic, etc.] In some parts of southeastern Massachusetts, a picnic. *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 264.

Tucker porcelain. See *American* ⋆*porcelain.*

Tucker's system of circles. See ⋆*circle.*

tuck-plate (tuk′plāt), *n.* In *iron ship-building*, a sharply curved plate of the outside plating at the junction of the stern-post with the transom frame under the counter. Also called *oxter-plate*.

tuck-rail (tuk′rāl), *n.* In *ship-building*, the rail which is wrought well with the upper side of the wing transom, and which forms a rabbet for calking the butt-ends of the bottom planks.

tuf, tufen. Amended spellings of *tough*, *toughen*.

tuffaceous (tu-fā′shius), *a.* [*tuff* + *-aceous.*] In *petrog.*, having the properties of or composed of volcanic tuff: to be distinguished from *tufaceous*.

tuffeau (tu-fō′), *n.* [F. *tuffeau*, *tufeau*, tuff or tufa, < *tuf*, tuff.] In *petrog.*, a name employed in France and Belgium for a fine-grained argillaceous sandstone, frequently calcareous, colored green or gray by glauconite. Sometimes applied to a friable granular chalky limestone. *Geikie*, Text-book of Geol., p. 166.

tuff-lava (tuf′lä″vạ̈), *n.* [*tuff*^{3} + *lava.*] Same as ⋆*taxite.*

tuft^2, *n.*—**Ungual tuft,** a tuft of hairs beside the claw of a spider. *Proc. Zool. Soc. London*, 1897, p. 725.

tufting-needle (tuf′ting-nē″dl), *n.* A needle for passing a thread in a mattress or pillow which it is desired to tuft. The thread is drawn taut after being passed and so raises the tuft. See cut under *needle*.

tug-chain (tug′chān), *n.* In a harness for a horse, a short piece of chain at the end of the tug: sometimes the whole tug, when made of chain; sometimes it also serves to carry a coiled spring to relieve the sudden strain of starting; a trace-chain. See *tug*, 5.

tuladi (tö-lä-dē′), *n.* [Canadian F. *touladi*, *touradi*, from a Montagnais name of the fish (Clapin). The word gave name to the river *Touladi* (*Tuladi*), flowing into Lake Temiscouata.] A fish (*Salmo ferox*) found in the waters of eastern and northern Quebec. *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 264.

tulare (tö-lä′rē), *n.* [Sp., < *tule*, tule.] A marsh occupied with tule or reeds. [Western U. S.]

Tularosa formation. See ⋆*formation.*

tule, *n.* 2. More broadly, other marsh plants, such as cattail.

> In others (cienagas), there is added the willow and clumps of *tule* (cat-tail) and other swamp plants.
> *E. W. Hilgard*, in Rep. Agr. Exper. Stations, Univ. [California, 1892-93, p. 185.

Tule land, marshland originally covered with tule, now extensively reclaimed and put in wheat. [California.]

tulip, *n.*—**Native tulip**, in Australia, same as *waratah*, 1.—**Tulip ware.** See *American* ★*pottery* (*b*).

tulipine (tū′lip-in), *n.* [*Tulipa* (see def.) + *-ine*^{2}.] An alkaloid of uncertain composition contained in *Tulipa Gesneriana.* It acts energetically on the nervous system, increases the salivary flow, and is an aperient and diuretic.

tulip-poppy (tū′lip-pop″i), *n.* See ★*Hunnemannia.*

tulip-wood, *n.* 2. (*d*) In Australia, a tree of the elm family, *Homoiceltis Philippinensis* (*Aphananthe Philippinensis* of Planchon).

tulisan (tö-lē-sän′), *n.* [Tagalog.] In the Philippine Islands, a robber or outlaw.

tullidora (töl-yē-dō′rā̤), *n.* [Mex. Sp.; Sp. *tullidura*, ‹ *tullir*, emit dung, mute (applied to birds).] Same as ★*tlalcapolin* (which see).

Tulostoma (tū-lọ-stō′mā̤), *n.* [NL. (Persoon, 1797), irreg. ‹ Gr. τύλος, a callus, + στόμα, a mouth. Referring to the thickened opening of the peridium.] A genus of stipitate gasteromycetous fungi having a double peridium with a small apical opening. About 40 species are known, many of which are found in the arid portions of the world. *T. mammosum* is frequently found in sandy soil in Europe, North America, and other parts of the world.

Tulostomaceæ (tū-lọ-stō-mā′sẹ-ē), *n. pl.* [NL., ‹ *Tulostoma* + *-aceæ.*] A family of stipitate gasteromycetous fungi named from the type genus, *Tulostoma.*

tulucana-oil, *n.* See *touloucouna*-★*oil.*

tulucunin (tö-lö-kö′nin), *n.* [*Tulucuna, Touloucouna* (see def.), + *-in*^{2}.] A pale-yellow amorphous compound, $C_{10}H_{14}O_4$, contained in the bark of *Carapa procera* (*Touloucouna*), from Guiana.

tum^3 (tum), *n.* [A corruption of *stomach.*] The stomach. [A child's word.]

tuman, *n.* See *toman.*

tumble-home, *n.* 2. The falling in or curvature inward toward the central plane of the side of a vessel from the water-line upward. Also called *tumbling-home.*

tumbler, *n.* 17. A wheel or drum with revolving paddles, used in tanning hides. *Sadtler*, Handbook of Indust. Chem., p. 329.

tumbler-bearing (tum′blėr-bãr″ing), *n.* A bearing used when traveling cranes are driven by a square shaft. As the crane travels along, it carries a bevel-gear which slides on the square driving-shaft and by means of which power is transmitted to the hoisting apparatus. Since the square driving-shaft is long, it has to be supported at intervals as well as at the ends. For this purpose bearings are used which automatically fall out of the way as the sliding-gear comes to them, and return to position when it has passed. These bearings are so named because of their falling or tumbling out of the way.

tumble-rose (tum′bl-rōz), *n.* A common name of *Scarus cæruleus*, one of the parrot-fishes found on the southern Atlantic coast of the United States and southward to Brazil.

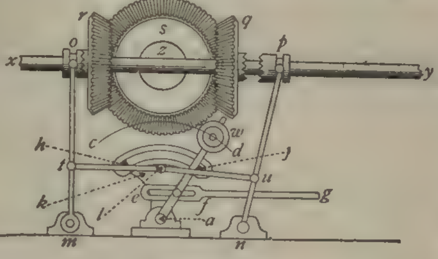
tumbling-mill (tum′bling-mil), *n.* In foundry practice, a rumble, tumbling-box or -barrel, or battery of tumbling-barrels.

tumbling-room (tum′bling-röm), *n.* In *founding*, a room in which castings are cleaned by being tumbled in a tumbling-barrel. *Trans. Amer. Inst. Elect. Engin.*, 1901, p. 562.

tumbling-shaft, *n.* 2. The transverse shaft in a Stephenson reversing link-motion from arms on which the link proper is suspended or controlled in position. When the engine is horizontal, the arms have a rocking or tumbling motion through the necessary angle to move the link from the position for full forward gear to full gear backward. In many large engines the tumbling-shaft is actuated by power; in smaller engines it is rocked by a hand-lever, or, in French practice, by a screw-gear and nut. *Thurston*, Manual of Steam-Engine, II. 356.

tumbling-star (tum′bling-stär″), *n.* A six-pointed iron casting used in a tumbling-barrel to keep the abradant or cleansing-material stirred up and intimately mixed with the things to be cleansed or polished.

tumbling-weight (tum′bling-wāt″), *n.* A mechanical device by which a movement is stopped or reversed by a part of the apparatus which is driven. As the moving part advances, it engages with a throw-out motion, tending to disconnect it from the driving force. In the motion of the driven part it comes to a point at which the throw-out motion has partly released it from the driving force, and the latter is unable to move it all the way so as to throw the driving force out of gear entirely, or to effect the further motion necessary to cause a reversal. With the tumbling-weight principle, the motion of the driven body moves a lever carrying the necessary weight, so that the latter is lifted to and past a central neutral position. It then falls or tumbles on the other side of this central position, and in its fall completes the required throw-out or reversing adjustment, and connects the driven body to the power for the reverse motion, or throws it out of gear entirely, as may be required. The tumbling-weight is used in slow-moving hydraulic machinery without fly-wheel control, in old forms of planers, some forms of textile machinery, and the like. *Nature*, Nov. 19, 1903, p. 68.



Tumbling-weight.

w, tumbling-weight, secured to a pivoted lever centered at *a* and free to rock between stops through the arc *cd*; *efg*, the rod which causes the weight-lever, *aw*, to rock through half of the arc *cd* by alternate push and pull of the ends of the slot *ef*. When the machine actuating *efg* has carried the weighted lever to the central position and a little past it, the weight is free to fall or tumble the rest of the way without effort from *efg*. In falling or tumbling, a stop or pin fitting the curved slot *hj* engages with the pivoted lever *k* by such slot and is carried to right or left by the tumble of the weight *w*. *k* is linked by a pin at *l* to two levers, *mo* and *np*, which throw the jaw or other clutch at *o* and *p* into gear with the complement of such half-clutch, forming part of the hubs of wheels *q* and *r* in gear with *s*. The release and engagement take place necessarily in succession, and with only the time between required for the tumble of the weight *w* and the actuating of the slot *hj*. The link *efg* can be actuated by the mechanism driving or driven by the shaft *xy*, if the wheel *s* or the shaft *x* is the driver and is turning constantly in one direction; and there will be no possibility of the clutches standing in the relation of one out and the other not yet in, unless the tumbling-lever is held from falling by an exterior action, or is intentionally placed in central position and latched there, if *w* is large enough to do the work allotted to it.

tumbo^1 (tụm′bọ̄), *n.* [A native name.] A name given in Peru and Bolivia to the edible fruit of the *Passiflora* or passion-flower.

tumbo^2 (tum′bō), *n.* [Native name in southwestern Africa.] A curious tree of the deserts of southwestern Africa, *Tumboa Bainesii.* See *Welwitschia.*

tumenol (tū′men-ol), *n.* [(*bi*)*tumen* + *-ol.*] A trade-name of a preparation obtained by the action of sulphuric acid on the unsaturated hydrocarbons of mineral oils. Its use is similar to that of ichthyol.

tumeri (tū′mė-ri), *n.* A Hindu double flute, having the tubes inserted in a gourd which serves as a reservoir for the air.

tumi (tö′mẹ̄), *n.* See ★*topo.*

tummy (tum′i), *n.* Same as ★*tum*^{3}.

tumor, *n.*—**Adenoid tumor.** See *adenoma.*—**Beet-root tumor.** The chytridiose of beet. See ★*chytridiose.*—**Butyroid tumor**, a tumor of the breast, with greasy, butter-like contents.—**Connective-tissue tumor**, any neoplasm belonging histologically to the connective-tissue group, such as fibroma, chondroma, myxoma, osteoma, etc.—**Fatty tumor.** Same as *lipoma.*—**Fibrocellular tumor.** Same as *fibroma.*—**Granulation tumor.** Same as *granuloma.*—**Heterologous tumor**, a growth composed of elements different from those forming the tissue from which the tumor arises.—**Homologous tumor**, a growth composed of the same kind of tissue as that from which it arises.—**Infiltrating tumor**, a new growth not distinctly marked off from the surrounding tissue.—**Mucoid tumor.** Same as *myxoma.*—**Rokitansky's tumor**, a multilocular ovarian cyst.—**Varicose tumor**, a purplish swelling formed by a mass of dilated venous radicles.

tum-tum^2 (tum′tum), *n.* [Chinook jargon.] The heart.

> *Tum-tum* is the heart, and, according to Mr. Hale, is intended to represent its beating, but we have a shrewd suspicion that it is just our own "tummy" [stomach].
> *J. Platt, Jr.*, in N. and Q., 10th ser., III. 107.

tun^3, *n.* An amended spelling of *ton*^{1}.

tuna^1, *n.* 2. The common eel of New Zealand, *Anguilla aucklandii.*

tuna-eel (tö′nä̤-ēl), *n.* See ★*tuna*^{1}, 2.

tund (tund), *v. i.* [Imitative.] To emit a dull, hollow sound. [Rare.]

> Play they did: drums *tunding* and bagpipes skirling as though Fort Carillon . . . would succumb like another Jericho to their clamour.
> *A. T. Quiller-Couch*, Fort Amity, I.

tundra, *n.* 2. A marshy moss-covered plain or rolling district, deeply frozen in winter and thawed at the surface in the summer. Such plains occupy large areas of arctic Asia and North America.

tune, *n.*—**Act tune**, music intended to be performed in a theater between the acts. See *entr'acte*, 2, and *playhouse* ★*tune.*—**Playhouse tune**, a piece of music sung or played between the acts of a drama or play; an intermezzo.

tune, *v. t.* 7. In *elect.*, to bring (two or more electric circuits) into resonance; adjust to syntony; make the natural frequency for electrical oscillations in (one circuit) equal to the frequency in another circuit by adjustments of inductance and capacity.

> The distance between the transmitter and receiver was varied from two meters to twenty meters. No effort was made to "*tune*" the circuits.
> *Elect. World and Engin.*, June 11, 1904, p. 1120.

8. In *psychophys.*, to adjust physiologically to respond in an individual way to determinate intensities of stimulus: said (in the passive) of the pressure, warmth, cold, and pain 'spots' of the skin.

> Emphasize the fact that the [cold] spots are not all equally sensitive, but are '*tuned*' or adjusted to respond to a given stimulation by sensations of varying intensity.
> *E. B. Titchener*, Exper. Psychol., I. ii. 84.

tuned, *a.* 2. In *elect.*, in resonance. See ★*resonance*, 4.

tung, tungd. Simplified, and former, spellings of *tongue, tongued.*

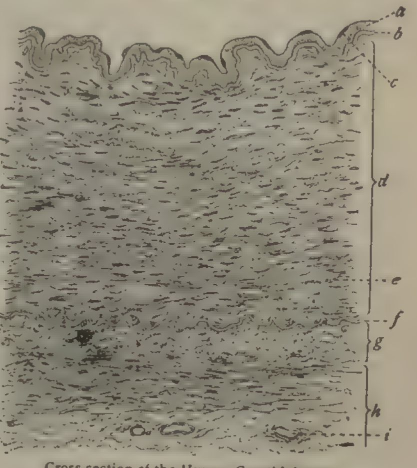
tungsten, *n.* Metallic tungsten has been obtained by means of the electric furnace in a fused state, though not quite compact, and probably not quite pure. It is of rather bright gray color, with metallic luster, specific gravity 18.7, hard, but not sufficiently so to scratch glass, of very high melting-point and softening gradually before fusion, so that it may be welded. It is little acted on by air or water at ordinary temperature, slowly attacked by hydrochloric, hydrofluoric, or sulphuric acid, rapidly by hydrochloric or hydrofluoric acid with addition of nitric acid, and when in powder burns in the air at a red heat.—**Tungsten bronze.** See ★*bronze.*—**Tungsten trioxid**, a bright-yellow powder, obtainable by gradually heating ammonium tungstate in the air until ammonia ceases to be given off. It has a density of 6.34, becomes darker in color on heating, returning to its canary-yellow tint on cooling again, and behaves as an acid oxid, from which tungstates and tungstic acid may be prepared.

Tungus (tung-gös′), *n.*; pl. *Tunguses* (tung-gö′sẹ̈z). [Also *Tungoos.* Siberian.] 1. One of a race of eastern Siberia related to the Manchus.—2. The language of this race.

Tungusian (tung-gö′si-a̤n), *a.* and *n.* **I.** *a.* Of the Tunguses or their language.

II. *n.* One of the Tunguses; also, their language.

Tunica elastica, the elastic middle coat of an artery. Also called *media* or *tunica media.*



Cross-section of the Human Carotid Artery.

a, intima; *b*, elastica interna; *c*, endothelium of the intima; *d*, media; *e*, fenestrated elastic membrane; *f*, elastica externa; *g*, inner layer of adventitia; *h*, outer layer of adventitia; *i*, one of the vasa vasorum.

(From Böhm-Davidoff Huber's "Textbook of Histology.")

tunicary, *n.* **II.** *a.* Relating to a tunic or enveloping membrane.

> The *tunicary* hernia of the jejunum, though covered on all sides by peritoneum, still lay entirely on one side of the mesentery. *Jour. Exper. Med.*, Jan. 15, 1901, p. 343.

Tunicary hernia. Same as *mucosal* ★*hernia.*

tuning, *n.* 2. In *elect.*, the adjustment of a circuit, as to capacity and inductance, so that electrical oscillations induced in it shall agree in frequency with those in another circuit or circuits.—**Intermediate tuning**, in *music*, tempered tuning. See *tempered*, 2.

tuning-hole (tū′ning-hōl), *n.* In *organ-building*, same as *tuner*, 3.

tuning-wrench (tū′ning-rench), *n.* Same as *tuning-hammer* or *tuning-key.*

tunket (tung′ket), *n.* A meaningless term euphemistically substituted for 'devil,' 'hell,' etc. [Prov.]

> "Hey? Did you speak to me?' asked the widow sweetly.
> "Did I speak? No, I screeched! What in *tunket*—"
> "I want you to see this picture of the mayor's house in Blazeton." *J. C. Lincoln*, Cy Whittaker's Place, xiv.
>
> "Who in *tunket* is it backs up the old creetur', anyways?" asked Master Fairway.
> *G. S. Wasson*, The Green Shav. iii.

tunki (tön'kẹ̄), *n.* [Quichua.] A name given in Bolivia and some parts of Peru to the cock of the rock.

tunnelism (tun'el-izm), *n.* [*tunnel* + *-ism.*] The theory and practice of tunneling. [Rare.]

> A complete system of *tunnelism.*
> *C. Clark*, Obs. on the Intended Tunnel beneath the River Thames, 1799, quoted in N. and Q., 10th ser., I. [27.

tunnelist (tun'el-ist), *n.* [*tunnel* + *-ist.*] An engineer who has devoted himself to the construction of tunnels. [Rare.]

> The *tunnelist* and his friends.
> *C. Clark*, Obs. on the Intended Tunnel beneath the River Thames, 1799, quoted in N. and Q., 10th ser., I. [27.

tunny, *n.*—**Little tunny**, a name of *Gymnosarda alleterata*, a scombroid fish found on both sides of the warmer parts of the Atlantic.

tuno (tö'nō), *n.* [Native name in Central America?] A tree of the fig family, *Castilla Tunu*, closely related to *C. elastica*, the tree producing Central American rubber. From its latex is obtained a sticky, resinous, nonelastic rubber, also called *tuno* or *tuno gum.*

tunta (tön'tä), *n.* [S. Amer.] See ★*chuñu.*

tupara (tö-pä'rä̤), *n.* [A Maori corruption of E. *two-barrel* (gun).] A double-barreled gun. *E. E. Morris.* [New Zealand.]

tupik (tö'pik), *n.* [Also *topek;* < Eskimo (of Alaska) *tupik, toopik, tupeq,* a tent.] A summer tent of the Eskimos, consisting of a single pole or a framework of poles supporting a cover of skins.

> These people [Eskimo] who live in *tupiks* (tents or huts of skin) in summer, and in *igloos,* partly excavated, partly stone-built dwellings, in winter.
> *Geog. Jour.* (R. G. S.), XII. 499.

tupong (tö'pong), *n.* [Aboriginal Australian.] The aboriginal name for a fish of southern Australia, *Aphritis bassii*, of the family *Notoheniidæ.* Also known as the *fresh-water flathead.* *E. E. Morris,* Austral English.

tupu (tö'pö), *n.* [Quichua *tupu, topu,* adopted by the Aymará of Bolivia.] A supposed standard of linear measure of the Incas. The value of the tupu was and is very uncertain. At present the Indians apply the name to the league, the mile, and any other unit of length introduced and brought to their knowledge by whites.

tupuna (tö'pö-nä), *n.* [Maori.] A parent or any ancestor, male or female. *E. E. Morris.*

tur^2 (tör), *n.* A common name of three species of wild goat found in the Caucasus, but more particularly of *Capra caucasica*, which inhabits the central Caucasus. This animal has horns, with a somewhat spiral curve, approaching one another at the tips.

Tur. An abbreviation (*a*) of *Turkey;* (*b*) of *Turkish.*

turacoporphyrin (tū"ra̤-kō-pôr'fi-rin), *n.* [*turac(in)* + *porphyrin.*] A substance supposedly identical with hematoporphyrin, obtained from turacin.

turanose (tū'ra̤-nōs), *n.* A hygroscopic, amorphous, dextrorotatory carbohydrate, $C_{12}H_{22}O_{11}$, prepared by the action of dilute acids on melezitose. It melts at 65–70° C.

turban-eye (tėr'ba̤n-ī), *n.* One of the dorsal pair of compound eyes of the males of certain may-flies (*Ephemeridæ*), as distinguished from the lateral or sessile pair. It is a pillar facetted at its summit, and is also called *pillared eye.*

> In the case of the "*turban-eye*" of Callibætis, the formation of a superposition image on the proximal and an apposition image on the distal retinulæ enables the eye with the superposition image to see, although perhaps indistinctly, in dim light where the small-facetted, deeply pigmented eye would be useless. As these *turban-eyes* are restricted to the males of these may-flies, which seek the females during flight in the gloaming, their use is obvious. *Nature*, April 4, 1907, p. 541.

turbarian (tėr-bā'ri-a̤n), *a.* [NL. **turbarianus*, < ML. *turbaria*, a peat-bog. See *turbary.*] Of or pertaining to peat-bogs.—**Turbarian epoch**, in *geol.*, a subdivision of the Pleistocene or glacial series of northern Europe. It is equivalent to the fifth and sixth glacial epochs, which are separated by the Upper Forestian or fifth interglacial epoch. The lower Turbarian or fifth glacial epoch is represented by certain peat deposits overlying the Lower Forest bed, by the carse clays and raised beaches of Scotland, and in part by the Littorina clays of Scandinavia; and the Upper Turbarian or sixth glacial epoch is represented by the deposits of peat which underlie the lower raised beaches.

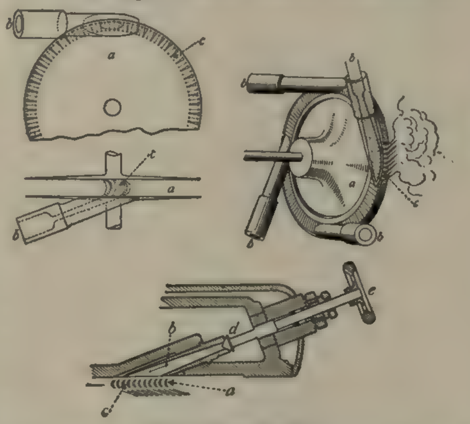
turbinal, *n.*—**Jacobson's turbinal**, a turbinal cartilage found in Jacobson's organ of the *Echidna* and *Ornithorhynchus.* *Proc. Zool. Soc. London*, 1894, p. 10.

turbinate, *a.*—**Turbinate body**, a turbinate bone with sponge tissue and mucous membrane covering it.

II. *n.* A turbinate body.

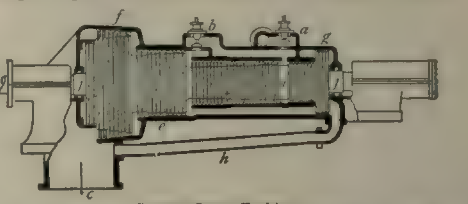
> Cases of asthma treated by removal of the middle *turbinate.* *Detroit Med. Jour.*, Feb., 1903, p. 733.

turbine, *n.*—**Double turbine.** (*a*) A turbine-wheel divided into two layers by a thin partition, usually midway in its height or depth. It has two sets of guide-blades, and when run at part gate, or half power, one set of guides and blades is full and running with solid water. (*b*) A pair of turbines fastened on one shaft, either back to back or face to face, an arrangement which balances the pressure due to the weight of the driving water-column, and releases the stresses on the footsteps or thrust-bearings: usual in modern high-powered installations.—**Downward-discharge turbine**, a form of turbine water-wheel in which the water is discharged from the buckets in a downward direction, parallel to the vertical axis of the wheel.—**Gas-turbine**, a turbine which uses the gas obtained by burning or exploding a fuel for its motive power.—**Girard impulse-turbine**, a form of radial-flow impulse-turbine named from Girard, its inventor.—**Multiple-expansion turbine**, a steam turbine in which the steam is expanded by stages and traverses an impulse-wheel at each expansion, instead of being allowed to expand directly from the initial to the exhaust pressure. Also called *multiple impact turbine.*—**Parsons turbine.** See *steam* ★*turbine.*—**Steam turbine**, a form of steam motor in which the energy of steam is applied directly to vanes or blades attached to the revolving shaft to cause it to rotate. High-pressure steam issuing with great velocity from nozles of proper form impinges upon receiving surfaces by which its kinetic energy is absorbed and utilized, rather than its pressure over an area. The turbine uses either impact or reaction or both; in modern forms, both. The advantages of the turbine principle are: (1) economy in steam, particularly in the smaller units: (2) no reciprocating masses; (3) no dead-center in starting; (4) no danger from water of condensation; (5) little lubrication of surfaces under pressure, in some forms none; (6) no wearing of contact surfaces metal to metal; (7) no vibration to be neutralized by massive foundations; (8) high speed; (9) small bulk or cubic space, and hence cheaper power-houses; (10) reduced construction and erection cost; (11) the smaller number of operators required in the engine-room. Among its disadvantages may be included: (1) the high speed, which makes accidents from centrifugal rupture possible and compels a reducing mechanism for many uses, with attendant loss of power; (2) the stored revolving energy, making the arrest of the motor a matter of some time; (3) the difficulties where the shaft must be occasionally reversed, necessitating either another motor for the purpose or some design which shall be equivalent thereto in complication; (4) the rapid wear from abrasion; (5) the loss of efficiency when run at part load; (6) the difficulty of running at varying speeds at full load or part load; (7) the difficulty of exact regulation to isochronism of speed at all variations of load. Turbines are most efficient when run condensing. The control of power is effected by having a number of steam-delivery nozles and adjusting the number in action to the magnitude of resistance to be overcome. The idea of the steam-turbine motor is historically very old. Hero of Alexandria, in B.C. 200, illustrated and made a reaction or Barker's mill motor, and Branca of Italy, in 1629, designed an impact motor. But the early machinery of this character was for slow-speed work and ineffective. Three types of turbine are at present in use: the Swedish design of Carl de Laval, the British design of Charles Algernon Parsons, and the American type known as the Charles G. Curtis design. *De Laval steam turbine.* In this type the total power of the steam is devoted to producing velocity in an expanding nozle, where pressure is transformed into motion. The jet at the end of these nozles is delivered against a curved bucket or vane on the periphery of a single disk or wheel. Such rim should turn at one half the linear velocity of the jet for best effect, but this linear velocity makes even a large disk turn at inconvenient speed, and a reduction from the speed of the disk to that of the shaft from which driving motion is taken off from the machine is effected by a ten-to-one gearing made of very carefully cut spiral gears running in oil. *Parsons steam turbine:* known in the United States also as the *Westinghouse turbine.* In this type the steam is carried in an axial direction through the space provided between a succession of internal revolving cylinders and external stationary cylinders which inclose them. Both the internal and external cylindrical surfaces are covered by many successive circles of vanes or blades so arranged that the steam has to pass alternately through rows of moving and stationary blades. The kinetic energy is absorbed by impact upon the moving blades, and expansion effect of reduction of pressure is secured by the successive expansion in steps. As the volume increases, the velocity to pass a given weight of steam in a given time must increase also. The axis turns at conveniently low speed due to the reduced peripheral velocity, but the multiplicity of parts is great, as are their attendant weight and their cost of construction. *Curtis steam turbine.* This turbine (patented in 1895) has expanding nozles designed to convert nearly all the expansive force of the steam into velocity; but, in addition, the steam passes subsequently through two or more lines of vanes on moving disks or elements which alternate with reversed vanes or guide-blades on stationary elements. The velocity acquired in the nozle is fractionally abstracted and imparted to the moving element, so that with a high initial velocity of steam the moving element can turn at a convenient speed. The nozle construction is made up of many sections, so that steam passes to the wheel in a broad belt or annulus; but of this ring any section may be closed off by valves, at will, to reduce the mass of steam in action when the load diminishes. The Curtis turbine as made for large sizes is arranged with its axis vertical instead of horizontal as in the other types.—



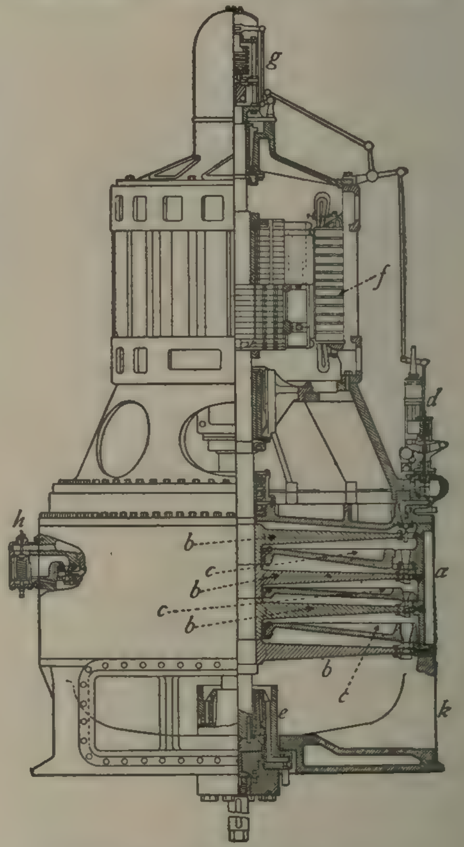
De Laval Steam Turbine.

a, turbine-wheel or -disk, forming the motor proper; *b*, nozle or jet, leading steam at high velocity on the vanes or buckets, *c*, and reducing the pressure; *d*, controlling-valve, admitting steam at will to the nozles, *b*, by movement of the exterior hand-wheel, *e*.



Parsons Steam Turbine.

a, steam-inlet and throttle-valve; *b*, overload-valve to admit additional high-pressure steam to second stage; *c*, exhaust-outlet to condenser; *d*, first stage of turbine-blades; *e*, second series; *f*, third series; *g*, balance-piston to equalize end-thrust pressure; *h*, low pressure equalizing pipe; *j*, *j*, hydraulic packing-chambers.



Curtis Vertical Steam Turbine.

a, turbine-chamber or -casing; *b*, *b*, *b*, *b*, revolving disks, or turbine-bucket elements of the rotor; *c*, *c*, *c*, guide-disks, or fixed elements of the stator forming the stages of the turbine; *d*, valves admitting steam to the nozles (these are controlled by linkage to the governor *g*); *e*, footstep, carrying the vertical weight of turbine, generator, and shaft; *f*, dynamo or electric generator; *g*, governor to control speed and power; *h*, by-pass adjusting-valve; *k*, outlet to condenser, carrying away used steam.

Turbine steamer, yacht, etc., any vessel propelled by steam turbines. At first adopted for torpedo-boats and yachts, the steam turbine is now applied to large transatlantic liners.

turbine-alternater (tėr'bin-al"tėr-nā-tėr), *n.* A combination of an alternating-current dynamo and a turbine to drive it, the two being mounted on a common shaft or connected through a clutch.

turbinectomy (tėr-bi-nek'tō-mi), *n.* [*turbin(ate)* + Gr. ἐκτομή, excision.] Excision of a turbinate body. *Buck*, Med. Handbook, IV. 273.

Turbinolia (tėr-bi-nō′li-ạ̈), *n.* [NL., < L. *turbo* (*-bin-*), a top.] A genus of aporose madreporarian *Anthozoa* having a free conical corallum with circular calice and septa produced outside the theca. The species range from Tertiary to recent.

turbinotomy (tėr-bi-not′ọ̄-mi), *n.* [*turbin*(*ate*) + *-o-* + Gr. -τομια, < ταμεῖν, cut.] Any cutting operation upon a turbinate body. *Lancet*, April 4, 1903, p. 969.

turbo (tėr′bō). [*turbine.*] **1.** A prefix (*turbo-*), used in composition to designate a machine in which the motive energy is derived from a steam turbine either directly connected, or on the same revolving shaft as the element designated by the other word of the compound: as, a *turbo-alternater*, an alternating-current dynamo the armature of which is the prolongation of the axis of the steam turbine; a *turbo-generator*, a dynamo either for direct or alternating current, similarly directly driven. See cut at *Curtis steam* ★*turbine.*—**2.** As a substantive: (*a*) A pump or ventilator in which the impeller revolves as a turbine, or as a top, and drives the fluid which it is to displace by a centrifugal or rotary action.

> Oil coolers are erected in the basement below the *turbos*, through which the lubricating oil is passed, and cooled by means of a cold water circulation.
> *Elect. World and Engin.*, July 30, 1904, p. 1651.

(*b*) A direct-connected turbine-driven generator; an abbreviation of *turbo-dynamo.*

> Generator.—Type, revolving field *turbo*, No. 235,686; rated capacity, 400 kw; voltage, 440, 3-phase; etc.
> *Elect. Rev.*, Sept. 14, 1904, p. 487.

Turbo unit, the combination of the steam turbine and the machine it drives directly upon a common base or foundation, or making one machine.

turbo-air-compressor (tėr″bọ̄-ãr′kọm-pres″-ọr), *n.* A machine for compressing and displacing air, in which the elements which compress the air or constitute the blowing-engine have a rotary instead of a reciprocating motion, and receive their motion and power from a steam turbine directly connected to their revolving shaft. When used for ventilating only it is called a ★*turbo-ventilator* (which see).

turbo-alternater (tėr-bō-al′tėr-nā-tėr), *n.* An alternating-current generator directly connected to and driven by a steam turbine.

> The station contains at present five *turbo-alternators* of 1,350 h.p. each. *Elect. World and Engin.*, XLI. 183.

turbo-dynamo (tėr-bō-dī′nạ̈-mō), *n.* A generator of electric currents which is directly connected to and driven by a steam turbine.

> The purpose of this paper is to outline the electrical and mechanical difficulties which arise in the design of *turbo-dynamos* (dynamo-electric generators directly connected to steam-turbines) of 500 to 4000 revolutions per minute. *Elect. World and Engin.*, March 19, 1904, p. 558.

turbo-electric (tėr″bō-ẹ̄-lek′trik), *a.* Designating a direct-connected dynamo-electric generator.

> Each of the 5,000-kw *turbo-electric* units is of the vertical type, General Electric make, has a weight of 260 tons and stands 29.5 ft. high above the floor.
> *Elect. World and Engin.*, May 21, 1904, p. 945.

turbo-exciter (tėr′bō-ek-sī′tėr), *n.* A small turbine-driven dynamo the current from which supplies the field-coils of other machines.

> There are also installed two groups of *turbo-exciters*, of 110 hp each, with a speed of 600 r. p. m.
> *Elect. World and Engin.*, July 25, 1903, p. 147.

turbo-generator (tėr″bọ̄-jen′ẹ-rạ̈-tọr), *n.* In *elect.*, a turbine-driven electric generator. See ★*turbo*, 2 (*b*).

> It is not too much to say that the economy in space of the *turbo-generator* ranks second only to its economies of operation, as it requires only one-fourth of the space necessary for the most modern, vertical type of direct-connected, reciprocating units of equal electrical output.
> *Sci. Amer.*, March 19, 1904, p. 230.

turbo-machine (tėr′bọ̄-mạ̈-shēn″), *n.* See the extract.

> As in the case of reciprocating steam engines, steam turbines are heat engines, converting the calorific energy of the steam into directly-available mechanical energy. From another point of view they are analogous to hydraulic turbines, and form part of the general class which the author [Professor Rateau] will call "*turbo-machines.*"
> *Sci. Amer. Sup.*, Sept. 26, 1903, p. 23185.

turbo-motor (tėr′bọ̄-mō″tọ̈r), *n.* A turbine; any air-, gas-, steam-, or water-motor acting on the principle of a turbine; specifically, a steam turbine; also, a combination of a turbine and the machine which it drives directly on the same shaft.

> A torpedo destroyer has been driven through the water at the rate of forty-three miles an hour by the use of the *turbo-motor* instead of reciprocating engines.
> *Geog. Jour.* (R. G. S.), XVI. 453.

turbo-pump (tėr′bọ̄-pump), *n.* A combination of a turbine, either hydraulic or steam, and a pump driven by it, mounted on the same base.

> Direct-coupled to ventilators, and centrifugal pumps, steam turbines, owing to their capability of producing great power at high speed, exhibit surprising results. Prof. Rateau has installed turbo-ventilators giving a pressure of half an atmosphere, and *turbo-pumps* with a lift of several hundred metres.
> *Elect. World and Engin.*, July 4, 1903, p. 17.

turbot, *n.* **5.** A New Zealand fish, *Ammotretis guntheri.* Also called *lemon-sole* or *yellow-belly.*—**Blue turbot**, a plectognathous fish, *Balistes vetula*, found in the tropical Atlantic.—**Greenland turbot**, a common name of *Rheinhardtius hippoglossoides*, a flounder found in arctic parts of the Atlantic and south to Finland and the Grand Banks.

turbo-ventilator (tėr″bọ̄-ven′ti-lā-tọ̈r), *n.* A ventilator or fan driven by a turbine. Steam turbines are frequently used for this purpose.

> Prof. Rateau has installed *turbo-ventilators* giving a pressure of half an atmosphere, and turbo-pumps with a lift of several hundred metres.
> *Elect. World and Engin.*, July 4, 1903, p. 17.

turca (tör′kä), *a.* [It.] In *music*, in the expression *alla turca*, in Turkish style, that is, with sharp accents, lively movement, and usually noisy effects.

Turcophobe (tėr′kọ̄-fōb), *n.* Same as *Turcophobist.*

ture-lure (tür-lür′), *n.* [F. See def.] An old French burden or refrain, like 'fa-la,' appended to or inserted in popular songs without special meaning: the source of many English forms, such as 'tooral-looral.'

turey (tö-rā′), *n.* [W. Indian.] **1.** A kind of stool or reclining-chair of wood or stone, formerly made by the Indians of the West Indies, fashioned with great care and frequently decorated.—**2.** A wooden stool with goatskin back used by the jibaros of Porto Rico.

turf-builder (tėrf′bil″dėr), *n.* In *phytogeog.*, a perennial plant which by its creeping rootstocks forms a turf. Turf-builders consist of monocotyledons, mainly grasses, but also include many sedges. They form the ruling type of vegetation in grass-land formations. *Pound and Clements.*

turgescence, *n.* **4.** In *bot.*, the becoming turgid or distended by a liquid content. See ★*turgid*, 3.

turgid, *a.* **3.** In *bot.*, distended by water or other liquid: said primarily of cells or cellular tissue.

Turgotine (tėr′gọ̄-tin), *a.* [*Turgot* (see def.) + *-ine.*] Of or pertaining to A. R. J. Turgot (1727–81), an eminent French statesman.

> He [Chemist Charles] soars, he dwindles upward; has become a mere glowing circlet like some *Turgotine* snuff-box, . . . like some new daylight moon!
> *Carlyle*, French Rev., I. ii. 6.

Turk, *n.* **7.** (*b*) A bark-beetle, *Tomicus typographus*, so called in old German works.

Turk. An abbreviation (*a*) of *Turkey*; (*b*) of *Turkish.*

turkey, *n.* **1.** Six standard varieties of domesticated turkeys are more or less grown in the United States, the bronze, the Narragansett, the buff, the slate, the white, and the black, the main differences being in size and color. The black is the smallest and the Narragansett the largest, the white and bronze now ranking near one another for second place.

3. A bag containing a lumber-jack's outfit.—**To hoist the turkey**, to take one's personal belongings and leave camp. [Slang.]

turkey-apple (tėr′ki-ap″l), *n.* A small tree, *Cratægus induta*, a native of Arkansas, sometimes 25 feet high, armed with stout spines, and bearing red or yellowish astringent subacid fruits.

turkey-foot (tėr′ki-fůt), *n.* Same as *Colorado* ★*sand-grass*; also, same as *big* ★*blue-stem.*

turkey-louse, *n.* (*b*) A mallophagous insect, *Lipeurus polytrapezius*, common on wild and domestic turkeys.

turkey-mullen (tėr′ki-mul″en), *n.* See ★*mullen.*

Turkey-red discharge style. See ★*style*^{1}.—**Turkey-red process.** See ★*process.*

turkey-shoot (tėr′ki-shöt), *n.* A rifle-shooting match in which a live turkey is the target and the prize: sometimes only the head of the fowl is exposed to the shooter.

Turkish bean. See ★*fire-bean.*—**Turkish gall.** See ★*gall*^{3}.

Turkomanic (tėr-kọ̄-man′ik), *a.* [*Turkoman* + *-ic.*] Of or pertaining to the Turkomans.

turmeric, *n.* **1.** (*b*) In Australia, either of two species of trees: (1) *Zieria Smithii*, the stinkwood of Tasmania, which see, under *stinkwood* (*b*); and (2) *Hakea dactyloides*, an evergreen shrub of the family *Proteaceæ.*—**Indian turmeric.** Same as *turmeric-root*, 2.

II. *a.* Noting an acid, a compound, $C_{11}H_{14}O_2$, formed by the oxidation of turmerol by means of potassium permanganate.

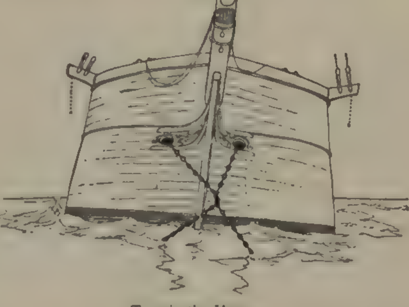
turn, *v.* **I.** *trans.* **23.** Specifically, to open off drifts or chutes in a mine at an angle with the main gangway. [British.]—**To turn over.** (*b*) Specifically, in foundry work, the process, used in molding with patterns divided at a meridian section, in which the molding-flask is made in upper and lower parts (cope and drag) and the pattern is extracted from each by turning or rolling it over so as to expose the half pattern at the parting.

> To make moulds well by the system of "bedding in" of patterns requires, on the whole, a higher measure of skill on the part of the moulder than does the "*turning over*" or "rolling over" of complete moulding boxes.
> *Engin. Mag.*, Feb., 1903, p. 695.

To turn under, to bury by plowing, as weeds, manure, etc.

II. *intrans.*—**To turn for**, in *type-setting*, to substitute one type for another type that is deficient in the case. The substitute is turned face down, to make an unmeaning mark and compel the notice of the proof-reader.—**To turn in all standing**, *naut.*, to turn into one's bunk or hammock without undressing; go to bed with all of one's clothes on.—**To turn out all standing**, *naut.*, to get out of one's berth or hammock fully dressed.—**To turn out crabs**, to throw two aces, the lowest cast at hazard; hence, to turn out a failure; prove a disappointment. See *crab*^{1}, 6. [Colloq.]—**To work and turn**, to print all the pages of a form of type on one side of a sheet of double size and turn the sheet end for end, and print on the other side—a method that produces two copies of the form: in opposition to the sheetwise method, in which two forms are separately printed on each side of a smaller sheet. See ★*sheetwise.*

turn, *n.* **21.** A manœuver by which troops, marching in line, change direction.—**22.** The stated period of the day during which a gang of men work; a shift.—**23.** In British *mining*, the number of cars which the miner is expected or allowed to fill during his shift or turn below.—**24.** In *forestry*, two or more logs coupled together end to end for hauling. [Pacific coast.]—**Dead turns.** (*b*) In an armature coil, turns in which no useful induction takes place and which therefore do not contribute to the production of electromotive force.—**Long turn**, in speculative dealings, as in stocks, bonds, wheat, or the like, a transaction that takes a long time to complete, on account of an adverse market or the like.—**Primary turns.** See ★*primary.*—**Series-turns**, the number of ampere-turns in the series-coil of the field-windings of a generator or motor.—**Shunt-turns**, the number of ampere-turns in the shunt-coil of the field-windings of a generator or motor.—**Three turns around the long-boat and a pull at the scuttle-butt**, a facetious description of the ordinary day's work on board a naval vessel.—**To catch a turn**, *naut.*, to make fast quickly a rope or line so as to snub it and prevent it from running out.—**Turn in the hawse**, *naut.*, said of anchor cables when they are crossed owing to the swinging of the ship in a tideway.



Turn in the Hawse.

turn-about, *n.* **3.** A small steamer, torpedo-boat, or launch in which the dead-wood astern is cut away and two rudders are fitted, one forward in place of the dead-wood and one in the usual place abaft the screws, to give ability to turn quickly. The design is known as the *turn-about system.*

> One of these (Rattlesnake class) had a straight keel and an ordinary rudder; a second was identical with the first, except that the after deadwood had been cut away, and the "*turn-about*" system applied.
> *White*, Manual of Naval Arch., p. 701.

turn-bat (tėrn′bat), *n.* A rod or lever placed between the legs of the massive tongs used in handling blooms (by hand) in the rolling-mill, that the piece may be turned through 90° or 180° in being presented to the guides or to the next pass in the rolls.

turnbuckle, *n.* **2.** A tongue of metal, pivoted above its center of gravity, used as a shutter-fastener.—**3.** A form of shutter-bolt with a hasp which when turned over a staple cannot be thrown back except by a reverse turning motion.

turn-button (tėrn'but″n), *n.* In *lock-making*, a latch having a pivoted rotating bolt operated by means of a knob or T-handle on the outside of the case.

turncock, *n.* 2. A plug-cock or faucet, in which the plug is turned around its axis, by a handle or a wrench, in order to open or close it.

turndun, *n.* Same as *tundun*.

turneraceous (tėr-nẹ-rā'shius), *a.* [NL. *Turnerac*(*æ*) + *-ous.*] Belonging or pertaining to the *Turneraceæ*.

turn-furrow (tėrn'fur″ọ), *n.* The mold-board of a plow.

> The mould-board or *turn-furrow* is placed obliquely behind the fin. *Penny Cyc.*, XVIII. 272.

turnhall (törn'hâl), *n.* [G. *turnhalle*, ‹ *turnen*, exercise, + *halle*, hall.] A building in which gymnasts practise; a gymnasium.

turning-engine, *n.* 2. A small engine and necessary transmissive machinery to enable a massive engine to be turned over slowly for inspection or adjustment without the use of motor steam in the large cylinders. If used to start the large engine under steam it is often called a *barring-engine*.

turning-glass (tėr'ning-glȧs), *n.* See the extract.

> After the negative [in half-tone engraving] is developed the film is stripped from the plate, reversed, and placed on another, called a *turning-glass*, thus becoming a positive. *Census Bulletin* 216, June 28, 1902, p. 64.

turning-lathe, *n.* 2. In *ceram.*, a lathe used by potters to trim and smooth the surface of the ware, which has been thrown and dried, before it is burned.

turning-machine, *n.*—**Boring-and-turning machine.** See ★*boring-machine.*

turning-plow (tėr'ning-plou), *n.* Any plow which has a mold-board and turns a furrow slice, as opposed to a plow of the shovel type. Also *turn-plow.*

turning-point, *n.* 3. In *graphics*, a maximum or minimum point on the graph or curve.

turnip, *n.*—**Brown rot of the turnip.** Same as *black rot of the cabbage.* See *black* ★*rot* (*c*).—**Indian turnip.** (*b*) Same as *prairie-turnip.*—**Turnip gall-weevil.** Same as *cabbage* ★*gall-weevil.*

turnip-beetle (tėr'nip-bē″tl), *n.* A beetle that infests the turnip.—**Red turnip-beetle**, a chrysomelid beetle, *Entomoscelis adonidis*, occurring in northern Europe and the northern United States and Canada, and feeding on turnip-leaves.

turnip-grass (tėr'nip-grȧs), *n.* See *alkali* ★*zacaton* (*a*).

turnip-jack (tėr'nip-jak), *n.* An English gardeners' name for the turnip flea-beetle. See *Phyllotreta* and *turnip-fly* (*c*).

turnip-louse (tėr'nip-lous), *n.* Same as *turnip-aphid.*

turnip-wood, *n.* 2. In Australia, the timber of either of two species of trees, *Dysoxylum Muelleri* and *Akania Hillii*, which when freshly cut has the odor of a turnip.

turnout, *n.* 8. A short side road, or a part of a road of greater width than the rest, which enables vehicles to pass one another.

turnover. I. *n.* 7. The amount of a material which is turned over, or on which some process is carried out: nearly equivalent to *output.*

> A high current-density being employed, the *turn-over* of gold is rapid—an essential factor of success when the costliness of the metal is taken into account. *Encyc. Brit.*, XXVIII. 110.

8. An essay or article that begins on the last column of a page of a newspaper and 'turns over' to the next page.

> Grant Allen and myself wrote most of the *turnovers*, and such men as Leslie Stephen contributed the book reviews. *Newcastle Daily Leader*, Sept. 22, 1903.

II. *a.*—**Turnover collar**, one which is folded over on itself: opposed to *standing collar*; also used as a noun: as, "he wore a narrow *turn-over.*"

turnover-gear (tėrn'ọ̄-vėr-gēr), *n.* A device for rolling or adjusting logs on a sawmill-carriage; a canting device. Also called a *nigger.*

turn-plow (tėrn'plou), *n.* Same as ★*turning-plow.*

turnpool (tėrn'pöl), *n.* [*turn*, *v.*, + *pool.*] See the extract. [Local, Eng.]

> It is not difficult to show the character of the flow at the bottom of a small river. . . . Later, I have employed lump sugar soaked in a strong alcoholic solution of magenta. On placing one of these cubes at the outer bend of a curve—the "*turnpool*"—it is found that the water there is almost stagnant. *Nature*, Dec. 5, 1907, p. 102.

turn-tree (tėrn'trē), *n.* The revolving drum of a horizontal wooden capstan or windlass.

Turnway society. See ★*society.*

turpentine, *n.*—**White turpentine**, a trade-name of turpentine from the long-leaved pine.

turpentine, *v.* II. *intrans.* To make or gather turpentine.

turpentine-gum (tėr'pen-tīn-gum), *n.* Same as *American thus* (which see, under *thus*²).

turpentine-substitute (tėr'pen-tīn-sub″sti-tūt), *n.* Same as ★*spiritine.* The term is also applied to rosin spirit or ★pinoline.

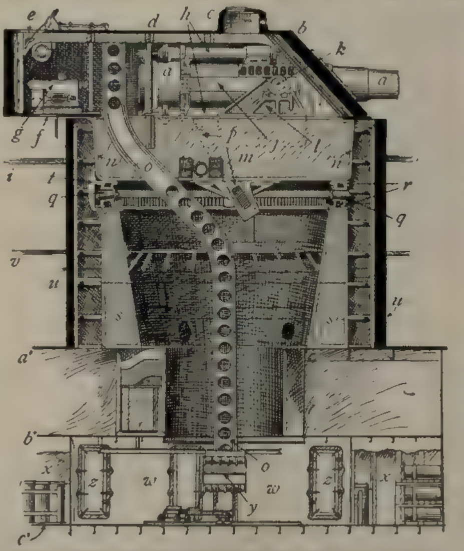
turpentine-tree, *n.* 3. The peebeen of northern Queensland, *Syncarpia Hillii.*—4. In New Zealand, same as ★*tarata.*

turpentining (tėr'pen-tī-ning), *n.* The process or business of obtaining resin or crude turpentine from living pine-trees. Also called *turpentine orcharding*, *turpentine tapping.*

turpethin (tėr'peth-in), *n.* [NL. *Turpeth*(*um*) (see def.) + *-in*².] A brownish-yellow amorphous glucoside, $C_{34}H_{56}O_{16}$, contained in the root of *Ipomæa Turpethum* from Ceylon and Malabar.

turquoise-berry (tėr-koiz'ber″i), *n.* A liliaceous plant of Tasmania, *Drymophila cyanocarpa*, bearing white flowers followed by blue berries.

turret¹, *n.* 3. In *naval construction*, a turret is a completely inclosed revolving armored structure above the deck of a war-ship containing one or more guns, mounted on the turn-table carrying the turret-structure, which project through gun-ports cut through the armor on the front side of the turret. Proposals for the emplacement of the guns of war-ships on armored turn-tables were independently made by Captain Coles of the British navy and by Ericsson. Captain Coles at first called his shield or turret a 'cupola' (which see). It was not until 1864, however, that the first British vessel with a turret was tried. In the United States, the first turret was fitted in 1862 on the original 'Monitor' invented by Ericsson. (See *monitor*, *n.*, 7). The turret of the original 'Monitor,' and of all subsequent vessels built during the Civil War, was carried on a heavy forged vertical central shaft by means of collars on the shaft. When not in use the turret rested on the deck. Before it could be rotated the shaft was wedged up at the bottom, or lifted up by hydraulic power, carrying the turret with it clear of the deck. It was then rotated on the shaft or spindle by steam-engines controlled from the turret, the pinions of which were geared to a large rack fastened under the floor of the turret. The large smooth-bore guns, when fired, recoiled entirely inside the turret, and an armored port-shutter could be closed while loading them. The British turrets were supported on a ring of iron rollers near the circumference so that they could be rotated without being lifted. This is the method by which all modern turrets are supported. The central spindle of the Ericsson turret was liable to be bent by the impact of projectiles on the turret, which caused the turret to jam. Modern turrets are turned by either hydraulic or electric motors. The mechanisms for elevating the guns, hoisting ammunition, and loading are very elaborate. The operations are performed largely by hydraulic or electric power. The deck-lugs carrying the guns are secured to girders forming part of the turn-table of the turret. See ★*gun-mount.* In the development of seagoing ships with high freeboard, the turrets necessarily were placed higher above the water. To protect the mechanism and the ammunition-hoists under them, it was necessary to provide a fixed cylinder of armor called a ★*barbette* (which see). All modern turrets are mounted above fixed barbettes (see cut). The top of the turret is armored, and above it project the armored sighting-hoods. There is usually a central sighting-hood for the trainer and one for the gun-pointer of each gun. The great length of modern guns causes them to project a considerable distance in front of the turret, and it is necessary to bring the body of the turret to the rear of the axis of rotation to provide room for loading the gun and to balance the rotating weight on the axis. The rear of the turret thus overhangs the barbette. The arrangement is called a *balanced turret.* The first turrets were circular cylinders of armor, but the modern turrets are of various forms; usually the turret armor is inclined in order to deflect projectiles. The first turrets each contained two guns, but in subsequent development, in some countries, a single gun has been mounted in each turret. The saving in weight of armor protection by placing two guns in one turret has, however, led to its universal adoption in the latest designs. In no country, except the United States, have more than two guns been mounted in one turret. See *superposed* ★*turret.*

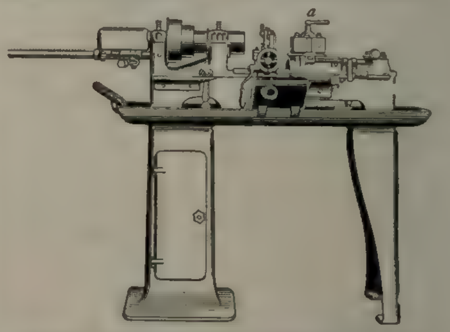


Vertical Section through a Turret and Barbette for 12-inch Guns.

a, turret-gun; *b*, turret-port armor-plate; *c*, sighting-hood; *d*, turret-roof; *e*, escape-scuttle; *f*, scuttle for access from deck; *g*, electric rammer; *h*, *h*, combined hydraulic recoil and spring return-cylinders; *i*, main deck; *j*, gun-sleeve; *k*, trunnions on gun-sleeve; *l*, deck-lug; *m*, turret-gun girder; *n*, turret-pan; *o*, ammunition-hoist guide-rails; *p*, gun-elevating gear; *q*, turret-rollers; *r*, *r*, upper and lower turret-roller paths; *s*, *s*, turret supports or foundations; *t*, holding-down clip; *u*, barbette armor; *v*, gun-deck; *w*, handling-room; *x*, *x*, magazines; *y*, ammunition-hoist carriage; *z*, water-tight doors from magazines and shell-rooms to handling-room; *a′*, protective deck; *b′*, upper platform; *c′*, lower platform.

(From "Scientific American.")

6. An attachment to a lathe, drill, boring-machine, or slotting-machine designed to hold and present to the work a series of boring-, drilling-, or cutting-tools, the object being to save the time lost in changing from one tool to another by hand. In a lathe it consists of a round or six- or eight-sided horizontal tool-holder placed between the two heads. It has a circular motion in a horizontal plane, or may have a tilting circular motion that may be controlled by hand or may be automatic, and may also have a feed-motion to advance the tool to the work. The presentation of one tool to the work, the feed, the withdrawal of the tool on the completion of the cutting, and the partial revolution of the turret to bring another tool into action, may be automatic and continuous. In the boring-mill the turret is suspended over the table on a horizontal axis. In the slotting-machine it may be carried on the cutter-head, moving with it. It may carry four cutters, each of which may be brought into use in turn. In the drill the turret is suspended on a horizontal axis and may carry six drills, each one of which may be brought into action in turn by revolving the turret, the drills not at work remaining motionless. The turret gives its name to the machine in which it is employed, as a *turret-lathe*, a *turret boring-machine*, etc. Machines employing turrets are usually automatic and perform a complete series of operations on the work, as in a screw-machine or screw-cutting machine or the turret forming-machine. A turret is sometimes called a *monitor* from its shape.—**Superposed turret**, a type of turret used only in the United States navy. It consists of an ordinary turret for two 12-inch guns on the roof of which is supported a smaller turret containing two 8-inch guns. The whole forms a single armored structure with four guns, whose axes are parallel. This type of turret is fitted on the 'Kearsarge' and 'Kentucky,' and on five battle-ships of the Virginia class.—**Turret boring-machine.** See ★*turret*¹, 6.

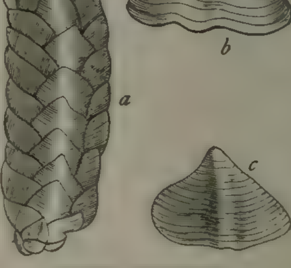


Turret-lathe, showing horizontal, automatic, and self-feeding tool-holder or turret at *a*.

turret-deck (tur'et-dek), *n.* See ★*deck*, 2.

turret-indicator (tur'et-in″di-kā-tọr), *n.* See ★*indicator*, 1 (*j*) (2).

Turrilepas (tu-ril'ẹ̄-pas), *n.* [NL., ‹ L. *turris*, a tower, + Gr. λεπάς, a limpet.] A genus of lepadoid cirriped *Crustacea* having an elongate body covered by from four to six rows of overlapping triangular plates which are concentrically striated and have radial or punctate ornamentation. The species range from Cambrian to Upper Devonian.



Turrilepas Wrightianus

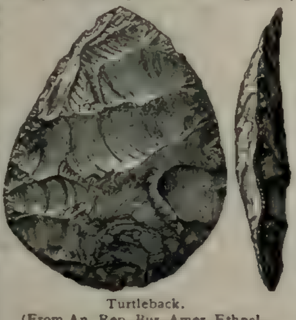
a, complete individual; *b* and *c*, individual plates: all enlarged.

(From Zittel's "Palæontology.")

turriliticone (tur-i-lit'i-kōn), *n.* [NL. *Turrilites* + Gr. κῶνος, a cone.] A turreted shell of certain ammonoid cephalopods, so called because of its resemblance to the shell of the ammonoid genus *Turrilites*. Such shells are developed as phylogerontic stages in the evolution of various races of ammonoids, and are specially common in the Upper Cretaceous formations.

turti (tör′ti), *n.* A Hindu oboe.

turtle², *n.*—**Horned turtle**, an extinct turtle, of the genus *Miolania*, distinguished by conical projections from the back part of the skull as in the horned 'toad.' The remains of these turtles occur in the Pleistocene of Patagonia, Australia, and Lord Howe's Island.—**Leathery turtle**, the trunk-turtle or leather turtle, *Dermochelys coriacea*.



Turtleback.
(From An. Rep. Bur. Amer. Ethnol., 1892.)

turtleback, *n.* **2.** (*a*) They are roughly chipped stone implements, usually of flint, quartzite, or argillite, rather thick in the center, somewhat rounded on one side, and usually leaf-shaped or almond-shaped in outline. Some of these may be finished implements of a rude type, others specimens which have been rejected because of some defect, but a great number are evidently merely roughly blocked-out implements, the finishing process being intended to be performed later. Caches containing great numbers of these objects have been found.

The singular name "*turtleback*" is suggested instantly on seeing a specimen of the class so designated by Abbott and others. As commonly used, it refers to rude or unfinished leaf-shape implements of any size, which may be found in great abundance almost anywhere.
Smithsonian Rep. (*Bur of Ethnol.*), 1892, p. 136.

3. In *mech.*: (*a*) A name given to rounded formations suggesting the carapace of the tortoise or turtle. (*b*) A rounded-back cover of any structure, as over the rear of a motor-car whose frame is designed for the rear seats of the tonneau construction, but in which only two front seats are installed.—**4.** See the extract.

Sir Samuel Baker suggests that the "*turtle backs*" of this region [Nile delta], patches of sand which appear like islands in the wide expanse of dark alluvium, may be parts of this original floor; but it is possible that they may be only lenticular masses of blown sand, alternating with the alluvial deposit. *Geog. Jour.* (R. G. S.), X. 540.

turtle-grass, *n.* **2.** See *Zostera*.

turtle-insect (tėr′tl-in″sekt), *n.* Same as *brown* ★*scale*. *E. G. Lodeman*, The Spraying of Plants, p. 10.

turtle-press (tėr′tl-pres), *n.* The type-revolving press of R. Hoe and Company (now disused) for which type was imposed on the segment of a cylinder called the turtle from its resemblance to the upper shell of a turtle. [Slang.]

turtlet (tėrt′let), *n.* [*turtl*(*e*) + *-et*¹.] A young turtle.

Many a *turtlet* probably sticks fast during the mending process. *Science*, Nov. 17, 1905, p. 638.

tusa (tö′sä), *n.* [Perhaps from Sp. *tusa*, fem. of *tuso*, a name for a dog, used as an exclamation in calling dogs or driving them away.] A name current in New Mexico and the southwestern United States, among the Spanish-speaking inhabitants of all classes, for the prairie-dog.

Tuscaloosa formation. See ★*formation*.

Tuscan capital, formation. See ★*capital*³, ★*formation*.

Tusculan (tus′kū-lan), *a.* [L. *Tusculan*(*us*).] Of or pertaining to Tusculum, an ancient city situated near the site of the modern Frascati, about 13 miles southeast of Rome: as, the "*Tusculan* Disputations of Cicero." Near it was Cicero's villa.

Tuscumbia limestone. See ★*limestone*.

tusilan (tū′si-län), *n.*; pl. *tusilanes* (-lä′nās). [Philippine Sp.] A robber; an outlaw.

There are ladrones still at large, but only a few, nearly all having been killed or are in prison serving long sentences, and the islands are now practically free from ladronism. Ladrones, or as they were formerly called, *tusilanes*, are simply robbers.
National Geog. Mag., March, 1904, p. 111.

tusk¹, *n.*—**Servant tusk**, that tusk of any animal, specifically of an elephant, that is most used.

The elephant . . . is said to use the right tusk more than the left, and this is accordingly called the '*servant tusk*.' *Buck*, Med. Handbook, IV. 48.

tusker, *n.* **2.** A wild boar with large tusks.

The hunter . . . may either lose the chase altogether, or be suddenly charged by an enraged *tusker*.
Sporting Magazine, July, 1827.

tusser, *n.* **3.** A kind of silk cloth woven from tusser-silk.—**4.** A dress or garment of tusser-silk.

I must say that a *tusser* always looks fresh.
F. H. Burnett, in The Century, June, 1901, p. 183.

tussicula (tu-sik′ū-lạ̈), *n.* [L., dim. of *tussis*, a cough.] A slight cough.

tussive (tus′iv), *a.* Of or relating to a cough.

tussocker (tus′ọk-ėr), *n.* [*tussock* + *-er*.] In New Zealand, a sundowner. See the extract. [Slang.]

Now, a "sun-downer," or "*tussocker*"—for the terms are synonymous—is a pastoral loafer; one who loiters about till dusk, and then makes for the nearest station or hut, to beg for shelter and food.
Vincent Pyke, Wild Will Enderby. Quoted by E. E. [Morris, Austral English.

tussock-moth, *n.*—**Old tussock-moth**, a liparid moth, *Notolophus antiqua*, common to Europe and the northern United States. To British collectors it is known as the *common vaporer*.—**Well-marked tussock-moth**, an American liparid moth, *Hemerocampa definita*, resembling the common white-marked tussock-moth, but having more distinct markings on the fore-wings of the male.

tussol (tus′ol), *n.* [L. *tussis*, a cough, + *-ol*.] A trade-name of antipyrin mandelate, $C_{11}H_{12}ON_2.C_8H_8O_3$: used in medicine, chiefly in the treatment of whooping-cough.

tussur (tus′ụr), *n.* Same as ★*tusser*.

tut-bargain (tut′bär″gạn), *n.* [Cf. *tut-work*.] A bargain to do work by the piece. [Prov. Eng.]

tutelary, *a.* **II.** *n.* A tutelary divinity; an animal regarded as a tutelary divinity: as, Anubis, the *tutelary* of sepulchers.

He carried a rattle or flute, used to imitate the voice of the *tutelary* or the sound of its movements, while he imitated its notes of alarm, fright, pain, and pleasure with his own voice, and mimicked its corresponding movements. *Smithsonian Rep.*, 1901, p. 80.

tuteur (tö-tėr′), *n.* [F., < L. *tutor*.] A tutor. The feminine is *tutrice*.

tutte corde (tö′tạ kôr′dạ). [It., 'all strings.'] In music for the pianoforte, a direction to relinquish the shifting pedal, so that all the strings may sound: opposed to *una corda*.

tutty-man, tuttiman (tut′i-mạn), *n.* [*tutty*¹ + *man*.] A tithing-man in the town of Hungerford, England, as a functionary in the ceremonies of hocktide. See the extracts.

The ancient hocktide customs are being observed in Hungerford this week. Yesterday the commoners were summoned by the blowing of a horn, and the proceedings opened with the despatch of tithing or *tutty men* on their arduous but pleasant duty. In accordance with a charter granted in the days of John of Gaunt, Duke of Lancaster, the duty of the *tutty men* includes a call at every house in the town and the demand of a toll from the male members. Furthermore, the women folk have to undergo the ordeal of being kissed by the *tutty men*.
Daily Mail (London), April 17, 1901, quoted in E. E. D.

The *tutti-men* went forth in the morning carrying floral staves, determined to do their duty by kissing every lady who crossed their path and exacting a penny from every male.
The Express (London), quoted in N. Y. Com. Adver- [tiser, May 21, 1903.

tutu (tö′tö), *n.* [Maori.] A poisonous New Zealand shrub, *Coriaria ruscifolia*. See *Coriaria*.

tutu-poison (tö′tö-poi″zn), *n.* A poison found in the tutu, a New Zealand shrub, especially in the seeds. Its physiological action greatly resembles that of strychnine; the best antidote is said to be belladonna.

Tuvalian (tụ̄-val′i-ạn), *a.* In *geol.*, noting the upper member of the Tirolian series of the upper pelagic Trias of the Mediterranean province.

Tuxedo (tuk-sē′dọ̄), *n.* Same as *Tuxedo* ★*coat*.—**Tuxedo coat.** See ★*coat*².

T. V. [An abbreviation of *tuberculin volutin*.] A symbol suggested by von Behring for a principle alleged to be present in the tubercle bacillus which exerts a catalytic and zymogenic action. *Nature*, Oct. 12, 1905, p. 581.

Tw. An abbreviation for *Twaddell*, indicating the use of the Twaddell hydrometer scale: as, 10° *Tw.* = specific gravity 1.050.

twelfth-second (twelfth′sek″und), *n.* The fraction $\frac{1}{10^{12}}$ of a second.

twelve, *n.*—**In twelves**, in *printing*, said of a form of type, or a sheet, or a section for binding, that has twelve pages only.

twenty-eight (twen′ti-āt′), *n.* **1.** Eight more than twenty.—**2.** The Australian yellow-collared parrakeet, *Platycercus semitorquatus*: so named from its note, which is sometimes repeated several times in successiou.

twice, *adv.*—**Twice gathered**, in *agri.*, doubly plowed in the manner known as gathering. See ★*gathering*.

They are then plowed, and the ridges '*twice gathered*'—to use a plowman's parlance—which means that a back furrow is made in the center of each of these secondary plots, and the furrows are thrown each way toward the back furrow until the ridge is completed.
H. Stewart, Irrigation for the Farm, p. 41.

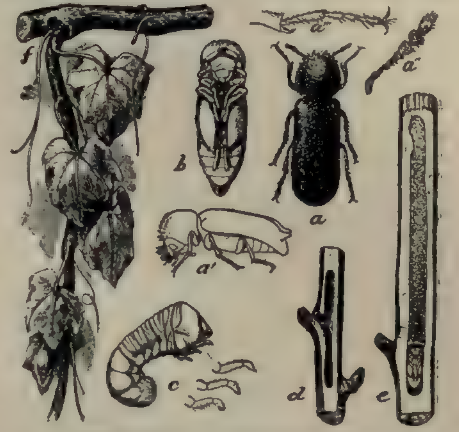
Twichell's acidimeter. See ★*acidimeter*.

twig¹, *n.* **4.** In *anat.*, one of the minute branches of a blood-vessel.

twig-beetle (twig′bē″tl), *n.* A twig-borer.—**Apple twig-beetle**, an American scolytid beetle, *Stephanoderes hispidulus*.

twig-blight, *n.* **2.** A blight of the apple, peach, and cherry caused by *Sclerotinia fructigena*; also a blight of the grape caused by *Botrytis cinerea*. See *Sclerotinia*.

twig-borer, *n.*—**Apple twig-borer**, an American bostrychid beetle, *Amphicerus bicaudatus*, which bores into the twigs of the apple- and other fruit-trees.—**Peach twig-borer**, the larva of a gelechiid moth, *Anarsia lineatella*, common to Europe and the United States. It bores into the young twigs of the peach.



Apple Twig-borer (*Amphicerus bicaudatus*).
a, *a′*, beetle; *a″*, *a‴*, antenna and leg of same, much enlarged; *b*, pupa; *c*, larva; *d*, *e*, larval galleries; *f*, grapevine, showing hole made by beetle. *a*, *a′*, *b*, and *c*, 2½ times natural size; *d*, *e*, *f*, reduced. (Marlatt, U. S. D. A.)

twig-gall (twig′gâl), *n.* An abnormal growth upon the twigs or branches of trees usually due to insects, fungi, or bacteria.—**Olive twig-gall.** Same as *olive* ★*tuberculosis*.

twig-girdler, *n.*—**Pear twig-girdler**, a beetle, *Oncideres cingulatus*.

twil, *v.*, *n.*, *prep.*, and *conj.* A simplified spelling of *twill*.

twild, *a.* A simplified spelling of *twilled*.

Twilight arc. Same as *twilight curve* (which see, under *twilight*).—**Twilight correction.** See ★*correction*.—**Twilight of the gods** [(= G. *götterdämmerung*) a translation of the ON. *ragna rökr*, which is an old error for *ragna rök*, the history (esp. the final judgment and end) of the gods and the world. See *Ragnarök*.], in *Norse myth.* See *Ragnarök*.

twill¹, *n.*—**Florentine twill.** Same as ★*cassimere-twill*.—**Prunella twill**, a variety of a three-harness twill. See ★*llama-twill*.—**Twill set.** See ★*set*¹.

twilley, twilly (twil′i), *v. t.*; pret. and pp. *twilleyed*, *twillied*, ppr. *twilleying*, *twillying*. Same as *willow*¹. *C. Vickerman*, Woollen Spinning, p. 117.

twilling-bar (twil′ing-bär), *n.* In *weaving*, a piece of mechanism in a twilling-machine; a modified form of the Jacquard loom invented in 1859. *T. W. Fox*, Mechanism of Weaving, p. 181.

twilling-hook (twil′ing-hůk), *n.* A hook for lifting a warp-thread in a Jacquard twilling-machine. *T. W. Fox*, Mechanism of Weaving, p. 181.

twin¹. **I.** *a.*—**Twin balance-rudders.** See ★*balance-rudder*.—**Twin condenser**, a condenser made in two parts, which may be either just alike or symmetrical with respect to a plane between them.

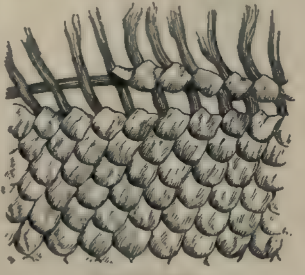
II. *n.* **3.** In addition to the common type of twins (*hemitropic twins*, *revolution twins*), the relation of whose parts can be explained by hemitropy, or a revolution of 180° about a *twinning axis* (see *twin*¹, 3), there is also a rare type, called *symmetric* or *reflection twins*, where there is no twinning axis but the twinned parts are in symmetrical position to each other with reference to some definite plane. This type is best illustrated by the so-called *Brazil* (or *Brazilian*) *twins* of quartz (common in crystals from Brazil), where two enantiomorphous crystals, one right-handed the other left-handed, are thus united, the plane of symmetry or reflection being a face of the prism of the second series. Further, in some cases, as in twins of sodium periodate, the orientation of the parts of the twinned crystal is explained by a rotation about an axis (of some multiple of 60°, as 180°), combined with reflection about a face which after the revolution is a plane of symmetry; this is a case of *alternating twinning*. Whatever the type of twin, the crystallographic law which defines the orientation of the parts of the twinned crystal is called the *twinning law* or *law of twinning*. An example is the *Brazil law*, which applies to Brazil twins (see above), also the *albite*, *pericline*, *Baveno*, *Carlsbad laws* among the feldspars, the *spinel law*, etc.; these belong respectively to *albite twins*, *pericline twins*, etc. (see *twin*^{1}). The *Manebach law* is that of the feldspar twins (*Manebach twins*) from Manebach and elsewhere, in which the base is the twinning-plane and usually also the contact or composition face. A *cyclic twin* is a repeated twin in which the axes of the twinned crystals are inclined to each other and usually at an angle which is an aliquot part of 360°, or nearly so, so that the compound crystal is often stellate in form. When the twinning of two crystals of lower symmetry results in a compound crystal having all the faces of the corresponding from the higher symmetry class, the result is a *complementary* (or *supplementary*) *twin*. Thus two pyritohedrons of pyrite twinned about the vertical axis form an interpenetrating twin of the complementary (supplementary) type; two twinned tetrahedrons of diamond form another example; also two hemimorphic crystals of pyrargyrite twinned about a vertical axis and united by a plane parallel to the base.—**Homologous twins, identical twins**, twins that are of the same sex and alike in form, in constitution, and in character. In the armadillo, *Tatusa hybrida*, and in the chalcid beetle, *Encrytus fuscicollis*, they are known to be the products of the separated blastomeres of a single ovum, and it is supposed that this is also true of human homologous twins.

> This suggestion . . . receives support . . . from the mode of formation of *homologous Twins* which are now shown, almost beyond doubt, to arise from the division of one ovum. *W. Bateson*, Study of Variation, p. 35.

Interpenetrant twin. Same as *penetration-twin* (which see, under *twin*^{1}, 3).

twin^1, *v. t.* **3.** To cut or form in pairs by cutters or chisels.

twine^1, *n.*—**Bird-cage twine**, a type of basketry consisting of a stiff warp and stiff cross-rods which are tied to the warp by a wrapping of pliable material.



Bird-cage Twine.
(From Rep. U. S. Nat. Museum, 1902.)

twine-binder (twīn′bīn″dėr), *n.* An attachment to a harvesting-machine by which the sheaf or truss is tied into a bundle with twine. See ★*wire-binder*. *Sci. Amer. Sup.*, Dec. 20, 1902, p. 22546.

twine-bush (twīn′bush), *n.* See *Hakea*.

twine-cell (twīn′sel), *n.* A peculiar structure in the eye of the pecten formed by a number of nerve fibers coiled in the form of a ball of twine. *Biol. Bulletin*, May, 1904, p. 317.

twinning^1, *n.*—**Multiple twinning**. Same as *repeated twinning*. See ★*twin*^{1}, 3.

twin-screw (twin′skrö), *a.* Having two screw-propellers: said of a vessel.

twirl, *n.*—**Morfit's steam twirl**, a contrivance used in soap-making to heat and stir the contents of the boiling-pans. It consists of a hollow vertical shaft through which, and through a series of convoluted tubes connected with it, steam is passed, while the whole system is rotated by means of gearing. The result is mechanical stirring, with 'dry steam' heat if the tubes are unperforated, but 'wet steam' may be used if the tubes are perforated with a number of small holes through which the steam escapes into the liquid contents of the pan.

twist, *n.* **1.** (*f*) *pl.* A commercial name of stringy crude rubber made up like balls of cord. See ★*rubber*^{1}, 3. **18.** (*c*) The entire angle through which one end of the rod has been twisted by the torsional effort, measured from a radius at the other or fixed end. The average twist per unit of length will be the whole twist divided by the length in such units. **19.** In Venetian and old English glasses, any one of the spiral lines, of various colors, frequently blown in the handles and other parts. See ★*air-twist* (with cut).—**Double and twist**. See ★*double*.—**Mano twist**, a variety of crude india-rubber, the product of *Landolphia florida*, brought in lumps, darker in color on the outside than inside, from Sierra Leone in Africa. Also called *Sierra Leone twist*.—**Reverse twist, reverse curve**, a twist or curve imparted to a ball in the opposite direction from that which is most natural. For instance, in base-ball and tennis it is easier for a right-handed man to make a ball curve from right to left, and a twist or curve in the other direction is therefore generally known as a *reverse*.—**Sierra Leone twist**. Same as *Mano* ★*twist*.—**Twist surface**. See ★*surface*.

twist-cop (twist′kop), *n.* A cop of warp-yarn spun on a mule.

twister, *n.* **1.** (*h*) A tornado or local whirlwind. [Colloq., U. S.]

> Their whirling winds are strong enough to blow down trees and overturn buildings. Violent local storms of this kind are often called cyclones, or prairie *twisters*, in the Mississippi valley, but the name tornado is to be preferred in order to distinguish them from the much larger and less violent cyclonic storms. *W. M. Davis*, Elem. Phys. Geog.

3. A twisting or zigzag movement of a horse. [Colloq.]

> This movement unseated many a rider during the recent contest, however, and it was a broncho named "E. A." (who used a combination of "sun-fish" and "*twister*") that proved the hardest to ride, and, according to some eye-witnesses, compelled even the champion to catch hold of his saddle-horn to save himself from falling, or, as the cowboys say, made him "hunt leather."
> *Wide World Mag.*, April, 1903, p. 548.

4. A somersault in which the body rotates or 'twists.' See ★*spotter*, 5. [Slang.]

> When he had them people just right he ran out and called their attention and showed them what he really could do; he done a spotter-*twister*, which is about the limit, and took a start and went back into that tent like a whirligig. *C. D. Stewart*, Partners of Providence, xix.

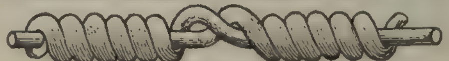
twist-frame (twist′frām), *n.* A throttle-frame for spinning cotton.

twist-gear (twist′gēr), *n.* A helical gear; a gear on which the teeth are helices, even though the two shafts connected by the gear and its mate are parallel. Also called *twist-wheel*.

twistical (twis′ti-kal), *a.* [Humorous, from *twist*, *v.*] Somewhat twisted or crooked, physically, mentally, or morally; odd; questionably honest. [Colloq., U. S.]

twisting-machine, *n.* **2.** A machine resembling a ring spinning-frame, for twisting two or more threads or yarns, as cotton, together by the rotation of a spindle or a similar device. *Nasmith*, Cotton Spinning, p. 224.

twist-joint, *n.*—**American twist-joint**, the connection between successive wire sections in an electric circuit, made either by soldered sleeves in a power circuit, or by twisting the wires around each other, as in an overhead telegraph circuit.



American Twist-joint.

twist-wheel (twist′hwēl), *n.* A gear on a roving- or spinning-machine by the changing of which the relation of the velocities of spindles and delivery-rollers is changed. *Nasmith*, Cotton Spinning, p. 198.

twist-yarn (twist′yärn), *n.* A cotton yarn used for warp. *Nasmith*, Cotton Spinning, p. 392.

twit, *n.* **2.** A thin, weak place in a thread of wool, cotton, etc. *C. Vickerman*, Woollen Spinning, p. 236.

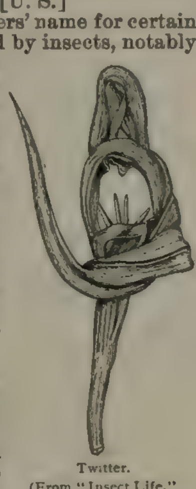
twitchety (twich′e-ti), *a.* [*twitch*, *v. i.*, in imitation of *fidgety*.] Fidgety; irritable; nervous. [Colloq., Eng.]

twitch-road (twich′rōd), *n.* A forest road or trail along which logs are dragged by horses from the place where they have been felled to the 'yard' where they are loaded upon sleds. [Maine.]

> This first real storm of the winter promised two feet on a level, and guaranteed the slipping on ramdowns and *twitch-roads*. *Holman Day*, King Spruce, xx.

twitch-up (twich′up), *n.* A slender sapling or branch, to the end of which a noose of wire or horsehair, etc., is attached, bent down and so held, in a snare, that if a grouse or other bird or small animal attempts to push through the noose it will release the sapling and be strangled by the noose. [U. S.]

twitter^1, *n.* **4.** A gardeners' name for certain plant-deformations caused by insects, notably a curious bunching and twisting of the carnation-plant caused by the work of anthomyiid larvæ. Some forms of twitter are caused by thrips and others by plant-lice.



Twitter.
(From "Insect Life," U. S. D. A.)

twitty (twit′i), *a.* [*twit*, *n.*, 2, + *-y*^{1}.] Irregular, with thin and thick places: said of wool or cotton yarn when in this condition. *C. Vickerman*, Woollen Spinning, p. 351.

two-bagger (tö′bag″ėr), *n.* In *base-ball*, a two-base hit. See ★*hit*^{1}. [Colloq.]

two-clang (tö′klang), *n.* In *acoustics*, a compound tone or clang, made up of two simple tones that differ in frequency.

> Similar simple periods are found to recur in the other harmonious *two-clangs*.
> *Wundt* (trans.), Human and Animal Psychol., p. 69.

two-cycle (tö′sī″kl), *a.* Completed in two phases or cycles; operating or completing a series of operations in two cycles or phases: as, a *two-cycle* gas-engine, one which completes the series of operations, namely, suction, compression, explosion, and exhaust, in two strokes or cycles.

two-group (tö′gröp), *n.* A rhythmized group of two sound-units; two ticks, syllables, etc., arranged as iambus or trochee. *Amer. Jour. Psychol.*, XII. 536. [Rare.]

two-grouping (tö′grö″ping), *n.* Arrangement by twos; the grouping of ticks, syllables, etc., in iambic or trochaic rhythm. *Amer. Jour. Psychol.*, XII. 535.

two-high (tö′hī), *a.* Having two rolls, one over the other, as distinguished from *three-high*: said of rolling-mills for iron or other metals. See ★*roll*, *n.*

two-on (tö′on), *a.* In *printing*, said of an arrangement of pages for presswork by which two copies in duplicate can be printed together on the same sheet by the same operation. This method utilizes a large machine, lessens the number of impressions, and saves needless presswork.

two-pair (tö′pãr), *a.* Being up two flights, namely, from the street door: as, the *two-pair* front chamber. [Eng.]

two-phase (tö′fāz), *a.* **1.** Two-cycle; having two phases or stages in a complete cycle, usually an expansion and a compression phase.—**2.** In *elect.*, of or pertaining to an alternating-current generator which produces two currents differing in phase by half a cycle, or to a circuit carrying such currents, or to a motor, transformer, or any electrical device used on a two-phase circuit. See ★*quarter-phase*.—**Two-phase alternater**, a generator for the production of two-phase alternating currents.—**Two-phase circuit**, in *elect.*, a circuit traversed by or intended for the distribution of two-phase currents.—**Two-phase generator**. See ★*two-phase alternater*.—**Two-phase system**, in *elect.*, a system for the production and distribution of two alternating currents differing from one another by half a cycle, and the utilization of such currents.

two-phaser (tö′fā″zėr), *n.* A generator of two-phase alternating currents, or a motor used on a two-phase circuit.

two-rhythm (tö′riᴛʜm), *n.* A rhythm of which the unit is bimembral; iambic or trochaic rhythm.

> There is no one principle which satisfactorily explains the preference for the *two-rhythm*.
> *Amer. Jour. Psychol.*, XII. 536.

two-sided (tö′sī″ded), *a.* **1.** Having two sides or aspects.—**2.** Of double orientation.—**3.** In *geom.*, bilateral: as, a *two-sided*, not a unilateral, surface.

twosome, *a.* **II.** *n.* In *golf*, a match between two persons.

two-step (tö′step), *n.* **1.** A round dance, danced by couples, the partners moving together in a series of sliding steps in two-two time, the first step of each measure being longer than the second and termed a 'slide.'—**2.** The music for such a dance, which is in duple or quadruple rhythm, not essentially different from a rapid march or quick-step.

two-storied (tö′stō″rid), *a.* **1.** Having two stories, and only two, as a house.—**2.** In *forestry*, comprising on the same area two classes, which vary considerably in height, composed of trees of different species. In a two-storied forest the taller trees form the *overwood* or *upper story*; the shorter trees form the *underwood* or *lower story*. The term is not applicable to forests under reproduction, in which the appearance of two stories is the temporary result of an incomplete process, but to those forests of which the two stories of growth are a natural and permanent feature.

two-way, *a.* **3.** Having the capacity to act in two ways: said of a fitting or fixture which has one inlet and one outlet.—**4.** Noting a fitting resembling a T, with one inlet and two outlets, but no control over the flow through them.

twyer, *n.*—**Bull's-eye twyer**, a twyer which discharges the air at the center of a hemispherical plate.—**Duck's-nest twyer**, a twyer or blast-pipe outlet in a forge in which the perforated end is cup-shaped or like a nest.—**Lurman's slag-twyer**, a water-cooled twyer of bronze, used for the removal of slag and placed below the plane of the blast-twyers. *Phillips and Bauerman*, Elements of Metallurgy, p. 226.—**Negro-head twyer**, a blast-nozle having a cubical block on its end built into the furnace.—**Nigger-head twyer**. Same as *negro-head* ★*twyer*.

twyer-box (twī′ėr-boks), *n.* **1.** A chamber or duct from which the separate twyer-pipes are led into the walls of the furnace proper.—**2.** In the Bessemer converting vessel, the chamber below the refractory bottom from which air passes into the molded twyer-blocks and so up into and through the molten metal. Air is supplied to the box from a pipe leading down from the hollow trunnion of the converter.

twyer-pipe (twī′ėr-pīp), *n.* 1. The pipe which supplies air from the blast-main to the individual twyers.—2. The twyer itself.

TX. [*T* an abbreviation of *tuberculin*, *X* representing an unknown substance.] A substance assumed by von Behring to result from the transformation of T. C., after it has been incorporated by and become an integral part of the cells of the body. See ★*T. C.* *Nature*, Oct. 12, 1905, p. 581.

Ty. An abbreviation of *territory*.

tychite (tī′kīt), *n.* [Gr. τύχη, fortune, chance, + *-ite*2.] A carbonate and sulphate of magnesium and sodium ($2MgCO_3.2Na_2CO_3.Na_2SO_4$) which occurs in colorless octahedral crystals at Borax Lake, San Bernardino County, California. It is associated with and similar to the related mineral ★northupite (which see), but out of several thousand crystals only four of tychite were discovered, hence the name.

Tychonian (tī-kō′ni-an), *a.* Same as *Tychonic*.

tychoparthenogenesis (tī″kọ-pär-the-nō-jen′-e-sis), *n.* [NL., < Gr. τύχη, chance, + NL. *parthenogenesis*.] Exceptional or occasional parthenogenesis. See *occasional* ★*parthenogenesis*.

tyee (tī′ē), *n.* [Chinook jargon.] 1. A chief; a person of wealth or distinction.—2. Same as *quinnat*. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 151.

tylhexactine (til-hek-sak′tin), *n.* [Gr. τύλη, a cushion, + ἕξ, six, + ἀκτίς (ἀκτιν-), a ray.] In the sponge-spicules, a hexactine with knobs at the end of each ray.

tylion (ti-lī′ọn), *n.*; pl. *tylia* (-ä̤). [NL. *tylīon*, < Gr. τυλεῖον, a cushion, dim. of τύλη, a cushion.] In *craniom.*, the median point of the limbus sphenoidalis. *Von Török.*

tyloma (tī-lō′mä̤), *n.*; pl. *tylomata* (-ma-tä̤) [NL., < Gr. τύλωμα, a callus (on the shoulder).] Same as *callosity*, 2.

Tylosaurus (tī-lọ-sâ′rus), *n.* [NL., < Gr. τύλος, a knot or callus, + σαῦρος, lizard.] One of the mosasaurs of the subfamily *Tylosaurinæ*, characterized by having the premaxillæ produced into a long rostrum in advance of the teeth: found in the Niobrara Cretaceous of Kansas, New Mexico, and Texas.

tylostyle, *n.* (*b*) In the sponge-spicules, a triode or three-rayed element in which one of the arms is long, straight, and sharp, and the other two are atrophied.

tympanal, *a.* **II.** *n.* 1. The posterior one of the pterygoid bones in fishes: it is usually between the hyomandibular and the mesopterygoid: same as ★*metapterygoid*, 2. *Starks*, Synonymy of the Fish Skeleton, p. 514.—2. The upper anterior bone of the gill-cover in fishes: not homologous with the bone called *tympanal* by Cuvier: same as *præoperculum*, 2. *Starks*, Synonymy of the Fish Skeleton, p. 515.

tympanectomy (tim-pa̤-nek′tọ-mi), *n.* [NL. *tympanum* + Gr. ἐκτομή, excision.] Excision of the drum-membrane of the ear.

Tympanic canal. Same as *Jacobson's* ★*canal*.

tympanicity (tim-pa̤-nis′i-ti), *n.* [*tympanic* + *-ity*.] The condition of being tympanitic, or of giving a hollow sound on percussion.

> The area of gastric *tympanicity* was only slightly enlarged. *Lancet*, July 11, 1903, p. 98.

tympanion (tim-pā′ni-on), *n.*; pl. *tympania* (-ä̤). [NL., < Gr. τυμπάνιον, dim. of τύμπανον, a drum.] In *craniom.*, the highest point (upper tympanion) and lowest point (lower tympanion) on the border of the annulus tympanicus. *Von Török.*

tympanitic, *a.* 2. Giving out a hollow or drum-like sound on percussion.

> The skin and subcutaneous tissues of the face, neck and chest were markedly swollen, and *tympanitic* on percussion. *Jour. Exper. Med.*, Oct. 25, 1900, p. 140.

tympanomalleal (tim″pa̤-nō-mal′ẹ̄-al), *a.* and *n.* Noting a bone in the head of fishes, lying between the hyomandibular and the quadrate; the symplectic. *Starks*, Synonymy of the Fish Skeleton, p. 513.

tympanomastoid (tim″pa̤-nō-mas′toid), *a.* [*tympanum* + *mastoid*.] Relating to the drum of the ear and the mastoid cells. *Buck*, Med. Handbook, III. 697.

tympanophonia, tympanophony (tim″pa̤-nọ-fō′ni-ä̤, tim-pa̤-nof′ọ-ni), *n.* [NL. *tympanophonia*, < Gr. τύμπανον, drum, + φωνή, sound.] Same as *tinnitus*. *Buck*, Med. Handbook, III. 660.

tympanotomy (tim-pa̤-not′ọ-mi), *n.* [Gr. τύμπανον, drum, + -τομια, < ταμεῖν, cut.] Incision through the tympanum of the ear. *Buck*, Med. Handbook, III. 672.

tympan-sheet (tim′pa̤n-shēt), *n.* In *printing*, the sheet of paper affixed to the outside or impressing-surface of the tympan.

tymp-arch (timp′ärch), *n.* The arch of refractory material, or of water-cooled metal, supporting the wall of a blast-furnace (for iron) over the opening to the forehearth (if the furnace has one). The name is often retained for the arch over the tapping-hole in modern blast-furnaces for iron. See *tymp*.

tyndallization (tin″da̤l-i-zā′shọn), *n.* [John *Tyndall*, a British physicist.] Sterilization of a fluid by heating it repeatedly to a point slightly below that of boiling. With each heating the bacteria which have developed from the more resistant spores are destroyed; when finally no undeveloped spores remain the fluid is sterile. *Buck*, Med. Handbook, I. 686.

Tyntlastes (tin-tlas′tēz), *n.* [NL., < Gr. *τυντλάστης, < τυντλάζειν, work in the mud, < τύντλος, mud.] A genus of gobioid fishes found on the Pacific coast of Central America.

typ. An abbreviation (*b*) of *typographic* or *typographical*.

type, *n.* 10. The four types first recognized and frequently referred to, namely, hydrochloric acid, water, ammonia, and marsh-gas, simply represent the first four degrees of valence, monad, dyad, triad, and tetrad.—**Apocentric type**, in *biol.*, a modified condition of an archecentral type. *P. Chalmers Mitchell.*—**Archecentral type**, in *biol.*, the most primitive type, from which all others have been derived. *P. Chalmers Mitchell.*—**Chaucer type.** See *golden* ★*type*.—**Crystal types.** See ★*symmetry*, 6.—**Disentis type**, in *anthrop.*, the type of man found in the valley of the Rhine, in the canton of Grisons. The type agrees with the Alpine type of Ripley. *Rütimeyer.*—**Extra condensed type.** See ★*condensed*.—**Five-line nonpareil type**, an old name for 30-point type.—**Golden type**, a name given to one of the three fonts of type designed by William Morris and used by him at the Kelmscott Press, the other two being the Troy and the Chaucer. The golden type is Roman, the others Gothic in style. The American reproduction is called *Jenson type*.

> In *golden type*, with ornamental initials but no borders, this edition is embellished with twelve full-page designs by Mr. A. J. Gaskin of the Birmingham School. *A. Vallance*, William Morris, p. 160.

GOLDEN TYPE
Golden Type

Ideational type. Same as ★*memory type*.—**Minikin type**, excelsior or 3-point type. [Eng.]—**Snellen's types.** Same as *test-types*.—**Supplementary type**, a specimen used in extending or correcting knowledge of a previously defined species.—**Troy type**, one of the three forms of type designed by William Morris, the other being the golden and the Chaucer. See *golden* ★*type*.—The American reproduction is called *Satanick type*.

TROY TYPE
Troy Type

Two-line double pica type, meridian or 44-point type. [Eng.]—**Type form, locality, museum.** See ★*form*, etc.—**Type material**, the material or specimens from which a new species has been described and named.—**Type specimen**, the actual specimen from which a species has been described and named. A typical specimen is a characteristic example of a given species, but a type specimen is one on which a species is based. See ★*cotype*, ★*genotype*, ★*holotype*, ★*metatype*, ★*paratype*, ★*topotype*.

type, *v.* **II.** *intrans.* To use a type-writer. [Colloq.]

> She had n't the brains to sing. She *typed* for a living, I believe. *F. W. Hume*, Crimson Cryptogram, viii.

type-body (tīp′bod″i), *n.* The metal base on which the face of a type is cast. 'Body' is used to describe the height of a type as it appears in print, as pica or 12-point body, or as nonpareil or 6-point body. It does not define the width of a type. The square or em-quadrat of a type is understood as its body.

type-composition (tīp′kom-pọ-zish″ọn), *n.* The setting up of type in proper order; type-setting. See *composition*, 1 (*c*).

type-life (tīp′līf), *n.* An organism which epitomizes or typifies the life and development of all the other organisms having the same line of descent; a typical form.

typer (tī′pėr), *n.* [*type*(*write*) + *-er*.] A type-writer. [Colloq.]

> In two consecutive advertisements which appeared on the front page of the 'Athenæum' for May 21, I notice the two different forms, typist, and *typer*, meaning a person who uses a type-writer. *N. and Q.*, 9th ser., VI, quoted in Encyc. Dict.

type-slug (tīp′slug), *n.* A line of composed type in one solid strip, as made by a linotype machine.

type-work (tīp′wėrk), *n.* In *printing*, the letterpress or body of printed matter on a page.

> The headband may be one third or sometimes one half of the page, but when it is very large the *type-work* below must be correspondingly reduced in size. *De Vinne*, Mod. Book Composition, p. 162.

type-writer, *n.* 1. Any machine printing letters by type. Type-writing machines are divided into two chief classes, the stamping-machines, in which the type stamps the letters on the paper by means of an inked ribbon, and the printing-machines, which employ inked type. A typical machine of the stamping or ribbon class consists of three parts, the keyboard, the carriage, and the action or printing mechanism. (See Fig. 1, *A*, *B*, and *C*.) The keyboard consists of several ranks of type-keys and two or more mechanical keys (*H*, *I*). The carriage is quite distinct from the rest of the machine, and has a traverse, right and left, across the top of the machine. Its essential features are the cylinder or platen (*E*) that supports the paper and the feed-motion that feeds the paper in two directions, across and down the page. The traverse of the carriage to the right by means of the carriage lever (*F*) stores power in a coiled spring, the traverse to the left being automatic and under the influence of the coiled spring. The carriage is fitted with adjustable stop-motions to control the traverse of the carriage, and with other fittings and parts for the complete and perfect control of its movements under the varying conditions of stamping letters on paper in the work of correspondence, reporting, dictation, and copying. The action includes all the levers and other moving parts placed between the keyboard and carriage and controlling the type, the feed-motion of the carriage, and the ribbon-operating mechanism. When the machine is ready for use, a sheet of paper is placed in the carriage and coiled round the cylinder and the carriage is moved to the extreme right of its traverse. A number of type-keys are touched in succession, each blow upon a key by the finger causing a type-bar, supporting a certain type, to rise and strike the under side of the cylinder. As the paper is wrapped round the cylinder it would be struck by the type were it not that the inked ribbon, stretched between two reels (*J*), comes between, the type forcing the ribbon against the paper and causing it to stamp on the paper an inked impression of the type. At the same time, this movement of the key also releases the feed-motion of the carriage and causes it to feed the paper one space to the left, giving a clean space for the next impression. When all the letters of a word are stamped on the paper, the mechanical key called the *space-key* (*H*) is touched and the feed-motion feeds the paper to the left one space to form the blank between the finished word and the next. When enough words are stamped upon the paper to fill a line, a lever on the carriage-lever is used to move the carriage back to its first position (at the beginning of the line) and at the same time to feed the paper down the proper distance to give the required space between the lines, the actual space being adjustable at will. Touching other mechanical keys, called *shift-keys* (*I*), shifts the cylinder slightly to bring the paper before one or the other of the two types on each type-bar and gives a selection between the two types (capital or small letters) marked on each type-key of the keyboard. This is the essential operation of most machines employing an inked ribbon, and explains in part the underlying principle on which all type-writers are built. It will be seen that the impression is made on the paper when under the carriage and out of sight of the operator. To read what has been done, the carriage must be tilted back to render the work visible. This has led to the invention of the so-called *visible writers* or type-writers in which the impressions are made on the front or on top of the cylinder and in plain view of the operator, producing visible writing. In the machines that use type which strike the front of the cylinder, the type-bars lie, when at rest, in a horizontal position in a segment of a circle, pressure upon a key throwing the type-bar upward and backward

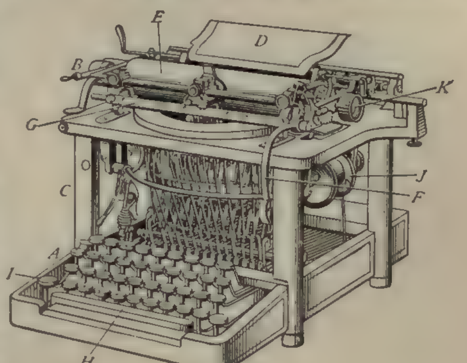


Fig. 1.

A, keyboard; *B*, carriage; *C*, action or printing mechanism; *D*, paper-shelf; *E*, cylinder or platen; *F*, carriage-lever; *G*, front scale; *H*, space-key; *I*, shift-key; *J*, ribbon-reel; *K*, thumb-wheel controlling cylinder. Type-bars and type are not visible.

against the cylinder. In the machines that strike a downward blow on top of the cylinder, the type-bars, when at rest, stand erect in two groups on each side of the machine (see Fig. 2) or stand in a half-circle between the keyboard and the carriage. The machines of the second class use inked type direct and are practically printing-machines. In some of these machines all the essential features of the machine shown in Fig. 1 are employed except the inked ribbon, the types, when idle, resting on an ink-pad that keeps them constantly wet with ink. Pressure upon a type-key causes the type-bar to lift the type from the pad and make a direct print on the paper. Some machines of this class are *visible writers*, or print in sight of the operator, giving the so-called *visible writing*. Still other printing type-writers employ a *type-wheel*, the motion of the type-key causing the wheel to revolve until the right letter is opposite the paper, when an impression is made on the paper. Another machine employs a type-shuttle, the touching of a key causing it to move until the right letter is brought before the paper, when an impression is made by means of an inked ribbon. The *book type-writer* is a ribbon-machine designed to print directly upon the pages of a book, such as a ledger or other account-book. The machine has no carriage, and consists of a keyboard and action having type-bars that strike downward, the entire machine having a traverse over the page itself. The book is laid open in a suitable platen or holder, and the machine travels on the platen, being fed across and down the page automatically by the operation of the keys.—**Electric type-writer**, a type-writing machine in which the depression of the key is transmitted to the proper letter and causes it to move, not by levers or cams, but by an electric device.

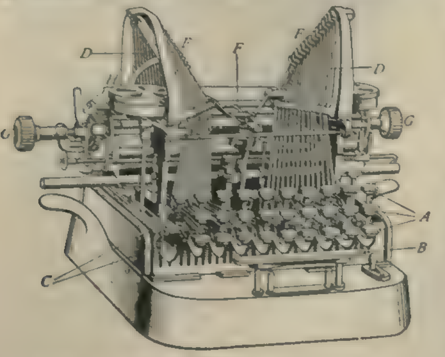


Fig. 2.

A, type-keys; *B*, space-key; *C*, shift-keys; *D*, type-bars; *E*, type; *F*, cylinder; *G*, thumb-wheel controlling cylinder; *H*, ribbon reel. The type-bars are of the shape of an inverted U and are supported at two points.

typhaceous (tī-fā'shius), *a.* [NL. *Typhace(æ)* + *-ous.*] Belonging or pertaining to the *Typhaceæ*.

typhic (tī'fik), *a.* [*typh(us)* + *-ic.*] Relating to typhus or typhoid fever. *Buck*, Med. Handbook, III. 358.

typhization (tī-fi-zā'shọn), *n.* [*typh(us)* + *-iz(e)* + *-ation.*] The production of a morbid state, not actually typhus fever, supposed to be the result of exposure to infection of that disease.

Typhlichthys (tif-lik'this), *n.* [NL., < Gr. *τυφλός*, blind, + *ἰχθύς*, fish.] A genus of small blind fishes of the family *Amblyopsidæ*, found in subterranean streams in Indiana, Kentucky, and neighboring States.

typhlodicliditis (tif-lọ-dik-li-dī'tis), *n.* [NL., < Gr. *τυφλός*, blind, + *εἶδος*, form, + *κλείς* (*κλειδ-*), means of closing, key, etc., + *-itis.*] Inflammation of the ileocæcal valve.

Typhlogobius (tif-lọ-gō'bi-us), *n.* [NL., < Gr. *τυφλός*, blind, + NL. *Gobius.*] A genus of gobioid fishes found under rocks and in crab-holes on the coast of southern California. Their eyes are reduced and covered with skin, being functional only in the young.

typhlolithiasis (tif″lọ-li-thī'ạ-sis), *n.* [NL., < Gr. *τυφλός*, blind, + NL. *lithiasis.*] The occurrence of calculi in the cæcum.

Typhlomolge (tif-lọ-mol'jē), *n.* [NL.] A genus of tailed amphibians. They have the tongue moderate, anterior border free; vomeropalatine teeth in a strong series; limbs excessively elongated; fingers four, toes five; eyes entirely concealed under the skin; gill-rami long, simple; and fimbriæ long and slender. The genus is related to the cave-dwelling *Proteus* of Europe, and the only known species, *T. rathbuni* Stejneger, is found in the water from an artesian well at San Marcos, Texas.

typhlostenosis (tif″lọ-stẹ-nō'sis), *n.* [NL., < Gr. *τυφλός*, blind, + *στένωσις*, narrowing.] Contraction of the cæcum.

typhlotomy (tif-lot'ọ-mi), *n.* [Gr. *τυφλός*, blind, + *-τομια*, < *ταμεῖν*, cut.] Incision into the cæcum. *Lancet*, May 30, 1903, p. 1511.

typhodeictor (tī-fọ-dīk'tọr), *n.* [E. *typh(oon)* + Gr. **δείκτωρ*, < *δεικνύναι*, point out.] An instrument for obtaining, by inspection, the bearing or position of a revolving storm, hurricane, or typhoon; a storm-card; specifically, an apparatus for this purpose devised by Lieutenant-Colonel J. A. Lloyd in 1849.

typhogenic (tī-fọ-jen'ik), *a.* [NL. *typhus* + Gr. *-γενής*, -producing, + *-ic.*] Causing typhus or typhoid fever.

typhohemia (tī-fọ-hē'mi-ạ̈), *n.* [NL. *typhus* + Gr. *αἷμα*, blood.] Putrefaction of the blood, formerly thought to occur in cases of typhus or so-called putrid fever.

Typhoid bacillus. See *Eberth's* ★*bacillus* and *typhoid.* —**Typhoid cholera.** See ★*cholera.*—**Typhoid spine.** See ★*spine.*

typholysin (tī-fol'i-sin), *n.* [*typho(id)* + *lysin.*] A bacteriolysin directed against the typhoid bacillus. *Buck*, Med. Handbook, App., p. 536.

Typhonian* (tī-fō'ni-an), *a.* Pertaining to or connected with Typhon or Set, an Egyptian deity.

typhopneumonia (tī″fọ-nụ-mō'ni-ạ̈), *n.* [NL.] Same as *typhoid pneumonia* (which see, under *pneumonia*).

typhosepsis (tī-fọ-sep'sis), *n.* [NL., < E. *typho(id)* + Gr. *σῆψις*, putrefaction.] Same as ★*typhohemia*.

Typhula (tī'fū-lạ̈), *n.* [NL. (Fries, 1818), < *Typha*, a genus of plants, which it is fancied to resemble in miniature, + dim. *-ula.*] A genus of small hymenomycetous fungi belonging to the family *Clavariaceæ* and closely related to *Pistillaria*, from which it differs chiefly in having four sterigmata to each basidium instead of two. The species usually grow on decaying herbaceous stems and arise from a small sclerotium. *T. gyrans* occurs in Europe and North America. *T. graminum* is said to be parasitic on wheat plants in Sweden.

Typhus siderans an extremely severe and usually rapidly fatal form of typhus fever.

typist (tī'pist), *n.* [*type*, *v.*, + *-ist.*] One whose occupation is writing with a type-writer. [Colloq.]

They do not aspire to swell the already-overcrowded labour market by going out as governesses, companions, clerks, *typists*. *The Grand*, Oct. 1, 1905, p. 455.

typo. An abbreviation of *typographic*, *typographical*, or *typography*.

typografer, typografical, typografy. Amended spellings of *typographer*, etc.

typogravure (tip″ọ-grạ-vūr'), *n.* [F. **typogravure*, < Gr. *τύπος*, type, + F. *gravure*, engraving.] A half-tone relief photo-engraved block which may be printed from simultaneously with type matter.—**Typogravure process**, in *photog.*, a process for obtaining half-tone pictures from copper relief-plates.

typologic (tip-ọ-loj'ik), *a.* [*typolog(y)* + *-ic.*] Of or pertaining to typology or the study of types.

It is only very seldom . . . that we can follow the *typologic* development. *Smithsonian Rep.*, 1890, p. 514.

typologist (tī-pol'ọ-jist), *n.* [*typolog(y)* + *-ist.*] One who is versed in typology; a student of types and symbols.

typometer (tī-pom'e-tėr), *n.* [Gr. *τύπος*, type, + *μέτρον*, measure.] A type-gage used by type-founders to test the dimensions of type-bodies. Different mechanisms are made for width or set, height to paper, and conformity to standards.

typometry (tī-pom'e-tri), *n.* [Gr. *τύπος*, type, + *-μετρια*, < *μέτρον*, measure.] The science or art of determining the proper sizes of type-bodies.

typoradiography (tī-pọ-rā-di-og'rạ-fi), *n.* [Gr. *τύπος*, type, + E. *radiography.*] The process of making photographic copies of a manuscript by placing it in contact with a package of sensitized printing-papers or films, exposing it to the action of X-rays, and subsequently developing the radiographs thus obtained.

Owing to the thin sensitized films of the printing paper, very unsatisfactory skiagraphs were obtained. Dr. Kolle now declares that he has overcome these difficulties and that the process of *typo-radiography* is not a theoretical dream, but is a self-evident and systematic method of procedure. *Sci. Amer.*, Jan. 28, 1899.

typoscribe (tī'pọ-skrīb), *n.* [Gr. *τύπος*, type, + L. *scribere*, write.] One who operates a type-writer. *The Writer.* [Rare.]

typoscript (tī'pọ-skript), *n.* [Gr. *τύπος* + E. *script.*] Writing produced by means of a type-writer. *The Writer.* [Rare.]

typotelegraph (tī-pọ-tel'ẹ-gråf), *n.* [Gr. *τύπος*, type, + E. *telegraph.*] A name given to the automatic printing telegraph of Cardwell.

typotelegraphy (tī″pọ-tẹ-leg'rạ-fi), *n.* [*typotelegraph* + *-y*^{3}.] Telegraphy in which the receiving instrument automatically reproduces the message in printed characters. *Elect. World and Engin.*, Oct. 3, 1903, p. 377.

Typotheria (tī-pọ-thē'ri-ạ̈), *n. pl.* [NL., < Gr. *τύπος*, type, + *θήρ*, wild beast.] A group of extinct ungulates, regarded as an order or suborder, having elongate, rodent-like teeth, the canines reduced or absent, and the rest of the tooth-series nearly always present. The humerus has an entepicondylar foramen; the propodials are complete and usually separate; and the digits are four or five in number. Species of moderate size have been found in the Miocene and Pleistocene of South America.

Tyrannosaurus (tī-ran-ọ-sâ'rus), *n.* [NL., < Gr. *τύραννος*, lord, master, + *σαῦρος*, lizard.] A great carnivorous dinosaur from the Upper Cretaceous (Laramie) of North America, characterized by its small fore limbs, greatly elongated hind limbs inclosing large hollow cavities, and huge serrated teeth of which thirteen are present in the upper jaw and twelve or thirteen in the dentary. This dinosaur walked erect, as a biped, supporting the weight of the body on the hind limbs and tail.

tyrant-fish (tī'rạnt-fish), *n.* A species of cutlas-fish, *Evoxymetopon tæniatus*, of the West Indies, known in Spanish as *tirante*.

tyrein (tī'rẹ-in), *n.* [Gr. *τυρός*, cheese, + *-e-in.*] Clotted casein.

tyroglyphid (tī-rog'li-fid), *n.* and *a.* **I.** *n.* Any mite or acarid of the family *Tyroglyphidæ*.

II. *a.* Of or pertaining to the *Tyroglyphidæ*.

tyroid (tī'roid), *a.* [Gr. *τυρός*, cheese, + *εἶδος*, form.] Cheesy; resembling cheese.

Tyrolian (ti-rō'li-ạn), *a.* Same as *Tyrolese*.

tyroma, *n.* 2. [pl. *tyromata* (-mạ-tạ̈).] A tumor containing cheesy matter.

tyromancy (tī'rọ-man-si), *n.* [Gr. *τυρός*, cheese, + *μαντεία*, divination.] Divination by means of cheese. [Rare.]

tyrosin, *n.* Tyrosin is p-oxyphenyl-propionic acid, $-C_6H_4(OH).CH_2.CH(NH_2)COOH$. It is obtained from nearly all albumins on hydrolytic decomposition by means of acids, alkalis, and the proteolytic ferments. It is supposed that a tyrosin radical exists as such in all those substances from which it is obtainable on decomposition.

tyrosinase (tī'rọ-si-nās), *n.* [*tyrosin* + *-ase.*] An oxidizing ferment which acts upon tyrosin and leads to the formation of various black substances which are known only in part. The formation of homogentisic acid (alkapton) is probably referable to a tyrosinase. The black pigment secreted by the octopus is produced in this manner.

tyrotoxin (tī-rọ-tok'sin), *n.* [Gr. *τυρός*, cheese, + *τοξ(ικόν)*, poison, + *-in*^{2}.] A poisonous substance producing the complex of symptoms referable to cheese-poisoning.

tyrotoxism (tī-rọ-tok'sizm), *n.* [*tyrotox(icon)* + *-ism.*] The aggregate of symptoms in poisoning by tyrotoxin or tyrotoxicon; cheese-poisoning. *Buck*, Med. Handbook, IV. 189.

tzin (zin), *n.* [Nahuatl *-tzin*, a suffix noting respect or distinction.] A lord; a prince.

Such was the *tzin* Guatamo, or, as he is more commonly known in history, Guatamozin.
Lew Wallace, The Fair God, i. 6.

U 3. An abbreviation (*a*) [*l. c.*] in a ship's log-book, of *ugly threatening weather*; (*b*) [*l. c.*] of *uncle*; (*c*) of *Unionist*.

uabain (wä′ba-in), *n.* [Appar. ‹ **uabä*, an African name (of the plant?), + *-in*².] Same as ★*acocantherin*.

uarana (wä-rä′nä), *n.* Same as *guarana*.

uarango (wä-rän′gō), *n.* [Also *guarango*. Peruvian?] A thorny tree, *Acacia macracantha*, abundant on the Peruvian coast, resembling the mesquite.

uaruar (wär-wär′), *n.* [Quichua of Peru.] Same as *floripondio*.

U. B. An abbreviation (*a*) of *United Brethren*; (*b*) of *United Brethren in Christ*.

ubiquity, *n.*—**Coefficient of ubiquity.** See ★*coefficient*.

U. C. An abbreviation (*a*) of *University College*; (*b*) of *Upper Canada*; (*c*) of the Latin *urbis conditæ*, from the founding of the city, meaning from the first year of Rome.

'ud (öd), *n.* An Arab lute or guitar, usually with seven pairs of strings, common in many Oriental countries. It was the prototype of the European lute of the sixteenth century: also *oud*. See *lute*.

udad (ö′dad), *n.* Same as *aoudad*. *Proc. Zool. Soc. London*, 1898, p. 352.

udell (ū-del′), *n.* [(*al*)*udel*.] A pear-shaped vessel, or cylinder tapered at one end, of glass or clay ware, open at both ends, used in the condensation of iodine vapor in the industrial preparation of iodine, the vapor being carried through several series of such vessels, which fit into one another successively in each series. See *aludel*. *Roscoe and Schorlemmer*, Treatise on Chem., I. 201.

udika-bread (ö-dē′kä-bred′), *n.* Same as *dika-bread*. In the preparation of this nutritious native food the roasted oily seeds of three West African trees are used: *Irvingia Gabonensis*, of the quassia family, *Fegimanra Africana*, of the cashew family, and *Pentaclethra macrophylla*, of the mimosa family. See *dika-bread*.

udo (ö′dō), *n.* [Jap.] An ornamental plant, *Aralia cordata*, cultivated in Japan and China as a vegetable. The edible portions of the plant are its young shoots, which are blanched by being covered with earth. In the winter the crisp, white stems are used for salad like celery. *Nature*, Aug. 15, 1907, p. 380.

udomograph (ū-dom′ō-gràf), *n.* [L. *udus*, moist, + *m*(*etrum*), measure, + Gr. γράφειν, write.] A recording pluviometer or rain-gage.

U. E. I. C. An abbreviation of *United East India Company*.

ugab (ö′gäb), *n.* [Heb. *'cugab*.] A Hebrew musical instrument, probably a syrinx, but possibly some simple pipe: translated 'organ' in the authorized version of the Bible. In modern Hebrew the term is applied to the organ and the piano.

Uganda bark-cloth, a felt-like material which consists of several layers of the inner bark of species of *Brachystegia*, especially *B. spicæformis* and *B. appendiculata*, forest-trees of tropical Africa: used by the natives of Uganda and other regions near the east coast for clothing, bags, and other domestic purposes. The bark is rendered very soft and pliable by being pounded with grooved mallets and it is usually dyed or superficially stained a brick-red color with the juice of the tree itself.

Ugrian, *a.* 2. Pertaining to that group of peoples which includes the Voguls, Ostiaks, and Magyars.

Ugro-Finnic (ö-grō-fin′ik), *a.* Same as ★*Finno-Ugrian*.

> The Finns belong to the *Ugro-Finnic* or Uralo-Altaic stock and are akin to the Magyar and Laplander. About a dozen different tribes of this *Ugro-Finnic* stock are recognized; they are scattered over northern and central Russia and Siberia. *Pop. Sci. Mo.*, Nov., 1903, p. 67.

Ugro-Slavonic (ö′grō-sla-von′ik), *a.* Both Ugrian and Slavonic (Slavic) in origin. *Keane*, Ethnology, p. 201.

U. G. R. R. An abbreviation of *underground railroad*.

ugui (ö′gö-ē), *n.* [Jap.] Same as ★*akahara*.

uhllo (öl′yō), *n.* [Also *üllo*; California Indian.] A variety of shell-money used by the Indians of California. It is made of oblong pieces of abalone shell from one to two inches long, strung edge to edge on a string. These strings, which usually consist of about ten pieces, are often used as necklaces.

uhuula (ö-hö-ö′lä), *n.* [Hawaiian.] A native Hawaiian name for species of scaroid or parrot-fishes.

Uintacrinidæ (ū-in-ta-krin′i-dē), *n. pl.* [NL., ‹ *Uintacrinus* + *-idæ*.] A family of flexible crinoids with pentamerous symmetry and stemless calyx, the basal plates inclosing a centrodorsal, two costals supporting a long series of arm-plates and numerous interbrachials, and arms very long and pinnulate. The single genus *Uintacrinus* occurs in the Upper Cretaceous of Kansas and Westphalia.

Uintacyonidæ (ū-in′ta-sī-on′i-dē), *n. pl.* [NL. *Uintacyon* (*Uintah* (mountains) + Gr. κύων, dog), the type genus, + *-idæ*.] A family of flesh-eating mammals, of the order *Creodonta*, but suggesting dogs in their appearance.

Uintah group. See ★*group*¹.

uintaite (ū-in′ta-īt), *n.* [*Uintah*, mountains in Utah, + *-ite*².] Gilsonite; a black, brilliant, and lustrous variety of bitumen giving a dark-brown streak, breaking with a beautiful conchoidal fracture, and having a hardness of from 2 to 2.5 and a specific gravity of from 1.065 to 1.07. It is easily fusible, dissolves in turpentine, and is used in making varnishes and in coverings for electric insulation. *G. P. Merrill*, in Smithsonian Rep. (Nat. Mus.), 1899, p. 450.

uintathere (ū-in′ta-thēr), *n.* A uintatherium.

Uintatherium beds. Same as *Bridger* ★*group*.

Uintornis (ū-in-tôr′nis), *n.* [NL., ‹ *Uintah*, mountains in Utah, + Gr. ὄρνις, a bird.] A fossil woodpecker from the Eocene Tertiary of Wyoming.

Uitenhage series. See ★*series*.

uitlander (oit′län-dėr), *n.* [D., a foreigner, = E. *outlander*.] 1. A term used in the late South African republics to denote any white man in the country who is not a Boer.

> The Witwatersrand and the Revolt of the *Uitlanders*.
> *Geog. Jour.* (R. G. S.), IX. 240.

2. More generally, an outsider.

> Any *Uitlander*, meaning thereby any unfortunate first-class, fire-tried physician of any one of the other forty-four sovereignties of the united United States, might just as well make up his mind, first as last, that he must live and die outside of this watched-over, Medically-Protected (from Albany) Happy Valley of Rasselas, i.e., New York. *Amer. Physician*, Jan., 1903, p. 29.

uitspan (oit-spán′), *v. t.* and *i.* [D. *uitspannen*, outspan.] Same as *outspan*. [South African.]

U. J. D. An abbreviation of the Latin *Utriusque Juris Doctor*, doctor of both laws, that is, the canon and the civil law.

U. K. A. An abbreviation of *Ulster king-at-arms*.

Ukrainian (ū-krā′ni-an), *n.* An inhabitant of the Ukraine; a Little Russian.

Ulæma (ū-lē′mä), *n.* [NL., ‹ Gr. οὖλος, entire, + αἷμα, blood. The interhemal is entire and not cup-shaped at its upper end.] A genus of fishes of the family *Gerridæ*, found in the West Indies.

ulæmorrhagia (ū-lē-mō-rā′ji-ä), *n.* [NL., ‹ Gr. οὖλον, gum, + αἱμορραγία, hemorrhage.] Same as *oulorrhagy*.

ulatrophia (ū-la-trō′fi-ä), *n.* [NL., ‹ Gr. οὖλον, gum, + ἀτροφία, atrophy.] Shrinking of the gums.

ulatrophy (ū-lat′rō-fi), *n.* Same as ★*ulatrophia*.

Ulca (ul′kä), *n.* [NL., ‹ Dan. Norw. *ulk*, a frogfish, *Cottus gobio*.] A genus of cottoid fishes found in Alaska.

ulcer, *n.*—**Annam ulcer,** an endemic ulcer of tropical Asia, probably the same as the Aleppo ulcer (which see, under *ulcer*).—**Cochin-China ulcer.** Same as *Aden ulcer* (which see, under *ulcer*).—**Cold-ulcer.** See ★*cold-ulcer*.—**Irritable ulcer,** an ulcer, usually of the leg, which is slow to heal and exceedingly painful.—**Jacob's ulcer.** Same as *rodent* ★*ulcer*.—**Peptic ulcer,** an ulcer of the stomach or duodenum, caused by the corrosive action of the gastric juice upon the mucous membrane.—**Perforating ulcer,** an ulcer of the stomach which extends down through the muscular and peritoneal layers of the viscus, allowing escape of the contents into the general abdominal cavity.—**Rodent ulcer,** a form of epithelioma, not very malignant in character, which occurs as an ulcer, gradually involving the deeper strictures.—**Round ulcer,** an ulcer of the stomach or duodenum, usually extending down to the peritoneal surface or perforating this membrane: so called because of its circular outline, which looks as if punched out with an instrument.—**Stercoral ulcer.** See ★*stercoral*.—**Tropical ulcer,** a contagious ulcerative affection which occurs in various parts of tropical Asia.

Ulcina (ul′si-nä), *n.* [NL.] A subgenus of *Aspidophoroides*.

ulcus (ul′kus), *n.* [L.] An ulcer.—**Ulcus durum** or **induratum,** hard (syphilitic) chancre.—**Ulcus molle,** soft (non-syphilitic) chancre.

ulero (ö-lā′rō), *n.* [Sp. *hulero*, ‹ *hule*, caoutchouc, rubber, ‹ Nahuatl *ulli*, rubber, sap of the rubber-tree.] One who collects caoutchouc or rubber.

> The *ulero* makes with his machete diagonal lines of gashes, extending nearly around the [rubber] tree, like the letter V, the point being downward.
> *National Geog. Mag.*, Nov., 1903, p. 413.

ulerythema (ū-ler-i-thē′mä), *n.* [NL., ‹ Gr. οὐλή, a scar, + NL. *erythema*.] A skin-disease marked by redness and the formation of scars.

uletic (ū-let′ik), *a.* [Gr. οὖλον, gum, + *-etic*.] Of or pertaining to the gums.

ulikon (ū′li-kon), *n.* A common name for the eulachon or candle-fish, *Thaleichthys pacificus*. See *candle-fish*, 1.

ulitis (ū-lī′tis), *n.* [NL., ‹ Gr. οὖλον, gum, + *-itis*.] Inflammation of the gums.

ulla-lulla (ul′ä-lul′ä), *n.* [Irish.] A funeral lament.

> Alas! my warrior's spirit brave,
> Nor mass nor *ulla-lulla* heard,
> Lamenting soothe his grave.
> *Campbell*, O'Connor's Child, st. 11.

uller (ul′ėr), *n.* [See *ullage*.] A device for filling up the ullage or wantage of a cask. See ★*ulling-can*.

ulling (ul′ing), *n.* [See *ullage*.] The process of filling up the ullage or wantage of a cask, as by means of an ulling-can.

ulling-can (ul′ing-kan), *n.* A can with a long spout designed for use in filling up the ullage or wantage of a cask.

Ulmer hound or **dog.** A strain of the Great Dane, or German mastiff, having a mottled black and white coat and blue eyes: named from the city of Ulm.

ulmic, *a.* 2. Noting an acid, a compound, $C_{20}H_{14}O_6$, contained in the red coloring-matter of beet-root juice and also found in sugar-cane juice. It may be prepared by the action of alkali on glucose.

ulnocondylar (ul-nō-kon′di-lär), *a.* [L. *ulna*, ulna, + E. *condylar*.] Relating to the inner or ulnar side of the condyle of the humerus. *Amer. Nat.*, Feb., 1904, p. 105.—**Ulnocondylar foramen,** a perforation in the inner or ulnar side of the humerus, just above the condyle. Same as ★*entepicondylar foramen*.

Ulocentra (ū-lō-sen′trä), *n.* [NL., ‹ Gr. οὖλος, entire, + κέντρον, sharp point.] A genus of percoid fishes found in fresh waters of the eastern United States.

uloid (ū′loid), *a.* [Gr. οὐλή, a scar, + εἶδος, form.] Having the appearance of a scar; like a scar.

uloncus (ū-long′kus), *n.*; pl. *ulonci* (-sī). [NL., ‹ Gr. οὖλον, gum, + ὄγκος, mass.] A tumor of the gums.

ulorrhagy (ụ-lor'a̤-ji), *n.* [Gr. *οὖλον*, gum, + *-ραγια*, < *ῥηγνύναι*, break.] Same as *oulorrhagy*.

ulosis (ụ-lō'sis), *n.* [NL., < Gr. **οὔλωσις*, < *οὐλοῦσθαι*, to be scarred, < *οὐλή*, scar.] Same as *cicatrization*.

ulotic (ụ-lot'ik), *a.* [*ulosis* (*-ot-*) + *-ic*.] Relating to a cicatrix, or causing cicatrization.

Ulotriches (ụ-lot'ri-kēz), *n. pl.* [NL.] Same as *Ulotrichi*.

ulsterette (ul-stė-ret'), *n.* [*ulster* + *-ette*.] A storm coat, not so large or so heavy as an ulster; a light ulster. [Colloq.]

ultimate, *a.* **4.** In *mech.*, final; 'breaking'; specifically, noting the strain required to break a piece of material.

ulto. [*l. c.* or *cap.*] A contraction of the Latin *ultimo*, 'last' (month).

ult. præs. An abbreviation of the Latin *ultimus præscriptus*, the last prescribed.

ultrabasic (ul-trạ̈-bā'sik), *a.* In *petrog.*, extremely rich in the base-forming elements and poor in silica: applied by Judd (1881) to peridotites, hornblendites, limburgites, and related igneous rocks. *Geikie*, Text-book of Geol., p. 863.—**Ultrabasic series.** See ★*series*.

ultrabrachycephalic (ul"trạ̈-brak"i-se-fal'ik), *a.* In *anthrop.*, having a cephalic index of 90 and more. *Deniker*, Races of Man, p. 58.

ultradolichocephalic (ul-trạ̈-dol"i-kọ-se-fal'ik), *a.* In *anthrop.*, having a cephalic index of 64 or less. *Deniker*.

ultragalactic (ul"trạ̈-ga-lak'tik), *a.* Lying beyond the Galaxy or Milky Way.

It is not possible here to discuss the reasoning by which the author [E. E. Fournier d'Albe] seeks to establish the existence of *ultragalactic* universes; the arguments he employs are simple and reasonable, and will appeal strongly to the reader who is willing to be guided by probability in a region where logical certainty is at present unattainable. *Nature*, Oct. 24, 1907, p. 633.

ultragangetic (ul"trạ̈-gan-jet'ik), *a.* Situated or living beyond the Ganges.

We had two audiences of the King, with an interchange of presents; but the Council, with the usual cautious and exclusive spirit of the *ultra-gangetic* nations, would not consent to any written treaty of commerce.
Davis, Chinese, I. 77.

ultramarine, *n.*—**Gahn's ultramarine,** a trade-name for cobalt aluminate used as a pigment.

ultramartian (ul-trạ̈-mär'shian), *a.* Being or existing beyond the planet Mars.

Prof. See's result, from physical considerations, is that it amounts to about 10h. 7m., and that [rotation] of Neptune to 12h. 51m., which is longer than that of any of the great *ultra-Martian* planets, and exceeds that of Saturn by more than two hours.
Athenæum, March 11, 1905, p. 312.

ultramaterial (ul"trạ̈-mạ-tē'ri-a̤l), *a.* In a state of subdivision involving the breaking up of the atom into still smaller particles: said of ions and of ionized gases.

Radium, like other radio-active bodies, gives off matter in three states—(1) an emanation having the mobility of a heavy gas, (2) positively charged particles of little penetrating power, and relatively large size, (3) *ultra-material* negative particles, of a size much smaller than atoms. A mica plate will screen off 1 and 2, therefore the globulin solutions are unaffected by the *ultra-material* negative particles. *Amer. Jour. Sci.*, Oct., 1903, p. 329.

ultramedian (ul-trạ̈-mē'di-a̤n), *a.* Same as *postmedian*. *Proc. Zool. Soc. London*, 1902, p. 115.

ultramicroscope (ul-trạ̈-mī'krọ-skōp), *n.* An instrument for rendering visible, by means of diffractive effects, bodies below the limit of the resolving-power of the microscope.

ultranutrition (ul"trạ̈-nụ-trish'ọn), *n.* Nutrition that goes beyond the needs of the individual and takes the form especially of reproduction. *L. F. Ward*, Pure Sociol., p. 291.

ultra-optimal (ul-trạ̈-op'ti-ma̤l), *a.* [L. *ultra*, beyond, + E. *optimal*.] In excess of the optimum or most favorable amount or degree.

Ultraoptimal light stops protoplasmic streaming.
Bot. Gazette, March, 1904, p. 233.

ultraparallel (ul-trạ̈-par'a̤-lel), *a.* and *n.* **I.** *a.* In *geom.*, coplanar, yet nowhere meeting, not even at infinity. *Lindemann*.—**Ultraparallel lines,** straights coplanar, yet nowhere meeting, not even at infinity.

II. *n.* In *geom.*, a straight line coplanar with another, yet nowhere meeting it, not even at infinity.

ultrapenetrating (ul-trạ̈-pen'ẹ̄-trā-ting), *p. a.* Having the power of penetrating to an unusual depth: said of certain X-rays and of other obscure rays which pass through substances opaque to most rays of the same kind.

There are several varieties of Röntgen rays, as there are of cathode rays. They form an entire scale, and may be distinguished from each other by their degree of penetration. Some are *ultrapenetrating*. Others are extinguished at a distance of a few millimeters from their origin. This depends upon the generating apparatus, on the current employed, and on other circumstances controlling their production.
Smithsonian Rep., 1901, p. 284.

ultraphysical (ul-trạ̈-fiz'i-ka̤l), *a.* Beyond the physical; non-physical; transcending what is immediately given in physical research.

It [modern cosmogony] deals with all that the skies hold, visibly or invisibly; draws unstintingly on time past and time to come; concerns itself equally with gradual transformations and sudden catastrophes, with the dissipation and concentration of energy, with the subtle interplay of matter and force, with physical and *ultra-physical*, chemical and electrical modes of action.
Knowledge, March, 1904, p. 30.

ultraplanetary (ul-trä-plan'e-tạ-ri), *a.* Being beyond the orbits of the planets.

ultraradical (ul"trạ̈-rad'i-ka̤l), *a.* Extremely radical; occupying the extreme radical position, as in politics.

So uncompromising were his [Virchow's] strictures on the authorities, together with his alliance to the *ultra-Radical* party, that he was compelled to resign his appointment at the Charité. *Nature*, Oct. 2, 1902, p. 551.

ultrarational (ul-trä-rash'ọn-a̤l), *a.* Pertaining to a disciplined scientific activity of mind; surpassing mere 'rationalism.' *L. F. Ward*, Pure Sociol., p. 144.

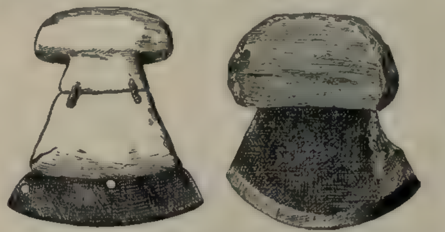
ultrastellar (ul-trạ̈-stel'ạ̈r), *a.* Lying beyond the stars: said of those remote portions of the universe which lie beyond the range of the telescope.

ultraterrestrial (ul"trạ̈-te-res'tri-a̤l), *a.* Being outside of the earth or its atmosphere; coming from beyond the earth.

If such an experimental result were obtained, it would strengthen the possibility of Lord Kelvin's speculation that the origin of life on the earth may have been *ultra-terrestrial*. *Nature*, Dec. 4, 1902, p. 104.

Ultra-violet light. See ★*light*[1].

ulu (ö'lö), *n.* [Also *ooloo*; Eskimo **ulu*.] A kind of semilunar knife used by Eskimo women.



Forms of Ulu.
(From Rep. U. S. Nat. Museum, 1890.)

ulua (ö-lö'ä), *n.* [Hawaiian.] See ★*Carangus*.

ulupica (ö-lö-pē'kä), *n.* [Native name in Bolivia?] A small green pepper, exceedingly strong but of a pleasant flavor, which grows wild on the eastern flanks of the Bolivian Andes and the Cordillera of Cuzco: used as a condiment in soups, and also eaten raw.

Ulvaria (ul-vā'ri-ạ̈), *n.* [NL., < *Ulva*, a genus of algæ, sea-lettuce.] A genus of blennioid fishes found in the North Atlantic.

Ulvicola (ul-vik'ọ-lạ̈), *n.* [NL., < *Ulva*, sea-lettuce, + *colere*, inhabit.] A genus of fishes of the family *Blenniidæ*, found on the coast of southern California.

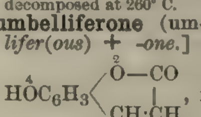
um, *n.* Same as *om*.

umangite (ö-mang'gīt), *n.* [*Umango* (see def.) + *-ite*[2].] A copper selenide, Cu_3Se_2, occurring in fine granular to compact masses of a dark cherry-red color: found in the Sierra de Umango, Argentina.

umbel, *n.* **3.** In the spicular elements of the hexactinellid sponges, a straight shaft or rhabd with rays at one end grouped together in the form of an umbel.

umbellic (um-bel'ik), *a.* [*umbell*(*iferone*) + *-ic*.] Pertaining to umbelliferone.—**Umbellic acid,** metadihydroxycinnamic acid; a yellowish, pulverulent, unstable compound, $\overset{2\,4}{(HO)_2}C_6H_3\overset{1}{C}H{:}CHCOOH$, prepared by the action of potassium hydroxid on its lactone, umbelliferone. It darkens at 240° C. and is completely decomposed at 260° C.

umbelliferone (um-be-lif'e-rōn), *n.* [*umbellifer*(*ous*) + *-one*.] A colorless compound,



$$H\overset{4}{O}C_6H_3\left\langle\begin{matrix}\overset{2}{O}-CO\\ \quad\;\;|\\ \underset{1}{C}H{:}CH\end{matrix}\right.$$

, formed by the distillation of resins from umbelliferous plants, particularly of asafetida resin, and also by the action of sulphuric acid on a mixture of resorcinol and malic acid. It crystallizes in slender needles and melts at 223–224° C.

umbellulic (um-bel'ụ-lik), *a.* [*Umbellul*(*aria*) + *-ic*.] Noting an acid, a colorless compound, $C_{11}H_{22}O_2$, contained, in combination with glycerol, in the nuts of the Californian bay-tree, *Umbellularia Californica*. It melts at 31–34° C. and boils at 275–280° C.

umbellulone (um-bel'ụ-lōn), *n.* [*Umbellul*(*aria*) + *-one*.] A colorless liquid ketone, $C_{10}H_{14}O$, contained in the essential oil of Californian laurel, *Umbellularia Californica*, which is also known as mountain-laurel, cajeput, spice-tree, California olive, California bay-tree, and sometimes pepperwood. It has a mint-like odor and a peculiar, characteristic pungency. It boils at 218° C.

umbilicate (um-bil'i-kāt), *v. i.*; pret. and pp. *umbilicated*, ppr. *umbilicating*. [*umbilicate*, *a.*] To become umbilicate. *Buck*, Med. Handbook, VII. 250.

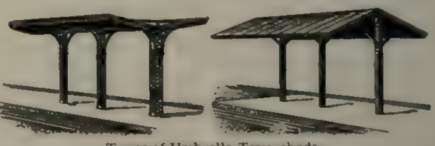
umbiliciform (um-bi-lis'i-form), *a.* Same as *umbiliform*.

The pulp extends through the *umbiliciform* pit, along the ventral side of the rhachis, to its tip.
Gadow, in Newton, Dict. of Birds, p. 248.

Umbilicus of the city of Rome, a cone-shaped brick structure at the northern end of the hemicyclium behind the Rostra, in Ancient Rome, a trace of which still remains. It marked officially the center of the city. Similar monuments existed in many ancient towns. *Huelsen*, Roman Forum, p. 80.

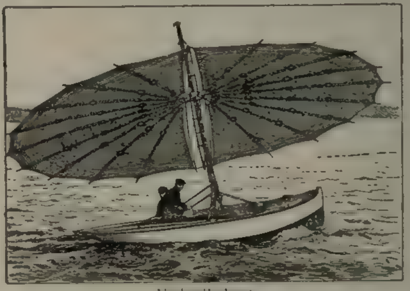
umbolateral (um-bō-lat'ẹ-ra̤l), *a.* Pertaining to the side or lateral portions of the beak or umbo, in the pelecypods and brachiopods.

Umbrella train-shed, in *railroading*, a broad hood supported on a single line of posts placed at the center of an island platform. The roof overhangs the tracks on each side of the platform and in the so-called *butterfly type* (left-hand figure) pitches toward the center, the rain-water running down to a gutter in the middle. See ★*island platform*.



Types of Umbrella Train-sheds.

umbrella-boat (um-brel'ạ̈-bōt), *n.* A boat propelled by a sail called, from its shape, an umbrella-sail. The pull of such a sail is at right angles to its mean surface, or in the direction of the mast, so that the wind-pressure has no effect whatever to incline the boat—that is, to heel her over. In changing course the mast and sail rotate by means of a turn-table to which the mast is secured, and the latter is raised and lowered by means of two tackles, a balance-weight being provided which assists in elevating the mast and balancing its dead-weight. The umbrella-sail is also and more generally known as a *cyclone-boat sail*, owing to its revolving motion.



Umbrella-boat.

umbrella-bush (um-brel'ạ̈-bůsh), *n.* In Australia, a small, bushy tree, *Acacia Oswaldi*, so called because of its value as a shade-tree.

umbrella-fern (um-brel'ạ̈-fėrn), *n.* Same as *eagle-★fern*.

umbrella-insulator (um-brel'ạ̈-in"sụ-lā-tọr), *n.* See ★*insulator*.

umbrella-sail (um-brel'ạ̈-sāl), *n.* See ★*umbrella-boat*.

umbrella-tree, *n.* **3.** In the southern United States, a cultivated flat-topped variety of the china-tree, *Melia Azedarach*, in which the branches radiate from the main stem like the ribs of an umbrella.—**4.** See ★*grass-tree*, 4 (*a*).

Umbro-Latin (um"brō-lat'in), *a.* and *n.* **I.** *a.* Pertaining to or designating that group of ancient peoples, speaking closely related languages, which occupied central Italy, and which included, among others, the Umbrians, Oscans, and Romans.

One of the settlements has been discovered in a peat moor at Mercurago, near Arona. This moor was formerly

> a shallow lake, in which a pile dwelling was built by some of the earliest settlers of the *Umbro-Latin* race.
> *Smithsonian Rep.*, 1890, p. 493.

II. *n.* An individual belonging to the Umbro-Latin group.

Umbrula (um-brö'lä), *n.* [NL., dim. of *umbra*, shade: see *umbra*¹.] A subgenus of *Menticirrus*.

uminta (ö-mēn'tä), *n.* [Bolivian Indian, Aymará or Quichua.] Same as *tamal*.

umla (öm'lä), *n.* [Native name in New Guinea.] A dark-brown vegetable arrow-poison, used by the Hattams in New Guinea.

> In the New Hebrides cadaveric poisons and euphorbia juice are used, while in New Guinea the Hattams smear their arrow-heads with a dark brown vegetable poison called *umla*. *Ratzel* (trans.), Hist. of Mankind, I. 234.

umptekite (ump'te-kīt), *n.* [*Umptek*, Finland, + *-ite*².] In *petrog.*, a variety of syenite composed of alkali feldspars in perthitic intergrowth, with little nephelite, arfvedsonite, and ægirite; a facies of nephelite-syenite. *Ramsay*, 1894.

umu (ö'mö), *n.* [Hawaiian, Samoan, Tahitian, Maori, and other Polynesian languages.] A native Polynesian oven. It consists of a hole or pit in the ground containing heated stones, on which the food is placed in baskets. Water is then poured on the stones and the whole covered up to keep in the steam till the food is sufficiently cooked.

unacademic (un″ak-a-dem'ik), *a.* Not academic in any sense of that word; particularly, unconventional in art or literature.

> The originality lay not in the central contention, but in the fervour, sincerity, and conviction, of a most *unacademic* sort, with which it was presented and enforced.
> *J. Morley*, Rousseau, I. 133.

unacclimated (un-a-klī'mā-ted), *a.* Not acclimated.

> Sunstroke occurs with greater frequency in the tropics amongst *unacclimated* individuals than amongst those of long residence. *Buck*, Med. Handbook, IV. 617.

una corda (ö'nä kôr'dä). [It.] In *piano-forte-playing*. See *shifting* ★*pedal*. See also *pedal*, 2 (*a*).

unagi (ö-nä'gi), *n.* [Jap.] A Japanese name of the common eel, *Anguilla japonica*, of the family *Anguillidæ*, found in the waters of Japan.

unar (ū'när), *n.* [L. *unus*, one, + *-ar*³.] In *photog.*, a trade-name of an anastigmatic objective, of Jena glass, for general use. *Photo-miniature*, Sept., 1901, p. 284.

Unartok series. See ★*series*.

uñas de gato (ön'yäs dā gä'tō), *n.* [Sp., 'cat's-claws.'] Same as ★*bayag-kambing*.

unassoiled (un-a-soild'), *a.* Not assoiled, in the sense either of *assoil*¹, *v.*, or of *assoil*², *v.*

unattenuated (un-a-ten'ū-ā-ted), *a.* Not attenuated; possessing toxicity not diminished from what may be considered the normal: said of a virus.

> Rabbits inoculated with *unattenuated* rabies virus.
> *Buck*, Med. Handbook, VI. 833.

unawful (un-â'ful), *a.* Not awful; not inspiring awe. [Rare.]

> I go . . . where wild men howl around
> Their blood-stain'd altars — to uplift th' unknown
> *Unawful* Crucifix.
> *Milman*, Anne Boleyn, iii.

unbalance¹, *v. t.*—**Unbalancing factor.** See ★*factor*.

unbehoving (un-bē-hö'ving), *n.* The state of being not proper, fitting, or incumbent. [Rare.]

> Unless you can dream that his faith is fast,
> Through behoving and *unbehoving*.
> *Mrs. Browning*, A Woman's Shortcomings, st. 5.

unc. An abbreviation of the Latin *uncia*, ounce.

unca (ung'kä), *n.*; pl. *uncæ* (un'sē). [NL., ‹ L. *unca*, fem. of *uncus*, adj., hooked.] In *musical notation*: (*a*) Same as *hook*, 4, or *pennant*, 3. (*b*) Same as *eighth-note*.

uncapping-knife (un-kap'ing-nīf), *n.* In *bee-keeping*, a knife with a broad, double-edged blade secured by an offset to a wooden handle: used to slice off the covers or caps of the honeycomb preparatory to extracting the honey. In using the knife, the honeycomb, in its frame, is held over an enameled vessel called an *uncapping-can*, the wax or cappings falling on a wire screen, and the honey passing through the screen into a second vessel below.

unchristly (un-krist'li), *a.* Not Christly or Christ-like.

> Ages have wrangled and fought over this subject until history points with scarlet finger to *unchristly* deeds and impotent creeds, all in His name.
> *Pop. Sci. Mo.*, Feb., 1901, p. 435.

unciliated (un-sil'i-ā-ted), *a.* In *bot.*, without ciliation; eciliolate.

uncin (un'sin), *n.* [L. *uncin*(*us*), a hook.] In the sponge-spicules, a long spindle-shaped diactine covered with barbs throughout its length and derived from the hexactine.

Uncinaria (un-si-nā'ri-ä), *n.* [NL., LL. *uncin*(*us*), a hook, + *-aria*.] Same as *Dochmius* and *Ancylostomum*; the hookworm. See ★*uncinariasis*.

uncinariasis (un″si-nä-rī'a-sis), *n.* [NL., ‹ *Uncinaria* + *-iasis*.] The aggregate of symptoms, the most marked of which is anemia, due to the presence in the intestine of the uncinaria or hookworm. Also called ★*ancylostomiasis* (which see), *dochmiasis*, *hookworm disease*, *miners' anemia*, *St. Gotthard disease*, *tunnel anemia*, etc.

> Prevalence of Ankylostoma in the United States.—At the meeting of the American Medical Association, May 5th, 1903, Dr. A. J. Smith described the distribution of *uncinariasis* in the United States. He found eight persons suffering from the disease out of eighty-eight supposed healthy persons examined in Texas. He also compared the Uncinarius duodenalis (man) and the U. stenocephala (dog), and drew attention to the distribution of the two worms in the same localities.
> *Jour. Trop. Med.*, June 15, 1903, p. 200.

uncinariatic (un″si-nā-ri-at'ik), *a.* Pertaining to or affected with uncinariasis.

uncinate, *n.* **2.** An uncinate process (processus uncinatus), such as is found on the ribs of birds and crocodiles. *Proc. Zool. Soc. London*, 1903, p. 274. [Rare.]

Uncites (un-sī'tēz), *n.* [NL., ‹ L. *uncus*, a hook.] A genus of spire-bearing brachiopods, belonging to the order *Telotremata*, which have an extended and rostrate ventral valve with concave and coalesced deltidial plates, and a pair of pouch-like plates just within the margin of the dorsal valve, which are the extension of the dental sockets. *Uncites gryphus* is a highly characteristic fossil of the Middle Devonian in Germany.

uncollapsed (un-ko-lapst'), *a.* Not collapsed.

> The portion of the ventricle which leads up to the aortic orifice is so strengthened by fibrous or fibro-cartilaginous tissue as to remain *uncollapsed* during diastole.
> *Buck*, Med. Handbook, IV. 571.

Unconditional convergence. (*a*) Convergence unaffected by any change in the order of the terms. (*b*) The convergence of a series the absolute values of whose terms make a convergent series.

Unconditionally convergent. (*a*) Convergent and having the same value, whatever the order of the terms. (*b*) Absolutely convergent.

unconformity, *n.* **2.** In *geol.*, same as *unconformability*.

> Again, the simple geological interpretation of a well-known *unconformity* between Archæan and Triassic rocks has made it extremely probable that many of the present landscapes, not only in the Midlands but elsewhere, may be really fossil landscapes, of great antiquity and due to causes quite different from those in operation there at the present day. *Science*, Oct. 9, 1903, p. 458.

unconvincing (un-kon-vin'sing), *a.* Not convincing; not such as to convince or to impress seriously.

> He [Watteau] is not conventional or *unconvincing* in his picturesqueness as Philip Wouverman and his fellows too often were. *C. Phillips*, in Portfolio, N. S., XVII. 28.

uncoössified (un-kō-os'i-fīd), *a.* Not united into one bone. See *coössify*.

> Mandibular symphysis *uncoössified*.
> *H. F. Osborn*, in Bulletin Amer. Mus. Nat. Hist., June [28, 1902, p. 191.

uncornified (un-kôr'ni-fīd), *a.* Not converted into horny tissue. *Buck*, Med. Handbook, III. 238.

uncorrectable, uncorrectible (un-ko-rek'ta-bl, -ti-bl), *a.* Incapable of being corrected.

> Finally the deformity becomes permanent and *uncorrectible*. *Buck*, Med. Handbook, IV. 528.

uncostliness (un-kôst'li-ness), *n.* The state or character of being uncostly. [Rare.]

> Utilitarian writers in general have placed the superiority of mental over bodily pleasures chiefly in the greater permanency, safety, *uncostliness*, etc., of the former.
> *J. S. Mill*, Utilitarianism, ii.

uncouple, *v. t.* **2.** In *organ-playing*, to separate or disjoin by throwing off the coupler between two keyboards which have been mechanically joined in action. See *organ*¹, 6.

uncoupled, *a.* **4.** In *organ-playing*, separated or disjoined; not united by means of a coupler: said of keyboards. See *organ*¹, 6.

unctorium (ungk-tō'ri-um), *n.*; pl. *unctoria* (-ä). [L.] An anointing-room in a Roman bath.

unda maris (un'dä mā'ris). [L., 'wave of the sea.'] See *vox angelica*.

undazzle (un-daz'l), *v. i.* To cease to be dazzled; become calm and clear. [Rare.]

> Slowly my sense *undazzled*. Then I heard
> A noise of some one coming thro' the lawn.
> *Tennyson*, A Dream of Fair Women, st. 45.

undecagon (un-dek'a-gon), *n.* [Irreg. ‹ L. *undec*(*im*), eleven, + Gr. γωνία, angle.] A polygon of eleven sides.

undecalcified (un-dē-kal'si-fīd), *a.* Not decalcified: said, in histology, of sections of bone in the natural state.

> Sections of *undecalcified* bone, teeth, etc.
> *Buck*, Med. Handbook, IV. 712.

undecane (un'dē-kān), *n.* [L. *undec*(*im*), eleven, + *-ane*.] A colorless hydrocarbon, $CH_3(CH_2)_9CH_3$, of the methane series, prepared by the action of hydriodic acid and phosphorus on undecylic acid. It melts at −26.5° C. and boils at 194.5° C. Also called *hendecane* and *normal undecane*.

undecoic (un-dē-kō'ik), *a.* Same as ★*undecylic*.

undecollic (un-dē-kol'ik), *a.* Pertaining to an acetylene derivative with eleven carbon atoms. Also called *hendecinoic*.—**Undecollic acid,** a colorless compound, $C_{10}H_{17}COOH$, prepared by the action of alcoholic potassium hydroxid on dibromundecylenic acid. It crystallizes in thin plates, melts at 59.5° C., and may be distilled under reduced pressure. Also called *hendecinoic acid*.

undecylenic (un″dē-si-len'ik), *a.* Pertaining to undecylene, or, in general, to an ethylene derivative containing eleven atoms of carbon.—**Undecylenic acid,** a colorless compound, $C_{10}H_{20}O_2$, probably $CH_2{:}CH(CH_2)_8COOH$, prepared by the distillation of castor-oil under reduced pressure. It crystallizes in large plates, melts at 24.5° C., and boils at 275° C. Also called *hendecenoic acid*.

undecylic (un-dē-sil'ik), *a.* [L. *undec*(*im*), eleven, + *-yl* + *-ic*.] Pertaining to a compound of the methane series which contains eleven atoms of carbon. Also called *hendecoic*, *hendecatoic*, or *undecoic*.—**Undecylic acid,** a colorless crystalline compound, $C_{11}H_{22}O_2$, of the acetic-acid series, prepared by the action of hydriodic acid and red phosphorus on undecylenic acid. It has a faint odor of caproic acid, melts at 28.5° C., and boils at 228° C. under 160 millimeters pressure. Also called *hendecoic*, *hendecatoic*, and *undecoic acid*.

underarm (un-dėr-ärm'), *a.* In *cricket*, delivered with the hand below the shoulder: said of bowling.

underbasal (un'dėr-bā″sal), *n.* In Carpenter's nomenclature of the calyx-plates in the crinoids, a plate of the lowest series in dicyclic forms. Also *infrabasal*.

underbody (un'dėr-bod″i), *n.* In *naval arch.*, that part of a vessel which is below the load water-line. Also called *under-water body*.

> The entire *underbody* and top sides of the cup defender Columbia, which successfully defended America's cup against the challenger yacht Shamrock, are constructed of Tobin bronze plates, approximately ½-inch thick, and weighing between 500 and 600 pounds each.
> *Army and Navy Jour.*, Oct. 28, 1898.

underbreeding (un-dėr-brē'ding), *n.* The condition of being underbred; underbred conduct or utterances.

underbright (un'dėr-brīt), *n.* A clear bright line of light on the horizon beneath a layer or bank of clouds.

undercasing (un'dėr-kā″sing), *n.* A circular grid, placed under the main cylinder of a cotton-carding machine, to render possible the emission of extraneous matter. *Nasmith*, Cotton Spinning, p. 112.

undercellar (un-dėr-sel'är), *v. t.* To provide with a cellar beneath, or with an open space in the form of a cellar beneath.

> The building is very solidly built, but *undercellared* only, and to the smallest extent on the eastern side.
> *Buck*, Med. Handbook, VIII. 142.

under-clearer (un'dėr-klēr″ėr), *n.* A small roller, covered with some suitable material, placed underneath the bottom front drafting-roller of a ring-spinning machine, to remove the short fibers, or fly, from the latter roller. *Nasmith*, Cotton Spinning, p. 329.

underclub (un'dėr-klub), *v. i.*; pret. and pp. *underclubbed*, ppr. *underclubbing*. In *golf*, to use a club of insufficient power to gain the desired distance. *W. J. Travis*, Practical Golf, p. 102.

under-compounded (un'dėr-kom-poun″ded), *p. a.* In *elect.*, said of a generator or motor in which the relation of the shunt and series field-coils is such that, with increasing load, the voltage diminishes.

under-consumption (un′dėr-ko̤n-sump″sho̤n), *n.* In *polit. econ.*, an abnormal condition of the market in which the general demand for commodities is inadequate to absorb the normal supply.

The root-evil of depressed trade is *under-consumption*.
Hobson, Evol. of Modern Capitalism, p. 182.

undercool (un-dėr-köl′), *v. t.* Same as ★*supercool*.

undercorrect (un′dėr-ko̤-rekt″), *v. t.* In *optics*, to apply a correction for the chromatic aberration of a lens such that the focal length for violet rays remains less than that for the longer waves of the spectrum. *C. S. Hastings*, Light, p. 105.

undercovering (un′dėr-kuv″ėr-ing), *n.* An underlying covering; specifically, the coat of soft hair, fur, or wool which forms the chief covering of many mammals, overlaid and hidden by long, coarse hairs. The fur of the beaver and otter, the woolly coat of the musk ox, and the fleece of the Cashmere goat are familiar examples.

The downy *undercovering* of the Cashmere goat furnishes the hairs or fibres that are used for the spinning of the yarn that is woven into alpaca cloth.
Hannan, Textile Fibres of Commerce, p. 213.

undercut, *v. t.* **2.** In *golf*, to hit (the ball), by baffing or otherwise, so that it rises high in the air, and will not, owing to its spin, roll far after alighting.—**3.** In *pugilism*, to hit with an upward blow.

undercut, *n.* **2.** In *lumbering*, the notch cut in a tree to determine the direction in which the tree is to fall and to prevent splitting. Also called *notch* and *nick*.—**3.** In *mining*, the opening along the vein which is made at the bottom of the seam or below the ore-body, so that the shot or blast, or any subsequent cutting, shall cause the ore to fall downward when loosened.—**4.** Any part of the pattern used in foundry-molding which is outside of perpendiculars or normals to the face of the parting plane of the flask, so that in drawing the pattern the sand would be unavoidably torn away by it, or which prevents the drawing of the pattern altogether. It is the reverse of *taper*.

II. *a.* **1.** Descriptive of a bookbinders' machine that cuts paper from the under side.—**2.** Noting a photo-engraved plate in which the acid has bitten too much under the lines.

undercutter, *n.* **2.** Specifically, a machine driven by power, either electrically or by compressed air, for mining or quarrying, by which an undercut or channel below the ore-body can be made. *Trans. Amer. Inst. Elect. Engin.*, 1899, p. 454.—**3.** A skilled woodsman who chops the undercut in trees so that they shall fall in the proper direction.

underdeterminant (un′dėr-dē-tėr″mi-na̤nt), *n.* In *math.*, the first minor of a symmetrical determinant.

underdevelopment (un′dėr-dē-vel″up-ment), *n.* A condition of incomplete or arrested development.

underdrainage (un″dėr-drā′nā̤j), *n.* Drainage of agricultural lands and removal of excess of water and of alkali by drains buried beneath the surface. See *underground* ★*drainage*.

The early Romans used to plant their crops in wet soils on high ridges in order to secure sufficient drainage and early maturity. The sea island cotton planters, in the early part of the century, used the same method in a modified form to insure the maturity of the long staple crop within the limits of the growing season. More recently the practice of *underdrainage* with poles, stones, and tile-drains has supplanted this crude method and has given much more effective results.
Yearbook U. S. Dept. Agr., 1899, p. 342.

underdry (un′dėr-drī), *v. t.*; pret. and pp. *underdried*, ppr. *underdrying*. To dry imperfectly or inadequately.

Because of the loss in weight from over-drying, there is a temptation to *underdry* them [vanilla beans], and many bundles, owing to this mistake, are found mouldy within, on being opened.
Buck, Med. Handbook, article 'Vanilla.'

underfeed (un′dėr-fēd), *a.* Noting apparatus which feeds or supplies fresh material from below; specifically, noting a form of mechanical feeder for fuel of boiler-furnaces, designed for bituminous coal rich in volatile components. The coal is fed through a tubular channel and enters the burning area from under the bed of ignited fuel. The gases first distilled off must pass up through the glowing bed above them and become heated enough to unite with oxygen and burn with little smoke. After the coking is completed the solid carbon begins to glow and burn, and its combustion is completed as it reaches the top of the fuel-bed and rolls outward toward the sides of the grate area proper. This feeder is particularly well adapted for pitchy or fat coals. *Jour. Franklin Inst.*, Dec., 1904, p. 439.

under-fired (un′dėr-fīrd), *a.* **2.** Noting a fire or furnace which is supplied with fuel by the underfeed system. See ★*underfeed*. *D. K. Clark*, Steam Engine, I. 74.

under-fleece (un′dėr-flēs), *n.* The downy growth of hair or wool next to the skin, and underneath a thick growth of coarser hair, in the camel, Tibetan goat, and similar animals.

underflow, *n.* **2.** The water which is now known to be often in transit beneath the apparently dry gravels of rivers in arid districts, such as the southwestern United States.

underframe (un′dėr-frām), *n.* **1.** A principal frame which supports a secondary one for a detachable unit. Thus, in a motor-vehicle the engine has its own frame and is self-contained, the latter being attached to the frame of the vehicle proper, which last is then the underframe.—**2.** Specifically, in *car-building*, the massive pressed steel or wooden framework which forms the base of a car and is designed to resist the strains to which the car is subjected in starting and stopping, and to support the car-body, which is rigidly attached to it and adds to its strength.

The locomotive's *underframe* has four axles, similar to those of the old experimental car. The gage is the standard German; the wheels have a diameter of 49 inches and meet with the requirements of the Prussian State Railways. *Sci. Amer.*, Dec. 13, 1902, p. 410.

underfur (un′dėr-fėr), *n.* The coat of soft, fine hair, or fur, found in many mammals, overlain by longer, coarser hairs. The underfur forms the principal furs of commerce, such as the beaver, otter, fur-seal, etc.

Underfur of back about 15 mm. in length, proximal half smoke-grey, light buffy yellow distally; long hairs about 25 mm. in length, black, with white subterminal ring and black tip.
Annals and Mag. Nat. Hist., June, 1904, p. 424.

underground, *a.*—**Underground water**, water lying below the earth's surface and stored in cavities in the rocks.

Accounts of floods, forest fires, and *underground waters*, and reports on iron, zinc and copper mining, and on the Portland cement industry.
Nature, May 26, 1904, p.86.

II. *n.* **2**†. An underground passage.

And yet those seas (as heavens please)
Return to Springs by *undergrounds*.
Kyd (tr. of Garnier's Cornelie), Cornelia, [ii. 377.

3. A contraction of *underground railway*. [Colloq.]

undergrowth, *n.* **3.** Short, fine under-hair on a skin. *Flemming*, Practical Tanning, p. 92.—**4.** Specifically, in *forestry*, the ground-cover, underbrush, and young trees below the large sapling stage.

underhammer (un′dėr-ham″ėr), *n.* In *pianoforte-making*, a lever mechanism intermediate between the jack and the hammer proper.

underhung, *a.* **3.** Suspended or hung in such a manner that the elements which carry the weight or load are below the load they carry, but the links connecting the two are in tension. Said of locomotives or motor vehicles in which the springs are below the frame and are hung from the axles, the spring-ends being connected to the frame by compression elements, instead of the reverse of this system, which exists in over-hung constructions. *D. K. Clark*, Railroad Mach., p. 207.

underlap (un′dėr-lap), *v. i.* To lap under or beneath; have the edge or border lying beneath the edge of some other object, as the clapboards of a house or the feathers of a bird.

The margin of the *underlapping* side is sutured to the deep surface of the overlapping side.
Buck, Med. Handbook, IV. 680.

underleaf, *n.* **2.** One of the amphigastria of some *Hepaticæ*.

The *underleaves* of Odontoschisma present peculiarities which have been strangely overlooked by writers on the genus. *Bot. Gazette*, Nov., 1903, p. 330.

underlearn (un-dėr-lėrn′), *v. t.* To learn incompletely. [Rare.]

If only 8 repetitions were taken at first, the line being "*underlearnt*," it probably appeared quite strange the next day. *Encyc. Brit.*, XXXII. 61.

underlet (un′dėr-let), *n.* In *brewing*, a pipe which serves to admit water below the false bottom of the mash-tun or mashing-vat, replacing with fresh water the wort when drawn off.

underley, *n.* See ★*underlye*.

underlie, *n.* **2.** See ★*underlye*.

underline, *n.* **2.** The lower line of the body: used in describing the "points" of a horse.

underload (un-dėr-lōd′), *v. t.* To place upon or in (something) a load less than the maximum load that it can carry.

But if the bottom current is *underloaded*, the material is carried slowly forward.
I. C. Russell, Rivers of North America, p. 68.

underlye (un′dėr-lī), *n.* In *soap-making*, the lower, watery layer which separates out from beneath the curd soap in the 'salting-out' process. It consists essentially of a strong brine, holding in solution the glycerin of the original fat unless a free fatty acid has been used. Also written *underlie* and *underley*.

under-mediant (un′dėr-mē″di-a̤nt), *n.* In *music*, same as *submediant*. See ★*undertone*, 4, and ★*under-scale*.

undernutrition (un″dėr-nṳ̄-trish′o̤n), *n.* **1.** Incomplete or imperfect nutrition.

Long-continued *undernutrition* of the body.
Buck, Med. Handbook, II. 225.

2. An economic condition in society in which large numbers of individuals are insufficiently fed. It is estimated that in the United States as many as 10,000,000 persons, though not technically paupers, are inadequately nourished. *Patten*, Development Eng. Thought, p. 382.

underofficer (un-dėr-of′i-sėr), *v. t.* To provide with an inadequate number of officers, as a regiment or a ship.

under-painting (un′dėr-pān-ting), *n.* Preparatory painting over which the finished work is done. In the early Italian schools, the under-painting was done probably for a long time in tempera, the dry quality of which was valuable under oil glazes.

underplant (un′dėr-plant), *v. t.* In *forestry*, to plant (young trees) under an existing stand.

underplate (un′dėr-plăt), *n.* A flat, round plate of glazed porcelain, used in chemical laboratories to place under acid bottles or other vessels from which corrosive liquids might drip upon a table.

underplight (un′dėr-plīt), *n.* [*under* + *plight*^{3}, *n.*] In *geol.*, a name given by F. C. J. Spurrell to contorted and folded clays, sands, and gravels upon which rest unsorted glacial materials called 'trail' (see ★*trail*^{1}, 6). The term is local in southern England. *J. Geikie*, The Great Ice Age, p. 393.

underpoled (un′dėr-pōld), *a.* In *metal.*, insufficiently treated with the pole; said of copper which is reduced from a condition of some oxidation in the melted state by being stirred by a pole of wood which furnishes carbon with a ready affinity for the oxygen present, and acts to reduce the oxids to the metallic state. Underpoled copper is brittle and unreliable.

underpressure (un′dėr-presh-ṳ̄r), *n.* Deficiency of pressure in any portion of a fluid, as compared with the pressure which exists in surrounding regions.

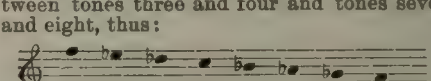
The foul air . . . makes a direct escape into the open and does not return to mix with the incoming fresh air, providing, of course, the proper outlets are free and unobstructed and it meets or passes no compartment on its way in which *underpressure* exists.
Buck, Med. Handbook, VI. 158.

underrun (un′dėr-run), *n.* An undercurrent.

The discovery of the *underrun* of the Hudson and its bearing on the feasibility of obtaining a water-supply for the towns along that river, may be mentioned as contributions in a special field of geography.
Geog. Jour. (R. G. S.), XI. 291.

The tide enters the (Long Island) Sound along its bottom, as an "*underrun*," one and a half hours before the ebb of the surface waters has ceased.
J. D. Dana, Manual of Geol. (4th ed.), p. 214.

under-scale (un′dėr-skāl), *n.* In *music*, a scale reckoned downward from a given tone by the same intervals as those of the ordinary upward major scale, the half-steps occurring between tones three and four and tones seven and eight, thus:



Such a scale is strongly minor, being practically the same as the Dorian mode of ancient Greek music. See ★*undertone*, 4.

underscore (un'dėr-skōr), *n.* [*underscore, v.*] A line drawn beneath a written or printed word or passage, as for emphasis.

In reply to F. W. M., the correct way of representing italicized words, when copying printed matter in typewriting, is to use the *underscore*.
Phonetic Jour., May 4, 1901, p. 288.

underscrub (un'dėr-skrub), *n.* Underwood; underbrush; scrub growing beneath taller trees.

At first the wood consisted principally of oaks, commingled with which were a few firs and still fewer pines —the *underscrub* being composed chiefly of hazels and occasional birches. *J. Geikie*, The Great Ice Age, p. 455.

undershut (un'dėr-shut), *a.* Shut by pressure or a force acting against gravity or from below, by an upward motion, as a valve.

undersighted (un'dėr-sī-ted), *a.* Myopic.

undersitter† (un'dėr-sit-ėr), *n.* In *old English law*, a kind of subtenant. Also *undersettle*.

[The jurors present] that strangers coming from without, who hire houses from divers persons and hold nothing of the lord, common in the few with their beasts and take other profits in the common, and such folk are called *undersettles*.
Publications of the Selden Society: The Court Baron, [p. 146.

It [Small Holdings Act, 1597] also provided against any inmate or *undersitter* being admitted to what was sacred to one family. *Encyc. Brit.*, XXV. 322.

undersluice (un'dėr-slös), *n.* A sluice or wasteway of an irrigating canal or similar work, so arranged that the water escapes beneath some other structure. *H. M. Wilson*, Irrigation Engineering, p. 471.

understain (un-dėr-stān'), *v. t.* To color less deeply than usual. *Jour. Exper. Med.*, Oct. 1, 1901, p. 560.

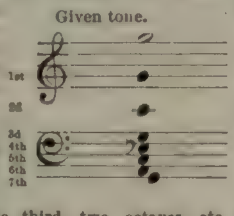
understanded† (un-dėr-stan'ded), *pp.* An obsolete, weak form of *understood*, past participle of *understand*.

underthrust (un'dėr-thrust), *a.* and *n.* **I.** *a.* In *geol.*, noting those strata which during compression are thrust under others, as in a reversed fault or in an overturned fold.

It seems possible, as the author [Dr. O. Ampferer] points out, that the whole highland of Triassic rocks rests upon an underfolded and *underthrust* knot of younger strata. *Nature*, Oct. 13, 1904, p. 593.

II. *n.* In *geol.*, the transmission of a compressive strain in the depths of the earth which may produce folds upon the surface.

undertone, *n.* 4. In *musical acoustics:* (*a*) Same as *combinational tone* (which see, under *tone*¹). (*b*) One of a series of tones reckoned downward from a given tone in exactly the same way that the series of overtones or harmonics is reckoned upward. The interval from the given tone to the first undertone is an octave; to the second, an octave and a fifth; to the third, two octaves, etc. (See cut.) While this series is not actually heard in any case, yet it is claimed by many theorists recently that the relations involved are sufficiently felt to explain the minor mode as in a true sense an inversion or polar opposite of the major. Hence has arisen a large number of terms beginning with *under-*, denoting intervals and chords regarded downward corresponding with the usual names of intervals and chords regarded upward. See cut under *harmonic*, *n.*, 1.



undertype (un'dėr-tīp), *a.* Having the armature below the field-coils.— **Undertype dynamo** or **motor,** a bipolar machine, with a field of the horseshoe form, in which the pole-pieces are bolted to the base so as to lower the armature as far as possible: opposed to ★*overtype* machines in which the armature is above the field-coils.

undervegetation (un'dėr-vej-ẹ-tā″shọn), *n.* The low growth in a forest; undergrowth, but including the herbaceous as well as the woody plants.

It often happens that this *undervegetation* is swept away by fire or devoured and trampled by sheep without immediate serious injury to the trees.
C. Hart Merriam, in Smithsonian Rep., 1901, p. 405.

underwing, *n.*—**Plum underwing,** an American noctuid moth, *Catocala ultronia*, whose leech-like grayish-brown larva feeds on plum foliage.

Underwriters' door. See ★*door*.

undeviated (un-dē'vi-ā-ted), *a.* Not deflected from its path: said of a beam of light.

We shall have a brilliantly colored strip, the end nearest the place where the *undeviated* light would fall being red. *C. S. Hastings*, Light, p. 41.

undine, *n.* 2. An apparatus for irrigating the eye in the operation of extracting cataract. *Buck*, Med. Handbook, II. 735.

undissociated (un-di-sō'shi-ạ-ted), *a.* In *phys. chem.*, not dissociated: said of that part of a dissolved electrolyte which is not electrolytically dissociated into its ions. See *Arrhenius's theory of electrolytic or ionic* ★*dissociation*.

The colour of any *undissociated* salt that may be present. *Encyc. Brit.*, XXVIII. 12.

Undulate cirrus. See ★*cirrus*.

undulater (un'dụ-lā-tėr), *n.* A receiving apparatus used as a substitute for the siphon recorder in submarine telegraphy. Also *undulator*.

undulation, *n.* 7. In playing musical instruments of the viol class, the wavy tone produced by oscillating or balancing the finger on a string that is being stopped.—**Point of undulation.** See ★*point*¹.

undulationism (un-dụ-lā'shọn-izm), *n.* [*undulation* + *-ism*.] The hypothesis of brain-waves; the theory that a person may be telepathically affected by a wave-emanation which expresses the will-power of another.

unduloid (un'dụ-loid), *n.* [*undul*(*ate*) + *-oid*.] In *geom.*, the surface of revolution of the elliptic catenary.

unearth, *v. t.* 4. In *elect.*, to break the ground connection of a circuit; to insulate from electrical contact with the earth.

unearthed (un-ėrtht'), *p. a.* In *elect.*, not earthed.

The high-tension voltage used by this company is, in a sense, the highest to be found in the United Kingdom— 10,000 volts on each of the two phases, with one end of each phase earthed—giving over 14,000 volts between the *unearthed* conductors.
Elect. World and Engin., Feb. 18, 1905, p. 339.

unegoist (un-ē'gō-ist), *a.* Not egoistical. [Rare.]

The youngest of the horrible family proposed to him . . . that they two should drink "a goblet of wine" together, each to the person that each loved most in the world. "I find your toast *unegoist*," said he [Mazzini] . . . , "and I accept it with pleasure."
Froude, Letters and Mem. of Jane Welsh Carlyle, p. 250.

unenumerable (un-ẹ-nū'mėr-a̤-bl), *a.* Not denumerable.

There is, as we have seen, no convincing reason for thinking that any *unenumerable* aggregate is capable of being normally ordered.
E. W. Hobson, Proc. Lond. Math. Soc., ser. 2, III. 182.

unerrancy, *n.* Same as *inerrancy*. [Rare.]

unessential, *n.* 2. Same as *unessential* ★*note*.

unexcitable (un-ek-sī'ta̤-bl), *a.* Not excitable; not responsive to a stimulus.

Regions in front of the motor area of head, neck, and eyes were found to be *unexcitable* with a current of equal strength. *Buck*, Med. Handbook, II. 311.

unexploited (un-eks-ploi'ted), *a.* Not exploited; not utilized; not developed.

There appears to be an *unexploited* field in the case of deposits of the so-called rare metals.
Athenæum, March 18, 1905, p. 439.

unfair, *a.* 1. (*f*) In recent trade-union literature, a term applied to employers or shops that do not submit to the trade-union regulations respecting hours, wages, and other conditions of employment: as, an *unfair* shop.

2. Not smooth, flowing, or regular in outline, or not properly regulated in place, specifically applied to two openings or holes which are intended to match in line when superposed, but by reason of error in adjusting are forced to overlap on the edges. *Thurston*, Manual of Steam-Boiler, p. 422.—**Unfair list,** in recent trade-union literature, a term applied to a list of employers who do not observe trade-union regulations: published in union journals with the purpose of depriving such employers of the patronage of trades-unionists.

The favorite method at present is to place the recalcitrant employer on an *unfair list* and spread the ban through the medium of the labor press.
New Int. Encyc., XVI. 859.

unfissured (un-fish'ụrd), *a.* Not marked by fissures. *Buck*, Med. Handbook, II. 187.

unfoveated (un-fō'vẹ-ạ-ted), *a.* Not marked by pits: said of the smooth scar following an unsuccessful vaccination. *Biometrika*, Feb., 1903, p. 136.

unfurnitured (un-fėr'ni-ṭụrd), *a.* Unprovided with furniture; unfurnished. [Rare.]

The place was dark, *unfurnitured*, and mean;
Yet there the freedom of a race began.
Lowell, To W. L. Garrison, st. 2.

ung. An abbreviation of the Latin *unguentum*, ointment.

ungeld† (un'geld), *n.* [*un-*² + *geld*², which see.] An outlaw; a person so far out of the protection of the law that if he were murdered no geld or fine should be paid by him that killed him. *Cowel.*

ungetatable (un-get-at'a̤-bl), *a.* Not accessible; not to be reached or got at. [Colloq.]

Where the leak was they had not a notion. Probably it was deep down under the cargo of grain, and quite *un-get-at-able.* *Cutcliffe Hyne*, A Master of Fortune, vii.

unglaciated (un-glā'ṣi-ā-ted), *a.* In *geol.*, not exhibiting the effects of glaciation: specially applied to boulders or rock-ledges, or even areas of land, which lie north of the limits of ice action in the Glacial Epoch.

Mention was made by others of the benches of boulders which lie on the side of Rigaud. It was brought out that they are coarse cobbles, entirely *unglaciated* and all of local origin. *Science*, Jan. 25, 1901, p. 137.

ungrammared (un-gram'a̤rd), *a.* Ignorant of the grammar of one's own language; illiterate. [Rare.]

ungual. I. *a.*—**Ungual bone,** the terminal or ungual phalanx of a digit.—**Ungual furrows.** See ★*furrow*.

II. *n.* An ungual phalanx or claw.

The *unguals*, which in the ground-sloths are large claws, in the other two orders are more or less hoof-like, completely so in the glyptodonts.
Science, June, 1903, p. 902.

unguentarium (ung-gwẹn-tā'ri-um), *n.*; *pl.* *unguentaria* (-a̤). [L.] In *class. antiq.*, a small club-shaped bottle made of alabaster, glass, or terra-cotta, used for holding unguents.

unguentum (ung-gwen'tum), *n.* [L.] An ointment; an unguent.

unguis, *n.* 6. The horny, nail-like covering of the tip of the bill found in ducks and geese.

In all the duck order the bill is likewise soft; but there it is always terminated by a hard, horny, *unguis*, or "nail," more or less distinct.
Coues, Key to North Amer. Birds, p. 102.

ungula, *n.*—**Spherical ungula,** the portion of a globe cut out by two planes through the center.

ungulated (ung'gụ-lā-ted), *a.* [See *ungulate*.] Having hoofs; ungulate.

ungumming (un-gum'ing), *n.* In the preparation of raw silk for use, same as ★*stripping*, 7.

unhandseled (un-hand'sẹld), *a.* Not handseled; not used; virgin. See *handsel*, *n.* [Rare.]

This was that earth of which we have heard, made out of Chaos and Old Night. Here was no man's garden, but the *unhandselled* globe. It was not lawn, nor pasture, nor mead, nor woodland, nor lea, nor arable, nor waste land. *Thoreau*, Maine Woods, p. 70.

unhaste (un-hāst'), *n.* Absence of haste; deliberation. *Encyc. Dict.* [Rare.]

unicalcarate (ū-ni-kal'ka̤-rāt), *a.* Having but one spur: said of the legs of certain arthropods.

Legs short, subequal, first tarsi "*unicalcarate*," the others bicalcarate.
U. S. Dept. Agr., Bur. Animal Industry, Rep., p. 442.

unicell (ū'ni-sel), *n.* An alga, or other plant, consisting of but a single cell; a unicellular plant.

unicellularity (ū-ni-sel-ụ-lar'ị-ti), *n.* [*unicellular* + *-ity*.] The condition or state of being unicellular or consisting of a single cell, like the *Protozoa* and *Protophyta*.

uniceps (ū'ni-seps), *a.* [LL. *uniceps*, one-headed, < L. *unus*, one, + *caput* (*capit-*), head.] Having one head or origin: noting a muscle. See *biceps*.

The biceps has been seen with as many as four and even five heads. The supernumerary heads, as a rule, have their origin from the bicipital groove, body of humerus, coracoid process, capsule of shoulder-joint, or tendon of the pectoralis major. . . . The long head is occasionally absent, the muscle being *uniceps* instead of biceps, as in some animals.
Buck, Med. Handbook, vi. 52.

uniceptor (ū-ni-sep'tọ̈r), *n.* [L. *unus*, one, + *-ceptor:* see ★*ceptor*.] A receptor which has a single combining group. See ★*immunity*, 5.

Ehrlich has recently suggested the name 'ceptor,' in place of 'intermediary body.' According to the manner of action he distinguishes '*uniceptors*' and 'amboceptors.' Bordet calls this body 'substance sensibilisatrice'; Metchnikoff 'fixator'; P. Mueller, 'copula.'
Jour. Exper. Med., March 17, 1902, p. 281, note.

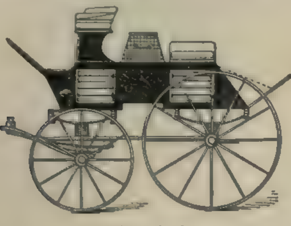
unicispinate (ū″ni-si-spī'nāt), *a.* [L. *unicus*, single, + *spina*, spine, + *-ate*¹.] Bearing undivided or simple spines, as the surface of certain brachiopod shells: contrasted with ★*duplicispinate*.

unicispinous (ū″ni-si-spī'nus), *a.* [L. *unicus*, single, + *spina*, spine, + *-ous*.] Same as ★*unicispinate*.

unicist, *n.* 2. One who believes in the unitary character or origin of something, as that a given group of animals or plants constitutes a single species.

Inclined to accept the *unicist* theory, or claim at least that the facts do not warrant the belief in the existence of distinct species; while . . . others actively uphold the existence of a single polymorphous species.
J. Ewing, in Jour. Exper. Med., March 25, 1901, p. 483.

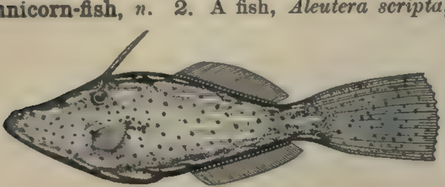
unicorn, *n.*—**Unicorn brake,** a brake designed for three horses driven 'unicorn fashion,' that is, one horse before the other two.—**Unicorn uterus.** See *uterus unicornis*, under *uterus*.



Unicorn brake.

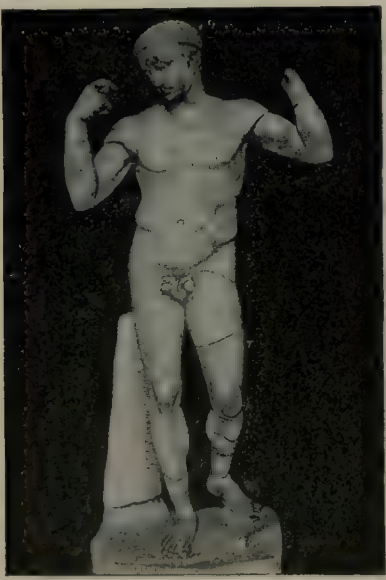
unicornate (ū-ni-kôr′nāt), *a.* [L. *unus*, one, + *cornu*, horn, + *-ate*.] Same as *unicornous*. *Buck*, Med. Handbook, II. 714.

unicorn-fish, *n.* 2. A fish, *Aleutera scripta*, belonging to the family *Monacanthidæ*, found in the West Indies and off the west coast of Mexico.



Unicorn-fish (*Aleutera scripta*).

unicrurine (ū-ni-krö′rin), *a.* [L. *unus*, one, + *crus* (*crur-*), leg, + *-ine*.] Noting the common position assumed in walking, when one foot stands firmly upon the ground and the other touches it lightly. [Rare.]



Unicrurine: the Vaison Diadumenos after Polycletus.
(In the British Museum, London.)

If the pace were slackened we should just have the so-called *unicrurine* attitude of the Polykleitan statues.
E. Sellers, in Jour. Hellenic Studies, XIII. 12.

Unicursal surface. See ★*surface*.

unidirectional (ū″ni-di-rek′shọn-ạl), *a.* [L. *unus*, one, + E. *direction* + *-al*¹.] Having, or moving in, only one direction; not subject to reversals or changes of direction: said of a direct electric current, or sometimes of a magnetic field of which the lines of force are fixed as to direction.

uniface (ū′ni-fās), *n.* [L. *unus*, one, + *facies*, face.] A coin struck on one side only. *W. C. Hazlitt*.

Unifacial surface. See ★*surface*.

uniform. I. *a.*—**Uniform convergence.** A series whose terms are functions of a variable x is said to converge uniformly within an interval if it is possible to choose n (say $n = m$) so that for every value of n equal to or greater than m and for every value of x within the interval the remainder r_n shall be less than any given positive quantity ϵ.—**Uniform manifold.** See ★*manifold*.—**Uniform motion.** See ★*motion*.

II. *n.*—**Full uniform,** a uniform prescribed to be worn on occasions of ceremony.

uniformation (ū″ni-fôr-mā′shọn), *n.* [*uniform* + *-ation*.] The act or process of making uniform.

uniformization (ū-ni-fôr-mi-zā′shọn), *n.* [*uniformiz(e)* + *-ation*.] The act of uniformizing or making uniform.

The *uniformisation* of real algebraic curves.
Nature, Nov. 21, 1907, p. 72.

uniformly, *adv.* 2. In *math.*, with uniform convergence.

unigenesis (ū-ni-jen′e-sis), *n.* [L. *unus*, one, + Gr. γένεσις, origin.] Same as *monogenesis*.

unigenist (ū-nij′e-nist), *n.* [L. *unus*, one, + Gr. -γενεια, < √ γεν, produce, + *-ist*.] Same as *monogenist*.

Prof. Kollmann draws another argument in support of the *unigenist* doctrine against polygenist views.
Keane, Ethnology, p. 156.

unigravida (ū-ni-grav′i-dạ̈), *n.* [L. *unus*, one, + *gravidus*, pregnant.] A woman who has been pregnant but once.

Unilateral surface. Same as *unifacial* ★*surface*.

unilobal (ū-ni-lō′bạl), *a.* [L. *unus*, one, + E. *lobal*.] Consisting of a single lobe.

unilobular (ū-ni-lob′ụ-lạ̈r), *a.* [L. *unus*, one, + NL. *lobulus*, lobule, + *-ar*³.] Possessing a single lobe or lobule.

The liver is much increased in size, the "*unilobular*" form, also of alcoholic origin. *Encyc. Brit.*, XXXI. 551.

unincised (un-in-sīzd′), *a.* Not incised or cut into.

Separating the *unincised* skin from larynx, hyoid bone, and muscles of the floor of mouth.
Buck, Med. Handbook, I. 659.

unincorporated (un-in-kôr′pọ-rā-ted), *a.* Not incorporated.—**Unincorporated association.** See *voluntary association*, under *association*.

unincubated (un-in′kụ-bā-ted), *a.* Not yet incubated: said of the freshly laid eggs of birds. *Buck*, Med. Handbook, I. 441.

uninfiltrated (un-in-fil′trạ-ted), *a.* Not infiltrated.

The whole process is superficial, the lesions springing from an *uninfiltrated* base.
Buck, Med. Handbook, III. 715.

uninhibited (un-in-hib′i-ted), *a.* Not inhibited, in any sense of that word. *Buck*, Med. Handbook, V. 44.

uninodal (ū-ni-nō′dạl), *a.* [L. *unus*, one, + *nodus*, node, + *-al*¹.] Having one node; having one point that remains at rest while adjacent points are vibrating.

This sort of seiche is therefore called a *uninodal* longitudinal seiche. *G. H. Darwin*, The Tides, p. 26.

Uninodal area, a region of the ocean where, according to R. A. Harris, it becomes possible for the water to oscillate as a mass about a single horizontal axis and give rise to uninodal tides. See the extract.

In brief, the tides are ascribed primarily to seiche-like oscillations sustained by the disturbing forces of the moon and sun, the free period of the body approximately agreeing with the period of the forces. A binodal area extends from northwestern Australia to Somali and Arabia, and a *uninodal area* from Mozambique Channel to Baluchistan and India; the tides in the latter area are, however, influenced by the tides south of the channel. The co-tidal lines are generally crowded together near the nodal lines, through straits, and in shallow arms of the sea, while they are generally spread apart at and near the loops of the oscillations. *Sci. Amer.*, May 9, 1903, p. 351.

uninominal, *a.* 2. Relating to one name only. See the extract.

An electoral bill for establishing *uninominal* voting—that is voting for single candidates in separate districts, instead of list voting. *Appleton's Ann. Cyc.*, 1899, p. 84.

uninucleated (ū-ni-nū′klẹ̄-ạ̄-ted), *a.* Same as *uninuclear*.

union. I. *n.* 9. In *mech.*: (*b*) A device for connecting the ends of two pipes in a line, without turning either. In the screwed union, a piece is screwed into the end of each of the pipes and these are then drawn together by a third piece which catches behind a collar on one of them and screws onto the other. A flange-union consists of two flanges which are screwed or otherwise fastened on the ends of the pipes and are then bolted together.—**Conjugated double unions,** two double unions in an organic compound separated by two atoms which are united singly, as $R_2C = CH–CH = CR_2$.—**Pan-American union,** the International Union of the American Republics. See the extract.

The International Union of the American Republics, popularly known as the *Pan-American Union*, has existed since 1890. It was established by the International Conference of 1889–90, with the Bureau of the American Republics as its organ. The reason for its creation was the fostering of the friendly relations between all the republics, the dissemination of more general knowledge of the social and economic conditions obtaining in the various portions of the Western Hemisphere and for improving business intercourse and trade relations. In 1893 the publication of a monthly bulletin was inaugurated.
Science, June 5, 1903, p. 892.

Primary union, in *surg.*, union of the edges of a wound directly, without granulation or suppuration. Also called *union by first intention*.—**Triple union,** in *chem.*, a union of two atoms, usually of carbon, in such a manner that two univalent atoms may be added to each. Thus acetylene, HC ⋮ CH, may give ethane, $CH_3.CH_3$. The term implies that three of the valences of each carbon atom are used to hold it to the other atom, but the actual nature of the union is uncertain.—**Vicious union.** See *vicious*.

II. *a.*—**Union black.** See ★*black*, *n.*—**Union goods,** a trade-name for textile fabrics made from two or more different fibrous materials, commonly cotton and wool. Care has to be taken in the selection of dyestuffs for use on such goods in view of the more or less different relations of the same dye to different fibers.—**Union label,** a label placed on goods or wares offered for sale, signifying that they have been made by members of a labor-union or in a union shop: used as a device for discriminating against workers who do not belong to the unions, or against independent shops.—**Union shop,** a shop in which only union workers are employed, or from which independent workers are excluded; a 'closed' shop.—**Union suit.** See ★*suit*.

union-coupling (ū′nyọn-kup″ling), *n.* A contrivance by which two sections of pipe may be joined so that connection and disconnection may be made without interfering with other joints; a union.

unionize (ū′nyọn-īz), *v. t.*; pret. and pp. *unionized*, ppr. *unionizing*. [*union* + *-ize*.] To give the character of a union, and specifically of a trade-union, to; transform into, organize as, or incorporate in a (trade-) union; cause to join a (trade-) union.

The rest of the world does n't care. So the shadow of the coal heap lies dark upon these "*unionized*" little ones as they grow up to be men and women. Within a few years the breaker boy will be a miner.
McClure's Mag., Feb., 1903, p. 444.

This year [1900] the strikes were notably successful—New England papers reporting that nearly every "*unionized*" town in that section has now the eight-hour workday for . . . building trades workmen.
Rev. of Revs., XXI. 651.

union-made (ū′nyọn-mād), *a.* Made by members of a labor-union.

union-nut (ū′nyọn-nut), *n.* An Australian tree of the rue family, *Bosistoa sapindiformis*, yielding a beautifully marked, close-grained, yellowish wood suitable for cabinet-work.

unioval (ū-ni-ō′vạl), *a.* [L. *unus*, one, + *ovum*, ovum, + *-al*¹.] Relating to, or springing from, a single ovum: as, *unioval* twins. *Buck*, Med. Handbook, I. 227.

uniovular (ū-ni-ō′vụ-lạ̈r), *a.* [L. *unus*, one, + E. *ovular*.] Relating to or derived from a single ovum. *Lancet*, May 23, 1908, p. 1481.

uniparental (ū″ni-pạ̄-ren′tạl), *a.* [L. *unus*, one, + *parens*, parent, + *-al*¹.] Relating to only one of the parents. *Buck*, Med. Handbook, IV. 639.

unipariens (ū-ni-pār′i-ẹnz), *a.* [NL., < L. *unus*, one, + *pariens*, ppr. of *parere*, bring forth.] Bearing one young at a time; uniparous.

Unipartite number. See ★*number*.

uniperiodic (ū″ni-pē-ri-od′ik), *a.* [L. *unus*, one, + E. *periodic*.] Having only one period: said of an alternating current which has a frequency of one cycle in a second of time.

uniphase (ū′ni-fāz), *a.* [L. *unus*, one, + Gr. φάσις, phase.] In *elect.*, same as ★*single-phase*.

uniphaser (ū′ni-fā-zėr), *n.* [*uniphase* + *-er*.] A single-phase electric generator or motor.

Uniplanar motion. See ★*motion*.

Uniplane kite. See *boys'* ★*kite*.

unipolar, *a.* 3. In *elect.*, pertaining to a unipolar or nonpolar electric machine, that is, a machine in which the armature rotates in a uniform magnetic field. Unipolar electric generators require high speeds and therefore were not used before the advent of the steam turbine.

unipotence (ū-nip′ọ̄-tẹns), *n.* [*unipotent*: on the analogy of *omnipotence*.] The character of being unipotent; power or efficiency in one way or direction only. [Rare.]

unipotent (ū-nip′ọ̄-tẹnt), *a.* [L. *unus*, one, + *poten(t)s*, powerful. See *omnipotent*.] Powerful or effective in only one way or direction. [Rare.]

unique, *a.* 3. In *math.*, unambiguous and singly determinate.

It is a fundamental theorem that every ideal can be resolved into the product of a finite number of prime ideals, and that this resolution is *unique*.
Encyc. Brit., XXXI. 286.

uniquely, *adv.* **2.** In *math.*, unambiguously and with single determinateness.

> It is clear that a large class of problems in permutations can be solved in a similar manner, viz., by giving special values to the elements of the determinant of the matrix. The redundant product leads *uniquely* to the real generating function. *Encyc. Brit.*, XXVII. 156.

uniqueness, *n.* **2.** In *math.*, freedom from ambiguity in its outcome.

> The *uniqueness* of the quadrilateral construction cannot be projectively proved without three dimensions, and hence there is no pure projective Geometry of spaces having only one or two dimensions.
> *Encyc. Brit.*, XXVIII. 671.

uniradial (ū-ni-rā′di-al), *a.* [L. *unus*, one, + *radius*, radius, + *-al*¹.] In *biol.*, not repeated independently. *P. C. Mitchell.*

unireme (ū′ni-rēm), *n.* [L. *unus*, one, + *remus*, oar. The word is a modern formation, in distinction from *bireme* and *trireme.*] In *Gr. antiq.*, a ship having a single bank of oars: the earliest form of Greek ship.

unirritable (un-ir′i-ta-bl), *a.* Not irritable, in any sense; that cannot be irritated or stimulated.

> Immediately after death the heart is found to be *unirritable* to electrical stimulation.
> *Buck*, Med. Handbook, II. 692.

uniserial, *a.* **3.** Arranged in a single series: specifically used of the arms of *Crinoidea* in which the component plates may be arranged in one vertical series, or in two such series (biserial), in which case the edges of the plates of each series are beveled to fit into the interspaces of the other series. The arms invariably begin with a uniserial arrangement, the biserial order when present being a secondary development.—**4.** In the art of decoration, being in a single series in which the elements either face in the same direction, or alternately to one side or the other, or alternately look away from or toward each other.

unisolated, *a.* **2.** In *chem.*, not separated from combination or freed from admixture: said of an element or definite compound the existence of which may be suspected, but which has not been obtained as a distinct substance.

> If a gas of the same series, still *unisolated*, may exist (as is not impossible), which has an atomic weight half that of helium, this gas, liquified in turn by the aid of liquid helium, would bring the experimenter still closer to that zero. *Encyc. Brit.*, XXX. 286.

unit, *n.* **3.** Any subdivision of an army having a distinct organization and defined duties.

> Two companies and two squadrons of their force proceeded toward Daliandiapu-Tse. Our cavalry and *units* withdrew toward Schlindjane. *N. Y. Herald*, May 9, 1904.

Ångström unit, in *spectroscopy*, a unit for the measurement of wave-lengths of light introduced by A. J. Ångstrom of Upsala in 1866 and largely used by spectroscopists. The Ångström unit is 0.0000001 mm. or $\frac{1}{10000}$ of a micron (μ). The wave-length of the longest visible rays of the spectrum (red) is about 7600 Ångström units; that of the shortest (violet) is about 3900.—**Astronomical unit**, in measuring astronomical distance, the mean distance of the earth from the sun. See *sun.*—**Board of Trade unit**, any unit, such as the so-called 'Board of Trade ohm,' or the kilowatt-hour, defined, authorized, or specified by the London Board of Trade: sometimes abbreviated as *B. T. U.*, but unfortunately so, since the same letters are commonly used to designate the British thermal unit.—**British thermal unit**, the amount of heat necessary to raise one avoirdupois pound of water one degree Fahrenheit. It is equivalent to 1054.9 joules, 778.104 foot-pounds, or 251.995 lesser calories. Abbreviated B. T. U.—**Circular unit**, a unit of surface equal to the area of a circle whose diameter is the linear unit. See *circular* ★*foot*, ★*cross-section unit.*—**Cross-section unit.** See ★*cross-section.*—**Fractional unit**, one of the parts of which the fraction itself denotes one or more: thus for $\frac{3}{4}$ it is $\frac{1}{4}$.—**Hefner unit**, a unit of light-intensity, emitted by the flame of a Hefner-Alteneck lamp, which burns amyl-acetate. See ★*light standard*, ★*hefner.*—**Imaginary unit**, the neomon, the square root of minus one, $\sqrt{-1}$, $(-1)^{\frac{1}{2}}$, i, ι.—**Integral unit**, 1, the unit for integers.—**Jacobi's unit of current**, the current which when passed through a water voltameter will generate one cubic centimeter of gas (at 0° C. and 760 millimeters pressure) per second.—**Jacobi's unit of resistance**, the resistance of a copper wire one meter in length and one millimeter in diameter.—**Manometric unit**, a unit employed in measuring the pressure of gases. The manometric unit commonly employed is the pressure exerted by a column of mercury one centimeter in vertical height.—**Metallic unit**, one per cent. of the valuable metal in the ton of ore from which it is extracted in the metallurgical process. The price of the ore per ton is based on the number of metallic units at an agreed price per unit.—**Multiple unit**, a system of electric railway-train control, devised by Mr. F. J. Sprague, in which two or more cars, each independently equipped with motors and controllers individual thereto, are combined into a train, without regard to end-relation or sequence of cars, and operated as a unit from one or more master switches through a secondary train line. *F. J. Sprague.*—**Natural unit of electricity.** See ★*electricity.*—**Photometric unit**, a unit of intensity of light employed in photometry. See ★*light standard.*—**Physical unit**, a unit in terms of which physical quantities are expressed.—**Physiological unit.** (*a*) The smallest portion of an organism which exhibits the characteristic activities of the whole. The conception of a physiological unit is not fixed, since it depends upon the standard with reference to which activities are measured. If capacity for sexual reproduction is the criterion, most of the higher animals are complete physiological units only in their adult condition. If capacity for generating the whole is the criterion, fertilized eggs and parthenogenetic eggs are physiological units. If capacity for restoring the whole from a part is the criterion, $\frac{1}{200}$ part of the body of a hydra and $\frac{1}{27}$ part of that of a stentor are physiological units, since smaller parts than these do not regenerate the whole. (*b*) According to the hypothesis of Herbert Spencer, an ultimate biological unit or element which, when joined to others like itself, possesses the power to become a specific organism. The body of each individual organism is held to consist of its own sort of physiological units which are all alike and nearly, but not completely, identical with those which compose the body of another individual of the same species. The physiological unit is held to be intermediate between the molecule or chemical unit and the cell or morphological unit, each cell being regarded as composed of innumerable physiological units each of which again consists of innumerable molecules. The physiological units are held to make each organism and each species what it is and to have the aptitude to contribute to the construction of the organism in virtue of their polarity. The hypothesis of physiological units is advanced as an explanation of the facts of inheritance in general, and, especially, the generation of living beings from eggs and the regeneration or replacement of lost parts. The organism is able to replace lost parts because the polarity of the units, it is said, causes them to restore the organism to its perfect condition under the directive influence of the whole, which forces the units to arrange themselves in just such a way as is necessary for the perfection of the part in the harmony of the whole. A germ-cell is held to contain small groups of these units which, by their polarity, give to it the power to reproduce the whole. (*c*) According to Bateson, an ultimate element or unit of inheritance, of unknown nature, of which an allelomorph or character-unit is the sensible manifestation.

> The units with which that science must deal, we may speak of, for the present, as character-units, the sensible manifestations of *physiological units* of as yet unknown nature.
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., [1902, I. 159.

Pound-centigrade unit, a thermal unit; the heat necessary to raise one pound of water one degree centigrade. It is equal to 1898.81 joules.—**Siemens mercury unit**, in *elect.*, a practical unit of resistance equal to the resistance of a column of mercury one meter long and one square millimeter in cross-section, at a temperature of 0° C.—**Tactical unit**, a subdivision of an army which is made the basis of tactical instruction, and in which the strength of an army is expressed. The tactical units are the battalion, squadron, and battery.—**Unit angle.** (*b*) In the sexagesimal method, a degree. (*c*) In the centesimal method, a grade.—**Unit magnetic reluctance.** See ★*reluctance.*—**Unit moment of a couple.** See ★*couple.*—**Unit of acceleration.** See ★*acceleration.*—**Unit of angular acceleration.** See ★*acceleration.*—**Unit of angular velocity.** See ★*angular.*—**Unit of entropy**, the ★claus (which see).—**Unit of imaginaries**, the neomon, the square root of minus one, $\sqrt{-1}$, *i.*—**Unit of inductance**, that inductance which will produce one unit of electromotive force by a change of current taking place at the rate of unit current per second. When electromotive force and current are measured in c. g. s. units the unit of inductance thus defined is the c. g. s. unit of inductance. The practical unit of inductance usually employed is the henry. It is 1×10^9 c. g. s. units, or the inductance in a circuit when the electromotive force is one volt and the current changes at the rate of one ampere per second.—**Unit of luminous intensity**, the intensity of the light from a standard source, such as the Hefner lamp. See ★*light standard.*—**Unit of magnetic flux**, the flux which acts on a unit magnetic pole with a force of one dyne; a maxwell.—**Unit of magnetizing force**, a magnetizing force of one gilbert per centimeter. As practical units, the magnetizing forces of one ampere-turn per inch and of one ampere-turn per centimeter are frequently employed.—**Unit of magnetomotive force**, the magnetomotive force which corresponds to unit flux in a magnetic circuit having unit reluctance; a gilbert. A practical unit in common use is the magneto force due to one ampere flowing once around a magnetic circuit.—**Unit of photometric intensity**, the intensity of light sufficient to give an illumination of one lux at 1 meter's distance; a hefner. See ★*light standard.*—**Unit of power**, the power developed by the expenditure of energy at a rate corresponding to a unit of energy in a unit of time. The c. g. s. unit of power is one erg per second. The corresponding practical units are the watt or joule per second and the kilowatt.—**Unit of radioactivity**, a radioactive standard. A committee appointed by the council of the Rontgen Society of London has recommended that the γ-ray ionization from one milligram of pure radium be regarded as a standard, and called a unit of radioactivity. *Science*, Jan. 15, 1909.—**Unit of work**, the work done by unit force acting through unit distance. The c. g. s. unit of work is the erg, which is the work done by a dyne acting through one centimeter; the practical unit in the metric system is the joule, which is 10,000,000 ergs. The usual gravitational units are the kilogram-meter and the foot-pound; those involving power, the watt-hour (= 3600 joules) and the horse-power hour.—**Unit planes.** See ★*plane*1.—**Unit point.** See ★*point*1.—**Unit sect.** See ★*sect*2.—**Unit sect-carrier.** See ★*sect-carrier.*—**Unit strength**, the resistance to rupture expressed in the units of force in use or preferred, exerted by an area of cross-section having one unit of extent. The strength or resistance may be to stresses tending to pull apart—unit tensile resistance; or to stresses tending to crush—unit compressive resistance; or stresses tending to bend or flex—unit resistance to flexure.—**Unit tube.** See ★*tube of flow.*—**Unit vector.** See ★*vector.*—**Urotoxic unit**, the amount of urine, per kilogram of the animal's weight, necessary to kill a rabbit when injected into its veins.—**Varley's unit of resistance.** See ★*resistance.*—**Violle unit**, in *photometry*, the light emitted by one square centimeter of the surface of a mass of glowing platinum at the melting temperature of that metal. See ★*light standard.*—**Table of the units commonly used in measurements:**

Acre, = 43,560 square feet, = 4,046.87 square meters.
Acre-foot, a unit used in irrigation; the volume of water required to cover one acre to a depth of one foot, = 43,560 cubic feet, = 1,233.49 cubic meters.
Ampere, a practical unit of electrical current, = 0.1 c. g. s. unit.
Ampere (international), the ampere as defined for practical purposes by the International Congress at Chicago in 1893, as the current required to deposit 0.001118 gram of silver in a second of time. This value was subsequently legalized in the United States and was readopted by the Electrical Conference in England (1908), although the value 0.0011183 was known to be more nearly correct.
Ampere-hour, =3,600 coulombs, =360 c. g. s. units (electromagnetic).
Ampere-second, =1 coulomb.
Ampere-turn, a unit of magnetomotive force, =4 π/10 c. g. s. units, =1.256637 gilberts.
Ångström unit, =0.0000001 millimeter, =0.0001 micron.
Are, = 100 square meters, =1,076.387 square feet.
Atmosphere, a unit of fluid pressure, = the pressure of a column of mercury 76 centimeters in height, =1,013,240 dynes per square centimeter. Sometimes an atmosphere is defined as a pressure of 1 kilogram per square centimeter.
Bougie décimale, a unit of intensity of light originally defined as 1/20 of a violle; subsequently (by the Geneva Congress of Photometricians), as equal to 1 hefner.
Bougie de l'étoile, a unit of intensity of light used in France; the light from a stearin candle burning 10 grams per hour, =1/7 carcels (approximately).
British thermal unit, the heat required to raise one pound (avoir.) of water one degree Fahrenheit, = 1,054.90 joules, = 251.996 calories, = 778.104 foot-pounds, = 0.000392982 horse-power hour, = 0.293027 watt-hour.
Calory, a calorimetric unit; the heat required to raise one gram of water one degree centigrade (also called a *gram-calory* or *small calory*), = 4.18617 joules, = 3.08777 foot-pounds, =0.003968 British thermal unit, =0.00116282 watt-hour.
Candle (*British standard*), a unit of intensity of light; the light from a spermaceti candle of specified composition, size, and form (see *standard* ★*candle*), = 1.136 Hefner units.
Candle (*German*; G. *Vereinskerze*), a unit of intensity of light; the light from a paraffin candle having a diameter of 20 millimeters and a flame height of 50 millimeters, =1.16 . . . 1.224 Hefner units (approximately), =1.05 British standard candles (approximately).
Candle (*Munich*), a unit of intensity of light; the light from a stearin candle of conical form, =0.153 carcel (approximately), =1.17 British standard candles (approximately).
Candle (*star*). See *bougie de l'étoile* (above).
Candle-foot. See *foot-candle* (below).
Candle-meter. See *meter-candle* (below).
Carcel, a unit of intensity of light formerly used in France; the light from a lamp of Argand type with mechanical draft, =10.87 . . . 10.90 Hefner units (approximately), =9.53 British candles (approximately).
Centimeter, =0.01 meter, =0.393700 inch.
Centimeter (*cubic*), =0.001 liter, =0.0610234 cubic inch.
C. G. S. unit of acceleration, an acceleration of one centimeter per second per second, =0.00101979 of the acceleration due to gravity.
C. G. S. unit of capacity (*electromagnetic*), the capacity of a condenser the charge of which at unit potential (c. g. s.) is one c. g. s. unit of quantity or 10 coulombs, $=1 \times 10^9$ farads.
C. G. S. unit of capacity (*electrostatic*), $=1/9 \times 10^{-20}$ c. g. s. units of capacity of the electromagnetic system (approximately), $=1/9 \times 10^{-11}$ farads (approximately).
C. G. S. unit of electric charge (*electromagnetic*), the charge transferred by one c. g. s. unit of current in one second of time, =10 coulombs, =0.00277778 ampere-hour, $=3 \times 10^{10}$ electrostatic units (approximately).
C. G. S. unit of electric charge (*electrostatic*), the charge which in air exerts a force of one dyne on an equal charge at a distance of one centimeter, =1/v c. g. s. units (electromagnetic), =10/V coulombs or $1/3 \times 10^{-9}$ coulombs (approximately).
C. G. S. unit of electric current, the current which, flowing in a circular coil of one centimeter radius, produces at the center of the coil a magnetic field of 2μ units intensity, =10 amperes.
C. G. S. unit of electrical resistance, $=1 \times 10^{-9}$ ohms.
C. G. S. unit of electromotive force, $=1 \times 10^{-8}$ volts.
C. G. S. unit of energy, =1 erg, = 0.0000001 joule.
C. G. S. unit of force, =1 dyne, =0.00101979 of the force due to a gram, =0.000002248 of the force due to a pound, =0.00007233 poundal.
C. G. S. unit of inductance, the inductance which gives one c. g. s. unit of electromotive force when the current is changing at the rate of one c. g. s. unit per second, $=1 \times 10^{-9}$ henrys.
C. G. S. unit of magnetic flux, the flux which acts with a force of one dyne on a unit magnetic pole, = 1 maxwell, =1 line of force, =1/4 μ of the flux from a unit pole.
C. G. S. unit of magnetic induction (or *flux density*), a flux density of one line of force, or maxwell per square centimeter; the magnetic induction in a field which exerts a force of one dyne upon a unit pole placed in it, =1 gauss.
C. G. S. unit of magnetomotive force, the magnetomotive force that gives one c. g. s. unit of magnetic flux through one c. g. s. unit of reluctance, = 1 gilbert, = 10/4 μ ampere-turns.
C. G. S. unit of permeance (or *magnetic conductance*), the reciprocal of one unit of reluctance.
C. G. S. unit of power, =1 erg per second.

C. G. S. unit of reluctance (or *magnetic resistance*), that reluctance (or resistance) through which a c. g. s. unit of magnetomotive force gives a c. g. s. unit of magnetic flux, =1 oersted.

C. G. S. unit of velocity, a velocity of one centimeter per second.

Chain (*surveyors'*), = 66.00 feet, =20.117 meters.

Coulomb, a practical unit of electric charge, = 0.1 c. g. s. unit (electromagnetic), =1 ampere-second, =0.000277778 ampere-hour.

Coulomb (*international*), the charge transferred by one international ampere in one second of time.

Daniell, a former practical unit of electromotive force; the electromotive force of a Daniell cell, =1.08 to 1.10 volts.

Day (*astronomical*), the twenty-four hours from noon to noon (mean solar time).

Day (*calendar day*), the twenty-four hours from midnight to midnight (mean solar time).

Day (*civil*). Same as *calendar day* (above).

Day (*mean solar*), =86,400 mean solar seconds, =86,636.55 sidereal seconds, =1.002737 sidereal days.

Day (*sidereal*), =86,164.1 mean solar seconds, =86,400 sidereal seconds, =0.997269 mean solar day.

Degree (*of arc*), =0.0174533 radian.

Degree (*of latitude*), =60 nautical miles at equator (approximately), =69.00 statute miles at 40° lat.

Degree (*of longitude*), =60 nautical miles at equator (approximately), =53.05 statute miles at 40° lat.

Degree (*Celsius*). Same as a *degree centigrade* (below).

Degree (*centigrade*), =1/100 of the interval between the ice-point and the steam-point of a thermometer, =9/5 of a degree Fahrenheit.

Degree (*Fahrenheit*), =1/180 of the interval between the ice-point and the steam-point of a thermometer, =5/9 of a degree centigrade.

Degree (*Kelvin; K*), =one degree on the absolute scale of temperatures the intervals of which are the same as those of the centigrade scale while the zero is at −273° C.

Degree (*Réaumur*), =1/80 of the interval between the ice-point and the steam-point of a thermometer, =5/4 of a degree centigrade, =9/4 of a degree Fahrenheit.

Dyne, a unit of force; the force which, acting on a mass of one gram, produces an acceleration per second of one centimeter per second, =0.00007233 poundal. A dyne is equivalent to the following gravitational forces at sea-level in latitude 45°: =0.00101979 gram, =0.00000224825 pound.

Erg, the c. g. s. unit of energy; the work done by a force of one dyne acting through a distance of one centimeter, =0.0000001 joule.

Farad, a unit of electrical capacity, =9×10^{11} c. g. s. units of the electrostatic system (approximately).

Farad (*international*), the capacity represented by the ratio of one international coulomb divided by one international volt. The microfarad in common use is one millionth of this quantity.

Fathom (*British*), =0.001 nautical [mile, =6.080 feet, = 1.8532 meters.

Fathom (*United States*), =6.00 feet, =1.8288 meters.

Foot (*British*), =12 inches, =30.4801 centimeters.

Foot (*cubic*), =28,317.0 cubic centimeters, =7.48052 gallons (United States).

Foot-candle, a unit of illumination; the illumination from a candle at a distance of one foot, =12.2 luxes (approximately).

Foot-pound, a gravitational unit of work, =1.35573 joules, =0.323859 calory, =0.000376591 watt-hour, =0.000000505051 horse-power hour.

Furlong, =660 feet, =201.17 meters.

Gallon (*liquid; United States*), =3,785.43 cubic centimeters, =231 cubic inches.

Gallon (*imperial*), =4,545.9361 cubic centimeters, =277.410 cubic inches, =0.00594586 cubic yard.

Gauss, a unit of magnetic induction or flux density, = 1 c. g. s. unit, =1 maxwell or line of force per square centimeter, =6.45163 maxwells per square inch.

Gilbert, a unit of magnetomotive force, =1 c. g. s. unit, =10/4π=.7958 ampere-turn.

Grade, a unit of angular measure, =0.01 quadrant, = 0.015708 radian.

Grain, =0.0647989 gram.

Gram, =15.432356 grains, =0.0352740 oz. (avoir.), =0.0022046 pound (avoir.).

Gram (taken as a unit of force at sea-level in latitude 45°), =980.600 dynes, =0.0709265 poundal.

Gram-centimeter, a gravitational unit of work; the work required to lift one gram one centimeter against gravity, =980.60 ergs in lat. 45°.

Gram-molecule, that weight of a substance in grams which equals numerically its molecular weight.

Hand, a unit used in measuring the height at which horses stand, =4.0 inches.

Hectare, =10,000 square meters, =2.47104 acres.

Hectoliter, =100 liters, =26.4170 gallons (U. S.), =3.53145 cubic feet.

Hefner, the unit of intensity of light commonly accepted as the primary standard in photometry (see ★*hefner*), =0.88 British standard candle, =0.89 . . . 1.026 bougies décimales (approximately).

Hefner (*spherical*), a unit of flux of light; the total flux from a source of light of one hefner intensity, =12.5664 lumens.

Henry, a practical unit of inductance; an inductance such that the induced electromotive force is one international volt, while the rate of variation of the inducing current is one international ampere per second, =1 quadrant, =1 secohm, =1×10^{9} c. g. s. units.

Horse-power, = 745.650 watts, = 33,000 foot-pounds per minute, =42.4108 British thermal units per minute, = 10,687.3 calories per minute, = 1.01387 metric horse-power.

Horse-power (*metric*), = 0.735448 kilowatt, = 0.986318 horse-power.

Horse-power hour, = 2,684,340 joules, = 1,980,000 foot-pounds, =2,544.65 British thermal units, =745.650 watt-hours, =641,240 calories.

Hundredweight (*long*), =112 pounds (avoir.).

Hundredweight (*short*), =100 pounds (avoir.), =45.35924 kilograms.

Inch, =.083333 foot, =2.540005 centimeters.

Inch (*circular*), a unit of cross-section, =1,000,000 circular mils, = 0.785398 square inch, = 5.067090 square centimeters.

Inch (*miners'*), a unit of flow of water, =1.5 cubic feet per minute, =0.000707925 cubic meter per second.

Joule, a practical unit of energy, = 10,000,000 ergs, = 0.737612 foot-pound, =0.238882 calory.

Kapp line, a practical unit of magnetic flux =6,000 maxwells.

Kilo-calory (also called *large calory*), =1,000 calories.

Kilodyne, =1,000 dynes.

Kilogram, =1,000 grams, =35.2740 ounces (avoir.), =2.20462 pounds (avoir.).

Kilogram (taken as a unit of force at sea-level in latitude 45°), =980,600 dynes, =70.9265 poundals.

Kilogram-meter, a gravitational unit of work, = 9.80596 joules, = 7.23300 foot-pounds, = 2.34247 calories, = 0.00272388 watt-hour.

Kilometer, =1,000 meters, =3,280.83 feet, =0.621370 mile.

Kilowatt, = 1,000 watts, = 1.34111 horse-power, = 44,256.7 foot-pounds per minute, =56.8776 British thermal units per minute.

Kilowatt-hour, = 1,000 watt-hours, = 3,600,000 joules, = 3,412.66 British thermal units, = 859,975 calories, = 1.34111 horse-power hours.

Kine, a unit of velocity, =one centimeter per second.

Knot or *nautical mile*, =6,080.27 feet, =1,853.25 meters, = 1' of the earth's circumference.

Light-year, a unit of length used in expressing the distance of fixed stars from the earth, =9.467×10^{12} kilometers, =5.8825×10^{12} miles.

Line of force (*magnetic*), a unit of flux, =1 maxwell or c. g. s. unit.

Link, a unit of length used in surveying, =7.920 inches, = 20.117 centimeters.

Liter, =1,000 cubic centimeters, =1.05668 quarts (United States), =0.0013079 cubic yard.

Lumen, a unit of flux of light; the flux from a source of one hefner intensity per unit of solid angle; the flux from one hefner which is comprised within a cone which subtends a surface of one square meter at a radius of one meter, =0.079577 of the total flux from a hefner.

Lumen-hour, a unit of quantity of light (or more properly of luminous energy); one lumen of flux for one hour.

Lux, a unit of illumination; the illumination from one hefner at a distance of one meter, = 0.0818 foot-candle.

Matthiesen's unit of electrical conductivity, = 592,768 mho-cubic centimeter units.

Maxwell, a unit of magnetic flux, = 1 c. g. s. unit, = 1 line of force, =1/4 π of the flux from a unit pole.

Megadyne, =1,000,000 dynes.

Megamho, the reciprocal of a microhm.

Megaohm. Same as *megohm* (below).

Megavolt, =1,000,000 volts.

Megohm, a unit of electrical resistance, =1,000,000 ohms.

Meter, =100 centimeters, =39.37000 inches, =3.28083 feet.

Meter (*cubic*), = 61,023.4 cubic inches, = 264,170 gallons (United States), = 35.3145 cubic feet, =1.30794 cubic yards.

Meter-candle, a unit of illumination; the illumination from a candle at a distance of one meter, =1 lux (approximately), =0.0818 foot-candle.

Meter-kilogram, a practical unit of torque; the torque exerted by a force corresponding to the weight of one kilogram acting at the end of an arm one meter in length.

Mho, a practical unit of electrical conductance; for unvarying direct currents it is the reciprocal of the ohm, =1×10^{-9} c. g. s. units.

Mho (in alternating currents), a practical unit of admittance. Admittance in *mhos* is effective amperes divided by effective volts.

Mho (in alternating circuits), a unit of susceptance. Susceptance in *mhos* is wattless amperes divided by volts.

Mho-cubic centimeter unit (*Hering*). See *unit of electrical conductivity* (below).

Micro-ampere, =0.000001 ampere.

Microdyne, a unit of force, =0.000001 dyne.

Microfarad, the practical unit commonly used for the measure of electrical capacity, =9×10^{5} c. g. s. units of the electrostatic system (approximately), = 0.000001 farad.

Microhenry (*of inductance*), = 0.000001 henry, = 1,000 c. g. s. units.

Microhm, a unit of electrical resistance, =0.000001 ohm, =1,000 c. g. s. units.

Micron (μ), =0.001 millimeter, =10,000 Ångström units.

Microvolt, =0.000001 volt, =100 c. g. s. units.

Mil, =0.001 inch, =.002540 centimeter.

Mil (*circular*), a unit of cross-section, =0.000001 circular inch, =0.00050671 square millimeter.

Mile (*nautical*) or *knot*, =1.15155 statute miles, =6,080.27 feet, =1,853.25 meters.

Mile (*statute*), =5,280 feet, =1,609.35 meters.

Milliampere, =0.001 ampere.

Milligram, =0.015432 grain.

Millihenry (*of inductance*), =0.001 henry.

Millimeter, =0.1 centimeter, =0.039370 inch.

Millimeter (*circular*), a unit of cross-section, = 1.55000 circular mils, =0.785398 square millimeter.

Millimicron (μμ), =0.001μ, =0.000001 millimeter.

Millivolt, =0.001 volt.

Mol, =1 gram-molecule.

Month (*lunar*), averages 29.53059 mean solar days.

Month (*synodic*), an average lunar month.

Oersted, a unit of reluctance or magnetic resistance, =1 c. g. s. unit.

Ohm, a unit of electrical resistance, =1×10^{9} c. g. s. units.

Ohm (*B. A.*, or *British Association*), =0.986699 ohm.

Ohm (*Board of Trade*), =1.01358 B. A. ohms.

Ohm (*international*), a practical unit of resistance recommended by the International Congress at Chicago in 1893 and subsequently legalized by the United States Congress. It is the resistance at 0° C. of a column of pure mercury of uniform cross-section and 106.3 centimeters in length, weighing 14.4521 grams.

Ohm (*legal*), =0.997178 ohm.

Ohm (*true*), =1×10^{9} c. g. s. units.

Ounce (*avoir.*), =28.3495 grams, =437.500 grains, =0.062500 pound (avoir.)

Ounce (*fluid; British*), =28.41227 cubic centimeters, = 1.73381 cubic inches.

Ounce (*fluid; United States*), =29.5737 cubic centimeters, =1.80469 cubic inches.

Ounce (*troy*), =480 grains, =31.1035 grams.

Pint (*imperial*), =568.245 cubic centimeters, =34.6762 cubic inches, =1.20091 United States pints (liquid).

Pint (*dry; United States*), =1.16365 liquid pints (United States), =0.968972 imperial pint, =550.614 cubic centimeters.

Pint (*liquid; United States*), =473.179 cubic centimeters, =28.875 cubic inches, =0.859367 pint (dry; United States), =0.832702 imperial pint.

Poucelet, a unit of power, =100 kilogram-meters per second, =0.9806 kilowatt, =1.31509 horse-power.

Pound (*avoir.*), =7,000 grains, =453.5924 grams.

Pound (taken as a unit of force at sea-level in latitude 45°), =444,791 dynes, =32.1717 poundals.

Pound (*troy*), =5,760 grains, =373.242 grams.

Pound-foot, a practical unit of torque; the torque exerted by a force corresponding to the weight of one pound acting at the end of an arm one foot in length.

Poundal, a unit of force; a force which, acting upon a mass of one pound, produces an acceleration per second of one foot per second, =13,825.5 dynes. The poundal corresponds to the force exerted by 0.031083 pound or 14.099 grams at sea-level in latitude 45°.

Pyr, a unit of intensity of light, =1 bougie décimale.

Quadrant (*of arc*), =1.57080 radians.

Quadrant (*of inductance*), =1 henry.

Quart (*imperial*), =1,136.4908 cubic centimeters, =69.3525 cubic inches, =1.20091 quarts (liquid; United States).

Quart (*dry; United States*), =1,101.23 cubic centimeters, =1.16365 liquid quarts (United States).

Quart (*liquid; United States*), =946.359 cubic centimeters, =57.7500 cubic inches, =0.033420 cubic foot, =0.859367 dry quart (United States), =0.832702 imperial quart.

Radian, a unit of plane angular or circular measure, = 57.2958 degrees, =0.63662 quadrant, =0.159155 of the circumference.

Rod (*surveyors'*), =16.5 feet, =5.0292 meters.

Secohm (*of inductance*), =1 henry.

Second (*sidereal*), =0.997269 mean solar second.

Second (*mean solar*), =1.002738 sidereal seconds.

Siemens unit, a unit of electrical resistance; the resistance of a column of pure mercury one meter long and one square millimeter in cross-section, =0.940734 ohm.

Steradian, a unit of solid angle, =0.636620 of a spherical right angle.

Stone, =14 pounds (avoir.), =6.35029 kilograms.

Ton (*long*), =2,240 pounds (avoir.).

Ton (*metric*), =1,000 kilograms, =2,204.62 pounds (avoir.).

Ton (*short*), =2,000 pounds (avoir.), =45.35924 kilograms.

Unit of electrical conductivity, conductivity such that a column one centimeter long and one square centimeter of cross-section has a resistance of one ohm: called by Hering the *mho-cubic centimeter unit*.

Unit of pole strength. Same as *unit of magnetic induction* (see *maxwell*, above).

Unit of torque, the torque produced by one dyne acting at the end of an arm one centimeter in length.

Unit magnetic pole, a magnetic pole that, at a distance of one centimeter, exerts a force of one dyne on another unit pole. The flux from a unit pole is 4μ maxwells.

Vereinskerze. See *German candle* (above).

Violle, a unit of intensity of light; the light from one square centimeter of platinum at the melting-point, = 20 . . . 20.6 Hefner units (approximately), =20 bougies décimales (approximately), =19.8 British candles.

Volt, a practical unit of electromotive force, =1×10^{8} c. g. s. units.

Volt (*international*), the practical unit of electromotive force recommended by the international congress at Chicago in 1893; the electromotive force that will maintain one international ampere through one international ohm.

Volt (*true*), 1×10^{8} c. g. s. units.

Watt, a unit of power; the power required to do 10,000,000 ergs of work per second, =0.001 kilowatt, = 0.00134111 horse-power, = 0.101979 kilogram-meter per second, =0.737612 foot-pound per second, =0.238882 calory per second.

Watt-hour, a practical unit of work, =3,600 joules, = 2,655.40 foot-pounds, = 859.975 calories, = 0.00134111 horse-power hour.

Weber, a name formerly given to the unit of magnetic flux, =1 maxwell.

Yard (*British*), =36 inches, =91.4402 centimeters.

Yard (*cubic*), =0.764559 cubic meter, =201.974 gallons (United States).

Year (*calendar*), =365 mean solar days.

Year (*leap*), =366 days.

Year (*mean solar*), =365.24220 mean solar days.

Year (*sidereal*), =366.256399 sidereal days, =365.256360 mean solar days.

Unit. An abbreviation of *Unitarian*.

unit-character (ū′nit-kar″ak-tėr), *n.* In a cross-bred offspring of parents with antagonistic or mutually incompatible characters, or in the descendants of such offspring, one of the antagonistic parental characters manifested to the exclusion of the other; a character unit or the sensible manifestation of a physiological unit of as yet unknown nature. See the extract.

> Each such character, which is capable of being dissociated or replaced by its contrary, must henceforth be conceived of as a distinct *unit-character*; and as we know that the several *unit-characters* are of such a nature that any one of them is capable of independently displacing or being displaced by one or more alternative characters taken singly, we may recognize this fact by naming such *unit-characters* allelomorphs.
>
> *W. Bateson*, Mendel's Prin. of Heredity, p. 27.

United Labor party. See ★*labor*[1].

uniter, *n.* **2.** A solution for coating galvanized iron previous to its being painted, to prevent the peeling off of the paint.

uniterminal (ū-ni-tėr′mi-nal), *a.* [L. *unus*, one, + *terminus*, terminus, + *-al*^{1}.] In *mineral.*, pertaining to an axis of symmetry characterized by an unlike distribution of faces at the two extremities. *W. J Lewis*, Crystallography, p. 132.

unit-group (ū′nit-gröp), *n.* The group (of three, five, two-fours, etc.) which serves as unit in an auditory or tactual rhythm. *Amer Jour. Psychol.*, XIII. 96.

unit-stere (ū′nit-stēr), *n.* [*unit* + *stere.*] A name sometimes given to a certain very small volume used in computing the molecular volume of a solid or liquid from its chemical formula.

> The molecular volumes of complex paraffins and alcohols can be calculated very exactly by means of the formulæ . . . where S is a constant which has an average value of 2·970, and is called the *unitstere*.
> *Nature*, Jan. 10, 1907, p. 263.

unit-tube (ū′nit-tūb), *n.* A tube of magnetic induction throughout which the flux is equal to unity.

unituberculate (ū″nī-tū-bėr′kū-lāt), *a.* [L. *unus*, one, + E. *tuberculate.*] Bearing only one tubercle, as some of the plates in the test of certain echinoids.

unity, *n.*—**Law of mechanical-esthetic unity**, in *psychol.*, the principle (adopted by T. Lipps as explanatory of the geometrical-optical illusions) that "every spatial form is endowed by us, in idea, with a living personality, or is regarded as the scene of the interplay of opposing mechanical forces." *E. B. Titchener*, Exper. Psychol., I. i 152.—**Roots of unity.** See ★*root*^{1}.

univ. An abbreviation (*a*) of *universal*; (*b*) [*cap.*] of *Universalist*; (*c*) of *universally*; (*d*) [*l. c.* or *cap.*] of *university*.

univariance (ū-ni-vā′ri-ans), *n.* [*univariant.*] In *phys. chem.*, the possession, by a thermodynamic system, of only one degree of freedom. See *degree of freedom* and ★*phase rule*.

univariant (ū-ni-vā′ri-ant), *a.* [L. *unus*, one, + *varians* (*-t-*), variant.] 1. In *math.*, linearly variant.—2. In *phys. chem.*, having a variance equal to unity. The variance (V) of a chemical system is expressed by the equation $V = c + 2 - \phi$, where c is the number of independent components and ϕ is the number of phases in which the system may exist.

> The following properties of an *n*-component *univariant* system are well known: At a given temperature and under the corresponding equilibrium pressure $n + 1$ phases can coexist in equilibrium. At the given temperature and under the corresponding pressure, the *univariant* system of $n + 1$ phases admits of a continuous series of states of equilibrium in which the entropy and the volume of the system change while the total thermodynamic potential of the system and the concentrations of the phases remain unaltered. The state of equilibrium is completely determined if, in addition to the masses of the independent components, the volume or the entropy of the system be given.
> *Jour. Phys. Chem.*, June, 1904, p. 436.

universal, *a.* 5. In *mech.*, having feed-motions of the work against the cutter or tool in all possible directions (both right and left, forward and back, and up and down). Since tools of this type have usually a wide range of adaptable cutters, the term has been extended to mean having a very wide range of uses, or capable of doing nearly all kinds of work. It is the contradictory of *special* (in this use), which is applied to a tool that is designed for one class of work and no other.—**Universal algebra**, the calculus of generalizations of addition and multiplication.—**Universal consent.** See ★*consent*.—**Universal coupling.** (*b*) A universal joint; a Cardan joint. (*c*) A form of pipe-union in which the two pieces joined together, end to end, may be at an angle with each other, or not in line: effected by the use of a spherical surface of contact, one half male and the other female, pressed together by a nut forming part of the female half.—**Universal paper, system.** See ★*paper*, ★*system*.

universe, *n.*—**Island universe**, in *astron.*, a separate stellar system of limited extent, occupying a detached position in space and forming as it were an island in the ocean of illimitable space, in which other 'universes' exist. To such an 'island universe' our sun is by many supposed to belong.

universitize (ū-ni-vėr′si-tīz), *v. t.*; pret. and pp. *universitized*, ppr. *universitizing*. To convert into a university; add the character of a university to. [Rare.]

> The *universitized* college is encroached on from below till . . . would abandon the first one or two years, while the senior year is often given over to the professional school. *G. S. Hall*, Adolescence, II. 531.

university, *n.*—**University extension.** The movement was initiated by the University of Cambridge, England, in 1873, for the extension of university teaching by university instructors to those, chiefly, who desire the benefits of university training but who for any reason cannot reside at a university or even in a university town. The movement was taken up by the other universities and spread all over Great Britain, and in 1887 was taken up in the United States where it received new developments. The instruction is given principally by lectures, but class-work and class-reviews, home-work and correspondence are sometimes added.

univocal, *a.* 5. In *math.*, having only one result.—**Univocal operation.** See ★*operation*.

univoltine (ū-ni-vol′tin), *a.* [Appar. < L. *unus*, one, + It. *volta*, twin, + *-ine*^{1}.] Having but one generation annually: said of the ordinary races of the domestic silkworm to distinguish them from those races having two or more generations.

univore (ū′ni-vōr), *a.* and *n.* [*univor*(*ous*).] Noting a parasitic fungus which is restricted to a single host-plant.

> He [H. Klebahn] concludes that a fungus may suddenly choose a new host. Specialization may proceed from many hosts to one (plurivore fungus), or from living on a single host (*univore*) the rest may develop a capacity to infect several.
> *Jour. Roy. Micros. Soc.*, April, 1904, p. 222.

univorous (ū-niv′ǫ-rus), *a.* [L. *unus*, one, + *vorare*, eat, + *-ous.*] In *bot.*, living upon a single host: said of parasites. See ★*plurivorous*.

unleached (un-lēcht′), *a.* Not leached: as applied to wood-ashes, implying an important distinction, since such ashes when unleached, or not exhausted of soluble matter by the action of water, have notable manurial value on account of the potash salts which are present; but the value on this account is almost entirely lost after leaching.

> *Unleached* wood ashes spread about the trees after they are planted afford an excellent fertilizer.
> *Yearbook U. S. Dept. Agr.*, 1901, p. 396.

unlidded (un-lid′ed), *a.* Not covered by the eyelid. [Rare.]

> The *unlidded* eye of God, awake, aware.
> *Browning*, Ring and Book, iii. 1366.

unlikemindedness (un-līk-mīn′ded-nes), *n.* Dissimilarity of mind from mind, in feelings, ideas, or purposes; differences of language, religion, or knowledge in a population. *Giddings*, Elem. of Sociol., p. 290.

unlisted (un-lis′ted), *a.* Not listed; not placed in a (or the) list: as, *unlisted* securities—those not listed in the stock exchange.

unlithified (un-lith′i-fīd), *a.* Not converted into stone: as applied to volcanic ashes, the term means that these are still in loose form and have not become compacted by pressure, fusion, or cementing action. *Amer. Geol.*, Sept., 1903, p. 173.

unmechanical (un-mẹ-kan′i-kal), *a.* 1. Not mechanical.—2. Not in accordance with the observed laws or principles of mechanics, physics, or mathematics, conformity to which is necessary to success.—3. Not in accordance with practical experience in mechanical matters as respects convenient or continuous operation in practice.—4. Not designed in accordance with the methods or practice of the shop or factory which produces a successful commercial product.

unmediated (un-mē′di-ā-ted), *a.* Not mediated; unconnected; unrelated; lacking a common middle term.

> Living experience refuses to be sundered into the *unmediated* dualism of res cogitans and res extensa.
> *Encyc. Brit.*, XXXII. 66.

unmedullated (un-med′u-lạ̄-ted), *a.* Not having a medulla: said of a certain form of nerve-fiber. *Buck*, Med. Handbook, II. 320.

unmetered (un-mē′tėrd), *a.* Not measured by a meter, as a flow of water or gas of which no such measurement is taken.

unmold^2 (un-mōld′), *v. t.* [*un-*^{2} + *mold*^{4}, *n.*] To take out of its mold, as a frozen cream.

> To *unmold* creams.—Dip the mold into cold water, wipe it dry and invert it on the dish . . . hence the *unmolding* of creams requires great care.
> *Century Cook Book*, p. 493.

unnaturalist (un-nat′ū-ral-ist), *n.* One who is wanting in natural feeling. [Rare.]

> Me, a poor unit of humanity, to be treated like a polypus under the scissors of an experimental naturalist, or *unnaturalist*. *Southey*, Doctor, interchap. xiii.

unneutralized (un-nū′tral-īzd), *a.* Not rendered neutral.

> The *unneutralized* excess of bacterial toxins circulates in the blood serum. *Buck*, Med. Handbook, III. 535.

unofficial (un-ǫ-fish′al), *a.* Not official; specifically, in *med.*, not approved by an authoritative body.

unoperated (un-op′ẹ-rạ̄-ted), *a.* Not operated upon.

unordered, *a.* 4. In *math.*, without reference to or consideration of the order: as, an *unordered* pair.

unorganizable (un-ôr′gan-ī-za-bl), *a.* Incapable of becoming organized.

> The floor [of wound in plant] is covered by dead or dying *unorganizable* materials, without any layer of regenerative cells. *Encyc. Brit.*, XXXI. 515.

unoxidized (un-ok′si-dīzd), *a.* Not oxidized. As applied to portions of human food, the term signifies that these have not undergone chemical changes involving combination with oxygen, but not infrequently the expression 'imperfectly' or 'incompletely oxidized' would in such a case be more correct.

> The *unoxidized* materials excreted by the kidneys, intestines, and otherwise. *Encyc. Brit.*, XXVII. 444.

unpair (un-pãr′), *n.* Something that is not paired: the opposite of *pair*. *N. E. D.*

unparticipate (un-pär-tis′i-pāt), *a.* Having no part or share; unparticipating. [Rare.]

unperoxidizable (un-pėr-ok′si-dī-za-bl), *a.* Incapable of being converted into a peroxid, as some of the metals which do not form peroxids. *Jour. Brit. Inst. Elect. Engin.*, 1899–1900, p. 465.

unpersuasive, *a.* 2. Specifically in art criticism, noting unreality in a painting, or failure to express the actual function of the thing represented.

> Were it not for the fatiguing series of *unpersuasive* waterfalls, which too often represent him, his real qualities would have more chance of making themselves felt.
> *L. Binyon*, in Portfolio, N. S., XXI. 49.

unphysiological (un-fiz″i-ǭ-loj′i-kal), *a.* Not in accordance with the laws of physiology.

> Sophists perpetuate *unphysiological* feeding, and the patent foods, their illogical writings being seized upon by traffickers and sent broadcast.
> *Med. Record*, March 7, 1903, p. 372.

unpigmented (un-pig′men-ted), *a.* Devoid of pigment.

> If we wish to see the early and *unpigmented* forms, we must look for them during the later stage of rigor or the earlier part of the stage of pyrexia.
> *Pop. Sci. Mo.*, Feb., 1901, p. 365.

unqueen, *v. t.* 2. To remove the queen bee from (a colony).

unsealer (un-sēl′ėr), *n.* One who, or that which, unseals.

> Smiling on him as Heaven smiles on Hell,
> With a sad love, remembering when he stood
> Not fallen yet, the *unsealer* of her heart,
> Of all her holy dreams the holiest part.
> *Lowell*, A Legend of Brittany, ii. 22.

unseen, *a.*—**To buy sight unseen**, to buy (something) without having seen it, taking it as it is; to buy 'a pig in a poke.' [Colloq.]

II. *n.* That which is unseen; something designed not to be seen.

> For example, Mr. H— is called in by an examiner for the Fortescue Scholarship at one of our great universities, who has incautiously left about in his rooms the proof of a Greek *unseen* in three long slips. A student has spied the paper, entered, and copied out the first slip, which takes him a quarter of an hour!
> *Athenæum*, April 1, 1905, p. 391.

unsegmented (un-seg′men-ted), *a.* Not divided into segments; noting the egg which has not undergone cleavage, or the embryo or parts of the embryo which show no metameric arrangement of their parts.

unself (un-self′), *v. t.* To separate or free from (one- or it-) self; transform into a different self. [Rare.]

> The whole sad strange plot, the grotesque intrigue
> To make me and my friend *unself* ourselves,
> Be other man and woman than we were!
> Think it out, you who have the time!
> *Browning*, Ring and Book, vii. 707.

unsense (un′sens), *n.* Lack of sense; folly.

> Fisherman I 've been since I seed the *unsense* of sea-dangerin'.
> *R. Kipling*, Their Lawful Occasions, in Traffics and Dis-[coveries, p. 127.

unsense (un-sens′), *v. t.*; pret. and pp. *unsensed*, ppr. *unsensing*. To deprive of sense or consciousness; render unconscious. [Rare.]

> One blow, given with the proper play of his athletic arm, will *unsense* a giant. *Borrow*, Lavengro, xxvi.

unshop (un-shop′), *v. t.* To dismiss from employment in a shop; throw out of employment. [Rare.]

unsilvered (un-sil′vėrd), *a.* Not coated with silver: said in optics of a mirror in which the reflecting surface is that of the glass itself and not that of a layer of silver deposited upon the glass to increase the reflecting power.

unsingable (un-sing′a-bl), *a.* In *music*, noting a piece or passage, actual or hypothetical, that cannot be sung.

unsoiling (un-soil′ing), *n.* The act or process of stripping the surface of dirt or soil from the top of a quarry or bed of clay or other valuable material: the first stage of an open-cut.

unspeakable, *a.* **3.** Not able to speak. [Rare.]

> With no company but that of Panks (my dog), who generously shares his dumbness with me and looks up at me as who should say, "You are become *unspeakable* as one of us, poor old fellow; I pity you!"
> *Lowell*, Letters, II. 415.

unstalked (un-stâkt′), *a.* Having no stem, as some genera of crinoids. *Encyc. Brit.*, XXVII. 618.

unsteady, *a.* (*f*) In *mech.*, having a motion which is not uniform or which does not take place with a constant angular velocity, or around a permanent axis through the center of gravity of the mass. Revolving bodies out of running balance have an unsteady motion.

unstow (un-stō′), *v. t.* To empty of its cargo or contents; unload.

> First and foremost, we have to *unstow* the hold, and deposit its contents in the storehouse on Butler Island. Brooks and a party are now briskly engaged in this double labor. *Kane*, Arctic Expl., I. 105.

unstraining (un-strā′ning), *n.* In *physics*, the process of release from strain.

> When the atoms are in motion these strain-forms produce straining and *unstraining* in the æther as they pass across it, which in its motional or kinetic aspect constitutes the resulting magnetic field; as the strains are slight the coefficient of inertia here involved must be great. *Encyc. Brit.*, XXV. 108.

unstring, *v. t.* **5.** In *archery*, to loosen or remove the bowstring from one end of (the bow), which is thus relieved of all tension and becomes quite or nearly straight: opposed to *brace* and *string*. Bows are kept unstrung when not in use, except among some primitive peoples.

unstriped (un-strīpt′), *a.* Same as *unstriated*.

> The three varieties of muscle—*unstriped*, cardiac, and striped. *Encyc. Brit.*, XXV. 395.

unstructural (un-struk′ţū-ral̤), *a.* Without regard to proper construction. [Rare.]

> Wood tied into different shapes in the most *unstructural* manner.
> *K. W. Clouston*, Chippendale Period in Eng. Furniture, [p. 37.

unsummered (un-sum′ėrd), *a.* No longer showing the characters of summer; autumnal or wintry. [Rare.]

> And, now to these *unsummer'd* skies
> The summer bird is still,
> Far off a phantom cuckoo cries
> From out a phantom hill.
> *Tennyson*, Pref. Poem to My Brother's Sonnets, iii. 1.

unterred†, *a.* Unburied; not interred.

> This treasure of thine eyes, if spent for those
> That lye *unterr'd*, wanting their funeral rites,
> And restless walk upon the Stygian strand,
> . . . .
> Would send them over to Elizium.
> *Marmion*, A Fine Companion, i. 1.

untoned (un-tōnd′), *a.* Not toned; not characterized by permanent distinctive tones as a part of the pronunciation.

> But agglutinating forms reappear in Karen, while a distinctly polysyllabic group of *untoned* languages, with Oceanic (Malayo-Polynesian) affinities, occupies a great part of Camboja and surrounding uplands (Khmer, Kuy, Charay, Stieng, Cham). *Keane*, Ethnology, p. 326.

unvoice (un-vois′), *v. t.*; pret. and pp. *unvoiced*, ppr. *unvoicing*. In *phonetics*, to deprive of voice, or sonant quality; render nonsonant or surd.

unwarrant (un-wor′an̈t), *v. t.* To deprive of warrant or guarantee; disallow the propriety or safety of (doing something). [Rare.]

> On the ground that the state of trade absolutely *unwarrants* it.
> *St. James's Gazette*, Dec. 31, 1902, p. 13, quoted in N. [and Q., 9th ser., XI. 387.

unyeaned (un-yēnd′), *a.* Not yeaned or born: said of a sheep or goat. *C. Vickerman*, Woollen Spinning, p. 46.

up, *adv.* **15.** In *printing*, finished; noting completion of a task: as, the chapter is *up*; the paper is *up*.—**One up,** in *golf*, one hole ahead: said of one's opponent.—**To be up to one,** to be for one to do; to be something one has to do. [Slang.]

> Why am I minus when it's *up to me*
> To brace my Paris Pansy for a glide [dance].
> *Wallace Irwin*, Love Sonnets of a Hoodlum, xiv.

U. P. An abbreviation (*b*) of *underproof*, as applied to alcoholic liquors.

upæthral, *a.* Same as *hypethral*.

upaithric (ūp-ī′thrik), *a.* Same as *hypethral*.

> I now understand why the Greeks were such great poets. . . . They lived in a perpetual commerce with external nature, and nourished themselves upon the spirit of its forms. . . . Their temples were mostly *upaithric*; and the flying clouds, the stars, or the deep sky, were seen above. *Shelley*, Letter XXXII. (from Naples).

up-bow (up′bō), *n.* In *violin-playing*, a stroke of the bow upward, beginning with the point: opposed to ★*down-bow*.

U. P. C. An abbreviation of *United Presbyterian Church*.

upcomer (up′kum-ėr), *n.* A term used, as synonymous with *upcast*, *upraise*, and *uptake* or *riser*, for a duct or tube or channel within which the flow of the contained fluid is upward from below.

> The water flows through the last bank of tubes from the rear steam drum, and the third bank of tubes from the mid steam drum into the rear water drum. That is to say, the third and fourth nests of tubes are downcomers, and the first and second banks *upcomers*.
> *Sci. Amer. Sup.*, Jan. 10, 1903, p. 22592.

up-end, *v.* **II.** *intrans.* To stand on end.

> A silvery-white ghost rose bolt upright from the oily water. . . . "Grampus," said [Dan]. "Beggin' fer fish-heads. They *up-eend* thet way when they 're hungry."
> *R. Kipling*, Captains Courageous, ii.

Upeneus (ū-pẹ̄-nē′us), *n.* [NL., said to be formed (irregularly for **Hypeneus*) from Gr. *ὑπήνη*, the upper lip, prop. the hair on the upper lip.] A genus of fishes of the family *Mullidæ*, containing numerous species which inhabit tropical seas.

upgrade (up-grād′), *v. t.* In *stock-raising*, to raise the grade of by the introduction of a higher strain of blood: as, to *upgrade* a herd.

> All these qualities must be blended as a strongly flowing stream in the heredity of the breed. These qualities must be so prepotent that in *upgrading* common stock they will predominate in the blood of males used for that purpose. *Yearbook U. S. Dept. Agr.*, 1901, p. 221.

up-grade (up′grād), *n.* An ascending grade.

up-keep (up′kēp), *n.* **1.** Maintenance; support; specifically, the process of keeping up an industrial 'plant,' a machine, an institution, etc., at its condition of maximum efficiency, as by repair and renewal.

> Multiple voltage and similar systems, although probably not increasing the cost of the motor itself, increase the cost of the installation as a whole, as well as the cost of *upkeep*. *Elect. World and Engin.*, Dec. 5, 1903, p. 930.

> Although the initial cost is heavy, still the cost of *upkeep* is lower than that for most of the other paving materials. *Nature*, Aug. 3, 1903, p. 316.

2. The cost of such keeping up, including all [elements of operating expense, deterioration, interest, and the like.

> The *upkeep* of the [arc] lamp, including carbons, labour for trimming and repairs, will be about £16 to £18 per annum. *Encyc. Brit.*, XXVIII. 86.

uplift, *n.* **3.** An elevation.

> These majestic forms usually depend as much on the deep erosion of great valleys by streams as on their lofty *uplift*. Unlike the simple tilted blocks of Oregon, or the orderly folds of the Jura, the greater ranges show little or nothing of their original form.
> *W. M. Davis*, Elem. Phys. Geog.

upokororo (ō″pō-kō-rō′rō), *n.* [Maori.] A name used by the natives of New Zealand for *Prototroctes oxyrhynchus*, a fresh-water food-fish of the family *Haplochitonidæ*.

upon, *prep.*—**Upon my word, soul,** etc., by my word, etc.

> *Upon my soul*, Jack, thou art a very impudent fellow!
> *Sheridan*, Rivals, iv. 2.

Upper deck. See ★*deck*, 2.—**Upper Pentamerus limestone.** See *Becraft* ★*limestone*.

uppercut (up′ėr-kut), *n.* In pugilism, an upward blow.

> He swung *uppercuts* and jabbed, and had M.—— a weary-looking individual by the end of the fifth round.
> *N. Y. Evening Globe*, July 28, 1904.

upperwing (up′ėr-wing), *n.* A British collectors' name for a European noctuid moth, *Orthosia croceago*.

upperwood (up′ėr-wu̇d), *n.* [*upper* + *wood*, translating G. *oberholz*.] The tall growth of a forest as opposed to the undergrowth. *Science*, May 23, 1902, p. 820.

upraise (up′rāz), *n.* [*upraise*, *v.*] In *mech.*, a riser; an up-take; specifically, in *mining*, a secondary shaft or mill-hole carried from one heading or gangway up toward another.

upright, *n.* **5.** In *golf*, the lie of a club. See ★*lie*[1].—**Virtual upright,** in *naval arch.*, the apparent direction of the vertical on a vessel rolling in the waves; differing from the true upright by the composition of the accelerations due to gravity and to the motion of the wave.

upset, *n.* **2.** See the extract.

> An "*upset*," or, as it may be termed, a "transverse shake" is much more rarely met with, and, so far as I know, is found exclusively in foreign hard-woods, grown chiefly in tropical or subtropical climates. It consists of a complete severence of the longitudinal fibers of the tree in certain spots; but, as a rule, the defect is not very extensive. *Sci. Amer. Sup.*, March 25, 1905, p. 24433.

Angle of upset. See ★*angle*3.

upsetting-press (up-set′ing-pres), *n.* See ★*press*[1].

upshoot, *n.* **2.** An upward curve, as of a pitched base-ball. *Sci. Amer.*, July 16, 1904, p. 42.

upsilon (ūp′si-lon), *n.* [Gr. ὖ + ψιλόν, neut. of ψιλός, bare.] The Greek letter Υ, *υ*, corresponding to the English *u* (and *y*).

up-slip (up′slip), *n.* In *geol.*, the passage upward of one side of a fault, according to a conception which assumes the rise of one wall instead of the fall of the other.

> The Wasatch Mountains are of immature age, and consequently are now rising. Raw scarps at the foot of a spur just northeast from the city, and similar scarps at the base of the main range a short distance to the southeast, tell of comparatively recent *up-slips* of these sections of the mountain mass. *Science*, Oct. 25, 1907, p. 556.

upstander (up′stand″ėr), *n.* One of two vertical pieces at the rear end of a dog-sledge.

> I had scarcely time to seize the *upstanders* when my dogs were off. As we neared the bear, all the dogs were loosened, and were at him like a cloud.
> *R. E. Peary*, in McClure's Mag., Feb., 1903, p. 919.

upstanding (up-stan′ding), *a.* **1.** Having an erect and vigorous body.

> Thin I wint downshtrame in the flat an' left him my blessin'. May the Saints carry ut where ut shud go, for he was a fine *upstandin'* young orficer.
> *R. Kipling*, The Taking of Lungtungpen, in Plain Tales [from the Hills, p. 117.

2. Standing well up from the ground; having comparatively long legs and an erect carriage: said of horses, pigeons, and other domesticated animals.

> The roadster is more *upstanding*, not so wide, and entirely lacks the massiveness of the drafter.
> *U. S. Dept. Agr.*, Bur. Animal Industry, Bulletin 37, [1902, p. 23.

> *Upstanding* birds, with wide shoulders, long bodies and legs. *Book of Pigeons.*

up-stroke (up′strōk), *n.* In *mech.*, the traverse of a piston, or of any reciprocating or rocking element of an engine or machine, in which the driving element is moving upward, or the principal driven element is coming up.

uptake, *n.* **3.** A pipe or duct or channel leading gas, water, steam, or other liquid upward from below: used of part of a boiler furnace flue-system, in the gas-producer, blast-furnace, and elsewhere; specifically, a flue leading hot gas from the combustion-chamber or smoke-box to the chimney, in gas-making or in boiler-settings.

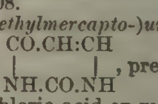
upway (up′wā), *n.* Same as ★*upslip*.

> An Attempt to Detect and Measure any Relative Movement of the *Upway*, that may now be taking place at the Ridgeway Fault, near Strata Dorsetshire.
> *Rep. Brit. Ass'n Advancement of Sci.*, 1901, p. 52.

Ur. A chemical symbol of *uranium*, less commonly used than the single letter U.

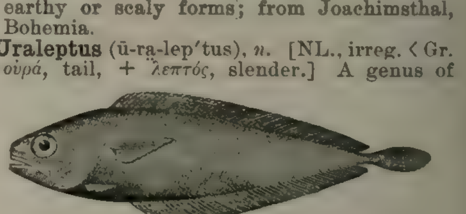
urachal (ū′ra̤-ka̤l), *a.* [*urachus* + *-al*[1].] Of or pertaining to the urachus.

urachovesical (ū″ra̤-kọ̄-ves′i-kal), *a.* [NL. *urachus* + *vesica*, bladder, + *-al*[1].] Relating to both the urachus and the bladder. *Buck*, Med. Handbook, VII. 708.

uracil (ū′ra̤-sil), *n.* [(*methylmercapto-*)*uracil*.] A colorless compound,  $\begin{array}{l}\mathrm{CO.CH{:}CH}\\ |\qquad\quad\ \ |\\ \mathrm{NH.CO.NH}\end{array}$, prepared by the action of hydrochloric acid on methylmercapto-uracil. It crystallizes in spherical masses of minute needles and melts at 338° C.

uraconite (ū′ra̤-kọ̄-nīt), *n.* [*ura*(*nium*) + Gr. *κονία*, powder, + *-ite*[2].] A hydrated uranium sulphate of a yellow color, occurring in earthy or scaly forms; from Joachimsthal, Bohemia.

Uraleptus (ū-ra̤-lep′tus), *n.* [NL., irreg. < Gr. *οὐρά*, tail, + *λεπτός*, slender.] A genus of fishes of the family *Gadidæ*, found in deep waters of the Atlantic.



Uraleptus malardi.
(From Bulletin 47, U. S. Nat. Museum.)

Uralian, *a.* **2.** In *geol.*, same as ★*Gshelian*.

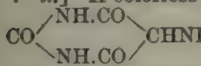
uraline (ū′ra̤-lin), *n.* [*ural* + *-ine*[2].] Same as *ural*.

uralite, *n.* **2.** The trade-name of a fire-proof building material, said to be made from disintegrated asbestos fiber with admixture of silicate of soda, carbonate of soda, chalk, mineral pigments, and glue, pressed into molded forms, dried, and baked. It is intended to replace wood where incombustibility is important, and in this capacity has been to some extent used in the internal fittings of ships of war.

uralium (ụ̄-rā'li-um), *n.* [NL. (in a F. spelling *ouralium*), named from the Ural Mountains in Russia.] A supposed new metallic element announced in 1879 as present in Russian native platina. Its existence has not been confirmed. Originally written (in French style) *ouralium*.

uralorthite (ū-rạl-ôr'thīt), *n.* [G. *Uralorthit* (1841), < *Ural* (mountains) + *orthite*.] A variety of allanite from the Ural Mountains, occurring in large prismatic crystals of a pitch-black color.

uramil (ū'rạ-mil), *n.* [*ur*(*ic*) + *am*(*monium*) + *-il*.] A colorless compound,



$\mathrm{CO}\begin{matrix}\diagup\mathrm{NH.CO}\diagdown\\ \diagdown\mathrm{NH.CO}\diagup\end{matrix}\mathrm{CHNH_2}$, prepared by the action of ammonium chlorid on alloxantin. It crystallizes in silky, lustrous needles. Also called *murexan* and *aminobarbituric acid*.

uramilic (ū-rạ-mil'ik), *a.* [*uramil* + *-ic*.] Pertaining to uramil or to uramilic acid.—**Uramilic acid**, a colorless compound, $C_8H_9O_7N_5$ (?), prepared by the action of dilute sulphuric acid on uramil. It crystallizes in slender needles or quadratic prisms.

uranalysis (ū-rạ-nal'i-sis), *n.* [NL., < Gr. *οὖρον*, urine, + *ἀνάλυσις*, analysis.] Analysis of the urine.

Urania, *n.* **4.** See the extract.

We learn that an "*Urania*," that is to say, an institution in which all the most interesting features of the various branches of science and technology will be exhibited to the public in a systematic manner, has lately been founded in Vienna. *Geog. Jour.* (R. G. S.), XI. 444.

uranic², *a.*—**Uranic acid**, a yellow powder obtained by boiling a solution of uranium nitrate in absolute alcohol, washing with water the precipitate formed, and drying it at a low temperature. Its composition is expressed by the formula H_2UO_4, and on being heated it is resolved into water and uranic oxid, UO_3. The name *uranic acid* has sometimes been incorrectly given to this oxid because on union with more electropositive metallic oxids it forms the salts known as uranates.

uranic³ (ụ̄-ran'ik), *a.* [Gr. *οὐρανός*, the palate (a particular use of *οὐρανός*, the sky), + *-ic*.] In *anthrop.*, relating to the palate.—**Uranic index**, the external width of the palate measured at the second molars expressed in per cents. of its length.

uranicentric (ū'rạ-ni-sen'trik), *a.* [Prop. **Uranocentric*, < *Uranus* + Gr. *κέντρον*, center.] Having Uranus as a center; as seen from the center of Uranus.

The *Uranicentric* motion [of the satellites] is retrograde, the planes of their orbits lying nearly perpendicular to the planet's ecliptic. *Chambers*, Descriptive Astron., p. 152.

Uranidea (ū-rạ-nid'ẹ̄-ạ̈), *n.* [NL., irreg. < Gr. *οὐρανός*, the sky, + *ἰδεῖν*, see.] A genus of cottoid fishes found in cold streams and springs of the United States.

uranidin (ụ̄-ran'i-din), *n.* [*uran*(*ic*) + *-id* + *-in*².] A coloring matter found by Krukenberg in different beetles and lepidopterous pupæ.

The melanosis or blackening of insect blood, for instance, is due to the oxidation of a chromogen, the pigment produced being known as a *uranidine*.
Encyc. Brit., XXVII. 151.

uraniid (ụ̄-rā'ni-id), *n.* and *a.* **I.** *n.* One of the lepidopterous family *Uraniidæ*.

II. *a.* Having the characteristics of or belonging to the *Uraniidæ*.

uranin¹, **uranine**¹ (ū'rạ-nin), *n.* The trade-name of the sodium salt of fluorescein or methylfluorescein, the solution of which in water exhibits a magnificent yellowish-green fluorescence like that of uranium glass. The name is also applied to the sodium salt of benzylfluorescein, used as a dyestuff, which is also known as *chrysolin*.

The esculin screen suppresses the ultra-violet and part of the violet spectrum rays; and the photograph, made chiefly by the blue rays, is a very good one. The *uranine* screen suppresses the blue spectrum rays and part of the violet; and the photograph, made chiefly by the ultra-violet rays, is very bad indeed.
Jour. Roy. Micros. Soc., Dec., 1904, p. 634.

uranin², **uranine**² (ū'rạ-nin), *n.* Same as *pitchblende* or *uraninite*. See *uraninite*.

uraninite, *n.* This mineral, in its different varieties (the crystallized kinds called *cleveite*, *bröggerite*, *nivenite*, etc., and the more abundant amorphous and impure *pitchblende*), has become of much importance as being the chief source of radium. See ★*radium* and ★*radioactivity*. From the investigation of it also has been derived a large part of our present knowledge of the transformation of uranium into radium and the further successive changes of the latter element with lead as the probable final step: all analyses have shown a small amount of this element whose presence was hitherto unexplained. It has also been found that many varieties of uraninite yield the gas helium, which is one of the early transformation products of radium.

uranium, *n.* Metallic uranium, as obtained in the fused condition by means of an electric furnace, is compact, white, and lustrous, capable of taking a high polish, of sp. gr. 18.7, melting at a very high temperature, and volatilizing more readily than iron, slowly acted upon by water at ordinary temperature, burning in oxygen or chlorin, and combining freely with nitrogen at 1000° C. The foundation was laid for the modern study of the phenomena of radioactivity when, in 1896, M. Henri Becquerel observed that a salt of uranium emits rays which affect a photographic plate screened by black paper opaque to ordinary light. This property proved to be common to all the salts of uranium and to uranium itself, and is exhibited continuously by uranium and its compounds even when they are kept in darkness. The intensity of the radiation is not materially affected by change of temperature within very wide limits. Not only are photographic effects produced by the radiation from uranium compounds, but positively or negatively electrified bodies, also, are discharged by ionization of the surrounding air. Subsequent investigation has shown that the uranium radiation is complex, and includes the emission of rays of the three types which have been designated as α, β, and γ respectively. No condensible gaseous emanation is given off, as in the case of radium and of thorium, but the radioactivity of uranium involves the constant production of a new kind of matter, itself temporarily active. See ★*uranium X*. The recent study of radioactive minerals has shown that the amount of radium in a mineral is proportional to the amount of uranium present. Uranium is believed to be the parent or generating substance of an extensive series of radioactive elements which are successively produced by the atomic disintegration of the uranium. This series of products includes ionium, actinium, radium, and polonium. The final substance remaining after the radioactive transformations are concluded is supposed to be ordinary lead.—**Uranium ocher.** Same as *uran-ocher*. All the substances described under this name appear to be more or less basic sulphates of uranium.—**Uranium X.** In 1900 it was shown by Sir William Crookes that if a solution of uranium nitrate is precipitated by ammonium carbonate and this reagent is added in excess so that the greater part of the precipitate is redissolved, there is left a very small amount of undissolved residue, which consists in large measure of impurities of common character. This residue includes in minute quantity a substance which, measured by its β-radiation, is several hundred times as radioactive, weight for weight, as the original uranium salt, while the larger part of this salt, which has been dissolved by ammonium carbonate in excess, has lost its β-ray activity. Other methods of separating the uranium of a compound into a highly radioactive and an inactive portion have since been discovered. In each case prolonged keeping of the products shows that in the course of weeks or months the highly active portion loses its activity and the inactive portion becomes again active. Hence it appears that the radioactivity of uranium and its compounds involves the continuous production of a new and chemically distinct kind of matter, of greatly enhanced but gradually lost radioactivity. To this immediate product from uranium the name 'Uranium X' has been given.—**Uranium yellow.** See ★*yellow*.

uranium-glass (ụ̄-rā'ni-um-glȧs''), *n.* Glass colored yellow by means of oxid of uranium. It exhibits a characteristic and beautiful greenish fluorescence.

uranniobite (ū-ra-nī'ọ̄-bīt), *n.* [*uran*(*ium*) + *niobite*.] A variety of uraninite from Norway which occurs in octahedral crystals.

uranochalcite (ū''rạ-nọ̄-kal'sīt), *n.* [*uranium* + Gr. *χαλκός*, copper, + *-ite*².] A sulphate of uranium, copper, and calcium which occurs in green incrustations of doubtful homogeneity: from Joachimsthal, Bohemia.

uranocircite (ū''rạ-nọ̄-sėr'sīt), *n.* [*uranium* + Gr. *κίρκος*, a falcon, + *-ite*². The name alludes to the place of origin, Falkenstein.] A phosphate of uranium and barium analogous in composition to autunite and similar in crystallization, from Falkenstein, Vogtland.

uranolith (ụ̄-ran'ọ̄-lith), *n.* Same as *uranolite*.

Nebular chemistry has very little in common with the chemistry of "*uranoliths*."
A. M. Clerke, Problems in Astrophysics, p. 534.

uranometria (ū''rạ-nọ̄-met'ri-ạ̈), *n.* [NL., < Gr. *οὐρανός*, heaven, + *μετρία*, measurement.] A list of stars which are visible to the naked eye, usually arranged according to constellations, and giving their names or other designations, their magnitudes, and their approximate positions. Same as *uranometry*, 2.

This ingenious form of photometer has enjoyed considerable reputation, but no astronomer has yet persevered in producing a complete '*uranometria*' by its aid.
Encyc. Brit., XXXI. 707.

uranophane (ụ̄-ran'ọ̄-fān), *n.* A hydrous silicate of uranium and calcium which occurs in radiated aggregates of acicular crystals having a bright yellow color: probably the same mineral as uranotil.

uranophotography (ū''rạ-nọ̄-fọ̄-tog'rạ-fi), *n.* [Gr. *οὐρανός*, the sky, + E. *photography*.] The photography of celestial spaces.

Urano-photography, the photography of celestial spaces. Chromo-photography, the direct obtaining of the reproduction of colors by photography.
Woodbury, Encyc. Dict. of Photog., p. 304.

uranopilite (ū-rạ-nop'i-līt), *n.* [*uranium* + Gr. *πῖλος*, felt, + *-ite*².] A hydrous sulphate of uranium and calcium occurring in yellow crystalline incrustations.

uranoplastic (ū''rạ-nọ̄-plas'tik), *a.* [*uranoplast*(*y*) + *-ic*.] Relating to uranoplasty or the operation for closure of a cleft palate. *Med. Record*, May 30, 1903, p. 884.

uranorraphia (ū''rạ-nọ̄-raf'i-ạ̈), *n.* [NL., < Gr. *οὐρανός*, the palate, + *ῥαφή*, sewing.] Same as *uraniscorraphy*.

uranoschisis (ū-rạ-nos'ki-sis), *n.* [NL., < Gr. *οὐρανός*, the palate, + *σχίσις*, cleaving.] The condition of having a cleft palate.

Uranoscopinæ (ū-rạ-nọ̄-skọ̄-pī'nē), *n. pl.* [NL., < *Uranoscopus* + *-inæ*.] A subfamily of stargazers (*Uranoscopidæ*), fishes found on both coasts of the warmer parts of America.

uranoso-uranic (ụ̄-ran''ọ̄-sọ̄-ụ̄-ran'ik), *a.* Noting a dark green oxid of uranium, of sp. gr. 7.2 or 7.3, and having the composition of uranyl-uranate, U_3O_8 or $UO_2.2UO_3$ or $(UO_2)_2UO_4$. It is one of the principal constituents of the mineral uraninite or pitchblende, though the proportions of uranium and oxygen vary widely in specimens from different localities.

uranosphærite (ū''rạ-nọ̄-sfē'rīt), *n.* [*uranium* + Gr. *σφαῖρα*, sphere, + *-ite*².] A hydrous bismuth uranate which occurs in semiglobular crystalline aggregations of an orange-yellow or brick-red color: from Schneeberg, Saxony.

uranospinite (ū''rạ-nọ̄-spī'nīt), *n.* [*uranium* + Gr. *σπίνος*, a siskin. The second part of the name alludes to the color of the substance.] A hydrous arsenate of uranium and calcium analogous to autunite in composition and similar in crystallization: from Neustädtel, near Schneeberg, Saxony.

uranotantalite (ū''rạ-nọ̄-tan'tạ-līt), *n.* [*uranium* + *tantalum* + *-ite*².] Same as *samarskite*.

uranothallite (ū''rạ-nọ̄-thal'īt), *n.* [*uranium* + Gr. *θαλλός*, a green shoot, + *-ite*².] A hydrous carbonate of uranium and calcium which occurs in scaly or granular crystalline aggregates of a siskin-green color: from Joachimsthal, Bohemia.

uranotil (ụ̄-ran'ọ̄-til), *n.* [NL., < *uranium* + Gr. *τίλος*, a fiber.] A hydrous silicate of uranium and calcium closely related to, and probably identical with, uranophane.

uranyl (ū'rạ-nil), *n.* [*uranium* + *-yl*.] Uranium dioxid, UO_2, when it occurs as a dyad radical in combination: as, for example, potassium and uranyl sulphate, $K_2.UO_2.(SO_4)_2.(H_2O)_2$, the salt with which Becquerel's first experiment in regard to radioactivity was made.

urapterygid (ū-rap-ter'i-jid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Urapterygidæ*.

II. *a.* Having the characteristics of or belonging to the *Urapterygidæ*.

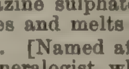
urase (ū'rās), *n.* [*ur*(*ic*) + *-ase*.] A ferment which decomposes urea with the formation of ammonium carbonate. It occurs in various bacteria and has also been demonstrated in the mammalian liver.

urasol (ū'rạ-sol), *n.* [*ur*(*ic*) + *-ase* + *-ol*.] The trade-name of a substance which occurs in minute crystals, insoluble in water but soluble in alcohol or ether, intended for medicinal use as a solvent of uric acid, and a remedy in the treatment of muscular rheumatism and gout: said to be a condensation product of formaldehyde with acetic and salicylic acids.

Uraspis (ụ̄-ras'pis), *n.* [NL., < Gr. *οὐρά*, tail, + *ἀσπίς*, a shield.] A subgenus of *Caranx*, carangoid fishes widely distributed in warm parts of the Atlantic.

uraturia (ū-rạ-tū'ri-ạ̈), *n.* [NL., < E. *urate* + Gr. *οὖρον*, urine.] The presence of an excessive amount of urates in the urine.

urazole (ūr-az'ōl), *n.* [*ur*(*ic*) + *azo-* + *-ole*.] A colorless compound,



$\mathrm{NH}\begin{matrix}\diagup\mathrm{CO.NH}\\ \quad\quad |\\ \diagdown\mathrm{CO.NH}\end{matrix}$, prepared by the action of hydrazine sulphate on urea. It crystallizes in plates and melts at 244° C.

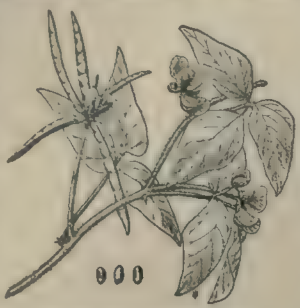
urbanite (ėr'bạ-nīt), *n.* [Named after *Urban* Hjärne, a Swedish mineralogist, who investigated it.] A member of the pyroxene group intermediate between diopside and acmite. It occurs in brown pyramidal crystals at Långban, Sweden.

urbanization (ėr″bạn-i-zā′shọn), *n.* The process of rendering urbane or urban in character: the state of being urbanized.

> Attention has been prominently directed, by the report of the Committee on Physical Deterioration, to what is there described as the "*urbanization*" of the people; and hence few portions of the volume now issued will be of more general interest than those which set forth the extent to which this process is actually being carried on. *Science*, Aug. 12, 1904, p. 220.

urbification (ėr″bi-fi-kā′shọn), *n.* The process of rendering, or the state of being, urban; concentration in urban communities. [Rare.]

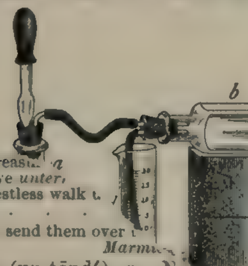
Urd[1] (ėrd), *n.* [ONorth. *Urdhr.* See *weird, n.*] In *Scand. myth.*, one of the three Fates, the Norn of the past.


Urd (*Phaseolus Mungo radiatus*).

urd[2] (ėrd), *n.* [Hind. *urd, urad.*] In India, the most highly prized of all the pulses of the genus *Phaseolus*, a variety of *P. Mungo*, largely cultivated in all parts of India. It is a valued article of Hindu medicine, and as food is eaten in the form of bread, boiled whole, parched, or as spice-balls. Same as *mash*[4].

urdite (ėr′dīt), *n.* [*Urda*, a place in Norway, + *-ite*[2].] A variety of the mineral monazite, from near Nöterö, Norway.

urea, *n.* It is the most important nitrogenous waste product of the mammalian organism. It is an acid amide, its solutions presenting a neutral reaction. It can combine with acids to form crystalline, salt-like products, and is decomposed by sodium hypobromite and the hypochlorite with the liberation of carbon dioxid, nitrogen, and water. On heating the substance ammonia is given off and biuret formed.—**Acetylene urea.** See ★*glycoluril.*—**Squibb's urea apparatus,** a device for determining the quantity of urea in urine. A measured



This treas a
That lye unter,
And restless walk t
. . . .
Would send them over t
Marm

untoned (un-tōnd′), *a.* No
acterized by permanent distr atus.
part of the pronunciation. le-pipette into a
But agglutinating forms reappear in K mite held in a
distinctly polysyllabic group of *untoned* lang. water from
Oceanic (Malayo-Polynesian) affinities, occupie graduate, *d*,
part of Camboja and surrounding uplands (Khme he nitro-
Charay, Stieng, Cham). *Keane*, Ethnology, p ight of

unvoice (un-vois′), *v. t.*; pret. and pp. *unvoiced*, ppr. *unvoicing*. In *phonetics*, to deprive of voice, or sonant quality; render nonsonant or surd.

unwarrant (un-wor′ạnt), *v. t.* To deprive of warrant or guarantee; disallow the propriety or safety of (doing something). [Rare.]

> On the ground that the state of trade absolutely *unwarrants* it.
> *St. James's Gazette*, Dec. 31, 1902, p. 13, quoted in N. [and Q., 9th ser., XI. 387.

unyeaned (un-yēnd′), *a.* Not yeaned or born: said of a sheep or goat. *C. Vickerman*, Woollen Spinning, p. 46.

up, *adv.* 15. In *printing*, finished; noting completion of a task: as, the chapter is *up*; the paper is *up*.—**One up,** in *golf*, one hole ahead: said of one's opponent.—**To be up to one,** to be for one to do; to be something one has to do. [Slang.]

> Why am I minus when it's *up to me*
> To brace my Paris Pansy for a glide [dance].
> *Wallace Irwin*, Love Sonnets of a Hoodlum, xiv.

U. P. An abbreviation (*b*) of *underproof*, as applied to alcoholic liquors.

upæthral, *a.* Same as *hypethral.*

upaithric (ūp-ī′thrik), *a.* Same as *hypethral.*

> I now understand why the Greeks were such great poets. . . . They lived in a perpetual commerce with external nature, and nourished themselves upon the spirit of its forms. . . . Their temples were mostly *upaithric*; and the flying clouds, the stars, or the deep sky, were seen above. *Shelley*, Letter XXXII. (from Naples).

uredosorus (ụ-rē-dọ-sō′rus), *n.*; pl. *uredosori* (-rī). [NL., < *uredo*, a blight, + Gr. σωρός, a heap. See *sorus.*] A single fertile hyphal mass producing uredospores in uredineal fungi.

ureilite (ū-rē′i-līt), *n.* See ★*meteorite.*

urelcosis (ū-rel-kō′sis), *n.* [NL., < Gr. οὐρ(ήθρα), urethra, + ἕλκωσις, ulceration.] The presence of ulcers in the urethra.

uremia, *n.*—**Puerperal uremia,** uremic poisoning, causing convulsions or coma, occurring after childbirth.

Uremic coma. See ★*coma*[1].

ureometer (ū-rẹ-om′e-tėr), *n.* Same as *ureameter.*

ureometry (ū-rẹ-om′e-tri), *n.* Same as *ureametry.*

uresin (ū′re-sin), *n.* [*ur(ic)* + *-es-* + *-in*[2].] The trade-name of a double citrate of lithium and urotropin. It is used in medicine to dissolve gravel and diminish the excretion of uric acid.

uret (ū′ret), *n.* [*(carb)uret.*] A name occasionally applied, in organic chemistry, to the univalent radical $CONH_2$.

-uret. A chemical suffix, now entirely antiquated: same as *-id*[1], 2.

ureteralgia (ụ-rē-tẹ-ral′ji-ạ̈), *n.* [NL., < Gr. οὐρητήρ, ureter, + ἄλγος, pain.] Pain in one or both ureters.

ureterectomy (ụ-rē-tẹ-rek′tọ-mi), *n.* [Gr. οὐρητήρ, ureter, + ἐκτομή, excision.] Excision of one of the ureters.

ureterocystostomy (ụ-rē″tėr-ọ-sis-tos′tọ-mi), *n.* [Gr. οὐρητήρ, ureter, + κύστις, bladder, + στόμα, mouth.] The operative implantation of the ureter into the bladder elsewhere than at the natural opening. *Med. Record*, June 13, 1903, p. 958.

ureterodialysis (ụ-rē″tėr-ọ-dī-al′i-sis), *n.* [NL., < Gr. οὐρητήρ, ureter, + διάλυσις, separation.] Same as ★*ureterolysis.*

ureterolithotomy (ụ-rē″tėr-ọ-li-thot′ọ-mi), *n.* [Gr. οὐρητήρ, ureter, + λίθος, stone, + -τομια, < ταμεῖν, cut.] Removal of a stone impacted in the ureter.

ureterolysis (ụ-rē-tẹ-rol′i-sis), *n.* [NL., < Gr. οὐρητήρ, ureter, + λύσις, separation.] Rupture of one or both ureters.

ureteronephrectomy (ụ-rē″tėr-ọ-nef-rek′tọ-mi), *n.* [Gr. οὐρητήρ, ureter, + νεφρός, kidney, + ἐκτομή, excision.] Excision of a kidney with the corresponding ureter.

ureterophlegmasia (ụ-rē″tėr-ọ-fleg-mā′si-ạ̈), *n.* [NL., < Gr. οὐρητήρ, ureter, + φλεγμασία, inflammation.] Same as *ureteritis.*

ureteropyelitis (ụ-rē″tėr-ọ-pī-e-lī′tis), *n.* [NL., < Gr. οὐρητήρ, ureter, + πύελος, a trough (pelvis).] Inflammation of a ureter and the pelvis of the kidney.

ureteropyosis (ụ-rē″tėr-ọ-pī-ō′sis), *n.* [NL., < Gr. οὐρητήρ, ureter, + πύον, pus, + *-osis.*] Suppuration in a ureter.

ureterorrhagia (ụ-rē″tėr-ọ-rā′ji-ạ̈), *n.* [NL., < Gr. οὐρητήρ, ureter, + -ραγια, < ῥηγνύναι, break.] Hemorrhage from a ureter.

ureterorrhaphy (ū-rē-tẹ-ror′ạ-fi), *n.* [Gr. οὐρητήρ, ureter, + ῥαφή, sewing.] An operation for closing by sutures any abnormal opening in the urethra.

reterostenoma (ụ-rē″tėr-ọ-stẹ-nō′mạ̈), *n.*
NL., < Gr. οὐρητήρ, ureter, + στένωμα, a nar-
wea place, < στενοῦν, make narrow.] Stricture
upperw reter.
ors' na **ostomy** (ụ-rē-tẹ-ros′tō-mi), *n.* [Gr.
thosia cr ureter, + στόμα, mouth.] The opera-
upperwo ablishment of a permanent opening
translatin a ureter and some neighboring hol-
of a fores s or the surface of the body.
Science, Ma **uy** (ụ-rē-tẹ-rot′ọ-mi), *n.* [Gr. οὐρητήρ,
upraise (up -τομια, < ταμεῖν, cut.] Incision into
a riser; an
secondary sl **teral** (ụ-rē″tėr-ọ-ū-rē′tẹ-rạl), *a.*
heading or g two portions of a ureter; noting
e union of the two ends of a di-
upright, *n.*
★*lie*[1].—**Virtua ine** (ū-rē″tėr-ọ-ū′tẹ-rin), *a.* Re-
direction of the
differing from th h ureter and uterus.
accelerations du **al** (ụ-rē″tėr-ọ-vaj′i-nạl), *a.* Re-
wave. h ureter and vagina.
upset, *n.* 2. —**Piperidyl urethane.** See ★*piperidyl.*
An "*upset*,"
shake" is much **Crest of the urethra.** Same as *crista*
know, is found see, under *crista*).
chiefly in tropic (ū-rẹ-thral′ji-ạ̈), *n.* [NL., < Gr.
a complete sever hra, + ἄλγος, pain.] Pain in the
in certain spots;
extensive. *S*
Angle of upset. rē′thrizm), *n.* [Gr. οὐρήθρα, ure-

thra, + *-ism.*] Extreme sensitiveness and irritability of the urethra.

urethroblennorrhea (ụ-rē″thrọ-blen-ọ-rē′ạ̈), *n.* [NL., < Gr. οὐρήθρα, urethra, + NL. *blennorrhœa*, blennorrhea.] A mucous or purulent discharge from the urethra.

urethrocystitis (ụ-rē″thrọ-sis-tī′tis), *n.* [NL., < Gr. οὐρήθρα, urethra, + κύστις, bladder, + *-itis.*] Inflammation of the urethra and bladder.

urethrorectal (ụ-rē-thrọ-rek′tal), *a.* [Gr. οὐρήθρα, urethra, + NL. *rectum* + *-al*[1].] Relating to both urethra and rectum.

urethrorrhagia (ụ-rē-thrọ-rā′ji-ạ̈), *n.* [NL., < Gr. οὐρήθρα, urethra, + -ραγια, < ῥηγνύναι, break.] Hemorrhage from the urethra.

urethrorrhaphy (ū-rẹ-thror′ạ-fi), *n.* [Gr. οὐρήθρα, urethra, + ῥαφή, sewing.] An operation for closing a defect in the urethral wall by sutures.

urethrorrhœa (ụ-rē-thrọ-rē′ạ̈), *n.* [NL., < Gr. οὐρήθρα, urethra, + ῥοία, flowing.] Any discharge from the urethra.

urethroscopic (ụ-rē-thrọ-skop′ik), *a.* [*urethroscop(y)* + *-ic.*] Relating to urethroscopy.

urethroscopical (ū-rē-thrọ-skop′i-kạl), *a.* Same as ★*urethroscopic.*

urethrospasm (ụ-rē′thrọ-spazm), *n.* [Gr. οὐρήθρα, urethra, + σπασμός, spasm.] Spasmodic contraction of the muscular fibers of the urethra.

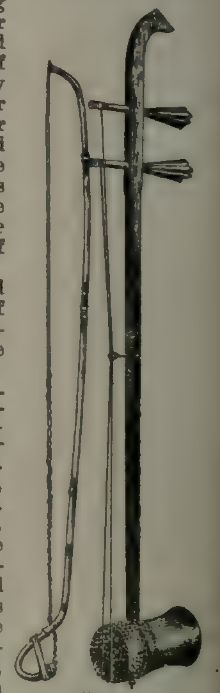
urethrostenosis (ụ-rē″thrọ-stẹ-nō′sis), *n.* [NL., < Gr. οὐρήθρα, urethra, + στένωσις, narrowing.] Stricture of the urethra.

urethrostomy (ū-rẹ-thros′tọ-mi), *n.* [Gr. οὐρήθρα, urethra, + στόμα, mouth, + *-y*[3].] The establishment of a permanent opening into the urethra through the perineum.

urethrovaginal (ụ-rē-thrọ-vaj′i-nạl), *a.* [Gr. οὐρήθρα, urethra, + L. *vagina* + *-al*[1].] Relating to both urethra and vagina.

urethrovesical (ū-rē-thrọ-ves′i-kạl), *a.* [Gr. οὐρήθρα, urethra, + L. *vesica*, bladder, + *-al*[1].] Relating to both the urethra and the bladder.

ur-hien (ör″hi-en′), *n.* [Chin.] A Chinese musical instrument of the viol class, usually with two strings, having a small cylindrical or cup-shaped body of wood or bamboo, the top of which is formed by stretched skin, and, for a neck, a simple shaft or strip of wood inserted through the body. The strings extend from pegs in the upper part of the neck over a small bridge that rests on the top of the body.


Ur-hien.
(In the Metropolitan Museum of Art, New York.)

urial (ū′ri-ạl), *n.* A wild sheep, *Ovis vignei*, of northern India, somewhat resembling the bighorn.

uric, *a.*—**Uric-acid diathesis.** See ★*diathesis.*—**Uric-acid shower.** See ★*shower*[1].

uricacidemia (ū″ri-kas-i-dē′mi-ạ̈), *n.* [NL., < E. *uric acid* + Gr. αἷμα, blood.] Same as *lithemia.*

uricidin (ụ-ris′i-din), *n.* [*uric* + *-id* + *-in*[2].] The trade-name of an alkaline diuretic prepared from lemon-juice. It is a granular substance containing sodium sulphate, sodium chlorid, sodium citrate, lithium citrate, and other salts, and is used in cases of gout and rheumatism.

uricolytic (ū″ri-kọ-lit′ik), *a.* [*uric* + *-o-* + Gr. λυτικός, loosing, dissolving.] Relating to a tissue-ferment which has the power of destroying uric acid.

> In a later communication of Schittenhelm, devoted entirely to the so-called *uricolytic* ferment, the author states that he has found this enzyme in the kidney, liver, muscles, and possibly in the bone marrow, but not in the spleen, lungs, and intestines — which can form but not destroy uric acid. *Jour. Med. Research*, Dec., 1906, p. 311.

urinable (ū′ri-nạ-bl), *a.* [*urin* + *-able.*] Capable of being excreted in the urine. *Buck*, Med. Handbook, III. 543.

Urinary fever. Same as *urethral fever* (which see, under *fever*1).—**Urinary reflex.** See ★*reflex.*

urine, *n.* The daily elimination of solids in the urine normally varies between 40 and 60 grams, of which almost 40 per cent. consists of mineral salts, the remainder of organic bodies. Of the mineral salts chlorids predominate, the amount, varying between 10 and 15 grams, being largely dependent upon the quantity ingested. As this in turn is greatly influenced by the appetite, the elimination of chlorids is, generally speaking, a fair index of the latter. Of other mineral salts sulphates and phosphates of the alkalis and the alkaline earths predominate; in addition there are traces of fluorides and nitrates. Among the organic waste products which appear in the urine of man urea is the most important. Fully 85 per cent. of the nitrogenous tissue-waste appears in this form. The daily amount varies to a great extent with the appetite and accordingly with the quantity of nitrogenous food consumed, but is on the whole fairly constant for one and the same individual: 20–30 grams per day may be regarded as a fair average, but, as overeating is on the whole very common, an elimination of 40–50 grams is not infrequently noted. In some of the lower animals, notably in birds and reptiles, uric acid is the principal nitrogenous component of the urine, while urea is found only in small amounts. In man it is unusual to meet with larger quantities than 0.6–1.0 gram in the twenty-four hours. In birds and reptiles it is formed synthetically in a manner quite analogous to the production of urea, but in man this mode of formation has not been satisfactorily demonstrated. Its origin here is to be sought in the destruction of nucleins, the resultant xanthin bases giving rise to uric acid on oxidation. Xanthin bases, comprising xanthin, hypoxanthin, guanine, carnin, paraxanthin, heteroxanthin, and episarcine, are found normally only in very small quantity; generally speaking, this represents about 10 per cent. of the amount of uric acid. Theobromine and caffein (derived from cocoa and coffee and tea, respectively) are partly eliminated in the urine as such, while in part they appear as methyl-xanthin (heteroxanthin). Among other organic components which are normally found in the urine are oxalic and oxaluric acid, creatinine, allantoin, hippuric acid, phenol, cresol, pyrocatechin, hydroquinone, indican, scatoxyl sulphate, glycuronic acid, various fatty acids, certain neutral sulphur bodies, such as sulphocyanides, oxy- and alloxy-proteinic acid, various pigments, ferments, etc. Collectively, these bodies are only present in very small amounts: they are in part of tissue origin, that is, metabolic waste products, and in part products of albuminous putrefaction, formed in the intestinal canal. Among the latter indican and scatoxyl sulphate merit especial attention. The mother-substances of the two are indol and skatol, respectively, which, after oxidation to indoxyl and scatoxyl, unite with sulphuric acid, and are then eliminated as the corresponding sodium and potassium salts. Both indoxyl and scatoxyl are chromogens and on oxidation give rise to various pigments, of which the indigo blue derived from indican is the most abundant. The amount of the latter is, roughly speaking, an index of the degree of intestinal putrefaction. Under certain conditions, which are as yet but little understood but which can scarcely be classified as pathological, still other substances appear in the urine, among which cystin and alkapton (homogentisinic acid) are the most noteworthy. Both cystinuria and alkaptonuria are the expression of curious metabolic anomalies. Both may occur in families, and commonly appear early in life and persist throughout. In the case of alkaptonuria it has been shown that consanguinity of the parents may be an etiological factor, but in cystinuria this is not the case. Neither condition *per se* is pathological, but, owing to the readiness with which cystin separates from the urine in solid form, and the resultant disturbances in the course of the urinary tract, cystinuria in a general way tends to shorten life. Associated with cystinuria there is at times diaminuria (appearance of putrescin and cadaverin). Under pathological conditions marked quantitative variations occur both in the amount of urine *per se*, as also in its various normal components, depending to a great extent upon diminished ingestion of food and increased tissue-waste. Of abnormal constituents which may be met with in disease, the most notable are the serum albumin and serum globulin of the blood, blood as such, albumoses, sugar (dextrose), diacetic acid, beta-oxybutyric acid, lactic acid, biliary constituents, chyle, certain abnormal chromogens, pigments, etc. Traces of albumin may be met with in some individuals who are apparently in perfect health (physiological albuminuria), but, generally speaking, albuminuria is a pathological phenomenon, though not necessarily the indication of a nephritis. The renal epithelium responds to any abnormal stimulus with albuminuria, and it is thus readily understood that the condition may be merely temporary and of comparatively little significance. Long-continued albuminuria, however, especially when occurring in individuals who have reached maturity, and in whom a direct cause of the anomaly is not at once apparent, should always be viewed with anxiety. The amount of albumin which may appear in the urine varies from just discernible traces to 1.5–3 per cent. The largest amounts of albumin are met with in a comparatively rare disease, multiple myelomatosis, in which a peculiar albuminous substance, differing from the common albumins of the blood, is met with, the so-called albumin of Bence Jones. The daily elimination may here equal the entire amount of the blood albumins. The elimination of glucose (glucosuria), like that of albumin, is essentially an abnormal phenomenon, and is observed in a large number of pathological conditions, but may also follow the ingestion of excessive amounts of sugar in normal individuals. In disease it may be either temporary or permanent. The latter occurs in diabetes mellitus. In such cases, particularly when advanced, acetone, diacetic, and beta-oxybutyric acid are also present, but may likewise occur in other conditions. The ensemble, however, is especially characteristic of the disease in question. Biliary constituents are met with whenever the outflow of bile through the natural channels is impeded. Of the pathological chromogens, finally, one merits especial consideration. It is met with notably in typhoid fever, and on treatment with diazobenzene sulphonic acid, in the presence of ammonia, such urine gives rise to a garnet-red color. Its presence, though observed in other pathological conditions also, is especially constant in typhoid fever and of distinct diagnostic importance. In cases of pulmonary tuberculosis, where the reaction is also encountered, its occurrence is generally viewed as a symptom of grave prognostic import. The chemical nature of the substance in question has not been satisfactorily established.—**Crude urine,** watery, light-colored urine, which throws down little or no sediment.—**Febrile urine,** high-colored urine of strong odor, excreted when fever is present.—**Hysterical urine,** light-colored, watery urine excreted in large amount.—**Milky urine.** See *chyluria.*—**Nervous urine.** Same as *hysterical* ★*urine.*

urinilic (ū-ri-nil'ik), *a.* [*urine* + *-il* + *-ic.*] Noting a colorless compound, $C_8H_7O_6N_7$, called *urinilic acid*, prepared by the action of nitrous acid on uric acid. It crystallizes in short, thick prisms.

urinogenous (ū-ri-noj'e-nus), *a.* [L. *urina*, urine, + *-genus*, -produced.] Of urinary origin.

urinologist (ū-ri-nol'ọ-jist), *n.* [*urinolog*(*y*) + *-ist.*] Same as *urologist.*

urinomancy (ū'ri-nọ-man-si), *n.* [L. *urina*, urine, + Gr. *μαντεία*, divination.] Same as *uromancy.* *G. S. Hall*, Adolescence, I. 116.

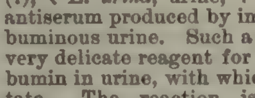
urinserum (ū'rin-sē"rum), *n.* [G. **urinserum* (?), < L. *urina*, urine, + *serum*, serum.] An antiserum produced by immunization with albuminous urine. Such a serum constitutes a very delicate reagent for the detection of albumin in urine, with which it forms a precipitate. The reaction is referable to the production of a precipitin. *Vaughan and Novy*, Cellular Toxins, p. 117.

urisolvent (ū-ri-sol'vent), *a.* [*uri*(*c*) + *solvent.*] Dissolving, or facilitating the solution of, uric acid.

> Quinate of lithia. *Urisolvent.*
> *Phil. Med. Jour.*, Jan. 31, 1903, p. 7.

urisolvin (ū-ri-sol'vin), *n.* [*urisolv*(*ent*) + *-in*2.] The trade-name of a mixture of lithium hydrogen citrate and urea. It is used in medicine as a diuretic and a solvent of uric acid.

uritone (ū'ri-tōn), *n.* [*uri*(*c*) + *tone.*] The trade-name of hexamethylene tetramine,



, a colorless compound, prepared by the action of ammonia on formaldehyde. It crystallizes in lustrous rhombohedra, which may be sublimed in vacuo. It is used in medicine to remove uric acid and to render the urine antiseptic. Also called *urotropin* and *formin.*

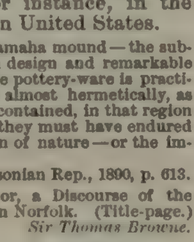
urn, *n.*—**Ciliated urns,** in *Holothuroidea*, cup-shaped organs, of obscure function, attached by stalks to the epithelium of the mesentery and sometimes to the inner surface of the body-wall.—**Hut urn.** See *hut-urn.*—**Mortuary urn,** an urn or jar in which are placed the ashes or remains of the dead.

urn-burial (ėrn'ber"i-ạl), *n.* A method of burial in which the remains, after cremation or without cremation, were placed in an urn. Such urns are found, for instance, in the mounds of the southeastern United States.

> The *urn-burial* from the Altamaha mound—the subject of this paper—is original in design and remarkable for its ingenious simplicity. The pottery-ware is practically imperishable; and sealed almost hermetically, as were the ashes of the dead they contained, in that region where frost is scarcely known, they must have endured forever but for some convulsion of nature—or the implements of civilization.
> *J. F. Snyder*, in Smithsonian Rep., 1890, p. 613.
>
> Hydriotaphia, *Urne-Buriall*, or, a Discourse of the Sepulchrall Urnes lately found in Norfolk. (Title-page.)
> *Sir Thomas Browne.*

urn-stand (ėrn'stand), *n.* A stand or small table designed to hold a tea-urn.

> Quaint little *urn-stands* for the breakfast table, with small slides at the side to rest the teapot on.
> *K. W. Clouston*, Chippendale Period in Eng. Furniture, [p. 171.



Urn-stand.

Urobacillus (ū"rọ-ba-sil'us), *n.* [NL., < Gr. *οὖρον*, urine, + NL. *bacillus.*] An invalid generic name which has been applied to certain bacteria occurring in urine, as *Bacillus* (*Urobacillus*) *Pasteuri.*

urobilinogen (ū-rọ-bil'i-nọ-jen), *n.* [*urobilin* + *-o-* + *-gen.*] The colorless mother-substance or chromogen of urobilin.

urobilinoid (ū-rọ-bil'i-noid), *a.* [*urobilin* + *-oid.*] Resembling urobilin.

urocanic (ū-rọ-kan'ik), *a.* [Gr. *οὖρον*, urine, + L. *canis*, dog, + *-ic.*] Same as ★*urocaninic.*

urocanin (ū-rọ-kā'nin), *n.* [*urocan*(*ic*) + *-in*2.] A base obtained from urocaninic acid, $C_{11}H_{10}N_4O$.

urocaninic (ū"rọ-kạ-nin'ik), *a.* [Gr. *οὖρον*, + L. *caninus*, of dogs, + *-ic.*] Noting an organic acid of the composition $C_{12}H_{12}N_4O_4$, found in the urine of dogs.

Urocentrus (ū-rọ-sen'trus), *n.* [NL., < Gr. *οὐρά*, tail, + *κέντρον*, spine.] A subgenus of fishes under the genus *Pholis*, belonging to the family *Blenniidæ*, found in Bering Sea.

urocerid (ụ-ros'ẹ-rid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Uroceridæ.*

II. *a.* Having the characteristics of or belonging to the family *Uroceridæ.*

urochloralic (ū"rọ-klọ-ral'ik), *a.* [Gr. *οὖρον*, urine, + E. *chloral* + *-ic.*] Noting a conjugate glycuronic acid which appears in the urine after the administration of chloral.

Uroconger (ū-rọ-kong'gėr), *n.* [NL., < Gr. *οὐρά*, tail, + NL. *conger.*] A genus of conger-eels, *Leptocephalidæ*, found in deep seas.

urocrisis (ū-rọ-krī'sis), *n.* [NL., < Gr. *οὖρον*, urine, + *κρίσις*, crisis.] Any crisis in a disease which is accompanied by the discharge of a large amount of urine.

urocyanin (ū-rọ-sī'ạ-nin), *n.* [Gr. *οὖρον*, urine, + *κύανος*, blue, + *-in*2.] Urinary indigo blue. See ★*urine.*

urocystitis (ū"rọ-sis-tī'tis), *n.* [NL., < Gr. *οὖρον*, urine, + *κύστις*, bladder, + *-itis.*] Inflammation of the urinary bladder.

urodæum (ū-rō-dē'um), *n.*; pl. *urodæa* (-ä̤). [NL., < Gr. *οὖρον*, urine, + *ὁδαῖος*, by the way, < *ὁδός*, way.] In *anat.*, the median division of the cloaca in such animals as birds, receiving the openings of the urinary and genital organs. Correlated with *cryptodæum* and *proctodæum.* *Parker and Haswell*, Zoology, II. 368.

urodynia (ū-rọ-din'i-ä̤), *n.* [NL., < Gr. *οὖρον*, urine, + *ὀδύνη*, pain.] Pain experienced in urinating.

urofuscohematin (ū"rọ-fus-kọ-hem'ạ-tin), *n.* [Gr. *οὖρον*, urine, + L. *fuscus*, brown, + *αἷμα*(*τ-*), blood, + *-in*2.] A brown pigment, $C_{68}H_{106}N_8O_{26}$, which was found by Baumstark in the urine of a leprous patient.

Uroglena (ū-rō-glē'nä̤), *n.* [NL., < Gr. *οὐρά*, tail, + *γλήνη*, cavity, socket.] A genus of flagellate protozoans, living as free-swimming colonies in fresh water, of which they are said to affect the taste and odor.

urohematin (ū-rọ-hem'ạ-tin), *n.* [Gr. *οὖρον*, urine, + *αἷμα*(*τ-*), blood, + *-in*2.] A urinary chromogen, which is probably related to indoxyl, and which gives rise to a red pigment, indoxyl red.

urohematoporphyrin (ū"rọ-hem"ạ-tọ-pôr'fi-rin), *n.* [Gr. *οὖρον*, urine, + E. *hematoporphyrin.*] Hematoporphyrin, occurring in the urine. This is normally found in traces; larger amounts are especially met with following the long-continued use of sulphonal, trional, and tetronal.

urohyal, *n.* **2.** In *ichth.*, a median bone of fishes between the hypohyals and extending back under the gills.

uroleucinic (ū"rọ-lụ-sin'ik), *a.* [Gr. *οὖρον*, urine, + *λευκός*, white, + *-in* + *-ic.*] Noting an acid, trioxyphenyl propionic acid, C_6H_2-$(OH)_3.(CH_2)_2.COOH$. This acid has been found in one case of alkaptonuria, where it apparently took the place of homogentisinic acid.

urolith (ū'rọ-lith), *n.* [Gr. *οὖρον*, urine, + *λίθος*, stone.] A urinary calculus.

urolithic (ū-rọ-lith'ik), *a.* [*urolith* + *-ic.*] Relating to urinary calculi.

Urolophinæ (ū"rọ-lọ-fī'nē), *n. pl.* [NL., < *Urolophus* + *-inæ.*] A subfamily of sting-rays having a short stout tail provided with a rayed caudal fin.

Urolophus (ụ-rol'ọ-fus), *n.* [NL., < Gr. *οὐρά*, tail, + *λόφος*, crest.] A genus of sting-rays belonging to the family *Dasyatidæ*, found in warm seas.

uromantia (ū-rọ-man'ti-ä̤), *n.* [NL.] Same as *uromancy.*

uronephrosis (ū"rọ-nef-rō'sis), *n.* [NL., < Gr. *οὖρον*, urine, + *νεφρός*, kidney, + *-osis.*] Same as *hydronephrosis.*

uropatagium (ū″rọ̄-pat-ā̤-jī′um), *n.*; pl. *uropatagia* (-ä). [NL., < Gr. *οὐρά*, tail, + NL. *patagium*.] 1. One of a pair of plates on either side of the anus in many insects.

> Wings hairy for about half an inch on each side of the body, above and below; base of *uropatagium* thinly haired, its free edge quite without fringe. Toes with tufts of hair overhanging the claws.
> *Annals and Mag. Nat. Hist.*, May, 1904, p. 383.

2. That portion of the membrane of a bat which lies between the hind legs and includes the tail; the interfemoral membrane. This is subdivided by Harrison Allen into the endopatagium and mesopatagium, the two being divided by a line drawn from the elbow.

> Thumbs short, with thickened but not enlarged basal pad. Wings from the base of the toes. Calcars about equal in length to the free border of the *uropatagium*.
> *Annals and Mag. Nat. Hist.*, March, 1904, p. 207.

urophanic (ū-rọ̄-fan′ik), *a.* [Gr. *οὖρον*, urine, + *-φανης*, appearing, + *-ic*.] Appearing in the urine.

uropherin (ụ̄-rof′e-rin), *n.* [Gr. *οὖρον*, urine, + *φέρειν*, bear, + *-in*².] A lithium compound of diuretin, used as a diuretic.

Urophycis (ū-rō-fī′sis), *n.* [NL., < Gr. *οὖρον*, urine, + NL. *Phycis*.] A genus of fishes of the family *Gadidæ*, taken in rather deep water in the Atlantic. See cut at *white* ★*hake*.

uropittin (ū-rọ̄-pit′in), *n.* The chief constituent of a red substance of resinous appearance, a product of decomposition of Thudicum's 'urochrome,' believed by him to be the only normal urinary pigment.

uropodous (ụ̄-rop′ọ̄-dus), *a.* [NL. *Uropod*(*a*) + *-ous*.] Same as *uropodal*.

Uropterygius (ū″rop-tẹ̈-rij′i-us), *n.* [NL., < Gr. *οὐρά*, tail, + *πτερύγιον*, wing, fin.] A genus of small moray eels containing several species.

urorhodin (ū-rọ̄-rō′din), *n.* A more correct form of *urrhodin*.

urorosein (ū-rọ̄-rō′zẹ̄-in), *n.* [Gr. *οὖρον*, urine, + L. *rosa*, rose, + *-e-in*.] A rose-colored pigment present in the urine as a colorless chromogen, from which it can be obtained by oxidation. Probably related to indoxyl or skatoxyl red.

uroroseinogen (ū-rọ̄-rō-zẹ̄-in′ọ̄-jen), *n.* [*urorosein* + *-gen*.] The chromogen of urorosein.

urorubin (ū-rọ̄-rö′bin), *n.* [Gr. *οὖρον*, urine, + L. *rubeus*, red, + *-in*².] A cherry-red pigment, occasionally obtainable from the urine of disease by boiling with dilute hydrochloric acid and extracting with ether. Apparently similar to, if not identical with, urorosein.

urorubrohematin (ū-rọ̄-rö-brọ̄-hem′ạ-tin), *n.* [Gr. *οὖρον*, urine, + L. *ruber*, red, + Gr. *αἷμα*(*τ-*), blood, + *-in*².] A red pigment, $C_{68}H_{94}N_8O_{30}Fe$, found by Baumstark in the urine of a patient suffering from leprosy.

urosepsis (ū-rọ̄-sep′sis), *n.* [NL., < Gr. *οὖρον*, urine, + *σῆψις*, putrefaction.] A constitutional state resulting from the infiltration of urine into the tissues.

uroseptic (ū-rọ̄-sep′tik), *a.* [*urosepsis* (*-sept-*) + *-ic*.] Relating to urosepsis.

uroserrial (ū-rọ̄-ser′i-ạl), *n.* [Gr. *οὐρά*, tail, + L. *serra*, saw, + *-i-al*¹.] A small bone in the head of a fish connecting the hyomandibular with the quadrate. Same as *symplectic*. *Starks*, Synonymy of the Fish Skeleton, p. 513.

urosome, *n.* (*c*) In certain crustaceans, as the amphipods, the last three segments of the pleon or abdomen. Compare ★*mesosome* and *metasome*.

urotheobromine (ū″rọ̄-thē-ọ̄-brō′min), *n.* [Gr. *οὖρον*, urine, + E. *theobromine*.] A colorless, poisonous compound, $C_7H_8O_2N_4$, contained in human urine. It crystallizes in silky needles or monoclinic plates, melts at about 284° C., resembles caffein and theobromine in physiological action, and is also called *paraxanthin*.

Urotoxic coefficient, the number of urotoxic units per kilogram of weight formed in the twenty-four hours.—**Urotoxic unit.** See ★*unit*.

urotoxicity (ū″rọ̄-tok-sis′i-ti), *n.* [*urotoxic* + *-ity*.] The toxic condition of the urine. See *urotoxic* ★*unit*. *Amer. Jour. Psychol.*, XII. 267.

urotoxin (ū-rọ̄-tok′sin), *n.* [Gr. *οὖρον*, urine, + E. *toxin*.] Any toxic substance of basic character found in the urine.

urotoxy (ū′rọ̄-tok-si), *n.* [Gr. *οὖρον*, urine, + *τοξ*(*ικόν*), poison, + *-y*³.] The toxicity of urine; the amount of urine necessary to kill one kilo of an animal by intravenous injection. *Vaughan and Novy*, Cellular Toxins, p. 469.

urotropin (ụ̄-rot′rọ̄-pin), *n.* Same as ★*uritone*.

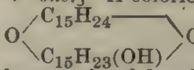
uroxanic (ū-rok-san′ik), *a.* [*ur*(*ic*) + *ox*(*ygen*) + *-an* + *-ic*.] Noting an acid, a colorless compound, $C_5H_8O_6N_4$, prepared by the prolonged action of potassium hydroxid and air, free from carbon dioxid, on uric acid. It crystallizes in short prisms or tetrahedra.

uroxanthinic (ū-rok-san-thin′ik), *a.* [*uroxanthin* + *-ic*.] Pertaining to uroxanthin.—**Uroxanthinic acid**, the supposed active principle to which the specific reactions of alkapton urine are due. See ★*homogentisic acid*.

urpethite (ėr′pe-thīt), *n.* [*Urpeth* + *-ite*².] A yellow to brown hydrocarbon which constitutes the larger part of the ozocerite obtained from the Urpeth colliery, England.

urrhodinic (ū-rọ̄-din′ik), *a.* Pertaining to urrhodin.—**Urrhodinic acid.** Same as ★*uroxanthinic acid*.

ursone (ėr′sōn), *n.* [(*uva*)*urs*(*i*) (see def.) + *-one*.] A colorless compound,



$O\begin{matrix}/C_{15}H_{24}\text{——}\backslash\\ \backslash C_{15}H_{23}(OH)/\end{matrix}O.2HO$

contained in the leaves of red bearberry, *Arctostaphylos Uva-ursi*. It crystallizes in slender, lustrous needles and melts at 264–266° C.

Urticales (ėr-ti-kā′lēz), *n. pl.* [NL. (Lindley, 1833), < *Urtica* + *-ales*.] An order of dicotyledonous, archichlamydeous (chiefly apetalous) plants embracing the families *Ulmaceæ*, *Moraceæ*, and *Urticaceæ*, or the elm, mulberry, and nettle families.

urticant (ėr′ti-kạnt), *a.* [ML. *urticans* (*-ant-*), ppr. of *urticare*, sting, nettle. See *urticate*.] Stinging; producing an itching sensation.

urticaria, *n.*—**Giant urticaria.** Same as ★*angioneurotic edema*.—**Urticaria pigmentosa**, a form of urticaria in which the wheals are at first pinkish in color, leaving patches of a yellowish or brownish discoloration after their disappearance.—**Urticaria tuberosa**, a form of urticaria in which somewhat persistent nodes are formed.

urticate, *v. t.*—**Urticating organ**, a nettling-organ or nematocyst. *Proc. Zool. Soc. London*, 1903, p. 169.

urtite (ėr′tīt), *n.* [Named from Lujavr-*Urt*, Kola, Finland.] In *petrog.*, a phaneric, granular, igneous rock composed almost wholly of nephelite, with a small amount of ægirite and apatite. *Ramsay*, 1896.

Uru. An abbreviation of *Uruguay*.

urunday (ö′rön-dī), *n.* [From the Tupi name.] A large tree of the family *Anacardiaceæ*, *Astronium Urundeuva*, native to Argentina and Paraguay. Its very hard wood is heavier than water and is used for telegraph poles, building construction, etc. *Elect. World and Engin.*, Oct. 31, 1903, p. 727.

urushi (ö-rö′shẹ̄), *n.* [Jap.] Japanese lacquer; varnish. See ★*lacquer*.

urushic (ö-rö′shik), *a.* [*urushi* + *-ic*.] Noting an acid, a dark, pasty compound, $C_{14}H_{18}O_2$, contained in urushi, the sap of *Rhus vernicifera*, which is used in making Japanese lacquer. It decomposes above 200° C.

urusite (ū′rụ̄-sīt), *n.* [*Urus* (see def.) + *-ite*².] Same as *sideronatrite*: from the Urus plateau, Cheleken Island, in the Caspian Sea.

urvölgyite (ör-völ′gi-īt), *n.* [G. *urvölgyit* (1879), named from *Urvölgy* (Herrengrund), in Hungary.] Same as *herrengrundite*.

Ur. X. The chemical symbol of *uranium X*. See ★*uranium X*.

U. S. An abbreviation (*b*) of *Uncle Sam*; (*c*) of *United Service*; (*d*) [*l. c.* or *cap.*] of the Latin *ut supra*, as above.

usage, *n.*—**Immemorial usage**, prescription; existence of a custom so long that the memory of man runneth not to the contrary. The time of memory was fixed by Edward I. to commence from the beginning of the reign of Richard I. A man might, after 1276, offer in evidence what his father had told him respecting real property. *Pollock and Maitland*, Eng. Law, I. 168.

usar (ö′sä̤r), *n.* [Hind. *ūsar*, *ōsar*, also *ūshar*, < Skt. *ūshara*, impregnated with salt, barren land, < *ūsha*, alkaline earth.] In northern India, barren land; an alkali desert: applied to land with a saline soil bearing only hardy, low growths.

usar-grass (ö′sä̤r-grȧs), *n.* [*usar* + *grass*.] A wiry creeping perennial rush-grass, *Sporobolus orientalis*, with short rigid leaves and spreading panicles. It is native to the usar tracts of northern India, often constituting the entire vegetation. It endures saline and alkali soils and affords a supply of fodder where other plants cannot exist.

U. S. C. C., U. S. C. Ct. Abbreviations of *United States Circuit Court*.

U. S. D. C., U. S. Dist. Ct. Abbreviations of *United States District Court*.

use¹, *n.* 9. *pl.* Rough iron forgings sold to be subsequently worked down into finished shapes in the forge, or heating furnace, by hammer or press. They are used also for porter-bars, or to build up larger forgings not made from an ingot. [Eng.]

use-inheritance (ūs′in-her″i-tạ̈ns), *n.* See ★*inheritance*.

U-shaped (ū′shāpt), *a.* Having the shape of the capital letter U; in *phys. geog.*, said of valleys whose cross-profile resembles the letter U.

Usherian, Ussherian (u-shē′ri-ạ̈n), *a.* Of or pertaining to Archbishop Usher (1580–1656) or to his biblical chronology of the world.

> The *Ussherian* chronology, formerly inserted in the margins of our Bibles. *Nature*, Oct. 22, 1903, p. 594.

usine (ū-zēn′, F. ü-zēn′), *n.* [F. *usine*, OF. *uisine*, < L. *officina*, shop, factory. See *officinal*.] In sugar-producing regions, an establishment in which the sugar-cane from any number of plantations is ground and the sugar extracted, thus enabling the planters to devote their whole time to cane cultivation; a central sugar-house. The usines are generally owned by companies, and the cane is either bought outright or worked up for a fixed price, or for a percentage of the product. Called also *sugar-usine*.

using-grounds (ū′zing-groundz), *n. pl.* Places where grouse or quail gather.

> The sportsman will, too, often come to bobwhite's aid when the country is covered with forbidding coats of snow and sleet. The "*using-grounds*" of the coveys are generally known or suspected by the farmer who is fond of shooting and on these wintry occasions he scatters "tailings"—a poor quality of wheat—where the starving quail can find them.
> *C. D. Lanier*, in Harper's Mag., Oct., 1893, p. 681.

U. S. L. An abbreviation of *United States legation*.

U. S. M. A. An abbreviation of *United States Military Academy*.

U. S. N. A. An abbreviation of *United States Naval Academy*.

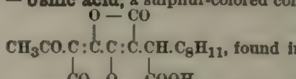
usnarin (us′nạ̈-rin), *n.* [*Usn*(*ea*) + *-ar-* + *-in*².] A colorless compound contained in the lichen *Usnea barbata f. dasypoga* and *U. barbata f. hirta*, from Java.

usneaceous (us-nẹ̄-ā′shius), *a.* Pertaining or belonging to the lichen family *Usneaceæ*.

usneoid (us′nẹ̄-oid), *a.* [NL. *Usnea* + *-oid*.] Pertaining to or resembling the lichen genus *Usnea*, or the family *Usneaceæ*.

usnetic (us-net′ik), *a.* [*Usn*(*ea*) + *-et-* + *-ic*.] Pertaining to or derived from lichens.—**Usnetic acid**, a colorless compound, $C_9H_{10}O_3$, contained, in small quantity, in the lichen *Usnea barbata*. It crystallizes in prisms and melts at 172° C. Also called *decarbousnic acid*.

usnic (us′nik), *a.* [*Usn*(*ea*) + *-ic*.] Pertaining to, or derived from, *Usnea* or other lichens.—**Usnic acid**, a sulphur-colored compound,



$$\begin{matrix} & O - CO & \\ CH_3CO.C:C.C:C.CH.C_8H_{11} & & \\ CO-O & COOH & \end{matrix}$$

found in many lichens such as *Parmelia perlata*, *P. caperata*, *Cladonia silvatica*, *C. alpestris*, etc. It is known in three forms, namely, levorotatory, dextrorotatory, and optically inactive. It crystallizes in monoclinic prisms and melts at 195–196° C.

U. S. P. An abbreviation of *United States Pharmacopœia*. Also written *U. S. Pharm.*

U. S. Pharm. An abbreviation of *United States Pharmacopœia*. Also written *U. S. P.*

U. S. R. An abbreviation of *Usher of the Scarlet Rod*.

U. S. S. C., U. S. S. Ct. Abbreviations of *United States Supreme Court*.

U. S. Sig. Serv. An abbreviation of *United States Signal Service*.

U. S. S. S. An abbreviation of *United States steamship*.

ustilaginaceous (us-ti-laj-i-nā′shius), *a.* Same as *ustilagineous*.

Ustilaginales (us-ti-laj-i-nā′lēz), *n. pl.* [NL., < *Ustilago* (*Ustilagin-*) + *-ales*.] An order of parasitic fungi containing the two families of smuts, *Ustilaginaceæ* and *Tilletiaceæ*.

ustilagine (us-til′ạ̈-jin), *n.* [*ustilago* (*-gin-*).] A colorless, bitter, crystalline alkaloid contained in corn-smut.

usucapion (ū-zụ̄-kā′pi-ọn), *n.* [L. *usucapio* (*-n-*).] Same as *usucaption*. *Poste*, tr. of Gaius, ii. 42.

usufruct, *n.*—**Perfect usufruct,** in *law*, a usufruct in which the beneficiary has the right to use the property of another without altering its substance, though it is subject to ordinary diminution in value through use.

usurpative (ū-zėr'pa̤-tiv), *a.* Same as *usurpatory.*

> The *usurpative* control of their nutrition by the fungus suggests that these phenogams did not originate as symbionts by a predilective departure from a self-supporting condition. *Amer. Nat.*, Jan., 1908, p. 16.

u. s. w. An abbreviation of the German *und so weiter*, and so forth.

Ut. An abbreviation of *Utah.*

uta^2 (ö'tä̤), *n.* [A native name in Peru.] A Peruvian name for a skin-disease analogous to, if not identical with, ★*espundia*, considered to be a kind of lupus. It is attributed to the sting or bite of some insect, and is curable, but may become fatal in case of excesses or neglect. It is limited to warmer districts.

utahite (ū'tä-īt), *n.* [*Utah* + *-ite*^{2}.] A hydrous ferric sulphate ($3Fe_2SO_4.4H_2O$) occurring in aggregates of orange-yellow scales, rhombohedral in crystallization: from the Tintic district, Utah.

utahlite (ū'tä-līt), *n.* [*Utah* + Gr. *λίθος*, stone.] A variety of variscite from Utah occurring in compact, nodular masses of a bright green color.

uteralgia (ū-te̤-ral'ji-ä̤), *n.* [NL., ‹ L. *uterus*, uterus, + Gr. ἄλγος, pain.] Same as *metralgia.*

uterin, *a.* A simplified spelling of *uterine.*

Uterine appendages, the ovaries and oviducts.—**Uterine colic.** See ★*colic.*—**Uterine croup.** See ★*croup*^{1}.—**Uterine elevator.** In *surg.*, same as *repositor.*—**Uterine glands.** See ★*gland.*—**Uterine positor.** See ★*positor.*

uteritis (ū-te̤-rī'tis), *n.* [NL., ‹ L. *uterus*, uterus, + *-itis.*] Same as *metritis.*

uterocervical (ū″te̤-rō̤-sėr'vi-ka̤l), *a.* [L. *uterus*, uterus, + *cervix* (*cervic-*), neck, + *-al*^{1}.] Relating to the neck of the womb.

uterofixation (ū″te̤-rō̤-fik-sā'shon), *n.* [L. *uterus*, uterus, + E. *fixation.*] Same as ★*hysteropexy.*

utero-ovarian (ū″te̤-rō̤-ō̤-vā'ri-a̤n), *a.* [L. *uterus*, uterus, + *ovarium*, ovary, + *-an.*] Relating to both the uterus and the ovaries.

uteropexy (ū'te̤-rō̤-pek-si), *n.* [L. *uterus*, uterus, + Gr. *πῆξις*, fastening.] Same as ★*hysteropexy.*

uteroplacental (ū″te̤-rō̤-plā̤-sen'ta̤l), *a.* [L. *uterus*, uterus, + NL. *placenta*, placenta, + *-al*^{1}.] Relating to the uterus and the contained placenta.

uterosacral (ū″te̤-rō̤-sā'kra̤l), *a.* [L. *uterus*, uterus, + *sacrum*, sacrum, + *-al*^{1}.] Relating to the uterus and the sacrum: noting certain folds of peritoneum, the recto-uterine folds (which see, under *recto-uterine*).

uterotomy (ū-te̤-rot'ō̤-mi), *n.* [L. *uterus*, uterus, + Gr. *-τομία*, ‹ *ταμεῖν*, cut.] Same as *hysterotomy.*

uterotubal (ū″te̤-rō̤-tū'ba̤l), *a.* [L. *uterus*, uterus, + *tubus*, tube, + *-al*^{1}.] Relating to both the uterus and the oviducts.

uterovaginal (ū″te̤-rō̤-vaj'i-na̤l), *a.* [L. *uterus*, uterus, + *vagina*, vagina, + *-al*^{1}.] Relating to both the uterus and the vagina.

uterovesical (ū″te̤-rō̤-ves'i-ka̤l), *a.* [L. *uterus*, uterus, + *vesica*, bladder, + *-al*^{1}.] Relating to both the uterus and the bladder.

Uterus arcuatus, a deformity of the uterus marked by a depression at the fundus; the first degree of uterus bilocularis: called also *saddle-shaped uterus.*—**Uterus bipartitus.** Same as *uterus bilocularis.*—**Uterus incudiformis,** a form of uterus bicornis in which the fundus is broad and level between the two horns, the organ having a resemblance to an anvil.—**Uterus planifundalis.** Same as ★*uterus incudiformis.*—**Uterus septus,** a septate uterus; uterus bilocularis.—**Uterus subseptus,** an incomplete uterus bilocularis.—**Uterus triangularis.** Same as ★*uterus incudiformis.*

Utica shale. See ★*shale*^{2}.

utility, *n.* **4.** In *polit. econ.*, the capacity of an object for the satisfaction of a human want.—**Effective utility,** the relative capability of like kinds and quantities of a commodity to afford satisfaction under varying conditions of want.—**Final utility,** in *polit. econ.*, the utility, or want-satisfying power, of that unit of a commodity which is put to the least important use. Also called *marginal* ★*utility.*—**Initial utility,** in the modern theory of economics (Cournot, Jevons, Walras), the satisfaction due to the consumption of a first necessary portion of any useful commodity: contrasted with *final* ★*utility.*—**Marginal utility,** the utility of a final increment of any commodity in process of consumption, for example, a final mouthful of food at the end of a meal. The conception of marginal utility, suggested by Bentham, Cournot, and Gossen, and developed by Jevons, Menger, Walras, and Wieser, is the foundation of the modern theory of economic value.—**Objective utility,** the conception of utility as an "inherent fitness or capability of certain things to satisfy the various wants of mankind." *J. B. Say.*—**Subjective utility,** the conception of utility as varying with the mental state of the consumer of goods.

> *Subjective utility* is pleasurable feeling combined with knowledge that the pleasure is consequent upon an external condition or thing, namely, an objective utility. It is pleasure attributed to an external cause.
> *Giddings*, Prin. of Sociol., p. 41.

utilization, *n.*—**Arnold utilization process.** See ★*process.*

Uto-Aztecan (ū″tō̤-az'tek-a̤n), *a.* and *n.* [*Ute* (Indians) + *Aztec* + *-an.*] A linguistic family of North American languages, which, according to certain authors, includes the languages grouped by others under the three separate families Shoshonean, Piman, and Nahuatlecan. The relationship between these three groups is at least very distant. *Brinton.*

Utopistic (ū-tō̤-pis'tik), *a.* [Gr. *οὐ*, not (no-), + *τόπ*(*ος*), place (-where), + *-istic.* See *Utopia.*] Same as *Utopian.* *Gumplovicz* (trans.), Outlines of Sociol., p. 156.

Utricular glands. Same as *uterine* ★*glands.*

utriculitis (ṳ̄-trik-ṳ̄-lī'tis), *n.* [NL., ‹ *utriculus* + *-itis.*] Inflammation of any utricle.

utriculus, *n.*—**Utriculi breviores,** the short utricles of the seminal vesicles of insects.—**Utriculi majores,** the large utricles of the seminal vesicles of insects.

utropine (ū'trō̤-pin), *n.* The trade-name of hexamethylene tetramine, $(CH_2)_6N_4$. It is prepared by the action of ammonia on formaldehyde and is used as a urinary antiseptic.

utsubo (öt-sö-bō'), *n.* [Jap. *utszbo*, a quiver.] A fish, a moray, of the family of *Murænidæ*, *Gymnothorax kidako*, found in the waters of Japan: also known as *kidako* and *kichigaiunagi.*

ut sup. An abbreviation of the Latin *ut supra*, as above.

utu (ö'tö), *n.* [Maori.] **1.** An equivalent, compensation, or satisfaction for injuries received; the payment or return which every Maori expected and demanded for any injury or injustice.

> *Utu* or payment is invariably expected for any injustice committed, and is exacted in some shape, the sufferer feeling debased in his own opinion until he obtains satisfaction. The *Utu*, similar to the tapu, enters into everything connected with this people.
> *J. S. Polack*, Manners and Customs of New Zealand, II. [63. Quoted in E. E. Morris, Austral English.

2. Any compensation for services; wages.

> Besides that, for such shining service done,
> A splendid claim, he reckoned, would arise
> For '*utu*'—compensation or reward.
> *A. Domett*, Ranolf, p. 470. Quoted in E. E. Morris, [Austral English.

Utznach lignites. See ★*lignite.*

U-valley (ū'val″i), *n.* A valley which has a U-shaped cross-profile; especially that part of a valley which has been given such a form by glacial erosion.

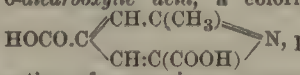
uveïtis (ū-vē̤-ī'tis), *n.* [NL., ‹ *uvea* + *-itis.*] Inflammation of the uvea.

uvic (ū'vik), *a.* [L. *uva*, a grape, + *-ic.*] Pertaining to or derived from grapes.—**Uvic acid,** a colorless compound, $HOOC.C{:}C(CH_3).O.C(CH_3){:}CH$, prepared by heating racemic acid with sodium acetate and acetic anhydrid. It crystallizes in needles or rods, melts at 135° C., is volatile with steam, and may be sublimed. Also called *pyrotritaric acid* and *2,5-dimethylfurfurane-3-carboxylic acid.*

uviol (ū'vi-ol), *n.* [Trade-name. See the def.] A glass of special composition which is more completely transparent to ultra-violet light than are ordinary glasses, transmitting wave-lengths as short as $0{\cdot}25\mu$. Uviol glass is used in the construction of spectrographs and for other apparatus where transmitting power in the extreme ultra-violet is essential. The word is an arbitrary abbreviation of *ultraviolet.*—**Uviol lamp,** a mercury-arc lamp in which the vacuum-tube is made of uviol glass. The light from such lamps has greater actinic activity than the light from those in which ordinary glass is used, on account of the transparency of uviol glass for radiation of the shorter wave-lengths.—**Uviol prism,** a prism of uviol glass, which affords a spectrum extending further into the ultra-violet than can be obtained with prisms of ordinary flint glass.

uvitic (ṳ̄-vit'ik), *a.* [L. *uva*, grape, + *-it* + *-ic.*] Noting an acid, 1-*methylisophthalic acid*, a colorless compound, $\overset{1}{C}H_3.C_6H_3(\overset{3.\ 5}{CO}OH)_2$, prepared by the oxidation of mesitylene with nitric acid. It crystallizes in slender needles, melts at 287–288° C., and may be sublimed.

uvitonic (ū-vi-ton'ik), *a.* [*uvit*(*ic*) + *-on-* + *-ic.*] Noting an acid, 2-*methylpyridine-4, 6-dicarboxylic acid*, a colorless compound,



$$\mathrm{HOCO.C}\left\langle\begin{array}{l}\mathrm{CH.C(CH_3)}\\ \mathrm{CH{:}C(COOH)}\end{array}\right\rangle\mathrm{N}$$

, prepared by the action of ammonia on pyroracemic acid. It forms trimetric crystals and melts and decomposes at 274° C.

uvulatomy (ū-vṳ̄-lat'ō̤-mi), *n.* An erroneous form for ★*uvulotomy.*

uvulitis (ū-vṳ̄-lī'tis), *n.* [NL., ‹ *uvula* + *-itis.*] Inflammation of the uvula.

uvuloptosis (ū″vṳ̄-lop-tō'sis), *n.* [NL., ‹ *uvula* + Gr. *πτῶσις*, falling.] Elongation of the uvula.

uvulotome (ū'vṳ̄-lō̤-tōm), *n.* [*uvula* + Gr. *-τομος*, ‹ *ταμεῖν*, cut.] An instrument used in amputation of the uvula.

uvulotomy (ū-vṳ̄-lot'ō̤-mi), *n.* [*uvula* + Gr. *-τομία*, ‹ *ταμεῖν*, cut.] An operation for the removal of a portion of the uvula.

V 3. Also an abbreviation (*a*) of *rector*; (*b*) [*l. c.*] in *electrotechnics*, of *velocity*; (*c*) of Latin *venerabilis*, *venerandus*, venerable; (*d*) of *version*; (*e*) of *vicar*; (*f*) of *vice*; (*g*) [*l. c.* or *cap.*] of Latin *vide*, see; (*h*) [*l. c.* or *cap.*] of *village*; (*i*) [*l. c.* or *cap.*] of *violin*; (*j*) of *viscount*; (*k*) of *visus*, acuteness of vision; (*l*) [*l. c.* or *cap.*] of *vocative*; (*m*) [*l. c.* or *cap.*] of *volume*; (*n*) of *volunteers*; (*o*) in *elect.*, of *volt*, the unit of electromotive force or electric pressure, equal to 100,000,000 absolute or c. g. s. units.—5. In *meteor.*, a V-shaped depression; an area of low pressure bounded by V-shaped isobars and differing from an oval secondary cyclone.—6. In *mach.*, a raised ridge upon the bed of a lathe or of a planer, having sloping sides resembling an inverted capital letter V. On these V's the carriage rests by gravity, and self-centers itself upon them without adjusting gibs or wedges. The objection to them is the effect of sidewise pressure upon the traveling bed or carriage, by which the latter may be forced up the slope of the V under heavy work, and the carriage-travel become out of line.

Va. An abbreviation (*a*) [*l. c.*] of *viola*; (*b*) of *Virginia*.

V. A. An abbreviation (*a*) [*l. c.*] of *verb active*; (*b*) [*l. c.*] of *verbal adjective*; (*c*) of *Vicar Apostolic*; (*d*) of *Vice-Admiral*; (*e*) of *Victoria and Albert* (*Order of*); (*f*) [*l. c.*] of the Latin *vixit annos*, lived [so many] years.

vaal (väl), *n.* [D., = E. *vale.*] A valley. [South Africa.]

vaca (vä'kä), *n.* [Cuban use of Sp. *vaca*, a cow, ＜ L. *vacca*, a cow.] See ★*cataphebe*.

vacation, *n.*—**Long vacation,** in England, the summer vacation at the law-courts and universities, which is longer than those at Christmas and Easter.

vacational (vā-kā'shon-al), *a.* [*vacation* + *-al*^{1}.] Of or pertaining to, or of the nature of, a vacation.

vacationing (vā-kā'shon-ing), *n.* The going on a vacation. [Rare.]

In many instances the child now spends most of his time in school and in *vacationing*.
L. H. Bailey, Outlook to Nature, p. 153.

vaccine, *n.*—**Glycerinated vaccine.** See ★*glycerinate*.—**Haffkine's vaccine.** Same as *anti-plague* ★*serum*.

vaccinic, *a.* 2. Noting an acid, a substance now known to consist of a mixture of butyric and capric acids.

vacciniculturist (vak"sin-i-kul'tūr-ist), *n.* [*vaccine* + *-i-* + *culture* + *-ist.*] One who conducts a vaccine-farm. *Buck*, Med. Handbook, VII. 605.

vacciniform (vak-sin'i-fôrm), *a.* [*vaccine* + L. *forma*, form.] Resembling in any way, especially in the eruption, cowpox.

vaccinostyle (vak-sin'ō-stīl), *n.* [*vaccine* + *-o-* + L. *stilus*, *stylus*, a style.] A small metallic lance used for vaccinating. *Buck*, Med. Handbook, VIII. 119.

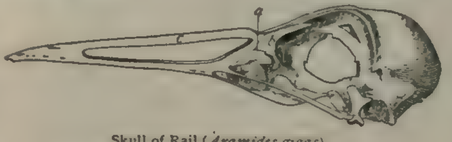
vacherie (väsh-rē'), *n.* [F. *vacherie*, cow-house. See *vachery*.] An island in the swamps bordering the lower Mississippi raised four or five feet above the general level. [Louisiana.]

The soil of the *vacherie* is a calcareous loam of a chocolate color.
U. S. Dept. Agr., Farmers' Bulletin No. 60, p. 14.

Vachette clasp. See ★*clasp*.

vacrome (vak'rōm), *n.* A trade-name for a preparation, containing a salt of chromium, used in mineral tanning. *Flemming*, Practical Tanning, p. 223.

vacuity, *n.*—**Infra-orbital vacuity,** an opening in the bones of the cranium, behind and below the orbit, typically found in the skull of pterodactyls. Also known as *inferior temporal vacuity*, in distinction from the larger supratemporal vacuity commonly present.—**Interorbital vacuity,** in *ornith.*, an opening in the bony plate which separates the orbits or eye-sockets.—**Interpterygoid vacuity,** a space or opening between the pterygoids, characteristic of some groups of reptiles.—**Lacrymonasal vacuity,** in *ornith.*, the space between the lacrymal and the descending process of the nasal.—**Laterotemporal vacuity** or **fenestra,** the lower or outer of the two openings back of the orbit in such a skull as that of *Hatteria*. See cut under ★*Diapsida*.



Skull of Rail (*Aramides gigas*).
a, lacrymonasal vacuity; *b*, lacrymal bone; *c*, nasal bone.

vacuole, *n.*—**Oral vacuole,** in choanoflagellate protozoans, a vacuole-like elevation of the body protoplasm at the base of the collar, serving for the ingestion of food-particles.

vacuolide (vak'ū-ō-lid), *n.* [*vacuole* + *-ide.*] A semifluid granule of photogenic, or light-producing, matter given off by certain phosphorescent mollusks such as *Pholas dactylus*.

These semifluid granulations, which I have called *vacuolides* because of the appearance that they present under the microscope, and which are found in all photogenic elements, must be the plasmatic or microsomic corpuscles of the luminous cells.
Smithsonian Rep., 1895, p. 427.

vacuometer (vak-ū-om'e-tėr), *n.* [*vacuum* + Gr. *μέτρον*, measure.] 1. A device for measuring vacua or low pressures.—2. An instrument used in comparing barometers.—**Voege's vacuometer,** an instrument for the measurement of low gas-pressures, based upon the fact that the sensitiveness of thermojunctions to radiation is increased in vacuo.

vacuum, *n.*—**Absolute vacuum,** a region within which no matter exists. An absolute vacuum has never been even approximately attained by mechanical means, for although it is possible to reduce the quantity of gas in a closed vessel to about $\frac{1}{100,000,000}$ of that present at a pressure of one atmosphere, there still remain several millions of molecules in each cubic centimeter of volume.—**Crookes's vacuum,** in *elect.*, a vacuum high enough to suppress the Geissler discharge and to permit of the free formation of cathode rays and of the production of the various phenomena characteristic of Crookes's tubes.—**Geissler's vacuum,** in *elect.*, a partial vacuum in which the pressure is sufficiently reduced to permit of the Geissler discharge, but not low enough for the production of cathode rays or of the other phenomena characteristic of high vacua.—**High vacuum,** a vacuum in which the attenuation of the gas is extreme and in which the various phenomena associated with a long mean free path of the particles may occur.—**Low vacuum,** a partial vacuum in which the pressure is considerable and the mean free path of the gaseous particles very small. See *high* ★*vacuum*.—**Vacuum correction,** the correction of the readings of a mercurial barometer necessitated by the presence of an imperfect vacuum in the upper part of the tube. The correction is determined by Arago's method and consists in determining the apparent pressure of the atmosphere several times in succession, when the mercury is screwed up in the tube so that the vacuum-chamber is small, and again when the mercury is low in the tube and the vacuum-chamber is large. The Arago method is limited in its application by our ignorance of the variation of capillarity in different parts of the barometer tube and the adhesion of gas to the glass tube. The perfection of the vacuum may roughly be tested by passing an electric discharge through it.—**Vacuum distillation.** See ★*distillation*.—**Vacuum dredging-machine.** See ★*dredging-machine*.—**Vacuum effect.** See ★*effect*.—**Vacuum fan.** See ★*fan*^{1}.

vacuum-chamber (vak'ū-um-chām"bėr), *n.* The space above the summit of the mercury column in any barometer. This space should be a (relatively) perfect vacuum: if it is not, then the correction or reduction to a vacuum should be determined by Arago's method.

vacuum-cone (vak'ū-um-kōn), *n.* A small conically shaped vacuum which is created in a jet-condenser.

vacuum-line (vak'ū-um-līn), *n.* The line in the diagram which would be traced by the steam-engine indicator if the pistons were exposed at that end to the pressure of a perfect vacuum. On account of the fact that heat remains in the condenser, this line is rarely drawn by the instrument itself; but if the atmospheric line of no pressure is drawn by the indicator-pencil, the vacuum-line can be drawn by hand by taking the reading of an aneroid or mercurial barometer, translated into pounds per square inch, and laying off the distance below atmosphere on the scale the spring of the indicator demands.

vacuum-pot (vak'ū-um-pot), *n.* A chamber within which pressures less than that of the atmosphere and approximating a vacuum are maintained; specifically, a form of steam-engine condenser having the shape of a pot, in which a vacuum is maintained by placing it at the upper end of a water-column 32 feet or more high, so that water drains out of it by gravity and without a pump, maintaining a vacuum which would be Torricellian except for the vapor of warm water and the air entrained with the steam and injection-water, or present from leakage. *Thurston*, Stat. Steam-engine, p. 24.

vacuum-vessels (vak'ū-um-ves"lz), *n. pl.* Same as *Dewar's* ★*flasks*.

The introduction of the now well-known *vacuum-vessels* by Dewar has rendered the manipulation of gases a matter of comparative simplicity.
M. W. Travers, Exper. Study of Gases, p. 207.

vadose (vā'dōs), *a.* [L. *vadosus*, shallow.] Shallow: specifically applied to those ground waters which seep into rocks and soil from the surface, as opposed to the construction waters which were built into the rocks at the time of their formation.

Another lecture of great interest was that delivered by Prof. Suess, of Vienna, on the nature of hot springs. The mineral springs which are due to infiltration from surface water go by the name of "*vadose*" springs; they may be either cold or hot, according to their depth.
Nature, Nov. 6, 1902, p. 20.

These considerations tend to restrict the activities of the meteoric waters to the *vadose* region, as Pośepný calls it, i.e., that belt of the rocks which stands between the permanent water level and the surface.
Smithsonian Rep., 1906, p. 200.

Vagabond's disease or **pigmentation.** See ★*disease*.

vagile (vaj'il), *a.* [NL. **vagilis* (cf. L. *motilis*, E. *motile*), ＜ *vagus*, wandering. See *vague*.] Wandering; vagrant; not sedentary; not fixed.

While it is already difficult to understand how these giants could have balanced themselves upon their apex, it would appear still more unintelligible that they should have striven to raise themselves so high above the sea bottom when their recent descendants find it so much more advantageous to lie low in the mud and to prey upon the much richer fauna of the *vagile* benthos.
Amer. Geol., April, 1903, p. 214.

vaginalectomy (vaj"i-na-lek'tō-mi), *n.* [NL. *vaginalis* + Gr. *ἐκτομή*, excision.] Excision of the tunica vaginalis.

vaginectomy (vaj-i-nek'tō-mi), *n.* [L. *vagina*, vagina, + Gr. *ἐκτομή*, excision.] Excision of the vagina.

Vaginoceras (vaj-i-nos'e-ras), *n.* [NL., ＜ L. *vagina*, a sheath, + Gr. *κέρας*, horn.] A genus of nautiloid cephalopods having a structure quite similar to that of ★*Endoceras* (which see) and occurring in rocks of the same age.

vago-accessorius (vā-gō-ak-se-sō'ri-us), *n.*; pl. *vago-accessorii* (-ī). [NL., ＜ *vagus* + *accessorius*.] The pneumogastric (vagus) and spinal accessory nerves regarded as one.

vagosympathetic (vā"gō-sim-pa-thet'ik), *a.* [NL. *vagus* + *sympathetic*(*us*).] The vagus and cervical sympathetic nerve, forming one trunk in the dog. *Med. Record*, March 7, 1903, p. 388.

vagotomy (vā-got'ō-mi), *n.* [NL., ＜ *vagus* + Gr. *-τομια*, ＜ *ταμεῖν*, cut.] Division of the vagus or pneumogastric nerve.

vagrantism (vā'grant-izm), *n.* Vagrancy. *G. S. Hall*, Adolescence, I. 296. [Rare.]

Vagus foramen. See ★*foramen*.

vagus-pulse (vā'gus-puls), *n.* A full, slow pulse.

vaidya (vīd'yä), *n.* [Skt. *vaidya*, one versed in science, ＜ *vidyā*, knowledge, science, ＜ √ *vid*, know: see *veda*, *wit*.] In India, one of the caste of hereditary physicians, accounted a mixed caste.

vaiseshika (vī-sā′shi-kạ̈), *n.* [Skt. *vaiseshika* (*vaiçeṣika*), special, specific, peculiar, < *visesha* (*viçeṣa*), difference, specific property, special distinction (cf. *visishta* (*viçiṣta*), distinguished, particularized), < *vi*, away, off, + √ *sish* (*çis*), leave, be left.] The second school of Hindu philosophy distinguished by its doctrine of atoms.

vaka (vä′kä), *n.* [Also *vakka.* Tongan and Marquesan *vaka* = Tahitian *vaa* = Samoan *va'a* = Hawaiian *waa* = Maori *waka.*] A canoe or boat.

val. An abbreviation of *value.*

Valachian, *a.* Same as *Wallachian.*

Valanginian (val-an-jin′i-ạn), *a.* and *n.* [*Valangin*, a district in Switzerland, + *-ian.*] In *geol.*, the lowest substage of the Cretaceous system in the Jura, represented by limestones and marls and overlain by the Hauterivian substage.

valdivin (val′di-vin), *n.* [NL. *valdivia* (see def.) + *-in*2.] A colorless, very bitter glucoside, $C_{18}H_{24}O_{10}.2\frac{1}{2}HO$, contained in the fruit of *Simaba valdivia.* It crystallizes in hexagonal prisms and melts at 230° C.

Valenciennellus (vā-len″si-e-nel′us), *n.* [NL., named for the noted ichthyologist Achille *Valenciennes.*] A genus of deep-sea fishes of the family *Maurolicidæ.*

valene (val′ēn), *n.* [*val*(*eric*) + *-ene.*] Same as ⋆*valerone.*

valent (vā′lent), *a.* [See *valence*2.] Having a certain valence or valency.

valenton (vä-len-tōn′), *n.* [Amer. Sp. use of Sp. *valentón*, an arrogant, vainglorious person.] A characinoid fish of the Orinoco.

> The Orinoco is full of fish of many varieties, amongst them the "*valenton,*" a kind of tarpon, the voracious carib fish. *Geog. Jour.* (R. G. S.), XIII. 47.

valeral (val′ẹ-ral), *n.* [*valer*(*ic*) + *-al*3.] A colorless, mobile liquid, $CH_3(CH_2)_3CHO$, prepared by the distillation of a mixture of calcium normal valerate and calcium formate. It boils at 103.4° C. Also called *normal valeraldehyde, normal valeric aldehyde* or *pentanal.*

valeraldehyde, *n.*—**Normal valeraldehyde.** See ⋆*valeral.*

valeramide (val-ėr-am′id), *n.* [*valer*(*ate*) + *amide.*] A colorless compound, $CH_3(CH_2)_3$-$CONH_2$, prepared by heating ammonium valerate. It crystallizes in pearly, lustrous plates, melts at 114–116° C., and may be sublimed. Also called *normal valeric amide.*

valerene (val′ẹ-rēn), *n.* [*valer*(*ic*) + *-ene.*] Same as *amylene.*

Valerianales (vạ-lē-ri-a-nā′lēz), *n. pl.* [NL. (Britton, 1898), < *Valeriana* + *-ales.*] An order of dicotyledonous sympetalous plants characterized by having the flowers more or less aggregated in heads and the stamens fewer than the lobes of the corolla. It embraces the *Valerianaceæ* and *Dipsacaceæ*, or the valerian and teazel families.

valeric, *a.*—**Normal valeric amide.** See ⋆*valeramide.*

valeridine (va-ler′i-din), *n.* [*valer*(*al*) + *-id* + *-ine*2.] A colorless alkaloidal compound, $C_{10}H_{19}N$, prepared by the action of alcoholic ammonia on valeral.

valerin (val′ẹ-rin), *n.* [*valer*(*ic*) + *-in*2.] The general name for the three compounds formed by the action of valeric acid on glycerol. They are all colorless, oily, neutral liquids, $C_3H_7O_2(OCOC_4H_9)$, $C_3H_6O(OCOC_4H_9)_2$, and $C_3H_5(OCOC_4H_9)_3$, respectively.

valerine (val′ẹ-rin), *n.* [*valer*(*ic*) + *-ine*2.] Same as *amylene.* A trade-name.

valeritrine (va-ler′i-trin), *n.* A colorless, mobile liquid, $C_{15}H_{27}N$, prepared by heating valeral with alcoholic ammonia.

valero-. A combining form used, in organic chemistry, to denote the presence, in the molecule of a compound, of the valeryl radical $-CH_2(CH_3)CH_3$, or to indicate derivation from a compound of the methane series with five atoms of carbon.

valerol (val′ẹ-rol), *n.* [*valer*(*ian*) + *-ol.*] The name formerly applied to a mixture of substances obtained by the distillation of valerian oil.

valerone (val′ẹ-rōn), *n.* [*valer*(*ian*) + *-one.*] A colorless, mobile liquid, $[(CH_3)_2CHCH_2]CO$, prepared by the distillation of calcium isovalerate. It boils at 181–182° C. Also called *2,6-dimethyl-4-heptanone, diisobutyl ketone,* or *diisopropylacetone.*

valeroxyl (val-ėr-ok′sil), *n.* [*valer*(*ian*) + *ox*(*ygen*) + *-yl.*] Same as *valeryl:* an obsolete term.

valerylene (va-ler′i-lēn), *n.* [*valeryl* + *-ene.*] Same as 3-⋆*pentine.*

vali (vä′lē), *n.* [Turk. *wālī*, < Ar. *wālī*, a governor, < *walla*, appoint as governor or ruler.] The governor-general of a vilayet, or government, one of the primary divisions of the Turkish Empire.

> Travelling the next year with an open order to the *Valis* of Salonica and Monastir, supplied by the Ministry of the Interior. *Geog. Jour.* (R. G. S.), XVI. 215.

validol (val′i-dol), *n.* [L. *validus*, strong, + *-ol.*] The trade-name of a menthol valerate, $C_5H_9CO_2C_{10}H_{19}$, a clear, oily liquid with an aromatic odor. It has numerous medicinal uses.

valinch (val′inch), *n.* [Also formerly *valentia* (used in Suffolk): origin obscure.] Same as *thief-tube.*

valleite (va-lā′īt), *n.* [Named after Dr. la *Vallée*-Poussin.] A silicate near anthophyllite occurring in colorless and pale red crystals with the pink tremolite of Edwards, New York.

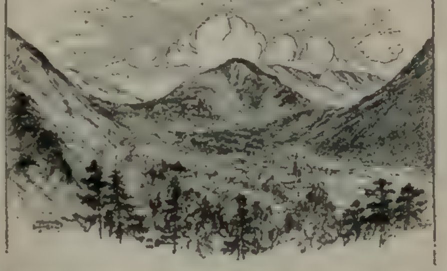
Vallet's mass. See ⋆*mass*2.

valley, *n.* **4.** The depression between two ridges of a tooth, typically shown in such molars as those of the tapir and mastodon: correlated with *lake*, which is a depression surrounded by a raised ridge of enamel such as occurs in the molars of a horse. *Amer. Jour. Sci.*, Feb., 1904, p. 134.—**Blind valley,** a valley inclosed at its lower end where the stream escapes by an underground passage.

> There are many *blind valleys* and hollows, the drainage water escaping underground.
> *Geog. Jour.* (R. G. S.), XVI. 681.

Cataclinal valley. See ⋆*cataclinal.*—**Dendritic valley.** See ⋆*dendritic*, 3.—**Diaclinal valley.** See ⋆*diaclinal.*—**Discordant valleys,** valleys that do not join each other at an even grade. The higher one of two such valleys is called a *hanging* ⋆*valley.* Valleys of this kind characterize mountains that have been strongly glaciated.

> The streams from the side valleys plunge down the rocky walls of the deepened main valley, forming fine waterfalls. *Discordant* side *valleys* of this kind are called hanging valleys. *W. M. Davis*, Elem. Phys. Geog.



Hanging valleys, at right and left, opening into main valley.

Hanging valley, a lateral valley which opens in the side wall and above the floor of the main valley, so that the lateral stream cascades into the main valley. Hanging valleys are particularly characteristic of mountains that have been strongly glaciated; their discordant relation to the open main valley is there explained by the excess of glacial erosion in the main valley. They occur exceptionally on the sides of narrow cañons, where a small lateral stream has not yet worn down its valley so as to join the master stream at accordant grade; also on bold coasts where the sea has worn away the lower ends of small valleys.—**Schroeter's valley,** a deep cleft on the moon's surface near the bright crater Aristarchus.—**Structural valley,** a valley which is a direct result of the geological structure of a region, such as one produced by a syncline.—**Tectonic valley,** a valley formed by movements of the earth's crust, instead of by the erosive action of rivers.—**Through valley.** See the extract.

> A prominent feature in regions of former glaciation, both of continental glaciers and mountain-valley glaciers, is the presence of *through valleys*, that is, valleys in which there is now no pronounced divide. Such valleys abound in the Finger Lake region of central New York, and they are common also in Alaska, and, as Penck has shown, in the Alps. The evidence points to the conclusion that many of these through valleys owe their characteristics to the passage of ice across divides, and the consequent lowering of the divides by glacial erosion.
> *Pop. Sci. Mo.*, Feb., 1907, p. 119.

Valley glacier. See ⋆*glacier.*—**Valley of solution,** valleys excavated by the dissolving power of water, almost always in limestone.

> '*Valleys of Solution* in Northern Arkansas' are discussed by A. H. Purdue. They are described as steep and bilaterally symmetrical, with remarkable straightness, due, no doubt, to their connection with jointing planes. *Science*, March 22, 1901, p. 466.

valley-floor (val′i-flōr), *n.* The flat bottom of a valley as excavated during an earlier drainage cycle. It may then be buried under a cover of later silts and gravels.

> The full depths of the silt deposits that cover these remnants of the *valley floors* were not determined, as all the wells examined were very shallow, reaching a sufficient water supply very near the surface.
> *W. G. Tight*, in U. S. Geol. Surv., Prof. Paper 13, p. 59.

valley-train (val′i-trān), *n.* Stratified glacial debris occurring in a narrow belt along the axis of a valley, outside the region occupied by a glacier.

> The stratified drift assumed different forms in different positions. Outside the moraine it was sometimes deposited in the form of plains (overwash plains), as from Plainfield to Metuchen, and sometimes in the form of narrow belts along valleys (*valley trains*). Within the area covered by the ice, it sometimes assumed the form of hillocks (kames), especially where the water issued from beneath the ice.
> *R. D. Salisbury*, in Geol. Surv. New Jersey, 1894, p. 144.

vallum, *n.* **3.** A name given, incorrectly, to a ditch with earthworks on either side, which follows the line of Hadrian's wall in northern England. See the extract.

> The "*vallum*" can no longer be explained as of old, but it is still a puzzle. Many of its features have been elucidated by recent excavations. . . . The "*vallum*" is one of the largest of extant Roman earthworks; speculation has busied itself about it for two centuries, and excavation for some years. It remains unexplained, a proof of the imperfection of our knowledge of antiquity.
> *Encyc. Brit.*, XXXII. 281.

valorization (val″ọr-i-zā′shọn), *n.* [L. *valor*, value (see *valor*), + *-ize* + *-ation.*] The act of placing a value upon (something); valuation; the act of fixing the price of (some commodity). See the extract.

> To help coffee planters, Brazil will, in accordance with the provisions of the law of August 6, 1906, purchase coffee at about eight and one-half cents a pound. . . . It is proposed to purchase coffee on account of the three coffee producing Brazilian States, whenever the price of coffee falls below about eight and three-eighths cents a pound. Since 1901 the price of coffee has, with very few exceptions, been below the cost of production. The financing of the *valorization* scheme is provided for by the issuing of bonds by the three coffee producing States, guaranteed by the general government.
> *Amer. Political Sci. Rev.*, Feb., 1907, p. 249.

valsoid (val′soid), *a.* [*Valsa* +*-oid.*] Resembling or pertaining to the genus *Valsa* (which see).

valuate (val′ụ̄-āt), *v. t.*; pret. and pp. *valuated*, ppr. *valuating.* To place a value on; compute the value of; appraise.

> I am, if you will excuse a rather technical pleasantry, an encumbrance on the estate. The actual harm I can do, I leave you to *valuate* for yourself.
> *Stevenson and Osbourne*, The Wrecker, xix.

valuation, *n.*—**Valuation area,** a forest area of known size upon which measurements or other detailed studies are made for the determination of the stand or yield. See ⋆*experiment area.* Also called *sample plot, sample area.*—**Valuation survey,** the measurement or other detailed study of the stand upon a valuation or experiment area. Two kinds of valuation survey are distinguished: (*a*) The *strip survey* comprises the measurement of a stand, or a given portion of it, upon strips usually one chain wide. (*b*) The *plot survey* comprises the measurement of the stand, or a given portion of it, upon isolated plots not in the form of strips.

value, *n.*—**Absolute value of a complex number.** See ⋆*number.*—**Absolute value of a real number.** See ⋆*number.*—**Book value.** See ⋆*book.*—**Calorific value.** See ⋆*calorific.*—**Cardinal value,** in *psychophys.*, the value of the stimulus or of sensation at the cardinal point. *G. T. Fechner* (trans.), Psychophysik, II. 49.

> Wundt conjectures that the maximal pleasure coincides with this *cardinal value* of sensation.
> *O. Külpe* (trans.), Outlines of Psychol., p. 250.

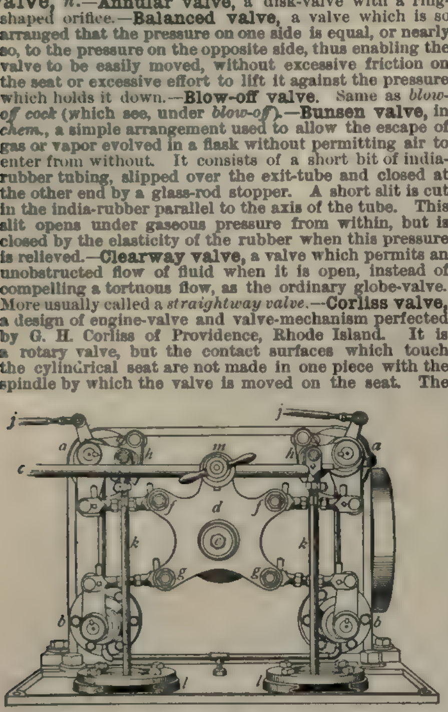
Critical value, a value of the variable at a critical point of a function.—**Economic value,** the capacity of a commodity or service to increase human well-being either through the direct satisfaction of wants, or through the power of producing, or commanding in exchange, commodities or services which directly satisfy wants.—**Effective value,** in *elect.*, that mean value of an alternating current, electromotive force, etc., which gives the same average effect or power as the periodically varying actual current, etc. It is the square root of the mean square of instantaneous values, and is the value recorded by all alternating-current instruments, meters, etc. See ⋆*alternating.*—**Ether value.** See ⋆*ester number.*—**Final utility theory of value,** in *polit. econ.*, the theory that the value of any commodity is determined by the utility, or want-satisfying power, of that unit of the supply which is put to the least important use.—**Intrinsic value.** (*a*) Inherent usefulness of a commodity, as contrasted with its market value. Thus diamonds are sometimes said to have little intrinsic value, though commanding a high price. This use is practically obsolete. (*b*) Value which is socially recognized, in contrast with purely personal valuation. Thus an heirloom may be said to be of small *intrinsic value*, although highly valued by its possessor. (*c*) Value as determined by ordinary market conditions, as contrasted with value with which an object is endowed by virtue of convention or governmental fiat. Thus paper money is often said to be devoid of intrinsic value.—**Most frequent value,** that value which occurs most frequently in the course of a series of observations, or that value toward which the others seem to crowd most thickly. Also called the *most crowded value*, the *favorite* *value*, the *median value*, and the *prevailing value*. The German term *scheitelwerth* is also sometimes used by English writers. —**Saponification value,** in the analysis of fats, the number of milligrams of potassium hydroxid required completely to saturate the free and combined acids of one gram of a fat. Also called *saponification number* or *Koettstorfer's number*.—**Turning value.** (*a*) In *graphics*, the ordinate of a turning point. (*b*) In *math.*, the value of the function represented by the ordinate of a turning point.—**Value in use,** in classical *polit. econ.*, the capacity of an object for the satisfaction of human wants. In modern political economy, the term *utility* is employed instead.

value, *v. t.* **II.** *intrans.* See ★*cruise*¹, 2.

valuer, *n.* **2.** See ★*cruiser*, 2.

valv, *n.* A simplified spelling of *valve*.

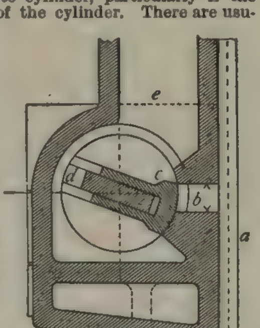
valve, *n.*—**Annular valve,** a disk-valve with a ring-shaped orifice.—**Balanced valve,** a valve which is so arranged that the pressure on one side is equal, or nearly so, to the pressure on the opposite side, thus enabling the valve to be easily moved, without excessive friction on the seat or excessive effort to lift it against the pressure which holds it down.—**Blow-off valve.** Same as *blow-off cock* (which see, under *blow-off*).—**Bunsen valve,** in *chem.*, a simple arrangement used to allow the escape of gas or vapor evolved in a flask without permitting air to enter from without. It consists of a short bit of india-rubber tubing, slipped over the exit-tube and closed at the other end by a glass-rod stopper. A short slit is cut in the india-rubber parallel to the axis of the tube. This slit opens under gaseous pressure from within, but is closed by the elasticity of the rubber when this pressure is relieved.—**Clearway valve,** a valve which permits an unobstructed flow of fluid when it is open, instead of compelling a tortuous flow, as the ordinary globe-valve. More usually called a *straightway valve*.—**Corliss valve,** a design of engine-valve and valve-mechanism perfected by G. H. Corliss of Providence, Rhode Island. It is a rotary valve, but the contact surfaces which touch the cylindrical seat are not made in one piece with the spindle by which the valve is moved on the seat.



Corliss Valve.

a, *a*, live-steam inlet-valves; *b*, *b*, exhaust-steam outlet-valves; *c*, valve-rod from eccentric rocker-arm actuating the valve-gear; *d*, wrist-plate, having an oscillatory or rocking motion around its center *e*; *f*, *f*, attachment of steam-rods, which open *a*; *g*, *g*, attachment of exhaust-rods, which open and close *b*; *h*, *h*, dogs or catches or claws which can be unhooked from the valve-stems or spindles of *a* by the governor-rods *j*, *j*; *k*, *k*, dash-pot links, attached to the valve-spindle and acting to close the valves *a* when catches *h* are released by *j* by means of weights of pistons in *l*; *l*, *l*, dash-pots acting to cushion the descent of *k* and prevent undue shock; *m*, wrist-plate pin by which *c* can be released from *d* for starting.

The valve also does not fill the cylindrical hollow completely. These features preclude the seizing of the valve by the casing on unequal expansion by heat. The valve-port is transverse to the cylinder axis. The passage can be very short from valve-chest to cylinder, particularly if the valves are in the heads of the cylinder. There are usually four of these valves, one for the inlet of steam and one for exhaust at each end. The valves for letting in steam are made to close by having the mechanism which opens them released or tripped, so that the valve may drop shut quickly by the action of a weight. To prevent slamming or shock when the weight acts, the rod which carries the weight is fitted with a dash-pot, or cylinder in which fits an air-piston, which cushions the fall. Atmospheric pressure may be used on these dash-pot pistons to help quick closure. The point of trip or release is controlled by the governor. The exhaust-valves are not tripped but are positively connected to the wrist-plate which drives all four of the valves. This wrist-plate or spider is given a rocking motion round its axis by an eccentric-rod from the engine-shaft.



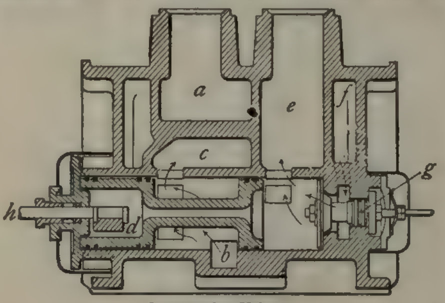
Corliss Valve.

a, bore of cylinder; *b*, steam-port or passage leading from steam-chest *e* to *a*. *c*, shell or valve proper, opening *b* to *e* when revolved around its axis; *d*, valve-spindle or -stem, revolved by the valve mechanism without from the wrist-plate, but not forming one piece with *c*; *e*, passage from steam-chest full of live steam, ready to pass into *b* and *a* when valve is opened.

The steam-valve rods are attached near the vertical diameter through the axis of the plate, and the exhaust-valves nearer the horizontal diameter. This gives a holding open to the exhaust-valves, and a quick opening to the steam-valves. The Corliss gear gives a variable admission as the load varies, but a constant release of the exhaust, and a constant compression to act as a cushion for the reciprocating mechanism. It gives high initial pressure in the cylinder and a sharp cut-off.—**Cornish valve,** a double-beat or double-seat lifting- or disk-valve, in which the pressure on the upper disk is balanced by an equal pressure on the lower disk in the opposite direction: used first in the Cornish pumping-engines for mines, for the water-valves at the foot of the ascending water-column.—**Cowburn valve,** a dead-weight safety-valve; a form of safety-valve to which the weight is applied by placing it directly on top of the valve without the interposition of any lever or spring. The advantage of this is that the weight on the valve is a direct multiple of the pressure at which it will blow off.—**Cut-off valve.** See ★*cut-off*.—**Double-beat valve,** a lift-valve having two disks, each with a seating-face, so that the steam-pressure acts to open the valve as well as to close it, thus making practically a balanced valve. Such a valve is easily moved and does not wear rapidly, as the valve lifts off the seats instead of sliding. Also called a *Cornish valve*, because of its extensive use on Cornish pumping-engines.—**Double-face valve,** a valve intended to seat, as desired, upon one of two seats which are opposite to each other in the casing inclosing the valve. The valve seats, therefore, either upon its upper or upon its lower face, according to its position.—**Double-seat valve,** same as Cornish, or double-beat valve, or the balanced puppet-valve with two disks on a single spindle.—**Ectal valve,** the outer of the two folds or valves by means of which the branchiopore, or external opening of the water-tube, of a lamprey is closed.

Synchronously with the forwardly directed current there is a closure of the external branchiopore by means of the *ectal* and ental *valves*. *Science*, Feb. 5, 1904, p. 219.

Electric valve, an electric apparatus which permits currents to pass in one direction only, and therefore can be used to rectify alternating currents. See ★*rectifier*. Such valves are: (*a*) the aluminium cell, consisting of an aluminium and a carbon or lead plate in an electrolyte; (*b*) metal arcs, especially the mercury arc.—**Ental valve,** the inner of the valves, or folds of membrane, with which the water-tube of a lamprey is provided. See the extract under *ectal* ★*valve*.—**Flat valve.** (*a*) A valve which slides upon a flat or plane surface, as a face or contact surface. (*b*) A lifting-valve in which the contact with the top surface above the opening in the seat has a plane or flat area, as distinguished from one in which a part of the surface of a cone fits into a conical edge in the opening.—**Full-way valve,** a gate-valve; a valve which gives the full straightway opening, and causes no constriction of the passage through which the fluid is to pass.—**Hanging valve.** (*a*) A valve which is hinged and falls by gravity or by a spring-pressure so as to form an abutment in a rotary engine. It is lifted by the piston as it passes. (*b*) A clack- or flap-valve.—**Induction valve.** (*a*) A valve through which a fluid is admitted. (*b*) Specifically, in an internal-combustion motor cylinder, the valve through which the combustible mixture of fuel and air enters, having been previously proportioned by proper mixing apparatus, usually also valves.—**Intercepting valve,** a valve used in compound engines, and particularly in the compound locomotive, to enable the engineer to start the engine with boiler-steam in the low-pressure as well as in the high-pressure cylinder, or with the engine operating as a two-cylinder simple engine. Sometimes called a *simpling valve*.



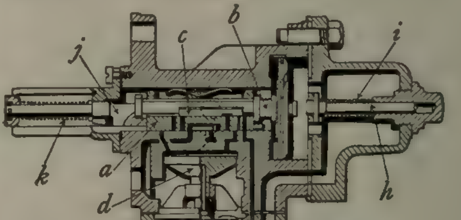
Intercepting Valve.

a, high-pressure steam from boiler dry-pipe; *b*, exhaust from high-pressure cylinder; *c*, passage to open air for high-pressure exhaust. In the position shown of the piston intercepting valve *d*, the exhaust-steam passes freely from *b* to *c* through the ports, as shown by arrows. *e*, passage to receiver by pipe leading to low-pressure cylinder; *f*, chamber fed by live boiler-steam through an independent pipe, with valve under control of engine-man; *g*, reducing-valve, permitting live steam at reduced pressure to pass directly from *f* to *e* and reach low-pressure piston without going through the high-pressure cylinder; *h*, rod leading to engine-man's cab, either to independent lever or by connections to the lever of cut-off and reversing motion. In the position shown, the engine is working simple, the high cylinder exhausting to the atmosphere, the low receiving boiler-steam directly through *f* and *g* through *e*. When *d* is moved to the right as far as it will go, the ports leading from *b* to *c* are closed by the cylindrical surface at the left-hand part of *d*, but steam can pass directly from *b* to *e*, and so from high- to low-pressure cylinders through the receiver. At the same time the valve *g* is forced shut by the position of *d* and no live steam passes from *f* to *e*. The engine now works compound.

In its simplest form, boiler-steam is admitted through it to the passage from the high to the low cylinder, and hence acts to drive the low piston, with a back pressure upon the exhaust side of the high. In better forms, the high-pressure exhaust is cut off from the passage to the low-pressure cylinder and turned into the exhaust-pipe directly, when pressure is let into the low cylinder from the boiler. The intercepting valve is also made either automatic or non-automatic. In the automatic type, after a few strokes as a simple engine, the pressure accumulating in the receiver between the cylinders will cause a piston attached to the valve to move and close it, and the engine becomes compound, even against the will of the engineer. In the non-automatic types, the engineer controls the change from simple to compound at his will. He can bleed live steam into the low-pressure cylinder, if he desires, on grades or when he wants to make up time, sacrificing some economy thereby, but keeping up to his time-schedule. Motor-cars using compound steam-engines have also an intercepting valve for use in starting, or on bad ground.—**Lapless valve,** a slide- or other valve having no lap on the end, but just covering the opening from end to end, when in mid-position.—**Monkey-tail valve,** a name used at sea for what is elsewhere called the *by-pass valve*, whereby live steam from the pipe leading from the boiler can be bled into the passage or port of the low-pressure cylinder of a compound engine for starting, or warming, the cylinder, or to increase the power of the engine for a short time, although at the expense of loss of economy.—**Mushroom valve,** a form of lifting-valve having a circular thick flat disk on the end of a guiding and lifting valve-stem. The combination suggests a mushroom or toadstool in shape: much used in internal-combustion motors for inlet of gases to the combustion and compression chamber and for outlet of exhaust or waste gases.—**Nodon valve,** in *elect.*, a form of electrolytic rectifier using aluminium as negative terminal, designed by Nodon. See ★*rectifier*.

The *Nodon valve* is an application of a peculiar property of aluminium which causes it to resist the passage of a current when it is made the positive pole of an electrolytic cell, while offering little or no resistance when it is the negative pole. *Lancet*, April 18, 1903, p. 1108.

Non-advancing stem valve. See ★*spindle-valve*.—**One-way valve,** a valve so constructed that flow through it is possible in one direction only, and it closes under a reverse of the flow; a check-valve.—**Pneumatic valve,** a valve used to make an opening air-tight or to stop the flow of air. It may be a clack-valve, a disk-valve, or a slide-valve, and is made light or strong according to its use.—**Pulverizing valve,** a valve with an opening of small diameter, through which the liquid must pass at high velocity, so as to be broken up or atomized to form a mist of very small particles, or in a fine state of division: used for liquid fuel, that the mixture of atomized fuel and air may be readily combustible, and the combustion may be smokeless because complete. *The Engineer* (London), 1903, p. 111.—**Rectal valves,** transverse folds or rugæ in the mucous membrane of the rectum.—**Retaining valve,** a valve designed to prevent back-flow in pumps or water-columns should the usual valves leak: particularly used in pumping in series or by successive lifts to prevent water which has been delivered to the ascending column from working back. The foot-valve at the bottom of a suction-pipe in a well or cistern is a retaining valve.—**Rotating valve.** (*a*) A flat valve, usually a circular disk, which rotates around its axis to open and close ports or openings made in the flat face against which it is pressed. (*b*) A cylindrical valve, fitting a cylindrical casing, controlling openings or ports made in the cylindrical surface by a rotation of the cylinder around its axis. When the valve is a cone fitting a conical surface it is a plug-valve.—**Screw-down valve,** a form of valve, for opening and closing a passage, in which a disk, ball, or cone is raised and lowered off and on a seat by a spindle having a screw-thread fitting a nut: distinguished from a gate or any sliding valve, whatever the position of the axis.—**Straight-through valve,** one in which the flow of the material which it controls is not deflected or resisted by the construction of the seat of the valve: the gate-valve is of this type. Called also *straightway valve*.—**Straightway valve.** Same as *clearway* ★*valve*.—**Test-valve.** (*a*) A valve, or an opening closed by a valve, through which a sample may be taken of the material flowing through the pipe or passage, for purposes of test or experiment. (*b*) A valve held shut by a determined force, such as a weight or spring, so that by it the pressure in the duct or passage may be tested.—**Triple valve,** in a continuous brake system for railway trains, in which compressed air supplies the power, the valve between the brake-pipe, the car (auxiliary) reservoir, and the brake-cylinder under each car, by means of which the engineer can, at will, (*a*) charge the auxiliary reservoir with compressed air, (*b*) apply the brake, and (*c*) release the brake. Its essential elements are a balanced piston, on one side of which is the pressure in the brake-pipe and on the other side the pressure in the auxiliary reservoir; a slide-valve, on top of which is the pressure in the auxiliary reservoir; and a graduating-valve, which opens or closes certain ports in the slide-valve. When charging the system, air from the brake-pipe passes through a feed-groove around the piston of the triple valve and so into the auxiliary reservoir, charging it with compressed air, the slide-valve meanwhile connecting the brake-cylinder to the exhaust port and atmosphere through ports in its face.



Diagrammatic Section of Triple-Valve, Standard Freight Type.

a, slide-valve; *b*, main piston; *c*, graduating-valve; *d*, emergency-piston; *e*, emergency-valve; *f*, check-valve spring; *g*, check-valve; *h*, graduating-stem; *i*, graduating-spring; *j*, retarding-stem; *k*, retarding-spring.

When the pressure in the brake-pipe falls below that in the auxiliary reservoir, the balance of pressure on the piston is destroyed and the piston moves toward the now lower brake-pipe pressure, carrying with it the graduating- and slide-valves which (*a*) cut off the auxiliary reservoir from the brake-pipe, (*b*) cut off the brake-cylinder from the atmosphere, and (*c*) connect the auxiliary reservoir with the brake-cylinder, thus admitting compressed air to the brake-cylinder, which forces the piston in this cylinder outward, and, through the connecting levers and rods, sets the brake. For any definite reduction in brake-pipe pressure short of the point at which the brake-cylinder and auxiliary reservoir pressures equalize, the increase of brake-cylinder pressure continues until the auxiliary reservoir pressure falls slightly below that remaining in the brake-pipe when the triple-valve piston returns in the direction of the now lower auxiliary reservoir pressure, carrying with it the graduating-valve, until the latter cuts off the flow of air from the auxiliary reservoir to the brake-cylinder, when all communication through the triple valve is closed. When the pressure in the brake-pipe is then increased above that in the auxiliary reservoir sufficiently to overcome the resistance of both the piston and slide-valve, the parts return to their first position, charging the auxiliary reservoir anew and connecting the brake-cylinder to the atmosphere, which releases its charge and allows the release-springs to return its piston with the attached levers, rods, and brake-shoes to their original positions and releasing the shoes from the wheels. Various improved types of triple valves are now in use, providing for differentiating between service and emergency brake-cylinder pressures, for graduating the release of all brakes in the train, for a rapid serial service application of all the brakes in long trains, for uniform releasing and uniform recharging of all the brakes in long trains, and so on.—**Two-port valve**, a valve having two ports or openings. These may be designed to control admission and secure admixture of two fluids, as in the mixing valves for gas and air in internal-combustion engines; or the valve in its motion may open two ports or openings, together or in succession, for the passage of the controlled fluid. *Elect. Rev.*, Sept. 24, 1904, p. 517.—**Valve of Gerlach**, a fold of mucous membrane sometimes present, like a valve, at the entrance of the vermiform appendix.—**Velar valve**, the valve formed by the velum, or fold of membrane around the mouth opening of a lamprey: an important part of the sucking apparatus by which the animal adheres to its prey.—**Vibrating valve**, a plug-cock which has an oscillating motion to admit steam to and exhaust it from a steam-cylinder.

valve-box (valv′boks), *n.* 1. See ★*gate-box.* —2. Same as ★*valve-chest.*

valve-cage (valv′kāj), *n.* A lattice or grid construction over a lifting-valve of the ball type, intended to prevent the ball-valve from rising too far in the flow of the fluid past it, and to compel it to return to its place on the valve-seat when the flow tends to reverse.

valve-casing (valv′kā″sing), *n.* 1. The shell or chamber around a rotating cylindrical valve, or a conical plug-valve, in which the ports or openings are formed which the valve is to control.—2. The shell or body of the valve in globe- or gate-valves, within which are formed the contact areas or seating of the valve.

valve-chest (valv′chest), *n.* The casing or box inclosing the valve of a steam-engine. See ★*steam-chest*, 1.

> Taking boiler and *valve-chest* pressures and vacuum pressures on the roof and in the engine-room.
> *Nature*, Sept. 25, 1902, p. 535.

valve-face (valv′fās), *n.* The finished surface or face on which the valve, by sliding or lifting, moves and fits to open and close the passage or passages which it is to control. In sliding-valves this face is a plane; in lifting-valves it is a plane or a segment of the surface of a cone.

valve-gear, *n.*—**Trip valve-gear**, an engine valve-gear in which the cut-off is effected by the tripping or releasing of a lever which holds the steam-valve open, as in the Corliss or Green engines.

> The engines are vertical, cross-compound, condensing engines with Corliss *trip-valve gear* driven by separate eccentrics. *Elect. Rev.*, Aug. 8, 1903, p. 197.

valve-head (valv′hed), *n.* That part of the valve which closes the opening; the valve proper as distinguished from the stem.

valve-hook (valv′hu̇k), *n.* The hook on the rod which actuates a valve and which engages with a pin on the valve-stem or other element of the gear to drive it. See *gab*[4]. *Trans. Amer. Inst. Elect. Engin.*, 1904, p. 638.

valve-key (valv′kē), *n.* 1. A form of socket-wrench having a T-head, or other shape resembling the winding-key of a clock, which fits the squared or prismatic shape on the end of a valve spindle. It is designed for use where the valve should not be opened or shut except by one duly authorized and possessing such a key or wrench.—2. A key fitting the lock which is on the casing surrounding a safety-valve or other valve, and by which tampering with the valve is prevented.

valve-line (valv′līn), *n.* A line fastened to the valve at the top of a balloon, by pulling which the valve is opened.

valve-plate (valv′plāt), *n.* 1. A flat plate forming part of the seat of a valve, usually the contact portion, so that it can be renewed on wear or leakage without discarding or refinishing the entire casting.—2. A plate fitting over the end of the casing of a cylindrical valve, serving to guide the valve and close the opening.—3. A plate covering an opening into a valve-chest. Usually called a *bonnet.*

valve-port (valv′pôrt), *n.* One of the openings on a valve-seat, by which the passages to the cylinder or chamber are put into communication with the pressure-fluid; also any one of the similar openings through which pressure is relieved and the fluid escapes.

valve-ring (valv′ring), *n.* A packing-ring used on the back of a valve under pressure, so as to prevent such pressure from gaining access to the entire area of the valve and forcing it to its seat so that it will be hard to move. The ring slides upon a finished surface, and is held thereto by springs.

valve-rod (valv′rod), *n.* The rod which actuates or drives a valve-stem; the rod which is fastened to a valve to move it back and forth.

valve-seat (valv′sēt), *n.* The finished contact area upon which the lifting-valve rests when closed, and the sliding-valve slides to open and close the ports. In lifting-valves it is usually annular, and either flat or conical in form.

valve-sector (valv′sek″tor), *n.* 1. A link with a slot struck with an arc of a circle as center-line, used in the operation of certain valve-gears. Called also a quadrant.—2. A special name for a link in the valve-gear of certain types of oscillating engines.—3. The notched sector into which the latch catches on the levers which operate throttle-valves, so that the lever can be locked in position.—4. The notched sector or quadrant in which the lock or latch of the reverse lever in Stephenson link-motions can be engaged to hold the lever in desired positions.

valve-spindle (valv′spin″dl), *n.* The stem or axis on which a valve is fastened and which transmits motion from outside of the steam or valve-chest to the valve proper within it. In sliding- and lifting-valves the spindle or stem slides in and out through a stuffing-box; in rotating valves it turns around its own axis. 'Spindle' is not correctly applied to the stems of screw-valves for pipe.

valve-stem, *n.* 1. When the spindle or stem raises and lowers the valve by drawing the latter as a nut on a screw, the stem is said to be *non-advancing*, since it does not move in and out. When the nut is in the casing and the stem is threaded, the construction is called an *advancing stem*, since it moves in and out.
2. Any rod by which a gate or valve is lifted, as in sluice- or weir-gates at dams, or for water-wheels.

valve-strip (valv′strip), *n.* A straight piece acting as the valve-ring and used on rectangular balanced valves instead of a ring, to serve as a distance-piece and packing-strip between the valve and the pressure-plate.

valve-trumpet (valv′trum″pet), *n.* A trumpet with valves and keys.

valvolene (val′vọ-lēn), *n.* A trade-name for a lubricating-oil of high boiling-point suitable for use on the valves and other working parts of a steam-engine which are exposed to contact with the steam.

valvotomy (val-vot′ọ-mi), *n.* [L. *valva* (see *valve*) + Gr. τομή, a cutting, < τέμνειν, ταμεῖν, cut.] In *surg.*, operation for the division of any valve, and specifically for division of the rectal valves.

valvula, *n.* 2. In *entom.*, same as ★*uropatagium.*

Valvular insufficiency. See ★*insufficiency.*

valvule, *n.*—**Cardiac valvule.** See ★*cardiac.*

valylene (val′i-lēn), *n.* [*val*(*erian*) + *-yl* + *-ene.*] A colorless, oily compound, $CH:C(CH_3)C\vdots CH$, or $CH_3CH:CHC\vdots CH$, prepared by the action of alcoholic potassium hydroxid on valerylenedibromide. It has an odor of garlic and boils at 50° C.

vamp-skiver (vamp′skī″vėr), *n.* In *shoe-manufacturing*, a special form of skiving-machine for trimming vamps. One type employs a rotary knife. See *skiving-machine.*

van[1], *v. t.*—**Vanning jig**, in *mining*, a movable sieve jig with a combined vertical and endwise movement. These machines are built of large size and have large capacity, treating several hundred tons of ore per day, the vanning movement facilitating the travel of the ore through the machine.

van[3], *n.* 4. The small store in a logging-camp in which clothing, tobacco, and medicine are kept, to supply the crew.

vanadio-. See ★*vanado-.*

vanadiotungstate (vạ-nā″di-ọ-tung′stāt), *n.* A salt which contains the radicals of both vanadic and tungstic acids. A number of such compounds have been obtained and described. Also called *vanadotungstate.*

vanadious, *a.* 2. More specifically, containing vanadium as a constituent with apparently triad valence: as, *vanadious* oxid, V_2O_3. Vanadious salts in solution have a green color; they have not been much examined. Also *vanadous.*

vanadium, *n.* Metallic vanadium in a compact state has been obtained by fusion in an electric furnace. It has a gray color, is lustrous, and, as thus far observed, brittle, though perhaps this may be due to impurity of the metal; it is with difficulty freed from oxygen, carbon, and nitrogen.—**Vanadium steel.** See ★*steel*[1].

vanado-. In *chem.*, a prefix to the name of a compound, signifying the presence of vanadium as a constituent: as, for instance, potassium *vanadofluoride*, K_2VF_5. Also written *vanadio-.*

vanadyl (van′a̤-dil), *n.* [*vanad*(*ium*) + *-yl.*] In *chem.*, hypovanadious oxid, V_2O_2, or rather VO, when it occurs as a triad radical in combination, as in normal vanadyl sulphate, $(VO)_2(SO_4)_3$.

Vancouver system. See ★*system.*

vandal-root (van′da̤l-röt), *n.* See ★*root*[1].

Vandemonian (van-dē-mō′ni-a̤n), *a.* and *n.* [Humorously from *Van Diemen's* (Land).] I. *a.* Of or pertaining to Van Diemen's Land (now Tasmania); Tasmanian.

II. *n.* An inhabitant of Van Diemen's Land (Tasmania); a Tasmanian; specifically, one of the early convict settlers of Tasmania. [Obsolete in all uses.]

> The *Van Diemonians*, as they unpleasingly call themselves, or permit themselves to be called, are justly proud of their horse-flesh.
> *G. C. Mundy*, Our Antipodes, p. 533. Quoted in E. E. [Morris, Austral English.

> "I never wanted to leave England," I have heard an old *Vandemonian* observe boastfully. "I was n't like one of these 'Jemmy Grants' (cant term for 'emigrants'); I could always earn a good living; it was the Government as took and sent me out."
> *Cassell's Magazine*, 1867, p. 440. Quoted in E. E. Mor- [ris, Austral English.

Vandemonianism (van-dē-mō′ni-a̤n-izm), *n.* [*Vandemonian* + *-ism.*] Rowdy conduct like that of an escaped convict. See ★*Vandemonian.* *Austral English.* [Obsolete.]

> Mr. Houston looked upon the conduct of hon. gentlemen opposite as ranging from the extreme of *vandemonianism* to the extreme of nambypambyism.
> *Victorian Hansard*, April 22, 1863, p. 701. Quoted in [E. E. Morris, Austral English.

Van der Waal's equation. See ★*equation.*

van-john (van-jon′), *n.* A corruption of *vingt-et-un*, current in England in the middle of the nineteenth century. *N. and Q.*, 9th ser., IX. 384.

vanman (van′ma̤n), *n.*; pl. *vanmen* (-me̤n). [*van*[3] + *man.*] A man who drives a van.

> A *vanman* who was near at the time was knocked down [by lightning], and a florist working in his garden was enveloped in a ring of flame and whirled several yards, while the spade with which he was working was hurled over the hedge. *Nature*, April 18, 1907, p. 589.

vanmost (van′mōst), *a.* Foremost in the van; leading the van. [Rare.]

> Ziethen, *vanmost* of all, finds Nadasti and his Austrian squadrons drawn across the Highway.
> *Carlyle*, Frederick the Great, XVIII. iv.

Vannic (van′ik), *a.* and *n.* [*Van* (see def.) + *-ic.*] Of or pertaining to the language of the cuneiform inscriptions of the Lake Van district; also, to the kingdom in which this language was used, and whose capital was at Van; the language itself.

> These inscriptions are the records of kings whose capital was at Van, and who marched their armies in all directions during the ninth, eighth, and seventh centuries before our era. The latest date that can as yet be assigned to any of them is B.C. 640. At this time there were still no speakers of an Indo-European language in Armenia. The language of the inscriptions has no connection with those of the Indo-European family, and the personal and local names occurring in the countries immediately surrounding the dominions of the *Vannic* kings, and so abundantly mentioned in their texts, are of the same linguistic character as the *Vannic* names themselves.
> *A. H. Sayce*, in Smithsonian Rep., 1890, p. 483.

vantage, *n.*—**Vantage in**, in *lawn-tennis*, vantage scored by the serving side.—**Vantage out**, in *lawn-tennis*, vantage scored by the receiving side.—**Vantage set**, in *lawn-tennis*, when deuce sets have been called, a single set above deuce.

Van t'Hoff's dilution law. See *Ostwald's* ★*dilution law.*

Vaphio cups. See ★*cup.*

vapor, *n.*—**Capacity for vapor,** in *meteor.*, the maximum quantity of vapor that can be contained in a unit volume of space or of air. The presence of the air within that space is supposed not to affect the capacity for vapor.—**Elastic force of vapor,** the pressure exerted by saturated vapor in rising from, or separating from, its mother liquor at a given temperature. When there is not sufficient vapor within a given space to saturate it at the given temperature, the elastic force is diminished in the ratio of the volumes, and the vapor does not resist compression until it has been reduced to the volume of saturation.—**Vapor actinometer.** See ★*actinometer.*—**Vapor density.** See ★*density.*

vapor-bound (vā′po̤r-bound), *a.* Filled with water-vapor or air the expansion of which prevents the atmospheric pressure from filling the chamber with water on the sucking or aspirating stroke: said of a pump.

vapor-bridge (vā′po̤r-brij), *n.* The name sometimes given to the column of hot conducting gases between the terminals of an electric arc.

vapor-cure (vā′po̤r-kūr), *n.* A manufacturers' name for a method of vulcanizing india-rubber at one time in use. It consisted in exposing the articles to be treated to the action of the vapor of sulphur monochlorid in specially arranged chambers.

vapor-dust (vā′po̤r-dust), *n.* The smallest globules of water that have condensed from the aqueous vapor of the atmosphere and are floating in the air without being sufficiently numerous to form visible fog or haze, but are appreciable by other optical effects. Also called *dust-vapor.*

vapor-engine, *n.*—**Series vapor-engine,** a motor driven by a secondary vapor which is vaporized by the heat from the exhaust of a primary engine.

vaporer, *n.*—**Common vaporer.** Same as *old* ★*tussock-moth.*

vapor-glaze (vā′po̤r-glāz), *n.* A deposit of glaze or gloss, produced by volatilization, as a salt-glaze or smear-glaze.

vaporization, *n.*—**Heat of vaporization, latent heat of vaporization.** See ★*heat.*—**Molecular heat of vaporization.** See ★*heat.*

vaporizer, *n.* **2.** Specifically, a carbureter, or device by which liquid hydrocarbon, moving rapidly in a fine state of division in a current of air, becomes an explosive mixture with the air, or makes an air-gas mixed with the necessary air for combustion. *Trans. Amer. Inst. Elect. Engin.*, 1901, p. 95.

vaporizing-burner (vā′po̤r-ī-zing-bėr″nėr), *n.* A burner suitable for fluids, such as crude oil, which must first be broken up or atomized into vesicles or made into a vapor which is burned with admixture of air.

vapor-jacket (vā′po̤r-jak″et), *n.* A device of glass surrounding the bulb of a gas thermometer and enabling it to be heated by the vapors of pure liquids to definite temperatures. *M. W. Travers*, Exper. Study of Gases, p. 150.

vapor-lamp, *n.* **2.** See ★*mercury lamp.*

vaporless (vā′po̤r-les), *a.* [*vapor* + *-less.*] Devoid of vapor, as a perfect vacuum.

vapor-pressure (vā′po̤r-presh″ụr), *n.* See ★*pressure.*—**Vapor-pressure curve.** See ★*curve.*

varec, *n.* In the original French use of this word it applies to the seaweed itself before burning, but it is now commonly applied to the ash which results from the burning, utilized for the extraction from it of iodine and salts of potassium, as formerly of sodium carbonate. Also *vareck.*

variability, *n.*—**Coefficient of variability.** See ★*coefficient.*—**Relative variability,** in *statistics*, a measure of variability defined as $rv = \frac{A\ D \times 100}{M}$, where M is the mean of the series of observations, and AD is the average deviation or mean variation. Also termed *variation coefficient. Psychol. Bulletin*, I. 141.

variable. **I.** *a.*—**Variable nebula.** See ★*nebula.*

II. *n.*—**Cluster variable,** a variable star found in star-clusters some of which have already been found by photography to contain a great number of these objects, as, notably, the cluster known as ω Centauri, in which 122 have been detected.—**Long-period variable,** a variable star the period of which exceeds about two months, the interval between maxima being generally somewhat irregular. Mira, ο Ceti, is a typical example.—**Punctual variable,** a variable star which is perfectly regular in the interval between successive maxima or minima. The short-period variables of the β Lyræ type and the Algol variables are all punctual.—**Short-period variable,** a variable star characterized by continuous change of brightness, the maxima and minima following at regular intervals, and the period in most cases being short (from 5 hours to 6 or 8 weeks). β Lyræ is the type of the class. The changes are probably determined by the orbital revolution of two or more stars, but in just what way is still a problem.—**State variable,** one of the 3 variables, pressure (*p*), volume (*v*), and temperature (*θ*), which occur in the equation of state. See ★*equation.*

variance, *n.* **5.** In *phys. chem.*, that property of a chemical system which is expressed by the equation $V = c + 2 - \phi$, where V is the variance, c the number of independent components, and ϕ the number of phases in which the system may exist. Systems are said to be *invariant, univariant, bivariant, multivariant,* etc., according to the value of V.

variant, *n.* **2.** In *biol.*, a term introduced by Barrande to express a departure from the type of a species showing contemporaneous secondary modification of form and surface features, and contrasted with the *variety*, in which the principal characters of the species are retained accompanied by departures in one or more primary modifications. The distinction is obscure and has not been generally adopted.

variate, *a.* **II.** *n.* A single magnitude-determination of a character or quality common to a number of individuals.

> We see accordingly that the chance of an outlying observation being reasonable or not,—the observation consisting of a complex of *n variates,*—can be readily found, if the incomplete normal moment functions have once been tabled, and the constants of the correlation surface be known.
> *K. Pearson*, in Biometrika, March, 1908, p. 61.

variation, *n.* **8.** Specifically: (*a*) The diversity which is found in organisms, their parts, or their activities, when carefully compared, considered without reference to their succession in time, and without referring them to any fixed standard; the individuality of living beings.

> No two plants are indistinguishable, and no two animals are without differences. *Variation* is coextensive with heredity. *H. Spencer*, Prin. of Biol., § 85.

(*b*) The difference of offspring from the parent.

> To this phenomenon, namely the differences between the structure, the instincts, or other elements which compose the mechanism of the offspring and those which were proper to the parent, the name *Variation* has been given. *W. Bateson*, Study of Variation, p. 3.

(*c*) Statistical or formal abnormality in living beings, or the departure of individual organisms from the mean, average, or rule for the race, considered as a fixed standard or logical species which individual animals approach or from which they recede.

> To the biometrician . . . *variation* is a quantity determined by the class or group without reference to its ancestry. *H. H. Ellis*, in Pop. Sci. Mo., Jan., 1903, p. 252.

(*d*) A change in a living being which is due to its own activity as an individual, as contrasted with a change which is inherited. See the extract.

> Some authors use the term *variation* in a technical sense, as implying a modification directly due to the physical conditions of life; and *variations* in this sense are supposed not to be inherited.
> *Darwin*, Origin of Species, p. 25.

(*e*) A congenital or germinal change in a living being, which is not due to its own activity and is transmitted to descendants, as contrasted with a change which comes about in it by its own activity and is not transmitted to descendants. [Rare.]

> In a lucid paper he [Professor Lloyd Morgan] brought forward his useful distinction between *variations*, which are of germinal origin and congenital, and modifications which are impressed upon the organism by its environment. *Nat. Sci.*, Nov., 1896, p. 287.

Accidental variations, those differences from the average or mean value of any element that are not represented by any known law and must be treated as the result of pure chance until their cause or law has been discovered. Accidental variations introduce into the study of nature an element of doubt or uncertainty that must be evaluated by the laws of chance and probability. See *chance, probability, variation.*—**Analytical variation,** diversity among individuals which is attributed to the decomposition and unequal inheritance of compound parental characters; allelomorphic variation.

> To the variations which thus arise by resolution of compound characters we propose to give the name of *Analytical Variations.* There can be no doubt that a very large proportion of the discontinuous variations in colour at all events, met with both in wild and domesticated species, are of this nature.
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc.,
> [1902, I. 148.

Coefficient of variation. See ★*coefficient.*—**Coincident variation,** the appearance, in a race of organisms, of a characteristic which is transmitted to descendants and is adapted for some purpose which has been served previously by a modification produced by or in accordance with the conditions of life and not transmitted to descendants. See *adaptation*, 3, ★*self-adaptation*, ★*modification*, 7.

> *Coincident variations* . . . : variations which coincide with or are similar in direction to modifications.
> *Baldwin*, Development and Evolution, p. 151.

Continuous variation, the sort of diversity among the individuals of a race or species in which the differences are minimal and inconspicuous.

> The fact that *Continuous Variations* exist is also none the less a fact. *W. Bateson*, Study of Variation, p. 18.

Definite variation, the exhibition by many members of a race or species of the same feature of difference from other members.

> The centrifugal encroachment of a darker upon a lighter colour in blossoms is . . . one of the commonest lines of *definite variation.* *Nat. Sci.*, June, 1897, p. 375.

Determinate variation, the alleged modification of the members of a race or species in a definite line independently of the survival of the fittest and the extermination of the unfit.

> The latter [Professor Lloyd Morgan], moreover, was one of the first among English selectionists to consider '*determinate variation*' as a fixed problem which must be included in any evolution theory.
> *Baldwin*, Development and Evolution, p. 338.

Differentiant variation, mutation; discontinuous variation; a distinct and hereditary change of type.

> Either they are distinguishable, in which case his criticism of my memoir is idle, or they are not distinguishable, in which case his theory of evolution by "*differentiant variation*" is also idle.
> *Biometrika*, April, 1903, p. 323.

Discontinuous variation, the sort of diversity among the individuals of a race or species which is characterized by lacunæ or gaps unfilled by transitional forms.

> It may be stated at once that the evidence of such *Discontinuous Variation* does exist.
> *W. Bateson*, Study of Variation, p. 18.

Diurnal variation, the amount of change in one day, or a periodic change with a period of one day. Compare *hourly* ★*variation.*—**Embryogenic variation,** variation that arises during the early stages of embryonic development. *H. F. Osborn*, Biol. Lectures, 1895, p. 87.—**Extrinsic variation,** a characteristic which makes its appearance during the life of the individual organism, either during its embryonic development or when it is in its mature condition; an acquired character. See the extract.

> The former two sets of variations are generally spoken of as "acquired characters"—new characters acquired during the lifetime of the individual—but their nature would be more clearly indicated by calling them *extrinsic variations*, as contrasted with the intrinsic variations forming the last group.
> *Parker and Haswell*, Zoology, II. 622.

Fortuitous variation, the diversity or individuality of living beings considered as a part of the diversity of nature. The use of the term does not imply belief that the phenomena in question are accidental, or due to chance, or disorderly; but only the belief that certain purposes, such as an account of the origin of species, are best served by concentrating attention upon the diversity or individuality of living beings, to the temporary neglect of the order which they, like everything else in the natural world, exhibit.—**Fraser-Mortimer variation,** in *chess*, an obsolete variation in the Evans gambit.—**Gametic variation,** germ-variation; the diversity of germ-cells in an individual organism. *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., 1902, I. 127.—**Gamogenic variation,** variation which arises during the maturation and fertilization of germ-cells.

> *Gamogenic*, i.e., those (ontogenic *variations*) arising during maturation and fertilization.
> *H. F. Osborn*, Biol. Lectures, 1895, p. 87.

Geographical variation. (*a*) The diversity which is often found in comparing representatives, from different regions, of a widely distributed species. (*b*) A change that may take place in an individual or a variety or species when its habitat changes.—**Germ variation,** the diversity of germ-cells considered as the cause or reason for the inheritance by offspring of the characteristics in which their parents differ or vary from each other or from other members of the race.

> I am entirely of (the) opinion that polydactylism is due to a *germ-variation*; this must be so whenever it is hereditary, for it would not otherwise be transmissible.
> *Weismann* (trans.), Germ-plasm, p. 430.

Gonogenic variation, variation which has its origin in germ-cells. *H. F. Osborn*, Biol. Lectures, 1895, p. 87.—**Homœotic variation,** variation or individual diversity characterized by homœosis or the substitution in the body of an organism of one member of a meristic series for another.

> *Homoeotic Variation* in the spinal column consists in the assumption by one or more vertebræ of a structure in which the type is proper to vertebræ in a different ordinal position in the series.
> *W. Bateson*, Study of Variation, p. 107.

Hourly variation. (*a*) A variation which completes its cycle of increase and decrease in an hour. (*b*) The amount of change which a quantity suffers in an hour: as, the *hourly variation* of the sun's declination.—**Individual variation,** the diversity which is exhibited by the individuals of a species.

> It is a matter of common observation that no two individuals of a species are ever exactly alike. . . . *Individual variations* of this kind are of universal occurrence.
> *Parker and Haswell*, Zoology, I. 2.

Intrinsic variation, individual diversity which is the result of the diversity in germ-cells; germinal variation. See the extract under *extrinsic* ★*variation.*—**Kenogenic variation,** variation which has to do only with the present or individual, or with the future, history of an organism, as contrasted with *palingenic* ★*variation.*—**Meristic variation,** diversity among the individual organisms of a race or species in the number, position, or arrangement of parts that form a regular pattern, such as the right and left halves of a bilateral organism or the series of vertebræ in a vertebrate. *W. Bateson*, Study of Variation, p. 23.—**Mortimer's variation,** in *chess*, an old-fashioned attack in the Evans gambit.—**Negative variation,** reduction in the amount of the current in an excised muscle or nerve when the same is tetanized.—**Ontogenic variation,** variation which arises during individual life-history or ontogeny.

> Let *ontogenic variation* include all variations from the type which have their cause in any stage of individual development. *H. F. Osborn*, Biol. Lectures, 1895, p. 85.

Palingenic variation, variation which has its origin, either directly or indirectly, in past or ancestral history.

> The most profound gap in time is between '*palingenic variations*,' springing from the past history of the individual, and 'cenogenic variations,' which have to do only with present and future history.
> *H. F. Osborn*, Biol. Lectures, 1895, p. 84.

Parallel variation. (*b*) The exhibition, by the individuals of two species, of the same sort of diversity in color or in some other characteristic. See the extract.

> There can be no doubt that a very large proportion of the discontinuous variations in colours, at all events, met with both in wild and domesticated species, are of this nature. The fact that similar component forms are similarly related to each other and to the type, in various species, thus provides the true account of the numerous phenomena of "*parallel*" *variation*.
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., 1902, [I. 148.

Pathologic variation, the phenomena of teratology considered as deviations from an established norm or type.—**Perfect variation.** See *total* ★*variation.*—**Phylogenic variation,** variation which has been inherited from near or remote ancestors.

> Let *phylogenic variation* include those departures from type which have become constant hereditary characters in certain phyletic series, or even in a few generations.
> *H. F. Osborn*, Biol. Lectures, 1895, p. 86.

Progressive variation, the appearance of characters that are new in the history of a species.—**Residual variations,** the remainder after subtracting from a phenomenon the part due to causes already established. The *method of residual variations* is one of the four canons of the inductive method.—**Retrogressive variation,** the exhibition by a race, variety, or individual organism of ancestral characteristics; reversion.—**Saltatory variation,** in *biol.*, variation by leaps or bounds; discontinuous as opposed to continuous or gradual variation; mutation in the sense in which De Vries uses that word. See ★*mutation*, 8.—**Seminal variation.** Same as ★*seed variation.*—**Similar variation,** the modification of meristic parts in the same way, either in one individual organism or in different ones. See the extract.

> The phenomenon of the *Similar Variation* of parts that are repeated Meristically in Series is a fact which will be found to have important bearings on several distinct departments of biological study.
> *W. Bateson*, Study of Variation, p. 26.

Simultaneous variation, the modification of two or more meristic parts of an individual organism in the same way. In Bateson's terminology, the presence of extra fingers on the hands of two children, or on the hand of parent and child, is *similar*, but not *simultaneous variation*; while the presence of extra fingers on both hands, or of extra digits on hands and feet, is both similar and simultaneous variation. *W. Bateson*, Study of Variation, p. 26.—**Skew variation,** diversity among the individuals of a species, race, or population, of such a character that equal deviations from the mode in opposite senses are not equally frequent. *Pearson.*—**Somatogenic variation.** (*a*) Variation which has its origin in the soma or body as contrasted with the germ-cells.

> It is an inevitable consequence of the theory of the germ-plasm . . . that *somatogenic variations* are not transmissible. *Weismann* (trans.), Germ-plasm, p. 392.

(*b*) Variation which arises during the larval and later stages of development, as contrasted with variation which arises during the early embryonic stages.

> (*d*) *Somatogenic*, i.e., those (ontogenic *variations*) occurring during larval and later development.
> *H. F. Osborn*, Biol. Lectures, 1895, p. 87.

Substantive variation, variation or diversity among individuals in the constitution or substance of parts, as contrasted with diversity in the number and arrangement of parts. *W. Bateson*, Study of Variation, p. 23.—**Synthetical variation,** diversity among individual organisms brought about by the addition of something new, as contrasted with *analytical* ★*variation.*—**Taxonomic variation,** a term introduced by Baldwin to designate determinate variation which is due to external causes.—**Total** or **perfect variation,** in *biol.*, a complete and yet perfectly symmetrical departure from the system of symmetry which is characteristic of the species.

> The resulting form possesses the character of division into four no less completely and perfectly than its parent possessed the character of division into three. The change from three to four is thus perfected: from the form with perfect division into three is sprung a form with perfect division into four. This is a case of *total* or *perfect Variation*. *W. Bateson*, Study of Variation, p. 61.

Variation-diagram. See ★*diagram.*—**Variation of latitude.** See ★*latitude.*

variative (vā′ri-ā-tiv), *a.* [*variat*(*e*) + *-ive.*] Same as *variational.*

> The hypothesis that this *variative* improvement is capable of being continued indefinitely.
> *Winchell*, Doctrine of Evolution, p. 48.

variator, *n.* 2. In *exper. psychol.*, the device which secures uniform change of pitch in Stern's tone-variator; in the old pattern of the instrument, the mercury trough; in the new pattern, a metal cam. See ★*tone-variator. Scripture*, Exper. Phonetics, p. 102.—3. A device for producing desired variations, usually in power or in speed; specifically, in the practice of motor-drawn trains of vehicles on the highway, each unit of which has its own propelling motor, a device attached to the leading and guiding vehicle, by which the limits of speed in each change-gear of the following vehicles may be reduced between determined limits without a resetting of the change-gear lever on each. *Sci. Amer. Sup.*, May 14, 1904, p. 23710.

varical (var′i-kal), *a.* [L. *varix* (*varic-*), a varicose vein, + *-al*¹.] Pertaining to the varices on the surface of certain molluscan shells. See *varix.*

varicella, *n.*—**Varioloid varicella,** a term applied occasionally to an exanthematous affection resembling chicken-pox, but believed to be varioloid. *Lancet*, Aug. 29, 1903, p. 628.

varicomphalus (var-i-kom′fa-lus), *n.*; pl. *varicomphali* (-lī). [L. *varix* (*varic-*), a dilated vein, + Gr. ὀμφαλός, the navel.] A varicose swelling at the umbilicus.

varicoseness (var′i-kōs-nes), *n.* [*varicose* + *-ness.*] The state of being varicose; a condition of dilatation and tortuousness.

varicosis (var-i-kō′sis), *n.* [NL., < L. *varix* (*varic-*), a varicose vein, + *-osis.*] The occurrence of varicose veins; varicosity.

varicotomy (var-i-kot′ō-mi), *n.* [L. *varix* (*varic-*), a varicose vein, + Gr. -τομια, < ταμεῖν, cut.] An operation for the division of varicose veins.

varié (vä-rē-ā′), *a.* [F., pp. of *varier*, vary, change.] In *music*, treated in variations: said of an air or theme.

varietal, *a.* 2. In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*¹), having the character of or producing a variety of a mode.

variety, *n.* 6. (*c*) In *agri.* and *hort.*, a group of cultivated plants which have the same characteristics. All plants which have been widely cultivated have given rise to many different forms and these are in general known as varieties. Illustrations are the varieties of strawberries, apples, corn, wheat, cotton, etc. 'Variety,' in this sense, is thus a generic word including races, strains, and clons. See ★*race*³, 5 (*c*), ★*strain*², 1 (*b*), and ★*clon.*—7. In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*¹), a division of a mode which recognizes the presence of subordinate mineral components.—**Analytical variety,** a variety which is supposed to have been produced by the decomposition and unequal inheritance of a compound parental character; an allelomorphic variety.

> The conception of Species, however we may formulate it, can hardly be supposed to attach to allelomorphic or *analytical varieties.*
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., [1902, I. 148.

Cultural variety. See ★*cultural.*—**Reversed variety,** a variety which exhibits inverse symmetry, such as a læotropic variety of a dexiotropic mollusk. See *inverse* ★*symmetry.*

varigradation (vā″ri-grā-dā′shon), *n.* [L. *varius*, various, + E. *gradation.*] In *phys. geol.*, alternate aggradation and degradation by a stream in successive parts of its course.

variola, *n.* 3. The pustular apothecium occurring on certain lichens.—**Variola equina,** a contagious, infective fever of horses characterized by the eruption of pocks similar to those of smallpox in man. Also called *horsepox.*—**Variola miliaris,** a form of smallpox in which the eruption is for the most part in the form of minute vesicles which dry up into scabs that fall off leaving no mark.—**Variola pemphigosa,** a form of smallpox in which the vesicles develop into large blebs with seropurulent contents but do not form the typical eruption of the disease.—**Variola siliquosa,** a form of smallpox or varioloid in which the contents of the pustules are absorbed leaving the walls standing empty.—**Variola verrucosa,** an abortive form of smallpox or varioloid in which the eruption consists of papules capped with minute vesicles, which leave wart-like elevations on the skin: called also *wart-pock* or *wart-pox.*

variolarin (vā″ri-ō-lā′rin), *n.* [*Variolaria* + *-in*².] A compound said to be present in the lichen *Pertusaria* (*Variolaria*) *dealbata.*

variolate, *a.* 3. In *pathol.*, marked as if by smallpox.

variolate (vā′ri-ō-lāt), *v. t.*; pret. and pp. *variolated*; ppr. *variolating.* [*variola* + *-ate*².] To inoculate with the virus of smallpox.

varioliform (vā-ri-ol′i-fôrm), *a.* [NL. *variola* + L. *forma*, form.] Resembling smallpox. *Lancet*, July 11, 1903, p. 103.

variolose (vā-ri′ō-lōs), *a.* [*variola* + *-ose.*] In *entom.*, same as *variolous. Annals and Mag. Nat. Hist.*, April, 1901, p. 407.

variolo-vaccination (vā-ri″ō-lō-vak-si-nā′shon), *n.* Inoculation of the human subject with variolo-vaccinia.

variotinted (vā″ri-ō-tin′ted), *a.* [L. *varius*, various, + E. *tinted.*] Of various tints or colors.

> With the telescope nothing more distinctive than a silvery shimmer corresponds to the dazzling *variotinted* fireworks disclosed by the prism.
> *A. M. Clerke*, Problems in Astrophysics, p. 44.

varisse (va-ris′, va-rēs′), *n.* [Appar. for F. *varice*, < L. *varix* (*varic-*), an enlarged vein. See *varix.*] Blood-spavin in the horse; an enlargement or varicose condition of the vein on the inside of the hock-joint.

Varix racemosum. Same as *aneurismal varix* (which see, under *aneurismal*).

var. lect. An abbreviation of the Latin *varia lectio*, different reading.

varletaille (vär-le-tāl′), *n.* [A nonce-formation < *varlet* + F. *-aille*, in imitation of *canaille.*] Varlets collectively; varletdom. [Nonce-word.]

> "I had deemed it dishonouring in a brave soldier, a well-born gentleman (now from his valiantness, merit, and wisdom, become a puissant and dreaded lord), to sink into that lackeydom and *varletaille* which falsehood and cringing have established in these walls, and baptized under the name of 'courtiers.'"
> *Bulwer*, Last of the Barons, iv. 6.

varnish, *n.* 5. In *etching*, any resinous coating used to cover parts of the plate which have become exposed: to be distinguished from the *ground*, which is the original coating applied to the entire plate. *P. G. Hamerton*, Etching and Etchers, p. 323.—**Balloon varnish,** a flexible varnish consisting of a solution of india-rubber in chloroform, carbon disulphid, etc., used for coating balloons, bags, and other articles requiring flexibility.—**Bookbinders' varnish,** the best French varnish diluted with alcohol to suit the different materials to be varnished.—**Crystal varnish,** or **paper-varnish,** Canada balsam thinned with spirits of turpentine, or mastic dissolved in alcohol. *Thorpe*, Dict. Applied Chem., I. 623.—**Desert varnish.** See ★*desert*¹.—**Paper-varnish.** Same as *crystal* ★*varnish.*—**Spirit varnish,** a quick-drying varnish made by dissolving gum shellac in alcohol. Usually called *shellac varnish.*—**Zapon varnish,** a solution of celluloid in amyl acetate and acetone, used as a lacquer on brass, bronze, or ironwork, on the last of these especially as the means of causing bronze-powders to adhere. Also known as *banana liquid*, in consequence of the smell of the amyl acetate. There are several other varnishes of analogous character. *Sci. Amer. Sup.*, Jan. 13, 1900.

Varolian (va-rō′li-an), *a.* Of or pertaining to Costanzo Varoli (1543 (?)–1575), an Italian anatomist, or to the pons Varolii (see *pons*) named for him.

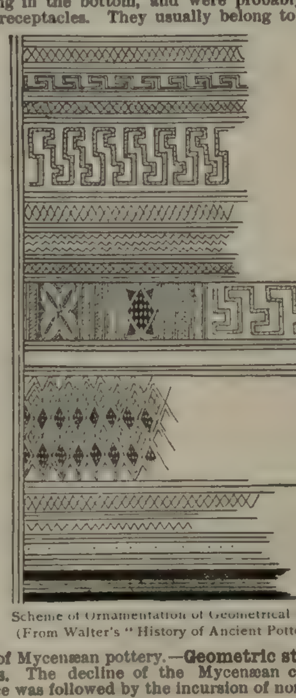
varvicite (vär′vi-sīt), *n.* [*Varvic*(*us*), a Latinized form of *Warwick*, + *-ite*².] An ore of manganese, resembling wad in composition, apparently a product of the alteration of manganite, from Warwickshire, in England.

vas, *n.*—**Vasa propria of Jungbluth,** vessels lying beneath the amnion in early embryonic existence.—**Vasa serosa,** capillary blood-vessels.

Vascular reflex, trunk. See ★*reflex*, ★*trunk.*

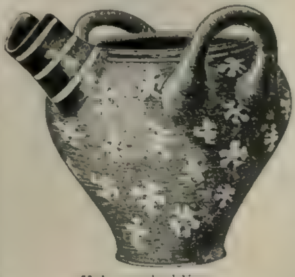
vasculitis (vas-kū-lī′tis), *n.* [NL., < L. *vasculum*, vessel, + *-itis.*] Inflammation of a lymph- or blood-vessel.

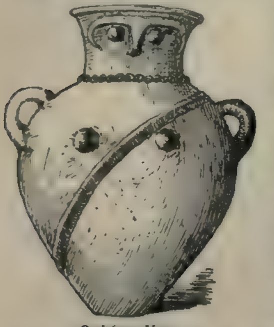
vase, *n.*—**Auldjo vase,** a Pompeian vase, many fragments of which were bequeathed by Miss Auldjo to the British Museum in 1859. It is an oinochoe, 9 inches high, which was found in the House of the Faun at Pompeii. It is made of dark blue glass overlaid with white and cut in a cameo like the Portland vase.—**Dipylon vases,** a name especially applied to a series of Greek vases in the geometric style discovered in 1871, in excavations carried on by Joannis Paleologos, in the outer Ceramicus, to the northeast of the Dipylon gate at Athens. In each of the graves excavated was found, broken, a large vase of good manufacture and decorated with characteristic geometric patterns. Pottery which resembles these vases has taken the name 'Dipylon.'—**Filler vase,** a peculiar type of vase found frequently in recent excavations in Crete and elsewhere in the Levant. Filler vases are funnel-shaped with single handles and an opening in the bottom, and were probably used to fill other receptacles. They usually belong to the Kamares class of Mycenæan pottery.—**Geometric style in Greek vases.** The decline of the Mycenæan civilization in Greece was followed by the incursion of northern people,



Scheme of Ornamentation of Geometrical Vases.
(From Walter's "History of Ancient Pottery.")

chiefly Dorian and Ionian. Contemporaneous with this there existed a definite style in the decoration of pottery, which from its peculiar conventionalism is called 'geometric.' Remains of work of this character have been found in all parts of the Hellenic world. There is much variety in the specimens, but the fundamental characteristics remain the same. The vases are usually of considerable size and well baked. The ornamentation, dark on a light ground, is distributed in horizontal bands. It is usually conventional, but the human figure and various animals often appear represented in a peculiarly rigid and primitive way. A large deposit of this ware found near the Dipylon gate at Athens has given the name Dipylon to a class of geometric vases. See *Dipylon* ★*vases*.—**Hole-mouthed vase**, in *Gr. antiq.*, in Kamares and Cretan ware generally, a vase having a deeply curved beak or spout and one or two handles.—**Owl-face vases**, terra-cotta vases, found by Dr. Schliemann in his excavations at Troy, which have eyes and a beak marked upon them, giving the appearance of an owl's face.—**Prothesis vase**, in *Gr. antiq.*, a monumental vase carved in marble, sometimes placed over the grave of an unmarried person. These vases were tall and slender and resembled the loutrophoros or lecythus. They are usually decorated with a funeral scene. See ★*loutrophoros*.


Hole-mouthed Vase.
(From "Annual of the British School at Athens.")


Owl-face Vase.
(From Schliemann's "Troy and Its Remains.")

> We find a whole set of interesting vases, called *prothesis* vases from the subject upon them, which is usually the "laying out" of the corpse surrounded by mourners.
> *Gardner*, Ancient Athens, p. 173.

Sosias vase, a vase made by Sosias, a Greek potter and vase-painter of the fifth century B.C. He frequently associated with the painter Peithinos. It is customary to classify the signed vases according to their makers, as Duris vase, Euphronius vase, etc.

vasectomize (vạ-sek'tọ-mīz), *v. t.*; pret. and pp. *vasectomized*, ppr. *vasectomizing*. [*vasectom(y)* + *-ize*.] To excise the vas deferens of a person or animal.

vasectomy (vạ-sek'tọ-mi), *n.* [L. *vas*, vessel, + Gr. *ἐκτομή*, excision.] Excision of the vas deferens. *Buck*, Med. Handbook, II. 749.

vaselene (vas'e-lēn), *n.* [See *vaseline*.] A general term for various petroleum products of soft, pasty, or gelatinous character, including that to which the name *vaseline* (so spelled) was originally applied as a proprietary trade-name.

vaseline-oil (vas'e-lin-oil), *n.* See ★*oil*.

vasicine (vas'i-sin), *n.* [NL. *vasica* + *-ine*^{2}.] An alkaloid contained in the leaves of *Adhatoda vasica Nees*, from the Panjab. It is intensely poisonous to the lower forms of animal life, but has no appreciable effect on normal animals of higher orders. The natives use the leaves of the plant as a remedy in affections of the respiratory organs.

vasite (vā'sīt), *n.* Same as ★*wasite*.

vasoconstriction (vas"ọ-kọn-strik'shọn), *n.* Contraction of the blood-vessels; a narrowing of the lumen of the veins or arteries. *Buck*, Med. Handbook, III. 118.

vasocorona (vas"ọ-kọ-rō'nạ̈), *n.* [L. *vas*, vessel, + *corona*, crown.] The system of blood-vessels supplying the spinal cord which pass from the surface toward the center.

vasodilatation (vas-ọ-dil-ạ-tā'shọn), *n.* [L. *vas*, vessel, + E. *dilatation*.] Dilatation of the blood-vessels.

> As increase of lymph-formation and *vasodilatation* must, in the long run, go hand in hand, it would seem reasonable to suppose that the nerve fibres going from the capillaries to the arteries and veins may exert an inhibitory influence on the vasoconstrictors, or a stimulating one on the vasodilators, whereby a larger supply of blood is furnished to the irritated part.
> *C. Sihler*, in Jour. Exper. Med., March 25, 1901, p. 496.

vasogen (vas'ọ-jen), *n.* [*vas(eline)* + *-o-* + *-gen*.] An easily absorbable ointment base capable of retaining in perfect emulsion a large quantity of water: made by the action of compressed air upon vaseline under pressure and heat; oxygenated vaseline. *Buck*, Med. Handbook, I. 549.

vasohypertonic (vas-ọ-hī-pėr-ton'ik), *a.* [L. *vas*, vessel, + E. *hypertonic*.] Same as *vasoconstrictor*.

vasohypotonic (vas-ọ-hī-pọ-ton'ik), *a.* [L. *vas*, vessel, + E. *hypotonic*.] Same as *vasodilator*.

vasomotor, *a.*—**Vasomotor wave**, a recurrent fluctuation in the volume of blood supplied to some bodily organ or group of organs: it may be recorded by means of the plethysmograph. *Amer. Jour. Psychol.*, XIII. 13.

vasoneurosis (vas"ọ-nụ-rō'sis), *n.* [NL., < L. *vas*, vessel, + Gr. *νεῦρον*, nerve, + *-osis*.] Same as *angioneurosis*. *Buck*, Med. Handbook, IV. 530.

vasospasm (vas'ọ-spazm), *n.* [L. *vas*, vessel, + Gr. *σπασμός*, contraction.] Spasmodic contraction of the blood-vessels. *Buck*, Med. Handbook, V. 74.

vasotonic (vas-ọ-ton'ik), *a.* [L. *vas*, vessel, + Gr. *τόνος*, tone, + *-ic*.] Relating to the tone or elasticity of the blood-vessels.

vasotribe (vas'ọ-trīb), *n.* [L. *vas*, vessel, + Gr. *τρίβειν*, rub, crush.] Same as ★*angiotribe*. *Lancet*, May 30, 1903, p. 1520.

vasotrophic (vas-ọ-trof'ik), *a.* [L. *vas*, vessel, + *τροφή*, nutrition.] Relating to the nutrition of the blood-vessels.

vasque (väsk), *n.* [F., < It. *vasca*.] In a fountain, a bowl, usually quite flat and shallow, which receives the water.

vassalize (vas'a̤l-īz), *v. t.*; pret. and pp. *vassalized*, ppr. *vassalizing*. To render vassal or a vassal; make a vassal or vassals of.

vat, *n.*—**Beating vat.** See ★*beating-vat*.—**Steeping vat.** See ★*steeping-vat*.—**Vat indigo, process.** See ★*indigo*, ★*process*.—**Vat waste.** Same as ★*alkali waste*.—**Woad vat**, an indigo vat of the fermentation type in which woad is used. The woad not only acts as a fermentation medium, but aids somewhat in the coloring process.—**Zinc-powder vat**, in *dyeing*, with indigo, a bath made up with water, indigo, lime, and zinc-dust or zinc-powder, in which the reducing action of the last-named material is employed to render the dyestuff soluble as indigo white or hydrindigotin, from which indigotin or indigo blue is precipitated again on the fibers of cloth which has been steeped in the 'vat' and afterward exposed to the air.

Vat. An abbreviation of *Vatican*.

vaticinatory (vạ-tis'i-nạ-tō-ri), *a.* [*vaticinate* + *-ory*.] Prophetic; vaticinating. [Rare.]

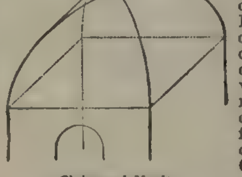
> We will not dispute her *vaticinatory* utterances [on the Resubjection of Women]. *N. and Q.*, 9th ser., III. 357.

vatman (vat'ma̤n), *n*; pl. *vatmen* (-me̤n). One who works at a vat, as in paper-making.

> "We went on from 1838 to 1872, giving these three or four rises, and, in 1872, a rise of sixpence per day was conceded by the employers without any great fuss"; the pay of a first-class *vatman* for a "day's work" in a Kentish mill being now 6s. 5d., as compared with 4s. 7d. in 1840.
> *Webb*, Indust. Democracy, I. 421.

vat-net, *n.* **2.** A laundry-net used to hold fabrics suspended in a bluing vat.

vault^1, *n.* **5.** In crinoids, same as ★*disk*, 5 (*e*).—**Cloistered vault**, a vault the shape of which is the reverse of a groined vault, that is, one of which the curved surfaces rise from the whole length of the wall on either side. In the case of a square or parallelogram the four curved surfaces meet at a curved line which has everywhere a reëntrant angle the reverse of a groin. Also called *coved* ★*vault*, the four curving surfaces being considered as coves.—**Coved vault.** (*a*) A vault the general character of which is that of a nearly flat middle part and a decided curve at the edges, as of a flat ceiling with a cove between it and the wall. This form can only be used on a very small scale. (*b*) Same as a *cloistered* (or *cloister*) ★*vault*.—**Fan vaulting.** Same as *fan-tracery vaulting* (which see, under *fan-tracery*). The characteristic of this form of vaulting is that it consists of a series of cones springing from columns, or half-cones springing from vaulting shafts or corbels. These cones have a more or less concave curve. The faces between them above are filled by flat stone slabs resting upon the cones and half-cones, and closing the vault at the top. The whole surface may be covered with fine tracery, but this is quite arbitrary, since the ribs have no constructive function: the vaulting is not ribbed vaulting in a strict sense.


Cloistered Vault.

vb. An abbreviation of *verb*.

vb. a. An abbreviation of *verbal adjective*.

vb. n. An abbreviation of *verbal noun*.

V. C. An abbreviation (*b*) of *Vice-Chairman*; (*c*) of *Vice-Chancellor*.

V-connection (vē'kọ-nek"shọn), *n.* A connection of the parts of a three-phase electric circuit sometimes employed, in which one of the three coils of the generator or transformer is omitted from the circuit and the other two carry the entire load.

Vd. A chemical symbol of *vanadium*. More usually the single letter V is employed.

v. def. An abbreviation of the Latin *verbum defectivum*, defective verb.

v. dep. An abbreviation of the Latin *verbum deponens*, deponent verb.

V. D. L. An abbreviation of *Van Diemen's Land*.

V. D. M. An abbreviation of the Latin *verbi dei minister*, minister of the word of God.

veal (vēl), *v. t.* [*veal*, *n.*] To raise (calves) for sale as veal. [Colloq.]

> Male calves, if worthy of it, are reared for breeding purposes, but none is ever *vealed*.
> *W. J. Spillman*, in Yearbook U. S. Dept. Agr., 1903, p. 364.

> One who can afford to *veal* the male produce.
> *Rep. Kansas State Board Agr.*, 1901–02, p. 9.

vealiness (vē'li-nes), *n.* The character of being vealy; immaturity. [Colloq.]

veal-skin, *n.* **2.** A large and heavy calfskin, obtained from older animals than calfskin proper. *Modern Amer. Tanning*, p. 164.

vecht-generaal (fekt'gen-e-räl"), *n.* [D.] Literally 'fighting general'; in the Boer army, an officer formerly nominated in time of war, by the government or Council of War, who as lieutenant of the generalissimo had charge of two or more commandos, and whose tenure of office began and ended with the hostilities. *United Service Mag.*, June, 1902, p. 303.

vector. **I.** *n.*—**Axial vector**, a vector whose components do not change sign for a reversal of direction of the rectangular, coördinate axes. *W. Voigt*.—**Distributed vector**, a vector having reference to the condition of an entity (as to the velocity of a liquid) as indicative of which it has a value at each point.—**Gibbs's vector method**, a method of computing orbits based upon Gibbs's vector-analysis.—**Polar vector**, a vector whose components on rectangular axes change sign for a reversal of direction of the axes. *W. Voigt*.—**Polygon, triangle, of vectors.** See ★*polygon of vectors*.—**Radiant vector**, a vector which indicates the rate at which energy is transferred through space and the direction of propagation.—**Resolution of a vector.** See ★*resolution*.—**Resultant vector**, the quantity obtained by the addition of two or more vectors. The vectors in question may be forces, velocities, accelerations, etc., and the method used is in each case the vector diagram of the form known as the parallelogram of forces, which is applicable to the composition of vector quantities whatever their nature. The resultants obtained are called respectively the *resultant force*, *resultant velocity*, *resultant acceleration*, etc.—**Unit vector**, a directed unit sect.

II. *a.*—**Vector algebra**, vector analysis, the algebra of directed magnitudes.—**Vector diagram**, a graph of the relations of vector quantities.—**Vector formula**, one containing vector quantities.—**Vector quantity.** (*b*) See ★*quantity*.—**Vector sum**, the geometrical sum of vector quantities.

Vectorial product. Same as *outer* ★*product*.

vector-product (vek'tọ̈r-prod"ukt), *n.* A vectorial product. *Heaviside*.

Vedaic (vē-dā'ik), *a.* Same as *Vedic*.

Vedaism (vā'da̤-izm), *n.* [*Veda* + *-ism*.] The ideas or doctrines of the Vedas.

Vedantism (vạ-dän'tizm), *n.* [*Vedanta* + *-ism*.] The doctrines or system of the Vedanta.

Vedda (ved'ạ̈), *n.* [Also *Veddah*, *Vaddah* (in F., D., and G. forms *Bedda*, *Beda*, *Weddah*), said to mean 'hunter,' and perhaps from Tamil *vedu*, hunting.] One of an aboriginal people in Ceylon, classed as of Dravidian stock.

Veddan (ved'a̤n), *a.* [*Vedda* + *-an*.] Of or pertaining to the Veddas.

> The highest recorded capacity for the latter [anthropoid crania] is about 590 c.c. while the lowest for the former [crania of man] is that of a normal *Veddan* skull of 950 c.c. *Buck*, Med. Handbook, IV. 39.

Vedic, *a.* **II.** *n.* Vedic Sanskrit; Sanskrit of the earliest recorded form preserved in the Vedas.

vedro (ve-drō'), *n.* [Russ. *vedró*, a pail, a liquid measure.] A Russian liquid measure, containing 30 Russian pounds of distilled water at 16⅔ degrees C., as weighed in vacuo. It is equal to 12.299 liters, or to 3.249 United States gallons.

Vegetable down. Same as ★*Bombax cotton*.—**Vegetable pottery.** See ★*pottery*.—**Vegetable wool.** See ★*wool*.

vegetable-caterpillar (vej'ẹ-ta-bl-kat"ėr-pil-ä̤r), *n.* Same as ★*plant-caterpillar*.

vegetalin (vej'ẹ-ta̤l-in), *n.* [*vegetal* + *-in*^{2}.] The trade-name for an acid liquor obtained as a by-product in the manufacture of sauerkraut. After concentration and filtration it is utilized in tanning and in the textile industries.

vegetate, *v. i.* **3.** In *pathol.*, to grow in the form of an excrescence.—**4.** Same as ★*sprout*, 5.

vegetation, *n.* **4.** In *phytogeog.*, the sum total, or a local aggregate, of plant individuals, often of many species, viewed with reference to their ecological adjustment to each other and to all the efficient factors of their environment: contrasted with *flora*, which denotes a scheme of species rather than a sum of individuals.

Heat determines the flora, climatic humidity the *vegetation.* *A. F. W. Schimper* (trans.), Plant-Geog., p. 160.

vegetational (vej-ẹ-tā'shọn-ạl), *a.* [*vegetation* + *-al*¹.] Pertaining to, or of the nature of, vegetation.

If we ascend a high tropical mountain we shall find the same change of *vegetational* formation [as in receding toward the poles]. *Buck*, Med. Handbook, III. 148.

vegetation-form (vej-ẹ-tā'shọn-fôrm), *n.* A type of plant development viewed with reference to its gross biological (not taxonomic) character. The groups mentioned in the quotation include many subdivisions, as the cushion-form (see ★*cushion-plant*), the rosette-form, the sod-form. See ★*life-form.*

In consequence of what has been said elsewhere, *vegetation-forms* are to be regarded as biological groups whose members possess similar plant-bodies. They fall into seven main groups: woody plants, half shrubs, pleiocyclic herbs, hapaxanthous herbs, water plants, hysterophytes, and thallophytes. *F. E. Clements*, Phytogeog. Nebraska, p. 97.

Vegetative hemisphere, pole. See ★*hemisphere*, ★*pole*².

veguero (vā-gā'rō), *n.* [Cuban Sp., < Cuban *vega*, a tobacco-field, < Sp. *vega* (see *vega*¹).] The superintendent of a tobacco-farm; a tobacco-farmer. [Cuba.]

According to the best opinions admitted among *vegueros*, one man can take care of 12,000 tobacco plants. *C. G. W. Locke*, Tobacco, p. 53.

vehicle, *n.* **2.** (*d*) In *chem.*, a liquid used to carry sensitive salts for coating glass or paper for use in photography.

vehicle-mile (vē'hi-kl-mīl″), *n.* A distance of one mile run by a vehicle; the equivalent of 'car-mile,' but applied to road vehicles instead of to cars which run on rails.

The boiler is of the vertical cylindrical tubular type, with a burner using kerosene oil with a vaporizer, consuming about 5½ gallons of oil per *vehicle mile* with a four-ton load. *Hiscox*, Horseless Vehicles, p. 92.

vehiculary (vē-hik'ụ̄-lạ̄-ri), *a.* Same as *vehicular.*

veil, *v. t.*—**Veiled woman,** in some parts of the East, a married woman, never seen in public without a veil: hence a supposedly respectable woman.

Azizum is a *veiled woman* somewhere near Bareilly. *R. Kipling*, Indian Tales, p. 570.

vein, *n.*—**Ambient vein,** in *entom.*, the costal or marginal vein or nervure when it extends entirely around the wing, as in certain *Diptera.*—**Banded veins,** mineral veins in which the constituent minerals are arranged in parallel bands, of which the outermost correspond, then the next inner ones, and so on to the center, affording a symmetrical filling. Evidently the solutions from which the layers crystallized circulated in an open fissure. When one pair of layers was deposited on the walls, a change in composition caused a new one. At the center the opposing growths of crystals may project into each other, giving the *comb-in-comb* structure. If the growths do not completely fill the fissure but the layers of crystals project into cavities, these are called vugs (vuggs, or vughs). Vugs are the chief sources of fine crystals. If after a fissure has been filled a movement of the wall rock opens a new crevice at one side, a new series of bands may result whose combination with the older is *unsymmetrical* wall to wall. Banded veins show clearly the order of formation or paragenesis of the minerals, but they are less common than was once believed.—**Brecciated veins,** mineral veins which fill the interstices in the broken or brecciated rock along a line of faulting. Much barren rock or gangue is then mixed with the ore. An older vein may be brecciated and filled by a second deposition.—**Caudal vein,** in lower vertebrates such as the fishes, the vein which returns the blood from the tail.—**Chambered veins.** See ★*chambered.*—**Contact vein.** Same as *contact deposit* (which see, under *contact*).—**Cuvierian veins.** Same as *cardinal veins* (which see, under *vein*).—**Drusy vein,** a mineral vein having cavities coated with small crystals.—**Eruptive vein,** an occasional name for a dike: properly speaking, a contradiction, since veins are deposited from solution. *Geikie*, Text-book of Geol., p. 738.—**Exudation vein,** in *geol.*, relatively coarse or fine crystallizations which are sometimes seen in granite or other massive rocks, and which formed or segregated during the cooling stages, and along some special line or around some center. *Geikie*, Text-book of Geol., p. 130.—**Hemorrhoidal veins,** sets of veins forming a plexus at the lower portion of the rectum. The superior empty into the inferior mesenteric vein, the middle and inferior into the internal iliac vein.—**Infiltration vein,** in *geol.*, a vein deposited from waters which have percolated through cavities in the wall-rock and have brought in the vein-filling in solution.—**Interosseous veins,** veins of the hand and foot corresponding in location to the interosseous arteries.—**Linked veins,** in *geol.*, a series of overlapping or imbricating veins: an expression originally suggested by G. F. Becker as a translation of the German *gangzug.*—**Massive** or **compact veins,** mineral veins which fill the fissure wall to wall, chiefly with one mineral and not in banded arrangement.—**Metasomatic vein.** See *substitution* ★*vein.*—**Mineral vein,** in *geol.*, a deposit of minerals from solution or sublimation, in a fissure in rocks or along one with replacement of the walls. The term is much used for an important and frequent form of ore-body.—**Replacement vein.** See *substitution* ★*vein.*—**Reticulated veins,** mineral veins in relatively narrow but extended cracks along a line of brecciation, so that the total makes a network in the rock.—**Simple vein,** a vein filled with a single mineral.—**Substitution vein,** an ore-body produced by the replacement of some preëxisting rock: more commonly called a *replacement* or *metasomatic vein.* Limestones are most frequently so affected.—**Veins of Burow,** veins in the anterior abdominal wall where the urachus formerly existed, connecting the deep epigastric and the umbilical veins.—**Vitelline veins,** embryonic veins draining the area vasculosa.

The two allantoic veins in the chick . . . unite in the body of the embryo, becoming there a single allantoic vein, which passes forward on the left side and joins the left *vitelline vein.* *Buck*, Med. Handbook, I. 190.

White veins, a condition sometimes assumed by tobacco-leaves in which the lateral veins become superficially whitish. It occurs chiefly in the process of curing after continued dry and warm weather. It reduces the value of wrappers but not of fillers.

vein-miner (vān'mī″nėr), *n.* One whose work lies in veins or fissures of the earth-rock, as distinguished from one working in placers, or in metalliferous sands. [Rare.]

The *vein-miner* should be well up in faulting and all the geometrical problems associated with it, and he should have an exhaustive acquaintance with the vein and metalliferous minerals. *Science*, Oct. 9, 1903, p. 459.

vein-quartz (vān'kwârts), *n.* Quartz in veins, often carrying valuable metallic minerals. See ★*quartz.*

Velar valve. See ★*valve.*

veld-cornet (felt'kôr″net), *n.* [S. Afr. Dutch, < *veld*, field, + *cornet*, a cavalry officer. See *veldt.*] Same as *field-cornet.*

veldheer (felt'hãr), *n.* [D. *veld*, field, + *heer*, master.] A general; a general commandant. [South Africa.]

veldwachter (felt'väch-tėr), *n.* [D. *veld*, field, + *wachter*, watchman.] A rural guard. [South Africa.]

velleda-moth (vel'ẹ-dạ̈-môth″), *n.* Same as *velleda* ★*lappet-moth.*

vellericorn (ve-ler'i-kôrn), *a.* [L. *vellus* (*veller-*), a fleece, + *cornu*, a horn.] Having horns covered with skin, as does the giraffe.

The '*vellericorn*,' or skin-covered type presented by the former, is evidently the most primitive. *Nature*, May 21, 1908, p. 66.

vellosine (vel'ọ-sin), *n.* [NL. *Vellosii* (see def.) + *-ine*².] A colorless, dextrorotatory, poisonous alkaloid, $C_{21}H_{22}O_2N_2(OCH_3)_2$, contained in Brazilian pereira-bark, *Geissospermum Vellosii*. It crystallizes in trimetric plates, melts and darkens at 189° C., and resembles brucine in general physiological effect.

velo (vē'lō), *n.* [*velo*(*city*).] In *physics*, a proposed unit of linear velocity; a velocity of one foot per second of time.

velocipede, *n.* **2.** An electric jib-crane which runs on a single track and is held upright by the post running between two rails at the top. *The Engineer* (London), 1903, p. 89.

velocity, *n.*—**Areal velocity,** the area inclosed in the triangle described in a unit of time by the radius vector of a body moving on a straight line.—**Coefficient of velocity.** See ★*coefficient.*—**Critical velocity.** (*a*) In the mechanics of fluids, the velocity at which the viscosity of a fluid, through which a small spherical body is falling, just balances the weight of the sphere so that the latter will fall at a uniform speed. Also called *terminal velocity.* (*b*) The velocity at which the mode of flow of a liquid, in a pipe or channel, is modified by the setting up of eddy-motion and the consequent interruption of the stream lines.—**Curve of velocity.** See ★*curve.*—**Group velocity,** the velocity of a group of waves, taken as a whole, which in a dispersive medium differs from the velocity of a given single wave-length.—**Justifying velocity,** in *meteor.*, a wind-velocity that is regarded by the United States Weather Bureau as having warranted or justified the display of some warning signal or telegram. Justifying velocities vary from 30 to 50 miles, depending on the temperature above or below freezing, the direction of the wind, the nature of the coast, and the character of the warning given.—**Linear velocity,** velocity expressed in terms of a length divided by a time: opposed to *angular velocity*, which is expressed in terms of an angle divided by a time.—**Maxwell-Boltzmann law of the distribution of velocities.** See ★*law*¹.—**Mean velocity** of a moving body, during any period of time considered, the quotient obtained by dividing the distance traversed by the body in the given period by the length of the period, the distance being expressed in terms of a unit of length, and the duration of the period in terms of some unit of time.—**Parallelogram, polygon** or **triangle of velocities.** See ★*polygon of vectors.*—**Peripheral velocity,** the linear velocity of the periphery of a rotating body.—**Relative velocity,** velocity measured with reference to some point which may itself be in motion.—**Resultant velocity.** See *resultant* ★*vector.*—**Striking velocity,** the velocity of a projectile or other body at the instant it strikes. This factor combined with the weight determines the penetration of a projectile.—**Terminal velocity.** (*a*) See *terminal.* (*b*) Same as *critical* ★*velocity* (*a*).—**Uniform velocity,** the velocity of a body which is not acted upon by unbalanced forces and which consequently traverses equal spaces in equal times.—**Unit of angular velocity.** See ★*angular.*—**Velocity gradient, head.** See ★*gradient*, ★*head.*—**Velocity of light.** See ★*light*¹.—**Velocity ratio.** See ★*ratio.*—**Wave velocity.** (*a*) The velocity of propagation of any wave or wave system. (*b*) The velocity of a given individual wave-length of light as opposed to the group velocity of a complex beam taken as a whole.

velodrome (vel'ọ-drōm), *n.* [F. *vélodrome*, < L. *velo*(*x*), swift, + Gr. δρόμος, a running.] **1.** A race-course for bicycles and the like.

The interesting programme of events down for decision at the Buffalo *Vélodrome* attracted an enormous crowd of spectators, who enjoyed a capital day's sport. *N. Y. Herald* (Paris ed.), June 2, 1903.

There are one or two of the many rinks where women in high life do resort for want of a better place; such is the *Vélodrome* Buffalo, near Neuilly, and the *Vélodrome* de la Seine. *A. Alexandre*, in Scribner's Mag., Aug., 1895, p. 198.

2. A hollow cone (or frustum of a cone) of thin boards or slats, within which a bicycle-rider exhibits feats of riding and dynamic support of the weight of wheel and rider. The centrifugal acceleration generated by rapid wheeling keeps the rider from falling even when the wheel is nearly horizontal as it runs. The resultant of the centrifugal and gravity reactions is normal to the inclined elements of the cone. When the cone is suspended in the air it is called an *aërial velodrome.*

velograph (vel'ọ-gråf), *n.* [L. *velo*(*citas*), velocity, + Gr. γράφειν, write.] An instrument for recording the rate of speed of a vehicle and also the number and duration of stops. *Cycle and Auto Trade Jour.*, Oct., 1904, p. 99.

Velouté sauce. See ★*sauce.*

velum, *n.* **10.** [*cap.*] One of the subdivisions of the constellation Argo Navis. See *Argo*, 2.—**Velum penis,** a plate, flap, or hood concealing the penis in the male *Acridiidæ.*

velvet, *n.*—**Beggar's velvet.** See ★*beggar.*

velvet-fish (vel'vet-fish), *n.* A name given in Tasmania to the fish *Holoxenus cutaneus* Günther, of the family *Cirrhitidæ.* The skin is covered with minute appendages, so soft to the touch as to suggest velvet; the color is deep purplish red. *E. E. Morris*, Austral English.

velvet-plant (vel'vet-plant), *n.* See ★*Crassocephalum.*

velvril (vel'vril), *n.* The trade-name of a substance proposed as a substitute for india-rubber and gutta-percha in many of their uses, especially in electrical insulation. It is an intimate mixture of the soluble variety of nitrocellulose with nitrated linseed-oil or castor-oil, preferably the latter.

Ven. An abbreviation of *Venerable.*

venanzite (ve-nan'zīt), *n.* [San *Venanzo*, Umbria, Italy, + *-ite*².] In *petrog.*, a name given by Sabatini (1898) to a lava composed of olivin, leucite, and melilite, with black mica, a little pyroxene, nephelite, and magnetite. Called *euktolite* by Rosenbusch (1899).

vending-machine (ven'ding-mạ-shēn″), *n.* A mechanical device for displaying and delivering to the purchaser candy or other small articles; a slot-machine. It is adapted to the sale of a great variety of articles and is made in many forms. The actuating mechanism of the machine consists of a system of balanced levers connected with a slot or opening in the casing of the machine in which a coin may be deposited. The weight of the coin, when dropped into the slot, causes the levers to move, releasing one article in the magazine and delivering it upon a shelf within reach of the purchaser. The same movement deposits the coin in the cash-box and restores the machine to its normal position, ready for the next purchase. The term properly includes all slot-machines, slot gas-meters, slot weighing-machines, card-printing machines, and musical and moving-picture machines.

Venefica (vẹ-nef'i-kạ̈), *n.* [NL., < L. *venefica*, fem. of *veneficus*, poisoning, < *venenum*, poison, + *facere*, make.] A genus of deep-sea eels of the family *Nettastomidæ.*

venene (vẹ-nēn'), *n.* [L. *venenum*, poison. See *venom.*] The poisonous principle of snake venom. Also *venin* and *venine.*

venenific (ven-e-nif'ik), *a.* [L. *venenum* + *facere*, make.] Producing poison; poison-making.

venenosalivary (ven″ẹ-nọ-sal'i-vạ-ri), *a.* Pertaining to the salivary poison-glands of a mosquito, or to the product of these glands. *Sci. Amer. Sup.*, Dec. 13, 1902, p. 22533.

veneriform (vẹ-ner′i-fôrm), *a.* [L. *Venus* (*Vener-*), a genus of mollusks, + *forma*, form.] Having the form of the shell in the recent pelecypod genus *Venus*.

Venetian. **I.** *a.*—**Venetian cake.** See ★*cake*1.—**Venetian door.** See ★*door.*

II. *n.* **6.** A kind of soft woolen cloth with a closely finished face.

> *Venetian.*—An all-wool material of a broadcloth construction, except that the face is twilled.
> *Dry Goods Economist*, June 13, 1908.

Venetic (vẹ-net′ik), *a.* Of or pertaining to the Veneti, or to the Venetians.

> Even in Crete, and universally on the mainland, the modern population betrays by its brachycephaly a large admixture of Albanian, *Venetic*, or Slav intruders.
> *Nature*, Oct. 29, 1903, p. 635.

Venez. An abbreviation of *Venezuela.*

venin, venine (ven′in), *n.* See ★*venene.*

venipuncture (vē′ni-pungk″tṳ̄r), *n.* [L. *vena*, vein, + *punctura*, puncture.] Puncture into a vein.

venogen (ven′ọ-jen), *n.* [*ven*(*in*) + *-gen.*] An antecedent of venin.

Venom agglutination. See ★*immunity*, 5.

venomization (ven″um-i-zā′sho̤n), *n.* [*venomize* + *-ation.*] The process of treating a substance, such as red blood-corpuscles, with snake venom. *Jour. Exper. Med.*, April 25, 1905, p. 201.

venomize (ven′um-īz), *v. t.*; pret. and pp. *venomized*, ppr. *venomizing.* [*venom* + *-ize.*] To treat with snake poison.

venomotor (vē′nọ-mō-to̤r), *a.* Causing change in the lumen of a vein; noting the nerve-fibrils distributed to the muscular tissue in the walls of the veins. *Buck*, Med. Handbook, III. 116.

Venous cachexia. Same as *venosity*, 3.

vent1, *n.*—**Back-air vent**, in *plumbing*, a pipe, or other connection with the open air, placed on the crown of a trap to prevent the loss of seal in the trap by siphonage.

vental (ven′ta̤l), *a.* [NL. **ventalis*, ‹ *ventus*, wind.] Of or pertaining to the wind.

vent-drill (vent′dril), *n.* An instrument used for clearing the vent of a gun when it has been obstructed with caked powder, or with a fragment of metal from a primer.

venter2, *n.* **6.** In the coiled nautiloid cephalopod shell, such as *Nautilus* and the ammonites, the outer or peripheral portion of the whorls. The determination of the ventral side or venter is based on the presence of the hyponomic sinus or the curved lines which represent the position of that sinus. The siphuncle in a great majority of cases is ventral, but there are exceptions in the mature state, as in *Clymenia*, where it is dorsal, and it may be dorsal in early growth stages, changing its position to the venter in later growth. In the straight or curved shells of the *Tetrabranchiata*, such as *Orthoceras*, the venter can rarely be determined and only by the indication of the hyponomic sinus of its curves.

ventilagin (ven-til′a̤-jin), *n.* [NL. *Ventilago* (see def.) + *-in*2.] A reddish-brown amorphous compound, $C_{15}H_{14}O_5$, the characteristic coloring matter of the root bark of *Ventilago maderaspatana.*

ventilating-grate (ven′ti-lāt-ing-grāt″), *n.* An open fireplace, stove, or heater having double walls at the back and sides, with an open hearth or basket-grate for wood or coal. The space between the walls of the stove is open above and below. When in use the air in this space becomes heated, expands, and escapes at the top into the room, fresh cold air entering continuously below, with a great economy of the heat of the fire.

ventilating-jack (ven′ti-lā-ting-jak″), *n.* **1.** A hood or cowl of sheet-iron, or some other thin metal, placed over the opening of a fresh-air inlet and directed toward the flow of the air in order to catch and induce a flow of it into the opening and so into the space to be ventilated.—**2.** A similar hood or cowl over the outlet for foul or vitiated air, directed in the direction toward which the outer air-current is moving, so that a current shall be induced outward from the space to be ventilated.

ventilation, *n.*—**Coefficient of ventilation.** See ★*coefficient.*—**Natural ventilation**, in *mining*, ventilation due to movements of air caused by a difference in temperature within the mine and outside of it.—**Thermometric ventilation**, a ventilating apparatus operated by a thermostat or by the variations in temperature of a fluid.

venting (ven′ting), *n.*—**Back-air venting**, in *plumbing*, making a pipe-connection with the open air and the crown of a trap to prevent loss of water-seal by siphonage.

Ventral chain. Same as *ventral chord* (which see, under *ventral*).—**Ventral lobe.** See ★*lobe.*—**Ventral plate**, a thickening of the blastoderm in the arthropod and especially in the insect embryo: so called because it is formed on the ventral surface of the yolk. It gives rise to the body of the embryo.

ventran (ven′tra̤n), *a.* [L. *venter*, belly, + *-an.*] Having the position of the venter; at the venter or ventral: used in descriptive biology, especially with reference to the shells of the *Cephalopoda.*

ventricle, *n.*—**Optic ventricle**, in *neurol.*, the cavity of an optic lobe of the midbrain; an optocœle.—**Ventricles of Morgagni**, the depression in the larynx just above the vocal cords. In some monkeys this is greatly enlarged, forming a sac or resonator that adds to the volume of the voice. Also *sinus of Morgagni.*

ventricosity (ven-tri-kos′i-ti), *n.* [*ventricose* + *-ity.*] The character of being ventricose; the condition of being strongly convex, as in gastropod shells. *Proc. Zool. Soc. London*, 1901, p. 391.

ventro-axial (ven-trọ-ak′si̤-a̤l), *a.* [L. *venter* (*ventr-*), belly, + E. *axial.*] Relating to the trunk or body, or to the dorsal and ventral portions considered collectively.

> These muscles may be divided into two series — those of the trunk (*ventroaxial*), and those of the limb (appendicular).
> *Encyc. Brit.*, XXV. 399.

ventro-axillary (ven-trọ-ak′si-lā-ri), *a.* Relating to the ventral surface of the body and the axilla.

ventrodorsal (ven-trọ-dôr′sa̤l), *a.* Relating to both ventral and dorsal surfaces; in relation to the human body, the same as *anteroposterior* or *sagittal.*

ventromedial (ven-trọ-mē′di-a̤l), *a.* Same as ★*ventromedian.*

ventromedian (ven-trọ-mē′di-a̤n), *a.* Both ventral and median.

ventromyel (ven-trọ-mī′el), *n.* [L. *venter*, belly, + Gr. *μυελός*, marrow.] The ventral (anterior) portion of the spinal cord.

ventropodal (ven-trop′ọ-da̤l), *a.* [L. *venter* (*ventr-*), belly, + Gr. *πούς* (*ποδ-*), foot, + *-al*1.] Walking or moving with the breast touching the ground: specifically, applied to the locomotion of loons and grebes on land. *Shufeldt.*

ventroposterior (ven″trọ-pos-tē′ri-o̤r), *a.* Lying on the lower, hinder portion of any organ or part: noting the ventral and hinder portion of any organ.

> The region where the *ventro-posterior* limit of the proton passes into the ordinary epithelium of the foregut.
> *Trans. Amer. Micros. Soc.*, Nov., 1903, p. 62.

ventrose (ven′trōs), *a.* [LL. *ventrosus*, L. *ventriosus*, ‹ *venter*, belly. See *venter.*] Corpulent; having a large abdomen; also ventricose.

ventrosuspension (ven″trọ-sus-pen′sho̤n), *n.* Same as *ventrofixation. Med. Record*, Dec. 29, 1906, p. 1028.

Venturia (ven-tū′ri-ạ̈), *n.* [NL. (De Notaris, 1844), ‹ A. *Venturi*, an Italian botanist.] A genus of pyrenomycetous fungi having mostly sunken dark-colored membranous perithecia furnished with bristles about the apex. The ascospores are uniseptate and hyaline or olive-green. Over 50 species have been described. They occur chiefly on dead stems and fallen leaves. *V. ditricha* is frequently found on birch-leaves, in Europe and America. The conidial condition of some species belongs to the form-genus *Fusicladium.*

Venus's-purse (vē′nus-iz-pėrs″), *n.* Same as *Venus's flower-basket, Euplectella aspergillum.*

Vera di pozzo. See *pozzo.*

verantin (ver′an-tin), *n.* A resinous substance accompanying alizarin that has been produced from rubian. It is not a coloring matter.

verascope (vē′ra̤-skōp), *n.* [L. *verus*, true, + Gr. *σκοπεῖν*, view.] In *photog.*, an apparatus for short-distance stereoscopic photography. As devised by Richard and Colardeau the errors due to the separation of the images of the central part from each other on the negative, and the effort of the eyes to bring the images of the positive print into proper focus when looking through the stereoscope, are overcome by the optical and mechanical arrangement of the camera.

Verasper (ve-rȧs′pėr), *n.* [NL., ‹ *verus*, true, + *asper*, rough. The name was suggested by *Veratrum.*] A genus of flounders found in Japan and the Kurile Islands.

veratria (vẹ-rā′tri-ạ̈), *n.* [NL.] Same as *veratrine.*

veratridine (vẹ-rat′ri-din), *n.* [*veratr*(*ine*) + *-id* + *-ine.*] An alkaloid, isomeric with veratrine and occurring along with it in the so-called veratrine of ordinary medical use, differing however from it in being amorphous instead of crystallizable and being much more soluble in water.

veratrinized (vẹ-rā′trin-īzd), *a.* [*veratrine* + *-ized.*] Under the influence of veratrine.

> The continuous response of a *veratrinized* muscle.
> *Smithsonian Rep.*, 1899, p. 347.

veratrol (vẹ-rā′trol), *n.* [*veratr*(*ate*) + *-ol.*] A colorless, crystalline compound, $C_6H_4(\overset{1}{O}\overset{2}{C}H_3)_2$, prepared by heating barium veratrate. It melts at 15° C. and boils at 205–206° C. Also called *pyrocatechol dimethyl ether* or 1,2-*dimethoxybenzene.*

verb, *n.*—**Active verb.** See ★*active.*—**Verb function.** See ★*function.*

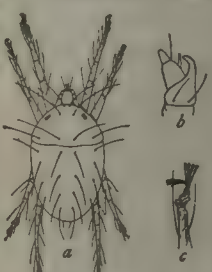
Verbal agraphia. See ★*agraphia.*

verbal-motor (vėr-ba̤l-mō′to̤r), *a.* **1.** Tending to think, remember, imagine, etc., in verbal ideas, and to experience these ideas in tactual, motor, or kinesthetic terms.

> The *verbal-motor* type stands, in the author's experience, next in order of frequency to the visual.
> *E. B. Titchener*, Exper. Psychol., I. ii. 393.

2. Having a verbal form, with tactual or kinesthetic contents: as. *verbal-motor* imagery.

verbena-mite (vėr-bē′nạ̈-mīt), *n.* A leaf-mite, *Tetranychus bimaculatus*, or 'red spider,' found on greenhouse plants in the northern United States and on vegetables and weeds in the South.



Verbena-mite (*Tetranychus bimaculatus*).
a, adult; *b*, palpus; *c*, claws: all highly magnified.
(After Banks, U. S. D. A.)

verbigerate (ver-bij′ẹ-rāt), *v. i.*; pret. and pp. *verbigerated*, ppr. *verbigerating.* [L. *verbigerare*, talk, chat.] In *pathol.*, to utter repeatedly certain words or phrases, without regard to their sense.

verdalite (ver′da̤-līt), *n.* [Irreg. ‹ OF. *verd*, green, + *-lite.*] Same as *verd-antique.*

verdet (ver-dā′), *n.* [F., ‹ *verd*, *vert*, green.] Dibasic cupric acetate or common blue verdigris as used to spray plants as an insecticide. The name is also applied to normal cupric acetate.

> *Verdet* is an acetate of copper. There are many such combinations, all being known under the general name of verdet, or verdigris. The form used by Bencker was that technically known as the dibasic acetate of copper. It requires to be soaked in water three or four days before it is used, so that as much as possible will dissolve.
> *E. G. Lodeman*, The Spraying of Plants, p. 44.

Verdet's constant. See ★*constant.*

Verdhandi (ver′ᴛʜan-di), *n.* [ON. *Verdhandi*, from the ppr. of *verdha*, be. See *worth*, *v.*] In *Norse myth.*, one of the three Fates, the Norn of the present.

verdict, *n.*—**Perverse verdict** a verdict in which the jury have been influenced by their own interpretation of the law rather than by the law as charged by the court; a verdict contrary to law.

verdigris-green, *n.* **2.** A green color imparted to the lead glaze of common earthenware by the use of verdigris, as in the tulip ware of the old Pennsylvania-German potters.

verein (fe-rīn′), *n.* [G.] Union; a union, association, or society.

vergery (vėr′jėr-i), *n.* [*verger* + *-y*3.] Same as *sacristy.*

veridic (vē-rid′ik), *a.* [L. *veridicus*, ‹ *verus*, true, + *dicere*, speak.] Same as *veridical.*

Verilus (vẹ-rī′lus), *n.* [NL., ‹ Sp. *veril*, a border, edge.] A genus of fishes belonging to the family *Lutianidæ*, found in deep water in the West Indies.

verine (ver′in), *n.* [*ver*(*atridine*) + *-ine*2.] A yellow, amorphous compound, $C_{28}H_{45}O_8N$, prepared by the action of alcoholic sodium hydroxid on veratridine. It melts at 130° C., and closely resembles cevin, with which it may be identical.

veriscope (ver′i-skōp), *n.* See *vitascope.*

veritism (ver′i-tizm), *n.* [*verit*(*y*) + *-ism.*] The methods or work of the veritists. See ★*veritist.*

> "*Veritism*," as illustrated in Spinelli's "A basso Porto, runs out into declamation of commonplace over noisy and frequently cacophonous music; and such a combination will not make an art work even with the admixture of a widely gesticulating chorus and well contrived pictures and groupings.
> *N. Y. Tribune*, Jan. 29, 1900.

veritist (ver′i-tist), *n.* [F. *véritiste*, ‹ *verité*, E. *verity*.] A recent name for a form of realism which takes pleasure in portraying what is debased or abnormal.

> And now we have the latest efforts of the "*veritist*" school, which seeks to employ the language of the ideal to express not the real alone, but that form of the real which is least deserving of presentation in any form. Mascagni set an example with "Cavalleria Rusticana," and his hot-blooded melody, like peppers "hot i' the mouth," ravished the blasé world. Then came "I Pagliacci," "La Festa Marina," "A Santa Lucia," all based on the notion that artistic motive (it is hard to remain English in a discussion like this) of a lyric drama are to be found in the social barnyard.
> *N. Y. Tribune*, Jan. 29, 1900.

verity, *n.*—**The four verities** or noble truths of Buddhism, the four fundamental principles evolved by Gautama the Buddha as he sat in rapt meditation under the bo-tree pondering on the problem of life and its miseries. They are: (1) that suffering exists wherever sentient being exists; (2) that the cause of suffering is desire or a craving for existence and its pleasures; (3) that deliverance from suffering can be effected only by the eradication of desire; and (4) that this can be accomplished only by walking in the noble eightfold path (1) of right views in regard to life; (2) of right aims; (3) of right words; (4) of right conduct; (5) of right means of livelihood (celibate mendicancy); (6) of right effort; (7) of right-mindfulness (that is, freedom from error in recollecting the law); and (8) of right meditation and tranquillity. See ★*nidana*.

Verm. An abbreviation of *Vermont*.

Verma (vėr′mạ̈), *n.* [NL., altered from L. *vermis*, a worm.] A genus of eels belonging to the family *Ophichthyidæ*, and found in rather deep water off the Florida coast.

Vermalia (ver-mā′li-ạ̈), *n. pl.* [NL., neut. pl. of NL. **vermalis*, ‹ L. *vermis*, a worm.] In Haeckel's system of classification (1896), a phylum of unsegmented, worm-like animals including the *Rotifera*, *Nemathelminthes*, *Molluscoidea*, and *Rhynchocœla*.

vermetoid (vėr′me-toid), *a.* and *n.* [L. *vermis*, a worm, + *-t-* + *-oid*.] Worm-like; resembling the *Vermetidæ*; a worm-like organism.

> Each must be considered as a separate genus whether it has one or more species, but 1 and *a*, 2 and *b*, 3 and *c*, 4 and *d*, can each be classed as a distinct genus, with a turritelloid and a *vermetoid* species, or all species of *vermetoids* may be classed as Turritella.
> *Amer. Nat.*, Oct., 1907, p. 638.

vermian, *a.* **2.** In *anat.*, relating to the vermis of the cerebellum. *Buck*, Med. Handbook, II. 158.

vermicular, *a.* **5.** Noting limestone, sandstone, or shale rocks from which minerals have been dissolved leaving round holes or cavities which give the rock the appearance of having been worm-eaten.

> The '*vermicular* limestones' have given geologists much trouble as to a satisfactory explanation of their formation. That sodium chloride was the original occupant of these cavities seems doubtful. But celestite is soluble in water containing small quantities of sodium, calcium or magnesium-chloride. *Science*, April 15, 1904, p. 620.

Vermicularia (vėr-mik-ụ̄-lā′ri-ạ̈), *n.* [NL. (Tode, 1790), ‹ L. *vermiculus*, a worm; referring to the cylindrical spores of some species.] A large genus of *Fungi Imperfecti*, having mostly superficial, black, membranous pycnidia provided with stiff dark bristles. The spores are elongate, unicellular, and hyaline. Over 125 species have been described. *V. Dematium* is a common species throughout the northern hemisphere, occurring on dead herbaceous and woody plants. *V. circinans* is the cause of onion-scab.

vermiculation, *n.* **5.** A color-marking of fine, wavy lines: a term frequently used in describing the plumage of birds.

vermicule, *n.* **2.** A motile, worm-like stage in the development of some sporozoans. See ★*pseudovermiculus*. *Proc. Roy. Philos. Soc.* (London), March 6, 1902, p. 76.

vermiculus, *n.* **3.** Same as ★*vermicule*, 2.

> MacCallum's observations on Halteridium, a crescentic parasite of birds, indicate that these crescentic bodies are of two varieties, one, the male, producing flagella, the other, the female, uniting with a free flagellum and developing into a motile form called the "*vermiculus*."
> *J. Ewing*, in Jour. Exper. Med., March 25, 1901, p. 467.

vermidom (vėr′mi-dom), *n.* [L. *vermis*, a worm, + *dom*(*us*), house.] A colony or aggregated group of tubicolous worms. *Encyc. Dict.*

vermilion, *n.*—**American vermilion.** Same as *Austrian* ★*cinnabar*.

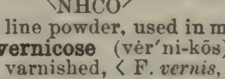
vermilionette (vėr-mil-yo̤n-et′), *n.* [*vermilion* + *-ette*.] A trade-name for a red pigment made by precipitating a solution of eosin with sodium carbonate in water by means of lead acetate. The precipitation may be effected in the presence of red lead or basic lead chromate, or white zinc may be used as the material on which to fix the eosin. Any such product is of little value because of its fugitive character as a pigment.

Verminous bronchitis, cachexia. See ★*bronchitis*, ★*cachexia*.

Vermontese (vėr-mon-tēs′), *n. sing.* and *pl.* [*Vermont* + *-ese*.] An inhabitant, or the inhabitants, of Vermont.

> The refusal of Congress to welcome the new State was a cause of estrangement which the British government hoped to use in efforts to induce a return of the *Vermontese*, as the fashion of speech then went, to their allegiance.
> *Winsor*, Narrative and Critical History of America, VII. [188, note.

Vernal catarrh. See ★*catarrh*.

vernal^2 (vėr′nal), *n.* [? *vern*(*in*) + *-al*^{3}.] The trade-name of diethylmalonylurea,  $\mathrm{CO}\left\langle\begin{matrix}\mathrm{NHCO}\\ \mathrm{NHCO}\end{matrix}\right\rangle\mathrm{C}(\mathrm{C}_2\mathrm{H}_5)_2$, a colorless, crystalline powder, used in medicine as a soporific.

vernicose (vėr′ni-kōs), *a.* [NL. *vernicosus*, varnished, ‹ F. *vernis*, varnish.] In *bot.*, having a shiny surface as though freshly varnished.

Vernier chronoscope. See ★*chronoscope*.

vernier-compass (vėr′ni-ėr-kum″pas), *n.* **1.** A form of compass for surveyors' use in which the horizontal limb carrying the sights is fitted with a vernier for close-reading of the angles from the compass-needle as a zero point.—**2.** A form of dividers for shop use in which the vernier principle is applied for setting or for reading the distance apart of the points. One arm has the fixed scale, and the other has the movable one. The two scales are laid out from the common center of the pivot of the compass, and slide past each other as the two legs are adjusted.

vernier-gage (vėr′ni-ėr-gāj″), *n.* **1.** A gage or measuring and calipering apparatus to which the principle of the vernier is applied. It usually has the measuring element in two parts which slide past each other in measuring and carry on the contact edges the two graduations of the vernier type.—**2.** A form of pressure-recording apparatus in which the indicating needle or arm is fitted with one graduation of the vernier and the fixed dial carries the other.

vernin (vėr′nin), *n.* [? L. *vern*(*alis*), of the spring, + *-in*^{2}.] A colorless alkaloid, $C_{16}H_{20}O_8N_8.3H_2O$, contained in the young shoots of the vetch, the clover, and the gourd, in hazel and pine pollen, in germinated barley, and in the sugar-beet. It crystallizes in slender, lustrous, microscopic prisms.

vernis Martin (ver-nē′ mär-taṅ′), *n.* [F. *vernis*, varnish, + *Martin*, a personal name.] A colorless lac varnish, peculiarly adapted for fixing the finest water-color paintings on thin ivory or wood surfaces, invented by Martin, a coach-painter of Paris, in the reign of Louis XIV.

vernonin (vėr′nọ̄-nin), *n.* [*Vernonia* + *-in*^{2}.] A colorless, pulverulent compound, $C_{10}H_{24}O_7$, contained in the root of *Vernonia Nigritiana*. It is used on the west coast of Africa as a febrifuge and is a cardiac poison, 80 parts of it producing the same effect as one part of digitalin.

Vernon shale. See *Salina* ★*beds*.

veronal (ver′ọ̄-nạl), *n.* [*ver*(*nin*) + *-on-* + *-al*^{3}.] A trade-name for diethylmalonylurea, used medicinally as a hypnotic. *Buck*. Med. Handbook, VIII. 221.

verriculated (ve-rik′ụ̄-lā-ted), *a.* Same as *verriculate*.

verriculose (ve-rik′ụ̄-lōs), *a.* Same as *verriculate*.

verriculum (ve-rik′ụ̄-lum), *n.*; pl. *verricula* (-lạ̈). [NL.] Same as *verricule*.

verruca, *n.*—**Verruca necrogenica.** Same as *anatomical tubercle* (which see, under *tubercle*).—**Verruca plana**, a broad, flat wart, usually on the face or back.—**Verruca senilis**, a form of wart, usually verruca plana, occurring in the aged.

Verrucariales (ver-ŏ-kā-ri-ā′lēz), *n. pl.* [NL., ‹ *Verrucaria*, the type genus, + *-ales*.] An order of pyrenocarpous lichens, the *Pyrenocarpeæ* of Zahlbruckner's classification, in Engler and Prantl's *Natürlichen Pflanzenfamilien*. The *Verrucariaceæ* are one of the principal families.

verrucosis (ver-ŏ-kō′sis), *n.* [NL., ‹ *Verruc*(*aria*) + *-osis*.] Same as *lemon*-★*scab* and *orange*-★*scab*.

verrugato (ver-ŏ-gä′tō), *n.* [Sp., warty, ‹ *verruga*, ‹ L. *verruca*, a wart.] A name of *Micropogon furnieri* of the West Indies, of *Micropogon ectenes* of the Pacific coast of Mexico, and of *Menticirrhus elongatus* of the Pacific coast of Central America, fishes of the family *Sciænidæ*; also of the Mexican flasher, *Lobotes pacificus*.

versatile, *a.* **7.** In *ichth.*, capable of being turned either way: describing a spine, a tooth, or any organ that may not be usually so turned. *Jordan and Evermann*, Amer. Food and Game Fishes, p. 540.

verse^2, *n.*—**Intensity-verse**, in *phonetics*, verse the rhythm of which depends primarily upon differences of intensive accentuation, and not upon the alternation of long and short syllables: opposed to ★*time-verse*. *Scripture*, Exper. Phonetics, p. 538.

verse-group (vėrs′gröp), *n.* The verse considered as the unit of rhythm.

> The rhythm on which he lays most stress has as its unit the verse, or line (average duration, 2.69 sec.; but where the rhythmic effect is most marked, average 1.67 sec.). . . . This 1.67 sec. *verse-group*, he feels, tallies fairly well with the normal attention-time.
> *G. M. Stratton*, Exper. Psychol. and its Bearing upon [Culture, p. 236.

versicler (vėr′si-klėr), *n.* [*versicle*, *n.*] One who writes versicles or little poems. [Rare.]

> "I 'll read your *versicler* to-morrow morning early." The latter expressed a fear that the hour was too critical for poetry. *G. Meredith*, Diana of the Crossways, xxx.

versiera (ver-si-ā′rä), *n.* [It., 'the wife of the Adversary,' a female goblin, ‹ L. *adversaria*, fem. of *adversarius*, an adversary. See *adversary*.] In *math.*, a certain curve, 'the witch of Agnesi.' See *witch*^{1}.

versine (vėr′sīn), *n.* [*ver*(*sed*) + *sine*.] Same as *versed sine*. See *sine*^{2}.

versionize (vėr′sho̤n-īz), *v. t.*; pret. and pp. *versionized*, ppr. *versionizing*. [*version* + *-ize*.] To make a version of; translate. [Rare.]

> Wace's poem, already taken from Geoffrey of Monmouth, as Geoffrey had taken it, or pretended to take it from the older chronicle, was soon again, as we shall see, to be *versionized* into English. *H. Coppée*, Eng. Lit., p. 52.

versor, *n.*—**Quadrilateral versor**, in *math.*, a versor the rotatory effect of which upon a vector is equal to a right angle.

verst, *a.* A simplified spelling of *versed*.

vert^1, *n.*—**Vert sablé** (F. 'sanded green'), a sandy or speckled green color used on Sèvres porcelain.

vert^2, *v.* **II.** *trans.* To turn: noting the movements of the eyeball.

> For instance, all of the muscles of the eyes may be relatively weak. The ducting or *verting* power is not as great as it should be. *Med. Record*, Feb. 7, 1903, p. 210.

Vert. An abbreviation (*a*) of *Vertebrata*; (*b*) of *vertebrate*.

verteber (vėr′tẹ̄-bėr), *n.* An obsolete English form of *vertebra*.

vertebra, *n.*—**Anticlinal vertebra**, a vertebra, near the center of the dorsolumbar series, having a vertical spinous process toward which the spinous processes of the vertebræ on either side incline. The typical form of anticlinal vertebra is found in members of the cat family. —**Caudal vertebræ**, in *ichth.*, that portion of the vertebral column behind the abdominal cavity which bears hemapophyses and is without ribs. See *abdominal vertebræ*, under *abdominal*.—**Complex vertebra**, a name given by Ramsay Wright to the elongate second vertebra of catfishes, which is really a complex structure formed by the fusion of the second, third, and fourth vertebræ.

> For convenience in descriptive anatomy we venture to propose for the confluent, 2nd., 3rd., and 4th. vertebræ the term *complex vertebra*.
> *Philos. Trans. Roy. Soc.* (London), 1893, ser. B, p. 70.

Naked vertebræ, the imperfectly ossified vertebræ of some ganoid fishes (the older *Crossopterygii*, the *Heterocerci*, the pycnodonts, etc.), in which the interior of the arches and spinous processes is cartilaginous, while the outer coating of bone forms a hollow cylinder.—**Ring vertebra**, a vertebra composed of two half vertebræ and hollow within, such as occur in some fishes. See ★*hemivertebra*.

vertebral, *n.* **3.** One of the unpaired horny plates which cover the median dorsal portion of the carapace of a turtle.

vertebralia (vėr-tẹ̄-brā′li-ạ̈), *n. pl.* [NL., neut. pl. of *vertebralis*. See *vertebral*.] The horny plates which run along the central portion of the carapace, or upper shell, of a turtle; the vertebrals. See ★*vertebral*, *n.*, 3. Same as ★*neuralia*.

vertex, *n.* **2.** (*b*) In *geom.*, the point at which concurrent straights meet.—**Vertex of a cone**, the apex.—**Vertex of a curve**, any point in which a diameter meets the curve.—**Vertex of an angloid** the common origin of the rays.—**Vertex of a pencil or sheaf**, in *geom.*, the cointersection point of the system of concurrent straights.

vertical. **I.** *a.*—**Vertical circle.** (*c*) A telescope moving in a vertical plane with a large circle attached upon which vertical angles are read. The instrument is not confined to the meridian but is free to turn around a vertical axis.—**Vertical equation, trace.** See ★*equation*, ★*trace*^{1}.

II. *n.*—**Angle of the vertical.** See ★*angle*^{3}.

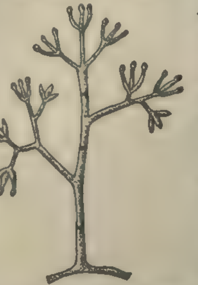
verticibasal (vėr′ti-si-bā′sa̤l), *a.* [L. *vertex* (*vertic-*), top, + *-i-* + E. *basal.*] In *bot.*, characterized by a base and vertex.

All the higher plants and also most algæ are bipolar (*verticibasal*). *Pfeffer* (trans.), Physiol. of Plants, II. 155.

verticibasality (vėr″ti-si-bā-sal′i-ti), *n.* [L. *vertex* (*vertic-*), top, + *-i-* + E. *basal* + *-ity.*] In *bot.*, the character of being verticibasal; the fact of being organized with base and apex. See ★*polarity*, 1 (*c*).

Flowering plants possess, therefore, a relatively stable *verticibasality*.
Pfeffer (trans.), Physiol. of Plants, II. 155.

Verticillium (vėr-ti-sil′i-um), *n.* [NL. (Nees von Esenbeck, 1816), < L. *verticillus*, a whorl.] A genus of hyphomycetous fungi, having erect branched conidiophores with the terminal branches in whorls and bearing unicellular hyaline or bright-colored conidia. Over 50 species have been described. *V. Candelabrum* is a common species on decaying wood in Europe and North America.



Verticillium Candelabrum, showing branched conidiophore with conidia: much magnified.

vertigo, *n.*—**Laryngeal vertigo,** a neurosis marked by vertigo, preceded by a feeling of fulness in the throat and coughing, and followed by loss of consciousness.—**Ophthalmic vertigo,** dizziness due to ocular defects, especially the insufficiency of the muscle of the eye.

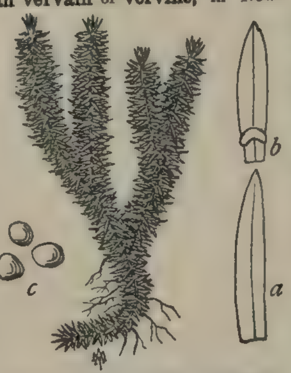
vervain, *n.*—**Indian vervain** or **vervine,** in Newfoundland, the shining club-moss or swamp evergreen, *Lycopodium lucidulum.* See *shining* ★*club-moss.*

vervine (vėr′vīn), *n.* A common corruption of *vervain.*

Very lord, tenant. See *very* ★*lord.*

ves. Abbreviation of Latin *vesicatorium* (a blister).

vesanic (vē-san′ik), *a.* [L. *vesanus*, insane, + *-ic.*] Insane; of or pertaining to insanity. *Buck*, Med. Handbook, V. 87.



Indian Vervain (*Lycopodium lucidulum*). *a*, leaf; *b*, sporophyll with sporangium; *c*, spores.

vesbium (ves′bi-um), *n.* [NL., < It. dial. *Vesbio*, < L. *Vesuvius*, Vesuvius.] A supposed new chemical element announced in 1879 by Scacchi as present in lava from Vesuvius. It was afterward shown to be vanadium.

vesical, *a.*—**Vesical crises,** attacks of violent pain in the bladder, with tenesmus, occurring sometimes in the course of locomotor ataxia.—**Vesical reflex.** Same as *urinary reflex* (which see, under ★*reflex*).

vesicle, *n.* 1. (*d*) In *petrog.*, a cavity in lava formed by the expansion of escaping gas-bubbles, chiefly of steam.—**Accessory vesicle,** in certain polyclads, a backward prolongation of the vagina as a blind sac beyond the point of entrance of the duct from the uteri.—**Anal vesicle,** in gephyreans, one of the branching structures, of supposed excretory function, which unite into a common stem opening into the intestine close to the anus.

The study of the development of the Gephyrea, according to Korschelt and Heider, proves that these organs "do not arise, as was supposed, from the intestine, but are formed in the somatic layer of the mesoderm"; and further that "their entire mode of origin proclaims the *anal vesicles* to be nephridia which only secondarily entered into connection with the hind gut." If this is so, their function must be excretory; and the observations of many zoologists lend support to this theory.
Trans. Linn. Soc., Zool., Dec., 1900, p. 88.

Caudal vesicle. See ★*caudal.*—**Chlorophyl vesicle.** See ★*chlorophyl.*—**Racemose vesicle,** in starfishes, one of the small rounded glandular bodies projecting inward from the circumesophageal canal. There is a pair in each interradius except the one containing the stone-canal; in this there is only a single vesicle. Also known as *Tiedemann's body* or *Tiedemann's vesicle.*—**Tiedemann's vesicle.** Same as *racemose* ★*vesicle.*

vesicorectal (ves″i-kō-rek′ta̤l), *a.* [L. *vesica*, bladder, + *rectum*, rectum, + *-al*¹.] Relating to both the bladder and the rectum.

vesicospinal (ves″i-kō-spī′na̤l), *a.* [L. *vesica*, bladder, + *spina*, spine, + *-al*¹.] Having relation to both the bladder and the spinal cord: noting the nerve-center for the act of urination, located in the spinal cord. *Ribot* (trans.), Psychol. of Emotions, p. 116.

vesico-urachal (ves″i-kō-ū′ra̤-ka̤l), *a.* [L. *vesica*, bladder, + NL. *urachus* + *-al*¹.] Relating to the bladder and the urachus.

vesico-urethral (ves″i-kō-ụ-rē′thra̤l), *a.* [L. *vesica*, bladder, + NL. *urethra* + *-al*¹.] Relating to both the bladder and the urethra. *Buck*, Med. Handbook, I. 777.

Vesicular structure. See ★*structure.*

vesiculate, *v.* **II.** *trans.* To fill or cover with vesicles; render vesiculate or vesicular.

Baking Powder *vesiculates* the dough by mechanical means, and affects or changes the constituents of the flour. *Med. Record*, Feb. 7, 1903.

vesiculectomy (vẹ-sik-ụ-lek′tọ-mi), *n.* [L. *vesicula*, vesicle, + Gr. ἐκτομή, a cutting out.] Excision of a portion of the seminal vesicle on either side, with the object of producing sterility.

vesiculitis (vẹ-sik-ụ-lī′tis), *n.* [NL., < L. *vesicula*, vesicle, + *-itis.*] Inflammation of a vesicle, specifically of the seminal vesicles.

vesiculopapular (vẹ-sik″ụ-lō-pap′ụ-lä̤r), *a.* [L. *vesicula*, vesicle, + *papula*, papula, + *-ar*³.] Marked by both vesicles and papules. *Buck*, Med. Handbook, III. 720.

vesp. An abbreviation of the Latin *vespere*, in the evening.

vesper, *n.* **3.** A vesper hymn or song. [Rare.]

Heartless things
Are done and said i' the world, and many worms
And beasts and men live on, and mighty Earth
From sea and mountain, city and wilderness,
In *vesper* low or joyous orison,
Lifts still its solemn voice.
Shelley, Alastor, l. 694.

vespertine, *a.* **6.** In *astrol.*, setting after the sun: said of a planet.

vespid (ves′pid), *n.* and *a.* **I.** *n.* A member of the hymenopterous family *Vespidæ.*

II. *a.* Having the characteristics of or belonging to the family *Vespidæ.*

vespoid (ves′poid), *n.* and *a.* **I.** *n.* A member of the hymenopterous superfamily *Vespoidea.*

II. *a.* Having the characteristics of or belonging to the superfamily *Vespoidea.*

Vespoidea (ves-poi′dē-ä̤), *n. pl.* [NL., < *vespa* + *-oidea.*] The old family *Vespidæ* considered as a superfamily.

vessel, *n.*—**Bast vessel.** Same as *sieve-cell.*—**Cardiovisceral vessel.** See ★*cardiovisceral.*—**Supraspinal vessel,** in *entom.*, a ventral sinus lying on the nerve-cord and closed by a pulsating diaphragm.

Vestalia (ves-tā′li-ä̤), *n.* [NL., neut. pl. of *Vestalis*, Vestal.] In *Rom. antiq.*, the yearly festival of Vesta, which occurred on the ninth of July.

Vested school. See ★*school*¹.

Vestibular canal. Same as *urogenital sinus.*

vestibule, *n.* **3.** (*c*) In *Bryozoa* of the suborder *Cryptostomata*, a tubular shaft which lies above and leads to the mouth of the zoœcium. This vestibule or vestibular shaft may be crossed by diaphragms or hemisepta and is surrounded by vesicular tissue or a solid calcareous deposit.—**4.** In *car-building*, a car-platform inclosed above and on two sides and connected by a bellows-like extension with the similarly inclosed platform of the next car. Each extension carries an iron door-frame called a *face-plate.* When two cars are coupled together the opposing face-plates are pressed together by springs, which at the same time allow them to slip over one another with the motion of the cars. The permanent structure of the vestibule includes doors on each side, at the steps, and hinged platforms to cover the steps when the doors are closed.

vestibule-latch (ves′ti-būl-lach″), *n.* In *lock-making*, a lock for an outside door, having a bolt operated from the outside by a key and from the inside by the door-knob, the outer knob being fixed or controlled by a stop.

vestibulotomy (ves-tib-ụ-lot′ọ-mi), *n.* [L. *vestibulum*, forecourt, vestibule, + Gr. τομή, a cutting.] Operative opening into the vestibule of the inner ear.

Of these combinations the most important is that of superior with inferior *vestibulotomy*, constituting what we have called "double *vestibulotomy*."
Lancet, May 9, 1908, p. 1341.

vestige, *n.*—**In vestige,** as a vestigial organ or structure.

The fundus of a pouch whose opening remains *in vestige* on the back of the tongue, as in the foramen cæcum.
Encyc. Brit., XXV. 403.

vestigially (ves-tij′i-a̤l-i), *adv.* In a vestigial or rudimentary way.

This conception [of the sentience of environing bodies] persists up through barbarism, albeit *vestigially*, into civilization.
Amer. Anthropologist, Jan.-March, 1902, p. 33.

vestium (ves′ti-um), *n.* [NL., < L. *Vesta*, Vesta.] See ★*sirium.*

vestry, *n.* **3.** (*b*) The identity of ecclesiastical and secular powers and duties in the English parish represented by the vestry has now quite disappeared. The important acts tending to this result were the Public Health Act of 1875, which virtually made each urban civil parish, outside the metropolitan area, a distinct 'urban district'; the Local Government Act of 1894, which gave rural civil parishes certain powers of self-government; and the London Government Act of 1899, which substituted municipal boroughs for the former civil parishes of London.

By the London Government Act, 1899, twenty-eight boroughs were created in substitution for the old vestries, boards, commissioners, etc. The general administrative powers of these boroughs are but little larger than those of the vestries which they have superseded.
J. F. Stephen, Laws of England (14th Ed.), III. 33.

veszelyite (ves′zel-yīt), *n.* [Named after one *Veszely*, a mining engineer.] A hydrous phosphate and arsenate of lead and zinc occurring in crystalline granular incrustations of a greenish-blue color: from Morawitza in the Banat.

Vet. An abbreviation (*a*) of *veteran;* (*b*) of *veterinary.*

veter. [*l. c.* or *cap.*] An abbreviation of *veterinary.*

vetitive (vet′i-tiv), *a.* [L. *vetitum*, pp. of *vetere*, forbid.] Of the nature of or pertaining to a veto; that forbids or prohibits.

The only case in which our executives have a real *vetitive* power is the case of pardon.
F. Lieber, Civil Liberty, p. 202.

Vet. Surg. An abbreviation of *veterinary surgeon.*

vexillatio (vek-si-lā′shi-ō), *n.* [L., < *vexillum*, a standard.] In *Rom. antiq.*, a body of troops marching under a single vexillum or battle-flag.

veziga (ve′zi-gä̤), *n.* [Russian.] The prepared spinal cord of the sturgeon.

Twenty-five of the common sturgeon of Russia being required to furnish 1 pound of "*veziga*" or viaziga (prepared spinal cord), as the product is commonly known in the European markets.
Bulletin U. S. Fish Com., XVIII. 417.

V-gear, *n.* **2.** A friction-gear which has V-grooves turned in its face, to give a large gripping surface, and allow the gear to wedge slightly into the grooves on the gear with which it works.

V-hut (vē′hut), *n.* A hut shaped like the letter V. See the extract. [Australasia.]

In case my readers may not know what a '*V*' *hut* is like, I will describe one:—It is exactly as if you took the roof off a house and stood it on the ground, you can only stand upright in the middle.
C. L. Innes, Canterbury Sketches, p. 20. Quoted in E. [E. Morris, Austral English.

via¹, *n.*—**Secundæ viæ,** the second passages for nutrient material, namely, the lacteals, blood-vessels, and lymphatics, whereby the digested material is carried to the tissues.

viagram (vī′a̤-gram), *n.* [L. *via*, way, road, + Gr. γράμμα, a writing.] The diagram or trace made by the recording pen of a viagraph.

In the experiments the viagraph must play a conspicuous part; and if the speed, pull, and vibration could be autographically recorded to correspond with the '*viagram*' the different conditions could be seen at a glance, while a scale of measurements would give definite results.
Rep. Brit. Ass. Ad. Sci., 1901, p. 414.

viagraph (vī′a̤-gråf), *n.* [L. *via*, way, road, + Gr. γράφειν, write.] An instrument designed to indicate and usually to record the resistances offered by the roadway to a wheeled vehicle running over it. It gives the grades, the inequalities of surface and the resistances to traction caused by these, particularly with varying quality of road-making material. When made a recording instrument, the trace of the pen or pencil is called a *viagram*, and its ordinates give the values of the desired factors or elements under observation, while the abscissas are distances upon the road from the starting-point.

An instrument called the *viagraph* is described by the author, which takes an automatic record of the inequalities of the street surface and gives the sum of all the vertical depressions found in paving over a mile.
Pop. Sci. Mo., Feb., 1901, p. 438.

vial, *n.*—**Bologna vial,** in *glass-manuf.*, a glass vial which has been suddenly cooled in the making. It has a thick bottom and open mouth, and will resist a smart blow, but will fly in pieces if a sharp grain of sand is dropped into it.

viatorial (vī-a̤-tō′ri-a̤l), *a.* [L. *viator*, a traveler, + *-al*¹.] Of or pertaining to traveling.—**Viatorial privilege.** See ★*privilege.*

vibrancy (vī′bran-si), *n.* [*vibran*(*t*) + *-cy.*] The character of being vibrant; capability or fact of vibration.

vibration, *n.*—**Circular vibration,** the resultant of two plane vibrations, equal in amplitude and frequency, but at right angles to one another and having a difference of phase of 90°.—**Damped vibration,** a simple harmonic motion with a decreasing amplitude.—**Elliptical vibration,** the periodic motion of a particle or medium which results from the composition at right angles of two plane vibrations of equal frequency and having a difference of phase other than a quarter of a wave-length.—**Forced vibration,** vibration of a body or system produced by the periodic application of a force the frequency of which differs from the free vibrational frequency of the body. Forced vibrations correspond to the frequency of the applied force and not to the frequency of free vibration of the body or system. *Encyc. Brit.*, XXV. 53.—**Isochronous vibration,** a vibration the frequency of which is independent of the amplitude. In isochronous vibrations, the time consumed by each oscillation remains constant, as the vibration diminishes in intensity, until the motion ceases altogether.—**Rectilinear vibration,** a vibration in which the path of the oscillation is along a straight line. See *simple harmonic motion*, under *motion*.—**Stationary vibration,** a vibration in which the position of the nodes and loops is fixed. The vibration of a standing-wave system in which interference causes the permanence of the nodes in space is a stationary vibration.—**Synchronous vibrations,** vibrations having the same frequency and the same phase.—**Vibration form,** in *optics*, the path or curve described by the end of the line representing the light vector at any point.—**Vibration galvanometer,** a galvanometer with light moving parts and a free period of oscillation such as to permit to follow, by its deflections, the rapid fluctuations of a vibratory current. One of the most sensitive forms is the string-galvanometer of Einstoven.—**Vibration magnetometer.** See ★*magnetometer*.

vibration-ratio (vī-brā′shǫn-rā″shi-ō), *n.* In *acoustics*, the ratio of the pitch-numbers of tones, more especially of the tones composing the musical intervals: as, the *vibration-ratio* of the octave, etc. *E. B. Titchener*, Exper. Psychol., I. i. 35.

vibrator, *n.* **4.** Any arm or lever pivoted at one point and free to swing or vibrate between stops, usually adjustable in position; in general uses, such a device operating at high speeds or frequency.—**5.** An appliance with a rubber or other tip of variable shape which is made to oscillate very rapidly by means of electricity or some mechanical device: employed in mechanicotherapy to give vibratory massage to a part.—**Ribbon vibrator,** in *elect.*, an interrupter consisting of a vibrating ribbon or strip of steel the frequency of which is adjusted by varying the tension with which it is stretched.—**Righi vibrator,** an apparatus, devised by Professor Righi of Bologna, for the production of very short electric waves. It consists essentially of a series of three spark-gaps between small balls of metal. *Elect. World and Engin.*, Feb. 13, 1904, p. 203.

vibrio, *n.*—**Koch's vibrio.** Same as *Koch's comma* ★*bacillus*.—**Metchnikoff's vibrio,** a species of bacteria, *Microspira* (*Vibrio*) *Metchnikovi*, said to be the cause of an intestinal disease of chickens. See ★*Microspira*.

vibrioid (vib′ri-oid), *a.* [NL. *Vibrio* + *-oid.*] Pertaining to or resembling *Vibrio*, a genus of bacteria.

vibrograph (vī′brǫ-gráf), *n.* [L. *vibrare*, swing, + Gr. *γράφειν*, write.] An instrument designed to record photographically vibrations, as of a building, the ground, etc. *Nature*, Feb. 25, 1904, adv.

vibrometer (vī-brom′e-tėr), *n.* [L. *vibrare*, vibrate, + Gr. *μέτρον*, measure.] A device for imparting vibrations to the membrana tympani in the treatment of tinnitus aurium and deafness. *Buck*, Med. Handbook, III. 653.

vibrophone (vī′brǫ-fōn), *n.* [L. *vibrare*, vibrate, + Gr. *φωνή*, sound.] A device for inducing movements of the drum-membrane of the ear by means of sound-waves directed into the auditory meatus. *Buck*, Med. Handbook, III. 653.

vibroscopic (vī-brǫ-skop′ik), *a.* [*vibroscop*(*e*) + *-ic.*] Pertaining to, or obtained by means of, a vibroscope.

vibrotherapeutics (vī′brǫ-ther-ą-pū′tiks), *n.* [L. *vibrare*, vibrate, + E. *therapeutics*.] The employment of mechanical vibration in the treatment of disease.

viburnin (vī-bėr′nin), *n.* [*Viburn*(*um*) + *-in*^{2}.] A substance, probably consisting of a mixture of compounds, extracted from the black haw, *Viburnum prunifolium*. It is used medicinally in certain uterine affections.

Vic. Ap. An abbreviation of *Vicar Apostolic*.

vicar, *n.*—**Vicar capitular,** an ecclesiastic governing a diocese during the interregnum between the death of a bishop and the instalment of his successor.—**Vicar-general.** (*b*) A priest deputized by a bishop to assist him in the administration of a diocese, but without episcopal jurisdiction or functions.

vicarious, *a.* **5.** In *paleon.*, said of representative, closely related species or genera of fossil organisms occurring in homotaxial formations of different faunal provinces. Examples are afforded by the Silurian trilobites *Deiphon americanus*, of the American Niagaran, and *Deiphon forbesi*, of the British Wenlock beds; and by the brachiopods *Orthis striatula*, of the European Upper Devonian, and *Orthis tulliensis* and *O. impressa*, of the homotaxial North American formations.

vice-kingdom (vīs′king″dǫm), *n.* The territory ruled by, or the jurisdiction of, a vice-king or viceroy; a viceroyalty.

vice-reine (vēs-rān′), *n.* [F., < *vice-*, vice-, + *reine*, < L. *regina*, queen.] **1.** A nominal title of the wife of a viceroy.

> The first photo taken of the *Vicereine* during the State tour in Burma. *Black and White*, Jan. 4, 1902, p. 4.

2. The female governor of a state or colony, who rules in place of the king. [Rare.]

> "Brussels . . . at the time that it belonged to Austria and had his sister the Archduchess Mary Christine for *Vice-Reine*. *Jerningham Letters*, II. 391.

3. An American nymphalid butterfly, *Basilarchia floridensis*, found in Georgia and Florida, and resembling the viceroy although much darker in color. *Comstock*, How to Know the Butterflies, p. 173.

Vic. Gen. An abbreviation of *Vicar-General*.

vichy (vish′i), *n.* An abbreviation of *Vichy water*. See *water*.

vicilin (vis′i-lin), *n.* [L. *vicia*, vetch, + *-l-* + *-in*^{2}.] A globulin found in the horse-bean, *Vicia faba*; also in lentils, peas, etc.

vicinage, *n.*—**Jury of the vicinage.** See ★*jury*.

vicinal, *a.* **2.** In *organ. chem.*, noting the proximity, in the molecule of a cyclic compound, of two or more substituting groups or atoms. It is used especially of derivatives of benzene having groups in the positions 1,2,3.

vicine^{1}, *a.* **2.** In *phytogeog.*, naturalized from a neighboring formation: opposed to ★*adventitious*. See ★*adventitious*, 4. *F. E. Clements*.

vicine^{2} (vis′in), *n.* [L. *vicia*, vetch, + *-ine*^{2}.] A colorless compound, $(C_8H_{15}O_6N_3)_x$, contained in the seeds of the horse-bean, *Vicia faba*, *V. faba minor*, and in the sugar-beet root. It crystallizes in aggregates of needles.

vicinity, *n.* **4.** In *geom. topics*, a place, A, is said to be in the vicinity of a place, B, within a place, C, which contains both A and B, and in a given respect, if, and only if, an object instantaneously filling A can by an ordinary motion move to B without ever leaving C, and without at any instant during its motion occupying any place which differs from A in the given respect.—**Immediate vicinity,** in the *theory of functions*, a part of a continuum so near to a point (or other element) that there is no change material for the purpose in hand between its outmost verge and that point (or element).

Vicious circle. See ★*circle*.

Vicksburg beds. Same as *Vicksburg group*.

Victoria black. See ★*black*.—**Victoria green.** (*b*) Same as *malachite-green*, 2.

victorium (vik-tō′ri-um), *n.* [NL., named from Queen *Victoria* of Great Britain.] The second name given by Sir William Crookes to a supposed new chemical element of the yttrium group which he had at first called *monium*. The oxid was obtained as the result of long-continued fractionation of what had been considered an yttrium salt, and the chief evidence of its being distinct was afforded by study of the phosphorescent spectrum. The question of the independent existence of this, as of sundry other supposed constituents of the group of the rare earths, remains to be cleared up. See ★*monium*.

vid (vid), *n.* In *math.*, a letter or unit in Benjamin Pierce's linear algebras.

vid. [*l. c.* or *cap.*] An abbreviation of the Latin *vide*, see.

Vidal black. See ★*black*.

vidduy (vid′ö-ē), *n.* [Heb., < *ỹadah*, confession of sin, prayer for pardon (Jastrow).] A name especially applied to the confession called *'al-het*, which is repeated four times during the services of the eve and day of atonement; also applied to the confession of a sick Hebrew when he is approaching death.

vide^{2} (vēd), *a.* [F. *vide*, empty, unoccupied. See *void*.] **1.** In *music*, especially in orchestral scores, an indication of an omitted passage or cut.—**2.** In *violin music*, a direction to play a note upon an open, unstopped string.

vieja (vẹ-ā′hä), *n.* [Cuban Sp., < Sp. *vieja*, fem. of *viejo*, old, < L. *vetulus*, old.] A common name of fishes of the genus *Sparisoma*.—**Vieja colorada,** *Sparisoma flavescens*, a scaroid fish found from Key West to Rio Janeiro.—**Vieja muger.** Same as ★*Vieja colorada*.

Vienna blue. See ★*blue*.—**Vienna green,** cupric arsenite or aceto-arsenite, used as a pigment.—**Vienna lime.** See ★*lime*^{1}.—**Vienna porcelain.** See ★*porcelain*^{1}.

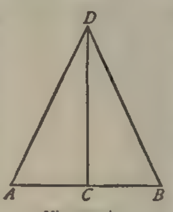
vierer (fēr′ėr), *n.* [G., < *vier*, four.] A small coin of the Swiss canton of Berne, equal to four deniers or denarii, introduced in 1828.

vierin (vī′ẹ-rin), *n.* An amorphous, white, bitter principle of aromatic odor obtained from the bark of *Remizia velozii*: used as a substitute for quinine.

vierkleur (fēr′klėr), *n.* [D., < *vier*, four, + *kleur*, color.] The four-colored (red, white, blue, and green) flag of the former South African Republic (Transvaal).

vietinghofite (fē′ting-hōf-īt), *n.* [Named after M. de *Vietinghof*.] Essentially a ferruginous variety of samarskite, from near Lake Baikal, Siberia.

view-angle (vū′ang″gl), *n.* In *photog.*, the angle included by a lens, determined from the relation of the focal length to the diameter of the field. If, in the figure, AB equals the diameter of the field and CD the focal length, then the angle ADB is the view-angle. When the ratio between the diameter of field and focal length is known, reference tables give the angle sought.



View-angle.

> In so far as we depart from this normal *view-angle* of 50°, whether from choice or necessity, we will obtain perspectives to which the eye is unaccustomed, and which will therefore be spoken of as unnatural, exaggerated, etc. *Photo-miniature*, Sept., 1901, p. 249.

view-finder (vū′fīn″dėr), *n.* Same as *finder* (*f*).

vigesimal, *a.* **2.** Based upon twenty.

> The *vigesimal* system flourished in America, but was rare in the Old World. *F. Cajori*, Hist. Elementary Math., p. 4.

Vigesimal notation, system. See ★*notation*, ★*system*.

vigesimoquarto (vī-jes″i-mō-kwâr′tō), *a.* Said of a section of twenty-four pages in a book, on a sheet, or in form of type. Usually called *twenty-four-mo*.

vigilambulism (vij-il-am′bū-lizm), *n.* [L. *vigilia*, a waking, + *ambulare*, walk. Cf. *somnambulism*.] See the extract.

> Another form of natural somnambulism . . . is "day-time" somnambulism, or *vigilambulism*. It concerns hysterical patients who possess, besides their normal and regular life, another psychological existence or second state, so to speak, of which they retain no memory in their normal condition. The peculiar characteristic of this second state is that it constitutes a complete psychological existence; the subject lives the everyday life, his mind is alive to all ideas and perceptions, and he is not delirious. *A. Binet* (trans.), Alterations of Personality, p. 3.

vigilist (vij′il-ist), *n.* [*vigil* + *-ist.*] One who keeps a vigil in the ecclesiastical sense of the word; in general, one who keeps watch.

vigneron (vi-nye-roṅ′), *n.* [F., < *vigne*, vine. See *vine*.] A wine-grower; one who cultivates grapes.

vignin (vig′nin), *n.* [NL. *Vigna* (see def.) + *-in*^{2}.] A globulin found in the cow-pea, *Vigna sinensis*.

vigogne (vi-gōny′), *n.* [F. *vigogne*, vicuna.] A soft woolen dress material. *Dry Goods Economist*, June 13, 1908.

vigorite (vig′ǫ-rīt), *n.* [*vigor* + *-ite*^{2}.] The trade-name of an explosive, one grade of which consists of 30 per cent. nitroglycerin, 49 per cent. potassium chlorate, 7 per cent. potassium nitrate, 9 per cent. wood-pulp, and 5 per cent. magnesium carbonate.

Vigoureux printing. See ★*printing*.

Villafranchian (vil-ä-fran′chi-ąn), *a.* and *n.* **I.** *a.* In *geol.*, noting a stage or group of the Pliocene Tertiary in the northern Apennines of Italy, constituted of fluviolacustrine sands and clays, with shells indicating a moist, warm climate, and with remains of *Rhinoceros* and *Mastodon*. Below it lies the Astian group with marine or estuarine fossils.

II. *n.* The Villafranchian stage or group.

Village settlement. See ★*settlement*^{1}.

Villarius (vi-lā′ri-us), *n.* [NL., < L. *villus*, hair.] A genus of catfishes found in Mexico.

Villavecchia test. See ★*test*^{1}.

Villeroi sauce. See ★*sauce*.

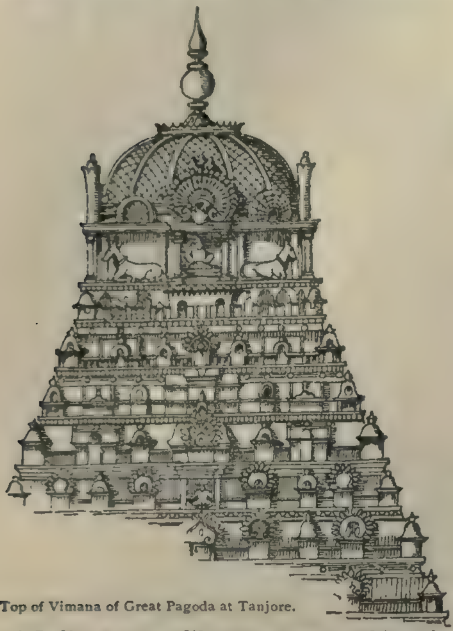
villiaumite (vil-i-ō′mīt), *n.* [After M. *Villiaume*, who collected the material.] Sodium fluoride, occurring in small grains of a carmine color and isometric crystallization in the nepheline-syenite of the Los Islands.

villiferous (vi-lif′ẹ-rus), *a.* [NL. *villus* + *-ferous*.] Provided with villi, or minute finger-like projections, such as occur typically on the walls of the intestine.

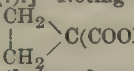
villosin (vil′ǫ-sin), *n.* [NL. *villosus* (see def.)

+ *-in*².] A colorless glucoside of unknown composition, contained in the root of *Rubus procumbens* (*R. villosus* of Aiton). It crystallizes in silky, lustrous needles and melts at 173–175° C.

vimana (vi-mä'nä), *n.* [Skt. *vimāna*, a car, chariot, palace, tower.] In the architecture of India, a tower-like structure marking the principal or central part of a temple. It is usually pyramidal or spire-like in shape, several stories high, and elaborately sculptured, and is assumed to contain the central and most sacred shrine.


Top of Vimana of Great Pagoda at Tanjore.

v. imp. An abbreviation of the Latin *verbum impersonale*, impersonal verb.

vinaconic (vin-ạ-kon'ik), *a.* [L. *vinum*, wine, + *aconic* (?).] Noting an acid, a colorless compound,  $\left.\begin{matrix}CH_2\\|\\CH_2\end{matrix}\right>C(COOH)_2$, prepared by the action of ethylene bromide on diethyl sodiomalonate. It crystallizes in slender prisms or needles, melts at 140° C., and is also called *ethylenemalonic acid*, or 1,1-*trimethylenedicarboxylic acid*.

vincetoxin (vin-sẹ̄-tok'sin), *n.* [NL. *Vincetox*(*icum*) (see def.) + *-in*².] The name given to two yellow, amorphous, pulverulent compounds, $C_{16}H_{12}O_6$, contained in powdered asclepias root, *Cynanchum Vincitoxicum*. They melt at 59° C. One dissolves in water, the other does not.

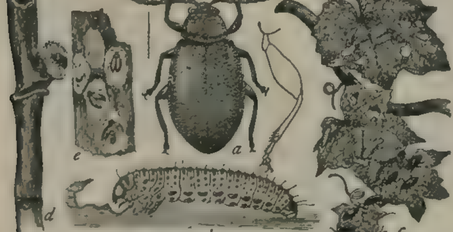
Vinciguerria (vin-si-ger'i-ạ̈), *n.* [NL., named after Decio *Vinciguerra*, an Italian naturalist.] A genus of fishes of the family *Maurolicidæ*, found in the open Atlantic.

Vinculum matrimonii, in *law*, marriage; the bond of matrimony. The expression is usually used in the phrase *divorce a vinculo matrimonii*, to indicate an absolute divorce as distinguished from a *divorce a mensa et thoro*, or limited divorce. See these phrases under *divorce*.

vine, *n.*—**Macquarie Harbor vine.** Same as *Macquarie Harbor* ★*grape*.

vine-aphis (vīn'ā″fis), *n.* Same as ★*grape-vine aphis*.

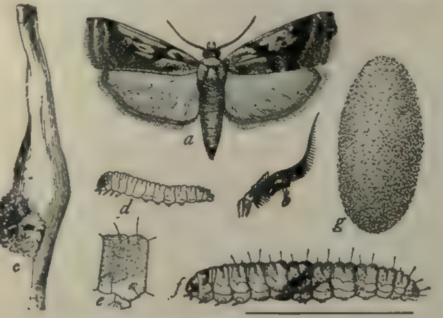
vine-beetle (vīn'bē″tl), *n.* Any one of several beetles which attack the vine, as the grape-vine flea-beetle, the grape-vine fidia, and others.



Grape-vine Flea-beetle (*Haltica chalybea*).

a, adult beetle, with enlarged leg at right; *b*, larva; *c*, larvæ and beetles on foliage; *d*, injury to buds; *e*, beetles killed by fungus. (After Marlatt, U. S. D. A.)

vine-borer, *n.*—**Bean vine-borer.** (*a*) The larva of a phycitid moth, *Monoptilota nubilella*, which bores the stems of beans in the United States from Maryland southward. (*b*) The smaller corn-stalk borer, the larva of another phycitid moth, *Elasmopalpus lignosellus*, which sometimes bores into bean-stalks in the southern United States.—**Lima-bean vine-borer**, the larva of an American phycitid moth, *Monoptilota nubilella*. It bores into the stems of Lima beans.—**Melon vine-borer.** Same as *squash* ★*vine-borer*.—**Squash vine-borer**, the larva of an American sesiid moth, *Melittia satyriniformis*. It bores into and excavates the stems of squash-vines, especially near the roots.



Bean Vine-borer (*Monoptilota nubilella*).

a, female moth; *b*, antenna of male; *c*, gall of larva; *d*, young larva; *e*, first abdominal segment of same from side; *f*, mature larva; *g*, cocoon: *b* and *c* much enlarged. (Chittenden, U. S. D. A.)

vine-chafer (vīn'chā″fėr), *n.* **1.** An American scarabæid beetle, *Pelidnota punctata*.—**2.** The rose-chafer, *Macrodactylus subspinosus*. See cut at *rose-bug*.—**Spotted vine-chafer**, a large American scarabæid beetle, *Pelidnota punctata*, which feeds on the leaves of the grape. Its larvæ live in decaying wood.

vine-disease, *n.*—**California vine-disease.** See ★*disease*.

vinegar, *n.*—**Chilli vinegar.** See ★*chilli*.—**Double vinegar.** See *vinegar* ★*essence*.—**Quick vinegar process**, a method, introduced into practical use in Germany in 1823, for making vinegar in a shorter time than had previously been required. A vat is used, having above the true bottom a false one perforated with holes, the space above being filled with a porous material, usually beech-shavings, sometimes charcoal in small lumps. Air is admitted from beneath by a number of holes, and the alcoholic liquid to be fermented, divided into many small streams, is allowed to trickle downward over the shavings, which gradually become coated with the special ferment organism, *Mycoderma aceti*. The formation of acetic acid in the liquid is greatly expedited by the large surface of contact with the air, oxygen from which is taken up. The process is widely in use in Germany for spirit-vinegar, and in England and the United States for malt-vinegar. *Thorpe*, Dict. of Applied Chem., III. 327.—**Vinegar essence.** See ★*essence*.

vinegar-lamp (vin'ẹ̄-gär-lamp), *n.* An apparatus for oxidizing alcohol to acetic acid through the agency of platinum-black or of spongy platinum.

vinegaroon, *n.* A corruption of *vinegerone*.

vinegary, *a.* **2.** Figuratively, sharp; sour-tempered.

> *Vinegary* spinsters and buxom kindly matrons.
> *Athenæum*, July 15, 1905, p. 74.

vine-maple, *n.* **2.** See ★*maple*¹.

vine-mildew (vīn'mil″dū), *n.* See *grape-mildew*, ★*grape-fungus*.

vine-peach (vīn'pēch), *n.* A variety of the melon, *Cucumis Melo*, bearing fruits of the size, shape, and color of an orange or lemon. These are not edible in their natural state, but are useful for making preserves and pickles. Called also *orange-melon* and *vegetable orange*.

vine-scale (vīn'skāl), *n.* In *entom.*: **1.** *Pulvinaria*, a large, brown, naked scale-insect with a large white egg-mass.—**2.** A diaspine scale-insect, *Aspidiotus uvæ*, which lives under the loose outer bark of grape-canes.

vine-sphinx (vīn'sfingks), *n.* See ★*sphinx*.

vine-worm (vīn'wėrm), *n.* Same as *black head* ★*cranberry-worm*.

vingtième (vaṅ-tyām'), *n.* [F. (*adj.*) twentieth, (*n.*) a twentieth, < *vingt*, twenty.] A twentieth; specifically, one of the many special taxes imposed on the French peasantry before the Revolution. *Kidd*, Social Evolution, p. 222.

vino (vē'nō), *n.* [Sp. *vino*, wine. See *wine*.] A native drink in the Philippines. See ★*buri* and ★*tuba*², 1.

> Insanity, crime, and frequently death in a few days result from the use . . . of *vino*.
> *Army and Navy Jour.*, Dec. 7, 1901.

vinolentia (vin-ọ̄-len'ṭi-ạ̈), *n.* [L.: see *vinolency*.] Drunkenness.

vint² (vint), *n.* A very complicated Russian game, something like bridge, in which the players bid for the privilege of naming the trump, and the scores are for various combinations held, for under and over tricks, honors, etc. It is very common for the winnings or losings on one hand to run over 20,000 points.

> After dinner the Czar generally enjoys the Russian gambling game called *vint*.
> *Rev. of Revs.*, Sept., 1904, p. 342.

vinta (vēn'tă), *n.* [Bisaya *binta*.] A small sailing-boat with outriggers, much used by the Moros. [Philippine Is.]

vinyard, *n.* A simplified spelling of *vineyard*.

vioform (vī'ọ̄-fôrm), *n.* [L. *vio*(*la*), violet, + E. *form*(*aldehyde*).] The trade-name of iodochlorhydroxyquinoline, $C_9H_4NIClOH$. It is an antiseptic powder and is used in surgery as a substitute for iodoform. *Buck*, Med. Handbook, VIII. 238.

viol¹, *n.*—**Arched viol**, a form of hurdy-gurdy. *Pepys*, Diary, Oct. 5, 1664.

viola-emetin (vī″ọ̄-lạ̈-em'e-tin), *n.* Same as *violin*².

violaite (vī'ọ̄-lạ̈-īt), *n.* [Irreg. < L. *viola*, violet, + *-ite*².] A variety of pyroxene from the Kedabeg copper mines, in Russia, peculiar in its strong pleochroism.

violamine (vī-ọ̄l-am'in), *n.* [L. *viola*, violet, + E. *amine*.] A name given to a number of artificial dyestuffs of the xanthene group. They dye violet and bluish red.—**Violamine B.** Same as *fast* ★*acid-violet B*.—**Violamine 3B.** Same as *fast* ★*acid-blue*.—**Violamine G.** Same as ★*acid-rosamine*.—**Violamine R.** Same as *fast* ★*acid-violet ARR*.

violan (vī'ọ̄-lan), *n.* [L. *viola*, violet, + *-an*.] A violet-blue variety of pyroxene from Saint-Marcel, Piedmont: essentially identical with diopside.

violantin (vī-ọ̄-lan'tin), *n.* A yellowish-white, granular, pulverulent compound, $C_4H_3O_5N_3.C_4H_3O_4N_3.4H_2O$, prepared by mixing solutions of nitroso- and nitrobarbituric acid. It decomposes at 120° C. Also called *nitrosonitrobarbituric acid*.

violaquercitrin (vī″ọ̄-lạ̈-kwėr'sit-rin), *n.* A yellow glucoside, $C_{27}H_{28}O_{16}$, contained in *Viola tricolor var. arvensis*. It crystallizes in slender needles.

viola-zither (vē-ō'lạ̈-zith″ėr), *n.* See *bow* ★*cithern*.

violet¹, *n.*—**Acid-violet.** See ★*acid-violet*.—**Alizarin violet.** Same as *gallein*.—**Alkali violet**, an acid dyestuff of the triphenyl-carbinol, sulphonic-acid type: so-called because it is best dyed in a slightly alkaline bath. Compare *alkali blue*, under *blue*.—**Anthracene violet.** Same as *gallein*.—**Azo violet**, a direct cotton-color of the disazo type derived from dianisidine. It dyes unmordanted cotton a bluish violet from a soap bath.—**Benzyl violet**, one of the methyl-violets.—**Chytridiose of violet.** See ★*chytridiose*.—**Cresyl fast violet**, a basic coal-tar color of the oxazin type but of uncertain composition. It dyes tannin-mordanted cotton violet.—**Diamine violet**, a direct cotton coal-tar color of the disazo type derived from benzidine. It dyes unmordanted cotton violet in an alkaline salt bath.—**Ethyl violet**, a basic coal-tar color of the triphenyl methane type. Same as *ethyl purple* (which see, under *purple*).—**Fast violet.** Same as *gallocyanine*.—**Fast violet B**, an acid coal-tar color of the disazo type derived from para-toluene-azo-α-naphthylamine. It dyes wool bluish violet in an acid bath.—**Fast violet R**, an acid coal-tar color of the disazo type derived from benzene-azo-naphthylamine. It dyes wool a reddish violet in an acid bath.—**Gallanil violet**, a mordant coal-tar color of the oxazin type prepared by the action of nitrosodimethyl- or ethylaniline upon the anilide of gallic acid. It dyes chromium-mordanted wool reddish purple.—**Gentian violet**, an aniline dye extensively used in the study of bacteria. It is sometimes used in combination with saturated aniline water, as so-called *gentian aniline water*; the aniline enforces the staining power of the dye.—**Guinea-violet**, an acid coal-tar color. It dyes wool violet in an acid bath.—**Hessian violet**, a direct cotton coal-tar color of the disazo type derived from diamido-stilbene. It dyes unmordanted cotton bluish red in a soap bath.—**Kongo violet**, a direct cotton coal-tar color of the disazo type derived from benzidine. It dyes unmordanted cotton a vinous-red color from a neutral salt bath. Also called *Bordeaux extra*.—**Lanacyl violet**, an acid coal-tar color of the monoazo type prepared from diazotized amidonaphtholdisulphonic acid. It dyes wool dark violet in an acid bath.—**Lauth's violet**, one of the coal-tar colors, used as a dye. It is a salt of thionin, containing sulphur as one of its constituent elements.—**Methylene violet**, one of the coal-tar dyes, of reddish-violet color.—**Neutral violet**, a basic coal-tar color of the azin type, prepared by the action of nitroso-di-methyl-aniline on meta-phenylene-diamine. It dyes tannin-mordanted cotton a reddish violet.—**Oxamine violet**, a direct cotton coal-tar color. It dyes unmordanted cotton a reddish violet in an alkaline salt bath.—**Red violet**, one of the acid violets; a name by which Hoffmann's violet is sometimes designated.—**Root-rot of the violet.** See ★*root-rot*.—**Victoria violet**, an acid color of the monoazo type, which is prepared by the reduction of chromatrope 2B. It dyes wool a bluish violet.

violet d'évêque. [F., 'bishop's violet.'] In *ceram.*, a violet glaze of Oriental porcelain. Also called *bishop's purple*, or *aubergine* ★*purple* (which see).

violet-disease (vī'ọ̄-let-di-zēz″), *n.* Same as ★*leaf-spot of violet*.

violet-midge (vī′ǫ-let-mij), *n.* See ★*midge.*

violet pensée (vyo-lā′ poṅ-sā′). [F., 'pansy violet.'] A delicate shade of violet color, obtained from manganese, sometimes seen in the soft-paste porcelain of Sèvres.

violetta (vē-ō-let′ạ̈ or vī-ǫ-let′ạ̈), *n.* [It. dim. of *viola*¹.] A form of large viola, invented by Stelzner of Wiesbaden, in 1891, intermediate in size and range between the viola proper and the violoncello.

violin¹, *n.*—**Alto violin.** See *viola*1, 2.

violin-case (vī-ǫ-lin′kās), *n.* A case or box in which a violin is kept.

violin-maker (vī-ǫ-lin′mā″kėr), *n.* One whose trade or occupation is to make violins and similar instruments; a luthier.

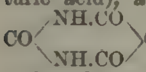
violin-making (vī-ǫ-lin′mā″king), *n.* The process, trade, or art of making violins and similar instruments. It includes many details, such as the selection and preparation of materials, the making and manipulation of patterns, the shaping and fitting of parts, and the application of carving, purfling, and varnish. It reached its perfection in northern Italy about 1700.

violin-player (vī-ǫ-lin′plā″ėr), *n.* A violinist.

violle (vi-ol′), *n.* [Named from M. *Violle,* a French physicist.] A unit of photometric intensity, equal to the light radiated perpendicularly from a square centimeter of surface of platinum at the temperature of solidification.

> The bougie décimale is defined as $\frac{1}{20}$ of a violle and the latter, according to the determinations of Professor Violle, after whom this unit has been named, is equal to 19.8 British standard candles. See ★*light standard.*

violuric (vī-ǫ-lū′rik), *a.* [L. *viola,* violet, + E. *uric.*] Noting an acid (nitrosobarbituric acid), a yellowish compound,



$$CO\left\langle\begin{matrix}NH.CO\\NH.CO\end{matrix}\right\rangle C{:}NOH.H_2O,$$

prepared by the action of potassium nitrite on barbituric acid. It forms lustrous, trimetric crystals.

viper, *n.*—**Russell's viper,** an extremely poisonous snake, *Daboia russelli,* of India, ranking next to the cobra in its deadly character. It is of a pale brown with three rows of dark spots, edged with lighter color.

Virchow's crystals. See ★*crystal.*

vireo, *n.*—**Bahama vireo,** a subspecies of vireo, *Vireo altiloquies barbatulus,* found in Cuba and the Bahamas.

Vireux slates. See ★*slate*².

virgate¹, *a.* **2.** In *geol.,* noting a system of faults, the minor members of which branch from a central one as twigs from a bough.

virgate¹ (vėr′gāt), *v. i.* [L. *virga,* branch, twig, + *-ate.*] To branch off, like a twig, or diverge like a system of twigs. [Rare.]

virgation (vėr-gā′shǫn), *n.* [L. *virga,* a branch, twig, rod, + *-ation.*] The act of branching or diverging; a branching form or arrangement; specifically, in *geol.,* a branching system of faults.

> The Western Balkans form in their southern part six ranges, the orographical expression of a geological "*virgation.*" *Geog. Jour.* (R. G. S.), IX. 87.

virgin. I. *n.*—**Offices of the Virgin.** See ★*office.*

II. *a.*—**Virgin wax,** white wax.

> Take an ordinary glass slip 3 in. by 1 in., give it a few strokes with *virgin wax* (white wax), hold the slip over a Bunsen burner, or spirit lamp, until the wax melts, which may then be spread with the finger, then sprinkle the sand over the melted wax, to which it adheres.
> *Jour. Roy. Micros. Soc.,* Aug., 1904, p. 462.

virgula (vėr′gụ̄-lạ̈), *n.*; pl. *virgulæ* (-lē). [NL., dim. of L. *virga,* a rod.] A solid strengthening rod in the graptolites which originates in the wall of the sicula and extends through the nema into the rhabdosomes. It is characteristic of the *Axonolipa,* an order of the *Graptoloidea.*

viridarium (vir-i-dā′ri-um), *n.*; pl. *viridaria* (-ạ̈). [L. *virid(is),* green, + *-arium.* See *-arium.*] A plantation of trees; a pleasure-garden.

viridiaëneous (vir-i-di-ạ̄-ē′nẹ̄-us), *a.* [L. *viridis,* green, + *aëneus,* of copper, + *-ous.*] Greenish aëneous. *Annals and Mag. Nat. Hist.,* June, 1903, p. 604.

viridic (vi-rid′ik), *a.* [L. *viridis,* green, + *-ic.*] Noting an acid a brown, amorphous compound of uncertain composition. The calcium salt is found in coffee-beans and imparts to them their green color.

viridine, *n.* **2.** An obsolete green basic dyestuff.—**Alizarin viridine,** a mordant dyestuff related to anthraquinone. It is used in calico-printing and -dyeing to produce very fast shades of green.

virify (vir′i-fī), *v. t.*; pret. and pp. *virified,* ppr. *virifying.* [L. *vir,* man, + *-i-* + *-fy.*] To render masculine. [Rare.]

> Why are females *virified* and males feminized in their gerontic stages as if the secondary qualities of each were latent in the other but were suppressed during the reproductive period? *G. S. Hall,* Adolescence, II. 57.

virilism (vir′i-lizm), *n.* [*viril(e)* + *-ism.*] Hermaphrodism in which the individual is a female but has certain genital organs resembling those of the male.

v. irr. An abbreviation of the Latin *verbum irregulare,* irregular verb.

virtual, *a.* **4.** In *elect.,* in alternating currents, effective: said of the value which is to be used in computing energy or power relations of a current.—**Virtual amperes,** in *elect.,* effective amperes; amperes of alternating or fluctuating current as determined by finding the amperes of an unvarying direct current that would give the same heating effect.—**Virtual current,** alternating or fluctuating current expressed in virtual amperes.—**Virtual electromotive force.** (*a*) Effective electromotive force in an alternating circuit; where the wave form is sinusoidal, the maximum induced electromotive force divided by the square root of two. (*b*) In synchronous alternating-current machines, the induced electromotive force corresponding to the resultant of the magnetomotive forces of field-flux and armature-flux.

> The *virtual E.M.F.* and the real induced E.M.F. differ from each other by the E.M.F. of armature self-induction.
> *Steinmetz,* Elements of Electrical Engineering, p. 128.

Virtual value, in alternating currents, the intensity of a current as determined by finding the value of a steady direct current which would produce the same heating effect. Where the wave-form is sinusoidal the virtual value of a current equals 0.707 times the maximum value.—**Virtual volts** (or **voltage**). See ★*virtual electromotive force.*

virulin (vir′ǫ̈-lin), *n.* [L. *virul(entus),* full of poison, + *-in*².] A hypothetical substance produced by the pneumococcus which counteracts the action of opsonins upon the organisms in question, and in the absence of which phagocytosis would take place. *Science,* April 24, 1908, p. 658.

virus, *n.*—**Attenuated virus.** Virus can also be attenuated by heat. Attenuated virus is extensively used in active immunization, as, for example, against anthrax and rinderpest.—**Dehumanized virus,** vaccine virus obtained originally from man, but modified by passage through a heifer.—**Fixed virus,** antirabic virus, the toxicity of which has been increased by repeated passage through animals (rabbits), to a point beyond which it is impossible to go. Such virus kills in about six days. This form is the standard. Fixed virus is distinguished from *street virus,* or that inoculated through the bite of a rabid dog, which is of uncertain strength and virulence.—**Street virus,** the ordinary virus of rabies, as it occurs in mad dogs; not intensified by being passed through a series of animals. See *fixed* ★*virus.*

vis³, *n.*—**Vis a tergo,** a force acting from behind; a pushing or impelling force.—**Vis major** [L. 'greater force'], in *law,* an irresistible natural force, exempting one, barring special contract or fraud, from contract obligation. In both the civil and the common law the term has nearly the meaning of "act of God."

Vis. An abbreviation of *viscount.* Also written *Visc., Visct.*

Visaya (vē-sä′yä), *n.*; pl. *Visayas* (-yäs). [Another spelling of *Bisaya,* in which the *b* is pronounced, in Spanish mouths, nearly like *v.*] One of a Malay people who occupy the north and east coasts of Mindanao and most of the islands lying between Mindanao and Luzon. They are the most numerous of the various peoples which occupy the Philippines, numbering some 2½ millions, and are now largely Christianized.

Visayan (vẹ̄-sä′yan), *a.* and *n.* [*Visaya* + *-an.*]

I. *a.* Of or pertaining to the Visayas.

II. *n.* **1.** The language of the Visayas.—**2.** Same as ★*Visaya.*

visceral, *a.*—**Visceral bar,** a general term applied to the rod-like cartilaginous structures in the mandibular, hyoid, and branchial arches of sharks, or of the embryos of higher vertebrates.—**Visceral reflex.** See ★*reflex.*

viscero-inhibitory (vis″ẹ̈-rō-in-hib′i-tō-ri), *a.* Restraining the functional activity of the viscera: noting certain nerves. *Buck,* Med. Handbook, VII. 574.

visceroptosis (vis″ẹ̈-rop-tō′sis), *n.* [NL., < L. *viscera,* viscera, + Gr. πτῶσις, falling.] Same as ★*splanchnoptosis.*

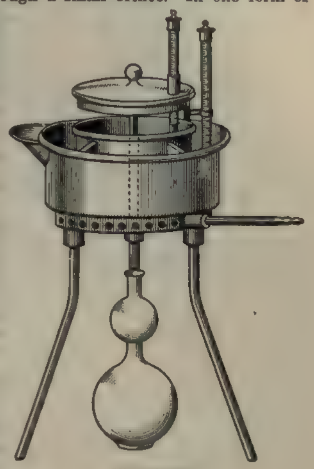
viscerosensory (vis″ẹ̈-rǫ-sen′sǫ-ri), *a.* [L. *viscera,* viscera, + E. *sensory.*] Relating to sensation in the viscera. *Buck,* Med. Handbook, VII. 591.

viscogen (vis′kǫ-jen), *n.* [L. *viscus,* bird-lime (a viscous substance), + *-gen,* -producing.] The trade-name of a thickening material used to adulterate milk.

viscoid (vis′koid), *a.* [*visc(ous)* + *-oid.*] Slightly viscid.

viscose (vis′kōs), *n.* [L. *viscosus,* sticky. See *viscous.*] The trade-name of a plastic material made from cellulose (cotton fiber) by treatment with a solution of caustic soda, addition of carbon disulphid, and digestion at ordinary temperature until a homogeneous liquid is produced, a solution of cellulose thiocarbonate, from which a structureless jelly-like coagulum of cellulose is formed by spontaneous decomposition. Cellulose tetra-acetate may also be used to obtain viscose. Mineral pigments, hydrocarbons, and other substances may be incorporated with viscose before it is molded into special shapes for use. A fiber imitating silk in luster has also been prepared from this material. *Sci. Amer. Sup.,* Feb. 27, 1904, p. 23535.

viscosimeter, *n.* The viscosity is determined by the rate of efflux through a small orifice. In one form of this apparatus the oil to be tested is placed in an inner vessel, the cover of which is lined with a thick pad of non-conducting material. It is kept at a temperature of 50° C. by means of a water-jacket and the coil is heated by a spirit-lamp. The volume of oil which flows through a central orifice, in the bottom of the inner vessel, in a given time, indicates the degree of viscosity.



Viscosimeter.

viscosimetry (vis-kǫ-sim′e-tri), *n.* [*viscosimeter* + *-y*³.] The measurement of viscosity; the scientific use of the viscosimeter; viscometry.

> The spectrophotometry, *viscosimetry,* and electric signs of solutions. *Nature,* Jan. 9, 1908, p. 239.

viscosity, *n.*—**Coefficient of viscosity.** See ★*coefficient.* **Maxwell's law of viscosities.** See ★*law*1.

Viscous spheroid. See ★*spheroid.*

vise¹, *n.*—**Coachmakers' vise,** an iron vise with one stationary jaw and a movable jaw attached to a square slide-bar through which the screw operates in closing or opening the jaws.—**Dog-nose vise,** a form of vise in which the jaws are long and tapering from the base to the grip, like the tapering nose of the hound: used to hold work in which the grip should come some distance from the end of the piece.—**Jewelers' vise,** a small vise fitted with a hollow handle or tail; a tail-vise, for use with fine wire or similar delicate material.—**Pig-nose vise,** a form of holding vise with long tapering jaws, resembling the snout of the pig, adapted for work within which the jaw must enter, and the grip must come at some distance from the end.

vision, *n.*—**Center of vision.** (*b*) See ★*center*1.—**Facial vision,** perception of objects near the face when one is blindfolded or in the dark.

> The paper supplements and in three respects aims to correct the reports of previous experiments on *facial vision.* In the perception of objects in proximity to the face independently of the sense of sight, the nature of the sensory impression upon which perception depends is not commonly discriminated.
> *Science,* April 10, 1903, p. 589.

Helmholtz theory of vision, or **of visual sensation.** See *Young-Helmholtz theory of color,* under *color.*—**Hemisphere of vision.** See ★*hemisphere.*—**Hering's theory of vision.** See *Hering's theory of* ★*color.*—**Multiple vision.** Same as *polyopia.*—**Recurrent vision,** the phenomenon of periodically oscillatory persistence of vision, first described by C. A. Young and sometimes called the *Young effect.* When an object is subjected to a single instantaneous illumination, as by a powerful electric spark, it is seen several times; first vividly, then more and more faintly at intervals of about a fifth of a second.

visionnaire (vi-zyo-nãr′), *n.* [F.] One who sees visions; a visionary.

> On the other hand there are some things which it is a virtue to doubt, and superstition has no ranker, grosser forms than those due to the attempts long ago described by Kant to explain the dreams of *visionnaires* by those of metaphysicians.
> *Amer. Jour. Relig. Psychol. and Education,* May, 1904, [p. 58.

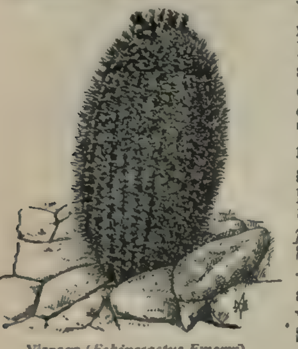
visita (vi-sē′tä), *n.* [Sp., visit, visitation. See *visit.*] In the Philippine Islands, a village or hamlet which is without a priest, and depends on the visits of a neighboring priest for religious ministrations.

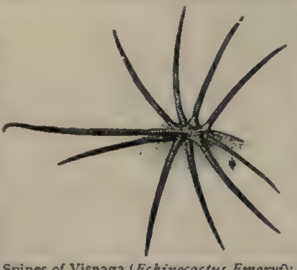
visitandine (viz-i-tan′din), *n.* Same as *visitant,* 3.

visitate† (viz'i-tāt), *v. t.*; pret. and pp. *visitated*, ppr. *visitating*. To visit for the purpose of examining, inspecting, surveying, or the like.

> Our lords
> Lie blistering 'fore the *visitating* sun.
> *Fletcher* (and another), Two Noble Kinsmen, i. 1. 6.

visnaga, viznaga (vis-nä'gä, vēth-nä'gä), *n.* [Sp. *viznaga*, *biznaga*, < Ar. *bashnāqa*, a dialectal form of *bastinākh*, < L. *pastinaca*, a parsnip or a carrot. See *parsnip*.] **1.** A name applied in the Mediterranean region to *Ammi Visnaga*, a carrot-like plant, the peduncles of which become dilated into disks which bear the umbel-rays. These harden into spines and become erect and connivent. They are used for toothpicks, giving to the plant the name *toothpick*, or *picktooth-plant*. See *picktooth*, 2. —**2.** In Mexico and the southwestern United States, a name applied by the Spanish colonists to species of *Echinocactus* and *Coryphantha*, fleshy, cylindrical plants which bear stout spines and contain a watery pulp. In the desert of Arizona *Echinocactus Wislizeni* and *E. Emoryi*, sometimes called *barrel-cactus*, yield a refreshing substitute for drinking-water; and in Mexico the pulp of several species, including *E. ingens*, is cut into slices and made into sweetmeats. Also written *bisnada* and *bisnaga*.


Visnaga (*Echinocactus Emoryi*).


Spines of Visnaga (*Echinocactus Emoryi*): less than one third natural size.

vistascope (vis'tạ-skōp) *n.* [*vista* + Gr. σκοπεῖν, view.] An apparatus for viewing distant objects in spite of intervening obstructions. It consists of an aërial camera obscura, so attached to a kite-sustained cable that an image of distant objects is thrown on a horizontal ground-glass plate or on thin paraffined paper acting as the screen of the camera. The observer on the ground views the image by the aid of a field-glass. It was invented by W. A. Eddy.

Vistulan (vis'tū-lạn), *a.* [*Vistula*, a river of northern Europe, + *-an*.] Of or relating to the Vistula.—**Vistulan race**, in *anthrop.*, one of the European races or types, in Deniker's classification, characterized by fair complexion, mesocephalic head, and short stature: found in Poland and Silesia.

Vistulian (vis-tū'li-ạn), *a.* Same as ★*Vistulan*.

visual. **I.** *a.*—**Broca's visual plane**, a plane passing through the axes of the two orbits.—**Visual adaptation, aphasia.** See ★*adaptation*, ★*aphasia*.—**Visual area**, the area of vision; the surface of the eye, especially of the compound eye of insects and crustaceans, which carries the corneal lenses and admits the light, irrespective of separation of the lenses by parts of the test.—**Visual cone.** See ★*cone*.—**Visual doubles.** In *astron.*, see ★*double*, 18.—**Visual space.** See ★*space*.

II. *n.* One who is eye-minded, that is, one who thinks, remembers, imagines, etc., predominantly in terms of sight.

> This division of men into *visuals*, audiles, motiles and indifferents . . . is of great interest.
> *Mind*, July, 1886, p. 415.

visualism (viz'ū-al-izm), *n.* [*visual* + *-ism*.] The character of being visual; also, the habit of visualizing; power or tendency to form visual images mentally.

visualist (viz'ū-al-ist), *n.* [*visual* + *-ist*.] **1.** One who holds that we gain our perceptions and ideas of space through the sense of sight, and that touch is a mere time-sense: opposed to ★*tactualist*. *G. M. Stratton*, Exper. Psychol. and its Bearing upon Culture, p. 128. [Rare.] —**2.** One who is eye-minded; a visualizer. *Amer. Jour. Psychol.*, XIII. 544.

visualize, *v. t.* **2.** Hence, in *literature*, to make (a character) appear real by vividness and force of description.

> The best *visualized* character is that of a Norwegian girl, a singer. *Athenæum*, April 15, 1905, p. 469.

visualizer, *n.* **2.** One who habitually associates colors with sounds; a person endowed with colored hearing. [Rare.]

> Such subjects are highly impressionable. . . . This I have ascertained in the four pupils and one teacher who were found to be "*visualizers*" out of thirty five . . . who were examined.
> *L. Waldstein*, The Subconscious Self, p. 150.

visual-kinesthetic (viz"ū-al-kin"es-thet'ik), *a.* Compounded of sensations of sight and touch (kinæsthesis); noting the concurrence or association of visual and kinesthetic elements. Same as ★*visual-motor*. *Psychol. Rev. Mon. Sup.*, III. xiv. 60.

visual-motor (viz"ū-al-mō'tor), *a.* Compounded of sensations of sight and touch (kinæsthesis); noting a concurrence or association of visual and kinesthetic elements. *E. B. Titchener*, Exper. Psychol., I. ii. 397.

visual-verbal (viz"ū-al-vėr'bal), *a.* **1.** Characterized by a visual memory or imagination of words or verbal ideas; tending to represent words mentally in terms of sight.

> The *visual-verbal* mind reads from a memory manuscript or printed page, lying open before the mind's eye.
> *E. B. Titchener*, Exper. Psychol., I. i. 197.

2. Having a verbal form, with visual contents: as, a *visual-verbal* idea.

visuo-psychic (viz"ū-ō-sī'kik), *a.* Concerned in, or related to, the higher, associative, or conceptual functions of vision: as, the *visuo-psychic* area of the cerebral cortex. *Philos. Trans. Roy. Soc.* (London), 1900, ser. B, p. 168.

visuo-sensory (viz"ū-ō-sen'sō-ri), *a.* Concerned in, or related to, the sensory functions of vision: as, the *visuo-sensory* area of the cerebral cortex. *Philos. Trans. Roy. Soc.* (London), 1900, ser. B, p. 168.

vitaceous (vī-tā'shius), *a.* [NL. *Vitace*(*æ*) + *-ous*.] Belonging or pertaining to the *Vitaceæ*.

vitagraph (vī'tạ-gråf), *n.* [L. *vita*, life, + Gr. γράφειν, write.] A trade-name for a moving-picture machine or kinetoscope. *Optical Jour.*, Dec., 1903, p. 801.

Vital dynamics. See ★*dynamics*.—**Vital staining.** Same as ★*intra-vitam staining*.

vitality, *n.*—**Vitality classes.** See ★*class*.

vitascope (vī'tạ-skōp), *n.* [L. *vita*, life, + Gr. σκοπεῖν, view.] An apparatus, based on the principle of the zoëtrope, for projecting a great number of pictures of the same object in rapid succession upon a screen, thus producing the appearance of motion. *Cinematograph*, *electroscope*, *kinographoscope*, and *veriscope* are names applied to various machines essentially like the vitascope.

> The *vitascope*, a far more complicated and powerful structure [than the kinetoscope], takes this same ribbon which has been prepared by the kinetoscope, and coils it up on a disc at the top of the machine, from which it is passed over a system of wheels and through a narrow, upright clamp-like contrivance that brings it down to a strong magnifying lens, behind which there is an electric burner of high capacity. The light from this carbon burner blazes fiercely through the translucent ribbon, and projects the images on the negatives there, blended, to a distant screen, with great clearness, for the benefit of the audience. *N. A. Rev.*, CLXIII. 377.

vitelligerous (vit-e-lij'ẹ-rus), *a.* [L. *vitellus*, yolk, + *gerere*, bear, + *-ous*.] Yolk-bearing, or yolk-laden: said of certain eggs. *Proc. Zool. Soc. London*, 1898, p. 555.

vitellinate (vī-tel'i-nāt), *n.* [*vitellinic* + *-ate*1.] A salt of a vitellinic acid.

Vitelline furrow. See ★*furrow*.—**Vitelline gland.** See ★*gland*.

vitellophag (vī-tel'ọ-fag), *n.* [L. *vitellus*, yolk, + Gr. φαγεῖν, devour.] In *embryol.*, one of the primary endoderm or yolk-cells which in the arthropod egg liquefy or act upon the yolk in such a way as to facilitate its assimilation by the growing embryo.

> To any one who is at all familiar with the developmental stages under discussion, Petrunkewitsch's figures suggest anything but what he attempts to prove. Even in his first paper there is no satisfactory evidence to show that the cells regarded as derivatives of the polar bodies in the figures on plate 4 are really such, and not dividing cleavage cells or possibly *vitellophags*.
> *Science*, April 8, 1904, p. 588.

vitellophagocyte (vī-tel"ọ-fag'ọ-sīt), *n.* [L. *vitellus*, yolk, + Gr. φαγεῖν, devour, + κύτος, hollow (cell).] Same as ★*vitellophag*.

vitellose (vī-tel'ōs), *n.* [*vitell*(*in*) + *-ose*.] An albumose derived from vitellin.

vitexin (vī-tek'sin), *n.* [*Vitex* (see def.) + *-in*2.] A canary-yellow, pulverulent coloring matter, $C_{15}H_{14}O_7$ or $C_{17}H_{16}O_8$, contained, in the form of a glucoside, in puriri, the wood of *Vitex littoralis*, from New Zealand.

viticetum (vit-i-sē'tum), *n.*; pl. *viticeta* (-tạ̈). [NL., < *vitis*, vine, + *-etum*, denoting place of growth. Cf. *arboretum*.] A place where vines are cultivated; a vineyard. [Rare.]

> The *viticetum* is along the western edge of the forest.
> *D. T. MacDougal*, in Pop. Sci. Mo., June, 1900, p. 176.

vitiliginous (vi-ti-lij'e-nus), *a.* [*vitiligo* (*-gin-*) + *-ous*.] Pertaining to, affected with, or characteristic of, vitiligo.

> He also referred to the *vitiliginous* squamous dermatosis which had been observed by Jeanselme on the coast of Annam and other parts of Indo-China.
> *Med. Record*, Oct. 12, 1907, p. 622.

vitin (vī'tin), *n.* [L. *vitis*, a grape-vine, + *-in*2.] A compound, $C_{20}H_{32}O_2$, found in the epidermis of grapes and apples. It crystallizes in silky needles which melt at 250–255°. It is a weak acid.

vitium (vish'i-um), *n.*; pl. *vitia* (-ạ̈). [L. See *vice*1.] Vice; defect.

vitrage (vi-träzh'), *n.* [F., glazing, glass windows, < *vitrer*, glaze.] A curtain made from a material of light texture, designed to be fastened to a window or a glass door.

vitreocapsulitis (vit"rẹ-ō-kap"sū-lī'tis), *n.* [NL., < L. *vitreus*, vitreous, + *capsula*, capsule, + *-itis*.] Same as *hyalitis*.

vitreograph (vit'rẹ-ọ-gråf), *n.* [L. *vitreus*, of glass, + Gr. γράφειν, write.] A photographic or other print on glass.

vitreoperforate (vit"rẹ-ọ-pėr'fọ-rāt), *a.* [L. *vitreus*, vitreous, + *perforatus*, perforate.] Having a perforated silicious shell or test, as certain *Foraminifera*.

Vitreous chamber. See ★*chamber*.

vitreously (vit'rẹ-us-li), *adv.* In *physics*, in a manner analogous to that observed in the case of glass: as, a *vitreously* charged body or a *vitreously* reflected beam of light.

> "Vitreous selenium" reflects blue and violet light metallically and the longer wave-lengths *vitreously*.
> *Physical Rev.*, April, 1904, p. 194.

vitri-. [L. *vitrum*, glass.] In *petrog.*, in the quantitative system of classification of igneous rocks (see ★*rock*1), a prefix used to indicate that a rock is microscopically glassy. Compare ★*vitro-*.

vitriol, *n.*—**Brown vitriol**, the English trade-name for sulphuric acid or oil of vitriol, stained by soot and dust from the flues, when it has been concentrated in leaden pans heated from the top.—**Cyprian vitriol**, crystallized cupric sulphate, $CuSO_4.5H_2O$. So-called Cyprian vitriol made at Chessy in France from mixed ores of copper and zinc was found to contain the sulphates of both metals, with even much more zinc than copper.—**Eagle vitriol**, the trade-name for an impure mixture of iron and copper sulphates, sometimes containing zinc sulphate: used by tanners in coloring leather.—**Martial vitriol**, in *chem.*, an antiquated name for crystallized sulphate of iron or ferrous sulphate ($FeSO_4.7H_2O$), also known as *green vitriol* and *copperas*.—**Nitrous vitriol**, strong sulphuric acid charged with nitrosulphonic acid. It runs off from the bottom of the Gay-Lussac absorbing-tower in the manufacture of sulphuric acid by the lead-chamber process.—**Rectified vitriol**, in the manufacture of sulphuric acid, a trade-term applied to the product concentrated to a strength of about 95 per cent. real acid: also written *rectified O. V.* (oil of vitriol).—**Rose vitriol.** Same as *bieberite*.—**Salzburg vitriol**, a mixture of blue and green vitriols.—**Spirit of vitriol**, an old name for sulphuric acid.—**Vitriol ocher.** Same as ★*glockerite*.—**Vitriol shale**, a shale or slate which contains a considerable proportion of intimately mingled iron pyrites. The weathering of such shale gives rise to the production of ferrous sulphate and sulphuric acid, and the latter usually acts on the earthy matter present to form more or less aluminium sulphate. On leaching with water a solution is obtained, which by evaporation to dryness leaves a cake, consisting chiefly of ferrous and ferric sulphates, aluminium sulphate, and some free sulphuric acid. This cake constitutes the so-called *vitriol stone* from which fuming sulphuric acid may be made.—**Vitriol stone**, the solid mass obtained by leaching with water pyritous shale which has been weathered by atmospheric exposure and evaporating the liquor to dryness. The residue contains as its principal ingredient ferric sulphate, and from it by heating in clay retorts fuming sulphuric acid may be obtained, while a residue of colcothar is left. See ★*vitriol shale*.

vitriol (vit'ri-ọl), *v. t.*; pret. and pp. *vitrioled*, ppr. *vitrioling*. To cleanse from grease, dirt, or loose oxid scale on a metal surface by dipping in a bath of dilute sulphuric acid; pickle.

vitriolate, *a.* **II.** *n.* An antiquated name for a sulphate.

vitrite (vit'rīt), *n.* [L. *vitrum*, glass, + *-ite*.] A variety of hard glass or other substance used for electric insulation.

vitro-. [L. *vitrum*, glass.] In *petrog.*, a prefix used to signify that a rock is glassy; in the quantitative system of classification of igneous rocks (see ★*rock*^{1}), indicating that the rock is megascopically glassy. Compare ★*vitri-*.

vitrophyro-yukonose (vit′rọ̄-fī-rō-ū′kọ-nōs), *n.* In *petrog.*, in the quantitative classification of igneous rocks (see ★*rock*^{1}), a yukonose which has a megascopically porphyritic and glassy texture; a glassy porphyry with the composition of yukonose. See ★*yukonose.*

vitrotype (vit′rọ̄-tīp), *n.* [L. *vitrum*, glass, + Gr. *τύπος*, type.] A photographic picture made with a collodion film on glass or earthenware and fired in an oven. *Stand. Dict.*

Vittaria (vi-tā′ri-ạ̈), *n.* [NL. (J. E. Smith, 1793), ‹ L. *vitta*, a ribbon, + *-aria*, in allusion to the narrow fronds of the fern.] A genus of polypodiaceous ferns, usually epiphytic. The fronds are closely clustered and pendent, linear and often grass-like, leathery in texture or somewhat membranous, and mostly fertile; and the sori are borne in a continuous line at or near the margin, usually within a groove formed in part of the unaltered edge of the leaf and somewhat protected by this, but without special indusia. There are about 50 species, of wide distribution in tropical or subtropical regions. *V. lineata*, the grass-fern, occurs in Florida, usually on the palmetto, and throughout most of tropical America.

vivacious, *a.* 3. Perennial: sometimes applied to plants which live from year to year.

Viverravidæ (viv-e-rav′i-dē), *n. pl.* [NL. *Viverravus* (the type genus) + *-idæ.*] A family of extinct mammals of the order *Creodonta*, with long bodies and short legs, suggesting the existing *Viverridæ*.

vizard^2† (viz′ạ̈rd), *n.* 1. A vizard-mask; a vizor.

> Together with all *vizards* for the Day I prohibit all Masks for the Night, made of Oil'd Skin and I know not what. *Congreve*, Way of the World, iv. 6.

2. One who wears a vizard-mask.

> *Med.* Who in the devil's name can this be?
> *Dor.* Why the *vizard*—that very *vizard* you saw me with. *Etheredge*, Man of Mode, i. 1.

V. L. An abbreviation of *Vice-Lieutenant.*

vladika (vlad′i-kạ̈), *n.* [Bulg. Bohem. *vladyka*, bishop, OBulg. *vladyka*, lord, ‹ *vlada*^{n}, *vlasti*, rule.] A bishop of the Church of Montenegro, who at the same time exercises temporal rule.

> The Church of Montenegro has from early times been independent under its bishops, who from 1516 to 1851 were also the temporal rulers, under the title of *Vladikas*, or prince-bishops. *Encyc. Brit.*, XXXI. 383.

vley, *n.* Same as *vly*.

> On the edge of a small *vley* (lake) . . . due east from Wynberg station. *Proc. Zool. Soc. London*, 1897, p. 340.

V. M. An abbreviation (*a*) in *electrotechnics*, of *voltmeter*; (*b*) of the Latin *Veterinarius Medicus*, veterinary physician.

v. n. An abbreviation of the Latin *verbum neutrum*, neuter verb.

Vo. An abbreviation of *verso* (left-hand page).

vocabularian (vọ̄-kab-ụ̄-lā′ri-ạn), *n.* [*vocabulary.*] One who is master of a large or unusual vocabulary. [Rare.]

> Mr. —— indulges in no conceits, he is not a *vocabularian*; he uses, as none but a poet can, the old poetic materials. *Pall Mall Gazette*, July 20, 1899, p. 4. *E. D.*

vocabulation (vọ̄-kab-ụ̄-lā′shọn), *n.* Selection of a vocabulary; choice of words or phrases. [Rare.]

> A rich-toned voice responsive to her feelings, and a mind not exactly intellectual, but felicitous in *vocabulation* and ingenious in the construction of sentences. *E. Eggleston*, Faith Doctor, xiii.

Vocal nodules. See *singers'* ★*nodes.*—**Vocal reaction.** See ★*reaction.*

vocalion (vọ̄-kā′li-ọn), *n.* [NL., ‹ L. *vocalis*, vocal, + *-on.*] A form of reed-organ gradually perfected from experiments begun in England about 1870. Its tones are produced from large free reeds so connected with special resonance-cavities and supplied with wind under heavy pressure that their quality is strikingly full and mellow, and also capable of considerable variation of timbre. Vocalions are often made with three manuals and pedals, and with many stops, so as to fulfil something of the function of a pipe-organ.

vocalise (vō-kạ̈-lēz′), *n.* [F., ‹ *vocaliser*, vocalize.] An exercise or study for singers, usually without words. Compare *solfeggio.*

voce (vō′chạ̄), *n.* [It., ‹ L. *vox* (*voc-*), voice. See *voice.*] Voice; used in the expressions *voce di petto*, the chest-voice, *voce di testa*, the head-voice, and *voce velata*, the veiled voice.

voces. Plural of *vox.*

voetganger (fōt′gäng″ėr), *n.* [D., 'foot-goer.'] A name given by the Boers in South Africa to the young of the migratory locusts so destructive in that country.

vogesite (vō′ge-sīt), *n.* [G. *Vogesen*, Vosges Mountains, + *-ite*^{2}.] In *petrog.*, a dark-colored porphyry, with panidiomorphic granular texture, composed chiefly of orthoclase, with some lime-soda feldspar, and prismatic crystals of hornblende and diopside. *Rosenbusch*, 1887.

voglianite (vōg′li-a-nīt), *n.* [Named after J. F. *Vogl*, who analyzed it.] A hydrous sulphate of uranium occurring in green earthy coatings: found in Joachimsthal, Bohemia.

voice, *n.* 12. In *music*, a singer or the voice-part that a singer sings.—13. In *voice-building*, same as ★*voice quality.*—14. The sound made by the stridulation of an insect.—**Accessory voices.** See ★*accessory.*—**Active voice.** See ★*active.*—**Boy voice**, the male voice before mutation, closely resembling the mature female voice.—**Cavernous voice.** See ★*cavernous.*—**Chamber voice**, a voice suitable for private or parlor singing, rather than for concert singing.—**Falsetto voice.** See *falsetto.*—**Outer voices.** See *outer* ★*parts.*—**Voice quality**, the specific quality or timbre of the tones of a voice, either in general or in particular applications. It is *pure* when unrestricted and smooth, *guttural* when cramped in the throat, *nasal* when resonated in or emitted through the nose, *veiled* when obscured or made indistinct either voluntarily or involuntarily, *breathy* or *aspirated* when accompanied by the emission of unvocalized breath, *forced* when made with undue effort or with apparent difficulty, etc.

voice-builder (vois′bil″dėr), *n.* A teacher or trainer in voice-building

voice-building (vois′bil″ding), *n.* The act or process of developing vocal ability by systematic discipline. It is properly a specialized form of gymnastics, designed to bring every part of the vocal apparatus under control and to make it efficient for numerous practical purposes. It includes not only detailed training in the management of the breath and of the various adjustments of the larynx, pharynx, and mouth that are demanded in facile and effective phonation, but also the stimulus of correct mental conceptions as to ideal vocal tone, finished pronunciation, expressive and forcible delivery, etc., which constitute the basis of both speaking and singing in an artistic manner. It is strictly the preliminary discipline for both elocution or oratory on the one side and singing on the other. Incidentally, it is also of distinct hygienic value.

voice-formation (vois′fôr-mā″shọn), *n.* Same as ★*voice-building.*

voice-key (vois′kē), *n.* In *exper. psychol.*, a reaction key which is opened by the expulsion of the breath in speaking. *Scripture*, Exper. Phonetics, p. 154.

voice-placing (vois′plā″sing), *n.* In *voice-building*, the act or process of adjusting the breath and the resonance-cavities of the pharynx and mouth so that vocal tones are apparently located, that is, resonated, in certain points in the mouth. In general it is most satisfactory when the center of resonance is high and forward.

voice-production (vois′prọ̄-duk″shọn), *n.* 1. Same as ★*voice-building.*—2. Specifically, the actual use of the voice in producing particular effects either in speaking or singing.

voice-stop (vois′stop), *n.* In *phonetics*, a sonant stop (mute); a voiced stop.

voice-trainer (vois′trā″nėr), *n.* Same as ★*voice-builder.*

voice-training (vois′trā″ning), *n.* Same as ★*voice-building.*

Void of course. See ★*course*^{1}.

voile (vwol), *n.* [F. *voile*, veil. See *veil*, *n.*] A fabric similar to the old-fashioned nun's-veiling, but made with somewhat heavier yarns. *Dry Goods Economist*, June 13, 1908.

voiture, *n.*—**Voiture légère** [F., 'light carriage'], a motor-car designed to carry four or five persons and made lighter in weight and shorter in length than the ordinary touring-car: usually also of less motor capacity than the heavier cars, to reduce cost both of manufacture and of operation.

voiturette (vwo-tụ̄-ret′), *n.* [F., dim. of *voiture.* See *voiture.*] A name given in France to a light motor-car, usually for two persons, or for two more in an extra or folding seat. The voiturette is lighter, shorter, and less highly powered, and therefore cheaper than the larger cars.

> Light [automobile] cars of the "*voiturette*" type. *Encyc. Brit.*, XXXI. 13.

voiturier (vwo-tü-ryā′), *n.* [F.] One who drives a voiture or carriage.

> If you could have seen him going round and round the coach that brought them, as a preliminary to paying the *voiturier* to whom he could n't speak, in a currency he did n't understand, you never would have forgotten it. *Dickens*, quoted in Forster, Life of Charles Dickens, [II. 294.

voiturin (vwo-tü-raṅ′), *n.* [F.] One who keeps a voiture for hire or drives one.

Vol. An abbreviation (*a*) [*l. c.* or *cap.*] of *volume*; (*b*) of *Volunteer* or *Volunteers.*

volad (vō′lad), *adv.* [L. *vol*(*a*) (see *vola*) + *-ad*^{3}.] In a direction toward the palm or sole. *Trans. Linnean Soc. London*, Zoöl., Nov., 1899, p. 506.

volador (vō-lä-dōr′), *n.* [Sp., a flier, a flying-fish, ‹ *volar*, ‹ L. *volare*, fly.] A flying-fish, *Exocœtus californicus*, found on the coast of California.

voladora, *n.* 2. A muller. *Phillips and Bauerman*, Elements of Metallurgy, p. 740.

volante (vọ̄-län′tạ̄), *a.* [It., ‹ L. *volans*, flying. See *volant.*] In *music*, in a light, rapid manner.

volatic (vọ̄-lat′ik), *a.* [L. *volaticus*, ‹ *volare*, fly. See *volant.*] Of short duration; transitory.

volatile, *a.* 5. Having the power of being readily converted into gas or vapor. Sometimes applied, in chemistry, to those constituents, or that portion, of a substance which is driven off by heating at a specified temperature.—**Volatile combustible matter**, that portion of an organic substance other than water which is expelled by heating to bright redness in a closed crucible: applied especially in the analysis of coal.

Volcanalia (vol-kạ-nā′li-ạ̈), *n. pl.* [L., neut. pl. of *Volcanalis*, of Vulcan, ‹ *Volcanus*, *Vulcanus*, Vulcan.] In *classic myth.*, the annual festival of Vulcan, held on August 23, when certain fish were thrown into the fire on the hearth and a red heifer and a boar pig were sacrificed.

volcanello (vol-kạ̄-nel′ō), *n.* [It., dim. of *volcano*, volcano.] A small volcano.

volcanic. I. *a.*—**Volcanic chimney.** See ★*chimney*, 4 (*e*).—**Volcanic pipe.** See ★*pipe*^{1}.—**Volcanic vapors and sublimates**, vapors and volatilized minerals given off from volcanic centers, especially in their expiring stages The former are chiefly steam, carbonic acid, sulphureted hydrogen, and compounds of fluorin and boron; the latter are commonly native sulphur, realgar, orpiment, and ferric chlorid, which last often oxidizes to specular hematite.

II. *n.* 2. In *petrog.*, a volcanic rock: generally used in the plural.

> A paper on "The Humboldt region; a study in Basin Range structure," in which the fact was brought out that the upper beds in the region are *volcanics* which were originally level upon folded rocks. *Sci. Amer. Sup.*, Jan. 16, 1904, p. 23446.

volcanite (vol′kạ-nīt), *n.* [*Volcano*, on the island of Vulcano, Lipari, + *-ite*^{2}.] In *petrog.*, a glassy lava, forming bombs at Vulcano, containing soda-orthoclase or soda-microcline and augite, and having the chemical composition of dacite. *W. H. Hobbs*, 1893.

volcanization (vol″kạn-i-zā′shọn), *n.* [*volcaniz*(*e*) + *-ation.*] The act, process, or result of volcanizing.

volcanize (vol′kạn-īz), *v. t.*; pret. and pp. *volcanized*, ppr. *volcanizing* [*volcan*(*ic*) + *-ize.*] To subject to the action of volcanic forces; modify by volcanic action; render volcanic in character.

volcano, *n.* 1. Volcanoes originate either in the development of a fissure in the earth's crust which releases pent-up forces within, or in the bursting of these accumulated forces through a less elongated passage and the consequent establishment of the vent. Once released these forces build up about the vent a conical heap of ejected materials which in the end may yield a mountain of great altitude and extent. Cones usually consist both of loose materials and of solid flows and dikes which have come forth as molten rock; but some cones are known which are almost if not entirely the former (*cinder cones*, *tuff cones*), and others which are chiefly the latter. The loose materials roll down from the rim both outwardly and inwardly and eventually establish themselves at their angles of repose. Thus the cross-section of a cone exhibits layers of which the outer dip away from the vent and the inner toward it. The coarser fragments are necessarily nearer the vent, and yield agglomerates and breccias. The finer materials (*tuffs*) lie farther out and sift down at flatter angles until gradually the slope dies out in the general surrounding level. Around the immediate vent there is thus developed a space like an inverted cone, or a bowl, the crater, which is prolonged downward in the vent or chimney, the whole being funnel-shaped in outline. The upper edge of the annular mountain surrounding the crater is called the *rim*; the outer portions are the *slopes* or *flanks*. The loose materials are also much carved and modified by the rains, but where they predominate they yield the symmetrical volcanic peaks such as Fuji-yama in Japan. When outbreaks of molten rock (lava) are superadded to the fragmental materials, they seldom pour out over the rim of the crater, but burst through the flanks. If they enter cracks and congeal in them, they furnish dikes, which serve like ribs to stiffen the loose materials. If they pour forth as a flood down the sides they furnish surface flows or sheets. All these become afterward buried in later outbreaks of fragmental materials until the structure of the cone is very complex. The activity of Mont

Pelée, in Martinique, in 1902, was at first explosive but by March, 1903, a columnar mass of hot rock had been protruded as a great spine 500 meters above the vent, evidently starting below as a viscous mass, cooled as it emerged until it practically yielded a solid eruption called a *pelélith.* It disintegrated in the course of months and fell away. When lava enters very largely into the materials of the mountain, the outline is affected in a notable degree. Some lavas which have high percentages of silica (rhyolites, trachytes) are relatively infusible and are at most ropy and viscous. They well up and congeal with steep slopes and do not move far from the vent. Others which have low percentages (basalts) are very fusible and flow like water for miles. The Hawaiian cones are good examples of the latter and in consequence have very flat slopes; whereas in the Auvergne the 'puys,' which belong under the former, are very steep and may have no crater at all. Volcanic vents break out through the floor of the ocean (submarine eruptions) no less than on the land, and are a fruitful cause of oceanic islands. The activity of the cones is variable, and on the basis of this they are classified under several types as follows: (1) continuously active but of corresponding moderation; (2) intermittently active, with quiescent periods of relatively short duration and with outbreaks of notable but not maximum violence; (3) intermittently active, with long periods of rest, followed by excessively violent eruptions. Volcanoes exhibit a marked linear distribution upon the earth's surface, and they favor continental borders more than the interiors. The greatest series of vents encircles the Pacific Ocean and reaches its culmination in Java. A location near the sea is, however, not essential, as was once the prevailing opinion, since the great Mexican cones are on the central plateau, and Kilimanjaro, an active volcano, has been discovered in Africa. Volcanic areas have shifted from time to time. Old and long extinct centers may be detected, as in Maine and southeastern Pennsylvania, which were active before the Cambrian period, while the Hebrides were the scene of enormous outbreaks in the Tertiary. The cause of volcanoes is very obscure. They are obviously connected with the internal heat of the earth. Some refer this to heat still retained from the early nebulous condition of the earth (nebular hypothesis); others to heat produced by mechanical pressure in a globe of accumulating small, cold particles (planetesimal hypothesis); while still others are increasingly inclined to look with favor upon radioactive phenomena below the surface. The localized outbreaks have been referred to contractions of the crust through loss of heat; to readjustments from the shifting of sediments; and to strains caused by the attractions of the sun and moon when in positions favorable to deformation of the globe. In a vent once established there is reason to think that the last named causes affect the periodicity of eruptions. As volcanic activity expires many important after effects are manifested, such as fumaroles, solfataras, hot springs, geysers, and the formation of mineral deposits.—**Air-volcano,** a miniature crater resembling a true volcano in shape and often provided with a cone: produced by the explosion of gases in mud. Compare *salse*^{2} and ★*maccaluba.*—**Bedded volcano,** a volcano whose crater consists of stratified tuffs and lava-sheets: the commonest type of cone.—**Dome volcano,** a name suggested by von Seebach for those volcanoes which are built up of lava-flows, with little or no breccias and tuffs. The Hawaiian volcanoes are good examples.—**Dormant volcano,** a volcano which is inactive but not necessarily extinct.—**Explosive volcano,** in *geol.*, a volcano whose outbreaks are marked by explosions (such as Mont Pelée, Martinique) and whose products are fragmental tuffs and breccias rather than molten lavas.

volcanologist (vol-kạ-nol'ọ̈-jist), *n.* [*volcanolog*(*y*) + *-ist.*] A student of volcanology. Also *vulcanologist.*

> The tendency of the fluid nucleus to increase in ellipticity might produce a result worthy of examination by *volcanologists.* *Smithsonian Rep.*, 1890, p. 216.

vole-mouse (vōl'mous), *n.* [< Norw. **voll-mus*, lit. 'field-mouse,' < *voll*, earlier *vall* = Dan. *vold* (obs. or dial.) = Sw. *vall* = Icel. *völlr*, a plain, an open field (= AS. *weald*, a forest, E. *wold*, *weald*, open country), + *mus* = E. *mouse.* The same first element occurs in *wallop*, *n.*] The short-tailed field-mouse; the vole.

> *Vole-mouse*, the short-tailed field mouse, O. and S. [Orkney and Shetland islands].
> *Edmondston*, An etym. gloss. of the Shetland and Ork- [ney dialect, p. 140.

volgerite (fōl'gėr-īt), *n.* [From O. *Volger*, its discoverer.] A form of antimony ocher, $Sb_2O_5.4H_2O$, from near Constantine, Algeria.

Volgian (vol'ji-an), *a.* and *n.* [*Volga*, a river in Russia, + *-ian.*] In *geol.*, a term introduced by Nikitin for a division of the Jurassic rocks of northern Russia, correlated with the Portlandian of western Europe.

volipresence (vol-i-prez'ens), *n.* [Irreg. < L. *volo*, I will, I wish (inf. *velle*), + *præsentia*, presence.] The multipresence of Christ, that is, the belief that with his humanity Christ is able to be present wherever he wills. This doctrine is held by the Saxon churches generally.

Volitional action. See ★*action.*

Volkmann's canal, contraction. See ★*canal*^{1}, ★*contraction.*

volkslied (fōlks'lēt), *n.* [G.] A folk-song. See *lied* and *folk-song.*

Volksraad (fōlks'räd), *n.* [D., 'people's council.' See *folk* and *rede*^{1}, *n.*, ★*raad*^{2}.] A legislative assembly or a house of parliament in South Africa.

> Meanwhile the emigrant farmers had established what they called the Republic of Natalia, elected a *Volksraad*, and founded the town of Pietermaritzburg.
> *Encyc. Brit.*, XXXII. 716.

volley, *n.* **4.** In *cricket:* (*a*) A full-pitch. (*b*) A ball so bowled as to reach the batsman without touching the ground.—**5.** In *mining*, the ignition and explosion of several blasts in the rock at one time, or of groups of such blasts in sections.

volley, *v. t.* **3.** In *cricket*, of the bowler: (*a*) To bowl a ball which reaches the batsman before pitching. (*b*) To bowl a full-pitch.

volley-ball (vol'i-bâl), *n.* A gymnasium game, played with a white leather ball, consisting in keeping the ball in motion over a high net from one side to the other.

volost (vō'lost), *n.* [Russ. *vólostŭ*, a district, bailiwick.] A small administrative division in Russia.

> Several communes united compose a *volost* or canton, of which there are 10,530 in European Russia. To the cantonal and provisional assemblies, each composed of duly elected delegates, is applied the name, of late become so familiar, of the zemtsvo. The mir or *volost* decides all questions of local nature, such as concern roads, schools, health, justice, and acts as a peasants' court in cases not involving more than 60 dollars. But over every act or meeting impends the shadow of the Tsar. His delegate or commissioner is always near and may, though he seldom does, reverse all the proceedings.
> *National Geog. Mag.*, July, 1905, p. 512.

Vols. [*l. c.* or *cap.*] An abbreviation of *volumes.*

volt^2, *n.*—**Reichsanstalt volt,** the practical unit of electromotive force adopted by the Imperial Physicotechnical Institute in Charlottenburg; a unit based upon the electromotive force of the Clark cell taken as 1.43285 volts.

voltage^2, *n.*—**Anode voltage,** in electrolysis, the difference of potential between the anode and the electrolyte. *Electrochem. Industry*, July, 1903, p. 374.—**Cathode voltage,** in electrolysis, the difference of potential between the cathode and the electrolyte. *Electrochem. Industry*, July, 1903, p. 374.—**Critical voltage,** in electrolysis, the decomposition voltage or voltage of polarization.

> This *critical voltage*, or voltage of "polarization," is the number of pounds at which the nature of the electrochemical system, cathode-electrolyte-anode, sets our electrochemical safety-valve.
> *Electrochem. Industry*, July, 1903, p. 373.

Decomposition voltage, in an electrolytic cell with one electrolyte of uniform concentration, the algebraic sum of the cathode voltage and the anode voltage.—**Delta-voltage,** in *elect.*, in a three-phase machine, the voltage between any two collector-rings.—**Electrode voltage,** the difference of potential between one of the electrodes of an electrolytic cell and the electrolyte. It is termed 'cathode voltage' in the case of the cathode and 'anode voltage' in the case of the anode.—**Floating voltage,** in *elect.*, the voltage of a storage-battery when neither charging nor discharging.—**Impedance voltage,** in an alternating-current circuit, the total loss of electromotive force due to impedance. It is the resultant of the e. m. f. consumed by resistance and that consumed by reactance.—**Multiple voltage system.** Same as ★*multivoltage system.*—**Open-circuit voltage,** in *elect.*, the voltage at the terminals of a generator when the external circuit is broken.—**Primary voltage.** See ★*primary.*—**Receiver voltage,** in *elect.*, the voltage at the receiving end of a circuit over which alternating currents, or the current impulses used in signaling, are transmitted.—**Star voltage,** in an alternating-current, polyphase, star-wound machine, the voltage between any collector-ring and the common neutral.

voltage-changer (vōl'tāj-chān″jėr), *n.* **1.** In *elect.*, a device by which the voltage or electrical pressure in a circuit may be altered either up or down. More usually from a lower to a higher voltage.—**2.** A motor-driven dynamo or generator whose windings are so related in each machine that the current which drives the motor shall generate one of a different voltage in the dynamo: used in regulating-systems. Sometimes called a *booster*, when the voltage is to be raised. *Elect. Rev.*, Sept. 24, 1904, p. 548.

Voltaic alternatives. See ★*alternative.*

voltameter, *n.*—**Copper voltameter,** a voltameter in which the metal deposited by the current is copper: usually from a solution of copper sulphate.—**Differential voltameter,** a voltameter for measuring electrical resistance by comparing the volume of gases set free by the decomposition of water by the current passing through the circuit to be measured with that from a current in a circuit of known resistance.—**Richards voltameter,** in *elect.*, a silver voltameter with a porous cup around the (silver) anode. *Physical Rev.*, Aug., 1904, p. 140.—**Silver voltameter,** an instrument for the measurement of electric currents by weighing the silver deposited by them in a known time: the form of voltameter chiefly employed in accurate determinations of the electric current and specified by the International Electrical Congress in their practical definition of the ampere. Under the best conditions it is capable of an accuracy of one part in ten thousand.—**Volume voltameter,** a voltameter in which the products of electrolysis are determined volumetrically; specifically, a water voltameter the out-put of which is thus ascertained.—**Water voltameter,** a voltameter in which oxygen and hydrogen are made by the electrolytic decomposition of water and in which the current through the instrument is determined by the amount of gas generated in a unit of time.—**Weight voltameter,** a voltameter in which the electrolytic product is determined by weighing instead of by volumetric methods; specifically, a water voltameter in which the output is thus determined.—**Zinc voltameter,** a voltameter in which the metal deposited by the current to be measured is zinc. The zinc voltameter has been used to some extent in commercial practice under the name of the 'chemical meter.'

voltampere, *n.* **2.** The product of volt and ampere, that is, of electromotive force and current which in an alternating-current electric circuit may be greater than the true power, and is called *apparent* ★*power* (which see).

volt-box (vōlt'boks), *n.* A specially wound resistance-box used as an adjunct to a potentiometer, and serving to adapt the instrument to the measurement of differences of potential above its normal range.

volte-face (vōlt-fäs'), *n.* [F., < It. *voltafaccia*, < *voltare*, turn, + *faccia*, face.] A sudden change from one position, in a matter of principle, policy, or politics, to its direct opposite.

> Rochefort, instead of returning to his resuscitated creation, founded "L'Intransigeant" and drew "La Lanterne's" clientele. Viviani thereupon justified his radicalism in making a radical *volte-face.* From a fierce and destructive republican he became, overnight, a conservative. *Cosmopolitan Mag.*, XXX. 269.

volt-face (vōlt-fās'), *n.* [F. *volte-face*, Englished, < *volt*^{1} + *face.*] Same as ★*volte-face.*

voltivity (vōl-tiv'i-ti), *n.* [*volt*(*age*) + *-ivity.*] The line integral of electric force; the voltage.

voltmeter, *n.* It is a direct-reading instrument for the measurement of difference of potential between two points in an electric circuit, as between the terminals of a generator, battery, or electric lamp, or between the mains of a distributing circuit. Voltmeters for use on direct-current circuits are frequently strong-field galvanometers of high resistance, in which case the difference of potential between their terminals is proportional to the current flowing in the voltmeter circuit and is measured by the deflection of a coil suspended in a fixed magnetic field, or sometimes by the movement of a magnet in the field of a fixed coil. Various special forms of electrodynamometer are also used as voltmeters and such instruments are applicable alike to direct- and to alternating-current circuits. In cases where it is preferable to have no flow of current in the voltmeter circuit, *electrostatic voltmeters* are employed. These are usually modifications of the quadrant electrometer of Lord Kelvin, in which a pointer attached to the needle of the instrument moves over a calibrated, direct-reading scale. Electrostatic voltmeters are equally serviceable on direct- and on alternating-current circuits and are especially adapted to measuring high voltages, from 1,000 to 20,000 volts.—**Alternating-current voltmeter,** an instrument for measuring differences of potential in alternating-current circuits.—**Direct-current voltmeter,** a voltmeter for use on circuits where the difference of potential is always in the same direction.—**Gravity voltmeter,** a voltmeter in which the magnetic or electrostatic forces acting on the moving part of the instrument are balanced against the force of gravity. Many electrostatic voltmeters are gravity voltmeters.—**Hot-wire voltmeter,** a voltmeter in which the current passing through the instrument heats a fine wire, and the expansion of the wire produces and controls the movement of a pointer along a scale calibrated to indicate the voltage at the terminals of the heating circuit.—**Hydrostatic voltmeter,** an early form in which an iron rod or core was attached to a float similar to the body of a hydrometer. The cylindrical vessel containing the liquid in which this core was thus vertically suspended was surrounded with a coil of fine insulated wire. Current in the coil caused the core to be more deeply submerged and its position, as indicated by the movement of a pointer along a vertical scale, measured the difference of potential between the terminals of the fixed coil.—**Recording voltmeter,** a voltmeter which makes an automatic record, usually in the form of a curve traced upon a cylinder or disk, of fluctuations in the voltage of an electric circuit.—**Spring voltmeter,** a voltmeter in which the magnetic or electrostatic forces acting on the moving part of the instrument are balanced by the tension of a spring.—**Static voltmeter,** an electrostatic voltmeter.—**Switchboard voltmeter,** an indicator of voltage permanently mounted as an attachment to the switchboard of a central station. Such instruments are commonly provided with an open scale easily read at a distance and covering only a small range on either side of the normal voltage of the circuit on which the instrument is to be used.—**Weight voltmeter,** a gravity voltmeter.

volubility, *n.* **3†.** Easy, swift, rolling motion; the property of moving in an easy, rolling manner.

> Touching such Creatures as we termed gliding, . . . Some move more slowly, but others with a certain *Volubility* and flexible Agitation of the Body.
> *Guillim*, Heraldry, xviii.

volume, *n.* **4.** (*b*) A measure of the relative quantity of a substance as determined by its bulk.

> A *volume* of acetylene needs approximately twelve *volumes* of air, forming as products of combustion carbon dioxide and water vapour. *Encyc. Brit.*, XXV. 37.

Combination by volume. See ★*combination.*—**Contraction volume,** the volume of blood which leaves the heart at each systole. **Critical volume,** the specific volume of a liquid at its critical temperature, that is, the volume occupied by a unit mass of the liquid at the critical pressure.—**Elasticity of volume.** Same as *elasticity of bulk* (which see, under *elasticity*).—**Measure of volume.** See ★*measure.*—**Merchantable volume,** in *lumbering*, the total volume of that portion of the tree which can be used under given conditions: sometimes called *possible merchantable volume.*—**Molecular volume,** the molecular weight of a substance divided by its density.—**Volume-entropy diagram.** See ★*diagram.*—**Volume growth.** See ★*increment*, 6.—**Volume resistivity.** See ★*resistivity.*—**Volume rotation.** See ★*rotation.*

volume-blower (vol′ūm-blō″ėr), *n.* A blowing-machine designed to furnish a large volume of air or gas at low pressures, as distinguished from the pressure-blower, which delivers less volume of air at higher pressure. *Elect. World and Engin.*, Jan. 31, 1903.

volumenometer, *n.*—**Becquerel's volumenometer,** a gas-pyrometer which measures the changes of pressure resulting from a given variation of the gaseous mass contained in the bulb, which may be of iron, or porcelain, or platinum.

Volume-pressure diagram. See ★*diagram.*

volumescope (vọ-lū′me-skōp), *n.* [Irreg. < *volume* + Gr. *σκοπεῖν*, view.] A graduated glass tube for demonstrating the difference in volume of the components of a compound, especially when they are set free by chemical action.

volume-table (vol′ūm-tā″bl), *n.* A table of volumes; specifically, in *forestry*, a tabular statement of the volume of trees in board feet or other units upon the basis of their diameter breast-high, their diameter breast-high and height, their age, or their age and height.

> Ever since the sustained annual yield became a factor in forest management every method of reducing the labor involved in taking an inventory of the stock on hand has been welcomed by the forest manager. One of the greatest of these labor savers is the *volume-table* by means of which it is possible, with a minimum of measurement and calculation, to obtain the cubic content of a stand in a very satisfactory manner.
> *Forestry Quart.*, I. 6.

volumeter, *n.* **2.** Same as *stereometer.*

voluntarism (vol′un-tā-rizm), *n.* [*voluntar*(*y*) + *-ism.*] **1.** The metaphysical opinion that all existence and all actual happening is of the nature of an individual effort (against a resistance) which has on each occasion a peculiar conscious quality and is also discriminative or, at least rudimentally, purposive, and so cognitive. In so far as this opinion makes cognition essentially purposive, it agrees, in effect, with pragmatism from which, however, it differs in being a metaphysical hypothesis founded on arguments drawn from psychology, instead of being a maxim of logic deduced from an analysis of the nature of signs.—**2.** A type of psychological theory, which regards the will as fundamental, and accordingly emphasizes the volitional rather than the intellectual aspect of our nature: ordinarily opposed to *intellectualism.*

> Psychology of the inner sense commonly tends toward intellectualism. . . . The psychology of immediate experience, on the other hand, tends toward *voluntarism.*
> *W. Wundt* (trans.), Outlines of Psychol., p. 13.

> *Voluntarism*, we say, is right in every respect except in believing itself to be a psychology.
> *Harvard Psychol. Stud.*, I. 642.

voluntarist (vol′un-tā-rist), *n.* and *a.* **I.** *n.* One who, in metaphysics or psychology, accepts the theory of voluntarism.

> There are psychologists who recognize both [views] and keep them separated, others who hold to the one or the other as the only possible view: they are phenomenalists or *voluntarists.* *Harvard Psychol. Stud.*, I. 642.

II. *a.* Same as ★*voluntaristic. Jour. Philos., Psychol. and Sci. Methods*, Dec. 20, 1906, p. 717.

voluntaristic (vol″un-tā-ris′tik), *a.* [*voluntarist* + *-ic.*] Pertaining to, or characteristic of, the metaphysical or psychological theory of voluntarism.

> In all these respects, *voluntaristic* psychology is opposed to intellectualism.
> *W. Wundt* (trans.), Outlines of Psychol., p. 14.

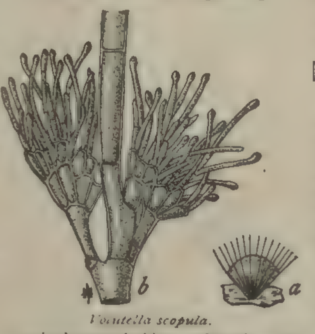
> As if, for instance, the phenomenalistic study dealt with perceptions and ideas, the *voluntaristic* with feelings and volitions. *Harvard Psychol. Stud.*, I. 643.

> The general movement which rightly or wrongly is coming to be designated as pragmatism is away from an intellectualistic and transcendental, toward a *voluntaristic* and empirical metaphysics.
> *Jour. Philos., Psychol. and Sci. Methods*, Aug. 4, 1904, [p. 427.

volunteer. **I.** *n.* **4.** In *hort.*, a plant that comes up of itself from naturally scattered seed, in distinction from one that comes from sowing by the horticulturist.

II. *a.*—**Volunteer crop,** a spontaneous growth of a useful plant in quantity for harvesting: for example, of crab-grass, which in the southern United States covers fields after the removal of the regular crop.—**Volunteer growth.** See ★*growth.*

Volutella (vol-ū-tel′ạ̈), *n.* [NL. (Tode, 1790), < L. dim. *voluta*, a spiral.] A large genus of hyphomycetous fungi having rather regular, disk-like sporodochia with bristles about the margin. The conidia are unicellular and terminal. Over 60 species have been described. They are widely distributed and occur on decaying vegetable matter. *V. ciliata* is a common species in Europe and America. *V. scopula* is found on decaying hyacinth bulbs in France.



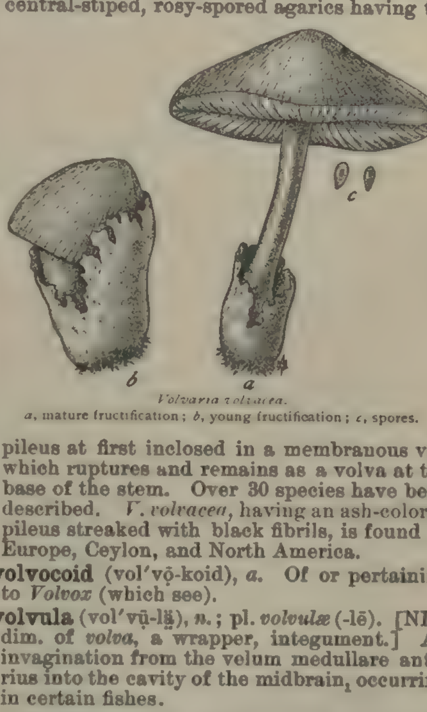
Volutella scopula.

a, single sporodochium, enlarged; *b*, portion of the conidia bearing hyphæ: highly magnified.

volute-pump (vọ-lūt′pump), *n.* See ★*pump*^{1}.

volute-spring, *n.* **2.** A coiled spring in which the band of steel is wound in a double volute, the bases of two cones being joined together.

Volvaria, *n.* **2.** [Fries, 1821.] A genus of central-stiped, rosy-spored agarics having the pileus at first inclosed in a membranous veil which ruptures and remains as a volva at the base of the stem. Over 30 species have been described. *V. volvacea*, having an ash-colored pileus streaked with black fibrils, is found in Europe, Ceylon, and North America.



Volvaria volvacea.

a, mature fructification; *b*, young fructification; *c*, spores.

volvocoid (vol′vọ-koid), *a.* Of or pertaining to *Volvox* (which see).

volvula (vol′vụ-lạ̈), *n.*; pl. *volvulæ* (-lē). [NL., dim. of *volva*, a wrapper, integument.] An invagination from the velum medullare anterius into the cavity of the midbrain, occurring in certain fishes.

> The velum medullare anterius . . . from which there is developed in many fishes a remarkable invagination into the cavity of the midbrain known as the *volvula.*
> *Buck*, Med. Handbook, II. 271.

vomer, *n.* **3.** A genus of carangoid fishes found in warm seas.—**Caudal vomer.** Same as *pygostyle.*

vomero-palatine (vō″mẹ-rō-pal′ạ̈-tin), *n.* A bone in the ganoid fishes formed by the fusion of the palatine and vomerine plates and usually bearing five longitudinal series of round or oval grinding teeth.

vomit, *n.*—**Barcoo vomit.** See *Barcoo* ★*disease.*—**Coffee-ground vomit,** dark brown or blackish granular matter, suspended in fluid (blood changed in appearance by the action of the gastric juice), vomited in cases of cancer or ulcer of the stomach, yellow fever, or other diseases in which gastric hemorrhage occurs.

vomiting-boiler (vom′i-ting-boi″ler), *n.* In *bleaching*, an arrangement by which water or a weak alkaline lye contained in an iron boiler is forced upward, under pressure of the steam formed through a central pipe and discharged over the cloth to be washed, and gradually percolates back to the boiler, to be again forced up and discharged, thus securing continued circulation of the liquid. An injector is sometimes used as the source of the necessary pressure.

vonitra (vō-nē′trä), *n.* [Malagasy.] The Madagascar name for a palm, *Dictyosperma fibrosum*, and for the fiber obtained from it. See *Madagascar* ★*bass.*

voorlooper (fōr′lō-pėr), *n.* [S. Afr. D.] Same as *fore-looper.*

> Only a wave to our troopers,
> Only our flanks swinging past,
> Only a dozen *voorloopers*,
> Only we 've learned it at last.
> *R. Kipling*, Two Kopjes, st. 7.

voortrekker (fōr′trek-ėr), *n.* [S. Afr. D.] One who treks in advance; a pioneer.

voraz (vọ-räth′), *n.* [Sp. (adj.), < L. *vorax* (*vorac-*), voracious.] A common name of *Aprion macrophthalmus*, of the family *Neomænidæ*, of the West Indian fauna. *Jordan and Evermann*, Fishes of N. and M. America, p. 1280.

vorhand (fôr′hänt), *n.* [G., < *vor*, fore, + *hand*, hand.] In *skat*, the eldest hand, the leader for the first trick; the one to whom bids are first made.

vorschlag (fôr′shlaċh), *n.* [G., < *vor*, fore, + *schlag*, stroke.] In *music*, same as *appoggiatura:* opposed to ★*nachschlag.*

vorspiel (fôr′shpēl), *n.* [G., < *vor*, fore, + *spiel*, play.] In *music*, a prelude or overture.

vortex, *n.*—**Magnetic vortex,** a magnetic whirl.—**Strength of a vortex.** See ★*strength.*—**Vortex sheet.** See ★*sheet*^{1}.—**Vortex spiral,** a spiral fluid vortex. *W. M. Hicks*, 1895.

vortex-atom (vôr′teks-at″ọm), *n.* An atom supposed to be formed by the rotational or vortex motion of a portion of an incompressible fluid free from viscosity. A vortex-atom may be regarded as a vortex-ring in the ether, a body which, as was shown by Helmholtz and by Kelvin, possesses many of the properties which it is necessary to assign to an atom. See *vortex.*

vortex-fringe (vôr′teks-frinj), *n.* The vortex-ring generated by the fall of a horizontal disk through the air. [Rare.]

> There is at first a circulation of air around the edge of the plate . . . forming a kind of *vortex fringe.*
> *Lanchester*, Aerodynamics, p. 145.

vortex-ring (vôr′teks-ring), *n.* See *vortex.*

vorticity (vôr-tis′i-ti), *n.* [L. *vortex* (*vortic-*), vortex, + *-ity.*] The state or condition of the rotating portions of a fluid in which vortex-motion occurs.

> This seems to be J. J. Thomson's view—though it is not clear that he regards the *vorticity* as anything more than an analogy—his view is that the lines of force or vortex fibres actually exist, radiating from corpuscles, constituting electric lines of force, generating magnetic fields when they move, and conferring mass on the particle by reason of the amount of ether entangled inextricably in each filament. *Nature*, May 26, 1904, p. 75.

vorticosely (vôr′ti-kōs-li), *adv.* In a whirling or verticose manner: applied to the movements of the atmosphere.

> The law being that air always moves *vorticosely* from where the pressure is high to where it is low.
> *Geikie*, Text-book of Geol., p. 431.

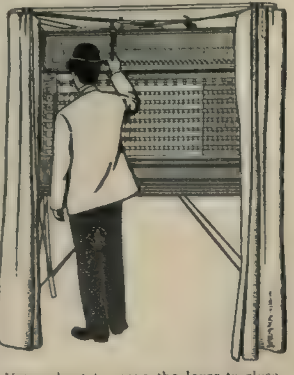
Vosgean (vō′zhẹ-ạn), *a.* Of or pertaining to the Vosges, a range of mountains in eastern France and western Germany. See ★*Vosgian. Geog. Jour.* (R. G. S.), XI. 441.

> The glaciers of the Pamirian phase worked back like rivers by expediting the erosion of the cirques at their head, and so in time greatly narrowed the mountain belt, and retired from their early moraines. Keeping pace with the erosion, the glaciers, preserving approximately their original length, crept back from north and south towards the present central line of the Alps, leaving their moraines as a measure of their erosion. Thus the Alpine phase was reached. Later, the eating back reduces the height of the central line, and a Pyrennean phase is produced, leading still later to a *Vosgean* phase, when, the summits being worn away below the snow-line, glaciers become impossible.
> *Geog. Jour.* (R. G. S.), XI. 441.

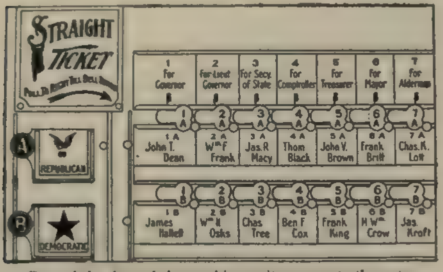
Vosgian (vō′zhi-ạn), *a.* and *n.* **I.** *a.* [*Vosg*(*es*) + *-i-an.*] Of or pertaining to the Vosges Mountains.

II. *n.* In *geol.*, the Bunter sandstone of the Triassic system as developed in the Vosges Mountains, consisting of a lower division of unfossiliferous red sandstone, the Grès des Vosges, and an upper red sandstone, the Grès bigarré, with *Myophoria* and reptilian remains.

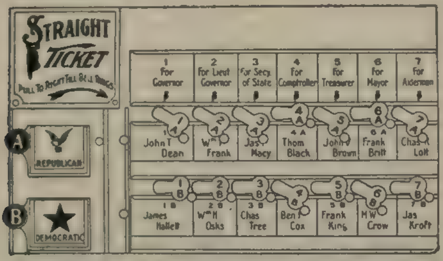
voting-machine (vō′ting-mạ-shēn″), *n.* A machine for recording, counting, and registering votes at an election. It is essentially a combined adding and registering machine, and is mechanically related to the arithmometer and cash-register (which see). It consists of an adding-machine inclosed in a casing about four feet high and four wide and ten inches deep, supported on iron legs and inclosed in a curtained booth. At the front or operating side is a metal frame in which may be placed sheets of paper or labels upon which are printed the party signs and names of all the candidates and any questions to be submitted to the voters at any particular election. When the labels are in place and the curtains of the booth are opened and the counting and registering parts of the machine are at zero or blank, the machine is ready for use. On the front of the machine are the levers which are to be moved by the voter when indicating his vote. They are arranged in two groups, one group having a large key for each of the political parties, and a larger group having small keys arranged in horizontal lines, corresponding to the names of the candidates and the questions to be answered. When the first voter enters the booth he stands before the machine and moves an operating lever at the top of the machine. This causes the curtains to close, insuring secret voting, and, at the same time, unlocks the machine. If he wishes to vote a straight party ticket he moves the party lever, indicated by its emblem. Up to this point no record is made and the voter can reconsider his action and move another party lever, the first being then thrown out of action. Having decided and moved the party lever he wishes to move, he reverses the operating lever at the top of the machine. This records and counts a straight party vote, opens the curtains, and locks the machine. No other vote can be recorded until the next voter enters the booth and moves the operating lever to close the curtain and unlock the machine. This voter may wish to vote a split ticket and answer "yes" or "no" to one or more questions. He can move any one or more of the small keys to indicate, according to the printed labels, the exact choice he wishes to exercise among the candidates or the exact answer (yes or no) he wishes to give to one or more of the questions. Levers not moved record a failure to answer any particular question. If he wishes to add the name of a new candidate he can write it in pencil on a ribbon of paper exposed on the front of the machine at the top, and his written selection of a new candidate's name is recorded in the machine by the act of opening the curtains and locking the machine. The machine registers the number of voters using it, the exact vote, whatever its character, for each of the candidates selected by each voter, and the total vote cast for each party and for each and every candidate properly added up and permanently recorded, together with the total answers, yes or no, and all failures to vote on any or all questions and candidates. It is capable of recording the votes of one hundred and twenty voters an hour.



Voter about to move the lever to close the curtains of the booth.



Part of the face of the machine as it appears to the voter before he has begun to vote.



Part of the face of the machine showing a split or scratch vote finished, ready to be registered by opening the curtain. As indicated by the pointers turned downward, the voter has, in this instance, voted for the Republican candidates for all offices except Comptroller and Mayor; for these two he has chosen the Democratic candidates, Cox and Crow, respectively.

votometer (vō-tom′e-tėr), *n.* [L. *votum* (see *vote*) + Gr. *μέτρον*, measure.] A voting-machine. *Appleton's Cyclo.*, VIII. 202.

votress² (vō′tres), *n.* [*vot*(*e*) + *-r-* + *-ess.*] A female voter. [Rare.]

> The *votress* insisted that she must plump for "Annie Sinclair." *Daily Telegraph*, Nov. 23, 1894.

voupristi (vö-prēs′ti), *n.* [NGr. **βούπρηστι*, < Gr. *βούπρηστις*. See *Buprestis.*] A large yellow blister-beetle, having an offensive odor, and said by the monks on Mount Athos so to affect plants which it has touched that horses or cattle feeding on these plants are poisoned. *Kirby and Spence*, Entomology, p. 84.

vowel, *n.*—**Harmonic sequence of vowels.** See ★*sequence.*—**Hebrew vowels.** The Hebrew alphabet consists of twenty-two letters, all of which are consonants. The vowels, long and short, are ten in number, viz.:

(ָ) KÁMETS = *ä* in father.
(ֵ) TSÉRE = *ai* in main.
(ִי) ḤIRIK GADOL (long ḥirik) = *ee* in bee.
(וֹ) ḤOLEM = *o* in vote, or *ou* in house.
(וּ) SHURUK = *oo* in moor, pool.
(ַ) PÁTAḤ = *a* in pat.
(ֶ) SÉGOL = *e* in bet.
(ִ) ḤÍRIK KÁTON (short ḥirik) = *i* in bit.
(ֳ) KÁMETS ḤÁTOPH = *o* in lot.
(ֻ) KÍBUTS = *u* in pull.

The vowel-points, except holem and shuruk, are written below the consonants. The ḥolem is placed above the letter, and the dot of the shuruk within the letter vau to the left (וּ).—**Round vowel**, a vowel sound uttered with rounding of the lips, as *o*, *u*.—**Vowel gradation**, the appearance, in different inflections or derivates of the same root, of several different vowels (derived, theoretically, from one original vowel) which fall into definite grades, including back and front vowels, and long, short, weak or obscure, and lost ('zero grade') vowels, the differences having been produced by variations of accent, stress, emphasis, etc., following the changes of inflection, contractions, etc., in the earlier stages of the language. Examples are, in Greek: λείπω, λέλοιπα, λιπεῖν, οἶδα, ἰδεῖν, etc.; in Latin, *tollo*, *tuli*, (*t*)*latum*, *facio*, *feci*, *frango*, *fregi*, etc.; in English, *sing*, *sang*, *sung*, *song*, *speak*, *spake*, *spoken*, *speech*, etc. Vowel gradation plays a great part in the development of the Indo-European languages, and is the sole key to many etymological problems. See *ablaut.*—**Vowel instrument.** See ★*instrument.*

vowel, *v. t.* 2. To pay (debts) by an "I O U." [Humorous.]

> Capot me, but those lads abroad are pretty fellows, let 'em say what they will. Here, sir, they will *vowel* you from father to son, to the twentieth generation. They would as soon now-a-days pay a tradesman's bill as a play debt. All sense of honour is gone. *Foote*, The Minor, i.

vox, *n.* 2. [*pl.*] In the expressions *voces Aretinæ*, *voces Belgicæ*, etc., same as *syllable*, 2.—**Vox cholerica**, the faint voice noted in states of extreme prostration, as in the algid stage of cholera.—**Vox populi**, the voice of the people; the will and wish of the people.

vraic (vrāk), *n.* [Dial. form of *wrack*¹, *n.* See *varec.*] Same as *wrack*¹, 1 (*a*). [Island of Jersey.]

> There is not much seaweed burned at the present time, and *vraic* ashes are now difficult to obtain. *Daily Cons. and Trade Rep.*, May 8, 1908, p. 6.

V. R. et I. An abbreviation of *Victoria Regina et Imperatrix*, Victoria Queen and Empress.

V. Rev. An abbreviation of *Very Reverend.*

vril-food (vril′föd), *n.* [An abbreviation of *bovril* (a kind of beef extract).] A commercial beef extract or some preparation of it.

> We also took dried boiled potatoes, pea-soup, chocolate, *vril-food*, etc. *Nansen*, Farthest North, II. 126.

vrouw (frou), *n.* [D.] Same as *frow*¹, 1.

V-shaped, *a.* 2. Having a cross-profile in the form of the capital letter V; in *phys. geog.*, said of young valleys that have been eroded by normal stream-action.

Vt. An abbreviation of *Vermont.*

vuelta (vö-el′tä), *n.* [Sp., a turn, change. See *vault*, *n.*] In *silver-refining*, the moment when all impurities have been removed from the silver under treatment. *Coal and Metal Miners' Pocketbook.*

Vul. An abbreviation of *Vulgate.*

Vulcanian² (vūl-kä′ni-a̤n), *a.* [*Vulcano*, in the Lipari Islands, + *-i-an.*] See the extract.

> An altogether different type [of volcanic action] was realized in 1888–89 at Vulcano for which Mercalli has proposed the name *Vulcanian.* It is produced when at the moment of explosion the magma is very viscous or wholly consolidated; in the first case, the bombs have the bread-crust structure with a pumiceous center and a glassy exterior; in the second case, they are formed of angular blocks which on cooling become fissured by contraction. The clouds accompanying the *Vulcanian* explosions are very dense, opaque, gray or black, with outlines extremely well defined, and lightning is frequent among them. The solid matter transported by them, whatever its dimensions, is formed of fragments or dust of rock entirely consolidated. Perfect examples of *Vulcanian* clouds have been furnished by Vulcano (trachitic), Mount Pelée (andesitic), and by the recent eruption (April, 1906) of Vesuvius (leucitic). *Smithsonian Rep.*, 1906, p. 224.

vulcanoid (vul′ka̤-noid), *n.* [NL. *vulcanus*, volcano, + *-oid.*] A name given by Shaler to those numerous 'craters' upon the moon which seem to have been produced by volcanic action, and resemble terrestrial craters except in being much larger.

> The craters are so different in size from those of the earth, many being over a hundred miles in diameter, and so numerous, overlapping and irregularly distributed that the causes leading to their formation must be very different from those of volcanoes upon the earth, and for these forms Shaler proposes the name of *vulcanoids.* The maria, or great plains, evidently belong to a category distinct from the vulcanoids, being characterized by their larger size, smoother and darker floors, and it is suggested that they may be caused by the infalling of large meteors. *Amer. Jour. Sci.*, Oct., 1904, p. 314.

vulcanologist (vul-ka̤-nol′ǭ-jist), *n.* Same as ★*volcanologist.*

> Within the memory of man all volcanic action has been subaërial, but many *vulcanologists* seem to think that some of the older eruptions have been submarine. *Geog. Jour.* (R. G. S.), X. 414.

vulgarization, *n.* 3. Popularization; the act of popularizing. [Rare.]

> We have here another of those popularizations—or, as the French might say, *vulgarizations*—of an ancient poem [Vision of Piers the Plowman] which are owing to Prof. Skeat. *N. and Q.*, 10th ser., III. 319.

vulgarizer (vul′ga̤-rī-zėr), *n.* [*vulgariz*(*e*) + *-er*¹.] 1. One who or that which makes common, coarse, or gross: as, a *vulgarizer* of popular taste.—2. One who popularizes, or makes attractive to the people. [Rare.]

vulpic (vul′pik), *a.* [NL. *vulp*(*ina*) (see def.) + *-ic.*] Noting an acid, a yellow compound, $CH_3O.COC(C_6H_5):C.C(OH):C(C_6H_5)CO.O$, contained in *Letharia vulpina* and in various other lichens. It crystallizes in thin, monoclinic plates, or in thick, transparent prisms, and melts at 148° C. Also called *methyl pulvate.*

vulpinic (vul-pin′ik), *a.* [NL. *vulpina* (see *vulpic*) + *-ic.*] Same as ★*vulpic.*

Vulsiculus (vul-sik′ṳ̄-lus), *n.* [NL., so called in allusion to the reduced number of the barbels, dim. < L. *vulsus*, pp. of *vellere*, pluck.] A genus of fishes belonging to the family *Peristediidæ*, found in deep water of the Gulf of Mexico.

vulsinite (vul′sin-īt), *n.* [L. *Vulsinii*, an ancient Etruscan tribe, + *-ite*².] In *petrog.*, a name given by H. S. Washington (1896) to lava intermediate in composition between trachyte and andesite. A trachyte containing nearly as much labradorite as orthoclase. The lava equivalent of monzonite. Compare ★*latite*, ★*trachyandesite*, and ★*trachydolerite.*

vulva, *n.*—**Vulva cerebri**, an opening into the third ventricle of the brain, beneath the anterior crus of the fornix and at the junction of the optic thalami.

vulval (vul′va̤l), *a.* Same as *vulvar.* *Buck*, Med. Handbook, IV. 321.

vulvocrural (vul-vǭ-krö′ra̤l), *a.* Relating to the vulva and the thigh; noting the crease between these two parts. *Buck*, Med. Handbook, III. 725.

vutu, *n.* See ★*futu.*

VV. An abbreviation of *violins.*

V-valley (vē′val″i), *n.* A valley whose cross-profile resembles the capital letter V.

vv. ll. An abbreviation of the Latin *variæ lectiones*, various readings.

V. W. An abbreviation of *Very Worshipful.*

W 3. An abbreviation (*h*) [*l. c.*] in a ship's log-book, of *wet dew*; (*i*) of *Western Postal District, London*; (*j*) [*l. c.*] of *wife*; (*k*) of *Wolfram*; (*l*) [*l. c.* or *cap.*] in *electrotechnics*, of *work*; (*m*) in *elect.*, of *watt*, the unit of electric power; (*n*) *naut.*, of *winter free-board line*. See ⋆*free-board*².

W. A. An abbreviation (*a*) of *West Africa*; (*b*) of *West Australia*.

waapa (wä-ä'pä), *n.* [Hawaiian, ‹ *waa*, canoe, + *pa*, a board.] A canoe made of boards; a skiff or boat.

wabash† (wâ'bash), *v. t.* [In allusion to the river *Wabash* (which means 'dirty white').] To cheat. *Jour. Amer. Folk-lore*, Oct.–Dec., 1902, p. 264. [Illinois, Indiana, etc.]

wabbler, *n.* (*c*) A flexible coupling used in rolling-mills for the purpose of connecting the rolls in one pair of housings to those in the next and the gears next the engine to the first bench of rolls. The gears must revolve at a definite center-distance apart, in order that the teeth may mesh at their respective pitch-lines; but the rolls must be capable of adjustment at varying center-distances to allow for variations in thickness of raw and finished stock. Hence positive connection is inconvenient. These wabblers couple the ends of the rolls by the breaking pieces, which fail if too massive a piece comes into the pass between the rolls, and save the latter.

wabbles (wob'lz), *n. pl.* [*wabble*, *v.*] **1.** A disease of cattle characterized by the loss of coördination and irregular gait, caused by eating certain toxic plants.—**2.** The lesion or swelling which appears under the skin of cattle at various parts of the body caused by the warble of the ox gadfly. Also called *warbles*.

wabbling-disk (wob'ling-disk), *n.* A disk the plane of whose face is at an angle with the shaft-axis around which it revolves. It can be used as a cam-plate by causing a roller to bear upon the face of the disk so that a linear motion is produced. Called also, in England, a *swash-plate*.

wabeno (wâ-bē'nō), *n.* [Ojibwa.] A sort of juggler or sleight-of-hand performer.

waddy (wad'i), *v. t.*; pret. and pp. *waddied*, ppr. *waddying*. [*waddy*, *n.*] To strike with a waddy or club. See *waddy*. [Australian.]

> When the white thieves had left me, the black thieves
> appeared,
> My shepherds they *waddied*, my cattle they speared.
> *R. Lowe* (Viscount Sherbrooke), Songs of the Squatters, ii. 7. Quoted in E. E. Morris, Austral English.

waddy-wood (wad'i-wůd), *n.* The cheesewood, *Pittosporum bicolor*, from the wood of which chiefly the Tasmanian aborigines made their waddies. See ⋆*cheesewood* and *Pittosporum*.

wad-mill (wod'mil), *n.* In *ceram.*, a small pug-mill with a perforated bottom, through which the plastic clay 'wads,' which are used in the kiln to seal the saggars, are pressed. See *wad*¹, *n.*, 3.

wafer, *n.* (*g*) In *photog.*, chemicals employed in developing, compressed into a flat cake to be dissolved in water for use.

waffle-cutter (wof'l-kut'ėr), *n.* In *candy-making*, hinged and pivoted knives used in cutting candies into various forms resembling waffles, etc. A buttercup or satinette press is essentially the same except in the shape and size of the knives.

waffle-powder (wof'l-pou"dėr), *n.* A special large-grained powder, designed by Commodore Jeffers of the United States navy.

wage, *n.*—**Living-wage**, in *polit. econ.*, such a rate of remuneration for labor as will enable the workman, without an amount of exertion that is injurious to health or unduly burdensome, to procure whatever is necessary to maintain himself and his family in a degree of comfort which is fitting for persons of their class. The term is exceedingly flexible, sometimes referring to a wage which merely affords somewhat more than the necessities of physical existence, sometimes to a wage which would make possible a high degree of intellectual, social, and moral development.

waging-table (wā'jing-tā"bl), *n.* Same as *waging-board*.

Wagneriana (väg-nē-ri-ā'nä), *n. pl.* [*Wagner* (see def.) + *-i-* + *-ana*.] Items, details, and collections of all kinds relating to Richard Wagner, or to his theories of music and the other arts. *Athenæum*, Feb. 3, 1906, p. 147.

wagon, *n.*—**Bracket-front wagon**, a buggy made with brackets and a foot-board, which takes the place of the high dash.—**Brewster wagon**, a square box-buggy with the body suspended on cross springs attached to side-bars; notable for its lightness and simplicity.—**California wood-spring wagon**, a buggy hung upon wooden springs and thorough-braces, introduced throughout the Pacific States about 1867.—**Gospel wagon**, a large covered wagon used in open-air mission work as a vehicle of travel, and at meetings as a platform for the speaker and his assistants.—**Hurry-up wagon**, a wagon provided with extension-ladders and other equipment for the quick repairing of the overhead wires of an electric railway. [Slang.]—**Jagger wagon**, a buggy with bolsters like a farm wagon and a seat supported by two wooden springs running the full length of the body, the ends resting upon the ends of the corner posts. It takes its name from the original builder and was the first light wagon to use wooden springs of the side-bar type. Used chiefly by farmers in New Jersey.

wagon-cage (wag'ọn-kāj), *n.* A kind of box-truck for carrying cloth to be run into a bleaching-keir and elsewhere about the bleach-works.

wagon-dump (wag'ọn-dump), *n.* A machine for unloading a wagon. It consists essentially of two tilting tracks, pivoted at the center, and placed on the edge of a dock or hatchway. In their normal position the tracks are flush with the floor and are locked in place, the out-board ends being at the edge of the dock or hatchway. The tracks are of the gage of the wagon-wheels and may form a part of the platform of a weighing-scale. The wagon is backed upon the tracks and then, by means of gearing controlled by a hand crank, the tracks are unlocked and tilted up, causing the wagon to dump its load.

wahoo, *n.* **4.** A common name of *Acanthocybium solandri*, a scombroid fish of tropical seas.

Wahsatch group. See ⋆*group*¹.

wah-wah (wä'wä), *n.* [From the animal's cry.] The Bornean gibbon, *Hylobates leuciscus*. The name is used as a book-name and is frequently applied to other species of gibbons.

> As I was walking under the tree to see where my *wah-wah* was, down it came with a heavy 'thud' within two feet of me. *Hornaday*, Two Years in the Jungle, p. 418.

waibling (vīb'ling), *n.* [An abbreviation of G. *Waiblinger*, a Ghibelline (which see).] A Ghibelline. [Rare.]

Waihao series. See ⋆*series*.

Waipara formation. See ⋆*formation*.

waipiro (wä-ē-pē'rō), *n.* [Maori, ‹ *wai*, water, + *piro*, stinking.] Spirits; alcoholic drink. *E. E. Morris*, Austral English.

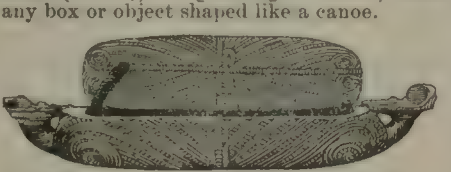
wairepo (wä-ē-rā'pō), *n.* A common name in New Zealand of *Dasybatis brevicaudatus*, a sting-ray.

waist, *n.* **5.** (*d*) In *archery*, the narrow middle or handle in a broad flat bow. Bows of this double-paddle shape are used by some primitive peoples.

waisted, *a.* **2.** Specifically, in fine English glass-ware, noting a bell-shaped cup in which the bell is slightly constricted, with a bulbous termination at the point of attachment to the stem. *Burlington Mag.*, III. 67.

waiv, *v.* and *n.* A simplified spelling of *waive*.

waka (wä'kä), *n.* [Maori.] A canoe; hence any box or object shaped like a canoe.



Waka, for holding ornaments or feathers for the hair.

wakan (wä-kän'), *a.* and *n.* [Sioux *wakan*, sacred, supernatural.] Same as ⋆*wakanda*.

wakanda (wä-kän'dä), *a.* and *n.* [Dakota *wakanda*, consider sacred.] **I.** *a.* Possessed of supernatural power; awe-inspiring; sacred.

II. *n.* Something possessed of supernatural power.

Wake percentage. See ⋆*percentage*.

wakeness (wā'kn-es), *n.* [*wake*, *a.*, + *-ness*. The fuller form would be *wakenness*. Compare *forgiveness*.] The state or time of being awake. [Rare.]

> I feele my thoughts vnknit, mine eyes vnstaied, my hart I know not how affected, or infected, my sleepes broken and full of dreames, my *wakenesse* sad and full of sighes, my selfe in all thinges vnlike my selfe. If this be loue I woulde it had neuer beene deuised.
> *Lyly*, Gallathea, iii. 1.

wakiup (wak'i-up), *n.* Same as *wickiup*.

Wal. An abbreviation of *Walloon*.

waldmeister (vält'mīs"tėr), *n.* [G., 'master of the forest.'] The German name of *Asperula odorata*, a plant used in the making of a 'maitrank' and other summer drinks, and now somewhat cultivated in the United States.

wale¹, *n.* **8.** In *wood ship-building*, one of the strakes of heavy outside planking above the turn of the bilge. In wooden war-ships, the main wales extended from the lower gun-port sills to the bottom plank, the middle wales between the main-deck ports and the gun-deck ports, and the channel wales, sometimes called *strings*, between the spar- and main-deck ports. See *bend*¹, 3 (*d*).

wale², *v. t.* Specifically, to sort or pick (coal) by hand at the mine or breaker.

wale-shore (wāl'shōr), *n.* Same as ⋆*breast-shore*.

walk, *v.* **I.** *intrans.*—**To walk away from.** See ⋆*away*.

II. *trans.*—**To walk the pegs**, in *cribbage*, a slang phrase for a method of picking up the front peg and advancing it while lifting out the back peg to score.

walk, *n.* **8.** (*d*) The process of training puppies for sporting purposes. A puppy in training is said to be *at walk*.

> The judges select the best puppies that come in from *walk*. *Eyre Hussey*, Miss Badsworth, M. F. H., xxii.

14. In the West Indies, a plantation of coffee, cinnamon, cacao, pimento, or other trees yielding valuable fruits or spices.

> In the cultivation of a young *walk*, the general and most approved system is to keep the trees perfectly clear of suckers, and to rear one stem only from one root.
> *Bryan Edwards*, A Hist. of Brit. W. Indies, II. 342.

Walking weeder. See ⋆*weeder*.

walking-stick, *n.*—**Thick-thighed walking-stick**, an American phasmid insect, *Diapheromera femorata*. See cut under *walking-stick*.

walk-out (wâk'out), *n.* A laborers' strike. [Colloq., U. S.]

wall¹, *n.*—**Anticlinal walls.** See ⋆*anticlinal*.—**Baffle wall**, a wall or partition built partly across a channel, its purpose being to retard the flow, to produce a uniform intermingling of the different portions of the flowing stream, or to detain solid matter which may be floating on the surface or rolling on the bottom. For the latter purpose the wall or partition is built to extend a short depth into the flowing stream from above, as in sewage tanks, or from the bottom upward, as in mining-sluice riffles.—**Cold wall**, the northwestern side of the Gulf Stream, east of the United States, where the warm current is bordered by much colder water.

> Between the Kuro Siwo and the Asiatic coast a band of cold water, with a slight movement to the southward, known as the Oya Siwo, forms the analogue of the "*Cold Wall*" of the Atlantic. *Encyc. Brit.*, XXXI. 405.

Dry wall, a wall built of dry masonry, that is, without mortar. It may be rough, like a wall between fields, or may be made of carefully cut ashlar with almost invisible joints, as in the naos of a Greek temple.—**Top wall**, in *mining*, a roof or hanging wall; the country rock on the top of the vein or gangway, or on the side geologically superior.—**Wall of the nail.** See ⋆*nail*.—**Walls of Troy**, a continuous pattern composed of fretwork in straight lines, used as a border decoration on pottery. See *meander*, 2.

> The body of the vessel is covered with a series of diagonal lines, between which the meander, or "*walls of Troy*" design forms the embellishment.
> *E. A. Barber*, Pottery and Porcelain of the U. S., p. 38.

Wall., Wallach. Abbreviations of *Wallachian.*

walla^2 (wol′ạ̈), *n.* [Amerindian?] One of the common names applied to a small variety of *Oncorhynchus nerka*, the blueback salmon of the Pacific coast.

wallaby, *n.*—**Agile** or **red wallaby,** *Macropus agilis*, a species common in North Australia, of a sandy gray color, and about six feet in length.—**Bennett's wallaby,** *Macropus bennetti*, the common kangaroo of Van Diemen's Land, of a dark gray color and five feet, or a little more, in total length. *Nature*, Aug. 7, 1902, p. 352.—**Red-necked wallaby,** *Macropus ruficollis*, a species of a rusty-gray color with a brighter spot on the back of the neck. It is about five feet in total length and occurs in New South Wales.—**Rock wallaby.** See ★*rock-wallaby.*

wall-brown (wâl′broun), *n.* Same as ★*gatekeeper*, 2.

wall-campimeter (wâl′kam-pim″e-tėr), *n.* In *exper. psychol.*, a large vertical campimeter for preliminary exploration of the retina: so called because hung upon a wall, in distinction to the smaller campimeters, which are constructed for use upon a table. *Amer. Jour. Psychol.*, XI. 257.

waller^3 (wâ′lėr), *n.* [G. *waller.*] A catfish, *Silurus glanis*, found in fresh waters of Europe.

wall-fountain (wâl′foun″tạn), *n.* A fountain attached to a wall and forming part of an architectural scheme.

walling^1, *n.* **3.** [*wall*^{1}, *v.*] The process of reinforcing the sides of a vertical shaft with tubbing or staves to prevent displacement sidewise by pressure of the earth. It is done either with planks or steel, or, in important and permanent workings, with brick.

> Much time can also be saved when sinking and *walling* are carried on simultaneously by the method used in several deep sinkings in South Wales.
> *Encyc. Brit.*, XXVII. 117.

4. In *billiards*, same as ★*bricole*, 4.—**Walling cribs,** cribs or massive frames, usually of oak, in the vertical shaft of a mine, upon which the walling is built or by which the tubbing is kept in place.

wall-link (wâl′link), *n.* The walking-leaf or walking-fern, *Camptosorus rhizophyllus.* See *Camptosorus.*

wall-map (wâl′map), *n.* A large map designed to be hung upon the wall of a room and to be read while in this position.

> The famous *wall-maps* in Sala dello scudo in Venice.
> *Geog. Jour.* (R. G. S.), XIII. 406.

Walloon, *n.* **4.** [*l. c.*] A disease of the tobacco-plant in which the leaves assume an abnormal erect position, regarded as due to an excess of moisture followed by drought.

wall-sculpture (wâl′skulp″tụ̄r), *n.* Sculpture carved upon a wall in relief as in the compositions to be found on Egyptian monuments.

wall-tracery (wâl′trā″sėr-i), *n.* Tracery like that of a Gothic window, but used as surface decoration for a wall, pew-end, or the like, carved in stone or wood.

walnut, *n.* **4.** In the West Indies, a name often applied to the angelin or cabbage-tree, *Vouacapoua Americana*, from its resemblance in leaf and fruit to the English walnut. See *cabbage-tree*, 2, and *Andira.*—**California black walnut,** the species *Juglans californica*, found on bottom-lands in the coast-plain of California. It is a graceful round-topped tree, reaching 60 feet in height, and is often there cultivated for shade and as a grafting-stock for the European walnut. **Dwarf walnut.** See *Mexican* ★*walnut.* -**Little walnut.** See *Mexican* ★*walnut.*—**Mexican walnut.** Same as *rock-walnut* (which see, under *walnut*). The name 'rock-walnut' is merely a translation of the systematic name, and is not found in use in any of the areas in which the tree grows. It is called *dwarf*, *little*, and *western walnut* in Texas, but farther west it is simply known as the walnut. Since, however, it ranges south into Mexico, it is sometimes called *Mexican walnut*, and as it is common in New Mexico, this seems to be an appropriate name.—**Walnut clay.** See ★*clay.*—**Western walnut.** See *Mexican* ★*walnut.*

walnut-borer (wâl′nut-bōr″ėr), *n.* Any one of several beetles similar to or identical with those affecting hickory and oak.

walnut-caterpillar (wâl′nut-kat″ėr-pil-ạ̈r), *n.* The larva of the walnut-moth. Sometimes called *royal horned walnut-caterpillar.*

walnut-weevil (wâl′nut-wē″vl), *n.* An American curculionid beetle, *Conotrachelus juglandis*, which attacks walnuts and butternuts.

walnut-worm (wâl′nut-wėrm), *n.* Any one of several lepidopterous larvæ which feed on walnut, as the larva of the royal moth, the larva of the black-walnut sphinx, *Cressonia juglandis*, the larva of the luna moth, and many others.

waltz, *v. i.*—**Waltzing mouse.** See ★*mouse.*

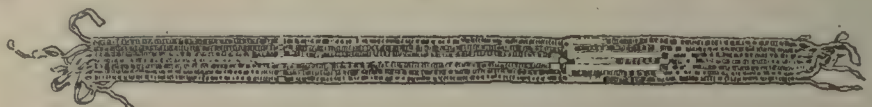
waltzer, *n.* **2.** A waltzing mouse, one of a breed whose members have the habit of spinning rapidly round and round.

> In those cases in which pictures of the *waltzers* were made, a classification of them has been made into (α) *waltzers* with less colour than Fig. 7, and (β) *waltzers* with more colour than Fig. 7.
> *A. D. Darbishire*, in Biometrika, Jan., 1904, p. 6.

waly^3, *n.* Same as ★*vali.*

wammikin (wä′mi-kin), *n.* [Prob. from a Maine Indian dialect (Passamaquoddy?). Compare also ★*wanigan* and ★*wangan*, which are forms of the same word.] A raft of square timber or long logs, on which is built a shanty with cooking and sleeping facilities, used by lumbermen in Maine. *Bartlett.*

wampum-belt (wom′pum-belt), *n.* A belt or girdle made of wampum by the Indians of the North Atlantic region, the purple and white beads being generally so arranged as to form designs. These belts were exhibited at times when important tribal events took place and thus became mnemonic records of the events.



Remembrance belt of the Iroquois, recording the treachery of a French missionary at Onondaga, who sought to summon the French army from Canada.
(In New York State Museum, Albany.)

wan^1, *a.* **II.** *n.* A wan tint or complexion; paleness. [Rare.]

> Melissa, tinged with *wan* from lack of sleep,
> Or grief, and glowing round her dewy eyes
> The circled Iris of a night of tears.
> *Tennyson*, Princess, iii.

wan^3 (vän), *n.* [G., = E. *weld*^{1}.] The German name, sometimes used in English, of the dyestuff weld (not woad).

Wanaka series. See ★*series.*

wananish (wä-nä-nish′), *n.* See *winninish*, ★*ouananiche.*

wander, *v. i.* **6.** In *phys. chem.*, to move hither and thither in every direction: said of the molecules of a liquid or of the molecules of two miscible liquids in contact with each other. *W. Ramsay*, in Findlay, The Phase Rule, p. xli.—**Wandering ants,** the ants of the family *Dorylidæ.* They lead a nomadic social life and have imperfect sight. The subfamily *Ecitoninæ* inhabit the New World and the *Dorylinæ* the Old World. *Cambridge Nat. Hist.*, VI. 175.

wanderer, *n.* **3.** An American lycænid butterfly, *Feniseca tarquinius*, wide-spread in the United States east of Kansas. Its larvæ feed upon plant-lice on alder. *Comstock*, How to Know the Butterflies, p. 237.

wanderlust (vän′der-löst), *n.* [G., < *wandern*, wander, + *lust*, desire. See *lust.*] A natural impulse to change of place; a craze for travel.

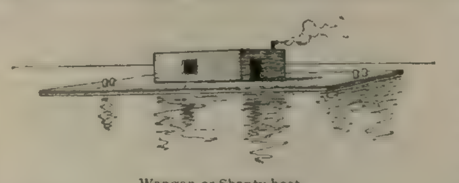
> Among these "neuroses of excitement' which at times seize upon the souls of communities, none is more inexplicable, and none more fraught with consequences to world-history than the goading restlessness which has driven single tribes or groups of tribes into aimless roving. This *Wanderlust* arises as an emotional epidemic, not by a process of reasoning. It drives communities from fixed seats and comfortable homes, transforming them into migratory and warring hordes.
> *Brinton*, Basis of Social Relations, p. 113.

wander-year (won′dėr-yēr), *n.* [Trans. of G. *Wander-jahr.*] A year of travel which it was formerly the custom, in Germany, for a journeyman to take before settling down to his employment.

> Few . . . of those to whom the romantic *wander-years* and heroic death appeal, have leisure and training to grapple with the technical Latin and hard Italian of the versatile and stormy Nolan. *Nature*, May 24, 1900, p. 77.

W. and M. An abbreviation of *William and Mary* (King and Queen).

wangan (wäng′gan), *n.* [Also *wanigan*, *wangin*; from an Algonkian dialect in Maine. A related word is *wangun.* The same word apparently appears as *wammikin.*] A boat (especially a house-boat) used chiefly by lumbermen for carrying provisions, tools, etc. [Maine.]



Wangan or Shanty-boat.

> And when the great blow was at its height the *wangan* camp, built upon the roots of the splay-foot spruces, swayed with the writhing of the roots, creaked in its timbers, and seemed to toss like a craft on a crazy sea.
> *Holman Day*, King Spruce, xvi.

Wanganui system. See ★*system.*

wanghee (wang-hē′), *n.* [Chin.] Same as *wanghee-cane.* See under *Phyllostachys.*

wanigan (wän′i-gan), *n.* Same as ★*wangan.*

wantage-rod (won′tạ̄j-rod), *n.* A scale for measuring the wantage, or empty part of a barrel or cask.

wanza (wän′zạ̈), *n.* Same as ★*auhi.*

war^1, *n.*—**Black War.** See ★*black.*—**Opium War,** a war between China and Great Britain (1840-42), which arose from the efforts of the Chinese government to stop the opium trade with India. It ended with the Treaty of Nangking, by which the five treaty ports, Canton, Amoy, Fu-chau, Ningpo, and Shang-hai, were opened to foreign trade and Hong-Kong was ceded to England with a large indemnity.—**Pastry War,** a quarrel between France and Mexico which occurred in 1838. See the extract. France sent a fleet to enforce its claims, which blockaded the coast.

> A conflict broke out, the Guerrerists were victorious, and the pillage of foreign shops in Mexico city (1828), among them that of a French baker, gave a basis for the foreign claims which, ten years later, caused the "*Pastry War*" with France. *Encyc. Brit.*, XXX. 731.

waral (wä′räl), *n.* [Ar.] See the extract.

> There are two species of lizards in Eastern Arabia—one is called dabb (Uromastix acanthinurus), and feeds only on desert vegetation; the other is called *waral* (Weranus arenarius), and eats insects, birds' eggs, etc. The latter is considered forbidden but the former lawful food. *Bulletin Amer. Geog. Soc.*, Oct., 1907, p. 601.

war-arrow (wâr′ar″ō), *n.* An arrow used in warfare.

warble-mark (wâr′bl-märk), *n.* A defective spot in a hide as delivered to the tanner, due to the attack of the bot-fly during the life of the animal from which the hide has been taken.

war-bonnet (wâr′bon″et), *n.* A head-dress which consists of a skin bonnet set with feathers of the golden eagle and often provided with a long trailer decorated with feathers, worn by the Indian warriors of North America.

war-bow (wâr′bō) *n.* In *archery*, a bow for use in war.

war-cloud (wâr′kloud), *n.* Something that portends war as a cloud portends rain.

war-club (wâr′klub), *n.* A club of wood, bone, or other material used in warfare. Such clubs show great variety in form and workmanship, and are found among nearly all primitive peoples.

ward^2, *n.* **10.** (*g*) A territorial division in the Mormon Church for purposes of ecclesiastical government. It is the administrative unit, with an executive head called a *bishop.*—**Court of Wards and Liveries.** See ★*court.*

ward^3 (wârd), *n.* [*ward*^{3}, *adv.*] A name, proposed by the Scottish engineer James Thomson, for a directed quantity as expressed graphically by the length and direction of a line.

warden^1, *n.* **5.** In Australia, a government officer, with magisterial and executive powers, in charge of a gold-field. *E. E. Morris*, Austral English.—**6.** In *freemasonry*, one of the officers of a lodge.—**Prime warden,** the chief warden.

> The *prime warden* of the Fishmongers' Company.
> *Science*, July 18, 1902, p. 118.

wardite (wârd′īt), *n.* [Named after Professor Henry A. *Ward* (1834–1906).] A hydrated aluminium phosphate which occurs as a light green incrustation in cavities of the variscite from Cedar valley, Utah.

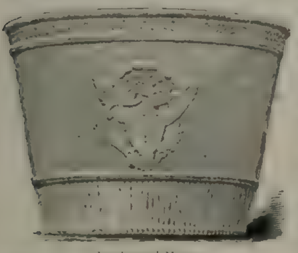
wardman, *n.* **2.** A precinct detective, particularly in New York city. On September 16, 1894, the office was abolished during an investigation of the police department of that city by the State senate in which witnesses testified to the collection by wardmen of hush money or tribute from those engaged in unlawful callings.

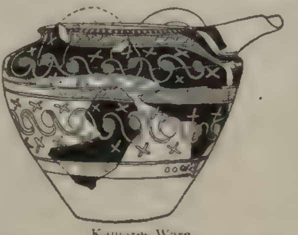
Ward-room news. See ★*news.*

war-drum (wâr′drum), *n.* A drum used in war; especially, in Africa, a large wooden drum used to summon the warriors in case of war or sudden attack.

> An enormous *war-drum*, made entirely of wood, carved and hollowed from a single trunk, and borne by two men on a shoulder-pole. *Geog. Jour.* (R. G. S.), X. 160.

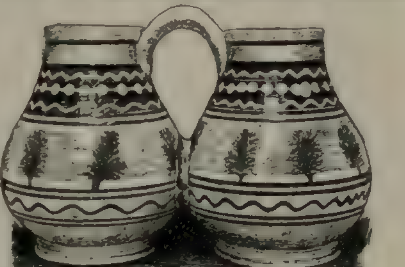
ware^{2}, *n.* — **Albert and Albertine ware**, a fine-grained, unglazed terra-cotta of a light buff color, usually seen in vases and other decorative shapes. — **Albion ware**, pottery with underglaze paintings in slip-colors, in which the greens predominate, made in Baltimore, Maryland. The subjects were Oriental, such as tiger hunts, hawking scenes, elephant rides, etc. — **Anatolian ware**, tin-enameled faïence made at Kutahia, Anatolia: usually pieces of small size with brightly colored decorations. — **Astbury ware**, earthenware made by John Astbury, an English potter, in the early part of the eighteenth century, characterized by relief ornaments stamped in white pipe-clay on a red or brown body covered with lead glaze, or a wash of white clay on the red body covered with salt glaze. — **Awaji ware**, a coarse porcelain or stoneware made in Awaji (Awadsi) Province, Japan. Also modern pottery with green and yellow glazes, made extensively for the foreign markets. — **Barbotine ware**, pottery ornamented with flowers, etc., in barbotine or slip. — **Belleek ware**, in *ceram.*, a soft-paste porcelain, closely resembling Parian, cast in molds and usually of exceeding thinness, frequently possessing a nacreous or lustrous glaze. The body was invented by William Henry Goss, a potter at Stoke-on-Trent, England. Some of his workmen afterward manufactured it at Belleek, County Fermanagh, Ireland, where it has been brought to great perfection. The Irish Belleek is characterized by a grayish-white, pearly glaze. The relief decorations are usually modeled after marine shells and other creatures. In 1882 workmen from the Belleek factory came to Trenton, New Jersey, and introduced the manufacture of egg-shell porcelain there. — **Brocaded ware.** Same as *nishikide* ★*ware.* — **Brocade painted ware.** Same as *nishikide* ★*ware.* — **Burlington white ware.** See *American* ★*pottery* (*b*). — **Camares ware.** See *Kamares* ★*ware.* — **Castleford ware**, earthenware made at Castleford, England, from about 1800 to 1820; specifically, a white ware, resembling Parian, with relief decorations. Black or Egyptian ware was also produced there at one time. — **Castor ware**, ancient Roman pottery found near Castor, England, having relief and indented decorations, somewhat similar to Samian ware. Also called *Durobrivian ware.* — **Cauliflower ware**, a cream-colored ware with embossed ornamentation colored with green glaze, in imitation of the cauliflower. This characteristic ware was produced in great abundance by English potters in the eighteenth century, in the form of cauliflower tea-pots, etc. — **Chemical ware**, in *ceram.*, ware used for chemical purposes; specifically, stoneware which, on account of its vitreous nature and great hardness, is not affected by the action of acids. — **Durobrivian ware.** See *Castor* ★*ware.* — **Eastwood ware**, earthenware of various kinds made at Eastwood, Hanley, England, by William Baddeley, among which was the black basalt, previously introduced by Josiah Wedgwood. — **Elers ware**, a red ware resembling porcelain, produced in England in the seventeenth century by the Elers brothers. — — **Etruria ware.** (*a*) The various products of the Etruria pottery, established by Josiah Wedgwood in England in 1766. (*b*) The wares produced at the Etruria pottery, Trenton, New Jersey. — **Flint-enameled ware.** See *Bennington* ★*pottery*, under *American* ★*pottery* (*b*). — **Fulham ware**, stoneware made at Fulham, England, from about 1671, by John Dwight, in the style of the old German grès cérame. Among the Continental designs which he reproduced were Bellarmine jugs, or graybeards, and pieces bearing the portraits and monograms of English kings and queens. See *old Fulham ware*, under *ware*^{2}. — **Gombroon (also Gombron, Gomron) ware**, a rather indefinite name applied to pottery supposed to have been made formerly at the town of Gombroon, or Bander-Abbas, on the Persian Gulf. Authorities differ as to the character of this ware. Some assert that it was pottery of soft body which was rubbed away from the interior, leaving only the harder shell or outside glaze ("shell-ware"); others assert that it was a creamy white pottery with perforated decorations filled in with translucent glaze; while some writers describe it as a sort of semi-porcelain of white and semi-translucent body, of Perso-Chinese origin. — **Gustafsberg ware**, pottery made at Gustafsberg, Sweden, from about 1820. Among the later productions are Parian of a fine quality, imitations of Wedgwood's jasper ware in cameo effects, mainly blue and white, and a characteristic style of carved decoration, in low relief, in which the designs appear in a different color from the ground. — **Henri II. ware**, a fine white or cream-colored pottery, beautifully inlaid with colored clays in intricate patterns, and embellished with reliefs, supposed to have been made at Oiron, France, in the sixteenth century. It was so called because some of the pieces bore the cipher of Henri II. Only sixty-seven genuine examples are known to exist. Also called *faïence d'Oiron*, which see, under *faïence*, ★*faïence à nielluro*, and *Saint-Porchaire* ★*faïence.* — **Herculaneum ware**, earthenware and porcelain made at the Herculaneum pottery, Liverpool, England, between 1794 and 1841. Among the various products of this pottery were Liverpool cream-ware pitchers with black-printed designs (see cut at *Washington* ★*pitcher*), blue-printed ware, and a fine quality of soft-paste porcelain. A marked piece of the latter, decorated in the 'Lowestoft' style, is in the Pennsylvania Museum, Philadelphia. — **Ivory-white ware**, a variety of cream-colored ware with an ivory-white glaze, made extensively in the United States for table- and toilet-services. — **Jackfield ware**, pottery made at Jackfield, Shropshire, England, in the eighteenth century; specifically, a red ware coated with a brilliant black glaze, sometimes ornamented with gilding, now much prized by collectors. — **Jet ware**, pottery, usually of a red body, covered with a brilliant black glaze. — **Kaga ware**, pottery and porcelain of the Province of Kaga, Japan. The modern Kaga pottery is of cream-colored clay with red and gold decorations. The Kaga porcelain is usually very thin, and similarly colored. — **Kamares ware**, the name given to a peculiar style of prehistoric or Mycenæan pottery which was first discovered in the excavation of the cemetery of Kamares in Crete. Its leading characteristic is a black lustrous glaze which covers the body of the vase, the decoration being in white relieved by frequent use of yellow and red, giving a fine polychromatic effect. — **Kutani ware**, pottery and porcelain first made at Kutani, Japan, but afterward produced at other places. Its most characteristic style of decoration is in red and gold. — **Lambeth delf ware.** See *Lambeth* ★*delf.* — **Leeds ware**, a fine cream-colored earthenware made at Leeds, England, in the eighteenth century, resembling the queen's-ware of Josiah Wedgwood. Among the best productions are openwork dishes, trays, and basket-work. The name is also somewhat questionably applied by collectors to a class of earthenware of light, porous body with a glaze which shows a greenish tint in the thicker parts, supposed to have been made in the Leeds district. — **Liverpool ware**, pottery or porcelain made at Liverpool, England; specifically, cream-colored earthenware produced from about 1780 to 1810. — **Lotus ware**, a soft-paste porcelain made at East Liverpool, Ohio, characterized by a beautiful white body and brilliant glaze and elaborate relief ornaments consisting of little bosses and raised network. It is usually devoid of surface coloring, being made especially for decorators. — **Lustered ware.** Same as *luster-ware*: applied also to the iridescent lustered ware of a decorative character. — **Marieberg ware**, tin-enameled faïence and soft-paste porcelain made at Marieberg, Sweden, from 1750 to 1780. The principal characteristics of this ware are rustic handles, modeled figures, relief ornaments and feet, and a purple or purplish red color in the enamel. One of the distinguishing marks is composed of three crowns above the initials MB. — **Mi Shima ware**, a variety of pottery having a characteristic style of decoration which was introduced into Japan by Korean potters.

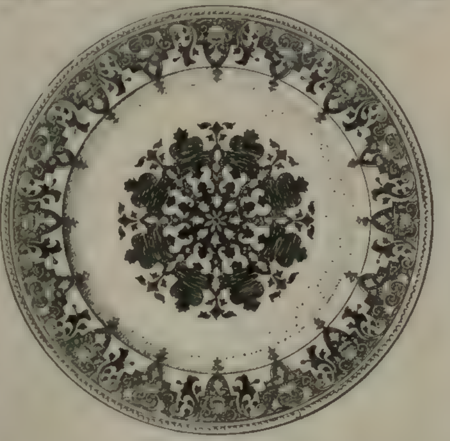

Castleford Ware
Sugar bowl, with American eagle in relief.
(In the Pennsylvania Museum, Philadelphia.)

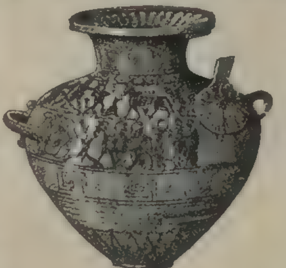

Kamares Ware.
(From "Journal of Hellenic Studies," by permission of The Council.)

> One class of Korean tea-bowls is known to the Japanese by the name of *Mishima ware*, because the formal lines of its decoration resemble at a distance the printed columns of the almanac which is issued from a famous temple at Mishima on the Tokaido, the great route from Kioto to Yedo. *S. W. Bushell*, Oriental Ceramic Art, p. 682.

Mocha ware, a common white pottery or cream-ware decorated with dendritic or tree-like designs in black or other color, on tinted ground, first made in England in the latter part of the eighteenth century. See *Mocha stone*, under *stone*, and ★*dip-ware.* — **Moustiers ware**, a faïence made at Moustiers in southern France. The manufacture of faïence with white glaze and blue decoration was initiated at Moustiers in the latter part of the seventeenth century by one Pierre Clérissy. Later several colors were employed. The manufacture of faïence at Moustiers and elsewhere in France was much stimulated by the sumptuary laws of 1672 (Louis XIV.) which placed a heavy tax on the manufacture of plate. — **Ninsei ware**, pottery made by Ninsei, the greatest ceramic artist of Japan, whose work extended through the first half of the seventeenth century. — **Nishikide ware.** [Jap. *nishiki*, a rich brocaded silk, + *de*, a postposition, of.] A variety of Satsuma pottery with decorations resembling brocade, made by Japanese potters in the latter part of the eighteenth century. Also called *brocaded ware* and *brocade painted ware.* — **Nottingham ware**, a brown stoneware with a smooth, lustrous glaze and incised decorations, made at Nottingham, England, and its vicinity during the eighteenth century. — **Oiron ware.** Same as *faïence d'Oiron*, which see, under *faïence*; also *Henri II.* ★*ware*, ★*faïence à nielluro*, and *Saint-Porchaire* ★*faïence.* — **Oribe ware**, earthenware and porcelain made by Shino Oribe, in the Province of Owari, Japan. See *Shino* ★*pottery.* — **Owari ware**, pottery and porcelain made in Owari Province, one of the principal ceramic centers of Japan. — **Pearl ware**, a variety of white pottery invented by Josiah Wedgwood, containing more flint and china clay, and of a whiter tint, than his queen's-ware. — **Pie-crust ware**, a form of earthenware dish made by Wedgwood and his successors, having a cover representing the top crust of a pie, elaborately crimped, fluted, and decorated in relief. — **Pineapple ware**, glazed pottery made by Thomas Whieldon and his imitators in England in the eighteenth century, simulating in texture and coloring the surface of a pineapple. Compare *cauliflower* ★*ware.* — **Polledrara ware**, the name given to a peculiar form of ancient pottery found on the Polledrara estates at Vulci, Italy. It is polychromatic and resembles Bucchero Nero and Naucratic ware. — **Porto Bello ware**, red pottery stamped with white designs commemorating the Vernon expedition to Porto Bello, Panama, in 1739, made by John Astbury, an English potter of that period; also earthenware made at the Portobello pottery, near Edinburgh, Scotland, at a later period. — **Printed ware**, pottery decorated by transfer-printing. See *printed china*, under *print, v. t.* — **Red ware**, a coarse, unglazed pottery.

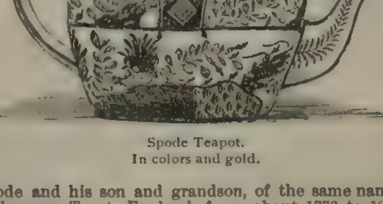

Mocha Ware. — English double water-jug, about 1800.


Moustiers Ware.


Polledrara Hydria.
(From "Journal of Hellenic Studies," by permission of The Council.)

> Leafield has been noted for some time for its *red-ware* pottery. *Hist. Co. Oxford*, p. 856.

Rockingham ware, earthenware and porcelain produced at a pottery on the estate of the Marquis of Rockingham, near Swinton, in England, about the end of the eighteenth century; specifically, a common yellowish-white pottery covered with a brown manganiferous and yellow mottled glaze, first made there and now manufactured extensively in England and the United States. See *flint-enameled* ★*ware.* — **Rörstrand ware**, ware made at Rörstrand, in the suburbs of Stockholm, Sweden, from about 1727. The earlier faïence produced there was similar to that made at Marieberg. The modern wares are porcelain and white stoneware. They are characterized by a bold style of relief modeling. Pâte-sur-pâte painting beneath the glaze is also practised successfully, and underglaze decoration in the style of the modern Danish porcelain. — **Seiji** (sē-i'ji) **ware**, Japanese stoneware or porcelain having a neutral gray or celadon glaze. — **Seto ware**, pottery, stoneware, and porcelain made in the village of Seto, Province of Owari, Japan. Among the most common varieties are a stoneware with celadon or pale green glaze, and a porcelain with blue decorations. — **Siderolite ware.** See ★*siderolite*, 3. — **Southwark white ware.** See *American* ★*pottery* (*b*). — **Spode ware**, earthenware and porcelain produced by Josiah Spode and his son and grandson, of the same name, at Stoke-upon-Trent, England, from about 1770 to 1833. — **Staffordshire ware**, pottery made in Staffordshire, England. The abundance of clay and coal makes it probable that this region has long been used by potters. In the ware made in the seventeenth century several varieties of clay were used and the pieces were usually decorated with slip, a creamy fluid made of clay softened in water. Lead ore, sometimes calcined, which the potters called smithum, was used in glazing. The chief coloring materials were manganese, called magnus, and oxid of copper. — **Swinton ware**, pottery and porcelain made at Swinton, England, in the latter half of the eighteenth century, particularly *Rockingham* ★*ware* (which see). — **Teco ware.** See *American* ★*pottery* (*b*). — **Toft ware**, red earthenware crudely decorated with liquid


Spode Teapot.
In colors and gold.

clay or slip poured through a quill: largely produced by the Toft family in England in the seventeenth century; hence the name. See ★*slip-decorated.*—**Tulip ware.** See *American* ★*pottery* (*b*).—**Whieldon ware,** earthenware produced in England by Thomas Whieldon in the eighteenth century, characterized by a mottled or variegated glaze resembling the coloring and marking of tortoise-shell. Also called *tortoise-shell ware* and *agate-ware.*—**White ware,** in *ceram.*, any earthenware of a white body and transparent glaze, used for table and toilet purposes, including the various grades of cream-colored ware, white granite, or ironstone china.—**Willesden ware,** the trade-name for all products resulting from the treatment described under the title *Willesden* ★*paper.* Cordage, netting, canvas, cotton cloth, and other materials consisting essentially of cellulose fibers are so treated. See also *Willesden* ★*canvas.*—**Wrotham ware,** slip-decorated ware: first made in England at Wrotham, Kent, near the beginning of the seventeenth century. See ★*slip-decorated.*—**Yellow ware,** earthenware of a yellow color, covered with a lead glaze. The body is identical with that of Rockingham ★ware (which see).

THOMAS TOFT

Toft Ware.
Eighteen-inch plaque with heads of Charles II.
(In the Pennsylvania Museum, Philadelphia.)

war-eagle (wâr′ē-gl), *n.* The golden eagle: so called because its feathers are used by North American Indian warriors in decorating their bodies, weapons, and garments. See ★*eagle.*

warehou (wä′re-hö), *n.* [Maori.] 1. The Maori name for the fish *Neptomenus brama*, called *snotgall-trevally* in Tasmania, and also *sea-bream.* *E. E. Morris*, Austral English.—2. A name in New Zealand of a carangoid fish, *Seriolella brama.*

war-game (wâr′gām), *n.* 1. See ★*kriegspiel.*—2. Military strategy; war.

> Soldier, soldier, . . . fresh from the fray,
> What of the last strategic views?
> What do you know of the *war-game's* way,
> Feint and cover and counter-ruse?
> *O. Seaman*, A Harvest of Chaff, p. 65.

war-god (wâr′god), *n.* A god of war; a deity who personifies or presides over war.

war-head (wâr′hed), *n.* The explosive head of a locomotive torpedo. It is packed with guncotton or other high explosive and provided with a detonating primer. The war-head is placed on the torpedo only when it is to be exploded, as in time of war.

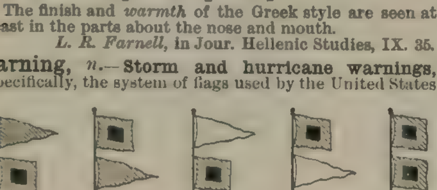
wariatu, *n.* Same as ★*warryato.*

warming-house (wâr′ming-hous), *n.* A name given (in modern times) to a heated room in medieval monasteries where the community assembled for the purpose of reading or recreation.

warmth, *n.* 5. In other fine arts, freshness, vigor, and sympathetic treatment of material, as in fine sculpture. [Rare.]

> The finish and *warmth* of the Greek style are seen at least in the parts about the nose and mouth.
> *L. R. Farnell*, in Jour. Hellenic Studies, IX. 35.

warning, *n.*—**Storm and hurricane warnings,** specifically, the system of flags used by the United States Weather Bureau to indicate the expected occurrence of strong winds. See *storm-signal*, under *signal.*—**Warning character.** See ★*character.*



U. S. Weather Bureau Storm and Hurricane Warnings.
Diagonal-lining represents the color red. A red flag with black center indicates that a storm of marked violence is expected: two red flags with black centers, displayed one above the other (right-hand figure), indicate the expected approach of a tropical hurricane or one of those extremely severe and dangerous storms which occasionally move across the Great Lakes and northern Atlantic coast. The pennants displayed with the flags indicate the direction of the wind: red, easterly (from northeast to south); white, westerly (from southwest to north). The pennant above the flag indicates that the wind is expected to blow from the northerly quadrants; below, from the southerly quadrants. By night a red light indicates easterly winds, and a white light below a red light, westerly winds. No night hurricane warnings are displayed.

warp, *n.*—**To loom the warp.** See ★*loom*1.—**To pace the warp.** See ★*pace*1.

warp-easer (wârp′ē″zėr), *n.* A bar or rod fixed at the back of a loom that is weaving leno fabrics, to ease the delivery of the crossing (or leno) warp-threads sufficiently to prevent injury to the other warp-threads. Also called *warp-slackener.* *R. Marsden*, Cotton Weaving, p. 147.

warping-cone (wâr′ping-kōn), *n.* A capstan, usually with a conical or hyperboloidal outline, used to take the hawser-chain or cable when a vessel or a load is being warped along. See *warp, v. t.*, 8. Known also as a *surging-drum* or a *warping-end;* but the latter is properly restricted to horizontal capstans, or warping-cones on the ends of motor-driven horizontal shafts. *Lockwood*, Dict. Mech. Engin. Terms.

warp-net (wârp′net), *n.* Lace made by the interlacing of bobbin- and warp-threads.

warp-reel (wârp′rēl), *n.* A cylindrical frame, usually 54 inches in circumference, for winding warp-yarn into hanks.

warp-slackener (wârp′slak″n-ėr), *n.* Same as ★*warp-easer.*

warragal, *n.* 2. A native Australian.—3. A wild horse. [Australian in all uses.]

warrant, *n.*—**Deposit warrant,** a warehouse receipt used as security for a loan.—**Escape-warrant,** in *law*, a legal process directed generally to any peace-officer to rearrest an escaped prisoner.—**Peace-warrant.** See ★*peace-warrant.*

warrant-machinist (wor′ant-ma-shē″nist), *n.* One of a corps of warrant-officers in the United States navy, established in 1899, with the same rank as boatswains, gunners, and carpenters, whose duties relate to the care and management of the propelling machinery on shipboard.

warranty, *n.*—**Express warranty,** in *law*, a warranty distinctly set forth in the terms of a contract, as distinguished from *implied* warranty.

warre2, *n.* Same as ★*whare.*

warree3, *n.* Same as ★*whare.*

warrener2 (wor′en-ėr), *n.* [Corruption of Tasmanian *yawarrenah*, the ear-shell.] A name in Tasmania of certain large marine shells, such as species of *Haliotis* and *Turbo.* See ★*mariner*2. *E. E. Morris*, Austral English.

warriater, *n.* See ★*warryato.*

warrina, *n.* Same as ★*warrener*2.

warryato (wä-ri-ä′tō), *n.* [Tamil *warra-ádú*, or *warri-átú.*] The Nilgiri ibex, *Hemitragus hylocrius*, a small species of a dark sepia brown color, with a reddish-brown saddle patch. Also *wariatu* and, incorrectly, *warriater.*

Warsaw limestone, shales. See ★*limestone*, ★*shale*2.

wart1, *n.*—**Mucous wart,** a moist, slightly elevated patch on the mucous membrane or near one of the orifices of the body. Also called *condyloma* and *mucous patch.*—**Post-mortem wart,** a wart-like growth which sometimes appears on the hands of those who make many dissections or post-mortem examinations.

wartern (wâr′tėrn), *n.* An English (Yorkshire) dialectal form of *quartern.*

wart-hog, *n.*—**Pallas's wart-hog,** *Phacochœrus æthiopicus* or *pallasi*, the species of southeastern Africa, distinguished from its northern relative by a shorter head, pendent warts, and reddish color.

wartlet, *n.*—**Dahlia wartlet.** See ★*dahlia.*

warty-back (wâr′ti-bak), *n.* A river-mussel, *Quadrula pustulosa*, used in the manufacture of pearl buttons.

warve (wârv), *n.* [A dial. form of *wharve.*] A grooved pulley on a spinning-spindle, to which power is transmitted by a band. Also called *whirl, wharre, whorl.* Same as *wherve*, 1. *Nasmith*, Cotton Spinning, p. 242.

wasabi (wä′sä-bē), *n.* [Jap.] A plant of the mustard family, *Alliaria wasabi*, cultivated in Japan for its roots, which taste like horse-radish. The grated root is served with the raw fish which forms such a prominent part of a Japanese meal.

wash, *v.* I. *trans.* 10. In *chem.*, to purify (a gas) by causing (it) to bubble through water, or some other liquid, or some special solution, by means of which foreign substances are removed. Thus hydrogen gas may be washed free of sulphureted hydrogen by passing it through a solution of lead acetate.

> The method of *washing* the gas with acid solutions of copper has been patented by Herr A. Frank of Charlottenburg, who finds that a concentrated solution of cuprous chloride in an acid, the liquid being made into a paste with kieselgühr, is the most effective.
> *Encyc. Brit.*, XXV. 39.

11. To subject, as stock, to a wash or fictitious sale. See *wash, n.*, 14. [Brokers' slang.]
II. *intrans.* 8. To both sell and buy the same stock at the same time. [Stock Exchange slang.]

wash, *n.* 15. A stony or gravelly slope of gentle declivity formed of debris washed from mountains by occasional torrential rains. [Western U. S.]

> Boulder channels or *washes* which extend . . . across the valley. *F. H. Newell*, Irrigation in U. S., p. 237.

16. An eroded or washed-out depression.

> The immediate result is a gully or *wash.*
> *Chamberlain and Salisbury*, Geol., I. 60.

> As we entered the valley (called by the Mormons a "*wash*") we were struck with its weird and desolate appearance, stretching, as it does, as far as the eye can see, naked of all vegetation except stunted sage-brush and greasewood, hemmed in on the east by high precipitous cliffs of red sandstone, with curious knobs and needles jutting upward and weathered into fantastic shapes and designs. *Amer. Inventor*, Feb. 15, 1904, p. 82.

17. The dry bed of an intermittent stream.—**Dry wash,** the dried-up bed of a stream; a watercourse unoccupied in the dry season. [Western U. S.]—**Lime, sulphur, and salt wash,** an insecticide preparation, largely used in treating trees attacked by the San José scale, made by boiling 10 pounds of lime, 6⅔ pounds of sulphur, and 5 pounds of salt, with water made up to 20 gallons.—**Oregon wash,** an insecticide preparation used for spraying plants, made by boiling 100 gallons of water with 100 pounds of sulphur and 80 pounds of lime until the sulphur is dissolved, dissolving 8 pounds of sulphate of copper in hot water, adding to 20 pounds of slaked lime, and mixing the whole together. One pound of the mixture is added to 2½ gallons of hot water for winter use, applying the liquid lukewarm, or 1 pound of the mixture to 8 or 10 gallons of water for summer use.—**Wash coat.** See ★*coat*2.

Wash. An abbreviation of *Washington* (State).

wash-book (wosh′bůk), *n.* Same as ★*flogger*, 3.

wash-drill (wosh′dril), *n.* A boring-apparatus for sand or loose earth in which a jet of water under high velocity is forced through a tube and issuing at the open lower end in the soil washes the latter from the path of the tube as it is pressed forward by its own weight or by a mechanical pressure. The water escapes around the outside of the tube and carries the loosened material to the surface with it. Also called a water-jet and similar to the latter when used in hydraulic mining.

> The borings through the alluvium were made by the "*wash drill*" or "water jet" method, and when samples were taken from time to time only the coarse material was collected, the finer being held in suspension and carried off with the water flowing from the holes.
> *Contrib. to Econ. Geol.*, U. S. Geol. Surv., Bulletin, [1907, p. 648.

wash-drum (wosh′drum), *n.* A wheel or drum with shelves or wooden projections upon its interior circumference, in which skins are cleaned or washed; a cleaning-drum.

washer, *n.*—**Blind washer.** Same as *blind* ★*flange.*—**Log washer,** in *mining*, an inclined trough in which a thick timber-shaft with projecting teeth or blades slowly revolves: used in the washing of ores containing a large proportion of clay.—**Triangular washer,** a washer or circular disk, for use under a bolt or tie-rod, cut from a cylinder by a plane which makes an angle with the base, so that one side is thicker than the other: used where the axis of the bolt is inclined to the face upon which the stress comes.

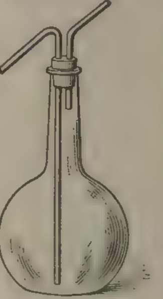
washer-wire (wosh′ėr-wīr), *n.* A special grade of brass wire cloth used in straining and cleaning paper-pulp. See ★*paper-machine.*

washery (wosh′e-ri), *n.*; pl. *washeries* (-riz). [*wash* + *-ery.*] A place where coal is sorted and sized by the use of flowing water, and by the same process is concentrated and freed from dirt and incombustible gangue.

> All the mines in the district were idle to-day, and three *washeries* which were in operation the greater part of last week were not in operation to-day.
> *N. Y. Times*, Sept. 25, 1900.

washing, *n.* 4. The purification of molten cast-iron by additions to the bath of metal in the hearth of a furnace; specifically the oxidization of phosphorus and sulphur by the addition of ores of pure oxid of iron, or those that contain manganese oxid.

washing-bottle (wosh′ing-bot″tl), *n.* A simple piece of apparatus in constant use in chemical laboratories; a wash-bottle. It consists of a glass bottle fitted with a cork or india-rubber stopper, through which pass two tubes, arranged as shown in the figure. Air blown in by the operator through the upper tube forces water out in a fine stream through the other tube, which reaches nearly to the bottom, and is drawn out to a slender jet at the outside extremity. This fine stream of water is especially useful in washing precipitates on filters. By removing the bottle from the mouth and inverting it a much larger stream can be obtained, air passing in through the jet and water running out through the tube, which is not contracted in bore. Alcohol, ether, or any other liquid may be substituted for



Washing-bottle.

water, and by using a thin-bottomed flask the liquid may be heated over a lamp-flame; in this form the arrangement is called a *washing-flask*.

washing-bulb (wosh′ing-bulb), *n.* An arrangement suggested by Liebig for washing a gas on the small scale in a chemical laboratory. It consists of a glass tube bent to the shape of the letter U, with a bulb at the bottom of the curve to contain the washing liquid, and a smaller bulb on each side to receive any of this liquid accidentally splashed over.

washing-flask (wosh′ing-flȧsk), *n.* See ★*washing-bottle*.

Washington pie, pitcher. See ★*pie*^{1}, ★*pitcher*^{2}.

Washita formation. See ★*formation*.

wash-mill (wosh′mil), *n.* A mill for washing skins after liming. *C. T. Davis*, Manuf. of Leather, p. 377.

washout, *n.* **2.** In *geol.*, a channel, eroded in one stratum and subsequently filled with material of a different character, such as the channels of shale which meander through coal-seams, cutting out the coal. *Geikie*, Text-book of Geol., p. 639.

washout-plug (wosh′out-plug), *n.* A valve in a tank or boiler or elsewhere by means of which the vessel may be cleansed by a current of water, or by outflow of the fluid contents.

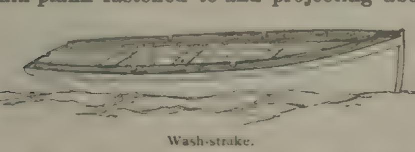
wash-pan (wosh′pan), *n.* A pan or hand jig for washing mined ore with water to concentrate the valuable part and eliminate dirt and waste.

wash-plain (wosh′plān), *n.* In *geol.*, a plain of gravel and sand washed forward from a glacier; an overwash-plain.

wash-reel (wosh′rēl), *n.* A vat or tank for washing skins. *Modern Amer. Tanning*, p. 257.

wash-room (wosh′röm), *n.* A room in which washing is done; either a laundry or a lavatory or bath-room.

wash-strake (wosh′strāk), *n.* A length of thin plank fastened to and projecting above the gunwale of a boat, or of a small, low-sided vessel, to keep out spray by thus increasing the freeboard; a wash-board. A boat's row-locks are cut in the wash-boards.



Wash-strake.

washt, *a.* A simplified spelling of *washed*.

wash-warmer (wosh′wâr″mėr), *n.* In the distillation of alcoholic liquors, a vessel to contain the wash or fermented liquid to be distilled, through which passes the pipe by which vapor is carried off from the still. This vapor undergoes partial condensation and thereby heats up the wash surrounding the pipe and allows of its being run into the still in an already hot state, thus economizing fuel. *Sadtler*, Handbook of Indust. Chem., p. 220.

wash-wheel (wosh′hwēl), *n.* A washing wheel for washing hides or skins. *C. T. Davis*, Manuf. of Leather, p. 331.

wash-work (wosh′wėrk), *n.* In water-color painting, those portions of the picture which are laid on in flat washes; also this method of painting or drawing.

wasite (wā′sīt), *n.* [*was*(*ium*) + *-ite*^{2}.] A hydrous and much-altered variety of allanite from Rönsholm, near Stockholm. It was supposed to contain a new element called ★*wasium*.

wasium (wā′si-um), *n.* [Named for Gustavus *Vasa* (*Wasa*).] A supposed new chemical element announced in 1862 by Bahr as present in a Swedish mineral resembling orthite. Its supposed oxid was probably thoria, though it may have been a mixture of earths of the yttria and ceria groups.

wasp, *n.*—**Parasitic wasps**, those true wasps which are parasitic in their habits. They belong especially to the families *Sapygidæ*, *Scoliidæ*, *Myzinidæ*, *Tiphiidæ*, *Chrysididæ*, and *Bethyllidæ*. **Thread-waisted wasp**, any member of the hymenopterous family *Sphecidæ*.—**White-faced wasp**, the large American *Vespa maculata*, which builds very large paper nests. More commonly called *white-faced hornet*.

wasp-ant (wosp′ȧnt), *n.* A member of the family *Mutillidæ*. See *Mutillidæ* and *velvet ant*, under *velvet*.

wasp-waist (wosp′wāst), *n.* A waist so tightly laced as to resemble the nearly divided body of a wasp.

> The cylinder in question, which first saw the light in Lajard's 'Culte de Mithra,' shows a person tightly cinctured, and with a *wasp-waist*, resembling the men on Mycenæan monuments.
>
> *Athenæum*, March 18, 1905, p. 344.

wassail-bowl, *n.* **2.** A rudely decorated pottery bowl, usually having slip-traced ornaments, made by English potters in the seventeenth and eighteenth centuries.

waste^1, *n.* **13.** In *phys. geog.*, detritus derived by the superficial disintegration of rock-masses and in process of removal by transporting agencies; rock-waste.—**Cop waste.** See weavers' ★*waste*.—**Old waste**, in *mining*, old or abandoned workings. *Barrowman*, Glossary.—**Weavers' waste**, the tangled clippings and broken ends of imperfectly formed thread from the spinning-room of a cotton-mill. This is the form of waste preferred in the United States as material for the manufacture of gun-cotton. Also called *cop waste*.

waste^1, *v. t.* **5.** In *stone-cutting*, to take off projecting irregularities of, as in preparing the stone for crating and transportation. Usually with *off*.

waste-block (wāst′blok), *n.* A mold or plaster flask from which a reverse mold is made. The waste-blocks receive the form of the original or pattern. The reversed molds are produced from them, and when this has been done they are of no further use; hence the name. *Lockwood*, Dict. Mech. Engin. Terms.

waster^1, *n.* **4.** (*c*) A term applied by fanciers to birds or other animals which have not bred true, but have varied from the colors of the parents and reverted more or less to the colors of the original stock.

> But now let him breed from his '*wasters*' and he will find that the extracted blacks are pure and give blacks only, that the splashed whites similarly give only whites, or splashed whites. *Nature*, Aug. 25, 1904, p. 408.

5. A cow or other animal which is wasting away in consequence of tuberculosis. [Slang.]—**6.** A marasmic infant.

waste-valve (wāst′valv), *n.* **1.** A valve through which water or other fluid may be blown out or drained away.—**2.** The blow-off valve in a steam-boiler through which water and mud, or precipitated solids in the water, can be blown to waste.—**3.** The valve or gate in the waste-weir or sluice of a dam, through which water may be wasted or allowed to flow out of the pond above the dam to relieve the latter.

waste-yarn (wāst′yärn), *n.* Yarn made from (textile) mill-waste, reworked. *Nasmith*, Cotton Spinning, p. 386.

wat^7 (wot), *n.* [*Siamese?*] A Siamese temple or monastery.

> A grove of palms about a *wat*, or monastery.
>
> *Geog. Jour.* (R. G. S.), XI. 488.

watch, *n.*—**Decimal watch**, a watch of which the dial indicates decimal fractions of an hour: used in industrial cost-keeping, etc.—**Deck watch**, an easily portable form of chronometer frequently used by travelers and explorers.—**Forecastle watch**, the watch kept at night on the topgallant forecastle, when the vessel is under way.—**Gravy-eye watch**, the deck-watch from midnight to 4 A.M., during which time the members of the crew are sleepier than at any other time, and are prone to nod over their work at the wheel or on the lookout. [Nautical slang.]—**Middle watch.** See *watch*, 6.—**Saloon watch**, the lookout maintained at night in the saloons, stewards' pantry, etc., when the vessel is either in port or at sea.—**Scuttle-butt watch**, the watch kept over the drinking barrels to see that nothing is allowed to foul the water, or that the water is not wasted.—**To keep a good watch**, to maintain vigilance and alertness.—**To keep a watch**, to be in charge of the deck; be officer of the deck; be one of the watch.—**To set the watch.** See ★*set*^{1}.—**Water-cask watch.** Same as *scuttle-butt* ★*watch*.

watch, *v. t.* **6.** To assign to a watch.

> The crew as a whole are equally divided into two watches, starboard and port. In ordinary types of cruising vessels the working force on deck is distributed as forecastlemen, fore, main and mizzen topmen, and afterguard. . . . The mechanics, musicians and servants are generally *watched* in the afterguard. [Applicable only to the old navy.] *Luce*, Seamanship, pp. 291, 293.

watch-barometer (woch′ba̤-rom″e-tėr), *n.* A pocket aneroid barometer.

watch-book (woch′bůk), *n.* A book in which is entered the time expended in the several smaller operations which together make up the time of completing a manufactured article. *Engin. Mag.*, July, 1904, p. 617.

watch-lock (woch′lok), *n.* An obsolete form of gun-lock, so named because supposed to be always ready to fire and hence used by watchmen.

watchman-beetle (woch′ma̤n-bē″tl), *n.* The European dor-beetle, *Melolontha vulgaris*.

Watchspring climber. See ★*climber*^{1}.

watchwise (woch′wīz), *adv.* In the direction of the movement of the hands of a watch; with the sun.

water, *n.* **9.** A wavy or marbled effect produced on a textile fabric, as grosgrain silk, by pressure and moisture. See *watered*.—**10.** A sheen or surface given to metal, by heat and pressure, resembling the ripples or the play of light on water.—**Acidulous water.** See ★*acidulous*.—**Blue, casual, compensation, conductivity water.** See ★*blue*, etc.—**Bottom water.** Same as *ground water* (under *water*).—**Capillary water.** See ★*soil moisture*.—**Dead water.** (*a*) See *dead-water*. (*b*) See ★*dead-water*. (*c*) Standing water, as contrasted with running or circulating water.

> If the ridge exceeded a certain height, there would be *dead water* on the lee side, and the trough would therefore silt up, diminishing the amplitude.
>
> *Geog. Jour.* (R. G. S.), XVIII. 200.
>
> Specially interesting is the discovery of quantities of sulphuretted hydrogen in the "*dead water*" at the bottom of the Frier and Drammen fjords, a condition only known to exist in the Black sea.
>
> *Geog. Jour.* (R. G. S.), XVIII. 85.

Duty of water. See ★*duty*.—**Entrained water**, in *steam-engineering*, water of condensation, spray, and water from the boiler swept along in a steam-pipe by the steam, mechanically suspended in the steam, or running along the bottom of the pipe with the steam.—**Florida water**, a perfume or toilet water similar to cologne.—**Fossil water.** See ★*fossil*.—**Gravitation water**, hydrostatic water. Same as *ground water* (under *water*).—**Hygrometric water**, that portion of the water contained in a mineral or other substance which can be driven off by heating to 100° C.—**Hygroscopic water.** See ★*soil moisture*.—**Meter of water.** See ★*meter*^{1}.—**Micellian water**, a term used by a few writers to signify the water which is produced by the union of hydrogen and oxygen existing as constituents of an aluminium acid silicate and is driven off as aqueous vapor in the so-called 'burning' of clay in the manufacture of pottery and bricks, thus permanently destroying the plasticity of the original clay.

> Only one sort of water of combination (the so-called *Micellian water* of Nageli and Van Bemmelen) is in any way a measure of plasticity. *Science*, Feb. 6, 1903, p. 213.

Physical water, in *phytogeog.*, the water or moisture actually present in a plant-formation, as distinguished from the *physiological water*. See ★*xerophyte*.—**Physiological water**, in *phytogeog.*, the water which a plant is capable of appropriating, as distinguished from the *physical water*. See ★*xerophyte*.—**Slack water.** (*c*) In *river-driving*, the temporary slackening of the current caused by the formation of a jam.—**To get first water**, to be the first to have its hose attached and water playing at a fire: said of a fire-engine: of the first importance to the reputation of an engine company. [Colloq.]

> Hence while these boats and their pipe lines are most powerful and valuable auxiliaries to the street forces, they can no more be depended upon for quick work at a remote point inland than can a steam fire engine be expected "*to get first water*" on a vessel anchored in midstream. *Sci. Amer.*, Jan. 21, 1899, p. 39.

To hang its water, in *mining*, said of a pump which fails to work on account of a defective clack-valve, or because of air above the clack, the column of water above preventing the bucket lids from opening. *Barrowman*, Glossary.—**Water friction-brake.** See ★*friction-brake*.—**Water hemisphere, itch.** See ★*hemisphere*, ★*itch*.—**Water of hydration.** See ★*hydration*.—**Water of imbibition.** See ★*imbibition*.—**Water of saturation**, in *geol.*, water which entirely fills the voids in rocks. It is contrasted with *water of* ★*imbibition*, which adheres to the particles and will not drain away.—**Water reserve.** See ★*reserve*.

water-bag, *n.* **3.** A bag of leather, rubber, or other suitable material for holding water.

water-ballast (wâ′tėr-bal″a̤st), *n.* See *ballast*, 1.

water-bearing^2 (wâ′tėr-bãr″ing), *a.* Provided with water, as a stratum which will yield an artesian flow or a series of springs.

> On the *water-bearing* rocks of Ohio.
>
> *Geog. Jour.* (R. G. S.), XVI. 371.

water-blast, *n.* **2.** In *mining*, an escape of air from an ascending working in which it has been confined and compressed by a head of water in some connecting passage with a seal at its foot.

water-blister (wâ′tėr-blis″tėr), *n.* A blister which contains a clear serous fluid, as distinguished from a blood-blister, in which the fluid is sanguineous.

water-block (wâ′tėr-blok), *n.* A hollow block, usually of iron, copper, or bronze, cooled by circulation of water in its interior, and used for forming parts of furnaces. *Phillips and Bauerman*, Elements of Metallurgy, p. 291.

water-bok (wâ′tėr-bok), *n.* Same as *water-buck*.

water-borne, *p. a.* **2.** *Naut.*, supported or sustained by the pressure of the water: said of a vessel or other object partly in and partly out of water. A vessel is partly water-borne when some part of it rests on the bottom so that its weight is supported partly by the ground and partly by its buoyancy in the water; a vessel completely water-borne is afloat.

> A vessel partially *water-borne* and partly aground loses stability as compared with her condition when afloat.
> *White*, Manual of Naval Arch., p. 124.

water-bosh (wâ′tėr-bosh), *n.* [*water* + *bosh*³.] A cistern in which puddling tools are cooled. See *puddling*, 2. *Phillips and Bauerman*, Elements of Metallurgy, p. 311.

water-bottom (wâ′tėr-bot″um), *n.* See *double* ⋆*bottom.*

water-bug, *n.*—**Creeping water-bug,** any one of the aquatic, predatory heteropterous insects of the family *Naucoridæ* (which see).

water-bush (wâ′tėr-bůsh), *n.* An Australian shrub or small tree, *Myoporum acuminatum angustifolium*, belonging to the family *Myoporaceæ.* It yields a soft, light, tough wood used for building purposes.

water-calorimeter (wâ′tėr-kal-ọ̄-rim″ė-tėr), *n.* See ⋆*calorimeter.*

water-cart, *n.* **2.** Same as ⋆*water-wagon*, 2. —**To fall off the water-cart,** to drink intoxicating liquor; to become drunk. [Slang.]

> Last night I tumbled *off the water cart* —
> It was a peacherino of a drunk.
> *Wallace Irwin*, Love Sonnets of a Hoodlum, ix.

water-cartridge (wâ′tėr-kär″trij), *n.* A form of cartridge for use in mining, in which the chamber carrying the explosive is surrounded with a water-jacket. The effect of the water is to diminish the volume of flame when ignition takes place, and lessen the chances of an explosion of gas in the workings.

water-cement (wâ′tėr-sẹ̄-ment″), *n.* Hydraulic cement. See *cement.*

water-chamber (wâ′tėr-chām″bėr), *n.* Same as ⋆*rolling-chamber.*

> Above the protective deck in that vessel a "*water-chamber*" was built, 16 feet long fore and aft, with a height of about 7 feet; its breadth could be varied (by bulkheads) from the entire breadth of the vessel at that part (67 feet) to either 51 feet or 43 feet.
> *White*, Manual of Naval Arch., p. 180.

water-cloud (wâ′tėr-kloud), *n.* A cloud that indicates the presence of water in the midst of ice- or snow-covered land.

water-color, *n.* **1.** Water-color is painting in some medium that is soluble in water. Pure water will not hold the color. Some binding substance, such as the yolk of egg or mucilage, must be added. In the form of tempera (which see), in which the medium is a solution of yolk of egg, water-color is one of the oldest forms of painting known, having been employed upon Egyptian monuments. In the middle ages and Renaissance, tempera was often used like modern water-color upon paper and absorbent canvas. In such work the representation of local color was limited. Tinted drawings were made rather than paintings. The color, moreover, always retained the opacity of the earths used and of the medium. During the seventeenth and eighteenth centuries the painters of Europe, and especially of Holland, used water-color abundantly, but always in the opaque form, the opacity being sometimes increased by the addition of white earth, forming the medium called *gouache.* The improvement of water-color has proceeded, first, in the direction of securing more transparency in the material, so that the luminosity of the underlying surface, usually white paper, becomes valuable; and, second, in the free use of local quality of color. The great advance, and indeed the perfection of the art, has been due almost entirely to the color-makers and artists of England. English water-color painting began early in the eighteenth century. There was an exhibition of such paintings in 1760 in London. The English pictures were for a long time, however, simply tinted drawings, quite monochromatic, like the Dutch. The forms were first carefully drawn with a pen; the lights and darks were then washed in with India ink, and the transparent local color was passed over. In 1780 the Messrs. Reeves of London began the preparation of water-colors commercially. This was followed by the improvement of papers by the Messrs. Whatman, and later by the still further improvement of the colors by Winsor and Newton, who as early as 1832 prepared soft colors in tubes. In this way the betterment of materials made possible the then great advances of the English painters in artistic expression and representation. In more modern times the material and method of water-color have become perfectly responsive to the impressions of nature and to the sentiment of the artist. The art has received additional impetus from the introduction of Japanese and Impressionist influences.

water-cooled (wâ′tėr-köld), *a.* Cooled by contact with circulating water. Gas-engine cylinders are frequently water-cooled. Main bearings and cross-head guides of marine engines are usually water-cooled by having water circulated through holes in the metal which surrounds the bearing.

water-cooler, *n.* (*b*) A coil of pipes, similar to a brine-cooler, for cooling distilled water by means of fresh cold water, preparatory to freezing it in making ice.

water-cow, *n.* **2.** In British Guiana, the manatee, *Trichecus inunguis.*

water-cycle (wâ′tėr-sī″kl), *n.* A boat driven by means of pedals, like a bicycle or tricycle. The power may be applied either to a paddle or to a screw-shaft, the former being the commoner arrangement, since it is more direct and less affected by friction.

waterd, *a.* A simplified spelling of *watered.*

water-devil, *n.* **3.** The predatory larva of any species of water-beetle of the genus *Dytiscus.*

water-dipper (wâ′tėr-dip″ėr), *n.* In the British West Indies, any dragon-fly.

water-dock, *n.* **2.** The goldenclub, *Orontium aquaticum.* See *Orontium.*

water-drum (wâ′tėr-drum), *n.* In *mech.*, a chamber which is filled with water while the boiler, to which it is connected or of which it is a part, is in operation; a chamber or tank at the lower end of the tubes in a water-tube boiler.

water-dwelling (wâ′tėr-dwel″ing), *n.* Same as *pile-dwelling.*

> One curious feature of the lake [Chiuta], which doubtless has been mentioned before, is the piles in the water, which still remain to mark the existence of lake dwellings. They are clustered towards the east side, and are generally situated about 50 to 200 yards from the shore. The water is now about 6 to 8 feet deep around them. These *water-dwellings* were, of course, a means of safety against raids and warfare.
> *Geog. Jour.* (R. G. S.), XV. 613.

water-elm, *n.* **2.** *Ulmus pedunculata* of central Europe. See *Ulmus.*—**3.** The planer-tree, *Planera aquatica.* See *planer-tree.*

water-fence (wâ′tėr-fens), *n.* A fence extending from a shore out into a lake or other body of water so that animals in pasture may not pass around its end.

Water-fennel oil, the volatile oil or essence obtained by distillation with water of the fruit of *Œnanthe Phellandrium.* It consists chiefly of a terpene, phellandrene, but contains also an aldehyde, phellandral, isomeric with citral.

water-fern, *n.* **3.** Same as *floating-*⋆*fern.* See ⋆*Ceratopteris.*

water-flag, *n.* **2.** The common blue flag, *Iris versicolor*, which grows in wet places or even in water.

water-floor (wâ′tėr-flōr), *n.* An arrangement of open troughs on the bottom of a room or vault for sweating hides. *C. T. Davis*, Manuf. of Leather, p. 122. [Rare.]

waterfront (wâ′tėr-frunt), *n.* Frontage upon water, as upon a river or bay; land abutting upon any considerable body of water: commonly applied to a part of a town or city that so abuts.

water-fungus (wâ′tėr-fung″gus), *n.* Same as ⋆*water-mold.*

water-gas, *n.* Two reactions may occur, represented by the formulæ $C + 2H_2O = CO_2 + 2H_2$ and $C + H_2O = CO + H_2$—the former of these chiefly at a temperature of about 500° C. and the latter at about 1000° C. Hence the product usually consists of both the oxids of carbon, mixed with hydrogen. If the incandescence of the carbon is maintained by the continuous combustion of a part of it, requiring the continuous supply of air, the nitrogen of this air is also found in the product, thus diluting it with incombustible matter. Such a mixture is used as fuel in gas-fired furnaces. If, however, the intermittent process is adopted, the supply of air being cut off as soon as the mass of coke or anthracite is glowing brightly, and steam already at a high temperature introduced, the presence of nitrogen is avoided, until by the gradual cooling down of the mass it again becomes necessary to cut off the steam and turn on the air. Water-gas made by this intermittent process is largely used as a source of artificial light, especially in cities of the United States, but, having of itself but poor illuminating power, it requires to be "carbureted" by mixture with the vapor from hydrocarbon oils and strongly heating the mixture.—**Semi-water gas,** gas made in a water-gas apparatus, but having a calorific value equal to about one half that of true water-gas.

water-glass, *n.* **4.** A glass water-gage to indicate to the eye the level of the water in a steam-boiler.

water-gnat (wâ′tėr-nat), *n.* A popular name in England of *Limnobates stagnorum*, a true aquatic bug.

water-gowan (wâ′tėr-gou″an), *n.* Same as *meadow-gowan* (which see, under *gowan*).

water-grate (wâ′tėr-grāt), *n.* A grate having hollow bars through which water circulates. [Rare.]

water-gum, *n.* **2.** See ⋆*gum*² (*b*).

water-haul (wâ′tėr-hâl), *n.* In *fishing*, a haul with nothing in the net but water: as, to make a *water-haul*, that is, catch no fish. Hence, a failure; a fruitless operation.

water-heater, *n.* **2.** A gas or gasolene heater for supplying hot water to a bath, lavatory, or kitchen boiler. It consists of a system of pipes or vessels, through which a stream or film of water may pass and be exposed to a large heating surface, and one or more Bunsen gas-burners, the whole being inclosed in a suitable casing and connected with a supply of water and gas.

water-horizon (wâ′tėr-họ̄-rī″zọn), *n.* A series of porous strata which yield a supply of water to wells.

> The wells in the red sandstone are generally deeper, but no *water-horizons* are as yet recognized. There are many wells in the valley of the Passaic from Paterson south to Newark, and particularly in the vicinity of Passaic and in the city of Newark, which supply large manufacturing establishments and individual home consumption.
> *R. D. Salisbury*, in Geol. Surv. of New Jersey, 1900, [p. xx.

water-horsepower (wâ″tėr-hôrs′pou-ėr), *n.* The unit used in British India to describe the work-capacity of falling water, in streams and water-courses. If water is considered as weighing 62.5 pounds per cubic foot, then 8.8 cubic feet falling one foot in one second will develop 550 foot-pounds per second or one horse-power in a perfect motor. In round figures, the actual motor is assumed to have a practical efficiency of nearly 60 per cent., so that 15 cubic feet of water will actually give a net horse-power, and this is the figure used.

water-hyacinth (wâ′tėr-hī″ạ̈-sinth), *n.* See ⋆*Piaropus.*

water-ice, *n.* **2.** Ice formed by freezing part of a body of water: contrasted with *snow-ice*, ⋆*glacier-ice, névé, firn.* *Geikie*, Text-book of Geol., p. 189.

watering-town (wâ′tėr-ing-toun″), *n.* A watering-place. [Rare.]

> The Caucasian railway, . . . went south-westwards across North Caucasia to Vladikavkáz, and to the *watering towns* around Pyatigórsk.
> *Geog. Jour.* (R. G. S), XVI. 224.

watering-trough, *n.* **2.** In *railroading*, a portion of a railroad track fitted with a very long, shallow iron trough placed on the ties between the rails. This trough is kept full of water and furnishes a supply for passing locomotives. The tender is fitted with a curved, hinged pipe, which has an open scoop-like mouth, and which, on being lowered into the water in the trough, serves as a scoop, lifting the water into the tank of the tender by the motion of the tender as it passes over the trough. The engine is said to 'pick up' its water at the watering-trough.

water-jacket (wâ′tėr-jak″et), *v. t.*; pret. and pp. *water-jacketed*, ppr. *water-jacketing.* To surround or fit with a water-jacket.

> The cylinder [of gas engine] is shown as *water-jacketed.*
> *Encyc. Brit.*, XXVIII. 183.

water-jags (wâ′tėr-jagz), *n.* Varicella. [Prov.]

water-jar (wâ′tėr-jär), *n.* A jar for holding water.

water-jet (wâ′tėr-jet), *n.* **1.** A device for the propulsion of vessels consisting of a jet of water expelled forcibly from the stern. The reaction in the chamber from which the jet issues is a force acting to send the hull in the direction opposite to that of the motion of the jet. The same mechanical energy used to create this unbalanced pressure is more effective if applied to direct propulsion by screw or paddle-wheel.

> The *water-jet* or hydraulic propeller cannot be regarded as a serious competitor with the screw or paddle-wheel, but it has attracted so much attention and been so strongly recommended that it cannot be left unnoticed.
> *White*, Manual of Naval Arch., p. 572.

2. A boring-apparatus using a jet of water from a nozle at high velocity, for excavating holes in soft earth or removing soil from the face of a bluff or bank. The flowing water erodes the loosened earth, and the latter flows away as silt suspended in the water. Used in hydraulic mining. When used for boring vertical holes it may also be called a ⋆*wash-drill* (which see).

water-kibble (wâ′tėr-kib″l), *n.* A water-bucket used in mines or shafts for hoisting water by the water-bucket system. The bucket is of sheet-steel with a valve in the bottom opening inward, so as to allow the bucket or skip to fill automatically when dropped into the sump or pocket at the bottom of the hoisting shaft. In many places the water-bucket system of draining the mines is cheaper and more efficient than the pumping system. [Eng.]

water-ladder (wâ′tėr-lad″ėr), *n.* A contrivance composed of pole-guides up and down which a barrel slides in filling a sprinkler by horse-power. [U. S.]

waterlaid, *a.* 2. In *geol.*, deposited in or by water: contrasted with *Æolian*^{1}, 2.

Soon after the skeleton was embedded in the stony debris, or lay exposed on its surface, the geologic conditions that appear to have long prevailed were somewhat suddenly changed, and there ensued a more rapid deposition of the very fine *waterlaid* loess, deeply enveloping the bones before they had time to be generally removed by decay under the influences of the weather and infiltrating air and water.
Sci. Amer. Sup., Feb. 14, 1903, p. 22679.

water-level, *n.* 3. In *mining*, a heading or gangway so nearly horizontal that drainage water in it flows very sluggishly or hardly at all.

water-lily, *n.*—**Little water-lily,** the water-shield or water-target, *Brasenia Schreberi.*

water-lime, *n.*—**Bertie water-lime.** See *Salina* ★*beds.*

water-logging (wâ′tėr-log″ing), *n.* The act or process of becoming water-logged; specifically, in *irrigation*, the saturation of the soil by an excess of water, generally accompanied by an excess of so-called alkali or earthy salts. *H. M. Wilson*, Irrigation Engineering, p. 38.

water-mallow (wâ′tėr-mal′ō), *n.* See ★*mallow.*

water-mama (wâ″tėr-mä′mä), *n.* In British Guiana, a water-sprite: a name given by the English colonists to mythical beings, supposed by the Carib and Arawak Indians to live in secluded streams and pools, into which they entice passers-by to their destruction. The water-mamas are of both sexes and are described as resembling the Indian men and women. Similar myths are common in other South American tribes.

Waterman calorimeter. See ★*calorimeter.*

water-maple, *n.* 2. The silver maple.—3. The mountain-maple.

water-master (wâ′tėr-mås″tėr), *n.* The superintendent or other officer in charge of the distribution of water from an irrigating canal or ditch. Locally named in California *zanjero*, and in New Mexico *majordomo. F. H. Newell*, Irrigation in U. S., p. 107.

water-mica (wâ′tėr-mī′kä), *n.* See ★*mica*^{2}.

water-millet (wâ′tėr-mil″et), *n.* See ★*millet*^{1}.

water-mold (wâ′tėr-mōld), *n.* An aquatic fungus, especially a member of the family *Saprolegniaceæ.* The water-molds grow mostly on decaying animal matter lying in the water. Compare *Saprolegnia.*

water-moth, *n.* 2. Any pyralid moth of the genus *Nymphula* whose larvæ are aquatic or subaquatic.

water-nymph, *n.* 4. Any dragon-fly.

water-oak, *n.* 3. See ★*oak.*

water-opal (wâ′tėr-ō″pal), *n.* Same as *hyalite.*

water-packed (wâ′tėr-pakt), *p. a.* Packed wet: applied to a cotton-bale which has been packed with wet cotton and is therefore more or less unmerchantable.

Cotton that is *water-packed* is liable to foster the growth of mildew, and this is probably the cause of the musty scent that sometimes emanates from such *water-packed* bales.
Hannan, Textile Fibres of Commerce, p. 112.

water-pan (wâ′tėr-pan), *n.* A slough.

Abdulla, our taciturn Midgan guide and tracker, points across a long dull-red depression, evidently in better times of rain a *water-pan*, to a distant cluster of brown irregular mounds. *Geog. Jour.* (R. G. S.), XI. 41.

water-pipe, *n.* 3. A narghile or hooka.

water-piston (wâ′tėr-pis″ton), *n.* 1. The piston of a pump by which the water is actuated.—2. A system for exhausting or compressing air or gases in which the level of water in a chamber is alternately raised and lowered mechanically. The increase of volume above the surface of the water, as it is lowered, causes an inflow into the chamber above such surface; and the rise of the surface expels the air or gas, less only so much as the water absorbs. The same result can be attained with oil, or with a liquid which does not absorb the gas even under pressure. The surface of the water is raised and lowered by the intrusion and withdrawal of a displacing plunger below the level of the water at its lowest point. The volume of the plunger would be displaced at each traverse. *G. Lunge.* Sulphuric Acid, III. 77.

water-plane, *n.* 2. The irregular surface of the underground water usually forming an inclined plane toward the sea or other system of drainage. The oscillations of the water-plane as recorded by a float and revolving drum at Maghull, eight miles northeast of Liverpool, by Isaac Roberts, seem to show that it is influenced by the sun, moon, tide, atmospheric pressure, temperature, and rainfall. 3. The level which marks the height of a body of water and often is indicated, after the water's departure, by beaches. Such water-planes may afterward be tilted by earth-movements.

The various elements are projected, with exaggeration of heights, on a vertical plane running a little west of south, or parallel to the direction of greatest inclination of old *water-planes.*
G. K. Gilbert, in Smithsonian Rep., 1890, p 241.

water-pocket (wâ′tėr-pok″et), *n.* 1. A cavity or mass of porous rock containing water; a water-hole. Chiefly current in the southwestern United States, where the Spanish equivalent *bolson* is often also used.—2. Same as ★*pocket*, 12.—3. Any depressed point or place in which water or other liquid may gather.

This system not only drains the piping itself, but also the *water-pockets* in the various valves.
Elect. World and Engin., Feb. 27, 1904, p. 397.

water-polo (wâ′tėr-pō″lō), *n.* A game, played in a swimming-tank, in which the contestants, in the water, toss a large rubber ball similar to a foot-ball. There are goals at either end against which the ball must be placed to score.

water-poppy (wâ′tėr-pop″i), *n.* See ★*Hydrocleys.*

water-port (wâ′tėr-pôrt), *n.* An opening or area in a surface through which water may pass, as in the valve-chamber of a reciprocating water-motor.

water-pouch (wâ′tėr-pouch), *n.* One of the large pockets, or cells, of the first and second compartments of the stomach in camels: so called because they retain water for a considerable period.

water-prairie (wâ′tėr-prā″ri), *n.* A saline playa; a salina. [Southwestern U. S.]

water-prick (wâ′tėr-prik), *n.* A slight imperfection on the grain of skins caused by too much soaking in water. *Modern Amer. Tanning*, p. 247.

Water-reel process. See ★*process.*

water-rheostat (wâ′tėr-rē″ọ-stat), *n.* A rheostat in which the resistance is due to a mass of water of fixed dimensions.

water-right (wâ′tėr-rīt), *n.* The legal right to the use (of a specified quantity or body) of water; in particular, the right to the use of water for the purpose of irrigation. See ★*right, n.*

Among] the classes of contracts which have been productive of either discontent or abuses are, first, perpetual *water-rights.* Under these contracts the user pays a certain amount per acre for all the land on the canal, whether he irrigates it or not. These contracts usually specify a certain duty which has been fixed before the needs of the lands or the crops to be cultivated were known. *Yearbook U. S. Dept. Agr.*, 1899, p. 39.

water-rocket (wâ′tėr-rok″et), *n.* 3. See the extract.

All waterfalls tend to break up into conical masses called *water-rockets*, and in rare cases a fall may be seen which consists of a slow procession of well-separated "rockets" ranged in roughly horizontal lines. A case is described in which this beautiful appearance was due to the formation of roll-waves above the fall.
Nature, April 18, 1907, p. 597.

water-rolled (wâ′tėr-rōld), *a.* Rolled along by water: specially applied to boulders or pebbles which, beginning as angular masses, have had their corners worn off by being rolled along in a current of water. Rounded water-rolled pebbles may thus be contrasted with angular glacial pebbles.

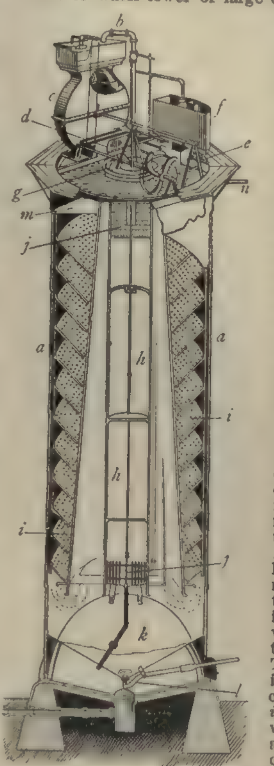
watershed, *n.* 2. The area drained by a river and all its tributaries.

water-shot (wâ′tėr-shot), *a.* Said of a ship when its position is such that it is moored midway between cross-tide and up and down stream.

water-sick (wâ′tėr-sik), *a.* A colloquial term, not in common use, applied to irrigated land which has received an excess of water, causing it to be heavy or soggy and not adapted to cultivation. *L. M. Wilcox*, Irrigation Farming, p. 439.

water-slide (wâ′tėr-slīd), *n.* A trough partly filled with water through which logs are slid from the rolling-bank to the mill. *Dialect Notes*, II. vi.

water-softener (wâ′tėr-sôf″nėr), *n.* An arrangement for removing from a natural water the salts of calcium and magnesium so as to fit it for use in steam-boilers without producing scale. The water to be treated is passed through a tank or water-tower of large dimensions, in which it receives an automatically regulated addition of the necessary chemicals, slaked lime and soda-ash, remains long enough to become clear by subsidence of the precipitate formed, and is run off by an outlet pipe at the top of the tank in a purified or softened condition. See ★*hardness*, 2. The figure shows a cross-section of a water-softener used to supply soft water to a railroad water-tank, the house on top of the tall cylindrical tank having been removed. At the top is the pipe which delivers the raw water to the tank at the left. From this tank the water flows down to a water-wheel, inclosed in the cylindrical casing, the power thus obtained being used to operate the water-mixing machinery, and then flows into a deep central well in the tower. At the right is the tank holding the chemical reagents, and in front, the scoop-wheel for taking up the softened water used in mixing the chemical solutions. The raw water flowing into the well in the center, called the *mixing-chamber*, is mixed with the dissolved reagents that are kept constantly agitated by the stirring-machine shown at the bottom and top of the mixing-chamber. When saturated the water overflows at the top into the cone-shaped annular space surrounding the mixing-chamber and flows in a solid stream down to the bottom where it turns upward in the outside annular space and rises through the perforated baffle-plates. During this downward and upward flow through the machine the raw water parts with its impurities, and the precipitates fall to the bottom of the tower. The reaction is most rapid at the start and the larger part of the now solid impurities fall at once. All that remains is caught and removed by the baffle-plates; and the now soft water passes upward through a filter, that removes any matter mechanically suspended in it, and fills the annular tank shown at the top of the tower, from which it is led away by the pipe at the right to the storage-tank. Other types of water-softening machines employ the same general principles, with somewhat different arrangement of tanks and mixing-chambers, and reach the same results by slightly different methods of practice.



Water-softener.

a, a, steel tower; *b*, in-take; *c*, water-motor for operating machinery; *d*, mixing-tank; *e*, scoop-wheel delivering soft water to tank; *f*, tank for chemical reagents; *g*, saturated water flowing into top of conical down-take where impurities settle; *h, h*, down-take; *i, i*, up-take, with baffle-plates; *j, j*, stirring-machinery; *k*, settling-tank; *l*, dump-valve; *m*, filters; *n*, outlet to railroad tank. Average height of tower, forty feet; capacity, from 10,000 to 30,000 gallons an hour.

water-spread (wâ′tėr-spred), *n.* Spread or expanse of water. [Rare.]

The *water-spread* of ancient times, however, appears to have been very great, possibly almost double that of to-day. *Bulletin Amer. Geog. Soc.*, Oct., 1907, p. 584.

water-sprout (wâ′tėr-sprout), *n.* In *hort.*, a vigorous, sappy, adventitious shoot in a tree or bush, usually arising because of heavy pruning or other unbalance of the plant.

As soon as the rainy season begins the trunk and larger branches put forth numerous *water sprouts*, which grow rapidly and at first seem to be perfectly healthy.
U. S. Dept. Agr., Div. Veg. Physiol. and Pathol., Bulletin 8, 1896, p. 10.

waterstone (wâ′tėr-stōn), *n.* 1. Marly limestone capable of yielding hydraulic cement. Compare *water-lime.*—2. pl. [*cap.*] In *English geol.*, a division of the Keuper.

water-strider, *n.*—**Broad-shouldered water-strider,** any one of the aquatic heteropterous insects of the family *Veliidæ*; so called on account of the broad prothorax. *Comstock*, Manual of Insects, p. 134.

water-stroke (wâ′tėr-strōk), *n.* Same as *water-brain fever.*

water-struck (wâ′tėr-struk), *a.* Said of bricks which have been dipped in water after leaving the mold and before firing. Interesting texture is produced in this way.

water-stuff (wâ′tėr-stuf), *n.* A translation and adoption of the German name (Wasserstoff) for hydrogen.

water-table, *n.* 4. In soil investigations, the upper surface of the gravitation or ground water; the upward limit of soil and rock saturation. See ★*soil moisture.*

[The] level, below which the rock and subsoil (down to

unknown depths) are full of water, is known as the ground-water level, ground-water surface, or *water-table*.
Chamberlin and Salisbury, Geol., I. 67.

5. In *car-building*, a window ledge.

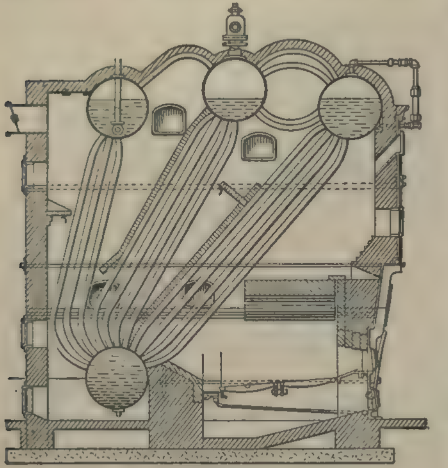
water-tender (wâ′tėr-ten′dėr), *n.* *Naut.*, a person whose duty it is to see that the proper level of water is maintained in the boilers and to regulate the supply of feed-water for that purpose.

Water-tight deck. See ★*deck*, 2.

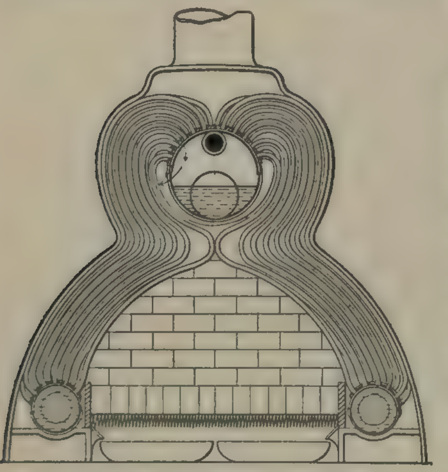
water-tower, *n.* 2. A tower, in a system of water-supply, in which water is kept to maintain a constant head or pressure and also to permit a considerable draft of water to be made from the system, in case of fire, before the pumping-engines are speeded up to the increased demand.—3. A tower in which a spray of falling water cools and cleanses an ascending current of gas.

water-tree, *n.* 2. In Australia, a tree of the family *Proteaceæ*, *Hakea leucoptera*, so called from the fact that in the arid districts which it frequents good drinking water may be obtained from its fleshy roots. It yields a soft, coarse-grained wood. Called also *needle-bush* and *pin-bush*. See ★*needle-bush*.

Water-tube boilers. Water-tube boilers are made in many forms. The tubes may be in long or short coils, or they may be straight, connected into headers at their two ends; they may be inclined at angles from the vertical line or from the horizontal line; and they may be sectional boilers or non-sectional. They may be used on the flash principle, or semi-flash, or they may be worked as continuous generators with a reserve content of heated water. Water-tube boilers are particularly well adapted for high pressures and temperatures of steam, and lend themselves easily to combination with superheating apparatus.



Inclined Vertical Water-tube Boiler.



Curved-tube Water-tube Boiler.

water-valve (wâ′tėr-valv), *n.* 1. A valve for controlling water.—2. Specifically, the feed-valve controlling entry of feed-water into a boiler. [Eng.]—3. A relief-valve, or cylinder-cock, or automatic snifting-valve, designed to let out water from the cylinder of a steam-engine.

water-vein (wâ′tėr-vān), *n.* A crevice containing water, and capable of yielding it to a well or other excavation.

water-wagon (wâ′tėr-wag″ọn), *n.* 1. A cart, such as a sprinkling-cart, designed to carry water.—2. Figuratively, total abstinence. [Slang.]

"To be on the *water wagon*," to abstain from hard drinks.
Dialect Notes, II. vi.

water-wheel, *n.*—**Impulse water-wheel,** one in which the impact of a jet of water striking on the revolving wheel is made to do work. Same as *impulse-wheel* (which see, under *wheel*1).—**Reaction water-wheel,** a form of rotating water-motor in which the pressure and velocity due to a head of water are directed upon curved vanes or buckets whose shapes utilize not only the impulse effect of the water, but also enable the latter to work by reaction as the direction of flow through the motor is changed, thus making both water and motor more effective.

watt, *n.*—**False watts.** Same as *phantom* ★*watts*.—**Phantom watts,** in alternating-current circuits, with lagging or leading current, the difference between the apparent watts (or the product of volts and amperes) and the true watts (or the above product multiplied by the power-factor). Also *false watts*.

wattage (wot′ạj), *n.* [*watt* + *-age*.] The rating in watts, of any electrical machine or device, of the power required to operate it: as, the *wattage* of a glow-lamp.

Dividing the kilowatt-hours mentioned by said number of lamps shows an average per lamp at station of 463.8 watts, deducting from which 9 per cent. for line loss, shows a net *wattage* per lamp at lamp terminal of 422.
Elect. World and Engin., June 27, 1903, p. 1095.

Watteau (vä-tō′), *n.* The name of a celebrated French painter, sometimes used to designate costume such as appears in his pictures: as, a *Watteau* bodice; a *Watteau* mantle.

wattevillite (vät′vil-īt), *n.* [Named after M. de *Watteville*, of Paris.] A hydrous sulphate of calcium and sodium which occurs in fine fibrous crystalline aggregates: derived from the alteration of pyrite at Bischofsheim, Bavaria.

watt-hour (wot′our), *n.* The energy derived from an activity or power of one watt maintained for one hour: a practical unit of energy.—**Watt-hour meter,** in *elect.*, an instrument for the measurement of energy, reading directly in watt-hours.

Wattled lapwing. Same as *wattled plover* (which see, under *wattled*).

wattless (wot′les), *a.* In *elect.*, consuming no power. A wattless alternating current is a current differing in phase by 90 degrees from the electromotive force; a wattless electromotive force is an electromotive force differing in phase by 90 degrees from the current. A better term is *reactive*.

wattman (wot′man̈), *n.* [*watt* + *man*: English in form but not in use.] See the extract.

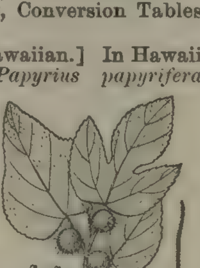
"*Wattman.*"—This term is employed in France to designate the engineer-driver of an electric carriage.
F. P. Marchant, in N. and Q., 9th ser., XII. 147.

wattmeter, *n.*—**Induction-wattmeter,** a wattmeter so constructed that no current is supplied to the moving parts, the armature, which is usually a metal disk, revolving under the direct inductive action of the currents in the fixed coils.—**Recording wattmeter,** an instrument for recording the power developed in an electric circuit. See *wattmeter*. *Trans. Amer. Inst. Elect. Engin.*, 1900, p. 657.

watt-minute (wot′min″it), *n.* The work done in one minute of time by the expenditure of one watt of power; one sixtieth of a watt-hour.

watt-second (wot′sek″ọnd), *n.* The work done in one second of time by the expenditure of one watt of power; one sixtieth of a watt-minute. *C. Hering*, Conversion Tables, p. 74.

wauke (wou′kā), *n.* [Hawaiian.] In Hawaii, the paper-mulberry, *Papyrius papyrifera*, the inner bark of which was used for making the paper cloth or kapa of the natives. It was formerly much cultivated. Called also *waoke*. See *Broussonetia*, ★*kapa*, 1, and *tapa*.



Wauke
(*Papyrius papyrifera*).
a, branch with pistillate inflorescence; *b*, pistillate flower; *c*, staminate flower.

wauregan (wâ-rē′gạn), *a.* [Mohican *wauregan*, Massachusetts *wunnegan*, good, fine, pleasant, delightful, *wunnegik*, *wanegik*, that which is good.] Good; fine; showy.

Wauregan. A word which, according to Bartlett, was in the last quarter of the nineteenth century "still local in and about Norwich, Conn.," in the sense of "fine, showy." It appears frequently in the earlier literature of New England. It is best known from the epitaph (by Dr. Elisha Tracy) on the tombstone of Uncas, the Mohegan Indian, in the burying-ground at Norwich:—

For courage bold, for things *wauregan*,
He was the glory of Moheagon.

The word is derived from the Mohican (Mohegan) *wauregan* (Massachusetts *wunnegen*), "good, fine, pleasant, delightful," the radical being the Algonkian *wan* (*wun*, *war*, etc.), "good, beautiful." As a place-name it appears in Wauregan, Conn.
Jour. Amer. Folk-lore, Oct.–Dec., 1902, p. 265.

wave1, *n.* 10. A manufacturers' name for a defect in articles of glass, consisting in a slightly protuberant ridge on the surface due to the glass having cooled irregularly and too much before blowing.—**Capillary wave,** a surface wave on a liquid such as water, the wave-length of which is so small that the principal force acting to restore the liquid to equilibrium is that due to surface tension. Same as ★*ripple*3, 3.—**Compressional wave,** a wave in an elastic medium due to the sudden application of a pressure which does not produce shearing. In such waves the vibratory motion of the individual particles is perpendicular to the wave front. Sound-waves in air and other media are compressional waves.—**Concentric waves,** waves which start from a common source and consequently have parallel fronts.—**Condensational wave,** a wave of compression.—**Cosmic wave,** a wave traversing interplanetary or interstellar space.—**Electromagnetic waves,** the method by which energy is supposed to be transferred from the sun to the earth, or from the transmitter to the receiver in the systems of wireless telegraphy, namely, by vibrations in planes perpendicular to the lines of propagation.—**Extraordinary wave,** that one of the two waves in a doubly refracting medium which undergoes extraordinary refraction. See *refraction*.—**Fessenden wave,** an electric oscillation which follows a conductor and for which the electrostatic and electromagnetic energies coincide as to time.—**Gravitational wave,** a water wave of which the wave-length is so great that the effect of surface-tension is inappreciable.—**Hertz wave.** See *Hertzian* ★*wave*.—**Hertzian wave,** an electromagnetic disturbance of the ether similar to a light-wave but of much greater wave-length: so named from Heinrich Hertz, who, in 1888, first showed experimentally how such waves may be produced and made a thorough investigation of their properties. See *wave*1, 3.

We see references to what are called "*Hertzian waves.*" These are waves identical in nature with light waves, but of much lower pitch or period. Red light consists of about four hundred millions of millions of electrical waves in the ether per second; blue or violet light about double that number. Hertz showed in his experiments that electric sparks between polished balls, under proper conditions, were attended by ether waves of the same nature as those of light, but having a pitch represented by some millions of vibrations per second. These waves, however, could be reflected, could be refracted, could be polarized, and be dealt with as if they were light waves.
E. Thomson, in Smithsonian Rep., 1900, p. 356.

High-frequency wave, a wave due to the vibrations of a body or medium the oscillations of which are very rapid. The term 'high frequency' is purely relative. Thus the waves of the ultra-violet portions of the spectrum are high-frequency waves compared with those of the infra-red; the sound-waves giving tones near the upper auditory limit are high-frequency waves compared to waves corresponding to the lower auditory limit; and the electric oscillations in a Tesla coil send out high-frequency waves in contrast to those from an ordinary induction-coil. See ★*frequency*, 3.—**Lodge wave,** an electric oscillation which follows a conductor and for which the electrostatic energy is a maximum at the instant when the electromagnetic energy is a minimum: named for Sir Oliver Lodge.—**Plane wave,** in *physics*, a wave the front of which is a plane. The wave reflected from a concave mirror is a plane wave when the source from which the incident wave reaches the mirror is at the principal focus of the latter.—**Pole of a wave.** See ★*pole*2.—**Slab wave.** See ★*slab-wave*.—**Solitary wave,** a translatory wave of water in which the water actually moves forward but does not produce other waves.—**Spherical wave,** in *phys.*, a wave, as a light-wave or sound-wave, the front of which forms part of the surface of a sphere. All waves coming from a single point and transmitted through an isotropic medium are spherical waves.—**Standing wave,** the form of undulatory disturbance produced by the interference of wave trains under conditions such as to form a system of nodes and antinodes that are stationary in space, as in an organ-pipe.—**Stationary wave,** the sinusoidal curve in which a particle of fluid moves after being forced out of its original rectilinear motion by the presence of some obstacle and left free to return to equilibrium. According to Margules the areas of high pressure and low pressure in the atmosphere may be the summits and troughs of stationary waves. A series of clouds marks the summits of a series of stationary atmospheric waves to the leeward of a mountain.—**Tonal wave.** Same as ★*tone-wave*.—**Trochoidal theory of the deep-sea wave,** in *naval arch.*, a theory in which the sea is supposed to be of unlimited extent and depth, and the water a frictionless incompressible liquid. Supposing a permanent uniform system of deep-sea waves to have been set up in the water, the dynamical and mathematical conditions of wave-motion are satisfied by considering each fluid particle to be moving with uniform velocity in a vertical circular orbit the plane of which is parallel to the direction of motion of the wave. The radius of the orbit of any particle diminishes rapidly with the depth from the surface in accordance with a certain formula. If we consider a circle the circumference of which is equal to the length of the wave from crest to crest to roll on a horizontal line at its top, any fixed point in the interior of the circle will describe a trochoid which will be the profile of the wave-surface or of a wave-subsurface. If we suppose the water originally at rest to be divided into horizontal layers, then the particles on the surface layer are all on the trochoidal wave-surface and each subsurface layer will be in a corresponding trochoidal wave-subsurface. The radius of the tracing-point of a trochoid in the interior of the rolling circle is the radius of the orbit of any particle in the wave-subsurface considered. The height of the wave is the vertical distance from trough to crest, equal to the diameter of the orbit of the particles in the surface layer. The period of the wave is the uniform time each particle takes to make one revolution in its orbit, which is also the time required for the crest of the wave to travel its own length. The speed of advance of the wave crest, in feet per second, is equal to 2¼ times the square root of the length approximately. The complete statement of the theory requires elaborate mathematical treatment. It is to be remarked that while the form of the wave has a continuous motion of translation, the particles forming the wave only rotate around a fixed center. It is obvious that a compound wave can be formed by the superposition of several simple trochoidal waves upon one another. Experience shows that in the ocean a long regular series of waves approximates closely to the motions called for by the trochoidal theory. To retain such practical conformity, the depth of water must not be less than the wave-length. In water of less depth the orbits of the particles become ellipses with the major axes horizontal.— **Water wave,** a wave of which the medium of propagation is water. The term *water wave* is frequently confined to surface waves on water, waves of the nature of sound-waves, which are transmitted through the interior of the fluid, being excluded.— **Wave indicator,** a device, such as an oscillograph, for showing the wave-form of an alternating electric current.— **Wave of displacement,** the wave set up by the bow of a vessel moving through the water or by a projectile moving through a fluid.— **Wave of explosion,** the propagation of an explosion from particle to particle through an explosive mixture, either radially from a center or longitudinally from one end to the other of a train of particles. The velocity depends on the chemicals, the size of the particles, the temperature, the closeness of packing or density, etc. The velocity of propagation through a mixture of oxygen and hydrogen is 28.14 meters per second, whereas the velocity of a sound-wave is 514 meters per second. The intensity of any explosion depends largely on the velocity of the wave of explosion.— **Wave of replacement,** the wave having its origin at the stern of a vessel or a projectile which is moving through a fluid. *White,* Manual of Naval Arch., p. 458.— **Wave velocity.** See ★*velocity.*

wave-crest (wāv′krest), *n.* The highest part of a wave or the line along the top of a wave.

wave-cut (wāv′kut), *a.* In *geol.*, a term applied to forms produced by the erosive action of waves.

> Vertically, the waves cut in a narrow zone like a horizontal saw. If the material above this zone of cutting is undermined, it may fall of its own weight, leaving a cliff at the shoreward margin of the cut. This cliff is called a *wave-cut* cliff or sea-cliff.
> *R. D. Salisbury,* in Geol. Surv. of New Jersey, 1893, p. [232.

wave-cylinder (wāv′sil″in-dėr), *n.* A hollow metal cylinder for use in the wave-siren. Two wave-forms are set out as curves around the periphery of the cylinder, above and below, and the edges are then cut away along the line of the curves. Several such cylinders may be mounted upon the same vertical axis.

wave-detector (wāv′dẹ̄-tek″tọ̈r), *n.* A ★coherer.

> The centre of interest in wireless telegraphy seems to be shifting from the *wave-detector* or coherer to the means of producing the energy required to act upon it.
> *Athenæum,* March 18, 1905.

wave-disk (wāv′disk), *n.* A metal disk for use in the wave-siren. The wave-form required is set out as a curve around the periphery of the disk, and the edge is then cut away along the line of the curve. *Smithsonian Rep.*, 1890, p. 349.

wave-form (wāv′fôrm), *n.* The form assumed by oscillations, as in water, sand, etc.

> The Gill Memorial to Mr. Vaughan Cornish, for his researches on sea-beaches, sand-dunes, and on *wave-forms* in water. *Geog. Jour.* (R. G. S.), XV. 639.

wave-mark (wāv′märk), *n.* The small ridge of sand heaped up by a wave at the limit of its advance when rolling in on a beach. Wave-marks are often preserved when the sand subsequently is buried and consolidated into rock. *J. D. Dana,* Manual of Geol. (4th ed.), p. 94.

wave-marked (wāv′märkt), *a.* Ripple-marked.

> This stratum has an extension of at least ten miles. About five and a half miles south of Versailles, the top of the Lorraine is formed by a *wavemarked* layer of limestone. *Amer. Geol.*, June, 1903, p. 356.

wave-marking (wāv′mär″king), *n.* A ripple-mark; ripple-marks collectively.

> The lowest Richmond beds at Lebanon, Ohio, are wave-marked. Numerous other instances of *wavemarking* at this horizon might be given.
> *Amer. Geol.*, June, 1903, p. 356.

wave-motor (wāv′mō-tọ̈r), *n.* A machine or apparatus designed to render the energy in the waves of a body of water, as the sea or a bay, available as a source of power. Such motors are of several forms: some use the impact of the breaking wave against a surface; others the rise and fall of floating masses as the waves pass under and lift them; others the rush of masses of water up a sloping beach. Such motors have difficulty with the variation of the tides and they are liable to wreckage in storms. The waves are not uniform in their action, and the power is not subject to control. They are more used on the Pacific coast than on the Atlantic, but are not reliable or long-lived anywhere.

wave-rate (wāv′rāt), *n.* In *acoustics,* vibration-rate; pitch-number.

> Two musical notes whose *wave-rates* do not differ at least a fifth of a vibration a second, seem to the most delicate ear to be of identical pitch.
> *G. M. Stratton,* Exper. Psychol. and its Bearing upon [Culture, p. 83.

wave-siren (wāv′sī″ren), *n.* [Translation of F. *sirène à ondes.*] A siren in which a current of air is driven through a narrow slit against an undulatory curve, of determinate form, cut in a metal plate: very much as, in the ordinary siren, the current is driven through circular orifices against holes of circular form. *Smithsonian Rep.*, 1890, p. 353.

wave-slope (wāv′slōp), *n.* In *naval arch.*, the angle of inclination of the surface of a wave at any point to the horizontal. *White,* Manual of Naval Arch., p. 212.—**Effective wave-slope.** The slope of the surface of a wave at any point is its inclination to the true horizontal at that point, and the instantaneous direction of the resultant fluid pressure on the outer wave-surface is normal to the wave-slope. In the similar subsurfaces in the interior of the wave, the direction of the resultant pressure differs less from the true vertical. A rigid body like a ship is affected by the fluid pressures in all the surfaces to which it penetrates, and the average resultant direction of the pressures is normal to the average or effective wave-slope in the part considered.

wave-train (wāv′trān), *n.* A series or succession of equidistant waves, sent out along the same path by a vibrating body.

waw^5 (wou), *n.* [Heb. *wāw.*] The sixth letter (ו) of the Hebrew alphabet, corresponding to the English *w* (*v*) or the Latin *v* (whence it appears as modern *v* in the English form of the Hebrew words. Its numerical value is VI.

wax^2, *n.*— **Andaquies wax,** a wax, produced by a wild bee found in the Orinoco and Amazon valleys in South America, used in making candles.— **Arjun wax.** Same as *Indian* ★*wax.*— **Balanophore wax,** a wax of the consistency of natural beeswax obtained from the parenchymatous tissue of *Langsdorffia hypogæa,* a native of Brazil.— **Bayberry wax.** Same as *myrtle-wax.*— **Becuiba-wax.** Same as *becuiba-tallow,* which see, under *tallow.*— **Black wax.** (*a*) Beeswax mixed with rosin and coal-tar, formerly in use in arsenals in making cartridges. (*b*) Black sealing-wax. (*c*) A local name in Texas for sticky clay containing much black-colored humus.— **Candleberry wax.** Same as *myrtle-wax.*— **Cane-sugar wax.** Same as *cerosin,* $C_{24}H_{18}O$.— **Cochineal wax.** See ★*cochineal.*— **Cork-wax.** Same as *cerin,* 2.— **Cow-tree wax.** See ★*cow-tree.*— **Earth-wax.** Same as *ozocerite* or *mineral wax.*— **Fig wax,** a vegetable wax, obtained from the sap of the wax fig-tree, *Ficus ceriflua* or *cerifera,* found in Java and Sumatra. Used in making candles. Also known as *Java wax* or *getah wax.*— **Indian wax,** an insect wax from *Ceroplastes ceriferus.* Also known as *Arjun wax.* — **Insect wax,** wax secreted by the Chinese wax-insect, *Ericerus pela* (*Coccus sinensis* or *C. pela*). Also known as *Chinese wax* and *pehla* or *pe-la wax.*— **Java wax.** Same as *fig* ★*wax.*— **Milk-tree wax,** a resinous, yellowish, waxy solid contained, to the extent of 30-35 per cent., in the sap of the South American cow-tree, milk-tree, or *palo de vaca, Brosimum galactodendron.* It is used by the natives for making candles.— **Myrtle-berry wax.** Same as *myrtle-wax.*— **Opium wax,** a white crystalline substance, a mixture of ceryl cerotate and palmitate, from the seed-vessels of the poppy, *Papaver somniferum.*— **Sugar-cane wax,** a white crystalline substance found on the surface of the stem of the sugar-cane, particularly the violet cane, which can easily be scraped off, and is sometimes seen in the melted state floating on the surface of evaporating cane juice. It appears to consist chiefly of ceryl cerotate and palmitate.— **Yellow wax,** a manufacturers' name for the last distilled product obtained from petroleum when the bottom of the still begins to be red-hot. It consists of impure anthracene, chrysene, picene, and other hydrocarbons of high molecular weight.

wax^3 (waks), *v. t.* [*wax*^{3}, *n.*] To beat; thrash. [Colloq.]

wax-butter (waks′but″ėr), *n.* A semisolid substance produced by the destructive distillation of beeswax. It consists mainly of the hydrocarbons cerotene and melissene with palmitic acid.

wax-extractor (waks′eks-trak″tọr), *n.* In *bee-keeping,* an appliance for melting empty honeycomb to extract and clarify the beeswax. The most simple form is a wooden box having a glass cover and containing a tray for the comb and a vessel to catch the melting wax. Exposed to bright sunlight, the comb under the glass readily melts and runs down the tray into the vessel. A larger appliance consists of a sheet-metal vessel fitted with a wire basket and screw-press. The comb is placed in the basket and a little water is put in the bottom of the vessel; when this is placed on a stove, the steam from the water melts the wax, causing it to run out through a spout, the press assisting the process by squeezing the wax out of the melting comb.

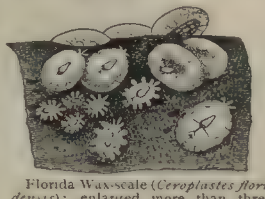
wax-gland (waks′gland), *n.* A minute unicellular dermal gland which secretes wax. Wax-glands are found in the abdominal integument of certain bees and are variously scattered over the surface of the body in very many homopterous insects.

wax-hair (waks′hãr), *n.* One of the long hairs which occur on the bodies of the young of the *Psyllidæ* or flea-lice. *Cambridge Nat. Hist.*, VI. 580.

wax-leather (waks′leᴛʜ″ėr), *n.* Leather finished on the flush side. *Flemming,* Practical Tanning, p. 264.

wax-press (waks′pres), *n.* See ★*wax-extractor.*

wax-scale (waks′skāl), *n.* 1. See *wax-insect,* 1. —2. One of the plates of wax in a wax-pocket of a wax-insect.— **Florida wax-scale,** a wide-spread scale-insect, *Ceroplastes floridensis,* which occurs in most of the warmer parts of the world and lives on many tropical and subtropical plants, including some of economic importance, as orange, lemon, fig, tea, guava, mango, and pomegranate.



Florida Wax-scale (*Ceroplastes floridensis*): enlarged more than three diameters. (Marlatt, U. S. D. A.)

> The *Florida wax scale* is three-brooded, development not being very rapid and extending over three or four months. The adult female insect, covered as it is with its waxy secretion, measures from 2 to 3 millimeters in length, is oval in form, and is characterized by a large central waxy prominence surrounded by six or eight smaller prominences, all, owing to the melting and cooling of the wax, much less distinctly limited than with [the species to be next considered. The waxy secretions give an appearance to the young insect of an oval stellate object. *Yearbook U. S. Dept. Agr.*, 1900, p. 277.

waxt, *p. a.* A simplified spelling of *waxed.*

way^1, *n.*— **Combust way.** See ★*combust.*— **Four-foot way.** See *six-foot* ★*way.*— **Maintenance of way,** in *railroading,* the business of caring for, repairing, guarding, and maintaining in a safe and efficient condition the road-bed, bridges, culverts, embankments, and tracks that form the permanent way. It is generally a department under the control of a division superintendent.— **Right of way.** (*d*) A lane.

> In England the word indicates a legal right to use a particular passage. In Australia it is used for the passage or lane itself. *E. E. Morris,* Austral English.

Six-foot way, a local railroad term for the foot-path or space between two tracks left for safety in passing trains and for convenience in repairing the tracks. Sometimes called *four-foot way.* [Rare.]— **Sun's way.** See ★*sun*^{1}. — **Way enough,** an order to stop rowing.— **Way of the wine,** movement or passage from left to right, as wine is circulated at table.

> We caught only a hurried glimpse as we passed on; for the order in which the sights of a Buddhist temple may be visited is invariable, and we took care not to offend the susceptibilities of the lamas by deviating from the orthodox left-to-right course which forms part of their religious observances. The '*way of the wine*' is a custom which would need no explanation to a Buddhist.
> *P. Landon,* The Opening of Tibet, p. 389.

wayang (wä′yäng), *n.* [Javanese and Malay *wāyang,* a stage play, with puppets or with living actors.] The shadow-play of Java, played with colored marionettes cut out of flat pieces of leather.

way-gone (wā′gôn), *a.* Wearied by travel; exhausted by walking. [Rare.]

> Who halts at prospect of the pinnacle
> That gives him note his journey's end is nigh,
> Except with fever of inquietude?
> *Way-gone* and crippled, rather would he on,
> Than lay him down and rest another night.
> *J. S. Knowles,* The Secretary, iii. 1.

way-surface (wā′sėr″fạ̄s), *n.* A bearing surface or track along which the laterally moving part of any mechanism slides: as, the *way-surface* of a milling-machine or of a dividing-engine.

> Only one of the three *way-surfaces* used to be accurately straight.
> *A. A. Michelson,* in Physical Review, June, 1905, p. 390.

W. B. An abbreviation (*a*) of *Water Board;* (*b*) of *way-bill.*

W. B. M. An abbreviation of *Woman's Board of Missions.*

W. C. An abbreviation (*a*) [*l. c.* or *cap.*] of *water-closet;* (*b*) of *Wesleyan Chapel;* (*c*) of *Western Central* (*London Postal District*); (*d*) [*l. c.*] of *without charge.*

W. C. A. An abbreviation of *Women's Christian Association.*

W. C. T. U. An abbreviation of *Woman's Christian Temperance Union.*

We. An abbreviation of *Wednesday.*

weakfish, *n.*—**Bastard weakfish.** Same as *white weakfish* (which see, under *weakfish*).

wealth-flow (welth′flō), *n.* Income; the amount of wealth which comes into existence in a fixed period of time. *Baldwin,* Dict. of Philos. and Psychol., I. 155. [Rare.]

wealth-fund (welth'fund), *n.* The aggregate of wealth which exists at a given moment, as contrasted with the income which comes into existence in a given time. The wealth-fund is regarded by some economists as capital, rightly conceived. *Baldwin*, Dict. of Philos. and Psychol., I. 155.

weaner (wē'nėr), *n.* A metal guard fastened to the nose of a sucking calf to wean it; a calf-weaner.

wear¹, *v. t.*—**To wear ship**, to put the helm up and bring the vessel around to a new tack by changing the wind across the stern. This is done in a heavy sea when tacking is not advisable owing to the danger of missing stays, and the accompanying chance of getting sternboard on the vessel.

weather, *n.*—**Broken weather**, unsettled weather.—**Falling weather**, rainy or snowy weather; weather which threatens rain, hail, or snow.—**Radiation weather**, the general atmospheric conditions peculiar to the clear dry atmosphere which prevails within areas of high pressure or descending air when terrestrial radiation of heat has its maximum influence.—**Weather forecaster.** See ★*forecaster.*

weather-card (weᴛʜ'ėr-kärd), *n.* A diagram showing the average or typical weather conditions as to pressure, temperature, wind, cloud, rain and local thunder-storms, tornadoes, and waterspouts on each side of the moving areas of high or low barometric pressure.

weather-case (weᴛʜ'ėr-kās), *n.* A case or small cupboard containing aneroids, thermometers, and hygrometers, and instructions for their use in making local forecasts: originally furnished by the United States Signal Service to voluntary observers.

weather-cloth, *n.* (*c*) The tarpaulin or sail sometimes exposed in the after weather rigging to keep a ship's head forced up to the sea and wind when she is hove to.

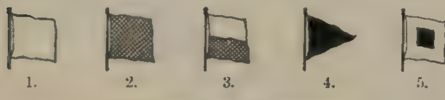
weather-cycle (weᴛʜ'ėr-sī″kl), *n.* The periodic recurrence of any feature of the weather. Such cycles are rarely definite enough to allow judicious forecasts to be based upon them. The ordinary weather may be regarded as complexly compounded from innumerable unknown cycles.

weather-deck (weᴛʜ'ėr-dek), *n.* *Naut.*, an uncovered deck exposed to the weather.

weather-door (weᴛʜ'ėr-dōr), *n.* **1.** A storm-door.—**2.** A swinging door or trap-door in an air-passage or gangway of a mine, designed to be closed in winds or storms. *Coal and Metal Miners' Pocketbook.*

Weathered clay. See ★*clay.*—**Weathered crust.** See ★*crust.*

weather-flag (weᴛʜ'ėr-flag), *n.* A flag used as a weather signal; specifically, one of the flags used by the United States Weather Bureau since 1891 to indicate the character of the weather expected to occur at the locality within thirty-six hours.



U. S. Weather Bureau Weather-flags.

Cross-hatching represents the color blue. The flags indicate: 1, alone, fair weather, stationary temperature; 2, alone, rain or snow, stationary temperature; 3, alone, local rain or snow, stationary temperature; 1, with 4 above it, fair weather, warmer; 1, with 4 below it, fair weather, colder; 2, with 4 above it, rain or snow, warmer; 2, with 4 below it, rain or snow, colder; 3, with 4 above it, local rain or snow, warmer; 3, with 4 below it, local rain or snow, colder; 5, cold wave.

weather-forecast (weᴛʜ'ėr-fōr″kȧst), *n.* A prediction of anticipated weather; specifically, the official published daily weather predictions (formerly known as weather indications or weather probabilities) for the next 24, 36, or 48 hours, based on the comparative study of daily weather-charts. Not to be confounded with *seasonal forecasts.*

weather-gaw (weᴛʜ'ėr-gâ), *n.* Same as *water-gall*, 2.

weather-guard (weᴛʜ'ėr-gärd), *n.* A protection or shelter against (bad) weather or storms.

weather-guard (weᴛʜ'ėr-gärd), *v. t.* To guard against (bad) weather or storms.

> The pioneers attend to this work, trenching the ground, *weather-guarding* the shelters.
> *Buck*, Med. Handbook, I. 477.

weathering, *n.*—**Belt of weathering**, the outer portion of the earth, which stands between the surface and the ground water, and which is therefore subject to active percolation. See *belt of* ★*solution.* *Van Hise*, in U. S. Geol. Surv., Monographs XLVII. i. 43.

weather-lights (weᴛʜ'ėr-līts), *n. pl.* The auroral light, so called because supposed by some to be indicative of approaching dry weather, or the result of preceding clear, cool weather. The term is also applied to the very distant flashes of light known as 'heat-lightning' or 'sheet-lightning,' which often follow a hot summer day and are supposed to be due to the heat, although they are generally due to the existence of thunder-storms in the distance.

weather-lore (weᴛʜ'ėr-lōr), *n.* The accumulated proverbs and superstitions relative to the weather, especially in its relation to man, animals, the stars, the moon, and plants.

weather-period (weᴛʜ'ėr-pē″ri-ọd), *n.* **1.** A cycle of time within which one or more types of weather may recur regularly.—**2.** An indefinite period of time within which certain weather changes repeat themselves in a given order of recurrence but without restriction as to the variable duration of the period.

weather-register (weᴛʜ'ėr-rej″is-tėr), *n.* An hourly or daily meteorological record of weather conditions at any station; a register kept by observers, as distinguished from an automatic record of conditions.

weather-rope (weᴛʜ'ėr-rōp), *n.* A tarred rope; a rope that will shed water owing to a coating of tar on its surface.

weather-sharp (weᴛʜ'ėr-shärp), *n.* One who understands the weather; a good weather forecaster; an official meteorologist. [Colloq.]

weather-shooting (weᴛʜ'ėr-shö″ting), *n.* The attempt to produce rain by the detonation of explosives or the sending up of smoke-rings or vortex-rings from specially constructed cannon. [Colloq.]

weather-table (weᴛʜ'ėr-tā″bl), *n.* Same as *water-table*, 1.

> A *weather-table* on the north wall [of a crypt at Iona] indicated that the side aisles had at one time extended westward to the transept.
> *The Antiquary*, Jan., 1906, p. 7.

weather-type (weᴛʜ'ėr-tīp), *n.* A distinctive kind of weather experienced at any station when the centers of high and low pressure have certain specific locations relative to the station. Very many such types have been described. Abercromby characterizes British types by the prevailing winds, namely: (1) the southerly wind-type, in which an anticyclone lies to the east or southeast of Great Britain; (2) the westerly wind-type, in which the tropical belt of anticyclone lies to the south of Great Britain; (3) the northerly wind-type, in which the anti-cyclone or the eastern part of the tropical belt of high pressure lies to the west and northwest of Great Britain; (4) the easterly wind-type, in which the high pressure of Asia and southern Europe appears in the northeast of Europe, rarely extending beyond the coast-line, while the Atlantic high pressure is feeble or absent.

weather-whistle (weᴛʜ'ėr-hwis″l), *n.* A signal given by means of a whistle, usually the steam-whistle of a factory, to announce to the public the forecast of the local weather and temperature for the next twenty-four hours as telegraphed from the Weather Bureau at Washington. The signal consists of a succession of long blasts and short blasts; for example, one long blast, fair weather; two long, rain or snow; three long, local rain or snow; four long, heavy snow; one short, lower temperature; two short, higher temperature; three short, a cold wave.

weav, *v.* and *n.* A simplified spelling of *weave*¹.

weavable (wē'vạ-bl), *a.* [*weave*¹ + *-able.*] Capable of being woven.

weave¹, *n.*—**Batavia weave**, a kind of twilled armure weave made on four harnesses.—**Cross-warp weave**, a weave in which the warp-threads cross one another in regular order, as in gauze- or leno-weaving.—**Plain weave**, the simplest form of weaving; the alternate interlacing of the warp-threads with the weft-threads. Sometimes called *cotton-weave.*

weaver, *n.*—**Cobweb weaver**, any spider of the family *Theridiidæ*, many of which inhabit houses. *Comstock*, Manual of Insects, p. 34.—**Social weaver**, *Philhetærus socius*, a weaver-bird of Central Africa which nests in companies of a hundred or more, building a structure as large as a hay-stack.

web, *n.*—**Half-tone web**, a glass plate containing two sets of opaque lines crossed at right angles, forming a dark ground pierced with small, transparent squares, used for the purpose of getting lines and dots in the negative.

webbing, *n.* **4.** *pl.* Reins. [Slang.]

> You did an infernal fool trick, but you 've saved me Tommy Eye, the best teamster on the Umcolcus waters. As he lies there now he ain't worth half a cent a pound to feed to cats; when he 's on a load with the *webbin's* in his hands I would n't take ten thousand dollars for him.
> *Holman Day*, King Spruce, iii.

webbing-moth (web'ing-môth), *n.* Any one of the true clothes-moths.

Weber-Fechner law. See ★*law*¹.

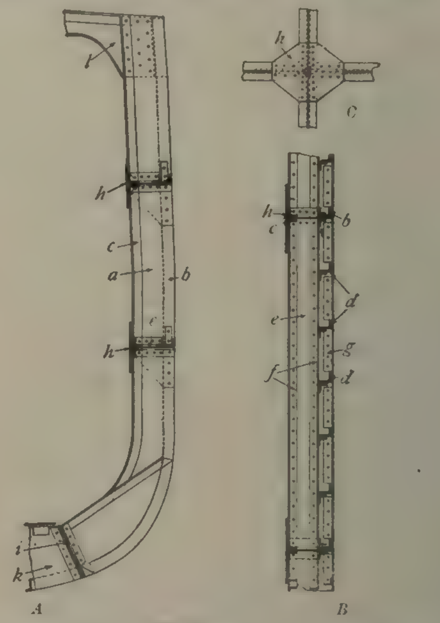
Weber formation. See ★*formation.*

web-foot, *n.* **2.** A native, or citizen of the State of Oregon: so called on account of the moist climate. *N. and Q.*, 9th ser., VII. 135. [Slang.]

web-footed, *a.* **2.** Said of a horse which goes best on a muddy or very wet track. [Racing slang.]

> Ravena and Bill Phillips, which finished second and third to Reddick, are by Clifford and Ornament respectively, both racers that were able to run stoutly on any kind of a track. The fifth event finds Saladin the winner, and he is by Albert, who, it has been said, never bred anything but *web-footed* colts and fillies.
> *N. Y. Evening Sun*, Aug. 17, 1905.

web-frame (web'frām), *n.* In *iron ship-building*, an extra strong frame composed of a frame-bar and a web-plate stiffened at the back edge by angle-bars. Such web-frames are fitted in place of every fourth, fifth, or sixth ordinary frame, where there are no hold-beams, or in spaces such as engine-rooms where there is great depth of side unsupported between the bottom and the lowest deck. See cut. On a merchant vessel the arrangement of the frames in the manner shown is called the *web-frame system.* On war-ships frames of the same character are frequently called *belt-frames*, and in such cases all the frames in a given region are usually of a web construction.



Web-frame.

A, elevation of web-frame and section of side-stringers; *B*, plan of side-stringer and section of frames; *C*, side elevation of junction of web-frame and stringer; *a*, web-plate; *b*, frame-bar; *c*, double reverse bars; *d*, ordinary frames; *e*, stringer-plate; *f*, stringer-bars; *g*, intercostal clip; *h*, diamond-plate; *i*, margin-plate; *k*, floor-plate; *l*, deck-beam.

web-member (web'mem″bėr), *n.* An element in a truss or braced girder, either in tension or compression, by which the stresses are conveyed from top chord to bottom chord, or in the reverse direction, and which acts as the solid web-plate does in the solid I-beam or the plate-girder.

webnerite (web'nėr-īt), *n.* [Named for A. *Webner*, a mining engineer.] Same as ★*andorite.*

web-plate (web'plāt), *n.* In a beam made to resist transverse or bending stress, the plate in the plane of the action of the load which joins the upper and lower flanges of the beam, resists the tendency to buckle, and withstands the shear. In very deep plate-girders, the web or vertical plate requires to be reinforced to prevent it from deforming under load: this is done by angle-irons or by extra plates.

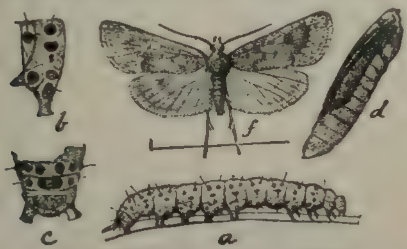
webskyite (veb'ski-īt), *n.* [Named for the German mineralogist, Martin *Websky* (1824–86).] An alteration-product of serpentine which occurs in pitch-black amorphous forms at Krems, in Bohemia.

websterite² (web'stėr-īt), *n.* [*Webster* county, N. C., + *-ite*¹.] In *petrog.*, a phaneric, granular igneous rock composed of orthorhombic and monoclinic pyroxenes; a variety of pyroxenite. *G. H. Williams*, 1890.

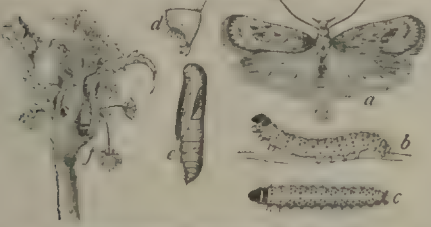
web-system (web'sis″tem), *n.* A group of web-members in a truss or girder, replacing the solid plate of a plate-girder, or the lattice-braces in a lattice-girder. See ★*web-member*.

web-work (web′wėrk), *n.* The structural part or web of a textile fabric.

web-worm, *n.*—**Alfalfa web-worm,** the larva of a pyralid moth, *Loxostege commixtalis*, common to Europe and North America. It feeds on alfalfa and other plants in the northwestern United States.—**Cabbage web-worm,** the larva of a pyralid moth, *Hellula undalis*, probably imported accidentally from Europe into the southern United States and California where it injures cabbage, turnips, and beets. *Yearbook U. S. Dept. Agr.*, 1900, p. 727.—**Corn-root web-worm.** See ★*corn*1.—**Garden web-worm,** the larva of a pyralid moth *Loxostege similalis* (formerly *Eurycreon rantalis*), which damages garden and field crops and which spins more or less silk.—**Parsnip web-worm,** the larva of an œcophorid moth, *Depressaria heracliana*, common to Europe and the United States. It feeds on the flower-heads and leaves of parsnip, protecting itself by a web.—**Pine web-worm.** Same as ★*pine-pest.*—**Privet web-worm,** the larva of a pyralid moth, *Diaphania quadristigmalis*, which occurs in the United States, the West Indies, and South America. The larva feeds on the terminal shoots of privet, hiding in a silken web.—**Root web-worm,** the larva of any one of several moths of the family *Crambidæ*: as, the *corn-root web-worm* (which see, under ★*corn*1).—**Sooty corn-root web-worm.** Same as ★*stalk-worm.*—**Spruce web-worm.** Same as *spruce bud-worm* (which see, under *spruce*3).



Garden Web-worm (*Loxostege similalis*).
a, larva; *b*, *c*, larval segments; *d*, pupa; *f*, moth, slightly enlarged.
(Riley, U. S. D. A.)



Parsnip Web-worm (*Depressaria heracliana*).
a, adult; *b*, larva from side; *c*, larva from above; *d*, anal segment of pupa; *e*, pupa; *f*, work of larva.
(From "Insect Life," U. S. D. A.)

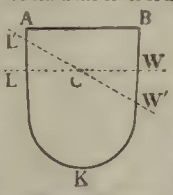
wedding, *n.* 2†. Anniversary of a wedding. [Rare.]

> So home and intended to be merry, it being my sixth *wedding*. *Pepys*, Diary, Oct. 10, 1661.

wedding-bells (wed-ing-belz′), *n. pl.* Church bells or chimes rung in celebration of a wedding.

wedding-flight (wed′ing-flīt), *n.* Same as *nuptial* ★*flight*.

wedge1, *n.* 5. In *geom.*, a prismatoid whose lower base is a rectangle, and upper base a line (sect) parallel to a basal edge.—6. In *ancient oriental archæol.*, an arrow-headed character, the shape of which was produced by pressing one corner of a solid square wand or the like into soft clay.—7. A playing-card so trimmed that one end is narrower than the other, so that when a certain part of the pack is turned round it can be withdrawn again at will, no matter how much the pack may be shuffled in the meantime.—**Compensating compound wedge,** a device of Spitta for placing an absorbent medium in the path of light-rays in a photometer. It consists of two wedges, similar in all respects, which by sliding, the one over the other, maintain a uniform thickness of the absorbing medium throughout the width of the slit. *W. M. Stine*, Photometrical Measurements, p. 90.—**Flying wedge,** in *foot-ball*, a group of men who get into rapid motion before reaching their opponents and thus strike them under headway.—**Miners' wedge,** a metal wedge used by miners for splitting off masses of coal.—**Optical wedge,** in *photog.*, a sheet of glass coated with a neutral-tinted film, graduated from transparency at one end to opacity at the other, and inserted in front of one of the lenses of a projection lantern.—**Ritchie wedge,** in *photom.*, a device for comparing the brightness of light-sources, described by Ritchie (1825). It consists of an opaque wedge with matte faces placed between the lights to be compared, with its edge toward the observer. When the illumination upon the two faces is equal, the brightness of the two sources is in the ratio of the squares of their distances from the wedge.—**Wedges of emersion and of immersion,** those portions of a floating body, specifically of a ship, which emerge from beneath the level of the liquid on the one hand, or become immersed, on the other, when the body is tipped or given a list without changing its displacement. Let A K B be the cross-section of a floating vessel, W L its water-line when upright, and W′ L′ its water-line when inclined: then W C W′ is a cross-section of the wedge of emersion and L C L′ of the wedge of immersion.



Wedge of Emersion and Immersion.

wedge1, *v. t.* 7. In *forestry*, to force by wedges (a tree that is being felled) to topple over.

wedge-gear (wej′gēr), *n.* A wedging device; an apparatus for moving a body or part by a wedging motion.

wedgewood (wej′wůd), *n.* [*wedge*1 + *wood*.] Wood made, or fit to be made, into wedges.—**Tough** or **stupid,** etc., **as wedgewood,** very tough, or stupid, etc. *N. and Q.*, 9th ser., X. 46. [Prov. Eng.]

weed1, *n.* 4. The vegetative parts of the cotton-plant as opposed to the flowers and fruit.

> Late cotton is thought [to be] more apt to run to *weed*. *U. S. Dept. Agr.*, Exper. Station, Bulletin 33, 1896, p. 250.

Mad-dog weed. (*a*) The water-plantain, *Alisma Plantago-aquatica.* (*b*) The mad-dog skull-cap or madweed, *Scutellaria lateriflora.*

weed1, *v. t.*—**To weed the rigging,** *naut.*, to clear the rigging by trimming loose ends of rope-yarns, rattling stuff, etc.

weeder, *n.*—**Riding weeder,** a weeder having a steel frame supporting three parallel horizontal steel angle-bars placed one behind the other, to which are attached sixty or more vertical steel teeth or weeding-points. The weight of the machine and the driver, who sits at the back of the machine, is supported in part by a pair of wheels and in part by the teeth, the weight upon the teeth, and the consequent depth to which they enter the ground, being under the control of the driver. The teeth are placed on the bars in diagonal lines to insure the complete breaking up of the surface of the soil and the destruction of the weeds.—**Walking weeder,** a smaller weeder of the same type, operated, by means of handles, by a man walking behind it.

weeding-hoe (wē′ding-hō), *n.* A combined rake and hoe.

weed-tree (wēd′trē), *n.* In *forestry*, a tree of a species which has little or no value.

week1, *n.*—**Baff week.** See ★*baff*3.—**Convocation week.** See ★*convocation.*—**Feast of Weeks.** See *Jewish* ★*festivals.* **Low week,** the week after Easter week, so called from its first day, Low Sunday.

week-end (wēk′end), *n.* The end of the week; by extension, the period from Friday night to Monday morning. Also used attributively: as, the *week-end* holidays. [Eng.]

> This brief holiday has got into serious history. No less an authority than Dr. S. R. Gardiner notes in his 'Oliver Cromwell' that
>
> "Oliver—if he invented nothing else—may be regarded as the inventor of that modified form of enjoyment to which hard-worked citizens have in our day given the name of the '*week-end*.'"
>
> He escaped from London to Hampton Court from Saturday to Monday. *Athenæum*, Aug. 10, 1901, p. 193.
>
> If the present weather continues, London certainly will empty for *week-ends* more than ever.
> *N. Y. Herald* (Paris ed.), June 2, 1903.

week-end (wēk-end′), *v. i.* To employ the week-end as a holiday season. [Eng.]

week-tenant (wēk′ten″ant), *n.* A tenant who rents by the week.

weep1, *v. i.* 6. To gather moisture in drops from the atmosphere, as a water-vessel cooled with ice, or a cool metal pipe in a room where steam is present or the atmosphere is humid; also leak slowly from a joint in drops.

weeper, *n.* 5. *pl.* Long side-whiskers.

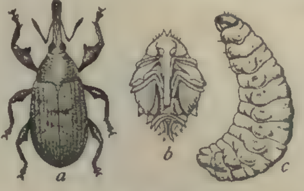
> The 'Piazza d'Erbe,' in fact, reminds us irresistibly of our own Mr. Frith; and the impression is strengthened by the presence in the foreground of a mid-Victorian Englishman with "Dundreary *weepers*."
> *Athenæum*, June 13, 1903, p. 760.

weequash (wē′kwosh), *n.* [Micmac (?) *wigwas* (also similarly in Passamaquoddy Cree, Ojibwa?), birch bark (canoe).] The act of spearing eels by night, from a canoe, with the aid of a torch or lantern. [New England.] *Jour. Amer. Folk-lore*, Oct.-Dec., 1902, p. 267.

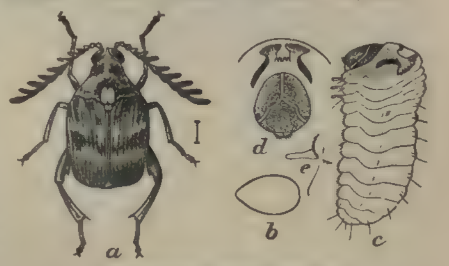
weequashing (wē′kwosh-ing), *n.* Also *wigwassing.* Same as ★*weequash.* Compare ★*neeskotting.*

weetweet2 (wēt′wēt), *n.* [Native name in Australia.] A throwing implement used by the aborigines of Victoria, Australia. It consists of a small piece of hard wood about an inch in diameter shaped like a double cone fastened to a slender, flexible rod about two feet long, and usually made in one piece. It is used in a game, the object being to throw it to the greatest possible distance. The total weight is less than two ounces. *Smyth*, Aborigines of Victoria, p. 352.

weevil, *n.*—**Black weevil.** Same as *rice-weevil.*—**Bronze apple-tree weevil,** a curculionid beetle, *Magdalis ænescens*, which in the western United States attacks the branches of the apple, particularly on spots which have previously been damaged by canker or sun-scald.—**Coffee-bean weevil,** a cosmopolitan anthribid beetle, *Aræcerus fasciculatus*, which damages many stored vegetable products, as coffee, cacao, dried apples, mace, and nutmegs. It also breeds in dry cotton-bolls and in the seeds of senna and wild indigo.—**Cotton-boll weevil,** a curculionid beetle which attacks the flowers and bolls of cotton in tropical America and which, about 1893, entered the State of Texas at Brownsville. It spread slowly through the State, crossed into Louisiana in 1903 and 1904, and threatens great damage to the cotton-growing industry of the United States. It caused an average annual loss to Texas in the years 1900 to 1905 of over $15,000,000.—**Cow-pea weevil,** a cosmopolitan bruchid, *Bruchus chinensis*, probably originating in eastern Asia, but now of very general distribution. It breeds in peas and beans of many varieties.—**Pales weevil,** a large, dark chestnut or black curculionid beetle, *Hylobius pales*, of wide distribution in the United States. Its larvæ burrow beneath the bark of the white pine, loosening it from the wood.—**Paraplectic weevil,** a European curculionid beetle, *Lixus paraplecticus*, whose larva bores in the stems of an umbelliferous plant the eating of which is supposed to cause blind staggers in horses.—**Root-weevil.** See ★*root-weevil.*—**Strawberry-weevil.** (*c*) Same as ★*strawberry-beetle*, 1.—**Sweet potato weevil.** Same as *sweet potato* ★*borer.*



Cotton-boll Weevil (*Anthonomus grandis*).
a, adult; *b*, pupa; *c*, full-grown larva: all enlarged.
(Howard, U. S. D. A.)



Cow-pea Weevil (*Bruchus chinensis*).
a, male weevil; *b*, egg; *c*, postembryonic larva; *d*, head of same; *e*, thoracic leg of same. *a*, much enlarged, *b*–*e*, more enlarged.
(Chittenden, U. S. D. A.)

wefted (wef′ted), *a.* [*weft*1, *n.*, + *-ed.*] Having the form of a weft or thin felt-like layer: said of the mycelium of fungi.

> More or less complex *wefted* sheets or tissue-like masses of such (mycelium). *Encyc. Brit.*, XXVIII. 554.

weft-fork, *n.*—**Center weft-fork,** a device fixed in the center of the reed-space of a loom for stopping the machine in case there is an omission of the weft at any throw of the shuttle. *T. W. Fox*, Mechanism of Weaving, p. 426.

Wehnelt break. An electrolytic interrupter for induction-coils. See ★*interrupter* (*a*).

Weierstrassian symbol. See ★*symbol*1.

Weigela (vī′ge-lạ̈), *n.* Same as *Weigelia.*

weigh1, *n.* 2. In *cotton-manuf.*, any given quantity of yarn delivered to an operative, for example, a winder, upon which wages are based. *R. Marsden*, Cotton Weaving, p. 412.

weigh-basket (wā′bȧs″ket), *n.* See ★*weigh-box.*

weigh-box (wā′boks), *n.* A chute used in delivering coal at a railroad coaling-station. It receives and weighs just enough coal to fill the tender of a locomotive or, when used in loading coal-cars, it measures a fixed weight of coal each time it is filled and discharged. It may be self-discharging and operated by hand or by power. A similar chute made wide and with open top for use in weighing and delivering coal from mine to car is called a *weigh-basket.* See ★*coaling-station*, 2.

weighing-globe (wā′ing-glōb), *n.* Same as ★*density-globe.* *M. W. Travers*, Exper. Study of Gases, p. 126.

weighing-head (wā′ing-hed), *n.* The element in a testing-machine connected to that part of the apparatus by which the stress passing through the test piece is weighed or measured by observation. See cut under ★*testing-machine.*

weighmaster (wā′mȧs″tėr), *n.* 1. The clerk or employee in any establishment who is in charge of the weighing-scales.—2. In Europe, a weigher of material, licensed by governmental authority to perform this duty publicly or in a market.

weighment (wā'ment), *n.* [*weigh*^{1}, *v.*, + *-ment.*] The performance of the act of weighing. [Rare.]

> Leaf *weighment* [in tea plucking] is one of the most important features of the day's work.
> *C. Bald*, Indian Tea, p. 165.

weight^1, *n.* **10.** In *math.*: (*a*) The number of roots of *x* appertaining to any given function or functions of *x*, which must be employed to express a quantity composed of the product of the coefficients. (*b*) With respect to any selected variable in a system of homogeneous functions, the sum of the weights in respect to such variable of the several coefficients of which the quantity is composed (the weight of each several coefficient meaning the index of the power of the selected variable in that term of the given function or functions which is affected with such coefficient). *Sylvester*, 1853.—**11.** In *archery*, the strength of a bow measured in pounds by the pull or weight necessary to fully draw the bow. —**Adhesion weight.** See ★*adhesion.*—**Combination by weight.** See ★*combination.* **Combining weights.** See ★*combine.*—**Curve of weight.** See ★*curves of ship calculations.*—**Galton's weights**, in *psychophys.*, a set of brass weights, made in cartridge form, and arranged for the easy verification of Weber's Law. *Francis Galton*, Human Faculty, p. 370.—**Molecular weight**, the weight of a molecule, that of hydrogen being taken as the standard.—**Near-weight detector**, an appliance used in connection with weighing-machines to indicate, as the material to be weighed is fed to the machine, that the desired quantity in weight is nearly supplied. It serves as a warning to the weigher against overweighing.—**Weight sensation.** See ★*sensation.*

weigh-tank (wā'tangk), *n.* A vessel so arranged that the tank and contents can be weighed at any time to determine the quantity of liquid withdrawn from it in a certain time or for a certain process or function. Any tank on a scales can be used for this purpose. *Jour. Brit. Inst. of Elect. Engin.*, 1904, p. 966.

weighting, *n.* **2.** The attachment to textile fabrics of substances which produce a spurious appearance of thickness and value: an adulteration frequently practised, and more common and carried much further on silk goods than on any others.

weight-money (wāt'mun"i), *n.* An early Chinese bronze coinage of the seventh to the third centuries B.C.

Weingarten triple. See ★*triple.*

weir, *n.*—**Bear-trap weir.** Same as *bear-trap* ★*dam.* —**Diversion weir**, a low dam or weir erected for the purpose of diverting water from a river or stream into the head of an irrigating canal or ditch. *H. M. Wilson*, Irrigation Engineering, p. 171.—**Drop-gate weir**, a low dam or weir the crest of which can be lowered when necessary to allow the water to pass unimpeded over the top. *H. M. Wilson*, Irrigation Engineering, p. 207.—**Flashboard weir**, the sill or base upon which flashing-boards are placed.—**Needle weir**, a form of movable weir or dam in which the portion of the waterway or channel to be regulated is closed by a series of disconnected, slender timbers, called *needles*, square or rectangular in cross-section and placed side by side in an inclined or vertical position, resting against a permanent sill on the bottom of the waterway and against a removable horizontal support near their upper ends. Various forms are used in the design of the upper movable supports for the needles and in the manner of manipulating them in the operation of opening and closing the dam, which when opened leaves an unobstructed waterway for the passage of flood-water or for navigation.—**Rated weir**, a measuring-weir, or overfall-dam, in which the quantity of water flowing over the dam per second has been determined and tabulated in terms of the depth of water flowing over the crest of the weir or dam. *Yearbook U. S. Dept. Agr.*, 1901, p. 420.—**Roller-way weir**, a dam with a movable crest, or portions which can be lowered on rollers or a similar sliding device, for permitting the free escape of water carrying ice, logs, or other debris. *H. M. Wilson*, Irrigation Engineering, pp. 192, 204.—**Shutter-weir**, a form of movable dam consisting of a series of individual narrow, rectangular wickets or shutters placed continuously side by side and together forming the entire barrier of the dam or weir. The individual character of each wicket or shutter permits the entire dam to be raised or lowered by operating one shutter at a time, and also permits the regulation of the flow of water, and hence the height of the water surface in the level above the dam to be regulated by opening or closing any desired number of shutters. *Nature*, Aug. 20, 1903, p. 363. —**Weir measurement**, the measurement of a flow of water by causing it to pass over a weir and observing accurately the width and the head, that is, the perpendicular distance between the edge of the weir and the level of the water at such a distance from the weir that its velocity is insensible. The effective weir is sometimes a rectangular or triangular notch in a thin board, and sometimes the smooth surface of a dam which has a broad crest of such slope that the flow of water while crossing it is uniform and rectilinear.

weir-box (wēr'boks), *n.* A vessel, usually rectangular, forming an enlargement in an open channel or flume, within which the current-flow may be reduced in velocity and the eddy action checked: designed to enable the water to approach a weir, at the down-stream end of the box, with the steady solid flow which is necessary if accuracy is to be secured in any measurements of flow depending on weir formulæ.

weir-crest (wēr'krest), *n.* The highest point in the current of water as it flows over a weir, as measured from the level of the bottom of the weir-notch or of the surface of the dam. The height of the crest is the height to be used in the formula to determine the volume passing the notch in a unit of time.

weir-notch (wēr'noch), *n.* See ★*weir measurement.*

weiselbergite (vī'zel-bėrg-īt), *n.* [*Weiselberg*, near St. Wendel, Germany, + *-ite*^{2}.] In *petrog.*, a porphyritic rock of pre-Tertiary age, which corresponds to a glassy and microlitic augite-andesite in composition and texture. *Rosenbusch*, 1887.

Weismannian (vīs-män'i-an), *a.* and *n.* **I.** *a.* Pertaining to or characteristic of the opinions of August Weismann or of his disciples. See ★*Weismannism.*

> To the method, observed by Boveri in *Ascaris*, in which both the divisions of the chromosomes are longitudinal and in which, accordingly, there is no reduction division in the *Weismannian* sense, the term eumitotic is applied, since it is the method characteristic of ordinary somatic mitoses.
> *Science*, June 5, 1903, p. 906.

II. *n.* One who adopts the views of August Weismann, especially with regard to heredity.

> While the line of argument will probably not be convincing to even the milder *Weismannians*, the wide range of illustrations brought together by the author will afford interesting reading to every zoölogist.
> *Amer. Nat.*, May, 1903, p. 349.

Weismannism (vīs'män-izm), *n.* **1.** The opinions and teachings of August Weismann, a noted German zoölogist and writer on speculative biology. In a memoir on the origin of the sexual cells of hydroids (1883), he showed that the sexual cells which undergo their development in the gonophores of certain hydroids are present, and recognizable, long before the gonophores, the blastostyles which carry them, or the hydranths which carry the blastostyles, come into being; and that the germ-cells reach their destination by long and complicated migrations along definite lines or germ-paths. He was afterward led, by reflection upon these facts and others, to the system of speculations about the nature of inheritance which is known by his name. These consist of the doctrine of germ-plasm together with the logical consequences of its acceptance. Germ-plasm is held to be the substance of inheritance, endowed with a complicated architecture, and never formed anew, being handed down from generation to generation in unbroken continuity. Among the logical consequences, real or assumed, of belief in this theory are: belief that germ-plasm, germ-cells, and unicellular organisms are potentially immortal, or independent of or exempt from natural death; that the development of multicellular organisms always is, has been, and must be, evolution or unfolding of the preëxistent; that cell-division is differential, consisting of the division of a cell into two or more with unlike values in inheritance and with unlike predetermined fates; that inheritance is due to the continuity of germ-plasm; that the somatic cells, or those which enter into the composition of the body, are out of the line of descent to future generations and subject to natural death, and that modifications produced in the soma ("acquired characters") are not and cannot be inherited by descendants, because the somatic cells have no descendants; that certain somatic cells serve as the bearers of germ-plasm along definite cell-paths to the regions of the body where new germ-cells are to be formed; that new hereditary modifications arise only in the germ-plasm through new combinations in sexual reproduction or amphigony; and that among these those that are fittest are preserved according to the principle of natural selection, which is the only and all-sufficient ground of the origin of species.
2. In popular biological literature, the doctrine or opinion that acquired characters are not, and can not be, inherited. See *doctrine of* ★*germ-plasm, substance* of ★*heredity, acquired* ★*character.*

Weismann's fibers. See ★*fiber*^{1}.

weiss-beer (vīs'bēr), *n.* See ★*beer*^{1}.

weiss-strahl (vīs'sträl), *n.* A pig-iron containing up to $4\frac{1}{2}$ per cent. of manganese. It is white in color and has a radiated fibrous or finely columnar fracture. It is used in certain processes for the manufacture of steel.

weka (wē'kä), *n.* [Maori.] One of several species of large, flightless rails of the genus *Ocydromus*, found in New Zealand: commonly known as *wood-hen.*

wel, *v. i.*, *n.*, *adv.*, and *a.* A simplified spelling of *well.*

welch^2, *v.* See *welsh*^{2}, *v.*

welcher, *n.* Same as *welsher.*

welcum, *a.*, *v. t.*, and *n.* An amended spelling of *welcome.*

welding (wel'ding), *n.* [*weld*^{2} + *-ing*^{1}.] The process by which substances, such as metal, are united or consolidated by hammering or compression with or without previous softening by heat.—**Electric welding**, the process of joining two surfaces of a metal by pressure when they have been made plastic by electric heat. The surfaces being brought near to each other, an electric current is passed between them. The resistance causes the formation of an electric arc at the point of approximate contact, and the intensity of the heat is so exactly controllable that most difficult joints are made with ease and certainty. Usually the two ends to be welded are held in specially constructed jaws which are electric conductors, so that by moving the ends together they are pressed properly together and the weld is completed.—**V-welding**, a method of welding iron in which the ends to be joined form an obtuse-angled V and a third piece of square section is inserted with its diagonals horizontal and vertical, fitting the two V ends. The whole is then heated and forged. It forms a butt-weld in effect, without overlapping the ends, and yet the surfaces of contact are larger, as in scarf-welding, and the mechanical pressure is effectively applied.

welding-hammer (wel'ding-ham"ėr), *n.* A hammer used by blacksmiths for striking the hard, quick blows necessary in welding.

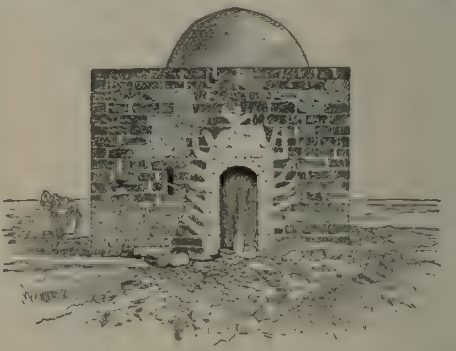
welding-machine, *n.*—**Electric welding-machine**, in *chain-making*, a machine for welding together the links of a chain by means of an electric current. The iron-wire links, bent into the required form in a bending-and-forming machine, are assembled in the same machine into an unfinished chain and fed to the welding-machine. Each link in turn is grasped by automatic clamps which press the open ends of the link together while a current is sent through the link. The gap in the link gives sufficient resistance to raise the metal at that point to welding heat when an automatic hammer strikes the link against an anvil completing the weld. The clamps release the welded link and take the next, the process being continuous. Similar machines are used to weld rods, bars, and other iron shapes.

weld-metal (weld'met"al), *n.* A name for metal of the class to which wrought-iron belongs, which has been built up from smaller masses to larger by the process of welding and pressure, instead of by a fusion process, the latter producing steels. The name has not been generally accepted in spite of its convenience. See *weld-iron* and *weld-steel.*

> Slag-bearing or "*Weld-metal*" Series.
> *Encyc. Brit.*, XXIX. 571.

Weldon mud, process. See ★*mud*, ★*process.*

weli (wel'ē), *n.* [Also *wely*, *welly*, Turk. *welī* (pron. vel'ī), Hind. *walī* (pron. väl'ī), Pers. *walī* < Ar. *walī*, a saint, patron, master.] **1.** In Mohammedan countries, a saint; a holy man. —**2.** Among European travelers in Mohammedan countries, a tomb or mausoleum (actually or nominally of a saint), visited as a shrine. *H. C. Butler*, Architecture and Other Arts, p. 247.



Weli.

well^1, *n.*—**Cold well**, a sump or collecting-basin in which is collected the water which has been cooled by passing over or through a cooling-tower. See ★*cooling-tower.*

> A 20-in. cast-iron main connects the four branches of the towers with the circulating pumps, each branch being controlled by a gate-valve. Underneath each tower is a settling well connecting with a central *cold-well* from which the condenser water is drawn.
> *Elect. World and Engin.*, Feb. 27, 1904, p. 396.

Ground-water well, a shallow well which derives water from the ground immediately surrounding it and is directly dependent upon the earth's saturation: called also a *surface well* or *seep-well.* *17th An. Rep. U. S. Geol. Surv.*, ii. 765.—**Seep-well.** Same as *ground-water* ★*well.*—**Surface well.** Same as *ground-water* ★*well.*

well^2, *a.*—**Well-the-braces**, *naut.*, an exclamation from the officer who is trimming the yards, signifying that the braces are not to be hauled on further, and that they are to be made fast or belayed.

well-come (wel-kum'), *a.* In *stock-raising*, noting an animal that has come from a good stock; of good pedigree.

> A bull may be a good individual, but is he, to use the Scotchman's phrase, "*well come*"? Were his sire, his grandsire, and his great-grandsire, his dam, his granddam, and his great-granddam good ones?
> *Rep. Kansas State Board Agr.*, 1901–1902, p. 60.

well-decked (wel′dekt), *a.* [*well*^{1}, *n.*, + *decked.*] In *iron ship-building*, noting a type of freight-steamer in which the side is carried up amidships above the upper deck to form a bridge-house closed by a bulkhead at each end. There is a forecastle deck at about the level of the bridge-house, and the upper deck between them is inclosed at the sides by high bulwarks, thus forming a sort of pit or well. To let the sea-water run out of the well, large freeing ports are cut in the bulwarks.

In the early 'nineties *well-decked* vessels formed a large proportion of the total number; but ten years later comparatively few of this type were being built, and these were principally intended for the coal trade, or were comparatively small vessels for coasting purposes.
Encyc. Brit., XXXII. 550.

well-in (wel-in′), *phrasal a.* Well-to-do; well off; wealthy. *E. E. Morris*, Austral English. [Australia.]

He 's a *well-in* squatter that took up runs or bought them cheap before free-selection, and land-boards, and rabbits, and all the other bothers that turn a chap's hair grey before his time.
Rolf Boldrewood, A Sydney-side Saxon, p. 1. Quoted
[in E. E. Morris, Austral English.

well-ordered, *a.* **2.** In *math.*, in the theory of assemblages, said of an aggregate or set when and only when its elements have been so disposed in fact or in thought, that: (a) of any two elements a and b, one, as a, precedes (that is, is of lower rank) and the other, as b, comes after (that is, is of higher rank); (b) of any triplet of elements a, b, c, if a is of lower rank than b, and b is lower than c, then a is lower than c; (c) the set has an element of lowest rank, a first term, and the same is true of every part of the set, that is, of every set whose elements are elements of the given set or series; (d) every element, unless it be the last, has an immediate successor; (e) the series satisfies Dedekind's postulate.

well-saffroned (wel-saf′rond), *a.* Well flavored or tinctured with saffron. [Rare.]

Thus they admonish: while thyself, I note,
Eatest thy ration with an appetite,
Nor fallest foul of whoso licks his lips
And sighs—'*Well-saffroned* was that barley-soup!'
Browning, Two Camels, l. 11.

well-set, *a.* **3.** In *cricket*, able to play the bowling with ease; unlikely to get out: said of a batsman.

wellsite (welz′īt), *n.* [Named for Professor H. L. *Wells* of New Haven, Conn.] A zeolitic mineral which belongs to the phillipsite group and occurs in complex twinned crystals analogous to those of phillipsite and harmotome. It contains less water than other members of the group: found in Clay county, North Carolina.

well-up (wel′up), *a.* In *cricket*, pitched nearer to the batsman than is proper; beyond a length: said of the ball. *Hutchinson*, Cricket, p. 65.

well-wheel (wel′hwēl), *n.* A large pulley-wheel supported by a swivel-hook, used to support the rope of a well.

Welsbach burner, lamp. See ★*burner*.

Welsh cotton. See *Kendal* ★*cotton*.—**Welsh porcelain,** Old Swansea and Nantgarw porcelain (the names of the towns where the leading potteries were located). The manufacture extended from 1768 to 1822. Old Swansea is sometimes called "duck-egg" porcelain. The paste has a soft translucent body similar to Sèvres.—**Welsh process.** Same as *Swansea* ★*process* of copper-smelting.

welter^2, *n.* In *glove-manuf.*, one who puts the welting in the seams and sews them up.

From the cutters' room the leather, which has assumed the shape of the glove, is sent to the "silkers," who embroider the back, and then to the "makers." Some make the gloves, that is they sew the fingers and put the thumbs in; others, called "*welters*," are engaged in welting or hemming the glove round the edge of the wrist; still others, called "pointers," work the ornamental lines on the back.
Sci. Amer. Sup., Jan. 24, 1903, p. 22629.

welter-weight, *n.* **2.** In *wrestling* or *boxing*, a weight coming between light- and middle-weight, usually 145 pounds or under.

welth, *n.* A simplified spelling of *wealth*.

welthy, *a.* A simplified spelling of *wealthy*.

welt-schmerz (velt′shmãrts), *n.* [G. *welt*, world, + *schmerz*, pain. See *smart*^{1}, *n.*] Literally, world-pain, or world-woe; weariness of life in general; in particular, a sentimental melancholy or pessimism; Wertherism.

Wemmelian (we-mē′li-an), *a.* and *n.* [*Wemmel*, in Belgium, + *-i-an.*] In *geol.*, a division of the Eocene Tertiary in Belgium, being the equivalent of the Bartonian or Barton clays of England which constitute the lower member of the Upper Eocene. They are the highest Eocene strata in the Belgian area.

wen^2 (wān), *n.* [AS. *wēn*, hope (see *ween*, *v.*), used as a name for its initial consonant.] A runic symbol (ƿ) used in Anglo-Saxon up to about 1300 A.D. to represent the w-sound.

wen^3 (wen), *n.* [Korean.] A current silver coin of Korea, equivalent to 40 United States cents.

wendigo, *n.* See ★*windigo*.

Wengen beds. See ★*bed*^{1}.

wen-mun (wen′mön), *n.* [Korean.] See the quotation.

The Corean language belongs to the Uralo-Altaic family, and is closely related to the Southern Tunguse dialects. Its mode of writing, called *wen-mun*, differs from the Chinese, and appears either to have been invented or derived from the Sanskrit by the Buddhist monks (M. Courant).
Deniker, Races of Man, p. 387.

wepon, *n.* A simplified spelling of *weapon*.

wer^4. A simplified spelling of *were*^{3}.

were-jaguar (wēr′jag″wär), *n.* [*were*(*wolf*) + *jaguar*.] A human being imagined to be transformed into a jaguar: corresponding to the werewolf or werwolf of Europe. *Keane*, Man Past and Present, p. 380.

Werfen beds. See ★*bed*^{1}.

Wernerianism (ver-nē′ri-an-izm), *n.* [*Wernerian* + *-ism*.] In *geol.*, the doctrines of Abraham Gottlob Werner. See *Wernerian*. He advocated the theory of the deposition of the metamorphic schists and gneisses as well as basalt and some other eruptive rocks from solution in the overlying ocean, and of the precipitation of mineral veins in crevices in the sea-bottom. While extensively believed at the time his views were finally in greatest part abandoned. It is called also ★*Neptunism* (which see).

werthemanite (ver′te-män-īt), *n.* [Named after its discoverer, A. *Wertheman*.] An earthy white hydrous aluminium sulphate ($Al_2O_3.SO_3.3H_2O$) from Peru. It is related to aluminite but contains less water.

Wesenberg zone. See ★*zone*.

westanite (wes′ta-nīt), *n.* [*Westanå* + *-ite*^{2}.] A hydrated aluminium silicate occurring in radiated crystalline masses of a brick-red color at Westanå, Sweden. It may be an alteration product of fibrolite or andalusite.

west-bound (west′bound), *a.* Moving or about to move toward the west; bound or destined for some place in the west: as, *west-bound* freight.

West-Ender (west-end′ėr), *n.* One who lives in the West End of London.

westernize (wes′tėrn-īz), *v. t.*; pret. and pp. *westernized*, ppr. *westernizing*. To render western (as opposed to Oriental) in character; infuse western ideas or ways into.

Not every land in the East has the elasticity of Japan to *Westernize* itself in one night.
Speaker, July 23, 1898, p. 124.

West-Indian (west-in′di-an), *a.* and *n.* **I.** *a.* Of or pertaining to the West Indies: used formerly, in a large sense, as equivalent to 'American.'—**West-Indian balsam, boxwood, lancelet.** See ★*balsam*, etc.

II. *n.* A native or inhabitant of the West Indies.

westland (west′land), *a.* Coming from the west; westerly. [Rare.]

Bide a bit, bide a bit; I'm thinking—and thanks to this bonny *westland* wind, I believe I've still a chance of it.
R. L. Stevenson, Catriona, xii.

Westm. An abbreviation of *Westminster*.

Weston cell. Same as ★*cadmium cell*.—**Weston clutch.** See ★*clutch*^{1}.

Westralian (wes-trā′lian), *a.* and *n.* [*Wes*(*tern*) + (*Aus*)*tralian*.] **I.** *a.* Of or pertaining to Western Australia.

II. *n.* **1.** An inhabitant of Western Australia.—**2.** A mining share in Western Australia: usually in the plural.

westrumite (wes′trum-īt), *n.* The trade-name for a cheap mineral-oil mixture sprinkled in a diluted state over the surface of a road to prevent or lay dust. Resistance to the action of rain and sun is claimed for this material.

A number of solutions are now on the market for the more or less temporary treatment of roads. Perhaps the best known is *Westrumite*, containing chiefly petroleum and ammonia, the product being completely miscible with water. It has been used extensively as a temporary measure. Experiments by the Scottish Automobile Club show that the effect remains for a considerable time.
Nature, Sept. 14, 1905, p. 485.

wet^1, *a.*—**Wet extraction,** in *metal.*, the extraction of a metal from its ores, or from the rock, by conversion into a soluble compound, which is leached out with water and decomposed, usually by means of another and cheaper metal. Copper, silver, and gold are largely extracted in this way.—**Wet method,** in *chem.*, same as *wet way* (which see, under *wet*^{1}).

weta (wā′tä), *n.* [Maori.] See ★*sawyer*, 6, and ★*weta-punga*.

weta-punga (wā″tä-pön′gä), *n.* [Maori.] The New Zealand name of a large locustid, *Deinacrida heteracantha*, formerly very abundant in New Zealand forests, climbing trees with agility, although bulky and wingless. *Cambridge Nat. Hist.*, V. 326.

wet-fly (wet′flī), *n.* In *angling*, an artificial fly which is allowed to sink: in distinction from a *dry-fly*, or floating fly.

The author's sympathies are rather with the *wet-fly* than with the dry-fly fisherman, and he is so far right that there is time and place for both.
Athenæum, May 7, 1904, p. 588.

wether^2, *n.*, *a.*, and *v.* A simplified spelling of *weather*.

wet-holystone (wet′hō″li-stōn), *v. t.* To holystone a deck or grating which is kept wet with water.

wet-machine (wet′ma-shēn″), *n.* In *paper-manuf.*, a machine used to gather the pulp from the water and form it into sheets and bundles.

wet-pan (wet′pan), *n.* In *ceram.*, a vat with horizontal grinding-stones in which clay is ground under water.

wet-short (wet′shôrt), *a.* Noting a lack of plasticity when wet: said of certain sands, on the analogy with "red-short" and "cold-short" as applied to wrought iron or steel. See ★*short*, *a.*, 13.

That is, while there is some small measure of cohesion, the sand, especially when wet, is excessively brittle. It is "*wet short*."
R. D. Salisbury, in Geol. Surv. of New Jersey, 1894,
[p. 102.

wettable (wet′a-bl), *a.* [*wet*, *v.*, + *-able*.] That can be made wet; that will absorb water or retain a thin stratum of water on the surface: said particularly of some leaves, in contrast with others which from being polished, velvety, or the like, do not retain water. See ★*drip-tip*.

wetting-trough (wet′ing-trôf), *n.* The open tank of water by which paper is wet or dampened for presswork.

Wetzel evaporator, an arrangement for expediting the evaporation of a liquid. It consists of a framework of pipes, through which steam passes, caused to revolve above and partly within a trough containing the liquid to be evaporated, each pipe dipping in turn into the liquid and coming out covered with a film of it, which evaporates rapidly in the remaining part of the revolution, in which the pipe is exposed to the air. Also called *Wetzel pan*.

W. G. **2.** [*l. c.*] In *ceram.*, the abbreviation of *white* ★*granite* (which see).

W. Ger. An abbreviation of *West Germanic*.

W. G. G. An abbreviation (a) of *Worthy Grand Guardians*; (b) of *Worthy Grand Guide*.

W. G. H. An abbreviation of *Worthy Grand Herald*.

W. G. M. An abbreviation of *Worthy Grand Marshal*.

W. G. S. An abbreviation of *Worthy Grand Sentinel*.

wh. An abbreviation of *wholesale*.

whack, *v. t.*—**To whack** (something) **up,** to force to greater speed; drive or send faster. [Slang.]

Moorshed suggested "*whacking her* [torpedo-boat] *up*" to eighteen knots, to see if she would stand it. . . . *Whack her up*, Mr. Hinckcliffe.
R. Kipling, Their Lawful Occasions, in Traffics and
[Discoveries, pp. 119, 123.

whack, *n.* **5.** Fettle; condition. [Rare.]

The Tycoon [Lincoln] is in fine *whack*. I have rarely seen him more serene and busy.
John Hay, Letter printed in The Century Mag., Feb.,
[1909.

whaddie, *n.* See *waddy*.

whale^1, *n.*—**Little piked whale,** the small finback, *Balænoptera acuto-rostrata*, which reaches a length of from 20 to 30 feet and is readily distinguished by the band of white across the flippers.—**Pollack-whale.** See ★*pollack-whale*.—**Pygmy right whale,** *Neobalæna marginata*, the smallest of the whalebone whales, under 20 feet in length, but related to the great arctic bowhead. It is found in the vicinity of New Zealand.—**Social whale,** the black-fish, *Globiocephalus melas*, that goes in large schools.

whale^3 (hwāl), *v. i.* To move with effort. [Slang.]

"Her!" snorted the little man, in indignant astonishment. "You don't think I've *whaled* up here . . . to talk about women, do you?"
Holman Day, King Spruce, xxiv.

whaleback, *n.* **2.** A vessel of which the upper deck is rounded: generally without upper works. It has a spoon-bow, with the whole of the main deck arched and meeting the side in a continuous curve. There are a number of very large hatches in the crown of the deck. The propelling machinery is in the extreme after end of the vessel. Such vessels were first used on the Great Lakes.—**3.** In *phys. geog.*, a drift-hill of rounded profile thought to resemble the back of a whale rising above the sea.

whaleback, whalebacked (hwāl'bak, -bakt), *a.* Having an arched or curved deck continuous with the side: said of a particular type of steamer. See ★*whaleback*, *n.*, 2.

whalebone-tree (hwāl'bōn-trē), *n.* One of the mint-trees, *Prostanthera lasianthos.* See *Prostanthera.* [Australia.]

whale-chart (hwāl'chärt), *n.* A chart showing the localities reported to be favorable for whale-fishing.

whale-deep (hwāl'dēp), *n.* A deep depression or hole in the sea-floor. Also *whale-hole.*

> The whole length of the roding ran out, and still the anchor found nothing, and Harvey grew mortally afraid, for that his last touch with earth was lost. "*Whale-hole,*" said Manuel, hauling in. . . . [It was] the edge of the barren *Whale-deep*, the blank hole of the Grand Bank.
>
> *R. Kipling*, Captains Courageous, v.

whale-feed (hwāl'fēd), *n.* A New Zealand term for a small shrimp found in immense swarms.

whale-foots (hwāl'fu̇ts), *n. pl.* The deposit found at the bottom of casks of whale-oil. It is a low-grade grease, used in making coarse soap and in tanning.

whale-hole (hwāl'hōl), *n.* See ★*whale-deep.*

Whale-oil soap. See ★*soap.*

whaler^{1}, *n.* **2.** The name given in Sydney to the shark, *Carcharias brachyurus*, Günth. *E. E. Morris*, Austral English.—**3.** A sundowner; one who cruises about. *E. E. Morris*, Austral English. [Australian slang.]

> The nomad, the "*whaler*," it is who will find the new order hostile to his vested interest of doing nothing.
>
> *Sydney Morning Herald*, Aug. 12, 1893. Quoted in [E. E. Morris, Austral English.

Whalers' language, a jargon heard in the north of the Pacific Ocean: a mixture of Hawaiian, Chinese, English, Chukchi, Japanese, etc. *Deniker*, Races of Man, p. 133.

whalm†, *n.* Same as *walm*, *n.*

whangdoodle (hwang-dö'dl), *n.* [A made word of a humorous nature.] **1.** An imaginary animal whose nature and features are purposely left undefined. Compare *gyascutus* and ★*snark.*—**2.** In *poker*, a round of jack-pots, usually played after a certain hand is shown, such as four of a kind.

whanger (hwang'ėr), *n.* A curer of fish. [Newfoundland.]

whare (hwä're), *n.* [Also *ware*, *warree*, etc. Maori for *house.*] A house. [Australia.]

> The Europeans who were near us in a raupo *whare* (rush house).
>
> *H. Williams' Journal*, Carleton's Life, p. 151. Quoted [in E. E. Morris, Austral English.

> Sitting in the sun at the mouth of his *warree*, smoking his pipe.
>
> *G. C. Mundy*, Our Antipodes, x. Quoted in E. E. Morris, [Austral English.

wharf, *n.*—**Sheer wharf**, a navy-yard wharf on which sheers are erected.

whartonite (hwâr'ton-īt), *n.* [Named after Joseph *Wharton* of Philadelphia.] A nickeliferous variety of pyrite from the Sudbury district, Ontario.

wharve (hwärv), *n.* [Also, improperly, *warve*; a variant of *wherve.*] Same as *wherve*, 1.

what^{1}, *pron.*—**To give one what for**, to give one something to cry, suffer, be miserable *for:* usually said of one who deserves punishment or retribution. [Slang.]

> Poor Little Billee came off very badly. The German Pole fenced wildly, but well. . . Then Taffy took up the foil, and redeemed the honor of Great Britain as became a British hussar, . . . and Svengali *got "what for."*
>
> *Du Maurier*, Trilby, i.

whata (hwā'tä), *n.* [Maori.] An elevated platform or storehouse for keeping food.

whau (hwou), *n.* [Maori *whau*, = Samoan, Tahitian, Marquesan, *fau*, *Hibiscus tiliaceus*, Hawaiian *hau*, Tongan *fau*, etc., name of several trees.] In New Zealand, *Entelea arborescens*, a shrub or small tree belonging to the linden family, having cymes of white, 4-petaled flowers and fruit in the form of a spinous capsule. Its wood, like that of the fau, *Pariti tilaceum*, in Samoa, is very light and is used by the natives for making floats for their fishing-nets. Also called *corkwood.* See *New Zealand* ★*cork-tree.*

whauwhi (hwou'hwē), *n.* [Maori.] In New Zealand, the lacebark and ribbonwood trees, the fibrous bast of which was formerly used for making tapa cloth. See ★*houhere*, *lacebark*, 3, and *ribbonwood.*

wheat, *n.* Present authority tends to include in one botanical species (*Triticum æstivum*; *T. sativum* of some authors) all the forms of cultivated wheat except the one-rowed wheat (see *einkorn* ★*wheat*) and the Polish wheat (see below). For the original application of *T. æstivum* see *summer* ★*wheat.* Two less important subtypes of *T. æstivum* are spelt (which see) and ★emmer. The remaining varieties (sometimes combined in a subspecies *tenax*) are divided into four groups, for which see *club*, *durum*, *poulard*, and *vulgare* ★*wheat.* According to the cerealist of the United States Department of Agriculture the United States may be divided into eight wheat-growing districts: (1) the soft wheat district, mainly the Middle and New England States; (2) the semi-hard winter wheat district, Ohio to Illinois, Michigan, and a small part of Wisconsin; (3) the southern wheat district, approximately the Southern States; (4) the hard spring wheat district, the northern States of the plains; (5) the hard winter wheat district, the middle States of the plains; (6) the durum wheat district, the southern States of the plains; (7) the irrigated wheat district, approximately the Rocky Mountain and Basin States; (8) the white wheat district, the Pacific coast States.—**Ægilops wheat**, a wheat-like cereal developed by E. Fabre through cultivation and selection of a hybrid between common wheat and the Old-World grass *Ægilops ovata.* It propagated true to type by seed and was given the name *Ægilops speltæformis.*—**Arnautka wheat**, a valued Russian durum variety, giving best results over a limited area about the Sea of Azov. It is among those introduced into the United States.—**Bald wheat**, beardless wheat.—**Barley wheat**, durum wheat: so called from its strong resemblance in the field to barley.—**Beloturka wheat**, a south-Russian durum variety, very similar to Kubanka and among those introduced into the United States. The name means 'white Turkish.'—**Blue-stem wheat**, an American variety with several subvarieties, classified as hard spring, differing from the Fife in having the glumes covered with fine velvety hair. The velvet blue-stem is grown in North Dakota and the Palouse blue-stem in southeastern Washington and adjacent regions.—**Bread wheat**, any wheat commonly used for bread-making, hence specifically same as *vulgare* ★*wheat.*—**Breast of wheat**, a spikelet or mesh.

> In some sections of the country, a spikelet is better understood if it is spoken of as a *breast of wheat.*
>
> *Todd*, Amer. Wheat Culturist, p. 24.

Club-eared wheat, any wheat with a compact head. Opposed to *sprat* ★*wheat.*—**Club wheat**, a group of wheats (sometimes distinguished as *Triticum compactum*) characterized by a short, dense head and short, stiff straw: also called *square-head wheat* from the shape of the ear. It forms a large part of the white wheat of the Pacific coast. From the fact that its ears do not shatter it is adapted to the methods of harvesting there employed. The grain is much like that of the softer vulgare sorts. It is also cultivated in Chile, Turkestan, and Abyssinia.—**Cone wheat**, a form of poulard wheat with conical ears. See *English* ★*wheat.*—**Crimean wheat.** See *Turkey* ★*wheat.*—**Duck's-bill wheat**, the poulard wheat as grown in England, or some one of its varieties.—**Durum wheat**, a strongly marked group of varieties now referred to *Triticum æstivum*, but formerly regarded as a species, *T. durum.* These are tall barley-like wheats, the stem commonly filled or lined with pith, the leaves broad, of a peculiar whitish green color, and with a very harsh cuticle. The grain is glassy and very hard and needs to be softened by steam before milling. On account of their high gluten content these wheats are adapted to the manufacture of macaroni and they afford the bulk of the product so used. The flour as prepared for use in macaroni is called *semolina.* Durum wheat also makes a richer and better-keeping bread than the ordinary and affords an excellent quality of 'grits.' Culturally, durum wheats are best adapted to hot semiarid regions and hitherto they have been grown most extensively in east and south Russia, also largely in Turkestan and North Africa, and to a less extent in the dry parts of South America, etc. In the United States these wheats, though earlier grown in small quantities experimentally or for feed (see *wild goose* ★*wheat*, *Nicaragua* ★*wheat*), had no market standing prior to 1901, when the results of government introduction and successful experimentation began to appear: in 1903 the product reached 6,000,000 bushels. They succeed in the Great Plains region, even as far north as Canada. For important Russian varieties introduced into the United States see *Gharnovka*, *Arnautka*, *Kubanka*, *Beloturka*, *Pererodka* ★*wheat.* Among Algerian varieties introduced experimentally are Pelissier and Marouani. For other general names see *hard* ★*wheat*, *macaroni* ★*wheat*, *rice* ★*wheat.*—**Dwarf wheat**, the club or hedgehog wheat. *Standard Dict.*—**Egg-shell wheat**, an old English variety of white winter wheat.—**Egyptian wheat**, wheat grown in Egypt, chiefly varieties of the poulard type; specifically, one of these varieties with branching spikes sometimes called *Triticum compositum.* This wheat has been cultivated in Egypt, the Orient, and southern Europe, but on account of its inferior grain is not highly rated. A former English name is *Smyrna wheat.* Also *mummy-wheat* (which see).—**Einkorn wheat** [G. *einkorn*, one-grain], the one-grained wheat, *Triticum monococcum*, a species bearing usually only one grain to the spikelet and having a very flat head. This species, known from antiquity, apparently originated in southeastern Europe and is thought to have been the source of emmer. It is grown in Europe in poor rough places for mush and cracked wheat and for fodder, but is known only experimentally in America. It resists leaf-rust completely.—**English wheat**, the poulard wheat in the forms grown in England.—**Fall wheat**, any autumn-sown wheat: same as *winter* ★*wheat.*—**Fife wheat**, a variety of beardless, red, hard-grained spring wheat (*vulgare* type) including several subvarieties, as red Fife (the most important), white Fife, Scotch Fife, Wellman's Fife. The stock was derived by David Fife of Ontario from imported seed believed to have been ultimately of a Russian winter variety. It yields fairly and produces a flour of excellent quality. These wheats are important northward, red Fife being the standard Canadian wheat.—**Flint wheat**, same as *hard* ★*wheat* (*b*), at least as to the harder-grained subvarieties: occurring in American variety names, as *Genessee flint*, *old white flint.*—**Fulcaster wheat**, a bearded, semi-hard, red wheat derived as a hybrid from the Fultz and another variety. It is widely grown, especially in the region from Pennsylvania to Oklahoma. **Fultz wheat**, a semi-hard, red-grained, beardless variety of the *vulgare* type, originated by Abraham Fultz in Mifflin county, Pennsylvania, in 1862, said to be probably the most widely grown variety of the United States.—**Gehun wheat**, a Himalayan variety introduced into Canada and found to be very early, high altitude having produced a quality desirable in high latitude. It has been the subject of much experiment and, crossed with Onega, has yielded early Riga, eight or nine days earlier than red Fife and of a high gluten content, but not very productive.—**Gharnovka wheat**, a Russian durum variety of high standing, the principal one grown in the vicinity of the Sea of Azov. It is one of those introduced into the United States.—**Goose wheat.** (*a*) Same as *wild goose* ★*wheat.* (*b*) An inferior wheat mainly fed to chickens: a bearded variety hardy and early. *N. E. D.*—**Grass wheat.** See *Odessa* ★*wheat.*—**Hard wheat.** (*a*) Same as *durum wheat.* (*b*) In the United States, commonly any hard-grained variety of the common wheat. Also *flint wheat.*—**Hedgehog wheat.** Same as *club* ★*wheat.* *Stand. Dict.*—**Huron wheat.** See *Ladoga* ★*wheat.*—**Indian wheat.** (*c*) A grass, *Panicum ciliatissimum*, with the habit of Bermuda grass. It is a native of western Texas and is of some agricultural value for the dry regions of the southwestern United States. Locally called *carpet-grass.*—**Kubanka wheat**, a Russian durum variety highly valued in the Volga region, and at its best on the Siberian border. It is very resistant to drought and the grain is of excellent quality. In the Great Plains region, where it has been introduced, it gives large yields and ripens sufficiently early even in the Dakotas, proving also resistant to all diseases. The name is from the territorial division Kuban.—**Ladoga wheat**, a variety of *vulgare* wheat introduced into Canada from the region of Lake Ladoga, found useful for crossing with red Fife to combine its early ripening, important in the northern country, with the excellent quality and productiveness of the latter. Two promising varieties thus obtained are the Preston, a bearded, and the Stanley, a beardless wheat, both four to six days earlier than the red Fife, but the former not quite so productive, the latter of slightly lower quality. Crossed with white Fife it has yielded the Huron, an early bearded variety slightly more productive than red Fife, and the Percy, also early, equal to red Fife in quality but less productive.—**Lammas wheat**, winter wheat: so called in England as harvested near Lammas Day (later than summer wheat). With a qualifying word, one of several varieties, as *white Lammas*, *red Lammas.*—**Macaroni wheat**, any wheat adapted to the manufacture of macaroni; hence, specifically, the durum wheats (see above), as the type chiefly so used. The Polish wheat is, however, also a macaroni wheat, and varieties of the poulard type (see *poulard* ★*wheat*) are sparingly so used. In the United States, prior to the introduction of the durum varieties, an inferior macaroni was made from hard varieties of *vulgare* wheat, produced chiefly in Kansas. **Many-eared wheat.** Same as *Egyptian* ★*wheat.*—**May wheat**, any of a group of *vulgare* spring wheats (red May, early May, late May, etc.) found to be successful in the coastal region of the southern United States.—**Mediterranean wheat.** (*a*) In general, any wheat grown in the Mediterranean region, thus including the Algerian durum wheats. (*b*) Specifically, a red bearded *vulgare* variety, a standard in Texas, introduced from the islands of the Mediterranean.—**Nicaragua wheat**, specifically, a durum wheat, probably from Nicaragua, where these wheats are almost exclusively grown, introduced into Texas before the present market for these wheats had been created.—**Odessa wheat**, a south Russian hardy red variety (*vulgare*) which can be planted either in the fall or the spring. It was the first to meet the peculiar wants of the middle section of the Great Plains of the United States. Also called *grass wheat.*—**Onega wheat**, a *vulgare* variety introduced into Canada from the region of Archangel and used in crosses for earliness. See *Gehun* ★*wheat.*—**Pendulum wheat.** See *poulard* ★*wheat.*—**Percy wheat.** See *Ladoga* ★*wheat.*—**Pererodka wheat**, a strain of Kubanka wheat with darker-colored grains. Though placed below the latter in Russia, in this country it has in some respects excelled it.—**Pink bacteriosis of wheat.** See ★*bacteriosis.*—**Polish wheat.** (*a*) Any of the varieties of *Triticum polonicum*, a species marked by very large, loosely formed heads; narrow, papery, and slightly spreading chaff; and normally very large, especially long, yellowish white, and very hard grains. Polish wheat is adapted to dry regions and is grown somewhat in the Mediterranean region, southern Russia, and Turkestan. Its grain is of macaroni quality. (*b*) A red winter wheat of the *vulgare* type grown in Poland and southwest Russia.—**Poulard wheat**, any wheat of the strongly marked subtype of *Triticum æstivum* sometimes distinguished as a species, *T. turgidum*, turgid wheat. These wheats are tall, stout-stemmed varieties with an ear that nods from its weight when filled out (hence called *pendulum wheat*), the ear being bearded, but shedding its awns at maturity. They are productive both in grain and straw, but both of these are coarse, the straw being suited to thatching. The grain is allied to that of the durum wheats and is used sparingly for macaroni. They are cultivated in the United States only experimentally, in England in small amount in places unfavorable to better varieties (see *English* ★*wheat*), and to a greater extent in the Mediterranean countries. For an important variety see *Egyptian* ★*wheat.* Here belong the cone and rivet wheats of England. The French name 'poulard' sometimes appears in English as 'pollard,' as in the variety name 'gray pollard' (see *pollard*, 5).—**Preston wheat.** See *Ladoga* ★*wheat.*—**Rice wheat.** (*a*) An American name for the durum wheats, referring to the texture of the grains. (*b*) A hard-grained, beardless, winter *vulgare* variety of the United States.—**Smyrna wheat.** See *Egyptian* ★*wheat.*—**Soft wheat**, any wheat with relatively soft grains, the term thus including many *vulgare*, but no *durum*, varieties.—**Sprat wheat,** any variety of common wheat with the ears long and straggling: opposed to *club-eared wheat.* [England.] *J. Wrightson*, Farm Crops, p. 110.—**Spring wheat.** See *summer ★wheat.*—**Square-head wheat.** Same as *club-★wheat.*—**Square wheat.** (*a*) Same as *square-head ★wheat.* (*b*) The poulard wheat in some of its forms.—**Stanley wheat.** See *Ladoga ★wheat.*—**Summer wheat,** a group of varieties of the common wheat formerly regarded as a species and distinguished not only by its late planting and early harvesting quality but also by its narrower ears, bearded glumes, and longer-bearded paleæ, its smaller grains, and shorter and more slender straw. It was locally grown in England, where it was planted in April or even in May, but was regarded as mainly a wheat of warmer countries. Opposed to *winter wheat* (see below) and also called *spring wheat*, but distinguished from varieties of winter wheat sown in early spring. It was to wheats of this type that the name *Triticum æstivum* was originally given, but the view now prevails that there is no fixed botanical distinction between summer and winter wheat, a variety of either being readily cultivated into one of the other; and the term 'spring wheat' (now chiefly used) refers only to fitness for spring planting.—**Taganrog wheat,** any variety of Russian durum wheat after export: so designated commercially from the name of the chief port of shipment.—**Talavera wheat,** a *vulgare* wheat which was introduced from Spain into England about 1817, became a favorite, especially in the form of Bellevue Talavera, and is still used. It is a good yielder with large grains, the ears long and slender, the leaves broad, and the straw white. This variety affords a part of the Italian bonnet-making straw.—**Turkey** or **Turkish wheat.** (*b*) A hard red winter wheat of the *vulgare* type, the favorite variety in the Missouri valley, etc., originally from southern Russia. Also called *Crimean wheat.*—**Vulgare wheat,** the name of that group of varieties of wheat (sometimes classed as *Triticum sativum vulgare*) which includes the ordinary bread-making wheats; common wheat. The subvarieties are either summer or winter, bearded or beardless, red, amber, or white, and soft or hard (but see *durum ★wheat*). Except a small amount of poulard, these are the only wheats grown in England and until recently practically no others have been grown in the United States.—**Wheat false caterpillar.** See *★caterpillar.*—**Wheat plant-louse.** See *★plant-louse.*—**Wheat stalk-borer** See *★stalk-borer.*—**Wild goose wheat,** a durum wheat considerably grown in Canada and less in the Dakotas, said to have sprung from grains found in the crop of a wild goose, but doubtless ultimately derived from south Russian seed. This wheat began to be shipped abroad from Canada prior to the commercial success of durum wheat in the United States. Used also of durum wheats as a type name.—**Winter wheat,** wheat of any variety sown in autumn for the crop of the next season. Formerly regarded as a species and named by Linnæus *Triticum hybernum.* See *summer ★wheat* and *Lammas ★wheat.*

wheat-beetle (hwēt′bē″tl), *n.* Same as *★grain-beetle.*

wheat-blight (hwēt′blit), *n.* See *★blight.*

wheat-grass, *n.* Several species of wheat-grass, *Agropyron*, are of settled agricultural value. The common couch-grass, *Agropyron repens*, is a good hay-grass, despite its tenacity as a weed.—**Bearded** or **awned wheat-grass,** *Agropyron caninum*, a fibrous-rooted species without creeping rootstocks. It occurs on the northern border of the United States and in Canada as far west as North Dakota, and is likely to possess agricultural value. Also called *dog-grass* and *dog's-tooth grass.*—**Bunch wheat-grass,** *Agropyron spicatum*, a densely tufted species, one of the most valuable bunch-grasses of Washington and Oregon.—**Japanese wheat-grass,** a perennial grass from Japan, *Brachypodium Japonicum*, resembling the bearded wheat-grass, but of rather stronger growth. It has passed successful tests in California, and, in the Southern States, is regarded as valuable for winter grazing, since it makes its best growth in the cooler months.—**Slender wheat-grass,** *Agropyron tenerum*, of the northern prairie region. It is well established as a cultivated hay-grass.—**Western wheat-grass.** (*a*) *Agropyron occidentale*, distinguished by its bluish tinge throughout and known as (*Colorado*) *bluestem* and *gumbo grass.* It grows naturally on dry bench lands, etc., and in Montana and neighboring States is regarded as one of the most important native forage plants. (*b*) *A. pseudorepens*, the false couch-grass of the Great Plains, is a softer plant than the last and is hence better suited to cultivation for hay.

wheat-pit (hwēt′pit), *n.* In a produce exchange, that part of the exchange where wheat is bought and sold.

> Every bonanza farmer's office is connected by wire with the markets at Minneapolis, Chicago, and Buffalo. Quotations arrive hourly in the selling season, and the superintendent keeps in close touch with his agents in the *wheat-pits* of these and other cities.
> *Encyc. Brit.*, XXV. 217.

wheat-scab (hwēt′skab), *n.* See *★scab.*

Wheatstone balance. Same as *Wheatstone bridge.*

Wheatstone-Siemens exploder, a portable magneto-electric machine for firing blasting charges of explosives.

wheel¹, *n.* 10. A movement in drill in which a line changes front without destroying the alinement.—**Allen wheel,** a form of car-wheel for sleeping or passenger-car service, in which the rim and tire are kept at a fixed distance from the hub by a filling of compressed pasteboard or strawboard or paper pulp, held in place by steel plates bolted together. They are said to run more noiselessly and with easier absorption of shock from the rail than all-metal wheels. Called also *paper car-wheels.* **Big wheel.** (*b*) See *★logging-wheel.* **Coupled wheels,** wheels which are joined by side-rods or coupling-rods. This is done on locomotives to increase and equalize the tractive force. All the coupled wheels are driving-wheels and, as they carry most of the weight of the locomotive, the adhesion is greater, as is also the tractive force, than if only one pair of wheels were connected to the piston and cylinder.—**Ferris wheel,** a device intended to amuse the people at an exhibition, fair, or summer resort. It consists of a large double wheel carrying, between its two rims, cars which are suspended from shafts through their tops, the cars thus remaining right side up as the wheel turns. The axle of the wheel is mounted in bearings which rest on columns of a little greater height than the radius of the wheel. Passengers are carried in the cars suspended in the wheel, which is slowly revolved by a suitable motor. The original Ferris wheel, exhibited at the Columbian Exposition at Chicago in 1893, was 250 feet in diameter, and 40 passengers could be carried in each of the 36 cars. It was invented by G. W. G. Ferris.—**Free wheel.** (*a*) A bicycle which has a device for freeing the driving-wheel from the driving-mechanism, as in coasting. (*b*) The driving-wheel of a bicycle which has a releasing-device for freeing the pedals for coasting.—**Gassiot's wheel,** an apparatus for demonstrating the luminous effects of Geissler tubes. The tubes are rotated while under the influence of the electric discharge, being fastened to a frame for that purpose. Very beautiful effects are produced, similar to those seen with fireworks.—**Impact wheel,** an impulse-wheel; a water-wheel in which the energy is partly or wholly obtained from the impact of the water on the blades. The reaction of the water, derived from changing its direction of flow, is also used by such a wheel in most cases.—**Lee wheel,** the leeward side of the steering-wheel; the side of the wheel where the assistant wheelsman stands.—**Little tin god on wheels.** See *★god¹.*—**Open-plate wheel,** in *car-building*, a light cast-iron street-car wheel having radial openings in the plate or web.—**Pelton wheel,** a form of water-wheel which has, on the periphery of the rotating wheel, buckets on which impinge one or more tangential jets of water. The buckets are so shaped as to divide the stream of water into two parts and reverse the direction of the water, so as to take advantage of the reaction. The wheel is named after its inventor. It has been used also for steam-turbines.—**Phonic wheel,** a rotating device, used in certain systems of synchronous telegraphy, the motion of which is controlled by electric impulses sent over the line.

> The *phonic wheel*, invented independently by La Cour and Lord Rayleigh . . ., consists of a wheel carrying several soft iron armatures fixed at equal distances round its circumference.
> *Encyc. Brit.*, XXV. 50.

Radial wheel, a wheel having straight radial spokes or spokes which point directly to the center, as distinguished from a wheel having tangential spokes.—**Square wheel,** in *railroading*, a car- or engine-wheel in which the cylindrical circumference of the tread has been worn flat in spots by sliding or skidding on the rail with the brake set hard enough to keep the wheel from turning. Soft spots in the tread make a wheel prematurely flat or square. Square wheels are very hard on both rail and car, since the wheel rolls like a polygon on a plane and strikes a hard blow on the rail when the front end of the flat spot comes down in rolling. Also called *flat wheel.*—**Tangent wheel,** a gear-wheel driven by a worm or screw tangent to its circumference.

wheel-back (hwēl′bak), *n.* A back resembling a wheel.—**Wheel-back chair,** in old English furniture, a chair in which the back resembles a wheel, although not necessarily round. The central portion or hub may be decorated with carving or inlay.

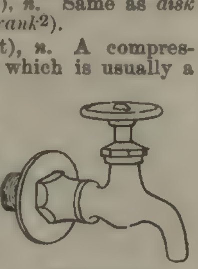
wheelbarrow-race (hwēl′bar-ō-rās″), *n.* A foot-race in which the contestants wheel barrows, either with or without occupants; also, a form of gymnastic exercise in which one player takes the other by the feet and half carries him along while the one so held runs on his hands.

wheel-base, *n.*—**Flexible wheel-base,** that of a railway-car or other vehicle in which the plane of rotation of the leading or the hauling pair of wheels is changeable so as to give a steering effect or prevent binding on curves. In an *inflexible wheel-base* (as in consolidation locomotives) this is not possible.

wheel-cake (hwēl′kāk), *n.* Same as *mill-cake*, 1.

wheel-crank (hwēl′krank), *n.* Same as *disk crank* (which see, under *crank*²).

wheel-faucet (hwēl′fâ″set), *n.* A compression-faucet, the head of which is usually a small horizontal wheel, the rotation of which pushes the screw of compression down or raises it.



Wheel-faucet.

wheel-house, *n.* 2. In *mech.*, a building in which a water-wheel is housed.—3. A structure to contain and safeguard the wheels of the valves of a water-works system.—4. The curved inclosure for the paddle- or side-wheels of a steamboat.—5. The free space under the forward part of the body in some carriages, which enables the front axle to make a more extensive arc in turning, and permits the wheels to 'cut under.'

wheeling, *n.* 3. In *mil.*, the act of executing a wheel.

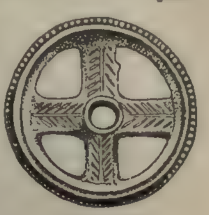
wheel-load (hwēl′lōd), *n.* The load carried by a wheel; the concentrated load impressed on a bridge or other structure by the wheel of a vehicle. *The Engineer*, April 25, 1902, p. 403.

wheel-map (hwēl′map), *n.* See the extracts.

> The mediæval *wheel-maps*, in which Jerusalem was accepted as the centre of the world, whence the main geographical lines radiated like the spokes of a wheel.
> *Geog. Jour.* (R. G. S.), XIII. 226.

> The wretched subterfuge of Cosmas (c. A.D. 550) to explain the phenomena of the apparent movements of the sun by means of an earth modelled on the plan of the Jewish Tabernacle, gave place ultimately to the *wheel-maps*—the T in an O—which reverted to the primitive ignorance of the times of Homer and Hecatæus.
> *Encyc. Brit.*, XXVIII. 618.

wheel-money (hwēl′mun″i), *n.* In *archæol.*, the name given to certain wheel-like objects of metal found in France and Great Britain. They are of gold, silver, or bronze, and, while by some regarded as primitive money, are usually looked upon as having some connection with sun-worship.



Wheel-money.

wheel-motion (hwēl′mō″shọn), *n.* A simple mechanism attached to a hank-winding machine for the convenient removal of the hank from the reel.

wheel-press (hwēl′pres), *n.* See *★forcing-press.*

wheel-shutter (hwēl′shut″ėr), *n.* In an arith-machine, a sliding plate used in certain operations to conceal any of the numeral wheels. *H. Goldman*, The Arithmachinist, p. 104.

wheelsman, *n.*—**Lee wheelsman,** *naut.*, the assistant who stands at the lee of the wheel.

wheel-stuffed (hwēl′stuft), *a.* In *leather-manuf.*, stuffed or greased by means of a drum or wheel: said of skins. *Modern Amer. Tanning*, p. 224.

wheel-stuffing (hwēl′stuf″ing), *n.* A process of greasing skins by placing them in a wheel where grease and heat are applied. *Modern Amer. Tanning*, p. 109.

wheelwrighting (hwēl′rī-ting), *n.* The business of a wheelwright.

wheez, *v.* and *n.* A simplified spelling of *wheeze.*

wheeziness (hwē′zi-nes), *n.* Excessive breathiness in a sound. See *★breathiness.*

whelk, *n.* **Native whelk,** an Australian marine mollusk, *Trochocochlea constricta.* *E. E. Morris.*

whense, *adv.* and *conj.* An amended spelling of *whence.*

wherry¹ (hwer′i), *v. t.*; pret. and pp. *wherried*, ppr. *wherrying.* [*wherry*¹, *n.*] To transport in, or as in, a wherry. [Rare.]

> Buoyant shells,
> On stormless voyages, in fleets or single,
> *Wherried* their tiny mariners; aloof,
> On wing-like fins, in bow-and-arrow figures,
> The flying fishes darted to and fro.
> *Montgomery*, Pelican Island, i.

Whetstone crystals. See *★crystal.*

Whey alcohol. See *★alcohol.*—**Whey butter.** See *★butter¹.*—**Whey champagne.** See *★champagne.*

whicker (hwik′ėr), *v.* [Also dial. *wicker*; imitative.] 1. To neigh; whinny; bleat.

> Setting it [a pony] free with a vicious cut of his whip that made it *whicker.*
> *R. Kipling*, Wee Willie Winkie, in Indian Tales, p. 84.

2. To giggle; snigger. *Eng. Dial. Dict.*

Whieldon ware. See *★ware*².

Whiffletree neck-yoke. See *★neck-yoke.*

whim¹, *n.* 6†. A pun.

> Shall Squire Oldrent's daughters
> Weare old rents in their garments? (there 's a *whim* too).
> *R. Brome*, Jovial Crew, i.

whimbrel, *n.* 2. The Australian curlew, *Numenius uropygialis.*

whimper, *v. i.* 3. To produce a sound resembling a whimper. [An affected use.]

> "What 's that that *whimpers* over'ead?" said Files-on-Parade.
> "It 's Danny's soul that 's passin' now," the Colour-Sergeant said.
> *R. Kipling*, Danny Deever, st. 4.

> For he could see the Captains Three had signalled to the Fleet.
> But three and two, in white and blue, the *whimpering* flags began.
> *R. Kipling*, The Three Captains.

whimsy-whamsy (hwim′zi-hwam″zi), *n.* A fantastic or whimsical notion; a whim. [Prov., Eng. (Lancashire).]

> The real reason . . . why the Dean has n't risen higher is because he always has some *whimsy-whamsy* in his head.
> *Anthony Hope*, Quisanté, v.

whip, *v.* **I.** *intrans.*—**To whip back,** in *cricket,* to break back quickly. See *to* ★*break back.* *Hutchinson,* Cricket, p. 326. **To whip in,** to keep the hounds from scattering; to whip them in to the line of chase.

> "You must have begun somewhere, I suppose?"
> "Yes ma'am, I begun, but then I'd *whipped-in* for five years before I hunted Squire Rayton's harriers."
> *Eyre Hussey,* Miss Badsworth, M. F. H., xv.

II. *trans.*—**To whip up,** in *golf,* to strike a ball well underneath with a lofted club and with a snappy turn of the wrists, causing it to go high in the air with little run. *W. Park, Jr.,* Game of Golf, p. 114.

whip, *n.* **3.** (*c*) See the extract. [Eng.]

> Other Treasury officials with political duties are the Financial Secretary, the Patronage Secretary, called the senior "*whip,*" and three Junior Lords of the Treasury, called assistant "*whips.*" *Encyc. Brit.,* XXXIII. 547.

12. In *pianoforte-making,* the crosspiece at the top of an action-extension which bears and operates both the hammer and the damper-action. Also called *jack-whip.* See the cut under *pianoforte.*—**13.** A light line used in marine life-saving apparatus, run as an endless circuit from the shore around a sheave on the vessel and back to the shore. The breeches-buoy is operated by such a whip.—**14.** One who operates a whip-hoisting or whip-conveying line. **Double whip,** two single blocks with a rope rove through them, the standing part being made fast to a becket in one of the blocks. **Single whip,** a rope rove through a single block. **Whip and runner,** a whip whose block is made fast to a pendant, which latter is rove through a block.—**Whip upon whip,** *naut.,* one whip applied to the fall of another whip.

whip-bird (hwip'bėrd), *n.* An Australian bird, *Psophodes crepitans,* of somewhat uncertain affinities: more commonly called *coach-whip bird.* The name alludes to the peculiar note.

whipcol (hwip'kol), *n.* Rum with eggs and cream whipped in it. See the extract.

> "*Whipcol.*"—Among well-to-do families in Shetland the crowning glory of the "Yule breakfast" has been from time immemorial a brimming bowl of *whipcol,* a delectable compound of old rum, fresh eggs, sugar, and cream. *N. and Q.,* 8th ser., II. 347.

whip-cord, *n.* **4.** A weave showing a corded effect or pattern running lengthwise of the fabric.

whip-ended (hwip'en″ded), *a.* In *archery,* tapering sharply at the ends; having the ends of very small diameter: said of a bow. A backed bow can safely be made in this fashion, though a self-bow of like construction would be liable to break.

whip-flange (hwip'flanj), *n.* In *pianoforte-making,* the projection from the action-rail to which a whip is pivoted.

whipped (whipt), *a.* Applied to a mottled or agitated blue color used on Chinese porcelain. See ★*bleu fouetté.*

whipper, *n.* **6.** See the extract.

> After being thus dried, it may be either stored or passed at once to the *whipper,* a machine that knocks the dust and sand out and leaves the cotton whiter and more open.
> *U. S. Dept. Agr.,* The Cotton Plant, Bulletin, 1896, p. 230.

whipping, *n.* **7.** In *golf,* the thin twine with which the head and shaft of a club are bound together.

whipping-action (hwip'ing-ak″shọn), *n.* In *mech.,* a reciprocating, angular motion; an action or motion which tends to produce flexure: as, the *whipping-action* of a connecting-rod.

whippoorwill-pea (hwip'pọ̈r-wil-pē″), *n.* See ★*pea*^{1}.

whipsaw, *v. t.* **3.** Hence, to beat, defeat, or cause to fail in two opposite ways at the same time. See the extract. [Slang.]

> He [a broker] has only been a member a short time. It was reported on the floor that he had lately been "*whip-sawed*" in the market, having been caught short of Reading, long of sugar and long of wheat.
> *N. Y. Evening Mail,* Jan. 24, 1906.

whip-scorpion, *n.*—**Giant whip-scorpion,** an arachnid of the order *Pedipalpi* and family *Thelyphonidæ, Thelyphonus giganteus,* found commonly in the southern United States, where it is known as the vinegerone, the vinaigrier, the mule-killer, and the whip-tail scorpion. Although greatly feared, it is harmless.—**Tailed whip-scorpion,** any member of the family *Thelyphonidæ.* See *whip-scorpion.*—**Tailless whip-scorpion,** any member of the family *Phrynidæ.* See *Phrynidæ.*

whip-snake, *n.* **2.** An Australian poisonous snake, *Hoplocephalus flagellum,* about a foot long. *E. E. Morris.*

whipsnake-eel (hwip'snāk-ēl″), *n.* Any eel of the genus *Ophichthus;* in particular, *O. gomesii,* found about the coral reefs of the Gulf of Mexico.

whip-stick (hwip'stik), *n.* Same as *mallee.*

whip-stitch, *n.*—**In a whip-stitch,** in a moment; in a jiffy. [Colloq.]

whiptail (hwip'tāl), *n.* **1.** One of the skua gulls, *Stercorarius longicaudus,* so called from the two long, slender tail-feathers.—**2.** A fish. See *Tasmanian* ★*whiptail.*—**Tasmanian whiptail,** a fish belonging to the *Macruridæ,* a family of deep-sea fishes allied to the cods, having a long tail tapering to a point.

whip-thread (hwip'thred), *n.* One of the warp-threads, in gauze-weaving, that whip, or twist, about the ground or standard warp-threads. Also called *douping-warp.*

whirl, *n.* **7.** In *angling,* a spoon-bait.

> When fishing from a sail-boat the angler uses two lines with spoon-baits or '*whirls,*' by means of which large catches are made.
> *Jordan and Evermann,* Amer. Food and Game Fishes, p. 336.

Magnetic whirl, a vortical motion of the ether surrounding a circuit in which the electric current is increasing or decreasing in intensity.

whirl-about, *n.* **3.** An American hesperiid butterfly, *Thymelicus brettus,* occurring along the coast from Connecticut to Mexico. *Comstock,* How to Know the Butterflies, p. 279.

whirler, *n.* **3.** In *ceram.,* a primitive horizontal wheel turned by one hand while the other hand of the potter fashions the clay; also a revolving wheel used by decorators in painting bands of slip, color, or gold on the ware; a decorating-wheel. See *tournette.*—**4.** A revolving derrick used in loading iron ore on cars, or transferring it from cars to a vessel.

> One of the older methods, which has not yet been abandoned, consists of the utilization of "*whirlers,*" or revolving derricks, which in their appearance and plan of working are not so very different from the steam-shovels to be found in the mining regions.
> *W. Fawcett,* in The Century, April, 1901, p. 862.

5. An instrument designed to furnish a navigator with an artificial horizon when at sea. It is also known as *Troughton's top,* after its inventor, and *spinner.*

whisk-broom (hwisk'bröm), *n.* Same as *whisk*^{1}, *n.,* 1.

whisky^2, *n.*—**Dry whisky.** See ★*mescal-buttons.*—**Malt whisky,** whisky made from malted barley. Its smoky flavor is due to the fact that the malt is dried over a peat fire. The pure Highland malt whisky of Scotland is made in this way. *Encyc. Brit.,* XXIV. 542.—**Whisky skin.** See *skin, n.,* 8.

whisky-poker (hwis'ki-pō″kėr), *n.* A variation of poker in which an extra hand, or 'widow,' is dealt face down and each player in turn can exchange his hand for it. If he exchanges, his five cards are laid face up, and any following player can exchange one of them for one of his own, or he can take them all. When any player is satisfied, either before or after exchanges have taken place, he 'knocks,' and when it comes round to him again the hands are all shown and the best poker combination wins.

whisky-still (hwis'ki-stil), *n.* See ★*still*^{2}.

whispering-dome (hwis'pėr-ing-dōm), *n.* See ★*dome*^{1}.

whispery (hwis'pėr-i), *a.* Full of whispers; whispering. [Rare.]

> The reeling sea
> Now thumps like solid rock beneath the stern,
> Now leaps with clumsy wrath, strikes short, and, falling
> Crumbled to *whispery* foam, slips rustling down
> The broad backs of the waves.
> *Lowell,* Columbus, l. 5.

whist^2, *n.*—**Bridge whist.** See ★*bridge*^{2}.—**Cayenne whist,** a variety of whist in which the suits have different values and the trump is named by the dealer's side, instead of being turned up. It may also be played without a trump, either to win tricks or to lose them all: in the latter case it is called *nullo.*—**Compass whist,** in *duplicate whist* or *bridge,* an arrangement of the players by which they always occupy the same points of the compass with which they started.—**Domino whist,** a game of cards. See ★*five-or-nine.*—**Drive whist.** Same as *progressive whist.* See *progressive* ★*games.*—**Humbug whist,** a variation of double dummy in which the two players sit opposite each other. Four hands are dealt, and if either player is not content with his own hand he can exchange it for the one on his right, the trump remaining the same as first turned up. Only the thirteen cards in each hand are played, the scoring for tricks and honors being the same as at whist.—**Kalamazoo whist,** another name for duplicate whist: so called because the first duplicate-whist trays were made in Kalamazoo, Michigan.—**Scotch whist.** See *catch the ten,* under *catch*^{1}.—**Solo whist,** a card game for four players, each having 13 cards dealt to him, 3 at a time for four rounds and then 1 at a time, the last being turned up for a trump. The cards rank as in whist, and the object is to make tricks. There are six varieties of the game, the players announcing in turn which of these, if any, they are willing to undertake. The one offering the best game is the caller. The games are: *proposal* and *acceptance,* to make six tricks with the assistance of a partner; *solo,* to make five tricks alone; *misère,* to take no trick, there being no trump suit; *abondance,* to name a trump suit, and take nine tricks alone; *open misère,* to lay the hand face up on the table after the first trick, and lose every trick; *open abondance,* to name a trump suit and take all the tricks with the caller's hand exposed face upward on the table. When a proposal is bid, any player in turn may accept, and if no higher bid is made, the players are partners, just as they sit. A solo outbids a proposal, even if it has been accepted; misère outbids solo; and so on. The eldest hand always leads for the first trick, except in open abondance. Each deal is a complete game in itself. Payments are made in red and white counters, worth 5 and 1 respectively. Proposals and solos win or lose 1 red, misères 2, abondance 3, open misères 4, open abondance 6. The single player wins from or loses to each adversary. In addition to the red counters, white ones are paid for under or over tricks.—**Straight whist,** the opposite of duplicate whist; whist played in games or rubbers.—**Swedish whist,** a game very much resembling bridge, and by some supposed to have suggested it.

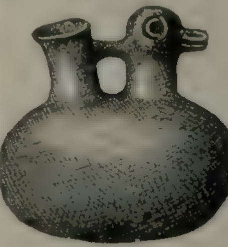
whister^2 (hwis'tėr), *n.* One who plays whist. [Colloq.]

whistle, *n.*—**Slick as a whistle,** very neatly, cleverly, or adroitly. [U. S. slang.]

whistler, *n.* **5.** A name used in England for a gadoid fish, *Motella tricirrhita.*

whistling-board (hwis'ling-bōrd), *n.* In *railroading,* a post or target displayed beside a line as a signal to the engineer to blow his whistle at that point; a whistling-post.

whistling-jar (hwis'ling-jär), *n.* A peculiar kind of jar made by the ancient Peruvians, particularly in the region of Chimu, provided with double or connecting spouts through which the air rushes when the contents of the jar are poured out. By appropriate constrictions in the spouts the inrushing air is made to produce a whistling sound. Sometimes these jars have the forms of animals and the sound is intended to imitate the voice of the animal.



Whistling-jar.

> Copies of old Peruvian vases have also been attempted, which included some of the double "*whistling-jars*" so well known to collectors of Incarial vessels.
> *E. A. Barber,* Pottery and Porcelain of the U. S., p. 90.

whistling-moth (hwis'ling-môth), *n.* Any one of several agaristid moths of the genus *Hecatesia,* inhabiting Australia. They fly at dusk and make sharp continued calls like those of cicadas. The noise, according to Sir George Hampson, is probably made by rubbing the tarsal spines against a ridged area in the front of the fore wings. *W. W. Froggatt,* Australian Insects.

> The "*whistling* (stridulating) *moths*" of the genus Hecatesia, which emit sounds like the call of a Cicada (pp. 234, 235), of which latter group there are also many large and remarkable Australian species.
> *Nature,* Sept. 19, 1907, p. 516.

whistling-post (hwis'ling-pōst), *n.* See ★*whistling-board.*

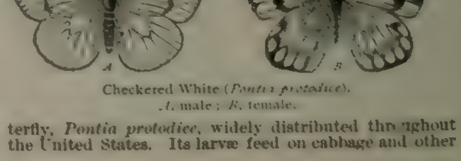
whit-bed (hwit'bed), *n.* Same as *whit-bee.* See *Portland stone,* under *stone.*

white^1. **I.** *a.*—**White C.** See ★*C.*—**White J.** See ★*J.*—**White line.** (*b*) In *wood-engraving,* a line cut directly into the surface of the block, and not left upon the surface, as was done by the early German schools. Thomas Bewick (1753–1828) introduced the method of working out the design by cutting away the lights and leaving the darks, depending thus upon a white line instead of a black line.

> By the new method the block was treated as a black surface, and the color was lessened by increasing the number of *white lines.*
> *G. E. Woodberry,* Hist. of Wood-engraving, p. 152.

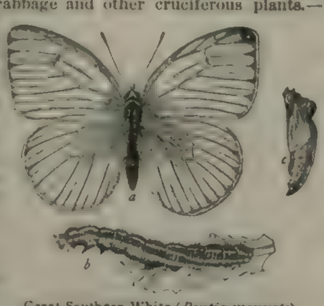
White mold. See ★*leaf-mold,* 2, and ★*mold*^{2}.—**White nebula, plague.** See ★*nebula,* ★*plague.*—**White River series.** See ★*series.*—**White rot, ware.** See ★*rot,* ★*ware*^{2}.

II. *n.* **5.** Any one of several white pierid butterflies, as the great southern white, *Pontia monuste,* the checkered white, *P. protodice,* the gray-veined white, *Pieris napi,* or the cabbage-butterfly, *P. rapæ.* *Comstock,* How to Know the Butterflies, p. 71.—**6.** In *milling,* the trade-name of flour made from the whitest and finest part of the wheat and free from all the outer coats.—**7.** Same as *bloom*^{1}, 6 (*d*). [Rare.] *Flemming,* Practical Tanning, p. 163.—**Barytic white,** a white pigment consisting of barium sulphate. Same as *constant white* (which see, under *white*^{1}).—**Charlton white,** a house-painters' pigment, consisting of barium and strontium sulphates with zinc sulphid.—**Checkered white,** an American pierid butterfly, *Pontia protodice,* widely distributed throughout the United States. Its larvæ feed on cabbage and other



Checkered White (*Pontia protodice*).
A, male; *B,* female.

cruciferous plants.—**Chinese white.** (*b*) A trade-name for a pigment used as a substitute for white lead: it is sometimes zinc oxid, sometimes barium sulphate.—**Duresco white,** the trade-name of a pigment consisting of barium and strontium sulphates with zinc sulphid. **Garden white,** any one of the several species of white pierid butterflies common in gardens in Europe and North America: as, the imported cabbage-butterfly, *Pontia rapæ.*—**Gray-veined white,** a variable pierid butterfly, *Pieris napi,* common to Europe and North America, which exhibits an extraordinary polymorphism, eleven named varieties occurring in the United States. Its larvæ feed on cabbage and other cruciferous plants.—**Great southern white,** a large American pierid butterfly, *Pontia monuste,* occurring commonly in the southern United States, the West Indies, and South America. Its larvæ feed on cabbage, lettuce, and turnip. **Griffiths' patent zinc white,** a pigment made by precipitating a solution of zinc sulphate or chlorid with a soluble sulphid, calcining the precipitate, and quenching it, while hot, in cold water.—**Hamburg white,** the trade-name of a pigment, a mixture of white lead and barium sulphate. **In the white,** not yet dyed: said of textile fabrics, as wool, mohair, or cotton. **Marbled white.** See ★*half-mourner.* **Orr's zinc white,** a house-painters' pigment which consists of a mixture of zinc sulphid and barium sulphate, made by the interaction of solutions of zinc sulphate and barium sulphid. It is not blackened by an atmosphere which contains sulphureted hydrogen.—**Satin white.** Same as *blanc fixe* (which see, under *blanc*).



Great Southern White (*Pontia monuste*). *a*, adult; *b*, larva; *c*, pupa.

whitebait, *n.* **3.** A name used in New Zealand for the young fry of *Galaxias attenuatus,* a fish of the family *Galaxidæ;* also the young of the New Zealand smelt, *Retropinna Richardsonii.* *E. E. Morris,* Austral English.

white-beard, *n.* **2.** In Australia, any one of several species of shrubby plants of the genus *Styphelia,* especially *S. ericoides,* so called from the dense beard of white hairs which lines the corolla lobes.

whitebill, *n.* **2.** A clupeoid fish, *Sardinella humerales,* of the West Indian fauna.

white-blast (hwīt'blȧst), *n.* A disease of cultivated onions, in America, caused by the insect *Thrips striatus.*

white-border (hwīt'bôr″dėr), *n.* The antiopa butterfly.

whitecap, *n.* **6.** The inner chaff of wheat: chiefly in the plural. *Todd,* Amer. Wheat Culturist, p. 24.

white-cat (hwīt'kat), *n.* **1.** A name applied to the fork-tailed catfish of the Potomac river, *Amiurus catus,* found from Maryland to Texas.—**2.** Same as *channel-cat* (*a*).

white-eye, *n.* **4.** Same as *wall-eyed pike* (which see, under *pike*^{2}).

whiteface (hwīt'fās), *n.* A small Australian passerine bird, *Xerophila leucopsis.* *E. E. Morris.*

Whitefielder (hwit'fēl-dėr), *n.* A follower of Whitefield, the evangelist, who, in the great controversy with Wesley, in the middle of the eighteenth century, held the Calvinistic view as opposed to the Arminian; a Whitefieldian.

Whitefieldite (hwit'fēl-dīt), *n.* Same as ★*Whitefielder.*

whitefish, *n.*—**Bissell's whitefish,** *Argyrosomus bisselli,* found in small lakes in Michigan.—**Bloater whitefish,** a small whitefish, *Argyrosomus prognathus.*—**Broad whitefish,** the common name of a species of whitefish, *Coregonus kennicotti,* of the family *Salmonidæ,* found in the streams of British Columbia and Alaska. The largest species of the genus attains a weight of 30 pounds. **Coulter's whitefish,** *Coregonus coulterii,* found in the head waters of the Columbia river in British Columbia.—**Humpback whitefish,** *Coregonus nelsoni,* of northern North America.—**Kennicott's whitefish,** *Coregonus kennicotti,* from British America and Alaska.—**Lauretta whitefish,** a fish, *Argyrosomus laurettæ,* found in the Yukon river.—**Least whitefish,** a fish, *Argyrosomus pusillus,* widely distributed in the fresh waters of Alaska.—**Richardson's whitefish,** *Coregonus richardsoni,* found in British Columbia.—**Silver whitefish,** *Argyrosomus prognathus,* a whitefish found in the Great Lakes.

whitehead, *n.* **5.** A small and rare oscinine bird, *Clitonyx albicilla,* peculiar to the North Island, New Zealand, and threatened with extinction.

> Now, singularly enough, the *whitehead* (Clitonyx albicapilla(sic!) was forty years ago the commonest bird in the North Island, and at that time a strict inhabitant of low scrubby vegetation, where its habits were gregarious. For many years it seemed to have become extinct, Mr. Reischek, during several years' hunting in the Auckland woods never having met with a single example. During the last few years it has reappeared, but in an entirely new character, as the frequenter of the highest tree-tops, and it appears to be sensibly increasing.
> *Pop. Sci. Mo.,* Jan., 1903, p. 224.

white-letter (hwīt'let-ėr), *n.* See the extract.

> The roman type was then called *white-letter* as a ready name of distinction [from 'black-letter'], for roman showed more white than black upon the printed page.
> *De Vinne,* Plain Printing Types, p. 292.

Whitening of pig-iron. See ★*pig-iron.*

white-pointer (hwīt'poin″tėr), *n.* A New South Wales name for the *white shark.* See *shark*^{1}. *E. E. Morris,* Austral English.

white-top, *n.* **2.** Same as ★*blackbutt.*—**3.** The common wild oat-grass, *Danthonia spicata,* of the eastern United States.—**4.** *Tridens strictus,* an approved hay-grass of central Texas.

whitewash, *n.* **4.** A wash or loose superficial deposit of white boulders and pebbles of quartz and sericite-schist which appears on the hillsides above the gold-bearing creeks of the Klondike and is itself auriferous. See the extract. [Local.]

> The early miners of course confined their attention to the valleys, and the discovery of these rich deposits upon the hillsides excited great surprise; they now rival the valley gravel in importance. The deposit is locally known as '*white-wash*' or the 'White Channel.' The origin of the White Channel is shrouded in mystery; it was at first supposed to be a glacial deposit.
> *H. A. Miers,* in Pop. Sci. Mo., July, 1902, p. 234.

whitewashing-machine (hwīt'wosh-ing-ma-shēn″), *n.* A painting-machine adapted to the use of prepared liquid whitewash. See ★*painting-machine.*

whither^2 (hwiᴛʜ'ėr), *v. i.* [Also dial. *whidder, whuther, whudder, wither, wuther, wudder;* origin obscure, perhaps orig. imitative. Compare *wuther.*] To make a rushing noise; make a tumult in the atmosphere; roar, rustle, or whistle, as the wind; bellow, as a bull. [A wide-spread prov. word.]

whiting^2, *n.* **5.** A name given to a large number of unrelated silvery and white fishes, for example to different sciænoid, clupeoid, and gadoid fishes.—**California whiting,** *Menticirrhus undulatus,* of the coast of California.—**Northern whiting,** *Menticirrhus saxatilis,* of the Atlantic coast of the United States.—**Sand whiting,** *Menticirrhus americanus,* of the south Atlantic and Gulf coasts of the United States. **Whiting of Lake Winnipiseogee,** a whitefish, *Coregonus labradoricus,* found from the Winnipeg and Great Lake regions to the lakes of the Adirondacks and White Mountains, and northeastward.

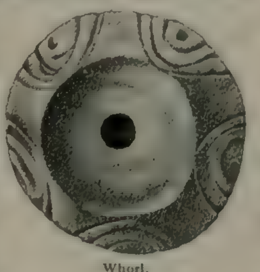
whitney, witney (wit'ni), *n.* A kind of cloth having a raised nap in ridges (*E. D. D.*): a heavy, rather coarse, woolen fabric much used in the eighteenth century for coats, breeches, petticoats, and cloaks. Blankets are now made of it. [Prov., Eng. (Yorkshire).]

> *Whitney.* A heavy and rather coarse cloth in universal use in the eighteenth century. . . . Its color was usually scarlet. . . . It was also spelled *Witney.*
> *A. M. Earle,* Costume of Colonial Times, p. 256.

whittlings (hwit'lingz), *n. pl.* Chips or bits produced in whittling.

W. H. M. A. An abbreviation of *Women's Home Missionary Association.*

whorl, *n.* **5.** In *archæol.,* one of certain round objects, sometimes slightly cup-shaped, which are frequently found in excavations. They usually carry marks or inscriptions, and are probably votive offerings. Dr. Schliemann found many thousand terra-cotta whorls in the third, fourth, fifth, and sixth cities at Hissarlik. They have been found in Italy, Crete, and elsewhere.



Whorl.

whort, *n.*—**Indian whort,** the bearberry, *Arctostaphylos Uva-ursi.* Also called *upland* or *wild cranberry.*

whudder (hwud'ėr), *v. i.* See ★*whither*^{2}, *v.*

whyo (hwī'ō), *n.* A footpad. [Western U. S. slang.]

W. I. An abbreviation of *West Indies.*

Wianamatta shales. See ★*shale*^{2}.

Wichita group. See ★*group*^{1}.

wick^1, *n.* **2.** In *hort.,* a pea-vine, of a set being bred for earliness, which continues to grow above instead of promptly maturing the lower pods.

> The objectionable form is a vine twenty-four to sixty inches in height, which even when the lowest pod is fully ripe is still growing, having its apex covered with blossoms and buds. Such plants as these last are called by seedmen '*wicks*' or 'offs,' and a stock of 'Extra Early' peas is valued in inverse proportion to the number of such plants it produces. *Science,* May 6, 1904, p. 738.

wickelkamacite, *n.* See ★*meteorite.*

wicker^3, *v.* See ★*whicker.*

wicket, *n.* **8.** A game, formerly played in parts of the United States, resembling primitive cricket.—**Bird-lime wicket,** in *cricket,* a wicket which in consequence of the action of rain followed by wind or sunshine becomes dry on the surface only, causing the ball when bowled to break readily. *Hutchinson,* Cricket, p. 88.—**Biting wicket,** in *cricket,* a wicket upon which the spin or twist imparted to the ball by the bowler will readily bite or take effect. *Hutchinson,* Cricket, p. 103.—**Hard wicket,** in *cricket,* a wicket or playing-ground which is hard and dry. *Hutchinson,* Cricket, p. 69. **Pace of the wicket.** See ★*pace*^{1}.—**Single wicket,** that form of cricket in which only one batsman at a time is having his innings.—**Sticky wicket,** in *cricket,* a wicket affected by rain which causes the ball to stick and lose its speed at the pitch.—**To catch a wicket,** in *cricket,* to catch a batsman out.

wicking^2 (wik'ing), *n.* [*wick*^{5} + *-ing*^{1}.] In *lawn-bowls,* the act of caroming from one ball lying near the jack, with the effect that one's own balls lie nearer the jack than those of one's opponents: more fully termed *in-and-out wicking.*

wickiup, *n.* **2.** Hence any small hut or shanty. [Western U. S.]

> This Wilkins lives in a *wickeyup* out on the aige of the town. *A. H. Lewis,* Wolfville Days, iii.

> See those spars up-ended over there? I mean that *wickyup* thing. Hop-poles, then, you rural blightee. Keep on fetching me hop-poles.
> *R. Kipling,* Steam Tactics, in Traffics and Discoveries, [p. 181.

Widal reaction. See ★*agglutination test.*

Wide ball, cards. See ★*ball*^{1}, ★*card*^{1}.

wide-awake, *n.* **2.** The sooty tern, *Sterna fuliginosa,* a tropical and subtropical species, named from its cry.

> The most numerous terns are the 'black-backed' and 'gray-backed' *wideawakes,* of which there must be millions, nesting among the bushes and tufts of grass, particularly on the southern end of the island.
> *C. C. Nutting,* in Pop. Sci. Mo., Aug., 1903, p. 327.

wide-gage (wīd'gāj), *a.* Same as *broad-gage.*

wide-lead (wīd'led), *v. t.* In *printing,* to lead (lines of type) widely.

> If the text is *wide-leaded,* about half a page of blank space may be given to the chapter heading; if thin-leaded, one third; if solid and without a head-band, one fourth or one fifth of the page.
> *De Vinne,* Mod. Book Composition, p. 131.

wide-minded (wīd'mīn-ded), *a.* Broad-minded; liberal; capable of more than one view of a subject.

widemindedness (wīd'mīn-ded-nes), *n.* Broadmindedness; liberality; a capacity of looking at a subject from many points of view.

> Free libraries controlled by trained librarians [develop] a certain *widemindedness*—forming a basis for true cultivation. *N. and Q.,* 10th ser., III. 320.

wide-space (wīd'spās), *v. t.* In *printing,* to arrange the type or words with thicker or wider spaces than usual.

> *Wide-space* fat type; thin-space condensed type.
> *De Vinne,* Mod. Book Composition, p. 88.

widow^1, *n.*—**College widow.** See ★*college.*—**Widow's peak,** a lock of hair growing down in the middle of a woman's forehead. [Colloq.]

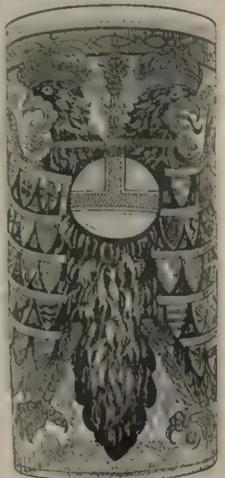
> She who waited by the brushwood-pile was no longer a little girl, but a woman with black hair that grew into a "*widow's peak,*" combed back from her forehead.
> *R. Kipling,* The Brushwood Boy, in The Day's Work, [p. 410.

widow-fish (wid'ō-fish), *n.* A scorpænoid fish, *Sebastodes ovalis,* found on the coast of California.

widow-maker, *n.* **2.** Specifically: (*a*) In *lumbering,* a broken limb hanging loose in the top of a tree, which in its fall may injure a man below. (*b*) A breaking cable.

width, *n.*—**Intercondylic width,** the distance between the outer surfaces of the condyles of the lower jaw. *A. Thompson,* Jour. Anthrop. Inst., XXXIII. 148.—**Intertemporal width,** in *anthrop.* and *zoöl.,* the least width between the two temporal fossæ, taken behind the postorbital processes: used in measuring skulls of mammals.

wiederkomm (vē'der-kọm), *n.* [G. *wiederkomm,* < *wiederkommen,* come again, < *wieder,* again, + *kommen*, come.] A cylindrical drinking-glass, usually of large size, decorated with paintings in enamel colors, made in Germany in the 16th, 17th, and 18th centuries. See ★*willkomm*.



Wiederkomm, 17th century.

wierd, *a*. An amended, and former, spelling of *weird*.

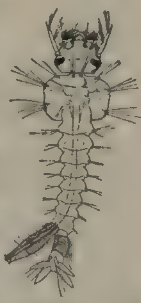
wife, *n*.—**Spiritual wife**, in the Mormon church, the wife who is 'sealed' to her husband 'for eternity.' See ★*sealing*^{2}, 2.

wife-tribe (wīf'trīb), *n*. In primitive society where laws of exogamy exist, that tribe from which a member of a certain tribe must choose his wife. *Ratzel* (trans.), Hist. of Mankind, I. 117.

wig^4 (wig), *v. i.* [Origin obscure.] To post a scout on the route of flight in a pigeon race, with a hen pigeon to attract the opponent's bird and retard his progress. *Barrère and Leland.* [Slang.]

wiggler, *n*. **2.** The larva of a mosquito. Same as *wriggler*, 1, and *wiggletail*.

> The larvæ of Culex, commonly known as *wigglers*, are familiar to almost everyone, and are the common *wigglers* found in horse troughs and rain-water barrels, which wriggle around in the water, returning at frequent intervals to the surface to breathe, and when at the surface hanging with simply the tip of the tail extruding, the rest of the body being held below the surface at a great angle.
> *L. O. Howard*, in Yearbook U. S. [Dept. Agr., 1901, p. 181.



Wiggler (full-grown larva of *Culex*), enlarged. (Howard, U. S. D. A.)

Wiggletail Democrat, a Democrat bred in a stagnant party as the wiggletail or wiggler is bred in stagnant pools; one who is a Democrat by inheritance or habit and not by reflection. *Thomas E. Watson.* [U. S. political slang.]

wigwassing, *n*. See ★*weequashing*.

Wikstrœmia (wik-strē'mi-ạ̈), *n*. [NL., named in honor of Johann Emanuel *Wikström* (1789–1856), a Swedish botanist.] A name given by Endlicher in 1833 to *Capura*, a genus of plants of the family *Daphnaceæ*.

wil, *v*., *n*., and *a*. A simplified spelling of *will*.

wild^1, *a*. **14.** Being in a state of ebullition. Thus steel, solidifying in a mold, which is evolving gases, is said to be *wild*.

> No. 2 sample is an extra soft open-hearth steel, containing 0.14 per cent. of carbon and only 0.19 per cent. of manganese. This steel must have been very "*wild*" and oxygenated. *Nature*, April 14, 1904, p. 553.

Cape wild dog, *Lycaon pictus*, better known as the Cape hunting dog.

> Elephants, hyænas, hippopotami, and that most typical African animal, the *Cape wild-dog!*
> *Nature*, Oct. 23, 1902, p. 633.

Wild date. See ★*date*^{3}

wildboret, *n*. Apparently a heavy repped woolen goods, which was much used for women's winter gowns in Colonial days.

> *Wildbore.* We read of "Marone Ribb'd *Wildbores*" in the Salem Gazette of 1784, and the name appears frequently elsewhere, until this century *Wildbore* was apparently a heavy repped woollen goods, and was much used for women's winter gowns.
> *A. M. Earle*, Costume of Colonial Times, p. 257.

wildcat, *n*. **3.** *Naut.*, a deeply grooved iron wheel on a windlass or capstan. On the side faces of the groove are radial projecting ribs in pairs called whelps, so spaced that they catch the alternate links of the chain cable.—**4.** A formational name applied in Kentucky to a conglomerate of Carboniferous age (Wildcat Mountain Conglomerate), and in California to a series of sediments of Pliocene age.

> As already pointed out these flood plains are not delta deposits, but are the result of corrasion of the rocks of the *wild-cat* formation.
> *U. S. Dept. Agr.*, Bureau of Plant Industry, 1902, Bul- [letin 12, p. 55.

5. Same as ★*niggerhead*, 4.—**6.** An oil-well, mine, or the like discovered in ★**wildcatting** (which see).

> New territory has been opened up by unexpected *wildcats* [oil-wells]. The shut-down had done less than was expected to decrease stocks.
> *McClure's Mag.*, Feb., 1903, p. 399.

wildcatter (wīld'kat"ėr), *n*. One who prospects for oil or ores, or takes other ventures; one who opens new oil-wells, mines, or similar venturesome enterprises.

> It is a fact that large oil producers do not prospect; they leave that dangerous business to the professional "*wildcatter*," and when he has located a new, rich territory, they buy him out.
> *Sci. Amer.*, June 18, 1904, p. 474.

wildcatting (wīld'kat-ing), *n*. The act of prospecting, as for ores or minerals. See the extract under ★*wildcatter*.

> *Wildcatting* has been going on at a number of other points in the state and some encouragement has been met, especially in Randolph and Macoupin counties. It seems not unlikely that as experienced drillers prospect other parts of the state, especially in the southern portion, additional oil fields will be found.
> *Contrib. to Econ. Geol.*, U. S. Geol. Surv., 1907, p. 829.

Wildermuth ear. See ★*ear*^{1}.

wild-fowling (wīld'foul-ing), *n*. The hunting of wild-fowl.

> Their principal means of subsistence is *wild-fowling*, a dangerous occupation, frequently costing human lives.
> *Geog. Jour.* (R. G. S.), XIII. 259.

wilful-missing (wil'fụl-mis"ing), *a*. Missing voluntarily; missing, but not killed, wounded, or captured. [Colloq.]

> There is a world outside the one you know,
> To which for curiousness 'Ell can't compare—
> It is the place where "*wilful-missings*" go,
> As we can testify, for we are there.
>
> You may 'ave read a bullet laid us low,
> That we was gathered in "with reverent care
> And buried proper." But it was not so,
> As we can testify, for we are there.
> *R. Kipling*, Wilful-Missing, st. 1.

wilga (wil'gạ̈), *n*. [Austral Eng., from the aboriginal name.] An Australian tree of the rue family, *Geijera parviflora*, yielding a hard wood having an agreeable odor.

wilk-bob (wilk'bob), *n*. Same as *road-goose* (which see, under ★*goose*).

will^1, *n*.—**Divided will.** See *divided* ★*self*.—**Mancipatory will.** Same as *mancipatory testament* (which see, under *testament*).—**Sealed will** or **mystic will**, a form of will or testament common under the Louisiana code as under its original, the Code Napoleon. It is signed by the testator, and placed in a sealed wrapper and superscribed by the testator and by a notary and witnesses to whom he has declared that it is his will.—**To break a will.** See ★*break*.

Will^4 (wil), *n*. An abbreviation of the personal name *William*.—**Black Will**, a common name of *Centropristes striatus*, a serranoid fish of the Atlantic coast of the United States.

Willard's brome-grass. See ★*brome-grass*.

willcoxite (wil'kok-sīt), *n*. [Named after Col. Joseph *Willcox*.] A hydrous silicate of aluminium, magnesium, sodium, and potassium, which occurs in whitish pearly scales as a coating about corundum and is derived from its alteration: found in North Carolina.

Willesden canvas. See ★*canvas*.

willey (wil'i), *v. t.* Same as *willow*^{1}, *v. t.* *C. Vickerman*, Woollen Spinning, p. 117.

williamsite (wil'yạm-sīt), *n*. [Named after L. W. *Williams*, from whom it was received.] An apple-green or oil-green variety of serpentine which has lamellar to massive granular structure, from Pennsylvania.

willier (wil'i-ėr), *n*. [*willy* + *-er*^{1}.] One who operates a willow or willy for cleaning cotton, wool, etc.

Willing game. See ★*game*^{1}.

Willis's cords. See ★*cord*^{1}.

willi-willi (wil'i-wil"i), *n*. See ★*willy-willy*.

willkomm (vil'kọm), *n*. [G. *willkomm-becher*, 'welcome-cup.'] Same as ★*wiederkomm*.

willow^1, *n*. **3.** Same as ★*blackbutt*.—**Native willow.** (*a*) In Australia, any one of several species of trees suggesting the willow, especially the boobyalla, *Acacia longifolia*, and *Pittosporum phyllirœoides*. See ★*boobyalla* and ★*butter-bush*. (*b*) Same as ★*coobah*.—**Roman willow**, the lilac, *Syringa vulgaris*.—**Willow dagger-moth.** See ★*willow-moth*, 2.—**Willow fig.** See ★*fig*^{2}.—**Willow leaf-beetle.** See ★*leaf-beetle*.—**Willow slug-caterpillar.** See ★*slug-caterpillar*.

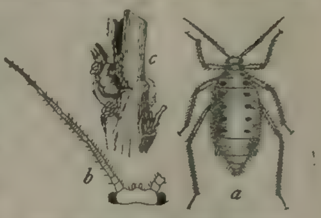
willow-borer (wil'ọ̄-bōr"ėr), *n*. (*a*) A cerambycid beetle, *Xylotrechus annosus*. (*b*) Any one of several buprestid beetles, such as *Buprestis fasciata* and *Agrilus politus*.

willow-cat (wil'ọ̄-kat), *n*. A name applied to the large catfish of the lower Mississippi, *Ictalurus anguilla*.

willow-catfish (wil'ọ̄-kat"fish), *n*. Same as ★*willow-cat*.

willow-chafer (wil'ọ̄-chā"fėr), *n*. Same as *goldsmith-beetle*, 1.

Willow Creek beds. See ★*bed*^{1}.

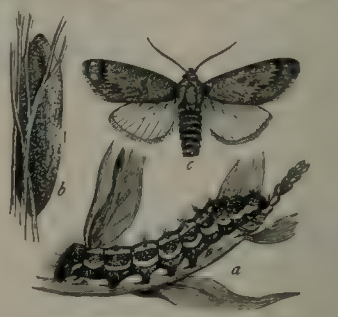


Flocculent plant-louse (*Melanoxanthus flocculosus*) found on willow.

a, oviparous female, enlarged; *b*, head and antenna of same, greatly enlarged; *c*, eggs on willow bark. (After Weed, U. S. D. A.)

willow-louse (wil'ọ̄-lous), *n*. Any one of several species of plant-lice found on the willow, such as *Rhopalosiphum salicis*, *Chaitophorus nigræ*, *C. smithiæ*, *Lachnus salicicola*, and *L. dentatus*.

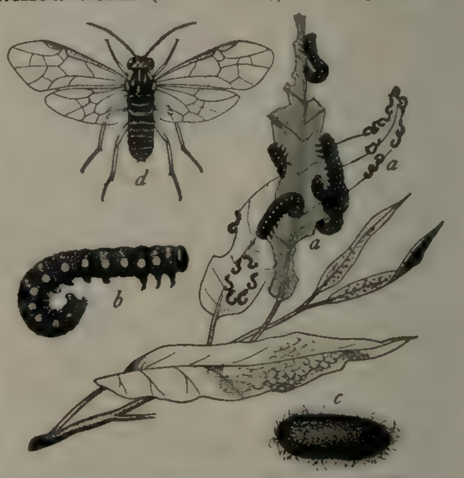
willow-moth, *n*. **2.** Any one of more than 60 species of American moths whose larvæ live on willows; notably the willow tussock-moth, *Hemerocampa definita*, the adult of the pink-striped willow span-worm, *Deilinea variolaria*, and either of the willow dagger-moths, *Apatela oblinita* and *A. Americana*.



Willow Dagger-moth (*Apatela oblinita*).

a, larva; *b*, cocoon; *c*, moth. (After Riley, U. S. D. A.)

willow-worm (wil'ō-wėrm), *n*. Any one of more than 150 species of lepidopterous or tenthredinid larvæ which feed on the willow.



Yellow-spotted Willow-worm (*Pteronus ventralis*).

a, *a*, young larvæ; *b*, full-grown larva; *c*, cocoon; *d*, adult: all slightly enlarged. (Howard, U. S. D. A.)

willyamite (wil'yạ-mīt), *n*. [*Willyama* (see def.) + *-ite*^{2}.] A sulphantimonide of cobalt and nickel which occurs in masses with cubic cleavage and of a tin-white to steel-gray color: found at the Broken Hill mines, Willyama township, New South Wales.

willy-willy (wil'i-wil"i), *n*.; pl. *willy-willies* (-iz). [Native Australian *willi-willi*.] **1.** A small whirl of wind carrying up black clouds of dust and often leaves and grass. [Interior of Australia.]—**2.** A violent storm of wind and rain on the northwest coast of Australia.

> His [Henry Taunton's] reminiscences are spread over the seventies and eighties, his last pearling season being that of 1886–7, which terminated by the disastrous loss of his vessel, torn from its anchorage in Lagrange Bay by one of those sudden hurricanes known by the native name of "*Willi-Willi.*" *Athenæum*, Jan. 2, 1904, p. 11.

> In discussing cyclones and storms, mention is made of the "*Willy Willies*" which afflict the north-west parts of West Australia. These are severe cyclones which apparently originate in the Cambridge Gulf and travel south-

west and south along the line of the coast, or they cross the continent towards the Australian Bight. These storms cause great havoc, and are marked by torrential rains. *Nature*, Oct. 22, 1908, p. 653.

wilsonite (wil′sọn-īt), *n.* [Named after Dr. James *Wilson*, who found it.] An altered scapolite, near pinite in composition, from Bathurst, Canada.

wilt¹ (wilt), *n.* [*wilt*, *v.*] A disease of plants which causes them to wilt: used only with a qualifying word indicative of the plant affected. —**Aster wilt**, a fungous disease of cultivated asters caused by a species of *Fusarium*.—**Carnation wilt**, a disease very similar to aster wilt, which affects cultivated carnations.—**Corn wilt**, a bacterial disease of corn caused by *Pseudomonas Stewarti*.—**Cotton wilt.** See *wilt* ★*disease*.—**Cucumber wilt**, a fungous disease of cucumbers caused by *Neocosmospora vasinfecta*.—**Flax wilt**, a serious disease of flax, especially in the Dakotas, attributed to *Fusarium Lini*.—**Potato wilt**, a fungous disease which affects potatoes, doubtfully attributed to *Oöspora rosea*.—**Tomato wilt.** Same as *sleepy* ★*disease*.

wilt-disease (wilt′di-zēz″), *n.* See ★*disease* and ★*wilt*.

Wilts. An abbreviation of *Wiltshire*.

wimble-bit (wim′bl-bit), *n.* See ★*bit*¹.

wimble-drill (wim′bl-dril), *n.* See ★*drill*¹.

wimen, *n.* An amended spelling of *women*.

wimi (wē′mē), *n. sing.* and *pl.* [Hopi.] Sacred objects, supposed to possess magical powers, belonging to the various clans and religious societies among the Hopi. These objects are used in the construction of the ponya, or altar, and include tiponis, effigies of the gods, and other objects.

The Antelope chief bewailed that his altar was so poor in *wimi* (fetishes), and showed me, in addition to what have been mentioned, a trochid shell and a few rounded stones. *J. W. Fewkes*, in An. Rep. Bur. Amer. Ethnol., [1894-95, p. 279.

win¹, *v.*—**To win out.** (*a*) In *faro*, said of a card when it wins four times on one deal. (*b*) To win; succeed. [Colloq.]

win¹, *n.* 2. A victory; a success; an act of winning. [Colloq.]

Mr. . . . has bred his good bitch Frances, who only lacks one *win* of being a champion, to Debonair-Adirondack Kennels' Debonair Carol, 52677. *Field and Fancy*, April 6, 1901.

wind¹, *v.* **I.** *intrans.*—**To wind away**, *naut.*, to blow the boatswain's call; whistle a call; sound the boatswain's whistle.

II. *trans.*—**To wind a ship**, to change its position by bringing its stern where its head was; swing a vessel around at its anchor so as to clear a turn in the hawse.

wind¹, *n.*—**Out of wind.** (*b*) In *carpentry*, free from perceptible or injurious warping or twisting, as timber; also, brought to a straight and regular form by cutting or planing.

wind², *n.* **Backing wind.** See *hauling* ★*wind*.—**Baric law of the wind**, the relation between the direction of the wind and the trend of the isobars; the law according to which the winds blow spirally inward, circulating in the direction contrary to the sun or contrary to the motion of the hands of a watch.—**Beating wind**, a head wind which forces a vessel to tack.—**Coast wind**, a wind that blows along or over the coast of a continent. Such winds are sometimes dry winds descending from interior mountains, as the harmattan of West Africa or the northers of the Texas coast. At other times they are simply the steady winds of that region of the globe, but converted into eddies and gusts by the transition from land to water, as on the west coast of Mexico.—**Diurnal inversion of the wind**, the Espy-Koeppen rule in accordance with which the wind, at some little distance above the earth's surface, is strongest during the night and feeblest at midday, whereas the reverse is true at the immediate surface of the earth, with corresponding diurnal changes in direction, as announced by Espy in 1840 and Koeppen in 1886.—**Dove's law of the rotation of the winds**, the rule that in the north temperate zone the changes in the direction of the wind at any locality go through a period lasting only a few days, and most frequently in this order: east, south, west, north, or in the direction of the apparent daily course of the sun. In the southern hemisphere the order is reversed. This law was known to Aristotle for the Mediterranean region, but Dove in 1827 gave it a wider extension. His theoretic explanation by the introduction of belts of southerly and northerly winds is now replaced by the laws of cyclones and their movements of translation.—**Eye of the wind.** See ★*eye*¹.—**Hauling wind**, a wind that changes around the compass in the direction of the movement of clock-hands or with the sun—the reverse of a *backing wind*, which shifts contrary to the revolution of clock-hands, or against the sun.—**Head wind**, a wind directly in the course of the vessel; a wind coming from the quarter toward which the ship is bound.—**Hot wind**, specifically, in Australia, a wind blowing from the north, lasting for two or three days, and marked by a few hours of extreme heat.—**Hurricane winds.** In the northern hemisphere these winds revolve contrary to the movements of the hands of a watch, and in the southern hemisphere with the hands of a watch, or, as a sailor expresses it, 'against the sun' and 'with the sun,' respectively.—**In the wind.** (*b*) Said of the sails of a vessel when they are all shivering, owing to the ship's having been brought close to the wind.—**Large wind**, *naut.*, a wind blowing at such an angle with the keel that it is practically a free or quartering wind, or one which blows over the quarter of the vessel.—**Moderate wind.** Same as *moderate breeze*. See *wind-scale* (under *scale*³).—**Planetary winds.** See ★*planetary circulation*.—**Spiral** or **spiraling winds**, winds that blow in a general reëntrant spiral system of curves around the globe and around local areas of high and low pressure; the complex system of cyclonic and anticyclonic winds.

The relation of weather changes to the *spiraling winds* of the prevailing westerlies may be simply illustrated by drawing (on an appropriate scale) the winds and clouds of a cyclonic and an anticyclonic area, . . . on tracing paper and moving the paper slowly to the right, across a map of the United States. *W. M. Davis*, Elem. Phys. Geog.

To hold a good wind (*naut.*), to possess weatherly qualities; to preserve the breeze.—**To hold the wind** (*naut.*), to keep the sails full.—**To hug the wind.** See ★*hug*.—**Wind erosion.** See ★*erosion*.—**Wind-mantle.** See ★*shelter-belt*.—**Woven wind**, a fanciful name applied to various delicate gauzy textiles, such as Coan linen, Dacca muslin, etc.

The construction of the roller gin has undoubtedly been greatly improved in recent times, especially as regards the ease with which it is worked and the quantity of cotton it cleans, but it is doubtful if the quality of the product is any better than it was in those ancient days when the Hindoos extracted with it the delicate fibers with which they made the wonderful tissues called the "*woven wind*." *U. S. Dept. Agr.*, The Cotton Plant, Bulletin, 1896, p. 355.

windage, *n.* 3. The disturbance of the atmosphere by the movement of any object through it, as by that of a revolving fly-wheel or armature.

In reply to a query as to whether the *windage* is excessive, he said that it is more than in the case of the slow-speed generator, yet as a whole it has not a disagreeable effect since noise in the engine room is a comparative quantity. *Elect. World and Engin.*, July 4, 1903, p. 15.

4. The space intervening between the moving part of any mechanism and the inclosure within which it moves, as the air-gap of a dynamo.—5. The air-friction of the moving parts of a machine as distinguished from the friction of the bearing surfaces.

Mr. W. Odell described some experiments he had carried out to determine the power wasted by the *windage* of fly-wheel and dynamo armatures and he stated that a 9-foot disc running at 500 revolutions a minute would absorb about 10 H. P. *Nature*, Oct. 29, 1903, p. 635.

wind-bag, *n.* 2. In *ornith.*, a pouch connected with the gullet and capable of being distended with air when a bird is 'showing off.' Such wind-bags are present in the frigate-bird, the great bustard, and others.

These *wind bags*, which, almost without exception, may be inflated and deflated at the will of the animal, differ much in the nature of their origin. *W. P. Pycraft*, in Knowledge, Jan., 1903, p. 1.

wind-borne (wind′bôrn), *a.* Carried by the wind, as sand.

wind-break, *n.* 2. The breaking of trees by wind.

wind-cripple (wind′krip″l), *n.* A tree stunted or otherwise injured by the wind.

Wind-cripples have dead or dying tops, often with entire loss of the conical shape; the growth of their branches is limited to a critical line. This leads to a densely branched and often one-sided habit. *Science*, Feb. 28, 1908, p. 339.

wind-cutter, *n.* 2. A construction or configuration for the front end of a high-speed vehicle, such as a railway-car or motor-vehicle, by which the resistance to motion by displacement of the air is lessened. Such wind-cutters are sections of conoids or inclined or warped surfaces presenting a sharp edge of entry into the air, or receiving the wind pressure on areas oblique to the direction of motion. Dirigible aërodromes have wind-cutting ends. *The Engineer* (London), 1901, p. 432.

wind-drift (wind′drift), *n.* The general movement or resultant of the wind, disregarding minor deflections; the general movement of clouds or storms or flotsam carried along by the wind.

The sand so produced is rounded by *wind-drift* in an unmistakable manner, the grains being entirely different from those of sea-sand. *Geog. Jour.* (R. G. S.), XI. 662.

winder¹, *n.* 6. A mechanism for drawing or bending a crossbow.

winder-hole (wīn′dėr-hōl), *n.* The hole in the dial or case of a clock, or of any spring-driven apparatus, into which the key is inserted for the purpose of winding the spring.

wind-firm (wind′fėrm), *a.* Able to withstand heavy wind.

wind-gall, *n.* 2. A defect in a timber or log, due to an old wound caused by the breaking of a limb, commonly by a wind.

wind-guard (wind′gärd), *n.* A screen or some device placed between an object and the wind, for protection.

A *wind-guard* is also provided in the form of a fan revolving very rapidly in front of the balloon, and thus deflecting and dispersing the current of wind and preventing any impact blow on the nose of the silk bag. *Daily Telegraph*, Oct. 5, 1905.

wind-harp (wind′härp), *n.* Same as *Æolian harp* (which see, under *Æolian*).

wind-hungry (wind′hung″gri), *a.* Said of sails that have no wind in them; not rounded by the wind, as sails.

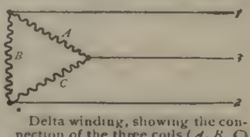
Windic (win′dik), *a.* and *n.* **I.** *a.* Of the Winds or Wends: used as a large group-name.

II. *n.* A group-name used to include the Lettic and Slavic branches. Compare *Wendic*.

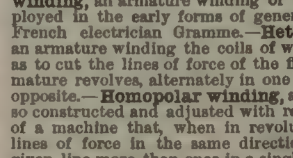
windigo (win′di-gō), *n.* [Also *wyndego*, *wendigo*; Canadian F. *windigo*, *wendigo*, < Ojibwa and Cree *windigo*.] A cannibal giant in Indian mythology.

Wendigo (*windigo*). A monster, a cannibal-giant of Indian story, an Indian turned cannibal. A word still in use in northern and northwestern Canada, and the literature of that region. *Jour. Amer. Folk-lore*, Oct.-Dec., 1902, p. 266.

winding¹, *n.* 3. Any portion of an electric circuit which is coiled. The term is applied to the armature and field-coils of generators and motors, to the turns of wire on electromagnets, to the coils of galvanometers and other current-measuring instruments, to the primary and secondary turns of transformers, to resistance and inductance-coils, and, in general, to any convolution or set of convolutions which forms a portion of the conducting circuit of an electrical machine or device.—**Armature winding**, the coil or set of coils of wire, or, in general, the set of conductors, on the armature of a generator or motor, constituting the circuit in which currents are generated when cut by the lines of force of the magnetic field of the machine, or which, in the case of a motor, move across the lines of the field.—**Bar-winding**, an armature winding for generators of low voltage and large current output, in which a small number of conductors of large cross-section are used.—**Bifilar winding**, a form of non-inductive winding in which two wires are wound side by side and connected differentially in series. See *differential winding*, under *differential*.—**Bipolar winding**, any armature or field winding designed for use in a generator or motor having but one pair of magnet poles.—**Chain-winding**, a form of winding, for the stationary armatures of alternating-current machines, in which separate overlapping coils are inserted in slots of the armature core and the coils belonging to each phase are connected in series.—**Closed-coil winding**, an armature winding for direct-current generators and motors in which all the coils are in series, the successive bars of the commutator serving as connectors: distinguished from an *open-coil winding*, in which only one coil at a time is in circuit.—**Cumulative winding**, a winding consisting of two sections, which are excited by two different currents, as a shunt- and a series-current, in such a manner that their magnetic effects are in the same direction.—**Delta winding**, a three-phase winding in which the phase-coils are connected in series with one another so as to form a closed circuit and the terminals of the outside circuit are connected to the three junctions between the coils.—**Discoidal winding**, an armature of ring type in which the thickness of the core, measured parallel to the axis, is small as compared with its diameter.—**Disk-winding**, an armature winding with radial conductors all in the same plane and connected by peripheral wires about the thin disk-like support.—**Double-layer winding**, a slot-winding for armatures in which each slot contains two conductors placed one above the other.—**Drum-winding**, the armature winding of electric machines in which the conductors are arranged on the surface of a laminated iron cylinder or drum: contrasted with a *ring-winding*, in which one side only of each armature turn is on the surface, the other side passing through the interior of a ring-shaped iron core.—**Field-winding**, the coil, or set of coils, constituting the field-circuit of a generator or motor and serving to conduct the currents that produce the magnetic field of the machine. The machine is said to be 'series-wound' or 'shunt-wound,' according to the manner in which the field-winding is connected to the armature circuit.—**Flat-ring winding**, a discoidal winding.—**Gramme winding**, an armature winding of the ring type as employed in the early forms of generator devised by the French electrician Gramme.—**Heteropolar winding**, an armature winding the coils of which are so arranged as to cut the lines of force of the field, in which the armature revolves, alternately in one direction and in the opposite.—**Homopolar winding**, an armature winding so constructed and adjusted with reference to the field of a machine that, when in revolution, it always cuts lines of force in the same direction and never cuts a given line more than once in a single revolution.—**Lap-winding**, a form of winding for the armatures of motors and generators in which successive coils overlap, as is shown in the diagram.—**Mesh-winding**, a form of armature winding for polyphase armatures.—**Multiple winding**, in *elect.*, a winding of field-coils, armatures, or other coils in which two or more wires are wound side by side with the ends connected so as to form a multiple circuit. Such windings afford the same number of turns as a series-winding having the same length of wire, but they are of lower resistance.—**Multipolar winding**, any armature or field winding of a multipolar generator or motor.—**Non-inductive winding**, a winding, as of the coils in a resistance-box, in which the current flows in one direction through half of the total number of turns and in the

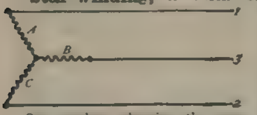


Delta winding, showing the connection of the three coils (*A*, *B*, *C*) with the three mains (1, 2, 3).

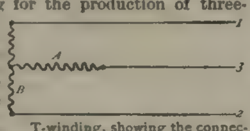


Lap-winding on four-pole dynamo.

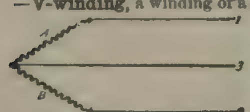
other direction through the remainder, so that the inductive effect on neighboring circuits is neutralized. A non-inductive winding is frequently made by doubling upon itself the wire to be wound and then winding the halves simultaneously side by side. The current entering the coil flows around the spool in one direction until the middle of the wire is reached, when it turns and flows back through the remaining half, almost along its former path.—**Open-coil winding**, an armature winding so connected that, at any moment, only those coils the terminals of which are under the brushes are in circuit.—**Parallel winding**, in *elect.*, a coil consisting of two or more windings in multiple circuit.—**Phase winding**, one of the several separate coils on the armature of a polyphase generator.—**Polyphase winding**, a set of similar coils symmetrically placed on the armature of an alternating-current generator and so connected as to furnish polyphase current in the outside circuit of the machine; the winding of any machine or device on a polyphase circuit.—**Primary winding.** See ★*primary.*—**Quarter-phase winding**, an armature winding with two sets of coils so arranged as to follow each other through the field and to produce two separate alternating currents with a difference of phase of 90°.—**Re-entrant winding**, an armature winding which, as in some types of spirally wound ring-armatures, is closed upon itself.—**Ring-winding**, an armature winding of the type devised by Pacinotti and first introduced in practical form by Gramme. In ring-windings the armature core is in the form of a more or less flattened hollow ring about which the coils are wound, each turn passing from the commutator end outside of the core and returning through the inside on the same side of the axis and close to the iron of the core.—**Rotor winding**, the set of conductors constituting the revolving circuit of a generator or motor. In machines with stationary field-coils the rotor winding is on the armature; in machines with a stationary armature the rotor winding is the field-winding.—**Secondary winding**, the coil, or set of coils, constituting the circuit in which, in a transformer, currents are induced.—**Series-winding.** (*b*) A winding placed in series with the other parts of the main circuit of any electrical machine or device, as a dynamo, motor, or arc-lamp, and traversed by the entire current flowing in that circuit.—**Shunt-winding.** (*b*) A winding placed in parallel with a portion of the main circuit of any electrical machine or device, as a dynamo, motor, or arc-lamp, and traversed by a portion of the current flowing in the main circuit.—**Shuttle-winding**, an armature coil wound longitudinally about a deeply grooved shuttle-shaped bobbin of iron.—**Siemens winding**, a simple form of drum-winding for armatures as used by Siemens in his early form of direct-current generator.—**Single-layer winding**, a slot-winding for armatures in which each slot contains but one conductor.—**Single-phase winding**, the armature winding of an alternater designed for the production of single-phase currents, or of a motor on a single-phase circuit.—**Slot-winding**, an armature winding the turns of which are embedded in deep grooves or slots in the core, or a field-winding of a generator or motor similarly embedded in the iron of the poles.—**Spiral winding**, a winding of a ring-armature in which the coils form a continuous spiral around the ring-shaped core.—**Squirrel-cage winding**, a form of rotor or armature winding in which copper bars are mounted in equidistant longitudinal slots in a cylindrical frame and are all joined together at either end to copper rings.—**Star-winding**, a form of polyphase winding in which the middle points of the phase-coils are connected together and grounded, as in the quarter-phase star-connected system; or in which the three phase-coils of a three-phase machine are connected together as shown in the cut, and the mains are connected to the free ends of the coils.—**Stator winding**, the set of conductors on the stationary part of a generator or motor; the field-winding in machines with a revolving armature and the armature winding in machines in which the field is on the rotor.—**Sunk winding**, in *elect.*, a winding embedded within the iron of the field or armature of a generator or motor, or sunk in a groove or slot. See *slot-*★*winding.*—**Teaser winding**, an extra magnetizing coil applied to the field of a generator or motor: said of the shunt-coils of compound-wound machines, or of separately excited coils used in addition to the regular field-coils for purposes of starting or regulation.—**Three-phase winding**, in alternating-current generators, the set of armature-coils necessary to the production, in the outside circuit, of a three-phase current; the winding of any apparatus used on a three-phase system.—**T-winding**, a winding for the production of three-phase currents in which only two coils are used. One terminal of one of the coils is connected to the middle point of the other coil and the three free ends of the coils are connected to the three mains of the outside circuit.—**Two-phase winding**, in alternating-current generators, the armature coils necessary to the production of a two-phase current; the winding of any apparatus used on a two-phase circuit.—**V-winding**, a winding of a generator, motor, or transformer, consisting of two coils connected in series, for use on a three-phase circuit. Two of the three mains of the outside circuit are connected to the coils at their junction.—**Wave-winding**, a modification of a lap-winding for armatures in which the end connectors of each loop pass around the shaft in opposite directions.—**Y-winding**, a form of star-winding for three-phase machines and transformers.



Star-winding, showing the connections of three phase-coils (*A*, *B*, *C*) to the mains (1, 2, 3).



T-winding, showing the connection of the two coils (*A*, *B*) with the three mains (1, 2, 3).



V-winding, showing the connection of the two coils (*A*, *B*) with the three mains (1, 2, 3).

winding-band (wīn′ding-band), *n.* A band on a spinning-mule for governing the rotation of the spindle in winding the yarn on the cop. *Nasmith*, Cotton Spinning, p. 295.

winding-drum (wīn′ding-drum), *n.* A small cylinder on a spinning-mule upon which is wound the winding-band. See ★*winding-band.* *Nasmith*, Cotton Spinning, p. 287.

winding-faller (wīn′ding-fâ″lėr), *n.* A wire that runs lengthwise of the spindle-carriage on a spinning-mule. It is designed to press down the yarn on the spindle to the required point for the commencement of winding, and to guide it in properly forming the cop. *Nasmith*, Cotton Spinning, p. 267.

winding-machine (wīn′ding-ma̤-shēn″), *n.* In *textile-manuf.*, a machine for winding thread or yarn on a reel, bobbin, spool, etc.—**Doubling winding-machine**, a machine for winding two or more single threads together upon a bobbin, preparatory to the process of twisting, as in the manufacture of cotton thread. *Nasmith*, Cotton-Spinning, p. 364.

winding-shaft (wīn′ding-shȧft), *n.* The shaft in a hopper, or dumping-bottom car, around which are wound the chains by which the bottom is held up.

wind-jammer (wind′jam-ėr), *n.* A common term for a merchant sailing vessel. [Colloq.]

> I went for a voyage in a sailing-ship once for my health. What is it you call them? *Wind-jammers?*
> *Dolf Wyllarde*, Captain Amyas, vi.

> Well, I hope her crew have got to dry land somewhere, or been picked up, poor beggars. Nasty things, those old *wind-jammers*, Mr. Strake. Give me steam.
> *Cutcliffe Hyne*, A Master of Fortune, vii.

windlass^2, *n.* 3. A hand or power machine for drawing a package of staves together to form a barrel.—**Spanish windlass.** (*b*) A device for moving heavy objects in logging. It consists of a rope or chain, within a turn of which a lever is inserted and power gained by twisting.

windlass-house (wind′la̤s-hous), *n.* In a vessel, a compartment or house above the deck, in which a steam windlass is placed.

windlass-machine (wind′la̤s-ma̤-shēn″), *n.* A piece of gymnasium apparatus similar to a steering-machine in a boat, with sticks to be grasped by the hands and so weighted or moved against springs as to provide the necessary resistance.

wind-mantle (wind′man″tl), *n.* Same as ★*shelter-belt.*

wind-meter (wind′me″tėr), *n.* Any apparatus for accurately measuring the force, pressure, or velocity of the wind; an anemometer.

wind-motor (wind′mō″to̤r), *n.* A windmill; any motor using the force of the wind directly.

window, *n.*—**Clearstory window.** See ★*clearstory.*—**Double window**, a pair of window-sashes with air-space between, usually adjustable so that the outer sash or casement is put up only in winter.—**Hering window**, in *physiol.* and *psychol.*, a device for the demonstration of color-contrast. By means of two vertical slits in the wall of a dark room (the one admitting white, the other colored light), two contiguous shadows of a black rod are thrown upon a white screen; the one shadow appears in the stimulus color, the other in the complementary color. The Hering window has four colored glasses, to serve as stimulus colors, and an arrangement whereby the width of the vertical slits may be varied and controlled.—**Lenard window**, a diaphragm of aluminium inserted in the wall of a vacuum-tube to permit of the exit of cathode-rays generated within the tube.

window-box (win′dō-boks), *n.* In *carpentry*, the vertical hollow upright of the window-frame prepared to hold the weights for a sliding sash.

window-dresser (win′dō-dres″ėr), *n.* In a retail store, a person employed to dress a show-window or to arrange in the window an attractive display of samples of the goods for sale in the store.

window-fly (win′dō-flī), *n.* Any of the small active black flies of the dipterous family *Scenopinidæ*, found commonly on windows in houses. See *Scenopinus* and *Scenopinidæ.*

window-peeper (win′dō-pē″pėr), *n.* Formerly, in certain parts of England, an inspector of houses in connection with the requirements of the window-tax.

> I have heard that in Sussex a "*window-peeper*"—i. e. an inspector of houses in connexion with the window tax—was used as a term of reproach long after the office had been done away with.
> *C. F. Y.*, in N. and Q., 9th ser., XI. 50.

window-wing (win′dō-wing), *n.* Any moth of the family *Thyrididæ*, many of which have translucent spots on their wings.

wind-pressure, *n.*—**Coefficient of wind-pressure.** See ★*coefficient.*

wind-puff (wind′puf), *n.* See the extract.

> After caponizing the bird should be given plenty of soft feed and should have plenty of water to drink. . . . It is well, however, to look him over two or three days after the operation has been performed, for sometimes air gets under the skin, causing a slight swelling or "*wind puff.*"
> *U. S. Dept. Agr.*, Bur. Animal Industry, Rep., 1905, p. [254.

wind-puffed (wind′puft), *a.* Affected with wind-puff, as a capon. See ★*wind-puff.*

> For a week or ten days the newly-made capons should be carefully observed to see whether they become "*wind-puffed.*" This is a condition caused by air gathering under and puffing out the skin near the wound.
> *U. S. Dept. Agr.*, Bur. Animal Industry, Rep., 1905, p. [273.

wind-ripple (wind′rip″l), *n.* A ripple-mark produced in sand by the wind, as contrasted with those produced by water.

> The uniformity of the *wind-ripple* pattern is at all times remarkable. *Geog. Jour.* (R. G. S.), IX. 279.

Wind River group. See ★*group*^{1}.

wind-rose, *n.*—**Baric** or **barometric wind-rose**, a diagram of radii showing, for any locality, the average pressure of the air or height of the barometer during the prevalence of wind from each point of the compass.—**Humidity wind-rose**, a wind-rose whose radii are proportional to the average relative humidity or, in some cases, the average absolute humidity or average dew-point of the respective winds.—**Hyetal** or **rain wind-rose**, a wind-rose whose radii are proportional to the quantity of rain that falls during the prevalence of each wind; one whose radii are proportional to the probability of the occurrence of rain within 24 hours.—**Temperature wind-rose**, a diagram of radii proportional to the temperatures of the respective winds.

windrow, *v. t.* Specifically—2. To cut (sugar-cane) before it is quite ripe and lay (it) in rows in the furrows. This is done to prevent the sap from running back into the roots or being otherwise spoiled by the action of frost. *U. S. Monthly Weather Rev.*, April, 1903, p. 192.

windrower (wind′rō″ėr), *n.* An attachment to a mower, consisting of a series of steel bands which trail on the ground behind the cutter-bar. It collects the grass as fast as cut, guides it to one side, and delivers it behind the mower in a continuous windrow.

wind-scale (wind′skāl), *n.* See *scale*^{3}, *n.*, and *Beaufort* ★*scale.*

wind-scoop (wind′sköp), *n.* 1. Same as *wind-sail.*—2. Any service used on a moving vessel or car to cause the motion of the latter to force air into the car for ventilation or to exhaust vitiated air by maintaining a lowered pressure at the orifice.

wind-shield (wind′shēld), *n.* A shield or protection against the force of the wind.

> The spectacle of a motor being driven at a rate which the cyclist can follow with the protection of a *wind-shield.* *Encyc. Brit.*, XXVII. 327.

wind-signal (wind′sig″na̤l), *n.* Any device for announcing publicly the expected character and direction of an approaching wind. In the United States, the storm-signal is a red flag with a square black center; the information signal, a pennant without flag; the hurricane signal, two red flags with black centers; the hot wind signal, a red pennant; and the inland storm signal, a red flag with a black center. See ★*weather-flag* and *hurricane* ★*warning.*

wind-slash (wind′slash), *n.* See *windfall*, 1 and 3.

Windsor fern. Same as *creeping-*★*fern.*

wind-stacker (wind′sta̤k″ėr), *n.* A pneumatic or blower elevator. It consists essentially of a power-driven blower for supplying an air-blast and a long adjustable sheet-metal pipe held in a nearly upright position by guy-ropes. It is used in connection with corn-huskers and -shredders to gather up the shredded husks and cut stalks, blow them through the pipe, and deliver them in a heap or stack upon the ground at a safe distance from the engine and machinery. By moving the pipe the heap of material falling from it can be given any shape required. The usual shape of the stack is a crescent with the points of the crescent facing south-east to form a shelter for cattle against cold northwest winds.

wind-star (wind′stär), *n.* A figure upon a chart having the form of an irregular star and showing the relative frequency and force of winds from different points of the compass at the point indicated.

> Maury constructed wind and current charts for all oceans, copies of which were supplied gratuitously for the use of navigators in this country, and FitzRoy and his small staff at once set to work on them, and converted the pilot charts (which showed the wind directions numerically under each principal point of the compass) into graphical "*wind-stars.*" *Nature*, June 9, 1904, p. 130.

windy-weep (win′di-wēp), *n.* The cool, gentle, evening breeze which descends upon a broad, quiet river, with a sighing or weeping sound, from a forest in a tributary ravine. [Colloq., U. S.]

wine, *n.*—**Aromatic wine**, a tonic wine used in tropical medicine made by percolating lavender, origanum, peppermint, rosemary, sage, and wormwood with strong white wine.—**Fig wine**, an alcoholic beverage made in Portugal by fermentation of the juice of ripe figs in the fresh state. A fig brandy is made from the wine by distillation.—**Way of the wine.** See ★*way*.

wineberry, *n.* **6.** In Australia, a small tree of the saxifrage family, *Polyosma Cunninghamii*, bearing small, ovoid, one-seeded fruits.

wine-card (wīn′kärd), *n.* A list of the wines, etc., that may be obtained in a hotel or restaurant.

Wine-cask borer. See ★*borer*.

wine-glass, *n.*—**Wine-glass cooler**, a cylindrical glass vessel of finger-bowl form, with a lip or notch at each side, for cooling wine-glasses, which were placed in it in an inverted position, the stems resting in the hollows of the lips.

wine-shop (wīn′shop), *n.* On the continent of Europe, a small shop where wine is retailed; in France, a cabaret.

> Monsieur Sigard and his new-found acquaintance, seated at a little table in front of a near-by *wine-shop*, were preparing the smoky-green mixture of absinthe and water which Paris slang has dubbed a parrakeet.
>
> *G. W. Carryl*, Zut and Other Parisians, p. 255.

winful (win′fu̇l), *a.* Winning; winsome. [Rare.]

> He is harmless, ye are sinful;
> Ye are troubled, he, at ease:
> From his slumber, virtue *winful*
> Floweth outward with increase.
> Dare not bless him! but be blessëd by his peace, and go in peace.
>
> *Mrs. Browning*, A Child Asleep, st. xii.

wing, *n.* **9.** (*q*) A cutter attached to the side of a colter making it a skim-colter. See *skim-colter*. (*r*) The characteristic part of a wing shovel (see under ★*shovel*^{1}) or of a wing sweep (see under ★*sweep*). (*s*) In *chess*, the extreme right or left of the board: as, the king's *wing* or the queen's *wing*. *Morphy*, Games of Chess, p. 385. (*t*) That part of the line of forwards, in games such as foot-ball, hockey, etc., which stretches from the center to the end; also, the position of certain players in push-ball and similar games.—**Royal wing**, in *chess*, an obsolete term for ★*king's side*. *Morphy*, Games of Chess, p. 348.

wing, *v. t.* **10.** *Naut.*, to move (an object having weight) from the middle of a vessel toward the sides.

wing-bar (wing′bär), *n.* **2.** A bar or spit formed partly across a bay.

> Dungeness foreland, then, appears to represent a transition from a bay-bar to a cuspate foreland. The *wing-bar* attempted at first to close Appledore bay, and then, on account of eddies, changed its nearly straight form into a cuspate point, which advanced gradually from south-west to north-east. *Geog. Jour.* (R. G. S.), IX. 545.

wing-bore (wing′bōr), *n.* A bore or hole made in the side or flank of an adit or gangway in a mine. *Coal and Metal Miners' Pocketbook.*

wing-dam (wing′dam), *n.* See ★*pier-dam*.

wing-deck (wing′dek), *n.* In *ship-building*, the projecting platform outside the hull forward and abaft the paddle-boxes of a paddle-steamer, with its framing and fender. Also called *paddle-wing*.

Winged disk. See ★*disk*.

wing-finger (wing′fing″gėr), *n.* One of the digits supporting a membrane which forms a wing, as in bats and the extinct pterodactyls. In bats there are four wing-fingers, corresponding to the four fingers (omitting the thumb) of the human hand; in pterodactyls there is but one finger, the enormously lengthened fifth digit, or little finger.

wing-jam (wing′jam), *n.* See ★*jam*^{1}.

wing-mark (wing′märk), *n.* A conspicuous band of color on the wing of an animal; specifically applied to the speculum of ducks.

wing-nut (wing′nut), *n.* A bolt- or screw-nut with wing-like projections; a thumb-nut; a finger-nut.

wing-patch (wing′pach), *n.* A well-marked patch of color on the wing of a bird, which may or may not correspond to the speculum; also a marking on the edge of the secondaries in ducks.

wing-sail (wing′sāl), *n.* The foresail or the mainsail of a schooner: so called because when the schooner is running before the wind these sails are often boomed out on opposite sides of the vessel, which is then said to be sailing *wing-and-wing*.

wing-space (wing′spās), *n.* *Naut.*, the space in the interior of a vessel near the side below the lower deck. Also called *wing*. See also *wing* ★*compartment* and *wing*, 9 (*d*).

> Above the turn of the bilge, the inner skin (*w*, *w* in the sections) is usually worked vertically up to the height of the main-deck, thus enclosing "*wing-spaces*" in the region of the water-line, or, as it is termed, "between wind and water." *White*, Manual of Naval Arch., p. 31.

wing-stay (wing′stā), *n.* **1.** A lateral stay or brace.—**2.** A radial stay used in steam-boilers to prevent deformation of flat surfaces such as heads under pressure by securing the head to the shell by flat steel plates riveted to both. More usually called *gusset-stay*.

wing-valve (wing′valv), *n.* A lifting- or check-valve which has its lift guided by three or four feathers or ribs called 'wings,' which are elements of a cylindrical surface below the valve-face and which fit a hollow cylindrical contact-area below the valve. *Lockwood*, Dict. Mech. Engin. Terms.

winhuka (win-hö′kä), *n.* Same as ★*rhinhuka*.

> Many species in this family [*Belostomatidæ*] occur in tropical America and frequently prove troublesome, among them a species related to the "wheel-bug," which occurs in Chili and is called the "*winhuka*" or "rhinhuka." It is said to be greatly feared, and, if numerous, to drive people for a time from their dwellings.
>
> *Buck*, Med. Handbook, V. 162.

winkle-pin (wing′kl-pin), *n.* An implement for eating periwinkles. See the extract.

> The snails promised on the oars duly appeared at déjeuner, served with two-pronged forks like giant *winkle-pins*, and disappeared at a pace that could scarcely be called snail's.
>
> *Zangwill*, in The Reader, May, 1904, p. 623.

winklerite (wingk′lėr-īt), *n.* [Named after Dr. C. *Winkler*.] A hydrated oxid of cobalt and nickel from Spain, which occurs in impure black amorphous forms.

Winkler's azotometer. See ★*azotometer*.

winning, *n.* **4.** In *metal.*, same as *beneficiation*.

> The electrolytic "*winning*" of copper is much more difficult than its refining, which latter now depends to a large extent on engineering and not so much on the operator's scientific knowledge of electrochemistry.
>
> *Electrochem. Industry*, April, 1904, p. 155.

winnonish (win-o̤-nish′), *n.* See ★*wananish*, ★*ouananiche*.

winter^1. **I.** *n.*—**Dogwood winter.** See the extract.

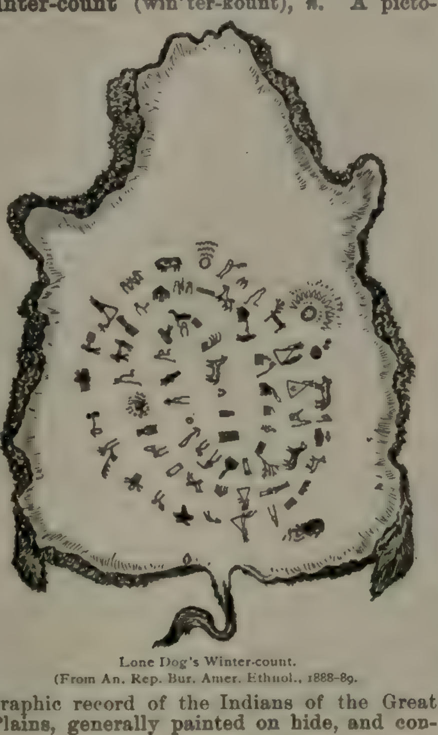
> *Dogwood winter.*—A man from North Carolina, who was visiting in Philadelphia, in the course of conversation used the expression *dogwood winter*. "What do you mean by *dogwood winter?*" asked his host. "Don't you really know what *dogwood winter* is?" demanded the man from Hickory, N. C. "There is always a spell of it in May, when the dogwood tree is in bloom. For several days there is cold, disagreeable, cloudy weather and often a touch of frost. Down our way it never fails, and we call it *dogwood winter*. I thought the phrase was general."
>
> Quoted in *Jour. Amer. Folk-lore*, July–Sept., 1907, p. 235.

Radiation winter, the cold portions of the winter season when radiation weather has most influence.—**Squaw winter**, the little winter, a short period of cold and light snow that often precedes the Indian summer of Canada and New England.

> *Squaw winter* is giving us a good long visit.
>
> *Seneca County Courier*, Nov. 21, 1901.
>
> We have had *squaw winter*; now we look for Indian summer. *Ithaca Journal*, Nov. 16, 1903.
>
> [Both the above quoted in *Dial. Notes*, II. vi.]

II. *a.*—**Winter brake.** See ★*brake*^{5}.—**Winter country**, in New Zealand (South Island), land so far unaffected by snow that stock is wintered on it. *E. E. Morris*, Austral English.—**Winter fallow.** (*b*) See ★*fallow*^{2}. **Winter garden.** See ★*garden*.

winter-count (win′tėr-kount), *n.* A pictographic record of the Indians of the Great Plains, generally painted on hide, and consisting of a series of figures each being the symbol of the principal event of a year. Thus their winter-counts are mnemonic devices for retaining the tribal history.



Lone Dog's Winter-count.
(From An. Rep. Bur. Amer. Ethnol., 1888–89.)

> The paintings were executed by an aged shaman as a sort of personal record akin to the calendars, or *winter-counts*, which play so large, yet so obscure, a rôle in Indian life. *Smithsonian Rep.*, 1900, p. 67.

winter-gnat (win′tėr-nat), *n.* Any species of the tipulid genus *Trichocera*. They inhabit high latitudes and appear fond of a low temperature. *Cambridge Nat. Hist.*, VI. 473.

winter-mother (win′tėr-muᴛʜ″ėr), *n.* A wingless parthenogenetic hibernating female of *Chermes* and allied aphidids. *Cambridge Nat. Hist.*, VI. 586.

Winton. In *eccles.*, an abbreviation of the Latin *Wintoniensis*, Winchester.

wiper, *n.* **5.** Same as *wiper-wheel*. See the extract and also ★*wipe-spark*.

> With the single wire or sparking coil with current from a live battery or permanent field generator, or other generator giving a nearly constant current that is broken by a wipe or contact breaking device within the cylinder, there are also troubles, resulting in mis-fires. The *wiper* or hammer must be actuated by snap devices on the outside of the cylinder and may be well regulated as to time and varied in its movement to delay ignition for motor speed change. *Hiscox*, Horseless Vehicles, p. 118.

6. A ring in a shaft-bearing, resting by its inner surface on the top of the shaft and hanging with its bottom elements in a bath of oil. As the shaft revolves the ring turns slowly with it, and brings up the oily parts of its surface which are wiped off by the grooves in which the ring is steadied.

wipe-spark (wīp′spärk), *n.* See ★*spark*^{1}.

wiping-spark (wī′ping-spärk), *n.* See ★*spark*^{1}.

wirble (wėr′bl), *v. i.* [ME. **werblen*, turn, whirl?] To whirl; eddy.

> Through each pause
> Of its fitful recital, in raw gusty flaws,
> The rain shook the canvas, unheeded; aloof,
> And unheeded, the night-wind around the tent-roof
> At intervals *wirbled*.
>
> *Owen Meredith*, Lucile, vi. 17.

wire^1, *n.* **10.** In *paper-making*, a general term for the woven brass wire-cloth used in a Fourdrinier or paper-making machine.—**Aluminium wire**, wire made of aluminium. It is nearly twice as strong as steel telegraph wire per unit of weight, but is only a little more than one half as strong per unit of volume.—**Bone-wire**, a substitute for whalebone, for stiffening dress-waists, etc.—**Bookbinders' wire**, a wire, covered with tin, used instead of thread stitching for holding together the sheets of pamphlets and magazines.—**Brass wire**, wire made from brass: used for springs, etc., where steel would rust.—**Helmholtz side-wire**, a wire which acts as a shunt to the primary coil of the Du Bois-Reymond inductorium, and thus reduces the disparity between the make-and-break currents. *A. D. Waller*, Human Physiol., p. 316.—**Leading-in wires.** (*b*) In *elect.*, wires connecting the terminals of an apparatus with the line wires or main circuit.

> That portion of the *leading in wires* embedded in the glass is of platinum.
>
> *Elect. World and Engin.*, May 21, 1904, p. 1012.

Machinery wire, a good quality of steel wire, untempered so that it may easily be bent.—**Metal-coated wire**, wire-cloth woven from steel wire that has been previously coated with zinc.—**Neutral wire**, in *elect.*, the intermediate conductor, usually maintained at zero potential, of a three-wire circuit.—**Plow-ground wire.** See ★*plow-ground*.—**Reticule wire.** See ★*reticule*.—**Steel wire**, wire made by rolling steel billets into rods, and drawing the rods through draw-plates into wire. It is of all grades of temper and composition to fit it for use in springs, drills, needles, electric lines, and the like.—**Stone wire.** (*a*) A wire of such cross section that the coil of the standard length weighed one English stone or 14 pounds. (*b*) By derivation from this, an annealed wire of size and weight suitable for weaving into nettings, wire-cloth, and the like.—**Three-wire system**, in *elect.*, a method of low tension distribution by three conductors energized so that the voltage between the two outside conductors is twice the voltage between the middle or neutral conductor and either of the outside ones. *Trans. Amer. Inst. Elect. Engin.*, 1901, p. 808.—**Wire-bar pitch**, the state of tough-pitch copper in which the removal of oxygen has been carried farther than it has in the ingot-pitch copper. See ★*ingot-pitch*.

> Finally, micrograph Fig. 31 represents a sample of copper . . . which has been brought to plate-pitch, *i. e.*, the poling has been carried further than is the case with the highest degree of *wire-bar pitch*.
>
> *Electrochem. Industry*, March, 1904, p. 94.

II. *a.*—**Wire bunch-grass.** See ★*bunch-grass*.—**Wire lath**, a wire netting used instead of wooden lath in the application of plaster to a wall. Sheet-metal cut in various ways is also used.—**Wire nail.** See ★*nail*.

wire-binder (wīr′bīn″dėr), *n.* An attachment to a harvesting-machine by which the sheaves are bound with wire.

wire-carrier (wīr′kar″i-ėr), *n.* A carrier consisting of a single or multiple block, used to support the wire which connects a signal-cabin of a railroad with the signal-arm on the signal-post. Where the line is curved the blocks are swiveled to allow the wires to move freely on the curve. Where a chain is used in place of a wire the carrier is called a *chain-wheel.*

wire-gage (wīr′gāj), *n.* See ★*gage*^{2}.— **American, Birmingham, British,** and **Stubb's wire-gage.** See ★A. W. G.

wire-glass (wīr′glás), *n.* Window-glass in which woven-wire netting is embedded. The netting serves to hold the glass together when cracked by heat or broken in any manner. Wire-glass is used in roofs, sky-lights, elevators, and wherever a thick semi-transparent glass is exposed to injury from fire, hail, etc. It is semi-fireproof. *Amer. Architect.*, Sept. 27, 1902, p. 99.

wire-grama (wīr′grä″mä), *n.* See ★*grama.*

wire-grass, *n.* 4. See *vine-*★*mesquite.*—5. The nimble-Will, *Muhlenbergia diffusa.*

wire-haired (wīr′hãrd), *a.* Having coarse, stiff hair: as, a *wire-haired* fox-terrier.

wire-joint (wīr′joint), *n.* 1. A joint by which two wires are united.— 2. A joint in a pipe-line in which a soft wire, laid in a groove or between flat surfaces, is used for packing. The soft metal compresses and compensates for irregularities.

wireless (wīr′les), *a.* and *n.* I. *a.* Being or done without a wire; not requiring a wire for its operation: as, *wireless* telegraphy.—**Wireless telegraphy, telephony.** See ★*telegraphy,* ★*telephony.*

II. *n.* Wireless telegraphy: as, a message by *wireless.* [Colloq.]

> First in this great field of making the "*wireless*" a handmaid of commerce is the . . . system, which has won the approval also of the United States government.
> *N. Y. Com. Advertiser*, Jan. 31, 1903.

wire-milker (wīr′mil″kėr), *n.* One who taps a telegraph-wire in order to intercept messages or to send his own; a wire-tapper [Colloq.]

> The *Wire-Milkers* [chapter heading].
> *Cutcliffe Hyne,* A Master of Fortune, vi.

wire-money (wīr′mun″i), *n.* The Maundy money of 1792, so called from the form of the numerals of value. *W. C. Hazlitt.*

wire-pointer (wīr′poin″tėr), *n.* A machine or apparatus for sharpening the end of wire in a coil so that it may be entered and pass through the steel dies used in the drawing process and start the proposed reduction.

wire-press (wīr′pres), *n.* A machine for putting the wire in the edges of tin pans, pails, or other tinware.

wire-rod (wīr′rod), *n.* A metal rod rolled to the correct size for drawing into wire.

wire-saw (wīr′sâ), *n.* A cutting-tool for stone or rock, made of an endless band of three or more hard wires made into a strand passing over pulleys which are driven like those of a band-saw. The stone is fed to the moving band, while a feed of sand and water is led into the groove as the band cuts into it.

> The *wire-saw* may be regarded as a kind of band saw. It is an endless strand composed of three steel wires, which is kept moving upon the rock while sand and water are fed to it. *Encyc. Brit.*, XXX. 764.

wire-stitch (wīr-stich), *v. t.* To fasten (loose leaves or the folded sections of a proposed book) by means of a wire staple forced through the paper by a machine.

> There has been introduced recently a noteworthy combination folding and *wire-stitching* machine, which by a continuous and automatic operation takes the sheets from the feeders, and folds, gathers, collates, covers, and wire-stitches copies of magazines and pamphlets, delivering them ready for distribution.
> *Census Bulletin* 216, June 28, 1902, p. 65.

wire-stitcher (wīr′stich″ėr), *n.* A machine used by bookbinders for stitching pamphlets with wire staples.

wire-tapper (wīr′tap″ėr), *n.* One who 'taps' a telegraph-wire, that is, reads by illicit means the messages passing over it; also, one who, for fraudulent purposes, professes to have secured private information in this way.

> On the day he bet his money, the *wiretappers* made it appear to . ., he says, that such sportsmen as . . . and . were betting thousands on Old Stone, through them, and advised him to "get in on the good thing," too.
> *N. Y. Tribune*, Feb. 1, 1906.

wire-tapping (wīr′tap″ing), *n.* The act, or the fraudulent scheme, of a wire-tapper. See ★*wire-tapper.*

wireworm, *n.*—**Corn-wireworm.** See ★*corn*^{1}.

wiring-die (wīr′ing-dī), *n.* An attachment to a sheet-metal press for placing reinforcing wire in the edges of pressed ware.

wirrah (wir′ạ̈), *n.* [Aboriginal Australian.] A fish, *Acanthistius serratus*, of New South Wales.

wirricow, *n.* Same as *worricow.*

Wis. An abbreviation of *Wisconsin.*

Wisd. An abbreviation of *Wisdom* (*Book of*).

wise, *a.* 7. Quite aware; knowing; cognizant of. [Slang.]

> I 'm *wise* his diamond ring 's a cut-glass snide.
> *Wallace Irwin,* Love Sonnets of a Hoodlum, vi.

Wise men of the East. See *Magus,* 2.

wisen (wī′zn), *v. i.* [*wise, a.*] To grow wise; know better. [Prov.]

> [He 's not] got climatized to the place, but . . . he'll *wisen* i' time. Quoted in *N. and Q.*, 9th ser., XII. 145.

wiserite (wiz′ėr-īt), *n.* See *wiserine.*

wiskinski, wiskinsky (wis-kin′ski), *n.* [Said to be of Algonkian origin.] An officer in the Tammany Society, nominally a door-keeper.

wistarin (wis′tạ-rin), *n.* [*Wistaria* + *-in*^{2}.] A colorless, crystalline, bitter, astringent glucoside contained in the bark of *Wistaria chinensis.*

wistiti (wis′tē-tē), *n.* [Also *ouistiti.*] A common name for the little South American monkeys known as marmosets, belonging to the genus *Midas* and related genera. See *Hapale* and *tamarin,* with cuts.

witch^{1}, *n.* 8. A modified and simplified form of a Jacquard attachment to a loom, for a more limited range of work; a *dobby* or *index-machine.*—**Black witch.** (*b*) See ★*witch-moth.*

witch-elm, *n.* 2. The winged elm or wahoo. —3. Occasionally, and improperly, applied to the witch-hazel.

witchetty (wich′e-ti), *n.* The name given in Australia to certain longicorn larvæ dug out of the roots of shrubs, or out of fallen trees, and roasted and eaten by the natives. *E. E. Morris,* Austral English.

witch-gowan (wich′gou″ạn), *n.* Same as *milk-*★*gowan.*

witch-hammer (wich′ham″ėr), *n.* A popular name for an inquisitorial code regarding witches, composed by the inquisitorial commissioner Sprenger.

Witch-hazel dagger. See ★*dagger*^{1}.

witch-hobble (wich′hob″l), *n.* [*witch* + *hobble.*] The hobble-bush, *Viburnum alnifolium* (so in the quotation); also the cranberry tree, *V. opulus.* The name 'hobble' refers to the obstruction offered by the prostrate branches of the former, which is also called *tangle-foot, tangle-legs,* and *trip-toe.*

> As they passed from the zone of striped maple, roundwood, *witch-hobble,* and mountain holly that Mother Nature had drawn across her naked breast . . . , his heart lifted. *Holman Day,* King Spruce, xix.

witch-hood (wich′hůd), *n.* The character of a witch; in the extract, witches collectively. [Rare.]

> And far and wide the heather press
> With *witchhood's* swarms of wantonness!
> *B. Taylor,* tr. of Goethe, Faust, I. xxi.

witch-loom (wich′lōm), *n.* A loom equipped with a witch or dobby attachment for weaving fancy patterns.

witch-moth (wich′môth), *n.* Any one of several large noctuid moths, notably the black witch-moth or black witch, *Erebus odora,* of North and South America and the West Indies.

withe, *n.* 5. In the West Indies, a liana; the stem of any vine used as a rope, and hence the vine itself.

withering (wiᴛʜ′ėr-ing), *v. n.* The act or process denoted by the verb *wither*^{2}; specifically, in the manufacture of black tea, the operation of wilting the fresh leaf by exposing it, thinly spread, for some time to the air. Withering expels half the water from the leaf and fits it to endure ★rolling (which see) without breaking, also developing oxidation. See *black* ★*tea.*

withering-loft (wiᴛʜ′ėr-ing-lôft″), *n.* In a tea-factory, an upper room devoted to the withering process. See ★*withering.* *U. S. Dept. Agr.*, Report 61, p. 16.

withering-persistent (wiᴛʜ″ėr-ing-pėr-sis′tẹnt), *a.* In *bot.*, same as *marcescent* (*a*).

withers, *n. pl.*—**Casting of the withers.** See ★*cast*^{1}, *v. t.*

witlet (wit′let), *n.* A person of little wit; a would-be witty person.

> The student himself is liable to be regarded as a relic of mediæval times, and his unconcern respecting ordinary matters is serviceable to the dramatist and newspaper *witlet* in their times of need.
> *J. J. Stevenson,* in Smithsonian Rep., 1897, p. 325.

witness, *n.* 7. In *geol.*, an eroded fragment of former more extensive strata, remaining in testimony of that which has departed. [Rare.]

> Deflation, or the action of sand-laden wind, is illustrated in many curious features, notably in certain scarped outliers of horizontal beds of sandstone which appear like pyramids in the plain. Some of these known as *zeugen* or "*witnesses*" are figured. *Nature,* Oct. 16, 1902, p. 612.

Crown witness. See ★*crown.*—**Diligence against witnesses.** See ★*diligence.*—**Going witness,** in *law,* one who is about to depart from the jurisdiction of the court so that his presence, when required, may not be compellable by subpœna. In a civil case the evidence of such a witness may be taken by deposition before trial. In a criminal case he may be detained by order of the court.—**Kerry witness,** an unreliable witness. **Prosecuting witness,** the party who, in an action to recover a penalty or in the prosecution of a criminal offense in which the government is plaintiff, is entitled to the penalty, or who is immediately aggrieved by the commission of the crime.

witney, *n.* See ★*whitney.*

wiwi (wē′wē), *n.* [F. *oui, oui,* **yes, yes.**] A Frenchman. *E. E. Morris.* [Australian slang.]

wizard (wiz′ạ̈rd), *v. t.* To effect by wizardry or enchantment. [Rare.]

> Over the eastern hills came the bright vernal sun. . . . Distance lends enchantment to the sound as well as to the view, and the clang and clash of innumerable belfries came modulated through the intervening air, wherefrom the last lingering trails of mist were gradually *wizarded* away. *A. Austin,* Lamia's Winter-quarters, p. 61.

W. L. An abbreviation of *wave-length.*

W. lon., W. long. [*l. c.* or *caps.*] An abbreviation of *west longitude.*

W. M. An abbreviation of *Worshipful Master.*

W. N. A. An abbreviation for *winter* (*free-board line for voyages in the*) *North Atlantic.* See ★*free-board*^{2}.

W. O. An abbreviation of *War Office.*

Woad vat. See ★*vat.*

wobbegong (wob′e-gong), *n.* [Aboriginal.] A New South Wales aboriginal name for a species of shark, *Orectolobus barbatus,* of the family *Hemiscylliidæ:* also known as the *carpet-shark,* from the beautifully mottled skin. *E. E. Morris,* Austral English.

wocheinite (vōċh′īn-īt), *n.* [*Wochein* (see def.) + *-ite*^{2}.] A variety of bauxite, often having a red color from ferric oxid: found near Lake Wochein in Carniola.

wodanium (wō-dā′ni-um), *n.* [NL., < *Woden,* OHG. *Wotan,* a Teutonic deity. See *Woden, Odin.*] A supposed new chemical element announced in 1818 by Lampadius as present in a cobalt ore, afterward proved to consist of already known elements (nickel, arsenic, etc.).

woehlerite (vė′lėr-īt), *n.* [Named after Prof. F. *Woehler* (1800–83).] A rare silicate which contains zirconium, niobium, calcium, and sodium, occurring in light yellow to grayish or brownish monoclinic crystals of prismatic and tabular habit: found in various localities in Norway.

wokowi (wō-kō′wẹ̄), *n.* [Comanche Indian name.] In Oklahoma, the name of the narcotic cactus *Lophophora Williamsii.* See ★*mescal-buttons.*

wolf, *n.*—**Maned wolf,** *Canis jubatus,* a long-legged, conspicuously colored species, about the size of the common wolf, found in parts of southern Brazil and northern Argentina.

> Attention is called to the fact that the attitude generally given to the South American *maned wolf* in museums and figures is incorrect, the creature carrying its head very low. *Nature,* Oct. 30, 1902, p. 661.

Marsupial wolf, the thylacine or zebra-wolf of Tasmania, *Thylacinus cynocephalus.* See cut under *thylacine.*

wolfachite (vol′fäċh-īt), *n.* [G. *Wolfach* (see def.) + *-ite*^{2}.] A sulpharsenide and antimonide of nickel, Ni(As,Sb)S, which occurs in orthorhombic crystals and in columnar radiated aggregates of a silver-white or tin-white color: found at Wolfach, Baden.

Wolffian ridge. See ★*ridge.*

wolf-hole (wůlf′hōl), *n.* A wolf's den; figuratively, a pit dug as a part of a line of defenses upon a military position. See the extract.

> In the immediate foreground of the picture is shown a series of "*wolf-holes,*" concealed with diabolical skill among a forest of sharpened sticks. These holes are laid out on a diamond pattern and each is between three and four feet deep. In many cases a sharp stake is driven firmly in the ground at the bottom. Usually they have a wire entanglement running parallel with them. In some cases they were built without the usual forest of stakes being driven around them at the surface of the ground; in which case the openings were concealed by grass and brushwood, and the attacking force knew nothing of their existence until the men crashed through to be impaled on the stakes below.
> *Sci. Amer.*, June 17, 1905, p. 482.

wolf-hound (wůlf'hound), *n.* A dog used in hunting wolves.—**Russian wolf-hound,** a large dog, much resembling the deerhound in general build, but having much softer hair. Its usual color is black and white.

Wolfram aluminium. See ★*aluminium.*

wolframine (wůlf'ra̤-min), *n.* [*wolfram* + *-ine*^{2}.] Same as *tungstite.*

wolframite (wůlf'ra̤-mīt), *n.*. [*wolfram* + *-ite*^{2}.] See *wolfram.*

Wolf-Rayet star. See ★*star*^{1}.

wolf's-peach (wůlfs'pēch), *n.* An old and fanciful name for the tomato, being a rendering of the Latin generic name of the tomato, *Lycopersicum*: it was once supposed that the fruit was poisonous or at least not good to eat.

wollomai (wol'ō̤-mī), *n.* [Aboriginal Australian.] The ★schnapper (which see). [Australia.]

wolver (wůl'vėr), *n.* Same as *wolfer.*

> Two weeks afterward as the *wolver* rode down an adjoining cañon, he saw a Wolf come out of a hole.
> *E. Thompson Seton*, Billy: the Big Wolf, i.

wolverene, *n.* **2.** An inhabitant of the State of Michigan. [Colloq., U. S.]

wolving (wůl'ving), *n.* Same as *wolfing.*

> Away back in the spring of '92 a Wolf was "*wolving*" on the east side of Sentinel Mountain.
> *E. Thompson Seton*, Billy: the Big Wolf, i.

woman, *n.* **4.** Formerly, the side of a British penny on which was the figure of Britannia, the other having the king's head: as "man or *woman?*"—that is, heads or tails?—**The new woman,** woman, as more or less freed from the control of traditional views of what is proper or becoming in female conduct, occupation, education, etc. [Slang.]—**The strange woman,** in biblical usage, a harlot.—**Veiled woman.** See ★*veil, v. t.*

womar, *n.* Same as ★*wommera.*

wommera (wom'e̤-rä̤), *n.* [Also *womerah*, *womara*, *woomera*, *wummerah*, *wammerah*, *wommela*, etc.: aboriginal Australian.] The spear-thrower, or throwing-stick, of the aborigines of Australia.

> The region in which spear slings are most frequent, even at the present day, is Australia. The principal weapon of the Australians is the spear, 3 to 4 meters in length, and all Australian spears except those used in catching fish are thrown by means of a sling, called "*wommera*," which is used both in war and in the chase. It was at one time distributed throughout Australia, but, being supplanted more and more by firearms, slings are now limited to West Australia from the north and the territory beyond New South Wales and Victoria.
> *Smithsonian Rep.*, 1904, p. 622.

wonder, *n.*—**Back-rolling wonder,** *Eupelmus mirabilis*, a chalcidoid parasite, of the family *Encyrtidæ*, which lays its eggs in the eggs of the angular-winged katydid, *Microcentrum retinerve*, and which has the habit of turning its abdomen up over the thorax.

wondercraft (wun'dėr-kráft), *n.* Thaumaturgy; the pretended art or power of working wonders. [Rare.]

> When thaumaturgy becomes a source of gain, and greed is wed to *wondercraft*, there springs from the union a progeny of devils that wreak on the teachers of truth the tortures of rack and fagot.
> *An. Rep. Bur. Amer. Ethnol.*, 1898–99, p. clxxxiii.

wondermonger (wun'dėr-mung"gėr), *n.* One who deals in marvels and prodigies; a thaumaturgist. [Rare.]

> By reason of a persistent refusal to recognize much, if any, difference between the scientist and the charlatan, between the expert and the quack; and, in fact, by a disposition—marked in some quarters—to give undue prominence to bogus weather prophets and *wondermongers*, at the expense of the equipped and reputable students of the subject. *Pop. Sci. Mo.*, Feb., 1901, p. 382.

wonga (wông'gä̤), *n.* [Aboriginal name.] In Australia, the lesser cattail, *Typha angustifolia.* See *Typha* and ★*raupo.*

wong-shi (wong-shē'), *n.* [Chinese *wang shi* or *wang sh'*, plants which grow in tufted heads with slender peduncles; *wang*, the footstalk of a flower, a plant that dyes yellow; *shi* or *sh'*, name of a plant.] A yellow dyestuff, the pods of *Gardenia florida*, brought from China. It contains crocin, apparently identical with that from saffron, and dyes silk or wool without a mordant, and cotton mordanted with tin salts.

wood^1, *n.* **11.** In *hort.*, any twig or tissue of a plant, whether hard or soft, that is considered in the making of cuttings or sometimes, in the case of garden plants, in the operation of pruning. See *hard* ★*wood*, *soft wood.*—**Armored wood,** wood which is covered with metal to protect it from injury by fire; also wood which has been strengthened by the addition of pressed or rolled steel. **Fernambuco wood.** Same as *Pernambuco wood* (which see, under *wood*^{1}). See *Brazil*, 2.—**Hard wood.** (*b*) In *hort.*, the wood or tissue that has hardened or ripened so far that it is no longer soft and herbaceous. Such twigs or shoots are often used for cuttings. The term is used in distinction from soft wood or green wood, cuttings from which are often likely to flag and decay, although some plants, as coleus, are always grown from soft-wood cuttings. (*c*) The name used in the lumber trade for the timber of deciduous-leaved trees as distinguished from evergreen or coniferous trees, though some, poplar, for instance, are as soft as white pine, while yew and some varieties of yellow pine rank high in hardness, when compared with hard woods. In Tasmania the name is usually confined to the timber of the eucalypts, while in Queensland it is especially applied to a myrtaceous tree, *Backhousia Bancroftii.*—**Haskinized wood,** wood which has been subjected to the process of ★haskinization (which see).—**Jamaica wood,** *Baryxylum Linnæi* (*Peltophorum Linnæi* of Bentham). See *West Indian redwood*, under ★*redwood.*—**Lima wood,** a dyewood obtained in Peru and Ecuador from *Cæsalpinia pectinata.* It reaches commerce from the port of Lima, whence the name. See *braziletto.*—**Madagascar wood,** a kind of sandalwood, resembling caliatour-wood, from the island of Madagascar, used as a dyestuff.—**Nic. wood,** a trade-name, an abbreviation of *Nicaragua wood.*—**Open woods,** those woods used by dyers which are soft and present little compactness of texture, so that their coloring matter is readily given up to solution in water.—**Panama wood,** a commercial name for quillai-bark, (which see, under *quillai*).—**St. Mary's wood.** See ★*bitanhol.*—**Terra-firma wood,** a dyestuff, of the same class with Brazil wood, Nicaragua wood, etc., consisting of the wood of a species of *Cæsalpinia.*—**Wood powder.** See ★*powder.*—**Wood pulp.** See *wood-pulp.*—**Wood turpentine.** See ★*spiritine.*

wood^1, *v. i.*—**To wood up.** (*a*) To supply (a boat) with wood for fuel. [U. S.]

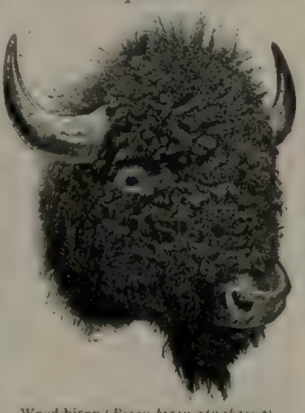
> So I 'm going down stream *to wood up*, and then we 'll come back and make them pay.
> *Cutcliffe Hyne*, A Master of Fortune, iii.

(*b*) To make a noise by scuffling with the feet or by handclapping, as students in approval or disapproval of a professor. [U. S. slang.]

wood-alcohol, *n.* Seriously injurious and even fatal effects have been observed as the result of swallowing wood-alcohol (methyl alcohol), or preparations containing it, such as essence of ginger. Injury to vision has repeatedly attracted attention.

Wood-apple gum. See ★*gum*^{2}.

wood-bison (wůd'bī"so̤n), *n.* An American bison, separated as a subspecies under the name *Bison bison athabascæ.* It formerly inhabited the mountainous and wooded parts of the northwestern United States and British territory from there to Lake Athabasca. A few still remain near this last locality. More commonly called *wood-buffalo.*



Wood-bison (*Bison bison athabascæ*)

wood-borer, *n.*—**Metallic wood-borers,** the beetles of the family *Buprestidæ.*

wood-buffalo (wůd'buf"a̤-lō), *n.* Same as ★*wood bison.*

wood-carving, *n.*—**Wood-carving machine,** one of a variety of profiling-machines having revolving cutters for reproducing a pattern in a wooden surface, much used in the manufacture of piano-legs, carved furniture, etc.

wood-cloth (wůd'klôth), *n.* A textile fabric manufactured by a process invented by Mitscherlich, in which long strips of soft wood, free from knots, cut parallel to the grain, are boiled with a solution of sulphurous acid or an acid sulphite, washed with water, pressed, repeatedly passed between rolls to separate but not break the fibers, dried, and combed like flax, being afterward spun and woven like any other textile material.

woodcock, *n.*—**Scotch woodcock,** eggs and bacon with caviare or anchovy paste on toast.

wood-crowfoot (wůd'krō"fůt), *n.* See ★*crowfoot.*

wood-drill (wůd'dril), *n.* **1.** A kind of auger for large holes in which the point has a tapering screw designed to draw the cutting edges forward.—**2.** A form of drill resembling an auger, used in mining in soft material, which has a central tit to draw the cutter proper after it.

wood-duck, *n.* **3.** The maned goose, *Bernicla jubata*, found in southern Australia.

Wood-engraver bark-beetle, a North American scolytid beetle, *Tomicus cælatus* Eichoff, damaging white pine, mining beneath the bark and loosening it from the wood, making regular and artistic furrows which suggested the name to Thomas Say, the pioneer entomologist. Same as *wood-engraver*, 2.

wood-gas, *n.* A double process of destructive distillation is necessary, the first producing a mixture of liquid, oily, or tarry substances, which in the second retort, at a higher temperature, evolves gases, chiefly marsh-gas and its homologues, ethylene and other unsaturated hydrocarbons, hydrogen and carbon monoxid, with carbon dioxid in large quantity, this last to be afterward removed by passage over slaked lime. Wood-gas is practically free from sulphur compounds.

wood-grass, *n.* **2.** Same as *bushy* ★*blue-stem.*—**3.** Same as *knot-root* ★*grass.*

wood-gum (wůd'gum), *n.* Same as ★*xylan.*

wood-hare (wůd'hãr), *n.* A term sometimes applied to the gray rabbit or cottontail, *Lepus sylvaticus*: mainly a book-name.

Woodhouse beds. A group of strata in Charnwood Forest, Leicestershire, England, believed by some to be pre-Cambrian, by others Cambrian. *Geikie*, Text-book of Geol., p. 897.

wood-ipecac (wůd'ip"ē̤-kak), *n.* See ★*ipecac.*

woodite (wůd'īt), *n.* A trade-name for an elastic packing material of fibrous character and consisting in part of india-rubber, intended, among other applications, for lining the hulls of ships of war in order to secure temporary plugging of holes made by shot. *N. and Q.*, 8th ser., II. 213.

woodland, *n.* **2.** In *forestry.* See ★*forest*, 1.—**3.** In *phytogeog.*, a vegetation composed of woody plants, regarded by Schimper as one of three grand types of climatic formation (compare ★*grass-land*, 2, and ★*desert*^{1} (*b*)). This author subdivides *woodland* (*gehölz*) into *forest* (*wald*), in which the tree growth is closed up; *bushwood* (*buschwald*), in which the trees are so separated by shrubby growth that their crowns do not touch; and *shrubwood* *gesträuch*), in which shrubs are the chief feature. Tropical woodland is divided by the same author into rain forest, monsoon forest, savanna forest, and thorn forest, these resulting from as many combinations of climatic conditions. See ★*forest*, 4.

wood-lot (wůd'lot), *n.* A lot covered with forest. See ★*forest*, 1. [U. S.]

> I've . . . scrimped here and pinched there. What do you s'pose I sold the *woodlot* for?
> *J. C. Lincoln*, Partners of the Tide, v.

wood-meal (wůd'mēl), *n.* Wood ground to a meal-like powder: used in paper-making, in the manufacture of explosives, and as a constituent of some plastic materials. See ★*meal*, 2.

wood-mosquito (wůd'mus-kē"tō), *n.* See ★*mosquito.*

wood-mulls (wůd'mulz), *n. pl.* Heavy hose worn by fishermen. [Eng.]

wood-nettle (wůd'net"l), *n.* See ★*nettle*^{1}.

wood-nodule (wůd'no̤d"ūl), *n.* Same as ★*sphæroblast.*

wood-nymph, *n.*—**Southern wood-nymph,** an American agapetid butterfly, *Cercyonis pegala*, common in Florida and the other Gulf States. Its larvæ feed on grasses.

wood-oil, *n.*—**China wood-oil,** a drying oil from the kernels of *Aleurites cordata* or *Elæococca vernicia*, used in making varnish.

wood-paper, *n.* **2.** Very thin veneers of wood backed or reinforced by thin paper: used as a wall-paper.

woodpecker, *n.* **2.** In *lumbering*, a poor chopper. [Slang.]

wood-pitch (wůd'pich), *n.* The residue left in the still after distillation of wood-tar. It is run out from the still while hot and becomes solid on cooling. It is used, often re-melted with rosin-pitch or with coal-tar, to protect the surface of timber; also used by shoemakers.

wood-pulp, *n.* *Chemical pulp* is produced by the chemical treatment of wood in the form of chips. It is almost wholly included under the heads of *sulphite pulp*, made with the aid of a solution of calcium acid-sulphite, and *soda pulp*, made with a solution of caustic soda. *Mechanical pulp* is produced by grinding wood to a sort of powder against a rapidly revolving surface of sandstone under a stream of water. Pulp so prepared has very little felting power, and is generally used with some addition of material of longer fiber. It is employed very largely in making lower-class, weak paper, such as that on which many newspapers are printed.—**Wood-pulp silk.** See ★*silk.*

wood-quartet (wůd'kwâr-tet"), *n.* An instrumental quartet of wood instruments, usually a flute, an oboe, a clarinet, and a bassoon.

wood-satyr (wůd'sat"ėr), *n.* A popular name of certain agapetid butterflies.—**Little wood-satyr,** an American agapetid butterfly, *Cissia eurytus*, having a wide southern and northern range in the United States. Its larvæ feed on grass.

wood-spirits (wůd'spir"its), *n.* Same as ★*spiritine.* Not to be confounded with 'wood-spirit' or methyl alcohol.

Woodstock group. See ★*group*^{1}.

wood-sugar (wůd'shůg"ä̤r), *n.* Same as ★*xylose.*

wood-trimmer (wůd′trim″ėr), *n.* In *wood-working*, a hand- or power-machine for cutting blocks or pieces of wood into a great variety of shapes. It is essentially a mitering cutter employing two cutting knives placed at a right angle and giving a shaving cut. See *mitering-machine*.

wood-turpentine (wůd′tėr″pen-tīn), *n.* Spirits of turpentine made by distilling with water the refuse wood of the long-leaf pine. See ★*spiritine*.

wood-yard (wůd′yärd), *n.* A yard or space where wood is stored and cut.

wool, *n.* 1. A wool fleece is divisible into sorts, according to fineness or length of staple. Clothing or short-staple wool may be divided into 9 (or more) sorts: *picklock*, *prime*, *choice*, *super*, *head*, *downrights*, *seconds*, *abb*, and *breech*; worsted or combing wool may be divided into 7 (or more) sorts: *blue*, *fine*, *neat*, *brown drawing*, *breech* or *britch*, *cow-tail*, and *brokes*. These sorts are sometimes designated as first, second, third, etc.—**Carbon wool.** See ★*carbon*.—**Clayton wool-brown**, an acid coal-tar color which dyes wool brown in an acid bath.—**Cross-bred wool**, the wool of a sheep that is the progeny of two varieties (usually understood to be an English and a merino blooded sheep).—**Forest wool**, the filamentous part of pine-tree leaflets, used for stuffing mattresses and for hygienic and other fabrics: for the latter use it is generally mixed with cotton.

> Near Breslau, in Silesia, there have been erected factories that convert the pine leaves into what is called "*forest wool*," for wadding. Other factories have been erected in other parts of Europe for a similar use of these leaflets, as in Sweden, Holland, and France. The products made from these pine-tree leaflets have been exhibited at a number of expositions, where they attracted more or less attention as furnishing suitable material for stuffing mattresses and articles of furniture in place of horse hair, for manufacture into hygienic fabrics for medical use, and for articles of dress, such as inner vests, drawers, shirts, chest preservers, etc. In the preparation of the textile material an ethereal oil is produced, which is employed as a curative agent and oftentimes as a useful solvent. *Sci. Amer. Sup.*, Nov. 15, 1902, p. 22464.

Full-blood wool, any wool bred to a fixed type.—**Glass wool.** (*b*) A variety of spun glass resembling asbestos or mineral wool, used for making fire-proof cloth and for electrical purposes.—**Half-blood wool**, a trade term for wool from sheep with one half merino blood and one half cross-bred or English blood.—**Kapok wool.** See *kapok*.—**Luster wool**, long-staple wool exhibiting a silky luster: it is the wool of such breeds of sheep as the Leicester and Lincoln converted by spinning into worsted yarn.—**Mestizo wool**, South American wool, particularly that of Argentina, from the cross between the imported merino and the native criollo sheep.—**Quarter-blood wool**, a trade term for wool from sheep with one quarter merino blood and three quarters cross-bred or English blood.—**Silk wool.** See ★*silk*.—**Skirted wool.** See *skirted*. **Tanners' wool.** See ★*tanner*^{1}.—**Three-eighths-blood wool**, wool from sheep with three eighths merino blood and five eighths cross-bred or English blood.—**Vegetable wool.** (*a*) Flax or other vegetable fibers which have been prepared by a chemical or mechanical process, or both, so as to look like wool: used for mixing with the latter.

> At the time of the New Jersey experiments it was thought that the question of economically cleaning the fiber [jute] had been settled by the invention of a "combined chemical and mechanical process." It was stated that the practical advantage of this refining process consisted in obtaining a *vegetable wool* so nearly akin to coarse animal wool "as to render their union in coarse fabrics advantageous, and for additional possible uses by itself a valuable substitute."
>
> *U. S. Dept. Agr.*, Rep. No. 6, p. 29.

(*b*) See the extract.

> Cotton, which comes next to sugar cane among the agricultural products of the coast, is principally grown in the departments of Piura, Ica, and Lima. Piura produces the remarkable cotton called *vegetable wool*, known in Europe as "full rough" and "moderate rough." This cotton is unique in its class and is used for mixing with wool in the manufacture of woolen goods. So excellent is this cotton that even an expert may mistake it for wool. *National Geog. Mag.*, Aug., 1904, p. 315.

Wool yellow. See *patent* ★*fustin*.

wool-eating (wůl′ē″ting), *n.* A disease of sheep. See ★*lick*, 7.

wooled (wůld), *a.* [*wool* + *-ed*^{2}.] Having wool: as, a fine *wooled* or medium *wooled* sheep.

> Marked achievements have been attained in producing new breeds of sheep; for instance, among the fine and medium *wooled* breeds from Europe are the Rambouillets, the Horned Dorsets, etc.
>
> *Yearbook U. S. Dept. Agr.*, 1901, p. 219.

woolen-mill (wůl′en-mil), *n.* An establishment in which all or some of the principal processes of wool-manufacture, as carding, spinning, and weaving, are performed, separately or together; a wool-mill.

wool-extract, *n.* Fabrics of mixed wool and cotton are steeped in dilute sulphuric or hydrochloric acid, dried, and heated to about 110° C., which 'carbonizes' the cotton and makes it easily reducible to powder: this powder is separated by dusting and screening.

wool-grease (wůl′grēs), *n.* The material, of greasy consistence, obtained from raw sheep's wool by extraction with special solvents, such as petroleum ether, or recovered from water in which the wool has been scoured. It consists largely of cholesterol and isocholesterol and thin esters, along with potash salts and certain special fatty and waxy organic substances. Lanolin for medical use and potassium carbonate are made from it. Also known as *suint*. *Jour. Soc. Chem. Industry*, X. 709.

Woolhope limestone. See ★*limestone*.

woolly-breeches (wůl′i-brich″ez), *n.* See *yellow* ★*forget-me-not*.

woolly-foot (wůl′i-fůt), *n.* A grama-grass, *Bouteloua eriopoda*, found in dry gravelly soil from Texas to Arizona and in Mexico, distinguished from others of its genus by having the stems woolly toward the base. It withstands severe drought and is locally very valuable for grazing. More fully, *woolly-foot grama*.

woolly-head, *n.* 2. A small white alto-cumulus or cirro-cumulus cloud, of a round shape and compact texture: distinct from the clouds of the mackerel sky, which are thinner and of a paler tint, shading off to white on one side, but fading into the delicate blue of the sky on the other.

wool-man (wůl′man), *n.* [Native Australian corruption of E. *old man*.] Old man: applied to a kangaroo. [Australian.]

> The male kangaroos were called by my natives old men, '*wool-man*,' and the females, young ladies, 'young liddy.'
>
> *R. Dawson*, The Present State of Australia, p. 139.
> [Quoted in E. E. Morris, Austral English.

wool-press (wůl′pres), *n.* Same as *wool-packer*, 2.

wool-printing (wůl′prin″ting), *n.* The printing of wool fabrics: analogous to calico-printing. *Georgievics* (trans.), Chem. Technol. Textile Fibres, p. 278.

wool-puller (wůl′půl″ėr), *n.* A workman who removes the wool from sheepskins. *Flemming*, Practical Tanning, p. 1.

wool-pulling (wůl′půl″ing), *n.* The process of removing the wool from sheepskins. *Flemming*, Practical Tanning, p. 2.

wool-scarlet (wůl′skär″let), *n.*—**Wool-scarlet R**, an artificial dyestuff belonging to the class of the oxy-azo dyes, soluble in water.

wool-scouring (wůl′skour″ing), *n.* The process by which raw sheep's wool is cleansed to prepare it for textile use. For a long time stale urine, containing ammonium carbonate derived from the hydrolitic decomposition of urea, was the chief agent in use, but at present soft water with cautious addition of ammonia, sodium carbonate or specially selected soap, is chiefly resorted to, or washing with petroleum naphtha followed by water alone. Wool itself is so easily attacked by alkalis that great care has to be exercised in using them.

wool-seal (wůl′sēl), *n.* 1. A very young harp-seal, *Phoca grœnlandica*, in its coat of long, white, woolly hair. Better known as *white-coat*.—2. See the extract.

> Many furriers—in America, at least—fail to recognize the fast furs as from a species of hair seals, considering them as the skins of a distant and separate species, to which they give the name "*wool-seal*."
>
> *Sci. Amer. Sup.*, Feb. 11, 1905, p. 24335.

wool-shed (wůl′shed), *n.* In Australia, a shed or building in which sheep are sheared and the wool sorted, packed, or stored ready for market. *E. E. Morris.*

> The *wool-shed* is a large building open on every side, with a high-pitched roof,—all made of wood and very rough. The sheep are driven in either at one end or both, or at three sides, according to the size of the station and the number of sheep to be shorn. They are then assorted into pens, from which the shearers take them on to the board;—two, three, or four shearers selecting their sheep from each pen. The floor, on which the shearers absolutely work, is called 'the board.'
>
> *A. Trollope*, Australia and New Zealand, I. 126.

woolskin (wůl′skin), *n.* A sheepskin with the wool on. *Flemming*, Practical Tanning, p. 64.

wool-table (wůl′tā″bl), *n.* Same as *wool-packer*, 2.

Woolwich and Reading beds. See ★*bed*^{1}.

wool-yoke (wůl′yōk), *n.* See ★*wool-grease*.

woomera, *n.* See ★*wommera*.

woozy (wö′zi), *a.* Grotesque; ridiculously odd or extraordinary. [Colloq.]

> Mr. Trelawney, . . . rich and learned in Egyptology, had the feline and mulierine mummies in a strange cabinet of weird and *woozy* curios, and he kept the jewel in a burglar-proof safe in the same room.
>
> *The Reader*, May, 1904, p. 658.

word^{1}, *n.*—**Motor word**, in *psychol.* and *phonetics*, the word as spoken; the word as presented in kinesthetic terms: opposed to *auditory*, *visual*, *written word*. *Scripture*, Exper. Phonetics, p. 83.

word-deaf (wėrd′def), *a.* Unable to understand spoken words, although the sound is heard. *Scripture*, Exper. Phonetics, p. 85.

word-dumbness (wėrd′dum″nes), *n.* Same as *ataxic aphasia* (which see, under *aphasia*). *Scripture*, Exper. Phonetics, p. 84.

word-idea (wėrd′i-dē-ạ̈), *n.* The idea or meaning conveyed by a written or spoken word.

> A *word-idea* should be learned as part of various courses of thought, in order to form the necessary language associations, in addition to being learned separately in the earlier lessons. *Scripture*, Exper. Phonetics, p. 150.

word-movement (wėrd′möv″ment), *n.* The muscular movement which constitutes articulation of a word. [Rare.]

> The centers for memories of *word-movements* are mainly in the anterior portion of the speech region.
>
> *Scripture*, Exper. Phonetics, p. 83.

word-seller (wėrd′sel-ėr), *n.* A rhetorician. [Rare.]

> So these *Word-sellers* haue no power to cure
> The passions which corrupted liues endure.
>
> *Lord Brooke*, Humane Learning, st. xxx.

word-sign (wėrd′sīn), *n.* A character used as the sign of a whole word: as, in phonography, a sign for *sh* may be used for *shall*, *ng* for *thing*, *ch* for *which*, etc. *Jour. Anthrop. Inst.*, XXX. p. 156.

> The *word-sign* value of a sign is, in the first place, the name of the object it represents, or of some material, or quality, or action, or idea suggested by it.
>
> *Encyc. Brit.*, XXVII. 730.

word-unit (wėrd′ū″nit), *n.* In *phonet.*, the spoken word considered not as made up of independent sounds, each expressed by a letter of the alphabet, but as a continuous series of an infinite number of sounds; and considered also as the expression, not of a series of volitions (for prefix, suffix, etc.), but of a single unified volition. *Scripture*, Exper. Phonetics, p. 453.

work, *v.* I. *intrans.* 9. *Naut.*, to move slightly, as a structural part of a vessel, with reference to adjacent parts; change form slightly, as a vessel: due to the strains brought upon a vessel that is rolling or pitching at sea.

> In many cases wood ships alter form transversely, "*working*" at the junctions of the decks and sides, or at the bilges, when rolling in a seaway.
>
> *White*, Manual of Naval Arch., p. 296.

10. In *machin.*, to have an undesired motion due to defective fitting of the bearing, guiding, or supporting areas of contact, or from wear.

II. *trans.* 18. In *hort.*, to graft or to bud.—**To work and turn.** See ★*turn*.—**To work out one's taxes**, to pay one's taxes by working on the highways or other public works. *Dialect Notes*, III. iii. [U. S.]

work, *n.* 15. A movement of strata of the earth upon one another which causes creeping, squeezing, or faulting of the veins or lodes in a mine.—**Detached work**, a redoubt or other defensive work not in close defensive relation with the main line of defense.—**Free work**, in *thermodynamics*, the work obtainable from any isothermal modification of the state of a substance or system. See *free* ★*energy*.—**Gaged work**, in *bricklaying*, fine work upon arches, etc., and in which gaged bricks are used. See *brick*^{2}.—**Incised work**, lettering, decorative sculpture, and the like, done by incision in a surface, either pierced through, as in a plate of metal, or merely sunk, as in a slab of stone with an inscription. The former is more properly called *pierced work*. Incised work may be filled up with another material, producing inlay (which see).—**Long and short work**, in *building*, the fitting of stones in successive courses, as at the corner of a building or a window jamb, so that the stones enter the wall in alternately longer and shorter blocks. The system is used in order to tie the body of the wall, when of an inferior material, more firmly to the square blocks of the angle or the jamb, and it enters into the decorative effect of some styles of architecture, such as that of the French Renaissance.—**Mont Melick work**, embroidery which is composed of many of the stitches used in lace and embroidery. It is of Irish origin and very old: recently revived.—**Principle of maximum work**, in *phys. chem.*, a theorem of Berthelot, which asserts that every chemical action which takes place without the addition of energy from without, tends to form that substance or those substances whose formation occasions the greatest development of heat. There are so many exceptions to the proposition that it is obviously not a law of nature.—**Sorrento work**, ornament cut out of flat boarding, as with a jig-saw or ribbon-saw; flat scrollwork, the back and face being parallel.

work-adder (wėrk′ad″ėr), *n.* In *physiol.* and *exper. psychol.*, an attachment to the ergograph, constructed on the principle of the cyclometer, which sums up the work done by the finger in successive contractions and thus indicates the total amount of work performed in a particular test or series of tests. See ★*ergograph*.

worked (wėrkt), *a.* In *hort.*, said of plants that have been grafted or budded.

worker, *n.*—**Fertile worker,** a worker honey-bee which lays eggs.

working, *n.* 6. In *forestry*, the harvesting of the final yield under a working plan. Working is *annual* when cuttings are made each year, *periodic* when they are made after uniform periods of two or more years; and *intermittent* when they are made at irregular intervals. *Sustained*, annual, periodic, or intermittent workings are those under which the amount of wood cut is so regulated that the productive capacity of the forest does not decrease, but produces a *sustained yield*, which likewise may be annual, periodic, or intermittent.

7. *Naut.*, the condition of moving slightly or changing form under the strain of rolling: said of a vessel or any of its structural parts. See ★*work*, *v. i.*, 9.—**Working home,** in *mining*, a system of working a vein or seam by which the work of extraction is begun at the point on the property farthest from the shaft or main gangway, and the progress is from the boundary toward the point of discharge. *Coal and Metal Miners' Pocket-book.*

working-area (wėr′king-ā″rẹ-ạ), *n.* In *forestry*, the total forest-area managed under a working-plan. Also called *working-circle.*

working-circle (wėr′king-sėr″kl), *n.* See ★*working-area.*

working-jib (wėr′king-jib), *n.* *Naut.*, the regular jib; the jib that is in general use, and not the jib of light-weight canvas sometimes bent in light weather.

working-mold (wėr′king-mōld), *n.* In *ceram.*, a plaster cast taken from a case-mold and used in molding the ware; an exact reproduction of the block-mold. See ★*block-mold* and ★*case-mold.*

working-pit (wėr′king-pit), *n.* That shaft of a mine out of which the ore is taken and which is used as a passage by the miners, as distinguished from a shaft used only for pumping or ventilation.

Working-plan renewal, in *forestry*, the preparation of a new working-plan for a given tract, when the present working-plan has been carried out, or changed conditions require its revision.

workplace (wėrk′plās), *n.* A place where work is done; a place or structure in which people work.

The size of the *workplace* should, of course, correspond to the number of employees, and to the needs of each establishment. The minimum of four hundred cubic feet of space for each worker, which is established by legislation in many places, is entirely inadequate.
Buck, Med. Handbook, VI. 327.

workt, *p. a.* A simplified spelling of *worked.*

world, *n.*—**Astral world.** See ★*astral.*—**In the world.** See *world*, 17.—**Roof of the world.** See ★*roof*^{1}.—**The world of appreciation.** See ★*appreciation.*

world-map (wėrld′map), *n.* A map of the entire earth.

A complete mappemonde, to remedy the deficiencies noticed above in the *world-map.*
Geog. Jour. (R. G. S.), XV. 379.

world-myth (wėrld′mith), *n.* A myth which assumes to explain the origin or constitution of the world. *Ratzel* (trans.), Hist. of Mankind, I. 58.

world-power (wėrld′pou″ėr), *n.* A state, a church, or other organization which exercises power in every part of the world or among all mankind.

In that development of doctrine which had organised the Church, as the representative of absolute truth, into a *world-power* coextensive with the State and resting ultimately on force. *Kidd*, Western Civilization, p. 307.

world-process (wėrld′pros″es), *n.* A development or evolution coextensive with the duration of the world, but especially of mankind, and including all the events of universal history. *Kidd*, Western Civilization, p. 174.

world-soul (wėrld′sōl), *n.* The (supposed) soul of the world.

The soul of the Upanishads had already become the one primeval *world-soul* from which all other souls emanated, when Buddhism arose; and the remarkable feature about this approximation to a great central truth was that it owed its existence, not to Brahmin philosophy, but to the conception of lay speculation.
Nature, Dec. 10, 1903, p. 121.

world-stuff (wėrld-stuf), *n.* The (ultimate) material of which the universe is composed.

world-weariness (wėrld′wē″ri-nes), *n.* The condition of being world-wearied; weariness with the world; general dissatisfaction with life.

worm, *n.* 6. (*e*) A conical winding-drum having a spiral groove in which the winding rope or chain lies as it is wound upon the drum, the object being to wind the rope at first over the smaller diameter of the cone, and to increase the leverage as the winding proceeds. A common example is the brake-chain worm of a railroad car at the lower end of a brake-shaft. (*f*) The driving element in screw-gearing or worm-gearing; the helix whose section is that of a wheel-tooth described upon a cylinder as a base which bears upon the tooth of the worm-wheel to cause the latter to revolve.

To particularize further, the motor runs at a speed of 1,500 r. p. m. and its extended shaft has a $\frac{7}{8}$-inch *worm* with 20 threads per inch, which engages with a worm wheel that is 7 inches in diameter, and similarly has 20 threads per inch in 500 teeth. *Elect. Rev.*, Sept. 17, 1904, p. 458.

Medina worm. Same as *guinea-worm.*—**Miners' worm,** *Ancylostoma duodenale.*—**Woolly worm,** any one of a number of saw-fly larvæ which secrete a close waxy fibrous covering resembling wool.

worm-abscess (wėrm′ab″ses), *n.* An abscess resulting from the presence of worms or larvæ of insects in the tissues.

worm-box (wėrm′boks), *n.* A metal covering with bearings for a worm and worm-wheel.

worm-eel (wėrm′ēl), *n.* A name applied to a small eel of the family *Myridæ.*

worm-gear, *n.*—**Ball worm-gear,** a form of gear using a screw-gear driven by a worm, in which the contact of the worm with the wheel is by means of steel balls in the periphery of the latter instead of teeth, to reduce the sliding friction. The balls are sunk in the wheel up to their equatorial line, and a guard or container prevents them from getting out beyond the area of contact with the worm.

worming (wėrm′ing), *v. n.* Specifically, the operation (performed by hand) of ridding the growing tobacco-plant of worms, chiefly the tobacco-worm (which see).

Worming has been done so persistently in many places in the Connecticut valley that this pest is well-nigh exterminated. *Killebrew and Myrick*, Tobacco Leaf, p. 251.

worm-tube (wėrm′tūb), *n.* The shell-like tube formed by many marine worms, especially by those of the genus *Serpula.*

From a conical base, which has a flat spreading margin and is attached to a mass of *worm-tubes*, the short main stem arises.
Annals and Mag. Nat. Hist., May, 1904, p. 381.

wormwood, *n.*—**Silvery wormwood.** See *wormwood-*★*sage.*

wormwood-sage (wėrm′wụd-sāj), *n.* See ★*sage*^{2} and *pasture* ★*sage-brush.*

wound^1, *n.*—**Exit wound,** in *medical jurisprudence*, the wound caused when a weapon or missile comes out, after it has passed completely through the body or a part of it.

wound-duramen (wönd′dū-rā″men), *n.* The duramen-like tissue formed in the process of healing of wounds in woody plants.

For these reasons it is quite correct to designate these preliminary steps towards wound-closure as a pathogenic formation of duramen, and the tissue derived from the process as *wound-duramen.*
Tubeuf, Diseases of Plants, p. 76.

wound-fungus (wönd′fung″gus), *n.* A fungus which gains entrance to a plant by means of a wound.

wound-gum (wönd′gum), *n.* A dark-colored gummy substance which forms in the dead tissue of wounds of woody plants.

wound-parasite (wönd′par″ạ-sīt), *n.* A parasite which gains entrance to a plant through a wound. See *wound* ★*parasite.*

Fomes Ribis enters the trunk of the tree apparently in the same manner as do most of the so-called "*wound parasites.*" *Science*, Oct. 11, 1907, p. 480.

Woven wind. See ★*wind*^{2}.

W. P. An abbreviation of *Worthy Patriarch.*

W. R. An abbreviation (*a*) of *West Riding*; (*b*) of *William Rex* (King William).

wraithe (rāᴛʜ), *n.* [Cf. *writhe*, *v.*] A coarse comb used on a form of warp-dressing or -beaming machine to keep the warp-threads apart. *R. Marsden*, Cotton Weaving, p. 292.

wrangler, *n.* 4. Same as *horse-wrangler.* [Western U. S.]

wrap^1, *n.* 2. In *cotton-manuf.*, one complete circuit of the measuring mechanism of a warp-beaming machine. The length of the wrap varies according to the details of the mechanism—3,564 yards, more or less. *R. Marsden*, Cotton Weaving, p. 281.

wrapper, *n.*—**Cigar wrapper,** tobacco-leaf employed for the outside finish of cigars: the most difficult to produce of all the grades. A light, thin, elastic, fine-veined and well-colored leaf is sought. See *broad-leaf* ★*tobacco*, *Havana* ★*tobacco*, *Sumatra* ★*tobacco.*—**Mahogany wrapper.** See *plug* ★*wrapper.*—**Plug wrapper,** tobacco-leaf fitted by fine, elastic texture, attractive color, etc., for covering plug tobacco. The lemon yellow is rated highest, this grading into mahogany and red. See *yellow* ★*tobacco*, *mahogany* ★*tobacco.* The dark export tobacco furnishes red and brown plug wrappers.—**Swiss wrapper,** a type of American export tobacco taken in small amount by Switzerland for cigar wrappers. It is a large, silky, fine-veined leaf of a dark brown or chestnut color.

wrapper-chain (rap′ėr-chān), *n.* See ★*binding-chain.*

wrapt, *p. a.* A simplified spelling of *wrapped.*

wrasse, *n.* (*b*) In New Zealand, *Pseudolabrus bothryocosmus.* Called also *poddly*, *spotty*, and *kelp-fish.* *E. E. Morris*, Austral English.

Wreath cent. See ★*cent.*

wrecker, *n.* 3. One whose business it is to tear down buildings preparatory to the erection of new ones on their sites.

The buildings now on the property will be turned over to *wreckers* on May 1. *N. Y. Evening Post*, Feb. 10, 1906.

wreck-fish, *n.* 2. An Australian species, *Polyprion oxygeneios*, of the family *Serranidæ.* *E. E. Morris*, Austral English.

wrecking (rek′ing), *p. a.* and *n.* [*wreck*^{1}, *v.*] Relating to the work of removing wreckage, as on a railway, of saving wrecked vessels or their cargoes, or of tearing down old buildings; also, such work itself.

wrecking-block (rek′ing-blok), *n.* A wire-rope block having three or more sheaves used in the derrick of a wrecking-car.

wrecking-company (rek′ing-kum″pạ-ni), *n.* A business concern engaged in saving wrecked vessels or their cargoes, or in tearing down old buildings.

wrecking-crane (rek′ing-krān), *n.* A crane adapted for use upon a wrecking-car.

wrecking-crew (rek′ing-krö), *n.* The men engaged in operating a wrecking-car or a vessel employed in wrecking-work.

wrecking-train (rek′ing-trān), *n.* A railroad train fitted up with appliances for clearing away wreckage on the track and repairing damages so far as may be to cars, track, and engine. See *wrecking-car.*

wreckt, *p. a.* A simplified spelling of *wrecked.*

wrench, *n.*—**Thomas wrench,** an instrument used for the forcible correction of a club-foot.—**Union wrench.** (*a*) A steel-bar wrench or spanner for work upon the nuts of unions for pipe or hose. (*b*) A hose-coupling wrench or spanner. The hose-coupling union may have pins or tits on its exterior face, fitting a hole in the end of the curved bar or spanner; or the unions may have radial holes into which a tit on the end of the spanner may enter.

wrench-board (rench′bōrd), *n.* A board or flat wooden surface upon which may be conveniently mounted, for display and access, the special wrenches supplied with an engine or machine. Fixed wrenches are much less injurious to bolts and nuts than the adjustable screw-, key-, or monkey-wrenches.

wrest, *n.* 5. The mold-board of a plow: originally its front portion. See *turn-wrest plow* (under *plow*).

The mould-board . . . is also called the turn-furrow or *wrest.* This term originally applied only to a portion of the mould-board, and was probably the *wrest* of the ancient plow which turned aside the earth.
J. Scott, Field Implements and Machines, p. 6.

wrestling-machine (res′ling-mạ-shēn″), *n.* A piece of gymnasium apparatus consisting of a long bar to be grasped at either end, resistance being given by friction and a spring which may be regulated.

wring-bolt (ring′bōlt), *n.* In *wood ship-building*, a large ring-bolt or eye-bolt used in conjunction with a wring-staff to force the outside planking into position in building a vessel. Also called *wrain-bolt.*

wrinkle-layer (ring′kl-lā″ėr), *n.* In the shells of the goniatite cephalopods, a shell layer beneath the epidermal or outer layer, which is characterized by very fine irregular transverse wrinkles.

wrist-guard (rist′gärd), *n.* In *archery*, a piece of bone, stone, stiff leather, or other material worn on the left wrist as a protection against the released bow-string.

wrist-machine (rist′mạ-shēn″), *n.* A piece of gymnasium apparatus consisting of a rounded bar attached to pulley-weights. The bar is grasped in the hands and the weights are pulled up by turning it.

wrist-reflex (rist′rē″fleks), *n.* Involuntary flexion or extension of the wrist caused by tapping the tendons of the flexor or extensor muscles respectively.

wrist-shot (rist′shot), *n.* See ★*shot*^{1}.

writ^1, *n.*—**Register of writs.** See ★*register*^{1}.—**Writ of association, covenant, debt, entry, seizin.** See ★*association*, etc.

writing, *n.*—**Automatic writing.** See ★*automatic.*—**Point writing.** See ★*point-writing.*—**Tangible**

writing, any writing in which the letters or other written characters are raised above the surface of the paper and sufficiently high to be read by the blind through the sense of touch. The term includes all kinds of handwriting employing letters and numerals, or any system of dots expressing letters, numerals, punctuation marks, or musical notation. See ★*point-writing.*

writing-fluid (rī′ting-flö″id), *n.* A trade term, usually applied to common ink made with nutgalls and a ferrous instead of a ferric salt of iron, the result being a solution nearly free from suspended solid particles, which flows freely from the pen, but produces writing which is pale at first and only gradually acquires its full depth of blackness by exposure to the air as oxygen is absorbed and ferric tannate formed.

W. R. jug. See ★*jug*^{1}.

Wronskian (rons′ki-an), *a.* A determinant the elements of whose first row, a_{1i}, are functions of x, whose successive derivatives are the elements of the succeeding rows: a_{ki} being thus the $(k-1)$th derivative of a_{1i}. Named for Hoëné Wronski, a Pole.

Wrotham ware. See ★*ware*^{2}.

wrought-iron, *n.*— **Direct production of wrought-iron.** See *Blair's* ★*process.*

W. S. An abbreviation (*b*) of *West Saxon.*

wuddie (wud′i), *n.* A gibbet. [Scotch.]

> 'Play on Captain Green's *wuddie,*' said the caddy on Leith Links; and his employer struck his ball in the direction of the Captain s gibbet on the sands.
> *A. Lang*, Historical Mysteries, ix.

Wülfing cloth. See ★*cloth.*

wummerah, *n.* See ★*wommera.*

wunder, wunderful, wundrous. Amended spellings of *wonder, wonderful, wondrous.*

Wundt-Lamansky law. See ★*law*^{1}.

Wundt's chronograph. See ★*chronograph.*

wurley (wėr′li), *n.* [Also *wurlie:* aboriginal Australian.] A hut or camp of the aborigines of Australia.

> He took
> His axe, and shaped with boughs and wattle-forks
> A *wurley*, fashioned like a bushman's roof.
> *H. C. Kendall*, Poems, p. 42. Quoted in E. E. Morris, [Austral English.

wurlie, *n.* See ★*wurley.*

wurm, *n.* and *v.* An amended spelling of *worm.*

wurry, *v.* and *n.* An amended spelling of *worry.*

wurse, wurst. Amended spellings of *worse, worst.*

wurship, *n.* and *v.* An amended spelling of *worship.*

wurshipt, *p. a.* An amended spelling of *worshiped.*

wurth, *v. i.*, *a.*, and *n.* An amended spelling of *worth.*

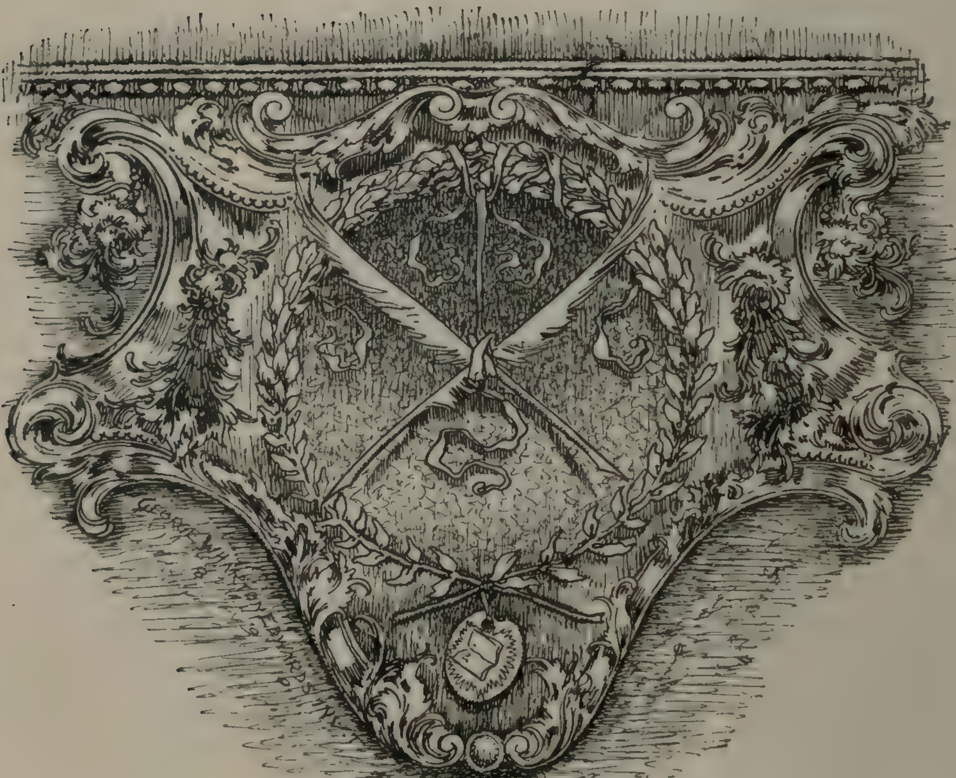
wurthless, *a.* An amended spelling of *worthless.*

wurthy, *a.*, *n.*, and *v. t.* An amended spelling of *worthy.*

W. Va. An abbreviation of *West Virginia.*

Wyo. An abbreviation of *Wyoming.*

wyomingite (wī-ō′ming-īt), *n.* [*Wyoming* + *-ite*^{2}.] In *petrog.*, an aphanitic lava with phenocrysts of phlogopite in a ground-mass of leucite and subordinate diopside. *Cross*, 1897.



X 4. (*c*) The chemical symbol of *xenon.* (*d*) In *elect.*, the symbol for *reactance* in alternating-current circuits. (*e*) In *wireless telegraphy*, a local disturbance causing a false signal; a stray.

xanol (zan′ol), *n.* [Appar. < Gr. *ξαν*(*θός*), yellow, + *-ol.*] The trade-name of sodium caffein salicylate. It is a colorless, pulverulent compound, used in medicine as a diuretic.

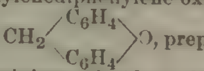
xanthaline (zan′tha-lin), *n.* [Gr. *ξανθός*, yellow, + *-al*³ + *-ine*².] A pulverulent alkaloid, $C_{37}H_{36}O_9N_2$, contained in crude opium. It melts at 206° C.

xanthamide (zan′thạ-mid), *n.* [Gr. *ξανθός*, yellow, + E. *amide.*] A colorless compound, $H_2NCS.OC_2H_5$, prepared by the action of alcoholic ammonia on ethyl xanthate. It crystallizes in monoclinic pyramids and melts at 38° C. Also called *xanthogenamide.* It is not the amide of xanthic acid.

xanthane (zan′thān), *n.* [Gr. *ξανθός*, yellow, + *-ane.*] The radical, $C_2N_2S_3$, of persulphocyanic acid.—**Xanthane hydrid.** Same as *isopersulphocyanic acid* (which see, under ★*persulphocyanic acid*).

xanthelasmoidea (zan″thẹ̄-las-moi′dẹ̄-ä̤), *n.* [NL., < *xanthelasma* + Gr. *εἶδος*, form.] An affection of the skin occurring in the form of reddish or yellowish wheals, which leave more or less permanent yellowish or brownish patches on the skin: called also *urticaria pigmentosa.*

> If further investigation should prove that in *xanthelasmoidea* the coagulability is high it will thus be more decisively separated from the urticarias and the name "urticaria pigmentosa" will be abandoned.
>
> *Lancet*, May 30, 1903, p. 1521.

xanthene (zan′thēn), *n.* [Gr. *ξανθός*, yellow, + *-ene.*] Orthomethylenediphenylene oxid; a colorless compound,  $CH_2\left\langle\begin{matrix}C_6H_4\\C_6H_4\end{matrix}\right\rangle O$, prepared by the action of aluminium chlorid on phenol. It crystallizes in plates, melts at 100.5° C., and boils at 315° C.

Xanthichthys (zan-thik′this), *n.* [NL., < Gr. *ξανθός*, yellow, + *ἰχθύς*, a fish.] A genus of fishes of the family *Balistidæ*. They are found chiedy in American waters, but some of them are widely distributed.

xanthidium (zan-thid′i-um), *n.*; pl. *xanthidia* (-ä̤). [NL., < Gr. *ξανθός*, yellow, + dim. *-ιδιον.*] A name applied to the fossil spore-cases of desmidean *Algæ* and also to the statoblasts of *Polyzoa*: found in rocks of various ages.

xanthin, *n.* A simplified spelling of *xanthine.*—**Xanthin bases.** See ★*alloxuric.*

xanthinine (zan′thi-nin), *n.* [*xanthin* + *-ine*².] A colorless, pulverulent compound, $C_4H_3O_2N_3$, prepared by heating ammonium thionurate.

xanthinoxydase (zan-thi-nok′si-dās), *n.* [*xanthin* + *oxydase.*] An autolytic oxidizing ferment which causes the transformation of hypoxanthin into xanthin.

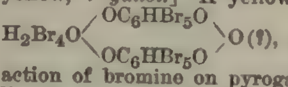
Xanthoceras (zan-thos′ẹ-ras), *n.* [NL. (Bunge, 1834), < Gr. *ξανθός*, yellow, + *κέρας*, horn; in allusion to the color and form of the five glands alternating with the petals.] A genus of North China plants, of the family *Sapindaceæ*. The single species, *X. sorbifolia*, is a handsome and desirable large shrub or small tree, hardy as far north as Massachusetts, with pinnately compound leaves and white flowers in numerous racemes. The fruit is large, green, and spineless, resembling that of the buckeye, containing dark brown glossy globular seeds.

xanthochroism (zan-thok′rọ̄-izm), *n.* [*xanthochro*(*ous*) + *-ism.*] In *ornith.*, the fact or condition of having abnormally yellow feathers. It occurs most frequently in cases where feathers are normally green, red, or orange, and is often seen in parrots and tanagers.

> The direct cause of Albinism is easily found, . . . but that of Erythrism and "*Xanthochroism*" cannot be positively assigned.
>
> *Newton*, Dict. of Birds, p. 1007.

xanthochroöid (zan-thok′rọ̄-oid), *a.* [*xanthochro*(*ic*) + *-oid.*] Same as *xanthochroic.*

xanthocyanopia (zan″thọ̄-sī-ạ-nō′pi-ä̤), *n.* [NL., < Gr. *ξανθός*, yellow, + *κύανος*, blue, + *ὤψ* (*ὠπ-*), eye.] A form of color-blindness in which there is perception only of yellow and blue; red-green blindness or xanthocyanopsy.

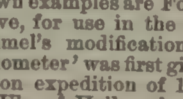
xanthogallol (zan-thọ̄-gal′ol), *n.* [Gr. *ξανθός*, yellow, + *gallol.*] A yellow compound,  $C_6H_2Br_4O\left\langle\begin{matrix}OC_6HBr_5O\\OC_6HBr_5O\end{matrix}\right\rangle O$(?), prepared by the action of bromine on pyrogallol. It crystallizes in laminæ and melts at 122° C.

xanthogenamide (zan″thọ̄-jen-am′id), *n.* Same as ★*xanthamide.*

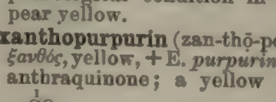
xanthogenate (zan′thọ̄-je-nāt), *n.* [*xanthogen*(*ic*) + *-ate*¹.] Same as *xanthate.*

xanthogenic (zan-thọ̄-jen′ik), *a.* [Gr. *ξανθός*, yellow, + *-γενης*, -producing, + *-ic.*] Producing a yellow color; xanthic.

xanthometer (zan-thom′e-tėr), *n.* [Gr. *ξανθός*, yellow, + *μέτρον*, measure.] A graduated scale of colors from blue to yellow, white, or green, for determining the color of ocean or lake water. Well-known examples are Forel's scale from blue to olive, for use in the lake of Geneva; O. Krümmel's modification, to which the name 'xanthometer' was first given, for use on the plankton expedition of 1890; and the scale of W. Ule of Halle, who extended the scale to 21 numbers.

xanthone (zan′thōn), *n.* [Gr. *ξανθός*, yellow, + *-one.*] Dihydroxybenzophenone anhydrid; a colorless compound,  $C_6H_4\left\langle\begin{matrix}\overset{1}{O}\\\underset{2}{CO}\end{matrix}\right\rangle C_6H_4$, prepared by the oxidation of methylenediphenylene oxid. It crystallizes in long needles, melts at 173–174° C., boils at 349–350° C., is volatile with steam, and is the parent substance of a considerable number of natural coloring matters.

xanthopsia (zan-thop′si-ä̤), *n.* [NL., < Gr. *ξανθός*, yellow, + *ὄψις*, view, appearance.] A pathological condition in which objects appear yellow.

xanthopurpurin (zan-thọ̄-pėr′pū-rin), *n.* [Gr. *ξανθός*, yellow, + E. *purpurin.*] Metadihydroxyanthraquinone; a yellow compound,  $C_6H_4\left\langle\begin{matrix}\overset{1}{CO}\\\underset{2}{CO}\end{matrix}\right\rangle C_6H_2(\overset{2\;4}{OH})_2$, contained in crude natural purpurin and prepared from this substance by reduction. It crystallizes in lustrous needles, melts at 262–263° C., and may be sublimed. Also called purpuroxanthin.

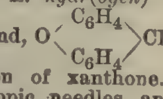
xanthorrhœa² (zan-thọ̄-rē′ä̤), *n.* [NL., < Gr. *ξανθός*, yellow, + *ῥοία*, flow.] The technical term applied to certain resins otherwise known as *akaroid resin*, *Botany Bay resin*, *nut resin*, or *grass-tree gum.*

xanthorthite (zan′thôr-thīt), *n.* [Gr. *ξανθός*, yellow, + *ὀρθός*, straight, + *-ite*².] An altered and hydrated variety of allanite of a yellowish color.

xanthose (zan′thōs), *n.* [Gr. *ξανθός*, yellow, + *-ose.*] An orange pigment found in certain crabs.

xanthosiderite (zan-thọ̄-sid′ẹ-rīt), *n.* [Gr. *ξανθός*, yellow, + *σιδηρίτης*, of iron.] 1. A hydrated ferric oxid, $Fe_2O_3.2H_2O$, which occurs in fine needles or fibers, also as an ocher, of a golden-yellow to brown or red color.—2. Same as *copiapite.*

xanthoxylin (zan-thok′si-lin), *n.* [*Xanthoxyl*(*um*) + *-in*².] A colorless, crystalline compound, $C_{10}H_{12}O_4$, contained in Japanese pepper, *Xanthoxylum piperitum.* It melts at 80° C. and boils without decomposition.

xanthydrol (zan-thī′drol), *n.* [Gr. *ξανθός*, yellow, + E. *hydr*(*ogen*) + *-ol.*] A colorless compound,  $O\left\langle\begin{matrix}C_6H_4\\C_6H_4\end{matrix}\right\rangle CHOH$, prepared by the reduction of xanthone. It crystallizes in microscopic needles and decomposes when heated.

xanthylic (zan-thil′ik), *a.* [*xanth*(*in*) + *-yl* + *-ic.*] Noting an acid, a hypothetical nucleinic acid which on decomposition yields only one xanthin base, namely, xanthin.

Xaverian (zạ-vēr′i-ạn), *a.* and *n.* **I.** *a.* Of or pertaining to St. Francis Xavier.

II. *n.* A member of a teaching brotherhood in the Roman Catholic Church, called the Xaverian Brothers.

xcp. An abbreviation of *ex coupon*, without coupon.

xdiv. A way of writing *ex div.* (which see).

Xe. A chemical symbol of xenon: less commonly used than X.

Xenarchi (zẹ-när′kī), *n. pl.* [NL., < Gr. *ξένος*, strange, + *ἀρχός*, rectum (anus).] A suborder of fishes containing only a single family and species, found throughout the Mississippi valley and coastwise from New York to Texas.

xenia² (zē′ni-ä̤), *n.* [NL., < Gr. *ξενία*, hospitality, also alien condition: see *xenial.*] In *bot.*, the immediate influence of pollen; the influence or effect on the very fruit which is pollinated rather than on the fruits of the plants which spring from the crossed seeds. *W. O. Focke.*

xenian (zē′ni-ạn), *a.* Same as *xenial.*

Xenistius (zẹ-nis′ti-us), *n.* [NL., < Gr. *ξένος*, strange, + *ἱστίον*, sail (alluding to the dorsal fin).] A genus of fishes of the family *Neomænidæ* found on the Pacific coast of America from San Diego to La Paz.

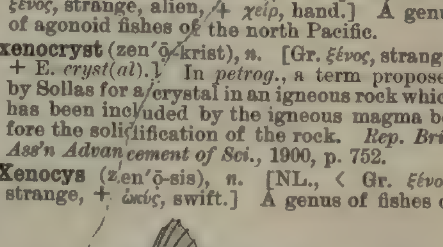
xenobiosis (zen″ọ-bī-ō′sis), *n.* [NL., < Gr. *ξένος*, strange, alien, + *βίωσις*, way of living.] The form of social symbiosis among ants which exists when two colonies of different species live together on friendly terms without bringing up their brood in common. *Wheeler*, 1901.

> As there are no observations on the behavior of the recently fecundated queens, it is impossible to decide whether the form of symbiosis exhibited by these ants arose from dulosis or from temporary parasitism or merely from a condition of *xenobiosis* like that of the North American Leptothorax emersoni or the European Formicoxenus nitidulus.
>
> *W. M. Wheeler*, in Pop. Sci. Mo., Dec., 1907, p. 557.

Xenochirus (zen-ọ-kī′rus), *n.* [NL., < Gr. *ξένος*, strange, alien, + *χείρ*, hand.] A genus of agonoid fishes of the north Pacific.

xenocryst (zen′ọ-krist), *n.* [Gr. *ξένος*, strange, + E. *cryst*(*al*).] In *petrog.*, a term proposed by Sollas for a crystal in an igneous rock which has been included by the igneous magma before the solidification of the rock. *Rep. Brit. Ass'n Advancement of Sci.*, 1900, p. 752.

Xenocys (zen′ọ-sis), *n.* [NL., < Gr. *ξένος*, strange, + *ὠκύς*, swift.] A genus of fishes of the family *Neomænidæ* inhabiting rocky shores of the eastern Pacific.



Xenocys jessiæ.
(From Bulletin 47, U. S. Nat. Museum.)

xenogenite (zẹ-noj'e-nīt), *n.* [Gr. *ξένος*, strange, + *-γενής*, -producing, + *-ite*².] Mineral deposits introduced into cavities in an older rock from an outside source. The contrasted terms are *idiogenite* and *hysterogenite*. *F. Pošepný*, in Trans. Amer. Inst. Min. Eng., XXIII. 207.

xenogenous (zẹ-noj'e-nus), *a.* [Gr. *ξένος*, strange, + *-γενής*, -producing, + *-ous*.] In *pathol.*, originating from causes outside of the body.

xenolith (zen'ọ̄-lith), *n.* [Gr. *ξένος*, strange, + *λίθος*, stone.] In *petrog.*, a term proposed by Sollas (1894) for a rock inclosed in an intrusive rock, and not derived from the igneous magma.

> The blocks (*xenoliths*) are completely immersed in the magma, partly through the confluence of apophyses which have been injected on joints and other planes of weakness in the country-rock; more often the blocks represent the effect of shattering, due to the obviously unequal heating of the solid rock at magmatic contacts.
> *Amer. Jour. Sci.*, July, 1908, p. 19.

xenomania (zen-ọ̄-mā'ni-ạ̈), *n.* [NL., < Gr. *ξένος*, a stranger, + *-mania*.] A mania for foreign persons or things.

> Even in his own day it was doubted whether he had not overweighted himself with his choice of historical subjects, though the epithet of "well-languaged," given to him at the time, evinces a real comprehension of one of his best claims to attention. No writer of the period has such a command of pure English, unadulterated by *xenomania* and unweakened by purism, as Daniel.
> *G. Saintsbury*, Hist. Elizabethan Lit., p. 136.

Xenomystax (zen-ọ̄-mis'taks), *n.* [NL., < Gr. *ξένος*, strange, + *μύσταξ*, the upper lip (maxilla).] A genus of eels of the family *Murænesocidæ* taken off the coast of Ecuador in over 400 fathoms.

xenon (zen'on), *n.* [NL. *xenon*, < Gr. *ξένον*, neuter of *ξένος*, strange, a stranger.] In *chem.*, the heaviest of the five recently discovered elementary substances present in gaseous form in the atmosphere. It was first obtained by Sir William Ramsay, assisted by M. W. Travers, in 1898, as a result of the careful fractional distillation of liquid air. It is a colorless gas, of density about 65.35 (oxygen = 16), condensable to a colorless liquid of density 3.52 at its boiling-point (water = 1), which boils under normal pressure at —109.1° C. Xenon is incapable, as far as known, of chemically combining with anything else. It gives in a suitably exhausted tube by electrical discharge a characteristic spectrum, which is modified on introduction of a Leyden jar and spark-gap. Ramsay found in atmospheric air about 1 volume in 170,000,000 of air.

xenoparasite (zen-ọ̄-par'ạ-sīt), *n.* [Gr. *ξένος*, a guest, + *παράσιτος*, a parasite.] A parasitic fungus which is able to infect a certain host-plant only when that host is wounded or otherwise injured. Compare ⋆*œcoparasite*.

> In a recent paper, E. S. Salmon described methods of culture in which he wounded, or otherwise injured, a host plant hitherto immune to the fungus, and thus rendered it liable to infection. For such a case he proposes the terms *xenoparasite* and xenoparasitism. In the case of the specialised fungus on its proper host under normal conditions, he uses the terms œcoparasite and œcoparasitism. He found that though he could, by wounding or weakening the host plant, induce a "strange" form to grow on it, yet, in the following generation, the spores so produced refused to germinate on the same host if it were in a healthy condition, while they germinated readily on the host on which the form normally grew.
> *Jour. Roy. Micros. Soc.*, April, 1905, p. 219.

xenoparasitism (zen-ọ̄-par'ạ-sī-tizm), *n.* [*xenoparasite* + *-ism*.] The particular form of parasitism shown by a xenoparasite. See the extract under ⋆*xenoparasite*.

xenophya (ze-nō'fi-ạ̈), *n. pl.* [Gr. *ξένος*, strange, + *φύεσθαι*, grow.] Foreign particles sometimes found combined with spicules and other elements in the skeleton of sponges. Compare ⋆*autophya*. *Haeckel.*

xenylenic (zen-i-len'ik), *a.* In *organic chem.*, pertaining or relating to derivatives of diphenyl.

xenylic (zẹ-nil'ik), *a.* Same as ⋆*xenylenic*.

Xererpes (zẹ-rėr'pēz), *n.* [NL., < Gr. *ξηρός*, dry, + *ἕρπης*, creeper.] A genus of the family *Blenniidæ*, small fishes of the Pacific coast of the United States.

xeribole (zē'ri-bōl), *n.* [Gr. *ξηρός*, dry, + *-βολος*, thrown, < *βάλλειν*, throw.] In *phytogeog.*, a bolochore in which the propulsion takes place as a result of drying. *F. E. Clements.*

xerodermatic (zē″rō-dėr-mat'ik), *a.* [*xeroderma (-mat-)* + *-ic*.] Relating to, or of the nature of, xeroderma. *Buck*, Med. Handbook, IV. 837.

xeroform (zē'rọ-fôrm), *n.* [Gr. *ξηρός*, dry, + E. *form(aldehyde)*.] A yellowish green, almost odorless and tasteless powder which consists of tribromphenol-bismuth, containing 50 per cent. of tribromphenol: a surgical and intestinal antiseptic.

xeronic (zẹ-ron'ik), *a.* [Gr. *ξηρός*, dry, + *-on* + *-ic*.] Noting a hypothetical acid,

$$\begin{matrix}C_2H_5CCOOH\\ \|\\ C_2H_5CCOOH\end{matrix}$$

, known only in the form of its salts or anhydrid.

xerophil, *n.* **II.** *a.* Same as ⋆*xerophile*.

xerophile (zē'rọ-fil), *a.* [Gr. *ξηρός*, dry, + *φιλεῖν*, love.] Same as *xerophilous*. *Kearney.*

xerophilous, *a.* **2.** In recent usage correlated with ⋆*xerophyte* and equivalent to ⋆*xerophytic*, properly in sense 1: first used by Thurmann (1849), who regarded xerophilous plants as correlated with dysgeogenous soils. See quotation under ⋆*silicicolous*.

> A hygrophilous vegetation corresponds to physiological moistness and a *xerophilous* vegetation to physiological dryness. *A. F. W. Schimper* (trans.), Plant-Geog., p. 2.

xerophily (zẹ-rof'i-li), *n.* [*xerophil(ous)* + *-y*³.] In *phytogeog.*, the character of being xerophilous or the occurrence of such character.

> In connection with the experimental investigation of the causes of *xerophily* in bog plants, new evidence as to the factors involved in the development of palisade cells and resinous deposits has been obtained.
> *Science*, June 3, 1904, p. 866.

xerophyte (zē'rọ-fīt), *n.* [NL. *xerophytum*, < Gr. *ξηρός*, dry, + *φυτόν*, plant.] In *phytogeog.*, a plant adapted to live under conditions of small available moisture. The name was first applied to plants inhabiting arid lands; but it now includes also the vegetation of salt marshes (see *halophyte*), of arid bogs and moors, and of cold regions, since in these situations, though the physical water (that is, the actual moisture) is copious, the physiological water (that which the plant is capable of appropriating) is scanty. The latter classes of plants possess adaptive modifications similar to those of dry-ground plants. Xerophytic adaptations are divided by F. E. Clements into those having to do with the increase in size and effectiveness of the root-system, by which absorption is increased; those developed in root, stem, and leaf for the storage of water; those in which the surface of the plant is reduced; and those arising in or near the epiderm, in consequence of which transpiration is decreased. Compare ⋆*hydrophyte* and ⋆*mesophyte*. See also ⋆*xerophilous*.

> In addition to the generally accepted classes of "hygrophytes" and "*xerophytes*," Schimper recognises a third or intermediate type, which he calls "tropophytes."
> *Nature*, Oct. 13, 1904, p. 573.

xerophytic (zē-rọ-fit'ik), *a.* [*xerophyte* + *-ic*.] Having the character or some feature of a xerophyte; xerophilous; composed of xerophytes; conditioned favorably as to the production of xerophytes. *Athenæum*, Jan. 27, 1906, p. 110.

xerophytism (zẹ-rof'i-tizm), *n.* [*xerophyt(e)* + *-ism*.] In *plant ecology*, adaptation to arid conditions; xerophily.

xerostatic (zē-rọ-stat'ik), *a.* [Gr. *ξηρός*, dry, + *στατικός*, causing to stand, stopping.] In *phytogeog.*, taking place under substantially uniform conditions of dryness: said of a succession in vegetation. *F. E. Clements.*

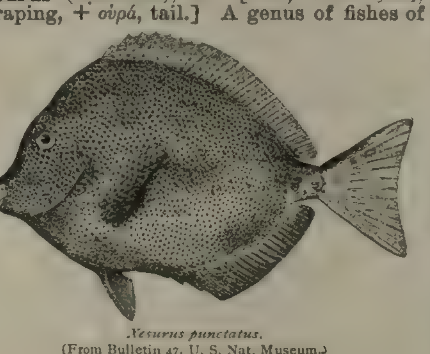
xerostoma (zẹ-ros'tọ-mạ̈), *n.* An improper form for *xerostomia*.

xerothermic (zē-rọ-thėr'mik), *a.* [Gr. *ξηρός*, dry, + *θερμός*, hot, + *-ic*.] Dry and hot; arid and warm: describing a climatic condition similar to that of the steppes of southern Russia.

> Jerosch holds that an interglacial *xerothermic* or steppe period has been proved by the facts of plant geography, paleontology, and geology; there is more doubt as to a similar postglacial period. *Bot. Gazette*, April, 1904, p. 312.

xerotropic (zē-rọ-trop'ik), *a.* [Gr. *ξηρός*, dry, + *-τροπος*, < *τρέπειν*, turn, + *-ic*.] In *phytogeog.*, due to a sharp change in conditions from moist to dry: said of a succession in vegetation. *F. E. Clements.*

Xesurus (zẹ-sū'rus), *n.* [NL., < Gr. *ξέσις*, scraping, + *οὐρά*, tail.] A genus of fishes of the family *Teuthididæ* of the tropical Pacific coast of America.



Xesurus punctatus.
(From Bulletin 47, U. S. Nat. Museum.)

xi (zī), *n.* The Greek letter Ξ, ξ, corresponding to the English *x*.

Xincan (hēn'kän), *n.* [*Xinc(a)* + *-an*.] A linguistic stock of southern Guatemala, now represented by a single language with a few dialects, spoken by the Xincas.

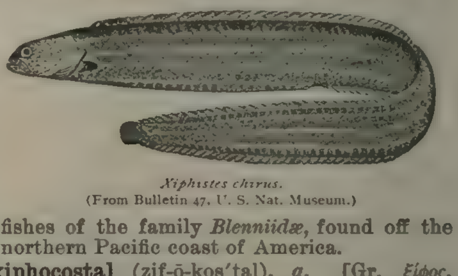
Xiphagrostis (zif-ạ-gros'tis), *n.* [NL. (Coville, 1905), < Gr. *ξίφος*, sword, + *ἄγρωστις*, grass, in allusion to the cutting leaf-margins of *X. floridula*.] A genus of about six species of tall perennial grasses with terminal fan-shaped panicles. The spikelets are one-flowered, in pairs at the joints of the rachis, one nearly sessile, the other pedicellate. The beautiful feathery appearance of the panicle is occasioned by a cluster of silky hairs which arises from the base of the spikelets. The species are natives of southern and eastern Asia, and one, *X. Japonica*, is frequent in cultivation.

xiphicerid (zī-fis'ẹ-rid), *n.* and *a.* **I.** *n.* A member of the orthopterous family *Xiphiceridæ*.

II. *a.* Having the characteristics of or belonging to the *Xiphiceridæ*.

Xiphidiinæ (zī-fid-i-ī'nē), *n. pl.* [NL., < *Xiphidion*, the type genus, + *-inæ*.] A subfamily of fishes under the family *Blenniidæ*.

Xiphistes (zī-fis'tēz), *n.* [NL., < Gr. *ξιφιστής*, a sword-belt, < *ξίφος*, a sword.] A genus of fishes of the family *Blenniidæ*, found off the northern Pacific coast of America.



Xiphistes chirus.
(From Bulletin 47, U. S. Nat. Museum.)

xiphocostal (zif-ọ̄-kos'tạl), *a.* [Gr. *ξίφος*, sword, + L. *costa*, rib, + *-al*¹.] Relating to the ensiform cartilage and the ribs.

xiphodynia (zif-ọ̄-din'i-ạ̈), *n.* [NL., < Gr. *ξίφος*, a sword, + *ὀδύνη*, pain.] Pain in the region of the ensiform appendage of the sternum.

xiphoidal (zī-foi'dạl), *a.* [*xiphoid* + *-al*¹.] Relating to or connected with the posterior or xiphoid portion of the breastbone.

> This gives rise to a pair of flaring external *xiphoidal* processes. *Amer. Nat.*, Jan., 1904, p. 20.

xiphonite (zif'ọ̄-nīt), *n.* [Gr. *Ξιφωνία*, Xiphonia, a city in Sicily, + *-ite*².] A variety of amphibole occurring in minute crystals of light yellow color and feeble pleochroism. It is found in cavities of a volcanic rock near Xiphonia, an ancient city of Sicily.

xiphopagic (zif-ọ̄-paj'ik), *a.* [NL. *xiphopag(us)* + *-ic*.] Same as ⋆*xiphopagous*. *Buck*, Med. Handbook, VII. 685.

xiphopagous (zī-fop'ạ-gus), *a.* [NL. *xiphopag(us)* + *-ous*.] Relating to that form of double monster known as a 'xiphopagus' in which the two bodies are united in the region of the xiphoid cartilage.

xiphosternal (zif-ọ̄-stėr'nạl), *a.* Same as *xiphisternal*.

X-luminescence (eks'lū-mi-nes″ẹns), *n.* The emission of light by certain substances as the result of exposure to X-rays. See ⋆*luminescence*.

xonotlite (zọ-not'līt), *n.* Same as *xonaltite*.

X-radiation (eks'rā-di-ā″shọn), *n.* See ⋆*radiation*.

X-radiator (eks'rā″di-ā-tọr), *n.* See ⋆*radiator*.

X-ray, *n.* See ⋆*ray*¹.—**X-ray dermatitis.** Same as *Röntgen-light* ⋆*dermatitis*.

X-ray (eks-rā'), *v. t.* To take a radiograph of; apply X-rays to the study of (an object, such as a portion of the human body).

> The distance between antikathode platinum plate and the surface of the part that is being *x-rayed* should be from 12 to 15 inches.
> *Amer. X-Ray Jour.*, Feb., 1903, p. 43.

Xt. A contraction of *Christ*.

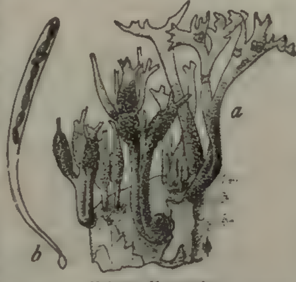
Xtian. A contraction of *Christian*. See *X*, 3.

xurel (hö-rāl'), *n.* [Sp. *jurel*, *xurel*.] Either of two carangoid fishes, *Trachurus picturatus* of the east Pacific and east Atlantic, and *Caranx latus* of the warm and tropical American Atlantic and Pacific.—**Xurel de castilla**, a Mexican name for *Chloroscombrus orqueta*, a carangoid fish found from Lower California to Panama.

xylamide (zil'a̤-mid), *n.* [*xyl*(*ic*) + *amide.*] In *organic chem.*, any one of a number of compounds, $(CH_3)_2C_6H_3CONH_2$, derived from the various xylic acids.

xylan (zī'la̤n), *n.* [Gr. *ξύλον*, wood, + *-an.*] A gelatinous, levorotatory compound, $C_5H_8O_4$(?), contained in all kinds of wood. With sulphuric acid it yields the sugar xylose; boiling mineral acids convert it chiefly into furfuraldehyde. It is also called *wood-gum.*

Xylaria (zī-lā'ri-ä̤), *n.* [NL. (Schrank, 1789), < Gr. *ξύλον*, wood.] A large genus of pyrenomycetous fungi having erect, black stipitate, cylindrical or clavate, simple or branched, corky stromata covered with a layer of perithecia. The spores are unicellular and dark-colored. Over 200 species have been described. Many occur in the tropics and some are cosmopolitan, growing on decaying wood. *X. Hypoxylon* is common and widely distributed, being rather variable in form of branching.



Xylaria Hypoxylon.
a, several stromata, showing various forms, reduced; *b*, ascus with spores.

Xylariaceæ (zī-lā-ri-ā'sē̤-ē), *n. pl.* [NL., < *Xylaria* + *-aceæ.*] A family of pyrenomycetous fungi, named from the genus *Xylaria*, characterized by the rather large variously shaped black stromata and mostly unicellular dark brown ascospores.

xylenol (zī'le-nol), *n.* [Gr. *ξύλον*, wood, + (*ph*)*enol* (?).] In *organic chem.*, any one of six colorless, crystalline compounds, $(CH_3)_2C_6H_3OH$, closely resembling phenol in general properties.

xyletic (zī-let'ik), *a.* [*xyl*(*ic*) + *-et-* + *-ic.*] Derived from or pertaining to xylenol or, specifically, to xyletic or hydroxydimethylbenzoic acid.—**Xyletic acid**, the general term applied, in organic chemistry, to the isomeric acids of the formula $(CH_3)_2C_6H_2(OH)COOH$, or hydroxydimethylbenzoic acids.

xylic (zī'lik), *a.* [*xyl*(*ene*) + *-ic.*] Pertaining to xylene or, specifically, to xylic or dimethylbenzoic acid.—**Xylic acid**, in *organic chem.*, the general term applied to the isomeric acids of the formula $(CH_3)_2CH_3COOH$, the dimethylbenzoic acids.

xylidic (zī-lid'ik), *a.* [*xyl*(*ic*) + *-id* + *-ic.*] Noting an acid.—**Xylidic acid**, either of two compounds, $CH_3C_6H_3(COOH)_2$, distinguished as *α*- and *β*-. They are formed by the oxidation of the corresponding dimethylbenzoic acids. The first, methylterephthalic acid, forms granular crystals, and melts at 280–283° C. The second, methylisophthalic acid, crystallizes in microscopic needles, and melts at 320–330° C.

xylidine, *n.* **2.** In *chem.*, an amine derivative from the hydrocarbon xylene, itself obtained from coal-tar. The general formula for xylidine is $C_6H_3(CH_3)_2NH_2$, but there are six isomeric forms, of which two form the greater part of the oily liquid industrially known under this name and used in the manufacture of artificial dyestuffs.—**Xylidine red**, an artificial dyestuff, the sodium salt of metaxylol-azo-*β*-naphtholsulphonate, used as a substitute for cochineal in dyeing wool and silk. Also known as *xylidine ponceau* and *ponceau 2 R.*

xylindein (zī-lind'ē̤-in), *n.* A blue compound contained in green, decayed wood which has been infected with *Peziza æruginosa.* It crystallizes in quadratic plates which have a strong coppery luster.

xylinid (zil'i-nid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Xylinidæ.*

II. *a.* Having the characteristics of or belonging to the family *Xylinidæ.*

xylite (zī'līt), *n.* [Gr. *ξύλον*, wood, + *-ite*².] 1. A colorless carbohydrate, $C_5H_{12}O_5$, prepared by the reduction of xylose.—2. A colorless liquid obtained from crude wood-spirit. It boils at 61.5° C.

Xylocopidæ (zī-lō̤-kop'i-dē), *n. pl.* [NL., < *Xylocopa* + *-idæ.*] A family of bees of which *Xylocopa* is the type genus; the carpenter-bees.

xyloglodine (zī-log'lō̤-din), *n.* [Gr. *ξύλον*, wood, + E. *gl*(*ycerin*) + *-od-* + *-ine*².] The trade-name of an explosive produced by the nitration of glycerin with starch, with cellulose, with mannite, or with benzene or other analogous substances.

xyloglyphy (zī-log'li-fi), *n.* [Gr. *ξύλον*, wood, + *γλύφειν*, carve.] The art of wood-carving. [Rare.]

xylografy, *n.* An amended spelling of *xylography.*

xyloline (zī'lō-lin), *n.* [Gr. *ξύλον*, wood, + *-ol* + *-ine*².] The trade-name of yarn or thread made by spirally twisting, with the aid of special machinery, narrow strips of paper-pulp taken from the paper-making machine. The yarn produced is said to be strong and cheap. See the analogous material **silvaline.*

xylolite (zī'lō̤-līt), *n.* [Gr. *ξύλον*, wood, + *-ol* + *-ite*².] The trade-name of a plastic material, a mixture of sawdust, calcined magnesite, and magnesium chlorid, intended for use in covering floors, partition walls, ships' decks, etc.

xylometer (zī-lom'e-tėr), *n.* [Gr. *ξύλον*, wood, + *μέτρον*, measure.] An instrument for ascertaining the specific gravity of wood.

xylonic (zī-lon'ik), *a.* [*xyl*(*ose*) + *-on-* + *-ic.*] Pertaining to xylose.—**Xylonic acid**, a colorless, dextrorotatory compound, $C_5H_{10}O_6$, prepared by the action of bromine and water on xylose.

xylophagid (zī-lof'a̤-jid), *n.* and *a.* **I.** *n.* A member of the dipterous family *Xylophagidæ.*

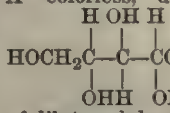
II. *a.* Having the characteristics of or belonging to the family *Xylophagidæ.*

xylophilous, *a.* **2.** In *phytogeog.*, growing on wood in any state: applied to a class of fungi. *Pound and Clements.*

xyloretinite (zī-lō̤-ret'i-nīt), *n.* Same as *xyloretine.*

xylorganum (zī-lôr'ga̤-num), *n.* [Gr. *ξύλον*, wood, + *ὄργανον*, organ.] Same as *xylophone.*

xylose (zī'lōs), *n.* [Gr. *ξύλον*, wood, + *-ose.*] A colorless, dextrorotatory carbohydrate,



$$HOCH_2\underset{OH}{\overset{H}{C}}-\underset{H}{\overset{OH}{C}}-\underset{OH}{\overset{H}{C}}CHO$$

prepared by the action of dilute sulphuric acid on wood-gum or corn-cobs. It reduces alkaline copper solutions, crystallizes in needles or orthorhombic prisms, and melts at 144–145° C. Also called *wood-sugar.*

xylylene (zī'li-lēn), *n.* [Gr. *ξύλον*, wood, + *-yl* + *-ene.*] In *organic chem.*, any one of the three isomeric bivalent radicals, $(CH_3)_2C_6H_2$ < $[CH_3;CH_3 = 1,2;\ 1,3;\ \text{or}\ 1,4.]$ The term is homologous with phenylene and the derivatives of both radicals resemble each other in general properties.

Xynœciæ (zī-nē'si-ē), *n. pl.* See **synœcia*¹.

Xyrauchen (zī-râ'ken), *n.* [NL., < Gr. *ξυρόν*, a razor, + *αὐχήν*, neck.] A genus of suckers (*Catostomidæ*) found in the Colorado River basin.

Xyrichthyinæ (zī-rik-thi-ī'nē), *n. pl.* [NL., < *Xyrichthys* + *-inæ.*] A rather large subfamily of labroid fishes, which have the lateral line interrupted posteriorly.

Xyridales (zī-ri-dā'lēz), *n. pl.* [NL. (Britton, 1898), < *Xyris* + *-ales.*] A large order of monocotyledonous plants, distinguished chiefly by the mealy endosperm, from which it has been called *Farinosæ.* In modern systems it is placed between the *Arales* and the *Liliales*, and embraces 11 families, of which the most important are the *Xyridaceæ*, *Bromeliaceæ*, *Commelinaceæ*, and *Pontederiaceæ.*

Xyrula (zir'ö̤-lä̤), *n.* [NL., < Gr. *ξυρόν*, razor (see *Xyrichthys*), + L. dim. *-ula.*] A genus of labroid fishes, including a single species found in rather deep water off Florida.

Xystæma (zis-tē'mä̤), *n.* [NL., < Gr. *ξυστόν*, the shaft of a spear, + *αἷμα*, blood (alluding to the interhæmal).] A genus of fishes belonging to the family *Gerridæ*, found on both coasts of tropical America.

Xystes (zis'tēz), *n.* [NL., < Gr. *ξύστης*, one that scrapes, < *ξύειν*, scrape.] A genus of fishes of the family *Agonidæ*, found on the north Pacific coast of the United States.

Xystreurys (zis-trö'ris), *n.* [NL., < Gr. *ξύστρα*, a scraper, + *εὐρύς*, broad. The name alludes to the broad gill-rakers.] A genus of flounders found on the southern Californian coast.

Xystroperca (zis-trō̤-pėr'kä̤), *n.* [NL., < Gr. *ξύστρα*, a scraper, + *πέρκη*, a perch.] A subgenus of serranoid fishes inhabiting the Gulf of California.

Y 2. (*e*) In *elect.*, the symbol for *admittance*, in alternating-current circuits. See ★*admittance*, 6.—**3.** (*b*) [*l. c.*] An abbreviation of *yard.*—**4.** [*l. c.* or *cap.*] A corruption of the Anglo-Saxon character Þ, equivalent to *th*, giving *ye* for *the* or *thee*; and, by contraction, *ym* for *them*; *yn* for *then*; *yr* for *their*; *ys* for *this*; *yt* for *that*. See def. 1.

Y^{2}, *n.*—**Golden Y,** a British collectors' name for a noctuid moth, *Plusia iota*. Also called the *plain golden Y*. *Plusia pulchrina* is called the *beautiful golden Y*.

Ya. In *chem.*, the designation first given by Marignac in 1880 to the metal now known as *gadolinium*, its oxid having been obtained, along with that of yttrium and other elements of the same group, from the samarskite of North Carolina.

yabber (yab'ėr), *v. i.* [Prob. a variant (as if D. or G.) of *jabber*. Some make it aboriginal.] To talk unintelligibly; jabber: said of the Australian aborigines. *E. E. Morris*, Austral English.

yabber (yab'ėr), *n.* [*yabber*, *v.*] The language or talk of the Australian aborigines. *E. E. Morris*, Austral English. [Australia.]

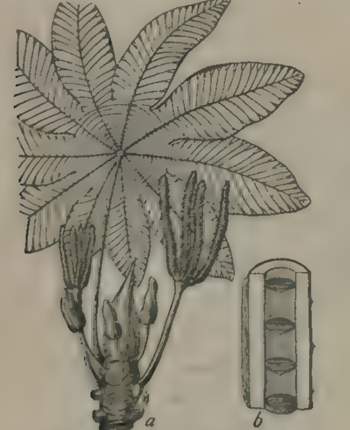
yabby (yab'i), *n.* [Also *yabbie*, < Australian aboriginal *yappy*, var. *yappitch*, *yabbechi*, *yaabity*.] In Australia, a crawfish, *Astacopsis bicarinatus*. *E. E. Morris*, Austral English.

yacht, *n.*—**Auxiliary yacht,** a pleasure vessel having both sail- and steam-power.—**Fin-keel yacht,** a pleasure vessel provided with a fin-keel.—**Royal yacht,** a yacht forming part of a navy and assigned for the special use of royalty.

yackman (yak'man), *n.* [D. *jagdman*, hunter.] A foraging ant; a wandering ant. [British Guiana.]

yad (yäd), *n.* [Heb. *yād*, hand.] A small tapering hand with outstretched index-finger, made of precious metal or ivory, beautifully carved. It is used to indicate the words to the reader while he is reading the Scriptures in the synagogue from the scroll called *Sepher Torah*.

yagrumo (yä-grö'mō), *n.* [An altered form of *guarumo*, the Cecropia tree.] In Porto Rico, a name applied to several trees having a slender trunk and a crown of large palmate leaves. *Yagrumo hembra* (female yagrumo) is a name applied to the hollow-stemmed *Cecropia peltata*, and *yagrumo macho* (male yagrumo) to the solid-stemmed *Didymopanax Morototoni*. See ★*grayumo*.



Yagrumo hembra (*Cecropia peltata*).
a, inflorescence and leaf; *b*, vertical section of the hollow-chambered stem.

yahourth (yä-hörth), *n.* [Also *yohourth*, *yoghourt*.] A soured and curdled milk used by the peasants of Bulgaria. It is prepared by the addition to boiled milk (or milk heated to about 180° F. and partly evaporated) of a leaven called 'maya,' which contains a powerful lactic ferment.

> A similar product which has received considerable attention of late is known as *yohourth*. While the kefir comes from the Caucasus region, the latter product is taken from Bulgaria or the neighboring regions, where its use is general and its dietetic qualities recognized. While it has the same general properties, it differs from kefir in its consistence and taste, seeing that it is a semi-solid, like soft cheese.
>
> *Sci. Amer. Sup.*, Nov. 23, 1907, p. 334.

Yakoma rubber. See ★*rubber*^{1}.

Yalensian (yā-len'ṣi-an), *a.* and *n.* [NL. *Yalensi*(*s*) + *-an*.] Of or pertaining to Yale University; a student or graduate of that University.

> A score of co-operative *Yalensians*, many of them specialists, have been engaged in the improvement of the three great dictionaries.
>
> *D. C. Gilman*, in Science, Nov. 1, 1901, p. 675.

yam, *n.*—**Australian yam,** either of two endemic species of *Dioscorea*, *D. hastifolia* of Western Australia and *D. transversa* of New South Wales and Queensland. The latter is usually known as the long yam. A third species, *D. sativa*, though common, is not endemic in Australia. Yams are largely eaten by the Australian aborigines, and the plants are the only ones which they cultivate.—**Dye yam,** a climbing plant, *Dioscorea rhipogonoides*, native of southern China, Indo-China, and Formosa. Its tuberous roots are used for dyeing coarse native cotton cloth and fishing-nets a dark-brown or tan color. Called by the Chinese *shu-lang*.—**Long yam.** See *Australian* ★*yam*, above.—**Native yam,** in Australia, any one of several species of *Ipomœa*, the tubers of which are sometimes eaten by the aborigines.—**Round yam.** See ★*burdekin-vine*.—**Wild yam.** (*c*) In Australia, a leafless, parasitic orchid, *Gastrodia sesamoides*, called native potato in Tasmania. The rhizomes of this plant, which are of the size and nearly the form of potatoes, were roasted and eaten by the Tasmanian natives.

yamen (yä'mun), *n.* A common, but misleading, spelling of *yamun*. See ★*yamun*.

yam-stick (yam'stik), *n.* A stick used by many primitive peoples, such as the natives of Australia, for digging roots. Also called *digging-stick*.

> The natives dig these roots with the *yam-stick*, an indispensable implement with them, made of hard wood, about three feet in length, thick at one end and edged; it is likewise used amongst the aboriginal tribes of South Australia, like the waddy, as a weapon of offence.
>
> *A. Tolmer*, Reminiscences, II. 102. Quoted in E. E. [Morris, Austral English.

yamun, *n.* Various transliterations of the Chinese word are in use: (1) *yamun*, which is to be preferred; (2) *yamăn*, used by Dr. S. Wells Williams in his "Dictionary of the Chinese Language"; (3) *yamên*, originally introduced by Sir Thomas F. Wade, former British Minister in Peking, and now used in the diplomatic, consular, and customs' services of China: it is more particularly characteristic of the Pekingese "dialect"; (4) *yamen*, which is the same as the preceding with the circumflex omitted, owing to the poverty of the type-fonts used in type-setting machines; (5) *yamön*, the form preferred by Prof. F. Hirth of Columbia University, New York. In every case the pronunciation is the same.

Yankee^{2}, *n.* **5.** A name for various special tools in various industries, usually given because of their American origin or because they have proved handy and ingenious; specifically, a molders' lifting-tool with the shank curved to admit it to places difficult of access.

yaourt^{2}, *n.* Same as *yurt*.

Yapman (yäp'man), *n.* A native of Yap, one of the Caroline Islands.

> The king of Korror allowed a hundred *Yapmen*, who were replaced from time to time, so that the number was always kept up to about a hundred, to live in his territory, to quarry these great discs of stone and send them over to their own island.
>
> *Geog. Jour.* (R. G. S.), XIII. 132.

yappy (yap'i), *a.* [*yap*^{1}, *v.*] Inclined to yap or yelp.

yara (yä'rä), *n.* [*Yara* river (?), eastern Cuba.] A variety of tobacco grown in eastern Cuba, mostly for home consumption, having a very different flavor from the Havana, and thought by some to be the product of *Nicotiana repanda*.

yarborough (yär'bur-ọ), *n.* In *whist* or *bridge*, a hand which contains no card above a nine: so called because a former Earl of Yarborough made a practice of betting 1,000 to 1 against any player's holding such a hand. The true odds against it are 1,827 to 1.

yard^{1}, *n.*—**Lower yards,** the fore-, main-, and cross-jack yards. See *yard*^{1}, 5.

yard^{2}, *n.*—**Bureau of Yards and Docks.** See ★*bureau*.—**Car-sorting yard.** See ★*drill-yard*.

yardage, *n.* **4.** Measurement or amount in yards.

> So that in actual cubic *yardage* we are exceeding the achievement of our predecessors, and the prophecy, which a year ago seemed over-sanguine, that the canal would be ready for commemorative expositions at Los Angeles and New Orleans in 1915, bids fair to be fulfilled.
>
> *Jour. Franklin Inst.*, Jan., 1908, p. 27.

5. ★Yard-price.

yard-craft (yärd'kråft), *n.* The tugs, lighters, and other small vessels used in a navy-yard or dockyard: used collectively.

> Merchants and shipowners make considerable use of this measurement, although it has no legal authority; it is also used in the Admiralty service in connection with store ships and *yard-craft*.
>
> *White*, Manual of Naval Arch., p. 72.

yard-locomotive (yärd'lō-kọ-mō″tiv), *n.* A locomotive specially designed to operate in the station- or terminal-yards of a railway for making up and distributing trains. Such locomotives must be capable of taking easily the sharp curves of switches and turnouts, and are often made without front trucks. They are heavy haulers, but are not adapted for high speeds on the line.

yard-price (yärd'prīs), *n.* **1.** The price of goods delivered in the yard or warehouse, as distinguished from the prime cost, or the price free on board the transportation vehicle.—**2.** The price per yard of headings driven in a mine or drift, in addition to the price per ton extracted to cover the value of the gangways to the mine-owners.—**3.** The price per yard of any work measured by this unit, as in road-making, excavation, and the like. Also called *yardage* in England.

yareta (yä-rā'tä), *n.* [Quichua name.] A curious umbelliferous plant, *Azorella glebaria*, of the high table-land of Peru and Bolivia, where, together with *taquia*, or llama dung, it is the chief source of fuel. It grows in hard compact masses like rounded hillocks or hemispherical boulders two or three feet high, and abounds in a balsamic resin. Quantities of it are gathered by the Indians and transported on the backs of llamas to Arequipa and other cities and to smelting-works of the mines of this treeless region, at many of which no other fuel is obtainable. At the Falkland Islands, where it also occurs, it is called *bog-balsam*. See *balsam-bog*.

Yarmouth capon. Red herring. *Halliwell.* [Prov., Eng.]

yarn^{1}, *n.*—**Clouded yarn.** (*a*) An unevenly colored yarn. (*b*) Yarn made from imperfectly carded stock.—**Condenser yarns.** See ★*condenser*.—**Paper yarn,** yarn made from cellulose fiber converted into flat strips and spun or twisted. It lends itself to a wide range of application, as for wall-hangings, druggets, etc., and will withstand washing and even bleaching. Allied to wood, silvalin, xylolin, and other so-called 'paper yarns.' *Daily Con. and Trade Rep.*, July 26, 1907, p. 1.—**Vigogne** (vicuña) **yarn,** yarn spun from cotton-waste.

yarra-herring (yar″ạ̈-her'ing), *n.* See *yarra* ★*herring*.

yarran (yar'ạ̈n), *n.* [Austral Eng.; from the aboriginal name.] Any one of several species of *Acacia*, as the Victorian myall, *Acacia homalophylla*, the weeping myall or boree, *A. pendula*, and *A. linifolia*. See *myall* and ★*boree*^{2}.

Yarrella (ya-rel'ạ̈), *n.* [NL., named after W. *Yarrell*, a British naturalist.] A genus of fishes of the family *Chauliodontidæ*, of the deep Atlantic.

Yaryan evaporator, *n.* See *Yaryan* ★*apparatus*.

yati (yut′ẹ̄), *n.* [Skt. *yáti*, lit. striver, < √ *yat*, strive after, dispose.] In Hindu mysticism, one who has renounced the world.

yautia (you-tẹ̄′ạ̈), *n.* [Arawak *yahutia.*] On the island of Porto Rico, the name applied to several species of *Xanthosoma*, plants belonging to the arum family, with large sagittate leaves and starchy roots, which are used for food after the manner of the leaves and roots of the taro of Polynesia (*Caladium Colocasia*). The principal cultivated species are *Xanthosoma sagittæfolium*, *X. atrovirens*, and *X. violaceum*. In addition to the indigenous species of *Xanthosoma*, the name is also applied to the introduced *Caladium Colocasia*, called 'Yautia malanga,' easily distinguished by its peltate leaves, the leaves of all the species of *Xanthosoma* having an open basal sinus; and also to *Alocasia macrorhiza*, called 'Yautia Panamá,' the *ape* of Polynesia. See ★*piga* and illustration under ★*ape*, 2.

yawl^2, *n.*—**Roslyn yawl**, a special type of large sharpy which carries jibs and a jigger-mast, and is supposed to have had its origin at Roslyn, Long Island, New York.

yaw-sighted (yâ′sī-ted), *a.* Cross-eyed. [Sailors' slang.]

Y-connection (wī′kọ-nek″shọn), *n.* See ★*polyphase.*

year, *n.*—**Calendar year.** See ★*calendar.*—**Chinese year,** a year of 12 lunar months of 29 and 30 days, with an intercalary month nearly every third year or 7 in the course of 19 years (the 3d, 6th, 9th, 11th, 14th, 17th, and 19th), thus bringing the lunar reckoning into agreement with the solar every nineteenth year. The year begins with the first new moon after the nineteenth of January. See *Metonic cycle*, under *cycle*^{1}. The Chinese system of reckoning by lunar months was introduced into Japan in 645 A.D., but was superseded by the Gregorian calendar in 1872.—**Christian year, church year.** Same as *ecclesiastical year* (which see, under *year*).—**Collected years** or **collect years**†, years taken in round periods, as 20, 40, or 60 years, for which the amount of a planet's motion is stated. *Skeat*, in Chaucer, Astrolabe (1872), glossary.—**Equinoctial year.** Same as *tropical year* (see *year*, 1); the mean period between two successive passages of the sun through the same equinox, which determines the seasons. It is 365 days, 5 hours, 48 minutes, 45.5 seconds.—**Farmers' year,** the year as related to agriculture: identical with the tropical year in length, but beginning with seed-time or harvest, which vary with the climate. Astronomically its commencement depends on the date when the sun attains a certain declination, rising at a fixed point on the horizon.

> Should this be confirmed we see that the *farmers' years* were the first to be established, and it is interesting to note that the agricultural rent year in many parts of Ireland still runs from May to November. . . . I have pointed out that both the May and August years began when the sun had the same declination (16° N.) or thereabouts.
>
> *Sir Norman Lockyer*, in Nature, Jan. 16, 1902, p. 250.

Light-year. See ★*light-year.*—**Presidential year,** in the United States, the year in which a president is elected.—**Year and day,** in *law*, a distinct period of time recognized for various purposes. It frequently had reference to a fixed period other than the exact number of days indicated by the literal meaning of the expression; for instance, in the law of the Gothic nations it meant a year and six weeks, and in Scotch law, in computing a term, it meant the return of the day of the next year bearing the same denomination.

> And if an appeal of murder be not brought within a *year and a day*, it shall be lost forever. And a copyhold not claimed within a *year and a day* after the death of the ancestor shall be lost forever by the custom of many manors, and such custom shall be good.
>
> *Plowden*, Reports, 372.

year-count (yēr′kount), *n.* Same as ★*winter-count.*

> There is absolutely no similarity between the "Tibetan calendar and the primitive form of the American," which "was not intended as a *year-count*, but as a ritual and formulary," and whose signs "had nothing to do with the signs of the zodiac, as had all those of the Tibetan and Tartar calendars."
>
> *Brinton*, quoted in Keane, Ethnology, p. 218.

year-day, *n.* **2.** A certain day of the year, defined by the position of the sun, the moon, or a star, for instance, by the setting of the sun behind a distant peak: used by primitive tribes in roughly adjusting the lunar and solar calendars, or for determining the time of ceremonials.

> A simple observation on the setting sun behind a distant sierra, which would in itself permit a count of *year-days*, if not the recognition of the bissextile.
>
> *An. Rep. Bur. Amer. Ethnol.*, 1897–98, p. xliii.

yeast, *n.*—**Surface yeast.** This is the more active form of yeast and is employed in brewing. It is carried to the surface of the fermenting liquid by minute bubbles of carbon dioxid, and accumulates as a ropy foam. See *yeast*, 1.—**Wild yeast,** any yeast which differs from the ordinary cultivated yeasts used in brewing.—**Yeast serum.** See ★*serum.*

yeast-budding (yēst′bud″ing), *n.* A form of reproduction occurring in some of the lower fungi, especially the *Saccharomycetes.* The spores germinate and produce other spores directly without the formation of a mycelium. See *yeast*, 1.

yeast-cake (yēst′kāk), *n.* A small condensed portion of yeast, dried into a cake or wrapped in tinfoil, used in raising bread.

yeast-powder, *n.* While this term is, in the United States, generally understood to mean one of the baking-powder mixtures used as substitutes for yeast, it has been sometimes applied to yeast itself obtained as a result of alcoholic fermentation, freed from water by pressure, washed with acetone and then with ether, and dried in pulverulent form by spreading it out on absorbent paper at ordinary temperature.

Yeda-urushi lacquer. See ★*lacquer.*

yeelaman (yē′lạ̈-man), *n.* [Australian.] Same as ★*hielaman.*

yegg (yeg), *n.* [Origin obscure: said to be from the name (John *Yegg*) of a tramp and safe-breaker; poss., through the form **yegger*, < G. *jäger*, hunter.] Same as ★*yeggman.*

> The prompt breaking up of the organized gangs of professional beggars and *yeggs.*
>
> *N. Y. Evening Post*, June 23, 1903. Quoted in Dialect [Notes, II. vi.

yeggman (yeg′man), *n.*; pl. *yeggmen* (-men). [*yegg* + *man.*] A tramp burglar and safe-breaker.

> Detective Sergeants . . . captured on the Bowery three men who, they say, are among the most successful "*yeggmen*," or safe-crackers, in the business. . . . A "*yeggman*" is the hardest sort of a rogue to catch, for he is usually shrewd enough to avoid traveling with his fellows or appearing in public places.
>
> *N. Y. Times*, Jan. 2, 1905.

> Six *yeggmen*, masked with handkerchiefs, blew open the safe in the Suffield Savings Bank early this morning.
>
> *N. Y. Tribune*, Dec. 18, 1905.

yel, *v.*, *n.*, and *a.* A simplified spelling of *yell.*

yelk, *n.* **2.** A manufacturers' term in Lancashire, England, for one of the hard, stony lumps found in slaked lime from a Buxton limestone.

yellow. **I.** *a.* **2.** As originally applied to journalism, indecently sensational; in general, sensational; morbid; decadent. See *yellow* ★*journal.*

> We must suppose that New York newspapers are by no means all "*yellow*," for the sensational "thousand words" [intended to further an evil design] is never printed. *Athenæum*, May 6, 1905, p. 555.

> The *Yellow* Book, a publication which . . . finally gave the adjective "*yellow*" a new and interesting application that has been found so expressive and so useful as to have fixed itself in the English language.
>
> *Bookman*, Feb., 1906, p. 552.

Yellow cell. See ★*Chlorella.*—**Yellow disease of the hyacinth.** Same as ★*bacteriosis of the hyacinth.*—**Yellow-fever fly.** See ★*fly*^{2}.—**Yellow grass-tree gum,** an Australian name for acaroid resin, from *Xanthorrhœa hastilis.*—**Yellow journal.** See ★*journal.*—**Yellow peril.** See ★*peril.*

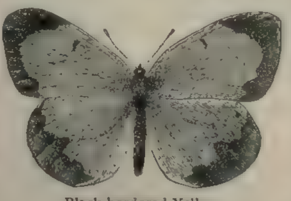
> *The Nation*, of New York, for August 3rd, has an interesting note on J.-J. Rousseau and the "*Yellow Peril*," by M. Salomon Reinach. He points out that "nobody seems as yet to have remarked that the first to prophesy the "*yellow peril*," and even the present war, was Jean-Jacques Rousseau in his little-read 'Contrat Social' (chap. viii.): 'L'Empire de Russie voudra subjuguer l'Europe, et sera subjugué lui-même. Les Tartares, ses sujets ou ses voisins, deviendront ses maîtres et les nôtres; cette révolution me paraît infaillible.' Voltaire laughed at that passage, and upbraided Rousseau for writing like the author of a popular almanac."
>
> *Athenæum*, Aug. 19, 1905, p. 245.

Yellow precipitate. See ★*precipitate.*—**Yellow press.** See *yellow* ★*journal.*—**Yellow sect.** See the extract.

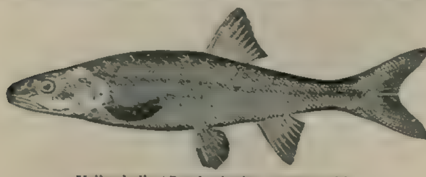
> In religion they [Milians] adhere to the "*Yellow Sect*," or reformed church of Tibet.
>
> *Geog. Jour.* (R. G. S.), XV. 622.

Yellow silver. See ★*silver.*—**Yellow spirit.** See ★*spirit.*—**Yellow ware.** See ★*ware*^{2}.

II. *n.* **1.** (*b*) An acid coal-tar color of the monoazo type prepared by combining diazotized meta-sulphanilic acid with diphenyl amine. It dyes wool orange-yellow in an acid bath.—**Acme yellow,** an acid dyestuff. Same as *tropæolin.*—**Acridine yellow,** a basic color related to acridine. It is of no value for wool-dyeing, but dyes silk and tannin-mordanted cotton a yellow with a greenish cast.—**Alizarin yellow,** the name applied to a number of yellow mordant dyestuffs, none of which are true alizarin colors. With the exception of alizarin yellow paste they are related to salicylic acid or to pyrogallic acid. Alizarin yellow paste is a natural product, made by extracting divi-divi or myrobalans with hot water and decomposing the extracted elagic acid with an acid or alkali.—**Alizarin yellow R,** a mordant acid coal-tar color of the monoazo type prepared by combining diazotized para-nitraniline with salicylic acid. It dyes unmordanted wool in an acid bath, but should be after-chromed for the best results. It may also be dyed upon chromium mordanted wool.—**Alkali yellow,** a direct cotton-color prepared from primulin.—**Aniline yellow,** an artificial coloring matter of the monoazo type. Chemically it is amido-azo-benzene. No longer used as a dyestuff.—**Anthracene yellow,** a mordant dyestuff. It is not derived from anthracene as its name indicates, but is a di-brom-di-hydroxy, beta-methyl-coumarin. It is sold in paste form and dyes wool, mordanted with chromium, a greenish yellow.—**Anthracene yellow B. N.** Same as *milling* ★*yellow.*—**Anthracene yellow C,** a mordant acid dyestuff of the disazo salicylic acid type.—**Arnica yellow,** a direct cotton-color, derived from stilbene. It dyes cotton a golden yellow from a salt bath.—**Azo yellow,** an acid-color of the monoazo type, prepared by the action of nitric acid upon diphenylamine yellow. It dyes wool yellow from an acid bath.—**Azulin yellow,** an acid coal-tar color: now obsolete.—**Black-bordered yellow,** an American pierid butterfly, *Eurema nicippe*, with bright orange wings bordered with blackish brown. It extends from New England to Florida and to Lower California. Its larvæ feed on the plants of the genus *Cassia.*—**Brilliant yellow,** the name applied to two coal-tar colors, one an acid-color of the nitro type prepared by the action of nitric acid on α-naphthol-disulphonic acid; the other a direct cotton-color of the disazo type derived from di-amino-stilbene-disulphonic acid. They both dye a bright yellow.—**Brilliant yellow S,** an acid coal-tar color of the monoazo type, prepared by sulphonating orange IV.—**Campobello yellow,** chryseinic acid. See ★*chryseinic.*—**Carbazol yellow,** a direct cotton coal-tar color of the disazo type derived from carbazol. It dyes unmordanted cotton yellow in an alkaline salt bath.—**Chloramine yellow,** a direct cotton coal-tar color of unpublished composition. It dyes unmordanted cotton green in a neutral salt bath. It is very fast to light for a color of this class.—**Chrome fast yellow.** Same as *milling* ★*yellow.*—**Chrome fast yellow G,** a mordant coal-tar color of the monoazo type related to salicylic acid. It dyes chromium-mordanted wool yellow and is used in calico-printing.—**Clayton yellow.** Same as *thiazol* ★*yellow.*—**Cologne yellow,** a pigment consisting of lead chromate mixed with lead sulphate and calcium sulphate.—**Columbia yellow.** Same as *chloramine* ★*yellow.*—**Cresotin yellow G** and **R,** two direct cotton coal-tar colors of the disazo type. The former is derived from benzidine, and the latter from toluidine. It dyes unmordanted cotton yellow in a soap bath.—**Crumpsall yellow,** a mordant acid coal-tar color of the monoazo salicylic-acid type. It dyes wool yellow in an acid bath. Its fastness is increased by after-chroming.—**Diamine yellow,** a direct cotton coal-tar color of the disazo type derived from benzidine. It dyes unmordanted cotton a bright yellow in a soap bath containing sodium phosphate.—**Diamond yellow,** a mordant coal-tar color of the monoazo type derived from amido-benzonic acid. It dyes chromium-mordanted wool yellow.—**Direct yellow G, 2G, 4G,** and **R,** direct cotton coal-tar colors of similar but uncertain composition: derived from para-nitro-toluene sulphonic acid. They all dye unmordanted cotton yellow in a salt bath and possess very good fastness.—**Dutch yellow,** a yellow pigment, the color lake formed by combining the coloring principle of Persian berries with aluminium and calcium oxids or hydroxids.—**English yellow.** (*a*) The name applied to the silver alloyed variety of gold much used in England 50 to 60 years ago, strikingly resembling in color the electrum of the ancients. (*b*) Same as ★*yellow*, 1 (*b*).—**French yellow,** chryseinic acid. See ★*chryseinic.*—**Gambine yellow,** a mordant coal-tar color. It dyes chromium-mordanted wool yellow.—**Heligoland yellow,** a direct cotton coal-tar color of the disazo type derived from di-phenyl-thio-urea. It dyes unmordanted cotton yellow in a salt bath.—**Hessian yellow,** a direct cotton coal-tar color of the disazo type derived from di-amido-stilbene. It dyes unmordanted cotton yellow in an alkaline salt bath.—**Imperial yellow.** (*b*) Same as *aurantia.*—**Indian yellow.** (*b*) Same as *azo* ★*yellow.*—**Janus yellow,** a Janus coal-tar color. It dyes tannin-mordanted cotton in a neutral bath and unmordanted cotton in an acid bath.—**Kongo yellow,** a direct cotton color of the disazo type derived from benzidine. It is sold in paste form. It dyes unmordanted cotton dull yellow in a soap bath.—**Lancaster yellow,** an acid coal-tar color. [Obsolete.]—**Leather-yellow.** See ★*phosphine*, 2.—**Mekong yellow G** and **R,** two direct cotton coal-tar colors of the tetrakisazo type, the former derived from benzidine and the latter from tolidine. They both dye unmordanted cotton yellow in a salt bath.—**Metanil yellow,** an acid coal-tar color of the monoazo type prepared by combining diazotized meta-sulphanilic acid with diphenylamine. It dyes wool orange-yellow in an acid bath.—**Mikado golden yellow.** Same as *mikado* ★*yellow.*—**Mikado yellow,** a direct cotton coal-tar color of the stilbene type, prepared by the action of caustic soda with para-nitro-toluene-sulphonic acid in the presence of an oxidizing agent. It dyes unmordanted cotton yellow in a salt bath.—**Milling yellow,** a mordant acid dyestuff of the azo-salicylic acid type. It may be dyed upon wool in an acid bath and afterward chromed, or it may be dyed directly upon chrome-mordanted wool. It gives a yellow which is fast to light and milling.—**Nankeen yellow,** a reddish yellow produced upon cotton by precipitating an iron salt with an alkali. Same as *iron buff* (which see, under *buff*^{1}).—**Naphthalene yellow.** See *Manchester yellow.*—**Naphthol yellow R. S.** Same as *brilliant* ★*yellow.*—**Naphthylamine yellow.** Same as *Manchester yellow* (which see, under *yellow*).—**New yellow.** (*a*) Same as *acid-yellow.* (*b*) Same as *diphenylamine-orange* (which see, under *orange*^{1}).—**Persian yellow,** a mordant coal-tar color of the monoazo type prepared by the nitration of the compound formed when diazotized toluidine is combined with salicylic acid. It dyes chromium-mordanted wool yellow and is used in calico-printing.—**Philadelphia yellow.** See ★*phosphine*, 2.—**Sulphanil yellow,** an artificial dyestuff, one of the class of benzidine dyes.—**Thiazol yellow,** a direct cotton coal-tar color of the thiazol type. It dyes unmordanted cotton a bright greenish yellow in a salt bath. It is not fast, but is used with other dyestuffs on account of the purity of the yellow it produces.—**Uranium yellow,** a color obtained from the metallic element uranium and used in coloring and decorating glass and porcelain.—**Victoria yellow.** Same as ★*yellow*, 1 (*b*).—**Wool yellow.** See *patent* ★*fustin.*



Black-bordered Yellow
(*Eurema nicippe*).



Yellowbelly (*Ptychocheilus oregonensis*).
(From Bulletin 47, U. S. Nat. Museum.)

yellowbelly, *n.* 2. *Ptychocheilus oregonensis*, a cyprinoid fish found in fresh waters of the Pacific coast of America tributary to the Columbia and Fraser rivers. It is long and slender, pike-like in form, although with toothless mouth. A second species, *P. grandis*, inhabits the waters of California. Also known as *squaw-fish*. 3. In New South Wales, a fresh-water fish, *Ctenolates auratus*: called also *golden perch*.—4. In Dunedin especially, and New Zealand generally, a large flounder, also called ★*lemon-sole* or *turbot*. *E. E. Morris*, Austral English.—5. A frog. [Dial. and nursery language.]

> "*Yellow belly, yellow belly*, come and have a swim."
> "Yes, my master, when the tide comes in."
> *Nursery song.*

6. A person born in the fens of Lincolnshire, in jesting reference to the frogs in the fens. *Halliwell.*

yellowbottle (yel′ō-bot″l), *n.* Same as ★*korumburra.*

yellowhead (yel′ō-hed), *n.* The yellow-headed blackbird, *Xanthocephalus xanthocephalus*, of the western United States; also a small perching bird, *Clitonyx ochrocephala*, of New Zealand.

> In complaints made against the redwing the *yellowhead* is frequently included as equally guilty. During the breeding season it is a hearty insect eater, and a number of the stomachs examined contained the remains of the well-known "army worm" (Leucania unipuncta), which was also found in stomachs of the redwing.
> *Yearbook U. S. Dept. Agr.*, 1897, p. 351.

yellowing, *n.* 2. A pathological condition of plants in which the leaves become yellow. It may be due to various causes, such as an excess of carbon dioxid in the air, an excess of water about the roots of the plant, or the presence of poisonous or acid gases in the soil or air.

yellow-jacket, *n.* 2. In Australia, any one of several species of trees having a smooth, yellow bark, especially the yellow box, *Eucalyptus melliodora*, and the river gum, *Eucalyptus rostrata*. *E. E. Morris*, Austral English.

Yellow-knives (yel′ō-nīvz), *n. pl.* The Athapascan tribe located northeast of the Great Slave Lake. Also called *Copper Indians.*

yellows (yel′ōz), *n.* See ★*yellowing*, 2.—**Beet yellows**, a disease of the beet attributed to bacteria. The leaves become covered with green and white spots, and finally turn yellow, while the root becomes stunted.

yellowtail, *n.* 2. (*j*) A fish, *Ocyurus chrysurus*, belonging to the family *Lutianidæ*, and found from Florida to Brazil. (*k*) In Victoria and New South Wales, *Trachurus declivis*, a species slightly different from the horse-mackerel of Europe.

yellow-top, *n.* 2. A reed-grass, *Calamagrostis hyperborea Americana*, common in low meadows and on shady river-banks throughout the northwestern United States. It affords a large yield of hay, excellent if cut in season.—3. Same as *early* ★*goldenrod.*

yellow-wood, *n.* 4. See ★*polecat-tree.*

yellow-worm (yel′ō-wėrm), *n.* A redia of a liver-fluke: more fully named *King's yellow-worm.*

yelm, *v.* 2. To lay straw in order for any purpose. [Prov.]

> Whereby all *yelming* or handling of the straw, except by the feeder, is avoided, with great saving of expense.
> *W. Fream*, Complete Grazier, p. 771.

yelting, *n.* 2. A fish, *Lutianus aya*, the red snapper of the southern Atlantic coast of the United States and the West Indies.

Yemenite (yem′e-nīt), *a.* and *n.* Of or pertaining to, or native to, Yemen, a region (now a vilayet) in southern Arabia; an inhabitant of Yemen.

> The present Sultan, a descendant of those *Yemenite* Imams who consolidated Arab power in Zanzibar and on the East African coast. *Encyc. Brit.*, XXXI. 529.

yen⁴ (yen), *n.* [Amerindian.] A name given by the Indians about the Klamath Lakes of Oregon to the short-nosed sucker, *Chasmistes brevirostris.*

Yeo. An abbreviation of *Yeomanry.*

yeoman, *n.*—**Signal yeoman**, a petty naval officer who has charge of the signal-chest. Also referred to as *yeoman of the signals.* [Eng.]

> The *Yeoman of Signals* came to the captain's cabin at the regulation pace.
> *R. Kipling*, Fleet in Being, Note iv.

yep (yėp), *adv.* A corruption of *yes.* Compare ★*nope.* [Slang.]

> "Like Lorry Tuck?" Harvey put in.
> "*Yep*; or the two De Vitré boys."
> *R. Kipling*, Captains Courageous, x.

yerbal (yār-bäl′), *n.*; pl. *yerbales* (-bä′lāz). [S. Amer. Sp., ‹ *yerba*, yerba.] A district or tract of country where yerba-mate, or Paraguay tea, abounds; a grove or plantation of yerba-mate. See *mate*⁴.

> A Belgian syndicate, working *yerbales*, cattle ranches, &c., £60,000. *Encyc. Brit.*, XXXI. 462.

yern⁴, *v.* A simplified spelling of *yearn*¹.

yeshibah (ye-shē′bä), *n.*; pl. *yeshiboth* (-bōt). [Yiddish *yesheve*, ‹ Heb. *yashab*, dwell, remain, sit.] A rabbinical college, presided over by eminent Talmudical scholars. The most renowned yeshibah is at Volojin, in the province of Vilna, Russia. Modern rabbinical colleges, where, besides Talmudical lore, academic instruction is given, are called *seminaries.*

yeshiboth, *n.* Plural of ★*yeshibah.*

Yesod, *n.* [Heb., foundation.] The ninth Sephira, attribute, or intelligence forming the Adam Kadmon. See ★*Sephiroth.*

yeux-de-perdrix (yė-dẹ-per-drē′), *n.* Plural of *œil-de-perdrix.*

Yezdigerdian (yez-di-jėr′di-an), *a.* [*Yezdigerd* + *-i-an.*] Of or pertaining to Yezdigerd III., the last Sassanid king of Persia, who reigned A.D. 632–641; specifically, noting an era dating from June 16, 632, the date of his accession to the throne.

yield, *n.* 2. Specifically, in *forestry*, the amount of wood at present upon, or which after a given period will be upon, a given area. See phrases below.—**Accident yield**, in *forestry*, trees which are cut on account of accident, such as damage by wind, snow, insects, or fire.—**Final yield**, in *forestry*, all material from reproduction cuttings or clean cuttings. It is usually the chief crop, and marks the end of the rotation. See *intermediate* ★*yield.*—**Future yield**, in *forestry*, the amount of wood which given trees upon a given area will contain after a given period.—**Intermediate yield**, in *forestry*, all material from thinnings or from any cutting not intended to invite or assist reproduction. See *final* ★*yield.*—**Present yield**, in *forestry*, the amount of wood at present contained in given trees upon a given area.—**Sustained yield.** See ★*working*, 6.

yielder, *n.* 3. That which yields or supplies; specifically, a variety of some cropping plant: with a qualifying term, as *good* or *poor.*

> The varieties of durums so far grown in the United States have proved better *yielders* under semiarid conditions than the vulgare wheats.
> *U. S. Dept. Agr.*, Bur. Plant Industry, 1902, Bulletin 7, [p. 13.

yield-point (yēld′point), *n.* 1. In testing the strength of iron, steel, and other ductile materials, the minimum load which produces permanent deformation. Also spoken of, less correctly, as the *elastic limit.*

> (*c*) Four features of the results of the tensile stress tests of outstanding interest merit a special comment.
> (1) In view of the doubt which exists at the present time as to whether copper and its alloys possess true *yield-points*, it is important to record that [with] from 0·1 per cent. to 9 per cent. of aluminium the alloys possess clearly marked *yield-points.* *Nature*, Feb. 28, 1907, p. 426.

2. The point on a stress-strain curve at which the strain begins to increase very greatly for a slight increase of stress.—3. See under ★*point.*

Y. M. C. A. An abbreviation of *Young Men's Christian Association.*

yod (yōd), *n.* [Heb., *hand.*] The tenth letter (י) of the Hebrew alphabet, corresponding to the English *i* (with the sound of *y*). Its numerical value is X.

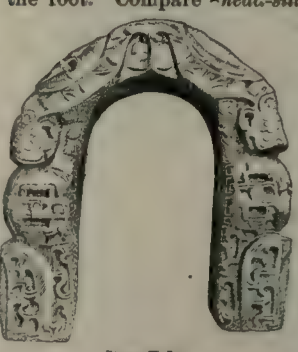
yohimbenine (yọ-him′bẹ-nin), *n.* [*yohimbé* + *-en* + *-ine*².] A colorless alkaloid, $C_{35}H_{45}O_6N_3$, found, together with yohimbine, in the bark and leaves of the yohimbé or yumbehoa-tree, belonging to the *Rubiaceæ.*

yohimbine (yō′him-bin), *n.* [*yohimbé* + *-ine*².] A colorless dextrorotatory alkaloid, $C_{23}H_{32}O_4N_2$, found, together with yohimbenine, in the bark and leaves of the yohimbé or yumbehoa-tree, belonging to the *Rubiaceæ.* It crystallizes in needles and melts at 234° C.

yoke¹, *n.* 2. (*m*) In *carp.*, the cross-piece at the head of a wooden window-frame, which forms the head of a window as the sill forms the foot. Compare ★*head-sill.*—**Stone yoke**, an ancient Mexican stone carving in the form of a yoke or collar, probably used for ceremonial purposes, perhaps for holding down the necks of individuals to be sacrificed: often elaborately carved.

> The *stone yoke*, or ceremonial collar, obtained from Mexico.
> *Smithsonian* [*Rep.*, 1899, p. 41.

To cause to pass under the yoke. See *yoke*¹, *n.*, 3.—**Yoke method**, in *elect.*, a method of measuring the magnetic quality of iron or steel in which the magnetic circuit through the specimen to be tested is completed through a massive yoke of soft iron.



Stone Yoke.
(From An. Rep. Bur. Amer. Ethnol., 1903–04.)

yoke-piece (yōk′pēs), *n.* 1. Any V-shaped piece used in mechanical constructions to enable a load or effort to be transmitted symmetrically to two other points of attachment, or which bridges or spans another element without touching it, for this same general purpose.—2. A piece which acts to bring two parallel forces or efforts to act at one point when resistance is applied, as the yoke enables two oxen to draw one cart or plow.

> The magnetizing coil, which surrounds the sheets or bars to be tested, possesses a correction winding and the heavy *yoke-piece* of cast steel of high permeability forms the arm of a balance. The magnetic attraction is compensated by a running weight, the displacement of which gives the measure of the induction obtained.
> *Elect. Rev.*, Sept. 17, 1904, p. 462.

yoking, *n.* 3. *pl.* In mining surveys, the stakes or monuments on the surface of the ground which when connected together by lines give the boundaries of the claim.

yolala (yö-lä′lä), *n.* [Malagasy.] A migratory locust of Madagascar, a variety of *Pachytylus migratorioides.* *Cambridge Nat. Hist.*, V. 298.

Yoldia clay. See ★*clay.*

yoldiform (yōl′di-fôrm), *a.* [*Yoldia* + L. *forma*, form.] Having the form of the molluscan shell of the genus *Yoldia.*

yolk-furrow (yōk′fur″ō), *n.* See ★*furrow.*

yolk-germ (yōk′jėrm), *n.* The germ from which the yolk of the egg develops.

yolk-mass (yōk′mȧs), *n.* The yolk of the egg considered as a unit.

yolk-nucleus (yōk′nū″klẹ-us), *n.*; pl. *yolk-nuclei* (-ī). In *cytol.*, one of the bodies of unknown significance and of variable structure which appear in the cytoplasm of the ovarian egg, or oöcyte; the "Dotterkern" of Carus (1850).

yolk-platelet (yōk′plāt″let), *n.* One of certain small crystalline structures found in the eggs of certain fishes and amphibia, consisting of albuminous material in combination with lecithins and mineral salts.

yolk-plug (yōk′plug), *n.* A mass of large entoderm cells which fills the blastopore of the amphibian embryo.

yolk-pyramid (yōk′pir″ạ-mid), *n.* One of the cuneate or pyramidal yolk segments of the developing eggs of certain crustaceans, such as the crawfish.

yolk-sphere (yōk′sfēr), *n.* The yolk-mass of a spherical egg.

yolk-stalk (yōk′stâk), *n.* The stalk-like tubular connection between the intestine of the vertebrate embryo and the yolk-sac.

> In the first stage, the proton is a modified strip of the ventral epithelium of the foregut bordering the *yolk-stalk.* *Trans. Amer. Micros. Soc.*, Nov., 1900, p. 57.

yoman, *n.* A simplified spelling of *yeoman.*

Yom-kipper (yom-kip′ėr), *n.* [Yiddish; Heb. *Yom Kippur.*] The Day of Atonement. See *Jewish* ★*fasts.*

yom-tob (yom-tōb′), *n.* [Yiddish *Yomtef*, ‹ Heb. *yom*, day, + *tob*, good.] A holy day; a festival. See *Jewish* ★*festivals.*

yoni (yō′ni), *n.* [Skt. *yoni*, lap, vulva, womb, origin, source, etc., ‹ √ *yu*, hold, fasten, yoke, etc.] The female organ of generation or a symbol thereof. Compare *lingam.*

york (yôrk), *v. t.* [See ★*yorker.*] In *cricket*, to bowl a batsman out with a ball which pitches in his block-hole, or within a few inches of it. *Cricket*, in The Badminton Library, p. 133.

yorker (yôr′kėr), *n.* [*York*(*shire*) + *-er*¹.] A ball which pitches in the block-hole, or within a few inches of it. *Hutchinson*, Cricket, p. 32.

> For one thing, the very name "anthropology" is apt to suggest different things to different minds. (And yet, as was said of the *yorker*, "What else would you call it?")
> *Athenæum*, March 25, 1905, p. 370.

Yorks. An abbreviation of *Yorkshire*.

York shilling. See ★*shilling*.

Yorkshire grease. See ★*grease*.

Yorktown beds. See ★*bed*¹.

yoro (yō′rō), *n.* See ★*buri*.

Yoruban (yō′rö-ban), *a.* and *n.* **I.** *a.* Of or pertaining to Yoruba.

II. *n.* A native of Yoruba.

Yosemitic (yō-se-mit′ik), *a.* [*Yosemit*(*e*) + *-ic.*] Of or pertaining to, or characteristic of, the Yosemite valley. [Rare.]

> Among all the countless waterfalls I have met in the course of ten years' exploration in the Sierra, whether among the icy peaks, or warm foot-hills, or in the profound *yosemitic* cañons of the middle region, not one was found without its Ouzel.
> *Muir*, The Mountains of California, p. 276.

young, *a.* 9. In *phys. geog.*, exhibiting an early stage of the geographic cycle, when sculpture or dissection is not far advanced. —**Younger hand.** See ★*hand*.—**Young river.** See ★*river*².

youngership (yung′gėr-ship), *n.* In primitive society, the position of a person who is throughout his life considered as a younger relative by the other members of the tribe, and who, as such, is obliged to remain in an inferior position. [Rare.]

> The captive is thus doomed to perpetual *youngership*, if the term may be permitted — that is, to perpetual servitude — because all other members of the tribe may consider him as last born and never to be advanced in age.
> *An. Rep. Bur. Amer. Ethnol.*, 1898–99, p. cxiii.

youthful, *a.* 5. In *phys. geog.*, exhibiting an early stage of the geographical cycle; young.

yponomeutid (i-pon-ọ-mū′tid), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Yponomeutidæ*.

II. *a.* Having the characteristics of or belonging to the lepidopterous family *Yponomeutidæ*.

Ypresian (i-pres′i-ạn), *a.* and *n.* [*Ypres* (see def.) + *-ian.*] In *geol.*, noting that stage of the Lower Eocene Tertiary in Belgium which is equivalent to the London Clay of England. It takes its name from Ypres in West Flanders. Also termed *Londinian*.

Y. P. S. C. E. An abbreviation of *Young People's Society of Christian Endeavor*.

Y. s. In *med.*, an abbreviation of *yellow spot* (of the retina).

Yt. An occasional symbol for *yttrium*. The single letter *Y* is more generally so used.

ytterbia (i-tėr′bi-ạ̈), *n.* [See *ytterbium*.] In *chem.*, ytterbium oxid, commonly assumed to be Yb_2O_3, which is white, and forms colorless salts, giving no absorption-spectrum; but a characteristic spark-spectrum can be obtained.

ytterbic (i-tėr′bik), *a.* [*ytterb*(*ium*) + *-ic.*] In *chem.*, containing ytterbium as a constituent.

ytterbium, *n.* In making the 'glowers' or filaments for the Nernst incandescent electric lamps it has been found that the mixture of zirconia with the earths of the yttria group gives the most satisfactory results when the latter contain a large proportion of ytterbium as compared with yttrium.

ytter earth. The name first given by Gadolin in 1794 to a new earth discovered by him in a black mineral (gadolinite) from Ytterby in Sweden. This is now known as *yttria* or *yttrium oxid*, though the original substance has been shown to contain in admixture several other metallic oxids.

> As early as 1794 Gadolin had separated from the gadolinite of Ytterby an earth which he called *ytter earth*, and which later was recognized as formed of erbine, terbine, and of ytter properly so called.
> *C. Winkler* (trans.), in Smithsonian Rep., 1897, p. 239.

ytterite (it′ėr-īt), *a.* [*yttrium* + *-ite*².] In *chem.*, of the same class as yttria. [Rare.]

> The cerite earths forming "alums" which are insoluble in potassic sulphate and so separate out, while the *ytterite* earths [yttrium oxid, erbium oxid] remain in solution. *V. B. Lewes*, in Smithsonian Rep., 1900, p. 388.

yttrocrasite (it-rọ-krā′sīt), *n.* A complex titanate of yttrium, thorium, uranium, and other elements. It occurs in the form of rough crystals (orthorhombic?) having a black color and pitchy luster, in Burnet county, Texas.

yttroilmenite (it-rọ-il′men-īt), *n.* [*yttrium* + *ilmenite.*] A name given by Hermann in 1846 and 1847 to a variety of yttrotantalite and afterward to samarskite under the impression that he had discovered in these minerals a new metallic element, which he proposed to call *ilmenium*.

Y-tube (wī′tūb), *n.* A form of tube, usually of glass and used in physical or chemical research, in which two diverging branches unite into a common stem. The flow of fluid may be either convergent into the single tube, or divergent from the latter into the two branches.

> An inverted *Y-tube* with a stop-cock in one arm connects the normal electrode with the other vessel.
> *Jour. Phys. Chem.*, Jan., 1905, p. 72.

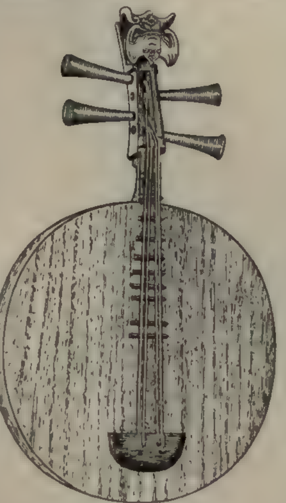
yuca, *n.* See ★*yucca*, 3.

yucca, *n.* 3. [Pron. iö′kạ̈.] The name given in western South America to *Manihot Aipi* (see *Manioc*). The latter name is not known in Peru and Chile or Bolivia, only 'yuca' being used. It is extensively consumed as a vegetable. The name is also common throughout Central America.—**Yucca cactus.** See ★*cactus*.

yucca-moth (yuk′ạ̈-môth), *n.* Same as *yucca-fertilizer*. *Cambridge Nat. Hist.*, VI. 432. —**Bogus yucca-moth,** any moth of the tineid genus, *Prodoxus*, of which the larvæ live in the flower-stems of yucca and not in the seed-pods as do the true yucca-moths of the genus *Pronuba*. *Cambridge Nat. Hist.*, VI. 432, note.

yufu (yū′fö), *n.* A fabric made from the bark of the paper-mulberry tree. *Jour. Anthrop. Inst.*, XXXI. 131.

yu-kin (yö-kin′), *n.* [Chin.] A Chinese lute or guitar with a large circular body, a short neck, and four strings. Also called *moon-guitar*.



Yu-kin.
(In Stearns Collection, University of Michigan.)

yukonose (yö′kon-ōs), *n.* [*Yukon*, Alaska, + *-ose*, suffix applied to names of subrangs.] In *petrog.*, in the quantitative system (see ★*rock*¹), a persodic domalkalic igneous rock of the quarfelic order of persalane, that is, one in which normative quartz and feldspar are in equal or nearly equal proportions, the feldspar being chiefly andesin.

yung, *a.* and *n.* A simplified spelling of *young*.

yustone (yū′stōn), *n.* [Chin. *yu*, jade, + E. *stone*.] Same as *jade*².

Yvette, crème d' (krām di-vet′). [F. *crème*, cream.] A cordial liqueur, one of those known as a crème from its consistency.

Y. W. C. A. An abbreviation of *Young Women's Christian Association*.

Y. W. C. T. U. An abbreviation of *Young Women's Christian Temperance Union*.

Z 2. (*d*) [*cap.* or *l. c.*] In *elect.*, the symbol for impedance in alternating-current circuits. See *impedance*.—3. A section of rolled steel, wrought-iron, or other metal used in structures, and particularly in the hulls of vessels, to resist flexure, and to connect other members. Its shape resembles the capital letter Z, except that the web is at right angles to the upper and lower flanges.

zacate (thä-kä′tā̤), *n.* [Mex. Sp. *zacate*, *sacate*, < Nahuatl *zacatl* (*çacatl*), grass, straw.] In Mexico, the southwestern United States, Guam, and the Philippines, a name applied to grasses, especially to those used for hay or fresh forage. Under this name the rice-grass, *Homalocenchrus hexandrus*, a grass of Mexican origin, is cultivated in the Philippines for fodder. See ★*rice-grass*.—**Zacate limon**, in Guam, the introduced lemon-grass, *Andropogon Nardus*.

zacaton (thä-kä-tōn′), *n.* [Mex. Sp. *zacatón*, aug. of *zacate*, < Nahuatl *zacatl* (*çacatl*), grass, straw.] In the southwestern United States and Mexico: (*a*) One of several grasses useful for hay, especially *Epicampes macroura* and species of *Sporobolus*; specifically, *Sporobolus Wrightii*, which in Arizona and New Mexico yields a hay valued in lieu of better for horses and mules. It grows in great clumps, producing a large amount of coarse, tough stems and leaves. (*b*) Same as *broom-root*.—**Alkali zacaton**. (*a*) The bulbous panic grass, *Panicum bulbosum*, native in cañons from Texas to Arizona and in Mexico. The stem has a bulbous base (hence called *turnip grass*), the leaves are smooth and flat, and the panicle is usually ample. It serves as a hay grass, valued on account of its ability to endure drought and an alkali soil. (*b*) Same as *fine-top* ★*salt-grass* (*a*).—**Bearded zacaton**, a tall satin-grass, *Muhlenbergia distichophylla*, with long leaves and a very long, narrow panicle, frequent in rich valleys in Arizona and New Mexico, where it is often cut, or by the Indians pulled, for hay.

Zaclemus (za-klē′mus), *n.* [NL.] A subgenus of *Paralonchurus*, sciænoid fishes of the American Pacific.

Zadokite (zā′dok-īt), *n.* and *a.* **I.** *n.* One of the sons of Zadok, who, according to Ezekiel, were the only legitimate priests.

II. *a.* Pertaining to Zadok, chief priest in the time of Solomon, or to his descendants.

zadruga (zä-drö′gä), *n.* [Serv. *zadruga*.] Among the South Slavic peoples, the association of all consanguineals into a coöperative organization, the members of which generally live in a complex of houses built within an inclosure and around the house of the stareshina or chief of the community. *Athenæum*, July 22, 1905, p. 104.

zaguan (thä-gwän′), *n.* [Sp.] A porch or a vestibule at the entrance of a house; entrance; hall.

Zalembius (za-lem′bi-us), *n.* [NL., < Gr. ζάλη, surge of the sea, + ἔμβιος, in life, < ἐν, in, + βίος, life.] A genus of surf-fishes, *Embiotocidæ*, found on the California coast.

Zalieutes (zal-i-ū′tēz), *n.* [NL., < Gr. ζάλη, surge of the sea, + ἁλιευτής, fisher.] A genus of fishes of the family *Ogcocephalidæ*, found in the eastern Pacific.

zalil (zä′lēl), *n.* [Native name in Khorasan.] A yellow-flowered larkspur, *Delphinium Zalil*, found in parts of Afghanistan and Khorasan. It is used for dyeing silk and is exported through the Panjab to India. See ★*asbarg*. (See cut, next column.)

Zalocys (zal′ǫ-sis), *n.* [NL., < Gr. ζάλη, surge of the sea, + ὠκύς, swift.] A genus of carangoid fishes found in the eastern Pacific. The only known specimen was taken at Clarion Island.

Zalopyr (zal′ǭ-pīr), *n.* [NL., < Gr. ζάλη, surge of the sea, + πῦρ, fire.] A subgenus of *Sebastodes* or rockfishes, found in the temperate and northern Pacific.

Zalypnus (za-lip′nus), *n.* [NL., < Gr. ζάλη, surge of the sea, + ὕπνος, sleep.] A genus of gobioid fishes found in the tropical Pacific on the American coast.

Zambesi black, blue, brown. See ★*black*, *n.*, etc.

zambo (säm′bō), *n.* Same as *sambo*.

Zanclean (zan′klẹ̄-a̤n), *n.* [L. *Zanclē*, < Gr. Ζάγκλη, an older name of Messana, It. *Messina*.] In *geol.*, the lowest division of the Subapennine series of Pliocene deposits in Italy: equivalent to the Messinian.

zangero, *n.* See ★*zanjero*.

Zaniolepis (zan-i-ol′e-pis), *n.* [NL., erroneously for *Xaniolepis*, < Gr. ξάνιον, a card or comb for wool, + λεπίς, a scale.] A genus of fishes of the family *Hexagrammidæ*, found in the north Pacific.

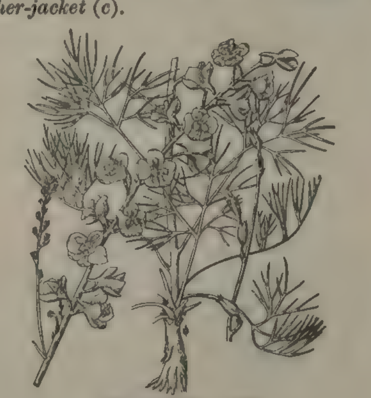
zanjero (thän-hā′rō), *n.* [Amer. Sp., < Sp. *zanja*, a ditch.] A man who patrols irrigation ditches to keep them in order or repair. See ★*ditch-rider*. Also *zangero*. *L. M. Wilcox*, Irrigation Farming, p. 163.

zanza, *n.* Same as ★*sansa*².

zapallo (thä-pä′lyō), *n.* [S. Amer. Sp.] The South American squash, *Cucurbita maxima*. The zapallo is originally from the East Indies.

zapatera (thä-pä-tā′rä), *n.* See *rule* ★*boxwood*.

zapatero (thä-pä-tā′rō), *n.* [Sp., shoemaker, < *zapato*, shoe.] A fish, *Oligoplites saurus*, found on both coasts of tropical America. See *leather-jacket* (*c*).



Zalil (*Delphinium Zalil*).

Zaphotias (za-fō′ti-as), *n.* [NL., < Gr. ζα-, very, + φῶς (φωτ-), light. The name alludes to the photophores.] A genus of fishes containing the single species *Z. pedaliota*; found in deep water of the Gulf Stream. Also written *sapote*.

zapor (zä′pôr), *n.* [Russ. *záporŭ* = Bulg. Bohem. Pol. *zapor*, a bar, barrier, < Slav. *za-per-*, *za-por-*, close, bar, < *za*, behind, + √ *per-*, OBulg. *prieti*, prop, support, Russ. *peretĭ*, press, close.] An artificial barrier in a river.

> From the earliest Russian times the natives were taught to barricade the streams by *zapors*, or barricades which were maintained for generations in the principal rivers.
> *Bulletin U. S. Fish Com.*, XXI. 244.

zapote (thä-pō′tā̤), *n.* [Mex. Sp., < Nahuatl *zapotl* (*çapotl*), pulpy sweet fruits.] The name of a number of fruits more or less spherical in form containing sweet edible pulp, and also of the trees which bear them. Also written *sapote*. See the following.—**Black zapote**, or **zapote prieto**, in southern Mexico, the insipid fruit of the introduced East Indian ebony, *Diospyros ebenaster*; in northern Mexico, the Mexican persimmon, *Brayodendron Texanum*, which see, under *persimmon*.—**Caimito zapote**, the star-apple, *Chrysophyllum cainito*.—**Chico zapote**, or **zapote chico**, the sapodilla, nispero, or naseberry, *Sapota zapotilla*.—**Egg zapote**, in southern Mexico, *Achras salicifolia*; in the Bahama Islands, *Achras serpentaria*, which see, under ★*egg-fruit*.—**Green zapote**, or **zapote verde**, *Matisia cordifolia*, a lofty tree of the bombax family growing in Colombia, having large heart-shaped leaves, clusters of rose-colored caulifloral flowers, and edible, green, fleshy 5-seeded fruit; also called *chupa-chupa*.—**Mammee zapote**, or **zapote mamey**, also called *zapote grande* and *zapote colorado*, the marmalade-tree, *Achras Sapota* (*Lacuma mammosa* Gaertn.), which see, under *marmalade-tree*.—**Melon zapote**, or **zapote melon**, the papaya, or papaw, *Carica papaya*, which see.—**Santo Domingo zapote**, in Mexico, the introduced mammee-apple, *Mammea Americana*, easily distinguished from the mammee zapote by its rough seeds: see *mammee-apple*.—**Sleepy zapote**, the fruit of *Casimiroa edulis*, a large tree of the Rutaceæ: see illustration under ★*cochilsapote*.—**Tipsy zapote**, or **zapote borracho**, *Achras salicifolia*, the fruit of which resembles a small yellow mango in form and color, and contains a sweet orange-colored pulp of a peculiar flavor, which is said to be intoxicating if eaten in quantity.—**White zapote**, or **zapote blanco**, same as *sleepy* ★*zapote*.—**Yellow zapote**, or **zapote amarillo**, same as *tipsy* ★*zapote*.

zapote-wood (thä-pō′tā̤-wůd), *n.* In southern Mexico and Yucatan, the hard durable wood of *Sapota zapotilla*, which is used in construction and in cabinet work. Also called *palo-Maria* in Yucatan.

Zaprora (za-prō′rä), *n.* [NL., < Gr. ζα-, intensive, + πρῷρα, prow.] A genus of fishes belonging to the family *Zaproridæ*.

Zaproridæ (za-prō′ri-dē), *n. pl.* [NL., < *Zaprora* + *-idæ*.] A family of fishes containing a single genus and species, *Zaprora silenus*, of which only the type is known. Taken off the coast of Vancouver Island.

Zapteryx (zap′te̤-riks), *n.* [NL., < Gr. ζα-, intensive, + πτέρυξ, fin. The ventral fins are larger than in the genus *Raja*.] A genus of guitar-fishes found in the warmer or tropical parts of the American Pacific.

zarp (zärp), *n.* ["From the initials *Z*(uid) *A*(frikaansch) *R*(epublikeinsch) *P*(olitie) = South African Republican Police." *Encyc. Dict.*] A member of the police force of the late South African Republic; a Boer policeman. [Slang.]

> It had been occupied by the Johannesburg *zarps*, who were driven north. The *zarps* had been greatly interfering with the success of Lord Roberts's proclamations for pacifying the country.
> *Pall Mall Gazette*, May 19, 1900, p. 8.

zayin (zä′yin), *n.* The seventh letter (ז) of the Hebrew alphabet, corresponding to the English *z*. Its numerical value is 7.

Z-bar (zē′bär), *n.* A rolled structural bar with a web and two flanges at right angles to it, roughly resembling the letter Z: largely used in ship-building for solid frames and stiffeners.

> *Z-bars* are now largely used for war-ships, and channel bars for merchant ships.
> *White*, Manual of Naval Arch., p. 384.

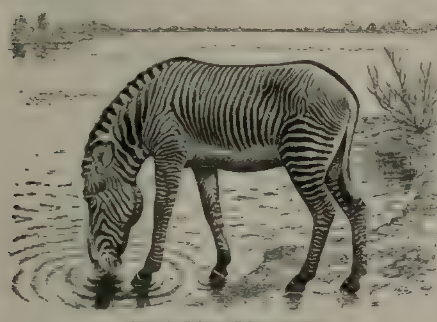
Z-beam (zē′bēm), *n.* A metal beam resembling in section the capital letter Z.

Z. B. T. An abbreviation of the Hebrew *Zion Bemishpat Tipodeh*, 'Zion shall be redeemed with judgment' (Isa. i. 27): the initials of a Jewish fraternity. The fraternity was founded in 1889, "to unite fraternally all collegiate Zionists of the United States and Canada" and to advance the cause of Zionism.

Z. C. In *astron.*, an abbreviation of *Zonæ Cordobenses*, Gould's Cordova Zones. See ★*C. Z.*

zearin (zē′a̤-rin), *n.* A colorless compound, $C_{52}H_{88}O_4$, contained in many species of lichens, particularly in *Hæmatomma coccineum*. It crystallizes in hexagonal double pyramids resembling quartz and melts at 249–251° C.

zebra, *n.* 2. A name used by fish-culturists in England for hybrids between *Salmo fario*, the European trout, and *Salmo fontinalis*, the American brook-trout.—3. An American heliconiid butterfly, *Apostraphia charithonia*, with black, yellow-banded wings. It occurs in Central America, the West Indies, and the southern United States. Its larvæ feed on the passion-flower vine.—**Grévy's zebra**, *Equus grevyi*, a species somewhat taller and more slender than



Grévy's Zebra (*Zebra grevyi*).

the true zebra, marked with many narrow black stripes, the cross stripes being much more numerous than the oblique stripes. The mane and tail are well developed. It inhabits the mountains from Somaliland to the north side of the Victoria Nyanza.

zebra-fish (zē'brạ̈-fish), *n.* A percoid fish, *Neotephrœops zebra*, found in Australian waters.

zebrinny (zē-brin'i), *n.* [*zebr*(*a*) + (*h*)*inny*.] A name given by Professor E. C. Ewart to a hybrid between a stallion and a female zebra.

zebroid (zē'broid), *a.* and *n.* [*zebra* + *-oid*.] **I.** *a.* Resembling a zebra.

II. *n.* A hybrid between a zebra and a pony.

> Whether, however, "*zebroids*," as it is proposed to call the hybrids, will maintain the immunity against tsetse attack characteristic of pure bred zebras, remains to be proved. *R. Lydekker*, Mostly Mammals, p. 43.

zebrula, *n.* An erroneous (New Latin) form of ★*zebrule*.

zebrule (zē'bröl), *n.* [*zebr*(*a*) + (*m*)*ule*.] A name given by Professor E. C. Ewart to the offspring of a mare and a zebra stallion.

> The zebra-horse hybrids were obtained by crossing mares of various sizes with a zebra stallion, a Burchell's zebra; and the new animals get the name of '*zebrules*.' *Science*, July 24, 1903, p. 128.

zebucan (sä-bö-kän'), *n.* [A native name in Guiana.] Same as *matapi*.

Zech. An abbreviation of *Zechariah*, a book of the Old Testament.

Zeelander (zē'lạ̈n-dėr), *n.* An inhabitant of Zeeland, Holland.

Zeeman effect. See ★*effect*.

zefyr, *n.* An amended spelling of *zephyr*.

zeilanite (zī'lạ̈-nīt), *n.* Same as *ceylonite*.

Zeinæ (zē-ī'nē), *n. pl.* [NL., < *Zeus* + *-inæ*.] A subfamily of fishes (John-dories) containing the pelagic genus *Zenopsis*.

zeiodelite (zī-od'ẹ̈-līt), *n.* A trade-name for a mixture of melted sulphur with rather more than its own weight of finely pulverized glass, used as a cement and as a substitute for plaster of Paris in making casts.

zelot, *n.* A simplified spelling of *zealot*.

zelous, *a.* A simplified spelling of *zealous*.

zeme, *n.* See ★*zemi*.

zemeism (zā'mẹ̄-izm), *n.* [*zemi* (*zeme*) + *-ism*.] That form of religious organization and worship which is associated with zemis. Also *zemism*.

> As in all primitive society the social organization of the Antilleans was built on a religious foundation, the people being governed by priesthoods which controlled all the public life of the people. Every cacique was a priest in virtue of his standing in the clan, which was the political unit and, as we shall later see, the religious and ceremonial unit as well. The whole social and religious organization was knit together by a form of totemism or tutelary clan ancients worship which I shall call *zemeism*. *J. W. Fewkes*, in Science, July 18, 1902.

zemi (zā'mi), *n.* [Also *zeme*; from West Indian (Taino).] A peculiar kind of image or idol, carved to represent some animal or the human form, found among the aboriginal inhabitants of the islands of the West Indies. They were usually of stone, and are still found occasionally on the islands. They are supposed to represent the ancestor or tutelary god of the clan.

> Idols, as well as the spirits they represented, were called *zemis*, and the name, meaning originally magic power, came to be applied to all supernatural beings and their symbolic representations. *J. W. Fewkes*, in An. Rep. Bur. Amer. Ethnol., 1903–04, [p. 54.

zemism (zā'mizm), *n.* Same as ★*zemeism*.

zemstvoist (zems'tvō-ist), *n.* and *a.* [*zemstvo* + *-ist*.] **I.** *n.* A deputy to a zemstvo; a member of an assemblage or congress of zemstvos.

II. *a.* Relating to a zemstvo or to the zemstvoists.

> From that sprang the imperial ukase of a year ago, nominally granting all the *zemstvoist* demands save that for a constitutional parliament, and also the industrial uprising of January last, in whose dreadful massacres the doom of autocracy was sealed. *N. Y. Tribune*, Jan. 1, 1906.

Zendicism (zen'di-sism), *n.* [*Zendic* + *-ism*.] Zendic doctrine. See ★*Zindikite*.

Zendicite, *n.* See ★*Zindikite*.

Zenion (zē'ni-ọn), *n.* [NL., dim. < Gr. *Ζήν*, variant form of Ζεύς, Zeus: see *Zeus*.] A genus of deep-sea fishes of the family *Zeidæ*. The only known specimens of its single species, *Z. hololepis*, were taken off Yucatan and Little Bahama Bank.

zenith, *n.*—**Astronomical zenith**, the point where the observer's plumb-line, produced upward, pierces the celestial sphere.—**Geocentric zenith**, the point where a line from the center of the earth through the observer, produced upward, pierces the celestial sphere. The geocentric zenith lies always nearer the equator than the astronomical zenith, the angular distance between them being called *the angle of the vertical*. This is a maximum in lat. 45°, where it becomes about 11′.—**Geometric zenith**, the point near the zenith of the plumb-line corresponding to the upper end of a line drawn from the center of the earth. The difference between the plumb-line zenith, or astronomical zenith, and the radius from the center of the earth would be zero if the earth were a homogeneous sphere without rotation on its axis; the rotation throws the plumb-line toward the equator and the irregularity of composition produces large local deflections, so that the geometric zenith differs from the astronomical.

zenithal, *a.*—**Besson's zenithal nephoscope.** See ★*nephoscope*.

zenitho-nadiral (zē″nith-ọ̄-nā'dėr-ạ̈l), *a.* Of or pertaining to the zenith and the nadir: applied to instruments for determining the meridian distances of stars from the astronomical zenith, for the purpose of finding the latitude. *Science*, Jan. 25, 1901, p. 131.

zenographical (zen-ọ̄-graf'i-kạ̈l), *a.* [*zenograph*(*y*) + *ic-al*¹.] Of or pertaining to zenography, the study of the planet Jupiter. *Smithsonian Rep.*, 1890, p. 176.

zenography (zẹ̄-nog'rạ̈-fi), *n.* [Gr. *Ζήν*, for Ζεύς, Jupiter, + *-γραφια*, < *γράφειν*, write.] The description and study of the planet Jupiter. Compare *selenography*, *areography*.

Zeoidea (zē-oi'dẹ̄-ạ̈), *n. pl.* [NL., < *Zeus* + *-oidea*.] A group of fishes containing the single family *Zeidæ* or the John-dories.

zeolitize (zē'ọ̄-līt-īz), *v. t.* To render zeolitic; transform into a zeolite.

zeophyllite (zẹ̄-of'i-līt), *n.* [Gr. *ζέειν*, boil, foam, + *φύλλον*, leaf, + *-ite*².] A zeolitic mineral having the composition $H_4Ca_4F_2Si_3O_{11}$. It occurs in hemispherical and spherical aggregates of small plates showing a perfect cleavage and pearly luster.

Zeph. An abbreviation of *Zephaniah*, a book of the Old Testament.

zepharovichite (zef'ạ̈-rọ̄-vich″īt), *n.* A hydrous aluminium phosphate, $AlPO_4 + 3H_2O$, occurring in whitish crystalline to compact masses: it is found in Bohemia.

zerenid (zẹ̄-ren'id), *n.* and *a.* **I.** *n.* A member of the lepidopterous family *Zerenidæ*.

II. *a.* Having the characteristics of and belonging to the family *Zerenidæ*.

zero, *n.* 4. In *function-theory*, a value of *x* which makes the function vanish.—**Drift of zero**, in *physics*, the gradual change of the position of the reference-point or zero from which deflection of the suspended parts of an instrument, as a galvanometer or electrometer, is measured.—**False zero**, in *elect.*, a deflected position of the needle of a galvanometer which is taken as the zero in certain methods of measurement, as in the determination of resistances containing electromotive force or in the loop-test for faults in cables.—**Order of zeros.** See ★*order*.—**Physiological zero.** (*a*) The lowest temperature at which eggs or seeds develop. (*b*) In *psychophys.*, the temperature at which a thermal stimulus fails to arouse a sensation either of warmth or of cold in the cutaneous organs; the indifference-point of thermal stimulation. *E. C. Sanford*, Exper. Psychol., p. 9.—**Zero field.** See ★*field*.

zero-meridian, *n.* See ★*meridian*.

zerriba, *n.* Same as *zareba*.

Zesticelus (zes-ti-sē'lus), *n.* [NL., < Gr. *ζεστός*, boiled (soft), + *Icelus*, name of another genus.] A genus of cottoid fishes found in the deep parts of Bering Sea.

Zestidium (zes-tid'i-um), *n.* [NL., dim. of *Zestis*.] A subgenus of *Stellifer*, sciænoid fishes of the tropical Atlantic and Pacific.

Zestis (zes'tis), *n.* [NL., < Gr. *ζεστός*, boiled (soft).] A subgenus of *Stellifer*, sciænoid fishes found in tropical parts of the Atlantic and Pacific.

zetaic (zẹ̄-tā'ik), *a.* [*zeta*¹ + *-ic*.] Of the nature of an ordinary algebraic multiplication except that subjacent indices are treated as if they were exponents: thus, the *zetaic* product $(a_1 - b_1)(a_1 - c_1)$ is $a_2 - a_1b_1 - a_1c_1 + b_1c_1$.

Zethus (zē'thus), *n.* [NL., < Gr. *Ζῆθος*, a name in mythology.] Same as *Cybele*, 2.

zeuxite (zūk'sīt), *n.* [Gr. *ζεῦξις*, a yoking, joining.] A ferriferous tourmalin from Cornwall, occurring in acicular interwoven crystals.

zeybek, *n.* Same as *Xebec*.

Z. G. An abbreviation of *Zoölogical Garden* or *Gardens*.

Z-girder (zē'gėr″dėr), *n.* See ★*girder*¹.

zibeline, *n.* 2. A kind of woolen dress-goods made from long wool and finished with a furry nap.

zibethum, *n.* Same as *zibetum*.

zikr (zēkr), *n.* [Ar. *zikr*, remembering, < *zakara*, mention, take part in.] A religious ceremony, or act of devotion, of various orders of dervishes.

zimba (zim'bạ̈), *n.* Same as ★*sansa*².

zinc, *n.* 2. The zinc element of a galvanic cell, prepared of proper shape and size, and often fitted with a binding-screw, ready for use.—**Acetate of zinc**, a salt obtained by dissolving either zinc, its oxid, or its carbonate, in acetic acid. It crystallizes in nacreous efflorescent laminæ belonging to the monoclinic system. The salt dissolves very readily in water and melts at 100° C.—**Aluminium zinc.** See ★*aluminium*.—**Belgian process for the extraction of zinc.** See ★*process*.—**Griffith's patent zinc white.** See ★*white*¹.—**Perforated zinc**, in *bee-keeping*, a sheet of zinc pierced in such a way that a queen or drone cannot pass through it, while a worker is readily admitted.—**Zinc chlorid**, in *chem.*, a white solid, $ZnCl_2$, of soft consistence at ordinary temperature, melting at a little above 100° C., and volatilizing at a higher temperature, very deliquescent and easily soluble in water. It is used by tinsmiths to facilitate soldering, in the manufacture of 'indurated fiber,' in weighting cotton cloth, and in surgery as an escharotic.—**Zinc fume**, the finely divided solid matter carried off in suspension by the gases from the hearth of a reverberatory furnace in which blende (zinc sulphid) is being roasted. It contains some 10 per cent. of zinc as sulphate, which can be recovered by leaching.—**Zinc oxid.** See ★*oxid*.—**Zinc sulphate**, in *chem.*, a compound obtainable by acting on metallic zinc with dilute sulphuric acid, generally prepared on the large scale by roasting zinc-blende and leaching the roasted ore with water, in either case evaporation of the solution yielding colorless crystals of the composition $ZnSO_4.7H_2O$. The salt is used in connection with dyeing, in hardening stucco, as an addition to size, and to boiled linseed-oil (as a dryer), and in medicine as an astringent and emetic. On being strongly heated zinc sulphate gives off sulphur dioxid and oxygen, and leaves a residue of zinc oxid.

zinc, *v. t.*—**Zinced iron**, iron coated with zinc by careful cleansing of the surface in a bath of dilute acid and subsequent immersion in melted zinc. The iron is galvanically protected from rusting by the presence of the zinc. Also, and more commonly, known as *galvanized iron*.

Zincali, *n. pl.* Same as *Zingari*. See *Zingaro*.

zincaluminite (zingk'a-lū″mi-nīt), *n.* A hydrated basic sulphate of zinc and aluminium occurring in minute thin hexagonal plates, white or bluish in color. It comes from the zinc mines of Laurium, Greece.

zinc-ammonium (zingk'a-mō″ni-um), *n.* In *chem.*, a hypothetical compound radical, in which an atom of zinc is assumed to replace two atoms of hydrogen in two combining units of the radical ammonium, as in zinc-ammonium chlorid, $\left.\begin{matrix}NH_3\\NH_3\end{matrix}\right\} ZnCl_2$.

zincate (zing'kāt), *n.* [*zinc* + *-ate*¹.] In *chem.*, a compound which may be viewed as resulting from the union of zinc oxid with the oxid of a more electropositive metal, or from the replacement of hydrogen in zinc hydroxid by a very strongly electropositive metal, such as potassium or sodium.

zinc-dust (zingk'dust), *n.* Metallic zinc in the condition of a fine powder, produced by grinding in an iron mortar heated to 200–250° C., and obtained to a considerable extent by the rapid cooling of zinc vapor in the reduction of the metal from its ores. In the latter case there is mixed with the powder more or less zinc oxid. Zinc-dust is much used as a deoxidizing agent in the operations of dyeing and calico-printing, sometimes also as a protective paint for ironwork. Also called *zinc-powder*.

zinc-gray (zingk'grā), *n.* A paint which consists of zinc ground in oil: used as a preservative for ironwork. *Phillips and Bauerman*, Elements of Metallurgy, p. 560.

zincide (zing′kid), *n.* [*zinc* + *-ide.*] In *chem.*, a compound of zinc with a more electropositive element or radical, as with sodium.

zincing (zing′king), *v. n.* A name given to the Parkes process (which see, under *process*); also the operation of adding zinc to the lead bath in the Parkes process. *Phillips and Bauerman*, Elements of Metallurgy, p. 700.

zinc-iron (zingk′ī″ėrn), *n.* An alloy of iron and zinc, easily obtainable by dissolving the former metal in melted zinc at a high temperature. Such an alloy is used as the means of introducing iron into copper-zinc and copper-tin alloys.

zincite, *n.* See *zinkite.*

zincografy, *n.* An amended spelling of *zincography.*

zincosite (zing′kọ-sīt), *n.* Same as ★*almagrerite.*

zinc-powder (zingk′pou″dėr), *n.* See ★*zinc-dust.*

zinc-sponge (zingk′spunj), *n.* Metallic zinc separated from a solution of one of its salts in the condition of an imperfectly coherent, sponge-like mass. *Encyc. Brit.*, XXVIII. 110.

zincum (zing′kum), *n.* [NL. *zincum*, zinc. See *zinc.*] A Latinized form of the name of the metal zinc. Used in official medical terminology.

zindikite (zin′di-kīt), *n.* [Ar. *zindīq*, a hopeless infidel, perhaps < Pers. *zan-dīn*, a woman's religion, + *-ite.* *Hughes.*] An infidel.

> There is a sect among the Mohammedans, called the *Zindikites*, who believe neither in the providence of the sovereign Power, nor in the immortality of the soul. But the four elements they believe to be the four essences constituting the Deity; and that, all things being compounded of them, all things are portions of the Deity himself.
>
> *C. Bucke*, Beauties, Harmonies and Sublimities of Nature, p. 319.

Zinganologist (zing-gạ-nol′ō-jist), *n.* [*Zingano*, Gipsy, + *-olog*(*y*) + *-ist.* See *Gipsy.*] Same as *Gipsologist.*

zingaresca (zing-gạ-res′kạ̈), *n.* [It. See *Gipsy.*] A song in Gipsy style.

zinke, *n.* **2.** In *organ-building*, a loud reed-stop. Also *cornet.*

zinkenite, *n.* Same as *zinckenite.*

zinket (zing′ket), *n.* [*zinc* + *-et.*] A trade-name for a sheet-metal tray used in transporting eggs, the eggs being held upright in the tray by means of circular supports. The tray with one dozen eggs is packed on the farm, shipped in crates and retailed in the tray, the consumer keeping the eggs in the tray till wanted; or the eggs may be cooked by placing them in the tray in boiling water.

> These *zinkets* are tray-like constructions of metal made by mechanical methods, each one of which holds one dozen eggs, and it is designed that the eggs shall be placed in these carriers at the time of their gathering on the farm, and in them they shall remain until such time as it is proposed to prepare them for consumption.
>
> *Sci. Amer.*, Feb. 4, 1905, p. 106.

zinkosite (zing′kọ-sīt), *n.* See ★*almagrerite.*

Zionism (zī′ọn-izm), *n.* [*Zion* + *-ism.*] The latest national movement of the Jews which has for its object "the creation of a home secured by public rights, for those Jews who either cannot or will not be assimilated in the country of their adoption." (*Herzl.*) This revival of the national spirit in a political form was due to the anti-Semitic agitation in the latter part of the nineteenth century. Dr. Theodor Herzl of Vienna was the leader, and in his "Jewish State" (1896) he first set forth the plan of an exodus to Palestine and the organization of a state paying tribute to the Sultan and settled by a chartered company, republican in form and tolerant of all religious opinions. An organization has been formed having over 100,000 members; annual congresses are held, and a colonial bank and national fund have been established.

> One of the most interesting results of the anti-Semitic agitation (see Anti-Semitism) has been a strong revival of the national spirit among the Jews in a political form. To this movement the name *Zionism* has been given.
>
> *Encyc. Brit.*, XXXIII. 927, p. 106.

Zionist. **I.** *n.* **2.** Specifically, an adherent of the plan of colonizing Hebrews in Palestine set forth by Theodor Herzl in 1896. See ★*Zionism.*

> The third annual convention of the Federation of American *Zionists* . . . will be held at New York City on June 10. This body will elect delegates to the *Zionist* Congress to be held at Basle, Switzerland, in August.
>
> *Rev. of Revs.*, May, 1900, p. 553.

II. *a.* Of or pertaining to Zionism or the Zionists.

> In the first place there is the so-called *Zionist* movement, which is a kind of Jewish nationalism and is vitiated by the same errors that distinguish its anti-Semitic analogue.
>
> *Encyc. Brit.*, XXV. 482.

Zionist flag. See ★*flag*^{2}.

Zionistic (zī-ọn-is′tik), *a.* Same as ★*Zionist.*

Zircon light. See ★*light*^{1}.

zirconia, *n.* This earth is now of industrial value as the chief material used in the 'glower' of the Nernst incandescent electric lamp. The glower commonly consists of about 85 per cent. zirconia and 15 per cent. yttria or mixed earths of that class.

zirconiferous (zėr-kọ-nif′ẹ-rus), *a.* [*zircon* + *-i-* + *-ferous.*] In *petrog.*, containing zircon.

zirconifluoride, zirconofluoride (zėr″kọ-ni-, zėr″kọ-nọ-flö′ọ-rid), *n.* Same as ★*fluozirconate.*

zirconitic (zėr-kọ-nit′ik), *a.* [*zircon* + *-it-* + *-ic.*] In *petrog.*, containing zircon. *J. D. Dana*, Manual of Geol. (4th ed.), p. 83.

zircono-. In *chem.*, a prefix to the name of a compound, signifying the presence of zirconium as a constituent, as potassium zirconofluoride, K_2ZrF_6. Sometimes written *zirconio-*, *zirconi-*, and *zirco-.*

zirkelite (zėr′kel-īt), *n.* [Named after Professor Ferdinand *Zirkel* of Leipzig, + *-ite*^{2}.] **1.** In *petrog.*, a name applied by Wadsworth (1887) to diabasic glasses. Same as *sordavalite.*—**2.** A rare mineral containing zirconium, titanium, thorium, iron, and calcium. It occurs in black octahedral crystals at Jacupiranga, Brazil.

zisium (zis′i-um), *n.* A trade-name for an alloy of aluminium with small proportions of zinc, tin, and copper, and traces of antimony and bismuth: it is used in making scientific instruments.

ziskon (zis′kon), *n.* A trade-name for an alloy of aluminium and zinc, containing 25 per cent. of the latter metal: used in making scientific instruments.

zithagin (zith′ạ-jin), *n.* Same as *saponin.*

Zittmann's decoction. See ★*decoction.*

zizarme, *n.* Same as *guisarme.*

Zoarcinæ (zō-är-sī′nē), *n. pl.* [NL., < *Zoarces*, the type genus, + *-inæ.*] A subfamily of eelpouts, or ophidioid fishes.

zodiac, *n.* **4.** Of the moon or of a planet, the belt of the heavens within which the moon or a planet moves.

zodiacal, *a.*—**Zodiacal band,** a band of faint light by some observers reported to extend from the apex of the zodiacal light to a considerable distance along the zodiac.

> The *zodiacal bands*, which are said to form a prolongation of the ordinary zodiacal light, were not seen, though stellar or nebulous bands, one extending from Aquila to the Pleiades, and the second from Præsepe to Coma Berenices have been noticed and perhaps offer an explanation of the *zodiacal bands.*
>
> *W. C. Winlock*, in Smithsonian Rep., 1890, p. 144.

zoecial, *a.* Same as *zoœcial.*

zoecium, *n.* Same as *zoœcium.*

zoëhemera (zō-ē-hem′ẹ-rạ̈), *n.*; pl. *zoëhemeræ* (-rē). [Gr. ζωή, life, + ἡμέρα, a day.] In *paleont.*, a term introduced by Clarke to express the period of duration of an index species in a given faunal province. *Zoëhemera* is contrasted with *hemera* in this respect, that the latter (employed with reference to any given species, as the '*hemera* of *Manticoceras intumescens*') implies the entire lapse of time during the existence of that species irrespective of the limitation of its province: the hemera of a species is universal, though the species itself is restricted in its distribution. The '*zoëhemera* of *Manticoceras intumescens*' expresses the time unit and the geographic distribution of the species or the fauna which it exemplifies, or, in other words, the duration of the faunal province to which that species pertains.

zogan (zō′gän), *n.* [Jap.] Inlaid work of gold or silver in other metal, as practised by the Japanese.

Zoharite (zō′här-īt), *n.* Same as ★*Frankist.*

zoidiogamous, *a.* See ★*zoidogamous.*

> The higher cryptogams, on the contrary, were *zoidiogamous*, i.e., fertilization was accomplished by a self-motile male cell, the spermatozoid.
>
> *Internat. Year-Book*, 1898, p. 113.

zoidogamous (zō-i-dog′ạ-mus), *a.* [(*spermato*)-*zoid* + *-o-* + Gr. γάμος, marriage.] In *bot.*, fertilized by motile male cells, or spermatozoids: said of the higher cryptogams among plants.

> The final history of the generative cell is obscure, but it is to be inferred from the brief summary of Thomson (*loc. cit.*) that the antheridial cell of the Araucarineæ does not divide into two as in the Abietineæ and the ancient *zoidogamous* Gymnosperms.
>
> *Amer. Nat.*, June, 1907, p. 362.

zoiodin (zō-ī′ọ-din), *n.* [Gr. ζωή, life, + ἰώδης, of a violet, + *-in.*] A form of nitrogenous organic matter deposited in violet laminæ from the sulphur-waters of Aix in Savoy.

zoisitization (zoi-sīt-i-zā′shọn), *n.* [*zoisite* + *-ize* + *-ation.*] In *petrog.*, the alteration of minerals or rocks to zoisite.

Zolaist (zō′lạ̈-ist), *n.* [*Zola*(*ism*) + *-ist.*] A writer whose works are marked by Zolaism; a literary follower of Émile Zola.

> Like most of his novels, it belongs to the school of what the *Zolaist* would term "moral anatomy."
>
> *G. Monod*, in Contemporary Rev., March, 1887, p. 449.

Zolaize (zō′lạ̈-īz), *v.*; pret. and pp. *Zolaized*, ppr. *Zolaizing.* [*Zola* + *-ize.*] **I.** *intrans.* To write in the naturalistic vein of Émile Zola.

II. *trans.* To cause to resemble, or bring into accord with, Zola's literary method or style.

> I do not mean that M. R. — has *Zolaized* Mr. Hardy; that would be unjust; but I do think that, unconsciously, he has subdued his translation to the taste that cherishes M. Zola.
>
> *G. H. Ely*, in Literature, March 30, 1901, p. 234.

zoll (tsọl), *n.* [G.] The twelfth part of a German foot, varying with the length of the foot but not very different from the English inch. *C. Hering*, Conversion Tables, p. 33.

Zöllner's photometer. See ★*photometer.*

zollpfund (tsọl′pfund), *n.* [G., < *zoll*, custom, + *pfund*, pound.] The pound adopted for the customs service of the German Zollverein, equal to 500 grams, or 1.1023 pounds avoirdupois.

zolotnik (zō-lōt-nēk′), *n.* [Also *solotnick*; < Russ. *zolotnikŭ.*] A Russian unit of weight, $\frac{1}{96}$ of the funt or Russian pound, equal to 4.27 grams or nearly 66 grains. It is divided into 96 dolia.

zomotherapeutics (zō″mọ-ther-ạ-pū′tiks), *n.* Same as ★*zomotherapy.*

zomotherapy (zō-mọ-ther′ạ-pi), *n.* [Gr. ζωμός, soup, + θεραπεία, medical treatment.] Use of raw meat, or the juice expressed therefrom, in the treatment of disease. *Med. Record*, June 27, 1903, p. 1059.

zona, *n.*—**Zona dermatica,** the thicker ring of dermal tissue which surrounds the zona epithelioserosa in rachischisis.—**Zona epithelioserosa,** the ring of epithelial tissue which bounds the defect in rachischisis.

zonæsthesia (zō-nes-thē′sị-ạ̈), *n.* [NL., < Gr. ζώνη, zone, + αἴσθησις, perception.] Same as ★*girdle-sensation.*

zonal, *a.* **6.** In *phytogeog.*, in or relating to œcological zones or belts. See ★*zone*, 8.

> It would seem that there are two principal types of plant arrangement in their habitats. These are: (1) *Zonal* and (2) Azonal.
>
> *C. MacMillan*, in Bulletin Torrey Bot. Club, XXIII. 500.

Zonal candle-power. See ★*candle-power.*—**Zonal equation.** See *zone-symbol*, under ★*symbol*^{1}, 2.—**Zonal structure,** in *petrog.*, a character of a crystal produced by concentric shells or layers of the crystal, which have different composition, color, or inclusions.

Zonary plankton. See ★*plankton.*

zonation (zō-nā′shọn), *n.* [Gr. ζώνη, zone, + *-ation.*] **1.** In *phytogeog.*, the distribution of vegetation in œcological zones or belts, or the general concept of such distribution. See ★*zone*, 8. *F. E. Clements.*—**2.** In *cytol.*, a term applied to a differentiation of the cytoplasm of the plant cell into concentric layers.

> During the completion of the mitosis the ooplasm and periplasm become clearly differentiated, but as yet no plasmoderma exists. This process of differentiation has been termed *zonation*, and is here accomplished by a withdrawal of cytoplasm from the periphery of the oogonium, as in Peronospora (Wager '00, fig. 2) and Albugo candida (Stevens '01, fig. 14), not by an aggregation of separate dense regions, as in A. Bliti (Stevens '99, figs. 59–61).
>
> *Bot. Gazette*, Dec., 1902, p. 421.

zone, *n.* **5.** (*b*) A portion of the surface of a sphere cut off by one plane.—**7.** A belt on the surface of the earth or of the celestial sphere included between two parallels to the equator.—**8.** In *phytogeog.*, a vegetation ring or belt: referring more directly to the plant-content itself or to the areas marked by œcological difference. (*a*) By Humboldt, and now with general consent, but with difference in application, used of circumpolar, roughly longitudinal belts of plant forms, which follow isothermal lines more nearly than parallels, the controlling factor being temperature. These are sometimes termed *zones of latitude.* See *life* ★*zone.* (*b*) Frequently used in the sense of a belt around a more local center corresponding to a gradation of the controlling forces in radial lines, as upon a mountain peak, in a lake, or in a sphagnum bog; or, more broadly, of continental elevation belts. Here other factors than heat, as moisture and light, are often dominant. Sometimes all of these are called *mountain zones* or *zones of altitude.* See ★*region*, 8 (*a*). The symmetry, hence the zonation, is in these cases *radial*; but along a ridge or a river the same causes produce bands of vegetation (by F. E. Clements still called 'zones') in which the symmetry is then said to be *bilateral.* The same author regards the layered vegetation of a forest, etc., as zonal, the zonation in this case being *vertical* or *unilateral* (that of former types being *lateral*). (*c*) A vegetation ring of biological origin resulting from the radial growth or dissemination of an individual, the interior of the circle disappearing: for example, the fairy ring (which see, under *fairy*). *C. MacMillan* and *F. E. Clements.*

9. One of the different levels of a shaft-furnace, characterized according to the reaction which takes place in it: as, the *zone* of fusion, reduction-*zone*, etc.—**Albany zone,** a catalogue of 8,200 stars between the parallels of 1° and 5° north declination observed at the Dudley Observatory, Albany, New York. *Smithsonian Rep.*, 1890, p. 179.—**Arctic** or **arctic-alpine zone.** See *life* ★*zone*.—**Austral zones.** See *life* ★*zone*.—**Biological zones,** geographic regions or subdivisions of the surface of the earth appropriate for sustaining specific forms of animal and vegetable life. Many such subdivisions or zones have been suggested. The most important are those of C. Hart Merriam. See *life* ★*zone*.—**Blue-yellow zone,** in *psychol. optics*, an intermediate retinal area, sensitive to blue, yellow, and the various terms of the black-white series, but insensitive to red and green. The results of perimetrical and campimetrical experiments show that the outermost zone of the retina is sensitive only to black-white; the central zone to black-white, blue-yellow, red-green; and the intermediate zone only to black-white and blue-yellow. *E. B. Titchener*, Exper. Psychol., I. i. 12.—**Canadian zone.** See *life* ★*zone*.—**Charcot's zones.** Same as *hysterogenic zones* (which see, under *zone*).—**Climatic zone,** one of a number of belts or subdivisions of the surface of the earth distinguished by successive differences of climate. Supan distinguishes the following: (*a*) Marine and equatorial climate, in which the temperature variations are less than 15° C. (*b*) Transition climate, in which the variation is greater than 15° C. and less than 20° C. (*c*) Land climate, in which the variation is greater than 20° C. and less than 40° C. (*d*) Extreme continental climate in which the variations are greater than 40° C. *Koeppen's climatic zones* are arbitrary divisions based upon temperature considerations as follows: (1) A tropical zone having an average temperature of over 68° F. (2) A subtropical zone which has the same temperature during 4 to 11 months. (3) A constant temperate zone with a temperature between 50 and 68° F. (4) A hot summer temperate zone which has an average temperature that sometimes falls below 50° F. (5) A moderate summer and cold winter temperate zone with a temperature between 50 and 68° F. (6) A cold zone with a prevailing temperature below 50° F. (7) A polar zone with an average temperature always below 50° F. *Wojeikoff's climatic zones* are distinguished according to the quantity and character of the rainfall. Twelve climatic regions are shown upon his maps as follows: (1) A zone of ocean trades with very rare rainfalls. (2) A region of equatorial rains, including the zone of calms. (3) A region of rain which prevails throughout the year. (4) A subtropical zone with rainless summers. (5) A zone of the fall and winter rains of middle latitudes. (6) The zone of summer rainfall of middle latitudes. (7) The zone of equal distribution of rain throughout all seasons. (8) A polar region with light snows in winter. (9) Deserts and semi-deserts with an annual precipitation less than 250 mm. (10 in.). (10) The region of the Australian monsoons. (11) The region of the Asiatic monsoons. (12) The region of the African monsoons. Climatic zones in altitude correspond to climatic zones in latitude and are marked by the retardation of the dates of the development of vegetation; this retardation amounts to about ten days for every 300 meters of increase in altitude in the Alps, or four days for 800 meters in France.—**Contact-zone,** a term much used by mining geologists and petrographers to describe those bands of altered and more or less recrystallized rock which follow the contacts between intrusive, igneous masses and the older rocks, usually sediments, which they penetrate. From limestones, intrusive rocks produce zones of garnet, vesuvianite, epidote, diopside, and other lime-silicates or, in the absence of these, crystalline marbles. Copper ores and magnetite are frequently found in these belts. Aluminous strata, such as clays and shales, yield andalusite, biotite, and various aluminous silicates. The rocks become dense and flinty and are called hornfels. It has been a disputed point whether the intrusive rock contributed new matter to the zones or merely caused the recrystallization of that *in situ*, but the conviction is growing that the former view is correct. The zones, especially when of varying intensity of change, are often called aureoles.—**Critical zone,** a zone or belt in the rocky crust of the earth along which movement is especially prone to occur during upheaval, because of the weakness of the rocks.

> Throughout the Tertiary crust-movements in the Alps, this passage-zone had been the great crush-zone of the district. It occurred in Fassa below a massive development of calcareous rocks, and above an almost equal thickness of mixed deposits; it was, therefore, a well-marked "*critical*" *zone* within the earth's crust, interleaved between rock material presenting strongly contrasted physical characters.
>
> *Nature*, Feb. 12, 1903, p. 359.

Crop-zone, a tract bounded by the latitudinal limits within which a crop will succeed; a life zone viewed with reference to cultivated crops. See *life* ★*zone*. Also *crop-belt*.—**Deep-sea coral zone,** a depth of the sea of between fifty and a hundred fathoms.—**Efficient zone,** in *psychophys.*, the innermost of the three retinal zones; the zone which is capable of seeing the reds and greens, as well as the blacks and whites, blues and yellows (G. *farbentüchtig*).—**Epigastric zone.** See *abdominal regions*, under *abdominal*.—**Floral zone,** a geographical division of the globe in accordance with the connection between vegetation and climate. Among the special divisions of this kind is that of Drude, who divided the earth into the boreal, tropical, and austral divisions, which are again subdivided into several sections. The most elaborate subdivision is that of Smirnos into nine zones whose boundaries, expressed in degrees of north latitude, are as follows: (1) equatorial, 0–15°; (2) tropical, 15–23.5°; (3) subtropical, 23.5–34°; (4) warm temperate, 34–45°; (5) cool temperate, 45–58°; (6) subarctic, 58–66.5°; (7) arctic, 66.5–72°; (8) frigid, 72–82°; (9) polar, 82–90°. These nine sea-level boundaries correspond also to nine altitudes above sea-level proceeding by steps of 2000 feet each. Thus the equatorial zone extends upward 2000 feet; above the equatorial lies the tropical zone between the limits 2000 and 4000 feet; the subtropical includes the interval between 4000 and 6000 feet; and so on for the whole system.—**Fundamental zone.** See *fundamental* ★*plate*.—**Hudsonian zone.** See *life* ★*zone*.—**Huygens's zone.** Same as *half-period* ★*element*.—**Hypogastric zone,** the lower of the three chief abdominal regions (which see, under *abdominal*).—**Impressed zone,** in the coiled cephalopod shells, the longitudinal impression formed in the dorsum by contact with the next whorl within. This may exist only while the whorls are in contact or may arise through inheritance in the young before the whorls come in contact, or persist in senile stages when the final whorl has been detached.—**Law of zones.** See ★*law*^{1}.—**Life zone.** (*a*) One of the longitudinal belts of plant and animal life determined upon principles worked out by C. H. Merriam. These principles are: (1) that the northward distribution of animals and plants is governed by the total quantity of heat during the season of growth and reproduction; and (2) that their southward distribution is governed by the mean temperature of a brief period covering the hottest part of the year. Upon this basis Merriam has made the following transcontinental divisions for North America:

Boreal region	Arctic or arctic-alpine zone. Hudsonian zone. Canadian zone.
Austral region	Transition zone. Upper Austral zone. Lower Austral zone.

Tropical region (not subdivided latitudinally).

Upon the basis of humidity, the transition zone is subdivided into the Alleghanian area, the arid transition area, and the Pacific Coast transition area; the Upper Austral into the Carolinian and Upper Sonoran areas; and the Lower Austral into the Austroriparian (Louisianian) and the Lower Sonoran areas. See phrases under ★*area*. (*b*) A bed or series of beds in any geological formation characterized by certain fossils or groups of fossils: nearly equivalent in meaning to ★*life-horizon*.—**Marsupite zone,** in *geol.*, a zone of the Upper Cretaceous series in France, equivalent to the Margate ★chalk of England (which see).—**Mesogastric zone,** the central abdominal zone, which comprises the umbilical and two lumbar regions.—**Mineral zone,** in *mining geol.*, a zone or belt, of somewhat indefinite and ill-defined lateral extent, along which impregnation of the rocks with ores or minerals has taken place.

> The term "*mineral zone*," as used in contradistinction to a "mineral vein," refers to the fact that a mineral zone is not always clearly defined, as by walls. The mineralization may extend along one or both sides of a fissure having no defining limits, while a vein is presumed to be situated wholly within definite bounding planes and may be easily distinguished from the adjoining country rock. In a zone of mineralization the mineralization may gradually disappear as distance from a central crack or fissure increases until it ceases altogether. A mass of rock within which occur several veins or ore bodies is also often referred to as a zone.
>
> *Mining and Scientific Press*, quoted in Sci. Amer. Sup., [Aug. 22, 1903, p. 23114.

Motor zone, the region of the cerebral cortex which, when electrically stimulated, produces contraction of the various voluntary muscles. *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 247.—**Mountain-zones.** See ★*zone*, 8 (*b*).—**Neutral zone.** (*b*) A zone or belt occupied by neither of two neighboring powers, but lying between their frontiers.

> Apart from the question of the *neutral zone*, the White Volta has never been accepted by Great Britain as the German frontier north of 10° N.
>
> *Geog. Jour.* (R. G. S.), XIII. 528, note.

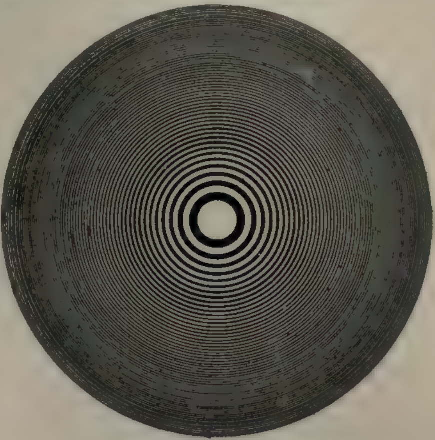
Oesel zone, in *geol.*, a division of the Upper Silurian rocks of the Baltic provinces, constituting the uppermost stage and divisible into a lower and an upper zone, the former broadly equivalent to the Wenlock and the latter to the Ludlow group of England.—**Red-green zone.** See *blue-yellow* ★*zone*.—**Spherical zone,** a portion of the surface of a sphere cut off by one plane, or included between two parallel planes.—**Thermal zone.** See ★*thermal belt*.—**Transition zone,** the territory or area in which the change takes place between the faunas or floras of two regions, the animals or plants of one being gradually replaced by those of the other. The transition zone thus contains a certain mixture of the plants and animals characteristic of the adjacent regions. Such zones are most marked on mountain ranges. See *life* ★*zone*.—**Vascular zone,** an area in the supramastoid fossa (a slight depression at the juncture of the superior and posterior walls of the external auditory canal), in which there are many foramina giving passage to blood-vessels. Also called *spongy spot*.—**Verdant zone,** a nearly horizontal belt on the sides of the Appalachian Mountains, corresponding in width to 400 feet vertical, in which vegetation is rarely affected by frost; a 'thermal belt.'

> The beautiful phenomena of the "*verdant zone*" or "thermal belt" exhibits itself upon our mountain sides commencing at about 300 feet vertical height above the valleys. *S. McDowell*, in Rep. U. S. Patent Office, 1861.

Wesenberg zone, in *geol.*, a division of the Lower Silurian in the Baltic provinces of Russia equivalent to the Bala or Caradoc of the British section. The Wesenberg zone is represented by a limestone abounding in fossils. **Zone catalogue,** a catalogue of the stars included between two parallels of declination, for example between + 30° and + 40°.—**Zone of brecciation,** a zone in the earth's crust at no great depth below the surface where openings in the form of intersecting fractures are more abundant than at other depths, and which is preeminently a zone of underground water circulation. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. iii. 130.—**Zone of cultivation,** the altitudes at which human beings live, cultivate the fields, pasture flocks, or hunt wild animals. In the Alps, according to Fritz, the altitude of permanent habitations averages about 1380 meters; that of the grain-fields 1390; that of the herdsmen's cottages 1950; that of the shepherds' huts 2190; and that of isolated trees 2250. The orographic snow-line is at 2630 meters, and the climatic snow-line at 2960 meters.—**Zone of cyclones.** See ★*cyclone*.—**Zone of flowage.** See ★*flowage*.—**Zone of maximum rainfall,** that altitude above the sea-level at which rainfall is heaviest, and above and below which it diminishes. In the northwestern Himalayas this is 1200–1400 meters above sea-level; in Java it is about 1000 meters; and in the Alps about 2000 meters. On the high plateau of Central Asia the zone of maximum snowfall in winter is at 2500–3000 meters, but the zone of rainfall in summer is higher up.—**Zone of observation,** the outer portion of the earth which comes within the range of human observation. *Van Hise*, in U. S. Geol. Surv., Monographs, XLVII. i. 37.—**Zone of Rolando,** the Rolandic or 'motor' area of the cerebral cortex. *T. Ziehen* (trans.), Introd. to Physiol. Psychol., p. 34.—**Zone of stars.** See ★*star*^{1}.—**Zones of altitude.** See ★*zone*, 8 (*b*).—**Zones of latitude.** See ★*zone*, 8 (*a*).—**Zone star.** See ★*star*^{1}.

zone-index (zōn′in″deks), *n.* See ★*symbol*, 2.

zone-plate (zōn′plāt), *n.* A plate bearing a series of concentric rings, alternately opaque and transparent. Such a device when placed in a beam of light brings the light to a focus by diffraction.



Zone-plate.

zone-symbol (zōn′sim″bọl), *n.* See ★*symbol*^{1}, 2.

zone-tariff (zōn′tar″if), *n.* See *zone* ★*tariff*.

zone-testing (zōn′tes″ting), *n.* A method of determining the chromatic and spherical aberrations of lenses and their astigmatism by taking photographs of the cone of light transmitted by separate zones of the lens.

zonite (zō′nīt), *n.* [Gr. ζώνη, girdle, + *-ite*^{2}.] Any one of the body rings of a myriapod. *Jour. Roy. Micros. Soc.*, April, 1903, p. 177.

zonolimnitic (zō″nọ-lim-nit′ik), *a.* [Gr. ζώνη, zone, + λίμνη, lake, + *-it-ic*.] Floating or swimming in fresh water at a definite depth below the surface. Also *zonolimnetic*. Compare ★*autolimnitic*, ★*bathylimnitic*.

zonophone (zō′nọ-fōn), *n.* [Gr. ζώνη, girdle, + φωνή, sound, voice.] A trade-name for a gramophone the records of which have been prepared by the Cheney process. See the extract.

> In a later method [Cheney's] the point of the recorder draws a groove in the surface of a viscous substance, from which an electrotype is made as a matrix. The resistance to the vibratory movement is very small and the sound is recorded with increased truthfulness. Records by this process have been called *zonophone* records.
>
> *Scripture*, Exper. Phonetics, p. 53.

zonulitis (zō-nụ̄-lī′tis), *n.* [NL., < *zonule* + *-itis*.] Inflammation of the suspensory ligament of the crystalline lens of the eye.

zoöcentric (zō-ō-sen′trik), *a.* [Gr. ζῷον, a living being, + κέντρον, center, + *-ic*.] Pertaining to the philosophy which regards the world as intelligently designed to promote the well-being of sentient creatures, that is, man and animals. *L. F. Ward*, Dynamic Sociol., II. 50.

zoöchore (zō′ọ̄-kōr), *n.* [Gr. ζῷον, animal, + χωρεῖν, spread abroad.] In *phytogeog.*, a plant disseminated through the agency of animals. *F. E. Clements.*

zoöchorous (zọ-ok′ọ̄-rus), *a.* [*zoöchore* + *-ous*.] Having the character of or pertaining to zoöchores. *F. E. Clements.*

zoöcracy (zọ-ok′ra̤-si), *n.* [Gr. ζῷον, an animal, + -κρατια, < κρατεῖν, govern.] Tribal law, the contents and execution of which are ascribed to the supernatural powers of animals. *W J McGee*, in 17th An. Rep. Bur. Amer. Ethnol., p. 294.

zoöcratic (zō-ọ̄-krat′ik), *a.* Of or pertaining to zoöcracy. *W J McGee*, in 17th An. Rep. Bur. Amer. Ethnol., p. 294.

zoöcultural (zō′ọ̄-kul-ṭūr-a̤l), *a.* [*zoöculture* + *-al*^{1}.] Pertaining to or of the nature of zoöculture. [Rare.]

When in barbarism agricultural and *zoöcultural* industries are organized, and other industries are carried

> on for exchange, then the labor of captives becomes an important factor in the industrial life of the people.
> *J. W. Powell*, in An. Rep. Bur. Amer. Ethnol., 1898–99, [p. cxiii.

zoöculture (zō'ọ-kul-ṭūr), *n.* [Gr. ζῷον, an animal, + L. *cultura*, culture.] The domestication of animals; the relations between man and animals which are found in various stages of culture, beginning with the hunting of animals, and developing through toleration of animals as neighbors to domestication.

> During his stay among the Hopi, Dr. Fewkes' attention was directed to the inter-relation between the tribesmen and certain feral creatures, notably eagles. The eagles are of much consequence to the folk, chiefly as a source of feathers, which are extensively used in ceremonies for symbolic representation, etc.; and it appears from the recent observations that particular clans claim and exercise a sort of collective ownership in certain families of eagles, perhaps homing in distant mountains; and that this right is commonly recognized by other clans, and even by neighboring tribes. Thus the relation affords a striking example of that condition of toleration between animals and men which normally precedes domestication, and forms the first step in *zooculture*, as has been set forth in preceding reports.
> *Smithsonian Rep.*, 1900, p. 65.

zoöcurrent (zō'ọ-kur-ẹnt), *n.* [G. **zoöcurrent* (Haeckel), < Gr. ζῷον, animal, + L. *currens*, current.] A stream of floating organisms in the water of the sea; a zoöreme, or planktonic current. See ★*zoöreme*, ★*planktonic current.*

> The pelagic animals and plants are so closely packed in these *zoöcurrents* as to resemble somewhat the human population in the busiest street of a great commercial city.
> *Haeckel* (trans.), Planktonic Studies, in Rep. U. S. Fish [Com., 1889–91, p. 626.

zoögene (zō'ọ-jēn), *a.* [Gr. ζῳογενής, born of an animal, < ζῷον, an animal, + -γενης, -born.] In *geol.*, having an animal origin, as coralline limestone, pteropod ooze, etc. Also *zoögenous.*

zoögenesis (zō-ọ-jen'e-sis), *n.* [Gr. ζῷον, an animal, + γένεσις, genesis.] Same as *zoögeny.*

zoögenic, *a.* **2.** In *geol.*, noting rocks the constituents of which have been furnished by animals as distinguished from plants, as, for example, shell limestones, guano beds, etc. *Amer. Geol.*, April, 1904, p. 231.—**Zoögenic sociology.** See ★*sociology.*

zoögenite (zọ-oj'e-nīt), *n.* [Gr. ζῷον, animal, + -γενης, -produced, + *-ite*^{2}.] In *petrog.*, a rock formed by the accumulation of animal debris. *Senft*, 1857.

zoögenous (zọ-oj'e-nus), *a.* **1.** In *geol.*, see ★*zoögene.*—**2.** In *pathol.*, noting certain diseases which are acquired by man from the lower animals.

zoögrafting (zō'ọ-graf-ting), *n.* [Gr. ζῷον, an animal, + E. *grafting.*] In *surg.*, the grafting of tissues derived from the lower animals.

zoögrafy, *n.* An amended spelling of *zoögraphy.*

zoöl. **2.** [*l. c.* or *cap.*] An abbreviation of *zoölogical.*

Zoölogical station. See ★*station.*

zoölogize (zọ-ol'ọ-jīz), *v. i.*; pret. and pp. *zoölogized*, ppr. *zoölogizing.* [*zoölog*(*y*) + *-ize.*] To study zoölogy practically.

zoölogy, *n.*—**Experimental zoölogy,** the study of living animals by means of experiments of which the objects, among others, are to ascertain how animals behave under given conditions, the readiness with which and the extent to which they may be influenced by their surroundings, and if sex may be determined by external or other conditions and, if so, in what manner.

> The scope of *experimental zoology* is so great that it cannot be treated as a whole within a volume of ordinary size.
> *Science*, Jan. 24, 1908, p. 140.

zoömechanical (zō"ọ-mẹ-kan'i-kal), *a.* Of or pertaining to zoömechanics.

> Roux claims that *zoomechanical* methods are of primary importance, that those of the descriptive zoölogists only prepare the way for causal investigators, and are of little or no intrinsic value.
> *Nat. Sci.*, June, 1897, p. 412.

zoömechanics, *n.* **2.** The doctrine or opinion that the origin and activity of living beings will, some day, be resolved into the activity of the organic mechanism and expressed in terms of matter and motion.

> Every science is a mechanical one, but to tack on the word "mechanics" to zoology and rechristen it "*zoomechanics*" in a general philosophical sense is not to create a new science.
> *Nat. Sci.*, June, 1897, p. 412.

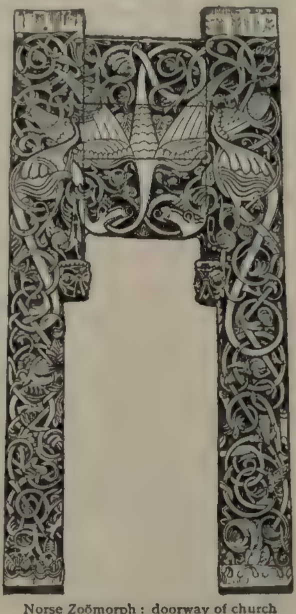
3. The opinion that the methods of the experimental laboratory are the only scientific and fruitful methods for studying zoölogy, and that knowledge gained by observing the changes that take place in the laboratory of nature is trivial and insignificant.

zoömimetic (zō-ọ-mi-met'ik), *a.* [Gr. ζῷον, an animal, + μιμητικός, mimetic.] Characterized by actions imitative of those of animals: said of an early stage of culture in which all technic activities, such as cutting, breaking, sawing, etc., are supposed to be imitative of similar activities of animals, and in which appropriate parts of animals, such as teeth, claws, horns, etc., are used as tools. Also called *hylozoic.* Compare ★*prelithic.* *W J McGee*, in An. Rep. Bur. Amer. Ethnol., 1895–96, p. 250.

zoömimic (zō-ọ-mim'ik), *a.* [Gr. ζῷον, an animal, + μιμικός, mimic.] See ★*zoömimetic.*

zoömonera (zō"ọ-mọ-nē'rä), *n. pl.* [NL., < Gr. ζῷον, an animal, + μονήρης, single.] Animal organisms without nuclei. Few zoölogists admit the existence of animals without nuclei. Since nuclei have been demonstrated in some of the so-called zoömonera, failure to find them in others is no proof of their absence.

zoömorph (zō'ọ-môrf), *n.* [Gr. ζῷον, an animal, + μορφή, form.] A manufactured object or ornamental design whose form originated in the endeavor to copy or imitate some animal. *Haddon*, Evolution in Art, p. 40.



Norse Zoömorph: doorway of church of Borgund, Norway.

zoöpaleontology (zō"ọ-pā"lẹ-on-tol'ọ-ji), *n.* [Gr. ζῷον, an animal, + E. *paleontology.*] A badly formed word introduced by Osborn to express that division of paleontology which relates solely to animal as contrasted with plant life. Same as *paleozoölogy.*

zoöpantheon (zō-ọ-pan'thẹ-on), *n.* [Gr. ζῷον, an animal, + πάνθειον, pantheon.] A pantheon which consists of animal gods, such as is characteristic of primitive religions.

zoöperal (zọ-op'ẹ-ral), *a.* [*zoöper*(*y*) + *-al*^{1}.] Of or relating to zoöpery.

zoöperist (zọ-op'ẹ-rist), *n.* [*zoöper*(*y*) + *-ist.*] One who experiments on animals; an experimental zoölogist.

zoöpery (zọ-op'ẹ-ri), *n.* [Gr. ζῷον, an animal, + πειρᾶν, try, + *-y*^{3}.] Experimentation on animals; experimental zoölogy.

zoöph. An abbreviation of *zoöphytology.*

zoöpharmacy (zō-ọ-fär'ma-si), *n.* [Gr. ζῷον, animal, + E. *pharmacy.*] That branch of pharmacy which pertains to the preparation of drugs as they are used in veterinary medicine.

zoöphile (zō'ọ-fil), *n.* [Gr. ζῷον, an animal, + φιλεῖν, love.] A zoöphilist, especially an antivivisectionist.

zoöphobia (zō-ọ-fō'bi-ä), *n.* [Gr. ζῷον, an animal, + -φοβια, < φοβεῖν, fear.] **1.** In *pathol.*, a morbid fear of animals.—**2.** In *anthrop.*, the fear of animals considered as beings endowed with supernatural powers. *Amer. Anthropologist*, Jan.–March, 1901, p. 12.

zoöphysical (zō-ọ-fis'i-kal), *a.* [*zoöphysic*(*s*) + *-al*^{1}.] Of or pertaining to zoöphysics in either sense of that word.

zoöphysics, *n.* **2.** The physics of animal bodies.

zoöphysiology (zō-ọ-fiz-i-ol'ọ-ji), *n.* [Gr. ζῷον, an animal, + E. *physiology.*] The physiology of animals: opposed to *phytophysiology*, or the physiology of plants.

zoöplankton (zō-ọ-plangk'ton), *n.* [Gr. ζῷον, animal, + NL. *plankton.*] Animals that float or swim in the water, considered collectively and contrasted with floating or swimming plants. See ★*plankton*, ★*phytoplankton.*

zoöplasm (zō'ọ-plazm), *n.* [Gr. ζῷον, an animal, + πλάσμα, anything formed.] The living substance of animals as contrasted with that of plants.

zoöplasty (zō'ọ-plas-ti), *n.* [Gr. ζῷον, an animal, + πλαστός, formed, + *-y*^{3}.] Same as ★*zoögrafting.*

zoöpraxiscope (zō-ọ-prak'si-skōp), *n.* **1.** Same as *zoöpraxinoscope.*—**2.** A phenakistoscope.

zoöpsychological (zō"ọ-sī-kọ-loj'i-kal), *a.* [*zoöpsycholog*(*y*) + *-ic-al*^{1}.] Of or pertaining to zoöpsychology.

zoöpsychologist (zō"ọ-sī-kol'ọ-jist), *n.* [*zoöpsycholog*(*y*) + *-ist.*] One who studies animal or comparative psychology; a comparative psychologist.

zoöreme (zō'ọ-rēm), *n.* [G. ★*zooreme* (?) (Haeckel), < Gr. ζῷον, animal, + It. *rema*, otherwise *reuma*, defluxion, rheum, said to be used dial. in the original Gr. sense, Gr. ῥεῦμα, a flow, a current.] A stream of floating organisms in the ocean; a zoöcurrent. See ★*zoöcurrent*, ★*planktonic current.* See the extract.

> Among the most noteworthy and important phenomena of marine biology is the great accumulation of swimming bodies which form long and narrow bands of thickened plankton. . . . For their scientific designation and their distinction from other marine currents I propose the term Zoöcurrent or *Zoöreme.*
> *Haeckel* (trans.), Planktonic Studies, in Rep. U. S. Fish [Com., 1889–91, p. 626.

zoösematic (zō"ọ-sẹ-mat'ik), *a.* [Gr. ζῷον, an animal, + σῆμα(τ-), a sign, + *-ic.*] Symbolizing animals. *W J McGee*, in An. Rep. Bur. Amer. Ethnol., 1895–96, p. 169.

zoösporangium, *n.* **2.** Any multicellular organ among the algæ or fungi giving rise to zoöspores.

zoösporocyst (zō-ọ-spō'rọ-sist), *n.* [*zoöspore* + Gr. κύστις, bag (cyst).] Any unicellular structure among algæ or fungi which produces zoöspores. Compare ★*zoösporangium*, 2.

zoötechny, *n.* **2.** The industries which are associated with the animal kingdom. *O. T. Mason*, in Amer. Anthropologist, Jan., 1899, p. 45.

zoötypic (zō-ọ-tip'ik), *a.* [Gr. ζῷον, animal, + τύπος, type, + *-ic.*] Of the animal type. [Rare.]

> But the worm-like organisms, "being longitudinal and bilateral," writes Cope, "one extremity becomes differentiated by first contact with the environment." In other words, the animal type has shown a cephalic or head-forming evolution in consequence of the bilateralism of structure. The individual has become concentrated. Out of this worm-form type, therefore, all the higher ranges of *zootypic* evolution have sprung, and one is almost tempted to read a literal truth into David's lamentation that "I am a worm and no man."
> *L. H. Bailey*, in Smithsonian Rep., 1897, p. 454.

zopf (tsopf), *n.* [G., a cue, queue, pigtail.] The fashion of the queue, that is, old-fashioned, pedantic formalism: applied to stiff antiquated ways in official life, in musical composition, etc.

zosmerid (zos'mẹ-rid), *n.* and *a.* **I.** *n.* A member of the heteropterous family *Zosmeridæ.*

II. *a.* Having the characteristics of or belonging to the family *Zosmeridæ.*

zosteriform (zos-ter'i-fôrm), *a.* [Gr. ζωστήρ, a girdle, + L. *forma*, form.] Resembling herpes zoster. *Buck*, Med. Handbook, V. 864.

Zuñi pottery. See *Pueblo pottery*, under *American* ★*pottery* (*a*).

zurlite (zör'līt), *n.* [Named after Signore *Zurlo.*] An impure form of humboldtilite (melilite) which occurs in opaque squares or octagonal prismatic crystals in calcareous blocks in Monte Somma.

zwieback (tswē'bäch), *n.* [G., < *zwie-*, E. *twi-*, two-, twice, + *backen*, E. *bake.* The word is equivalent in meaning to *biscuit.*] Slices of bread made from a rich dough, which have been heated in an oven until they are thoroughly dried and are of a deep yellow color.

Zwinglianism (zwing'li-an-izm), *n.* The doctrines of Ulrich Zwingli (1484–1531) and his followers. See *Zwinglian.*

zwischenglas (tswish'en-glas), *n.* [G., 'between-glass.'] A drinking-glass or tumbler so constructed that the decoration, usually depicting hunting scenes, is inclosed between two layers of glass: used in Germany in the 18th century. The outside surface is cut into vertical facets to facilitate handling.

zwitter (tswit'ėr), *n.* [G., lit. a hybrid, a halfbreed, < *zwei* (*zwi-*), two.] In *petrog.*, a variety of greisen, associated with tin ores, of somewhat variable composition, chiefly quartz, mica, topaz, with more or less tin ore.

zybethum, *n.* See *zibetum*.

zygadineine (zig-a̤-din′ē-in), *n.* [*zygadin*(*one*) + *-e-ine*.] A pale yellow, basic compound formed by the action of barium hydroxid on zygadinone. It resembles veratrine in physiological effect and melts at 102° C.

zygadinic (zī-ga̤-din′ik), *a.* [*zygadin*(*one*) + *-ic*.] Noting an acid, a compound prepared by the action of barium hydroxid on zygadinone.

zygadinin (zī-gad′i-nin), *n.* [*Zygad*(*enus*) + *-in* + *-in*.] A colorless, neutral compound contained in *Zygadenus venenosus*. It crystallizes in large transparent prisms and melts at 134° C. See *Zygadenus*.

zygadinone (zī-gad′i-nōn), *n.* [*Zygad*(*enus*) + *-in* + *-one*.] A resin contained in *Zygadenus venenosus*. Its physiological action is the same as that of the crude drug.

zygion (zig′i-on), *n.*; pl. *zygia* (-ä). [NL., < Gr. ζυγόν, yoke.] In *craniom.*, the points at which the greatest bizygomatic diameter is found.

zygnemaceous (zig-nē̤-mā′shius), *a.* Belonging or pertaining to the family of algæ *Zygnemaceæ* or to the genus *Zygnema*.

zygomatico-orbital (zī-gō̤-mat″i-kō-ôr′bi-ta̤l), *a.* Relating to both zygoma and orbit.

zygomaticosphenoid (zī″gō̤-mat″i-kō-sfē′noid), *a.* Relating to both the zygoma and the sphenoid bone: noting a fissure between the two.

zygomaticum (zī-gō̤-mat′i-kum), *n.*; pl. *zygomatica* (-kä̤). [NL.] The suborbital ring, a chain of small ossicles following the lower margin of the orbital cavity in fishes.

zygomaxillare (zī″gō̤-mak-si-lā′rē̤), *n.* [NL.] In *craniom.*, the lower terminus of the zygomaxillary suture. *Von Török.*

zygoneurous (zī-gō̤-nū′rus), *a.* [*zygoneur*(*y*) + *-ous*.] Relating to or characterized by zygoneury. *Proc. Zool. Soc. London*, 1901, p. 466.

zygoneury (zī-gō̤-nū′ri), *n.* [Gr. ζυγόν, a yoke, + νεῦρον, sinew, nerve, + -y^{3}.] In some gastropods, an arrangement of the nervous system, more frequent on the right than on the left side, in which the mantle-nerve of the pleural ganglion runs directly to the ganglion of the visceral commissure of its own side (supra- or subintestinal). Compare ⋆*dialyneury*.

zygoörbitale (zī″gō̤-ôr-bi-tā′lē̤), *n.* [NL.] In *craniom.*, the upper terminus of the zygomaxillary suture. *Von Török.*

zygophyllaceous (zī″gō̤-fi-lā′shius), *a.* [NL. *Zygophyllace*(*æ*) + *-ous*.] Belonging or pertaining to the *Zygophyllaceæ*.

Zygoptera (zī-gop′te̤-rä̤), *n. pl.* [NL., < Gr. ζυγόν, yoke, + πτερόν, wing.] A suborder of the *Odonata* which includes the two families *Calepterygidæ* and *Agrionidæ*. They have the wings of the two pairs equal in size, or the hind ones a little the smaller.

zygopterid (zī-gop′te̤-rid), *n.* and *a.* **I.** *n.* A member of the *Zygopterides*.

II. *a.* Having the characteristics of or belonging to the *Zygopterides*.

zygosphenal (zī′gō̤-sfē-na̤l), *a.* [*zygosphene* + *-al*^{1}.] Pertaining to, or of the nature of, a zygosphene (which see).

zygote, *n.* **2.** In *biol.*, a fertilized ovum, or the equivalent, in plants and in unicellular organisms, of a fertilized egg; the product of the conjugation of gametes, or sexual cells.

> The term "gamete" is now generally used as the equivalent of "germ-cell," whether male or female, and the term "*zygote*" is here used for brevity to denote the organism resulting from fertilization.
> *W. Bateson*, Mendel's Prin. of Heredity, p. 18, note.

> After the fusing of the flagella with the female germs in the stomach of the Anopheles mosquitoes, the fertilized organisms attach themselves to the walls of the stomach, penetrate the inner walls, and locate themselves just under the outer muscular wall. They then rapidly increase in size until they eventually become five times as large as at first. They are now known as *zygotes*.
> *L. O. Howard*, Mosquitoes, p. 51.

zygotic (zī-got′ik), *a.* [*zygot*(*e*) + *-ic*.] Of, pertaining to, or produced by means of, fertilized eggs or zygotes.

> In gametic variation we thus meet in fact the same series of possibilities with which we have been familiar in the variation of *zygotic* organisms.
> *Bateson and Saunders*, Rep. Evol. Com. Roy. Soc., 1902, [I. 127.

zygotoblast (zī-got′ō̤-blȧst), *n.* [Gr. ζυγωτός, yoked, + βλαστός, germ.] Same as ⋆*sporozoite*.

zygotomere (zī-got′ō̤-mēr), *n.* [Gr. ζυγωτός, yoked, + μέρος, part.] Same as *sporoblast*.

zygous (zī′gus), *a.* [Gr. ζυγόν, a yoke, + *-ous*.] Paired: used in descriptive paleontology with special reference to the lobes and saddles in the septal sutures of the ammonites, in contrast to the azygous or unpaired inflections.

zymic, *a.* **2.** Noting zymic acid, a substance which is now known to be impure lactic acid.

zymin (zī′min), *n.* [Gr. ζύμη, le̤aven, + *-in*^{2}.] An enzym, in a general sense.

zymite (zī′mīt), *n.* [Gr. ζύμη, leaven, + *-ite*^{2}.] In the Greek Church, the priest who celebrates the Eucharist with unleavened bread.

zymocyte (zī′mō-sīt), *n.* [Gr. ζύμη, leaven, + κύτος, a hollow (cell).] An organism which produces fermentation.

> Salicylic acid only holding its reputation as an enemy to the *zymocytes* of the cider barrel. *Disinfectants*, p. 14.

zymogenic, *a.* **2.** Of or pertaining to a zymogen. *Abbott*, Prin. of Bacteriology, p. 36.

zymohydrolysis (zī″mō-hī-drol′i-sis), *n.* [NL., < Gr. ζύμη, leaven, + E. *hydrolysis*.] The addition of the elements of water to the molecule of a compound (hydrolysis) by the action of an enzym (zymase).

> Scientific nomenclature — or, rather, scientific shorthand — is a little forbidding at times, and so it was that Croft Hill's bold announcement, three or four years ago, of the discovery of "reversible *zymohydrolysis*" was not starred in large type in the public prints the next morning. But this young Englishman had shown that a constructive ferment exists; or, rather, that under given conditions the destructive action of the ferment is reversible. *C. Snyder*, New Conceptions in Sci., p. 236.

zymolysis, *n.* **2.** Digestion by means of the non-organized ferments.

> It will be convenient to use the expression '*zymolysis*' to denote the changes produced by the enzymes in their action on other substances and to apply the term 'fermentation' to the action of the organized ferments.
> *Buck*, Med. Handbook, III. 840.

zymophore (zī′mō̤-fōr), *a.* Same as ⋆*toxophore*.

> The hypothesis of Morgenroth in regard to the existence of a haptophore group and the *zymophore* group in the labile ferment has been recently verified by Myers and Bashford, who have discovered zymoids analogous to the toxoids.
> *U. S. Dept. Agr.*, Bur. Animal Industry, Rep., 1900, [p. 257.

zymophoric (zī-mō̤-for′ik), *a.* [Gr. ζύμη, leaven, + -φορος, < φέρειν, bear.] Zymophorous; specifically, noting a group, analogous in its action to that of a ferment, which does not exist, however, in the free state, but as an integral part of free complements, or of receptors having the structure of agglutinins and precipitins. See ⋆*immunity*, 5, ⋆*toxophoric*.

zymophorous (zī-mof′ō̤-rus), *a.* [Gr. ζύμη, leaven, + φέρειν, bear.] Same as ⋆*zymophoric*.

zymoplastic (zī-mō̤-plas′tik), *a.* [Gr. ζύμη, leaven, + πλαστός, formed, + *-ic*.] Forming a ferment. *Buck*, Med. Handbook, IV. 475.

zymose (zī′mōs), *n.* [Gr. ζύμη, leaven, + *-ose*.] Same as *invertin*.

zymotechnologist (zī″mō̤-tek-nol′ō̤-jist), *n.* [*zymotechnolog*(*y*) + *-ist*.] One who is versed in zymotechnology or zymotechnics.

> The leading purpose of this treatise is to enlighten the so-called practical man in the methods of investigation employed by the *zymotechnologist*, so that in the future the practical man and the technologist may work together with better understanding at the many important and difficult problems which are encountered in the processes of the fermentation industries.
> *Nature*, Nov. 5, 1903, p. 4.

zymotechnology (zī″mō̤-tek-nol′ō̤-ji), *n.* Same as *zymotechnics* or *zymurgy*.

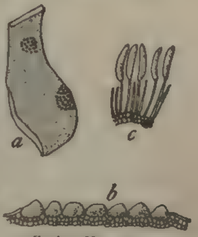
zymotoxic (zī-mō̤-tok′sik), *a.* [Gr. ζύμη, leaven, + τοξ(ικόν), poison, + *-ic*.] **1.** Noting that group of the complement to which its solvent properties are due, in accordance with the supposition that it may be of ferment nature. See ⋆*immunity*. Sometimes used synonymously with ⋆*toxophoric*.

> The intermediary body, therefore, carries two sets of combining or haptophore groups: one for the cells and the other for the complement (complementophilic group). The complement possesses in addition to such a corresponding haptophore group, another group which exhibits fermentative properties (*zymotoxic* or toxophore group), through the action of which solution of cells takes place.
> *Jour. Exper. Med.*, March 17, 1902, p. 282.

2. Relating to the action of toxins in the theory of infection.

Zyrian (zir′i-a̤n), *n.* A member of a Finnic people living in northeastern Russia, principally in the government of Vologda. Also *Ziryanian*, *Siryanian*.

Zythia (zith′i-ä̤), *n.* [NL. (Fries, 1825), < Gr. ζῦθος, ale, beer (?).] A genus of the imperfect fungi, type of the family *Zythiaceæ*, characterized by having reddish or orange-colored waxy pycnidia and hyaline unicellular spores. About 20 species have been described. *Z. Versoniana* occurs on fruit of *Punica Granatum* in Italy.



Zythia Versoniana.

a, pycnidia on skin of unripe pomegranate, reduced in size; *b*, pycnidia enlarged; *c*, sporophores with spores, highly magnified.

Zythiaceæ (zith-i-ā′sē̤-ē), *n. pl.* [NL., < *Zythia* + *-aceæ*.] A family of sphæropsidaceous fungi which have light- or bright-colored, fleshy or waxy pycnidia: named from ⋆*Zythia*, the principal genus (which see).

THE CENTURY CYCLOPEDIA OF NAMES SUPPLEMENT

The asterisk (*) is used to mark additions to articles in the Cyclopedia of Names

Aasen*, Ivar Andreas. Died Sept. 23, 1896.

Abbadie*, Antoine Thomson d'. Died at Paris, March 20, 1897.

Abbadie*, Arnaud Michel d'. Died 1893.

Abbazia (ä-bät-sē′ä). A village in Istria, Austria, situated on the Gulf of Quarnero, noted as a health-resort. It is protected on the north and west by mountains of considerable height and enjoys an equable climate (mean winter temperature, 50° F.: summer, 77° F.). The annual number of those seeking the baths is upward of 14,000. Population (1890), 1,192.

Abbe*, Cleveland. He has been professor of meteorology at George Washington University since 1886.

Abbe (äb′e), **Ernst.** Born at Eisenach, Saxe-Weimar, Jan. 23, 1840: died at Jena, Jan. 14, 1905. A German physicist, professor in the University of Jena 1870–91 and director of the astronomical observatory from 1878. He is noted for his theoretical work in optics and for the improvements which he made in optical glass and in optical instruments, especially in the microscope. The so-called Jena glass, including varieties much used for lenses, etc., was his invention. From 1866 he was connected with the firm of Karl Zeiss, the instrument-maker, of Jena.

Abbé Constantin, L' (ă-bā′coṅ-stăṅ-taṅ′). A novel by Ludovic Halévy, published in 1882.

Abbot*, Francis Ellingwood. Died 1903.

Abbott*, Austin. Died April 19, 1896.

Abbott*, Evelyn. Died 1901.

Abbott (ab′ọt), Sir **John Joseph Caldwell.** Born at St. Andrew's, Quebec, March 12, 1821: died at Montreal, Oct. 30, 1893. A Canadian statesman. He was graduated at McGill University in 1847, was called to the bar in the same year, and was appointed queen's counsel in 1862. He was dean of the faculty of law in McGill University for several years, and was knighted in 1892. He was a member of Parliament for Argenteuil 1859–74 and 1881–87, and entered the Senate for the division of Inkerman, Quebec, May, 1887. He joined the Conservatives in 1865, was a member (without portfolio) of Sir J. A. Macdonald's cabinet in 1887, and was premier of Canada 1891–92.

Abbott (ab′ọt), **Thomas Kingsmill.** Born at Dublin, March 26, 1829. An Irish clergyman and scholar, a graduate and fellow of Trinity College, Dublin, in which he occupied the chair of moral philosophy 1867–72, of biblical Greek 1875–88, and of Hebrew 1879–1900. He is the author of "Sight and Touch" (1864), a translation of Kant's "Theory of Ethics" (1873), "Elementary Theory of the Tides" (1888), etc.

Abdul Hamid II*. Sultan of Turkey. He was dethroned April 27, 1909, and was succeeded by his brother, Mehmed V.

Abdurrahman Khan*. Died Oct. 3, 1901.

Abel*, Sir **Frederick Augustus.** Died at London, Sept. 6, 1902.

Abney (ab′ni), Sir **William de Wiveleslie.** Born at Derby, England, July 24, 1844. An English physicist and captain in the Royal Engineers, known for his work in photography and spectroscopy. He was president of the Royal Astronomical Society 1893–95 and of the Physical Society 1895–97. Knighted in 1900.

Abra (ä′brä). **1.** A river of Luzon, rising in Lepanto-Bontoc province and taking a circuitous course, through Abra and Ilocos Sur provinces, to the China Sea. Length, 55 miles.— **2.** A province of northwestern Luzon in the Philippine Islands. It is bounded by Ilocos Norte (separated by a spur of the Cordillera Norte) on the north, Cagayan and Lepanto-Bontoc (separated by the Cordillera Central) on the east, Lepanto-Bontoc and Ilocos Sur on the south, and Ilocos Sur on the west. Capital, Bangued. The highest peak in the province is Burnay, near the point of separation from Ilocos Norte and Ilocos Sur. The valleys are fertilized by the Abra and its branches. Corn, rice, and tobacco are the chief products. The population consists mainly of Ilocans and Tinguianes. Area, 1,171 square miles. Population (1903), 51,860.

Abruzzi (ä-bröt′sē), **Duke of the (Prince Luigi Amadeo Giuseppe Maria Ferdinando Francesco).** Born at Madrid, Jan. 29, 1873. An Italian explorer, third son of Prince Amadeo of Aosta, at one time King of Spain. See *Amadeus.* In July, 1897, he ascended Mount St. Elias, in Alaska, and in 1899–1900 made an attempt, in the Stella Polare, to reach the north pole from Franz Joseph Land. Captain Cagni of his party, with three others, gained lat. 86° 33′ N., the highest then reached. In 1906 he made an ascent of the peaks of Mount Ruwenzori, and in 1909 conducted an expedition to the Himalayas. He has written "La Stella Polare nel mare artico 1899–1900" (1902), etc.

Absolon*, John. Died at London, June 26, 1895.

Academy, British. See *British Academy.*

Academy of Fine Arts, Pennsylvania. See *Pennsylvania Academy.*

Acapulco*. It was destroyed by earthquakes July 30, 31, 1909.

Achenbach*, Oswald. Died at Düsseldorf, Feb. 1, 1905.

Achensee (ăċh′en-zā). A small lake in the Tyrol, Austria, lying north of the valley of the lower Inn. It empties into the Isar. Length, 5½ miles.

Acheson (ach′e-sọn), **Edward Goodrich.** Born at Washington, Pa., March 9, 1856. An American electrician, the inventor of carborundum, siloxicon, the process of Egyptianizing clay, and a method of producing artificial graphite.

Acland*, Sir **Henry Wentworth.** Died Oct. 16, 1900.

Aconcagua*, Mount. Height determined in 1904, 22,812.1 feet (Schrader).

Acre (ä-krâ′). A territory of Brazil lying north of the river Aquiri and bordering on Bolivia and Peru. It is rich in india-rubber. The boundary dispute between Bolivia and Brazil with regard to this territory was adjusted by a treaty in November, 1903, and an agreement to adjudicate a similar dispute between Brazil and Peru was reached in July, 1904.

Acton, Lord. See *Dalberg-Acton.*

Acton*, Thomas C. Died May 1, 1898.

Adam*, Franz. Died Sept. 30, 1886.

Adams (ad′a̤mz), Mrs. (**Abigail Smith**). Born at Weymouth, Mass., Nov. 23, 1744: died at Quincy, Mass., Oct. 28, 1818. The wife of John Adams (second President of the United States) and the mother of John Quincy Adams (sixth President). Her marriage to John Adams took place Oct. 25, 1764. She supported her husband in his political views and work; joined him in France in 1784; and accompanied him to London, where he was United States minister 1785–88. Her letters, published in "Familiar Letters of John Adams and his Wife" (1876), are of historical value.

Adams (ad′a̤mz), **Brooks.** Born at Quincy, Mass., June 24, 1848. An American lawyer and writer, son of Charles Francis Adams (1807–86). He was secretary to his father when the latter was arbitrator at the Geneva tribunal (1871–72), and practised law until 1881. He is the author of "The Emancipation of Massachusetts" (1887), "The Law of Civilization and Decay" (1896), "America's Economic Supremacy" (1900), "The New Empire" (1902), etc.

Adams*, Charles Kendall. Died July 26, 1902.

Adams (ad′a̤mz), **Henry Carter.** Born at Davenport, Ia., 1851. An American economist, writer, and educator. He was lecturer at Cornell University and the University of Michigan 1880–87, and at Johns Hopkins 1880–82; was director of the division of transportation of the eleventh census and statistician of the Interstate Commerce Commission; and has been professor of political economy and finance in the University of Michigan since 1887. He is the author of "Outline of Lectures on Political Economy" (1881, 1886), "The State in Relation to Industrial Action" (1887), "Taxation in the United States 1789–1816" (1884), "Public Debts" (1887), "The Science of Finance" (1888), "Statistics of Railways" (1888–1904), "Economics and Jurisprudence" (1897), "Special Report on Railway Mail Pay" (1900), "Commercial Valuation of Railway Property in the United States" (1904: with B. H. Meyer), and "Digest of Hearings before the Senate Committee on Interstate Commerce" (1906: with H. T. Newcomb).

Adams (ad′a̤mz), **Herbert.** Born at West Concord, Vt., Jan. 28, 1858. An American sculptor. He was educated in Boston and was a pupil of Mercié in Paris; won honorable mention at the Paris Salon in 1888 and 1889, a medal at the Columbian Exposition, Chicago, in 1893, and a gold medal at the St. Louis Exposition in 1904; and has executed many memorial compositions and portrait statues. He has also been employed on the decoration of the great expositions.

Adams (ad′a̤mz), **Herbert Baxter.** Born at Shutesbury, Mass., April 16, 1850: died at Amherst, Mass., July 30, 1901. An American historian and educator. He was educated at Amherst College, Heidelberg University, and Johns Hopkins University; was lecturer in history at Smith College 1878–81; and was for many years associate professor and professor of history at Johns Hopkins University. He edited the reports of the American Historical Association (after 1884), the "Contributions to American Educational History" for the United States Bureau of Education (after 1887), and the "Johns Hopkins University Studies in Historical and Political Science." He published "Life and Writings of Jared Sparks" (1893), and many historical monographs.

Adams (ad′a̤mz), **Maude.** Born at Salt Lake City, Nov. 11, 1872. An American actress. For Kiskadden, her family name, she substituted her mother's maiden name, Adams. She first appeared on the stage as a child; supported John Drew, in "The Masked Ball," in 1892; and has made her principal successes in J. M. Barrie's plays, "The Little Minister," "Quality Street," "Peter Pan," and "What Every Woman Knows." She has also played in F. H. Burnett's "Pretty Sister of José," in a translation of Rostand's "L'Aiglon," "Romeo and Juliet," "Joan of Arc," etc.

Adams*, William Taylor. Died at Boston, March 27, 1897.

Adamson*, Robert. Died in 1902.

Addams (ad′a̤mz), **Jane.** Born at Cedarville, Ill., Sept. 6, 1860. An American worker for social reform. She was graduated at Rockford College in 1881, and in 1889 opened, with Ellen Gates Starr, Hull House Social Settlement in Chicago, of which she is now head resident worker. She has written "Function of the Social Settlement" (1899), "Democracy and Social Ethics" (1902), "Newer Ideals of Peace" (1907), etc.

Ade (ād), **George.** Born at Kentland, Ind., Feb. 9, 1866. An American journalist and playwright. He is the author of "Fables in Slang," "People You Knew," etc., and among his plays are "The Sultan of Sulu" (1902), "Peggy from Paris" (1903), "The County Chairman" (1903), "The Sho-Gun" (1904), "The College Widow" (1904), "The Bad Samaritan" (1905), "Just Out of College" (1905), "Marse Covington" (1906), "Mrs. Peckham's Carouse" (1906), "In Pastures New" (1906), "The Slim Princess" (1907).

Adelbert (a̤-del′bėrt) **College.** A college of the Western Reserve University (which see). It is named for the son of Amasa Stone. The latter, in 1880, offered the sum of $500,000 to the Western Reserve College provided it should be removed from Hudson, Ohio, to Cleveland and change its name to 'Adelbert College of Western Reserve University.'

Adenis-Colombeau (ăd-nē′kō-loṅ-bō′), **Jules.** Born at Paris, 1821. A French journalist and dramatist. He was on the editorial staff of the "Corsaire" 1847–49, and has written many comedies, vaudevilles, and libretti. Among his independent works are "Philanthropie et repentir" (1855), "Une crise de ménage" (1857), "Les chasseurs et la laitière," music by Gavaert (1865), "La fiancée d'Abydos," music by Barthe (1865), and "Le nouveau sorcier" (1867) and "Les trois souhaits" (1873), music by Poise. He has also written much in collaboration with Plouvier, Decourcelle, Tourte, Laurencin, Granvallet, Rostaing, Gastineau, and others.

Adeste fideles (ad-es′tē fī-dē′lēz). [L. 'Come, ye faithful.'] A hymn, originally in Latin, beginning with these words. It has been ascribed to Bonaventura (1221–74), but is more probably of the 17th or 18th century and of French or German authorship. The familiar arrangement, commencing "O come all ye faithful, joyfully triumphant," first appeared in Murray's "Hymnal" in 1852 and is an adaptation of the translation made by the Reverend Frederick Oakeley in 1841. It has also been published in many other translations. The tune is ascribed to John Reading (1677–1764), organist, and was called the "Portuguese Hymn" because it was sung at the chapel of the Portuguese Embassy in 1797 and at once became popular.

Adis, or Addis, Abeba (ä′dis ä-bā′bä). The present capital of Abyssinia, situated in the province of Shoa in lat. 9° N. It has a population of upward of 50,000. A treaty of peace with Italy was concluded here, Oct. 26, 1896.

Adler (äd′lėr), **Cyrus.** Born at Van Buren, Ark., Sept. 13, 1863. An American orientalist and archæologist, assistant secretary (in charge of the library and exchanges) of the Smithsonian Institution and curator of historic archæology in the United States National Museum from 1905.

Adler (äd′lėr), **Felix.** Born at Alzei, Germany, Aug. 13, 1851. An American reformer, lecturer, and writer. He came to the United States in 1857; was professor of Hebrew and oriental literature at Cornell University 1874–76; was the founder of the New York Society for Ethical Culture (1876), to which he gives addresses and in the work of which he is prominent; has been professor of political and social ethics at Columbia University since 1902; is a member of the editorial board of the "International Journal of Ethics"; and has been widely influential in educational and reform movements. He is the author of "Creed and Deed" (1877), "The Moral Instruction of Children" (1893), "Life and Destiny" (1903), "Marriage and Divorce" (1905), "Religion of Duty" (1905), "Essentials of Spirituality" (1905), and of many papers on related subjects. He was exchange professor at the University of Berlin 1908–09.

Adler (äd′lėr), **Friedrich.** Born at Berlin, Germany, Oct. 15, 1827: died at Berlin, Sept. 15, 1908. A German architect and archæologist. He was educated under the painters Weiss and Grieben and at the Berlin Bauakademie under the architect Strack. He has executed several important buildings, chiefly churches, but is best known as a writer on architecture, especially the medieval and Renaissance architecture of Germany. He was the chief associate of Ernst Curtius in the excavations at Olympia, the results of which were published between 1890 and 1897.

Adolphus*, William Augustus. Last duke of Nassau. Died at Hohenberg, Nov. 17, 1905.

Adye*, Sir **John Miller.** Died Aug. 26, 1900.

Ægidi*, Ludwig Karl. Died at Berlin, Nov. 19, 1901.

Afragola (ä-frä-gō′lä). A city of Italy, in the province of Naples, about ten miles northeast of the city of Naples. Population (1901), 22,419.

Afridis (ä-frē′diz). A warlike tribe of Afghans dwelling south of Peshawar.

Agardh*, Jakob Georg. Died at Lund, Sweden, 1901.

Agassiz (ag′a̤-si), **Lake.** An extensive postglacial lake which occupied the valley of the Red River in North Dakota, Minnesota, and Manitoba. The retreating ice-sheet ponded waters in front of it and in these were laid down sediments, now the fertile wheat-fields of this region.

Agassiz (ag′a̤-si), **Mount.** 1. A peak of the Uintah Mountains in Utah, 13,000 feet high. —2. A peak in Chile, in the territory of Magallanes, about lat. 50° S. It is about 10,000 feet high.

Agno (äg′nō). 1. A river of central Luzon, in the Philippine Islands. It rises in the northern mountains of Benguet province, and flows southward into Pangasinan, where it divides and turns westward, entering Lingayen Gulf by channels at Dagupan, Lingayen, San Isidro, and San Fabian. The produce of the northern part of the central valley of Luzon is carried by branches of the Agno to Lingayen Gulf. Length, about 128 miles. 2. A river of western Luzon, rising in the Zambales Mountains and flowing west to the China Sea.

Agnone (ä-nyō′nā). A city of Italy, in the province of Campobasso. Population (1901), 6,606; commune, 9,793.

Agoo (ä-gō-ō′). A municipality of La Union province, western Luzon, Philippine Islands. Civilized population (1903), 10,653.

Aguadilla (ä-gwä-dēl′yä). 2. A department in the northwestern part of Porto Rico. It is bounded by the Atlantic Ocean on the north, Arecibo and Ponce on the east, Mayaguez (separated by mountains) on the south, and the Atlantic Ocean on the west. Capital, Aguadilla. Area, 240 square miles. Population (1899), 99,645.

Aguinaldo (ä-gē-näl′dō), **Emilio.** Born about 1868. A Filipino leader of mixed European and native descent. He took a leading part in the rebellion against Spain 1896–98. In January of the latter year he left the Philippines, agreeing not to return. After the battle of Manila, May 1, 1898, he returned with the consent of the American authorities and established a native government, of which he became the head, and collected an army. On Feb. 4, 1899, he began hostilities against the American forces occupying Manila. He was captured in March, 1901.

Ai (ī). A river of southeastern Manchuria which flows into the Yalu opposite Wiju. It played an important part in the attack of the Japanese right upon the Russians in the battle of the Yalu River, May 1, 1904.

Aicard*, Jean. He was made a member of the French Academy in 1909, succeeding François Coppée.

Aidé*, Hamilton. Died Dec. 13, 1906.

Aigun*. It was opened to international trade in 1905.

Aikawa (ī-kä′wä). A city of Japan situated on the western coast of the island of Sado. Population, upward of 11,000.

Ainger (ān′jėr), **Alfred.** Born at London, Feb. 9, 1837: died at Darley Abbey, Derbyshire, Feb. 8, 1904. An English clergyman, author, and editor. He was educated at King's College, London, and at Trinity Hall, Cambridge, taking his degree in 1860. He was reader at the Temple Church 1866–92, canon of Bristol Cathedral 1887–1903, Master of the Temple 1894–1904, and chaplain in ordinary to Queen Victoria and King Edward VII. He wrote biographies of Lamb (1882) and of Crabbe (1903), and published annotated editions of Lamb's "Essays of Elia" (1883), of Lamb's "Letters" (1888), and of Hood's "Poems," with a biographical memoir (1897). He also wrote "The Gospel and Human Life: Sermons" (1904), etc.

Ainsworth*, William Francis. Died at Hammersmith, London, Nov. 27, 1896.

Aivazovski*, Ivan. Died at Feodosia in the Crimea, May 2, 1900.

Ajanta Caves. See *Ajunta.*

Akashi (ä-kä-shē′). A city of Japan situated on the shore of the Inland Sea about 12 miles west of Kobe. Population, upward of 22,000.

Alabama*. The State has 67 counties. It was the third State in the production of pig-iron in 1908.

Alaska*. The capital of the Territory is Juneau. The highest summit is Mt. McKinley (20,464 feet: *U. S. Geol. Surv.*).

Alaska-Yukon-Pacific Exposition. An exposition held at Seattle, Wash., from June to October, 1909, for the purpose of exhibiting the resources and demonstrating the progress of northwestern America and the Pacific coast generally. It was planned to occupy 250 acres of the campus of the University of Washington. The twelve main exhibit buildings were those of (1) the United States government, (2) Alaska, (3) Yukon, (4) Manufactures, Liberal Arts, and Education, (5) Agriculture, (6) Machinery, (7) Forestry, (8) Fine Arts, (9) Fisheries, (10) Mines, (11) Hawaii and the Philippines, (12) Foreign. The products of the countries bordering on the Pacific were shown in the foreign exhibits, and exhibits representative of their interest in Pacific trade development were made by the United States, Great Britain, France, Germany, Russia, the Netherlands, etc.

Albay. 2. A province in the southeastern part of Luzon in the Philippine Islands. It is bounded by Ambos Camarines on the north, the Pacific Ocean and Sorsogon on the east, Sorsogon and the Visayan Sea on the south, and the Visayan Sea on the southwest and west. Capital, Albay. Besides its area in Luzon it includes several islands, among them Catanduanes and Batan. Albay, including Catanduanes, is the largest abaca-producing province of the Philippines. A good quality of coal is mined in Batan. Gold and mercury are reported in other parts of the province. The northeastern coast is indented by Albay Gulf. Mountains extend from east to west, the eastern extremity being Mayon Volcano. The inhabitants are Bicols. Area, 1,783 square miles. Population (1903), 240,326.

Albay (äl-bī′) **Gulf.** A gulf on the eastern coast of Albay province, southeastern Luzon, in the Philippine Islands.

Albay Volcano. See *Mayon Volcano.*

Albert* (Alexandre Martin). Died in May, 1895.

Albert (äl-bãr′), **Eugène d'.** Born at Glasgow, April 10, 1864. A pianist and composer, a pupil of Liszt. He has composed a number of operas, among them "Der Rubin" (1893), "Ghismonda" (1895), "Gernot" (1897), "Die Abreise" (1898), and "Flauto Solo" (1906); two piano concertos; a symphony; two string quartets; and smaller works. As a pianist he is placed among the foremost of contemporary artists.

Albert Edward*. He ascended the throne as Edward VII. on Jan. 22, 1901.

Albert Friedrich August*. King of Saxony. Died at the Castle of Sibyllenort, Silesia, June 19, 1902.

Albert Friedrich Rudolf*. Archduke of Austria. Died at Arco, Tyrol, Feb. 18, 1895.

Alberta*. A province of Alberta was proclaimed Sept. 1, 1905. It includes the former district of Alberta, the western half of Athabasca, and a strip of Assiniboia and Saskatchewan. It is represented in the Dominion Senate by 4 members. Area, about 253,540 square miles. Population (1901), 72,841.

Albion College. A co-educational Methodist college in Albion, Michigan. It was endowed as the Wesleyan Seminary in 1839, and was opened in 1843; the present name and system were adopted in 1861. It has an endowment of $280,000 and a total yearly income of about $40,000. The students number about 500.

Albury (âl′bur-i). A town in New South Wales, Australia, situated on the border of Victoria about two hundred miles northeast of Melbourne. It is at the limit of steam navigation on the Murray River. Population, about 5,500.

Alden (âl′de̤n), **Henry Mills.** Born at Mount Tabor, Vt., Nov. 11, 1836. An American author, editor, and classical scholar. He was managing editor of "Harper's Weekly" 1863–69, and since 1869 has been editor of "Harper's Monthly." He is the author of "God in His World" (1890), "A Study of Death" (1895), and, in collaboration with A. H. Guernsey, "Harper's Pictorial History of the Great Rebellion" (1862–65), besides poems and essays.

Alden (âl′de̤n), **William Livingston.** Born at Williamstown, Mass., Oct. 9, 1837: died at Buffalo, N. Y., Jan. 14, 1908. An American author and journalist. He wrote "Canoe and Flying Proa," "Loss of the Swansea," "A Lost Soul," "Told by the Colonel," etc.

Aldrich*, Thomas Bailey. Died at Boston, March 19, 1907. His later works include "Two Bites at a Cherry" (1894), "Judith and Holofernes" (1896), "A Sea Turn" (1902), "Ponkapog Papers" (1903), "Judith of Bethulia" (1904), "Pauline Pavlovna" and "Songs and Sonnets" (1907).

Aldrich (âl′drich) **Deep.** A very deep portion of the Pacific Ocean, lying northeast of New Zealand and east of the Kermadec Islands.

Alert (a̤-lėrt′). One of the steam-vessels of the British polar expedition under Sir George Strong Nares, 1875–76: the other was the Discovery. The Alert passed through Kennedy Channel and wintered at Floeberg Beach, (82° 25′ N.), the most northerly point reached by ship up to that date.

Alexander I. (al-eg-zan′dėr). Born at Belgrade, Aug. 14, 1876: died there, June 11, 1903. King of Servia, 1889–1903, son of Milan I. and Queen Natalie. He was proclaimed king, under a regency, upon the abdication of his father, March 6, 1889. On April 13, 1893, he assumed personal control of affairs. On April 7, 1903, he suspended the constitution and annulled a series of laws passed by the Radical government, and on the night of June 10 was assassinated with Queen Draga in the palace. He was the last of the Obrenovitch dynasty and was succeeded by Peter I., the choice of the military party.

Alexander (al-eg-zan′dėr), **Edward Porter.** Born at Washington, Ga., May 26, 1835. An American soldier and engineer. He was graduated at West Point in 1857; entered the Confederate Army in 1861; served with the Army of Northern Virginia throughout the war; and became chief of ordnance. In 1864 he was promoted brigadier-general and chief of artillery in Longstreet's corps. At the battle of Gettysburg he directed the bombardment which preceded and accompanied the charge of Pickett's men.

Alexander*, Ludwig Georg Friedrich Emil. Prince of Hesse. Died Dec. 15, 1888.

Alexandra*, (Caroline Marie Charlotte Louise Julie). Wife of Edward VII., king of England.

Alexandra Feodorovna (al-eg-zan′drä fā-o̤-dō-rōv′na̤). (**Victoria Alice** (**Alix**) **Helena Louise Beatrice**). Born at Darmstadt, June 6, 1872. Empress of Russia, the fourth daughter of Ludwig IV., Grand Duke of Hesse, and Princess Alice, daughter of Queen Victoria. She married Nicholas II., Emperor of Russia, November 26, 1894.

Alexeief (ä-lek′sā-yef), **Eugenii Ivanovitch.** Born 1843. A Russian admiral, appointed imperial lieutenant with control of both diplomatic and military affairs in the Far East, July 30, 1903, shortly before the outbreak of the Russo-Japanese war. From 1883 to 1893 he was naval attaché of the Russian embassy in Paris; commanded the Russian squadron during the Chinese-Japanese war 1894–97; and took possession of Port Arthur. In 1898 he was promoted vice-admiral and made commander of Kwangtung province. He took part in the work of the allies in China 1900–01, and became chief of the Russian Pacific squadron. His conduct of affairs after his appointment to the imperial lieutenancy was unsuccessful, and after the early Japanese successes he was deprived (April, 1904) of most of his power. He retired in November and returned to Russia.

Alfonso XIII.* He was married to Princess Ena (Victoria) of Battenberg May 31, 1906.

Alfred*, Prince (Duke of Edinburgh). Second son of Queen Victoria. Died July 30, 1900.

Algeciras Conference. An international conference held at Algeciras, Spain, January 16–April 7, 1906, for the purpose of deliberating upon reforms in Morocco. It was presided over by the Duke of Almodovar, the Spanish minister of foreign affairs. It resulted in a compromise between the claims of France and Germany with regard to finance and police in Morocco. The maintenance of order in the ports of Morocco for the next five years was placed in the hands of France and Spain; and it was decided that the bank of Morocco, to be established at Tangier, should be international. Various reforms were urged upon the Sultan of Morocco, such as the removal of disabilities placed upon citizens of the United States (by the United States delegate), the abolition of slavery (Great Britain), the establishment of lighthouses (Germany), the publication of commercial statistics (Austria), and the immediate construction of railways (Spain). The United States was represented by Henry White, ambassador to Italy.

Alger (al′jėr), **Russell Alexander.** Born in Lafayette township, Medina Co., Ohio, Feb. 27, 1836: died at Washington, D. C., Jan. 24, 1907. An American politician and general. He served in the Union army during the Civil War and was brevetted major-general of volunteers in June, 1865; was governor of Michigan 1885–87; was a candidate for the presidential nomination at the Republican National Convention of 1888; was secretary of war 1897–August, 1899; and United States senator from Michigan 1902–07.

Alger*, William Rounseville. Died Feb. 7, 1905.

Alikhanof*. Assassinated July 16, 1907.

Alison*, Sir **Archibald.** Died Feb. 5, 1907.

Allain-Targé*, François Henri René. Died at the Château de Targé (Maine-et-Loire), July 16, 1902.

Allan, George. A pseudonym of Frau Kremnitz.

Allbut (âl′but), Sir **Thomas Clifford.** Born July 20, 1836. An English physician, professor of physics in Cambridge University from 1892. He has published "Science and Medieval Thought" (1901), and various works on medical subjects.

Allen*, Charles Grant Blairfindie. Died at Haslemere, Surrey, Oct. 25, 1899.

Allen*, Harrison. Died at Philadelphia, Pa., Nov. 14, 1897.

Allen (al′en), **Henry Tureman.** Born at Sharpsburg, Ky., April 13, 1859. An American soldier, appointed brigadier-general and chief of constabulary in the Philippine Islands in 1903. He was graduated at West Point in 1882; made a tour of exploration in Alaska in 1885; was instructor at West Point 1888–90; was military attaché in Russia and Germany 1890–98; served in the Santiago campaign and in the Philippines; and was governor of Leyte in 1901.

Allen (al′en), **James Lane.** Born near Lexington, Ky., 1849. An American novelist. Since 1886, when he was professor of Latin and higher English at Bethany College, West Virginia, he has given his entire attention to writing. He is the author of "Flute and Violin" (1891), "The Blue Grass Region of Kentucky" (1892), "A Kentucky Cardinal" (1894), "Aftermath" (1896), "A Summer in Arcady" (1896), "The Choir Invisible" (1897), "The Reign of Law" (1900), "The Mettle of the Pasture" (1903), "The Bride of the Mistletoe" (1909), etc.

Allison*, William B. Died at Dubuque, Iowa, Aug. 4, 1908.

Allman*, George James. Died Nov. 24, 1898.

Almanach de Gotha. See *Gotha, Almanach de.*

Alma-Tadema*, Sir **Laurence.** He was knighted in 1899.

Almirante Oquendo (äl-mi-rän′tā ō-ken′dō). A Spanish cruiser which took part in the naval battle off Santiago de Cuba, July 3, 1898. She was sister ship to the Vizcaya (which see). She was engaged by the Iowa, Indiana, and Oregon, took fire, and was run ashore and wrecked about six and a half miles west of the Morro. Her commander, Don Juan Bautista Lazaga, was drowned.

Alt (ält), **Rudolf.** Born at Vienna, Austria, Aug. 28, 1812: died there, March 12, 1905. An Austrian painter, son of Jakob Alt (1789–1872), also a painter of note. His work is confined to oil-paintings and water-colors of brilliant realism. He traveled extensively and found his subjects in every country.

Altamirano*, Ignacio Manuel. Died Feb. 14, 1893.

Altgeld (ält′gelt), **John Peter.** Born in Germany, December, 1847: died at Joliet, Ill., March 12, 1902. An American Democratic politician. He was brought to the United States by his parents when an infant; served in the Union Army; was admitted to the Missouri bar in 1869; was judge of the Superior Court, Chicago, 1886–91; and was governor of Illinois 1893–97. As governor he attracted wide attention by his pardon in June, 1893, of Neebe, Schwab, and Fielden, three anarchists who had been concerned in the Old Haymarket riot at Chicago, May 4, 1886. He was a prominent advocate of the free coinage of silver and was a supporter of W. J. Bryan for the presidency in 1896 and 1900. He published "Our Penal Machinery and its Victims" (1884), "Live Questions" (1890), etc.

Altruria (al-trö′ri-ạ̈). An imaginary commonwealth, the government and institutions of which are founded upon the principles of altruism. W. D. Howells has described such a community in his book "A Traveler from Altruria" (1894). The practical application of the principles resulted in the abolition of monopoly and competition and the establishing of social and economic equality.

Alvary*, Max. Died 1898.

Alverstone, Baron. See *Webster, Richard.*

Amacura (ä-mä-kö′rä). A small river in Venezuela which enters the delta of the Orinoco about fifteen miles west of the mouth of the Barima.

Amador de los Rios, José. See *Rios.*

Amazulu. See *Zulu.*

Ambos Camarines (äm′bōs kä-mä-rē′nās). A province in southeastern Luzon, in the Philippine Islands. It is bounded by the Pacific Ocean on the north; Catanduanes Island (separated by Maqueda Channel), Lagonoy Gulf, and Albay on the east; Albay and Tayabas (separated by mountains) on the south; and Tayabas (partly separated by the Gulf of Ragay) on the west. Capital, Nueva Caceres. The northern coast is deeply indented by San Miguel Bay, a safe harbor in all weather. The province is traversed by mountains, of which several exceed 5,000 feet in height. The volcanoes Iriga and Isarog are in the southern part. Gold, iron, and coal are found. Ambos Camarines is well watered, heavily forested with good timber, and productive of large quantities of rice, especially in Camarines Sur. The chief river, the Bicol, or Naga, is navigable by small steamers as far as Nueva Caceres, 25 miles from its mouth. The native population is chiefly Bicol. Area, 3,279 square miles. Population (1903), 239,405.

Ambrosius, Johanna. See *Voigt.*

Ambuella. Same as *Amboella.*

America. The name given by Lowell Mason to the tune of "God Save the King," after its adaptation for use in connection with the hymn "My Country, 'T is of Thee," written by Samuel F. Smith in 1832. The author of the hymn stated: "I found the tune in a German music-book, put into my hands by Lowell Mason."

America* (yacht). There have been twelve unsuccessful attempts to recover it.

American Museum of Natural History. An institution in New York City, incorporated in 1869 for the purpose of establishing and maintaining a museum and library of natural history, and of encouraging and developing the study of natural science. The collections are contained in a building which, when completed, will inclose four quadrangles and will fully occupy what is now known as Manhattan Square, an area lying west of Central Park and extending from Seventy-seventh to Eighty-first streets. The portion of the structure now (1909) completed has a frontage of 1,072 feet and is the largest municipal building in New York. The museum is supported in part by an annual appropriation from the city, and in part by the income from a permanent endowment, from membership fees, and from gifts for special purposes. The total of running expenses of maintenance for 1908 was approximately $275,000. The affairs of the museum are administered by a board of trustees, the president of which is Henry Fairfield Osborn, who serve without compensation. The exhibits include extensive collections in anthropology, paleontology, geology, mineralogy, conchology, entomology, mammalogy, ornithology, the lower animals, and forestry. The library contains about 50,000 volumes. The museum conducts scientific investigations at home and in the field, publishes memoirs, a bulletin and a journal, and is a center for the meetings of local scientific societies. It also offers free lectures to the public and to school children, and loans small collections to the public schools. More than 1,000,000 people visited the museum in 1908 and 109,225 attended the lectures.

American Protective Association. A secret society organized at Clinton, Iowa, March 13, 1887. Its chief objects were the securing of greater restrictions on immigration and on the naturalization of immigrants, the prevention of State aid to parochial schools, and the exclusion of Roman Catholics from political, and, as far as possible, from industrial affairs. Its chief activity was in the Middle West, but an international organization was effected, the membership of which, in 1896, was said to be about 2,500,000. The decline of the organization was as rapid as its rise. Abbreviated *A. P. A.*

American School of Classical Studies at Athens. A school founded at Athens, Greece, by the Archæological Institute of America, opened in 1882, and supported by individuals and the leading American colleges and universities. Its main purpose is the study of Greek archæology and the most important work it has undertaken is the exploration of ancient Corinth (begun in 1896), and the excavation of the Heraion at Argos.

American School of Classical Studies at Rome. A school founded at Rome in 1895 by the Archæological Institute of America, and supported by individuals and the leading American colleges and universities.

American Volunteers, The (official title, **The Volunteers of America**). A religious organization founded in March, 1896, by Mr. and Mrs. Ballington Booth, who separated from the Salvation Army. It was designed to be essentially American in constitution and method.

Ames*, Adelbert. He was appointed brigadier-general of volunteers in 1898.

Amherst (am′ėrst). A seaport of Nova Scotia, the capital of Cumberland County, situated on an arm of Chignecto Bay. It has manufactures and a considerable trade in lumber and ship-building. Population (1901), 4,963.

Ammen*, Daniel. Died July 11, 1898.

Amosis. See *Aahmes.*

Amundsen (ä′mönd-sen), **Roald.** Born in Borje, Norway, July 16, 1872. A Norwegian polar explorer. Between 1903 and 1907, in the Gjöa, he navigated the whole of the Northwest Passage and relocated the north magnetic pole.

Amurath V*. Sultan of Turkey May to August, 1876. Died Aug. 29, 1904.

Amytis (am′i-tis), or **Amitu** (ä′mi-tö). The Median wife of Nebuchadnezzar, King of Babylon, for whom he built the Hanging Gardens (which see).

Ancient and Honorable Artillery of Massachusetts, The. The first regularly organized military company in America, formed in 1637 and chartered in 1638. Its founders had been members of the Honourable Artillery Company of London, chartered in 1537. Formed to be a school for soldiers, it still exists under its original charter, and upon its rolls in every generation since its birth stand the names of the most distinguished men of the Colony and State.

Andersen (än′der-sen), **Karl.** Born at Copenhagen, Oct. 26, 1828: died there Sept. 1, 1883. A Danish lyric and epic poet. He lived in Iceland 1837–48, when he returned to Denmark—becoming inspector and intendant of Castle Rosenborg in Copenhagen. His works include "Strit og Fred" (1858), "Romanser og Sanger" (1880), "Genrebilleder" (1867–81), etc.

Anderson*, John. Scottish geologist. Died Aug. 16, 1900.

Andover* (Mass.). The Andover Theological Seminary has been removed to Cambridge and is affiliated with Harvard University.

Andral (äṅ-dräl′), **Gabriel.** Born at Paris, Nov. 6, 1797: died at Châteauvieux, Loir-et-Cher, Feb. 13, 1876. A French physician, professor in the University of Paris 1828–66. Among his works are "Clinique médicale" (1823–27), "Précis d'anatomie pathologique" (1829), "Cours de pathologie interne" (1836–37), etc.

Andree (än′drā), **Salomon August.** Born at Grenna, Sweden, Oct. 18, 1854. A Swedish engineer and aëronaut. In 1896 he was prepared to attempt to reach the North Pole in a balloon from Spitzbergen but was prevented by the direction of the wind. On July 11, 1897, with two friends, Strindberg and Fränkel, he made a successful start from Danes Island on the northwestern coast of Spitzbergen. Four days later a carrier-pigeon, with a message giving the position of the balloon as lat. 82° 2′ N., long. 15° 5′ E., on the 13th, was shot on the sealer Alken. Several buoys belonging to the balloon have been found, but no definite knowledge of the fate of the party has been obtained.

Andrews*, Edward Gayer. Died at Brooklyn, N. Y., Dec. 31, 1907.

Andrews (an′dröz), **Elisha Benjamin.** Born at Hinsdale, N. H., Jan. 10, 1844. An American educator and Baptist clergyman, chancellor of the University of Nebraska 1900–1908. He served as a private and officer in the Union Army in the Civil War; was graduated at Brown University in 1870; was president of Denison University (Granville, Ohio) 1875–79; was professor of homiletics in Newton Theological Institution 1879–82; was professor of history and political economy at Brown 1882–88, and of political economy and finance at Cornell 1888–89; and was president of Brown 1889–98. From 1898–1900 he was superintendent of schools in the city of Chicago. He is the author of "A History of the United States in our Own Times" (1904), etc.

Angel in the House, The. A poem by Coventry Patmore. It was published in four parts: "The Betrothal" (published anonymously in 1854), "The Espousals" (1856), "Faithful Forever," a poem of disappointed love (1860), and "The Victories of Love," a poem of bereavement (1862). It is an idyl of the home.

Angell*, James Burrill. He was minister to Turkey 1897–98. In 1909 he resigned the presidency of the University of Michigan.

Anju (än-jö′). A town in Korea, situated near the coast at the head of Korea Bay. It is on the railroad and was of importance during the Russo-Japanese war.

Annenkof*, Michael. Died in 1899.

Annunzio (än-nön′tzi-ō), **Gabriele d'.** Born at Pescara, Italy, in 1864. An Italian poet and novelist. He has written "Primo Vere" (1879), "Canto Nuovo" (1882), "Terra Vergine" (1882), "Intermezzo di rime" (1883), "Il libro delli Vergini" (1884), "L'Isottèo: La Chimera" (1885–88), "San Pantaleone" (1886), "Elegie romane" (1887–91), "Giovanni Episcopo" (1891: translated as "Episcopo and Company," 1896), "Poema paradisiaco: Odi navali" (1891–93), "Il Piacere" (1889), "L'Innocente" (1891), "Trionfo della Morte" (1894: tr. "The Triumph of Death," 1896), "Le Vergini delle Rocce" (1896), "La Citta Morta" (1898), "La Gioconda" (1899), "Il fuoco" (1899), "La Canzone di Garibaldi" (1900), "Francesca da Rimini" (1901), "Li Laudi" (1904), "La fiaccola sotto il moggio" (1905), "Più che l'amore" (1906), "L'Orazione e la Canzone in morte d' Giosuè Carducci" (1907), "La nave" (1908).

Anping (än-ping′). A seaport on the southwestern coast of the island of Formosa, about twenty miles north of Takow.

Antarctica (an-tärk′ti-kä). All that portion of the southern hemisphere which lies between the antarctic circle and the south pole; the Antarctic.

Antarctic Ocean*. The Belgica expedition took place 1897–99. Borchgrevink penetrated (1898–1901) to lat. 78° 50′ S., the farthest point then reached; Capt. R. F. Scott (1902), to 82° 17′ S.; Lieutenant Shackleton (1908–09), to 88° 23′ S. A notable scientific result of this last expedition was the location of the south magnetic pole at lat. 72° 25′ S., long. 154° E. French antarctic expeditions were led by Dr. Charcot in 1905 and 1908. Valuable work was done by the Argentine government in establishing a number of antarctic meteorological stations.

Anthony*, **Susan Brownell.** Died at Rochester, N. Y., March 13, 1906.

Antioch College*. It has been controlled by the Christian Connection.

Antique (än-tē′kä). A province, long, narrow, and mountainous, in the western part of Panay, in the Philippine Islands. Capital, San José de Buenavista. It is bounded by Capiz on the north, Capiz and Iloilo on the east, and the Visayan Sea on the south and west. Mountains separate it from the other provinces of Panay. It has many rivers. The chief products are rice and sugar-cane, and the manufactures cotton cloths and blankets. The native race is Visayan. Area, 1,134 square miles. Population (1903), 134,166.

Antoine (oṅ-twän′), **André.** Born at Limoges, 1858. A French actor, the founder (October, 1887) of the Théâtre Libre and director of the Odéon 1906–. The Théâtre Libre gave its first representation at l'Élysée des Beaux-Arts, Montmartre, Paris. Its purpose was to present to an audience consisting entirely of subscribers, plays of intrinsic merit which could not, for well-founded reasons, be given elsewhere. Its general tone was strongly naturalistic. For a short time in 1896 Antoine was director of the Odéon, and he opened the Théâtre Antoine in 1897.

Antung (än-tung′). A town of Manchuria situated on the Yalu river, near its mouth, below Wiju. It was opened to foreign trade, by agreement between China and the United States, in January, 1904, and after the Russo-Japanese war was reopened by Japan in 1906. The Japanese left approached it on the north during the battle of the Yalu river, May 1, 1904.

Anuyao (än-ö-yä′ō). A mountain in Cagayan province, Luzon, Philippine Islands. Height, 8,123 feet.

Aoki (ä-ō′ki), Viscount **Siuzo.** Born in Choshu, Japan, January, 1844. A Japanese statesman and diplomatist. He studied in Germany and was appointed secretary of the Japanese legation at Berlin in 1873 and minister in 1875, was vice-minister of foreign affairs 1886–89, and was minister of foreign affairs 1889–91 and 1898–1900. In 1906 he was appointed first Japanese ambassador to the United States, retiring in 1907. He is a member of the privy council of the empire.

A. P. A. An abbreviation of *American Protective Association* (which see).

Aparri (ä-pä′rē). A municipality and port of Cagayan province, in the northern part of Luzon, Philippine Islands, at the mouth of the Rio Grande de Cagayan. Civilized population (1903), 18,252.

Appalachian Plateau. A name defined by the United States Geographic Board (1907) as including the entire plateau forming the western member of the Appalachian system, known in the north as the Allegheny plateau and in the south as the Cumberland plateau.

Appalachian System. According to the United States Geographic Board (1907), all the eastern mountains of the United States from Alabama to northern Maine.

Appleton* (Wis.). Lawrence University is now undenominational.

Apponyi*, Count **György.** Died March 1, 1899.

Apthorp (ap′thôrp), **William Foster.** Born at Boston, Mass., Oct. 24, 1848. A writer on and critic of music. He was graduated at Harvard in 1869, studied under J. K. Paine and later under B. J. Lang. He has taught harmony, the piano, and counterpoint, and was musical critic of the Boston "Transcript" 1870–1901. He has published "Hector Berlioz" (1879), "Musicians and Music Lovers" (1894), "By the Way" (1898), and "The Opera Past and Present" (1901).

Arabi Pasha*. He was exiled to Ceylon in 1882 and was pardoned in 1901.

Arany*, **László.** Died at Budapest, Aug. 1, 1898.

Arcadelt (är′kạ-delt), **Jacob.** Born in the Netherlands about 1514: died at Paris about 1560. A Dutch composer, long active in Rome in the papal choir and afterward in Paris. His finest compositions were madrigals: he also wrote many masses and motets. Also *Archadelt, Archadet, Arcadet, Harcadelt.*

Archæological Institute of America. A society for the promotion of archæological research, founded in Boston in 1879. It has since established affiliated societies in different cities. The Institute founded the American School of Classical Studies at Athens (opened 1882), the American School of Classical Studies in Rome (1895), and the American School for Oriental Study and Research in Palestine (1900). Its official organ is the "American Journal of Archæology." It also issues reports and special publications relating to archæology.

Archer (är′chėr), **William.** Born at Perth, Scotland, Sept. 23, 1856. An English author and dramatic critic. He studied at the University of Edinburgh; was dramatic critic of the London "Figaro" 1879–81; and held a similar position on the staff of the London "World" 1884–1905, and afterward on the "Tribune." He is the author of "English Dramatists of To-day" (1882), "Henry Irving" (1883), "About the Theatre" (1886), "Masks or Faces? A Study in the Psychology of Acting" (1888), a biography of W. C. Macready (1890), "Study and Stage" (1899), "America To-day" (1900), "Real Conversations" (1904), etc. He has also translated Henrik Ibsen's prose dramas (1890–91), etc.

Arctic Explorers*. See also *Abruzzi, Amundsen, Andrée, Baldwin, Cook, Fiala, Lockwood, Wellman.*

Arctic Highlands. A region on the western coast of Greenland, north of Melville Bay and Cape York: so named by Captain Ross, its discoverer (1818). Its inhabitants, a small number of pure Eskimos, are called 'Arctic Highlanders.'

Arditi*, **Luigi.** Died May 1, 1903.

Arecibo. 2. A department in the northern part of Porto Rico. It is bounded by the Atlantic Ocean on the north; San Juan on the east; Ponce (partly separated by mountains) on the southeast; Ponce on the south and southwest; and Aguadilla on the west. Capital, Arecibo. Area, 621 square miles. Population (1899), 162,308.

Arène (ä-rān′), **Paul Auguste.** Born at Sisteron, France, June 26, 1843: died at Antibes, France, Dec. 18, 1896. A French journalist, dramatist, novelist, and Provençal poet, a member of Les Félibres. He wrote "Pierrot héritier," a one-act comedy in verse (1865), "Jean des Figues," a novel (1870), "Les comédiens errants" (1873: with Vernier), "Char" (1878: with Alphonse Daudet), "La vraie tentation de Saint Antoine" (1879), "Au bon soleil," Provençal tales (1879), "Paris ingénu" (1882), "Vingt jours en Tunisie" (1884), "La chèvre d'or" (1889), etc.

Argao (är-gä′ō). A municipality in the eastern part of Cebu province, Cebu, Philippine Islands. Civilized population (1903), 35,448.

Argentine Republic*. Its legislature contains 30 senators and 120 deputies.

Arisaka (ä-rē-sä′kä), Lieutenant-general. Born in Choshu in February, 1852. A Japanese soldier, inventor (1901) of a quick-firing mountain gun used in the Japanese army. He was created a baron in 1907.

Arizona*. It has 13 counties.

Arkansas*. The State sends 7 representatives to Congress and has 9 electoral votes.

Armour (är′mör), **Philip Danforth.** Born at Stockbridge, N. Y., May 16, 1832: died at Chicago, Ill., Jan. 6, 1901. An American capitalist. His fortune was largely made in the commission business (pork, grain, etc.) in Chicago and elsewhere. He founded in Chicago the Armour Institute of Technology (opened Sept., 1893).

Armstrong (ärm′strông), **David Maitland.** Born at Newburg, N. Y., April 15, 1836. An American artist. He studied art in Paris (where he was a pupil of Merson) and in Rome. For four years he was consul-general of the United States in Italy, and was appointed director of the department of American art at the exposition of 1878 in Paris. He has devoted himself mainly to mural painting and stained glass. He is a chevalier of the Legion of Honor.

Armstrong*, **William George.** Died Dec. 27, 1900.

Armstrong Legislative Committee. A joint committee of the New York Legislature, appointed July 20, 1905, to investigate the condition and the methods of the various life-insurance companies of the State and to recommend suitable legislation in the interests of the policy-holders. Of its eight members, three, including the chairman, W. W. Armstrong, were appointed from the Senate and five from the Assembly. Charles E. Hughes was chosen by the committee as its chief counsel. The sessions for receiving testimony opened Sept. 6, 1905, in the Aldermanic Chamber, New York, and closed Dec. 30, 1905. Many facts in regard to the mismanagement of the insurance companies of New York were brought to light, and important legislation resulted (1906) from the investigation.

Arnaboldi (är-nä-bōl′di), **Alessandro.** Born at Milan, Nov. 19, 1827. An Italian lyric poet. He studied law in Pavia, and for eighteen years held a municipal appointment in Milan, but resigned in 1873 to devote himself to literature. His first volume, "Versi," appeared in 1872. He also published "Nuovi Versi" in 1888.

Arneth*, **Alfred von.** Died at Vienna, July 30, 1897.

Arnold*, Sir **Arthur.** Died at London, May 20, 1902. He was knighted in 1895.

Arnold*, Sir **Edwin.** Died March 24, 1904.

Arnold*, **Thomas.** Born 1823: died 1900.

Arnold-Forster (är′nọld-fôr′stėr), **Hugh Oakeley.** Born 1855: died at London, Mar. 12, 1909. A British Liberal-Unionist statesman, son of William Delafield Arnold and adopted son of William Edward Forster (his uncle). He was educated at Rugby and at University College, Oxford, and was called to the bar of Lincoln's Inn in 1879. He was a member of the House of Commons for Belfast, West, 1892–1905, and for Croydon from 1906; was parliamentary secretary to the admiralty 1900–03; and was secretary of state for war 1903–Dec., 1906. He published "How to solve the Irish Land Question" (1889), "In a Conning Tower" (1891), "Our Home Army" (letters in the "Times," 1891–92), "Army Letters" (1898), "Our Great City" (1900), "War Office, Army, and Empire" (1900); "English Socialism of To-day" (1908); etc.

Arrhenius (ăr-rā′ni-ös), **Svante August.** Born at Wyk, near Upsala, Sweden, Feb. 19, 1859. A Swedish chemist, professor of physics at Stockholm from 1891, and director of physical chemistry at the Nobel Institute in Stockholm since 1905: especially noted for his researches in physical chemistry. His most important contribution to science is his theory of electrolytic dissociation. He has published a text-book of electrochemistry (1890), "Lehrbuch der cosmischen Physik" (1903), "Theorie der Chemie" (1906), "The Life of the Universe" (1909), etc.

Artesia (är-tē′ṣiạ̈). 1. A village in Los Angeles Co., California.—2. A post-town in Lowndes Co., Mississippi.—3. A town in Eddy Co., New Mexico.

Arthur (är′thụr), **Timothy Shay.** Born near Newburg, N. Y., 1809: died at Philadelphia, March 6, 1885. A writer of moral tales. He published some fifty stories, of which the best known is "Ten Nights in a Bar-room." In 1852 he founded "Arthur's Home Magazine."

Asakawa (ä-sä-kä′wä), **Kan-Ichi.** Born in Japan, Dec. 20, 1873. A Japanese scholar, appointed instructor in the history of Japanese civilization in Yale University from 1907. He was graduated at Waseda University, Tokio, and at Dartmouth College in 1899, where he was lecturer on East-Asian history 1902–06. He has published "The Early Institutional Life of Japan" (1903), "The Russo-Japanese Conflict" (1904), "Japan" (1906), etc.

Ascoli*, **Graziadio Isaia.** Born at Gorizia, July 16, 1829: died at Milan, Jan. 21, 1907.

Ashanti*. It became a British protectorate in 1896 and was annexed in 1901.

Ashikaga (ä-shi-kä′gä). A city of Japan, situated about sixty-five miles northwest of Tokio. Population, upward of 22,000.

Ashmead-Bartlett (ash′mēd-bärt′let), Sir **Ellis.** Born at Brooklyn, N. Y., 1849: died at London, Jan. 18, 1902. An English Conservative politician of American parentage. He was educated at Torquay and Christ Church, Oxford; was called to the bar of the Inner Temple in 1877; was a member of Parliament for Eye, Suffolk, 1880–85 and for Ecclesall, Sheffield, 1885–1902; and was civil lord of the admiralty 1885–92. Knighted in 1892. He was a strong imperialist and served in the South African war in 1900. He published "The Battlefields of Thessaly" (1897).

Aso (ä′sō), **Mount.** A living volcano in the island of Kiusiu, Japan.

Aspasia (as-pā′shiạ̈) the Younger. Milto, the daughter of Hermotimus, a native of Phocæa in Asia Minor. On account of her beauty a satrap of Persia carried her off and presented her to Cyrus the Younger. He changed her name to Aspasia (after the mistress of Pericles) and lived with her as her husband. After his death she fell into the hands of Artaxerxes, from whom she was claimed by Darius when he was declared heir to the Persian throne by his father. Artaxerxes gave her up (in accordance with the Persian custom), but shortly afterward made her a priestess of Artemis (Anaitis) at Ecbatana, or, according to Justin, a priestess of the sun.

Asquith (as′kwith), **Herbert Henry.** Born at Morley, Yorkshire, Sept. 12, 1852. An English statesman. He was educated at Balliol College, Oxford, and was called to the bar in 1876. Since 1886 he has been Liberal member of Parliament for East Fife. He was secretary of state for the home department 1892–95; ecclesiastical commissioner 1892–95; chancellor of the exchequer December, 1905, to 1908; and premier and first lord of the treasury 1908–.

Assiniboia*. On the establishment in 1905 of the provinces of Alberta and Saskatchewan, the larger part of Assiniboia was incorporated in these provinces.

Assuan Dam. A dam constructed across the Nile at Assuan, by Sir Benjamin Baker, for purposes of irrigation, completed in 1902. It is 1¼ miles long and its maximum height from the foundation was about 130 feet. In 1907 it was decided to increase its height six meters.

Astié*, **Jean Frédéric.** Died at Lausanne, May 20, 1894.

Astley (ast′li), Sir **John Dugdale.** Born at Rome, Feb. 19, 1828: died at London, Oct. 10,

1894. A noted English patron of sport. He entered the army, served in the Crimea 1854–55, and retired in 1859 with the rank of lieutenant-colonel. He succeeded to the baronetcy in 1873 and was Conservative member of Parliament for North Lincolnshire 1874–80. For many years he was a patron of the turf. He wrote "Fifty Years of my Life in the World of Sport at Home and Abroad" (1894).

Astor Library*. In 1895 it was combined with the Lenox Library and the (proposed) Tilden Library as the New York Public Library (which see).

Astrup (äs'tröp), **Eivind.** Born at Christiania, Norway, Sept. 17, 1871: died on the Dovrefjeld, Norway, December, 1895. A Norwegian arctic explorer, a companion of Peary in his explorations of Greenland 1891–92 and 1893–95.

Athabasca*. In 1905 it was divided between the new provinces of Alberta and Saskatchewan.

Atherton (ath'ėr-tọn), Mrs. (**Gertrude Franklin**). Born at San Francisco. A contemporary American author, grandniece of Benjamin Franklin. She has published "The Doomswoman" (1892), "A Whirl Asunder" (1895), "Patience Sparhawk and Her Times" (1897), "His Fortunate Grace" (1897), "American Wives and English Husbands" (1898), "The Californians" (1898), "A Daughter of the Vine" (1899), "The Valiant Runaways" (1899), "Senator North" (1900), "The Aristocrats" (1901), "The Conqueror" (1902), "The Splendid Idle Forties" (1902), "Rulers of Kings" (1904), "The Bell in the Fog" (1905), "The Travelling Thirds" (1905), "Ancestors" (1907), etc.

Atkinson*, **Edward.** Died at Boston, Mass., Dec. 11, 1905.

Atreus, Treasury of. See *Treasury of Atreus.*

Atsuta (ät-sö'tä). A town in Japan a short distance southeast of Nagoya. Population, upward of 25,000.

Atwater (at'wâ-tėr), **Wilbur Olin.** Born at Johnsburg, N. Y., May 3, 1844: died at Middletown, Conn., Sept. 22, 1907. An American physiological chemist, professor in Wesleyan University, Middletown, Connecticut, from 1873. He was the first director of the Connecticut Agricultural Experiment Station (the first to be established in the United States) 1875–77; was organizer and first director of the office of experiment stations in the United States Department of Agriculture 1888–91; was director of the Storrs Agricultural Experiment Station 1888–1902; and from 1894 had charge of the experiments upon nutrition established by the Department of Agriculture. With Rosa he was the inventor of the respiration calorimeter, used to demonstrate experimentally that the law of the conservation of energy holds true of the vital processes of the human body, and for various other physiological inquiries.

Atwood (at'wůd), **Charles B.** Born at Millbury, Mass., May 18, 1849: died at Chicago, Dec. 19, 1895. An American architect. He was educated at the Lawrence Scientific School of Harvard University and in the office of Ware and Van Brunt in Boston. He is especially known as the designer-in-chief of the Columbian Exposition at Chicago in 1893, where he created the Fine Arts Building and the Peristyle.

Aubertin*, **Charles.** Died in 1908.

Audiffret-Pasquier*, **Duc d'** (**Edme Armand Gaston**). Died June 4, 1905.

Auditorium (â-di-tō'ri-um). A large building in Chicago, combining a hotel and a theater. It is situated at the corner of Michigan Avenue and Congress street, and has a front of 360 feet on the latter street. It was erected 1887–89.

Augur*, **Christopher Colon.** Died at Washington, D. C., Jan. 16, 1898.

Augustin (äö-gös'tēn). A contemporary Spanish colonial governor. He was captain-general of the Philippines at the time of the Spanish-American War and, shortly before the surrender of Manila to the United States, August 13, 1898, turned over his command to General Jaudenes and escaped with his family on board the German ship "Kaiserin Augusta."

Aumale*, **Duc d'** (**Henri Eugène Philippe Louis d'Orléans**). Died at Zucco, Sicily, May 7, 1897.

Aus der Ohe (ous dãr ō'e), **Adèle.** Born at Hanover, Germany. A contemporary German pianist and composer, a pupil of Liszt and Kullak. She has played frequently in the United States since her first visit in 1886. Her compositions include several pieces for the piano and a sonata for piano and violin.

Austin*, **Alfred.** He was appointed poet laureate in December, 1895.

Australasian Federation*. After several years of discussion, the new Australian commonwealth was inaugurated on Jan. 1, 1901.

Australia*. It is now, with Tasmania, united under a federal government inaugurated Jan. 1, 1901. The six former colonies of New South Wales, Victoria, Queensland, South Australia, Western Australia, and Tasmania are denominated the 'original states.' Legislative power is vested in a federal parliament, consisting of a governor-general (representing the king), a senate, and a house of representatives. There is an executive council of seven ministers of state. The official title is the Commonwealth of Australia.

Austria*, **Lower.** It has 64 representatives in the Austrian Reichsrat and a Landtag of 127 members.

Austria*, **Upper.** It has 22 representatives in the Austrian Reichsrat and a Landtag of 50 members.

Avebury, Baron. See *Lubbock, Sir John.*

Averell*, **William Woods.** Died at Bath, N. Y., Feb. 3, 1900.

Avery (ā'vẹr-i), **Samuel Putnam.** Born at New York, March 17, 1822: died there August 12, 1904. An American connoisseur and collector. He began life as an engraver in New York City, and in 1865 entered business as a picture dealer. In this capacity he assisted in the formation of many fine collections. In 1867 he was appointed commissioner in charge of the American art department at the Universal Exposition in Paris. In 1892 he and his wife founded, in memory of their son, the Henry O. Avery Architectural Library at Columbia University. During his life he was instrumental in bringing to America a large number of the finest works of art in every department.

Awata (ä-wä'tä). A village near Kioto, Japan, noted for its pottery, a yellow faïence, first made in the seventh century.

Ayrton*, **William Edward.** Died at London, England, Nov. 8, 1908.

Bacarra (bä-kär'ä). A town of Ilocos Norte province, in the northwestern part of Luzon, Philippine Islands. Population (1903), 7,669: municipality, 14,616.

Bach*, Baron **Alexander von.** Died Nov. 13, 1893.

Bacheller (bach'el-ėr), **Irving Addison.** Born at Pierrepont, N. Y., Sept. 26, 1859. An American journalist and author. For a number of years he was on the staff of the Brooklyn "Times" and on that of the New York "World." He is the author of "The Master of Silence" (1890), "The Still House of O'Darrow" (1894), "Eben Holden" (1900), "D'ri and I" (1901), "Darrel of the Blessed Isles" (1903), "Vergilius" (1904), "Silas Strong, Emperor of the Woods" (1906), "The Hand-Made Gentleman" (1909), etc.

Bacher (bäćh'ėr), **Otto H.** Born at Cleveland, O., March 31, 1856: died at Bronxville, N. Y., Aug. 16, 1909. An American painter, etcher, and illustrator. He was a pupil of Duveneck, in Munich, and of Lefebvre, Boulanger, and Carolus Duran in Paris. He was especially successful in etching landscapes and architectural subjects. He wrote "With Whistler in Venice" (1908).

Backlund (bäk'lönd), **Johann Oskar.** Born in Sweden, April 28, 1846. A Swedish astronomer. He was appointed observer at the observatory at Dorpat, Russia, in 1876, adjunct astronomer at Pulkowa in 1878, astronomer of the Academy of Sciences at St. Petersburg in 1887, and director of the observatory at Pulkowa in 1895.

Bacolod (bä-kō-lōd'). A town, the capital of Negros Occidental province, in the northwestern part of Negros, Philippine Islands, situated in lat. 10° 41′ N., long. 122° 56′ E. Population (1903), 5,678.

Bacoor (bä-kō-ōr'). A municipality of Cavité, southern Luzon, Philippine Islands. A military road follows the coast from Bacoor to Manila. Civilized population (1903), 10,925.

Baddeck (ba-dek'). A fishing village and summer resort on Cape Breton Island, Nova Scotia, situated on the Little Bras d'Or. It is the capital of Victoria County. Population, about 1,700.

Baden-Powell*, Sir **George Smyth.** Died in 1898.

Baden-Powell (bă'dẹn-pou'l), Sir **Robert Stephenson Smyth.** Born Feb. 22, 1857. A British major-general, inspector-general of cavalry from 1903, especially noted for his defense of Mafeking in 1900, during the Boer War. He served in India, Afghanistan, and South Africa 1876–89; in Zululand in 1888; in Malta 1890–93; in Ashanti 1895; in Matabeleland 1896–97; and in South Africa, as lieutenant-colonel, 1897–99. With a force of 1200 men he was besieged in Mafeking for 215 days, being relieved on May 18, 1900. From 1900–03 he was general of South African constabulary. He retired in 1904. Among his publications are "Cavalry Instruction" (1895), "The Matabele Campaign" (1896), "Sport in War" (1900), etc.

Badger State. A popular name of the State of Wisconsin.

Baguio (bä-gē-ō'). A town, the capital of Benguet province, in the western part of Luzon, Philippine Islands, in lat. 16° 32′ N., long. 120° 38′ 50″ E. Civilized population of municipality (1903), 489.

Bahrein*, or **Aval, Islands.** They are under British protection.

Bailey (bā'li), **Liberty Hyde.** Born at South Haven, Mich., March 15, 1858. An American botanist, horticulturist, and educator, director of the N. Y. State College of Agriculture in Cornell University from 1903. He was professor of horticulture and landscape-gardening in Michigan Agricultural College (of which he is a graduate) 1884–88, and professor of horticulture in Cornell University 1888–1903. Among his works are "The Survival of the Unlike" (1896), "Evolution of Our Native Fruits" (1898), "The Principles of Fruitgrowing" (1897), "Cyclopedia of American Horticulture" (1900–02), "The Nature-Study Idea" (1903), "Outlook to Nature" (1905), "Cyclopedia of American Agriculture" (1907–09), text-books of botany and agriculture, and handbooks of horticultural practice.

Bailey*, **Philip James.** Died at Nottingham, England, Sept. 6, 1902.

Bain*, **Alexander.** Died at Aberdeen, Scotland, Sept. 18, 1903. He was lord rector of the University of Aberdeen 1881-87.

Baird*, **Absalom.** Died at Relay, Md., June 14, 1905.

Baird*, **Charles Washington.** Died in 1887.

Baird*, **Henry Martyn.** Professor of Greek in the New York University 1859–1902. Died at Yonkers, N. Y., Nov. 11, 1906.

Baker, Sir **Benjamin.** Born 1840: died at Pangbourne, Berkshire, May 19, 1907. An eminent English engineer. His most important works are the Forth Bridge and the dam across the Nile at Assuan.

Baker*, Mrs. (**Harriette Newall Woods**). Died in 1893.

Baker (bā'kėr), **Marcus.** Born at Kalamazoo, Mich., Sept. 23, 1849: died at Washington, Dec. 12, 1903. An American cartographer, connected with the United States Coast and Geodetic Survey 1873–86, and with the United States Geological Survey 1886–1903.

Baker (bā'kėr), **Ray Stannard.** Born at Lansing, Mich., April 17, 1870. An American magazine writer. He is the author of "Boys' Book of Inventions" (1899), "Second Boys' Book of Inventions" (1903), "Our New Prosperity" (1900), "Seen in Germany" (1901), "Following the Color Line" (1908), "New Ideals in Healing" (1909), and has written many short stories and articles on industrial and political topics.

Balabac (bä-lä'bäk). A hilly island south of Palawan (Paragua), and belonging to Paragua province in the Philippines. It has several good harbors. Area, 122 square miles. Population (1903), 455; only 18 were civilized.

Balaguer*, **Vittorio.** Died at Madrid, 1901.

Balakiref (bä-lä-kē'ref), **Mily Alexejevitch.** Born at Nijni-Novgorod, Jan. 2, 1837. A Russian composer, one of the founders of the new school of Russian music. In 1862 he established the Free School of Music in St. Petersburg, where works of the young Russian composers were given. In 1869 he was appointed director of the Imperial Chapel and conductor of the Imperial Musical Society, but retired in 1872. He has composed symphonic poems, overtures, a symphony, songs (including collections of folk-songs), and piano pieces.

Baldwin (bâl'dwin), **Evelyn Briggs.** Born at Springfield, Mo., July 22, 1862. An American meteorologist and arctic explorer. He accompanied Peary to North Greenland as meteorologist 1893–94, and was a member (second in command) of the Wellman expedition to Franz Joseph Land 1898–99. In 1901–02 he organized and led the Baldwin-Ziegler polar expedition, and established a chain of stations, embracing portable houses and a cargo of equipment, through the

Franz Joseph Land archipelago in contemplation of a sledge journey thence to the north pole during the proposed second year's work of the expedition. He also formed three stations of safety on Shannon Island, on the northeast coast of Greenland, in accordance with his plan to effect the return journey along that unexplored territory. These safety stations embrace three houses filled with an additional cargo of equipment. In addition to an exceptionally large pack of dogs, fifteen Siberian horses were used with marked success for drawing the sledges upon the sea-ice.

Baldwin (bâl′dwin), **James Mark.** Born at Columbia, S. C., Jan. 12, 1861. An American psychologist, professor of philosophy and psychology at Johns Hopkins University, Baltimore, from 1903. He was a professor of philosophy at Lake Forest University, Illinois, 1887–90, and at Toronto University, Canada, 1890–93, and of psychology at Princeton University, 1893–1903. He has written "Handbook of Psychology" (1889–1890), "Elements of Psychology" (1893), "Mental Development in the Child and the Race" (1896), "Social and Ethical Interpretations" (1897), "Story of the Mind" (1898), "Fragments in Philosophy and Science" (1902), "Development and Evolution" (1902), and "Thoughts and Things" (1906–08), and edited the "Dictionary of Philosophy and Psychology" (1901–06). He founded the "Psychological Review" in 1894 and still edits it.

Balfour*, **Arthur James.** He was first lord of the treasury and leader of the House of Commons 1895–1906, and prime minister 1902–05. He was member of Parliament for the Eastern Division of Manchester 1885–1906, and for the City of London 1906–. He also wrote "Essays and Addresses" (1893, 1905), "The Foundations of Belief" (1895), "Economic Notes on Insular Free Trade" (1903), "Reflections Suggested by the New Theory of Matter" (1904), etc.

Balfour (bal′fôr or bal′fėr), **Gerald William.** Born April 9, 1853. A British Conservative politician, brother of Arthur James Balfour. He was educated at Eton and at Trinity College, Cambridge. He was member for Central Leeds 1885–1906; was secretary to his brother, A. J. Balfour, when the latter was president of the Local Government Board 1885–86; was chief secretary for Ireland 1895–1900; was president of the Board of Trade 1900–05; and was president of the Local Government Board in 1905.

Baliuag (bä-lē′ō-äg). A municipality of Bulacan province, in the southern part of Luzon, Philippine Islands. Civilized population (1903), 15,936.

Ball*, Sir **Robert Stawell.** He was astronomer royal of Ireland 1874–92, and professor of astronomy and geometry and director of the observatory at Cambridge 1892–. He has written a number of works on scientific subjects.

Ballinger (bal′in-jėr), **Richard Achilles.** Born at Boonesboro, Iowa, July 9, 1858. An American lawyer, appointed secretary of the interior, March 5, 1909. He was mayor of Seattle 1904–06, and commissioner of the General Land Office 1907–09.

Baltimore*. A large part of the wholesale business and financial section of the city (over 2,000 buildings) was destroyed by fire February 7–8, 1904.

Bamberger*, **Ludwig.** Died at Berlin, March 14, 1899.

Banajao (bä-nä′yä-ō). An extinct volcano of La Laguna province, in the southern part of Luzon, Philippine Islands, approximately in lat. 14° 2′ N., long. 121° 27′ E. Height, 7,382 feet. Also *Majaijai.*

Banff (banf). A post-village of Alberta, Canada, situated on the Canadian Pacific Railway. It is a pleasure resort and the railway station for the Banff National Park. It has hot sulphur springs. Elevation, 4,500 feet above the sea.

Bangs (bangz), **John Kendrick.** Born at Yonkers, N. Y., May 27, 1862. An American author, editor, and humorist. He was graduated at Columbia in 1883; was associate editor of New York "Life" 1884–88; and was editor of the "Drawer" 1888–99, and of "Literary Notes" 1898–99, in "Harper's Magazine"; of "Literature" 1898–99; of "Harper's Weekly" 1898–1900; of the "Metropolitan Magazine" 1902–03; and of "Puck" 1904–05. He has published numerous humorous stories and articles.

Bangued (bän-gād′). A town, the capital of Abra province, northwestern Luzon, Philippine Islands, situated in lat. 17° 37′ N., long. 120° 39′ E. Civilized population of municipality (1903), 12,956.

Banks*, Mrs. **George Linnæus** (**Varley**). Died at Dalston, England, May 5, 1897.

Bantayan (bän-tä-yän′). 1. One of the Visayan group of islands in the Philippines, northwest of Cebu. Its fisheries are of some importance. Area, 47 square miles. Population (1903), 18,325.—2. A port in the southwestern part of Bantayan Island, province of Cebu. Population (1903), 5,242.

Banville*, **Théodore Faullain de.** Died at Paris, March 13, 1891.

Bara*, **Jules.** Died June 26, 1900.

Barbara Frietchie (bär′ba̤-rä̤ frē′chi). A war ballad by John Greenleaf Whittier, first published in the "Atlantic Monthly" for October, 1863. The incident told (the waving of the Union flag in the faces of Confederate troops) was based on a report of the patriotic act of a woman at Frederick, Maryland, when it was occupied by the Confederates under General Thomas J. Jackson.

Barber (bär′bėr), **Edwin Atlee.** Born at Baltimore, Md., Aug. 13, 1851. An American ceramist, archæologist, and writer, director of the Pennsylvania Museum and School of Industrial Art at Philadelphia. Among his publications are "Pottery and Porcelain of the United States" (1893), "Anglo-American Pottery" (1899), "American Glassware" (1900), "Tulip Ware of the Pennsylvania-German Potters" (1903), "Marks of American Potters" (1904), "Artificial Soft Paste Porcelain" (1907), "Salt Glazed Stoneware" (1907), "Tin Enamelled Pottery" (1907), "Lead Glazed Pottery" (1908), etc.

Barbier*, **Paul Jules.** Died at Paris, Jan. 16, 1901.

Barchester (bär′ches-tėr) **Towers.** A novel by Anthony Trollope, published in 1857.

Baret, or **Barret** (bar′et), **John.** Died about 1580. An English lexicographer. He received the degree of M. A. from Trinity College, Cambridge, in 1558 and the degree of M. D. at Cambridge in 1577. In 1574 he published "An Alvearie, or Triple Dictionarie in English, Latin, and French."

Bargiel*, **Woldemar.** Died at Berlin, Feb. 23, 1897.

Bar Harbor (bär här′bo̤r). A noted summer-resort in the island of Mount Desert, Maine. Population (1900), about 2,000.

Baring*, **Evelyn.** He was British agent and consul-general in Egypt 1883–1907. Created Baron Cromer 1892, Viscount 1899, Earl 1901.

Baring-Gould*, **Sabine.** Died at Port Elizabeth, South Africa, June 4, 1906.

Barker (bär′kėr), **Albert Smith.** Born at Hanson, Mass., 1843. An American naval officer, commissioned rear-admiral in 1899. He was graduated from the United States Naval Academy in 1861; served in the Union navy during the Civil War (New Orleans, Port Hudson); ran a line of deep-sea soundings around the world while in command of the Enterprise 1883–86; was a member of the board of strategy at the opening of the war with Spain; commanded the Newark and later the Oregon; and relieved Admiral Dewey at Manila in May, 1899. From 1900–03 he was commandant of the New York Navy Yard, and was commander-in-chief of the North Atlantic fleet 1903–05. He retired in 1905.

Barker*, **George Frederic.** He was professor of chemistry and physics in the University of Pennsylvania 1872–1900 (emeritus).

Barker (bär′kėr), **Wharton.** Born at Philadelphia, May 1, 1846. An American politician and financier. He was graduated at the University of Pennsylvania in 1866, and has been identified with many important commercial and financial enterprises, including Russian canals and railways. In 1895 he visited China, on the invitation of Li Hung Chang. He received the cross of St. Stanislaus from Alexander II. of Russia, in 1879. He was a prominent Republican until 1896, when he joined the Populist party. As presidential nominee of the anti-fusion Populists in 1900 he polled a popular vote of 50,373 against the 7,207,923 votes cast for President McKinley.

Barlow*, **Francis Channing.** Died Jan. 11, 1896.

Barlow (bär′lō), **Jane.** Born at Clontarf, Ireland, Oct. 17, 1860. An Irish novelist and poet. Among her works are "Bogland Studies" (1892), "Irish Idylls" (1892), "Kerrigan's Quality" (1893), "The End of Elfintown" (1894), "Strangers at Lisconnel" (1895), "A Creel of Irish Stories" (1897), "At the Back of Beyond" (1902), "By Beach and Bog Land" (1905), "Irish Neighbors" (1907), etc.

Barnard (bär′närd), **Charles.** Born at Boston, Mass., Feb. 13, 1838. An American writer. Among his works are "First Steps in Electricity" (1887), "Tools and Machines" (1903), "The Door in the Book" (1903), and "The County Fair," and other plays.

Barnard (bär′närd), **George Grey.** Born at Bellefonte, Pa., May 24, 1863. An American sculptor. He was educated at the Art Institute, Chicago, and at the École des Beaux Arts, Paris (1884–87). He was awarded gold medals at the Exposition Universelle, Paris, 1900, the Pan-American Exposition, Buffalo, 1901, and the Louisiana Purchase Exposition, St. Louis, 1904. His marble statue of the "Two Natures" is in the Metropolitan Museum, and his "God Pan" in Central Park, New York City. He has developed a powerful emotional style.

Barnard College. A college for the higher education of women, founded in New York City in 1889. It was incorporated in Columbia University in 1900. It has about 580 students.

Barnardo (bär-när′dō), **Thomas John.** Born in Ireland, 1845: died at Surbiton, England, Sept. 19, 1905. A British philanthropist, noted for his labors in rescuing and training destitute children. He began his work in London about 1866; established a home for orphaned children in 1867; founded a village for girls at Ilford in 1873, and a hospital for sick waifs in 1887; and formed the "Young Helpers' League" in 1891. The institutions which he founded have rescued and trained upward of 66,800 waifs, about 20,500 of whom have established themselves in Canada and the colonies.

Barnato (bär-nä′tō), **Barnett Isaacs.** Born in London, July 5 (?), 1852: died June 14, 1897. An English speculator and capitalist. He was the son of poor Jewish parents, and, according to report, supported himself as peddler, billiard-marker, etc. In 1872 or 1873 he left London for South Africa, where he made a large fortune in the Kimberley diamond-mines and the gold-mines around Johannesburg. In 1888 his diamond-mining interests were joined with those of Cecil Rhodes. In the same year he was returned to the Legislative Assembly at the Cape as member for Kimberley, and was reelected in 1894. In 1895 he returned to London, and was the center of the speculation in South African mining stocks known as the "Kafir Circus"; he was popularly known as the "Kafir King." The failure of the so-called "Barnato Banking Company" in October, 1895, subsequent losses, and great mental strain are supposed to have affected his reason. He committed suicide by jumping into the sea from the steamship Scot near Funchal.

Barnby*, Sir **Joseph.** Died at London, Jan. 28, 1896. He was knighted in 1892.

Barotseland (ba-rot′se-land). A region in Rhodesia, north of the Zambesi river; Northwestern Rhodesia. It is administered by the British South Africa Company. Area, est., 182,000 sq. miles; pop., over 350,500.

Barr (bär), **Robert**: pseudonym **Luke Sharp.** Born at Glasgow, Scotland, Sept. 16, 1850. An English novelist and editor. He was educated in Toronto, Canada; taught in Canada until 1876; joined the editorial staff of the Detroit (U. S.) "Free Press" in that year; established the weekly English edition of the "Free Press" in London in 1881; and in 1892 founded, with Jerome K. Jerome, the "Idler" magazine, of which he was co-editor until 1895. Among his works are "From Whose Bourne" (1893), "In a Steamer Chair" (1892), "The Face and the Mask" (1895), "In the Midst of Alarms" (1894, 1900), "The Strong Arm" (1900), "The Countess Tekla" (1899), "The Unchanging East" (1900), "Over the Border" (1903), "The O'Ruddy" (1904: with Stephen Crane), "The Woman Wins" (1904), "A Chicago Princess" (1904), "Speculations of John Steele" (1905), "The Triumph of Eugene Valmont" (1906), "A Rock in the Baltic" (1907), "Cardillac" (1909), etc.

Barrès (bä-rās′), **Maurice.** Born at Charmes-sur-Moselle, France, Aug. 17, 1862. A French politician, journalist, and author. He was a Boulangist deputy 1889–93. Among his works are "Sous l'œil des barbares" (1888), "Un homme libre" (1889), "Le jardin de Bérénice" (1890), "L'ennemi des lois" (1893), "Les déracinés" (1897), "Le voyage de Sparte" (1906), etc. He was elected to the French Academy in 1906.

Barrett*, **Wilson.** Died at London, July 22, 1904.

Barrias*, **Félix Joseph.** Died at Paris in January, 1907.

Barrias (bä-ri-äs′), **Louis Erneste.** Born at Paris, April 3, 1841: died there Feb. 4, 1905. A French sculptor. He was a pupil of Cavelier, Cogniet, and Jouffroy, and of the École des Beaux-Arts. He was awarded the grand prix de Rome in 1865, the première médaille at the Salon of 1872, and the médaille d'honneur in 1878. In 1884 he was elected a member of the Institut. He produced a large number of fine decorative and independent works. Among the more important may be mentioned the "Oath of Spartacus" (1872), "Religion and Charity" (1873), and the "Defense of Paris" at Courbevoie.

Barrie (bar′i). A town of Ontario, Canada, the capital of Simcoe County, situated on the western shore of Lake Simcoe. Population (1901), 5,949.

Barrie*, **James Matthew.** Among his later works are "Sentimental Tommy" (1896), "Margaret Ogilvy" (1896), "Tommy and Grizel" (1900), "The Little White Bird" (1902), "Peter Pan in Kensington Gardens" (1906), etc. He has also written the plays "The Professor's Love Story" (1895), "The Little Minister" (1897), "Quality Street," "The Admirable Crichton," "Little Mary" (1903), "Peter Pan" (1904), "Alice Sit-by-the-Fire" (1905), "What Every Woman Knows" (1908), etc.

Barrili*, **Antonio Giulio.** Died near Savona, Italy, Aug. 15, 1908.

Barros Arana*, **Diego.** Died Nov. 4, 1907.

Barrows*, **Elijah Porter.** Born at Mansfield, Conn., Jan. 5, 1817: died at Oberlin, O., Sept. 14, 1888.

Barry*, Sir **John Wolfe Wolfe-.** He was knighted in 1897.

Barth (bärt), **Auguste.** Born at Strasburg, March 22, 1834. A French orientalist. Among his works are "Les religions de l'Inde" (1879) and "Inscriptions sanscrites du Cambodge" (1885). He has also written for the "Journal asiatique," "Mélusine," "Mémoires de la société de linguistique," "Journal des savants," and "Revue de l'histoire des religions."

Bartholdi*, **Frédéric Auguste.** Died at Paris, Oct. 4, 1904.

Bartlett (bärt′let), **Homer Newton.** Born at Olive, N. Y., Dec. 28, 1845. An American musician. He has written numerous compositions for the voice, the violin, the piano, etc.

Bartlett*, **John.** Died at Cambridge, Mass., Dec. 3, 1905. He was senior partner of Little, Brown and Co., in Boston, 1878–89.

Bartlett (bärt′let), **Paul Wayland.** Born at

New Haven, Conn., 1865. An American sculptor, the son of Truman H. Bartlett, also an American sculptor of note. He was a pupil of Fremiet and of the École des Beaux Arts in Paris; was created a chevalier of the Legion of Honor in 1895; and was awarded a gold medal at Buffalo in 1901, the grand prize at St. Louis in 1904, and the first medal at the Liège exposition in 1905. Among his prominent works are a statue of Michelangelo in the Congressional Library, Washington; the "Bear Tamer" in the Metropolitan Museum in New York City; equestrian statues of General McClellan in Philadelphia and of Lafayette in Paris; and many excellent busts.

Bartlett*, Samuel Colcord. Died Nov. 16, 1898.

Bartol*, Cyrus Augustus. Died Dec. 17, 1900. He was pastor of the West Church in Boston 1861–87.

Bartoli*, Adolfo. Died at Genoa, May 16, 1894.

Barton*, Clara. She was president of the American National Red Cross Society 1881–1904. She went from the United States to Constantinople to administer the funds of the National Armenian Relief Committee Jan. 22–Sept. 12, 1896; superintended relief work during the Spanish-American War in 1898 and the Boer War 1899–1902, conducted Red Cross work in Galveston, Tex., August, 1900, etc. She has written "History of the Red Cross in Peace and War" (1898), etc. † 1912

Barton (bär'ton), Sir **Edmund.** Born at Glebe, Sydney, N. S. W., Jan. 18, 1849. An Australian statesman, first premier of the Australian Commonwealth. He was educated at the University of Sydney and was called to the bar in 1871; was a member of the Legislative Assembly of New South Wales 1879, 1880, 1882–87, 1891–94, and 1898–1900, and its speaker 1883–87; was attorney-general of New South Wales 1889 and 1891–93; and was a member of the Federal Conventions of 1891, 1897–98. He went to England in 1900 as the Federal delegate for New South Wales in support of the Federal Constitution Bill and was the first premier and minister for external affairs of the Australian Commonwealth, 1901–03. He has been judge of the High Court of Australia since 1903. He was made a privy councilor in 1901, and was knighted in 1902.

Barton (bär'ton), **Port.** A bay on the western coast of Paragua, Philippine Islands: safe for large vessels in all weather.

Bartsch (bärtsh), **Johann Adam Bernhardt,** Ritter **von.** Born at Vienna, Aug. 17, 1757: died at Vienna, Aug. 21, 1821. An Austrian engraver and historian of engraving. He was a librarian of the Imperial Library and a member of the Academy of Art in Vienna, and in 1816 was appointed custodian of the Cabinet of Engravings. His most important publication is the monumental "Peintre-graveur" (1802–1821: 21 volumes), a catalogue of engravers and engravings before the nineteenth century.

Barus (bar'us), **Carl.** Born at Cincinnati, Ohio, Feb. 19, 1856. An American physicist, professor of physics at Brown University from 1895. He was physicist of the United States Geological Survey 1880–92; professor of meteorology of the United States Weather Bureau 1892–93; and physicist of the Smithsonian Institution 1893–95. The Rumford medal of the American Academy of Sciences was awarded to him in 1900 for his researches in heat. He has published numerous scientific papers.

Basilan (bä-sē'län) **Islands.** A group of islands south of the western peninsula of Mindanao, in the Philippines, and now a part of Zamboanga district of Moro province. It consists of 32 named and 12 unnamed islands. The largest, Basilan, is mountainous, wooded and fertile, and has, at Isabela de Basilan, on the northwest coast, a harbor safe in all weather for large vessels. Area of the group, 501.8 square miles. Population of Basilan Island (1903), 27,017.

Basilan (bä-sē'län) **Strait.** A strait which separates Basilan Island from Mindanao, in the Philippines, and connects the Sulu (Jolo) with the Celebes Sea. Width, about 8 miles.

Basin Ranges. A name given by the United States Geographic Board in 1907 to all those ranges which lie between the Plateau Region on the east, the Sierra Nevada and Cascade Range on the west, and the Blue Mountains of Oregon on the north, including the Wahsatch and associated ranges.

Baskerville (bas'kėr-vil), **Charles.** Born at Deer Brook, Miss., June 18, 1870. An American chemist and author, professor in the College of the City of New York from 1904. He was a member of the faculty of the University of North Carolina 1892–1904. The discovery of two supposed new elements, berzelium and coralinium, was announced by him.

Bastable (bas'ta-bl), **Charles Francis.** Born at Charleville, County Cork, Ireland, 1855. An Irish economist, professor of political economy in the University of Dublin from 1882, and of jurisprudence and international law since 1902. He has written "The Commerce of Nations" (1892), "Public Finance" (1892), "The Theory of International Trade" (1897), etc.

Bastian*, Adolf. Died at Port of Spain, Trinidad, Feb. 3, 1905.

Bastidas (bäs-tē'däs), **Rodrigo de.** A Spanish navigator and explorer of the fifteenth century. After the discoveries of Columbus he joined de la Casa in an expedition to the New World. He visited the shores of the Caribbean Sea, including the site of Cartagena.

Bataan (bä-tä-än'). A peninsular province of southwestern Luzon, Philippine Islands, south of Zambales province, and between Manila Bay on the east and the China Sea on the west. Capital, Balanga. Two groups of mountains, continuations of the Zambales range, culminate in the Mariveles Peaks, the loftiest of which is an extinct, truncated volcano, 4,615 feet in height. Mariveles Bay, on the southern coast, is a safe harbor in all weather. The province is watered by many small streams, and produces sugar-cane, tobacco, rice, and indigo. The native inhabitants are chiefly Tagalogs. Area, 537 square miles. Population (1903), 46,787.

Batac (bä'täk). **1.** A municipality of Ilocos Norte province, in the northwestern part of Luzon, Philippine Islands. Civilized population (1903), 19,524.—**2.** A town of the same province. Population (1903), 5,767.

Batan (bä-tän'). An island of the Batan group, north of Luzon, Philippine Islands. It belongs to Cagayan province. Its coal deposits are of good quality, and are now in part worked by the United States for transport supply. Area, 24 square miles. Population (1903), 5,332.

Batangas. 2. The most southerly of the western provinces of Luzon, Philippine Islands. It is bounded by Cavite (separated by the Tagatay Mountains) and La Laguna on the north; La Laguna, Tayabas, and Tayabas Bay on the east; and the Mindoro Sea and Mindoro Island (separated by Verde Island Passage) on the south. Capital, Batangas, on Batangas Bay, in lat. 13° 45′ 30″ N., long. 121° 03′ E. The native population is Tagalog. The mountains are wooded and the valleys fertile, producing coffee, maize, pineapples, rice, and sugar-cane. The province is rich in mineral springs and streams the waters of which are beneficial in cutaneous diseases and in rheumatism. The north-central part of Batangas is occupied by Lake Bombon or Taal, in which is situated Taal volcano. Area, 1,201 square miles. Population (1903), 257,715.

Bates*, Arlo. He was editor of the "Boston Sunday Courier" 1880–86, and has been professor of English literature in the Massachusetts Institute of Technology since 1893. Among his later works are "A Lad's Love" (1887), "The Philistines" (1889), "The Puritans" (1898), "Talks on Writing English" (1901), "Diary of a Saint" (1902), "Talks on Teaching Literature" (1906), "The Intoxicated Ghost" (1908), etc.

Bates (bāts), **John Coalter.** Born in St. Charles County, Mo., Aug. 26, 1842. An American soldier, appointed major-general in the United States Army in 1902. He entered the army in 1861 and served with the Army of the Potomac until the close of the Civil War; was promoted colonel in 1892 and brigadier-general in 1901; served in the Santiago campaign (promoted major-general of volunteers); was commander and military governor of the department of Santa Clara, Cuba, and of Cienfuegos, in 1899; and was sent to the Philippines in 1899, where (1900) he commanded the department of Southern Luzon and conducted the campaigns there and in Mindanao. He became lieutenant-general, Feb. 1, 1906, and retired from active service in April of the same year.

Bates (bāts), **Katharine Lee.** Born at Falmouth, Mass., Aug. 12, 1859. An American writer and educator. She was graduated at Wellesley College in 1880 and has taught there since 1885, becoming professor of English literature in 1891. She has written "Rose and Thorn" (1889), "English Religious Drama" (1893), "American Literature" (1898), "Spanish Highways and By-Ways" (1900), etc.

Bateson (bāt'son), **William.** Born at Whitby, England, 1861. An English naturalist, fellow of St. John's College, Cambridge, from 1885, and professor of biology at Cambridge since 1908. Besides numerous papers on biological topics he has published "Materials for the Study of Variation" (1894), and "Mendel's Principles of Heredity" (1902).

Battenberg, Princess Ena of. See *Victoria Eugénie.*

Battenberg*, Henry, Prince of. Died Jan. 21, 1896.

Battey*, Robert. Died at Rome, Ga., Nov. 8, 1895.

Battle Hymn of the Republic, The. A song written by Julia Ward Howe during a visit to the camps near Washington in 1861. It is sung to the same tune as "John Brown's Body." The opening line is "Mine eyes have seen the glory of the coming of the Lord." It was first published anonymously in the "Atlantic Monthly" for February, 1862.

Battle of Mukden. See *Mukden.*

Battle of the Sea of Japan. See *Sea of Japan, Battle of the.*

Battle of the Sha River (Shaho). See *Sha.*

Battle of the Yalu River. See *Yalu River, Battle of the.*

Bauan (bäö-än'). A municipality of Batangas province, in the southwestern part of Luzon, Philippine Islands. Civilized population (1903), 39,094.

Bauernfeind*, Karl Maximilian von. Died at Munich, Aug. 2, 1894.

Baumann (bou'män), **Oskar.** Born at Vienna, June 25, 1864: died there, Oct. 12, 1899. An Austrian explorer and traveler in Africa. In 1885 he accompanied Oskar Lenz to Stanley Falls on the Kongo; in 1890 explored Usambara; and 1891–93 explored the regions south and west of the Victoria Nyanza. From 1896 he was honorary consul in Zanzibar.

Baumbach (boum'bäch), **Rudolf.** Born at Kranichfeld, Germany, Sept. 28, 1840: died at Meiningen, Sept. 22, 1905. A German lyric poet. He is best known for his poetic rendering of popular legends. Among his works are "Zlatorog" (1877), "Horand und Hilde" (1878), "Frau Holde" (1881), "Thüringer Lieder" (1891), "Neue Märchen" (1896), "Bunte Blätter" (1897), etc.

Baur*, Albert. Died May 7, 1906.

Bavier*, Simon. Died at Basel, Jan. 28, 1896.

Bayamon (bī-ä-mōn'). **1.** The former name of the department of San Juan in the northern part of Porto Rico.—**2.** A city in the department of San Juan, Porto Rico, situated on the Bayamon River. Population (1899), 2,218.

Bayard*, Thomas Francis. Died Sept. 28, 1898.

Baybay (bī-bī'). A municipality in the northern part of the island and province of Leyte, in the Philippine Islands. Civilized population (1903), 22,990.

Bayer*, Karl Robert Emmerich von. Died June 30, 1902.

Bayliss (bā'lis), Sir **Wyke.** Born at Madely, Salop, Oct. 21, 1835: died at London, April 6, 1906. A British artist, president of the Royal Society of British Artists from 1888. He was knighted in 1897.

Bayly*, Ada Ellen. Died at Eastbourne, England, Feb. 8, 1903.

Bayne*, Peter. Died Feb. 10, 1896.

Bayombong (bī-ōm-bōng'). A town, the capital of Nueva Vizcaya province, Luzon, Philippine Islands. It is situated on the Magat River in about lat. 16° 28′ N., long. 121° 4′ 30″ E.

Bay State. A name given to Massachusetts because of the bays (Massachusetts, Cape Cod, and Buzzard) which indent its coast.

Bazin (bä-zaṅ'), **René François Marie:** known as **René.** Born at Angers, France, Dec. 26, 1863. A French novelist and writer of travels. He studied law in Paris and upon his return to Angers was made professor in the Faculté Libre de Droit. Several of his works have been crowned by the French Academy, of which he was elected a member in 1903, succeeding Legouvé. He has published "Ma tante Giron" (1886), "Une tache d'encre" (1888), "Les Noellet" (1889), "La sarcelle bleue" (1892), "Sicile" (1892), "Madame Corentine" (1893), "Les Italiens d'aujourd'hui" (1894), "Terre d'Espagne" (1895), "En province" (1896), "De toute son âme" (1897), "La terre qui meurt" (1899), "Les Oberlé" (1901), "L'isolée" (1905), "Le blé qui lève" (1907), "Le mariage de Mademoiselle Gimel, dactylographe" (1909), etc.

Beale*, Lionel Smith. Died March 28, 1906.

Beard*, William Holbrook. Died Feb. 20, 1900.

Beardsley (bērdz'li), **Aubrey Vincent.** Born at Brighton, England, Aug. 24, 1872: died at Mentone, France, March 16, 1898. An English illustrator and draftsman. He had little special training and at first divided his time between business and an architect's office. From this he turned to book illustration, in which he found extensive employment. His work is full of charming caprices which suggest Preraphaelitism, the Japanese convention, and French art of the eighteenth century.

Bear State, The. A name variously applied to Arkansas, California, and Kentucky.

Beaufort (bō'fọrt) **Sea.** A part of the Arctic Ocean, lying north of Alaska and the provinces of Yukon and Mackenzie, and west of Banks Land.

Beaumont (bō'mont). A city of Texas, the capital of Jefferson County, situated on the Neches River. It has an extensive lumber trade, car-shops, machine-shops, etc. Large deposits of oil have been discovered in its vicinity. Population (1900), 9,427.

Béchamp (bā-shoṅ'), **Pierre Jacques Antoine.** Born at Bassing, near Dienze (Meurthe), Oct. 16, 1816: died at Paris, April 15, 1908. A distinguished French chemist, especially noted for his researches in organic, and particularly in biological, chemistry (fermentation, etc.).

Becque (bek), **Henri François.** Born at Paris, April 9, 1837: died there May 12, 1899. A noted French dramatist and critic. His works include "L'Enfant prodigue," "Michel Pauper," "L'enlèvement," "La Navette," "Les honnêtes femmes," "Les Corbeaux," "La Parisienne," "Le départ," "Veuve," "Le domino à quart," and "Une exécution"; an opera, "Sardanapale," music by de Joncieres; a volume of "Memoirs"; "Querelles littéraires"; etc. He received the decoration of the Legion of Honor in 1886.

Becquerel (bek-rel′), **Antoine Henri.** Born at Paris, Dec. 15, 1852: died at Paris, Aug. 25, 1908. An eminent French physicist, professor at the Ecole Polytechnique from 1895: son of Alexandre Edmond Becquerel. In 1896 he discovered the radiation from uranium which bears his name ('Becquerel rays'). His investigations were concerned chiefly with phosphorescence, ultra-red radiation, and spectroscopy. In 1903 he received, with Curie, the Nobel prize in chemistry. In 1908 he was made perpetual secretary of the Academy of Sciences.

Bedford, Duke of. See *John of Lancaster.*

Bedford (bed′fọrd), **Francis.** Born at Paddington, London, June 18, 1799: died at Shepherd's Bush, Hammersmith, June 8, 1883. An English bookbinder. In 1817 he was apprenticed to a binder and later became assistant to Charles Lewis (b. 1786 d. 1836). He was an especial protégé of the Duke of Portland, and was the best English binder of his time.

Beecher*, Charles. Died at Georgetown, Mass., April 21, 1900.

Beecher (bē′chėr), **Charles Emerson.** Born at Dunkirk, N. Y., Oct. 9, 1856: died at New Haven, Conn., Feb. 14, 1904. An American paleontologist and geologist, professor of paleontology and curator of the geological collection at Yale University. He published "Studies in Evolution" (1901) and various scientific papers.

Beecher*, Thomas Kinnicut. Died at Elmira, N. Y., March 14, 1900.

Beer*, Adolf. Died at Vienna, May 7, 1902.

Beets*, Nikolaas. Died at Utrecht, March 14, 1903.

Behring (bā′ring), **Emil von.** Born at Hansdorf, near Prussian Eylau, Germany, March 15, 1854. A German physiologist, professor of hygiene and director of the Hygienic Institute at Marburg from 1895. In 1890 he announced his discovery of the anti-diphtheria serum. Since that time he has devoted himself chiefly to the study of immunity. He received one of the Nobel prizes for 1901. Among his works are "Die Blutserumtherapie" (1892), "Die Geschichte der Diphtherie" (1893), "Therapie der Infektionskrankheiten" (1899), and "Beiträgen zur Experimentellen Therapie" (1900).

Beilstein (bīl′stīn), **Friedrich Konrad.** Born at St. Petersburg, Feb. 17, 1838: died there, October, 1906. A Russian chemist, professor of chemistry at the Institute of Technology in St. Petersburg from 1866. He made important investigations in physical and organic chemistry. His most important publication was his "Handbuch der organischen Chemie" (1880–83).

Belcredi*, Richard, Count **von.** Died Dec. 2, 1902.

Belfast*. In 1908 the Queen's College was raised to the rank of a university.

Belfort*, Battle of. Sometimes called the battle of Héricourt, from the town of that name, between Belfort and Montbéliard, near which the battle occurred.

Belgium*. The Kongo Free State was annexed to Belgium by the treaty of Nov. 28, 1907.

Bell*, Alexander Melville. Died at Washington, D. C., Aug. 7, 1905.

Bell*, Sir **Isaac Lowthian.** Died Dec. 20, 1904.

Bell*, James. Died March 31, 1908.

Bell (bel), **James Franklin.** Born at Shelbyville, Ky., Jan. 9, 1856. An American soldier. He was graduated at the United States Military Academy in 1878; served on the plains until 1894; and was aide to General Forsyth in California 1894–97. He took part in the campaign in the Philippine Islands in 1898; was awarded a medal of honor by Congress for gallantry in action near Porac, Luzon; was brigadier-general of volunteers 1899–1901; and was provost-marshal-general of Manila until 1901, when he was made a brigadier-general in the regular army. In 1903 he was appointed commandant of the Infantry and Cavalry School, Signal School, and Staff College at Fort Leavenworth, Kansas, and in 1906 chief of the general staff of the United States Army, succeeding Lieutenant-General John C. Bates. He was made a major-general in 1907.

Bell (bel), **James Montgomery.** Born at Williamsburg, Pa., Oct. 1, 1837. An American soldier, promoted brigadier-general in 1901. He entered the army in 1862 and served in the Civil War, in various campaigns against the Indians, on the frontiers, and in the Philippine Islands 1900–1901. He retired in the latter year.

Bell*, John. Died in March, 1895.

Bell (bel), **Robert.** Born at Toronto, Canada, June 3, 1841. A Canadian geologist, connected from 1857 with the Geological Survey of Canada, of which he became the director. He was naturalist and geologist of the Neptune (1884) and Alert (1885) expeditions to Baffin Bay and Strait, and of that of the Diana (1897) to the south coast of Baffinland, and has made important geological and topographical surveys in many parts of the Dominion. From 1863 to 1867 he was professor of chemistry in Queen's University, Kingston.

Bellamy*, Edward. Died in 1898.

Bellingham (bel′ing-ham). A city of Whatcom County, Washington, situated on Bellingham bay about fifty miles southeast of Vancouver, formed by the union in 1903 of New Whatcom and Fairhaven. Population estimated (1906), upward of 30,000.

Belloc (be-lok′), **Hilaire Joseph Peter.** Born July 27, 1870. An English writer, illustrator, and Liberal politician. He was educated at the Oratory School, Edgbaston, and at Balliol College, Oxford, and was elected to the House of Commons for Salford, south division, in 1906. He has published "The Bad Child's Book of Beasts" (1896), "More Beasts for Worse Children" (1897), "The Modern Traveller" (1898), "The Path to Rome" (1902), "Caliban's Guide to Letters" (1903), "Esto Perpetua" (1906). "The Historic Thames" (1907), "On Nothing" (1908), etc.

Beltrami (bel-trä′mi), **Eugenio.** Born at Cremona, Nov. 16, 1835: died at Rome, Feb. 18, 1900. A noted Italian mathematician, one of the originators of the non-Euclidean geometry. He was originally a civil engineer, and became professor successively at Bologna, Pisa, Rome, Pavia, and again at Rome. His "Opere matematiche" were published in 1902.

Benavides (be-nä-vē′dās), **Alonso de.** Born about 1580. A Spanish Franciscan friar who in 1621 was appointed 'Father Custodian' of the missions of New Mexico. He arrived on the Rio Grande in 1622 and indefatigably labored to convert the Puebloans, assisted by twenty-six others of his order, till 1629, when he was relieved. In 1630 he went to Spain and through Santander presented to the king the now world-famous "Memorial" containing the record of his work, travels, the natives, their towns, etc. This was published in 1630 at Madrid and was soon translated into other languages. No English translation was made until recently. The work forms the foundation of the history of New Mexico for that period. In 1632 he published another book on the opening to commerce of the rivers of the Bay of Espiritu Santo. He became assistant bishop in Portuguese India, and on the death of Archbishop Goa succeeded him.

Benedetti*, Count **Vincent.** Died at Paris, March 28, 1900.

Bengal*. The districts of the old province of Bengal which lie east of the Ganges have recently been combined into a separate administration, the lieutenant-governorship of eastern Bengal and Assam.

Benguet (ben-get′). An inland province in the western part of Luzon, Philippine Islands. Capital, Baguio. It is bounded by La Union and Lepanto-Bontoc (separated by spurs of the Caraballos Occidentales) on the north; Nueva Vizcaya (separated by the Cordillera Sur) on the east; Pangasinan on the south; and La Union on the west. It is traversed by the Agno, which rises in the mountains of the north and flows southward into Pangasinan. The surface is irregular, and indicates former great volcanic activity. For centuries gold and copper have been mined in small quantities by the Igorrotes, who form about 95 per cent. of the population. Area, 822 square miles. Population (1903), 22,745.

Benham (ben′am), **Andrew Ellicott Kennedy.** Born at New York, April 10, 1832: died at Lake Mahopac, N. Y., Aug. 11, 1905. An American naval officer, promoted rear-admiral in 1890. He entered the navy in 1847 and served through the Civil War. In 1894 he was in command of the United States squadron at Rio de Janeiro and forced the insurgent Brazilian vessels to raise the blockade of the port.

Benjamin (ben′ja-min), **Marcus.** Born at San Francisco, Cal., Jan. 17, 1857. An American chemist, editor to the United States National Museum from 1896. He was graduated from the School of Mines, Columbia University, in 1878; was chemist to the United States laboratory of the New York appraiser's stores 1883–85; and was sanitary engineer of the New York Board of Health in 1885. He has contributed scientific articles to many publications; and has been a member of the editorial staffs of various encyclopedias and dictionaries.

Benjamin (ben′ja-min), **Park.** Born at New York, May 11, 1849. An American patent lawyer and writer, son of Park Benjamin, the poet. He was graduated at the United States Naval Academy in 1867 (resigning from the navy in 1869), and at the Albany Law School in 1870, and was associate editor of the "Scientific American" 1872–78. He is the author of "The Age of Electricity" (1886), "The Voltaic Cell" (1892), "Intellectual Rise in Electricity" (1895), "The United States Naval Academy" (1900), etc. He has also edited Appleton's "Cyclopedia of Applied Mechanics" (1880), and "Modern Mechanism" (1892), and has written extensively on naval subjects.

Benjamin (ben′ja-min), **Samuel Greene Wheeler.** Born at Argos, Greece, Feb. 13, 1837. An American author and artist, the son of an American missionary. He was graduated from Williams College in 1859: studied law, seamanship, and art; and served as first United States minister to Persia, 1883–1885. His works include "Contemporary Art in Europe" (1877), "Art in America" (1879), "The Multitudinous Seas" (1879), "Troy, its Legend and Literature" (1880), "Persia and the Persians" (1887), numerous paintings, etc.

Benn (ben), **Alfred William.** Born in Westmeath County, Ireland, 1843. A British classical scholar and historian. He is the author of "The Greek Philosophers" (1882), "The Philosophy of Greece" 1898), "A History of English Rationalism in the Nineteenth Century" (1906), "Modern England" (1908).

Bennett (ben′et), **James Gordon.** Born at New York, May 10, 1841. An American journalist, proprietor of the New York "Herald": son of James Gordon Bennett. Under his auspices (with the London "Telegraph"), Henry M. Stanley made his journey of exploration across Africa 1874–77. He also fitted out the Jeanette polar expedition in 1879.

Bennigsen*, Rudolf von. Died at Bennigsen, Aug. 7, 1902. He was a member of the German Reichstag 1881–83 and 1887–98.

Benson (ben′sọn), **Edward Frederic.** Born at Wellington College, Berkshire, England, July 24, 1867. An English novelist, son of Edward White Benson, Archbishop of Canterbury. He is the author of "Dodo" (1893), "The Babe" (1897), "Mammon and Co." (1899), "Scarlet and Hyssop" (1902), "The Challoners" (1904), "The Angel of Pain" (1906), "The Blotting Book" (1908), "The Climber" (1909), etc.

Benson*, Edward White. Died at Hawarden, Flintshire, Oct. 10, 1896.

Bentley (bent′li), **John Francis.** Born at Doncaster, England, 1839: died at Clapham, England, March 2, 1902. An English architect. He was especially successful in the designing and decoration of Roman Catholic churches. In 1894 he was made commissioner to erect the new Roman Catholic cathedral of Westminster, of which the structural part alone was finished at his death.

Bentzon (baṅ-tsoṅ′), **Th.** The pseudonym of Mme. Blanc.

Ben Venue (ben ve-nö′). A mountain near the Trossachs, Scotland, rising from the southern shore of Loch Katrine. Height 2,393 feet.

Beraldi (be-räl′di), **Henri.** Born at Paris, Feb. 6, 1849. A French collector and historian of engraving. He inherited from his father a collection of many thousand engravings to which he made large additions. He is best known by his "Les graveurs du XVIIIe siècle" (1885–86), "Les graveurs du XIXe siècle" (1885–1892), and "Estampes et livres Paris" (1892).

Berenson (ber′en-sọn), **Bernhard.** Born at Wilna, Russia, June 26, 1865. An American art critic and writer. He is the author of "Venetian Painters of the Renaissance" (1894), "Lorenzo Lotto, an Essay in Constructive Art Criticism" (1895), "Florentine Painters of the Renaissance" (1896; rev. ed., 1909), "Central Italian Painters of the Renaissance" (1897), "The Study and Criticism of Italian Art" (1901: second series 1902), "The Drawings of the Florentine Painters" (1903), "North Italian Painters of the Renaissance" (1906), and shorter contributions to various magazines and reviews.

Beresford (ber′es-fọrd), Lord **Charles William de la Poer.** Born in Ireland, Feb. 10, 1846. An English admiral and parliamentarian, second son of the fourth Marquess of Waterford. He entered the navy in 1859 and rose to the rank of rear-admiral in 1897, of vice-admiral in 1902, and of admiral in 1906. He was rear-admiral in the Mediterranean 1900–02, commanded the Channel squadron 1903–05 and the Mediterranean fleet 1905–06, and was commander-in-chief of the Channel fleet 1906–09. He has been a Conservative member of Parliament for various terms. In the bombardment of Alexandria in 1882 he commanded the Condor, and in the Nile expedition of 1884–85 was a member of Lord Wolseley's staff, and subsequently commanded the naval brigade at the battles of Abu-Klea, Abu-Kru, and Metamneh, in the Sudan. He has written "Nelson and his Times" (1898: with W. H. Wilson), "The Break-up of China" (1899), etc.

Bergmann (berg′män), **Ernst von.** Born at Ruhen, Livonia, Dec. 16, 1836: died at Wiesbaden, March 25, 1907. An eminent German surgeon, professor of surgery and director of the surgical clinic of the University in Berlin from 1882. He was especially noted for his work in aseptic surgery.

Berlin*, University of. The number of students is over 8,200; of professors and teachers, about 500.

Bernardino Strait. See *San Bernardino Strait.*

Bernhardt*, Sarah (Rosine Bernard). In 1899 she founded in Paris the Théâtre Sarah Bernhardt, of which she is director. She is also professor at the Conservatoire. She has appeared also in "Phèdre," "La dame aux camélias," "La Princesse Lointaine," "L'Aiglon" (1903), "Théroigne de Méricourt" (1905), "La sorcière" (1906), "Sainte Thérèse" (1906), "Les Bouffons" (1907), etc. Her "Memoirs" were published in 1907.

Berthelot, Pierre Eugène Marcellin. Born at Paris, Oct. 25, 1827: died there, March 18, 1907. He became professor in the École de Pharmacie in 1860 and in the Collège de France in 1865; was general inspector of higher education in 1876; became a member of the Senate in 1881; and was minister of education 1886–87. He published numerous works on chemical and allied topics, "Science et libre pensée" (1905), "Archéologie et historie des sciences" (1906), etc.

Bertillon (ber-tē-yoṅ′), **Alphonse.** Born at Paris, April 22, 1853. A French anthropologist, chief of the department of identification in the Prefecture of Police of the Seine. He devised a method of identifying criminals by means of measurements. He has written "L'anthropométrie judiciaire" (1890), "Identification anthropométrique" (1893), "La comparison des écritures et l'identification graphique" (1897), etc.

Bertrand (bãr-troṅ′), **Joseph Louis François.** Born at Paris, March 11, 1822: died there, April 3, 1900. A noted French mathematician and littérateur. He was educated at the École Polytechnique, and held in succession positions on the staffs of the Lycée Saint-Louis, École Polytechnique, École Normale, Collège de France, and Lycée Napoléon. He was elected a member of the Academy of Sciences in 1856 and its perpetual secretary in 1874, and succeeded J. B. Dumas as member of the French Academy in 1884. His works include "Traité d'arithmétique" (1849), "Traité d'algèbre" (1850), "Traité de calcul différentiel et de calcul intégral" (1864–70), "Thermodynamique" (1887), "Calcul des probabilités" (1889), and various other mathematical articles and treatises. He also published "Les fondateurs de l'astronomie moderne" (1865), "L'académie des sciences et les academiciens de 1666 à 1793" (1868), "D'Alembert" (1889), "Blaise Pascal" (1890), etc.

Bertrand (bãr-troṅ′), **Marcel.** Born at Paris, July 2, 1847: died Feb. 13, 1907. An eminent French geologist, professor of geology in the French National School of Mines. In 1896 he was elected a member of the Académie des Sciences as successor to Pasteur.

Besant (bez′ant), Mrs. (**Annie Wood**). Born at London, Oct. 1, 1847. An English theosophist and writer on theosophical and philosophical topics. In 1867 she married Rev. Frank Besant and was legally separated from him in 1873. She was influential in the radical free-thought movement represented by Charles Bradlaugh, and in 1880 became prominent as a pupil of Madame Blavatsky and a member of the Theosophical Society. In 1898 she founded the Central Hindu College at Benares, in 1904 a girls' school at Benares, and in 1907 the University of India. Her publications include "Reincarnation" (1892), "Death and After" (1893), "Karma" (1895), "Four Great Religions" (1897), "Esoteric Christianity" (1901), "A Study in Consciousness" (1904), "Theosophy and the New Psychology" (1904), "Hints on the Bhagavad Gitâ" (1906), "The Wisdom of the Upanishats" (1906), etc.

Besant* (be-zant′), Sir **Walter.** Born Aug. 14, 1836: died June 9, 1901.

Beside the Bonnie Brier Bush. A collection of short stories by Ian Maclaren (John Watson), published in 1894. The book contains sketches, humorous and pathetic, of Scottish village life and is one of the most popular works of the so-called "kailyard" school of fiction.

Besnard (be-när′), **Paul Albert.** Born at Paris, June 2, 1849. A French painter. He studied at the École des Beaux-Arts and with the painters Cabanel and Brémond, winning the grand prix de Rome. In 1890 he took part in the installation of the secession of the Salon du Champ de Mars. His decorations of the École de Pharmacie are notable.

Bessemer*, Sir **Henry.** Died at London, March 15, 1898.

Best (best), **William Thomas.** Born at Carlisle, England, Aug. 13, 1826: died at Liverpool, May 10, 1897. An English organist. He edited many organ classics.

Beutenmüller (boi′tn-mül-ėr), **William.** Born at Hoboken, N. J., March 31, 1864. An American entomologist and writer on related subjects. He is editor of the "Journal" of the New York Entomological Society and since 1889 has been curator of the department of entomology in the American Museum of Natural History, New York City.

Beveridge (bev′ėr-ij), **Albert Jeremiah.** Born on a farm on the border of Adams and Highland counties, Ohio, Oct. 6, 1862. An American lawyer, Republican politician, and writer. He was graduated at De Pauw University, Indiana, in 1885, and was admitted to the bar. He was elected United States senator for Indiana in 1899 and again in 1905. His works include "The Russian Advance" (1903), "The Young Man and the World" (1905), etc.

Beyrich (bī′rich), **Heinrich Ernst.** Born at Berlin, Germany, Aug. 31, 1815: died there, July 9, 1896. A German geologist and paleontologist, professor in the University of Berlin from 1856. He was associate director of the Geological Survey of Prussia and published a number of important paleontological works.

Bezold (bet′zōld), **Wilhelm von.** Born at Munich, June 21, 1837: died at Berlin, Feb. 17, 1907. A noted German meteorologist, professor of meteorology and director of the Meteorological Institute at Berlin from 1885. He is best known for his studies in the physics of the atmosphere and in terrestrial magnetism. He published numerous scientific works and papers.

Bickerdyke (bik′ėr-dīk), **John.** The pseudonym of Charles Henry Cook.

Bickersteth*, **Edward Henry.** Died May 16, 1906.

Bicol (bē′kōl). The chief river of Ambos Camarines, southeastern Luzon, Philippine Islands. It flows from Lake Bato northwest to San Miguel bay, and is navigable by steamers of 9 feet draft to Nueva Caceres, a distance of 15 miles. Also *Inaya.*

Bida*, **Alexandre.** Died Jan. 2, 1895.

Biedermann*, **Friedrich Karl.** Died March 5, 1901.

Bierstadt*, **Albert.** Died at New York, Feb. 18, 1902.

Big-bend State, The. The State of Tennessee, so called from the Tennessee river ('the River of the Great Bend'), which traverses it.

Bigelow (big′e-lō), **Poultney.** Born at New York, Sept. 10, 1855. An American journalist and historian, son of John Bigelow. He was graduated from Yale University in 1879, and was admitted to the bar in 1882, but abandoned law for journalism and traveled extensively. He edited "Outing" 1885–87; served as foreign correspondent on "Harper's Weekly" and the London "Times"; and has written and lectured on modern history and colonial administration. His publications include "The German Emperor and his Eastern Neighbors" (1891), "Borderland of Czar and Kaiser" (1893), "White Man's Africa" (1897), "Children of the Nations" (1901), "History of the German Struggle for Liberty" (completed 1906), etc.

Biggs (bigz), **Herman Michael.** Born at Trumansburg, N. Y., Sept. 29, 1859. An American pathologist and bacteriologist, professor in New York University and Bellevue Hospital Medical College from 1887, and chief medical officer of the Health Department of the city of New York from 1902. He established the bacteriological laboratories of the Health Department of New York City in 1892, the first municipal institution of the kind, and is director of the Carnegie Laboratory of the Bellevue Hospital Medical College.

Bikélas (bi-kā′läs), **Dimitrios.** Born at Hermupolis, on the island of Syra, in 1835: died at Athens, July 20, 1908. A Greek poet and essayist. His best known work is his novel "Lukis Laras" (1879), a story of the Greek war of independence. A collection of his poems was published in 1862 (second edition, 1885). He also translated a number of Shakspere's plays into modern Greek.

Biliran (bē-lē-rän′). An island of the Philippines, off the north coast of Leyte and belonging to Leyte province. Its surface is mountainous. The highest peak is Mabui, 4,430 feet in height. Area, 190 square miles. Population (1903), 19,147.

Billings (bil′ingz), **John Shaw.** Born in Switzerland Co., Ind., April 12, 1839. An American librarian, director of the New York Public Library from 1896. He was graduated at Miami University in 1857 and at the Ohio Medical College in 1860, and served in the Northern army as a surgeon during the Civil War. In 1864 he was transferred to the surgeon-general's office in Washington and took charge of the medical library there. From 1893 to 1896 he was professor of hygiene in the University of Pennsylvania. Among his publications are the index-catalogue of the library of the surgeon-general's office, and the reports on vital and social statistics for the eleventh census.

Billotte (bi-lọt′), **René.** Born at Tarbes (Hautes-Pyrénées), June 24, 1846. A French painter, one of the founders, and secretary, of the Société Nationale des Beaux-Arts. He was a pupil of Eugène Fromentin. His work is represented in the Luxembourg, Paris, in the Pennsylvania Academy of the Fine Arts, the Carnegie Institute of Pittsburg, and elsewhere; and he has received numerous medals.

Binet (bē-nā′), **Alfred.** Born at Nice, France, July 8, 1857. A French psychologist, director of the laboratory of physiological psychology at the Sorbonne. Among his works are "La psychologie du raisonnement" (1886), "Le magnétisme animal" (1887: with Charles Féré), "Études de psychologie expérimentale" (1889), "Les altérations de la personalité" (1892), "L'âme et le corps" (1905), etc. He is one of the editors of "L'année psychologique."

Binmaley (bēn-mä-lā′). A municipality of Pangasinan province, in the western part of Luzon, Philippine Islands. Civilized population (1903), 16,439.

Binondo (bē-nōn′dō). A division of the city of Manila, Luzon, Philippine Islands. Civilized population (1903), 16,657.

Binyon (bin′yọn), **Laurence.** Born at Lancaster, England, Aug. 10, 1869. An English author and poet, assistant in the department of printed books of the British Museum 1893–95, and in the department of prints and drawings from 1895. Among his works are "Lyric Poems" (1894), "Poems" (1895), "London Visions" (1895, 1898), "The Praise of Life" (1896), "Porphyrion and Other Poems" (1898), "Odes" (1900), "The Death of Adam" (1903), "Penthesilea" (1905), "Paris and Œnone" (1906), and "Attila" (1907). He has also compiled a catalogue of English drawings in the British Museum.

Bird (bėrd), **Arthur.** Born in Cambridge, Mass., July 23, 1856. An American composer, resident in Berlin since 1886. He has composed a symphony and other orchestral works, a comic opera, "Daphne," and many piano pieces. In 1901 he received the Paderewski prize for the encouragement of American composers.

Birmingham, University of. See *University of Birmingham.*

Biron (bē′rōn: F. pron. bē-rôṅ′), **Ernest Johann**: also *Biren*; originally, perhaps, *Bühren.* Born Dec. 1, 1690: died Dec. 28, 1772. Duke of Courland: the son of noble parents, in Courland, but according to old authorities a groom, or shoemaker. He was educated at the University of Königsberg, and in 1724 became permanently connected with the court of the widowed duchess of Courland, Anna Ivanovna, niece of Peter the Great. He accompanied her to Russia when she ascended the throne, in defiance of the express stipulation excluding him, in the pact of the new empress with the Russian nobles who gave her the empire, and was created by her hereditary duke of Courland. As chief favorite, hated by all for his cruelty and haughtiness, he ruled Russia during the entire reign of Anna Ivanovna (1730–40); and this epoch, regarded as the worst in Russian history, is known as the "Bironovshtchina." Having made the infant Ivan Antonovitch her heir, the empress appointed Biron regent of Russia during the emperor's minority; but he had ruled only a few weeks, when (1741) he and his family were exiled to Siberia. The Empress Elizabeth (1742) allowed him to live in Yaroslavl, on the Volga; Peter III. summoned him to St. Petersburg, restoring his orders and property; Catharine II. (1762) restored to him the duchy of Courland; and he reigned in Mitau until 1769, when he abdicated in favor of his son Peter.

Birrell (bir′el), **Augustine.** Born at Wavertree, near Liverpool, England, Jan. 19, 1850. An English essayist, lecturer, and statesman. He studied at Cambridge; was admitted to the bar in 1875; sat in Parliament as Liberal member for Fifeshire West 1889–1900, and for Bristol North 1906–; was professor of law in University College, London, 1896–99; was bencher of the Inner Temple 1903; and was appointed president of the board of education, with a seat in the cabinet, December, 1905. He was appointed chief secretary for Ireland in 1907. He is the author of "Obiter Dicta" (1884: second series 1887), "Life of Charlotte Brontë" (1885), "Res Judicatæ" (1892), "Men, Women, and Books" (1894), "Sir Frank Lockwood" (1898), "Collected Essays" (1900), "Essays and Addresses" (1901), "Miscellanies" (1901), "William Hazlitt" (1902), "In the Name of the Bodleian" (1906), "Andrew Marvell" (1906), etc.

Bisayas. See *Visayan Islands.*

Bischoff (bish′ōf), **Joseph Eduard Konrad**: pseudonym **Konrad von Bolanden.** Born at Niedergailbach, Rhine Palatinate, Germany, Aug. 9, 1828. A German novelist. He was ordained priest in the Roman Catholic Church in 1852, and in 1872 was appointed by Pope Pius IX. acting privy chamberlain. His works include "Franz von Sickingen" (1859), "Barbarossa" (1862), "Die Aufgeklärten" (1864), "Angela" (1866), "Deutsche Kulturbilder" (1893–94), "Die Säule der Wahrheit" (1907), etc.

Bishop (bish′up), Mrs. (**Isabella Lucy Bird**). Born at Boroughbridge-hall, Yorkshire, October 15, 1832: died at Edinburgh, Oct. 7, 1904. An English writer of travels, philanthropist, and geographer. She traveled extensively in North America and Asia, was especially interested in medical missions, and built five hospitals and an orphanage in the East. Among her books of travel are "The Englishwoman in America" (1856), "Unbeaten Tracks in Japan" (1880), "Among the Tibetans" (1894), "Korea and her Neighbours" (1897), "The Yangtse Valley and Beyond" (1899), etc.

Bishop (bish′up), **William Henry.** Born at Hartford, Conn., Jan. 7, 1847. An American novelist. He was graduated from Yale in 1867; studied architecture; became proprietor and editor of the Milwaukee "Commercial Times"; and was instructor in modern languages at Yale 1893–1902. In 1903 he was appointed United States consul at Genoa and in 1905 consul at Palermo. His novels include "Detmold" (1879), "The House of a Merchant Prince" (1885), "The Golden Justice" (1887), "A Pound of Cure" (1894), "Writing to Rosina" (1894), "Tons of Treasure" (1902), etc.

Bishops' Bible, The. A folio edition of the Bible, published in October, 1568. It was a revision of the Great Bible of 1539, organized by Archbishop Parker and undertaken in 1563 by himself, eleven bishops, and four deans and prebendaries. It was not reprinted after 1606.

Bismarck (bis′märk), **Herbert,** Fürst **von.** Born at Berlin, Dec. 28, 1849: died at Friedrichsruh, Sept. 18, 1904. A German statesman, son of Prince Otto von Bismarck. He was occupied chiefly with diplomatic affairs and was secretary of state for foreign affairs 1886–90.

Bismarck*, **Otto Eduard Leopold,** Prince **von.** Died at Friedrichsruh, July 30, 1898.

Bitter (bit′ėr), **Karl.** Born at Vienna, Austria, Dec. 6, 1867. An Austrian-American sculptor. He was educated at the Academy of Art in Vienna, and came to New York in 1889. His work has been chiefly monumental, the best examples being decorations of the expositions at Chicago, 1893, Buffalo, 1901, and St. Louis, 1904. He was elected a member of the National Academy of Design in 1902.

Bitterroot Range. A range of mountains extending from Clark's Fork, on the northwest, to Monida, the crossing of the Oregon Short Line on the southeast, including all mountain spurs. *U. S. Geog. Board*, Feb. 6, 1907.

Björnson*, **Björnstjerne.** In 1903 he received the Nobel prize for literature.

Black*, **William.** Died at Brighton, Dec. 10, 1898.

Blackmore*, **Richard Doddridge.** Died at Teddington, Jan. 20, 1900. His latest works include "Perleycross" (1894), "Fringilla" (1895), "Tales from the Telling House" (1896), "Dariel" (1897).

Blackwell (blak′wel), **Elizabeth.** Born at Bristol, England, Feb. 3, 1821. An English-American physician. Her family emigrated to the United States in 1832. In 1849 she was graduated at the Geneva Medical College (Geneva, N. Y.), being, it is said, the first woman to obtain a medical diploma in the United States. After two years of study abroad she began the practice of medicine in New York City. In 1869 she returned to England.

Blackwood*, Frederick Temple Hamilton. Died Feb. 12, 1902. He was ambassador to France 1891–96.

Blaikie (blā′ki), **William.** Born at York, N. Y., May 24, 1843: died at New York, Dec. 6, 1904. An American lawyer, and writer on physical training. He was graduated at Harvard in 1866 and at the Harvard Law School in 1868, and accompanied the Harvard crew to England in 1869. He wrote "How to get strong and how to stay so" (1879), "Sound Bodies for our Boys and Girls" (1883), etc.

Blake (blāk), **Francis.** Born at Needham, Mass., Dec. 25, 1850. An American physicist, inventor (1878) of a widely used telephone transmitter which bears his name.

Blakelock (blāk′lok), **Ralph Albert.** Born at New York, Oct. 15, 1847. An American landscape painter. He was destined for the medical profession but became instead a self-taught artist and musician. He traveled in the far West and embodied his study of Indian life in his work. His painting is notable for its dignity and power, and for its rich color and strong individuality.

Blanc (bloṅ), Mme. (**Marie Thérèse de Solms**): pseudonym **Th. Bentzon.** Born at Seine-Port, Seine-et-Marne, Sept. 21, 1840: died Feb. 5, 1907. A French novelist, journalist, and critic. She was for a number of years on the staff of the "Revue politique et littéraire" ("Revue bleue") and the "Revue des deux mondes." She wrote many novels, among them "Un Remords" (1878), and "Tony" (1884), both of which were crowned by the French Academy; and a number of her contributions to the "Revue des deux mondes" were collected and published under the titles "Nouveaux romanciers américains" (1885), "Litterature et mœurs étrangères" (1887), and "Les américaines chez elles" (1895).

Blanchard*, Émile. Died at Paris, Feb. 10, 1900.

Blanco y Arenas, Ramón, Marquis de Peña Plata. Born in 1832: died April 4, 1906. A Spanish general, appointed governor-general of Cuba in October, 1897. He fought in the Carlist war; served in Cuba during the rebellion of 1868–78, and was captain-general of that island 1880–81; was captain-general of Catalonia 1877–79, 1882, and 1887–93, and was captain-general of the Philippines in 1894.

Bland (bland), Mrs. (**Edith Nesbit**). Born at London, Aug. 15, 1858. An English novelist, poet, and writer of children's stories. Among her works are "A Pomander of Verse" (1895), "Songs of Love and Empire" (1897), "The Story of the Treasure-Seekers" (1899), "The Wouldbegoods" (1901), "The Red House" (1903), "Oswald Bastable" (1905), "An Incomplete Amorist" (1906), "The Enchanted Castle" (1908), etc.

Bland (bland), **Richard Parks.** Born near Hartford, Ky., Aug. 19, 1835: died near Lebanon, Mo., June 15, 1899. An American politician. He was admitted to the (Utah) bar in 1860, and was a Democratic member of Congress from Missouri 1873–95 and 1897–99. Throughout his congressional career he was a conspicuous champion of the free coinage of silver and was the author of the Bland Silver Bill (1878).

Blashfield (blash′fēld), **Edwin Howland.** Born at New York, Dec. 15, 1848. An American painter. In 1867 he went to Paris and entered the atelier of Léon Bonnat, coming also under the influence of Gérôme and Chapu. He has been especially successful in the execution of monumental decorations, among which are a dome in the Manufactures and Liberal Arts Building at the Chicago Exposition in 1893; the central dome of the Congressional Library in Washington; "Westward," a large picture in the State capitol, Des Moines, Iowa; and a ballroom ceiling in the Waldorf-Astoria Hotel, New York City. He has been a member of the National Academy of Design since 1888.

Blass (bläs), **Friedrich.** Born at Osnabrück, Jan. 22, 1843: died at Halle, March 6, 1907. A noted German philologist, professor of classical philology at Halle from 1892. He was especially distinguished for his studies of the Greek language and his work upon Greek texts.

Bleriot (ble-ri-ō′), **Louis.** A French inventor and aviator. He crossed the English Channel in a monoplane invented by himself on July 25, 1909, starting from Calais and landing at the Shakspere Cliff near Dover. The time occupied by the flight was about 40 minutes. He was awarded the £1,000 prize offered by the "London Mail" for the first aviator to make an unbroken flight across the Channel by daylight.

Blind*, Karl. Died at London, May 31, 1907.

Blind (blind), **Mathilde.** Born at Mannheim, March 21, 1841: died at London, Nov. 26, 1896. An Anglo-German poet, daughter of a banker named Cohen, and step-daughter of Karl Blind. She published "Poems by Claude Lake" (1867), "The Prophecy of St. Oran" (1881), "The Heather on Fire" (1886), "The Ascent of Man" (1888), "Dramas in Miniature" (1891), "Songs and Sonnets" (1893), "Birds of Passage" (1895). She translated Strauss's "The Old Faith and the New" (1873–74) and "The Journal of Marie Bashkirtseff" (1890), and wrote biographies of George Eliot (1883), and Madame Roland (1886).

Bliss (blis), **Cornelius Newton.** Born at Fall River, Mass., Jan. 26, 1833. An American merchant and cabinet officer. He was treasurer of the National Republican Committees of 1892, 1896, 1900, and 1904, and was secretary of the interior 1897–98.

Bliss (blis), **Frederick Jones.** Born on Mount Lebanon, Syria, Jan. 22, 1859. An American archæologist, explorer for the Palestine Exploration Fund (London) 1891–1900. He excavated the site of Lachish (Tel-el-Hesy), and conducted explorations at Jerusalem and other localities. His publications include "A Mound of Many Cities" (1894), "Excavations at Jerusalem 1894–97" (1898), "Excavations in Palestine, 1898–1900" (1902), and "The Development of Palestine Exploration" (1906).

Block*, Maurice. Died at Paris, Jan. 9, 1901.

Blodget*, Lorin. Died March 24, 1901.

Blomfield (blum′fēld), Sir **Arthur William.** Born at Fulham Palace, London, March 6, 1829: died at Broadway, Worcestershire, England, Oct. 30, 1899. An English architect, fourth son of Charles James Blomfield, Bishop of London. He was articled for three years (1853–56) to Philip Charles Hardwick, architect of the Bank of England, whom he succeeded in this office in 1883. He was especially identified with the Gothic revival of the middle of the nineteenth century, his best buildings being churches. At various times he had charge of restorations at the cathedrals of Salisbury, Canterbury, Lincoln, and Chichester. His reconstruction of the Church of St. Mary Overie in London is especially notable.

Blomfield (blum′fēld), **Reginald.** Born Dec. 20, 1856. An English architect and writer, a nephew of Sir Arthur Blomfield. His practice is mainly confined to residential architecture and gardens. Among his published works are "The Formal Garden in England" (1892), "History of Renaissance Architecture in England" (1897), "Studies in Architecture" (1906), and numerous contributions to architectural periodicals.

Blondel (bloṅ-del′), **Jacques François.** Born at Rouen, France, Jan. 8, 1705: died Jan. 9, 1774. A noted French architect. He executed several important works in Paris and in 1773 designed an extensive scheme of reconstruction in the city of Metz, according to which were built the Hôtel de Ville (1765), the Place d'Armes, and the portal of the cathedral (1771). He also designed similar improvements in Strasburg. In 1739 he opened an architectural school in Paris which was merged, in 1756, with the Académie d'Architecture in which he became professor. He is best known from his books "De la distribution des maisons de plaisaunce" (1737–38), "Architecture française" (the "Grand Blondel," 1752–56), and "Cours d'architecture civile" continued by Patte (the "Petit Blondel," 1771–77).

Blondin*, Charles (**Émile Gravele**). Died at Ealing, London, Feb. 22, 1897.

Blondlot (bloṅd-lō′), **Prosper René.** Born at Nancy, France, July 3, 1849. A French physicist, appointed adjunct professor in the University of Nancy in 1886 and full professor in that institution in 1896. He is the author of a treatise on static electricity ("Introduction à l'étude de l'électricité statique": 1885), of a volume on thermodynamics ("Introduction à l'étude de la thermodynamique": 1888), and also of numerous papers on physics and particularly on electric waves. Blondlot's announcement in March, 1903, of the discovery of a new type of obscure rays, which he named N-rays, after his birthplace Nancy, attracted wide attention and his observations have since been a subject of lively discussion among physicists.

Blood (blůd), Sir **Bindon.** Born Nov. 7, 1842. A British lieutenant-general, commander of the forces in the Panjab (northern command, India). He served in the Jowaki expedition (1877–78), the Zulu War (1879), the Afghan War (1880), the campaign in Egypt (1882), and the relief of Chitral (1895); was commander of the Malakand field force and the Buner field force (1897–98); was lieutenant-general in command of the troops in the eastern Transvaal in 1901; and retired in 1907.

Bloody Angle. A salient at Spottsylvania Court House, which received this name from the severe fighting which followed the capture there by General Hancock of about 4,000 Confederate soldiers under General Edward Johnson, May 12, 1864.

Bloomfield (blöm′fēld), **Maurice.** Born at Bielitz, Austria, Feb. 23, 1855. An American scholar, professor of Sanskrit and comparative philology in Johns Hopkins University. He was graduated at Ferman University, Granville, S. C., in 1877. He has edited the Kāngika-Sūtra from the original manuscripts (1890), translated the hymns of the Atharvaveda (in Max Müller's "Sacred Books of the East"), and edited, with Professor Garbe of Tübingen, the Kashmirian Paippaladaveda (1901). Among his other publications are "The Atharva-Veda and the Gopatha-Brāhmaṇa" (1899); "Cerberus the Dog of Hades" (1905), a concordance of the entire literature of the Veda (1907), and numerous technical articles.

Blouet*, Paul. Died at Paris, May 24, 1903.

Blowitz (blō′vits), **Henry Georges Stephane Adolphe Opper de.** Born at Blowitz, near Pilsen, Bohemia, Dec. 28, 1825: died at Paris, Jan. 18, 1903. A journalist, the Paris representative of the London "Times." His parents were Austrians of Hebrew descent, but he adopted the name of his birthplace and was naturalized a Frenchman in 1870. He commenced life in France as a teacher of German at Tours, Marseilles, etc.; became a contributor to "La Gazette du Midi" and other papers; and in 1871 became connected with the London "Times." He was decorated (1871) with the badge of the Legion of Honor (officer of the Legion in 1878). He wrote "Feuilles volantes" (1858), "Midi à quatorze heures: l'Allemagne et la Provence" (1869), "Le mariage royal d'Espagne" (1878), "Une course à Constantinople" (1884), "Memoirs" (1903), etc. He retired in 1901.

Blue Hill Meteorological Observatory. A meteorological observatory at Hyde Park, Massachusetts, founded by Abbott Lawrence Rotch in 1885 and directed by him.

Blue Mountains*. 3. These include all the mountains of northeastern Oregon with the exception of the Wallowa Mountains, and extend into Washington. *U. S. Geog. Board*, 1907.

Blue Ridge*. According to the U. S. Geog. Board (1907), this includes the ridge extending from a few miles north of Harper's Ferry to northern Georgia.

Blumenthal*, Leonhardt, Count **von.** Died Dec. 22, 1900.

Blumenthal (blö′men-täl), **Oskar.** Born at Berlin, March 13, 1852. A German dramatist. He founded the Lessing Theater in Berlin in 1888 and conducted it until 1897. His works include a large number of comedies, many of which have been successful. Among the best known are "Die grosse Glocke," "Der schwarze Schleier," "Ein Tropfen Gift," "Als ich wiederkam" (with Kadelburg).

Boac (bō′äk). **1.** A municipality of Marinduque island in Tayabas province in the southern part of Luzon, Philippine Islands. Civilized population (1903), 15,823.—**2.** The capital of Marinduque subprovince, situated in the northwestern part of the island of Marinduque, in lat. 13° 27′ N., long. 121° 49′ E.

Boardman*, George Dana. Died at Atlantic City, N. J., April 28, 1903.

Boaz (bō′as), **Franz.** Born at Minden, Westphalia, July 9, 1858. A German-American anthropologist and philologist, professor of anthropology in Columbia University from 1898. He studied at the universities of Heidelberg, Bonn, and Kiel; visited the United States 1884–85; was assistant at the Royal Ethnographical Museum, Berlin, and docent at the University 1885–86; was instructor in anthropology at Clark University 1888–92; and was assistant curator (later curator) of the anthropological collection of the American Museum of Natural History, New York, 1896–1905. He has published many papers upon the Eskimo and other northern tribes, and has issued Chinook texts, etc.

Boccardo*, Girolamo. Died at Rome, March 20, 1904.

Bock*, Franz. Died at Aix-la-Chapelle, April 30, 1899.

Böcklin*, Arnold. Died at Fiesole, Italy, Jan. 16, 1901.

Bode (bō′de), **Wilhelm.** Born at Calvörde, Brunswick, Germany, Dec. 10, 1845. A noted German critic and historian of art, director of the Kaiser Friedrich Museum in Berlin. Among his publications are "Geschichte der deutschen Plastik" (1887 and 1893), "Italienische Bildhauer der Renaissance" (1887), "Florentiner Bildhauer der Renaissance" (1902), "Denkmäler der Renaissance-skulptur Toscanas" (1892–), "Rembrandt" (1897–1900), etc.

Bodmer*, Karl. Died at Paris, Oct. 31, 1893.

Boeckh (bėch), **Richard.** Born at Berlin, March 28, 1824: died at Grunewald, near Berlin, Dec. 6, 1907. A noted German statistician, professor of statistics (1852–92) and director of the city statistical department (1875–92) in Berlin. He edited the Berlin "Jahrbuch" and published numerous technical works and papers.

Boehm von Bawerk (bėm fon bä′verk), **Eugen.** Born at Brünn, Austria, Feb. 12, 1851. An Austrian political economist, professor in the University of Vienna. In 1884 he was appointed professor at Innsbruck; in 1889 entered the ministry of finance in Vienna; and for a short time in 1895, from November, 1897, to March, 1898, and again 1900–04, and 1906–, was minister of finance. He has published "Kapital und Kapitalzins" (1884–89), "Einige strittige Fragen der Kapitalstheorie" (1900), etc.

Boer War, The. 1. The war which followed the proclamation of the Transvaal Republic, Dec., 1880, between that country and Great Britain. Its chief events were the defeat of the British at Laing's Neck Jan. 28, 1881, and at Majuba Mountain Feb. 27, 1881 (the British commander Colley being killed). By treaty of March, 1881, the independence of the republic was recognized, but the Boers acknowledged the suzerainty of the queen.

2. A war waged by the Transvaal and the

Orange Free State against Great Britain, begun in Oct., 1899. The chief events were the siege and relief of Ladysmith Oct. 29, 1899, Feb. 28, 1900; the siege and relief of Kimberley Oct. 14, 1899,–Feb. 15, 1900; the siege and relief of Mafeking Oct. 15, 1899, May 16, 1900; the capture of Cronje's army at the Modder River Feb. 27, 1900; and the capture of Pretoria June 5, 1900. Peace was signed May 31, 1902.

Bögh*, **Erik.** Died at Copenhagen, Aug. 17, 1899.

Bogoslof (bō′gos-lof) **Island.** A small volcanic island in the Aleutian group (Alaska) northwest of Unalaska, in lat. 54° N., long. 168° W. The Bogoslof volcano was discovered by the Russian admiral Bogoslof in 1790. A second island, 2½ miles distant, appeared in the winter of 1886–87 and became connected with the original island. Since then various changes have occurred, new peaks having appeared and disappeared.

Bohemia*. It has 130 representatives in the Austrian Reichsrat and has a landtag of 242 members.

Bohol (bō-hōl′). A province of the Philippines, situated between Cebu and Leyte, and consisting of numerous islands, the largest of which is Bohol. Most of the rivers are unimportant for navigation. A few are navigable by boats of light draft for distances of from 3 to 12 miles. The population is chiefly Visayan. The capital, Tagbilaran, is in Bohol, in lat. 9° 38′ N., long. 123° 60′ E., on the strait of the same name which separates that island from Panglao. Area of province, 1,511 square miles. Population (1903), 269.223.

Böhtlingk*, **Otto.** Died at Leipsic, April 1, 1904.

Boise*, **James Robinson.** Died at Chicago, Ill., Feb. 9, 1895.

Boissier (bwä-syā′), **Marie Louis Gaston**: known as **Gaston.** Born at Nîmes, France, August 15, 1823: died at Paris, June 10, 1908. A French classical scholar, historian, and critic, perpetual secretary of the French Academy from 1895. He became professor of Latin literature in the Collège de France in 1861. In 1876 he was elected to the French Academy, succeeding Patin, and in 1886 to the Academy of Inscriptions and Belles-Lettres. Among his works are "Cicéron et ses amis" (1865), "L'opposition sous les Césars" (1875), "La religion romaine d'Auguste aux Antonins" (1874), "Promenades archéologiques" (1880), "La fin du paganisme" (1891), "Saint Simon" (1892), "L'Afrique romaine" (1895), "Tacite" (1903), "La conjuration de Catilina" (1905), etc.

Bolanden (bō′län-den), **Konrad von.** The pseudonym of Joseph Eduard Konrad Bischoff.

Boldini (bōl-dē′ni), **Giovanni.** Born at Ferrara, Italy, 1845. An Italian painter. He was trained at the Academy of Fine Arts in Florence, and made his initial success in London. In 1872 he established himself in Paris and has produced many portraits and easel pictures. He is a brilliant colorist and technician of the school of Fortuny and Rico.

Boldrewood (bōl′dėr-wůd), **Rolf.** The pseudonym of Thomas Alexander Browne.

Bolivia*. In November, 1903, the republic ceded to Brazil the territory of the Acre for $10,000,000. In March, 1905, a treaty was negotiated between Bolivia and Chile whereby Chile agreed to build a railway from Arica to La Paz and Bolivia was to have free transit to the Pacific ports. The question of the boundary with Peru was submitted to the president of the Argentine Republic for arbitration in 1908.

Bolles (bōlz), **Albert Sidney.** Born at Montville, Conn., March 8, 1846. An American lawyer and writer on finance. He has been professor of mercantile law and banking in the Wharton School of Finance and Economy in the University of Pennsylvania; chief of the Bureau of Industrial Statistics of the State of Pennsylvania; and editor of the "Bankers' Magazine." His works include "A Financial History of the United States for the periods 1774–1789" (1879), "1789–1860" (1883), and "1860–1885" (1886), "Practical Banking" (1884), "Industrial History of the United States" (1878), "Conflict Between Labor and Capital" (1876), "A History of Pennsylvania" (1899), "American Finance" (1901), etc.

Boltzmann (bōltz′män), **Ludwig.** Born at Vienna, Austria, Feb. 20, 1844: died at Duino, Sept. 5, 1906. An Austrian physicist, professor of physics in the University of Vienna from 1902. He became professor of mathematics and physics at Gratz in 1869, of mathematics at Vienna in 1873, of experimental physics at Gratz in 1876, and of physics at Munich in 1890, at Vienna in 1895, and at Leipsic in 1900. His investigations were chiefly in thermodynamics and electricity. Among his works are "Vorlesungen über Maxwells Theorie der Elektricität und des Lichts" (1891–93), "Vorlesungen über Gastheorie" (1896–98), "Vorlesungen über die Prinzipe der Mechanik" (1897; 2nd vol., 1904), and "Populäre Schriften" (1905).

Bolyai (bōl′yō-i), **Farkas.** Born at Bolya, Hungary, Feb. 9, 1775: died Nov. 20, 1856. A Hungarian mathematician, professor in the Reformed College of Maros-Vásárhely 1802–49. His chief work was "Tentamen juventutem studiosam in elementa matheseos puræ introducendi" (1832–33).

Bolyai (bōl′yō-i), **János.** Born at Klausenburg, Hungary, Dec. 15, 1802: died at Maros-Vásárhely, Jan. 27, 1860. A distinguished Hungarian mathematician, son of Farkas Bolyai. His most famous work is an appendix to the first volume of the "Tentamen" of his father, entitled "Appendix scientiam spatii absolute veram exhibens," in which he develops the idea of a geometry which is independent of Euclid's axiom of parallels.

Bombon (bōm-bōn′), or **Taal** (tä-äl′), **Lake.** A lake in the northern part of Batangas province, southwestern Luzon, Philippine Islands, of about 12 miles mean diameter. It discharges through the Pansipit river into the Gulf of Balayan, a distance of about 6 miles. The northern part of the lake is occupied by Taal volcano.

Bombonon (bōm-bō-nōn′), **Port.** A bay and port on the southern coast of Negros Island, in the Philippines. It is safe for large vessels in all weather.

Bonaparte (bō′na-pärt), **Charles Joseph.** Born at Baltimore, June 9, 1851. An American lawyer and cabinet officer, grandson of Jérôme Bonaparte. He was graduated at Harvard University in 1871 and at the Harvard Law School in 1874. He has been prominent in reform movements, was secretary of the navy 1905–06, and was attorney-general 1906–09.

Bonaparte*, **Mathilde Lætitia Wilhelmine.** Died at Paris, Jan. 2, 1904.

Bond (bond), Sir **Edward Augustus.** Born at Hanwell, England, Dec. 31, 1815: died at Bayswater, London, Jan. 2, 1898. Principal librarian of the British Museum 1878–88. In 1833 he entered the Record Office as an assistant and was transferred to the British Museum in 1838. In conjunction with Sir E. Maunde Thompson he founded the Palæographical Society in 1873. He was knighted a few days before his death.

Bond (bond), Sir **Robert.** Born at St. John's, Newfoundland, Feb. 25, 1857. A Canadian statesman. He was elected to the Newfoundland House of Assembly in 1882 and became speaker of that body in 1884, was colonial secretary 1889–97, and was premier and colonial secretary of Newfoundland 1900–09. In 1902 he negotiated the Hay-Bond Treaty in the interest of reciprocal trade between the United States and Canada. He was knighted in 1902.

Bonheur*, **Juliette** (Mme. **Peyrol**). Died July 19, 1891.

Bonheur*, **Rosalie (Rosa) Marie.** Born at Bordeaux, France, March 16, 1822: died at Fontainebleau, May 25, 1899.

Boni (bō′ni), **Giacomo.** A contemporary Italian architect and archæologist. Since September, 1898, he has had charge of excavations in the Roman Forum by which the conditions of ancient Roman life have been revealed to a remarkable extent. He has also superintended the reconstruction of the Campanile at Venice.

Bonner*, **Robert.** Died at New York, July 6, 1899.

Bonsal (bon′sal), **Stephen.** Born at Baltimore, Md., March 29, 1865. An American journalist and author. He was special correspondent of the New York "Herald" in the Bulgarian-Servian war (1885), in the Macedonian uprising (1890), in the Chino-Japanese war (1895), in the Cuban insurrection (1897), in the Spanish-American war (1898), with the China relief expedition (1900), in the Philippine Islands (1901), in Venezuela (1903), and in the Balkans, Albania, Macedonia, Montenegro, etc. (1904). He was in the diplomatic service of the United States as secretary of legation and chargé d'affaires in Peking, Madrid, Tokio, and Korea 1891–96. He is the author of "Morocco as it is" (1892), "The Real Condition of Cuba" (1897), "The Fight for Santiago" (1899), and "The Golden Horse Shoe" (1900).

Booth (böth), **Ballington.** Born at Brighouse, Yorkshire, England, July 28, 1859. A religious writer and speaker, president and general-in-chief of the Volunteers of America: second son of William Booth, founder of the Salvation Army. He commanded the Salvation Army in Australia 1885–87 and in the United States 1887–96, and in the latter year founded an independent organization, the Volunteers of America, having its centers of Christian and philanthropic operation in different parts of the country.

Booth (böth), **Charles.** Born at Liverpool, March 30, 1840. An English statistician. He was president of the Royal Statistical Society 1892–94, and in 1904 served on the tariff commission. He has taken an active part in the agitation in England for old age pensions, a subject on which he has written extensively. His publications include, "Life and Labour of the People in London" (1889–1903), a standard work in twelve volumes, "Pauperism and Endowment of Old Age" (1892), "The Aged Poor Condition" (1894), and "Old Age Pensions" (1899).

Booth (böth), Mrs. (**Maud Charlesworth**). Born near London, 1865. A lecturer, writer, and leader of the Volunteer prison work: wife of Ballington Booth, president of the Volunteers of America. She has written "Branded." "Look up and Hope," "After Prison, What?," "Sleepy Time Stories." etc.

Booth-Tucker (böth′tuk′ėr), **Frederick St. George de Lautour.** Born at Monghyr, Bengal, March 21, 1853. An English religious worker, commander of the Salvation Army in the United States 1896–1905. He married Emma Moss Booth (died 1903), a daughter of William Booth, in 1888, and prefixed the name 'Booth' to his own. He established the Salvation Army in India in 1882, retaining command of it until 1891, when he went to London and served as secretary in the international work of the Army. He has written a "Life of General William Booth," "In Darkest India," etc.

Borchgrevink (bōrėh′gre-vingk), **Carsten Egeberg.** Born at Christiania, Norway, 1864. A Norwegian antarctic explorer. He emigrated to Australia in 1888 and worked there for several years as surveyor and teacher; made a voyage to the antarctic seas on a whaler in 1894; and commanded an antarctic expedition (in the Southern Cross) 1898–1900, attaining lat. 78° 50′ S. (in King Edward VII. Land), the farthest then reached. He also determined the position of the south magnetic pole. He has written "First on the Antarctic Continent: being an Account of the British Antarctic Expedition 1898–1900" (1901), etc.

Borghi-Mamo*, **Adelaide.** Died at Bologna, Italy, Oct., 1901.

Borglum (bôr′glum), **John Gutzon de la Mothe.** Born in Nevada, March 25, 1867. An American sculptor and painter. He was educated at the school of the Art Association in San Francisco and at the Julien Academy and the École des Beaux-Arts in Paris. His bronze group, "The Mares of Diomedes," won a gold medal at the Louisiana Purchase Exposition in 1904 and has been secured for the Metropolitan Museum in New York City.

Bornier (bôr-nyā′), **Henri,** Vicomte de. Born at Lunel, Hérault, France, Dec. 25, 1825: died at Paris, Jan. 29, 1901. A French poet and dramatist. He succeeded Xavier Marmier as member of the French Academy in 1893. Among his works are "Les premières feuilles," a volume of poems (1848); the plays "Le mariage de Luther" (1845), "Dante et Béatrix" (1853), "Le monde renversé" (1853), "Les noces d'Attila" (1879), "La moabite" (1880), "L'Apôtre" (1881), "Mahomet" (1890), "Le fils de l'Arétin" (1895), "France d'abord!" (1899), etc. He published his collected verse, "Poésies complètes," in 1888.

Bornu*. It is now entirely within the British protectorate of Nigeria.

Borodin (bō′rō-dēn), **Alexander Porphyrievitch.** Born at St. Petersburg, Nov. 12, 1834: died there, Feb. 27, 1887. A Russian composer, a member of the young national school founded by Balakiref. He studied medicine and chemistry, becoming assistant professor of chemistry in the Academy of Medicine in St. Petersburg in 1862, but from that time devoted his leisure to music. He composed three symphonies (the third unfinished), string quartets, piano pieces and songs, and an opera, "Prince Igor" (unfinished, but completed by Rimsky-Korsakoff and Glazounof and published in 1889).

Bortniansky (bōrt-nyän′ski), **Dimitri Stepanovitch.** Born at Glucho, Tchernigof, Russia, 1752: died at St. Petersburg, Oct. 9, 1825. A Russian composer, pupil of the Italian Galuppi. He was director of the Imperial Choir and composed much music for the Russian church.

Bosanquet (bō-säṅ-kā′), **Bernard.** Born at Alnwick, England, 1848. An English philosophical writer, professor of moral philosophy at St. Andrews 1903–08. He was graduated at Oxford and was lecturer at University College there 1871–81. Among his publications are "Logic, or Morphology of Knowledge" (1888), "The Philosophical Theory of the State" (1899), and a translation of Lotze's "System of Philosophy."

Bosnia*. With Herzegovina it was annexed by Austria-Hungary in October, 1908.

Boss (bos), **Lewis.** Born at Providence, R. I., Oct. 26, 1846. An American astronomer, director of the Dudley Observatory, Albany, New York, from 1876, and also director of the Southern Observatory of the Carnegie Institution from 1906. He was graduated at Dartmouth College in 1870; was astronomer of the northern boundary commission 1872–76; and was chief of the United States government expedition sent to Chile in 1882 to observe the transit of Venus. He has published "Declinations of Fixed Stars" (1878), "Catalogue of 8,241 Stars" (1890), "Positions and Motions of 627 Principal Standard Stars" (1904), and numerous scientific papers. He was awarded the gold medal of the Royal Astronomical Society of London in 1905.

Boston Public Library. A building, in the Roman Renaissance style, situated on the west side of Copley Square, Boston. It was erected 1888–95 at a cost of $2,486,000, from the designs of the architectural firm of McKim, Mead, and White. It is 228 feet long, 225 feet wide, and 68 feet high (to the cornice), and incloses an open court 136 feet long and 100 feet wide. The decorations are notable and include sculpture by MacMonnies and Augustus and Louis Saint-Gaudens, and paintings by Puvis de Chavannes, Edwin A. Abbey, John S. Sargent, and others. It contains over 900,000 volumes and pamphlets. Among its valuable collections are the Ticknor Collection of Spanish and Portuguese books, the Barton Library (containing Shaksperiana), the Prince Library (MSS. and early New England books), the Barlow Library (Americana), etc.

Boston University*. It comprises departments of the liberal arts (founded 1873), theology (1871), law (1872), medicine (1873), arts and sciences (a graduate school) (1874), and agriculture (Massachusetts Agricultural College) (1867).

Bostonians, The. A novel by Henry James, published in 1886.

Botha (bō'thä), **Louis.** Born at Greytown, Natal, Sept. 27, 1862. A noted Boer general and statesman. He commanded the Boer forces at Colenso (Dec. 15, 1899) and Spion Kop (Jan. 22–24, 1900), and on the death of Joubert became commander-in-chief of the Boer forces. In 1907 he became the first prime minister of the Transvaal Colony.

Botta (bot'tä), Mrs. (**Anne Charlotte Lynch**). Born at Bennington, Vt., 1820: died at New York, March 23, 1891. An American writer. In 1855 she married Vincenzo Botta, and their house in New York City became a literary center. She wrote "Leaves from the Diary of a Recluse" (1845), "Poems" (1848), "A Hand-book of Universal Literature" (1860), etc.

Botta (bot'tä), **Vincenzo.** Born at Cavallermaggiore, Italy, Nov. 11, 1818: died at New York, Oct. 5, 1894. An Italian-American educator. He was graduated at the University of Turin and held the post of professor of philosophy there. In 1849 he was elected to the Sardinian parliament. For more than thirty years he was professor of the Italian language and literature in the University of the City of New York. He wrote "Discourse on the Life, Character, and Policy of Cavour" (1862), "Dante as Philosopher, Patriot, and Poet" (1865), etc.

Bottesini*, Giovanni. Died July 7, 1889.

Bötticher (bėt'i-ċhėr), **Karl.** Born at Nordhausen, Germany, May 29, 1806: died at Berlin, June 21, 1889. A German archæologist, assistant director of the sculpture gallery of the Berlin Museum 1854–68, and director 1868–76. His chief work, "Tektonik der Hellenen" (1844–52), was an important contribution to the knowledge of Greek architecture.

Bottome (bo-tōm'), Mrs. (**Margaret McDonald**). Born at New York, Dec. 29, 1827: died Nov. 14, 1906. An American writer, founder and president of the international order of the King's Daughters and Sons. She was a member of the editorial staff of the "Ladies' Home Journal," and contributed many articles to religious and other papers. Among her publications are "Crumbs from the King's Table," "A Sunshine Trip to the Orient," etc.

Boughton*, George Henry. Born near Norwich, England, 1836: died at London, Jan. 19, 1905. He became a royal academician in 1896.

Bouguereau*, William Adolphe. Died at La Rochelle, France, Aug. 20, 1905.

Boulger (bul'jėr), **Demetrius Charles.** Born at London, July 14, 1853. An English historian and writer on Asiatic affairs. In 1885, with Sir Lepel Griffin, he founded the "Asiatic Quarterly Review," of which he was editor for several years. His works include "England and Russia in Central Asia" (1879), "Central Asian Portraits" (1880), "History of China" (1881), "Central Asian Questions" (1885), "The Story of India" (1897), "The Congo State" (1898), "India in the Nineteenth Century" (1901), "History of Belgium" (1902–), "Belgian Life in Town and Country" (1904), "Life of Sir Halliday Macartney" (1908), etc.

Boulle or **Boule** (böl), **Charles André.** Born at Paris, Nov. 11, 1642: died there Feb. 29, 1732. The leading member of a large family of French cabinet-makers. He learned his trade from his father, Jean Boulle, and in 1672 was granted quarters in the Louvre palace, where he built up an establishment for the manufacture of fine furniture and inlaid work, which in 1720 was destroyed by fire. He was a protégé of Louis XIV., for whom his best work was done. His characteristic effects are secured by inlaying metals, tortoise-shell, mother-of-pearl, and other colored materials on ebony or ebonized wood. Modern boule is an imitation of this. Erroneously, *Buhl.*

Bourbaki*, Charles Denis Sauter. Died at Bayonne, France, Sept. 22, 1897.

Bourdillon (bör'di-lọn), **Francis William.** Born March 22, 1852. An English poet. He has written "Among the Flowers, and Other Poems" (1878), "Ailes d'Alouette" (1890), "A Lost God" (1891), "Sursum Corda" (1893), "Nephelé" (1896), "Minuscula" (1897), etc.; and has edited and translated "Aucassin and Nicolette" (1887).

Bourgeois (bör-zhwä'), **Léon Victor Auguste.** Born at Paris, May 21, 1851. A French statesman. He was deputy for Marne in 1888; was under-secretary of state in the ministry of the interior 1888–89; was elected deputy for Rheims in 1889; was minister of the interior 1890, of public instruction 1890–92 and 1898, and of justice 1892; was premier 1895–96; was president of the Chamber of Deputies 1902–03; and was minister of foreign affairs March–Oct., 1906. In politics he is Republican Radical. He was delegate to the Hague Peace Conference in 1899 and in 1907. His works include "Des travaux publics communaux" (1877), "Les chemins de fer économiques à voie étroite et les accotements" (1878).

Bourne (bōrn), **Edward Gaylord.** Born at Strykersville, N. Y., June 24, 1860: died at New Haven, Conn., Feb. 24, 1908. An American historian and educator, professor of history in Yale University from 1895. He was graduated at Yale University in 1883 and was professor of history at Adelbert College 1890–95. His works include "The History of the Surplus Revenue of 1837" (1885), "Essays in Historical Criticism" (1901), an historical introduction to 'The Philippine Islands' (1903), "Spain in America" (1904), "Discovery, Conquest, and Early History of the Philippine Islands" (1907), "Travels of Jonathan Carver" (1907), editions of the narratives of the explorations of De Soto, of Champlain, and of Columbus, etc.

Boutet de Monvel (bö-tā'dė moṅ-vel'), **Louis Maurice.** Born at Orléans, France, 1851. A French painter and illustrator. He first exhibited in the Salon in 1874. Between 1876 and 1880 he made several visits to Algeria, and he has painted numerous portraits and Algerian subjects; but is best known as an illustrator. His colored drawings for books, especially those for children, have a peculiar simplicity and naiveté.

Boutwell*, George Sewall. Died at Groton, Mass., Feb. 27, 1905.

Bowditch (bou'dich), **Henry Pickering.** Born at Boston, Mass., April 4, 1840. An American physiologist, professor in the Medical School of Harvard University 1871–1906. He has made numerous contributions to the science of physiology.

Bowdler (bōd'lėr), **Thomas.** Born at Ashley, near Bath, July 11, 1754: died at Rhyddings, near Swansea, Wales, Feb. 24, 1825. An English editor of Shakspere. He published "The Family Shakespeare" (1818), and his method of expurgating the text gave rise to the term *bowdlerize.* He prepared, on similar lines, an edition of Gibbon's "History" (completed 1825 and published 1826).

Bowles (bōlz), **Francis Tiffany.** Born at Springfield, Mass., Oct. 7, 1858. An American naval officer, chief constructor of the United States Navy, with the rank of rear-admiral, 1901–03. He was graduated from the United States Naval Academy in 1879, and has been engaged in the construction of the new navy of the United States from its foundation. In 1903 he resigned from the navy to engage in private ship-building.

Bowman (bō'man), Sir **William.** Born at Nantwich, England, July 20, 1816: died near Dorking, March 29, 1892. An English surgeon noted especially for his work in ophthalmology and for his investigations relating to the mucous membranes, muscular fiber, and the structure of the kidney.

Boxers (bok'sėrz). A Chinese secret society, the members of which took a prominent part in the attack upon foreigners and native Christians in China 1899–1900. The Chinese name of the society is I-ho-chuan — League of United Patriots; but since the last part of the name can be so accented as to mean "fists," and since athletic exercises are much practised by members of the society, the name "Boxers" was given to them by foreigners.

Boyesen*, Hjalmar Hjorth. Died Oct. 4, 1895.

Boys' Brigade. A boys' organization, established in 1883 by W. A. Smith of Glasgow, the aim of which is "the promotion of all that tends towards a true Christian manliness." The boys are trained largely by means of military drill and discipline, and companies are formed in connection with religious organizations. The membership in the United Kingdom is 58,000 and the total strength of the brigade, including the members in the United States, is about 105,000.

Bracquemond (bräk-môṅ'), **Félix Joseph Auguste.** Born at Paris, May 22, 1833. A French painter, etcher, ceramist, and ornamenter. He was a pupil of Joseph Guichard, who was a pupil of Ingres. He exhibited first in the Salon of 1852. His chief successes have been in etching,

Braddock (brad'ọk). A borough in Allegheny County, Pennsylvania, named in memory of General Braddock, who was killed in the vicinity in 1755. It has manufactures of steel and of other articles used in the construction of railroads and railroad cars. Population (1900), 15,654.

Bradford (brad'fọrd), **Gamaliel.** Born at Boston, Mass., Jan. 15, 1831. An American banker and publicist. He is the author of "The Lesson of Popular Government" (1898), and of various essays and monographs.

Bradley (brad'li), **Arthur Granville.** Born Nov. 11, 1850. An English historian and writer. Among his publications are a "Life of Wolfe" (1895), "Highways and Byways of North Wales" (1898), "Highways and Byways of the English Lake District" (1901), "Owen Glyndwr" (1901), "Highways and Byways of South Wales" (1903), "Marches of South Wales" (1905), "The Romance of Northumberland" (1908), etc.

Bradley (brad'li), **Henry.** Born at Manchester, England, Dec. 3, 1845. An English historian and philologist. He was educated at Oxford and Heidelberg, and was employed as a clerk and foreign correspondent at Sheffield until 1884, when he removed to London. He was president of the Philological Society 1891–93 and 1900–03. In 1889 he became joint editor with Dr. Murray of "The Oxford English Dictionary." His publications include "The Story of the Goths" (1888), "The Making of English" (1904), etc. He was made fellow of the British Academy in 1907.

Bradley (brad'li), **Joseph P.** Born in Berne, N. Y., March 14, 1813: died in Washington, D. C., Jan. 22, 1892. An eminent American jurist, appointed an associate justice of the United States Supreme Court in 1870. He was a member of the Electoral Commission in 1877.

Brady (brā'di), **Cyrus Townsend.** Born at Allegheny, Pa., Dec. 20, 1861. An American clergyman and author. He was graduated from the United States Naval Academy in 1883; was ordained priest in the Protestant Episcopal church in 1890; was archdeacon of Kansas 1892–95, and of Pennsylvania 1895–99; was rector at Overbrook, Philadelphia, in 1899, and of Trinity Church, Toledo, Ohio, in 1905; and served as chaplain of the First Pennsylvania Volunteers during the Spanish-American war. He has written "Recollections of a Missionary in the Great West" (1900), "American Fights and Fighters Series," and many volumes of fiction and biography.

Brahmaputra*. In 1908 Dr. Sven Hedin announced that he had determined in Tibet the true sources of the river Brahmaputra.

Brahms*, Johannes. Died at Vienna, April 3, 1897.

Brainard (brā'närd), **David Legge.** Born in Norway, Herkimer County, N. Y., Dec. 21, 1856. An American arctic explorer. He enlisted in the United States Army in 1876 and was promoted sergeant; fought in the Indian campaigns of 1877–78 under General Miles; and was a member of Greely's expedition to Lady Franklin bay 1881–84. With Lieutenant J. B. Lockwood he reached lat. 83° 24′ N., the highest then attained, in May, 1882, and in 1883 explored Grinnell Land and the northwestern coast of Greenland with him. In 1886 he was commissioned second lieutenant in the United States Army, "for distinguished and meritorious services in connection with the Arctic Expedition 1881–1884," and was promoted lieutenant-colonel, in the Subsistence Department, in 1905.

Brampton, Baron. See *Hawkins, Sir Henry.*

Brand (brand), Sir **Henry Bouverie William,** first Viscount Hampden and twenty-third Baron Dacre. Born Dec. 24, 1814: died at Pau, France, March 14, 1892. An English statesman. He was Liberal member for Lewes 1852–68, and for Cambridgeshire 1868–84; was parliamentary secretary to the treasury 1859–66; and was speaker of the House of Commons 1872–84. He was knighted in 1881, created Viscount Hampden of Glynde in 1884, and succeeded to the title of Lord Dacre in 1890.

Brandis (brän'dis), Sir **Dietrich.** Born at Bonn, March 31, 1824: died there, May 28, 1907. An eminent German botanist and authority on forestry. In 1856 he went to India and was placed in charge of the teak forests of Burma, and in 1864 was appointed the first inspector-general of the forests of India. He retired to Bonn in 1883. Knighted in 1887.

Brandon (bran'dọn). A manufacturing city, the capital of Brandon County, Manitoba. It has an industrial school for Indians. Population (1901), 5,380.

Brangwyn (brang'win), **William Francis.** Born of Welsh parents at Bruges, Belgium, 1867. A British painter, etcher, and decorator. He exhibited at the Royal Academy in London as early as 1886 and at the Chicago Exposition in 1893 won a medal with his picture "The Convict Ship." His etchings are printed in small editions and are highly valued by connoisseurs. Among his most notable decorations are a series in the great hall of the Skinners' Company and a wall picture at Lloyd's Registry.

Branner (bran'ėr), **John Casper.** Born at Newmarket, Tenn., July 4, 1850. An American geologist, professor in Leland Stanford University from 1891, and vice-president since 1899. He was graduated at Cornell University in 1874; was geologist of the Imperial Geological Commission of Brazil 1875–77, and agent of the United States Department of Agriculture in Brazil 1882–83; was connected with the geological survey of Pennsylvania 1883–85; was professor of geology in the University of Indiana 1885–91; was state geologist of Arkansas 1887–93; and conducted an expedition to Brazil in 1899. He has published numerous scientific reports and papers.

Brassey*, Thomas, Lord. He was born Feb. 11, 1836; was civil lord of the admiralty 1880–84; was secretary to the admiralty 1884–85; became a peer in 1886; was president of the Institute of Naval Architects 1893–95; and was governor of Victoria 1895–1900. He was the founder and first editor of the "Naval Annual." Among his works are "Work and Wages" (1872), "British Navy" (1881), "Sixty Years of Progress, and the New Fiscal Policy" (1904), etc.

Brazil*. The republic contains 20 states: Alagoas, Amazonas, Bahia, Ceara, Espirito Santo, Goyaz, Maranhao, Matto Grosso, Minas Geraes, Para, Parahyba do Norte, Parana, Pernambuco, Piauhy, Rio Grande do Norte, Rio Grande do Sul, Rio de Janeiro, Santa Catharina, and São Paula; one national territory, known as the Acre country, and acquired from Bolivia by treaty in November, 1903, in consideration of $10,000,000; and the federal district. A national exposition was held at Rio de Janeiro in 1908. In April, 1907, a boundary treaty was signed with Colombia, by which the frontier is traced from Cuchuhy on the Rio Negro to the confluence of the Apaporis and Yapura. From this point southward to the Amazon, the boundary is still unsettled.

Brazza*, Count **Pierre Savorgnan de.** Died at Fort Dakar, Senegambia, Sept. 14, 1905.

Bredichin (brā'di-ċhin), **Fedor Alexandrovitch.** Born at Nikolaief, Russia, Dec. 8, [N. S.], 1830: died at St. Petersburg, May 14, 1904. An eminent Russian astronomer, director of the observatory of the University of Moscow 1873–1890, and of that of Pulkowa 1890-94. His principal work was his investigation of the forms of comets, in connection with his theory of meteors.

Breeches Bible, The. See *Geneva Bible.*

Brehm (brām), **Christian Ludwig.** Born at Schönau, near Gotha, Germany, Jan. 24, 1787: died at Renthendorf, near Neustadt-on-the-Orla, Saxe-Weimar, June 23, 1864. A German naturalist, author of numerous works on ornithology.

Breton*, Emile Adélard. Died Nov. 26, 1902.

Breton*, Jules Adolphe Aimé Louis. Died at Paris, July 5, 1906.

Brewer (brö′ėr), **David Josiah.** Born June 20, 1837: died March 28, 1910. An American jurist, nephew of Stephen J. Field. He was graduated at Yale in 1856 and at the Albany Law School in 1858; was justice of the Supreme Court of Kansas 1870–84; was judge of the Circuit Court of the United States 1884–89; and was appointed associate justice of the United States Supreme Court in 1889. In 1897 he was president of the British-Venezuelan Boundary Commission appointed by President Cleveland and was a member of the Arbitration Tribunal to determine that boundary (Paris, 1899). He has written "The Pew to the Pulpit" (1897), "The Twentieth Century from Another View Point" (1899), "American Citizenship" (1902), "The United States a Christian Nation" (1905).

Brewster (brö′stėr), **Benjamin Harris.** Born in Salem County, N. J., Oct. 13, 1816: died at Philadelphia, April 4, 1888. An American jurist. He was graduated at Princeton in 1834 and admitted to the Philadelphia bar in 1838. In 1867 he was appointed attorney-general of Pennsylvania, and was attorney-general of the United States 1881–85.

Brialmont*, Henri Alexis. Died at Brussels, July 21, 1903.

Briand (bri-oṅ′), **Aristide.** Born at Nantes, March 28, 1862. A French statesman, a member of the Socialist party. In March, 1906, he became minister of instruction and public worship in the cabinet of Sarrien and remained in that position under Clemenceau from Oct., 1906, to July, 1909. In Jan., 1908, he became also minister of justice. He secured the passage of the law effecting the separation of church and state. In July, 1909, he became premier.

Brice (brīs), **Calvin Stewart.** Born at Denmark, Ohio, Sept. 17, 1845: died at New York, Dec. 15, 1898. An American politician. He was graduated from the Miami University (Oxford, Ohio) in 1863 and was admitted to the bar in 1866. He served with the Union Army in the Civil War; was identified with railroad interests in the United States and China; was chairman of the Democratic campaign committee which conducted the national campaign in 1888; and was United States senator from Ohio 1891–97.

Bridges (brij′ez), **Robert**: pseudonym **Droch.** Born at Shippensburg, Pa., July 13, 1858. An American author, editor, and critic. He was graduated at Princeton in 1879; was a reporter for the Rochester "Democrat and Chronicle" in 1880; was assistant news-editor of the New York "Evening Post" 1881–87; was literary reviewer for "Life" 1883–1900; and since 1887 has been assistant editor of "Scribner's Magazine." He is the author of "Overheard in Arcady" (1894), "Suppressed Chapters and Other Bookishness" (1895), "Bramble Brae," a volume of poems (1902), etc.

Bridges (brij′ez), **Robert.** Born Oct. 23, 1844. An English poet, critic, and physician. He held various positions in the London hospitals until 1882, when he retired from practice. He has written several volumes of poems, a study of "Milton's Prosody," "The Growth of Love," a number of plays, including "Nero," "Palicio," "Ulysses," "Christian Captives," "Achilles in Scyros," "Humours of the Court," and "The Feast of Bacchus," and also an oratorio entitled "Eden."

Bridgman, Laura Dewey. Born at Hanover, N. H., Dec. 21, 1829: died at South Boston, Mass., May 24, 1889. A blind deaf-mute noted in connection with educational methods for unfortunates of her class. Having lost sight and hearing and having been partially deprived of the senses of taste and smell by scarlet fever at three years of age, she was placed in the Blind Asylum at South Boston, at the age of eight, where she was educated by means of a raised alphabet devised by the principal, Dr. S. G. Howe.

Briggs*, Charles Augustus. He was ordained a priest of the Episcopal Church in 1899. Among his recent works are "Incarnation of the Lord" (1902), "Ethical Teaching of Jesus" (1904), "New Light on the Life of Jesus" (1904), "The Papal Commission and the Pentateuch," with Baron Friedrich von Hügel (1906), etc.

Bright (brīt), **Mynors.** Born 1818: died Feb. 23, 1883. An English scholar, proctor and president of Magdalene College, Cambridge, and editor of Pepys's "Diary." His edition of Pepys (1875–79), which is based upon a complete redecipherment of the original manuscript, corrects many errors in the earlier editions and includes a large number of passages previously suppressed.

Brink (bringk), **Jan ten.** Born at Appingedam, Netherlands, June 15, 1834: died at Leyden, July 19, 1901. A Dutch author, educator, and critic. In 1889 he was appointed professor of the history of Dutch literature at Leyden. Among his critical works are "Schets eener geschiedenis der Nederlandsche letterkunde" (1867–69), "Vondel bekroond" (1868), "Bulwer Lytton: biografie en kritiek" (1873), "Letterkundige schetsen" (1874–75), "Émile Zola" (1879), "Onze hedendaagsche letterkundigen" (1882–87: reprinted in 1902 as "Geschiedenis der Noord-Nederlandsche letteren in de XIX. eeuw"), "Causerien over moderne romans" (1884), and "De Roman in brieven 1740–1840" (1889). He is also the author of a number of novels.

Brinton*, Daniel Garrison. Died at Atlantic City, N. J., July 31, 1899. Among his later works are "Races and Peoples" (1890), "American Race" (1891), "Religions of Primitive Peoples" (1897), "Basis of Social Relations" (1902), etc.

Brisson*, Eugène Henri. He was elected permanent president of the Chamber of Deputies in June, 1906.

British Academy for the Promotion of Historical, Philosophical, and Philological Studies, The. An association incorporated by royal charter, August 8, 1902. Its formation was due to a suggestion made at the assembling of the International Association of Academies at Wiesbaden in 1899 and a consequent meeting of representative scholars at the British Museum in 1901. The fellowship is limited to one hundred. Its first president was Lord Reay.

British Columbia*. The province sends 7 members to the Dominion House of Commons and 3 members to the Senate.

British East Africa Company*, Imperial. In 1893 it resigned the administration of Uganda and Witu to the British government.

Britton (brit′on), **Nathaniel Lord.** Born at New Dorp, Staten Island, N. Y., Jan. 15, 1859. An American botanist, director of the New York Botanical Garden from 1896. He was graduated at the Columbia School of Mines in 1879, and was professor of botany in Columbia University 1888–96. Among his publications are "Illustrated Flora of the Northern United States and Canada," and "Manual of the Flora of the Northern United States and Canada."

Broadland (brôd′land). A name for the region of the Norfolk Broads, England.

Broca (brō′kä), **Paul.** Born at Sainte-Foy-la-Grande, Gironde, France, June 28, 1824: died at Paris, July 9, 1880. An eminent French anthropologist, founder of the Anthropological Society of Paris (1859), of the School of Anthropology (1876), and of the French Association for the Advancement of the Sciences (1872). He became a member of the Senate in 1880. Among his works are "Instructions générales pour les recherches anthropologiques" (1865), "Instructions craniologiques et craniométriques" (1875), "Mémoires sur les caractères physiques de l'homme préhistorique" (1869), and "Mémoires d'anthropologie" (1871–83: fifth vol., edited by Pozzi, 1888).

Brockway (brok′wā), **Zebulon Reed.** Born at Lyme, Conn., April 28, 1827. An American penologist, superintendent of the New York State Reformatory at Elmira 1876–1900, and mayor of Elmira 1906–07. He was appointed deputy superintendent of the Albany Penitentiary in 1851, superintendent of the Monroe County (New York) Penitentiary in 1854, and of the Detroit House of Correction in 1861. He has written numerous papers on the subject of penology.

Brodrick (brod′rik), **William St. John Fremantle,** ninth Viscount Midleton. Born Dec. 14, 1856. A British Conservative statesman. He was educated at Eton and Balliol College, Oxford; represented Surrey (West 1880–85 and South-west 1885–1906) in the House of Commons; and was financial secretary to the War Office 1886–92, under-secretary of state for war 1895–98, under-secretary of state for foreign affairs 1898–1900, secretary of state for war 1900–03, and secretary of state for India 1903–Dec., 1905.

Brodsky (brōd′ski), **Adolf.** Born at Taganrog, Province of the Don Cossacks, Russia, March 21, 1851. A distinguished Russian violinist. He was a member of the Hellmesberger Quartet in Vienna, and from 1868 to 1870 of the imperial opera orchestra there, and later was a professor at the conservatory of Moscow (1875–79). From 1879 to 1881 he was conductor of the symphony orchestra in Kief; made concert tours in Austria, Germany, and England 1881–83; and was professor at the Leipsic Conservatory 1883–91. In 1891–94 he was in the United States and Canada. In 1895 he was appointed professor, and later principal, at the Manchester Royal College of Music in England.

Broglie*, Jacques Victor Albert, Duc de. Died Jan. 19, 1901.

Brohan*, Emilie Madeleine. Born at Paris, Oct. 21, 1833: died there, Feb. 25, 1900.

Bronzino (bron-zē′nō), **Angiolo Allori**: called **Bronzino.** Born at Monticelli, near Florence, 1502: died at Florence, 1572. A Florentine painter and poet. He was a pupil of Raffaellino del Garbo and Jacopo Carrucci, called Pontormo. He was also much influenced by Michelangelo, whose style of drawing he affected. Bronzino was the favorite painter of Cosimo I., Duke of Tuscany, and has left a fine series of portraits of the Medici family. His best works are in Florence and Pisa.

Brooke (brůk), **John Mercer.** Born at Tampa, Florida, Dec. 18, 1826: died at Lexington, Va., Dec. 14, 1906. An American physicist. He was graduated from the Naval Academy at Annapolis in 1847, but resigned from the U. S. Navy in 1860. In 1861 he entered the Confederate service and became chief of the bureau of ordnance and hydrography. He invented a gun, named for him, and made the plans which were used in refitting the "Merrimac" ("Virginia"). He was professor of physics in the Virginia Military Institute 1865–99.

Brooke (brůk), **John Rutter.** Born at Pottsville, Pa., July 21, 1838. An American soldier, promoted major-general in the regular army in 1897. He enlisted in the Northern Army in 1861 and attained the brevet rank of major-general of volunteers in 1864. In April, 1898, during the Spanish-American War, he was placed in command of the troops in Chickamauga Park and in July was sent to Porto Rico, where he was head of the military commission and governor-general until December, when he became governor-general of Cuba. In 1900 he was placed in command of the department of the East. He retired in 1902.

Brooklyn*. Brooklyn became one of the boroughs of the Greater City of New York in 1898. See *New York.*

Brooks (brůks), **Noah.** Born at Castine, Me., Oct. 24, 1830: died at Pasadena, Cal., Aug. 16, 1903. An American journalist and writer of biography, history, and fiction, particularly for boy readers. He was editor of the Newark (New Jersey) "Advertiser" 1884–94. He published "The Boy Emigrants" (1876), "The Life of Abraham Lincoln" (1889), "American Statesmen" (1893), "The Story of Marco Polo" (1896), etc.

Brooks (brůks), **William Keith.** Born at Cleveland, Ohio, March 25, 1848: died at Lake Roland, near Baltimore, Nov. 12, 1908. An American biologist, associate professor (and later professor) of zoölogy at Johns Hopkins University, Baltimore, from 1876. He was graduated at Williams College in 1870 and was assistant in the Boston Society of Natural History 1875–76. Among his published works are "Handbook of Invertebrate Zoölogy" (1882), "Heredity" (1884), "Lucifer: a Study in Morphology" (1881), "The Stomatopoda of H. M. S. Challenger" (1886), "Foundations of Zoölogy" (1898), etc.

Brosch (brōsh), **Moritz.** Born at Prague, April 7, 1829: died at Venice, July 15, 1907. A German historian and journalist. His works include "Papst Julius II. und die Gründung des Kirchenstaats" (1878), "Geschichte des Kirchenstaats" (1880–82), "Lord Bolingbroke und die Whigs und Tories seiner Zeit" (1883), "Oliver Cromwell und die puritanische Revolution" (1886), "Geschichte von England, 1603–1850" (1890–97).

Brown (broun), **Alice.** Born at Hampton Falls, N. H., Dec. 5, 1857. An American author. Her work includes "Meadowgrass" (1895), "By Oak and Thorn" (1896), "Tiverton Tales" (1899), "King's End" (1901), "Margaret Warrender" (1901), "The Mannerings" (1903), "Judgment" (1903), "High Noon" (1904), "The Court of Love" (1906), "The Story of Thyrza" (1909), etc.

Brown (broun), **Francis.** Born at Hanover, N. H., Dec. 26, 1849. An American scholar, clergyman, and educator, president of Union Theological Seminary 1908–. He was instructor in biblical philology in Union Theological Seminary, New York, 1879–81, and associate professor 1881–90; and was appointed professor of Hebrew and cognate languages in 1890. He is the author of "Assyriology; Its Use and Abuse" (1885), and "The Christian Point of View" (1902: with George William Knox and Arthur C. McGiffert); and has compiled, with S. R. Driver and C. A. Briggs, a "Hebrew and English Lexicon of the Old Testament" (1891–1906).

Brown (broun), **Henry Billings.** Born at South Lee, Mass., March 2, 1836. An American jurist. He was graduated at Yale in 1856 and was admitted to the (Michigan) bar in 1860. He was United States judge for the Eastern District of Michigan 1875–90, and associate justice of the United States Supreme Court 1891–1906. His publications include "Admiralty Reports" (1876), and sundry articles in legal magazines.

Browne*, Henriette. Died in 1901.

Browne*, Junius Henri. Died at New York, April 2, 1902.

Browne (broun). **Thomas Alexander**: pseudonym **Rolf Boldrewood.** Born at London, England, Aug. 6, 1826. An Australian novelist. Among his works are "Robbery Under Arms" (1888), "The Miner's Right" (1890), "The Squatter's Dream" (1895), "The Crooked Stick" (1895), "War to the Knife" (1899), "The Ghost Camp" (1902), "The Last Chance" (1905), "A Tale of the Golden West" (1906), etc.

Brownell (brou-nel′), **William Crary.** Born at New York, Aug. 30, 1851. An American critic, author, and editor. He was graduated at Amherst College in 1871 and became in 1888 a literary adviser to the publishing house of Charles Scribner's Sons. Besides his contributions to periodicals he has written "French Traits" (1889), "French Art" (1892), and "Victorian Prose Masters" (1901).

Browning (brou′ning), **Oscar.** Born at London, England, Jan. 17, 1837. An English historian, critic, and writer. He is the author of "Modern England, 1820-1874" (1878), "Modern France, 1814-1879" (1880), "England and Napoleon in 1803" (1887), "Aspects of Education" (1888), "History of Educational Theories" (1889), "Life of George Eliot" (1890), "Dante, Life and Writings" (1891), "Goethe, his Life and Writings" (1891), "The Life of Bartolommeo Colleoni" (1891), "Guelphs and Ghibellines" (1893), "The Age of the Condottieri" (1895), "Peter the Great" (1898), "Charles XII. of Sweden" (1898), "Wars of the Nineteenth Century" (1899), "Impressions of Indian Travel" (1903), "Napoleon: First Phase" (1905), "The Fall of Napoleon" (1907), etc.

Brownson (broun'son), **Orestes Augustus.** Born at Stockbridge, Vt., Sept. 16, 1803: died at Detroit, Mich., April 17, 1876. An American journalist and theologian. At first a Presbyterian, he became a Universalist minister in 1825, a Unitarian preacher in 1832, and a Roman Catholic in 1844.

Brown University*. It has over 90 instructors and nearly 1,000 students, and a library of 150,000 volumes.

Bruce (brös), **Victor Alexander,** ninth Earl of Elgin and thirteenth Earl of Kincardine. Born near Montreal, May 16, 1849. A British Liberal statesman. He was educated at Eton and at Balliol College, Oxford; succeeded his father in 1863; was viceroy of India 1894-99; was chairman of the war commission in 1902, and chairman of the royal commission on the Scottish church crisis in 1904; and was secretary of state for the colonies Dec., 1905-08.

Bruckner (brök'ner), **Anton.** Born at Ansfelden, Upper Austria, Sept. 4, 1824: died at Vienna, Oct. 11, 1896. An Austrian organist, composer, and teacher. He was professor of harmony and counterpoint in the Vienna Conservatory. His most important works are nine symphonies (the last unfinished), which show the strong influence of Wagner, masses, a Te Deum, and other church music.

Bruneau (brü-nō'), **Alfred.** Born at Paris, March 3, 1857. A French composer and critic of music. His most important works are the operas "Le Rêve" (1891), "L'attaque au moulin" (1893), "Messidor" (1897), "L'enfant roi" (1905), "Naïs Micoulin" (1907), etc.; and songs. He has also published several volumes of critical writings.

Brunetière*, **Ferdinand.** Died at Paris, Dec. 9, 1906.

Brunner*, **Sebastian.** Died at Währing, near Vienna, Nov. 26, 1893.

Brush*, **George de Forest.** He was made a member of the National Academy of Design in 1902.

Brush (brush), **George Jarvis.** Born at Brooklyn, N. Y., Dec. 15, 1831. An American mineralogist, professor of metallurgy 1855-64, and of mineralogy from 1864 in the Yale (Sheffield) Scientific School. He was director of the Sheffield Scientific School 1872-98.

Bryan, William Jennings. Born at Salem, Ill., March 19, 1860. An American statesman. He served two terms in Congress as Democratic representative from Nebraska, and later engaged in journalism. He was nominated for president by the Democrats and Populists in 1896, and again in 1900, and by the Democrats in 1908, but was each time defeated.

Bryce*, **James.** He was chief secretary for Ireland 1905-06; member of Parliament (Liberal) for Aberdeen 1885-1906; and ambassador extraordinary and minister plenipotentiary to the United States 1907-. Among his later publications are "Impressions of South Africa" (1897), "Studies in History and Jurisprudence" (1901), and "Studies in Contemporary Biography" (1903).

Bryn Mawr College*. It has about 60 instructors and 450 students, and a library of about 52,000 volumes and 8,000 pamphlets.

Bucas (bö-käs') **Islands.** Three small islands of the Philippines, lying northeast of Mindanao and southwest of Siargao and forming part of the eastern boundary of Surigao Strait. On the eastern coast of Bucas Grande is Port Sibonga, a harbor safe in all weather for vessels not exceeding 15 feet draft. Area of the three islands, 53.4 square miles. Area of Bucas Grande, 43 square miles. Population (1903), 810.

Buchan (buk'an), **Alexander.** Born at Kinnesswood, Kinross-shire, Scotland, April 11, 1829: died at Edinburgh, May 13, 1907. A Scotch meteorologist, secretary of the Scottish Meteorological Society from 1860. He published numerous works and papers upon meteorological subjects, including "A Handy Text-book of Meteorology" (1867), "Introductory Text-book of Meteorology" (1871), "Atmospheric Circulation" (1889), "Oceanic Circulation" (1895), etc.

Buchanan*, **Robert Williams.** Died June 10, 1901.

Bücheler (büch'e-ler), **Franz.** Born in Rheinberg, June 3, 1837: died at Bonn, May 8, 1908. A noted German philologist, professor of classical philology at Bonn from 1870. He is especially known for his critical work on the classics.

Büchner*, **Friedrich Karl Christian Ludwig.** Died at Darmstadt, May 1, 1899.

Buckingham (buk'ing-am), **William Alfred.** Born at Lebanon, Conn., May 28, 1804: died at Norwich, Conn., Feb. 3, 1875. An American governor. He was governor of Connecticut 1858-66 and Republican senator from that state 1869-75. During the Civil War he was influential in raising the 55,000 volunteers which Connecticut sent to the Union army.

Buckley (buk'li), **James Monroe.** Born at Rahway, N. J., Dec. 16, 1836. An American clergyman, author, and editor. From 1859 to 1880 he filled pastorates of the Methodist Episcopal Church in New Hampshire, Michigan, Connecticut, and Brooklyn; since then he has been editor of "The Christian Advocate," of New York. Among his publications are "Oats or Wild Oats" (1885), "Faith Healing, Christian Science, and Kindred Phenomena" (1887), "Travels in Three Continents" (1894), "History of Methodism in the United States" (1897), "The Fundamentals and Their Contrasts" (1906), etc.

Buckner*, **Simon Bolivar.** He was nominated for vice-president by the National (Sound-money) Democrats in 1896.

Budde (böd'e), **Karl Ferdinand Reinhard.** Born at Bensberg, near Cologne, Germany, April 13, 1850. A German evangelical theologian, professor of Old Testament theology in the University of Marburg from 1900. Among his works are "Die Biblische Urgeschichte untersucht" (1883), "Die Bücher Richter und Samuel" (1890), "Der Kanon des Alten Testaments" (1900), "Das Alte Testament und die Ausgrabungen" (1903).

Budge (buj), **Ernest Alfred Thompson Wallis.** Born in Cornwall, July 27, 1857. An English archæologist, keeper of Assyrian and Egyptian antiquities at the British Museum. He has conducted explorations at Nineveh, Dêr (Mesopotamia), Assuan (Egypt), and Gebel Barkal (Sudan), and has published a large number of works on Oriental subjects.

Buell*, **Don Carlos.** Died Nov. 19, 1898.

Buenos Aires*. It is the first city in size of South America.

Buffalo*. It is the second city in size in the State (Greater New York being the first).

Buffalo Exposition. See *Pan-American Exposition.*

Bugge (bö'ge), **Elsius Sophus.** Born at Laurvig, Norway, Jan. 5, 1833: died at Christiania, June 8, 1907. A distinguished Norwegian philologist, professor of comparative philology in Christiania from 1866. He is best known from his work on the Eddas and earlier sagas.

Buhl. See *Boulle.*

Bulacan (bö-lä-kän'). A province in southern Luzon, Philippine Islands. It is bounded by Nueva Ecija on the north; Nueva Ecija and Infanta (separated by the Sierra Madre Mountains) on the east; Rizal and Manila bay on the south; and Pampanga on the west. Capital, Malolos. The Rio Grande de la Pampanga flows through it from north to south. The eastern part of the province is mountainous; the western part is fertile, producing sugar-cane and rice. The population is Tagalog. Area, 1,173 square miles. Population (1903), 223,742.

Bulawayo (bö-lä-wä'yō). A town in Matabeleland, South Africa, about lat. 20° 15′ S., long. 28° 30′ E. It contains a government office, schools, hotels, etc.

Bulfinch (bůl'finch), **Charles.** Born at Boston, Mass., Aug. 8, 1763: died there, April 15, 1844. An American architect. He designed the Doric column which replaced the beacon on Beacon Hill; built the Boston State House, between 1795 and 1798, the McLean Hospital, Somerville, and the General Hospital, Boston; and became architect of the Capitol at Washington, January 8, 1818, succeeding Benjamin H. Latrobe. He built there the porticos on the western side.

Bulgaria*. There is also a Grand Sobranje, consisting of members elected in the proportion of 1 to 10,000 of the population, to which constitutional and other questions of state are referred. On Oct. 5, 1908, Bulgaria declared her independence and the ruler assumed the title of czar.

Bullen (bůl'en), **Frank Thomas.** Born at London, April 5, 1857. An English author and lecturer. He led a roving life from 1866 to 1883, chiefly at sea, rising from seaman to the rank of chief mate, and was a junior clerk in the Meteorological Office 1883-99. He has written "The Cruise of the Cachelot" (1898), "Idylls of the Sea" (1899), "The Log of a Sea-waif" (1899), "Men of the Merchant Service" (1900), "With Christ at Sea" (1900), "Deep-sea Plunderings" (1902), "Creatures of the Sea" (1904), "Back to Sunny Seas" (1905), "Son of the Sea" (1907), "Our Heritage — the Sea" (1907), "Call of the Deep" (1908), "Young Nemesis" (1909), etc.

Buller (bůl'ėr), Sir **Redvers Henry.** Born in Devonshire in 1839: died June 2, 1908. A British general. He served in China 1860, the Red River Expedition 1870, the Ashanti war 1873-74, the Kaffir war 1878, the Zulu war 1879, the Boer war 1881, the Egyptian war 1882, and the Sudan campaigns 1884-85. He was under-secretary for Ireland 1886-87, and quartermaster-general 1887-90, and was appointed adjutant-general Oct., 1890. In 1891 he was made lieutenant-general, and in 1899 was commander-in-chief of the British forces in South Africa. Retired 1901.

Bullion State, The. A nickname of the State of Missouri.

Bülow (bü'lō), Prince **Bernhard Henry Martin Charles von.** Born at Klein-Flottbeck, Holstein, Germany, May 9, 1849. A German statesman, chancellor of the empire 1900-09. He entered the diplomatic service in 1873; was a secretary of the Berlin Congress in 1878; was second and afterward first secretary of the embassy at Paris 1879-83; was first secretary of the embassy at St. Petersburg 1883-88; was minister at Bukarest 1888-93; was ambassador at Rome 1893-97; was minister of state and secretary of state for foreign affairs 1897-1900; and was imperial chancellor and Prussian president of the council of ministers from October, 1900. In June, 1905, he was created a prince after he had secured the retirement of M. Delcassé, foreign minister of France, whose policy, especially with regard to Morocco, had become offensive to Germany. His diplomacy resulted in the conference at Algeciras (which see).

Bulthaupt (bölt'houpt), **Heinrich.** Born at Bremen, Oct. 26, 1849: died there, Aug. 20, 1965. A German poet and dramatist, librarian of the city of Bremen from 1879. Among his dramatic works are "Saul" (1870), "Die Arbeiter" (1876), "Viktoria" (1894), "Die Malteser" (1883), "Gerold Wendel" (1884), etc. He has also written "Dramaturgie des Schauspiels" (1882-1901), an exposition of the art of Shakspere and of the great German dramatists.

Buluan (bö-lö'än), **Lake.** A marshy lake in the southeastern part of Cottabato district, Mindanao, Philippine Islands. It is connected by narrow streams with Lake Liguasan, and thus feeds the Rio Grande de Mindanao, which flows through the latter lake. Area about 114 square miles.

Bulwer-Clayton Treaty*. It was abrogated in 1901 by the Hay-Pauncefote Treaty, signed at Washington Nov. 18, and ratified by the Senate Dec. 16.

Bumpus (bum'pus), **Hermon Carey.** Born at Buckfield, Maine, May 5, 1862. An American biologist, director of the American Museum of Natural History in New York City from 1902. He was professor (of biology) at Olivet College (Michigan) 1886-89, and at Brown University (successively assistant professor and associate professor of zoölogy and professor of comparative anatomy) 1890-1901; was assistant director of the marine biological laboratory at Woods Hole 1893-95, and director of the biological laboratory of the United States Fish Commission at Woods Hole 1898-1901; and was curator of invertebrate zoölogy in the American Museum of Natural History 1901-02.

Bunce (buns), **Francis Marvin.** Born at Hartford, Conn., Dec. 25, 1836: died there, Oct. 19, 1901. An American naval officer, appointed rear-admiral in 1898. In the same year he retired from active service. He was graduated from the United States Naval Academy in 1857; served in the Union navy in the Civil War; and commanded the North Atlantic Squadron 1895-97.

Bunner*, **Henry Cuyler.** Died at Nutley, N. J., May 11, 1896.

Bunsen*, **Robert Wilhelm.** Died at Heidelberg, Aug. 16, 1899.

Burauen (bö-rä'ö-än). A municipality in the north central part of Leyte island and province, Philippine Islands. Civilized population (1903), 18,197.

Burbank (bėr'bangk), **Luther.** Born at Lancaster, Mass., March 7, 1849. An American naturalist noted for his experiments in developing new varieties of fruits and flowers. He removed to Santa Rosa, California, in 1875, and established experimental farms. He has produced important varieties of the potato, plum, prune, peach, apple, rose, lily, amaryllis, canna, daisy (Shasta), cactus (thornless), etc., and some new species of fruits (the plumcot, Primus berry and others), and has added much to the knowledge of the laws of heredity and environment. He is in receipt of a grant from the Carnegie Institution for the furtherance of his work.

Burckhardt (börk'härt), **Jakob.** Born at Basel, Switzerland, May 25, 1818: died there, Aug. 8, 1897. A Swiss historian, especially of art, professor in the University of Basel. His chief books are the "Cicerone," a general guide to the art of Italy (1855), which has several times been re-edited by Wilhelm Bode (8th edition 1901), "Die Kultur der Renaissance in Italien" (1859: 4th edition 1885), and "Geschichte der Renaissance in Italien" (1867)

Burdett-Coutts*, **Angela Georgina,** Baroness. Died at London, Dec. 30, 1906.

Burgess (bėr'jes), **John William.** Born in Giles County, Tenn., Aug. 26, 1844. An American historian and educator. He was graduated at Amherst College in 1867; was professor of English and political economy in Knox College 1869-71; was professor of history and political science at Amherst College 1873-76; and has been professor of political science and constitutional law in Columbia University since 1876. He was Roosevelt professor of American history and institutions at the University of Berlin 1906-07. His works include "Political Science and Comparative Constitutional Law" (1890), "Middle Period, 1817-1853" (1897), "The Civil War and the Constitution, 1859-1865" (1901), "Reconstruction and the Constitution, 1866-1876" (1902), etc.

Burias (bö'ri-äs). An island of the Philippines, lying between Luzon and Masbate, and belonging to Masbate province. It has three ports good in all weather—Port Busin on the northwest and Port Busainga and Boca Engaño on the east coast. Area, 197 square miles. Population (1902), 1,627.

Burlingame (bėr′ling-gām), **Edward Livermore.** Born at Boston, Mass., May 30, 1848. An American editor, son of Anson Burlingame. He was educated at Harvard and at the University of Heidelberg; became connected with the publishing house of Charles Scribner's Sons in 1879; and has edited "Scribner's Magazine" since 1886.

Burnand (bėr-nand′), Sir **Francis Cowley.** Born Nov. 29, 1836. An English editor, author, and playwright. He has produced many plays, chiefly burlesques and comedies (among which are "Black-Eyed Susan," "Ixion," and "The Colonel"), and two light operas ("Contrabandista" and "The Chieftain") in collaboration with Arthur Sullivan, with whom he also wrote "Cox and Box," a musical version of Morton's farce "Box and Cox." From about 1862 he was on the editorial staff of "Punch" and one of its principal contributors, and was its editor-in-chief 1880–1906. He is the author of "Mokeanna," several series of "Happy Thoughts," "New Light on Darkest Africa," an "Eccentric Guide to the Isle of Thanet," and of a volume of reminiscences (1904).

Burne-Jones*, Sir **Edward.** Died at London, June 17, 1898.

Burnell (bėr-nel′), **Arthur Coke.** Born at St. Briavels, Gloucestershire, 1840: died at West Stratton, Hampshire, Oct. 12, 1882. An eminent English Sanskrit scholar and authority on the languages and literature of India. He was educated at King's College, London; entered the Indian Civil Service in 1857; and lived in India (except for terms of leave) 1860–80. His most important work, "Classified Index to the Sanskrit MSS. in the Palace at Tanjore," was printed for the Madras government in 1880. He also published a "Handbook of South Indian Palæography," (1874), "The Aindra School of Sanskrit Grammarians" (1875), translations from the Sanskrit, etc. "Hobson Jobson, being a Glossary of Anglo-Indian colloquial words and phrases," a work which he compiled with Colonel Yule, was published in 1886.

Burnett*, Mrs. (**Frances Hodgson**). Among her later works are "A Lady of Quality" (1896), "The Making of a Marchioness" (1901), "The Methods of Lady Walderhurst" (1902), "The Dawn of a To-morrow" (1906), "The Shuttle" (1907), etc. She married Stephen Townesend in 1900.

Burnham (bėrn′am), **Sherburne Wesley.** Born at Thetford, Vt., Dec. 12, 1838. An American astronomer, professor of practical astronomy in the University of Chicago: especially noted as a discoverer and observer of double stars. He was observer of the Dearborn Observatory 1877–81, of the Washburn Observatory 1881–82, of the Dearborn Observatory 1882–84, of the Lick Observatory 1888–92, and of the Yerkes Observatory 1897–. He has published a "General Catalogue of 1,290 Double Stars, discovered from 1871 to 1899" (1900). In 1904 he was awarded the Lalande prize in astronomy by the Academy of Sciences of Paris.

Burns (bėrnz), **Anthony.** Born in Virginia, about 1830: died at Saint Catherines, Canada, July 27, 1862. A fugitive slave, the last to be seized in Massachusetts under the fugitive slave law of 1850. He escaped from slavery in 1853, and his arrest in Boston, May 24, 1854, caused great indignation. An attempt was made to rescue him, but it failed, and he was adjudged to his owner and sent back. His freedom was bought in the following year, and he later studied at Oberlin College and became a Baptist minister at Saint Catherines.

Burns (bėrnz), **John.** Born at London, Oct., 1858. A British labor leader and cabinet officer. He was an unsuccessful Socialist candidate for the western division of Nottingham in 1885; has represented (Labor Party) Battersea in the House of Commons since 1892; and was appointed president of the Local Government Board, with a seat in the cabinet, in December, 1905.

Burr (bėr), **William Hubert.** Born at Watertown, Conn., July 14, 1851. An American engineer, professor of civil engineering at Columbia University from 1893. He has been consulting engineer to several of the departments of the City of New York, and in 1899 was appointed a member of the Isthmian Canal Commission to report upon a route. In 1904 he was appointed a member of the Isthmian Canal Commission to construct the Panama Canal, and in 1905 was made a member of the international board of consulting engineers to determine the plan of the canal. He has published a number of works on engineering.

Bürstenbinder (bürs′ten-bin-dėr), **Elisabeth:** pseudonym **E. Werner.** Born at Berlin, Nov. 25, 1838. A German novelist. Her works include "Gartenlaubenblüten" (1872), "Am Altar" (1873), "Glück Auf!" (1874), "Gesprengte Fesseln" (1875), "Vineta" (1877), "Gebannt und erlost" (1884), "Die Blume des Glücks" (1885), "Heimatklang" and "Sankt Michael" (1887), "Flammenzeichen" (1890), "Gewagt und gewonnen" (1891), "Freie Bahn" (1893), "Fata Morgana" (1896), "Hexengold" (1900), etc.

Burton (bėr′ton), **Richard.** Born at Hartford, Conn., March 14, 1859. An American poet and educator. He was professor of English literature in the University of Minnesota 1898–1902, and lecturer in English literature at the University of Chicago from 1902–06, and professor of English literature at the University of Minnesota 1906–. His works include "Dumb in June" (1895), "Memorial Day" (1897), "Literary Likings" (1898), "Lyrics of Brotherhood" (1899), "John Greenleaf Whittier" (1901), "Forces in Fiction" (1902), "Message and Melody" (1903), "Literary Leaders of America" (1904), and "Rahab" (1906).

Busch*, **Julius Hermann Moritz.** Died at Leipsic, Nov. 16, 1899.

Busson (bü-soṅ′), **Charles.** Born at Montoire, Loir-et-Cher, July 15, 1822: died April 4, 1908. A French painter. His works are chiefly landscapes.

Busuanga (bö-sö-ang′gä). The largest island of the Calamianes group, between Mindoro and Paragua, in the Philippine Islands. It belongs to Paragua province. There is an anchorage at Port Uson, on the southern coast. Area, 390 square miles. Population (1903), 4,371.

Butler (but′lėr). A borough, the capital of Butler County, Pennsylvania. It has manufactures of silk, woolen, glass, engines, etc. Population (1900), 10.853.

Butler (but′lėr), **Nicholas Murray.** Born at Elizabeth, N. J., April 2, 1862. An American educator, president of Columbia University from 1902. He was graduated from Columbia University in 1882; organized and was president of the Teachers College (New York) 1886–91; and became professor of philosophy and education, and first dean of the faculty of philosophy, in Columbia, in 1890. He founded the "Educational Review" (1891), and has written and edited many other educational publications. A number of his articles have been collected under the title "The Meaning of Education" (1898).

Butler*, **William Allen.** Died at Yonkers, N. Y., Sept. 9, 1902.

Bütschli (bütsh′li), **Otto.** Born at Frankfort-on-the-Main, Germany, May 3, 1848. A German naturalist, professor of zoölogy and paleontology in the University of Heidelberg from 1878. His investigations have related to the developmental history of invertebrates, and in later years especially to cell-division and the physicochemical aspects of the vital processes. Among his works are "Protozoen" (1880–89), "Untersuchungen über Strukturen" (1898), "Untersuchungen über die Mikrostruktur künstlicher und natürlicher Kieselsäuregallerten" (1900), "Mechanismus und Vitalismus" (1901).

Butter (but′ėr), **Nathaniel.** Died Feb. 22, 1664 (1663?). An English printer and journalist. He issued, in London, pamphlets describing murders and plays 1605–39, weekly redactions of foreign news-letters 1622–39, and half-yearly volumes of foreign news 1630–40. His news-sheets were the forerunners of the modern newspaper. Ben Jonson ridiculed him under the name of 'Cymbal' in his "Staple of News" (1625), and Fletcher and Shirley also referred to him in their works.

Butterfield (but′ėr-fēld), **Daniel.** Born at Utica, N. Y., Oct. 31, 1831: died at Coldspring, N. Y., July 17, 1901. An American soldier, brevet major-general in the United States Army. He entered the Union Army in 1861 as colonel of the twelfth New York regiment of militia; was promoted brigadier-general of volunteers in the same year and commanded a brigade during the Peninsular campaign of the Army of the Potomac; commanded a division in the second battle of Bull Run; was brevetted major-general of volunteers in 1862; commanded the Fifth Army Corps at the Battle of Fredericksburg; was chief of staff to Hooker at Chancellorsville and to Meade at Gettysburg; and was again chief of staff to Hooker during the battle of Chattanooga. During Sherman's Georgia campaign he commanded a division of the Twentieth Corps. He was United States subtreasurer in New York City 1869–70.

Butterworth (but′ėr-wėrth), **Hezekiah.** Born at Warren, R. I., Dec. 22, 1839: died there, Sept. 5, 1905. An American editor and writer of children's books. He was assistant editor of the "Youth's Companion." Among his works are a series of "Zigzag Journeys," "Poems for Christmas, Easter, and New Year," "Songs of History," "Story of the Hymns," "South America," "In the Boyhood of Lincoln," and "The Patriot Schoolmaster."

Butulan (bö′tö-län) **Mountains.** A range of mountains in the eastern part of Davao district, Mindanao, in the Philippine Islands. It extends from the most southern point of the island north to Casilaran Bay, an arm of the Gulf of Davao. Height of the loftiest peak, 4,520 feet.

Buxtehude (böks′te-hö-de), **Dietrich.** Born at Helsingör, Denmark, in 1637: died at Lübeck, Germany, May 9, 1707. A famous organist and composer, organist at Lübeck from 1668. He exerted a strong influence on Bach, who once journeyed fifty miles on foot to hear him play at his famous 'Abendmusiken' in Lübeck. His most important compositions were organ pieces.

Buys-Ballot (bois-bä-lō′), **Christophorus Henricus Didericus.** Born at Kloetinge, province of Zealand, Netherlands, Oct. 10, 1817: died at Utrecht, Feb. 3, 1890. A Dutch meteorologist, director of the meteorological institute at Utrecht 1854–87. He was the first to establish a system of storm-signals in Europe. He is best known as the propounder of the meteorological law or rule named for him, which states a relation between the difference of the barometrical readings at any two stations and the direction of the winds relative to a line joining the two stations.

Byelostok. Same as *Bielostok.*

Caamaño*, **José Maria Plácido.** He was born in Guayaquil, Oct. 5, 1838, and died at Seville, Spain, Dec. 31, 1901.

Cabatuan (kä-bä-tö-än′). A municipality in the central part of Iloilo province, Panay, Philippine Islands. Civilized population (1903), 16,497.

Cabel* (properly **Cabu**), Mme. (**Marie Josèphe Dreullette**). She was born Jan. 31, 1827, and died at Maisons Lafitte, May 23, 1885.

Cabicungan (kä-bē-kön-gän′). A volcano in Cagayan province, in the northern part of Luzon, Philippine Islands. Height, 4,326 feet.

Cable*, **George Washington.** He has also written "John March, Southerner" (1894), "The Cavalier" (1901), "Bylow Hill" (1902), "Kincaid's Battery" (1908), etc.

Cabot*, **John.** His second voyage was made in the spring of 1498.

Cabrillo (kä-brēl′yō), **Joâo** or **Juan Rodriguez.** Born toward the end of the 15th century: died January 3, 1543. A Portuguese navigator in the service of Spain. He explored the coast of California in 1542 from about lat. 33°; discovered the Santa Barbara Islands; and sailed as far north as about 38°. On his death the command was taken by his chief pilot Ferrelo, who continued the exploration of the coast to about lat. 42°.

Cabusilan (kä-bö-si-län′) **Mountains.** See *Zambales Mountains.*

Cáceres*, **Andrés Avelino.** Since 1906 he has been minister to Italy.

Cadiz. 2. A municipality in the northern part of Negros Occidental province, Negros Island, in the Philippines. Civilized population (1903), 16,429.

Cadorna*, **Raffaele.** Died at Turin, Feb. 6, 1897.

Cagayan (kä-gä-yän′). **1.** A river in Misamis province, Mindanao, Philippine Islands, flowing north into Macajalar Bay.—**2.** A lake in the northeastern part of Cagayan province, Luzon. Area, about 70 square miles.—**3.** See *Rio Grande de Cagayan.*—**4.** See *Cagayanes Islands.*—**5.** The most northeasterly province of Luzon, Philippine Islands. It is bounded by the Pacific Ocean on the north and east; Isabela and Lepanto-Bontoc on the south; and Abra and Ilocos Norte (both separated from it by the Cordillera Norte) on the west. Capital, Tuguegarao. The province is bordered on the eastern coast by the Sierra Madre Mountains. The mountains are densely wooded. The central plain of the Rio Grande de Cagayan, which intersects the province from north to south, is very fertile and produces large quantities of tobacco. The native races are chiefly Cagayanes and Ilocanos. Area, 5,052 square miles. Population (1903), 156,239.

6. A town, the capital of Misamis province in Mindanao, Philippine Islands, situated near the mouth of the Rio Grande de Cagayan, approximately in lat. 8° 11′ N., long. 124° 41′ E. Civilized population of municipality (1903), 7,108.

Cagayan de Jolo (kä-gä-yän′ dā Hō-lō′) and adjacent islands. A group of islands lying in the Sulu (Jolo) Sea, in lat. 7° 2′ N., long. 18° 32′ E., ceded by Spain to the United States by a treaty signed November 7, 1900. The islands are a part of the Jolo district of Moro province. Area, 29.1 square miles. Population of largest island (1903), 2,000. Formerly *Cagayan de Sulu.*

Cagayanes (kä-gä-yä nās) and adjacent islands of the Sulu (Jolo) Sea. A group of small islands lying between Negros and Paragua, and belonging to Paragua province, Philippine Islands. It consists of 8 Cagayanes, 4 other named islands, and 10 unnamed islets and rocks. The largest of the group is Cagayan. Total area, 8.2 square miles. Population of Cagayan (1903), 2,448.

Cagua (kä′gö-ä), or **Caua** (kä′ö-ä). A volcanic peak in Cagayan province, northern Luzon, Philippines, about lat. 18° 13′ N., long. 122° 4′ E. Height, 3,920 feet.

Caimanera (kī-mä-nā′rä). A town in the province of Santiago de Cuba, Cuba, situated on Guantanamo Bay. It is connected by rail with Guantanamo.

Caine*, Thomas Henry Hall. His later works include "The Manxman" (1895), "The Christian" (1897), "The Eternal City" (1901), "The Prodigal Son" (1904), "Drink" (1907), "My Story" (1909), etc. "The Deemster" was dramatized (as "Ben-ma'-Chree") in 1889, "The Manxman" in 1895, "The Christian" in 1898 and later in 1907, "The Eternal City" in 1902, "The Prodigal Son" in 1905, "The Bondman" in 1907, and "Pete" (with Louis N. Parker) in 1908.

Caird*, Edward. Died Nov. 1, 1908. He was professor of moral philosophy at Glasgow University 1866–93, and master of Balliol College, Oxford, 1893–1907. His later works include "The Evolution of Theology in the Greek Philosophers" (Gifford Lectures at Glasgow, 1901–02).

Caird*, John. Died July 30, 1898.

Caissa (kā̤-is′ā̤). [NL., artificially formed from *chess*, appar. on the model of *chase*² = F. *caisse*, with *-issa* conforming to the L. and Gr. fem. suffix *-issa* (E. *-ess*).] The goddess of chess: a modern invention of chess-players. The name is said to have originated with Sir William Jones, the Orientalist (1746–94).

Calabria*. It was visited by a most destructive earthquake Dec. 28, 1908, which also destroyed Messina.

Calasiao (kä-lä-sē-ä′ō). A municipality of Pangasinan province, in the western part of Luzon, Philippine Islands. Civilized population (1903), 16,539.

Calbayog (käl-bä′yōg). A municipality in Samar province, on the west coast of Samar, Philippine Islands. Civilized population (1903), 15,895.

Caldecott (kal′di-kot), **Randolph.** Born at Chester, England, March 22, 1846: died at St. Augustine, Fla., Feb. 12, 1886. An English painter and illustrator. He was educated at King Henry VIII.'s School at Chester and about 1871 went to London. In 1882 he became a member of the Royal Institute of Painters in Water Colours, exhibiting there, at the Royal Academy, and at the Grosvenor Gallery. His most characteristic and interesting work was done for children's stories.

Calderon*, Francisco Garcia. Died at Lima, Sept. 21, 1905.

Calderon*, Philip Hermogenes. Died April 30, 1898.

Calderwood (kâl′dėr-wůd), **Henry.** Born at Peebles, Scotland, May 10, 1830: died at Edinburgh, Nov. 19, 1897. A Scotch philosophical writer, professor of moral philosophy in the University of Edinburgh 1868–97.

California*. There are 57 counties. The State has 8 representatives in Congress and 10 electoral votes.

California, University of. See *University of California.*

Calvé (käl-vā′), Madame (**Emma de Roquer**). Born at Decazeville, Aveyron, France, in 1866. A distinguished soprano opera-singer, of French and Spanish parentage. She studied in Paris under Marchesi and others, and made her début in opera at the Théâtre de la Monnaie, Brussels, in 1882, as Marguerite in Gounod's "Faust." She played in Paris in 1884; made a tour in Italy; returned to Paris; made a European tour (Russia, Italy, Belgium, England, Spain); and came to America several times, first in 1893. Among her popular rôles in America are Carmen, and Santuzza in "Cavalleria Rusticana." Her home is at Cabrières in Aveyron.

Calvo* (käl′vō), **Carlos.** Born at Buenos Aires, 1824: died at Paris, May 2, 1906. An Argentine jurist and diplomat. He was in the consular service 1852–58; became deputy of the lower house 1859; from 1860 to 1864 represented Paraguay as chargé d'áffaires at Paris, being also accredited to great Britain; was accredited as envoy extraordinary and minister plenipotentiary to Berlin 1883, to Russia 1889, and to Austria 1890; and in 1899 was transferred to Paris, being accredited to both France and the Holy See. He formulated the doctrine that "the recovery of debts and the pursuit of private claims do not justify *de plano* the armed intervention of governments," with special reference to such action by European states against South American governments. He published numerous treatises on international law, etc., his most important work being "Le droit international et pratique" (1868, 5th ed. 1896).

Camagüey (kä-mä′gwā). 1. A province of Cuba (formerly Puerto Principe) situated between the provinces of Santa Clara and Oriente. Area, 10,064 square miles. Population (1907), 118,269.—2. The capital (formerly Puerto Principe) of the province of Camagüey, Cuba. Population (1907), 29,616.

Cambridge* (George William Frederick Charles), Duke of. Died March 17, 1904. He was commander-in-chief of the army 1856–95.

Cambridge*, University of. There are over 3,500 undergraduate students and about 120 instructors.

Camiguin (kä-mi-göēn′), 1. A very fertile mountainous island in Mindanao Sea, north of Mindanao, Philippine Islands. It belongs to Misamis province, and contains Camiguin volcano. Highest elevation, 5,383 feet. Area, 94 square miles. Population (1903), 30,754.

2. A volcano on Camiguin Island, approximately in lat. 9° 12′ N., long. 124° 42′ E. Its last great eruption took place in 1871, activity continuing into 1875. New solfataras appeared in 1897 and 1902. Height, 2,392 feet.

Camiguing (kä-mi-göēng′). A volcanic island of the Babuyan group, north of Luzon, Philippine Islands. It belongs to Cagayan province, and contains a volcano, Camiguin de Babuyanes. Highest elevation, 2,790 feet. Area, 61 square miles. Population (1903), 98.

Camiling (kä-mē-ling′). 1. A municipality of Tarlac province, in the southwestern part of Luzon, Philippine Islands. Civilized population (1903), 25,243.—2. A town of Tarlac province. Population (1903), 7,149.

Camotes (kä-mō′tās) **Islands.** A group of islands lying between Cebu and Leyte, in the Philippines, and belonging to Cebu province. The largest is Pasijan. Area, 90.1 square miles. Population (1903), 21,123.

Camp (kamp), **Walter.** Born at New Britain, Conn., April 7, 1859. An American business man and authority on athletics, treasurer of Yale Field and a member of Yale University Council. He is the author of "Book of College Sports," "American Football," "Football Facts and Figures," "Drives and Puts" (with Lilian Brooks), "Football" (with Lorin F. Deland), "Yale, her Campus, Classroom, and Athletics" (with Lewis S. Welch), etc.

Campanile of St. Mark's*. It collapsed July 14, 1902. The foundations have been strengthened and the rebuilding of the tower was begun in 1905.

Campanini*, Italo. Died near Parma, Nov. 23, 1896.

Campbell (kam′bel), **Douglas.** Born at Cooperstown, N. Y., July 13, 1840: died at Schenectady, N. Y., March 7, 1893. An American lawyer and historical writer. He was educated at Union College; served as captain of the 121st New York Volunteers in the Civil War; and practised law in New York until 1890. He wrote "The Puritan in Holland, England, and America, an Introduction to American History" (1892).

Campbell*, George Douglas. Died April 24, 1900.

Campbell (kam′bel), **Lewis.** Born at Edinburgh, Sept. 3, 1830: died Oct. 25, 1908. A Scotch classical scholar, professor of Greek at St. Andrews from 1863. He has published editions of Greek texts (including Sophocles 1871–81), a life of James Clerk Maxwell (1882: with W. Garnett), translations of Sophocles and Æschylus, a life of Benjamin Jowett (1897: with E. Abbott), "Tragic Drama in Æschylus, Sophocles, and Shakespeare" (1904), "Paralipomena Sophoclea" (1907), etc.

Campbell (kam′bel), **Mrs. Patrick (Beatrice Stella Tanner).** Born in London. A contemporary English actress. She made her début with a provincial company as Rosalind in "As You Like It," and two years later was engaged by Pinero to play the title rôle in "The Second Mrs. Tanqueray," one of her strongest parts. She has done much to make known to the English public the work of Ibsen, Maeterlinck, and Sudermann. Later she became manager of her own theater. Among her best known rôles are Ophelia, Lady Macbeth, Juliet, Lady Teazle, and Mrs. Ebbsmith.

Campbell (kam′bel), **William Wallace.** Born in Hancock County, Ohio, April 11, 1862. An American astronomer, director of the Lick Observatory from 1901. He has been astronomer in this observatory since 1891. He conducted eclipse expeditions to India in 1898, to Georgia in 1900, and to Spain in 1905. His works include "The Elements of Practical Astronomy" (1899), and numerous technical papers. He received the Lalande prize of the Paris Academy in 1903, the gold medal of the Royal Astronomical Society, and the Draper gold medal of the National Academy of Sciences in 1906.

Campbell-Bannerman (kam′bel-ban′ėr-man), Sir **Henry.** Born Sept. 7, 1836: died April 22, 1908. A British statesman. He was the son of Sir James Campbell, but assumed the additional surname of Bannerman (under the will of his maternal uncle) in 1872. He was educated at Glasgow University and Trinity College, Cambridge, and was Liberal member of Parliament for Stirling Burghs from 1868. He was financial secretary to the war office 1871–74, 1880–82; secretary to the admiralty 1882–84; chief secretary for Ireland 1884–85; secretary of state for war 1886, 1892–95; leader of the Liberal party in the House of Commons 1899–; and premier and first lord of the treasury December, 1905,–April, 1908. In 1895 he was knighted (G. C. B.). He was popularly referred to as "C.-B."

Camphausen*, Otto. Died May 17, 1896.

Campidoglio, Piazza del. See *Piazza del Campidoglio.*

Campos (käm′pōs), **Martínez.** Born at Segovia, Dec. 14, 1834: died at Zarauz, near San Sebastian, Sept. 23, 1900. A Spanish general. He served in Morocco; was sent to Cuba in 1864 as colonel; and in 1870 returned to Spain to help to suppress the Carlists, and was made a brigadier-general. On the abdication of King Amadeo he supported the republic, was put on the retired list, and soon after was arrested on a charge of conspiracy. He was soon released and placed in command of the 3d division of the Army of the North against the Carlists. From 1877 to 1879 he was commander-in-chief of the Spanish forces in Cuba. He was sent to Cuba in April, 1895, as governor-general; but was recalled in January, 1896.

Canada*. It comprises Quebec, Ontario, New Brunswick, Nova Scotia, Prince Edward Island, Manitoba, British Columbia, Alberta, Saskatchewan, the district of Keewatin, and the Northwest and Yukon Territories.

Canal Zone, Isthmian. See *Isthmian Canal Zone.*

Candon (kän-dōn′). A municipality in Ilocos Sur province, on the west coast of Luzon, Philippine Islands. Civilized population (1903), 18,828.

Canlaon (kän-lä-ōn′), or **Malaspina** (mä-lä-spē′nä). A volcano in the northwestern part of Negros Oriental province, Negros, Philippine Islands, approximately in lat. 10° 30′ N., long. 123° 6′ E. It is a picturesque mountain, always steaming. A notable eruption took place in 1902. Height, 8,192 feet.

Cannon (kan′on), **Joseph Gurney.** Born at Guilford, N. C., May 7, 1836. An American statesman. He was admitted to the (Illinois) bar in 1858, and was Republican member of Congress from Illinois 1873–91 and 1893–. He was chairman of the Committee on Appropriations in the 55th, 56th, and 57th Congresses (1897–1903), and speaker of the 58th, 59th, 60th, and 61st Congresses (1903–).

Cánovas del Castillo*, Antonio. Assassinated at Santa Agueda, near Vitoria, Aug. 8, 1897.

Cape Colony*. In 1909 a bill was drafted, to be brought before the imperial parliament at London for ratification, by which the Transvaal, Cape Colony, Orange River Colony, and Natal are to be united into a single nation with a centralized government, to be known as the United States of South Africa.

Capiz (kä′pēth). 1. The northeastern province of Panay, with adjacent small islands, in the Philippines. It is bounded by the Visayan Sea on the north; Iloilo (separated by mountains) on the east and south; and Antique (separated by mountains) on the west and south. Capital, Capiz. It is a mountainous and densely forested province, with numerous small rivers and with fertile valleys that yield large crops, notably of hemp, corn, sugar-cane, and rice. The chief river is the Panay. Among the minerals found here are gold, iron, and coal. The native race is Visayan. Area, 1,749 square miles. Population (1903), 230,721.

2. A town, the capital of Capiz province, situated on the northern coast near the mouth of the Panay River, in lat. 11° 36′ N., long. 122° 42′ E. Population (1903), 7,186: municipality, civilized population, 18,525.

Caprivi de Caprara de Montecucoli*, Georg Leo von. Died Feb. 6, 1899.

Caraballos Occidentales (kä-rä-bäl′yōs ōk-thē-den-tä′lās). A mountain-system of Luzon, Philippine Islands, extending for about 200 miles from north to south, and separating the valley of the Rio Grande de Cagayan from the China Sea. The northern part of the range, between Cagayan and Ilocos Norte provinces, is called the Cordillera Norte; the central part, separating Cagayan and Lepanto-Bontoc, the Cordillera Central; the southern part, intersecting Lepanto-Bontoc and separating Benguet from Nueva Vizcaya, the Cordillera Sur. The Cordillera Norte gradually increases in height from north to south to its culminating peak, Pagsan, 7,261 feet high. In the Cordillera Central are peaks 6,000 to 6,500 feet in height, and in the Cordillera Sur is Mount Data, 7,364 feet high. Spurs trending in different directions separate branches of the Cagayan river, or form the boundary between provinces. These spurs contain some of the higher peaks of the system.

Caraballos Sur (kä-rä-bäl′yōs sör). A range of mountains in Luzon, Philippine Islands, extending east and west between Nueva Vizcaya and Nueva Ecija provinces and connecting the Sierra Madre system on the east with the Caraballos Occidentales on the west.

Caran d' Ache (kä-rän′däsh′). [Russian *karan-dash*, a crayon.] The pseudonym of Emmanuel Poiré, a French illustrator and caricaturist. Born at Moscow, 1858: died at Paris, Feb. 26, 1909. He was the grandson of a soldier in Napoleon's army, and was educated in Moscow. Coming to Paris he was first an attaché in the ministry of war and afterward became an illustrator of popular journals, making clever caricatures for "Tout Paris," "La Vie Parisienne," "Chat Noir," and others.

Carcar (kär′kär). A municipality in Cebu province on the eastern coast of Cebu island, in the Philippines. Civilized population (1903), 31,895.

Cárdenas (kär′dā-näs), **Bernardino de.** A Spanish friar of the order of St. Francis, born in the seventeenth century at Chuquisaca (Sucre), Bolivia, then Peru. He devoted his life to missionary work among the natives of the country and opposed the intrigues and ambitions of the Jesuits. He wrote three books relating to the field of his endeavors (acquiring the title of "Historian of Peru"), the chief being "Manual y relacion de las cosas del reyno del Peru," published at Madrid in 1634.

Cárdenas (kär′dā-näs), Don **Garcia Lopez de.** A Spanish nobleman who became one of Coronado's captains on the expedition of 1540 to New Mexico and beyond. With his party he was the first to see and describe the Grand Cañon of the Colorado, which he looked into about September, 1540. He reported the gorge as extremely deep with a distance of three or four leagues from brink to brink. Cárdenas was very active in the battles with the Puebloans, once saving Coronado's life, and on another occasion causing a large number of natives to be put to death. He was sent by Coronado to Spain with a letter to the king and was one of the most active and distinguished officers of the expedition.

Carducci*, **Giosuè.** Died at Bologna, Feb. 16, 1907. In 1906 he received the Nobel prize for literature.

Carey (kā′ri), **Rosa Nouchette.** Born at London: died there, July 19, 1909. An English novelist, whose stories for girls attained wide popularity. Among them are "Nellie's Memories" (1868), "Wee Wifie" (1869), "Heriot's Choice" (1879), "Uncle Max" (1887), "The Old, Old Story" (1894), "Herb of Grace" (1901), "The Household of Peter" (1905), "The Angel of Forgiveness" (1907), etc.

Carigara (kä-ri-gä′rä). 1. A municipality in the northern part of Leyte, on Carigara bay. Civilized population (1903), 16,382.—2. A town of Leyte province. Population (1903), 5,338.

Carinthia*. It has 10 representatives in the Austrian Reichsrat and a Landtag of 43 members.

Carissimi (kä-rēs′si-mi), **Giacomo.** Born at Marino, near Rome, about 1604: died at Rome, Jan. 12, 1674. A noted Italian operatic composer, kapellmeister in Assisi, 1629, and in the church of Saint Appolinaris in Rome, 1628. He did much toward perfecting the recitative in the, then new, operatic form, and developed the sacred cantata.

Carleton (kärl′tọn), **Will.** Born at Hudson, Mich., Oct. 21, 1845. An American poet, journalist, and lecturer. He is the author of "Farm Ballads" (1873), "Farm Festivals" (1881), "City Ballads" (1885), "Songs of Two Centuries" (1902), "In Old School Days" (1907), "Drifted In" (1908), etc.

Carlos (kär′lōs) **I.** Born at Lisbon, Sept. 28, 1863: assassinated there (together with his older son), Feb. 1, 1908. King of Portugal. He was the son of King Luiz I. and Maria Pia, daughter of Victor Emmanuel II., King of Italy. He succeeded to the throne October 19, 1889. On May 22, 1886, he married Marie Amélie, daughter of Louis Philippe, Duc d'Orléans, Comte de Paris. He was succeeded by his younger son, Manuel II. (1889–).

Carlos*, **Don (Carlos Maria de los Dolores Juan Isidoro José Francisco,** Duke of Madrid). Died at Varese, Italy, July 18, 1909.

Carman (kär′man), **William Bliss.** Born at Fredericton, New Brunswick, April 15, 1861. An American poet, essayist, and journalist. He is the author of "Low Tide on Grand Pré" (1893), "St. Kavin" (1894), "A Sea Mark" (1895), "Behind the Arras" (1895), "Ballads of Lost Haven" (1896), "By the Aurelian Wall" (1897), "The Vengeance of Noel Brassard" (1899), "Christmas Eve at St. Kavin's" (1901), "Ode on the Coronation of King Edward" (1902), "From the Book of Myths" (1902), "The Kinship of Nature" (1903), "From the Green Book of the Bards" (1903), "Songs of the Sea Children" (1903), "Sappho" (1903), "The Friendship of Art" (1904), "The Word at St. Kavin's" (1904), "Songs from a Northern Garden" (1904), "From the Book of Valentines" (1905), "Collected Poems" (1905), "The Poetry of Life" (1905), "The Making of Personality" (1908), and, with Richard Hovey, "Songs from Vagabondia" (1894), "More Songs from Vagabondia" (1896), and "Last Songs of Vagabondia" (1900).

Carnavalet Museum. A historical museum at Paris. The Hôtel Carnavalet was built in 1550, in the farms which then occupied the eastern portion of Paris, by Pierre Lescot, architect, and Jean Goujon, sculptor. It derived its name from one of its early tenants, the Dame de Kernevenoy, called 'Carnavalet' at court. Madame de Sévigné lived here from 1677 to 1696. In 1866 it was bought by the city of Paris for a museum. Since 1872, and under the superintendence of M. Jules Cousin, fine collections and a large library have been formed, entirely devoted to material relating to the history of the city of Paris.

Carnegie*, **Andrew.** He has given large sums for the founding of educational institutions, libraries, etc. He has written "Round the World" (1884), "Triumphant Democracy" (1886), "The Gospel of Wealth" (1900), "The Empire of Business" (1902), "James Watt" (1905), "Problems of To-day" (1908), etc.

Carnegie Institution of Washington, The. An institution founded at Washington, D. C., by Andrew Carnegie, in 1902. He stated that his purpose was to "found in the city of Washington an institution which, with the coöperation of institutions now or hereafter established, shall in the broadest and most liberal manner encourage investigation, research, and discovery — show the application of knowledge to the improvement of mankind, and provide such buildings, laboratories, books, and apparatus, as may be needed." By an act of Congress, approved April 28, 1904, the Institution was placed under the control of a board of twenty-four trustees. The trustees meet annually, and during the intervals between such meetings the affairs of the Institution are conducted by an executive committee, chosen by and from the board of trustees, acting through the president of the Institution as chief executive officer. Dr. Daniel C. Gilman was the first president of the Institution, holding office until his resignation took effect in December, 1904, when the trustees elected Dr. Robert S. Woodward to the position. Many projects in widely different fields of inquiry have been considered or are under consideration by the executive committee, and up to October, 1908, about 120 volumes of scientific importance had been published. The endowment is twelve million dollars.

Carniola*. It has 12 representatives in the Austrian Reichsrat and a Landtag of 50 members.

Carnochan (kär′nọ-kạn), **John Murray.** Born at Savannah, Georgia, July 4, 1817: died at New York, Oct. 28, 1887. An American surgeon, noted especially for the treatment of elephantiasis Arabum by ligature of the femoral artery and for the successful removal of the entire lower jaw in one operation.

Caro (kä-rō′), **Elme Marie.** Born at Poitiers, March 4, 1826: died at Paris, July 13, 1887. A French philosopher. He was appointed professor in the Sorbonne in 1864, and was elected to the French Academy in 1874. He was a contributor to the "Revue de l'Instruction Publique," "Revue Contemporaine," and "Revue des Deux Mondes." Among his published works are "Le mysticisme au xviiie siècle" (1852), "Études morales sur le temps présent" (1855), "L'idée de Dieu et ses nouveaux critiques" (1864), "La philosophie de Goethe" (1866), "Le matérialisme et la science" (1868), "Mélanges et portraits" (1888), etc.

Carrière (kär-yãr′), **Eugène Anatole.** Born Jan. 17, 1849: died at Paris, March 27, 1906. A French painter. He studied under Cabanel at the École des Beaux-Arts after 1870, when he took part in the Franco-Prussian War and was captured. For a long time he worked in poverty and neglect, from which he did not emerge until 1884, when his works began to attract much attention. He painted a large number of portraits.

Carrion*, **Jerónimo.** Born at Loja, May, 1802: died at Cuenca, May, 1879.

Carroll, John. Born at Upper Marlborough, Md., Jan. 8, 1735: died at Georgetown, D. C., Dec. 3, 1815. An American archbishop of the Roman Catholic Church. He was educated in Belgium; was ordained priest in 1759; and was professor of moral philosophy in St. Omer and Liège 1759–71. In 1771 he was admitted to the Society of Jesus; and on the suppression of that society on the Continent in 1773 he went to England, and came to America in 1774. With Charles Carroll, Samuel Chase, and Benjamin Franklin he was sent by the Continental Congress on a political mission to Canada (1776). In 1784, at the request of Franklin, he was appointed superior of clergy in the United States. In 1790 he was consecrated bishop of Baltimore, and in 1808 was created archbishop of Baltimore. He founded Georgetown College (1788–91). Among his writings are "An Address to the Roman Catholics of the United States of America," "A Concise View of the Principal Points of Controversy between the Protestant and Roman Churches," etc.

Carryl (kar′il), **Guy Wetmore.** Born at New York, March 4, 1873: died there, April 1, 1904. An American humorist. He was graduated from Columbia University in 1895. Among his publications are "Fables for the Frivolous" (1898), "Mother Goose for Grown-ups" (1900), "Grimm Tales Made Gay" (1902), "The Lieutenant-Governor" (1903), "Zut, and Other Parisians" (1903), "The Transgression of Andrew Vane" (1904), "Far from the Maddening Girls" (1904), and "The Garden of Years" (1904).

Carson (kär′sọn), **Alexander.** Born near Stewartstown, County Tyrone, Ireland, 1776: died at Belfast, August 24, 1844. A Baptist theologian. He was of Scottish parentage and was for a time a Presbyterian minister, but separated from that church in 1804. Later he adopted Baptist views. He published numerous controversial writings.

Carter*, **Franklin.** He was president of Williams College 1881–1901.

Carter (kär′tėr), **James Coolidge.** Born at Lancaster, Mass., Oct. 14, 1827: died at New York, Feb. 14, 1905. An American lawyer. He was graduated at Harvard University in 1850 and at the Harvard Law School in 1853. In 1875 he was appointed by Governor Tilden a member of the commission to devise a form of municipal government for the cities of New York State, and in 1892 was appointed one of the counsel to represent the United States before the Bering Sea tribunal. He published "The Proposed Codification of our Common Law" (1884).

Carus*, **Julius Viktor.** Died at Leipsic, March 10, 1903.

Carus (kä′rös), **Paul.** Born at Ilsenburg, Germany, July 18, 1852. A German-American philosophical writer, editor of the "Monist" and "The Open Court" (Chicago). He was educated at the Universities of Strasburg and Tübingen. Among his publications are "Fundamental Problems," "The Gospel of Buddha," "Karma," "The Idea of God," "The History of the Devil," "The Nature of the State," etc.

Caruso (kä-rö′sō), **Enrico.** Born at Naples, Italy, 1874. A noted Italian dramatic tenor. He made his début in a small theater near Naples, and was not brought into prominence until 1896, when he sang at the Fondo theater in Naples. In 1898 he sang in Milan. In 1903 he began a series of engagements in New York that brought him great popularity.

Cary, Annie Louise. See *Raymond, Mrs.*

Casablanca (kä-sä-blän′kä) (**Dar-el-Beida**). A seaport of Morocco, situated on the Atlantic coast, about lat. 33° 35′ N., long. 7° 50′ W. On July 30, 1907, the Moors murdered eight Europeans and the city was bombarded by French ships Aug. 5, and captured by French troops. The conflict between France and Morocco continued until August, 1908. The forcible removal by French soldiers from the protection of the German consulate (Sept. 5, 1908) of deserters from the French Foreign Legion, led to a dispute between France and Germany which, after mutual explanations, was referred by them to the Hague Tribunal for arbitration.

Casati*, **Gaetano.** Died at Como, March 7, 1902.

Cascade Mountains*. According to the United States Geographic Board (1907), this range is limited on the south by the gap south of Lassen Peak and extends northward into British Columbia. Officially known as the *Cascade Range.*

Case School of Applied Science. A technical school in Cleveland, O., founded by Leonard Case, Jr., in 1877. Instruction was begun in 1881. It is attended by about 440 students, to whom it offers courses leading to the degrees of B. S., M. S., M. E., C. E., and E. E.

Casiguran (kä-si-gö′rän). A town in Principe, Tayabas province, eastern Luzon, Philippine Islands, situated at the head of Casiguran bay. Civilized population of municipality (1903), 2,067.

Casiguran (kä-si-gö′rän) **Bay.** A deep bay on the eastern coast of Luzon, indenting Principe, Tayabas province: a safe harbor for large vessels in all weather.

Cassatt (ka-sat′), **Alexander Johnston.** Born at Pittsburg, Pa., Dec. 8, 1839: died at Philadelphia, Dec. 28, 1906. An American business man, president of the Pennsylvania Railroad Company from 1899. He was educated at the Polytechnic School, Darmstadt, and the Rensselaer Polytechnic Institute, Troy, New York, graduating from the latter in 1859. He became connected with the Pennsylvania Railroad in 1861 as rodman and was appointed general manager in 1871 and vice-president in 1874, resigning in 1882.

Cassatt (ka-sat′), **Mary.** Born at Pittsburg, Pa. A contemporary American painter, a sister of A. J. Cassatt, president of the Pennsylvania Railroad. She studied in Rome, Antwerp, and Paris, coming under the influence of Degas. Her works are figure-paintings. She was elected an associate member of the Academy of Design in 1909.

Cassini (kä-sē′nē), Count **Arthur Pavolitch.** Born at St. Petersburg, 1838. A Russian diplomatist. He entered the government service (ministry of finance) in 1854; and has held the posts of secretary of the Russian legation in Denmark, minister resident in Hamburg, minister to China 1891–98, ambassador to the United States 1898–1905, and ambassador to Spain October, 1905–.

Castañeda (käs-tän-yā′dä), **Pedro de (de Naçera).** A Spanish soldier with Coronado on the expedition of 1540–42 into New Mexico, Texas, and Kansas, and its chief historian. He was a painstaking and critical recorder, though he seems to have written without official order or sanction. His narrative is entitled: "Relacion de la Jornada de Cibola conpuesta por Pedro de Castañeda de Naçera. Donde se trata de todos aquellos poblados y ritos, y costumbres, la qual fue el Año de 1540." The manuscript, which is frequently alluded to as the "original," is owned by the Lenox Branch of the New York Library, but since it ends with the words: "finished copying Saturday the 26th of October 1596 in Seville," there must have been another earlier manuscript. The original has never been seen. A transcript with English translation notes, and introduction, by George Parker Winship, was published in the Fourteenth Annual Report of the Bureau of American Ethnology, Washington, 1896.

Castelar*, **Emilio.** Died at San Pedro de Pinatar, Murcia, May 25, 1899.

Castle (kas′l), **Egerton.** Born at London, March 12, 1858. An English novelist. He is the author of "Schools and Masters of Fence" (1884), "Consequences" (1891), "English Book-plates" (1892), "The Jerningham Letters" (1896), "Young April" (1899), "Marshfield, the Observer" (1900); and with his wife (Agnes Sweetman) he has written "The Pride of Jennico" (1898), "The Bath Comedy" (1900: dramatized as "Sweet Kitty Bellairs"), "The Secret Orchard" (1901: dramatized 1901), "The Star Dreamer" (1903), "Incomparable Bellairs" (1904), "Rose of the World" (1905), "French Nan" (1905), "The Heart of Lady Anne" (1905), "If Youth but Knew" (1905), "My Merry Rockhurst" (1907), "Flower of the Orange" (1908), "Wroth" (1908), etc.

Castro (käs'trō), **Cipriano.** Born at Capacho, Venezuela, Oct. 12, 1860. A Venezuelan military leader and politician. He took arms in 1886 against the Lopez government; supported Palacio against the revolt of Crespo in 1892; and then ceased to be the leader of the Liberal party and for about six years was engaged in farming, near San José de Cucuta, Santander, Colombia. In May, 1899, he invaded Venezuela with sixty men; rapidly gathered an army; won victories at Las Pilas, Zumbador, etc.; entered Caracas (from which the president, General Ignacio Andrade, had fled); and declared himself 'supreme military leader.' The constitutional assembly made him provisional president March 30, 1901, and on Feb. 20, 1902, he was elected president for a term of six years. This position he resigned temporarily April 9, 1906. He was "constitutionally suspended from the presidency" in March, 1909, and was banished from the country.

Castro*, Dr. **José Maria.** Died April 4, 1893.

Catalan Grand Company. A band of mercenaries, mostly Catalans and Aragonese, who, after the wars in Sicily, entered the service of the Eastern Empire under the leadership of Roger di Flor. After his death in 1306 they waged war against the Greeks and became masters of Bœotia and Attica. Their power disappeared before the end of the fourteenth century.

Catanduanes (kä-tän-dö-ä'näs). A hilly island of the Philippines, east of the southern part of Luzon, from which it is separated by Maqueda Channel. It belongs to the province of Albay. Area, 682 square miles. Population (1903), 39,288.

Catbalogan (kät-bä-lō'gän). A town, the capital of Samar province, Philippine Islands, situated on the western coast of Samar Island, in lat. 11° 46′ 30″ N., long. 124° 52′ E. Civilized population of municipality (1903), 7,758.

Catherwood (kath'ėr-wůd), Mrs. (**Mary Hartwell**). Born at Luray, O., Dec. 16, 1847: died at Chicago, Dec. 26, 1902. An American novelist. Author of "The Romance of Dollard" (1889), "The Story of Tonty" (1890), "The Lady of Fort St. John" (1891), "Days of Jeanne D'Arc" (1897), etc.

Catholic University of America, The. A Roman Catholic institution of learning situated at Washington, D. C. It was founded in 1884, through a gift of $300,000 from Miss M. G. Caldwell of Newport, Rhode Island, for the higher education of the clergy. The university was incorporated in 1887 and opened to the clergy in 1889. Schools for the laity were opened in 1895. It now includes faculties of theology, law, philosophy, letters, and sciences. Eight colleges of religious communities, each with its own faculty and student body, are academically related to the university, and with one exception are located in its immediate vicinity.

Cattell (ka-tel'), **James McKeen.** Born at Easton, Pa., May 25, 1860. An American psychologist, professor of psychology in Columbia University from 1891. He is the editor of "Science," of "The Popular Science Monthly," and of the "Library" and "Archives of Philosophy, Psychology and Scientific Methods."

Caua. See *Caqua.*

Causeries du lundi (kōz-rē' dü lün-dē'). [F., 'Monday talks.'] A séries of critical essays contributed by Sainte-Beuve to current French periodicals and later collected and published in book form (1851–57). They were followed by "Nouveaux lundis" (1863–72) and "Premiers lundis" (1875).

Cavalcaselle (kä-väl-kä-sel'lā), **Giovanni Battista.** Born at Legnago, near Verona, Italy, Jan. 22, 1817: died at Rome, Oct. 31, 1897. An Italian art critic and historian. In 1848 he became involved in the struggle for liberation from Austria and was imprisoned. Later he was banished and sought refuge in England. With Joseph Archer Crowe he published "The Early Flemish Painters" (1857), "Titian: his Life and Times" (1877), "A New History of Painting in Italy" (vol. i, 1864), "A History of Painting in North Italy" (1871), "Raphael, his Life and Works" (1882). He was appointed inspector of the Museo Nazionale in Florence in 1867, and later general inspector of fine arts in Rome.

Cavalieri (kä-väl-yā'rẹ), **Emilio del.** Born at Rome about 1550: died March 11, 1602. A member of the group of Florentine musicians and poets who launched the new form of the opera at the end of the sixteenth century. His most important work was the "La rappresentazione di anima e di corpo," the first oratorio. He was one of the first to use solo voices with instrumental accompaniment, and the mode of notation called 'figured bass.'

Cavendish*, **Spencer Compton.** Eighth Duke of Devonshire. Died at Cannes, France, March 24, 1908. He was lord president of the council 1895–1903.

Cavité (kä-vē-tā'). **1.** A fortified town of the island of Luzon, in the Philippines, situated on the Bay of Manila about 10 miles southwest of the city of Manila. Near it a Spanish fleet was defeated by a United States squadron under Commodore (Admiral) Dewey, May 1, 1898. —**2.** A province in the southwestern part of Luzon, Philippine Islands. It is bounded by the bay and the city of Manila on the north; the city of Manila on the northeast; Laguna de Bay and Laguna de Bay province on the east; Batangas (separated by the Tagaytay range and Sungay Mountain) on the south and southeast; and Manila Bay on the northwest. Capital, Cavité. The northern part of Cavité, watered by many rivers, is very fertile and produces rice, abaca, sugar-cane, and coffee. Over twenty-five per cent. of the land is agricultural. The coast towns are engaged in fisheries. The native race is Tagalog. Area, 619 square miles. Population (1903), 134,779.

Cazin*, **Jean Charles.** Born at Samer, Pas-de-Calais, May 25, 1841: died at Lavandon, near Toulon, March 27, 1901.

Cebu. **2.** A province of the Philippines, consisting of Cebu and adjacent islands lying between Negros and Leyte in the Visayan Sea. Capital, Cebu. The native race is Visayan. The main island is long and narrow, and is traversed from northeast to southwest by the Cordillera Central Mountains, which, though not exceeding 2,000 feet in height, interfere with communication between the eastern and western parts of the island, as there are few passes. The rivers are unimportant, only one, the Cabiangon, being navigable by native boats a distance of 3 miles. There are two good harbors on the eastern coast—Cebu and Port Bugut or Carmen. Cebu contains the largest coal deposits of the Philippines. Petroleum has been reported in connection with the coal-beds. Gold and marble are found in the western part of the island. The mountains are wooded, the most extensive forests being on the western slopes. The industries of the province are chiefly the manufacture of sugar, salt, and cheese, and of fabrics of hemp and pineapple fiber. The fisheries are of importance. Area of province, 1,939 square miles. Population (1903), 653,727. **3.** The capital and chief port of Cebu province, in lat. 10° 18′ N., long. 123° 53′ 05″ E. The harbor is excellent. Population (1903), 18,330: municipality, civilized population, 31,079.

Celebes (sel'e-bes) **Sea.** That part of the Pacific Ocean which lies south of Mindanao, north of Celebes, and east of Borneo, the Sulu (Jolo) Archipelago, and Basilan Island. It is connected with the Java Sea by the Strait of Macassar.

Centennial State, The. A name given to the State of Colorado, because it was admitted to the Union in 1876.

Central Africa*, **British.** The name of the British Central African Protectorate was changed in 1907 to 'Nyasaland Protectorate.' Area, 43,608 square miles. Population (1908), about 1,000,000.

Central American Arbitration Treaty. A treaty signed on Dec. 20, 1907, by the representatives of the five Central American States at a conference at Washington, by which all the states agreed to submit disputed matters to a court of arbitration, the judges of which are to be appointed by the congress of each country and the decisions of which are to be binding on all parties.

Central Falls (sen'tral fâlz). A manufacturing city situated on the Blackstone river in Providence County, Rhode Island. Population (1900), 18,167.

Cernuschi (cher-nös'ki), **Enrico.** Born at Milan, 1821: died at Mentone, May 12, 1896. An Italian-French financier and political economist, an advocate of bimetallism. He played a conspicuous part in the insurrections at Milan in 1848, and at Rome in 1849, but in 1850 escaped to France where he was afterward naturalized. He wrote "Mécanique de l'échange" (1865), "Illusions des sociétés coopératives" (1866), "La diplomatie monétaire" (1878), "Le bimétallisme en Angleterre" (1879), "Le bimétallisme à quinze et demi" (1881), "Le grand procès de l'union latine" (1884), "Les assignats métalliques" (1885), etc.

Cervantes (ther-vän'tes). A town, the capital of Lepanto-Bontoc province, Luzon, in the Philippine Islands. It is situated approximately in lat. 17° 1′ 10″ N., long. 120° 50′ 30″ E.

Cervera y Topete (thār-vā'rä ē tō-pā'tā), **Pascual,** Count de Jerez and Marquis de Santa Ava. Born Feb. 18, 1839: died at Puerto Real, Spain, April 3, 1909. A Spanish admiral. He entered the naval academy at San Fernando in 1851, and served in Morocco, and in the Cuban rebellion 1868–78. He was recalled from Cuba to hold the office of minister of marine. On the outbreak of the war with the United States he sailed from the Cape Verde Islands with four cruisers and three torpedo-boat destroyers April 29, 1898, entered the harbor of Santiago de Cuba May 19, and lost his entire fleet off that port July 3, in an attempt to force his way through Admiral Sampson's blockading squadron.

Cesnola*, Count **Luigi Palma di.** Died at New York, Nov. 20, 1904.

Cevallos*, **Pedro Fermin.** He was born at Ambato, July 7, 1812, and died at Quito, May 21, 1893.

Chabrier (shä-bri-ā'), **Alexis Emmanuel.** Born at Ambert, Puy-de-Dôme, France, March 18, 1841: died at Paris, Sept. 13, 1894. A French composer, chiefly of operas. His most important works are "Gwendoline" (1886), "Le roi malgré lui" (1887), and some orchestral pieces.

Chabrillan*, **Comtesse de Moreton de** (**Céleste Vénard**). Died at Paris, Feb. 19, 1909.

Chadwick (chad'wik), **French Ensor.** Born at Morgantown, W. Va., Feb. 29, 1844. An American naval officer, promoted rear-admiral in 1903. He was graduated at the United States Naval Academy in 1865; was naval attaché in London 1882–89; was chief intelligence-officer 1892–93; was chief of the Bureau of Equipment 1893–97; and served as captain of the cruiser New York and chief of staff to Admiral Sampson during the war with Spain (1898). From 1900–03 he was president of the Naval War College and commanded the South Atlantic squadron in 1904. He retired in 1906.

Chadwick (chad'wik), **George Whitefield.** Born at Lowell, Mass., Nov. 13, 1854. An American composer. He studied in Boston and later in Leipsic and Munich. X On his return to America he became an organist in Boston and teacher of composition in the New England Conservatory. Since 1897 he has been its director. He has composed three symphonies, half a dozen overtures, five string quartets, a pianoforte quintet, the lyric drama "Judith" (1900), choral works ("Phœnix Expirans," 1891), and many songs. He has written a treatise on harmony.

Chadwick (chad'wik), **John White.** Born at Marblehead, Mass., Oct. 19, 1840: died at Brooklyn, N. Y., Dec. 11, 1904. An American Unitarian minister, literary critic, and author. He was graduated at the Cambridge Divinity School in 1864 and was minister of the Second Unitarian Society of Brooklyn 1864–1904. Among his works are "The Bible of To-day" (1878), "Faith of Reason" (1879), "The Man Jesus" (1881), "A Book of Poems" (1888), "Old and New Unitarian Belief" (1894), "A Life for Liberty" (1899), "Theodore Parker" (1900), "William Ellery Channing" (1903).

Chaffee (chaf'ẹ), **Adna Romanza.** Born at Orwell, O., April 14, 1842. An American general. He entered the army as a private July 22, 1861; served in the Civil and Spanish-American wars; was assigned to the command of the United States forces for the relief of the United States legation at Peking, June 24, 1900, and entered the city Aug. 14. He was nominated major-general Feb. 5, 1901. Retired in 1906.

Challemel-Lacour*, **Paul Amand.** Died at Paris, Oct. 26, 1896.

Challenger Deep. One of the deepest portions of the Pacific Ocean. It occurs between Guam and the Caroline Islands and was discovered by H. M. S. Challenger, which obtained a sounding of 4,475 fathoms at this place.

Chamberlain (chām'bėr-lạn), **Alexander Francis.** Born at Kenninghall, England, Jan. 12, 1865. An English-American anthropologist, assistant professor of anthropology in Clark University, Worcester, Massachusetts, from 1904. He was graduated at the University of Toronto in 1886. His works include "The Child: a Study in the Evolution of Man" (1900), "Poems" (1904), etc. He is editor of the "Journal of American Folklore."

Chamberlain (chām'bėr-lạn), **Daniel Henry.** Born at West Brookfield, Mass., June 23, 1835: died near Charlottesville, Va., April 13, 1907. An American lawyer, politician, and writer. He was graduated at Yale University in 1862 and at the Harvard Law School in 1863; served in the Union Army in the last years of the Civil War; established himself as a cotton-planter in South Carolina in 1866; and was attorney-general of that state 1868–72 and governor 1874–77.

Chamberlain*, **Joseph.** He was colonial secretary 1895–1903.

Chamberlain (chām'bėr-lạn), **J. Austen.** Born 1863. An English Liberal-Unionist statesman, eldest son of Joseph Chamberlain. He was educated at Rugby, and at Trinity College, Cambridge; has sat for Worcestershire (East) in the House of Commons since 1892; was a civil lord of the admiralty 1895–1900; was financial secretary to the treasury 1900–02; was postmaster-general 1902–03; and was chancellor of the exchequer 1903–Dec., 1905.

Chamberlin (chām'bėr-lin), **Thomas Chrowder.** Born at Mattoon, Ill., Sept. 25, 1843. An eminent American geologist, professor of geology and director of the Walker Museum in the University of Chicago from 1892. He was professor of geology at Beloit College 1873–82; assistant state geologist of Wisconsin 1873–76 and chief geologist 1876–82; president of the University of Wisconsin 1887–92; and geologist of the Peary Relief Expedition 1894. He has published "Geology of Wisconsin" (1877–83), "Text-book of Geology" (1904–06: with Salisbury), "The Tidal and other Problems" (1909, with F. R. Moulton, and others),

X Met him here in 1878-9.

and many scientific papers; and is the editor of the "Journal of Geology." He is the author of the 'planetesimal hypothesis,' relating to the formation of planetary systems.

Chambers (chām′bėrz), **Robert William.** Born at Brooklyn, N. Y., May 26, 1865. An American artist and novelist. He studied art abroad, exhibited at the Salon in 1889, and in 1891 went to New York, where he worked as an illustrator. Since 1893 he has been chiefly engaged in literary work. He has written "The Witch of Ellangowan," a drama, "The King in Yellow" (1895), "Lorraine" (1898), "The Cambric Mask" (1900), "The Conspirators" (1900), "Cardigan" (1901), "The Maid-at-Arms" (1902), "The Reckoning" (1905), "Iole" (1905), "The Tracer of Lost Persons" (1906), "The Fighting Chance" (1906), "The Younger Set" (1907), "The Firing Line" (1908), "The Special Messenger" (1909), etc.

Chaminade (shä-mi-näd′), **Cécile.** Born at Paris, Aug. 8, 1861. A French composer and pianist. She has written many pieces and songs that are popular, several orchestral suites, a symphony with chorus, and chamber-music.

Champlain*, Lake. Its elevation above sea-level is given as 101 feet.

Champney (champ′ni), **James Welles.** Born at Boston, July 16, 1843: died at New York, May 1, 1903. An American painter. He learned wood-engraving in Boston, and in 1866 went to Paris and became a pupil of Édouard Frere. He also studied in the Academy at Antwerp. He was elected an associate of the National Academy in 1882.

Champneys (champ′niz), **Basil.** Born 1842. An English architect and writer on art, son of William Weldon Champneys. He was educated at the Charterhouse school and at Trinity College, Cambridge, being graduated in 1864. Among the buildings which he has designed are the Archæological Museum at Cambridge, the Rylands Library at Manchester, and the Butler Museum at Harrow.

Chandler (chand′lėr), **William Eaton.** Born at Concord, N. H., Dec. 28, 1835. An American lawyer and statesman. He was graduated from the Harvard Law School and admitted to the bar in 1855; was reporter of the Supreme Court of New Hampshire in 1859; was a member of the New Hampshire legislature 1862–64, 1881, and speaker 1863–64; was solicitor and judge-advocate-general of the Navy Department 1865; and was assistant secretary of the treasury 1865–67. He was secretary of the navy 1882–85, and United States senator 1887–1901, and was president of the Spanish treaty claims commission 1901–07.

Changsha*. It was opened to foreign commerce in 1903. Population, est. (1907), 230,000.

Channing*, William Ellery. Born Nov. 29, 1818: died Dec. 23, 1901.

Channing (chan′ing), **William Henry.** Born at Boston, May 25, 1810: died at London, Dec. 23, 1884. An American Unitarian minister and writer, nephew of William Ellery Channing. He was graduated from Harvard College in 1829 and from the Cambridge Divinity School in 1833; succeeded James Martineau as minister of the Hope Street Unitarian Chapel in Liverpool, England, in 1857; and returned to the United States in 1862 and filled a Unitarian pulpit in Washington, D. C. He was interested in the Brook Farm experiment, contributed to "The Harbinger," and with Emerson and J. F. Clarke wrote "Memoirs of Margaret Fuller Ossoli" (1852). He also published a translation of Jouffroy's "Ethics" (1840), "Memoirs of William Ellery Channing" (1848), etc.

Chapman (chap′man), **Frank Michler.** Born at Englewood, N. J., June 12, 1864. An American ornithologist. He has been associate curator of ornithology and mammalogy in the American Museum of Natural History, New York City, since 1887, and is editor and founder of "Bird-Lore" and associate editor of "The Auk." He has published "Handbook of Birds of Eastern North America" (1895), "Bird-Life" (1897), "Bird Studies with a Camera" (1900), "A Color Key to North American Birds" (1903), "The Economic Value of Birds to the State" (1903), "Warblers of North America" (1907), "Camps and Cruises of an Ornithologist" (1908), etc.

Chapman*, John Gadsby. Died at Brooklyn, N. Y., July 6, 1890.

Chapu (shä-pü′), **Henri Michel Antoine.** Born at Le Mée (Seine-et-Marne), France, Sept. 29, 1833: died at Paris, April 20, 1891. A French sculptor. He was a pupil of Pradier, Duret, and Léon Cogniet, and won the grand prix de Rome, in sculpture, in 1855. His works include the statue of "Jeanne d'Arc hearing voices" (1870), the monument to Henri Regnault in the École des Beaux-Arts (1876), the tomb of Monsignor Dupanloup (1886), the monument to the Duchess of Orléans, and many important statues and busts. He won the médaille d'honneur at the Salon in 1875 and 1877, and was elected member of the Institute in 1880.

Charcot (shär-kō′), **Jean Baptiste Étienne Auguste.** Born at Neuilly-sur-Seine, July 15, 1867. A French physician and explorer. As leader of the French antarctic expedition (1903–05) he established the connection of Bismarck Strait with the sea east of Graham Land, and mapped the west coast of that land. In 1908 he took command of a second expedition to the Antarctic, the main objects of which were to make a collection of the fossils to which attention was drawn by Dr. Nordenskjöld, and to explore the region south of Loubet Island, and, if possible, to reach the south pole.

Charles*, Mrs. Andrew (Elizabeth Rundle). Died March 29, 1896.

Charles's Wain. See *Wain, Charles's.*

Charlotte Temple; or, a Tale of Truth. A tale by Mrs. Susanna (Haswell) Rowson, published in 1790. It has been many times republished. The heroine, an innocent schoolgirl, is induced to come to America by Montraville, a lieutenant in the British service, on his promise of marriage upon arrival. This promise is not fulfilled; he deserts her, and she dies after giving birth to a child. A grave marked by a tombstone bearing the name of "Charlotte Temple," erected by a sexton in the eighteenth century, lies in the graveyard of Old Trinity Church, New York City. The author in her preface states that the tale is a true one, "yet, I have substituted name and places according to my own fancy." The real name of Charlotte Temple is said to have been Stanley.

Charpentier (shär-poṅ-tyā′), **Gustave.** Born at Dieuze, Lorraine, June 25, 1860. A French composer. He studied at the Conservatoire in Paris, and took the Roman prize there in 1887. His most important works are a suite for orchestra, "Impressions d'Italie," the opera "Louise" (produced at the Opéra Comique, Paris, in 1900, with great success), which has been considered one of the most noteworthy of modern French operas, and the 'symphonie-drama' "La vie du poète" (1892).

Charton*, Édouard Thomas. Died at Paris, Feb. 28, 1890.

Chartran (chär-troṅ′), **Théobald.** Born at Besançon, 1849: died at Paris, July 16, 1907. A French painter, a pupil of Cabanel. His works are chiefly portraits and religious subjects.

Chassepot*, Antoine Alphonse. Died Feb. 13, 1905.

Chat, Nation du. See *Erie.*

Chatelain*, Héli. Died at Lausanne, Switzerland, July 22, 1908. In 1897 he founded the Phil-African Mission, near the edge of the Angola Highlands, for the industrial training of the natives under Christian influence.

Chausson (shō-soṅ′), **Ernest.** Born at Paris, 1855: died at Limay, June 10, 1899. A French composer, a pupil and follower of César Franck. His most important works are the opera "Le roi Arthus" (produced in 1903), a symphony, a symphonic poem "Viviane" (1888), chamber-music, and songs.

Chauvin (shō-vaṅ′), **Nicolas.** Born at Rochefort, France, in the 18th century. A French soldier of the Republic and the Empire. He was severely wounded and mutilated in the wars of Napoleon and received as reward for his services a saber of honor, a red ribbon, and a pension of 200 francs. His enthusiasm for the Emperor was so demonstrative that it won for him the ridicule of his comrades and gave rise to the term 'chauvinism.'

Chelan (shē-lan′). A lake in Chelan County, Washington. It is about fifty miles long and from one to two miles wide.

Cheliabinsk (chel-i-ä-binsk′). A city of Orenburg, Russia, situated near the northern boundary of the province in lat. 55° N. Population, upward of 10,000.

Chelminski (chel-min′ski), **Jan.** Born in Russian Poland, Jan. 27, 1851. A Polish painter. He received his professional training at the Academy in Munich and under Franz Adam. In 1873 he began painting, independently, genre subjects taken from the common life of Poland. His work is widely distributed.

Chemulpo (shē-mul-pō′), **Battle of.** A naval engagement in the harbor of Chemulpo, Korea, Feb. 9, 1904, between two Russian cruisers, the Variag and Koreetz, and a Japanese fleet consisting of four cruisers, seven torpedo boats, and three transports. Both of the Russian vessels were damaged and were sunk by their officers after the engagement.

Cheney (chē′ni), **John Vance.** Born at Groveland, N. Y., Dec. 29, 1848. An American poet and librarian. He studied law at Woodstock, Vermont, 1871–74, and at Haverhill, Massachusetts, 1874–75, and practised in New York for a year. On his removal to California in 1876 he became librarian of the Free Public Library in San Francisco (1887–1894), and in 1894 became librarian of the Newberry Library in Chicago. He has published two volumes of essays, "The Golden Guess" (1892), and "That Dome in Air" (1895), and several volumes of poems, among them "Thistle-Drift" (1887), "Wood-Blooms" (1888), "Lyrics" (1902), and "Poems" (1905).

Cherbuliez*, Charles Victor. Died at Combs, near Melun, July 1, 1899.

Chesney (ches′ni), Sir **George Tomkyns.** Born at Tiverton, Devonshire, April 30, 1830: died at London, March 31, 1895. A British general, engineer, and author, nephew of F. R. Chesney. He entered the army in 1848; served in the Indian mutiny; was president of the engineering college in Calcutta; was the first president of the Royal Indian Civil Engineering College, Cooper's Hill, Staines, near London, 1871–80; was secretary to the military department of the Indian government 1880–86; and was military member of the governor's council 1886–91. He was knighted in 1890, and was elected a Conservative member of Parliament for Oxford in 1892. In 1871 he published anonymously in "Blackwood's Magazine" "The Battle of Dorking, or Reminiscences of a Volunteer," a brochure which attracted much attention. He also published "Indian Polity" (1868); "The True Reformer" (1874), "The Dilemma" (1876), novels dealing with army affairs; "The Lesters, or a Capitalist's Labor" (1893); etc.

Chesterton (ches′tėr-tọn), **Gilbert Keith.** Born at Kensington, England, 1874. An English journalist and author. Among his published volumes are "The Wild Knight and other Poems" (1900), "Greybeards at Play" (1900), "Robert Browning" (1903), "G. F. Watts" (1904), "The Napoleon of Notting Hill" (1904), "Charles Kingsley" (1906), "The Man Who Was Thursday" (1908), "All Things Considered" (1908), etc.

Cheyne (chā′ni), **Thomas Kelly.** Born at London, England, Sept. 18, 1841. A noted English clergyman and biblical critic. He was a member of the Old Testament Revision Company 1884; was rector of Tendring, Essex, 1880–85; and was Oriel professor of the interpretation of Scripture at Oxford, and canon of Rochester, 1885–1908. In 1904 he was elected a member of the British Academy. Among the best known of his works are "The Prophecies of Isaiah" (1880–81), "The Book of Psalms," a new translation (1884–88, 1904), "Founders of Old Testament Criticism" (1893), "Introduction to the Book of Isaiah" (1895), "Isaiah," critically revised text, and translation in "Sacred Books of the Old Testament" (1898), "Jewish Religious Life after the Exile" (1898), "Critica Biblica" (1904), "Traditions and Beliefs of Ancient Israel" (1907), etc.

Chiapas*. The southeasternmost state of Mexico. Capital, Tuxtla-Gutiérrez.

Chicago*, University of. Its endowment is about $12,500,000. It has about 5,000 students, 350 instructors, and a library of 350,000 volumes.

Chicago Drainage Canal. A canal which extends from the west fork of the south branch of the Chicago river in Robey Street, Chicago, to Lockport, Illinois, a distance of about 28 miles, and thence to Joliet, a further distance of 7 miles. It discharges the sewage of Chicago into the Illinois river, a branch of the Mississippi. Work was begun in 1892 and the canal was formally opened in 1900, having cost $33,000,000. It is designed to be also used for shipping and is flushed by 300,000 cubic feet of water (drawn from Lake Michigan) per minute. The flow reverses the direction of that of the Chicago river.

Chicago Exposition. See *World's Columbian Exposition.*

Chickamauga National Park. A national reservation in Georgia, containing the battlefield of Chickamauga. It has an area of about fifteen square miles, comprising parts of Walker and Catoosa counties. It was dedicated in September, 1895.

Child*, Francis James. Died Sept. 11, 1896.

Childers*, Hugh Culling Eardley. Died Jan. 29, 1896.

Children of the Abbey, The. A story by Mrs. Regina Maria Roche, published in 1798.

Chile*. It has 23 provinces: Aconcagua, Antofagasta, Arauco, Atacamá, Biobio, Cautin, Chiloé, Colchagua, Concepción, Coquimbo, Curicó, Linares, Llanquihué, Malleco, Maule, Ñuble, O'Higgins, Santiago, Tacna, Talca, Tarapacá, Valdivia, and Valparaiso; and one territory, Magallanes.

Chi-li, Gulf of. See *Pe-chi-li.*

China*. Toward the end of 1899 an uprising headed by the Boxers (which see) against native Christians and foreigners began. It resulted, in June, 1900, in an attack upon the foreign legations in Peking, and the murder of the Japanese secretary of legation and the German minister, Baron von Ketteler. The legations were besieged and cut off from communication with the outside world. Their relief was at once undertaken by their governments. The first expedition under Admiral Seymour (June 10–26) from Tientsin was unsuccessful, and a second one was organized. The Taku ports were taken June 17; Tientsin was recaptured July 14; and Peking was captured Aug. 14. Steps have been taken toward the ultimate establishment of a constitutional government. Manchuria was occupied by Russia as a result of the "Boxer" uprising in 1900, but was restored to China, with the exception of the Liao-tung Peninsula, by the treaty of Portsmouth, Sept. 5, 1905. By the treaty of Dec. 22, 1905, China leased to Japan the Liao-tung Peninsula and ceded the control of the railways as far as Chang-chun, and the right to construct a railway from Antung to Mukden, and agreed to open 16 Manchurian ports and cities to foreign commerce. On Nov. 21, 1906, regulations were issued providing for a gradual decrease in the use, growth, and importation of opium.

Chinam-pho, Chinnampo (chē-näm-pō′). A free port on the western coast of Korea, about one hundred miles northwest of Seul. Population, upward of 17,000.

Chippendale (chip′en-dāl), **Thomas.** Flourished about 1760. A noted English furniture-maker. His business was carried on in London. His work is heavier in design and less tasteful than that of Sheraton and other later cabinet-makers.

Chittenden (chit′ẹn-dẹn), **Russell Henry.** Born at New Haven, Conn., Feb. 18, 1856. An

American chemist, professor of physiological chemistry at Yale University from 1882 and director of the Sheffield Scientific School (Yale) from 1898. He was graduated at Yale in 1875. His most important publications are "Studies in Physiological Chemistry," and "Physiological Economy in Nutrition."

Chivers (chiv'ėrz), **Thomas Holley.** Born at Digby Manor, Wilkes County, Ga., in 1807: died at Decatur, Ga., Dec. 18, 1858. An American poet. He studied medicine, but soon abandoned it for literature. He was a friend and admirer of Edgar Allan Poe (whom he first met in New York in 1845), though he accused Poe of plagiarizing him. To substantiate this claim he published several articles in 1853, under the pseudonym "Fiat Justitia." He published nine volumes of verse.

Choate (chōt), **Joseph Hodges.** Born at Salem, Mass., Jan. 24, 1832. A noted American lawyer, orator, and diplomatist, first cousin, once removed, of Rufus Choate. He was graduated at Harvard in 1852, and was admitted to the Massachusetts bar in 1855 and to the New York bar in 1856. In 1871, as a member of the Committee of Seventy, he aided in the overthrow of the "Tweed Ring" in New York. He was United States ambassador to Great Britain 1899–1905, and in 1907 was delegate to the International Peace Conference at the Hague.

Chodzko*, Alexander. Died Dec. 20, 1891.

Cholmondeley (chum'li), **Mary.** Born at Hodnet, Shropshire, England. A contemporary English novelist. Her best known works are "The Danvers Jewels" (1887: written under the pseudonym "Pax"), "Diana Tempest" (1893), "Red Pottage" (1899), "Prisoners" (1906), and "Hand on the Latch" (1909).

Chouart (shö-är'), **Medard:** known as **Sieur des Groseilliers.** Born at Brie, France, 1621. An early Canadian explorer. He left France when about 16 years of age and became a trader among the Huron Indians. With the Sieur Radisson (Pierre d'Esprit), he discovered the Upper Mississippi and explored the country in the region of Lake Superior (1659–60). In 1662 he made a journey from Quebec to Hudson's Bay. He went to England and secured the indorsement of Prince Rupert and other eminent men for an expedition to Hudson's Bay by a northwest passage, which was successfully carried out in 1668, and as a result of which the Hudson's Bay Company was chartered in 1670.

Christian IX.* Died at Copenhagen, Jan. 29, 1906. King of Denmark 1863–1906. He was succeeded by his son, Frederick VIII. (born June 3, 1843).

Christian Endeavor, Young People's Society of. A society originated in 1881 by Francis E. Clark, pastor of the Williston Congregational Church in Portland, Maine. Its object is to make young people loyal members of the church. It is directed by a central corporation (the United Society) and local societies (numbering in both hemispheres over 70,000), in connection with evangelical churches. The total membership is nearly four millions.

Christie's (kris'tiz). A noted auction-room in London. On December 5, 1766, the first James Christie (1730–1803) held his initial public auction on the site of the United Service Club in Pall Mall. The business was, at first, general, but the picture sales soon became the chief attraction. The 'private view-day' was especially popular with the prominent people of the time. The first Christie was succeeded by James Christie the second (1773–1831), who in 1824 moved to the present location at 8 King street. The two sons of James Christie second, James Stirling (died 1834) and George Henry, succeeded him. The present firm name of 'Christie, Manson, and Woods' was created in 1859.

Christ's Hospital*. The school was moved to Horsham, Sussex, in 1902.

Chrysander (krē'sän-der), **Friedrich.** Born at Lübtheen, Germany, July 8, 1826: died at Bergedorf, September 3, 1901. A German musical historian and biographer. His chief work is his biography of Handel, unfinished, in three volumes (1858–67). From 1868–71 and 1875–82 he was editor of the "Allgemeine Musikalische Zeitung," and he founded the "Vierteljahrsschrift für Musikwissenschaft." He was the founder of the German Handelgesellschaft and edited its complete edition of Handel's works.

Church*, Frederick Edwin. Died at New York, April 7, 1900.

Church (chėrch), **Richard William.** Born at Lisbon, April 25, 1815: died at Dover, England, Dec. 9, 1890. An English clergyman and writer, dean of St. Paul's 1871–90. He lived in Florence 1818–28; was graduated at Oxford in 1836; was fellow of Oriel 1838–52; was ordained priest in 1852; and received the living of Whatley in Somerset in the same year. He was select preacher at Oxford 1868, 1876–78, and 1881–82. He wrote "Anselm" (1843: enlarged 1870), "Dante" (1850), "Spenser" (1879), "Bacon" (1884), "A History of the Oxford Movement" (1891), etc.

Churchill (chėrch'il), **Winston.** Born at St. Louis, Mo., Nov. 10, 1871. An American novelist. He was graduated from the United States Naval Academy in 1894. He has worked chiefly in the field of historical fiction. Among his works are "Richard Carvel" (1899), "The Crisis" (1901), "The Crossing" (1904), "The Title Mart," a play (1905), "Coniston" (1906), "Mr. Crewe's Career" (1908), etc.

Churchill (chėrch'il), **Winston Leonard Spencer.** Born Nov. 30, 1874. An English war correspondent, author, and politician, eldest son of Lord Randolph Churchill. He entered the army and served with the Spanish forces in Cuba as correspondent for the "Daily Graphic" in 1895, with the Malakand field force in 1897, and with the Nile expeditionary force in 1898. He was correspondent for the London "Morning Post" during the South African campaign 1899–1900, and was taken prisoner in action Nov. 15, 1899, but escaped Dec. 12th. As a Conservative he was elected from Oldham to the House of Commons in 1900, and as a Liberal sat for Northwest Manchester 1906–08 and for Dundee 1908–. His change of party was largely due to his attitude toward Brodrick's army and Chamberlain's fiscal proposals. He was under-secretary to the colonial office 1906–08, and president of the board of trade 1908–. He has written "The Story of the Malakand Field Force" (1898), "The River War" (1899), "Savrola" (1900), "London to Ladysmith via Pretoria" (1900), "Ian Hamilton's March" (1900), "Lord Randolph Churchill" (1906), and "My African Journey" (1908).

Cicerone (chē-che-rō'nā). A noted guide-book by Jakob Burckhardt which contains an historic and descriptive account of the ancient and modern art of Italy. The first edition was published at Bâle in 1855 in seven small volumes.

Cincinnati, University of. See *University of Cincinnati.*

City of New York, College of. See *College of the City of New York.*

Clark (klärk), **Alvan Graham.** Born at Fall River, Mass., July 10, 1832: died at Cambridge, Mass., June 9, 1897. An American optician and astronomer, son of Alvan Clark. He became a member of the firm of Alvan Clark and Company in 1852, and completed the telescope for the Lick Observatory (36 inches). He made the 30-inch refractor for the Imperial Observatory at St. Petersburg, for which he was presented with a gold medal by the Emperor; the 40-inch lens for the Yerkes Observatory of the University of Chicago (at Williams Bay, Wis.); and many others. He was also known as an astronomer, and made many discoveries of double stars, among them that of the companion of Sirius, for which he was awarded the Lalande gold medal by the French Academy.

Clark (klärk), **Charles Edgar.** Born at Bradford, Vt., Aug. 10, 1843. An American naval officer, promoted rear-admiral in 1902. He was ordered, with his class at the United States Naval Academy, into active service in 1863; took part in the battle of Mobile Bay and the bombardment of Fort Morgan; and rose to the rank of captain in 1896. At the outbreak of the war with Spain (1898) he was appointed to the command of the battle-ship Oregon, then in San Francisco, and with remarkable skill and success brought her to Key West, upward of 14,000 miles, in time to take a very important part in the battle of Santiago. He retired in 1905.

Clark (klärk), **John Bates.** Born at Providence, R. I., Jan. 26, 1847. An American political economist and educator. He was graduated at Amherst College in 1872, and later studied in the universities of Heidelberg and Zurich. Since 1895 he has held a chair of political economy in Columbia University. He has written "The Philosophy of Wealth" (1885), "The Distribution of Wealth" (1899), "The Control of Trusts" (1901), "The Problem of Monopoly" (1904), "Essentials of Economic Theory" (1907), besides monographs, parts of joint publications, and many contributions to reviews.

Clark (klärk), **Walter Appleton.** Born at Worcester, Mass., 1876: died at New York, Dec. 27, 1906. An American artist and illustrator.

Clark (klärk), **William Bullock.** Born at Brattleboro, Vt., Dec. 15, 1860. An American geologist, professor and director of the geological laboratory in Johns Hopkins University from 1894. He was graduated at Amherst College in 1884, studied abroad, and became instructor (1887) and later associate professor (1892–94) in Johns Hopkins University. Since 1896 he has been state geologist of Maryland and geologist on the staff of the United States Geological Survey. He was also appointed by the governor of Maryland, in 1900, commissioner for that state in the re-running of Mason and Dixon's line.

Clarke (klärk), Sir **Caspar Purdon.** Born at London, 1846. A British archæologist, appointed director of the Metropolitan Museum, in the City of New York, in 1905. He was connected with the South Kensington Museum, London, from 1862, becoming in 1883 keeper of the Indian collections, in 1892 keeper of the art collections, in 1893 assistant director, and in 1896 director. In 1878 he was made a chevalier of the Legion of Honor, in 1883 a companion of the Indian Empire, and a commander of the Victorian Order in 1905. He was knighted in 1902.

Clarke*, Hyde. Died at London, March 1, 1895.

Clarke (klärk), **John Mason.** Born at Canandaigua, N. Y., April 15, 1857. An American naturalist, director of the New York State Museum. He was graduated at Amherst College in 1877; studied at Göttingen; was professor of geology and mineralogy at Smith College, Northampton, Massachusetts, 1881–84; has been professor of geology at the Rensselaer Polytechnic Institute, Troy, New York, since 1894; and became assistant state geologist in 1894, state paleontologist in 1898, and state geologist and paleontologist in 1904. He has published numerous scientific books and monographs.

Clarke*, John Sleeper. Died at Surbiton-on-Thames, England, Sept. 25, 1899.

Clarke*, Mrs. (**Mary Victoria Novello**). Died at Genoa, Jan. 12, 1898.

Clay*, Cassius Marcellus. Died at Whitehall, Ky., July 22, 1903.

Claypole or **Claypoole** (klā'pōl), Mrs. (**Elizabeth Cromwell**). Born July 2, 1629: died Aug. 6, 1658. The youngest daughter of Oliver Cromwell. She is said to have interceded with her father in behalf of many royalist offenders. She was buried in Henry VII.'s chapel in Westminster Abbey, but after the Restoration her body was taken up and cast, with others, into a pit.

Clays*, Paul Jean. Died at Brussels, Feb. 9, 1900.

Clear (klēr), **Claudius.** See *Nicoll.*

Cleburne (klē'bėrn), **Patrick Ronayne.** Born near Cork, Ireland, March 17, 1828: died at the battle of Franklin, Tenn., Nov. 30, 1864. An American soldier, a general in the Confederate Army. He served in the British Army for three years, and came to America in 1849. He was admitted to the bar in Arkansas in 1855, and practised until the outbreak of the Civil War, when he enlisted as a private. He rose to be commander of a corps, and was distinguished for his courage and skill, which earned for him the title of the 'Stonewall of the West' (in allusion to 'Stonewall' Jackson).

Clemenceau*, Eugène (**Georges Eugène Benjamin**). He was elected to the Senate in 1902; was appointed minister of the interior in 1906; and was premier, Oct., 1906,–July, 1909.

Clemens*, Samuel Langhorne: pseudonym **Mark Twain.** In 1884 he established at New York the publishing house of C. L. Webster and Co., the failure of which involved him in heavy losses. He resides at Redding, Conn. Among his later works are "Pudd'nhead Wilson" (1893–94 (serially) and 1895), "Personal Recollections of Joan of Arc" (1896), "Following the Equator" (1897), "The Man that Corrupted Hadleyburg" (1900), "The Jumping Frog" (1903), "Extracts From Adam's Diary" (1904), "A Dog's Tale" (1904), "Editorial Wild Oats" (1905), "Eve's Diary" (1906), "The $30,000 Bequest" (1906), "A Horse's Tale" (1907), "Christian Science" (1907), "Is Shakespeare Dead?" (1909).

Clement (klem'ent), **Clara Erskine.** See *Waters.*

Cleopas (klē-ō'pas). According to the account in Luke (chapter xxiv.), one of the two disciples who were accompanied by the risen Jesus in their walk to Emmaus.

Clerke (klärk), **Agnes Mary.** Born in Ireland, Feb. 10, 1842: died at London, Jan. 20, 1907. A British astronomer. She made astronomical observations at the Royal Observatory, Cape of Good Hope, in 1888; wen the Actonian prize in 1893; and in 1901 wrote the Hodgkins essay on low temperature research at the Royal Institution. Her works include "The System of the Stars" (1890), "The Herschels and Modern Astronomy" (1895), "Astronomy" (1898: with A. Fowler and J. E. Gore), and "Problems in Astrophysics" (1903).

Cleveland*, (Stephen) Grover. Died at Princeton, N. J., June 24, 1908. President of the United States 1885–89 and 1893–97. He wrote "Presidential Problems" (1904), "Fishing and Shooting Sketches" (1907), "Good Citizenship" (1908), "Addresses, State Papers, and Letters" (ed. by A. E. Bergh, 1909), etc.

Cleveland National Forest. A forest reserve in California, formerly known as the *San Jacinto* and renamed in 1908 by President Roosevelt in honor of President Cleveland. See *National Forests.*

Cluseret*, Gustave Paul. Born at Paris, June 13, 1823: died at Toulon, Aug. 21, 1900.

Coamo (kō'ä-mō). A city in the eastern part of Ponce department, Porto Rico, situated on the Coamo river. It is a place of resort on account of its thermal medicinal baths. Population (1899), 3,244.

Coast Ranges*. According to the U. S. Geog. Board (1907), they extend northward into Canada and southward into Lower California, and include all mountains west of Puget Sound and the Willamette, Sacramento, and San Joaquim valleys, and southwest of Mohave Desert.

Cobalt (kō'bâlt). A mining village in Coleman township, Ontario, Canada, about 340 miles north of Toronto. It has become famous for its silver-mines.

Cobbe*, Frances Power. Died April 5, 1904. She wrote an autobiography in 1894.

Cobden-Sanderson (kob'den-san'dėr-sọn), **Thomas J.** Born 1840. An English bookbinder. After a short stay with the binder Coverley he began practice with his wife as assistant. The Doves Press (Hammersmith), which he founded, was much influenced by William Morris and Walter Crane.

Cobet (kō-bet'), **Carel Gabriel.** Born at Paris, Nov. 28, 1813: died at Leyden, Oct. 26, 1889. A Dutch philologist, palæographer, and classical scholar. He was educated at the Hague gymnasium and at the University of Leyden and was professor at Leyden from 1846 (emeritus 1884). In 1856 he became joint editor of "Mnemosyne," a philological review. He published "Variæ lectiones" (1854), "Novæ lectiones" (1858), "Miscellanea critica" (1876), "Collectanea critica" (1878), etc.

Cochin China*, French. It is now represented in the parliament at Paris by one deputy.

Cockran (kok′ran), **William Bourke.** Born in Ireland, Feb. 28, 1854. An American lawyer and politician. He came to the United States in 1871; has long been identified with politics in New York City; and has been a member (Democratic) of Congress 1887–89, 1891–95, and 1904–09.

Coghlan (kōg′lan), **Joseph Bullock.** Born at Frankfort, Ky., Dec. 8, 1844: died at New Rochelle, N. Y., Dec. 5, 1908. An American naval officer, promoted rear-admiral in 1902. He was graduated at the United States Naval Academy in 1863. At the battle of Manila Bay, May 1, 1898, he commanded the cruiser Raleigh. He was second in command of the North Atlantic fleet 1902–04; was appointed commandant of the Navy Yard, New York, in 1904; and retired in December, 1906.

Cohn*, Ferdinand Julius. Died at Breslau, June 25, 1898.

Colban*, Madame (**Adolfine Marie Schmidt**). Died at Rome, March 27, 1884.

Colby University*. In 1899 the name was changed to Colby College.

Cole*, Timothy. His latest works include "Old Dutch and Flemish Masters" (1893: text by John C. Van Dyke); "Old Spanish Masters" (1901: text by Charles H. Caffin); "Old English Masters" (1902: notes by John C. Van Dyke and comments by the engraver).

Coleman (kōl′man), **Charles Caryll.** Born at Buffalo, N. Y., 1840. An American painter. In 1859 he went to Europe to study art, but returned to serve three years in the Federal army in the Civil War. Since 1866 he has lived and worked entirely in Europe, his studio now being on the island of Capri, Italy.

Coleridge-Taylor (kōl′rij-tā′lor), **Samuel.** Born at London, Aug. 15, 1875, of a full-blooded African father and an English mother. An English composer. His principal works are the three cantatas comprised in "Scenes from the Song of Hiawatha," the oratorio "The Atonement," songs, and a number of piano pieces in which he has reproduced certain characteristics of negro music.

Colgate University. An institution of learning situated at Hamilton, New York, founded in 1819 originally for the education of Baptist ministers. It comprises a College and a Theological Seminary, with a large preparatory school, Colgate Academy. In 1835 the exclusive ministerial charter of the school was given up, and in 1846 the collegiate department was incorporated under the name of 'Madison University'; this name was changed to 'Colgate University' in 1890, in honor of William Colgate and his sons, who for many years had been its leading patrons. The faculties number 47 professors and instructors, and the students about 480.

Colin Tampon. A nickname for a Swiss.

College of St. Francis Xavier, The. A college in New York City conducted by the Fathers of the Society of Jesus, founded in 1847 and chartered in 1861. It is the outgrowth of the first Latin school in New York, opened in 1683. It is attended by about 560 students, and offers courses leading to the degrees of B. A. and M. A.

College of the City of New York. An institution of learning free to all young men of New York City. It is the outgrowth of the Free Academy of New York (established in 1848); the present name was adopted in 1868. The institution is governed by trustees, appointed by the mayor of New York and the president of the Board of Education, who is *ex officio* a trustee. The college course is four years in length, preceded by a sub-freshman course with a minimum requirement of three years of residence, in which students are directly prepared for the college. Degrees are granted in arts and science. New buildings at 138th Street and St. Nicholas Avenue, New York, for which nearly $6,000,000 have been appropriated, were ready for occupancy in September, 1907.

Colliberts (kol-ē-bãr′). A despised race formerly existing in several parts of France, afterward chiefly found in Poitou, where they lived in boats on the rivers, but now nearly extinct.

Collins (kol′inz), **John Churton.** Born at Bourton-on-the-Water, Gloucestershire, England, March 26, 1848: died at Lowestoft, Sept. 15, 1908. An English author, lecturer, and educator, professor of English literature at Birmingham from 1904. He was graduated at Balliol College, Oxford, in 1872. Among his publications are "The Study of English Literature at the Universities" (1891), "Jonathan Swift" (1893), "Essays and Studies" (1895), "Ephemera Critica" (1901), "Studies in Shakespeare" (1904), and "Studies in Poetry and Criticism" (1905).

Collinson (kol′in-son), Sir **Richard.** Born at Gateshead, 1811: died at Ealing, September 13, 1883. An English admiral and arctic explorer. He commanded the expedition in search of Sir John Franklin 1850–54, and was shut up with the Enterprise in the arctic regions for three years, wintering 1851–52 at the southern entrance to Prince of Wales Strait, 1852–53 in Cambridge Bay, and 1853–54 in Camden Bay. His contribution to geographical knowledge was large and would have amounted to the discovery of the Northwest Passage if this had not been achieved by the Investigator under his subordinate M'Clure. He was knighted in 1875.

Colombia*, Republic of. The republic is divided into nine departments, according to decree of March, 1909, as follows: Barranquilla, Bucaramanga, Cartagena, Facatativa, Manizales, Medellin, Pasto, Popayan, and Tunja. In November, 1903, after a bloodless revolution, Panama was declared independent of Colombia.

Colonial Dames of America. 1. A patriotic society of women organized in the City of New York, May 23, 1890, and incorporated April 23, 1891. Its object is to collect and preserve relics, traditions, etc., relating to the early history of the United States and to the War of Independence and to educate the young in the history of their country by means of the celebration of events of national importance, etc.

2. A similar but distinct society, with branches in 36 States and a membership of over 5,500 women lineally descended from Colonial ancestry. Its object is to preserve or restore manuscripts, traditions, relics, and buildings connected with the Colonial period; to diffuse information concerning, and to create a popular interest in, the Colonial period; and to stimulate, especially in the young, a spirit of true patriotism and a genuine love of country. The society was organized in April, 1891.

Colonne (kō-lon′), **Édouard.** Born at Bordeaux, France, July 24, 1838. A distinguished French musical conductor. He founded the famous 'Concerts du Châtelet' in Paris in 1874, and has conducted them ever since. In these he has brought out a very large number of musical works new to Paris; has done much for the spread of Berlioz's fame; and has introduced the music of Brahms, Wagner, and other moderns.

Colorado*. It has 59 counties, sends 2 senators and 3 representatives to Congress, and has 5 electoral votes.

Colorado (kol-ọ̄-rä′dō) **College.** A non-sectarian, coeducational institution of learning situated at Colorado Springs, Colorado. The college was established in 1874 and a school of engineering was organized in 1902 and one of forestry in 1906. Its total endowment is $750,000, its annual income $78,000, and the number of students about 600.

Colorado (kol-ọ̄-rä′dō) **Desert.** A desert region in southern California, lying in San Diego County and extending into Lower California.

Colquhoun (kọ-hön′), **Archibald Ross.** Born at sea off the Cape of Good Hope, March, 1848. A Scotch engineer, traveler, and writer. He has held various official positions in India, Siam, and Upper Burma; was the "Times" correspondent in the Franco-Chinese war and the Far East 1883–84; accompanied the pioneer expedition to South Africa in 1890; and upon the occupation of Mashonaland was made administrator. He has traveled and explored extensively in many parts of the world. He is the author of "Across Chrysê" (1883), "China in Transformation" (1898), "The 'Overland' to China" (1900), "The Renascence of South Africa" (1900), "The Mastery of the Pacific" (1902), "Greater America" (1904), "The Africander Land" (1906), "From Dan to Beersheba" (1908), etc.

Columbia. An American sloop yacht, the successful defender of the America's cup in 1899 against the Shamrock, and again in 1901 against Shamrock II. Her dimensions are: length on water-line, 89 feet 7½ inches; length over all, 131 feet 4 inches; beam, 24 feet 2 inches.

Columbia University*. Barnard College, Teachers College, and the College of Pharmacy, while independent corporations, financially, are educationally integral parts of the university. The institution comprises undergraduate colleges for men and women, three graduate nonprofessional faculties, a school of fine arts, and professional schools of law, medicine, mines, engineering, chemistry, education, and pharmacy, and also a summer session and a system of extension teaching. The value of the material equipment, including a library of 390,000 volumes, is about $30,000,000, and there are about 500 instructors and 4,643 students in residence.

Columbian University*. In 1904 the name was changed to George Washington University.

Colvin (kol′vin), **Sidney.** Born at Norwood, England, June 18, 1845. An English writer and critic. He was educated at Trinity College, Cambridge; was Slade professor of the fine arts at Cambridge 1873–85; and held the directorship of the Fitzwilliam Museum 1876–84. He was appointed keeper of prints and drawings in the British Museum in 1884. He has published "Children in Italian and English Design" (1872), "Landor" (1881), "Keats" (1887), "A Florentine Picture Chronicle" (1898), "The Early History of Engraving in England" (1901), etc.; and has edited Robert Louis Stevenson's works (1894–98: 27 vols.), together with his "Letters" (1899: 2 vols.).

Commonwealth of Australia. The federal union of the British colonies ('original states') of New South Wales, Victoria, Queensland, South Australia, Western Australia, and Tasmania, proclaimed Jan. 1, 1901. Legislative power is vested in a federal parliament, consisting of the king, represented by a governor-general; a senate of six members for each of the original states, chosen for six years; and a house of representatives to consist, as nearly as may be, of twice as many members as there are senators, chosen in proportion to the population, but not less than five for any state. The executive is assisted by a council of ministers of state. The seat of the federal government is at Melbourne. In 1905 the administration of New Guinea, or Papua, was transferred to the Commonwealth, and negotiations are pending for transferring that of the Northern Territory. Area, 2,974,581 square miles. Population, est. (1907), 4,197,037.

Conaty (kon′a̤-ti), **Thomas James.** Born in Ireland, August 1, 1847. An American Roman Catholic prelate, Bishop of Monterey and Los Angeles, California, since 1903. He was ordained to the priesthood in 1872; was pastor of the Church of the Sacred Heart at Worcester, Massachusetts, 1880–97; and in 1896 was appointed rector of the Catholic University at Washington. In 1897 the title of domestic prelate was conferred upon him by Pope Leo XIII., and he was consecrated titular Bishop of Samos in 1901. In 1892 he helped to establish the Catholic summer school at Plattsburg, New York, of which he was president till 1896.

Concha*, José Gutierrez de la. Died at Madrid, Nov. 5, 1895.

Concordat of 1801*, The. It was abrogated by the passing of the Briand bill, Dec. 6, 1905.

Cone (kōn), **Helen Gray.** Born at New York, March 8, 1859. An American writer, professor of English in New York Normal College from 1899. She has contributed miscellaneous articles to literary magazines, and has published "Oberon and Puck: Verses Grave and Gay" (1885), and "The Ride to the Lady, and Other Poems" (1891).

Conger (kong′ger), **Edwin Hurd.** Born in Knox Co., Ill., March 7, 1843: died at Pasadena, Cal., May 18, 1907. An American politician and diplomat. He was a Republican member of Congress 1885–91, and minister to Brazil 1891–93, and was again appointed minister to Brazil 1897, but was transferred to China 1898. He was in Peking during the siege of the legations, and conducted the negotiations on the part of the United States after the capture of the city by the allies (Aug. 14, 1900).

Congressional Library. See *Library of Congress.*

Congreve*, Richard. Died at Hampstead, England, July 5, 1899.

Connecticut*. It has five representatives and seven electoral votes.

Connor (kon′ọr), **Ralph.** The pseudonym of Charles William Gordon.

Conrad (kon′rad), **Joseph.** Born in Poland, December, 1856. An English novelist. He went to sea at an early age, and served in the merchant marine, attaining the rank of captain. Among his works are "Lord Jim" (1900), "Youth" (1902), "Typhoon" (1903), "Falk" (1903), "Nostromo" (1904), "The Secret Agent" (1907), "A Set of Six" (1908), etc.; two novels written with Ford M. Hueffer, "The Inheritors" (1901), and "Romance" (1903); and a play, "One Day More" (1905).

Conried (kōn′rēd), **Heinrich.** Born at Bielitz, Austria, Sept. 13, 1855: died at Meran, Austria, April 27, 1909. A German-American theatrical and operatic manager. He made his début as an actor at the Imperial Court Theater in Vienna in 1873, and in 1878 went to the United States, where he became stage manager of the Germania Theater in New York City. Later he organized an opera company and gave performances in the principal cities of the country. In 1892 he became manager of the Irving Place Theater, New York, which was devoted to the German drama, and from 1903 to 1908 was manager of the Metropolitan Opera House in New York, succeeding Maurice Grau.

Constant*, Jean Joseph Benjamin. Died at Paris, May 26, 1902.

Constitution (Old Ironsides)*. She fought and captured the Cyane and the Levant, Feb. 20, 1815. In 1897 she was taken to Boston.

Constitutional Convention, The. In United States history, the body of delegates from the several states which framed the Federal Constitution, sitting at Philadelphia from May 25 to Sept. 17, 1787. The convention was called in accordance with the recommendation of the Annapolis Convention (which see).

Constitutional Union Party. The name adopted by the remnant of the Whig party at the South in the presidential election of 1860. Delegates from twenty states met at Baltimore, May 9, 1860, and nominated John Bell for president and Edward Everett for vice-president. A platform was adopted which sought to evade the slavery question by declaring for "the Constitution of the country, the union of the States, and the enforcement of laws."

Continental Congress. A legislative body representing the colonies of North America. What is known as the first Continental Congress, with delegates from all the colonies but Georgia, met in Philadelphia Sept. 5, 1774, and lasted until Oct. 26, 1774; the second, in which all were represented, met in Philadelphia May 10, 1775, and adjourned Dec. 12, 1776; the third met in Baltimore Dec. 20, 1776, and lasted until the Articles of Confederation went into operation March 1, 1781. The Congress declared independence, carried on the war, and in many respects governed the country.

Conway*, Moncure D. Died at Paris, Nov. 15, 1907.

Conway (kon′wā), Sir **William Martin**: known as Sir **Martin.** Born at Rochester, April 12, 1856. An English traveler, art critic, and geographer. He was professor of art in University College, Liverpool, 1885–88, and Slade professor of fine arts in the University of Cambridge 1901–04. He has traveled in the Himalayas, the Andes, Tierra del Fuego, Spitzbergen, etc. Among his publications are "Woodcutters of the Netherlands in the Fifteenth Century" (1884), "Early Flemish Artists" (1886), "The Bolivian Andes" (1901), "Early Tuscan Artists" (1902), "Aconcagua and Tierra del Fuego" (1902), "Great Masters" (1904), "No Man's Land: a History of Spitzbergen" (1906), etc.

Conze (kōnt′ze), **Alexander Christian Leopold.** Born at Hannover, Dec. 10, 1831. A German archæologist, professor in the University of Berlin from 1877. Among his works are "Melische Tongefässe" (1862), "Reise auf der Insel Lesbos" (1865), "Die attischen Grab-reliefs" (1893–1900: with Michaelis and others), and "Archäologische Untersuchungen auf Samothrake" (1875–80: with Hauser and Niemann).

Cook (kůk), **Albert Stanburrough.** Born at Montville, N. J., March 6, 1853. An American philologist, professor of the English language and literature in Yale University from 1889. He was graduated at Rutgers College in 1872; studied at Gottingen, Leipsic, and Jena; was associate in English in Johns Hopkins University 1879–81; and was professor of English in the University of California 1882–89. His publications include a translation of Sievers' "Old English Grammar" (1885) and various treatises and monographs upon philological and literary topics. He is general editor of the "Yale Studies in English" (31 volumes since 1898).

Cook (kůk), **Charles Henry:** pseudonym **John Bickerdyke.** Born at London, July, 1858. An English novelist, journalist, and writer on sports. Among his works are "An Irish Midsummer Night's Dream" (1885), "The Curiosities of Ale and Beer" (1886: with J. M. Dixon), "The Book of the All Round Angler" (1889), "Sea Fishing" (1895), "Wild Sports in Ireland" (1897), "Practical Letters to Young Sea Fishers" (1898), etc.

Cook*, Clarence Chatham. Died at Fishkill Landing, N. Y., June 2, 1900.

Cook (kůk), **Frederick Albert.** Born at Callicoon Depot, N. Y., June 10, 1865. An American physician and explorer. He was surgeon of the Peary arctic expedition 1891–92, and of the Belgian antarctic expedition 1897–99. In 1903 and 1906 he led expeditions for the exploration of Mount McKinley, announcing its ascent in September, 1906. In the summer of 1907 he started in an attempt to reach the north pole. He returned in 1909 and announced that he had reached the pole with two Eskimos on April 21, 1908.

Cooke (kůk), **Jay.** Born at Sandusky, Ohio, Aug. 10, 1821: died at Ogontz, Pa., Feb. 16, 1905. An American banker and financier. He opened in Philadelphia, Jan. 1, 1861, the banking-house of Jay Cooke & Company and became the principal financial agent of the Federal Government during the Civil War. In this capacity he negotiated loans to a value of about $2,000,000,000. His house failed in 1873 through the building of the Northern Pacific Railroad.

Cook Islands*. They were annexed to New Zealand in June, 1901. Total population, about 6,800.

Cooley*, Thomas McIntyre. Died Sept. 12, 1898.

Coolidge (kö′lij), **Thomas Jefferson.** Born at Boston, Mass., Aug. 26, 1831. An American manufacturer and diplomatist. He was United States minister to France 1892–93, and was appointed a member of the joint high commission to adjust disputes between the United States and Canada.

Cooper (kö′pėr), **Anthony Ashley.** Born at London, April 28, 1801: died at Folkestone, Kent, Oct. 1, 1885. A noted English philanthropist, seventh Earl of Shaftesbury. He entered parliament as Lord Ashley in 1826, and succeeded to the earldom on the death of his father in 1851. He was a promoter of many philanthropic projects, and was president of the British and Foreign Bible Society, the Evangelical Alliance, etc.

Cooper*, Thomas Sidney. Died at Canterbury, England, Feb. 7, 1902.

Cope*, Edward Drinker. Died at Philadelphia, Pa., April 12, 1897.

Cope (kōp), **Walter.** Born at Philadelphia, Pa., Oct. 30, 1860: died there, Nov. 3, 1902. An American architect. In 1885 he formed a partnership with John Stewardson, who was succeeded at his death by his brother Emlen L. Stewardson. They erected buildings for Bryn Mawr College, the University of Pennsylvania, and Princeton University, and also numerous churches and private residences.

Copeland*, Ralph. Died Oct. 27, 1905.

Coppée*, François Édouard Joachim (called **François**). Died at Paris, May 23, 1908. His "Pour la couronne" appeared in 1895. The collected plays were published 1873–86. He wrote also an autobiographical romance, "Toute une jeunesse" (1890), "Le coupable" (1897), "La bonne souffrance" (1898), "Dans la prière et dans la lutte" (1901), "Contes pour les jours de fête" (1903), etc.

Coquelin*, Benoît Constant. Died at Pont aux Dames, Seine-et-Marne, Jan 27, 1909.

Coquelin*, Ernest Alexandre Honoré. Died at Suresnes, Feb. 8, 1909.

Corbett (kôr′bet), **Boston.** Born at London, 1832. The slayer of the assassin of Abraham Lincoln. He came to the United States in 1839, and took the name of "Boston" from the city in which he was baptized. He enlisted in the 12th regiment of New York State militia, and later was a sergeant in the 16th New York cavalry. In disobedience of orders, he fired upon John Wilkes Booth at the time of his capture (April 26, 1865), and killed him. For this he was court-martialed. He afterward became insane, and was confined in an asylum in Kansas.

Corelli (kō-rel′i), **Arcangelo.** Born at Fusignano, near Bologna, Italy, Feb. 12, 1653: died at Rome, Jan. 10, 1713. A noted violinist and composer, one of the early founders of the modern art of violin playing. He had many pupils of distinction who transmitted the traditions of his style. He composed sonatas for several instruments that are still regarded as classics.

Corelli (kō-rel′i), **Marie.** Born in England in 1864. A British novelist. She is of Italian and Scotch parentage, and was adopted in her infancy by Charles Mackay, the poet. She has written "A Romance of Two Worlds" (1886), "Thelma" (1887), "Ardath" (1889), "Barabbas" (1893), "The Mighty Atom" (1896), "The Master Christian" (1900), "Temporal Power" (1902), "God's Good Man" (1904), "Free Opinions" (1905), "The Treasure of Heaven" (1906), "Holy Orders" (1908), etc.

Cornelius, Karl Adolf. Died at Munich, Feb. 10, 1903.

Cornelius (kôr-nā′li-ös), **Peter.** Born at Mainz, Germany, Dec. 24, 1824: died there Oct. 26, 1874. A German composer and poet. He was a follower of Liszt, in Weimar, and a champion of Wagner, whose cause he upheld in numerous critical writings. He composed the operas "Der Barbier von Bagdad" (the failure of which in 1858 through factious opposition was the cause of Liszt's leaving Weimar), "Der Cid" (1865), "Gunlöd" (uncompleted), and many songs. He also published an autobiography (1874).

Corrigan (kor′i-gan), **Michael Augustine.** Born at Newark, N. J., Aug. 13, 1839: died at New York, May 5, 1902. A Roman Catholic prelate, archbishop of New York 1885–1902. He was president of Seton Hall College, South Orange, New Jersey, 1868–76; was bishop of Newark 1873–80; and was coadjutor (titular archbishop of Petra) to the archbishop of New York 1880–85.

Corson (kôr′son), **Hiram.** Born at Philadelphia, Pa., Nov. 6, 1828. An American scholar, author, and educator, professor of English literature at Cornell University from 1870 (emeritus, 1903). He was connected with the library of the Smithsonian Institution 1849–56; was lecturer on English literature in Philadelphia 1859–65; and was professor at Girard College 1865–66, and at St. John's College, Annapolis, 1866–70. Among his works are "Hand-book of Anglo-Saxon and Early English" (1871), "An Introduction to the Study of Robert Browning's Poetry" (1886), "An Introduction to the Study of Shakespeare" (1889), "A Primer of English Verse" (1892), "The Aims of Literary Study" (1894), "The Voice and Spiritual Education" (1896), and "An Introduction to the Prose and Poetical Works of John Milton" (1899).

Cortelyou (kôr′tel-yö), **George Bruce.** Born at New York, July 26, 1862. An American cabinet officer. He was assistant secretary (1898–1900) and secretary (1900–03) to Presidents McKinley and Roosevelt; was first secretary of the Department of Commerce and Labor 1903–04; was elected chairman of the Republican National Committee in June, 1904; was postmaster-general of the United States 1905–07; and was secretary of the treasury 1907–09.

Cortes*. 2. The lower house consists of 148 deputies, besides 7 deputies for the colonies, elected by the people for 3 years.

Cossa*, Luigi. Born at Milan, May 27, 1831: died at Pavia, May 10, 1896.

Cotabato (kō-tä-bä′tō), or **Cottabato.** 1. Formerly a comandancia of southwestern Mindanao, Philippine Islands; now, a district of Moro province, to which a part of Mindanao belongs. It is bounded by Misamis on the north; Davao (separated by a mountain-range) on the east; the Celebes Sea on the south and southeast; and Illana Bay and Lanao district on the west. Capital, Cotabato. The southern coast is deeply indented by Sarangani Bay, near the head of which is Mount Matutum. Mountains follow the southwestern coast. The largest river, the Rio Grande de Mindanao, flows circuitously through the district southward to Lake Liguasan, thence northwestward to Illana Bay. The district is fertile but not developed. It is inhabited by Tirurayes, Moros, Subanos, and Bilans. Area, 9,572 square miles. Population (1903), 46,558.

2. A town, the capital of Cotabato province, situated near the coast of Illana Bay, on the delta of the Rio Grande de Mindanao, in lat. 7° 12′ N., long. 124° 16′ E.

Cotes (kōts), **Mrs. Everard (Sara Jeannette Duncan).** Born at Brantford, Canada, 1862. A British journalist and novelist. Her first volume, "A Social Departure" (1890), included letters written from Japan and the East to the Montreal "Star," of which she had been correspondent. She has also written "An American Girl in London" (1891), "His Honour and a Lady" (1896), "Those Delightful Americans" (1902), "The Pool in the Desert" (1903), "The Imperialist" (1904), "Set in Authority" (1906), "Cousin Cinderella" (1908), etc.

Couch, Arthur Thomas Quiller-. See *Quiller-Couch.*

Coues*, Elliott. Died Dec. 25, 1899.

Couperin (köp-raṅ′), **François.** Born at Paris, Nov. 10, 1668: died there in 1733. A French organist and harpsichord player, and the first great composer for the harpsichord exclusively. He wrote many suites and pieces for the harpsichord, and these, as well as his method of playing the instrument, expounded in his book on the subject, had a strong influence on Bach and on the subsequent development of the art.

Courrières (kö-ri-ãr′). A mining village near Béthune, Pas-de-Calais, France. An accident occurred in the mines here on March 10, 1906, by which over 1,000 miners were killed.

Courtney (kôrt′ni), **Leonard Henry.** Born at Penzance, Cornwall, July 6, 1832. An English politician and author. He was professor of political economy in University College, London, 1872–75; Liberal member of the House of Commons for Liskeard, Cornwall, 1876–85; and Liberal-Unionist member for the Bodmin division of Cornwall 1885–1900. He was undersecretary of state for the home department 1880–81, and for the colonies 1881–82; financial secretary to the treasury 1882–84; and chairman of committees and deputy speaker 1886–92. He has written "The Working Constitution of the United Kingdom and its Outgrowths" (1901), etc. He was created Baron Courtney of Penwith in 1906.

Courtney (kôrt′ni), **William Leonard.** Born at Poona, India, Jan. 5, 1850. An English journalist and author, editor of the "Fortnightly Review" from 1894. Among his publications are "Studies in Philosophy" (1882), "Constructive Ethics" (1886), "Life of J. S. Mill" (1889), "The Development of Maeterlinck" (1904), "The Feminine Note in Fiction" (1905), "The Literary Man's Bible" (1907), etc.

Coville (kō′vil), **Frederick Vernon.** Born at Preston, N. Y., March 23, 1867. An American naturalist, chief botanist of the United States Department of Agriculture and curator of the National Herbarium from 1893. In 1902 he procured the establishment, by the Carnegie Institution, of the Desert Botanical Laboratory, located at Tucson, Arizona. He has published "Botany of the Death Valley Expedition" (1893), and various scientific papers.

Cowell*, Edward Byles. Died Feb. 9, 1903.

Cox*, Sir **George William.** Born at Benares in 1827: died at Walmer, Kent, Feb. 9, 1902.

Cox*, Jacob Dolson. Died at Magnolia, Mass., Aug. 4, 1900.

Coxe*, Arthur Cleveland. Died July 20, 1896.

Coxsackie (kůk-sok′i). A town in Greene County, New York, situated on the west bank of the Hudson river. Population (1900), including that of Coxsackie village, 4,102.

Crabtree (krab′trē), **Lotta:** known as **Lotta.** Born at New York, 1850. An American actress. She made her first appearance on the stage at the age of six, and ten years later made her début in New York at Niblo's Garden. Her best known rôle was that of the Marchioness in a dramatization of "The Old Curiosity Shop": she also appeared in "Firefly," "Topsy," "Musette," "Bob," "Nitouche," "The Little Detective," etc. She retired from the stage in 1894.

Cracker State. A popular name of the State of Georgia.

Craigie (krā′gi), Mrs. **(Pearl Mary Teresa Richards):** pseudonym **John Oliver Hobbes.** Born at Boston, Mass., Nov. 3, 1867: died at London, Aug. 13, 1906. An American novelist and dramatist. For many years she resided in England. She published "Some Emotions and a Moral" (1891), "A Bundle of Life" (1894), "The Gods, some Mortals, and Lord Wickenham" (1895), "The Herb-moon" (1896), "The School for Saints" (1897), "Robert Orange" (1900), "Love and the Soul-hunters" (1902), "The Dream and the Business" (1906), etc. Among her plays are "The Ambassador" (1898), "The Wisdom of the Wise" (1900), "The Flute of Pan" (1905), etc.

Craik*, Georgiana Marian (Mrs. **A. W. May**). Died at St. Leonard's, Nov. 1, 1895.

Crane (krān), **Bruce.** Born at New York, 1857. An American painter, a pupil of A. H. Wyant. He exhibited first at the National Academy in 1879 and was elected Academician in 1902. He is a member of the American Water Color Society and was also a member of the Society of American Artists. His specialty is American landscape.

Crane (krān), **Stephen.** Born at Newark, N. J., November 1, 1871: died at Badenweiler, Germany, June 5, 1900. An American journalist and novelist. In 1897 he was correspondent for "The Westminster Gazette" and the New York "Journal" in the Greco-Turkish war, and in 1898 went to Cuba for the New York "World." He wrote, "Maggie: a Girl of the Streets" (1891), "The Red Badge of Courage" (1895), "George's Mother" (1896), etc.

Crane (krān), **William Henry.** Born at Leicester, Mass., April 30, 1845. An American comedian, best known for his impersonation of eccentric American characters. He has played leading parts in "The Henrietta," "The Senator," "On Probation," "For Money," "The American Minister," "Brother John," "A Fool of Fortune," "A Virginia Courtship," "David Harum," etc. For many years he played in conjunction with Stuart Robson.

Cranston (kran′stọn). A manufacturing town in Providence County, Rhode Island. Population (1900), 13,343.

Crawford*, **Francis Marion.** Died at Sorrento, Italy, April 9, 1909. Among his later works are "Casa Braccio" (1895), "Ave Roma Immortalis" (1898), "Via Crucis" (1899), "Marietta" (1901), "The Heart of Rome" (1903), "Salve Venetia" (1905), "Fair Margaret" (1905), "Arethusa" (1907), "The Primadonna" (1908), "The Diva's Ruby" (1908), "The White Sister" (1909), "Stradella" (1909).

Creelman (krēl′mạn), **James.** Born at Montreal, Canada, Nov. 12, 1859. An American journalist and author. He was editor of the New York "Evening Telegram" 1892–93; was war-correspondent for various American papers during the Chino-Japanese war, the Greco-Turkish war, the Spanish-American war, and the Philippine war (1899); was on the editorial staff of the New York "World" 1899–1906, and has been associate editor of "Pearson's Magazine" since 1906. He is the author of "On the Great Highway" (1901), "Eagle Blood" (1902), "Why We Love Lincoln" (1909), etc.

Creighton (krī′tọn), **Mandell.** Born at Carlisle, England, July 5, 1843: died at London, Jan. 14, 1901. An English prelate and historical writer, Bishop of London 1897–1901. He was graduated at Oxford in 1867; became professor of ecclesiastical history at Cambridge in 1884; edited the "English Historical Review" 1886–91; became canon of Worcester in 1885 and of Windsor in 1890; and was appointed Bishop of Peterborough in 1891. Among his works are "The Age of Elizabeth" (1876), "Cardinal Wolsey" (1888), "Queen Elizabeth" (1896), "Papacy During the Reformation" (1882–94: republished in 1897 as "History of the Papacy from the Great Schism to the Sack of Rome"), "Thoughts on Education" (1902), "Persecution and Tolerance" (1895), etc.

Cremona (krā-mō′nä), **Luigi.** Born at Pavia, Italy, Dec. 7, 1830: died June 10, 1903. A noted Italian mathematician. He was appointed professor at Bologna in 1860, at the Milan Polytechnic in 1866, and at the University of Rome in 1873. In 1879 he was made a senator of the Kingdom of Italy and was minister of public instruction in 1898. His works include "Introduzione ad una teoria geometrica sulle curve piane" (1862), "Preliminari di una teoria geometrica della superficie" (1867), and "Elementi di calcolo grafico" (1874).

Cresceus (kres′ẹ̄-us). An American trotting stallion, by Robert McGregor, dam Mabel, foaled in the spring of 1894. He gained the world's championship, August 2, 1901, by the record of one mile in 2:02¼ made at Columbus, Ohio; lost it in 1903 to Lou Dillon's 2 minutes; regained it October 19, 1903, at Wichita, Kansas, by a mile in 1:59¾; and again lost it to Lou Dillon, who trotted a mile in 1:58½ at Memphis, Tennessee, October 24, 1903.

Crespo*, **Joaquin.** Died April 17, 1898.

Crete*. In 1896–97 an effort was made by a part of the population, aided by Greek troops, to free the island from Turkish rule and annex it to Greece. This was opposed by the Great Powers, which established a pacific blockade of the island. As a result of defeat in the Greco-Turkish war, the Greeks were obliged to withdraw. Since December, 1898, it has been administered by a High Commissioner for the four powers France, Great Britain, Italy, and Russia. Since Aug. 14, 1906, the right of the king of the Hellenes to propose the High Commissioner has been recognized by the powers. The constitution of February, 1907, provides for an Assembly of 65 deputies, elected in the proportion of 1 for every 5,000 inhabitants. In May, 1908, the powers decided gradually to withdraw their troops from the island.

Crewe-Milnes (krū-milz′), **Robert Offley Ashburton,** first Earl of Crewe. Born at London, Jan. 12, 1858. A British statesman, secretary of state for the colonies from 1908. He was lord lieutenant of Ireland 1892–95, and lord president of the council 1905–08. He was created Earl of Crewe in 1895.

Crisp*, **Charles Frederick.** Died at Atlanta, Ga., Oct. 23, 1896.

Crispi*, **Francesco.** Died at Palermo, Aug. 11, 1901. He was prime minister 1887–91 and 1893–96.

Cristóbal Colón (kris-tọ̄′bäl kō-lon′). A Spanish armored cruiser, bought from the Italian government, of 6,840 tons displacement and a trial speed of 20 knots. In the battle of Santiago, July 3, 1898, under Captain Emilio Diaz Moreu, it was the last Spanish ship to surrender, being forced ashore by the Brooklyn and the Oregon at Rio Tarquino.

Cristofori (krēs-tō′fō-ri), **Bartolommeo.** Born at Padua, May 4, 1655: died at Florence, Jan. 17, 1731. An Italian instrument-maker, the inventor of the pianoforte.

Crocker (krok′ėr), **Francis Bacon.** Born at New York, July 4, 1861. An American electrical engineer and educator, professor of electrical engineering in Columbia University from 1893. He is the author of works on the management of dynamos, electric lighting, etc.

Crockett, Samuel Rutherford. Born at Little Duchrae, near New Galloway, Scotland, in 1859. A Scotch Presbyterian minister and novelist. He was educated at Edinburgh University and at the New Theological College, Edinburgh; and was minister of the Free Church at Penicuick from 1886 until he resigned his charge to devote himself to authorship. His principal works are "The Stickit Minister" (1893), "The Raiders" (1894), "The Lilac Sunbonnet" (1894), "Mad Sir Uchtred of the Hills" (1894), "Play-Actress" (1894), "The Men of the Moss-Hags" (1895), "Bog-Myrtle and Peat" (1895), "The Gray Man" (1896), "Sweetheart Travellers" (1896), "Cleg Kelly" (1896), "A Galloway Herd" (1896), "Lad's Love" (1897), "Joan of the Sword Hand" (1900), "The Dark of the Moon" (1902), "An Adventurer in Spain" (1903), "Strong Mac" (1904), "Maid Margaret" (1905), "Cherry Ribband" (1905), "Deep Moat Grange" (1908), "The Man of the Mountain" (1909), etc. His first book was published as "Dulce Cor: the Poems of Ford Bereton."

Croizette*, **Sophie Alexandrine.** Died March 19, 1901.

Croker (krō′kėr), **Richard.** Born at Blackrock, Ireland, Nov. 24, 1843. An American Democratic politician. He was brought to the United States as a child and was educated in the New York public schools. He was an alderman of New York 1868–70 and 1883, coroner 1873–76, fire commissioner 1883, and city chamberlain 1889–90. He was the recognized leader ("boss") of Tammany Hall for many years.

Croll (krōl), **James.** Born at Little Whitefield, Perthshire, Scotland, Jan. 2, 1821: died near Perth, Dec. 15, 1890. A Scotch physical geologist. He was connected with the geological survey of Scotland 1867–80. His most important work is "Climate and Time" (1875).

Croly*, **Jane Cunningham.** Died at New York, Dec. 23, 1901.

Cro-Magnon (krō-mä-nyoṅ′). A cave near Les Eyzies, Dordogne, France, in which were found, in 1858, prehistoric remains consisting of portions of several skeletons. They are taken as typical of a race assumed to have inhabited southwestern Europe near the close of the Pleistocene period.

Cromer, Lord. See *Baring, Evelyn.*

Cronje (krōn′ye), **Pietrus Arnoldus.** Born 1835. A Boer general, noted for his resistance to the British under Lord Methuen (who was marching to the relief of Kimberley) at the Modder River (Nov. 28, 1899), and his crushing defeat of that general at Magersfontein (Dec. 11). On the approach of Lord Roberts, in 1900, he retreated toward Bloemfontein, but was overtaken at Paardeberg and forced to surrender (Feb. 27). In the war against England in 1881 he distinguished himself at Majuba Hill, and in 1896 dispersed the raiders led by Dr. Jameson into the Transvaal.

Crookes*, Sir **William.** He is an authority on sanitation and has published a number of works on the subject, and he is noted for his researches into the properties of radiant matter. In 1903 he invented the spinthariscope. He is known also for his investigation of psychic phenomena. Knighted June, 1897.

Crooks*, **George Richard.** Died at Madison, N. J., Feb. 20, 1897.

Cropsey*, **Jasper Francis.** Died June 22, 1900.

Crosby (kroz′bi), **Ernest Howard.** Born at New York, Nov. 4, 1856: died Jan. 3, 1907. An American writer and social reformer, son of Howard Crosby. He was graduated from the University of New York in 1876 and from Columbia Law School in 1878; practised in New York 1878–89; and was appointed judge of the international court at Alexandria, Egypt, in 1889. He resigned in 1894 and returned to New York, where he devoted much attention to social reform. He wrote "Plain Talk in Psalm and Parable" (1899), "Captain Jinks, Hero" (1902), "Swords and Plowshares" (1902), "Tolstoi and His Message" (1903), "Broadcast" (1905), "Tolstoi as a Schoolmaster" (1905), "Garrison, the Non-resistant" (1905), "Labor and Neighbor" (1908), etc.

Crosland*, Mrs. (**Camilla Toulmin**). Died at Dulwich, Feb. 16, 1895.

Cross (krôs), **Charles Whitman.** Born at Amherst, Mass., Sept. 1, 1854. An American scientist, geologist of the United States Geological Survey from 1880. He was graduated at Amherst College in 1875 and at Leipsic in 1880. He has published many geological and mineralogical papers and, with Pirsson, Iddings, and Washington, "Quantitative Classification of Igneous Rocks" (1903).

Cross*, **Richard Assheton,** first Viscount **Cross.** He was secretary of state for India 1886–92, and lord privy seal 1895–1900.

Crouch (krouch), **Frederick Nicholls.** Born at London, July 31, 1808: died at Portland, Me., Aug. 18, 1896. An English musician, the composer of the music for the ballad "Kathleen Mavourneen." He came to the United States in 1849.

Crowe (krō), Sir **Joseph Archer.** Born at London, Oct. 20, 1825: died at Gamburg-on-the-Tauber, Baden, Sept. 6, 1896. An English diplomatist and connoisseur and historian of art. In 1847 he met Cavalcaselle, with whom he collaborated in the "Early Flemish Painters" (1856) and other works.

Crowninshield (kroun′in-shēld), **Frederic.** Born at Boston, Nov. 27, 1845. An American painter. He was graduated from Harvard University in 1866 and studied art for several years in Europe. From 1879 to 1885 he was instructor in drawing and painting at the school of the Boston Museum of Fine Arts. Since 1885 he has had a studio in New York and has devoted himself to general artistic work, including glass and mural painting. He has published several volumes of poems and a manual of "Mural Painting" (1887).

Crozier (krō′zhėr), **William.** Born at Carrollton, Ohio, Feb. 19, 1855. An American soldier, inventor of a wire-wound rifled cannon, and, with General Buffington, of a disappearing gun-carriage. He was graduated from West Point in 1876; fought against the Indians in the West; was major and inspector-general of United States Volunteers in 1898 (Spanish-American War); was a delegate to the Peace Conference at The Hague in 1899; served in the suppression of the Philippine insurrection; was chief ordnance officer, under General Chaffee, in the Peking relief expedition in 1900; and was appointed brigadier-general and chief of ordnance in the United States Army in 1901.

Cruvelli* (**Crüwell**), **Sophie.** Died at Nice, Italy, Nov. 6, 1907.

Cuadrado (kö-ä-drä′dō). A peak in the western part of Pampanga province, southwestern Luzon, Philippine Islands. Height, 5,443 feet.

Cuba*. It was the scene of rebellions 1868–78 and 1895–98. In 1898 it was freed from Spanish domination by the act of the United States. See *Spanish-American War.* In accordance with the requirements of the United States Congress, Cuba undertook (June 12, 1901) to make no treaty with any foreign power endangering its independence, to contract no debts for which the current revenue would not suffice, to concede to the United States government a right of intervention, and also to grant to it the use of naval stations; and on May 20, 1902, it was proclaimed a republic and the control of the island was formally transferred to the new Cuban government. On account of the breaking out of an insurrection, the United States again assumed temporary control of its affairs in September, 1906, and again withdrew in January, 1909.

Cui (kö′ē), **César.** Born at Vilna, Russia, Jan. 18 [N. S.], 1835. A Russian composer, by profession a military engineer. He is a representative of the neo-Russian school of music, and has written five operas, symphonies, songs, and piano pieces.

Cuirayan (kö-i-rä-yän′). A mountain of Lepanto-Bontoc province, in the northwestern part of Luzon, Philippine Islands. Height, 6,200 feet.

Culebra (kö-lā′brä). A station on the railroad about ten miles from Panama. At this point is the deepest and most difficult cut in the Panama Canal. The width of the cut at the bottom is designed to be 300 feet for a distance of four and one half miles.

Culin (kū′lin), **Robert Stewart.** Born at Philadelphia, July 13, 1858. An American anthropologist, curator of ethnology in the Brooklyn Institute from 1903. He has published "Korean Games" (1896), "Chess and Playing Cards" (1896), etc.

Culion (kö-li-ōn′). The second in size of the Calamianes Islands, northeast of Paragua, Philippines. It belongs to Paragua province. Halsey Harbor on the western, and Port Culion on the eastern coast are good harbors in all weather for large vessels. Area, 153 square miles. Population (1903), 1,051.

Culion (kö-li-ōn′), **Port.** A bay and harbor on the eastern coast of Culion Island, safe for large craft in all weather.

Cullinan Diamond. A diamond discovered in the Premier Mine, near Pretoria, in the Transvaal, Jan. 25, 1905. It was the largest ever found, weighing 3,030½ carats (English carat) and measuring 4 × 2½ × 2 inches. It was given to the King of England by the Transvaal Colony. The two largest gems cut from it were a drop briolette, of 516½ carats, and a square English-cut brilliant, of 309$\frac{3}{16}$ carats; and besides these the crystal furnished a drop diamond of 92 carats, a square brilliant of 62 carats, five other fine stones of from 18$\frac{11}{32}$ to 4$\frac{5}{16}$ carats, and 96 smaller brilliants with an aggregate weight of 7⅜ carats, not including nine unpolished ends.

Cuore (kö-ō′rạ̄). [Heart.] A book by Edmondo de Amicis, written in 1886. It is the daily record of the events of a school year as told by a boy pupil, to which are added letters from his parents, etc. It was translated into English by Isabel F. Hapgood in 1887.

Curie (kö-rē′), **Pierre.** Born at Paris, May 15, 1859: died there, April 19, 1906. A noted French chemist. He was educated at the Sorbonne; became professor in the School of Physics and Chemistry at Paris in 1895; and was appointed professor in the faculty of sciences at the Sorbonne in 1900. Together with his wife he made important experiments in radioactivity and discovered the element radium. They received the La Caze prize of 10,000 francs from the French Academy of Sciences in 1901, the Nobel prize for chemistry (with Professor Becquerel) in 1903, and in the same year a part of the French Osiris prize, consisting of 60,000 francs, for their services to science. In 1905 Professor Curie was elected a member of the French Academy of Sciences, succeeding Potier. He contributed many scientific articles to the "Comptes Rendus" of the Academy of Sciences, the "Journal de Physique," and the "Annales de Physique et Chimie."

Curie (kö-rē′), Mme. (**Marie Sklodowska**). Born at Warsaw, Russia, Nov. 7, 1867. A noted Polish chemist and physicist, wife of Pierre Curie. She was educated at the Lycee of Warsaw, and later studied at the Sorbonne in Paris. She is the discoverer of the element polonium and, with her husband, of radium. In 1906 she was appointed (as "chargee de cours") to the position at the Sorbonne made vacant by her husband's death, and in November, 1908, was appointed chief professor of physics. Among her publications are "Recherches sur les proprietes magnétiques des aciers trempes," and "Recherches sur les substances radioactives."

Currie (kur′i), Lady (**Mary Montgomerie Lamb**). Pseudonym, **Violet Fane.** Died at Harrogate, Yorkshire, Oct. 13, 1905. An English novelist and poet.

Curtin (kėr′tin), **Jeremiah.** Born at Milwaukee, Wis., Sept. 6, 1840: died Dec. 14, 1906. An American ethnologist and writer, assistant ethnologist of the United States Bureau of Ethnology from 1883. From 1865–70 he was secretary of the United States legation at St. Petersburg and was acting consul-general there 1865–66. He published numerous anthropological papers and translations of Polish and Russian fiction.

Curtiss (kėr′tis), **Glenn Hammond.** Born at Hammondsport, N. Y., May 21, 1878. An American aviator. He was director of experiments of the Aërial Experiment Association founded by Alexander Graham Bell. On July 4, 1908, he won (in an aëroplane) the prize offered by the "Scientific American" for the first flight of one kilometer. Record 1¼ miles in 1 min. 42⅗ sec. On July 17, 1909, he made a second record for the "Scientific American" trophy (24.7 miles in 52 min. 30 sec.). At Rheims, France, on Aug. 28, 1909, he won (in a biplane) the Gordon Bennett international aviation cup, flying 20 kilometers (12.42 miles) in 15 min. 50⅗ sec. On Sept. 12, 1909, at Brescia, Italy, he won the Grand Prize, making a flight of 31.05 miles in 49 min. 24 sec.

Curtius*, **Ernst.** Died at Berlin, July 11, 1896.

Curzon (kėr′zọn), **George Nathaniel.** Born at Kedleston, England, Jan. 11, 1859. An English statesman and publicist. He was under-secretary of state for India 1891–92; under-secretary for foreign affairs 1895–98; was Viceroy of India 1898–1904 and 1904–1905; and was created Baron Curzon of Kedleston in 1898. He has written "Russia in Central Asia" (1889), "Persia and the Persian Question" (1892), "Problems of the Far East" (1894), "Lord Curzon in India" (1906), "Frontiers" (1908), and "Principles and Methods of University Reform" (1909). In 1908 he was elected a member of the British Academy.

Cushing (kush′ing), **Frank Hamilton.** Born at Northeast, Pa., July 22, 1857: died at Washington, April 10, 1900. An American ethnologist, especially noted for his studies of the Zuñi Indians. He published "Zuñi Fetiches" (1883), "Adventures in Zuñi" (1883), "Zuñi Folk-tales" (1901), etc.

Custer (kus′tėr), Mrs. (**Elizabeth Bacon**). Born at Monroe, Mich. A contemporary American writer, wife of General George Armstrong Custer, whom she accompanied in many of his campaigns. She is the author of "Boots and Saddles, or Life in Dakota with General Custer" (1885), "Tenting on the Plains" (1887), and "Following the Guidon" (1891).

Cuyo. See *Cuyos Islands.*

Cuyos (kö-yōs′) **Islands.** A group of small islands in the Philippines, east of the northern part of Paragua and belonging to that province. It consists of 49 islands and rocks. The largest is Cuyo, with a small harbor and good anchorage. Its chief town, Cuyo, was formerly the capital of Paragua province. Area of the island, 21 square miles. Population (1903), 7,545. Area of group, 47 square miles.

Cuyuni (kö-yö′ni). A river in British Guiana emptying into the Essiquibo near its mouth. It rises in Venezuela and, for a part of its course, forms the boundary of the two countries.

Cyrano de Bergerac (sē-rä-nō′ dė bärzh-räk′). A play by Edmond Rostand, produced in 1897. The character of the hero is modeled upon that of its historic original (see *Bergerac*) and is sketched by the dramatist in superlatives. He is depicted as extraordinarily brave, extravagantly lavish, superbly indifferent to patronage, extremely ugly (owing to his very large nose), and loyally self-sacrificing in his love for his cousin, Roxane. The events of the play are those which are reported to have befallen the original Cyrano. Coquelin Aîné (supported by Bernhardt as Roxane) has played the part of Cyrano in French: Richard Mansfield has played it in English.

Czolgosz (chul′gōsh), **Leon F.** Born at Detroit in 1873: executed at Auburn, N. Y., Oct. 29, 1901. An American assassin, of Polish origin. Influenced by anarchistic teaching, he shot President McKinley in the Temple of Music of the Pan-American Exposition at Buffalo, N. Y., Sept. 6, 1901.

Dabney (dab′ni), **Charles William.** Born at Hampden-Sidney, Va., June 19, 1855. An American chemist and educator, president of the University of Cincinnati from 1904. He was graduated at Hampden-Sidney College in 1873 and at the University of Virginia in 1877; studied in Berlin and Göttingen 1878–80; was state chemist of North Carolina 1880–87; was professor of agricultural chemistry and director of the agricultural experiment station in the University of Tennessee 1887–90; was president of this university 1887–1904; and was assistant (United States) secretary of agriculture 1894–97. His publications include numerous papers on scientific and educational topics.

Dagami (dä-gä′mē). A town in the eastern part of Leyte Island in the Philippines. It is on the Binahaan river, at the head of navigation by cascos, 15 miles from the river's mouth. Civilized population of municipality (1903), 12,591.

Dagupan (dä-gö′pän). A municipality of Pangasinan province, in the western part of Luzon, Philippine Islands. It borders the southeastern shore of Lingayen Gulf. Civilized population (1903), 20,357.

Dahomey*. The French occupied the coast in 1851 and in 1894 annexed the whole kingdom of Dahomey. Until 1900 the kingdom of Abomey was allowed to exist, but in that year the king was seized and exiled to the Kongo. The colony is administered by a governor with an administrative council. Capital, Porto Novo.

Daingerfield (dān′jėr-fēld), **Elliott.** Born at Harper's Ferry, Va., March 26, 1859. An American painter. He studied at the Art Students' League, New York City, and in Europe. His work consists of easel pictures and decorations, notably those of the Lady chapel of the church of St. Mary the Virgin in New York. In his figure work he has formed himself mainly on Italian models, while in landscape he owes much to the friendship and influence of George Inness. In 1906 he was elected a member of the National Academy of Design.

Daiquiri (däi-ki-rē′). A town on the southern coast of Cuba, about 15¼ miles southeast of Santiago. On June 22, 1898, the American army of invasion (excepting Kent's division, which was disembarked at Siboney, June 23) made a successful landing at this place (which, in many of the reports from the front, was miscalled *Baiquiri*). Population (1899), 1,380.

Dairen. See *Dalny.*

Dajo (dä-hō′). A mountain on Jolo (Sulu) Island, in the Philippines. Height, 2,100 feet. An engagement between United States troops and Moros took place here March 6–7, 1906. Fifteen Americans, three members of the native constabulary, and six hundred Moros were reported killed.

Dalaguete (dä-lä-gā′tā). A municipality in the southeastern part of Cebu, in the Philippine Islands. Civilized population (1903), 21,354.

Dalberg-Acton (dal′bėrg-ak′tọn), Sir **John Emerich Edward,** first Baron Acton. Born at Naples, Jan. 10, 1834: died at Tegernsee, Upper Bavaria, June 19, 1902. An English historian. He succeeded his father as eighth baronet in 1837; was member of Parliament for Carlow 1859–65 and for Bridgenorth 1865–66; was raised to the peerage in 1869; and was appointed regius professor of modern history in Cambridge University in 1895. His famous historical library of about 60,000 volumes was purchased by Andrew Carnegie who, after Lord Acton's death, gave it to John Morley, who presented it to the University of Cambridge. He published "Lecture on the Study of History" (1895), and designed the "Cambridge Modern History," edited by others after his death.

D'Albert, Eugène. See *Albert.*

Dalmatia*. It sends 11 members to the Austrian Reichsrat and has a Diet of 43 members.

Dalny (däl′ni). A seaport in Manchuria, situated on Victoria Bay, in the Kwang-tung Peninsula, about twenty miles northeast of Port Arthur. It was founded by the Russians in 1899 and was designed to be the commercial terminus of the Trans-Siberian Railway. During the Russo-Japanese war (1904–05) it was captured by the Japanese. In September, 1906, it was made a free port. It is now known as *Tairen*, or *Dairen*. It has a fine harbor, protected by a breakwater, and it is connected by railway with Port Arthur, Mukden, Harbin, and the Eastern Chinese Railway System.

Dalou*, **Jules.** Died at Paris, April 15, 1902.

Daly (dā′li), **John Augustin.** Born at Plymouth, N. C., July 20, 1838: died at Paris, France, June 7, 1899. An American playwright and theatrical manager. In 1869 he opened the Fifth Avenue Theater in New York, and in 1879 established Daly's Theater. His productions were noted for their finished style, and he brought before the public some of the best known players of his time. He wrote several original plays, including "Horizon" and "Divorce," and many adaptations, and was the author of a life of Peg Woffington (1888).

Dameron (dam-e-roṅ′), **Charles Émile.** Born in Paris, 1848: died there, Jan. 22, 1908. A French painter, a pupil of Pelousse. His works are chiefly landscapes.

Damrosch (däm′rosh), **Frank.** Born in Breslau, Germany, June 22, 1859. A conductor of choral societies in and near New York, including the Oratorio Society, the Musical Art society, and the People's Choral Union: son of Leopold Damrosch. In 1905 he was appointed director of the Institute of Musical Art in New York City.

Damrosch, Walter. Born at Breslau, Prussia, Jan. 30, 1862. A musician, son of Leopold Damrosch. He has been director of the Oratorio Society and (until 1898) of the Symphony Society, and is now conductor of the New York Symphony Society.

Dana*, **Charles Anderson.** Died at West Island, near Glen Cove, L. I., Oct. 17, 1897.

Danao (dä-nä′ō). **1.** A river in Negros Occidental province, Negros, Philippine Islands. —**2.** A municipality in the eastern part of Cebu, Philippine Islands. Civilized population (1903), 16,173.

D'Annunzio, Gabriele. See *Annunzio.*

Dantas*, **Manuel Pinto de Souza.** Died Jan. 15, 1894.

Dapitan (dä-pē′tän). **1.** A river in Mindanao Island, in the Philippines, flowing northwest into Dapitan bay.—**2.** A subdistrict of Moro province, in the Philippine Islands. It occupies the northwestern part of Mindanao, and is bounded by the Sulu (Jolo) Sea on the west and north; Misamis on the east; and Zamboanga on the south. Both the eastern and western parts of the district are mountainous. The highest peak is Malindang. Forests of valuable woods, especially of ebony, extend nearly to the seacoast. There are numerous harbors. Dapitan bay, on the northwestern coast, is safe for all vessels during the northeast monsoon. At the north of this bay is Port Tagaguilong, safe in all weather for vessels not exceeding 15 feet draft. Port Murcielagos, on the northern coast, is equally good. The native race is chiefly Moro. The census of 1903 gives also 5,995 Subanos. Agriculture is carried on by native methods. Wax and cacao are exported in small quantities. Cattle-raising is an important industry. Area of district, including small dependent islands, 2,015 square miles. Population (1903), 23,577. **3.** A town, the capital of Dapitan province, on the Dapitan river, in lat. 8° 39′ N., long. 123° 24′ E. Civilized population of municipality (1903), 5,825.

Dapitan (dä-pē′tän) **Bay.** A bay on the northwestern coast of Mindanao Island. It is a safe harbor in the northeast monsoon.

Daraga (dä-rä′gä). A municipality of Albay province in the southeastern part of Luzon, Philippine Islands. The town is at the southern base of Mayon volcano. Civilized population (1903), 18,695.

Daram (dä-räm′). An irregularly shaped island on the west coast of Samar, in the Philippines, east of Daram Channel. It is a part of Samar province. Area, 35 square miles. Population (1903), 3,586.

Daram (dä-räm′) **Channel.** A channel north of Leyte Island, in the Philippines. It separates Biliran from Daram Island, and is connected by San Juanico Strait with San Pedro and San Pablo bay on the eastern coast of Leyte.

Dar-el-Beida (där-el-bā′i-dä). See *Casablanca.*

D'Artagnan. See *Artagnan, D'.*

Dartmouth College*. It has over 1,200 students and 85 instructors, and a library of 105,000 volumes and 22,000 pamphlets.

Darwin (där′win), Sir **George Howard.** Born at Down, Kent, England, July 9, 1845. An English physicist and astronomer, son of Charles Robert Darwin. He was called to the bar in 1874, but abandoned the law for the study of mathematics, and in 1883 was appointed Plumian professor of astronomy and experimental philosophy at Cambridge. The most notable of his works is "The Tides and Kindred Phenomena in the Solar System" (1898). He became K. C. B. in 1905.

Dasent*, **Sir George Webbe.** Died near Ascot, Berks, June 11, 1896.

Data (dä-tä′). An extinct volcano in the south-central part of Lepanto-Bontoc province, Luzon, in the Philippine Islands, in lat. 16° 57′ N., long. 120° 55′ E. Height, 7,364 feet.

Daudet*, **Alphonse.** Died at Paris, Dec. 16, 1897.

Daughters of the American Revolution. A patriotic society organized at Washington, D. C., Oct. 11, 1890. Any woman is eligible for membership who is descended from a man or woman, of recognized patriotism, who rendered material aid to the cause of independence.

Daughters of the Revolution. A patriotic society organized in New York City, Aug. 20, 1891. Membership is restricted to women who are lineal descendants of an ancestor who was in actual military or naval service under any of the thirteen colonies or States, or of the Continental Congress; or are descendants of one who signed the Declaration of Independence, or of an official who actually assisted in establishing American independence and became liable to conviction of treason against the government of Great Britain.

Davao (dä′vä-ō). **1.** A river in Mindanao, in the Philippine Islands. It rises in the eastern part of Cotabato, and flows southeast through Davao to the Gulf of Davao.—**2.** A district of Moro province, in the Philippine Islands. It is bounded by Surigao on the north; the Pacific Ocean on the east and south; and Cotabato (separated by a mountain range) on the west. Capital, Davao. The southern coast is indented by the Gulf of Davao, in which is situated Samal Island, a part of the province. Among the bays on the eastern coast is Pujada, a safe harbor in all weather. The district is very mountainous. The active volcano Apo, 10,311 feet in height, is in the range separating Davao from Cotabato, approximately in lat. 7° 3′ N., long. 125° 17′ E. The Butulan Mountains extend from south to north parallel with the eastern coast. The largest river is the Agusan, which rises among the Butulan Mountains and flows north into Surigao. Many other rivers water the district. Most of the staples, as hemp and sugar-cane, are produced. Forests of teak, ebony, and other valuable woods cover the mountains. The mineral resources of Davao are undeveloped. Coal and iron are found near Mati, north of Pujada Bay. The Christianized inhabitants are Visayans, the wild are Moros, Bagobos, and Mandayas. Area of the district, 9,707 square miles. Population (1903), 65,496.

3. A town, the capital of Davao province, situated on the Gulf of Davao at the mouth of the Davao river, in lat, 7° 1′ N., long. 125° 4′ E. Civilized population of municipality (1903), 8,560.

Davao (dä′vä-ō), **Gulf of.** An arm of the Pacific Ocean indenting the southern coast of Davao district, Mindanao, Philippine Islands. It is partly occupied by Samal Island.

David (dä′vēd), **Gérard** (**Gheerardt** or **Gheeraert**). Born at Oudewater, South Holland, about 1460: died at Bruges, Flanders, Aug. 13, 1523. A Flemish painter. He is mentioned by early writers but was entirely lost sight of until 1860, when information about him was discovered in the archives of Bruges. He settled in Bruges in 1483 and lived there during the remainder of his life. Well authenticated works by him are to be found in many European collections. He is one of the most important of the Flemish primitives.

David Grieve. A novel by Mary A. (Mrs. Humphry) Ward, published in 1892.

David Harum (dā′vid hā′rum). A novel by Edward Noyes Westcott, published in 1898. The scene is laid in central New York. The book won popularity through the shrewdness, humor, and homely philosophy of its principal character, an old horse-trading country banker, for whom it is named.

Davidson (dā′vid-sọn), **John.** Born at Barrhead near Glasgow, Scotland, April 11, 1857: died March 23, 1909. A Scottish poet and playwright. In 1890 he went to London, having previously published three plays, "Bruce" (1886), "Smith: a Tragedy" (1888), and "Scaramouch in Naxos" (1890). His works include "Perfervid" (1890), "Fleet Street Eclogues" (1893), "Ballads and Songs" (1894), "New Ballads" (1896), "Godfrida: a Play" (1898), "The Testament of an Empire-Builder" (1902), "A Queen's Romance, etc." (1904), "The Testament of a Prime-minister" (1904), "Ballad of a Nun" (1905), "The Triumph of Mammon" (1907), "Mammon and his Message" (1908), etc.

Davidson (dā′vid-sọn), **Randall Thomas.** Born April 7, 1848. An English prelate. He was educated at Harrow and at Trinity College, Oxford; was chaplain and private secretary to Archbishop Tait 1877–82 and to Archbishop Benson 1882–83; was dean of Windsor and domestic chaplain to Queen Victoria 1883–91; was bishop of Rochester 1891–95, and of Winchester 1895–1903; and was consecrated archbishop of Canterbury in 1903. Among his publications are "Life of Archbishop Tait" (1891: with W. Benham), "The Christian Opportunity" (1904), etc.

Davidson (dā′vid-sọn), **Thomas.** Born at Deer, Aberdeenshire, Oct. 25, 1840: died at Montreal, Canada, Sept. 14, 1900. A Scotch-American philosophical writer. He was graduated at the University of Aberdeen in 1860; went to Canada in 1866; and removed to the United States in 1867, establishing his residence at Cambridge, Massachusetts, in 1875. The Fabian Society (which see) was founded as a result of the conferences which he held in London in 1883.

Davis (dā′vis), **Charles Henry.** Born at Cambridge, Mass., Aug. 28, 1845. An American naval officer, son of Rear-Admiral C. H. Davis, appointed rear-admiral in 1904. He was graduated from the United States Naval Academy in 1864; attained the rank of captain in 1898; was superintendent of the Naval Observatory 1897–1902 (except April–Sept., 1898); commanded the auxiliary cruiser Dixie during the Spanish War (1898); was division commander of the battle-ship squadron in 1904, 1905, and 1906; and was a member of the international commission which investigated, at Paris (1904–05), the attack of the Russian squadron under Rozhestvensky upon the British fishing-fleet in the North Sea. He retired in August, 1907.

Davis (dā′vis), **Cushman Kellogg.** Born at Henderson, N. Y., June 16, 1838: died at St. Paul, Minn., Nov. 27, 1900. An American Republican politician. He was graduated at the University of Michigan in 1857; was admitted to the bar in 1859; and served in the Union Army 1861–64, rising to the rank of assistant adjutant-general. He was elected to the Minnesota legislature in 1867; was district attorney for Minnesota 1868–73; was governor of Minnesota 1874–75; and was elected United States senator in 1887 and in 1893 and 1899. In August, 1898, he was appointed a member of the Spanish-American Peace Commission. He published "The Law in Shakespeare" (1884).

Davis (dā′vis), **George Breckinridge.** Born at Ware, Mass., Feb. 13, 1847. An American soldier and jurist, judge-advocate-general of the United States Army. He was appointed a delegate to the Second Peace Conference in 1907. He has published several works upon international and military law.

Davis*, **John Chandler Bancroft.** Died at Washington, D. C., Dec. 27, 1907.

Davis (dā′vis), Mrs. (**Rebecca Blaine Harding**). Born at Washington, Pa., June 24, 1831. An American writer, mother of Richard Harding Davis. She is the author of "Life in the Iron Mills," through which she first came into prominence (1861), "Dallas Galbraith" (1868), "A Law Unto Herself" (1878), "Natasqua" (1886), "Silhouettes of American Life" (1892), "Kent Hampden" (1892), "Frances Waldeaux" (1897), "Dr. Warrick's Daughters" (1896), "Bits of Gossip" (1904), etc., besides many shorter stories and miscellaneous articles.

Davis, Richard Harding. Born at Philadelphia, April 18, 1864. An American journalist and author. He has written "Gallegher, and Other Stories" (1891), "Van Bibber and Others" (1892), "The West from a Car Window" (1892), "Exiles, and Other Stories" (1894), "Our English Cousins" (1894), "Rulers of the Mediterranean" (1894), "Princess Aline" (1895), "Cinderella, and Other Stories" (1896), "Three Gringos in Venezuela and Central America" (1896), "Soldiers of Fortune" (1897), "The King's Jackal" (1898), "With Both Armies in South Africa" (1901), "In the Fog" (1901), "Ranson's Folly" (1902), "The Bar Sinister" (1903), "Real Soldiers of Fortune" (1906), "The Scarlet Car" (1907), "Vera, the Medium" (1908), "The White Mice" (1909), etc.

Davis (dā′vis), **William Morris.** Born at Philadelphia, Pa., Feb. 12, 1850. An American geologist, professor of geology in Harvard University from 1899. He was graduated at the Lawrence Scientific School (Harvard) in 1869; was assistant in the Argentine National Observatory at Cordova 1870–73; and was assistant professor (1885–90), and professor (1890–99) of physical geography at Harvard. In 1903 he acted as physiographer of the Pumpelly (Carnegie Institution) expedition to Turkestan, and in 1905 accompanied the British Association to South Africa. Among his works are "Elementary Meteorology" (1894), and "Physical Geography" (1899). He was exchange professor at the University of Berlin 1908–09.

Davitt (dav′it), **Michael.** Born at Straide, County Mayo, Ireland, March 25, 1846: died at Dublin, May 31, 1906. An Irish journalist and political leader. His parents were evicted and he was sent to work when ten years of age in a Lancashire cotton-mill. He joined the Fenian Brotherhood in 1865; founded, with C. S. Parnell and others, the Irish Land League in 1879; and went to the United States to organize an auxiliary Land League in 1880. He three times suffered imprisonment on charges of treason-felony and sedition. He was first elected to Parliament for County Meath, in 1882, but was disqualified by a special vote of the House of Commons for non-expiration of sentence for treason-felony; was elected Nationalist member for Meath, North, in 1892, but was unseated on petition; and sat for Cork, Northeast, in 1893, and, as Anti-Parnellite member for Kerry, East, 1895–96, and Mayo, South, 1895–99. He published "Leaves from a Prison Diary" (1884), "Defence of the Land League" (1891), "Life and Progress in Australasia" (1898), "The Boer Fight for Freedom" (1902), "Within the Pale" (1903), and "The Fall of Feudalism in Ireland, Story of the Land League Revolution" (1904).

Dawes*, **Henry Laurens.** Died at Pittsfield, Mass., Feb. 5, 1903.

Dawson (dâ′sọn). A mining city of Yukon, Canada, situated on the Yukon river, near the Klondike gold-fields. Population (1901), 9,142.

Dawson (dâ′sọn), **George Mercer.** Born at Pictou, Nova Scotia, Aug. 1, 1849: died at Ottawa, Canada, March 2, 1901. A Canadian geologist and explorer, son of Sir John William Dawson. He was appointed geologist and botanist to the Northwest Boundary Commission in 1873; and in 1875 joined the geological survey of Canada, of which he became assistant director in 1883 and director in 1895. In 1891 and 1892 he served on the Bering Sea Commission. His publications include a "Report of the Geology and Resources of the Region in the Vicinity of the Forty-ninth Parallel" (1875), "Descriptive Sketch of the Physical Geography and Geology of Canada" (1884: with A. R. Selwyn), a preliminary report on the physical and geological features of a portion of the Rocky Mountains (1886), and many monographs.

Dawson*, Sir **John William.** Died at Montreal, Nov. 19, 1899. He was principal of McGill College and University 1855–93.

Day (dā), **Frank Miles.** Born at Philadelphia, Pa., April 5, 1861. An American architect. He was graduated at the University of Pennsylvania in 1883 and studied architecture at that university and in Europe. He is a fellow of the American Institute of Architects and was elected its president in 1906. He is also a trustee of the American Academy in Rome.

Day (dā), **William Rufus.** Born at Ravenna, Ohio, April 17, 1849. An American jurist and statesman. He was graduated at the University of Michigan in 1870 and was admitted to the (Ohio) bar in 1872. He succeeded John Sherman as secretary of state in April, 1898, but resigned in September to become chairman of the United States Peace Commission at Paris; was judge of the United States Circuit Court, 6th circuit, 1899–1903; and was appointed associate justice of the United States Supreme Court in 1903.

Deakin (dē′kin), **Alfred.** Born in Melbourne, Aug. 3, 1856. An Australian statesman, prime minister of the Commonwealth of Australia 1903–04 and 1905–. He was for many years a member of the parliament of Victoria; served in many official positions; and had an important part in bringing about the federation of the Australian colonies. He was the attorney-general for the Commonwealth 1901–03, and became prime minister in 1903 and again in 1905. He represented Australia in the Imperial Conference in 1907.

De Amicis*, **Edmondo.** Died at Bordighera, Italy, March 11, 1908. His later works include "Poesie" (1880), "Ritratti letterarii" (1881), "Gli amici" (1882), "Alle porte d'Italia" (1886), "Il romanzo d'un maestro" (1890), "La carrozza di tutti" (1898), "Speranze e gloria" (1900), "Memorie" (1900), "Ricordi d'infanzia e di scuola" (1901), "Capo d'anno" (1902), "Giardino della follia" (1902).

Dean (dēn), **Bashford.** Born at New York City, Oct. 28, 1867. An American zoölogist, professor of vertebrate zoölogy at Columbia University from 1903. He studied at the College of the City of New York and afterward at Columbia, Munich, Naples, and Misaki (Japan). In 1889–92 and 1900–01 he was engaged in biological work for the United States Fish Commission, and in 1903 became honorary curator of fishes in the American Museum of Natural History (New York). He is the author of numerous works on the anatomy and embryology of fishes.

Death Valley*, or **Amargosa Desert.** It is almost 276 feet below sea-level.

Debs (debz), **Eugene Victor.** Born at Terre Haute, Ind., Nov. 5, 1855. An American labor-leader. He received a common school education; became a locomotive fireman; was grand secretary and treasurer of the Brotherhood of Locomotive Firemen 1880–93; was sent to the Indiana legislature in 1885; was president of the American Railway Union 1893–97; successfully conducted a large strike on the Great Northern Railway; and while managing the strike of western railways in 1894 was charged with violation of an injunction and imprisoned for six months on the ground of contempt. He was the candidate of the Social Democratic Party for the presidency of the United States in 1900, 1904, and 1908.

Debussy (dā-büs-sē′), **Claude Achille.** Born at St. Germain-en-Laye, August 22, 1862. A French composer. He represents the extreme left wing of the young French school in finding new methods of expression and in harmonic combinations. His compositions include an opera, "Pelléas et Mélisande" (1902); cantatas, "L'enfant prodigue" (1884), and "La demoiselle élue"; a string quartet; nocturnes and other pieces for the orchestra; piano pieces; and songs.

Dechen (dā′ċhen), **Heinrich von.** Born at Berlin, March 25, 1800: died at Bonn, Feb. 15, 1889. An eminent German geologist and mining engineer, for many years director of mines at Bonn. With Karsten he edited the "Archiv für Mineralogie, Geognosie, Bergbau, und Hüttenkunde" (1838–55).

Dècle*, **Lionel.** He was born in May, 1859, and died March 1, 1907.

De Espejo. See *Espejo.*

Defender (dē-fen′dėr). A sloop-yacht built at Bristol, R. I., by the Herreshoffs, and owned by C. Oliver Iselin and others. Her length on load water-line is 88.45 feet. She defeated Valkyrie III. in competition for the America's cup, Sept., 1895. See *Valkyrie III.*

De Forest*, **John William.** Died July 18, 1906.

Degas (dā-gä′), **Hilaire Germain Edgard.** Born at Paris, July 19, 1834. A French painter. He belongs to the group of Impressionists, and was early associated with Manet, Monet, Renoir, and Fantin-Latour. His first successes were made with pictures representing race-courses; but his subjects were later usually taken from the theater, and he has depicted life behind the scenes with great appreciation. He has visited America and has painted a noted picture of negroes leading cotton at New Orleans.

Degeneration. The title of the English translation of "Entartung" (1893), by Max Nordau.

de Gubernatis, Angelo. See *Gubernatis.*

De Kay (dẹ̄ kā′), **Charles.** Born at Washington, D. C., July 25, 1848. An American author, poet, and critic. He was graduated at Yale in 1868; was literary and art critic of the New York "Times"; and was United States consul-general at Berlin 1894–97. He was the originator and one of the founders of the National Sculpture Society (1892) and of the National Arts Club (1898). Among his publications in book form are "Hesperus, and other Poems" (1880), "The Vision of Nimrod" (1881), "The Vision of Esther" (1882), "The Love Poems of Louis Barnaval" (1883), "Bird Gods" (1898), etc.

DeKoven (dẹ̄-kō′vẹn), **Henry Louis Reginald.** Born at Middletown, Conn., April 3, 1861. An American composer of light operas. Among his works are "Robin Hood" (1890), "The Fencing Master" (1892), "Rob Roy" (1894), "The Highwayman" (1897), and "Happyland" (1905). He has also written and published many songs.

Delaborde*, Henri. Died at Paris, May 18, 1899.

Deland*, Mrs. (**Margaretta Wade Campbell**). Among her later works are "Mr. Tommy Dove" (1893), "Dr. Lavender's People" (1903), "The Common Way" (1904), "The Awakening of Helena Richie" (1906), "An Encore" (1907), "R. J.'s Mother and Some Other People" (1908), etc.

De la Ramée*, Louise (pseudonym **Ouida**). She died at Viareggio, Italy, Jan. 25, 1908. She also wrote "Under Two Flags" (1867), "A Dog of Flanders" (1872), "In Maremma" (1882), "A Rainy June" (1885), "Othmar" (1885), "Don Gesualdo" (1886), "A House Party" (1887), "Guilderoy" (1889), "Ruffino" (1890), "Syrlin" (1890), "The Tower of Taddeo" (1890), "Santa Barbara" (1891), "The New Priesthood" (1893), "The Silver Christ" (1894), "Two Offenders" (1894), "Le Selve" (1896), "The Massarenes" (1897), "Toxin, an Altruist" (1897), "La Stregha" (1899), "The Waters of Edera" (1900), "Critical Studies" (1900), "Street Dust" (1901), etc.

De la Rey (dā lä rā′i), **Jakobus Herklaas:** called **Oom Koos.** Born in the Orange Free State, Oct. 22, 1847. A noted Boer general of French Huguenot descent. In 1893 he was elected member for the Lichtenburg district of the Transvaal in the Volksraad, and was a strong adherent of Joubert. He was one of the few members opposed to a rupture with England and favored a policy of conciliation, but at the outbreak of hostilities in 1899 advocated an aggressive military policy. He was elected to the command of the Lichtenburg burghers, who became part of Cronje's western column, and secured the first victory of the war at Kraaipan (Oct. 12–13, 1899). In 1902 he succeeded in capturing Lord Methuen, together with a number of British troops. He was a member of the Boer commission which arranged the terms of submission and afterward one of a deputation which visited Europe and the United States to raise funds for the assistance of their countrymen.

Delbœuf (del-bėf′), **Joseph.** Born at Liège, Belgium, Sept. 30, 1831: died at Bonn, Aug. 13, 1896. A Belgian philosophical writer and psychologist, professor of classical philology in the University of Liège 1866–96. Among his works are "La psychologie comme science naturelle" (1876), "Questions de philosophie et de science" (1883), "Examen critique de la loi psychophysique" (1883), and "La matière brute et la matière vivante" (1887).

Delbrück*, Martin Friedrich Rudolf. Died at Berlin, Feb. 1, 1903.

Delcassé (del-käs-sā′), **Théophile.** Born at Pamiers, Ariège, France, March 1, 1852. A French statesman and journalist. He was under-secretary for the colonies in 1893, colonial minister 1894–95, and minister of foreign affairs 1898–1905 (under premiers Brisson, Dupuy, Waldeck-Rousseau, and Combes). When holding this office he adjusted the "Fashoda affair"; negotiated the agreement with Great Britain as to the Nile Valley and Central Africa; and, with Lord Lansdowne, prepared the Anglo-French agreement of 1904. He retired on account of the difficulty with Germany over Morocco. In politics he is a radical Republican.

Delibes (dė-lēb′), **Clément Philibert Léo:** known as **Léo.** Born at Saint-Germain-du-Val, Sarthe, France, Feb. 21, 1836: died at Paris, Jan. 16, 1891. A French composer. He was a chorus conductor at the Opéra, and in 1881 was appointed professor of composition at the Conservatoire. His music consisted chiefly of operettas and ballets, of which latter two, "Coppélia" (1870) and "Silvia" (1876), have been very popular. He also wrote a few songs.

Delisle (dė-lēl′), **Léopold Victor.** Born at Valognes, Manche, France, Oct. 24, 1826. A noted French historian, bibliographer, and paleographer. In 1852 he was appointed assistant in the manuscript department of the National Library at Paris, of which he later became conservator and, in 1874, administrator general. He was made chevalier of the Legion of Honor in 1857, officer in 1877, and commander in 1883. He has written many important papers on the history of France, particularly that of Normandy, and on paleography and bibliography.

Delitzsch*, Friedrich. Since 1899 he has been professor of Assyriology at the University of Berlin.

Delsarte (del-särt′), **François Alexandre Nicolas Chéri.** Born Dec. 19, 1811: died July 19, 1871. A French musician and teacher, noted for his studies of the art of oratorical, musical, and dramatic expression.

Delyannis (de-li-än′is), or **Delijannis, Théodore.** Born in 1826: died June 13, 1905. A Greek statesman. From 1863 he was frequently in office as minister of foreign affairs, finance, or the interior. He represented Greece at the Congress of Berlin, and obtained an extension of Greek territory on the Thessalian frontier. He was premier 1885–86, 1890–92, 1895–April, 1897, 1902–03, and 1904–05. He was assassinated.

Demogeot*, Jacques Claude. Died at Paris, Jan. 9, 1894.

Demolins (dė-mō-lañ′), **Edmond.** Born at Marseilles, 1852: died at Roches, July 22, 1907. A French historian and sociologist. In 1886 he founded, with others, "La Science Sociale," a journal devoted to the study of social economics along new lines, following the methods of Le Play, of whom he was a pupil. Among the best known of his publications are "A quoi tient la supériorité des Anglo-Saxons" (1897), "Les Français d'aujourd'hui" (1898), "L'éducation nouvelle" (1898), "Les grandes routes des peuples" (1904), and "Classification sociale" (1905).

Denby (den′bi), **Charles.** Born in Botetourt County, Va., 1830: died at Jamestown, N. Y., Jan. 13, 1904. An American diplomatist. He was educated at the Georgetown University and at the Virginia Military Institute and was admitted to the Indiana bar in 1855. He served in the Union army during the Civil War, rising to the rank of colonel, and was United States minister to China 1885–98. In 1898 he was appointed by the President a member of the commission for the investigation of the war with Spain, and in 1899 a member of the civil commission for the investigation of affairs in the Philippines.

Denison (den′i-sọn), **Henry Willard.** Born at Guildhall, Vermont, May 11, 1846. An American jurist. He was the legal adviser of the Japanese during the negotiation of the peace with Russia at Portsmouth, New Hampshire, in 1905, and was a delegate to the second Peace Conference in 1907.

Denmark*. The Rigsdag is composed of an upper house (Landsthing) of 66 members and a lower house (Folkething) of 114 members. The army numbers (on a war footing) about 50,000. The country is divided for administrative purposes into 18 counties (amter). In 1907 a commission was appointed to report on the relations of Denmark and Iceland, and in 1908 a bill was drafted declaring Iceland a free, autonomous, independent country, forming with Denmark the United Danish Empire, and having in common the kingship, the ministry of foreign affairs, and the ministry of defense. The measure, however, was not acted upon.

Dennery. See *Ennery, d'.*

DePauw University. A coeducational institution of learning, under the patronage of the Methodist Episcopal Church, situated at Greencastle, Indiana. It is the outgrowth of the Indiana Asbury University (chartered in 1837), the name of which was changed in 1884 owing to the financial and other aid given to it by W. C. DePauw. The university offers courses in the liberal arts, music, and art and is attended by about 1,000 students. It has an endowment of $500,000 and an annual income of $72,000.

Depew*, Chauncey Mitchell. He was president of the New York Central Railroad 1885–99, and was elected senator from New York in 1899 and reëlected in 1905.

De Peyster*, John Watts. He died at New York, May 4, 1907.

Deschanel*, Émile Augustin Étienne Martin. Died at Paris, Jan. 26, 1904.

Deschanel (dā-shä-nel′), **Paul Eugène Louis.** Born at Brussels, Belgium, Feb. 13, 1856. A French statesman and author, son of Émile Augustin Étienne Martin Deschanel. He was secretary to two ministers of the interior, de Marcère and Simon, 1876–77; and after filling various minor offices was elected to the Chamber of Deputies in 1885, of which he was president 1898–1902, and reëlected in 1901. In 1899 he was elected a member of the French Academy, succeeding Hervé. His published work includes "La question du Tonkin" (1883), "La politique française en Océanie" (1884), "Les intérêts français dans le Pacifique" (1885), "Orateurs et hommes d'état" (1888: crowned by the French Academy), "Figures de femmes" (1889: also crowned), "Figures littéraires" (1889), "Questions actuelles," a collection of his principal speeches (1891), "La décentralisation" (1895), "La question sociale" (1898), "Quatre ans de présidence" (1902), "Politique intérieure et étrangère" (1906), "À l'institut" (1907), etc.

Des Groseilliers. See *Chouart.*

Deshayes (dā-zā′). **Gérard Paul.** Born at Nancy, May 13, 1795: died at Boiran, Oise, June 9, 1875. A French naturalist, especially known as a paleontologist (studies of *Mollusca*). Among his works are "Description des coquillages fossiles des environs de Paris" (1824-37), "Traité élémentaire de conchyliologie" (1834–58), and "Description des animaux sans vertèbres découverts dans le basin de Paris" (1857–65).

Des Périers*, Bonaventure. See *Heptameron.*

d'Esprit. See *Esprit.*

De Vere*, Aubrey Thomas. Died at Curragh Chase, County Limerick, Jan. 20, 1902.

De Vere*, Maximilian Schele. Died 1898.

Devine (dẹ̄-vīn), **Edward Thomas.** Born at Union, Hardin County, Iowa, May 6, 1867. An American sociologist, general secretary of the Charity Organization Society of the City of New York, and professor of social economy in Columbia University. He was graduated at Cornell College, Iowa, in 1887; studied in Germany 1890–91; and spent several years in teaching. His publications include "Economics" (1898), "The Practice of Charity" (1901), "The Principles of Relief" (1904), "Efficiency and Relief" (1906), "Misery and its Causes" (1909), etc. He is the editor of "The Survey" (formerly "Charities and the Commons").

De Vinne (dẹ̄-vin′i), **Theodore Low.** Born at Stamford, Conn., Dec. 25, 1828. An eminent American printer, established in business in New York City from 1859. He is the author of "The Invention of Printing" (1876), "Historic Printing Types" (1886), "Plain Printing Types" (1900), "Correct Composition" (1901), "Title-Pages" (1902), "Modern Book Composition" (1904), etc.

Dewar (dū′är), Sir **James.** Born at Kincardine-on-Forth, Perthshire, Sept. 20, 1842. A British physicist and chemist, professor of experimental philosophy in Cambridge and of chemistry in the Royal Institution, London. He is best known for his investigations of the properties of matter at the lowest temperatures. By evaporating liquid hydrogen under diminished pressure he obtained the lowest known temperature (— 493° F.). With Sir Frederick Abel he invented cordite. He was knighted in 1904.

De Wet (de vet′), **Christiaan Rudolf.** Born in the Orange Free State, South Africa, Oct. 7, 1854. A noted Boer general. He was a member of the Volksraad 1889–97; at the outbreak of the South African war in 1899 was appointed vice-commandant in Natal; and in December of the same year was made vecht-general on the western frontier under the command of General Cronje. He was most successful in guerrilla warfare, and was distinguished as a leader and strategist. After the close of the war he was a member of the committee for raising funds for the distressed Boers. In 1902 he published "Three Years of War." In 1907 he was made minister for agriculture of the Orange River Colony.

Dewey (dū′i), **Charles Melville.** Born at Lowville, N. Y., 1851. An American painter. He was a pupil of Carolus Duran in Paris 1876–77. His work is composed of landscapes which usually represent the subdued light of morning or evening with masses of dark trees against the sky. He won silver medals at the Pan-American Exposition in Buffalo in 1901, and at the Louisiana Purchase Exposition in St. Louis in 1904, and was elected associate of the National Academy of Design in 1903 and member in 1907.

Dewey (dū′i), **George.** Born at Montpelier, Vt., Dec. 26, 1837. An American admiral. He was graduated from the United States Naval Academy in 1858; served under Farragut as lieutenant on the Mississippi in 1862; and took part in the attack on Fort Fisher 1864–65. He was promoted lieutenant-commander in March, 1865; commander in 1872; captain in 1884; commodore in 1896; rear-admiral in 1898; and admiral in 1899. He has served on the Lighthouse Board, and has been chief of the Bureau of Equipment and president of the Board of Inspection and Survey. Having been placed in command of the Asiatic Station, on May 1, 1898, a few days after the outbreak of the war with Spain, he destroyed the Spanish fleet off Cavité in the Bay of Manila. On Aug. 13 his fleet aided the troops under General Merritt in the capture of Manila.

Dewey (dū′i), **John.** Born at Burlington, Vt., Oct. 20, 1859. An American philosopher, professor of philosophy in Columbia University from 1904. He was professor in the University of Minnesota 1888–89, in the University of Michigan 1889–94, and in the University of Chicago 1894–1904. He has published a number of works upon psychology, ethics, logical theory, and pedagogics.

Dewey (dū′i), **Melvil.** Born at Adams Center, N. Y., Dec. 10, 1851. An American librarian, director of the New York State Library and New York State Library School at Albany 1888–1905. He was graduated at Amherst College in 1874; was acting librarian at Amherst 1873–76; was chief librarian and professor of library economy in Columbia University 1883–88; and was secretary of the University of the State of New York 1888–1900. He organized, in 1876, the Spelling Reform Association, of which he has been secretary from 1876, and the Metric Bureau for the introduction of the international system of weights and measures. In 1887 he founded at Columbia the first library school, which later became the New York State Library School. He was New York State director of libraries 1904–05.

De Windt (dẹ̄-wint′), **Harry.** Born at Paris, 1856. An English traveler and explorer. He was educated at Cambridge; was aide-de-camp to Rajah Brooke of Sarawak, his brother-in-law, 1876–78; traveled from Peking to France by land in 1887; rode from Russia to India through Persia in 1889; and attempted to travel from New York to Paris by way of Alaska but nearly lost his life in Bering Strait, where he was rescued by a whaler. In 1901–02 he made the trip from Paris to New York; traveled through the Balkan states in 1905; and crossed Lapland in the winter of 1906. He has published a number of books of travel, including "From Paris to New York by Land" (1903), "Through Savage Europe" (1905), "Moles and their Meaning" (1908), "Notes of a Restless Life" (1908), etc.

Dewing (dū′ing), **Thomas Wilmer.** Born at Boston, Mass., May 4, 1851. An American painter. He studied art under Jules Lefebvre in Paris 1876–1879; was elected associate of the National Academy of Design in 1887 and academician in 1888; and won the Clarke prize at the Academy (New York) in 1887. His work is composed of figure pictures and interiors expressing much delicacy and refinement.

Dexter (deks′tėr), **Timothy.** Born at Malden, Mass., Jan. 22, 1743: died at Newburyport, Mass., Oct. 26, 1806. An American merchant, noted for his eccentricities. He accumulated a large fortune; assumed the title of "Lord"; maintained a poet laureate; and adorned his garden with colossal images of famous men, including one of himself labeled "I am the greatest man in the East." He published a book entitled "A Pickle for the Knowing Ones," and, being annoyed by the printers about punctuation, wrote a pamphlet entirely unpunctuated, but with a mass of points of all kinds at the end, and invited readers to "pepper the dish to suit themselves."

Diana of the Crossways. A novel by George Meredith, published in 1885.

Diaz (dē′äth), **Melchior.** A Spanish captain in Mexico. From about 1536 to 1539 he commanded Culiacan. In November, 1539, he was sent by the Viceroy Mendoza to verify the tale of Friar Marcos as to wealthy cities in the north. Going as far as "Chichilticalli" he was forced back by cold. He rejoined Coronado at Chiametla, sending a report to the viceroy. This was not favorable to Marcos, but secrecy was preserved by his superiors and the expedition proceeded. Later he escorted the discredited friar back. Executing, then, orders to explore northwest from Corazones, he crossed with twenty-five men northwest Mexico and southwest Arizona (the first to do this) to the Colorado river, which he reached (1540) about eighty miles above its mouth, soon after Alarçon, the first to ascend, had passed on his return. Crossing the river, which he called Rio del Tizon, he went west four days. Throwing a spear at an unruly dog Diaz was accidentally so injured that he died (about Jan. 1, 1541). He was one of the most judicious and trusted officers of the period.

Diaz*, Porfirio. He was reëlected 1896, 1900, and 1904.

Dickinson (dik′in-son), **Jacob McGavock.** Born at Columbus, Miss., Jan. 30, 1851. An American jurist. He was assistant attorney-general of the United States 1895–97; was counsel for the United States before the Alaska Boundary Tribunal in 1903; and was appointed secretary of war, in March, 1909.

Dieterici*, Friedrich Heinrich. Died at Berlin, Aug. 18, 1903.

Diéterle (di-ā-terl′), Mme. (**Marie von Marcke**). Born at Sèvres. A contemporary French artist. She is the daughter and pupil of Émile von Marcke, and is known as a painter of landscapes and cattle.

Dinagat (dē-nä′gät). A long, narrow island of the Philippines, belonging to Surigao province and lying north of Mindanao, from which it is separated by Surigao Strait. It is traversed from north to south by mountains, of which Redondo, a peak at the northern extremity, is the highest. Port Gabo, at the southeastern end of the island, is a good harbor in all weather for large vessels. Area, 309 square miles. Population (1903), 5,243.

D'Indy. See *Indy, d'.*

Dingras (dēn-gräs′). A municipality of Ilocos Norte province, in the northwestern part of Luzon, Philippine Islands. Civilized population (1903), 15,792.

Dipper, The Great. See *Wain, Charles's.*

Dirichlet (di-rēsh-lā′), **Peter Gustave Lejeune.** Born at Düren, Prussia, Feb. 13, 1805: died at Göttingen, May 5, 1859. A noted German mathematician, successor of Gauss as professor of mathematics at Göttingen in 1855. He is best known for his work in the theory of numbers.

Discovery. 3. The ship in which Captain Robert F. Scott made the antarctic expedition of 1900–04.

Distinguished Service Order. A naval and military order of distinction, instituted Sept. 6, 1886. It consists of the British sovereign and those officers who have been mentioned in despatches for meritorious or distinguished service in the field, or before the enemy, and upon whom the sovereign wishes, therefore, to confer honor. The badge of the order is a gold cross, enameled white, bearing upon the obverse the imperial crown within a wreath of laurel, and on the reverse the imperial cipher within a wreath of laurel. It is suspended by a red ribbon edged blue. The order has (1909) over 1,400 companions. Foreign officers are, under certain conditions, eligible to honorary membership.

Ditters von Dittersdorf (dit′erz fon dit′erz-dôrf), **Karl.** Born at Vienna, Nov. 2, 1739: died near Neuhof, near Pilgram, Bohemia, Oct. 24, 1799. A noted Austrian violinist and composer. The best of his many operas, "Hieronymus Knicker" (1787) and "Doktor und Apotheker" (1786), long retained a place on the stage. His symphonies on Ovid's "Metamorphoses" (published in 1785) are remarkable specimens of early program music, and his string quartets foreshadow some of the developments of Haydn and Mozart.

Dix*, Dorothea Lynde. Born at Hampden, Me., April 4, 1802.

Dodge (doj), **Charles Wright.** Born at Cape Vincent, N. Y., Jan. 15, 1863. An American naturalist, professor of biology at the University of Rochester from 1892. He was graduated from the University of Michigan in 1886. He has published an "Introduction to Elementary Practical Biology" (1894), etc.

Dodge*, Mary Abigail: pseudonym **Gail Hamilton.** Born at Hamilton, Mass., 1830: died at Wenham, Mass., Aug. 17, 1896.

Dodge*, Mrs. (**Mary Elizabeth Mapes**). Born at New York, Jan. 26, 1831: died at Onteora Park, Tannersville, N. Y., Aug. 21, 1905. She was editor of the "St. Nicholas" magazine 1873–1905. She wrote also "The Land of Pluck" (1894), "When Life is Young" (1894), "Rhymes and Jingles" (1874, 1903), and numerous short stories and sketches.

Dodge (doj), **Theodore Ayrault.** Born May 28, 1842: died Oct. 26, 1909. An American soldier and author. He served through the Civil War and in the War Department, rising to the rank of colonel. He retired in 1870. Among his works are: "Chancellorsville" (1881), "Civil War" (1883), "A Chat in the Saddle" (1885), "Great Captains" (1889), "Alexander" (1890), "Hannibal" (1891), "Cæsar" (1893), "Riders of Many Lands" (1894), "Gustavus Adolphus" (1895), and "Napoleon" (1904, 1907).

Dodgson*, Charles Lutwidge: pseudonym **Lewis Carroll.** Born at Daresbury, Cheshire, Jan. 27, 1832: died at Guildford, Surrey, Jan. 14, 1898.

Dolbear (dol′bãr), **Amos Emerson.** Born at Norwich, Conn., Nov. 10, 1837: died Feb. 23, 1910. An American physicist and inventor, professor of physics in Tufts College from 1874, best known for his inventions in telephony and wireless telegraphy. He invented the static telephone in 1879 and the air-space cable in 1882.

Dole (dōl), **Nathan Haskell.** Born at Chelsea, Mass., Aug. 31, 1852. An American author, journalist, and translator. He is the author of "A Young Folks' History of Russia" (1881), "A Score of Famous Composers" (1891), "The Hawthorn Tree and Other Poems" (1895), "Omar, the Tent-maker" (1899), "Peace and Progress" (1904), reissued as "The Building of the Organ" (1906), "The Pilgrims" (1908), and "Teacher of Dante" (1908), and has translated from many languages, notably the writings of Tolstoi.

Dole (dōl), **Sanford Ballard.** Born at Honolulu, H. I., April 23, 1844. A Hawaiian statesman. He is of American parentage, and was educated in the Hawaiian Islands and at Williams College, Massachusetts; studied law in Boston and was admitted to the bar in 1868; returned to Honolulu, and practised law there; and in 1887 was appointed associate judge of the supreme court. In 1893 he resigned to lead the revolution against the monarchy; was made head of the provisional government; and in 1894 became president of the republic of Hawaii. After the annexation of Hawaii to the United States he was appointed (1900) governor of Hawaii by President McKinley, and resigned in 1903 to become United States district judge for Hawaii.

Domingo (dō-mēng′gō), **José.** Born in Spain. A contemporary Spanish genre painter. He was a pupil in Paris of the elder Meissonier, whose style he follows. Among his works are "Card Players," "Halt at the Inn," "Return from the Pasture," etc.

Dominican Republic* (**Santo Domingo**, or **San Domingo**). It is divided into six provinces and six maritime districts. By the constitution adopted in 1908 the legislative power is vested in a national congress, consisting of a senate of 12 senators and a chamber of deputies of 24 members, elected by restricted suffrage for the term of four years. The executive is vested in a cabinet council composed of the president and seven ministers. The president is chosen by an electoral college for the term of six years.

Dongola*. It is now a province of the Anglo-Egyptian Sudan. Capital, Merowe.

Donnelly*, Ignatius. Died at Minneapolis, Jan. 1, 1901.

D'Ooge (dō′gi), **Benjamin Leonard.** Born at Grand Rapids, Mich., Jan. 10, 1860. An American classical scholar, professor of ancient languages in the Michigan State Normal College from 1886. He was graduated from the University of Michigan in 1881, and took his doctor's degree at the University of Bonn in 1901. His works include text-books, editions of Latin texts, etc.

Dooley (dö′li), **Mr.** A humorous creation of Finley Peter Dunne: an Irish-American publican of 'Archey Road,' Chicago, whose comments on topics of the day are compounded of shrewd wit and common sense.

Doppler (dōp′lėr), **Christian.** Born at Salzburg, Germany, Nov. 30, 1803: died at Venice, March 17, 1853. A German physicist and mathematician, professor of experimental physics in the University of Vienna 1851–53. The important principle that when the source of waves of light, or sound, etc., moves away from the observer the waves appear to become less frequent, and *vice versa*, was announced by and has been named for him.

Doremus (dō-rē′mus), **Charles Avery.** Born at New York, Sept. 6, 1851. An American chemist, son of Robert Ogden Doremus. He was professor of chemistry and toxicology in the University of Buffalo, Medical Department, 1877–82, and in the American Veterinary College of New York 1882–92; adjunct professor in Bellevue Hospital Medical College 1879–97; assistant professor of chemistry in the College of the City of New York 1897–03, and acting professor there 1903–04. He has published a "Report on Photography, Vienna Exposition" (1873), "Gaseous Poisons" in "Text-book of Legal Medicine and Toxicology" (1903), etc.

Doremus (dō-rē′mus), **Robert Ogden.** Born at New York, Jan. 11, 1824: died there, March 22, 1906. An American chemist, professor of chemistry and toxicology and medical jurisprudence in the Bellevue Hospital Medical College, and of chemistry and physics in the College of the City of New York.

Dorr (dôr), Mrs. (**Julia Caroline Ripley**). Born at Charleston, S. C., Feb. 13, 1825. An American poet and novelist. She is the author of "Poems" (1871), "Friar Anselmo and Other Poems" (1879), "Afternoon Songs" (1885), "Poems Complete" (1892), "Afterglow" (1900). Among her prose writings are "Farmingdale" (1854), "Lanmere" (1856), "Sibyl Huntington" (1869), "Expiation" (1872), "Bermuda" (1884), "The Flower of England's Face" (1895), "A Cathedral Pilgrimage" (1896), "In Kings' Houses" (1898), etc.

Dorsey (dôr′si), **George Amos.** Born at Hebron, Ohio, Feb. 6, 1868. An American naturalist, assistant curator (1896–97) and curator (1897–) of anthropology in the Field Columbian Museum, Chicago. He was instructor in anthropology in Harvard University 1895–96; in 1900 was appointed professor of comparative anatomy at the Northwestern University; and in 1905 became assistant professor of anthropology at the University of Chicago. He has published numerous anthropological and anatomical papers.

Doucet (dö-sā′), **Charles Camille.** Born at Paris, May 16, 1812: died there, April 1, 1895. A French dramatist and critic. He was the dramatic critic of the "Moniteur parisien," and was appointed chief of the theater division in the State Department in 1853 and director of theaters in the imperial household in 1863. He was elected to the French Academy as successor to Alfred de Vigny in 1865 and became its perpetual secretary in 1876. His works include "Léonce" (1838: with Bayard), "Un jeune homme" (1841), "L'Avocat de sa cause" (1842), "La chasse aux fripons" (1846), "Velasquez" (1847), "La barque d'Antonio" (1849), "Les ennemis de la maison" (1851), "Le fruit défendu" (1858), "La considération" (1860), "Concours littéraires" (1886), etc.

Douglas. 3. A town in Cochise County, Arizona, organized in 1901. There are extensive copper-mines in the vicinity. Population (1909), about 12,000.

Doumic (dö-mik′), **René.** Born at Paris, March 7, 1860. A French man of letters, literary and dramatic critic of the "Revue des Deux-mondes." In 1909 he was chosen a member of the French Academy to fill the chair of M. Gaston-Boissier. He has published a number of works on literary themes.

Dove (duv), **Patrick Edward.** Born at Lasswade, near Edinburgh, July 31, 1815: died April 28, 1873. A British editor and philosophical writer. He published "The Theory of Human Progression, and Natural Probability of a Reign of Justice" (1850), in which, among other doctrines, he maintained that rent belongs to the nation and thus, in a measure, anticipated the single tax theory of Henry George.

Dove*, Richard William. Died at Göttingen, Sept. 18, 1907.

Dow*, Neal. Died at Portland, Me., Oct. 2, 1897.

Doyle*, Sir **Arthur Conan.** He was knighted in 1902. His later works include "The Great Boer War" (1900), "The Hound of the Baskervilles" (1902), "The Adventures of Gerard" (1903), "The Return of Sherlock Holmes" (1904), "Sir Nigel" (1906), "The Croxley Master" (1906), "Round the Fire Stories" (1908), "Through the Magic Door" (1908), etc.

Drachman*, Holger Henrik Herholdt. Died at Hornbäk, Denmark, Jan. 14, 1908. His later poetical works include "Dybe Strenge" (1884), "Fjældsange og Æventyr" (1885), "Sangenes Bog" (1889), "Ungdomsdigte" (1898), "Broget Löv" (1901). He wrote also an autobiographical romance, "Den hellige Ild" (1899), "Smaa Fortællinger" (1884), "Med den brede Pensel" (1887), "Forskrevet" (1890), "Dädalus" (1900), and a number of dramatic works.

Dragomirof (drä′gō-mi-rôf), **Michael Ivanovitch.** Born 1830: died at Konotop, Oct. 29, 1905. A Russian general. He served in the Russo-Turkish war; was wounded at Shipka Pass; and was later appointed director of the Academy of the General Staff. In 1898 he was appointed governor-general of Kief, Podolia, and Volhynia. He published various important works on tactics and military administration. He retired in 1904.

Drake (drāk), **Alexander Wilson.** Born near Westfield, N. J., Sept. 4, 1843. An American wood-engraver and draftsman on wood, art director of the "Century Magazine" from 1870 ("Scribner's Monthly" 1870–81). He studied art in the Cooper Institute and the National Academy of Design, New York, and was largely instrumental in founding and developing the American school of wood-engraving. He was one of the founders of the Grolier Club, New York.

Dreadnought (dred′nât). A British battle-ship, launched in 1906. It is of 17,900 tons displacement; length, 490 ft; beam, 82 ft; draught, 26½ ft; has belt-armor 11 inches thick; mounts ten 12-inch guns; has 5 torpedo-tubes; develops 27,500 indicated horse-power; and has a maximum speed of 21.85 knots. It gives name to the class of modern "all-big-gun" ships, at present regarded as the most efficient type of battle-ship.

Drew*, Mrs. Louisa Lane. Died at Larchmont, N. Y., Aug. 31, 1897.

Dreyfus (drā-füs′), **Alfred.** A captain, of Jewish descent, in the French army. He was convicted (by a secret military tribunal) in 1894 of having divulged state secrets to a foreign power, and was sentenced to penal servitude for life. He was imprisoned on Devil's Island, French Guiana. The efforts to obtain a revision of his case involved men prominent in all branches of the government service and agitated France for years. He was accorded a second trial at Rennes, Aug. 7–Sept. 9, 1899, and was recondemned and sentenced to ten years' imprisonment, but was pardoned. The decision of the court of cassation, announced July 12, 1906, quashed the verdict of the Rennes tribunal and completely vindicated Dreyfus.

Drisler (dris′lėr), **Henry.** Born on Staten Island, N. Y., Dec. 27, 1818: died at New York, Nov. 30, 1897. An American classical scholar, lexicographer, and educator. In 1843 he was appointed tutor in Columbia College (later University) and was continuously connected with that institution during the rest of his active life, becoming professor of Greek in 1867, and dean of the faculty of arts in 1889. In 1894 he resigned and was made professor emeritus. In 1867 he was acting president of the university. He re-edited Liddell and Scott's edition of Passow's Greek lexicon (1851), and was associate editor of the seventh revised Oxford edition of Liddell and Scott, published in 1883.

Driver (drī′vėr), **Samuel Rolles.** Born at Southampton, England, Oct. 2, 1846. An English scholar, regius professor of Hebrew and canon of Christ Church in the University of Oxford from 1883. He was one of the revisers of the English translation of the Old Testament 1876–84. Among his works are "Isaiah" (1893), "An Introduction to the Literature of the Old Testament" (1897), and commentaries on "Deuteronomy" (1902), "Joel and Amos" (1897), "Daniel" (1901), "Genesis" (1904), "The Minor Prophets" (1905), "Job" (1905), "Three Papers on the Higher Criticism," with A. F. Kirkpatrick (1905), etc.

Droch (droch). The pseudonym of Robert Bridges (born 1858).

Drummond*, Henry. Died at Tunbridge Wells, March 11, 1897.

Drummond (drum′ond), **William Henry.** Born near Mohill, County Antrim, Ireland, April 13, 1854: died at Cobalt, Ontario, Canada, April 6, 1907. A Canadian physician and poet, known as "the poet of the habitant." He removed to Canada in his youth and was educated there. He began the practice of medicine in the Province of Quebec, where he came in close contact with the French Canadian voyageurs and habitants about whom most of his poems were written. Later he removed to Montreal, and for some years was professor of medical jurisprudence at Bishop University. His works include "The Habitant, and other French-Canadian poems" (1897), "Phil-o-rum's Canoe" and "Madeleine Vercheres" (1898), "Johnnie Courteau" (1901), "The Voyageur, and other poems" (1905), and "The Great Fight" (1908).

Dubois*, Paul. Died May 23, 1905. He was director of the École des Beaux-Arts 1878–1905.

Du Bois-Reymond*, Emil. Died at Berlin, Dec. 26, 1896.

Dubufe*, Édouard Marie Guillaume. Died May 27, 1909.

Du Chaillu*, Paul Belloni. Died at St. Petersburg, April 30, 1903.

Dudley (dud′li) **Observatory.** An astronomical observatory situated (since 1893) on Lake Avenue, Albany, New York. In 1873 it was incorporated with Union College, Schenectady, etc., to form Union University. It is supported by an endowment, by appropriations from the National Academy of Sciences, by grants from the Carnegie Institution, etc., and is devoted to original research. Elaborate star catalogues, annals, etc., have been issued from the observatory.

Dufay (dü-fā′), **Guillaume.** Born at Chimay, Belgium, about 1400: died at Cambrai, Nov. 27, 1474. A French composer and contrapuntist, originator of improvements in musical notation, such as the use of white notes.

Duff (duf), Sir **Mountstuart Elphinstone Grant.** Born at Eden, Aberdeenshire, Scotland, Feb. 21, 1829: died at London, Jan. 12, 1906. A British Liberal politician and author. He was educated at Balliol College, Oxford, and was called to the bar in 1854; was a member of the House of Commons for Elgin Burghs 1857–81; was under-secretary of state for India 1868–74; was under-secretary for the colonies 1880–81; and was governor of Madras 1881–86. He was knighted in 1886. Among his works are "Studies in European Politics" (1866), "Elgin Speeches" (1871), "Sir Henry Maine: a Brief Memoir" (1892), "Renan: In Memoriam" (1893), "Notes from a Diary" (1897–1905), "Out of the Past" (1903), etc.

Duffy*, Sir **Charles Gavan.** Born at Monaghan, Ireland, April 12, 1816: died at Nice, Feb. 9, 1903.

Dulanganes (dö-län-gä′nāz). A pagan people of southeastern Mindanao, by some regarded as part Indonesian.

Dulong (dü-long′), **Pierre Louis.** Born at Rouen, France, Feb. 12, 1785: died at Paris, July 19, 1838. A noted French physicist and chemist, professor of physics at the École Polytechnique in Paris from 1820 and permanent secretary of the Academy of Sciences from 1832. With Petit he announced (1819) the law that the product of the specific heat of any element in the solid state multiplied by its atomic weight is (approximately) constant.

Dumaguete (dö-mä-gā′tā). A town, the capital of Negros Oriental province, in the Philippines. It is situated on the eastern coast, near the southern entrance to the Strait of Tañon, in lat. 9° 18′ 30″ N., long. 123° 18′ E. Civilized population of municipality (1903), 14,894.

Dumanjug (dö-män-hög′). A municipality of Cebu province, in the Philippine Islands. It is situated on the west coast of Cebu island. Civilized population (1903), 22,203.

Dumaran (dö-mä-rän′). An island of Paragua province, in the Philippine Islands. It is situated east of the northern part of Paragua, from which it is separated by Dumaran Channel. It is high and well wooded. Area, 122 square miles. Population (1903), 1,987.

Du Maurier*, George Louis Palmella Busson. Died at London, Oct. 8, 1896. His last novel, "The Martian," appeared in 1897.

Dunbar (dun′bär), **Paul Laurence.** Born at Dayton, Ohio, June 27, 1872: died there, Feb. 9, 1906. An American author and poet, of African descent. He was engaged in journalistic work in Dayton and New York, and was employed in the Congressional Library in Washington. Among the better known of his works are "Oak and Ivy" (1893), "Majors and Minors" (1895), "Lyrics of Lowly Life" (1896), "Lyrics of the Hearthside" (1899), "The Strength of Gideon" (1900), "The Fanatics" (1901), "The Sport of the Gods" (1902), "Lyrics of Love and Laughter" (1903), "Lyrics of Sunshine and Shadow" (1905), etc.

Duncan, Sara Jeannette. The maiden name and pseudonym of Mrs. Everard Cotes, a contemporary novelist.

Dunmore (dun′mōr), **Earl of.** See *Murray, John.*

Dunne (dun), **Finley Peter.** Born at Chicago, Ill., July 10, 1867. An American journalist, author, and humorist, best known for his creation of "Mr. Dooley." He was a reporter for various Chicago newspapers from 1885 to 1891; was city editor of the "Times" 1891–92; was on the staffs of the "Evening Post" and "Times-Herald" 1892–97; and was editor of the "Journal" 1897–1900 (all in Chicago). His works include "Mr. Dooley in Peace and in War" (1898), "Mr. Dooley in the Hearts of his Countrymen" (1898), "Mr. Dooley's Philosophy" (1900), "Mr. Dooley's Opinions" (1901), "Observations by Mr. Dooley" (1902), "Dissertations by Mr. Dooley" (1906), etc.

Dunstable (dun′sta-bl), **John.** Born about 1370: died Dec. 24, 1453. An English composer, chief of the early school of contrapuntists, and said to have been the inventor of true counterpoint.

Düntzer*, Johann Heinrich Joseph. Died at Cologne, Dec. 16, 1901.

Duplessis*, George Victor Antoine Gratet-. Died at Paris, March 26, 1899.

Dupray*, Louis Henri. Died in April, 1909.

Duprez*, Gilbert Louis. Died at Paris, Sept. 23, 1896.

Dupuy (dü-püē′), **Charles Alexandre.** Born at Le Puy, France, Nov. 5, 1851. A French politician. He was professor of philosophy at the lycée of Le Puy (1876), and of St.-Étienne (1880), and inspector of the academy at Ajaccio (1884). He entered politics in 1885, and was minister of public instruction under Ribot in 1892, president of the council and minister of the interior 1893, 1894, 1898–99, president of the Chamber of Deputies 1893–94, and senator from Haute-Loire 1900–09.

Durand*, Madame (**Alice Marie Céleste Fleury**): pseudonym **Henry Gréville.** Died at Boulogne-sur-Mer, May 24, 1902.

Durendal (dö′ren-däl) or **Durendart.** See *Durandana.*

Durham University. A university at Durham, England, founded in 1832. It comprises, in Durham, University College (1837), Bishop Hatfield's Hall (1846), St. Chad's Hall (1904); and in Newcastle-upon-Tyne, the Durham College of Medicine (1852), and the Durham College of Science (now styled Armstrong College: 1871). It is attended by over 200 students at Durham, and (including those not reading for degrees) by about 2,000 at Newcastle. It confers degrees upon men in divinity and on men and women in civil law, arts, letters, medicine, surgery, literature, science, and music. Its affiliated colleges are Codrington College, Barbados (1875), and Fourah Bay College, Sierra Leone (1876).

Dutuit (dü-tüē′) **Collection.** A celebrated collection of works of art and historic interest in the possession of the City of Paris. It was formed by Eugène (1807–1885) and Auguste (1810–1902) Dutuit, with their sister Heloïse. The Dutuits made their fortune at Marseilles, but went to Rouen, and began their collections there in 1832. The Dutuit Collection is housed in the Petit Palais des Beaux-Arts in Paris and has been illustrated in several important books.

Dvořák*, Antonin. Died at Prague, May 1, 1904. He was director of the National Conservatory of Music in New York 1892–95, and in 1901 was appointed head of the Conservatorium in Prague.

Dwight*, Timothy. He resigned the presidency of Yale University in 1899.

Eakins (ē′kinz), **Thomas.** Born at Philadelphia, July 25, 1844. An American painter and lecturer on artistic anatomy, educated in art at the École des Beaux-Arts under Gérôme. He won medals at the Columbian Exposition, Chicago, 1893, at the Pan-American Exposition, Buffalo, 1901, and (a gold medal) at the Louisiana Purchase Exposition, St. Louis, 1904; also the gold medal of the Pennsylvania Academy of Fine Arts. He has painted many portraits and easel pictures. In sculpture his most notable works are the horses of the equestrian statues of Grant and Lincoln on the Memorial Arch in Brooklyn. He became a member of the Academy of Design in 1902.

Earle (ėrl), Mrs. (**Alice Morse**). Born at Worcester, Mass., April 27, 1853. An American writer on Colonial history. Among her works are "The Sabbath in Puritan New England" (1891), "Customs and Fashions in Old New England" (1893), "Colonial Dames and Goodwives" (1895), "Colonial Days in Old New York" (1896), "Home Life in Colonial Days" (1898), "Child Life in Colonial Days" (1899), "Stage Coach and Tavern Days" (1900), "Old Time Gardens" (1901), "Sun-dials and Roses of Yesterday" (1902), and "Two Centuries of Costume in America" (1903).

Earle*, John. Died at Oxford, Jan. 31, 1903.

Early English Text Society. A society founded in 1864 by F. J. Furnivall and directed by him. Its object is the promotion of the study of early English. It has rendered valuable service to literature in the publication of specially prepared editions of early English works. Abbreviated *E. E. T. S.*

East Africa*, British. After the surrender of the charter of the East Africa Company to the British government in 1895, the territory was divided for administrative purposes into the East Africa Protectorate, the Uganda Protectorate, and the Zanzibar Protectorate. Nairobi has been made the administrative center in place of Mombasa.

East Ham (ēst ham). A town, an eastern suburb of London, situated in the southwestern part of Essex, England. Population (1901), 96,018.

Eastman (ēst′man), **Charles Alexander (Ohiyesa).** Born at Redwood Falls, Minn., 1858. An American physician of native Sioux Indian parentage. He was graduated from Dartmouth College in 1887 and from the Boston University School of Medicine in 1890. In 1891 he married Elaine Goodale, the author. He was government physician at the Pine Ridge Agency, South Dakota, 1890–93; was in charge of the Indian work of the Young Men's Christian Association 1894–97; was attorney for the Santee Sioux at Washington, D. C., 1897–1900; and was government physician at Crow Creek, South Dakota, 1900–03. He has published "Indian Boyhood" (1902), "Red Hunters and the Animal People" (1904), "Old Indian Days" (1907), etc.

East Orange. A city of Essex County, New Jersey. Population (1900), 21,506. X

East Providence (ēst prov′i-dens). A town

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in Providence County, Rhode Island. It contains chemical and electrical works, wire-factories, etc. Population (1900), 12,138.

Eaton*, **Wyatt.** Died at Newport, R. I., June 7, 1896.

Ebeling*, **Adolf.** Died July 23, 1896.

Ebers*, **Georg.** Died at Tutzing, Bavaria, Aug. 7, 1898.

Echegaray (ā-chā-gä-rä′i), **José.** Born at Madrid, March, 1833. A Spanish mathematician, statesman, and dramatist, the foremost representative of the modern Spanish drama. He was made professor of mathematics in the Engineering College of Madrid in 1858; became a member of the Academy of Sciences in 1866; and is the author of a number of mathematical works of recognized value. He became a member of the Cortes in 1868; was minister of commerce, education, and finance 1868–74; withdrew from political life in 1874; and was again minister of finance in 1905. Among his best known works are "La esposa del vengador" (1874), "La ultima noche" (1875), "Ó locura ó santidad" (1877), "En el seno de la muerte" (1879), "El gran galeoto" (1881), "Mariana" (1892), "El hijo de Don Juan" (1892), "Mancha que limpia" (1895), and "El loco dios" (1900). Many of his plays have been translated into other languages. In 1904 he received, with Mistral, the Nobel prize for literature.

École Polytechnique*. The military students go to the École d'Application at Fontainebleau for two years, after which they enter the army as lieutenants of artillery or engineers.

Ecuador*. The executive is vested in a president, elected directly by the people for the term of four years; and the legislative is vested in a congress of two houses, the senate, consisting of two members for each province, and the house of deputies, with one deputy for every 15,000 inhabitants, elected for two years.

Eddy, Mrs. (**Mary Baker G.**). Born at Bow, Concord, N. H., July 16, 1822. The founder of Christian Science. She began to teach Christian Science in 1867, organized the first Church of Christ, Scientist, in Boston, in 1879, was ordained its pastor in 1881, and founded the Massachusetts Metaphysical College (chartered 1881). Her works include "Science and Health, with Key to the Scriptures" (the Christian Science text-book; first edition 1875), "Unity of Good" (1887), "No and Yes" (1887), "Rudimental Divine Science" (1890), "Retrospection and Introspection" (1891), "Manual of the Mother Church" (1895), "Miscellaneous Writings" (1896), etc.

Edinburgh*, **University of.** Its library contains over 200,000 volumes and 7,000 pamphlets. There are about 50 professors, besides lecturers, and the number of matriculated students is over 3,200.

Edward VII. Born at London, Nov. 9, 1841. The eldest son of Victoria: king of Great Britain and Ireland and emperor of India 1901–. See *Albert Edward*.

Edwards (ed′wärdz), **Harry Stillwell.** Born at Macon, Ga., April 23, 1855. An American journalist and author. He was assistant editor and editor of the Macon "Telegraph" 1881–87, and of the "Evening News" and "Sunday Times" 1887–88. In 1900 he became postmaster of Macon. Among his publications are "Sons and Fathers," for which he was awarded the $10,000 prize in a contest opened by the Chicago "Record" (1895), "The Marbeau Cousins" (1898), "Two Runaways; and Other Stories" (1889), "His Defense, and Other Stories" (1892), etc.

E. E. T. S. An abbreviation of Early English Text Society.

Egan (ē′gan), **Maurice Francis.** Born at Philadelphia, Pa., May 24, 1852. An American author and diplomat, envoy extraordinary and minister plenipotentiary to Denmark 1907–. He was editor of "The Freeman's Journal" 1881–88, professor of English literature at the University of Notre Dame, Indiana, 1889–95, and professor of the English language and literature in the Catholic University at Washington, D. C., 1895–1907. His works include "Preludes" (1880), "Songs and Sonnets" (1892), "Lectures in English Literature" (1894), "The Flower of the Flock" (1894), "The Chatelaine of the Roses" (1897), "From the Land of St. Lawrence" (1898), "The Leopard of Lancianus" (1898), "The Dream of Gerontius" (1903), "St. Martin's Summer" (1905), "The Ghost in Hamlet, and Other Essays" (1906), "The Wiles of Sexton Maginnis" (1909), etc.

Eggleston*, **Edward.** Died at Joshua's Rock, Lake George, N. Y., Sept. 2, 1902.

Egoist, The: a Comedy in Narrative. A psychological novel by George Meredith, published in 1879.

Egypt*. Egypt proper is administratively divided into 5 governorships (mohafzas) and 15 mudiriehs or provinces. By the campaigns of 1896–99 the authority of the government over the provinces in the Sudan was reëstablished. The predominant position of Great Britain was formally recognized by France in the *Anglo-French Agreement* (April, 1904), and a khedival decree appended thereto and approved by the Anglo-French Convention has removed most of the restrictions governing the management of finance. The great Nile dam at Assuan was completed in 1902. (See *Assuan Dam*.)

Ehrlich (ār′lich), **Paul.** Born at Strehlen, in Silesia, March 14, 1854. An eminent German physiologist, director of the Royal Institute for Experimental Therapeutics at Frankfort-on-the-Main, and professor in the University of Göttingen: especially noted for his studies in immunity. His "lateral chain theory," announced in 1897, has played an important part in the explanation of the facts of immunization. In 1908 he received, with Professor Metchnikoff, the Nobel prize in medicine.

Eidlitz (īd′litz), **Leopold.** Born at Prague, Bohemia, March 29, 1823: died at New York, March 22, 1908. An American architect. He was educated at the Polytechnic School at Prague, and, after a course of study at Vienna, came to America and established himself in New York City. He was associated with H. H. Richardson in the construction of the State House at Albany.

Eisenlohr*, **August.** Died at Heidelberg, Feb. 24, 1902.

Elbe and Trave Canal. A canal joining the Elbe at Lauenburg with the Trave at Lübeck, thus connecting the North Sea with the Baltic. It is 41 miles long, is 72 feet broad, and has seven locks. It was completed in 1900 at a cost of nearly six million dollars.

El Caney (el kä′nā). A town of Cuba, situated about 3 miles northeast of Santiago. A battle occurred here July 1, 1898, between the Spanish and the United States troops, in which the latter were victorious.

Elgar (el′gär), Sir **Edward.** Born at Broadheath, Worcestershire, England, June 2, 1857. A noted English composer, professor of music in Birmingham University from 1904. His best known works are the oratorios "The Dream of Gerontius" (1900), "The Apostles" (1903), and "The Kingdom" (1906). He has also composed much for the orchestra, including a series of variations, overtures ("Cockaigne" and "In the South"), an "introduction and "allegro" for solo quartet of strings and string orchestra. Of his earlier cantatas "Light and Life," "King Olaf," and "Caractacus" are the most notable. He was knighted in 1904.

Elgar (el′gär), **Francis.** Born at Portsmouth, England, April 24, 1845: died Jan. 17, 1909. A noted British naval architect. He was adviser in naval construction to the Japanese government 1879–81; director of dockyards at the British admiralty 1886–92; and was connected with private ship-building firms from 1892. He wrote "Ships of the Royal Navy" (1873), and numerous technical papers.

Elgin, Ninth Earl of. See *Bruce*.

Eliot*, **Charles William.** He retired from the presidency of Harvard University in 1909. His later works include "Five American Contributions to Civilization" (1897), "Educational Reform" (1898), "Charles Eliot" (1902), "More Money for the Public Schools" (1903), "The Happy Life" (new ed., 1905), "Great Riches" (1906), "Four American Leaders" (1906), "University Administration" (1908), etc.

Elkins (el′kinz), **Stephen Benton.** Born in Perry County, Ohio, Sept. 26, 1841. An American Republican cabinet officer. He was graduated at the University of Missouri in 1860 and was admitted to the bar in 1863; was delegate to Congress from New Mexico 1873–77; was secretary of war in President Harrison's cabinet 1891–93; and has been United States senator from West Virginia 1895–1901, 1901–07, and 1907–. He has large mining and railroad interests.

Ellicott*, **Charles John.** Died Oct. 15, 1905. He was bishop of Gloucester and Bristol 1863–97, and of Gloucester 1897–1905.

Elliot (el′i-ot), **Daniel Giraud.** Born at New York, March 7, 1835. An American naturalist, honorary curator of zoölogy in the Field Columbian Museum, Chicago. He has made extensive explorations in Canada, Alaska, South America, East Africa, Arabia, and elsewhere, and has published about 20 volumes and several hundred papers on zoölogical (especially mammalogical and ornithological) subjects.

Elliot (el′i-ot) **Islands.** A group of small islands in the Bay of Korea off the southeast coast of the Liao-tung peninsula. They were used by the Japanese during the Russo-Japanese war as a naval base.

Elliott (el′i-ot), **Charles.** Born in Ireland in 1792: died 1869. An American Methodist clergyman and writer. He emigrated to the United States in 1815, and 1857–1860 and 1864–67 was professor of biblical literature (and president) in the Iowa Wesleyan University. His best known work is his "Delineation of Roman Catholicism" (1841).

Ellis (el′is), **Henry Havelock.** Born at Croydon, Surrey, Feb. 2, 1859. An English man of letters and anthropologist. He edited the "Mermaid Series" of old English dramatists 1887–89, and has written "The New Spirit" (1890), "The Criminal" (1890), "Man and Woman" (1894), "Sexual Inversion" (1897), "Affirmations" (1897), "The Evolution of Modesty" (1899), "Analysis of Sexual Impulse" (1903), "Sexual Selection in Man" (1905), "The Soul of Spain" (1908), etc.

Ellis Island. A small island in upper New York Bay, about one mile from Manhattan Island. It is the property of the United States government and since 1892 has been used as an immigrant station. It receives the majority of the immigrants to the United States.

Elson (el′son), **Louis Charles.** Born at Boston, Mass., April 17, 1848. A musical writer and critic. His most important works are "National Music of America and its Sources" (1900), "Shakespeare in Music" (1901), "History of American Music" (1904), a music dictionary (1906), "Curiosities of Music" (1908), etc.

Elwell (el′wel), **Frank Edwin.** Born at Concord, Mass., June 15, 1858. An American sculptor. He studied sculpture at the École des Beaux-Arts in Paris and under Falguière, and modeled the first statue by an American sculptor to be placed in Europe (at Edam, Holland). Among his works are "Dickens and Little Nell," equestrian statue of General Hancock (Gettysburg), "Awakening of Egypt," "Greece" and "Rome" (for the New York Custom-House), "Despatch Rider," etc., and busts of Elihu Yale (for the Yale Club in New York City), Vice-President Morton, and others.

Elwood (el′wůd). A town in Madison County, Indiana. It has a trade in live stock, grains, etc., and brickyards, planing-mills, and various manufactures. Population (1900), 12,950.

Ely (ē′li), **Richard Theodore.** Born at Ripley, N. Y., April 13, 1854. An American economist. He was graduated at Columbia in 1876; studied abroad 1877–80, taking the degree of Ph.D. at Heidelberg; had charge of political economy at Johns Hopkins University 1881–92; and has since held the professorship in political economy in the University of Wisconsin. He has probably done more than any other American to awaken a popular interest in economics. He was founder of the American Economic Association and its president 1899–1901. His works include "French and German Socialism" (1883), "Problems of Today" (1888), "Outlines of Economics" (1893; rev. ed., 1908), "Socialism and Social Reform" (1894), "Monopolies and Trusts" (1900), "Studies in the Evolution of Industrial Society" (1903), etc.

Emerson (em′ėr-son), **Benjamin Kendall.** Born at Nashua, N. H., Dec. 20, 1843. An American geologist, professor of geology and mineralogy in Amherst College from 1872, and in Smith College from 1878. He is geologist of the United States Geological Survey, and was president of the Geological Society of America in 1899. His investigations have been concerned chiefly with the geology of Massachusetts.

Emmons (em′onz), **Samuel Franklin.** Born at Boston, Mass., March 29, 1841. An American geologist and mining engineer, geologist of the United States Geological Survey from 1879. He has written "Descriptive Geology of the 40th Parallel Region" (1877: with Hague), "Geology and Mining Industry of Leadville, Colorado" (1886), "Orographic Movements in the Rocky Mountains" (1879), "Geology of Lower California" (1890), "Geological Guide-book of the Rocky Mountains" (1892).

Emory*, **William Hemsley.** Died at Washington, D. C., Dec. 1, 1887.

Empire State of the South. A popular title of the State of Georgia.

Encounter Rock. A reef in the Lao-tie-shan Channel about twenty miles southeast of Port Arthur.

Encyclopædia Britannica*. The last (9th) edition was published 1875–88. Eleven supplementary volumes, including an atlas and an index to the whole work, were issued 1902–3.

Endicott*, **William Crowninshield.** Died at Boston, May 6, 1900.

Engler (eng′lėr), **Adolf.** Born at Sagan, Silesia, March 25, 1844. An eminent German botanist, professor in the University of Berlin and director of the Botanical Garden from 1889. From 1878 to 1884 he was professor at Kiel and from 1888 to 1889 at Breslau. Among his published works are "Versuch einer Entwickelungsgeschichte der Pflanzenwelt" (1872–82), and "Die natürlichen Pflanzenfamilien" (1888–1909: with Prantl and others).

English*, **Thomas Dunn.** Died at Newark, N. J., April 1, 1902.

Ennery (an-rē′), **Adolphe Philippe d'.** Born at Paris, June 17, 1811: died there, Jan. 26, 1899. A French dramatist and librettist. In 1858 he changed his name of Dennery by legal process to d'Ennery. He was a prolific writer and produced, independently or in collaboration, a large number of pieces. He wrote, with Desnoyer, "Émile, ou le fils d'un pair de France" (1831); with Dumas, "Halifax" (1842); with Dumanoir, "Don César de Bazan" (1844); with Jules Verne, "Le tour du monde en quatre-vingts jours" (1871); with Cormon, "Les deux orphelines" (1874); with Paul Ferrier, "Le trésor des Radjahs" (1894), etc.

Epaphroditus (e-paf-rō-dī′tus). 1. The messenger or delegate sent by the Apostle Paul to the church at Philippi. He visited Paul during his imprisonment at Rome. Paul characterizes him as "my brother, and companion in labour, and fellow soldier."— 2. A freedman of Nero, and his secretary. He assisted Nero in his attempt at suicide. The philosopher Epictetus was his freedman.

Ephesians. An epistle ascribed to St. Paul, forming one of the books of the New Testament. Both the authorship of the epistle and the church to which it was really addressed are in dispute.

Ephrata (ef′ra-tä). A township and borough of Lancaster County, Pennsylvania. It is noteworthy as having been the seat of the monastic community of Seventh-day German Baptists or Dunkers, founded there by Johann Conrad Beissel about 1738. The borough was incorporated in 1891. Population (1900), township, 2,390: borough, 2,451.

Ephrussi (ā-frü-sē′), **Charles.** Born at Odessa, Russia, Dec. 24, 1844: died at Paris, Sept. 30, 1905. A French art critic and editor. He was educated at Odessa and Vienna and came to Paris in 1871. In 1885 he became a proprietor of the "Gazette des Beaux-Arts" and in 1894 its director.

Epworth League (ep′wėrth lēg). A society of the Methodist Episcopal Church, organized at Cleveland, Ohio, in May, 1889, named for the birthplace of John Wesley. Its object is to strengthen the hold of each church upon the young people in its parish. Its organ is the "Epworth Herald" and its membership is over one million.

Er (ėr). A Pamphylian, the son of Armenius; a character introduced by Plato into the tenth book of "The Republic." He was slain in battle, and on the twelfth day after, as he was lying on the funeral pile, returned to life and told what he had seen in the other world.

Erckmann*, Émile (see *Erckmann-Chatrian*). Died at Lunéville, March 14, 1899.

Erebus*. Height, about 13,000 feet (Shackleton).

Eritrea*. The colony extends on the coast of the Red Sea from Cape Kasar (18° 2′ N.) to Cape Dumeirah on the strait of Babel-Mandeb (12° 30′ N.), about 670 miles. As a result of the defeat of the Italians at Adowa in 1896, the extent of the colony toward the interior has been much restricted. The inland boundary was defined (by treaty of 1891, protocols of 1898, 1899, and 1901, and agreement concluded in 1901) as running from Ras Kasar to Barka, thence to Sabderat, 13 miles east of Kassala, thence southward about 120 miles to the Atbara, and southeastward to Obok. By the treaty of July 10, 1900, between Italy and Abyssinia, Eritrea annexed the province of Cunama; and by the treaty of May 15, 1902, between Great Britain, Italy, and Abyssinia, the boundaries between Eritrea and Sudan, withdrawn from the Atbara, were determined by a line running southward from Labderah to Abu Gamel on the Gash and Ombruga on the Setit river. It has the control of its own administration and finance, under a civil governor appointed by the king. Asmara is the seat of government. Area, about 88,500 square miles.

Erman (er′män), **Adolf.** Born at Berlin, Oct. 31, 1854. An eminent German Egyptologist, professor in the University of Berlin from 1883, and director of the Egyptian department of the Royal Museum from 1885. Among his works are "Die Pluralbildung des Ägyptischen" (1878), "Neuägyptische Grammatik" (1880), "Ägypten und ägyptisches Leben im Altertum" (1885–87), "Ägyptische Grammatik" (2nd ed. 1902), "Zaubersprüche für Mutter und Kind" (1901), etc.

Eros. 2. An asteroid discovered in 1898, remarkable from the fact that the greater part of its orbit lies within that of Mars.

Escalante (ās-kä-lạn′tā), **Francisco Silvestre Velez.** A Spanish Franciscan friar, the first explorer of Utah and "ministro doctrinero" of Zuñi. In 1776 he went from Zuñi to Santa Fé to explore a road to connect the missions of the Rio Grande with those of California. With Escalante were three civilians, four soldiers, and his brother friar Dominguez. They crossed the tributaries of the San Juan, went down the Dolores, crossed Grand river, the Book Plateau, the head of White river, and finally the Green (which he called "San Buenaventura") some miles above the mouth of the Uinta. Going up the latter they surmounted the Wasatch range and descended to Utah Lake. They heard of Salt Lake, but did not go there. Turning then south they decided, October 7th, that winter would overtake them before they could reach Monterey and that they would strike for the Moki towns. Crossing the Sevier and passing the sites of Fillmore, Beaver, and Parowan they reached the Virgin near St. George or Toquerville. Thence they went south, southeast, north, etc., as the topography compelled, finally arriving at the Ute Ford of the Colorado about where the 37th parallel intersects the river. Fording here they at length reached the Moki towns and Zuñi. This ford has since been known as *El Vado de los Padres* (the Crossing of the Fathers).

Escobedo*, Mariano. Died May 22, 1902.

Eslava (es-lä′vä), **Miguel Hilarion.** Born at Burlada, Spain, Oct. 21, 1807: died at Madrid, July 23, 1878. A noted Spanish musician and composer. His principal work is "Lira Sacro-Hispaña," a collection published in Madrid in 1869 in 10 volumes. He wrote, among other operas, "Il Solitario" (1841) and "Pedro el Cruel" (published about the same time).

Esmarch*, Johannes Friedrich August von. Died at Kiel, Feb. 23, 1908.

Espejo (ās-pā′hō), **Antonio de.** A wealthy Spaniard who went to New Mexico, 1582–83, with several Franciscan friars. At the close of 1582 he was on the Rio Grande near El Paso. He went up the river, passing native settlements, and arrived at Tiguex. Six leagues on up river was Quires; thence fourteen leagues, Cunames; thence five or six leagues northwest, Ameies; thence fifteen leagues west, Acoma; and twenty-four leagues west, Zuñi. He continued to the San Francisco mountains. Returning via Zuñi he again visited the Rio Grande pueblos, whence he went east to Hubates, north to Tamos, and then east to Pecos river, which he followed out of the country, naming it 'Rio de las Vacas' because of the many buffalo he saw.

Esprit (es-prē′), **Pierre d'.** See *Radisson.*

Eucken (oi′ken), **Rudolf Christoph.** Born in Aurich, East Friesland, Jan. 5, 1846. A German philosopher, professor of philosophy at Jena from 1874. He has published "Geschichte und Kritik der Grundbegriffe der Gegenwart" (1878, 1892), "Geschichte der philosophischen Terminologie" (1879), "Gesammelte Aufsätze zur Philosophie und Lebensanschauung" (1903), etc.

Evans (ev′ạnz), **Arthur John.** Born at Nash Mills, Hertfordshire, England, 1851. An English archæologist, keeper of the Ashmolean Museum from 1884, and fellow of Brasenose College, Oxford. He is especially known for his explorations in Crete, which were begun in 1893 and resulted in the important discovery of a pre-Phenician script and the excavating (1900–08) of a prehistoric palace at Cnosus (palace of Minos) containing many remains of Minoan civilization.

Evans (ev′anz), Sir **John.** Born at Britwell Court, Buckinghamshire, Nov. 17, 1823: died there, May 31, 1908. An English antiquarian, archæologist, and numismatist. His works include "The Coins of the Ancient Britons" (1864: supplement, 1890), "The Ancient Stone Implements of Great Britain" (1872), "The Ancient Bronze Implements of Great Britain and Ireland" (1881), etc.

Evans (ev′ạnz), **Robley Dunglison.** Born in Floyd County, Va., Aug. 18, 1846. An American naval officer, appointed rear-admiral in 1901. He was graduated at the United States Naval Academy in 1863; served in the Union Navy during the last years of the Civil War (Fort Fisher); commanded the Yorktown which was sent to Valparaiso, Chile, in 1891, when trouble occurred between that country and the United States and sailors from the Baltimore were attacked in the streets of Valparaiso; was promoted captain in 1893; and commanded the battle-ship Iowa in Admiral Sampson's squadron during the Spanish war, taking part in the battle of Santiago, July 3, 1898. In 1908 he commanded the battle-ship fleet as far as San Francisco in its voyage around the world. He retired in August, 1908.

Evans (ev′ạnz), **Thomas Wiltberger.** Born at Philadelphia, Pa., Dec. 23, 1823: died at Paris, France, Nov. 14, 1897. An American dentist. He went to Paris and became the official dentist of Napoleon III. and Empress Eugénie; was prominent in the organization of the Red Cross Society; and founded the "American Register" in Paris, one of the first English newspapers published in that city. It was through his efforts that the Empress Eugénie was rescued from the violence of the Commune in 1870, and reached England in safety.

Evarts*, William Maxwell. Died at New York, Feb. 28, 1901.

Everett (ev′ėr-et), **Charles Carroll.** Born at Brunswick, Me., June 19, 1829: died at Cambridge, Mass., Oct. 17, 1900. An American Unitarian minister and educator. He was graduated at Bowdoin College in 1850; was minister of the Independent Congregational (Unitarian) Church at Bangor, Maine, 1859–69; and was appointed professor of theology at Harvard University in 1869 and dean of the Harvard Divinity School in 1878. He wrote "The Science of Thought" (1869), "Religions before Christianity" (1883), "Fichte's Science of Knowledge" (1884), "The Gospel of Paul" (1893), "Essays Theological and Literary" (1901), etc.

Everett (ev′ėr-et), **William.** Born Oct. 10, 1839: died Feb. 16, 1910. An American educator and author, son of Edward Everett. He was graduated at Harvard University in 1859 and at Trinity College, Cambridge, England, in 1863. He was admitted to the bar in Boston 1866, but never practised, and in 1872 was licensed to preach in the Unitarian Church. He was tutor and later assistant professor of Latin in Harvard University 1870–77; master of Adams Academy, Quincy, Mass., 1877–93; and was Democratic member of Congress 1893–95. In 1897 he was recalled to the mastership of Adams Academy. Among his publications are "On the Cam" (1865), "School Sermons" (1882), "Thine, not Mine" (1890), "The Italian Poets since Dante" (1904), etc.

Ever Faithful Isle. A name formerly given to the island of Cuba.

Evermann (ev′ėr-mạn), **Barton Warren.** Born in Monroe County, Iowa, Oct. 24, 1853. An American biologist, ichthyologist and assistant in charge of the scientific work of the United States Bureau of Fisheries from 1903 and curator of the division of fishes in the United States National Museum from 1905. He has published "The Fishes of North and Middle America" (1896–1900: with David Starr Jordan), "Food and Game Fishes of North America" (1902: also with Jordan), "Fishes of Hawaii" (1905), "Fishes of Alaska" (1907), etc.

Eversley, Viscount. See *Shaw-Lefevre, Charles.*

Ewald (ā′väld), **Karl.** Born Oct. 15, 1856: died at Copenhagen, Feb. 26, 1908. A noted Danish novelist. His works include stories of modern life, historical romances, fairy tales, etc. He was called the "Danish Hans Andersen."

Ewing (ū′ing), Mrs. (**Juliana Horatia Gatty**). Born at Ecclesfield, Yorkshire, 1841: died at Bath, May 13, 1885. An English writer for the young, daughter of Margaret Gatty. She married in 1867 Major Alexander Ewing of the army pay department. Her works include "Melchior's Dream" (1862), "The Brownies" (1870), "A Flat-iron for a Farthing" (1872), "Lob-lie-by-the-Fire" (1873), "We and the World" (1873), "Six to Sixteen" (1875), "Jan of the Windmill" (1876), "Jackanapes" (1883), "The Story of a Short Life" (1885), etc.

Excelsior State. A popular name for the State of New York: from the motto "Excelsior" on its shield.

Exner (eks′nėr), **Siegmund.** Born at Vienna, Austria, April 5, 1846. An Austrian physiologist, professor at the University of Vienna from 1874. His works include "Untersuchungen über die Lokalisation der Funktionen in der Grosshirnrinde des Menschen" (1881), "Die Physiologie des Fliegens und Schwebens in den bildenden Künsten" (1882), etc.

Eyre*, Edward John. Died Nov. 30, 1901.

Eyre (ãr), **Wilson.** Born at Florence, Italy, Oct. 30, 1858. An American architect. He was educated at schools in Italy and America and acquired his professional training in the office of James P. Sims in Boston. He has been especially successful in domestic architecture.

Fabian (fā′bi-ạn) **Society.** An organization for the advancement of socialism, formed as a result of informal conferences for the discussion of social questions held by Thomas Davidson in London in 1883. The Society (named for the Roman Fabius) held its first public meetings in 1888 and entered on a definite propaganda of socialism. The addresses have been published as the "Fabian Essays" (1889). "Tracts" have been issued at intervals.

Fabre*, Ferdinand. Died at Paris, Feb. 11, 1898.

Faed*, John. Died at Gatehouse of Fleet, Scotland, Oct. 22, 1902.

Faed*, Thomas. Died at London, Aug. 17, 1900.

Faguet (fä-gā′), **Émile.** Born at La Roche-sur-Yon, France, Dec. 17, 1847. A French historical critic, professor at the Sorbonne from 1890. He was dramatic critic of the "Soleil" for three years, and in 1896 succeeded Jules Lemaître on the "Journal des Débats." In 1900 he was elected to the French Academy, succeeding Cherbuliez. Among his works are studies of the four literary centuries of France, "Corneille" (1885), "La Fontaine" (1889), "Notes sur le théâtre contemporain" (1889–91), "Voltaire" (1894), "Flaubert" (1899), "Histoire de la littérature française" (1900), "André Chénier" (1902), "En lisant Nietzsche" (1904), "L'anticléricalisme" (1906), etc.

Fairbanks (fãr′bangks), **Charles Warren.** Born near Unionville Center, Ohio, May 11, 1852. An American lawyer and Republican statesman, Vice-President of the United States 1905–09. He was graduated at the Ohio Wesleyan University, Delaware, Ohio, in 1872 and was admitted to the (Ohio) bar in 1874. In 1898 he was appointed a member of the Joint High British-American Commission and chairman of the American commissioners. He was elected United States senator from Indiana in 1897 and in 1903, and Vice-President of the United States in 1904.

Fairchild (fãr′chīld), **Charles Stebbins.** Born at Cazenovia, N. Y., April 30, 1842. An American lawyer, banker, and cabinet officer. He was graduated at Harvard in 1863; practised law in Albany and New York City 1865–85, being deputy attorney-general of the State 1874–75, and attorney-general 1876–77; and was assistant secretary of the United States treasury 1885–87, and secretary 1887–89.

Fairchild*, James Harris. Died March 19, 1902. He resigned the presidency of Oberlin College in 1899.

Fairchild*, **Lucius.** Died May 23, 1896.

Faithfull*, **Emily.** Died at Manchester, May 31, 1895.

Falguière*, **Jean Alexandre Joseph.** Died at Paris, April 19, 1900.

Falk*, **Paul Ludwig Adalbert.** Died at Hamm, Westphalia, July 7, 1900.

Falke*, **Jakob.** Died June 12, 1897.

Fallières (fäl-yãr′), **Clément Armand.** Born at Mézin, Lot-et-Garonne, Nov. 6, 1841. A French statesman. He was elected to the Chamber of Deputies in 1876; was minister of the interior 1882–83 and 1887, minister of public instruction 1883–85 and 1889–90, minister of justice 1887–88 and 1890–92, senator 1889–1906, and president of the Senate 1899–1906; and was elected President of the French Republic January 17, 1906.

Fame, Hall of. See *Hall*.

Fane, Violet. The pseudonym of Lady Currie (Mrs. Mary Montgomerie Singleton).

Fantin-Latour*, **Ignace Henri Jean Théodore.** Died at Paris, Aug. 25, 1904.

Farina (fä-rē′nä), **Salvatore.** Born at Sorso, Italy, Jan. 10, 1846. An Italian novelist and journalist. Among his works are "Fiamma vagabonda" (1872), "Il tesoro di Donnina" (1873), "Amore bendato" (1875), "Oro nascosto" (1878), "Mio figlio" (1879–81), "Il Signor Io," his best-known book (1882), "Amore ha cent' occhi" (1882), "Pe' begli occhi della gloria" (1887), "Più forte dell' amore" (1890), "Il numero 13" (1895), "Madonnina Bianca (Vanitas)" (1897), "Fino alla morte" (1902), etc.

Farman (fär′man), **Henri.** Born in Paris (of an English father and French mother) in 1873. An English aviator. He began experiments with a Voisin biplane in August, 1907; on Jan. 13, 1908, won the Deutsch-Archdeacon prize for the first machine to fly one kilometer in a complete circle; on July 6, 1908, won the Armengaud prize offered for the first machine to remain over 15 minutes in the air; came to the United States in August, 1908; Oct. 30, 1908, made the first flight from city to city (Bouy to Rheims); and on Aug. 27, 1909, won the Grand Prix de la Champagne at Rheims by a record flight of 180 kilometers (111.848 miles) in 3 hrs. 4 min. 56⅗ sec. He continued his flight beyond the official time-limit until he had covered 190 kilometers (118.06 miles).

Farmer of St. Ives. A name given to Oliver Cromwell. He rented grazing lands at St. Ives, Huntingdonshire, 1631–36.

Farrar*, **Frederic William.** Died at Canterbury, March 22, 1903. He became dean of Canterbury in 1895.

Farren*, **Ellen** or **Nelly.** Died April 28, 1904.

Fashoda Affair. The culminating incident of the effort of France to gain control of the upper Nile. See *Marchand*.

Faucit*, **Helen,** Lady **Martin.** Died Oct. 31, 1898.

Faunce (fâns), **William Herbert Perry.** Born at Worcester, Mass., Jan. 15, 1859. An American clergyman and educator, president of Brown University from 1899. He was graduated at Brown University in 1880, and was pastor of the State Street Baptist Church, Springfield, Massachusetts, 1884–89, and of the Fifth Avenue Baptist Church, New York City, 1889–99.

Faure*, **François Félix.** Died at Paris, Feb. 16, 1899.

Fauré (fō-rā′), **Gabriel.** Born at Pamiers, France, May 13, 1845. A French composer. He has composed an opera, "L'Organiste" (1885), a symphony, incidental music to several plays (including "Pelléas et Mélisande"), a number of highly esteemed songs, a violin sonata, and piano pieces.

Favart*, **Marie** (**Pierette Ignace Pinaud**). Died at Paris, Nov. 11, 1908.

Fay*, **Theodore Sedgwick.** Died at Berlin, Nov. 24, 1898.

Faye*, **Hervé Auguste Étienne Alban.** Died at Paris, July 4, 1902.

Fayrer*, Sir **Joseph.** Died May 21, 1907.

Feng-huang-cheng (feng-hwang-cheng′). A town in southern Manchuria situated about forty miles northwest of the mouth of the Yalu. It was captured from the Russians by the Japanese under Kuroki, May 6, 1904. In 1907 it was opened to international trade.

Ferdinand IV.* Grand Duke of Tuscany. Died at Salzburg, Jan. 17, 1908.

Fernandez de Castro*, **Manuel.** Died at Madrid, May 7, 1895.

Ferrari*, **Luigi.** Died at Venice, May 12, 1894.

Ferraris (fä-rä′rēs), **Galileo.** Born at Livorno, Piedmont, Italy, Oct. 31, 1847: died at Turin, Feb. 7, 1897. An eminent Italian physicist, noted for his researches in electricity and especially for his discovery of the principle of the rotary field. From 1879 he was professor of physics at the Royal Industrial Museum and instructor of physics in the Superior Military Academy, in Turin. Among his works are "Sulla illuminazione elettrica" (1879), and "Lezioni di elettrotecnica" (1898).

Ferrelo (fā-rā′lō), **Bartolomeo:** correctly **Ferrer.** A Spanish navigator of about the middle of the sixteenth century. He accompanied Cabrillo as pilot on his expedition to the western coast of California 1542–43.

Ferrer. See **Ferrelo.**

Fétis*, **Édouard.** Died at Brussels, Jan. 31, 1909.

Fiala (fē-ä′lä), **Anthony.** Born at Jersey City, N. J., Sept. 19, 1869. An American arctic explorer. He was a member of the Baldwin-Ziegler expedition 1901–02, and commanded the Ziegler expedition which sailed from Tromsö, Norway, July, 1903, and attained lat. 82° 13′ N., returning in 1905. He is the author of "Fighting the Polar Ice" (1906).

Fichel*, **Benjamin Eugène.** Died at Paris, Feb. 1, 1895.

Fick*, **Adolf.** Died at Blankenburg, Aug. 21, 1901.

Fick*, **August.** He was appointed professor of comparative philology at Breslau in 1887.

Fiebeger (fē′be-gėr), **Gustave Joseph.** Born at Akron, Ohio, May 9, 1858. An officer of engineers and educator, professor of engineering and the art of war in the United States Military Academy. He was graduated from the Academy in 1879, and was assistant professor there 1883–88. His publications include "Field Fortification" (1901), "Civil Engineering" (1904), etc.

Field*, **Eugene.** Died at Chicago, Nov. 4, 1895. His works included "The Denver Tribune Primer" (1882), "Culture's Garland" (1887), "A Little Book of Profitable Tales" (1890), "A Little Book of Western Verse" (1890), "With Trumpet and Drum" (1892), "Echoes From the Sabine Farm" (1893), "The Holy Cross, and other tales" (1893), "A Second Book of Verse" (1893), "Love-songs of Childhood" (1894), "The House" (1896), "Second Book of Tales" (1896), "Songs, and other verse" (1896), "Eugene Field, an auto-analysis" (1896), "Love-affairs of a Bibliomaniac" (1896), "Lullaby-land" (1897), etc.

Field*, **Henry Martyn.** Died at Stockbridge, Jan. 26, 1907.

Field (fēld), **Kate.** Born at St. Louis, Mo., 1838: died at Honolulu, Hawaii, May 19, 1896. An American actress, journalist, and lecturer. She established a periodical, "Kate Field's Washington," in 1890, discontinued shortly before her death.

Field, (fēld), **Marshall.** Born at Conway, Mass., Aug. 26, 1835: died at New York, Jan. 16, 1906. An American merchant. He went to Chicago in 1856 and in 1860 entered into partnership with Potter Palmer and Levi Z. Leiter. Later, on the withdrawal of the two latter, the firm became Marshall Field and Company. He founded the Field Columbian Museum in Chicago.

Field*, **Stephen Johnson.** Died at Washington, D. C., April 9, 1899. He was associate justice of the United States Supreme Court 1863–97.

Field Columbian Museum. A museum situated at the north end of Jackson Park, Chicago, formed out of the Art Building of the World's Columbian Exposition of 1893 at the expense of Marshall Field. It contains collections in anthropology, ethnology, geology, natural history, etc.

Finck (fingk), **Henry Theophilus.** Born at Bethel, Mo., Sept. 22, 1854. An American critic and writer on musical and other subjects. He was graduated from Harvard in 1876, and since 1881 has been musical critic on the New York "Evening Post." He has published "Romantic Love and Personal Beauty" (1887), "Chopin, and other Musical Essays" (1889), "Wagner and his Works" (1893), "Primitive Love and Love Stories" (1899), "Songs and Song Writers" (1900), "Edvard Grieg" (1906), "Grieg and his Music" (1909), and books of travel in Spain, California, and Japan.

Finland*. The administration is vested in a national parliament consisting of one chamber of 200 members chosen by direct and proportional election. There are 16 electoral districts with a representation proportioned to the population. The suffrage is possessed by all citizens, male or female, above the age of 24 years.

Finlay (fin′lā), **Charles John.** Born at Puerto Principe, Cuba, Dec. 3, 1833, of English parents. An American physician, chief sanitary officer of Cuba from 1902. He was graduated from Jefferson Medical College, Philadelphia, in 1855. He originated (1881) the theory, since demonstrated, that yellow fever is transmitted by a species of mosquito (*Stegomyia fasciata*, Theo.).

Finsen (fin′sen), **Niels Ryberg.** Born at Thorshavn in the Faroe Islands, Dec. 15, 1860: died at Copenhagen, Sept. 24, 1904. A Danish physician, noted for his application of solar and electric light to the cure of diseases of the skin, especially of lupus. He was prosector at Copenhagen in 1890–93, and thereafter devoted himself to the development of the light-cure. He published a number of works on this subject. In 1903 he received the Nobel prize in medicine.

Fiorelli*, **Giuseppe.** Died at Naples, Jan. 29, 1896.

Firth (fėrth), **Charles Harding.** Born at Sheffield, England, March 16, 1857. A noted English historian and educator. He was educated at Balliol College, Oxford; was lecturer at Pembroke College, Oxford, 1887–93; was lecturer in English history at the University of Oxford 1900; was fellow of All Souls' College 1901; and has been regius professor of Modern History at Oxford since 1904. In 1903 he was made a fellow of the British Academy. He is the author of "Scotland and the Protectorate" (1899), "Oliver Cromwell and the Rule of the Puritans in England" (1900), "Cromwell's Army" (1902), etc., and has edited numerous biographical and historical volumes.

Fischer (fish′ėr), **Emil.** Born at Euskirchen, Prussia, Oct. 9, 1852. A noted German chemist, professor in the University of Berlin from 1892. His most notable achievement is the production, synthetically, of the simpler sugars. He has written "Anleitung zur Darstellung organischer Präparate" (6th edition 1901), etc. He received the Nobel prize in chemistry in 1902.

Fischer*, **Ernst Kuno Berthold.** He died at Heidelberg, July 5, 1907.

Fisher (fish′ėr), Sir **John Arbuthnot.** Born Jan. 25, 1841. A British naval officer, first sea-lord of the Admiralty 1904–05, and admiral of the fleet 1905–. He served in the Crimean (1855), Chinese (1859–60), and Egyptian (1882) wars, became vice-admiral in 1890, and was lord of the Admiralty 1892–97, a delegate to the peace conference at The Hague in 1899, commander-in-chief of the Mediterranean station 1899–1902, second naval lord of the Admiralty 1902–03, and commander-in-chief at Portsmouth 1903–04. In 1905 he was made a member of the Order of Merit. He was knighted in 1894.

Fiske*, **John** (originally **Edmund Fiske Green**). Died July 4, 1901.

Fiske (fisk), Mrs. (**Minnie Davey**): known as **Minnie Maddern Fiske.** Born at New Orleans, La., Dec. 19, 1865. An American actress. She took her mother's maiden name of Maddern. She went on the stage at the age of three and has starred since she was sixteen. In 1890 she married Harrison Grey Fiske, journalist and playwright. Her principal successes have been made in "Tess of the D'Urbervilles," "Becky Sharp," "Leah Kleschna," "Salvation Nell," etc.

Fisk University. An institution at Nashville, Tennessee, founded in 1865 by the American Missionary Association of New York and the Western Freedman's Aid Commission for the purpose of providing Christian education for the colored people of the South. It offers courses in preparation for the degrees of bachelor of arts and bachelor of science, and has a theological, a music, and a normal school. The students number over 550 and the alumni about 700. The endowment is less than $70,000. It has also a college preparatory department and a training-school.

Fitch (fich), **William Clyde.** Born at Elmira, New York, May 2, 1865: died at Paris, Sept. 4, 1909. An American playwright. He was graduated at Amherst College in 1886, and since 1889 has produced plays for the stage. Among them are "Barbara Frietchie," "Captain Jinks of the Horse Marines," "Beau Brummel," "The Climbers," "The Girl and the Judge," "The Girl with the Green Eyes," "The Woman in the Case," etc.

Flammarion*, **Camille.** His later works include "La fin du monde" (1893), "L'inconnu et ses problèmes psychiques" (1900), "Les éruptions volcaniques et les tremblements de terre" (1902), and "La planète Mars et ses conditions d'habitabilité" (1909).

Flandrin*, **Jean Paul.** Died at Paris, March 9, 1902.

Fletcher (flech′ėr), **Banister.** Born 1833: died at Hampstead, London, July 5, 1899. An English architect. He was trained in architecture in the office of Charles James Richardson (author of several books on Elizabethan architecture), and was professor of architecture and building construction in King's College, London, where he created an excellent school with a fine museum. His best known publication is the "History of Architecture" (1896: 4th ed. 1901), written with the assistance of his son Banister F. Fletcher.

Flexner (fleks′nėr), **Simon.** Born at Louisville, Kentucky, March 25, 1863. An American pathologist and bacteriologist. He has been director of the laboratories of the Rockefeller Institute for Medical Research, in New York City, from 1903. He has published various technical papers and monographs.

Florida*. The State has 46 counties. It sends 3 representatives to Congress and has 5 electoral votes.

Flower*, **Roswell Pettibone.** Died at Eastport, Long Island, N. Y., May 12, 1899.

Flower*, Sir **William Henry.** Died at London, July 1, 1899.

Fogazzaro (fō-gät-zä′rō), **Antonio.** Born at Vicenza, Italy, March 25, 1842. An Italian poet and novelist. Among the best known of his works are "Miranda" (1874), "Valsolda," a volume of poems (1876), "Malombra" (1881), "Daniel Cortis" (1885), "Il mistero del poeta" (1888), "Piccolo mondo antico" (1896), "Piccolo mondo moderno" (1900); two volumes of essays, "Discorsi" (1898) and "Ascensioni umane" (1899); and a book of plays, "Scene" (1903). His "Il Santo" (1905) was placed on the condemnation list by the Congregation of the Index in 1906 because of its liberal utterances in regard to the Roman Catholic Church.

Folk (fōlk), **Joseph Wingate.** Born at Brownsville, Tenn., Oct. 28, 1869. An American lawyer and Democratic politician, governor of

Missouri 1905–09. As circuit attorney of St. Louis, 1900–04, he became noted for the prosecution of bribery cases.

Folkething (fōl'ke-ting). [Dan., < *folk*, folk (= G. *volk*), + *thing*, a meeting (of lawmakers): see *Landsthing*.] The lower house of the Danish parliament or Rigsdag. It consists of 114 members elected for three years by universal suffrage. All matters regarding the budget and taxation must first be introduced into the Folkething and discussed by it before being taken up by the Landsthing or upper house.

Fontane (fòn-tän'), **Theodor.** Born at Neuruppin, Prussia, Dec. 30, 1819: died at Berlin, Sept. 20, 1898. A German poet, novelist, and essayist. He was educated at the Industrial School in Berlin, and was editor of the English department of the “Neuen Preussischen Zeitung” (1860–70), and dramatic critic of the “Vossische Zeitung” (1870–90). Among his works are “Aus England: Studien und Briefe” (1860), “Jenseit des Tweed: Bilder und Briefe aus Schottland” (1860), “Balladen” (1861), “Vor dem Sturm” (1878), “L'Adultera” (1882), “Graf Petöfy” (1884), “Irrungen, Wirrungen” (1888), “Effi Briest” (1895), “Der Stechlin” (1899), etc.

Foote (fut), **Arthur.** Born at Salem, Mass., March 5, 1853. An American composer and organist, a pupil of B. J. Lang and J. K. Paine. He has composed an overture, “In the Mountains”; a symphonic prologue, “Francesca da Rimini”; a suite for orchestra in D minor, a suite in E major for strings, a piano quintet, quartet, and trio, two string quartets, and other chamber music; an organ suite and other organ music; and many piano pieces and songs.

Foraker (for'a-kėr), **Joseph Benson.** Born near Rainsboro, Ohio, July 5, 1846. An American lawyer and politician. He served in the Civil War; was graduated from Cornell in 1869; was admitted to the (Ohio) bar; was judge of the Superior Court, Cincinnati, 1879–82; was elected governor of Ohio in 1885 and 1887; and was Republican United States senator from Ohio 1897–1909. He was delegate at large from Ohio to the National Republican Conventions 1884–1904, and in 1896 and 1900 presented the name of McKinley for nomination to the presidency.

Forbes*, **Archibald.** Died at London, March 30, 1900.

Force (fōrs), **Manning Ferguson.** Born at Washington, D. C., Dec. 17, 1824: died near Sandusky, Ohio, May 8, 1899. An American soldier and writer, son of Peter Force. He studied law, enlisted in the Northern army in the Civil War and at its close received the brevet rank of major-general of volunteers. He was judge of the Superior Court of Cincinnati 1877–87. His works include “From Fort Henry to Corinth” (1881), “Marching across Carolina” (1883), “Personal Recollections of the Vicksburg Campaign” (1885), etc.

Ford, Paul Leicester. Born at Brooklyn, N. Y., 1865: died at New York, May 8, 1902. An American author. He wrote “The Honorable Peter Stirling” (1894), “The True George Washington” (1896), “The Story of an Untold Love” (1897), “The Many-sided Franklin” (1899), “Janice Meredith” (1899), “Wanted: a Matchmaker” (1900), “A House Party” (1901), “Wanted: a Chaperon” (1902), “Love Finds the Way” (1904), “Thomas Jefferson” (1904), “His Version of It” (1905), “A Warning to Lovers” (1906), etc.

Ford (fōrd), **Worthington Chauncey.** Born at Brooklyn, N. Y., Feb. 16, 1858. An American historian, economist, and statistician, chief of the division of manuscripts in the Library of Congress since 1902. He was chief of the Bureau of Statistics of the Department of State 1885–89, and of the Treasury Department 1893–98; was in the Boston Public Library 1897–1902; and was lecturer on statistics at the University of Chicago in 1901. He is the author of “American Citizen's Manual” (1882–83), “The Standard Silver Dollar” (1884), “George Washington” (1900), “John Quincy Adams” (1902), and “The Case of Samuel Shrimpton” (1905); and has edited “The Writings of George Washington” (1889–91), etc.

Forrest (for'est), Sir **John.** Born in Western Australia, Aug. 22, 1847. An Australian explorer and statesman. He led an expedition into central Australia in search of Dr. Leichhardt in 1869; conducted explorations along the coast from Perth to Adelaide in 1870, and through the center of Australia from Champion Bay to the telegraph line between Adelaide and Fort Darwin in 1874; was engaged for several years in the trigonometrical survey of Western Australia; was first premier and treasurer of Western Australia 1890–1901; and was minister of defense for the Commonwealth of Australia 1901–03, minister of home affairs 1903–04, treasurer 1905–07, and acting prime minister March–June, 1907.

Forsyth*, **William.** Born Oct. 25, 1812: died at London, Dec. 26, 1899.

Fort Salisbury. A town in Mashonaland, South Africa. See *Salisbury*.

Foss (fos), **Cyrus David.** Born Jan. 17, 1834: died Jan. 29, 1910. An American clergyman, a bishop of the Methodist Episcopal Church from 1880. He was graduated at Wesleyan University in 1854; entered the itinerant ministry in 1857; and was president of Wesleyan University 1875–80. He made official visits to the missions of his church in Europe in 1886, in Mexico in 1893, and in India and Malaysia 1897–98, and 1906–07 made a tour of missionary observation around the world. Among his works are “From the Himalayas to the Equator” (1899), “In Sickness and Accidents” (1895), and “Religious Certainties” (1905).

Foster*, **Birket.** Died March 27, 1899.

Foster*, **Charles.** Died at Springfield, O., Jan. 9, 1904.

Foster (fos'tėr), **John Watson.** Born in Pike County, Ind., March 2, 1836. An American lawyer and diplomatist. He was graduated at the Indiana State University in 1855 and was admitted to the (Indiana) bar. He served in the Union Army; was minister to Mexico 1873–80, to Russia 1880–81, and to Spain 1883–85; was secretary of state 1892–93; was United States agent in the Bering Sea Arbitration at Paris in 1893; participated (by the invitation of the Emperor of China) in the peace negotiations between China and Japan in 1895; was a member of the Anglo-Canadian Commission in 1898; was United States agent at the Alaskan Boundary Tribunal at London in 1903; and was the representative of China at the second Hague conference in 1907. He has published “A Century of American Diplomacy” (1900), “American Diplomacy in the Orient” (1903), “Arbitration and the Hague Court” (1904), “The Practice of Diplomacy” (1906), etc.

Foster, Sir **Michael.** Born at Huntingdon, March 8, 1836: died at London, Jan. 29, 1907. An English physiologist. He was appointed professor of physiology at University College, London, in 1869; lecturer on physiology in Trinity College, Cambridge, 1870; was professor of physiology in Cambridge University 1883–1903; and was member of Parliament for London University from 1900. He was secretary of the Royal Society 1881–1903. He was knighted in 1899.

Foster*, **Randolph Sinks.** Died May 1, 1903.

Foster (fos'tėr), **Robert Frederick.** Born at Edinburgh, Scotland, May 31, 1853. An authority on indoor games, especially cards. He was educated as a civil engineer and architect, retiring from practice in 1893. Since 1895 he has been card editor of the New York “Sun.” He has published twenty-six hand-books on games, including the “Whist Manual” (1890), “Foster's Hoyle” (1897), “Foster's Complete Bridge” (1906), etc. He was the inventor of the eleven rule and of the self-playing cards, and originated the present card notation.

Fouillée (fö-yā'), **Alfred Jules Émile.** Born at La Pouëze, Maine-et-Loire, France, Oct. 18, 1838. A French philosophical and sociological writer. He taught in various colleges and schools, including the University of Bordeaux and the Normal School at Paris, and in 1879 retired to Mentone. He has written “La philosophie de Platon” (1869), “La philosophie de Socrate”, (1874), “Histoire de la philosophie” (1875), “Critique des systèmes de morale contemporaine” (1883), “La propriété sociale et la démocratie” (1884), “L'évolutionisme des idées-forces” (1893), “La psychologie des idées-forces” (1893), “Le mouvement positiviste et la conception sociologique du monde” (1896), “Le mouvement idéaliste et la réaction contre la science positiviste” (1896), “Psychologie du peuple français” (1898), “Nietzsche et l'immoralisme” (1902), “Esquisse psychologique des peuples européens” (1903), etc.

Four Peaks, The. Mountains in Paragua, in the Philippine Islands. Cleopatra's Needle is the highest. Heights, 4,730, 4,800, 4,900, and 5,200 feet.

Fowler (fou'lėr), **Charles Henry.** Born at Burford, Ontario, Aug, 11, 1837: died at New York, March 20, 1908. An American clergyman, a bishop of the Methodist Episcopal church from 1884. He entered the ministry in 1861, and was president of the Northwestern University 1872–76. In 1885 he visited the missions of his church in South America, and in 1888 went on a tour of visitation around the world. He organized the Peking and Nanking universities, established the first Methodist Episcopal church in St. Petersburg, established McClay College of Theology in southern California, and assisted in founding Nebraska Wesleyan University. He published “Colenso's Fallacies” (1863), “Missions and World Movements” (1904), “Addresses on Notable Occasions” (1908), etc.

Fowler (fou'lėr), **Frank.** Born at Brooklyn, N. Y., July 12, 1852. An American painter. He studied with Edwin White, N. A., in Florence, Italy, and for six years in Paris at the École des Beaux-Arts, and under Carolus Duran. He is a member of the National Academy of Design, and was a member of the Society of American Artists.

Fowler (fou'lėr), Sir **Henry Hartley,** Viscount Wolverhampton. Born at Sunderland, England, May 16, 1830. A British Liberal statesman. He sat for Wolverhampton in the House of Commons 1880–1908; and was under-secretary to the home department 1884–85, financial secretary to the treasury 1886, president of the Local Government Board 1892–94, secretary of state for India 1894–95, chancellor of the duchy of Lancaster 1905–08, with a seat in the cabinet, and lord president of the council 1908–. In 1895 he was knighted, and in 1908 he was raised to the peerage.

Fox (foks), **John.** Born 1861. An American author. He has published “A Cumberland Vendetta” (1895), “The Kentuckians” (1897), “The Little Shepherd of Kingdom Come” (1903), “Following the Sun Flag” (1905), “A Knight of the Cumberland” (1906), “The Trail of the Lonesome Pine” (1908), etc.

Fragonard (frä-gō-när'), **Jean Honoré.** Born at Grasse, France, April 5, 1732: died at Paris, Aug. 22, 1806. A French painter and engraver. He was a pupil first of Chardin and later of Boucher, with whose style he was more in sympathy. Like other French painters of his day, he was much influenced by the works of Tiepolo.

Fram (främ). A specially constructed steam-schooner in which Fridtjof Nansen attempted to reach the north pole. She is 113 feet long on the water-line, and was built at Raekvik, near Laurvig, Norway. She sailed from Christiania, June 24, 1893. Nansen left her to continue his journey on sledges March 14, 1895 (84° 4′ N. lat., 102° E. long.). Under command of Captain Otto Neumann Sverdrup she reached 85° 55.5′ N. lat., 66° 31′ E. long., on Nov. 15, 1895; and, returning, passed Spitzbergen in Aug., 1896, having circumnavigated Nova Zembla and the Franz-Joseph and Spitzbergen archipelagoes.

Français*, **François Louis.** Died at Paris, May 28, 1897.

France*. The chamber of deputies has 584 members. The religions supported by the state, before the passage of the Briand Bill in 1905, were the Roman Catholic, Protestant, and Jewish. By the passage of that bill the separation of the church and the state was effected, the adherents of all creeds were authorized to form associations for public worship (associations cultuelles), and the state, the departments, and the communes were relieved from payment of salaries.

France, Anatole: Jacques Anatole Thibault. Born at Paris, April 16, 1844. A French poet and miscellaneous writer. He is principally known from his critical articles in “La Vie Littéraire,” “Le Globe,” “Les Débats,” “Le Temps,” etc., and his novel “Le Crime de Sylvestre Bonnard” (1881).

Franchi*, **Ausonio**: pseudonym of **Cristoforo Bonavino.** Died at Castelletto, Italy, Sept. 12, 1895.

Francis II.* King of the Two Sicilies. Died at Arco, Tyrol, Dec. 27, 1894.

Francis (fran'sis), **Joseph.** Born at Boston, Mass., March 12, 1801: died at Cooperstown, N. Y., May 10, 1893. An American inventor. In 1829 he constructed life-boats for the United States vessels Santee and Alabama, and by 1841 all government ships had been equipped with boats of his invention. He was the first to make life-cars and boats of metal. In 1888 the United States Congress passed a resolution tendering him the thanks of the government and authorizing the preparation of a gold medal, which was presented to him in 1890.

Francis Joseph I.* Charles Louis, who became heir to the throne, died in 1896. His son, the Archduke Francis Ferdinand, became the heir apparent. He was born at Gratz in 1863.

Franck (frañk), **César.** Born at Liège, Belgium, Dec. 10, 1822: died at Paris, Nov. 8, 1890. A French composer, generally regarded as the founder of the modern French instrumental school. In 1872 he became professor of the organ at the Conservatoire, and organist at Ste. Clotilde. Among his compositions are the opera “Hulda” (produced 1894), an unfinished one, “Ghisèle”; oratorios, “Ruth,” “La Redemption,” and “Les Béatitudes”; a symphony; a symphonic poem, “Le chasseur maudit”; a sonata for piano and violin; a string quartet; a piano quintet; piano music; and songs.

Francke (fräng'ke), **Kuno.** Born at Kiel, Germany, Sept. 27, 1855. A German-American author, critic, and educator, professor of the history of German culture and curator of the Germanic Museum in Harvard University. Among his publications are “Zur Geschichte der Schulpoesie des 12 Jahrhunderts” (1879), “De Hymno in Cererem Homerico” (1880), “Libelli de Lite Imperatorum et Pontificum” (1892), “Social Forces in German Literature” (1896), “Glimpses of Modern German Culture” (1898), “History of German Literature” (1901), “German Ideals of To-day” (1907), etc. He is chevalier of the Royal Prussian Order of the Red Eagle.

Frankland*, Sir **Edward.** Died at Golaa, Gudbrandsdal, Norway, Aug. 9, 1899. He was knighted in 1897.

Franklin (frangk'lin). A district of the Northwestern Territories of Canada. It comprises Melville Island, Bathurst Island, Banks Land, Prince Albert Land, Victoria Land, Prince of Wales Land, Cockburn Island, Baffin Land, etc., is bounded by arctic waters on the north, and is separated on the east from Greenland by Baffin Bay and Davis Strait. Most of the district lies north of the arctic circle. Area, 500,000 square miles. Population (1901), 9,000.

Franklin*, **William Buel.** Died March 8, 1903.

Franzos*, **Karl Emil.** Died at Berlin, Jan. 28, 1904.

Fraser (frā'zėr), **Alexander Campbell.** Born at Ardchattan Manse, Argyll County, Scotland, Sept. 3, 1819. A Scotch philosophical writer, professor of logic and metaphysics in the University of Edinburgh from 1856 (emeritus 1891), succeeding Sir William Hamilton. He has published “Essays” (1846–56, 1858–68), “Life and Letters of Berkeley” (1871), “Berkeley” (1881), “Locke” (1890), “Thomas Reid” (1898), “Philosophy of Theism” (1898), “Biographia Philosophica” (1904), “Spiritual Realism” (1908), etc.

Fraunces's Tavern. An historic building on the southeast corner of Broad and Pearl streets in New York City. It was built for a private residence by Étienne De Lancey about 1700; was purchased by Samuel Fraunces for use as an inn in 1762; was a meeting place for the Sons of Liberty prior to the Revolution; was Washington's headquarters after the evacuation of New York; and was the place where he said farewell to his officers on Dec. 4, 1783. The New York Chamber of Commerce was organized in the building in 1768. The Society of the Sons of the Revolution was organized in the long room of the tavern Dec. 4, 1883, and in 1904 it purchased the property for use as its headquarters.

Fréchette*, **Louis Honoré.** Died May 31, 1908.

Frederic (fred′ėr-ik), **Harold.** Born at Utica, N. Y., Aug. 19, 1856: died at Henley, England, Oct. 19, 1898. An American journalist and novelist. He was London correspondent of the New York "Times" 1884–98. His works include "Seth's Brother's Wife" (1887), "In the Valley" (1890), "The New Exodus: a Study of Israel in Russia" (1892), "The Copperhead" (1894), "The Damnation of Theron Ware," published in England as "Illumination" (1896), "March Hares" (1896), "Gloria Mundi" (1898), and "In the Market-place" (1899).

Frederick I.* Grand Duke of Baden. Died at Mainau Island, Sept. 28, 1907.

Frederick VIII.: full name **Christian Frederick William Charles.** Born at Copenhagen, June 3, 1843. King of Denmark, eldest son of Christian IX., whom he succeeded January 30, 1906. He married Louise, daughter of Charles XV. of Sweden, July 28, 1869.

Frederick Augustus III. Born at Dresden, May 25, 1865. King of Saxony. He succeeded to the throne upon the death of his father, King George, October 15, 1904. He married Princess Louise of Tuscany in 1891: the marriage was dissolved in 1903.

Freestone State. A popular name of the State of Connecticut, from the brownstone quarries which it contains.

Fremantle (frē′man-tl), **William Henry.** Born 1831. An English theologian, dean of Ripon from 1895. He was canon of Canterbury 1882–95. He is the author of "The Gospel of the Secular Life" (1882), etc.

Frémont's Peak*. Its height has been determined (1906) as 13,720 feet, slightly less than that of Gannett peak (13,775) a short distance to the north.

French (french), **Alice**: pseudonym **Octave Thanet.** Born at Andover, Mass., March 19, 1850. An American novelist, and writer of short stories. She was educated at the Abbot Academy, Andover, and has lived west of the Mississippi, the field of much of her work. She has published "The Bishop's Vagabond" (1884), "Knitters in the Sun" (1887), "Expiation" (1890), "Stories of a Western Town" (1893), "A Book of True Lovers" (1898), "Man of the Hour" (1905), etc.

French (french), **Edwin Davis.** Born at North Attleboro, Mass., June 19, 1851: died Dec. 8, 1906. An American engraver. He studied with William Sartain, and for many years made a specialty of the art of book-plate engraving.

French (french), **Frank.** Born at Loudon, N. H., May 22, 1850. An American engraver. His work has appeared for many years in the "Century," "Harper's," and "Scribner's" magazines.

Frère*, **Charles (Édouard).** Died at Paris, Nov. 3, 1894.

Frère-Orban*, **Hubert Joseph Walther.** Died at Brussels, Jan. 2, 1896.

Fresenius*, **Karl Remigius.** Died at Wiesbaden, June 11, 1897.

Fresno (fres′nō). A city and the capital of Fresno County, California. Population (1900), 12,470.

Freund*, **Wilhelm.** Born at Kempen, Jan. 27, 1806: died at Breslau, June 4, 1894.

Freycinet*, **Charles Louis de Saulces de.** He was minister of war Nov., 1898,–May 6, 1899.

Friedländer*, **Friedrich.** Died June 14, 1901.

Froberger (frō′ber-gėr), **Johann Jakob.** Born in Halle, Germany: died at Héricourt, France, May 7, 1667. A German composer and organist, one of the pioneers in the early development of instrumental composition.

Front Range*. According to the United States Geographic Board (1907), it includes on the north the Laramie Range as far as the crossing of the North Platte, and on the south the Pike's Peak group.

Frothingham*, **Octavius Brooks.** Died Nov. 27, 1895.

Frothingham*, **Richard.** Died Jan. 29, 1880.

Frye (frī), **William Pierce.** Born at Lewiston, Maine, Sept. 2, 1831. An American lawyer and statesman, United States senator (Republican) from Maine from 1881. He was graduated at Bowdoin College in 1850; was attorney-general of Maine 1867–69; and was a member of Congress 1871–81. He was president *pro tempore* of the Senate after the death of Vice-President Hobart and also after the death of President McKinley.

Fukushima (fö-kö-shē′mä), Baron **Yasumasa.** Born in Matsumoto, Japan, Sept., 1853. A Japanese soldier, promoted major-general in 1900 and lieutenant-general in 1906. He was military attaché of the Japanese legation at Peking in 1883; held a similar position at Berlin 1887–92; returning to Japan, made the journey through Siberia on horseback in 1893; served with distinction as chief of the second section of the general staff in the Russo-Japanese war 1904–05; and became vice-chief of the general staff of the army in 1906, succeeding General Kodama. He has been knighted (K. C. B.), and in 1907 was created baron.

Fukuzawa (fö-kö-zä′wä), **Sutejiro.** Born at Tokio, 1863. A Japanese journalist, second son of Yukichi Fukuzawa. He came to the United States, with his brother Ichitaro, in 1883, and entered Yale University and on his return in 1890 took up the management of the "Jiji" newspaper, founded by his father.

Fukuzawa (fö-kö-zä′wä), **Yukichi.** Born in Buzen province, Japan, 1834: died Feb. 3, 1901. A Japanese author and journalist, one of the most noted educationalists of Japan. In 1858 he went to the United States and in 1862 to Europe to study Occidental institutions. The results of his observations were published, in 1866, in a voluminous work on Western manners and customs which had a great influence upon the modernization of Japan. Later he established the "Jiji" newspaper.

Fuller-Maitland. See *Maitland.*

Funston (fun′ston), **Fred.** Born in Clarke County, Ohio, Nov. 9, 1865. An American soldier, appointed brigadier-general in the United States Army in 1901. He joined the insurgent army in Cuba in 1896; was commissioned colonel of the Twentieth Kansas Volunteers in 1898; was sent to the Philippines; was promoted brigadier-general of volunteers in 1899 for establishing a ferry across the Rio Grande River at Calumpit in the face of a heavy fire; and captured Aguinaldo, the chief of the Filipino insurgents, in March, 1901. He was commander of the Department of California 1905–07, and is in charge of the army school of the line at Fort Leavenworth.

Furness, Horace Howard. Born at Philadelphia, Nov. 2, 1833. An American Shaksperian scholar and legal writer. He is editing a variorum edition of Shakspere's plays, which includes: "Romeo and Juliet" (1871), "Macbeth" (1873), "Hamlet" (1877), "King Lear" (1880), "Othello" (1886), "The Merchant of Venice" (1888), "As You Like it" (1890), "The Tempest" (1892), "Midsummer-Night's Dream" (1895), "The Winter's Tale" (1898), "Much Ado About Nothing" (1899), "Twelfth Night" (1901), "Love's Labor Lost" (1904), "Antony and Cleopatra" (1907), "Richard III." (1908), etc.

Furniss (fėr′nis), **Harry.** Born at Wexford, Ireland, 1854. A British illustrator and caricaturist. He went to London at the age of nineteen and has been employed on leading English periodicals (the London "News," "Graphic," "Dramatic News," etc.). In 1880 he joined the staff of "Punch." He has illustrated many books and has published accounts of journeys, a novel, etc.

Furtwängler (fört′veng-ler), **Adolf.** Born at Freiburg-im-Breisgau, Germany, June 30, 1853: died in Athens, Oct. 10, 1907. A German classical archæologist, professor in the University of Munich from 1894, and director of the Glyptothek. He was educated at the universities of Freiburg, Leipsic, and Munich; held a traveling stipendium of the German Archæological Institute 1876–78; and was attached to the expedition to Olympia 1878–79. Among his many works on ancient art and archæology are "Mykenische Tongefässe" (1879), "Die Sammlung Sabouroff" (1883–87), "Mykenische Vasen" (1886), "Die Bronzen und die übrigen kleineren Funde von Olympia" (1890), "Die Sammlung Somzée" (1897), "Neuere Fälschungen von Antiken" (1899), "Die Antiken Gemmen, Geschichte der Steinschneidekunst im Klassischen Altertum" (1900), etc.

Gabo (gä-bō′), **Port.** A bay and harbor at the southeastern extremity of Dinagat Island, Philippines: safe in all weather.

Gabrieli (gä-brē-ä′lē), **Andrea.** Born at Venice, about 1510: died there, 1586. A noted Italian composer and organist. His nephew and pupil, Giovanni, was born at Venice in 1557: died probably in 1612, and was equally noted. Both were organists in St. Mark's, Venice.

Gadow (gä′dō), **Hans Friedrich.** Born in Pomerania, March 8, 1855. A German-English naturalist, curator of and lecturer on zoölogy in the University of Cambridge from 1884. He has published "A Classification of Vertebrata" (1898), the volumes on birds in Brown's "Animal Kingdom," and those on amphibia and reptiles in the "Cambridge Natural History," "Through Southern Mexico" (1908), etc.

Gaetano (gä-ā-tä′nō), **Giovanni.** Flourished about 1542. An Italian pilot in the service of Spain. He was sent on the expedition from Mexico to the Philippines commanded by Lopez de Villalobos. To this expedition the discovery of the Hawaiian Islands is attributed.

Gage (gāj), **Lyman Judson.** Born at Deruyter, N. Y., June 28, 1836. An American financier. He was president of the Civic Federation of Chicago and of the Chicago Exposition Company; has been three times president of the American Bankers' Association, and in 1891 became president of the First National Bank of Chicago. He was secretary of the treasury 1897–1901, 1901–02.

Galdhöpiggen (gäld-hė-pig′en). The highest mountain of Norway, situated in Jotunheimen, about lat. 61° 40′ N. Height, 8,400 feet.

Galdos (gäl-dōs′), **Benito Perez.** Born at Las Palmas, Canary Islands, 1845. A Spanish novelist and dramatist. His most notable work is a series of romances entitled "Episodios nacionales," dealing with the history of Spain from 1808 to 1834 (1873–1907). He has also written many other novels and a number of plays.

Galicia*. It sends 106 representatives to the Austrian Reichsrat and has a diet of 161 members.

Gallagher*, **William Davis.** Died in 1894.

Gallaudet*, **Thomas.** Died at New York, Aug. 27, 1902.

Gallifet (gä-lē-fā′), **Gaston Alexandre Auguste,** Marquis **de.** Born at Paris, Jan. 23, 1830: died there, July 8, 1909. A French general. He entered the army in 1848, was commissioned colonel in 1867, and was promoted general of division in 1875. He served in the Crimea, Mexico 1863, Algeria 1860, 1864, 1865, 1868, and with the Army of the Rhine through the Franco-German war. He was taken prisoner at Sedan, and on his release was placed in command of a brigade of the Army of Versailles during the second siege of Paris, when he was distinguished for his severity to the Communard prisoners. He commanded the expedition against El-Golea, Africa, 1872–73. On the reorganization of the French army he became commander of a brigade of infantry in the Eighth army-corps, and held various other commands until his retirement in 1894. He drew up the cavalry regulations of 1882. He was minister of war June, 1899,–May, 1900.

Galli-Marié*, **Célestine.** Died Sept. 22, 1905.

Galveston*. It was devastated by an inundation in September, 1900. In 1906 it was the fourth city in size in the State.

Gambia*. Area of colony proper, 4 square miles, population, 8,807; area of protectorate, 3,615 square miles, population, 137,516. Both banks of the Gambia are now under British control up to the Anglo-French boundary. The colony is administered under a governor.

Gandara y Navarro*, **José de la.** Died in 1885.

Gannett (gan′et), **Henry.** Born at Bath, Maine, Aug. 24, 1846. An American statistician, geographer of the United States Geological Survey from 1882. He was geographer of the tenth, eleventh, and twelfth censuses and was assistant director of the census of the Philippine Islands 1902–03 and of the census of Cuba 1907–08. He has published "A Manual of Topographic Methods," statistical atlases of the tenth, eleventh, and twelfth censuses, "Commercial Geography," "Building of a Nation," and numerous other geographical and statistical works.

Gannett (gan′et) **Peak.** The highest peak of the Wind River Mountains, situated in Wyoming a short distance north of Frémont's Peak. Height, 13,775 feet.

Garcia*, **Manuel.** Born at Zafra, Spain, March 17, 1805: died at London, July 1, 1906. He went to London in 1848 and was professor at the Royal Academy of Music until 1895.

Garcia y Iniguez, Calixto. Born at Holguin, Cuba, Oct. 14, 1836: died at Washington, D. C., Dec. 11, 1898. A general of Cuban insurgents. With Cespedes and Marmol he planned the rebellion of

1868, and on the retirement of Gomez was made commander-in-chief of the forces of Cuba. He was captured in 1873 and imprisoned in Spain until 1878. He returned to Cuba in Aug., 1879, led an unsuccessful uprising, and was again carried to Spain. He lived in Madrid (as a teacher, etc.) under police surveillance, but escaped in Sept., 1895, reached New York, and finally landed with a large expedition near Baracoa. The provisional government immediately placed him in command of an army, with which he gained several important victories before uniting with the United States forces in the capture of Santiago, June 21–July 17, 1898.

Gardiner*, **Samuel Rawson.** Born at Ropley, Hants, March 4, 1829: died at Sevenoaks, Kent, Feb. 23, 1902. His later works include "History of the Great Civil War" (1886–91), "History of the Commonwealth and Protectorate" (1894–1904), "What Gunpowder Plot Was" (1897), "Cromwell's Place in History" (1897), "Oliver Cromwell" (1899), etc.

Gardner (gärd′nėr), **Ernest Arthur.** Born at London, 1862. An English classical archæologist, professor of archæology in University College, London. He was director of the British School of Archæology at Athens 1887–95. Among the explorations which he has conducted are those at Naucratis, Egypt (1885–86), Paphos, Megalopolis, and other sites in Greece. He has written "Chapters on Inscriptions in Naucratis" (1886–88), "Handbook of Greek Sculpture" (1896–97), and numerous articles on archæological topics.

Gardner (gärd′nėr), **Percy.** Born at Hackney, London, Nov. 24, 1846. An English archæologist, professor of classical archæology in the University of Oxford from 1887. He was editor of the "Journal of Hellenic Studies" (1880–96), and an editor of the coin catalogues of the British Museum 1873–86. Among his works are "The Parthian Coinage" (1877), "Samos and Samian Coins" (1882), "Types of Greek Coins" (1883), "New Chapters in Greek History" (1892), "Manual of Greek Antiquities" (1895: with Jevons), "Sculptured Tombs of Hellas" (1896), "Grammar of Greek Art" (1905), etc.

Garfield (gär′fēld), **Harry Augustus.** Born at Hiram, Ohio, Oct. 11, 1863. An American educator, son of President James A. Garfield. He was graduated at Williams College in 1885; studied and practised law; was professor of politics in Princeton University 1903–08; and has been president of Williams College since 1908.

Garland*, **Augustus Hill.** Died at Washington, D. C., Jan. 26, 1899.

Garland (gär′land), **Hamlin.** Born at West Salem, Wis., Sept. 16, 1860. An American novelist. He has found his material chiefly in the Mississippi valley and the mountain West. His works include "Main-traveled Roads" (1890), "A Little Norsk" (1891), "Rose of Dutcher's Coolly" (1895), "Her Mountain Lover" (1901), "The Captain of the Grayhorse Troop" (1902), "Hesper" (1903), "The Tyranny of the Dark" (1905), "The Long Trail" (1907), "The Shadow World" (1908), etc. He has also written a biography of Ulysses S. Grant (1898), a volume of verse, "Prairie Songs" (1893), and various pieces of criticism.

Garnett*, **Richard.** Died at Hampstead, April 13, 1906. He was keeper of printed books in the British Museum 1890–99.

Garnier*, **Jean Louis Charles.** Died at Paris, Aug. 3, 1898.

Gary (gā′ri), **James Albert.** Born at Uncasville, Conn., Oct. 22, 1833. An American manufacturer and Cabinet officer. He was delegate to the Republican national conventions of 1872, 1876, 1880, 1884, 1892, and 1896, and was postmaster-general March, 1897,–May, 1898.

Gaspar (gas′pär), or **Kaspar.** The legendary name of one of the three Magi who came from the East to worship the infant Jesus. See *Cologne, Three Kings of*, and *Magi*.

Gasser von Valhorn*, **Joseph.** Died at Prägraten, Tyrol, Oct. 28, 1901.

Gatacre (gat′a-kr), Sir **William Forbes.** Born Dec. 3, 1843: died at Gambela, Africa, March 4, 1906. A British major-general. He served in Burma (1889–90), and Chitral (1895); commanded the British troops in the Sudan, in the first advance on Atbara (1898); and led a division in the attack on Khartum and Omdurman (1899). He commanded the third division of the South African field force 1899–1900; was defeated in an attack on Stormberg Junction Dec. 11, 1899; occupied Burghersdorp in March, 1900; and was ordered home in April. In June, 1900, he was appointed major-general in command of the East District, and retired March 19, 1904.

Gatling*, **Richard Jordan.** Died Feb. 26, 1903.

Gatschet (gä-shā′), **Albert Samuel.** Born at St. Beatenberg, Switzerland, Oct. 3, 1832: died March 16, 1907. An American anthropologist, linguist of the Bureau of American Ethnology from 1879. He was ethnologist of the United States Geological Survey 1877–79. His investigations were concerned chiefly with the languages of the North American Indians.

Gatun (gä-tōn′). A town near Colon on the Panama railroad. For the Gatun dam, see *Panama Canal*.

Gaudry (gō-drē′), **Albert.** Born at Saint-Germain-en-Laye, Sept. 15, 1827: died at Paris, Nov. 27, 1908. An eminent French paleontologist, professor in the Museum of Natural History at Paris from 1872 (assistant professor 1853). He published numerous reports, monographs, and papers on paleontological and geological topics, of which the best known is "Animaux fossiles et géologie de l'Attique" (1862–67). In 1882 he was elected a member of the French Academy of Sciences.

Gayangos*, **Pascual de.** Died at London, Oct. 4, 1897.

Gebhart (geb-här′), **Émile Nicolas.** Born in Nancy, July 19, 1839: died at Paris, April 21, 1908. A French scholar, best known as a historian of art. He became professor of foreign literature at Nancy in 1860, and of Romance literature at the Sorbonne in 1880. He was elected a member of the French Academy in 1904. His works include "Histoire du sentiment poétique de la nature dans l'antiquité grecque et romaine" (1875), "Praxitèle" (1864), "Essai sur la peinture de genre dans l'antiquité" (1868), "Les historiens florentins de la Renaissance" (1875), "Rabelais" (1876), "De l'Italie" (1876), "La Renaissance italienne et la philosophie de l'histoire" (1887), "L'Italie mystique" (1890), "Conteurs florentins du moyen-âge" (1901), "D'Ulysse à Panurge" (1902), "Sandro Botticelli" (1907), etc.

Geddes (ged′es), **Patrick.** Born Oct. 2, 1854. A British biologist, professor of botany in University College, Dundee. He has written "Evolution of Sex" (1889: with J. A. Thomson), and many scientific and educational papers.

Geer af Finspång*, **Louis Gerhard von.** Died at Hanaskog, Sept. 24, 1896.

Gegenbaur*, **Karl.** Died at Heidelberg, June 14, 1903.

Geiger*, **Nikolaus.** Died at Wilmersdorf, near Berlin, Nov. 28, 1897.

Geikie*, Sir **Archibald.** He was director-general of the geological survey of the United Kingdom 1881–1901. His later works include "Field Geology" (5th ed., 1900), "Memoir of Sir Andrew Crombie Ramsay" (1895), "The Ancient Volcanoes of Britain" (1897), "The Founders of Geology" (1897), "Geological Map of England and Wales" (1897), "Types of Scenery, and their Influence on Literature" (1898), "The Geology of Central and Western Fife and Kinross" (1901), "The Geology of Eastern Fife" (1902), "Scottish Reminiscences" (1904), "Landscape in History" (1905), etc. He has been secretary to the Royal Society since 1903.

Geikie (gē′ki), **John Cunningham.** Born at Edinburgh, Scotland, Oct. 26, 1824: died April 1, 1906. A British clergyman and writer. He was the son of a Presbyterian minister of Toronto, Canada; entered the Presbyterian ministry in 1848; and took orders in the Church of England in 1876. Until 1860 he lived in Canada and Nova Scotia, and after that in England, except from 1879 to 1881, when he was rector of a church in Paris. His works include "The Life and Words of Christ" (1876), "The English Reformation" (1884), "Hours with the Bible" (1894–96), "Landmarks of Old Testament History" (1894), "The Vicar and His Friends" (1901), etc.

Geinitz*, **Hans Bruno.** Died at Dresden, Jan. 28, 1900.

Gemünder*, **George.** Died Jan. 15, 1899.

Geneva Bible. An English translation of the Bible issued from Geneva in 1560 by several English divines who had fled thither to escape the persecution of the reign of Mary. It was the first complete Bible to appear in Roman type, the first to omit the Apocrypha, and the first to recognize the division into verses. This translation was in common use in England till the version made by order of King James was introduced in 1611. The Geneva Bible has also been called the *Breeches Bible*, because Gen. iii. 7 is translated, "Then the eyes of them both were opened, and they knew that they were naked, and they sewed fig leaves together and made themselves *breeches*." "Breeches" occurs in previous translations, though the name is given especially to this one.

Gen-san. See *Yuen-san*.

George I.* (**Christian Wilhelm Ferdinand Adolphus**). The principal events of his reign have been the incorporation in 1881, through the intervention of the great powers, of the greater part of Thessaly and a small part of Epirus with Greece, and the war with Turkey in 1897.

George (jôrj): full name, **George Frederick Ernest Albert.** Born at Marlborough House, London, June 3, 1865. Prince of Wales, second son of Edward VII. In 1892, by the death of his elder brother, the Duke of Clarence, he became the heir to the throne of Great Britain and Ireland. He was created Duke of York in 1892; married Princess Victoria Mary (May) of Teck, daughter of Queen Victoria's first cousin, July 6, 1893; succeeded his father as Duke of Cornwall in 1901; and on Nov. 9, 1901, was given the title of Prince of Wales.

George*, **Henry.** Died at New York, Oct. 29, 1897.

Georgetown University. An institution of higher learning for men situated at Georgetown, District of Columbia. Since 1805 it has been under the control of the Society of Jesus. The university consists of Georgetown College (founded in 1789), the School of Medicine (opened in 1851), the School of Law (opened in 1870), and the Dental School (opened in 1901). Congress authorized the conferring of degrees in 1815, and in 1833 the authorities at Rome granted the power of conferring degrees in philosophy and theology in the name of the Holy See. The number of students is about 850. The university library contains nearly 100,000 volumes.

George Washington University. The name under which Columbian University has been known since 1904. See *Columbian University*.

Georgia*. There are 146 counties. In 1907–08 it was the second State in the production of cotton.

Georgia, University of. See *University of Georgia*.

Germany*. The foreign dependencies are Togoland, Kamerun, German Southwest Africa (protectorate), German East Africa (protectorate), Kaiser Wilhelm's Land (a protectorate in Papua), Bismarck Archipelago (protectorate), Kiao-Chau (lease), a part of the Solomon Islands, Marshall Islands, Mariana Islands, Caroline Islands, Pelew Islands, and Upolu and Savaii in the Samoan Islands.

Gérôme*, **Jean Léon.** Died at Paris, Jan. 10, 1904.

Geronimo*. He died at Fort Sill, Okla., Feb. 17, 1909.

Gerster*, **Etelka.** Born June 16, 1856.

Getty*, **George Washington.** Died at Forest Glen, Md., Oct. 1, 1901.

Gevaërt (ge-värt′), **François Auguste.** Born at Huysse, near Oudenarde, Belgium, July 31, 1828: died at Brussels, Dec. 24, 1908. A Belgian musical historian and composer. He lived in Paris for a time and brought out several operas there. In 1871 he was made director of the Brussels Conservatory, succeeding Fétis. His principal literary works are his "Traité générale d'instrumentation" (1863: revised as "Nouveau traité d'instrumentation" 1886), "Les origines du chant liturgique de l'église latine" (1890), "La mélopée antique dans l'église latine" (1895), etc.

Gherardi (ge-rär′di), **Bancroft.** Born at Jackson, La., Nov. 10, 1832: died at Stratford, Conn., Dec. 10, 1903. An American naval officer, appointed rear-admiral in 1887. He entered the navy as midshipman in 1846, and served through the Civil War. He retired in 1894.

Giacosa (jä-kō′sä), **Giuseppe.** Born in Colleretto-Parella, near Ivrea, Turin, Italy, Oct. 21, 1847: died there, Sept. 2, 1906. A noted Italian dramatist. His works include "Una partita a scacchi" (1873), "Trionfo d'amore" (1875), "I figli del marchese" (1874), "La signora di Challant" (1891), "Tristi amori" (1891), "Come le foglie" (1900), etc.

Gibbon*, **John.** Died Feb. 6, 1896.

Gibbs (gibz), **Josiah Willard.** Born at New Haven, Conn., Feb. 11, 1839: died there, April 28, 1903. A distinguished American physicist and mathematician, son of Josiah Willard Gibbs (1790–1861). He was graduated at Yale College in 1858 and became professor of mathematical physics there in 1871. The series of important papers in which the results of his investigations were embodied began with two, published in 1873, entitled "Graphical Methods in the Thermodynamics of Fluids" and "A Method of Geometrical Representation of the Thermodynamic Properties of Substances by Means of Surfaces." These were followed by a paper on the "Equilibrium of Heterogeneous Substances" (two parts, 1876 and 1878), one on "Multiple Algebra" (1886), etc. His work was most fruitful for the physicist, the chemist, and the mathematician. In 1906 his "Scientific Papers" were published in two volumes.

Gibbs (gibz), **Oliver Wolcott.** Born at New York, Feb. 21, 1822: died at Newport, R. I., Dec. 9, 1908. An American chemist, professor of applied science in Harvard University from 1863 (emeritus 1887). He was professor of physics and chemistry in the College of the City of New York 1847–63. His publications include numerous important papers on chemical topics. In 1884 he was elected an honorary member of the German Chemical Society, and was the first American who received this honor.

Gibson (gib′so̤n), **Charles Dana.** Born at Roxbury, Mass., Sept. 14, 1867. An American illustrator. He received his artistic education at the Art Students' League in New York and the Julian Academy in Paris. He has produced a large number of illustrations for "Life" and other pictorial magazines, his subjects being taken chiefly from American social life.

Gibson*, **Edward**, first Baron Ashbourne. He was lord chancellor of Ireland, with a seat in the cabinet, 1885–86, 1886–92, and 1895–1906.

Gibson*, **William Hamilton.** Died July 16, 1896.

Gibson's Desert. A desert region in Western Australia, lying between the Great Victoria Desert and the Great Sandy Desert.

Giddings (gid′ingz), **Franklin Henry.** Born at Sherman, Conn., March 23, 1855. An American sociologist. He was graduated from Union College in 1877; worked as a journalist until 1888; was lecturer on political science at Bryn Mawr 1888–91, and professor 1891–94; and since then has held the chair of sociology at Columbia University. He has written "Principles of Sociology" (1896), "Elements of Sociology" (1898), "Democracy and Empire" (1900), "Inductive Sociology" (1901), "Descriptive and Historical Sociology" (1907), etc.

Giffard (gif′ärd), Sir **Hardinge Stanley**, first Earl of Halsbury. Born Sept. 3, 1825. An English statesman. He was educated at Merton College, Oxford; was called to the bar at the Inner Temple in 1850; and was appointed queen's counsel in 1865. In 1875 he was created a knight, in 1885 a baron, and in 1898 an earl (Viscount Tiverton and Earl of Halsbury). He was Conservative member of Parliament for Launceston 1877–85, and lord high chancellor 1885–86, 1886–92, and 1895–Dec., 1905.

Gifford*, **Robert Swain.** Died at New York, Jan. 15, 1905.

Gigout (zhē-gö'), **Eugène.** Born at Nancy, France, March 23, 1844. A noted French organist, composer, and teacher. He was for many years professor in the Niedermeyer School in Paris and since 1863 has been organist at the Church of Saint-Augustin. In 1885 he founded an organ school in Paris. He has published many organ works and choruses in the Gregorian style.

Gilbert*, Mrs. **George H.** Born Oct. 21, 1821: died at Chicago. Dec. 2, 1904.

Gilbert (gil'bėrt), **Grove Karl.** Born at Rochester, N. Y., May 6, 1843. An American man of science, geologist of the United States Geological Survey from 1879. He was engaged on the Ohio Geological Survey 1869–71; in the Wheeler survey 1871–74; and in the Powell survey of a portion of the Rocky Mountains 1874–79. His publications include many reports and papers on geology and physiography.

Gilbert*, Sir **John.** Died at Blackheath, England, Oct. 5, 1897.

Gildemeister*, **Otto.** Died Aug. 26, 1902.

Gilder*, **William Henry.** Died at Morristown, N. J., Feb. 5, 1900.

Giles (jīlz), **Herbert Allen.** Born Dec. 8, 1845. A British Orientalist, professor of Chinese at the University of Cambridge. He was a member of the consular service in China 1867–93. In 1902 he was appointed lecturer on Chinese in Columbia University. He has published "A Glossary of Reference" (1878), "Historic China" (1882), "Chinese Biographical Dictionary" (1897), "A History of Chinese Literature" (1901), "The Religions of Ancient China" (1906), etc.

Gill*, Sir **David.** He was astronomer royal at the Cape of Good Hope 1879–1907. Knighted in 1900. He has published many important scientific papers and memoirs.

Gille*, **Philippe.** Died at Paris, March 20, 1901.

Gillette (ji-let'), **William.** Born at Hartford, Conn., July 24, 1855. An American actor and playwright. He appeared for a number of years in various stock companies, and has played leading rôles in many of his own productions. Among these are "The Professor," "The Private Secretary," "Held by the Enemy," "Too Much Johnson," "Secret Service," "Sherlock Holmes," etc.

Gilman*, **Daniel Coit.** Died at Norwich, Conn., Oct. 13, 1908. He was president of Johns Hopkins University 1875–1901, and was first president of the Carnegie Institution 1902–04. √u.

Gilmore*, **James Roberts**: pseudonym **Edmund Kirke.** Died in 1903.

Ginsburg (ginz'bėrg), **Christian David.** Born at Warsaw, Russia, Dec. 25, 1831. A British biblical scholar and writer. He was a member of the committee for the revision of the English version of the Old Testament. Among his works are the "Massorah" (1880–), commentaries upon various books of the Old Testament, etc.

Giroflé Girofla (zhē-rō-flā' zhē-rō-flä'). An opera bouffe in three acts (libretto by Vanloo and Leterrier, music by A. C. Lecocq) which was first produced at the Theater of Parisian Fantasies in Brussels, March 21, 1874.

Gislason*, **Konrád.** Died Jan. 4, 1891.

Gissing (gis'ing), **George.** Born at Wakefield, England, Nov. 22, 1857: died at St.-Jean-de-Luz, France, Dec. 28, 1903. An English novelist, a portrayer of modern social conditions and in particular of English middle-class life. He was educated at Owens College, Manchester. His works include "The Unclassed" (1884), "Demos" (1886), "The Nether World" (1889), "New Grub Street" (1891), "The Whirlpool" (1897), "The Town Traveller" (1898), "Our Friend the Charlatan" (1901), "By the Ionian Sea" (1901), "The Private Papers of Henry Ryecroft," an autobiographical book originally entitled "An Author at Grass" (1902), "Veranilda" (1905), "The House of Cobwebs" (1906), etc. He was a student of Dickens and published "Charles Dickens, a critical essay" (1898), an abbreviation of Forster's life of Dickens (1902), and introductions to the "Rochester" edition of Dickens's novels.

Glace (gläs) **Bay.** A town on the northeastern coast of Cape Breton Island, Nova Scotia. There are sheet-metal works in the town and coal-mines in the vicinity. Population (1901), 6,945.

Gladden (glad'en), **Washington.** Born at Pottsgrove, Pa., Feb. 11, 1836. An American Congregational clergyman and writer. He was graduated at Williams College in 1859; was pastor of churches in Brooklyn and Morrisania, New York, and North Adams and Springfield, Massachusetts (1860–82); has been pastor of the First Congregational Church in Columbus, Ohio, since 1882, and was moderator of the Congregational Council 1904–07. Among his publications are "Plain Thoughts on the Art of Living" (1868), "The Christian League of Connecticut" (1883), "Applied Christianity" (1887), "Who Wrote the Bible" (1891), "Tools and the Man" (1892), "The Christian Pastor" (1898), "How Much is Left of the Old Doctrines" (1899), "Social Salvation" (1902), "When Does the Sky Begin" (1904), "The Church and Modern Life" (1908).

Gladsheim (gläds'hīm). ['Home of gladness.'] In Old Norse mythology, a region in Asgard which contained the Valhalla, the assembling-place of the gods and heroes. It is the dwelling of Odin.

Gladstone (glad'stọn), **Herbert John.** Born at London, Jan. 7, 1854. An English Liberal statesman, youngest son of William Ewart Gladstone. He was educated at Eton and at University College, Oxford; has represented Leeds and Leeds West in the House of Commons since 1880; was private secretary to his father 1880–81; and was junior lord of the treasury 1881–85, financial secretary to the War Office 1886, under-secretary to the Home Office 1892–94, first commissioner of works 1894–95, chief Liberal whip 1899–1905, and home secretary Dec., 1905,–.

Gladstone (glad'stọn), **John Hall.** Born at London, 1827: died Oct. 8, 1902. An English chemist, professor of chemistry at the Royal Institute 1874–77. He published the "Life of Michael Faraday" (1872), "Spelling-reform from an Educational Point of View" (1878), and numerous papers on chemical topics.

Gladstone*, **William Ewart.** Died at Hawarden Castle, May 19, 1898. With the exception of about a year and a half, he sat continuously in the House of Commons 1832–95.

Glaisher*, **James.** Died Feb. 7, 1903.

Glaize*, **Auguste Barthélemy.** Died at Paris, Aug. 8, 1893.

Glasgow (glas'gō) **Ellen Anderson Gholson.** Born at Richmond, Va., April 22, 1874. An American novelist. She has written "The Descendant" (1897), "Phases of an Inferior Planet" (1898), "The Freeman and other Poems" (1900), "The Voice of the People" (1900), "The Battleground" (1902), "The Deliverance" (1904), "The Wheel of Life" (1906), "Ancient Law" (1908), etc.

Glass (glas), **Henry.** Born in Kentucky, Jan. 7, 1844: died at Paso Robles, Cal., Sept. 1, 1908. An American naval officer, promoted rear-admiral in 1901. He was graduated at the United States Naval Academy in 1863; served in the last years of the Civil War; commanded the cruiser Charleston on the Pacific Station in the Spanish war; and captured the Ladrone Islands (Guam) June 20, 1898. He was commander-in-chief of the Pacific Station 1903–04, and was appointed commandant of the Pacific Naval District in 1904, retiring in January, 1906.

Glatigny*, **Albert.** Born at Lillebonne, Normandy, May 21, 1839: died at Sèvres, April 16, 1873.

Glave (glāv), **Edward James.** Born Sept. 13, 1862: died at Underhill, Matadi, Kongo Free State, May 12, 1895. An English explorer in Central Africa. In 1883 he was sent by the Bureau of the International Association of Brussels to serve under Henry M. Stanley on the Kongo river. He was in command of the station at Lukolela 1884–86, explored the Kongo basin 1886–89, came to America on a lecturing tour in 1889, and explored Alaska 1890–91. Between August, 1893, and April, 1895, he crossed Africa from the mouth of the Zambesi river, journeying to the east and north of Lake Nyassa, west of Lake Bangweolo, east of Lake Moero, and west of Lake Tanganyika to the mouth of the Kongo river. This journey was undertaken for the investigation of the slave trade with a view to aiding in its abolition. He wrote "In Savage Africa" (1892).

Glazounof (glä'zö-nof), **Alexander Constantinovitch.** Born at St. Petersburg, Aug. 10, 1865. A Russian composer of the advanced national school, though also affected by more cosmopolitan Western influences. He has composed seven symphonies, several symphonic poems and suites, six string quartets and other instrumental music, cantatas, and songs. In 1906 he was appointed director of the St. Petersburg Conservatory.

Glencoe Junction. A railway junction in Natal, South Africa, about 40 miles northeast of Ladysmith. Here on Oct. 20, 1899, the British under General Symonds defeated the Boers under General Joubert.

Glyptothek (glip'tō-tāk). [G., < NL. *glyptotheca*, < Gr. *γλυπτόν*, a carved image, + *θήκη*, a collection.] A gallery of sculpture on the Königsplatz, Munich, built externally in the Ionic style with thirteen halls lighted from a central quadrangle. It was erected from designs by Klenze, 1816–30, by Louis I., King of Bavaria, primarily to provide a home for the Æginetan marbles. The name is also given to a museum of art in Copenhagen.

Godard (gō-där'), **Benjamin Louis Paul.** Born at Paris, Aug. 18, 1849: died at Cannes, Jan. 11, 1895. A French composer. Among his works are the operas "Pedro de Zalamea" (1884), "Jocelyn" (1888), "Dante et Béatrice" (1890), "Jeanne d'Arc" (1891), "La Vivandière" (1895), symphonies and suites, many piano pieces, and songs.

Godefroy*, **Frédéric.** Died at Lestelle, Basses-Pyrénées, Sept. 30, 1897.

Godkin (god'kin), **Edwin Lawrence.** Born in Ireland, Oct. 2, 1831: died at Brixham, England, May 20, 1902. An American journalist and author. He came to the United States as correspondent of the London "Daily News"; was admitted to the New York bar in 1858; became editor and proprietor of the "Nation" 1865–66; and was an editor and a proprietor of the "Evening Post" 1881–99. He published a "History of Hungary" (1856), etc.

Godwin*, **Parke.** Died Jan. 7, 1904.

Golden Hill. A lofty hill south of Port Arthur, Manchuria, rising from the sea on the northeasterly side of the entrance to the inner harbor. It is heavily fortified and played an important part in repelling the attacks of the Japanese fleet upon Port Arthur during the Russo-Japanese war.

Goldfield (gōld'fēld). A post-village in the southern part of Esmeralda County, Nevada, about 40 miles south of Tonopah. There are gold-mines in the vicinity.

Gold Coast*. In 1901 Ashanti was annexed by Great Britain and the administration placed in the hands of the governor of the Gold Coast, and in the same year the territories between the French and German possessions north of lat. 8° N. were put under British protection. Area of colony, Ashanti, and protectorate, 82,000 square miles.

Goldschmidt*, **Otto.** Died at London, Feb. 24, 1907.

Golgi (gōl'ji), **Camillo.** Born at Corteno, Italy, July 7, 1844. An Italian pathologist, professor of general pathology and histology in the University of Pavia. In 1887 he made a study of the life-cycle of the malarial parasite. In 1906 he received the Nobel prize for works dealing with the anatomy of the nervous system.

Gollancz (gōl'äns), **Israel.** Born at London, 1864. An English scholar, educator, and author. He was graduated at Christ's College, Cambridge, in 1887; was university lecturer in English at Cambridge, 1896–1906; and has been professor of English literature and language, and dean of the faculty of arts, at King's College, London. He has been fellow and secretary of the British Academy since its foundation in 1902. Among his works are "Cynewulf's 'Christ'" (1892), "Exeter Book of Anglo-Saxon Poetry" (1895), "Hamlet in Iceland" (1898), etc. He is also editor of the "Temple Classics," "Temple Dramatists," "Temple Shakespeare," etc.

Gomez (gō'meth), **Maximo** (**Maximo Gomez y Baez**). Born at Baní, San Domingo, in 1836: died June 17, 1905. A general of Cuban insurgents. He fought in the Cuban rebellion of 1868–78, rising from private to general. After this he went to Jamaica and Central America. In 1885, with Maceo and Crombet, he attempted to start a new rising, but was unsuccessful. He was influential in bringing about the insurrection of 1895–98, and during his first year as general had some success in his campaigns against the Spaniards.

Goncourt*, **Edmond de.** Died July 16, 1896.

Goodale (gu̇d'āl), **George Lincoln.** Born at Saco, Maine, Aug. 3, 1839. An American botanist, professor of botany in Harvard University 1878–1909, and Fisher professor of natural history and director of the Botanic Garden. He was graduated at Amherst College in 1860; was professor at Bowdoin College 1869–72; and was assistant professor at Harvard 1873–78. His publications include many works on economic botany.

Goodall*, **Frederick.** Died at London, July 29, 1904.

Goode*, **George Brown.** Died at Washington, D. C., Sept. 6, 1896.

Goodspeed (gu̇d'spēd), **Arthur Willis.** Born at Hopkinton, N. H., Aug. 8, 1860. An American physicist, professor in the University of Pennsylvania from 1904, best known for his studies in radiation (X-rays, etc.). He was graduated at Harvard in 1884, and became connected with the University of Pennsylvania, as instructor, in 1884.

Goodyear (gu̇d'yēr), **William Henry.** Born at New Haven, Conn., April 21, 1846. An American connoisseur and curator of art collections: son of Charles Goodyear (1800–1860). He was graduated at Yale University in 1867 and studied at the universities of Heidelberg and Berlin. From 1881 to 1888 he was curator of the Metropolitan Museum in New York, and since 1899 has been curator of fine arts in the Museum of the Brooklyn Institute of Arts and Sciences. He has investigated numerous irregularities which he has discovered in nearly all styles of architecture, and which in many cases were intentional; and his measurements of monuments have modified greatly the accepted theories of architectural development. He has written "A History of Art" (1888), "Grammar of the Lotus" (1891), "Roman and Medieval Art" (1893), "Renaissance and Modern Art" (1894), etc.

Gopher State. A popular name of the State of Minnesota.

Gordon (gôr'dọn), **Charles William**: pseudonym **Ralph Connor.** Born at Indian Lands, Ontario, 1860. A Canadian clergyman, missionary, and author. From 1890 to 1894 he was engaged in missionary work among the miners and lumbermen in the Canadian Rocky Mountains; represented the

met of

Canadian Western Missions of the Presbyterian Church in Great Britain 1893–94; and since 1894 has been minister of St. Stephen's Church in Winnipeg. He is the author of "Black Rock" (1898), "The Sky Pilot" (1899), "Beyond the Marshes" (1901), "The Man from Glengarry" (1901), "Glengarry School Days" (1902), "The Prospector" (1904), "The Doctor" (1906), "Life of James Robertson" (1908), etc.

Gordon (gôr′dọn), **John Brown.** Born in Upson County, Ga., Feb. 6, 1832: died at Miami, Fla., Jan. 9, 1904. An American soldier. He was educated at the University of Georgia; studied law and was admitted to the bar; served with distinction in the Confederate Army in the Civil War, and rose to the rank of lieutenant-general; was a member of the national Democratic conventions of 1868 and 1872; was a member of the United States Senate 1873–80 and 1891–97; and was governor of Georgia 1887–90. He is the author of "Reminiscences of the Civil War" (1903).

Gordon*, John Campbell Hamilton. Seventh Earl of **Aberdeen.** He was governor-general of Canada 1893–98, and has been lord-lieutenant of Ireland since 1905.

Gorgas (gôr′gas), **William Crawford.** Born at Mobile, Ala., October 3, 1854. A medical officer in the United States Army, especially noted for his services in freeing Havana from yellow fever. He entered the medical corps of the United States Army as first lieutenant in 1880, became captain in 1885 and major in 1898, and was promoted colonel by a special act of Congress in 1903 for his yellow fever work. In 1904 he was appointed chief sanitary officer of the Panama Canal, and he has been a member of the Isthmian Canal Commission since March, 1907.

Gorky (gôr′ki), **Maxim.** The pseudonym of Aleksyei Maksimovitch Pyeshkof.

Gorman (gôr′mạn), **Arthur Pue.** Born in Howard County, Md., March 11, 1839: died at Washington, D. C., June 4, 1906. An American Democratic politician. He became a page in the United States Senate in 1852; was a member of the Maryland House of Delegates 1870–75 (speaker 1873–75); was State senator 1875–81; and was United States senator from Maryland 1881–99 and 1903–06.

Gorst (gôrst), Sir **Eldon.** Born in New Zealand, June 25, 1861. A British statesman, successor to Lord Cromer as British agent and consul-general in Egypt in 1907. He was financial adviser to the Egyptian government 1898–1904, and assistant under-secretary of state for foreign affairs 1904–07.

Gortynian Inscription. An inscription found at Gortyna in Crete, a small part in 1862 and the rest in 1884. It is supposed to date from the fifth century B. C., although it contains references to the sixth and seventh centuries. It is of great value as giving what is practically a code of early Greek law and, to a considerable extent, its procedure.

Görz and Gradiska*. It has 6 representatives in the Austrian Reichsrat and has a landtag of 30 members.

Goschen*, George Joachim, first Viscount Goschen. Died at Hawkhurst, Kent, England, Feb. 7, 1907. He was first lord of the admiralty 1895–1900, and was raised to the peerage in 1900. His later works include "Life and Times of George Joachim Goschen" (1903) and "Essays and Addresses on Economic Questions" (1905).

Goss (gos), **Warren Lee.** Born at Brewster, Mass., Aug. 19, 1838. An American author and editor. Among his works are "The Soldier's Story of Captivity at Andersonville" (1866), "Jed" (1889), "The Recollections of a Private" (1890), "Tom Clifton" (1892), "Jack Alden" (1895), and "In the Navy" (1898).

Got*, François Jules Edmond. Died March 20, 1901.

Gottschall*, Rudolph von. Died in March, 1909.

Gould*, Benjamin Apthorp. Died at Cambridge, Mass., Nov. 26, 1896.

Gourko*, or **Gurko, Joseph Vladimirovitch.** Died Jan. 28, 1901.

Graham (grā′ạm), **Ennis.** The pseudonym of Mrs. Molesworth.

Grahame (grā′ạm), **Kenneth.** Born at Edinburgh, March 8, 1859. A British author, secretary of the Bank of England 1898–1908. He has written "Pagan Papers" (1893), "The Golden Age" (1895), "Dream Days" (1898), "The Headswoman" (1898), "The Wind in the Willows" (1908), etc.

Grand (grand), **Sarah.** The pseudonym of Mrs. McFall.

Granier de Cassagnac*, Paul (usually called **Paul de Cassagnac**). Died at Paris, Nov. 4, 1904.

Gran Malindang (grän mä-lēn′däng). A group of mountains in Misamis province, northern Mindanao, Philippine Islands. Height of loftiest peak, 8,580 feet.

Grant (grant), **Frederick Dent.** Born at St. Louis, Mo., May 30, 1850. An American soldier, son of Ulysses S. Grant, appointed major-general in the United States Army in 1906. He was graduated at West Point in 1871 and resigned from the army in 1881; was minister to Austria-Hungary 1889–93; and was police-commissioner of New York City 1895–97. On the outbreak of the war with Spain in 1898 he was appointed colonel and soon brigadier-general of volunteers; served in Porto Rico; and in 1899 was sent to the Philippines, where he took part in various operations against the insurgents in Luzon. In 1901 he was appointed brigadier-general in the United States Army. He commanded the Department of Texas 1902–04, the Department of the Lakes 1904, the Department of the East 1904–08, and again the Department of the Lakes 1908–.

Grant (grant), **Robert.** Born at Boston, Mass., Jan. 24, 1852. An American author and lawyer. Among his works are "Unleavened Bread" (1900), "The Reflections of a Married Man" (1892), "The Opinions of a Philosopher" (1893), "The Art of Living" (1895), "The Undercurrent" (1904), "The Orchid" (1905), "The Lawbreakers" (1906), "The Chippendales" (1909), etc.

Gras (grä), **Félix.** Born at Malemort, France, May 3, 1844: died at Avignon, March 4, 1901. A Provençal poet and novelist. He was a member of the brotherhood of Les Félibres, and succeeded his brother-in-law, its founder, Joseph Roumanille, as its head in 1891. He published in Provençal "Li Carbounié" (1876), "Toloza" (1881), "Roumancero prouvençal," a collection (1882), "Li Papalino" (1891). In 1898 the novel "The Reds of the Midi" was first published in an English translation by Mrs. T. A. Janvier; "The Terror" and "The White Terror" (1899) were also published in Provençal, French, and English.

Grassmarket. A wide thoroughfare in Edinburgh, near the Castle and the Cowgate. It was for a long time the place of execution and was the scene of the Porteous Riots in 1736.

Grau (grou), **Maurice.** Born at Brünn, Austria, Dec. 20, 1849: died March 14, 1907. An American operatic manager. He organized the Kellogg English Opera Company in 1873; became managing director of the Maurice Grau Opera Company and manager of the Metropolitan Opera House (New York) in 1897; and retired in 1903.

Gray*, Elisha. Died at Newtonville, Mass., Jan. 20, 1901.

Gray (grā), **George.** Born at New Castle, Del., May 4, 1840. An American statesman and jurist. He was graduated at Princeton in 1859; studied law at Harvard; was admitted to the bar in 1863; was attorney-general of Delaware 1879–85; was United States senator (Democratic) from Delaware 1885–99; and has been judge of the United States Circuit Court, third judicial circuit, since 1899. He was a member of the American and Spanish peace commission at Paris and of the American and British joint high commission at Quebec in 1898; and was appointed a member of the permanent court of arbitration under the Hague convention in 1900. He was also president of the anthracite coal-strike commission appointed by President Roosevelt in 1902.

Gray (grā), **Robert.** Born at Tiverton, R. I., 1755: died at Charleston, S. C., 1806. An American trader and explorer. In 1787–90 he made a voyage around the world, in command of the sloop Washington, which, together with the ship Columbia, had been fitted out for trading with the natives of the northwest coast. On a second voyage in 1791 he discovered the Columbia river, which he named after his own vessel.

Gray's Harbor. A bay entering the coast of Chehalis County, Washington, from the Pacific Ocean and receiving the waters of the Chehalis river.

Graziani*, Francesco. Died June 30, 1901.

Great Bible. See under *Coverdale*.

Great Eastern. A steamship, the largest built prior to 1899, when the Oceanic was launched. It was designed by I. K. Brunel, and was launched at Millwall on the Thames in 1858; made its first voyage across the Atlantic in June, 1860; was frequently employed from 1865 in cable-laying; and in 1886 was sold to be broken up for old iron. Length over all, 692 feet; width, 83 feet; depth, 58 feet; displacement, 27,000 tons. She was surpassed by the Oceanic in length (704 feet), draft (32½ feet), and displacement (31,590 tons), and also by later vessels.

Greatorex*, Mrs. (**Eliza Pratt**). Died Feb. 9, 1897.

Great Sandy Desert. An extensive desert region lying in the central and northern part of Western Australia.

Great Victoria Desert. An extensive desert region in the southeastern part of Western Australia.

Greco (grā′kō), **El.** See *Theotocopuli*.

Greece*. It contains 26 nomarchies or departments: Acarnania and Ætolia, Achaia, Arcadia, Argolis, Arta, Attica, Bœotia, Cephalonia, Corfu, Corinthia, Cyclades, Elis, Eubœa, Eurytania, Karditsa, Lacedæmon, Laconia, Larissa, Leucas, Magnesia, Messenia, Phocis, Phthiotis, Trikkala, Triphylia, and Zante. The chamber of deputies (bulé) contains 235 members. It waged an unsuccessful war with Turkey in 1897.

Greely*, Adolphus Washington. He was promoted major-general Feb. 10, 1906, and was appointed commander of the Pacific division of the United States Army in March, 1906, and of the Northern division in September of the same year. He retired in 1908. His works include "Three Years of Arctic Service" (1886), "American Weather" (1888), "American Explorers" (1893), "Handbook of Arctic Discoveries" (1897), and "Handbook of Alaska" (1909).

Green (grēn), **Andrew Haswell.** Born at Worcester, Mass., Oct. 6, 1820: died at New York, Nov. 13, 1903. An American lawyer, the originator of the plan of consolidating New York, Brooklyn, and the adjacent cities in the one city of 'Greater' New York, which was carried out in 1897. He practised law in New York, was active in the city government in several capacities (most notably as controller 1871–76), and was identified with many business, public, and philanthropic enterprises.

Green*, William Henry. Died at Princeton, N. J., Feb. 10, 1900.

Greenaway (grēn′a-wā), **Kate.** Born in London, March 17, 1846: died at Hampstead, London, Nov. 6, 1901. An English watercolor painter and illustrator. She enjoyed great popularity as an illustrator of children's stories. Her figures were dressed in a peculiar fashion, based on the empire style in France, which became known as the 'Kate Greenaway style.'

Greene (grēn), **Francis Vinton.** Born at Providence, R. I., June 27, 1850. An American soldier, engineer, and writer, appointed major-general of volunteers in 1898. He was graduated at West Point in 1870; was military attaché of the United States Legation at St. Petersburg 1877–78, and was with the Russian army at the battles of Shipka, Plevna, and Sophia, and in other engagements; was engineer of public works in Washington, D. C., 1879–80; and was professor of military engineering at West Point 1885–86. During the war with Spain in 1898 he served in the Philippines, commanding the American forces in the battle of Malate, and took part in the capture of Manila. Later he was in command at Havana. In 1903 he was police commissioner of the City of New York. He has written "The Russian Army and its Campaigns in Turkey" (1879), "Army Life in Russia" (1881), "The Mississippi Campaigns of the Civil War" (1882), "Life of Nathanael Greene" (1893), etc.

Greenland*. The highest point is probably about 12,000 feet. Peary explored the northern ice-cap in 1891–92 (during which expedition he determined the insularity of Greenland), and visited the same region 1893–95 and 1900, in the latter year rounding the northern end of the island, at that time supposed to be the most northerly land in the world. During 1906–08 the northeast coast was surveyed by the Mylius Erichsen (Danish) expedition which connected with Peary's explorations and completed the mapping of the island.

Greenough*, Richard S. Died April 24, 1904.

Greensboro (grēnz′bur-ō). A city, the capital of Guilford County, North Carolina. It contains a Female College, the State Normal and Industrial College, Bennett College (colored), and the Agricultural and Mechanical College (colored), and has manufactures of cotton-goods, flannels, carpets, machinery, etc. Population (1900), 10,035.

Grenfell*, George. He was born Aug. 21, 1849, and died in the Kongo State, July 1, 1906.

Grenfell (gren′fel), **Wilfred Thomason.** Born Feb. 28, 1865. An English physician and missionary, superintendent of the Labrador medical mission of the Royal National Mission to Deep Sea Fishermen. He fitted out the first hospital ship for North Sea fisheries and began his work on the Labrador coast in 1892. He has written "Vikings of To-day," "The Harvest of the Sea," "Off the Rocks," etc.

Grévin (grā-vaṅ′), **Alfred.** Born at Épineuil, France, 1827: died at Saint-Mandé, France, 1892. A French illustrator and caricaturist. He devoted himself wholly to the humorous illustration of Parisian life, creating a personal style which has been much imitated. In the "Journal Amusant," "Journal pour Rire," and "Charivari" he published more than 4,000 designs. In 1882 he founded in Paris a museum for the exhibition of waxworks which now bears his name.

Grevy*, Albert. Died at Mont-sous-Vaudrey, July 11, 1899.

Grey (grā), **Albert Henry George,** fourth Earl Grey. Born Nov. 28, 1851. An English statesman, grandson of the second Earl Grey. He was educated at Harrow and Trinity College, Cambridge, and succeeded his uncle, the third Earl Grey, in 1894. He was a Liberal member of the House of Commons 1880–86; was administrator of Rhodesia 1896–97; has been director of the British South Africa Company from 1898; was lord-lieutenant of Northumberland 1899–1904; and has been governor-general and commander-in-chief in Canada from 1904. –

Grey (grā), Sir **Edward.** Born April 25, 1862. An English Liberal statesman. He was educated at Winchester and at Balliol College, Oxford, and succeeded to the baronetcy in 1882. He has represented Berwick-on-Tweed in the House of Commons since 1885; was under-secretary for foreign affairs 1892–95; and has been secretary for foreign affairs from December, 1905.

Grey*, Sir **George Edward.** Died Sept. 19, 1898.

Gridley (grid′li), **Charles Vernon.** Born at Logansport, Ind., June 23, 1845: died at Kobe, Japan, June 4, 1898. An American naval officer. He was appointed acting midshipman in the United States Navy in 1860, and was promoted captain in 1897. In the battle of Manila Bay, May 1, 1898, he commanded the Olympia, flagship of Commodore (later Admiral) Dewey, and received the latter's order to open fire.

Grieg*, Edvard. Died at Bergen, Norway, Sept. 4, 1907.

Griggs (grigz), **John William.** Born at Newton, N. J., July 10, 1849. An American lawyer and cabinet officer. He was graduated at Lafayette College in 1868; was admitted to the bar in 1871; was a Republican member of the New Jersey State Assembly 1876–77; was State senator 1882–88; and president of the New Jersey Senate in 1886; was governor of New Jersey 1896–98; and was attorney-general 1898–1901. He is a member of the Hague permanent court of arbitration.

Grimm*, Herman. Died at Berlin June 16, 1901. He was professor of the history of art in the University of Berlin 1873–1901.

Gripenberg (grē′pen-berg), **Oscar Kasimirovitch.** Born 1838. A Russian general. He served in the Crimea and in the Polish insurrection of 1863. In the Turkestan campaigns of 1867 and 1868 he gained the cross of St. George and a sword of honor, and was appointed aide-de-camp to the Czar. He commanded the Moscow life-guards during the Russo-Turkish war 1877–78, receiving the rank of major-general for his services; was given charge of the sixth army corps and appointed to military command at Vilna in 1902; and commanded the second Manchurian army in the Russo-Japanese war 1904–05.

Griscom (gris′kom), **Lloyd Carpenter.** Born at Riverton, N. J., Nov. 4, 1872. An American diplomatist. He was secretary of legation at Constantinople 1899, and chargé d'affaires 1899–1901; minister to Persia 1901–02; ambassador to Brazil 1906–07; and ambassador to Italy 1907–09.

Grisi*, Carlotta (Caronne Adèle Joséphine Marie, called). Died at Geneva, May 22, 1899.

Groseilliers (grō-sā-yā′), **Sieur des.** See *Chouart.*

Grosse*, Julius Waldemar. Died at Torbole, Austria, May 9, 1902.

Gros Ventres (grō′väṅtr′). **1.** The northernmost subdivision of the Arapaho, an Algonquin tribe, now located in northern Montana. The Gros Ventres have separated from the body of the Arapaho and formed a tribal community by themselves.—**2.** A tribe belonging to the Siouan family.

Groth*, Klaus. Died at Kiel, June 1, 1899.

Grousset*, Pascal. Died at Paris, April 10, 1909.

Grove*, Sir **George.** Born at Clapham, Surrey, Aug. 13, 1820: died at London, May 28, 1900.

Grove*, Sir **William Robert.** Died Aug. 1, 1896.

Gruber (grö′bėr), **Max.** Born at Vienna, July 6, 1853. A German physiologist, professor of hygiene and bacteriology in the University of Munich from 1902. He is best known for his discovery in 1896 of the specific agglutination of bacteria by the blood-serum of animals which have been immunized with them, a discovery of great importance in serum-diagnosis.

Guahan*, or **Guam.** It was ceded by Spain to the United States by the treaty of Paris, Dec. 10, 1898.

Guanare*. San Carlos is the present capital of Zamora.

Guantanamo (gwän-tä′nä-mō). A city of Cuba situated about 40 miles northeast of Santiago de Cuba and about 10 miles north of Guantanamo bay. The latter was the scene of engagements between the Spanish and United States troops and vessels in June, 1898. Population (1899), 7,137.

Guatemala*. In December, 1907, the republic signed a treaty with the other Central American states establishing a court of arbitration for the settlement of disputes. See *Central American Arbitration Treaty.* In 1908 the transcontinental railway from Puerto Barrios on the Atlantic to San José on the Pacific was opened.

Guayama (gwī-ä′mä). **1.** A department in the east-central and southern part of Porto Rico. It is bounded by San Juan and Humacao on the north; Humacao on the east; the Caribbean sea on the south; and Ponce on the west. Capital, Guayama. Area, 561 square miles. Population (1899), 111,986. **2.** A city, the capital of Guayama, situated in the southeastern part of the province. Population (1899), 5,334.

Gubat (gö′bät). A municipality of Sorsogon province, southeastern Luzon, in the Philippine Islands. Civilized population (1903), 15,590.

Gubat (gö′bät), **Port.** A bay and harbor on the eastern coast of Sorsogon province, Luzon, safe during the southwest monsoon for vessels not exceeding 15 feet draft.

Gubernatis (gö-bãr-nä′tēs), Comte **Angelo de.** Born at Turin, Italy, April 7, 1840. An Italian Oriental scholar, author, critic, and dramatist, editor of the "Revue Internationale." In 1863 he was appointed professor of Sanskrit and comparative literature at the Instituto degli Studii Superiori at Florence. He was for a time a disciple of the anarchist Bakounin, and gave up his position at Florence in 1865 in order to follow out his views, but resumed it in 1867. In 1891 he went to the University of Rome. He founded "L'Italia Letteraria" (1862), "La Rivista Orientale" (1867), "La Civiltà Italiana" (1869), and "La Rivista Europea" (1869), and has been a contributor to various English and French reviews. Among his works are "Såvitri" (1877), "Zoölogical Mythology" (1872: written in English), "Storia universale della letterature" (1882–85), "Dizionario biografico degli scrittori contemporanei" (1879–80), "Dizionari degli artisti italiani viventi" (1889–), "La Hongrie politique et sociale" (1885), "Peregrinazioni indiane" (1887), "L'Argentina ricordi e letture" (1898), "Su le orme di Dante" (1901), etc.

Gude*, Hans Frederik. Died at Berlin, Aug. 17, 1903.

Guiana*, British. The boundary with Venezuela was determined by arbitration in 1899. The boundary with Brazil was settled July 12, 1904, by King Victor Emmanuel of Italy, to whom the dispute had been referred as arbiter on Nov. 6, 1901.

Guiana*, French. The dispute as to the boundary with Brazil was settled on Dec. 1, 1900, by the award of the Swiss government.

Guiangas (gē-äṅ′gäs). A pagan people of southeastern Mindanao, by some regarded as Indonesian. Also *Guangas.*

Guilmant (gēl-mäṅ′), **Félix Alexandre.** Born at Boulogne, March 12, 1837. A noted French organist and composer. For many years he was organist at the Church of the Trinity, in Paris. He has published many works for the organ, a symphony for organ and orchestra, seven sonatas, and vocal music. He has had great influence as a teacher, and among his pupils are many American players.

Guimaras (gē-mä-räs′). An island southeast of Panay, in the Philippine Islands. It belongs to Iloilo province, from the main part of which it is separated by Iloilo Strait. Area, 228 square miles. Population (1903), 21,306.

Guimaras (gē-mä-räs′) **Strait.** The strait which separates the island of Negros from Guimaras and Panay Islands, in the Philippines. In the southern part of the strait are several small islands.

Guinanes (gē-nä′näs), or **Guinaanes.** A head-hunting Malay people of northern Luzon.

Guiney (gwī′ni), **Louise Imogen.** Born at Boston, Jan. 7, 1861. An American poet and essayist. Her books of verse are "Songs at the Start" (1884), "The White Sail" (1887), "A Roadside Harp" (1893), "The Martyr's Idyl and Shorter Poems" (1899), and "England and Yesterday" (1898). She has also written "Brownies and Bogles" (1888), and "Lovers—Saint-Ruth's and Other Idyls" (1895); essays entitled "Goose Quill Papers" (1885), "A Little English Gallery" (1894), and "Patrins" (1897); and various biographical studies, etc.

Guiteras (gē′te-räs) **y Gener, Juan.** Born at Matanzas, Cuba, Jan. 4, 1852. A Cuban physician, professor of general pathology and tropical medicine at Havana from 1900. He is best known for his work in eradicating yellow fever. During the Santiago Campaign (1898) he served as yellow fever expert on the staff of General Shafter. From 1889 to 1899 he was professor of pathology in the University of Pennsylvania.

Gulf of Davao. See *Davao, Gulf of.*

Gulf of Ragay. See *Ragay, Gulf of.*

Gulfport (gulf′pōrt), A town in the southern part of Harrison County, Mississippi, on the Gulf of Mexico. It has manufactures, lumber-mills, etc., and exports lumber, sawed and hewn timber, and naval stores. Population (1900), 1,060: estimated (1906), 8,000.

Gulf State, The. A name given to Florida because it forms the eastern boundary of the Gulf of Mexico.

Gulick (gū′lik), **John Thomas.** Born in Kauai, Hawaiian Islands, March 13, 1832. An American missionary and biologist, best known for his important contributions to the theory of evolution. He is the son of a missionary in the Hawaiian Islands; was engaged in mining in California in 1850; was graduated at Williams College in 1859; and was a missionary in China and Japan 1864–99. Among his scientific papers are "The Diversity of Evolution Under One Set of External Conditions" (1872), "Divergent Evolution Through Cumulative Segregation" (1887), "Intensive Segregation" (1889), "Evolution, Racial and Habitudinal" (1905), etc.

Gumplówiz (gum-plō′wich), **Ludwig.** Born at Cracow, Austria, March 9, 1838: died at Gratz, Aug. 19, 1909. An Austrian jurist and economist, professor in the University of Gratz 1882–1907. He has published "Philosophisches Staatsrecht" (1877: 2d edition as "Allgemeines Staatsrecht" (1897), "Der Rassenkampf" (1883), "Grundriss der Soziologie" (1885), "Soziologie und Politik" (1892), "Die soziologische Staatsidee" (1892), "Soziologische Essays" (1899), etc.

Gunsaulus (gun-så′lus), **Frank Wakely.** Born at Chesterville, Ohio, Jan. 1, 1856. An American clergyman, educator, author, and poet, president of Armour Institute of Technology since 1892. He was graduated at the Ohio Wesleyan University in 1875; was ordained a Methodist minister, preaching four years; and later was pastor of various Congregational churches. He was divinity lecturer at Yale in 1890, professorial lecturer at the University of Chicago 1896–1903; and is lecturer at the Chicago Theological Seminary. Among his works are "The Transfiguration of Christ" (1886), "Monk and Knight" (1891), "Phidias and Other Poems" (1891), "Songs of Night and Day" (1895), "Gladstone" (1898), "The Man of Galilee" (1899), and "Paths to Power" (1905).

Guyot (gē-ō′), **Yves.** Born at Dinan, Côtes-du-Nord, France, Sept. 6, 1843. A French publicist, political editor of "Le Siècle" 1892–1903. He was minister of public works 1889–92. Among his publications are "Études sur les doctrines sociales du Christianisme" (1873), "Études de physiologie sociale" (1882–85), "La morale" (1883), "La science économique" (1881), "La tyrannie socialiste" (1893), "L'évolution politique et sociale de l'Espagne" (1899), "Dictionnaire du commerce, de l'industrie, et de la banque" (1898–1901: with A. Raffalovitch), "La comédie protectioniste" (1905), "La démocratie individualiste" (1907), "Le commerce" (1909), etc.

Guzman Blanco*, Antonio. Died at Paris, July 28, 1899.

Gyldén (gül-dān′), **Johan August Hugo.** Born at Helsingfors, Finland, May 29, 1841: died at Stockholm, Nov. 9, 1896. An eminent astronomer, director of the observatory and astronomer of the Academy at Stockholm 1871–96. From 1863 to 1865 he was connected with the observatory at Pulkowa. He published "Traité analytique des orbites absolues des huit planètes principales" (1893), etc.

Haakon (hâ′kōn), or **Hakon, VII. (Christian Frederick Charles (Carl) George Valdemar Axel).** Born at Charlottenlund, Denmark, August 3, 1872. King of Norway, second son of Frederick VIII., king of Denmark. He married Maud, third daughter of Edward VII., king of Great Britain and Ireland, July 22, 1896. He was elected king of Norway November 18, 1905, and crowned June 22, 1906.

Habicht*, Ludwig. Died at Amalfi, Dec. 29, 1908. His later works include "Das Grafenhaus" (1896), "Die Erbschaft" (1897), "Widersprüche" (1899), "Das Geheimnis des Waldes" (1900), "Besondere Kennzeichen" (1902), "Wahrheit" (1902), etc.

Haddon (had′on), **Alfred Cort.** Born at London, May 24, 1855. An English anthropologist, lecturer in ethnology at the University of Cambridge from 1900. He was professor of zoölogy in the Royal College of Science, Dublin, 1880–1901, and lecturer in ethnology at the University of London 1907–08. He has written "Evolution in Art," etc.

Haden*, Sir **Francis Seymour.** He was knighted in 1894.

Hadley, Arthur Twining. Born at New Haven, Conn., April 23, 1856. An American educator, the son of James Hadley. He was graduated at Yale University in 1876; was professor of political science there 1886–99, and was elected president of the university May, 1899. He has written "Railroad Transportation: its History and its Laws" (1885), etc. In 1907 he was appointed Theodore Roosevelt professor of American history and institutions at the University of Berlin.

Hadow (had′ō), **William Henry.** Born at Ebrington, England, Dec. 27, 1859. A writer on music and student of philosophy, fellow and tutor of Worcester College, Oxford. He has written "Studies in Modern Music" (1892, 1894), "A Croatian Composer: Notes Toward the Study of Joseph Haydn" (1887), "The Viennese Period," in "The Oxford History of Music," of which he was the editor (1904), and "A Primer of Sonata Form" (1896).

Haeckel*, Ernst Heinrich. He retired from his professorship at Jena in 1909. His later works include "Der Monismus. Glaubensbekenntniss eines Naturforschers" (1892; 10th ed., 1900), "Systematische Phylogenie" (1894–96), "Die Amphorideen und Cystoideen" (1896), "Über unsere gegenwärtige Kenntniss vom Ursprung des Menschen" (1898), and "Die Welträtsel"

(1899). He has also written "Kunstformen der Natur" (1899); "Indischen Reisebriefe" (1883) and "Aus Insulinde" (1901); and contributed many papers to the "Reports of the Scientific Results of H. M. S. Challenger" (1884–89).

Haffkine (häf′kin), **Waldemar Mordecai Wolff.** Born at Odessa, Russia, March 15 [N. S.], 1860. A Russian-English physiologist, bacteriologist with the Indian Government from 1893. He was assistant professor of physiology in the medical school at Geneva, Switzerland, 1888–89, and an assistant of Pasteur 1889–93. He has published numerous papers on bacteriology.

Hagen (hä′gen). In the "Nibelungenlied," the son of Alberich and the half-brother of Gunther. He is induced by Brunhild to slay Siegfried.

Haggard*, Henry Rider. He has written also "Black Heart and White Heart" (1900), "Lysbeth" (1901), "A Winter Pilgrimage" (1901), "Rural England" (1902), "Stella Fregelius" (1903), "The Brethren" (1904), "Ayesha" (1905), "A Gardener's Year" (1905), "The Poor and the Land" (1905), "Margaret" (1907), "The Yellow God" (1908), "The Lady of the Heavens" (1908), etc.

Hagonoy (ä-gō-noi′). A municipality of Bulacan province, in the southern part of Luzon, Philippine Islands. Civilized population (1903), 21,304.

Hague Conference. See *Peace Conference.*

Hai-cheng (hī-cheng′). A town in Manchuria, situated on the southern Manchurian Railway about twenty miles southeast of Niu-chuang.

Halcon (häl-kōn′). A mountain in north-central Mindoro, Philippine Islands. Height, 8,800 feet.

Haldane (hâl′dān), **Richard Burdon.** Born in Scotland, 1856. A British author and Liberal statesman. He was educated in the universities of Edinburgh and Göttingen; was called to the bar in 1879; and was appointed queen's counsel in 1890. He has sat for Haddingtonshire in the House of Commons since 1885, was vice-president of the Liberal Imperialist League in 1901, and was appointed secretary of state for war, Dec., 1905. He has published "Essays in Philosophical Criticism" (1883: with Andrew Seth), "Education and Empire" (1902), "The Pathway to Reality" (1903), "Army Reform, and other addresses" (1907), etc.

Hale*, Edward Everett. Died at Roxbury, Mass., June 10, 1909. He was appointed chaplain of the United States Senate in 1903. His later works include "A New England Boyhood" (1893), "How to Live" (1902), "Memories of a Hundred Years" (1902), "We, the People" (1903), "Foundation of the Republic" (1907), etc.

Hale (hāl), **Eugene.** Born at Turner, Maine, June 9, 1836. An American statesman, United States senator (Republican) from Maine from 1881. He was a member of Congress 1869–79.

Hale (hāl), **George Ellery.** Born at Chicago, June 29. 1868. An eminent American astrophysicist, director of the Solar Observatory of the Carnegie Institution at Mt. Wilson, California, from 1904. He was associate professor (1892–97) and professor (1897–1905) of astrophysics in the University of Chicago, and director of the Yerkes Observatory from its inception in 1892 until 1905. He has published numerous papers on astrophysical topics, "Study of Stellar Evolution" (1908), etc., and has edited "The Astrophysical Journal" from 1895. He invented the spectroheliograph.

Hale (hāl), **Horatio.** Born at Newport, N. H., May 3, 1817: died at Clinton, Ont., Dec. 30, 1896. An American ethnologist, son of Sarah J. Hale (1790–1879). He was graduated at Harvard in 1837; accompanied the Wilkes exploring expedition as philologist 1838–42; was admitted to the Chicago bar in 1855; and subsequently settled in Canada, where he practised law and pursued the study of ethnology. He published "Ethnography and Philology" (1846: 7th volume of the Wilkes Expedition Reports), "The Iroquois Book of Rites" (1883), "Indian Migrations as evidenced by Language" (1883), "Report on the Blackfoot Tribes" (1885), and many monographs, including "The Origin of Language and the Antiquity of Speaking Man."

Hale (hāl), **Philip.** Born at Norwich, Vt., March 5, 1854. An American musical critic and organist. He was graduated from Yale University in 1876 and was admitted to the Albany (New York) bar. His musical studies were in Europe (1882–87). He was critic of the Boston "Post" 1890–91, of the Boston "Journal" 1891–1901, and of the Boston "Herald" from 1901. He is the editor of the program books of the Boston Symphony Orchestra.

Halévy*, Ludovic. Died at Paris, May 8, 1908. He was elected a member of the French Academy in 1884.

Half Moon*, The. One of the two ships (the other being the Good Hope) in which Henry Hudson set out from Amsterdam, April 4, 1609 (N. S.), to find a passage through the Waigatz or Kara Strait, south of Nova Zembla. On reaching Nova Zembla his crew forced him to turn back; the Good Hope probably returned to Holland; and in the Half Moon he crossed the Atlantic to the coast of Nova Scotia. He coasted as far south as Chesapeake Bay, and then northward, reaching Sandy Hook on Sept. 4. He explored, during September, as far as the site of Albany, the river later named for him, reaching the sea again on Oct. 4. He reached England on Nov. 7.

Hall*, Asaph. Died at Annapolis, Md., Nov. 22, 1907. In 1877 he discovered the two moons of Mars. He was professor of mathematics at Harvard 1896–1901.

Hall (hâl), **Charles Cuthbert.** Born at New York, Sept. 3, 1852: died there, March 25, 1908. An American Presbyterian theologian, president of Union Theological Seminary (New York City) from 1897. He was graduated at Williams College in 1872; studied at Union Theological Seminary and in London and Edinburgh; and held pastorates in Newburg (1875–77) and Brooklyn (1887–97), New York. Among his writings are "Qualifications for Ministerial Power" (1894), "Christian Belief Interpreted by Christian Experience" (1905), "Christ and the Eastern Soul" (1909), "The Silver Cup" (1909), etc. He was twice (1892–93 and 1906–07) appointed Barrows lecturer, of the University of Chicago, to India and the Far East, and was Noble lecturer at Harvard in 1906.

Hall*, Fitzedward. Died at Marlesford, Suffolk, Feb. 1, 1901.

Hall (hâl), **Granville Stanley.** Born at Ashfield, Mass., Feb. 1, 1846. An American educator and psychologist. He was graduated from Williams College in 1867; studied for several years abroad; was professor of psychology at Antioch College 1872–76; lectured on psychology at Harvard and Williams 1880–81; and was lecturer and professor at Johns Hopkins University 1881–88. Since then he has been professor of psychology and education and president in Clark University. He is editor of the "American Journal of Psychology," of the "Pedagogical Seminary," and of the "American Journal of Religious Psychology and Education." His publications include "Aspects of German Culture" (1881), "Hints Toward a Select and Descriptive Bibliography of Education" (1886: with J. M. Mansfield), "Contents of Children's Minds on Entering School" (1894), "The Story of a Sand Pile" (1897), "Adolescence" (1904), "Youth" (1907), etc.

Hall*, James. Died at Bethlehem, N. H., Aug. 7, 1898.

Hall*, Marshall. Died Aug. 11, 1857.

Hall*, Newman. Died Feb. 18, 1902. He resigned his pastorate at Christ Church in 1892.

Hallock (hal′ok), **Charles.** Born at New York, March 13, 1834. An American journalist, author, and naturalist. He was editor of the New Haven "Register" 1855–56, of the New York "Journal of Commerce" 1856–61, and of "Forest and Stream" (which he founded) 1873–80; and was associate editor of "Nature's Realm" 1889–90, and of the "Northwestern Field and Stream" 1896–97. He founded the International Association for the Protection of Game in 1874, and in 1875 formulated uniform game laws, known as the "Hallock Code," used as a basis for legislation in many states. Among his publications are "Fishing Tourist" (1873), "Camp Life in Florida" (1875), "Our New Alaska" (1886), "The Salmon Fisher" (1890), "Luminous Bodies Here and Hereafter" (1906), and "Peerless Alaska" (1908).

Hallock (hal′ok), **William.** Born at Milton, N. Y., Aug. 14, 1857. An American physicist and educator, professor of physics in Columbia University from 1902 and dean of the faculty of pure science from 1906. He was graduated at Columbia in 1879 and was adjunct professor there 1892–1902. He has published numerous papers upon physical and astrophysical topics.

Hall of Fame. A building on University Heights, New York, erected in 1900 for the purpose of commemorating great Americans. It is a semicircular colonnade, 504 feet long and 20 feet high, connecting two of the buildings of New York University, with a ground floor underneath containing a long hall and six rooms to be used as a museum to contain memorials of those honored. Space is provided within the colonnade for 150 panels, which are to contain bronze tablets bearing the names (with busts or statues of bronze on parapets just above) of such Americans as shall be judged most famous in their respective fields by an electorate of 100 eminent American citizens appointed by the Senate of the University. The nominations, received from the general public, are transmitted by the Senate, which also is given a right of veto upon the decisions rendered by the electorate. According to the terms of election, persons to be eligible must have been born in what is now United States territory, and must have been dead at least ten years. Fifty names were to be chosen in 1900, representing a majority of the following classes: authors and editors; business men; educators; inventors; missionaries and explorers; philanthropists and reformers; clergymen and theologians; scientists; engineers and architects; lawyers and judges; musicians, painters, and sculptors; physicians and surgeons; rulers and statesmen; soldiers and sailors; and distinguished men and women outside these classes. Thereafter, five more were to be chosen at intervals of five years until the year 2000, when the roll would become complete. In 1900 the following 29 elections were made: John Adams, John James Audubon, Henry Ward Beecher, William Ellery Channing, Henry Clay, Peter Cooper, Jonathan Edwards, Ralph Waldo Emerson, David Glasgow Farragut, Benjamin Franklin, Robert Fulton, Asa Gray, Ulysses Simpson Grant, Nathaniel Hawthorne, Washington Irving, Thomas Jefferson, James Kent, Robert Edward Lee, Abraham Lincoln, Henry Wadsworth Longfellow, Horace Mann, John Marshall, Samuel Finley Breese Morse, George Peabody, Joseph Story, Gilbert Stuart, George Washington, Daniel Webster, and Eli Whitney. Twenty-one vacancies were thus left to be filled. In 1904 the plan was announced of two additional structures to be built in connection with the original hall, one of them to be provided with 25 panels for Americans of foreign birth, the other with 60 panels for American women. In 1905 the following 11 names were added to the list of those already chosen: John Quincy Adams, Louis Agassiz, Alexander Hamilton, John Paul Jones, James Russell Lowell, Mary Lyon, James Madison, Maria Mitchell, William Tecumseh Sherman, Emma Willard, and John Greenleaf Whittier.

Halsbury, Lord. See *Giffard.*

Halstead (hâl′sted), **Murat.** Born at Ross, Ohio, Sept. 2, 1829: died at Cincinnati, O., July 2, 1908. An American journalist and author. He joined the staff of the Cincinnati "Commercial" in 1853, became chief owner 1865, and, upon its change to the "Commercial Gazette," editor-in-chief. Among his publications are "History of the War with Spain" (1899), "Life and Services of William McKinley" (1902: with A. J. Munson), "Galveston" (1902), "The War between Russia and Japan" (1904–05), etc.

Halsted (hâl′sted), **George Bruce.** Born at Newark, N. J., Nov. 25, 1853. An American mathematician, professor of mathematics in the Colorado State Normal School 1903–. He was graduated at Princeton in 1875; was twice fellow of Johns Hopkins University, 1876–78; and was professor of mathematics in the University of Texas 1882–1903. His publications include a number of works on geometry (elementary, synthetic, metrical, pure projective, non-Euclidean, rational), and many scientific papers; also translations from various languages, making available the original sources in the domain of non-Euclidean geometry.

Hamilton*, Lord **George Francis.** He was secretary of state for India 1895–1903. He was member of Parliament for County of Middlesex 1868–85, and for Ealing Division, Middlesex, 1885–1906.

Hamilton (ham′il-ton), Sir **Ian Standish Monteith.** Born in Corfu, Jan. 16, 1853. A British general. He served in the Afghan war 1878–80, the Boer war in 1881, the Nile expedition 1884–85, the Burmese expedition 1886–87, the Chitral campaign in 1895, the Tirah expedition 1897–98, and the war in South Africa 1899–1901. He was chief of staff to Lord Kitchener 1901–02. During the Russo-Japanese war he accompanied the army of General Kuroki. He commanded the Southern Military Division 1905–08. In 1909 he was invited by the Czar to attend the Russian military manœuvers. He is the author of "A Staff Officer's Scrap-book during the Japanese War" (1905), etc.

Hamilton*, Schuyler. Died March 18, 1903.

Hamilton College. A classical college at Clinton, Oneida County, New York, founded by Samuel Kirkland as an Academy in 1793 and chartered a College in 1812. Connected with it are the Maynard Law School, and the Litchfield Observatory. There are 16 buildings, 20 instructors, and about 200 students.

Hammond (ham′ond). A manufacturing city in the northwestern part of Lake County, Indiana. Population (1900), 12,376.

Hammond*, William Alexander. Died at Washington, D. C., Jan. 5, 1900.

Hampden, Viscount. See *Brand, Sir Henry Bouverie William.*

Hampton*, Wade. Died at Columbia, S. C., April 11, 1902.

Handsworth (handz′wėrth). A manufacturing town in the southern part of Staffordshire, England, a suburb of Birmingham. Population (1901), 52,921.

Handy Andy. A novel by Samuel Lover, published in 1842. It contains humorous sketches of Irish life.

Hang-chau* or **Hangchow.** It was opened to foreign trade in 1895.

Hanging Gardens of Babylon. A structure, 400 feet square, built at Babylon on the banks of the Euphrates by Nebuchadnezzar (King of Babylon 605–562 B. C.) to please his Median wife Amytis (Amitu). It is said to have been divided into four terraces, each 100 feet wide and about 20 feet high, supported on piers of brick 22 feet thick. Over these piers were placed blocks of stone 16 feet long and 4 feet thick, joined by meshes of reeds set in cement, the whole covered by a layer of tiles and that by sheets of lead. The area thus made was covered with loam, and planted as a park and garden, and has been ranked as one of the seven wonders of the world. Tradition has coupled the gardens with the name of the mythical Assyrian queen Semiramis. The location is in the northern mound of ruins, Babil.

Hankel*, Wilhelm Gottlieb. Died at Leipsic, Feb. 17, 1899. He was professor of physics at Leipsic 1849–99.

Hanks (hangks), **Nancy.** Born in Virginia, about 1783: died at Pigeon Creek, Ind., Oct. 5, 1818. The mother of Abraham Lincoln. She was married to Thomas Lincoln June 12, 1806.

Hanna (han′ä), **Marcus Alonzo.** Born at New Lisbon (now Lisbon), O., Sept. 24, 1837: died at Washington, D. C., Feb. 15, 1904. An American business man and politician. He was a delegate to the National Republican Conventions of 1884, 1888, and 1896; was credited with having secured in 1896 the nomination of McKinley for President, and was made chairman of the National Republican Committee. He was first president of the National Civic Federation, and was United States senator 1897–1904.

Hanotaux (han-ō-tō'), **Albert Auguste Gabriel.** Born at Beaurevoir, Aisne, France, Nov. 19, 1853. A French author and statesman, minister of foreign affairs 1894–95 and 1896–98. He was elected a member of the Academy in 1897. His works include "Les villes retrouvées" (1880), "Origines de l'institution des intendants des provinces" (1884), "Henri Martin" (1885), "Études historiques sur le XVI. et le XVII. siècle en France" (1886), "Histoire du cardinal de Richelieu" (1893–1903), "Laffaire de Madagascar" (1896), "L'énergie française" (1902), "Histoire de la France contemporaine 1871–1900" (1903), "La paix latine" (1908), "Le partage de l'Afrique" (1909), etc.

Hansen (hän'sen), **Gerhard Henrik Armauer.** Born at Bergen, Norway, July 29, 1841. A Norwegian pathologist, president of the Museum at Bergen from 1894. In 1881 he discovered the bacillus of leprosy.

Hanslick (häns'lik), **Eduard.** Born at Prague, Sept. 11, 1825: died near Vienna, Aug. 6, 1904. An influential Austrian writer and musical critic. He first studied law, but abandoned it for journalism after beginning to write as musical critic of the "Wiener Zeitung" in 1848. In 1855 he joined the staff of the "Presse" and in 1864 that of the "Neue Freie Presse." He was professor of musical history and æsthetics in Vienna University 1861–1895. He published "Vom Musikalisch-Schonen" (1854), "Geschichte des Konzertwesens in Wien" (1869–70), "Aus dem Tagebuche eines Musikers" (1892: republished as "Aus Meinem Leben" in 1894), "Aus neuer und neuester Zeit" (1900), and a long series of volumes of his critical newspaper articles.

Hapgood (hap'gu̇d), **Isabel Florence.** Born at Boston, Mass., Nov. 21, 1851. An American author and translator. She has written "Russian Rambles" (1895), and "A Survey of Russian Literature" (1902), compiled and translated "The Epic Songs of Russia" (1886), and "A Service Book of the Holy Orthodox Catholic Apostolic (Greco-Russian) Church" (1906); and translated from the Russian of Tolstoi, Gogol, Gorky, and Turgenieff; from the Spanish of Armando Palacio Valdés, from the Italian of De Amicis, and from the French of Hugo, Joseph Roux, Renan, etc.

Harbin (här-bēn'). A city of Manchuria situated on the southerly bank of the Sungari River at the junction of the Port Arthur and Vladivostock branches of the Siberian Railway. It was founded by the Russians in 1896 and has developed rapidly into a place of great military and commercial importance. In 1907 it was opened to international trade. Population, upward of 30,000.

Harbinger (här'bin-jėr), **The.** A weekly journal issued by the members of the Brook Farm Association June 14, 1845,–February, 1849. It was devoted to the causes of association and Fourierism and was edited by George Ripley, with John Dwight and William Henry Channing as Boston contributors. C. A. Dana, F. G. Shaw, G. W. Curtis, Lowell, Whittier, and others wrote for it.

Harcourt (här'kōrt), **Leveson Francis Vernon-.** Born in London, Jan. 25, 1839: died at Swanage, England, Sept. 14, 1907. A British engineer, professor of civil engineering in University College, London, from 1882–1905. He published "Rivers and Canals" (1882), "Harbours and Docks" (1885), "Achievements in Engineering" (1891), "Civil Engineering as applied to Construction" (1902), etc.

Harcourt*, Sir **William George Granville Venables Vernon.** Died Oct. 1, 1904. He was chancellor of the exchequer in 1886, 1892–94, and 1894–95. In Parliament he sat for Derby 1880–95, and for West Monmouthshire 1895–1904.

Hardie (här'di), **James Keir.** Born in Scotland, Aug. 15, 1856. A British labor-leader and member of Parliament. He worked in the mines from his 7th to his 24th year, and was editor of the "Cumnock News" 1882–86, and of the "Miner" and "Labour Leader" 1887–1903. He was elected to Parliament by the Labor Party in West Ham, London, in 1892; was defeated in 1895; and was Labor representative from Merthyr Tydvil 1900–06 and 1906–. He was the founder of the Independent Labor Party, and was elected chairman of the Labor Party in the House of Commons, February, 1906.

Hardy*, **Arthur Sherburne.** He was United States minister to Persia in 1897–99, to Greece 1899–1901, to Switzerland 1901–02, and to Spain 1902–05. He has written also "Songs of Two" (1900), "His Daughter First" (1903), etc.

Hardy*, **Gathorne Gathorne-,** first Earl of Cranbrook. He died at London, Oct. 30, 1906.

Hardy*, **Thomas.** His later works include "Life's Little Ironies" (1894), "Jude the Obscure" (1896: serially in "Harper's Magazine" as "Hearts Insurgent," 1895), "The Well-Beloved" (serially, 1892; 1897), "Wessex Poems" (1898), "Poems of the Past and Present" (1901), and "The Dynasts" (3 parts, 1903, 1906, 1908).

Hare*, **Augustus John Cuthbert.** Died at St. Leonards, Jan. 22, 1903.

Harkness (härk'nes), **Albert.** Born at Mendon, Mass., Oct. 6, 1822: died at Providence, R. I., May 27, 1907. An American classical scholar, professor of Greek in Brown University from 1855. He was graduated at Brown in 1842, and studied at Berlin, Bonn, and Göttingen. His publications comprise a number of Latin text-books, including a Latin grammar (1864, 1869, 1881, 1898), editions of various Latin texts, and numerous philological papers.

Harkness (härk'nes), **William.** Born at Ecclefechan, Scotland, Dec. 17, 1837: died at Jersey City, N. J., Feb. 28, 1903. A Scotch-American astronomer. He was astronomical director of the United States Naval Observatory 1894–99, and director of the Nautical Almanac 1897–99. He attained the relative rank of rear-admiral in the United States Navy in 1899.

Harlan*, **James.** Died at Mount Pleasant, Iowa, Oct. 5, 1899.

Harland (här'land), **Henry.** Born at New York, March 1, 1861: died at San Remo, Italy, Dec. 20, 1905. An American novelist. He was educated at the College of the City of New York and at Harvard University. In later years he lived principally in London and on the Continent. Under the pseudonym of "Sidney Luska" he wrote "As it Was Written" (1885), and other novels. He then changed his literary style and published, under his own name, "Mademoiselle Miss" (1893), "Grey Roses" (1895), "Comedies and Errors" (1898), "The Cardinal's Snuff-box" (1900), "The Lady Paramount" (1902), "My Friend Prospero" (1904), "The Royal End" (completed by Mrs. Harland, 1909), etc. He also edited "The Yellow Book."

Harnack*, **Adolf.** He became director of the Royal Library in Berlin in 1905. His works include "Zur Quellenkritik der Geschichte des Gnostizismus" (1873), "De Apellis gnosi monarchica" (1874), "Die Zeit des Ignatius und die Chronologie der antiochenischen Bischöfe" (1878), "Das Mönchtum" (6th ed., 1903), "Martin Luther in seiner Bedeutung für die Geschichte der Wissenschaft und der Bildung" (3rd ed., 1901), "Lehrbuch der Dogmengeschichte" (1886–90), "Grundriss der Dogmengeschichte" (3rd ed., 1898), "Augustins Konfessionen" (3rd ed., 1903), "Geschichte der altchristlichen Literatur bis Eusebius" (1893–1904), "Geschichte der Königlich Preussischen Akademie der Wissenschaften zu Berlin" (1900), "Das Wesen des Christentums" (1900), "Die Aufgabe der theologischen Fakultäten und die allgemeine Religionsgeschichte" (1901), "Die Mission und Ausbreitung des Christentums in den ersten drei Jahrhunderten" (1902).

Harnack*, **Theodosius.** Died at Dorpat, Sept. 23, 1889.

Harper*, **William Rainey.** Died at Chicago, Jan. 10, 1906.

Harraden (har'a-den), **Beatrice.** Born at Hampstead, England, Jan. 24, 1864. An English novelist. Among her works are "Ships that Pass in the Night" (1893), "In Varying Moods" (1894), "Hilda Strafford" (1897), "The Fowler" (1899), "Katharine Frensham" (1903), "The Scholar's Daughter" (1906), and "Interplay" (1908).

Harriman (har'i-man), **Edward Henry.** Born at Hampstead, L. I., N. Y., Feb. 25, 1848: died at Turner, N. Y., Sept. 9, 1909. An American financier and railway president. He was president of the Union Pacific, Central Pacific, Southern Pacific, and allied railroads, and was especially noted for his constructive work in extending and developing the roads under his control.

Harris*, **Joel Chandler.** Died at Atlanta, Ga., July 3, 1908. His later works include "The Story of Aaron" (1896), "Stories of Georgia" (1896), "Chronicles of Aunt Minervy Ann" (1899), "Tales of the Home Folks in Peace and War" (1898), "Plantation Pageants" (1899), "On the Wing of Occasions" (1900), "The Making of a Statesman" (1902), "Gabriel Tolliver" (1902), "Wally Wanderoon and his Story-telling Machine" (1903), "The Tar-baby and other rhymes" (1904), "A Little Union Scout" (1904), "Told by Uncle Remus" (1905), "Uncle Remus and Br'er Rabbit" (1907), "The Bishop and the Boogerman" (1909). In 1907 he founded the "Uncle Remus Magazine."

Harris (har'is), **Townsend.** Born at Sandy Hill, N. Y., 1804: died at New York, 1878. An American diplomatist. He was the first United States consul-general to Japan, having been appointed in 1855 under the provisions of the treaty negotiated by Commodore Perry. In 1858 he became minister resident, resigning in 1861.

Harris*, **William Torrey.** He retired from the United States commissionership of education in 1906, and died Nov. 5, 1909.

Harrison*, **Benjamin.** Died at Indianapolis, March 13, 1901.

Harrison (har'i-son), Mrs. **Burton** (**Constance Cary**). Born in Fairfax County, Va., April 25, 1846. An American novelist. Her works include "Golden-rod" (1880), "Belhaven Tales" (1885), "Bar Harbor Days" (1887), "The Anglomaniacs" (1890), "Flower-de-Hundred" (1890), "Sweet Bells Out of Tune" (1892), "A Daughter of the South" (1892), "An Errant Wooing" (1894), "A Merry Maid of Arcady" (1897), "A Son of the Old Dominion" (1897), "A Triple Entanglement" (1899), "The Unwelcome Mrs. Hatch," a play (1903), "The Carlyles" (1905), "The Count and the Congressman" (1908), etc.

Hart (härt), **Albert Bushnell.** Born at Clarksville, Pa., July 1, 1854. An American historian, professor of history in Harvard University. He was graduated at Harvard in 1880, and studied later at Freiburg. He is the author of "Introduction to the Study of Federal Government" (1890), "Guide to the Study of American History" (1897: with E. Channing), "Salmon P. Chase" (1899), "Epochs of American History" (1891–96), "American History told by Contemporaries" (1898–1901), "Source-Book of American History" (1899), "Foundations of American Foreign Policy" (1901), "Handbook of the History, Diplomacy, and Government of the United States" (1903), "Actual Government as Applied under American Conditions" (1903), "Essentials of American History" (1905), "Manual of American History, Diplomacy, and Government" (1908), etc.

Hart*, **James McDougal.** Died at Brooklyn, N. Y., Oct. 24, 1901.

Hart (härt), **James Morgan.** Born at Princeton, N. J., Nov. 21, 1839. An American philologist, professor of English in Cornell University from 1890. He was graduated at Princeton in 1860 and studied at Göttingen 1861–64. From 1868 to 1872 he was assistant professor of modern languages in Cornell, and from 1876 to 1890 professor of modern languages and English literature in the University of Cincinnati. Among his publications are "German Universities" (1874), "Essentials of Prose Composition" (1902), "Development of Standard English Speech in Outline" (1907), etc.

Hart, Sir **Robert.** Born at Milltown, Ireland, Feb. 20, 1835. A British diplomat. He entered the consular service in China in 1854, was inspector-general of customs in China 1863–85, and was director of Chinese imperial maritime customs 1885–1909. Created a baronet in 1893. He is the author of "These From the Land of Sinim" (1901).

Harte*, **Francis Bret.** Died at Camberley, Surrey, England, May 5, 1902.

Hartenstein*, **Gustav.** Died at Jena, Feb. 2, 1890.

Hartley (härt'li), **Jonathan Scott.** Born at Albany, N. Y., Sept. 23, 1846. An American sculptor. After leaving the Albany Academy he became an assistant and pupil of E. D. Palmer, in Albany. Soon after 1864 he went to London and spent three years at the Royal Academy. He visited Germany, Italy, and France, and in 1875 opened a studio in New York. His first important statue was "The Whirlwind," exhibited in 1878. He has designed numerous monuments. His busts show exceptional power of representation and characterization.

Hartmann*, **Karl Robert Edward von.** Died at Grosslichterfelde, near Berlin, June 5, 1906. His later works include "Ethische Studien" (1898), "Die Weltanschauung der modernen Physik" (1902), "Das Christentum des Neuen Testaments" (1905), "Das Problem des Lebens" (1906), "System der Philosophie in Grundriss" (1907–09), etc.

Harvard University*. The oldest and largest institution of learning in America, situated partly in Cambridge and partly in Boston, Massachusetts. The college was founded by the general court of the colony of Massachusetts Bay in 1636. Two years later the name Harvard was given to it in memory of John Harvard (see *Harvard, J.*). The university includes Harvard College, the Graduate School of Arts and Sciences, Graduate School of Applied Science, Graduate School of Business Administration, the Divinity School, the Law School, the Medical School, the Dental School, the Bussey Institution, and the Arnold Arboretum, the first six of which are situated in Cambridge, the last four in Boston; also the University Library, the Museum of Comparative Zoölogy (popularly known as the Agassiz Museum), the University Museum, the Botanic Gardens, the Herbarium, the Astronomical Observatory, and the Peabody Museum of American Archæology and Ethnology, all of which are in Cambridge. It is governed by two boards—the corporation, consisting of the president, treasurer, and 5 fellows, in whom is vested the title to the property of the university; and the board of overseers, 30 in number (besides the president and treasurer). Until 1865 the State government was represented in the board of overseers, but since then they have been chosen exclusively by the alumni of the college. The number of teachers in 1908–09 was 610; of students in all departments 3,918 (2,277 in the college proper). There were also 1,332 students in the summer schools. The endowment of the university is about $20,000,000; its other property, including lands and buildings, about $10,000,000 more. Its annual income is over $1,500,000. Its fellowships and scholarships yield almost $140,000 a year. The library contains 803,800 bound volumes, not including pamphlets and maps.

Hasegawa (hä-sä-gä'wä), Viscount **Yoshimichi.** Born in Suwo, Japan, August, 1850. A Japanese soldier, commander-in-chief of the Korean garrison. He commanded a brigade in the Chinese-Japanese war, taking part in the battles of Port Arthur and Wei-hai-wei, and led the Imperial Guards division under General Kuroki in the war with Russia 1904–05. In the latter year he was made commander-in-chief of the Korean garrison. He was promoted general in 1904. He was made baron in 1895, and viscount in 1907.

Hassam (has'am), **Childe.** Born at Boston, Oct. 17, 1859. An American painter. After a public school education he studied art in Boston and Paris. He was elected an associate of the National Academy of Design in 1902, and a member in 1906; and belongs also to the American Water Color Society, to the Société Nationale des Beaux-Arts in Paris, and to the Secession in Munich. He has exhibited widely in this country and in Europe, and has taken many important medals and prizes. He follows generally the methods and principles of the French Impressionist school, producing landscapes of great brilliancy.

Haswell (haz'wel), **William A.** Born at Edinburgh, August 5, 1854. A British zoölogist, professor of biology in Sydney University from 1890. He was curator of the Queensland Museum in 1880, and became connected with Sydney University in 1882. With T. Jeffery Parker he published "A Textbook of Zoölogy" in 1897.

Haupt*, Herman. Died Dec. 14, 1905.

Haupt (houpt), **Lewis Muhlenberg.** Born at Gettysburg, Pa., March 21, 1844. An American civil engineer. He attended the University of Pennsylvania and the Lawrence Scientific School (Harvard), and was graduated at West Point in 1867; was instructor in mathematics and civil engineering (1872–75) and professor of civil engineering (1875–92) in the University of Pennsylvania; and has been occupied as a consulting engineer and in business. In 1897 he was a member of the Nicaragua Canal Commission, and, 1899–1902, of the Isthmian Canal Commission. He has published "Canals and their Economic Relations to Transportation," "Emancipation of Waterways," "The Control of the Mississippi," and many other books and pamphlets.

Hauptmann (houpt′män). **Gerhart.** Born at Salzbrunn, Silesia, Nov. 15, 1862. A German dramatist and poet. He studied sculpture for a time at Rome, and at this period wrote his first larger work, an epic entitled "Promethidenlos" (1885). Next came a group of plays, of the realistic school, "Vor Sonnenaufgang" (1889), "Das Friedenfest" (1890), "Einsame Menschen" (1891), and "Die Weber" (1892), the last of which marks the beginning of a new development, characterized by a broad thematic selection of types and ideas rather than individuals. The culmination of this period is represented by "Hannele" (1893) and "Die versunkene Glocke" (1896). He has written also a number of comedies, "Kollege Crampton" (1892), "Der Biberpelz" (1893), and "Der Rote Hahn" (1901), the last two folk-plays; "Florian Geyer" (1895), "Fuhrmann Henschel" (1898), "Schluck und Jau" (1899), "Michael Kramer" (1900), "Der arme Heinrich" (1902), and "Rose Bernd" (1903), and two prose studies, "Der Apostel" and "Baumwärter Thiel" (1892).

Hauréau*, Jean Barthélemy. Died at Paris, April 29, 1896.

Havana. 2. (Sp. **La Habana.**) A province of Cuba, bounded on the north by the Florida Straits, on the east by the province of Matanzas, on the south by the Caribbean Sea, and on the west by the province of Pinar del Rio. Capital, Havana. Area, 3,170 square miles. Population (1907), 538,010.

Havard (ä-vär′), **Henri.** Born at Charolles, Saône-et-Loire, France, Sept. 5, 1838. A French writer and connoisseur. For participation in the events of the Commune in 1871 he was forced into exile. After the amnesty he became art editor of "Le Siècle," a post which he held for fifteen years. He is a prolific writer on many matters relating to the fine and industrial arts. His chief books are "Amsterdam et Venise" (1876), "L'art et les artistes hollandais" (1879–81), "Dictionnaire de l'ameublement et de la décoration depuis le XIII^e^ siècle jusqu'à nos jours" (1887–90), "Les Boulle" (1893), "L'œuvre de E. V. Galland" (1895), "Histoire de l'orfévrerie française" (1896), and "Histoire et philosophie des styles" (1899–1900).

Hawaiian Islands*. The islands were annexed to the United States by act of Congress, July 7, 1898, and organized as a territory June 14, 1900. They have a legislature of two houses — a senate of 15 members and a house of representatives of 30 members. The governor and secretary are appointed for four years by the President of the United States.

Haweis*, Hugh Reginald. Born 1838: died 1901.

Hawkins*, Anthony Hope. His later works include "A Man of Mark" (1896), "Comedies of Courtship" (1896), "Phroso" (1897), "Simon Dale" (1898), "Rupert of Hentzau" (1898), "The King's Mirror" (1899), "Quisanté" (1900), "Tristram of Blent" (1901), "The Intrusions of Peggy" (1902), "Double Harness" (1904), "A Servant of the Public" (1905), "Sophy of Kravonia" (1906), "Helena's Path" (1907), "The Great Miss Driver" (1908), "Love's Logic" (1908), etc.

Hawkins (hâ′kinz), Sir **Henry**, first Baron Brampton. Born Sept. 14, 1817: died Oct. 6, 1907. An eminent English jurist. He was called to the bar of the Middle Temple in 1843; was appointed queen's counsel in 1858; was a judge of the High Court 1876–99; and was knighted in 1876 and raised to the peerage in 1899. His "Reminiscences," edited by Richard Harris, were published in 1904.

Hawley*, Joseph Roswell. Died at Washington, D. C., March 17, 1905.

Hawthorne (hâ′thōrn), **Charles Webster.** Born in Illinois, Jan. 8, 1872. An American painter, a pupil of William M. Chase and H. Siddons Mowbray. He won the first Hallgarten prize at the National Academy of Design in 1904. He has specialized the fisherfolk of the Massachusetts coast, and has also painted many pictures of still life.

Hay*, John. Died at Newbury, N. H., July 1, 1905. He was ambassador to Great Britain 1897–98, and secretary of state 1898–1905.

Hayashi (hä-yä′shi), Count **Tadasu.** Born at Tokio, Feb., 1850. A Japanese diplomatist, minister at the Court of St. James 1900–05 and ambassador in 1906. He was appointed minister to Peking in 1896 and to St. Petersburg in 1897; was a delegate to the peace conference at The Hague in 1899; and was minister for foreign affairs 1906–08. He was created baron in 1895, viscount in 1902, and count in 1907.

Hayes (hāz), **Henry.** The pseudonym of Mrs. Ellen Olney Kirk.

Haym*, Rudolf. Died at St. Anton, in Tyrol, Aug. 27, 1901.

Haymarket Square Riot*, The. Fielden, Schwab, and Neebe were pardoned by Governor John P. Altgeld in June, 1893.

Headley*, Joel Tyler. Died at Newburg, N. Y., Jan. 16, 1897.

Headley*. Phineas Camp. Died Jan. 5, 1903.

Hearn (hèrn), **Lafcadio.** Born in Santa Maura, Ionian Islands, June 27, 1850: died at Okubo, near Tokio, Sept. 26, 1904. A writer on Japan. He was of Irish and Greek parentage, went to America in 1869, and in 1890 to Japan, where he became a lecturer on English literature at the Imperial University in Tokio; married a Japanese woman; and was naturalized as a Japanese subject under the name of Yakumo Koizumi. He published "Stray Leaves from Strange Literature" (1884), "Some Chinese Ghosts" (1887), "Chita" (1889), "Two Years in the French West Indies" (1890), "Youma" (1890), "Glimpses of Unfamiliar Japan" (1894), "Out of the East" (1895), "Kokoro" (1896), "Gleanings in Buddha-Fields" (1897), "Exotics and Retrospectives" (1898), "In Ghostly Japan" (1899), "Shadowings" (1900), "A Japanese Miscellany" (1901), "Kotto" (1902), "Japan: an Attempt at Interpretation" (1904), "Kwaidan" (1904), and "The Romance of the Milky Way" (1905).

Hearts Insurgent. The title under which the novel "Jude the Obscure," by Thomas Hardy, was published in "Harper's Magazine" in 1895.

Hébert*, Antoine Auguste Ernest. He died at his estate near Grenoble, Nov. 5, 1908.

Hector*, Mrs. (**Annie French**): pseudonym **Mrs. Alexander.** Died at London, July 10, 1902.

Hedin (hā′dēn), **Sven Anders von.** Born at Stockholm, Feb. 19, 1865. A noted Swedish traveler and man of science. He studied at Stockholm, Upsala, Berlin, and Halle, and in 1885–86 made a journey through Persia and Mesopotamia. In 1890 he was appointed secretary of the Swedish Embassy to the Shah; ascended Demavend; and in 1891 visited Kashgar. His most important explorations were made in Central Asia during the years 1893–97, when he went from Orenburg to Peking by way of the Lop-Nor and Tibet; 1899–1902, when he descended the Tarim to the Lop-Nor; and 1905–08, when he explored the high tableland of Tibet, determined the sources of the Brahmaputra, and the Sutlej, discovered the true source of the Indus, and established the continuity of the Transhimalayan range, the most massive in the world. He has published accounts of his journeys and scientific observations, and various scientific papers.

Hegel*, Karl. Died at Erlangen, Dec. 6, 1901.

Heim (hīm), **Albert.** Born at Zurich, April 12, 1849. A noted Swiss geologist, professor at the University of Zurich from 1875. He has published numerous geological works and papers.

Heir of Redclyffe, The. A story for the young, with a moral purpose, by Charlotte M. Yonge. It was published in 1853.

Helheim (hel′hīm). In Old Norse mythology, the abode of the dead, the home of Hel (which see). It is a wide land of shadows, containing gloomy rivers, terribly high palaces, and valleys of venom, all guarded by a dog with blood-stained breast.

Helper (hel′pėr), **Hinton Rowland.** Born in North Carolina, Dec. 27, 1829: died at Washington, D. C., March 9, 1909. An American author and promoter. He is best known as the author of "The Impending Crisis of the South" (1857), a book which exerted a considerable influence upon affairs immediately preceding the Civil War. He endeavored to secure the building of a railroad (the "Three Americas Railway") to extend, eventually, from Bering Strait to the Strait of Magellan.

Hempl (hempl), **George.** Born at Whitewater, Wis., June 6, 1859. An American philologist, professor of Germanic philology in Leland Stanford Junior University from 1906. He was connected with the Johns Hopkins University as instructor in German 1884–86, and with the University of Michigan as professor of English philology and general linguistics 1889–1906; and was president of the American Dialect Society 1900–05, of the Modern Language Association 1902–03, and of the American Philological Association 1903–04.

Henderson (hen′dėr-sọn), **David Bremner.** Born at Old Deer, Scotland, March 14, 1840: died at Dubuque, Iowa, Feb. 25, 1906. An American lawyer and statesman. He enlisted in the Union army in 1861; was discharged, owing to the loss of a leg, in 1863; reënlisted as colonel of infantry (Forty-sixth Iowa) in 1864; and served till the end of the war. In 1865 he was admitted to the bar. He was a member of Congress from Iowa 1883–1903, and in 1899 was elected speaker of the House of Representatives, succeeding Thomas B. Reed.

Henderson (hen′dėr-sọn), **William James.** Born in Newark, N. J., Dec. 4, 1855. A musical writer and critic. He became critic on the staff of the New York "Times" in 1887, and on that of the "Sun" in 1902. He has published "Preludes and Studies" (1891), "What is Good Music" (1898), "How Music Developed" (1898), "Modern Musical Drift" (1904), "Pipes and Timbrels" (1905), "Art of the Singer" (1906), etc.

Henley*, William Ernest. Born Aug. 23, 1849: died July 12, 1903. An English writer and critic. He was editor of the "Scots Observer" (afterward the "National Observer") 1888–93 and of the "New Review" 1893–98. He published "A Book of Verses" (1888), "Poems" (1898), "London Types" (1898, with W. Nicholson), "For England's Sake" (1900), "Hawthorn and Lavender" (1901), "A Song of Speed" (1900), etc.

Henner*, Jean Jacques. Died at Paris, July 23, 1905.

Henry (äṅ-rē′). **Lieutenant-colonel.** Committed suicide Aug. 31, 1898. An officer of the French army, concerned in the Dreyfus case. In 1896 he was appointed chief of the Intelligence Department at the War Office in place of Colonel Picquart. He acknowledged that he had forged the new proofs of Dreyfus's guilt which Cavaignac, the minister of war, had laid before the Chamber of Deputies, was arrested, and committed suicide.

Hepworth*, George Hughes. Died at New York, June 7, 1902.

Herbelin*, Madame (**Jeanne Mathilde Habert**). Died at Paris, April 4, 1904.

Heredia (ā-rā′ᴅē-ä), **José Maria de.** Born at Fortuna-Cafeyere, near Santiago, Cuba, Nov. 22, 1842: died at the Château de Bourdonne, Seine-et-Oise, France, Oct. 3, 1905. A French poet, of French and Spanish parentage. He was educated at the Collège de Saint-Vincent, Senlis, Oise; spent one year at the University of Havana; and then returned to France and became a contributor to various journals. He published a collection of his verse under the title of "Trophées" in 1893. This work was crowned by the French Academy and he was elected a member of that body in 1894.

Hering (hā′ring), **Ewald.** Born at Altgersdorf, Saxony, Aug. 5, 1834. A German physiologist, professor in the University of Leipsic from 1895, best known for his researches in the physiology of the senses and in psychophysics.

Herkomer*, Sir **Hubert von.** He was Slade professor of art at Oxford 1885–94. Knighted in 1907.

Hermite (er-mēt′), **Charles.** Born at Dieuze, in Lorraine, Dec. 24, 1822: died at Paris, Jan. 14, 1901. An eminent French mathematician, a member of the faculty of Sciences of the University of Paris 1869–1901. Among his publications are "Sur la théorie des fonctions elliptiques" (1863), "Sur l'équation du V. degré" (1866), "Sur quelques applications de la théorie des fonctions elliptiques" (1877–82), "Cours d'analyse de l'école polytechnique" (1873), and "Cours à la Faculté des Sciences" (1882).

Herreshoff (her′e-shof), **John Brown.** Born at Bristol, R. I., April 24, 1841. An American ship-builder. At the age of fifteen he lost his sight. In 1864 he engaged in yacht-building at Bristol with his father, and later became associated with Dexter E. Stone under the firm name of Herreshoff and Stone. For many years the business was confined to sailing-vessels; but later steam-vessels, steel yachts, torpedo-boats, and naval vessels were undertaken. In 1879 he became president of the Herreshoff Manufacturing Company, which under his management has gained the reputation of building the fastest vessels in the world.

Herreshoff (her′e-shof), **Nathaniel Greene.** Born at Bristol, R. I., March 18, 1848. An American naval architect, brother of J. B. Herreshoff. He studied at the Massachusetts Institute of Technology 1866–69; became a draftsman at the Corliss Engine Works in Providence, Rhode Island; and studied engineering both in America and abroad. In 1879 he joined the Herreshoff Manufacturing Company at Bristol, Rhode Island, of which he later became superintendent. He has designed many high-speed torpedo-boats and racing yachts, including the Vigilant (1893), the Defender (1895), the Columbia (1899), and the Reliance (1903), which successfully defended the America's cup.

Hertz (hertz), **Heinrich.** Born at Hamburg, Feb. 22, 1857: died Jan. 1, 1894. An eminent German physicist, professor of physics at Bonn 1889–94. In 1880 he was an assistant of Helmholtz in Berlin, and in 1885 became professor of physics in the Polytechnic Institute at Karlsruhe. He is noted for his investigations of the relation between electricity and light, and especially for his discovery (1887–88) of the electric waves of large amplitude which have been utilized in wireless telegraphy. Among his publications are "Über die Beziehungen zwischen Licht und Elektricität," "Untersuchungen über die Ausbreitung der elektrischen Kraft," etc. His collected works were published in 1894.

Hertzberg*, Gustav Friedrich. Died at Halle, Nov. 16, 1907. His later works include "Griechische Geschichte" (1884), "Athen, historisch-topographisch dargestellt" (1885), "Geschichte der Stadt Halle" (1889–93), "Die historische Bedeutung des Saaletales" (1894), "A. H. Francke und sein Waisenhaus" (1898), etc.

Hervé (er-vā′), **Aimé Marie Édouard.** Born at Saint-Denis, Réunion Island, May 28, 1835: died at Paris, Jan. 4, 1899. A French journalist. He founded with J. J. Weiss, in 1867, the "Journal de Paris" and published in it criticisms of the Imperial Government. In 1873 he established "Le Soleil," and as a supporter of a liberal constitutional monarchy exercised a notable influence on public affairs. He was elected to the French Academy in 1886. He wrote "Une page d'histoire contemporaine" (1869), and "La crise irlandaise depuis la fin du XVIIIe siècle jusqu'à nos jours" (1885). In his articles in "Le Soleil" he made use of the pseudonym *Raoul Valnay*.

Hervey (hėr'vi), **James.** Born at Hardingstone, near Northampton, Feb. 26, 1713 (1714?): died at Weston Favell, near Northampton, Dec. 25, 1758. An English Episcopal clergyman and devotional writer. He published "Meditations and Contemplations" (in two parts: 1746–47), and "Dialogues between Theron and Aspasio" (1755). The Calvinistic doctrines taught in the "Dialogues" involved the writer in a controversy with John Wesley and his "Eleven Letters" written in reply to Wesley's "Remarks" were published posthumously in 1766. His collected works (six volumes) were published in 1769.

Hervieu (er-vyė'), **Paul Ernest**: pseudonym **Eliacin.** Born at Neuilly-sur-Seine, France, Sept. 2, 1857. A French author, dramatist, and journalist. Among his novels are "Les yeux verts et les yeux bleus" (1886), "L'inconnu" (1887), "Flirt" (1890), "L'exorcisee" (1891), "Peints par eux-mêmes" (1893), and "Amitié" (1900). His plays include "Les paroles restent" (1892), "Les tenailles" (1895), "La loi de l'homme" (1895), "La course de flambeau" (1901), "Point de lendemain" (1901), "L'énigme" (1901), "Théroigne de Méricourt" (1902), "Le dédale" (1903), and "Le reveil" (1905). In 1900 he was elected to the French Academy, succeeding Pailleron.

Herzegovina*. With Bosnia it was annexed by Austria-Hungary in October, 1908.

Heureaux*, **Ulisse.** Born about 1846: assassinated at Moca, Santo Domingo, July 26, 1899. He was president of the Dominican Republic 1882–83 and 1887–99.

Hewitt*, **Abram Stevens.** Died at New York, Jan. 18, 1903.

Hewitt (hū'it), **Peter Cooper.** Born at New York, March 5, 1861. An American electrician and inventor, son of Abram Stevens Hewitt, and grandson of Peter Cooper. He is best known for his work with vapor conductors of electricity. Among the more important of his inventions are the mercury-vapor lamp, static converter, interrupter, and circuit-breaker.

Hewlett (hū'let), **Maurice Henry.** Born at London, Jan. 22, 1861. An English writer of historical romances and sketches. His works include "Earthwork out of Tuscany" (1895), "A Masque of Dead Florentines" (1895), "Songs and Meditations" (1896), "The Forest Lovers" (1898), "Pan and the Young Shepherd" (1898), "Little Novels of Italy" (1899), "Life and Death of Richard Yea-and-Nay" (1900), "New Canterbury Tales" (1901), "The Queen's Quair" (1904), "The Road in Tuscany" (1904), "Fond Adventures" (1905), "The Fool Errant" (1905), "The Stooping Lady" (1907), "Half-way House" (1908), "Spanish Jade" (1908), "Artemizion" (1909), etc.

Hichens (hich'enz), **Robert Smythe.** Born at Speldhurst, Kent, Nov. 14, 1864. An English novelist. His works include "The Green Carnation" (1894), "New Love" (1895), "An Imaginative Man" (1895), "The Folly of Eustace" (1896), "Flames" (1897), "Byways" (1898), "The Londoners" (1898), "The Slave" (1899), "Tongues of Conscience" (1900), "The Prophet of Berkeley Square" (1901), "Felix" (1902), "The Woman With the Fan" (1904), "The Garden of Allah" (1904), "The Black Spaniel, and Other Stories" (1905), "The Call of the Blood" (1906), "The Daughters of Babylon" (with Wilson Barrett), "A Spirit in Prison" (1908), "Egypt and its Monuments" (1908), etc. He has collaborated in two plays, "The Medicine Man," and "Becky Sharp."

Hicks-Beach*, Sir **Michael Edward.** He was chancellor of the exchequer 1895–1902, and was created Viscount St. Aldwyn in December, 1905. He was member of Parliament for West Bristol 1885–1906.

Hill*, **David Bennett.** He was United States senator 1891–97.

Hill (hil), **David Jayne.** Born in Plainfield, N. J., June 10, 1850. An American educator and diplomatist. He was president of Bucknell University 1879–88, and of Rochester University 1888–96; assistant secretary of state 1898–1903; minister to Switzerland 1903–05; minister to the Netherlands 1905–07; and ambassador to Germany 1907–. In 1907 he was a delegate to the second Peace Conference.

Hill (hil), **George Birkbeck Norman.** Born at Tottenham, Middlesex, England, June 7, 1835: died Feb. 24, 1903. An English author, best known as a Johnsonian scholar and editor. He was graduated at Pembroke College, Oxford, in 1858, and in the following year succeeded his father as head-master of Bruce Castle School at Tottenham, resigning in 1876. Among his publications are "Dr. Johnson, His Friends and His Critics" (1876), an edition of Boswell's "Life of Johnson" (1887), "Boswell's Correspondence" (1879), "Footsteps of Dr. Johnson in Scotland" (1890), "Harvard College, by an Oxonian" (1895), "Talks about Autographs" (1896), "Johnsonian Miscellanies" (1897), "Memoirs of Edward Gibbon" (1900), etc.

Hill (hil), **James Jerome.** Born near Guelph, Ontario, Sept. 16, 1838. An American business man, president of the Great Northern system of railways 1893–1907. He went to St. Paul, Minnesota, in 1856, and early connected himself with the business of transportation. He secured control, through a syndicate, of the St. Paul and Pacific Railroad; reorganized it as the St. Paul, Minneapolis and Manitoba Railroad; and was its general manager 1879–82, vice-president 1882–83, and president from 1883. In the year 1889 the Great Northern Railway Company was formed and it leased the St. Paul, Minneapolis and Manitoba Railway and other lines (about 3,750 miles). Since that time the Great Northern Railway has been extended by purchase of other lines and construction to about 6,100 miles.

Hillis (hil'is), **Newell Dwight.** Born at Magnolia, Iowa, Sept. 2, 1858. An American clergyman and author. He was graduated at Lake Forest University in 1884, and at McCormick Theological Seminary in 1887; was pastor at Peoria, Illinois, 1887–90, at Evanston, Illinois, 1890–94, and of the Central Church in Chicago 1894–98, succeeding Professor David Swing; and in 1899 became pastor of Plymouth Church, Brooklyn, succeeding Dr. Lyman Abbott. Among his works [illegible] "A Man's Value to Society" (1896), "The Investment of Influence" (1896), "Foretokens of Immortality" (1897), "How the Inner Light Failed" (1898), "The Influence of Christ in Modern Life" (1900), "The Quest of Happiness" (1902), "Success Through Self Help" (1903), "Building a Working Faith" (1903), "The Quest of John Chapman" (1904), "Great Men as Life Teachers" (1906), "Fortune of the Republic, and other addresses" (1906).

Hilprecht (hil'prečht), **Hermann Vollrath.** Born at Hohenerxleben, Anhalt, Germany, July 28, 1859. A German Assyriologist, professor of comparative Semitic philology in the University of Pennsylvania from 1886, and curator of the Semitic section of its museum. He accompanied an expedition sent by this university to explore Nippur in Babylonia in 1888, and in 1900 took charge of it (after a year's absence); and has made numerous explorations in Asia Minor and Syria. He has also had charge of the Babylonian department of the Imperial Museum in Constantinople. Among his publications are "Recent Researches in Bible Lands," "Ausgrabungen in Assyrien und Babylonien," etc.

Hind*, **John Russell.** Died Dec. 23, 1895.

Hiroshige (hē-rō-shē'gä). Born 1793: died 1859. A Japanese painter, a pupil of Toyohiro. He was one of the leading masters of the Okioye, or later naturalistic school of Japan. His work is based on a key of color rather than on line and mass. His tones are flat, producing effects in a simple way. He was especially clever in the representation of atmospheric effects.

Hiroshima (hē-rō-shē'mä). A city of Japan, situated on the island of Hondu, near its southwestern extremity, on the inland sea. It is the capital of the province of Aki, and has an important trade in lacquered ware, bronzes, and other art objects. Population (1903), 121,196.

Hirsch (hirsh), Baron **Maurice de** (Baron **Maurice de Hirsch de Gereuth**). Born at Munich, Dec. 9, 1831: died at Ogyalla, near Komorn, Hungary, April 21, 1896. An Austrian financier, capitalist, and philanthropist, of Hebrew descent. His great wealth was partly inherited from his father, partly increased by marriage, and to a great extent gained by banking and by transactions in railroads, chiefly Turkish. He contributed upward of $25,000,000 for charitable purposes, largely for the education and alleviation of the sufferings of the Jews. Among the gifts by which he is best known is that to the Jewish Colonization Association ($10,000,000), and the De Hirsch Trust for the United States ($2,500,000).

His (hēs), **Wilhelm.** Born at Basel, July 9, 1831: died at Leipsic, May 1, 1904. An eminent German histologist and physiologist, professor of anatomy in the University of Leipsic 1872–1904, especially noted for his researches in the development of the nervous system.

Hitchcock (hich'kok), **Charles Henry.** Born at Amherst, Mass., Aug. 23, 1836. An American geologist, son of Edward Hitchcock. He was graduated at Amherst College in 1856; was assistant geologist of the State of Vermont 1857–61; was geologist of the State of Maine 1861–62 and of the State of New Hampshire 1868–78; and has been professor of geology in Dartmouth College from 1868. He has published numerous geological reports and papers.

Hitchcock (hich'kok), **Ethan Allen.** Born at Mobile, Ala., Sept. 19, 1835: died at Washington, D. C., April 9, 1909. An American diplomat and cabinet officer. He was minister (1897–98) and ambassador (1898) to Russia, and was secretary of the interior 1898–1907.

Hitchcock (hich'kok), **Frank Harris.** Born at Amherst, O., Oct. 5, 1867. An American lawyer and government official. He was graduated from Harvard in 1891, was admitted to the bar in 1894, and was in the service of the government in the Departments of Agriculture, Commerce and Labor, etc. He was first assistant postmaster-general 1905–08, and in 1909 was appointed postmaster-general. He was chairman of the Republican national committee in 1908 and conducted the presidential campaign of that year.

Hoar*, **George Frisbie.** Died at Worcester, Mass., Sept. 30, 1904. He was United States senator 1877–1904.

Hobart, Garret Augustus. Born at Long Branch, N. J., 1844: died at Paterson, N. J., Nov. 21, 1899. An American lawyer and Republican politician. He was educated at Rutgers College, and was admitted to the bar in 1869. In 1872 he served in the State assembly of New Jersey; in 1876 was elected a member of the State senate, and in 1881 its president; and in 1896 was elected vice-president.

Hobson (hob'sọn), **Richmond Pearson.** Born at Greensboro, Ala., Aug. 17, 1870. An American naval officer, noted for his exploit in blowing up the United States collier Merrimac in an attempt to block the channel of the harbor of Santiago de Cuba June 3, 1898. He was promoted naval constructor June 23, 1898, and captain Feb. 26, 1901; resigned Feb., 1903. He has been a Democratic member of Congress from Alabama 1907–.

Hoder (hō'der), or **Hödur** (hė'dör). [ON. Hödhr.] In Old Norse mythology, a blind god who, at the instigation of Loki, slays Baldur by means of a twig of mistletoe. He is in turn slain by Vale, the son of Odin. The story of the death of Baldur has been said to personify victory of darkness over light, the killing of summer by winter, the slaying of innocence by physical strength guided by sin, etc.

Hodge (hoj), **Frederick Webb.** Born at Plymouth, England, Oct. 28, 1864. An American anthropologist, ethnologist of the Bureau of American Ethnology 1889–1901, and from 1905. He has published numerous papers on ethnological topics, and is editor of "The American Anthropologist."

Hodgson (hoj'sọn), **Shadworth Hollway.** Born at Boston, Lincolnshire, Dec. 25, 1832. An English philosophical writer. He has written "Time and Space" (1885), "The Theory of Practice" (1870), "The Philosophy of Reflection" (1878), "The Metaphysics of Experience" (1898), etc.

Hoff (hōf), **Jacobus Hendrikus van't.** Born at Rotterdam, Aug. 30, 1852. An eminent Dutch chemist, professor in the University of Berlin from 1896. In 1878 he was appointed professor of chemistry, mineralogy, and geology at Amsterdam. He is especially noted for his researches in physical chemistry and as the founder of stereochemistry.

Hofmann (hof'män), **Josef.** Born at Cracow, Austria, Jan. 20, 1877. A Polish pianist and composer. As a child he attracted great attention in his concerts from 1883 to 1888. He was then withdrawn from public notice for study under Rubinstein, and made his début as an artist in 1894, winning high rank. He has composed a number of works for the pianoforte.

Hohenlohe-Schillingsfürst*, **Prince of (Chlodwig Karl Victor)**, Prince of Ratibor and Korvei. Died at Ragaz, July 6, 1901. He was chancellor of the German Empire Oct., 1894,–Oct., 1900, succeeding Caprivi.

Hokusai (hō'kö-sä-i). Born in Yedo, Japan, 1760: died 1849. A noted Japanese artist. He was at first apprenticed to an engraver, but after a few years abandoned engraving and studied designing with Shunsho, a noted artist of the period. Later he devoted himself to book-illustration, and finally became an artist and teacher of great repute. His works are very numerous, amounting to over thirty thousand drawings.

Holden (hōl'den), **Edward Singleton.** Born at St. Louis, Mo., Nov. 5, 1846. An American astronomer, librarian of the United States Military Academy from 1901. He was graduated from this academy in 1870; was astronomer in the United States Naval Observatory 1873–81; was director of the Washburn Observatory 1881–85; was president of the University of California 1885–88; and was director of the Lick Observatory 1888–98. The Lick Observatory was built according to plans prepared by Newcomb and Holden 1874–85. He is the author of numerous astronomical and other papers.

Holder (hōl'dėr), **Charles Frederick.** Born at Lynn, Mass., Aug. 5, 1851. An American author, a lineal descendant of Christopher Holder. He was assistant curator of zoölogy in the American Museum of Natural History, New York, 1871–75. Among his publications are "The Ivory King" (1887), "Living Lights" (1889), "Louis Agassiz" (1892), "Charles Darwin" (1893), "Big Game Fishes of the United States" (1903), "The Pioneer Quakers" (1905), "Life in the Open in Southern California" (1906), "The Log of a Sea Angler" (1906), "Big Game at Sea" (1908), "Fish Stories" (1909: with D. S. Jordan), etc.

Holder (hōl'dėr), **Christopher.** Born at Winterbourne, England, in 1631. One of the founders, in 1656, of the first society of Friends in New England. He was repeatedly banished from Boston and persecuted for his faith. He wrote in the Boston jail, in 1657, the first declaration of faith of the Quakers.

Holland (hol'ạnd), **William Jacob.** Born at Bethany, Jamaica, Aug. 16, 1848, of American parentage. An American naturalist, director of the Carnegie Museum, at Pittsburg, from 1898. He was graduated at Amherst College in 1869; was naturalist of the United States eclipse expeditions to Japan in 1887 and to Africa in 1889; and was chancellor of the Western University of Pennsylvania 1891–1901. He has published "The Butterfly Book" (1898), "The Moth Book" (1903), and numerous scientific memoirs on entomology and paleontology. He has been editor of the "Annals" and "Memoirs" of the Carnegie Museum from 1900.

Holmes (hōms), Mrs. (**Mary Jane Hawes**). Born at Brookfield, Mass.: died at Brockport, N. Y., Oct. 7, 1907. An American novelist, whose stories for young people have attained wide popularity. Among the best known of her earlier works are "Tempest and Sunshine" (1854), and "Lena Rivers" (1856). Among her later works are "Gretchen" (1887), "Dr. Hathern's Daughters" (1895), "The Cromptons" (1902), and "The Abandoned Farm" (1905).

Holmes (hōms), **Oliver Wendell.** Born at Boston, Mass., March 8, 1841. An American jurist, son of Oliver Wendell Holmes. He was graduated at Harvard in 1861 and at the Harvard Law School in 1866. He served with the 20th Massachusetts volunteer regiment in the Civil War 1861-64; was associate justice (1882–99) and chief justice (1899–1902) of the Supreme Judicial Court of Massachusetts, and has been associate justice of the United States Supreme Court from 1902. He edited Kent's Commentaries (1873), and has published "The Common Law" (1881), and a volume of speeches.

Holmes, Sherlock. See *Sherlock Holmes.*

Holmes (hōms), **William Henry.** Born in Harrison County, Ohio, Dec. 1, 1846. An American anthropologist, chief of the Bureau of American Ethnology from 1902, and honorary curator of the division of prehistoric archæology in the United States National Museum from 1903 and of the National Gallery of Art from 1907.

Holst*, Hermann Eduard von. Died at Freiburg, Jan. 20, 1904. He was professor of history at the University of Chicago 1892–99, and returned to Freiburg in 1900. He wrote also "John Brown" (1888), and "The French Revolution Tested by Mirabeau's Career" (1894).

Holt (hōlt), **Henry.** Born at Baltimore, Md., Jan. 3, 1840. An American author and publisher. He has been prominent in university settlement and municipal reform work. His works include "Talks on Civics" (1901), "On the Civic Relations" (1907), and two novels dealing with religious and social questions, "Calmire" (1892), and "Sturmsee" (1905).

Holt (hōlt), **Joseph.** Born in Breckenridge County, Ky., Jan. 6, 1807: died at Washington, D. C., Aug. 1, 1894. An American jurist. In 1857 Buchanan appointed him commissioner of patents, in 1859 postmaster-general, and in 1860 secretary of war. In September, 1862, Lincoln appointed him judge-advocate general, and upon the establishment of the Bureau of Military Justice in 1864 he was kept at its head with the same title. He was brevetted major-general in 1865 and was retired in 1875. He was judge-advocate and recorder of the military commission which tried the assassins of Lincoln, May-June, 1865.

Holtzendorff*, Franz von. Died at Munich, Feb. 5, 1889.

Holub*, Emil. Died at Vienna, Feb. 21, 1902. He wrote also "Die Kolonisation Afrikas" (1881–82), and "Von der Kapstadt ins Land der Maschukulumbe" (1888–90).

Holyoake*, George Jacob. Died at Brighton, Jan. 22, 1906. He wrote also "Life of Joseph Rayner Stephens" (1881), "The Co-operative Movement of To-day" (1891), "Sixty Years of an Agitator's Life" (1890), "Public Speaking and Debate" (1894), "Nature and Origin of Secularism" (1896), "Bygones Worth Remembering" (1905), etc.

Hondu, or **Hondo** (hon'dō, dō). The chief island of Japan. See *Nippon.*

Honduras*. The republic is divided into 16 departments, Atlantida, Choluteca, Colon, Comayagua, Copan, Cortes, El Paraiso, Gracias, Intibuca, Islas de la Bahia, La Paz, Olancho, Santa Barbara, Tegucigalpa, Valle, and Yoro, and one territory, Mosquitia. In December, 1907, a treaty was signed by the five Central American States agreeing to the establishing of a court of arbitration for the settlement of disputes. See *Central American Arbitration Treaty.*

Honshu, or **Honshiu** (hon'shö). Same as *Hondu.*

Hood*, Mount. Its height has been determined by the United States Geological Survey as 11,225 feet.

Hook*, James Clarke. Died April 14, 1907.

Hooker (hůk'ėr), Mrs. (**Isabella Beecher**). Born at Litchfield, Conn., Feb. 22, 1822: died Jan. 25, 1907. An American philanthropist and reformer, daughter of Lyman Beecher (1775–1863). She was an active worker in the cause of woman suffrage and in various reform movements. She was the author of "Womanhood: its Sanctities and Fidelities," "The Constitutional Rights of the Women of the United States," and pamphlets relating to the participation of women in government.

Hooker*, Sir **Joseph Dalton.** He was surgeon and naturalist of the Ross Expedition to the Antarctic 1839–43; explored as a naturalist the Himalayas, Eastern Bengal, Khasia mountains, etc., 1847–51; Syria and Palestine 1860; Morocco and the Greater Atlas 1871; and the Rocky mountains and California 1877. He was assistant director of the Royal Gardens at Kew 1855–65 and director 1865–85, and was president of the Royal Society 1872–77. He has written also a monumental work on the collections at Kew, and "The Flora of British India," on the completion of which last in 1897 he was created G. C. S. I.

Hoosier State, The. A popular name of the State of Indiana.

Hope diamond. A fine blue diamond, weighing 44¼ carats, and estimated to be worth £25,000, owned privately in England. It is supposed to be part of a diamond sold by Tavernier to Louis XIV., which was seized during the French Revolution and was lost. The Hope diamond came into the market in 1830, and was bought by H. T. Hope, a London banker.

Hopi (hō'pi). An Indian people, speaking a language belonging to the Shoshonean linguistic family, occupying six pueblos in northeastern Arizona. See *Tusayan.*

Hopkins (hop'kinz), **Johns.** Born in Anne Arundel County, Md., May 19, 1795: died at Baltimore, Md., Dec. 24, 1873. An American merchant and philanthropist, founder of the university in Baltimore which bears his name. At the age of seventeen he removed to Baltimore, and rose to be one of the leading business men of that city. On his death he left $7,000,000 for the founding of a university and a hospital.

Hoppin*, Augustus. Died at Flushing, N. Y., April 1, 1896.

Hornet Islands. See *Liancourt Rocks.*

Hornsey (hôrn'zi). A northern suburb of London, situated in Middlesex on New River. Population (1901), 72,056.

Horsley*, John Callcott. Died Oct. 19, 1903.

Hosmer*, Harriet G. Died at Watertown, Mass., Feb. 21, 1908.

Housman (hous'man), **Alfred Edward.** Born March 26, 1859. An English poet, essayist, and scholar. He was graduated at Oxford, and in 1892 was appointed professor of Latin at University College, London. He is the author of "A Shropshire Lad" (1896), by which he is best known.

Housman (hous'man), **Laurence.** Born July 18, 1867. An English illustrator and author. His publications include "Gods and their Makers" (1897), "Spikenard" (1898), "Rue" (1899), "An Englishwoman's Love Letters" (1901), "A Modern Antæus" (1901), "Bethlehem," a nativity play (1902), "Sabrina Wareham" (1904), "The Blue Moon" (1904), "The Cloak of Friendship" (1905), "The Chinese Lantern" (1908), etc.

Houssaye*, originally **Housset, Arsène.** Died at Paris, Feb. 26, 1896.

Houston (hūs'ton), **Edwin James.** Born at Alexandria, Va., July 9, 1844. An American electrician, emeritus professor of physics at the Franklin Institute, Philadelphia, and consulting electrical engineer. He is one of the inventors of the Thomson-Houston system of electric lighting. His publications include a "Dictionary of Electrical Words, Terms, and Phrases," and many books on electrical subjects, general and applied physics, etc.

Hovenden (hō'ven-den), **Thomas.** Born at Dunmanway, County Cork, Ireland, Dec. 28, 1840: died near Norristown, Pa., Aug. 14, 1895. An American artist. He came to New York in 1863, entered the School of the National Academy of Design, and in 1874 went to Paris and studied under Cabanel for six years. His earliest successes were made with scenes from negro life, and were followed by subjects taken from the common life of the people. He was killed at a railway station while attempting to save a child from being run over by a train.

Howard (hou'ärd), **Blanche Willis** (Mrs. **von Teuffel**). Born at Bangor, Maine, July 21, 1847: died at Munich, Germany, Oct. 7, 1898. An American novelist. She wrote "One Summer" (1875), "One Year Abroad" (1877), "Aunt Serena" (1881), "Guenn: a Wave on the Breton Coast" (1883), "The Open Door" (1889), "A Fellowe and his Wife" (1892: with William Sharp), "Seven on the Highway" (1897), "Garden of Eden" (1900), etc.

Howard (hou'ärd), **Bronson.** Born at Detroit, Mich., Oct. 7, 1842: died at Avon, N. J., Aug. 4, 1908. An American playwright. He was engaged in journalistic work in New York on the "Evening Mail," "Tribune," and "Evening Post," 1868–72. In 1880 he married Alice Wyndham, sister of the English actor Sir Charles Wyndham. His plays include "Saratoga" (1870), "Moorcroft" (1874), "The Banker's Daughter" (1878), "Hurricanes" (1878), "Young Mrs. Winthrop" (1882), "The Henrietta" (1887), "Shenandoah" (1889), "Aristocracy" (1892), "Peter Stuyvesant" (1899: in collaboration with Brander Matthews), etc.

Howard (hou'ärd), **John Galen.** Born at Chelmsford, Mass., May 8, 1864. An American architect. He went to Paris in 1891 and entered the École des Beaux-Arts, in the atelier of Victor Laloux. Returning to New York, he designed an addition to the Hotel Renaissance which was one of the first designs to bring modern French architectural methods into prominence. He was appointed architect of the University of California, and later professor in charge of its architectural department. In 1900 he was one of the board of architects of the Pan-American Exposition, in Buffalo, and in 1906 served on the board of advisers of the reconstruction committee for the City of San Francisco.

Howard (hou'ärd), **Leland Ossian.** Born at Rockford, Ill., June 11, 1857. An American entomologist, chief of the Bureau of Entomology of the United States Department of Agriculture from 1894. He has been honorary curator of the department of insects of the United States National Museum from 1895, and consulting entomologist of the United States Public Health and Marine Hospital Service. In 1897 he became permanent secretary of the American Association for the Advancement of Science. He has published "Mosquitoes" (1901), "The Insect Book" (1902), and many government bulletins, reports, etc.

Howard University*. It has about 100 instructors and 1,000 students.

Howe (hou), **Henry Marion.** Born at Boston, Mass., March 2, 1848. An American metallurgist, son of Samuel G. and Julia Ward Howe: professor of metallurgy in Columbia University from 1897. He was graduated at Harvard University in 1869 and at the Massachusetts Institute of Technology in 1871. He has published "Metallurgy of Steel" (1891), "Metallurgical Laboratory Notes" (1902), "Iron, Steel, and Other Alloys" (1903), etc. In 1901 he was made a chevalier of the Legion of Honor.

Howell (hou'el), **John Adams.** Born at New York, March 16, 1840. An American naval officer, promoted rear-admiral in 1898. He was graduated from the United States Naval Academy in 1858; was promoted captain in 1884 and commodore in 1895; served in the Civil War (Mobile Bay); commanded the patrol squadron during the Spanish War (1898), and the blockading squadron before Havana; and was retired in 1902. He is the inventor of an automobile torpedo and of the gyroscopic steering-gear for torpedoes.

Howells*, William Dean. His later works include "Stops of Various Quills" (1895), "A Parting and a Meeting" (1896), "The Day of Their Wedding" (1896), "Impressions and Experiences" (1896), "The Landlord at Lion's Head" (1897), "An Open-eyed Conspiracy" (1897), "A Chance Acquaintance" (1898), "The Story of a Play" (1898), "Their Silver Wedding Journey" (1899), "Heroines of Fiction" (1901), "A Pair of Patient Lovers" (1901), "Literature and Life" (1902), "The Flight of Pony Baker" (1902), "The Kentons" (1902), "Questionable Shapes" (1903), "The Son of Royal Langbrith" (1904), "London Films" (1905), "Miss Bellard's Inspiration" (1905), "Certain Delightful English Towns" (1906), "Through the Eye of the Needle" (1907), "Between the Dark and the Daylight" (1907), "Roman Holidays, and others" (1908), "Fennel and Rue" (1908), "Christmas Every Day" (1908), and "Mother and Father" (1909).

Howison (hou'i-son), **George Holmes.** Born in Montgomery County, Md., Nov. 29, 1834. An American philosophical writer and educator, professor of philosophy in the University of California from 1884. He has published "Treatise on Analytic Geometry" (1869), "The Conception of God" (1897: with Royce, Le Conte, and Mezes), "Limits of Evolution" (1901), etc.

Hozumi (hō-zö'mi), **Yatsuka.** Born Feb., 1860. A Japanese scholar, professor of constitutional and administrative law in the Imperial University of Tokio from 1889, and director of the College of Law.

Huascarán (öäs-kä-rän'). A mountain in Peru, in the department of Ancachs. Height, about 24,000 feet (Peck). Ascended by Miss Annie S. Peck in 1908.

Hübner*, Emil. Died at Berlin, Feb. 21, 1901.

Hudson (hud'son), **William Henry.** Born at London, May 2, 1862. An English author, critic, and educator. Among his works are "Introduction to the Philosophy of Herbert Spencer" (1894), "Studies in Interpretation" (1896), "The Study of English Literature" (1898), "Rousseau and Naturalism in Life and Thought" (1903), etc.

Hudson-Fulton Celebration. A celebration held in New York from Sept. 25 to Oct. 9, 1909, to commemorate the three hundredth anniversary of the exploration of the Hudson river by Henry Hudson in the Half Moon in 1609, and the one hundredth anniversary of the successful application of steam to navigation on the same river by Robert Fulton in the Clermont in 1807.

Hudson River School. A coterie of American painters who were active during the middle period of the nineteenth century, and who were especially interested in topographical painting—that is, in the representation of interesting views. Among those usually associated with the school are Asher B. Durand, John F. Kensett, T. Addison Richards, Sanford R. Gifford, F. E. Church, and Albert Bierstadt.

Hueffer (hü'fer), **Franz.** Born at Münster, Germany, May 23, 1845: died at Dresden, Jan. 19, 1889. A German critic and writer on music. In 1878 he was appointed musical critic of the London "Times." He was an ardent advocate of Wagner, and wrote a "Life of Wagner" (1881), and "Richard Wagner and the Music of the Future" (1874), and translated the "Correspondence of Wagner and Liszt" (1888). He also wrote "The Troubadours" (1878), "Musical Studies" (1880), "Italian and Other Studies" (1884), and "Half a Century of Music in England" (1889).

Huggins*, Sir **William.** He was knighted in 1897. He was president of the Royal Society 1900–05.

Hughes (hūz), **Ball.** Born at London, England, Jan. 19, 1806: died at Boston, Mass., March 5, 1868. An Anglo-American sculptor. His most important works were a statue of Alexander Hamilton in New York, which was destroyed soon after it was made, the effigy of Bishop Hobart in the vestry of Trinity Church, New York, and the bronze statue of Dr. Bowditch, the astronomer, in Mount Auburn Cemetery.

Hughes (hūz), **Charles Evans.** Born in Glens Falls, N. Y., April 11, 1862. An American jurist and statesman, governor of New York 1907–. He was graduated at Brown University (1881), and from the Columbia University Law School (1884); and was counsel of the gas commission of the New York legislature 1905, and of the commission (Armstrong) which investigated the insurance companies of the State 1905–06.

Hughes*, **Thomas.** Born Oct. 20, 1823: died at Brighton, March 22, 1896.

Humacao (ō-mä-kä′ō). 1. The most easterly department of Porto Rico. It is bounded by the Atlantic Ocean on the north and east; the Caribbean Sea and Guayama on the south; and Guayama and San Juan on the west. Capital, Humacao. Area, 413 square miles. Population (1899), 88,501.

2. A city, the capital of Humacao, situated in the eastern part of the department. Population (1899), 4,428.

Humbert*, It. **Umberto, I., Ranieri Carlo Emanuele Giovanni Maria Ferdinando Eugenio,** King of Italy. Assassinated at Monza, near Milan, July 29, 1900.

Hun (hön). A river in southern Manchuria which rises northeast of Mukden, flows south of that city in a southwesterly direction, and empties into the Liao not far from Niuchuang. It played an important part in the battles between Liao-yang and Mukden during the Russo-Japanese war.

Hundred Guilder Print. The popular name for an important etching by Rembrandt which represents Christ healing the sick. He was supposed to have sold a proof of this plate for one hundred guilders; but in fact he exchanged this proof, still in existence, with his friend Jan Zoomer for a proof of "The Pest" by Marcantonio Raimondi. The date of the plate is not definitely known, but is conjecturally given as 1649 or 1650.

Huneker (hūn′e-kėr), **James Gibbons.** Born at Philadelphia, Jan. 31, 1860. An American musical and dramatic critic. He was musical and dramatic editor of the New York "Sun" 1900-04, and dramatic editor of the "Morning Advertiser" 1895–97. He has published "Mezzotints in Modern Music" (1899), "Chopin" (1900), "Melomaniacs" (1902), "Overtones" (1904), "Iconoclasts" (1905), "Visionaries" (1905), "Egoists" (1909), etc.

Hungerford*, Mrs. (**Margaret Hamilton Argles**). Died at Bandon, Ireland, Jan. 24, 1897.

Hunt (hunt), **William Henry.** Born at Charleston, S. C., 1824: died at St. Petersburg, Feb. 27, 1884. An American lawyer and Republican politician. He studied at Yale; was admitted to the bar in 1844; and was appointed attorney-general of Louisiana in 1876, judge of the United States Court of Claims in 1878, and secretary of the navy in 1881. When President Arthur reorganized President Garfield's cabinet he retired from office and was appointed minister to Russia (1882). During the Civil War he supported the Union cause.

Hunter (hun′tėr), Sir **Archibald.** Born Sept. 6, 1856. A British general, commander of the western army-corps of the Indian army 1904–07, and of the southern army 1907–08. He commanded the tenth division in South Africa in the Boer war 1900–01.

Hunter*, Sir **William Wilson.** Died near Oxford, Feb. 7, 1900.

Huntington (hun′ting-ton). A city, the capital of Cabell County, West Virginia. It is situated on the Ohio river, southwest of the junction of the Guyandotte and the Ohio. It is the seat of Marshall College, and the West Virginia Asylum for Incurables, has car-, steel-, glass-, and machine-works, etc., and is a shipping-point for coal, lumber, salt, etc. Population (1900), 11,923.

Huntington*, **Daniel.** Died at New York, April 18, 1906.

Huntington*, **Frederick Dan.** Died at Hadley, Mass., July 11, 1904.

Hurst*, **John Fletcher.** Died at Washington, D. C., May 4, 1903.

Hutten (höt′ten), Baroness **von (Bettina Riddle).** Born at Erie, Pa., Feb. 14, 1874. An American-German author. She was educated in New York and married in 1897. She has published "Our Lady of the Beeches" (1902), "Pam" (1905), "He and Hecuba" (1905), "What became of Pam" (Amer. ed. "Pam Decides": 1906), "One Way Out" (1906), "The Halo" (1907), "Kingsmead" (1909), etc.

Hutton (hut′n), **Frederick Remsen.** Born at New York, May 28, 1853. An American engineer, professor of mechanical engineering in Columbia University from 1891, and secretary of the American Society of Mechanical Engineers 1883–1906 and president 1906–07. He has published "Mechanical Engineering of Power Plants" (1897), "Heat and Heat Engines" (1899), "The Gas Engine" (1904), etc.

Hutton (hut′n), **Laurence.** Born at New York, Aug. 8, 1843: died at Princeton, N. J., June 10, 1904. An American author and editor, literary editor of "Harper's Magazine" 1886–98. He published "Literary Landmarks" of "London" (1885), "Edinburgh" (1891), "Jerusalem" (1895), "Venice" (1896), "Florence" (1897), and "Rome" (1897), "A Boy I Knew" (1898), etc.

Hutton, Richard Holt. Born at Leeds, June 2, 1826: died at Twickenham, Sept. 9, 1897. An English journalist and essayist, editor of the "Spectator" 1861-97.

Huysmans (üs-män′), **Joris Karl.** Born at Paris, Feb. 5, 1848: died at Paris, May 12, 1907. A French writer, of Flemish extraction. His work was at first naturalistic, as in "Marthe" (1876), "Les sœurs Vatard" (1879), "En ménage" (1881), and "A vau-l'eau" (1882); but later exhibited a reaction from materialism as in "A rebours" (1884), "Là-bas" (1891), "En route" (1895), "La cathédrale" (1898), and "L'oblat" (1903), of which the last three were written as a result of the author's retreat to a Trappist monastery and a Benedictine community, and are largely autobiographic in character.

Hyatt (hī′at), **Alpheus.** Born at Washington, D. C., April 5, 1838: died at Cambridge, Mass., Jan. 15, 1902. An American naturalist, professor of zoölogy and paleontology in the Massachusetts Institute of Technology and in Brown University. His investigations were devoted chiefly to invertebrate animals, and especially to the tetrabranchiate cephalopods: they are of importance for general biology and especially to the theory of evolution. He belonged to the neo-Lamarckian group of evolutionists.

Hyde (hīd), **William De Witt.** Born at Winchendon, Mass., Sept. 23, 1858. An American educator and writer, president of Bowdoin College from 1885. He was graduated at Harvard in 1879. Among his publications are "Practical Ethics" (1892), "Practical Idealism" (1897), "The Art of Optimism" (1900), "From Epicurus to Christ" (1904), "The College Man and the College Woman" (1906), etc.

Hyderabad, or **Haidarabad.** A city in Sind, British India, on the Indus. It is a manufacturing center. It was founded in 1768. Population (1891), 58,048.

Hyndman (hīnd′man), **Henry Mayers.** Born at London, March 7, 1842. An English socialistic writer and agitator. He has taken an active part in the promotion of social reform since 1881, when he founded the Social Democratic Federation. Among his publications are "Historical Basis of Socialism" (1883), "A Commune for London" (1888), "Commercial Crises of the 19th Century" (1892), "Economics of Socialism" (1896), etc.

Hyppolite*, **Louis Mondestin Florvil.** Died at Cap Haitien, March 24, 1896.

Hyslop (his′lop), **James Hervey.** Born at Xenia, Ohio, Aug. 18, 1854. An American philosopher, psychologist, and educator. For some years he was professor of logic and ethics at Columbia University, but resigned in 1902. Among his publications are "Elements of Logic" (1892), "Elements of Ethics" (1895), "Democracy" (1899), "Logic and Argument" (1899), "Syllabus of Psychology" (1899), "Report on the Piper Case" (1901), "Problems of Philosophy" (1905), "Science and a Future Life" (1905), "Enigmas of Psychical Science" (1906), "Borderland of Psychical Research" (1906), "Psychical Research and the Resurrection" (1908), etc.

Iba (ē′bä). 1. A mountain of the Zambales range, in western Luzon, Philippine Islands. Height, 5,262 feet. —2. A town, the capital of Zambales province, Luzon. It is situated near the western coast, in lat. 15° 21′ N., long. 119° 58′ 30″ E. Civilized population of municipality (1903), 4,482.

Ibea*. It was formerly under the control of the Imperial British East Africa Company (which see).

Ibsen*, **Henrik.** Died at Christiania, May 23, 1906. His later works are "Lille Eyolf" ("Little Eyolf," 1894), and "Når vi Dode vagner" ("When We Dead Awaken," 1899).

Iceland*. The charter granted in 1874 was modified by two laws of Oct. 3, 1903. The legislative power was vested in the Althing, consisting of 40 members, 34 elected by popular suffrage, and 6 nominated by the king. A minister for Iceland, nominated by the king, is the responsible head of administration. The offices of governor and two amtmands were abolished. In May, 1908, a commission appointed in 1907 to report on the relations with Denmark presented a bill declaring Iceland a free, autonomous, and independent country, united to Denmark by a common king and ministries of foreign affairs and defense, but no action was taken on it.

Idaho*. It has 23 counties.

Iddings (id′ingz), **Joseph Paxson.** Born at Baltimore, Md., Jan. 21, 1857. An American geologist, professor of petrology in the University of Chicago from 1895. He was associate professor of petrology 1892–95, and has been a geologist of the United States Geological Survey since 1888. He has published a work on "The Rock Minerals" (1906), "Igneous Rocks" (1909–), and various technical papers; and with Cross, Pirrson, and Washington is author of "The Quantitative Classification of Igneous Rocks" (1903).

Iglesias*, **Miguel.** Died at Madrid, Spain, in 1901.

Ignatief*, **Nikolai Pavlovitch.** Died at St. Petersburg, July 3, 1908.

Ilagan (ē-lä′gän). A town, the capital of Isabela province, in Luzon, Philippine Islands. It is situated between the Rio Grande de Cagayan and the Pinacauan, one of its tributaries, approximately in lat. 17° 8′ 5″ N., long. 120° 50′ E. Civilized population of municipality (1903), 16,008.

Iligan (ē-lē′gän) **Bay.** An arm of the Mindanao Sea indenting the northern coast of Mindanao, in the Philippine Islands. It separates the western from the eastern part of Misamis province, and washes the northern coast of Lanao district.

Illana (ēl-yä′nä) **Bay.** An arm of the sea indenting the coast of Cotabato province, southern Mindanao, Philippine Islands.

Illinois*. It sends 2 senators and 25 representatives to Congress, and has 27 electoral votes.

Ilm (ilm). A small river in Germany which rises in the mountains southwest of Ilmenau, flows in a northeasterly direction past Weimar, and empties into the Saale near Sulza.

Ilocanos (ē-lō-kä′nōs). [Philippine Sp., < *Ilocos*, name of two provinces, prop. 'river men' (Tagalog *ilog*, river).] A Malay tribe of the Philippine Islands, inhabiting the extreme northwestern part of Luzon.

Ilocos Norte (ē-lō′kōs nōr′tā). The most northwesterly province of Luzon, Philippine Islands. It is bounded by the China Sea on the north; Cagayan (separated by the Cordillera Norte range) on the east; Abra (separated by a spur of the Cordillera Norte) on the southeast; Abra and Ilocos Sur on the south; and Ilocos Sur and the China Sea on the west. Capital, Laoag. The northern and eastern parts of the province are mountainous, with several peaks upward of 3,000 feet in altitude. The highest is Semeneblen (4,800 feet) on the boundary between Ilocos Norte and Abra. The valleys are very fertile, being watered by numerous rivers and producing rice, cotton, corn, sugar-cane, pineapples, betel-nuts, coffee, and tobacco. The largest river is the Laoag, which flows northwest to the China Sea. Most of the native inhabitants are Ilocanos. The census of 1903 gave also 2,148 Igorrotes. Area of province, including dependent islands, 1,330 square miles. Population (1903), 178,995.

Ilocos Sur (ē-lō′kōs sör). A very narrow province in northwestern Luzon, Philippine Islands. It is bounded by Ilocos Norte on the north; Ilocos Norte, Abra, and Lepanto-Bontoc (all separated from it by mountains) on the east; La Union on the south; and the China Sea on the west. Capital, Vigan. The highest peaks of the province are Estilete, 4,446 feet, and Nagapu, 4,154 feet high. The Abra flows through the province from east to west to the China Sea. The other rivers are small. Of the bays, Port Salomague, on the coast toward the north, is safe for large vessels in the northeast monsoon. The chief products are hemp, sugar-cane, and rice. Large numbers of cattle are raised. The inhabitants are mainly Ilocanos. The census of 1903 gave also 11,151 Igorrotes. Area of province, 471 square miles. Population (1903), 187,411.

Iloilo (ē-lō-ē′lō). 1. After Manila, the principal port of the Philippine Islands. It is situated on the island of Panay. It was captured from the Philippine insurgents by the United States troops on Feb. 11, 1899. Population, about 12,000. It was devastated by fire in April, 1907.—2. A river in Panay, Philippine Islands. It flows from its sources in the central mountain-range southeast to Iloilo Strait, and is navigable for 8 miles by small native craft.

3. A province of the Philippines, occupying the eastern and southeastern part of Panay and including numerous islands, the largest of which is Guimaras. It is bounded by Capiz (separated by mountains) and the Visayan Sea on the north; the Visayan Sea and Negros Island (separated by Guimaras Strait) on the east; the Strait of Iloilo and the Visayan Sea on the south; and Antique (separated by mountains) on the west. Capital, Iloilo, situated on Iloilo Strait, in lat. 10° 42′ N., long. 122° 35′ E. As a commercial center it is second to Manila. The most important rivers are the Jaro, the Jalaur, and the Iloilo. Among the products are tobacco, corn, pineapples, mangos, copra, rice, and sugar-cane. The native race is Visayan. Area, including islands, 2,027 square miles. Population (1903), 410,315.

Iloilo (ē-lō-ē'lō) **Strait.** A strait separating Panay, Philippine Islands, from Guimaras, and connecting the Sulu Sea with Guimaras Strait.

Inaya (ē-nä'yä). See *Bicol*.

Inchcape Rock, The. A ballad by Robert Southey. The story is that of the shipwreck of Sir Ralph the Rover upon the Inchcape or Bell Rock (which see), from which he had maliciously cut the warning bell placed there for the safety of mariners by the abbot of Aberbrothok (Arbroath).

In Darkest Africa. A work by Henry M. Stanley, published in 1890.

In Darkest England, and the Way Out. A book by William Booth, of the Salvation Army, published in 1890.

Independence Bay. An inlet on the northeastern coast of Greenland, in lat. 82° N., separating it in part from Melville Land: discovered by Peary and Astrup, July 4, 1892.

Indiana*. It is the eighth State in population.

Indiana University. A coeducational, nonsectarian State institution of learning situated at Bloomington, Indiana. It was founded in 1820; was opened in 1824; and became a university in 1838. It offers courses leading to the degrees of bachelor of arts and of law, master of arts, and doctor of philosophy. The students number over 2,000.

Indian Territory*. An act enabling Oklahoma and Indian Territory to enter the Union as the State of Oklahoma was passed by Congress in June, 1906. It was admitted to the Union as a State Nov. 16, 1907.

Indus*. In 1908 Dr. Sven Hedin announced that he had determined in Tibet the true sources of the Brahmaputra and the Sutlej, and had discovered the sources of the Indus.

Indy (aṅ-dē'), **Paul Marie Théodore Vincent d'**: known as **Vincent.** Born at Paris, March 27, 1851. A French composer, pupil of César Franck and leader of the radical modern French school. He was one of the founders of the Schola Cantorum in Paris, and is its director and professor of composition. His most important works are the operas "Fervaal" (1897) and "L'etranger" (1903), for both of which he wrote the librettos; the orchestral trilogy "Wallenstein"; symphonies; symphonic ballads; a string quartet; a trio for piano, clarinet, and violoncello; a sonata for piano and violin; and other chamber music and piano pieces.

Infanta Maria Teresa. An armored cruiser of 7,000 tons, the flagship of Admiral Cervera in the Spanish-American war. She was sunk in the battle of Santiago, July 3, 1898; was raised under the direction of Naval-Constructor Hobson; and was abandoned in a gale north of San Salvador, Nov. 1, 1898.

Ingalls (ing'galz), **John James.** Born at Middleton, Mass., Dec. 29, 1833: died at Las Vegas, N. Mex., Aug. 16, 1900. An American Republican politician. He was graduated from Williams College in 1855 and was admitted to the bar in 1857. He removed to Kansas; was a member of the Wyandotte Convention in 1859; was secretary of the Territorial Council in 1860 and of the State Senate in 1861; was a member of the Kansas Senate in 1862; and was United States senator from Kansas 1873–91.

Ingelow*, **Jean.** Born in 1820: died at London, July 20, 1897.

Ingersoll*, **Robert Green.** Died at Dobbs Ferry, N. Y., July 21, 1899.

Ingram (in'gram), **Arthur Foley Winnington.** Born in Worcestershire, England, Jan. 26, 1858. Bishop of London from 1901. He was educated at Oxford; was ordained in 1884; and was canon of St. Paul's Cathedral and bishop suffragan of Stepney 1897–1901. In 1888 he founded the Oxford House in the East End of London, and he is the leader of the Oxford settlement movement. His works include "Work in Great Cities" (1896), "Under the Dome" (1902), "The Gospel in Action" (1906), "Early English Colonies in America" (1908), "Joy in God" (1909), etc.

In His Name. A romance of the Waldenses in the 17th century, written by Edward Everett Hale in 1874.

Inness (in'es), **George.** Born at Paris, France, Jan. 5, 1854. An American artist, son of George Inness. He was a pupil of his father at Rome 1870–74, and studied at Paris in 1875. His work is signed 'Inness, Jr.' In 1895 he was elected an associate member and in 1899 a member of the National Academy of Design and was made an officer of the Académie des Beaux-Arts in 1902. He received honorable mention in the Paris Salon of 1896, and a gold medal in 1900.

Inouye (ē'nō-ö-yā), Marquis **Kaoru.** Born in Chosu, Nov. 28, 1835. One of the 'elder statesmen' of Japan. With Hirobumi Ito he secretly visited England in 1864, and their appreciation of the advantage of Western civilization subjected them on their return to attacks from which Inouye barely escaped with his life. Soon after the Restoration he was appointed vice-minister of finance, and remained in the government service in important positions until 1898, when he retired.

Iowa College*. It has about 55 instructors and 640 students.

Iowa State University*. It has about 164 instructors and about 2,400 students.

Ireland*. The kingdom is represented by 103 members in the House of Commons, and the peerage, which at present (1909) numbers 175 members, appoints 28 representative peers to sit in the House of Lords. In 1908 an act of parliament was passed providing for the abolition of the Royal University of Ireland and for the establishment of two new universities, the National University of Ireland, at Dublin, and the Queen's University, at Belfast, both to be non-sectarian.

Ireland, John. Born at Burnchurch, County Kilkenny, Ireland, Sept. 11, 1838. A Roman Catholic archbishop. He emigrated to the United States in 1849; was educated in France: and was ordained priest in St. Paul, Minn., in 1861. He was consecrated coadjutor to the bishop of St. Paul in 1875, became bishop of that city in 1884, and archbishop in 1888. He has written "The Church and Modern Society" (1896).

Iriga (ē-rē'gä). **1.** An extinct volcano in Ambos Camarines province, Luzon, Philippine Islands. Height, 4,092 feet.—**2.** A municipality of Ambos Camarines province, southeastern Luzon. Civilized population (1903), 19,297.

Irving*, Sir **Henry** (real name was **John Henry Brodribb**). Died at Bradford, Oct. 13, 1905.

Isabela (ē-sä-bā'lä). A province of eastern Luzon, Philippine Islands. It is bounded by Cagayan on the north; the Pacific Ocean and Principe on the east; Principe on the south; and Nueva Ecija, Nueva Vizcaya, and Lepanto-Bontoc (separated by mountains) on the west. Capital, Ilagan. The Sierra Madre range extends north and south not far from the coast, and sends spurs westward. The Rio Grande de Cagayan rises among the mountains in the south and, uniting near the central part of the province with the Magat, which rises in Nueva Vizcaya, flows north into Cagayan. There are extensive forests. The soil is easily cultivated, and produces large crops of corn and tobacco. The inhabitants are of several races, as Igorrotes, Ilocanos, and Tagalogs. Area, 5,018 square miles. Population (1903), 76,431.

Isabella II.* (**Maria Isabella Louisa**). Died at Paris, April 9, 1904.

Isarog (ē-sä-rōg'). A large extinct volcano of perfect conical form, situated in the southeastern part of Luzon, Philippine Islands, in about lat. 13° 41′ N., long. 123° 21′ E. Height, 6,634 feet.

Isham (ī'sham), **Samuel.** Born at New York, May 12, 1855. An American painter. He was graduated at Yale University in 1875, and studied in Paris under Jacquesson de la Chevreuse, Boulanger, and Lefebvre. He won a silver medal at the St. Louis Exposition in 1904, and was elected an academician of the National Academy of Design in 1906. He has published a "History of American Painting" (1905).

Isthmian Canal Zone. A strip of territory ten miles wide, extending five miles in each direction from the central line of the canal route across the Isthmus of Panama. It begins in the Caribbean Sea "three marine miles from mean low-water mark," and extends "to and across the Isthmus of Panama into the Pacific Ocean to a distance of three marine miles from mean low-water mark." The cities of Panama and Colon, with their harbors, are excluded from the territory. The use, occupation, and control of this zone were ceded in perpetuity by the Republic of Panama to the United States by a treaty ratified by the United States Senate, February 23, 1904. The Republic of Panama granted to the United States "the use, occupation, and control of all islands within the limits of the zone above described, and in addition thereto the group of small islands in the Bay of Panama named Perico, Naos, Culebra, and Flamingo."

Italones (ē-tä-lō'nās). A head-hunting people living in the wilds of Nueva Vizcaya, Luzon.

Italy*. The parliament consists of a senate of about 400 members, and a chamber of 508 members.

Ito (ē'tō), **Hirobumi**, Prince. Born in Chosu, Japan, Sept. 2, 1841: assassinated at Harbin, Oct. 26, 1909. A noted Japanese statesman: premier 1886–88, 1892–96, Jan.–June, 1898, 1900–01, and resident-general in Korea December, 1905–09. He became convinced of the advantages of Western civilization through visits to Europe and the United States, and was the leader in the introduction of European ideas and political methods into Japan. He was created count 1884, marquis 1895, and prince 1907.

Ito (ē'tō), Viscount **Sukenori.** Born in Satsuma, May, 1842. A Japanese admiral, admiral of the fleet since 1905. He was promoted vice-admiral and commanded with great success the United Japanese squadron in the Chinese-Japanese war 1894–95.

Ivory Black. A pseudonym of Thomas Allibone Janvier.

Jack. A novel by Alphonse Daudet, published in 1876.

Jackson (jak'sọn), **Samuel Macauley.** Born at New York, June 19, 1851. An American clergyman, author, editor, and educator, professor of church history in New York University from 1895. He was graduated at the College of the City of New York in 1870, and at Union Theological Seminary in 1873. He has been engaged in editorial work on various encyclopedias and other works of reference, and is the author of "Huldreich Zwingli" (1901) and editor of the series of "Heroes of the Reformation" and of "Handbooks for Workers in Church and Philanthropy."

Jackson Park. A park in Chicago, situated on the lake front in the southern part of the city; the site of the World's Columbian Exposition in 1893. It is connected with Washington Park by the Midway Plaisance. Area, 523 acres.

Jacque (zhäk), **Charles Émile.** Born at Paris, May 23, 1813: died there, May 7, 1894. A French painter and etcher. At the age of thirteen he began work with a map-engraver; served with the army for a number of years; and was later engaged as a draftsman for illustrated publications. He is best known for his etchings and dry-points, and excelled in pictures of rural life. Among the best of his etchings are "Paysage: troupeau de porcs," "Le matin," "La rentrée," "La labourage," and "Paysage et animaux"; and among his dry-points may be mentioned "Le tueur de cochons." He exhibited for many years at the Salon, and was awarded a number of medals. In 1867 he received the cross of the Legion of Honor. He was interested in the breeding of fowls, and published an illustrated handbook on the subject, "Le poulailler" (1858).

Jamaica*. The island was visited by an earthquake Jan. 14, 1907, which caused great damage in the city of Kingston.

James (jāmz), **Edmund Janes.** Born at Jacksonville, Ill., May 21, 1855. An American educator, president of the University of Illinois from 1904. He studied in Northwestern and Harvard Universities and in the University of Halle; was professor of finance in the Wharton School of the University of Pennsylvania 1883–95, and of political and social science in that university 1884–95; was professor of public administration in the University of Chicago 1896–1901; and was president of Northwestern University 1902–1904. He was founder and first president of the American Academy of Political and Social Science; also founder and first president of the American Society for the Extension of University Teaching. His publications include a large number of treatises and papers upon economic, historical, and educational topics.

James (jāmz), **William.** Born at New York, Jan. 11, 1842. An eminent American psychologist and philosophical writer, professor of philosophy in Harvard University from 1897. He became an instructor in Harvard in 1872; was assistant professor of philosophy 1880–85; was professor of philosophy 1885–89; and was professor of psychology 1889–97. During 1900–02 he was Gifford lecturer at the University of Edinburgh. He has written "Principles of Psychology" (1890), "The Will to Believe, and Other Essays" (1897), "Talks to Teachers" (1899), "Human Immortality" (1898), "The Varieties of Religious Experience" (1902), "Pragmatism" (1907), "A Pluralistic Universe" (1909), "The Meaning of Truth: A Sequel to Pragmatism" (1909), etc.

Jameson (jā'me-sọn), **John Franklin.** Born at Boston, Mass., Sept. 19, 1859. An American historical writer and educator, director of the bureau of historical research in the Carnegie Institution in Washington, D. C., and managing editor of the "American Historical Review" from 1905. He was graduated at Amherst College in 1879; studied at Johns Hopkins University; and was professor of history in Brown University 1888–1901, and in the University of Chicago 1901–05. He has published "A History of Historical Writing in America" (1891), "A Dictionary of United States History" (1894), etc.

Jameson (jā′me-sọn), **Leander Starr.** Born at Edinburgh, 1853. A Scottish physician and statesman. He practised medicine in Kimberley, Cape Colony, and was appointed administrator of the British South Africa Company; in this capacity he organized an attack upon the Matabele in 1893. In 1895, at the instigation of Cecil Rhodes and others, he prepared to lead an armed force to Johannesburg. He started (Dec. 29) from Pitsani, Bechuanaland, with about 600 men (chiefly drawn from the Bechuanaland and Matabele mounted police), before the preparations were complete, and was obliged to surrender to the South African Republic at Doorn Kop, Jan. 2, 1896. President Krüger sent him to Great Britain for trial. In July, 1896, he was condemned to serve a ten months' term of imprisonment for having infringed the foreign enlistment act, but was released Dec. 3, 1896, on account of ill health. He returned to South Africa; was elected a member of the Cape legislative assembly for Kimberley in 1900; was appointed a director of the De Beers Consolidated Company in 1900 and of the British South Africa Company in 1902; and was premier of Cape Colony 1904–08.

Jamestown Tercentennial Exposition. An exposition held at Sewell's Point, near Norfolk, Va., from April 26 to Nov. 30, 1907, to commemorate the three-hundredth anniversary of the first permanent settlement of English-speaking people in America, and the birth of the American nation. The grounds fronted on Hampton Roads, opposite Old Point Comfort, and covered an area of between three and four hundred acres. The principal buildings were grouped about a square called Raleigh Court. The style of architecture was of the colonial period and most of the buildings were permanent structures. Many of those erected by the different States were reproductions of places famous historically. The exhibits were chiefly historical and industrial in character, and were planned to represent all the great events and every phase of development pertaining to the growth of the American nation. They were divided into the following eight groups: historic art; education and social economy; manufactures and liberal arts (including graphic arts); machinery and transportation (including electricity); agriculture and horticulture; food products and accessories; forestry, fish, and game; and mines and metallurgy. The amusement features were grouped about the so-called "War Path." It was here that the representations of historical events took place. A feature of the exposition was the great naval and military display, in which most of the nations of the world were invited to participate.

Janauschek*, **Fanny** (originally **Franziska Magdalena Romance**). Died at Amityville, L. I., N. Y., Nov. 28, 1904.

Janet*, **Paul.** Died at Paris, Oct. 4, 1899. He was professor of the history of philosophy at the Sorbonne 1864–97.

Janinay (Hä-nē-nī′). A municipality of Iloilo province, eastern Panay, Philippine Islands. Civilized population (1903), 20,738.

Janvier (zhäṅ′vi-ā), **Thomas Allibone.** Born at Philadelphia, Pa., July 16, 1849. An American author. He is a member of the Folk Lore Society (London), and an honorary member of the Provençal Félibrige. Among his works are "Color Studies" (1885), "The Mexican Guide" (1887), "The Aztec Treasure House" (1890), "Stories of Old New Spain" (1891), "The Uncle of an Angel, and Other Stories" (1891), "An Embassy to Provence" (1893), "In Old New York" (1894), "In the Sargasso Sea" (1898), "The Passing of Thomas, and Other Stories" (1900), "In Great Waters" (1901), "The Christmas Kalends of Provence, and Other Provençal Festivals" (1902), "The Dutch Founding of New York" (1903), "Santa Fé's Partner" (1907), "Henry Hudson" (1909), etc.

Japan*. The empire is divided for administrative purposes into 47 prefectures (3 fu, 43 ken, and 1 dô). There is also a subdivision politically into 85 provinces, excluding Formosa. A war with Russia was waged 1904–05 (see *Russo-Japanese War*). By the treaty of Portsmouth, Sept. 5, 1905, Russia transferred to Japan, with the consent of China, the lease of the Kwantung province, including Port Arthur, Talien, and Dalny, and also the railway between Chan-Chun and Port Arthur, with all its branches, and the coal-mines connected therewith; and ceded the southern half of the island of Sakhalin. By agreement of Nov. 17, 1905, between Japan and Korea, Japan assumed control of the foreign relations of Korea and provision was made for the establishment of a Japanese resident-general; and on July 31, 1907, a further agreement was concluded by which all administrative measures and high official appointments are to be subject to the approval of the resident-general, and Japanese subjects are eligible for official posts in the government departments.

Jarves (jär′vis), **James Jackson.** Born at Boston, Mass., Aug. 20, 1820: died at Tarasp, Switzerland, June 28, 1888. An American writer and connoisseur. He traveled in South America and the Pacific Islands, and settled in Honolulu in 1838, where he established in 1840 the "Polynesian," the first Hawaiian newspaper. About 1849 he was appointed special commissioner of the Hawaiian government to negotiate treaties with the United States, France, and Great Britain. After 1851 he lived in Florence, Italy, where from 1879 to 1882 he was United States vice-consul and acting consul. Of his collections, the best of his pictures now form the Jarves Collection at Yale University; other pictures and pieces of sculpture belong to the Hollenden Gallery in Cleveland; and his antique and modern Venetian glass is in the Metropolitan Museum of Art, in New York City. On matters relating to the fine arts he published "Art Studies; the Old Masters of Italy" (1861), "The Art Idea, Sculpture, Painting and Architecture in America" (1866), "Art Thoughts; The Experience and Observations of an American Amateur in Europe" (1869), "Glimpses at the Art of Japan" (1876), and "Italian Rambles" (1884).

Jastrow (jas′trō), **Joseph.** Born at Warsaw, Poland, Jan. 30, 1863. An American psychologist, professor in the University of Wisconsin from 1888. He has published "Time-relations of Mental Phenomena" (1890), "Fact and Fable in Psychology" (1900), "The Subconscious" (1906), and numerous articles in scientific and popular magazines.

Jastrow (jas′trō), **Morris,** Jr. Born at Warsaw, Poland, Aug. 13, 1861. An American Orientalist, professor of Semitic languages and librarian in the University of Pennsylvania. He came to America in 1866; was graduated at the University of Pennsylvania in 1881; and studied later in Germany and France. His publications include "The Grammatical Works of Hayyug" (1897), "Religion of the Babylonians and Assyrians" (1898: rewritten and enlarged edition in German in course of publication since 1903), "The Study of Religion" (1902), etc.

Jaurès (zhō-rā′), **Jean Léon.** Born at Castres, Tarn, France, Sept. 3, 1859. A French socialist and politician. He entered politics in 1885 as member of the Chamber of Deputies from Tarn, and is noted for his defense of Captain Dreyfus and for his efforts to unite the factions of French Socialists. He is editor of "La Petite République" and is one of the founders of "L'Humanité." His publications include "Les preuves" (1898), "Action socialiste" (1900), "Études socialistes" (1902), "Discours parlementaires" (1904–), etc.

Jeaffreson*, **John Cordy.** Died Feb. 2, 1901.

Jebb (jeb), Sir **Richard Claverhouse.** Born at Dundee, Aug. 27, 1841: died Dec. 9, 1905. A noted British scholar. In 1875 he became professor of Greek in Glasgow University, and in 1889 regius professor of Greek at Cambridge. He represented his university in the House of Commons 1891–1905.

Jefferson*, **Joseph.** Died at Palm Beach, Fla., April 23, 1905.

Jensen (yen′sen), **Adolf.** Born at Königsberg, Prussia, Jan. 12, 1837: died at Baden-Baden, Jan. 23, 1879. A German composer, best known for his songs and piano pieces, especially several sets for piano (four hands).

Jerome (je-rōm′), **Jerome Klapka.** Born at Walsall, England, May 2, 1859. An English humorist, writer, and lecturer. He has been at various times clerk, teacher, actor, and journalist. His stage experiences are embodied in "On the Stage—and Off" (1885), and "Stage Land" (1889): and he has written a number of plays, among them "Barbara" (1886), "When Greek meets Greek" (1888), "Sunset" (1888), "New Lamps for Old" (1890), "MacHaggis" (1897), "Miss Hobbs" (1900), and "Susan in Search of a Husband" (1906). In 1892 he founded the "Idler" with Robert Barr, retiring in 1897, and was editor of "To-day" 1893–97. His publications include also "Idle Thoughts of an Idle Fellow" (1886), "Three Men in a Boat" (1889), "Novel Notes" (1893), "Sketches in Lavender, Blue, and Green" (1897), "Three Men on Wheels" (1900), "Tea Table Talk" (1903), "Tommy & Co." (1904), "American Wives and Others" (1904), "Idle Ideas in 1905" (1905), "Passing of the Third Floor Back" (1908), etc

Jerome (je-rōm′), **William Travers.** Born at New York, April 18, 1859. An American lawyer. He was educated at Amherst College and the Law School of Columbia University; was admitted to the bar in 1884; was a justice of special sessions 1895–1902; and was elected district attorney for New York County in 1901 and again in 1905.

Jeune (jön), Sir **Francis Henry,** first Lord St. Helier. Born March 17, 1843: died April 9, 1905. An English judge. He was knighted in 1891; was raised to the peerage in 1905; and was president of the probate, divorce, and admiralty division of the High Court of Justice and judge-advocate general 1892–1905.

Jeune (jön), Lady (**Susan Mary Elizabeth Stewart-Mackenzie**). A contemporary English philanthropist and writer, wife of Sir Francis Henry Jeune, first Lord St. Helier. She has contributed to the reviews many articles on social subjects, a number of which have been collected in book form under the title "Lesser Questions" (1894).

Jewett (jū′et), **Sarah Orne.** Born at South Berwick, Me., Sept. 3, 1849: died there, June 24, 1909. An American author, known for her studies of New England life. Her publications include "Deephaven" (1877), "Play Days" (1878), "Tales of New England" (1879), "Old Friends and New" (1879), "Country Byways" (1881), "The Mate of the Daylight and Friends Ashore" (1883), "A Country Doctor" (1884), "A Marsh Island" (1885), "A White Heron, and Other Stories" (1886), "The Story of the Normans" (1886), "The King of Folly Island and Other People" (1888), "Betty Leicester" (1889), "Strangers and Wayfarers" (1890), "A Native of Winby, and Other Tales" (1893), "Betty Leicester's Christmas" (1894), "The Life of Nancy" (1895), "The Country of the Pointed Firs" (1896), "The Queen's Twin" (1899), and "The Tory Lover" (1901).

Jex-Blake (jeks′blāk′), **Sophia.** Born 1840. An English physician, lecturer, and writer, a pioneer in medical education for women. She was tutor in mathematics at Queen's College, London, 1858–61, and began to study medicine at Boston, Massachusetts. In 1869 she matriculated in the medical faculty of the University of Edinburgh, but was not allowed to take a degree, and the action which she brought, with others, against the university was defeated. In 1874 she founded the London School of Medicine for Women, and in 1878 went to Edinburgh, where she opened a dispensary for women and children in 1878, and the Cottage Hospital in 1885. In 1886 she founded the Edinburgh School of Medicine for Women, which was recognized for graduation by the University of Edinburgh in 1894. She is the author of "American Schools and Colleges" (1867), "Medicine as a Profession for Women" (1869), etc.

Jiménez*, **Jesús.** Died at San José, Feb. 17, 1897.

Joachim*, **Joseph.** Died at Charlottenburg, Aug. 15, 1907.

John Halifax, Gentleman. A story by Dinah Mulock Craik, published in 1857.

Johns Hopkins University*. It has about 175 instructors and 683 students, of whom 518 are graduate students.

Johnson*, **Eastman.** Died April 5, 1906.

Johnson (jon′sọn), **Robert Underwood.** Born at Washington, D. C., Jan. 12, 1853. An American journalist and poet, associate editor of the "Century Magazine" from 1881. He originated the movement which resulted in the establishment of the Yosemite National Park, and was made a chevalier of the Legion of Honor in 1891 and of the Order of the Crown of Italy in 1895 for his services in the cause of international copyright. He is the author of "The Winter Hour and Other Poems" (1892), "Songs of Liberty and Other Poems" (1897), and "Collected Poems" (1902).

Johnson (jon′sọn), **Thomas George.** Born at London, England, 1844: died at New York, Oct. 29, 1904. An Anglo-American wood-engraver. He came to New York in 1872. He was especially noted for his engraved portraits, and won a medal at the World's Columbian Exposition in 1893 and exhibited at the Paris Exposition in 1900.

Johnston (jon′stọn), Sir **Harry Hamilton.** Born at Kennington, London, June 12, 1858. An English explorer and official in Africa. He was educated at King's College, London; made various journeys in Africa 1879–84 (Portuguese West Africa, Kongo River, Mt. Kilimanjaro); occupied consular positions in various parts of Africa 1885–89, led the expedition which founded the British Central Africa Protectorate in 1889; was commissioner and consul-general 1891; was consul-general, Tunis, 1897–99; and was consul-general and commander-in-chief for the Uganda Protectorate 1899–1901. He has published a number of works on Africa, including "Kilimanjaro" (1885) "British Central Africa" (1897), "A History of the Colonization of Africa by Alien Races" (1899), "The Uganda Protectorate" (1902), "The Nile Quest" (1903), "Liberia" (1906), "George Grenfell and the Congo" (1908), etc.

Johnston (jon′stọn), **Mary.** Born at Buchanan, Va., Nov. 21, 1870. An American novelist. She is the author of "Prisoners of Hope" (1898), "To Have and to Hold" (1900), "Audrey" (1902), "Sir Mortimer" (1904), "The Goddess of Reason" (1907), and "Lewis Rand" (1908).

Johnston (jon′stọn), **Richard Malcolm.** Born in Hancock County, Ga., March 8, 1822: died at Baltimore, Md., Sept. 23, 1898. An American novelist. He was graduated at Mercer University, Macon, Georgia, in 1841; was admitted to the bar; was professor of literature in the University of Georgia 1857–61; served in the Confederate army; and for several years after 1867 conducted a school near Baltimore. He wrote stories of Southern life, particularly life among the Georgia 'crackers.' Among his works are "Georgia Sketches" (1864), "Dukesborough Tales. By Philemon Perch" (1871), "Historical Sketch of English Literature" (1872: with W. H. Browne), "Life of Alexander H. Stephens" (1878: with W. H. Browne), "Two Gray Tourists" (1885), "Widow Guthrie" (1890), "The Primes and their Neighbors" (1891), and "Old Times in Middle Georgia" (1897).

Joinville*, **Prince de** (**François Ferdinand Philippe Louis Marie d'Orléans**). Died at Paris, June 16, 1900.

Jókai*, **Mór.** Died at Budapest, May 5, 1904.

Jolly Beggars, The. A humorous cantata by Robert Burns, written about 1785.

Jolo (Hō-lō′). 1. The largest island of the Jolo group in the Sulu (Jolo) Archipelago. It belongs to the Jolo district of Moro province, and is situated in lat. 6° N. Its surface is hilly. The most important elevations are Bahú, 2,810 feet, Butpula, 2,739 feet, Dajo, 2,100 feet, and Tumatanguis, 2,940 feet in height. The island is inhabited by Moros. The chief town is Jolo, the capital of Jolo province. Area, 326 square miles. Population (1903), 44,718. Also called *Sulu*. See *Dajo*. 2. A district of Moro province in the Philippine Islands. It includes the Jolo (Sulu), Tawi Tawi, Pangutaran, and other groups of the Sulu (Jolo) Archipelago, together with Sibutu, Cagayan de Jolo, and adjacent islands. The inhabitants are Moros. The capital, Jolo, is situated on the northwestern coast of Jolo (Sulu) Island, in lat. 6° 3′ N., long. 121° E. Area of district, 1,042 square miles. Population (1903), 90,589.

Jolo (Hō-lō′) **Group.** A group of 28 named and 4 unnamed islands of the Sulu (Jolo) Archipelago. It forms a part of the Jolo district of Moro province, Philippines. The largest island is Jolo (Sulu). Area of the group, 377.3 square miles. See *Sulu Islands*.

Jolo (Hō-lō′) **Sea.** The body of ocean waters inclosed by the Philippine Islands, the Jolo (Sulu) Archipelago, and Borneo. It is connected on the east by the Mindanao Sea, the Surigao Sea, and Surigao Strait with the Pacific Ocean, and on the west by

Balabac Strait with the China Sea. The northern reach of the waters is known as the Visayan Sea. Also called *Sulu Sea.*

Jones*, Henry. Born at London, Nov. 2, 1831: died there, Feb. 15, 1899.

Jones (jōnz), **Henry Arthur.** Born at Grandborough, Buckinghamshire, England, Sept. 28, 1851. An English dramatist. Among his plays are "Saints and Sinners" (1884), "The Middleman" (1889), "Judah" (1890), "The Crusaders" (1891), "The Case of Rebellious Susan" (1894), "Michael and his Lost Angel" (1896), "The Liars" (1897), "Mrs. Dane's Defence" (1900), "Joseph Entangled" (1904), "The Chevaleer" (1904), "The Heroic Stubbs" (1906), "The Hypocrites" (1906), and "The Evangelist" (1907). He has also published a volume of essays on "The Renascence of the English Drama" (1895).

Jones*, John Paul. Died at Paris, Sept. 12, 1792. The coffin containing his body was sought for by General Horace Porter, United States ambassador to France, in the abandoned Saint Louis Cemetery in Paris, and found March 31, 1905. The body was brought to the United States for interment in Annapolis.

Jordan*, David Starr. His later works include "Fishes of North and Middle America" (with B. W. Evermann: 1896–1900), "Factors in Organic Evolution" (1894), "Care and Culture of Men" (1896), "Foot-notes to Evolution" (1898), "Imperial Democracy" (1899), "American Food and Game Fishes" (1902, with B. W. Evermann), "The Voice of the Scholar" (1903), "The Call of the Twentieth Century" (1903), "Guide to the Study of Fishes" (1905), "Life's Enthusiasms" (1906), "The Human Harvest" (1907), "The College and the Man" (1907), "Fossil Fishes of California" (1907), "Evolution and Animal Life" (1907, with V. L. Kellogg), "Fishes" (1908), "Scientific Aspects of Luther Burbank's Work" (1909, with V. L. Kellogg), etc.

Jordan*, Wilhelm. Died at Frankfort-on-the-Main, June 25, 1904.

Jörg*, Joseph Edmund. Died at Landshut, Nov. 18, 1901.

Joubert (jö'bert or zhö-bãr'), **Petrus Jacobus.** Born in Cape Colony, Jan. 20, 1831: died at Pretoria, March 27, 1900. An eminent Boer general and statesman. He settled in the South African Republic as a farmer and ranchman; became a member of the Volksraad; was made attorney-general in 1870; and in 1874 was acting president. When hostilities began with England (1880–81) he was appointed commandant-general, and gained the victories of Laing's Neck, Ingogo, and Majuba Hill. He was again acting president 1883–84, and in 1899 assumed command of the Boer forces in the last war with England. He conducted the Natal campaign and the siege of Ladysmith, but was forced to retire on account of ill-health.

Jude the Obscure. A novel by Thomas Hardy, published in 1896 (serially in "Harper's Magazine" as "Hearts Insurgent," 1895).

Judson (jud'sọn), **Harry Pratt.** Born at Jamestown, N. Y., Dec. 20, 1849. An American educator, president of the University of Chicago from 1907. He was graduated at Williams College in 1870: and was professor of history and political science in the University of Minnesota 1885–1907.

Juneau (jö-nō'). A mining town in Alaska, the capital of the Territory since 1906. Population (1900), 1,864.

Junipero. See *Serra.*

Jupiter*. Jupiter has eight satellites or moons. Their periods of revolution are as follows: Io, 1d. 18h. 32.2m.; Europa, 1d. 18h. 27.6m.; Ganymede, 3d. 13h. 13.7m.; Callisto, 7d. 3h. 42.6m.; nameless, 11h. 57.38m.: nameless, 253.4d.; nameless, 260d.; nameless, 931 (?) d.

Jusserand (zhüs-rän'), **Jean Adrien Antoine Jules.** Born at Lyons, France, Feb. 18, 1855. A French diplomatist and author. He was educated for the law at Lyons, and in 1876 entered the Foreign Office. He was councillor of the embassy at London 1887–90; was minister at Copenhagen in 1898; and has been ambassador at Washington since 1902. In 1892 he was made an officer of the Legion of Honor. He is the author of "Les Anglais au moyen âge; la vie nomade et les routes d'Angleterre au XIVe siècle" (1884: crowned by the French Academy), "French Ambassador at the Court of Charles II." (1892), "Histoire littéraire du peuple anglais" (1894), "English Essays from a French Pen" (1895), "Shakespeare en France sous l'ancien régime" (1898), "Les sports et jeux d'exercice dans l'ancienne France" (1901), "Literary History of the English People," etc.

Kahnis*, Karl Friedrich August. Died at Leipsic, June 20, 1888.

Kai-ping (kī-ping'). A town in southern Manchuria situated on the railroad near the western coast of the Liao-tung Peninsula, about thirty miles below the mouth of the Liao river.

Kaiserslautern*. Here, Nov. 28–30, 1793, the Duke of Brunswick defeated the French under Hoche, and May 23, 1794, the Prussians under Möllendorf again defeated the French.

Kaiser Wilhelm (kī'zer vil'helm) **Canal.** A ship-canal connecting the harbor of Kiel with the mouth of the Elbe near Brunsbüttel. The canal was begun June 3, 1887, and opened for traffic June 19, 1895. Its breadth at the bottom is 72 feet, and at the surface 213 feet; depth, 29 feet 6 inches. It has a length of 61 miles. The cost of construction was estimated at about $39,000,000.

Kálnoky*, Count **Siegmund Gustav.** Died at his estate in Moravia, Austria, Feb. 13, 1898.

Kamimura (kä-mi-mö'rä), Baron **Hikonojo.** Born in Satsuma, May 5, 1850. A Japanese naval officer, promoted vice-admiral in 1903. He fought, as captain, in the Chinese-Japanese war (1894–95), and during the Russo-Japanese war commanded the second Japanese squadron. On August 14, 1904, he fought with the Russian cruiser squadron from Vladivostock, sinking the Rurik and damaging the Gromoboi and Rossia. In 1905 he was appointed commander-in-chief of the Yokosuka admiralty.

Kamphausen (kämp'hou-zen), **Adolf.** Born in Solingen, Prussia, Sept. 10, 1829: died Aug. 18, 1909. A German Protestant theologian, professor in the University of Bonn from 1863. He has written "Das Lied Moses" (1862), "Das Gebet des Herrn" (1866), "Das Buch Daniel und die neuere Geschichtsforschung" (1893), "Das Verhältniss des Menschenopfers zur israelitischen Religion" (1896), etc.

Kam-ranh (käm'rän) **Bay.** A bay on the southeastern coast of French Indo-China, situated in about lat. 12° N.

Kaneko (kä-nä'kō), Viscount **Kentaro.** Born at Fukuoka, Feb., 1853. A Japanese statesman and diplomatist, a member of the House of Peers. He was graduated at Harvard University in 1878; was private secretary to Marquis Ito 1885–90; and was minister of agriculture and commerce from April to June, 1898, and of justice from Oct., 1900, to May, 1901. In 1894 he was sent to the United States as a diplomatic agent of Japan. He was made a member of the privy council in 1906. He was created baron 1895 and viscount 1907.

Kanem*. A former vassal state of Wadai. It was recognized as coming within the French sphere of influence by the Anglo-French agreement of 1899, and since 1903 has ceased to be a state, and is now a district of the Shari territory. Capital, Maô.

Kankakee (kang-kạ-kē') **Peninsula.** A peninsula which is supposed by geologists to have existed in the sea of Middle Devonian time, in the United States, west of the Indiana basin.

Kansas*. It has 105 counties.

Kansas, University of. See *University of Kansas.*

Karsten*, Hermann. Died at Berlin, July 13, 1908. His later works include "Chemismus der Pflanzenzelle" (1869), "Zur Geschichte der Botanik" (1870), "Deutsche Flora, pharmazeutisch-medizische Botanik" (1883), "Geologie de l'ancienne Colombie" (1886), etc. He also edited "Botanischen Untersuchungen aus dem physiologischen Laboratorium in Berlin" (1865–67).

Kassala*. It is the capital of Kassala, one of the 13 provinces of the Anglo-Egyptian Sudan, and was ceded to Egypt in 1897.

Katahdin*, Mount. The height of the west peak has been determined to be 5,268 feet and that of the east peak 5,250 feet.

Kathleen Mavourneen. A song by Louise Macartney Crawford, an American writer of the 19th century. The music was written by Frederick N. Crouch (1808–96), and the words have been attributed also to Mrs. Anne (Barry) Crawford.

Kato (kä'tō), **Taka-akira.** Born at Nagoya, in 1859. A Japanese diplomat, ambassador to Great Britain 1908–. He was graduated from the Imperial University at Tokio in 1881; entered the foreign office in 1887; represented Japan in England 1894–99; was minister for foreign affairs 1900–01 and for a few months under Saionji in 1906; and succeeded Count Komura at London in 1908.

Katsura (kät-sö'rä), Marquis **Taro.** Born in Choshu, November, 1847. A Japanese statesman and general, premier 1901–Jan. 6, 1906, and 1908–. He fought in the civil war for the restoration; studied military science in Germany; was military attaché in Berlin 1875–78; was vice-minister of war 1886–91; commanded the Nagoya division during the Chinese war; and was minister of war 1898–1900. In 1902 he concluded the Anglo-Japanese treaty which insured to Japan freedom of action in the subsequent war with Russia. He was created viscount 1895, count 1902, and marquis 1907.

Kaulbars (koul'bärz), **Alexander von.** Born at St. Petersburg, 1844. A Russian traveler and general. He explored the Tian-Shan mountains 1869–72; and was a member of the Amu Daria expedition under Gluchowski in 1873. After the Russo-Turkish war of 1877–78 he was one of the commission for the demarcation of Servia, and was minister of war in Bulgaria July, 1882,–Sept., 1883. He became chief of the second Siberian army corps in China in 1900, and commander-in-chief of the Odessa military district in 1904; and commanded the third and later the second Manchurian army in the Russo-Japanese war in 1905. He is the author of various geographical and military publications.

Kawamura (kä-wä-mö'rä), Viscount **Kagêaki.** Born in Satsuma, February, 1859. A Japanese general. He led a brigade in the Chinese-Japanese war (1894–95), and in the war with Russia (1905) commanded an army which formed the extreme Japanese right in the battles about Mukden.

Keane (kēn), **Augustus Henry.** Born at Cork, Ireland, June 1, 1833. A British ethnologist and geographer, professor emeritus of Hindustani in University College, London. He has published works on Asia, Africa, and Central and South America, "Ethnology" (1895), "Man, Past and Present" (1899), "The Boer States, Land, and People" (1900), "Gold of Ophir: Whence Brought and by Whom?", "The World's Peoples" (1908).

Kearney (kär'ni). A town in Hudson County, New Jersey, situated on the east bank of the Passaic river, and connected by bridge with Newark. It has a soldiers' home and other institutions, and manufactures of chemicals, linoleum, wire, metal goods, etc. Population (1900), 10,896.

Kekule von Stradonitz (kek'ö-le fon strä'dọ-nitz), **Friedrich August.** Born at Darmstadt, Germany, Sept. 7, 1829: died at Bonn, July 13, 1896. A distinguished German chemist, professor at Bonn from 1869, especially noted as the founder of the theory of valency. His works are fundamental in the history of organic chemistry.

Keller (kel'ėr), **Helen Adams.** Born at Tuscumbia, Alabama, June 27, 1880. An American writer, deaf and blind from the age of nineteen months. She was graduated at Radcliffe College in 1904, and has written various contributions to magazines, poems, "The Story of My Life" (1902), "Optimism" (1903), "The World I live in" (1908), etc. Her education was conducted from 1887 by Miss A. M. Sullivan (Mrs. J. A. Macy).

Keltie (kel'ti), **John Scott.** Born at Dundee, Scotland, March 29, 1840. A Scotch geographer and statistician, editor (from 1880) of the "Statesman's Year-book" and editor of the "Geographical Journal" of the Royal Geographical Society, of which he is secretary.

Kemeys (kem'ēs), **Edward.** Born at Savannah, Ga., Jan. 31, 1843: died May 11, 1907. An American sculptor. He was educated in New York, and enlisted in the Federal army in the Civil War, rising to the rank of captain of artillery. In art he was self-taught. In 1878 he exhibited in the Paris Salon a group of "Bison and Wolves"; in 1887 modeled a colossal bison's head for the Omaha bridge of the Union Pacific Railroad; and designed several colossal groups for the Chicago Exposition of 1893, where he was awarded two medals. He was one of the earliest American sculptors to treat animals successfully.

Kemp (kemp), **James Furman.** Born at New York, Aug. 14, 1859. An American geologist, professor of geology at Columbia University from 1892. He was graduated at Amherst College in 1881 and at the School of Mines, Columbia University, in 1884; studied abroad; was assistant professor of geology at Cornell University 1888–91; and was adjunct professor at Columbia 1891–92. He has been connected, as geologist, with the United States Geological Survey and the Geological Survey of the State of New York. His publications include "Ore Deposits of the United States and Canada" (1893–1900), "Handbook of Rocks" (1896–1901), and various technical papers.

Kentucky University. A coeducational institution of learning situated at Lexington, Kentucky. It is the outgrowth of Bacon College, established at Georgetown, Kentucky, by the Disciples of

Christ in 1836. The institution was chartered as Kentucky University in 1858; was united with the Tansylvania University (founded in 1799) in 1865; and held its first session in Lexington in that year. The university comprises 6 colleges (liberal arts, Junior College for Women in Hamilton College, the Bible, law, medical, and commercial) and the Academy. The students number about 1,200. In 1908 the name was changed back to Transylvania University.

Keppel (kep'l), Sir **Henry**. Born at Kensington, June 14, 1809: died at London, Jan. 17, 1904. A British naval officer, appointed admiral of the fleet in 1875. He commanded the naval brigade at Sebastopol July-September, 1855; served in the Chinese war in 1857; and was promoted rear-admiral in 1857, and admiral in 1869. He wrote "Reminiscences" (1898), "A Sailor's Life under Four Sovereigns" (1899), etc.

Kératry*, **Comte Émile de.** Died at Paris, April 7, 1904.

Kerr (kėr), **John.** Born at Ardrossan, Ayrshire, Dec. 7, 1824: died at Glasgow, Aug. 18, 1907. A Scotch physicist, mathematical lecturer in the Free Church Normal Training College in Glasgow 1857–1901. He is best known from his work on electricity and light and for his discovery of the "Kerr effect" (a magnetic effect upon the plane of polarization of a plane polarized ray of light).

Keyes*, **Erasmus Darwin.** Died Oct. 14, 1895.

Khartum*, or **Khartoum.** The capital of the province of Khartum, one of the thirteen provinces into which the Anglo-Egyptian Sudan is divided. It is also the capital and seat of government of the provinces. It was reëntered by the British troops Sept. 4, 1898. The Gordon Memorial College, established through the efforts of Viscount Kitchener, was opened in 1902.

Khilkof (kil'kof), Prince **Michael Ivanovitch.** Died at St. Petersburg, March 21, 1909. A Russian official. In the early seventies he went to America, where he studied railroad engineering for a number of years. He then accepted a position in Caracas as chief engineer of a Venezuelan railway in process of construction, and after two years returned to Russia, where he finally became minister of ways and communications (1895–1905) and a member of the council of the empire. It was due to his administrative ability and energy that the service of the Trans-Siberian Railway was made effective for the transportation of troops and supplies in the Russo-Japanese war.

Kiao-chau (ki-ä-ō-chou'). A city and seaport of the province of Shan-tung, China. It was occupied by Germany in 1897, and, with adjoining territory amounting to about 200 square miles, became a German protectorate in 1898.

Kidd (kid), **Benjamin.** Born Sept. 9, 1858. An English sociologist. He has written "Social Evolution" (1894), "The Control of the Tropics" (1898), "The Principles of Western Civilization" (1902), and "Individualism and After" (1908).

Kidder (kid'ėr), **Frank Eugene.** Born at Bangor, Maine, Nov. 3, 1859: died at Denver, Col., Oct. 27, 1905. An American engineer and architect. He produced a series of valuable books on construction, including "The Architect's and Builder's Pocket-book" (1884: rewritten 1905), "Churches and Chapels" (1895), and "Building Construction and Superintendence" (1896–1906).

Kielland*, **Alexander Lange.** Died at Bergen, April 6, 1906.

Kiepert*, **Heinrich.** Died at Berlin, April 21, 1899.

Kilimanjaro*. Height, 19,780 feet.

Kimberley Goldfield. A gold-mining district in the northeastern part of Western Australia.

Kin-chau (kin-chou'). 1. A city of Manchuria situated in the province of Sheng-king, near the extreme northwestern coast of Liao-tung Gulf, on the Eastern Chinese Railway.—2. A town in southern Manchuria, situated on Kin-chau Bay near the isthmus which joins the Kwang-tung peninsula to the mainland. It was captured from the Russians by the Japanese in May, 1904.

King (king), **Charles.** Born at Albany, N. Y., Oct. 12, 1844. An American soldier and novelist. He was graduated at West Point in 1866; became captain in 1879, inspector and instructor of the Wisconsin National Guard 1882–89, colonel in 1890, adjutant-general in 1895, and brigadier-general of United States Volunteers in the war against Spain in May, 1898; and served under General Lawton in the Philippine Islands. In 1902 he was commandant of the Michigan Military Academy. His works include many army stories, among them "The Colonel's Daughter" (1883), "Marion's Faith" (1885), "Between the Lines" (1889), "Captain Blake" (1892), "Cadet Days" (1893), "The Iron Brigade" (1902), "Medal of Honor" (1905), "Tonio, Son of the Sierras" (1906), "Rock of Chickamauga" (1907), "To the Front" (1908), and "Lanier of the Cavalry" (1909); also "Famous and Decisive Battles of the World" (1885), "Campaigning with Crook" (1890), etc.

King (king), **Clarence.** Born at Newport, R. I., Jan. 6, 1842: died at Phœnix, Ariz., Dec. 24, 1901. An American geologist and mining engineer. He conducted, 1867–72, for the United States government, the geological survey of a belt extending across the Rocky Mountains along the 40th parallel of latitude, and was the first director of the United States Geological Survey (1879–81).

King Oscar II. Land. A land within the antarctic regions, about long. 62° W., lat. 65° S., discovered by Larsen in December, 1893.

Kingsley (kingz'li), **John Sterling.** Born at Cincinnatus, N. Y., April 7, 1854. An American naturalist, professor of zoölogy at Tufts College from 1892. He has published "Elements of Comparative Zoölogy" (1897), "Text-book of Vertebrate Zoology" (1899), "A Popular Natural History" (1890), etc., and edited "Standard Natural History" (1886), and the "American Naturalist" (1886–96). He has also translated and edited Hertwig's "Manual of Zoölogy" (1902).

Kingsley (kingz'li), **Mary Henrietta.** Born at Islington, London, Oct., 1862: died at Simon's Town, Cape Colony, June 5, 1900. An English traveler and author, niece of Charles Kingsley. She went to Saint Paul de Loanda, Portuguese West Africa, in 1893, and in 1895 explored the Niger Coast Protectorate, Kamerun, and Gabun. In 1900 she went to South Africa and devoted herself to nursing the wounded in the Simon's Town military hospital. She wrote accounts of her travels in "Travels in West Africa" (1897), "West African Studies" (1899), and "The Story of West Africa" (1899).

King's Norton (kingz nôr'ton). A manufacturing town in Worcestershire, England. It has paper-mills, rolling-mills, a screw-factory, chocolate-factory, etc. Here the Birmingham and Worcester Canal flows through a tunnel nearly two miles long. Population (1901), 57,122.

Kingston* (Jamaica). It was largely destroyed by an earthquake Jan. 14, 1907.

Kipling*, **Rudyard.** For a number of years he lived in the United States. He was awarded the Nobel prize for literature in 1907. His later works include "The Second Jungle Book" (1895), "The Seven Seas" (1896), "Captains Courageous" (1897), "The Day's Work" (1898), "Stalky and Co." (1899), "From Sea to Sea" (1899), "Kim" (1901), "Just So Stories for Little Children" (1902), "The Five Nations" (1903), "Traffics and Discoveries" (1904), "They" (1906), "Puck of Pook's Hill" (1906), etc.

Kirchhoff*, **Johann Wilhelm Adolf.** Died at Berlin, Feb. 26, 1908.

Kirchwey (kėrsh'wā), **George Washington.** Born at Detroit, Mich., July 3, 1855. An American lawyer, author, and educator, dean of the School of Law and Kent professor of law in Columbia University from 1901. He was graduated at Yale in 1879, and was admitted to the bar in 1881. He was editor of historical manuscripts for the State of New York 1887–89; professor of law at Union University and dean of the Albany Law School 1889–91; and professor of law at Columbia 1891–. He has edited and compiled "Readings in the Law of Real Property" (1900), and "Select Cases and Other Authorities on the Law of Mortgage" (1901).

Kirin*. It was opened to foreign commerce in 1907.

Kirk (kėrk), Mrs. (**Ellen Warner Olney**): pseudonym **Henry Hayes.** Born at Southington, Conn., Nov. 6, 1842. An American novelist, wife of John Foster Kirk. Among her publications are "Love in Idleness" (1877), "Through Winding Ways" (1879), "A Midsummer Madness" (1884), "The Story of Margaret Kent" (1886), "Sons and Daughters" (1887), "Queen Money" (1888), "Walford" (1890), "The Revolt of a Daughter" (1897), "Dorothy Deane" (1898), "Good-bye, Proud World" (1903), "The Apology of Ayliffe" (1904), "Marcia" (1907), etc.

Kirk*, **John Foster.** Died 1904.

Kirunga (ki-rön'gä). An active volcano in the Kongo Free State on the shore of Lake Kivu, north of Lake Tanganyika. It was discovered by Count von Götzen. Height, over 12,000 feet.

Kishinef*. A massacre of the Jews occurred here, Sept. 6, 1906.

Kitasato (kē-tä-sä'tō), **Shibasaburo.** Born at Kumamoto, Japan, Dec., 1856. A Japanese bacteriologist and pathologist, discoverer (1894) of the plague bacillus and (1898) of the bacillus of dysentery. He studied in Berlin, under Koch, 1886–91; became assistant (1891) in the Institute for Infectious Diseases; and was appointed professor in 1892. In 1893 he returned to Japan to take charge of the Bacteriological Institute connected with the University of Tokio, and in 1896 became director of the Institute for Infectious Diseases established at Shiteta in the province of Yechigo. He produced the first pure culture of the tetanus bacillus.

Kitchener (kich'e-nėr), **Horatio Herbert**, Viscount Kitchener of Khartum and Aspall. Born at Crotter House, Ballylongford, County Kerry, Ireland, June 24, 1850. A British general. He served in surveys of Palestine and Cyprus; was major of Egyptian cavalry 1882–84; served in the Nile expedition 1884; was governor of Suakin 1886–88; commanded the Dongola expedition in 1896 and the Khartum expedition in 1898, defeating the dervishes in the battle of Omdurman, Sept. 2, 1898, and establishing the authority of Great Britain in the Sudan, of which he was made governor Jan. 21, 1899. He was made adjutant-general in the Egyptian army in 1888 and sirdar in 1892; was promoted major-general in 1896, lieutenant-general in 1900, general in 1902, and field-marshal in 1909; was raised to the peerage in 1898, and appointed chief of staff under Lord Roberts in South Africa in 1899, and succeeded him in command there in Dec., 1900. He was appointed commander-in-chief of the Indian army in 1902.

Kjerulf (kyãr'ölf), **Theodor.** Born at Christiania, March 30, 1825: died there, Oct. 25, 1888. A Norwegian geologist, professor of mineralogy and geology in the University of Christiania from 1858.

Klondike (klon'dīk). A river in the Northwest Territory, Canada, which flows into the Yukon at Dawson, above the 64th parallel north latitude. It is noted for the gold-mines in its vicinity.

Knapp*, **Friedrich Ludwig.** Died at Braunschweig, June 8, 1904.

Knowles*, Sir **James.** Born Oct. 13, 1831: died at London, Dec. 13, 1908. He was knighted in 1903.

Knox*, Mrs. (**Isa Craig**). Died at Brockley, Dec. 23, 1903.

Knox (noks), **Philander Chase.** Born at Brownsville, Pa., May 6, 1853. An American lawyer and cabinet officer. He was graduated from Mount Union College, Alliance, Ohio, in 1872; was admitted to the bar in 1875; was assistant United States district attorney of the Western District of Pennsylvania 1876–77; was attorney-general in the cabinet of President McKinley 1901–04; was United States senator (Republican) from Pennsylvania 1904–09; and was secretary of state 1909–.

Knox College. A non-sectarian coeducational college situated at Galesburg, Illinois. It was chartered in 1837 under the name of the Knox Manual Labor College and its name was changed to Knox College in 1857. The plan of the college, originated at Whitesboro, New York, included the purchasing of lands in the Mississippi Valley by the colony which founded Galesburg as a body. Half the present township of Galesburg was purchased under this plan. The institution now comprises the college, an academy, and a conservatory of music, and has a student body of about 700 and an endowment of over $400,000.

Koch*, **Robert.** In 1905 he was awarded the Nobel prize in medicine.

Kodama (kō-dä'mä), Viscount **Gentaro.** Born on the island of Sikoku, Tokuyama, Feb. 5, 1852: died at Tokio, July 23, 1906. A noted Japanese general and strategist, chief of staff of the Manchurian army during the war with Russia (1904–05). He studied military science in Germany; was governor-general of Formosa and minister of war 1900–02; and was minister of home affairs in 1903. To his skill is attributed, in large measure, the success of the Japanese arms in Manchuria.

Koh-i-nur*. It was the personal property of Queen Victoria. It is now surpassed by the Cullinan diamond (which see).

Koldewey (kōl'de-vā), **Karl.** Born in Bücken, Hannover, Oct. 26, 1837: died at Hamburg, May 18, 1908. A German arctic explorer. He undertook in 1868 the first German polar expedition to Spitzbergen, and 1869–70 an expedition to eastern Greenland. He discovered the large Franz Joseph's Fiord. During his later years he was one of the superintendents of the Seewarte of Hamburg. He published accounts of his voyages.

Kölliker*, **Rudolf Albert von.** Died at Würzburg, Nov. 2, 1905. He was professor of physiology and comparative anatomy at Würzburg from 1847, and of anatomy, microscopy, and the history of development 1866–1902. His later works include "Icones histologicæ" (1863–65), "Anatomisch-systematische Beschreibung der Alcyonarien" (1870–72), "Morphologie und Entwickelungsgeschichte des Pennatulidenstammes" (1872), "Die normale Resorption des Knochengewebes" (1873), "Grundriss der Entwickelungsgeschichte des Menschen und der hohern Tiere" (1880), "Die Medulla oblongata und die Vierhügelgegend von Ornithorhynchus und Echidna" (1901), "Erinnerungen aus meinem Leben" (1899), etc. From 1849 he was one of the editors of the "Zeitschrift für wissenschaftliche Zoologie.

Komura (kō-mö'rä), Count **Jutaro.** Born in Hyuga, September, 1855. A Japanese statesman and diplomatist, senior Japanese plenipotentiary for the negotiation of peace with Russia at Portsmouth in 1905. He was graduated at Harvard in 1877; entered the diplomatic service on his return: was chargé d'affaires at Peking 1894–95; was appointed minister to the United States in 1898 and to Russia 1900; was foreign minister 1901–06 and 1908–; and ambassador to Great Britain 1906–08. He was created baron in 1903 and count in 1907.

Kongo Free State*. It was annexed to Belgium in October, 1908. The territory is divided for administrative purposes into 14 districts: Aruwimi, Banana, Bangala, Boma, the Cataracts, Equator, Kwango Oriental, Lake Leopold II., Lualaba-Kasai, Matadi, Stanley Falls, Stanley Pool, Ubangi, and Welle. Government is in the hands of a governor-general, representing the king.

Kongo*, **French.** By decree of Feb. 15, 1906, it was divided into three colonies, the Gabun Colony, the Middle Kongo Colony, and the Ubangi-Shari-Chad Colony, the Chad region being administered as a territory. *Statesman's Yearbook*, 1907.

Koninck (kō'ningk), **Philip de.** Born at Amsterdam, Nov. 5, 1619: died there, Oct. 4, 1688. A Dutch painter. His work is entirely confined to landscape, usually extensive views over the flat Dutch country in the manner of Rembrandt. His pictures show an attractive truth to nature and sense of distance. The color is usually pure and fine. His works are rare.

Kordofan*. It is now a province of the Anglo-Egyptian Sudan.

Korea*. The government is a monarchy, and the emperor is advised by a cabinet of ten ministers. It passed under Japanese control in 1904. In 1905 a treaty was signed with Japan giving to that country the control of the foreign relations of Korea and providing for a Japanese resident-general, and in 1907 a further agreement was reached by which administrative and other state matters are to be subject to the approval of the resident-general and Japanese subjects are to be eligible for government positions. The country is divided for administrative purposes into 13 provinces.

Kossuth (kosh′öt), **Franz.** Born at Budapest, Nov. 16, 1841. A Hungarian statesman, son of Louis Kossuth. He suffered exile with his father; was educated at Paris and in University College, London; went to Italy in 1861 as a civil engineer; and in 1894, on the death of his father, returned to Hungary and took the oath of allegiance as a Hungarian subject. He soon became the leader of the Independence Party in the Hungarian Parliament. In 1904 he united his forces with those of Count Apponyi and became the leader of the coalesced parties. In April, 1906, he became minister of commerce in the cabinet of Alexander Wekerle.

Köstlin*, **Julius.** Died at Halle, May 12, 1902.

Kotzebue*, **Alexander von.** Died at Munich, Feb. 24, 1889.

Krafft-Ebing (kräft′ā′bing), **Richard**, Baron **von.** Born at Mannheim, Aug. 14, 1840: died at Mariagrün, near Gratz, Dec. 22, 1902. A noted German physician and neurologist. He was professor of psychiatry at Strasburg 1872–73, at Gratz 1873–89, and at Vienna 1889–1902. He published numerous works on criminal psychology, nervous diseases, hypnotism, etc.

Krauss*, **Marie Gabrielle.** Died at Paris, Oct. 12, 1903.

Krehbiel (krā′bēl), **Henry Edward.** Born at Ann Arbor, Mich., March 10, 1854. An American critic and musical historian. He was reporter and then critic on the Cincinnati "Gazette," and later became musical critic of the New York "Tribune." He has written "Review of the New York Musical Season" (five volumes, 1885–90), "Studies in the Wagnerian Drama" (1891), "How to Listen to Music" (1897), "Music and Manners in the Classical Period" (1898), "Chapters of Opera" (1908), etc. He received the cross of the Legion of Honor in 1901.

Kremnitz (krem′nits), Frau (**Marie von Bardeleben**): pen-names **Mite Kremnitz** and **George Allan.** Born at Greifswald, Germany, Jan. 4, 1852. A German author, daughter of the surgeon Heinrich Adolf von Bardeleben (1819–95). She has published a number of translations from the Rumanian, and has written with Queen Elizabeth of Rumania (Carmen Sylva), under the pseudonym *Dito und Idem*, "Anna Boleyn," a tragedy (1886), "Aus zwei Welten" (1884), "Astra" (1886), "In der Irre" (1888), and "Rache, und andere Novellen" (1889). She is the author also of "Fluch der Liebe" (1880), "Ein Fürstenkind" (1883), "Ausgewanderte" (1890), "Mann und Weib" (1902), "Fatum" (1903), etc.

Kruger (krö′ger), **Stephanus Johannes Paul.** Born in Colesberg, Cape Colony, Oct. 10, 1825: died at Clarens, Switzerland, July 14, 1904. A South African statesman, the president of the South African Republic. He was chosen a member of the Executive Committee of the Transvaal in 1872, and four times served as president (1883–88, 1888–93; 1893–98, 1898–1900).

Kruse*, **Heinrich.** Died at Bückeburg, Jan. 13, 1902.

Kuhnau (kö′nou), **Johann.** Born at Neugeising, Saxony, April 6, 1660: died at Leipsic, June 5, 1722. A German composer and organist, remarkable for his clavier music, in which he made important contributions toward developing the sonata form and interesting experiments in program music. For the last twenty years of his life he was cantor of the Thomaskirche, in Leipsic, being the predecessor of Bach.

Kühne (kü′ne), **Wilhelm.** Born at Hamburg, March 28, 1837: died at Heidelberg, June 10, 1900. A noted German physiologist, professor and director of the Physiological Institute at Heidelberg from 1871. He published "Lehrbuch der physiologischen Chemie" (1866–68), etc.

Külpe (kül′pe), **Oswald.** Born at Kandau, Courland, Aug. 3, 1862. A German psychologist, professor of philosophy and esthetics in the University of Würzburg from 1894. He has published "Grundriss der Psychologie" (1893), "Einleitung in die Philosophie" (1895), etc.

Kumassi*, or **Coomassie.** In 1901 Ashanti was annexed to Great Britain. It is administered by a chief commissioner. The governor of the Gold Coast was appointed governor of Ashanti.

Kung*, Prince (**Kung-Tsin-Wang**). Died at Peking, May 2, 1898.

Kunz (könz), **George Frederick.** Born at New York, Sept. 29, 1856. An American mineralogist and expert in gems (with Tiffany and Company), special agent in charge of precious stones with the United States Geological Survey from 1883. He has written "Gems and Precious Stones of North America," "Precious Natal Stones," "Book of the Pearl" (with C. H. Stevenson, 1908), etc.

Kurino (kö-rē′nō), Baron **Shinichiro.** Born at Fukuoka, 1852. A Japanese diplomatist, ambassador to France 1906–. He was appointed minister at Washington in 1894, at Rome in 1896, at Paris in 1897, and at St. Petersburg in 1901.

Kuroki (kö-rō′ki), Count **Tamemoto.** Born at Saga, March 16, 1844. A noted Japanese general, commander of the First Army in the war with Russia (1904–05). He defeated the Russians in the battle of the Yalu river, May 1, 1904, and in many subsequent engagements. In the battles of the Liao-yang, the Shaho, and Mukden, he commanded the right wing. In the Chinese-Japanese war (1894–95) he led the Kumamoto division, and was promoted general in 1903. He was created baron in 1895 and count in 1907. He is a member of the supreme council of war.

Kuropatkin (kö-rō-pät′kin), **Alexei Nikolaievitch.** Born March 29 [N.S.], 1848. A distinguished Russian general, unsuccessful commander of the Russian forces in the first part of the Russo-Japanese war. He has been connected with the general staff of the Russian Army from 1874; performed various diplomatic and military services in Turkestan and elsewhere in Asia; served through the Russo-Turkish war (1877–78) as chief of staff to Skobelef; fought against the Tekke-Turkomans 1880–81; was minister of war in 1898; and became adjutant-general in 1902. In 1901 he was made general of infantry, and in 1902 aide-de-camp to the emperor. On the outbreak of the Russo-Japanese war (1904), he was made commander of the Russian forces in Manchuria, but was repeatedly defeated, most decisively in the battles of Liao-yang, the Shaho and Mukden. After the last defeat he was superseded by Linievitch. His military memoirs, "The Russian Army and the Japanese War," appeared in 1909.

Kwang-su (kwäng-sö′): personal name, **Tsaitien.** Born at Peking, Aug. 2, 1872: died there, Nov. 14, 1908. The title of the Emperor of China, son of Prince Chun, who was seventh son of the Emperor Tao-kwang and brother of the Emperor Hsienfêng. He succeeded to the throne on the death of his cousin, the Emperor Tung-chih, January, 1875, and nominally assumed the government in March, 1887; but until his marriage in February, 1889, was under the regency of his mother's sister, the Empress Dowager Tsu-hsi. In 1898 he issued several edicts in favor of reform and as a consequence the Empress Dowager resumed the regency in September of that year. The Emperor was childless and was succeeded by Pu-yi, great-grandson of the Emperor Tao-kwang.

Kwangtung*. It was leased to Russia in 1898, and transferred to Japan in 1905.

Labo (lä-bō′). A mountain in Ambos Camarines province, southeastern Luzon, Philippine Islands. Height, 5,000 feet.

Labori (lä-bō-rē′), **Fernand.** Born at Rheims, France, April 18, 1860. A French advocate, noted especially for his defense of Dreyfus in 1899. He has published "Répertoire encyclopédique du droit français" (with others), etc.

Labouchère*, **Henry.** He represented Northampton in Parliament 1880–1905, and was appointed a privy councillor in 1905. † 1912

Labrador*. It was named after João Fernandes Labrador, one of the early settlers.

Labuan*. It was administered by the British North Borneo Company 1889–1905, and in 1906 was proclaimed a part of the Straits Settlements. It is administered by the government of Singapore. Extensive coal-mines have been developed on the island.

Lacedæmon*. 2. A nomarchy of modern Greece. Capital, Sparta. Population (1907), 87,106.

Lachner*, **Ignaz.** Died at Hannover, Feb. 24, 1895.

Ladd*, **George Trumbull.** He resigned his professorship in Yale University in 1905. His later works include "Elements of Physiological Psychology" (1887), "What is the Bible?" (1888), "Introduction to Philosophy" (1890), "Outlines of Physiological Psychology" (1891), "Psychology, Descriptive and Explanatory" (1894), "Philosophy of Mind" (1895), "Philosophy of Knowledge" (1897), "Outlines of Descriptive Psychology" (1898), "Essays on the Higher Education" (1899), "Theory of Reality" (1899), "Philosophy of Conduct" (1902), "Philosophy of Religion" (1905), and "In Korea with Marquis Ito" (1908).

Ladmirault*, **Louis René Paul de.** Died at Paris, Feb. 3, 1898.

Ladrone Islands*, or **Mariana** (or **Marianne**) **Islands.** Guahan now belongs to the United States and the remainder of the group was purchased by Germany in 1899.

Lady of the Aroostook, The. A New England love story by William Dean Howells, published in 1875.

Ladysmith (lā′di-smith). A village in Natal, South Africa, about 80 miles north-northwest of Pietermaritzburg, at the junction of two railroads, one running into the Transvaal and the other into the Orange Free State: an important strategical point in the Boer war of 1899. General White, with about 10,000 troops, was besieged here by the Boers from Oct. 29, 1899, to Feb. 28, 1900, when he was rescued by the British under General Buller. Population, about 3,000.

La Farge*, **John.** He is distinguished for his work in stained glass, in which he has obtained remarkable color effects as the result of much experimentation. His writings include "An Artist's Letters From Japan" (1887), "Lectures on Art" (1895), "Considerations on Painting" (1901), "Great Masters" (1903), "Higher Life in Art" (1908), etc.

Lafayette College*. It has about 38 instructors and 450 students, with a library of 35,000 volumes.

La Follette (lä fol-let′), **Robert Marion.** Born at Primrose, Wis., June 14, 1855. An American lawyer and politician. He was graduated at the University of Wisconsin in 1879; was a Republican member of Congress 1885–91; was governor of Wisconsin 1901–06; and was elected United States senator in 1905.

Lagerlöf (lä′ger-lėf), **Selma.** Born at Mårbacka, Värmland, Nov. 20, 1858. A Swedish writer. Her works include novels, poems, etc. In 1907 she was crowned with a laurel wreath at Upsala as the most popular of living Swedish writers.

Lagonoy (lä-gō-noi′) **Gulf.** A large gulf on the eastern coast of southern Luzon, Philippine Islands, indenting the shores of Ambos Camarines and Albay. On the east it communicates directly with the Pacific Ocean. On the north it is connected with the Pacific by Maqueda Channel. Four islands on the south separate it from the Gulf of Albay.

Lagos (lā′gos). 1. A town on the western coast of Africa, in lat. 6° 28′ N., long. 3° 26′ E.: a commercial center. It was captured by the British in 1851 and annexed by them in 1861.

2. A British former protectorate, situated between Dahomey (French) and Nigeria. In May, 1906, the Colony and Protectorate of Lagos and the old Protectorate of Southern Nigeria were amalgamated under the name of the Colony and Protectorate of Southern Nigeria. Lagos now forms one of the three provinces, and the seat of government of the colony is at Lagos town.

Laguna de Bay (lä-gö′nä dā bī′). A lake in the southern part of Luzon, Philippine Islands, lying within the provinces of Cavité, Rizal, and La Laguna. Its greatest depth, ascertained by soundings, is 20 feet. It contains several small islands, the largest being Talim. Its outlet is the Pasig river, which connects it with Manila bay.

Lake Leopold II. 1. A large lake in the western part of the Kongo Free State. It discharges by the Mfini into the Kassai, a tributary of the Kongo.—2. One of the administrative districts of the Kongo Free State.

La Laguna (lä lä-gö′nä). A province of southeastern Luzon, Philippine Islands. It is bounded by Laguna de Bay and Rizal on the north, Infanta and Tayabas on the east, Tayabas and Batangas on the south, and Batangas and Cavité on the west. It encircles the southern half of Laguna de Bay, and occupies the eastern part of the mountainous peninsula projecting from the north into that lake. Capital, Santa Cruz. The highest mountains of the province are the extinct volcanoes Banajao and San Cristobal in the southeast, and Maquiling in the south. There are numerous rivers. The soil is very fertile, and more than half of it is adapted to agriculture. Among the productions are sugar-cane, abaca or hemp, rice, copra, betel-nuts, and coffee. The native race is Tagalog. Area, 629 square miles. Population (1903), 148,606.

Lalanne (lä-län′), **Maxime.** Born at Bordeaux, France, Nov. 27, 1827: died at Nogent-sur-Marne, July 29, 1886. A noted French etcher and illustrator. He was a pupil of Gigoux and made his début at the Salon of 1852 with a notable series of drawings. His work consists of numerous illustrations to books and periodicals, especially "L'Artiste" and "L'Illustration Nouvelle," the organ of a society of etchers which Lalanne assisted to establish in 1862, and many independent etchings and plates from the old masters.

Lamberton (lam′bėr-ton), **Benjamin Peffer.** Born in Pennsylvania, March 10, 1843. An American naval officer, promoted rear-admiral in 1903. He served as chief of staff to Commodore (Admiral) Dewey on the Olympia in the battle of Manila Bay, May 1, 1898, and was promoted captain May 17. He retired in 1905.

Lamon (lä-mōn′) **Bay.** A large bay on the eastern coast of Luzon, Philippine Islands, indenting Tayabas province on the north. It is protected by islands.

Lamothe*, Pierre Alexandre Bessot de. Died at Villeneuve-lès-Avignon, France, Oct., 1897.

Lamoureux (lä-mö-rė′), **Charles.** Born at Bordeaux, Sept. 28, 1834: died at Paris, Dec. 21, 1899. A noted French conductor. In 1877 he became conductor of the Opera, resigning in 1878. From 1872-78 he was assistant conductor of the Conservatoire concerts. In 1881 he established the Nouveaux Concerts (Concerts Lamoureux), where he did important work in introducing the music of Wagner and other modern composers.

Lamsdorff (lämz′dôrf), Count **Vladimir Nikolaievitch.** Born at St. Petersburg, December, 1844: died at San Remo, Italy, March 19, 1907. A Russian statesman. He entered the Foreign Office in 1866; rose to be assistant foreign minister in 1897; was foreign minister 1901-06; and was appointed a member of the Council of the Empire, May 11, 1906.

Lanao (lä-nä′ō). A district of Moro province, Philippine Islands. It occupies that part of Mindanao which lies between Iligan bay on the north and Illana Bay on the south; and is bounded by Misamis and Cotabato on the east, and Zamboanga on the west. Capital, Iligan. The native race is Moro. Area, 2,460 square miles. Population (1903), 101,293.

Lanao (lä-nä′ō) **Lake.** A lake in Mindanao, Philippine Islands, 2,200 feet above sea-level. It is drained on the north by the river Agus or Iligan, which flows into Iligan bay. On the southwest it is connected with Lake Tapao by a short river.

Landreth (lan′dreth), **Olin Henry.** Born at Addison, N. Y., July 21, 1852. An American civil engineer, professor of engineering in Union University, Schenectady, N. Y., from 1894. He was assistant astronomer at the Dudley Observatory, Albany, 1877-79; was professor of engineering at Vanderbilt University 1879-94, and dean of the engineering department 1886-94; and has been consulting engineer of the New York State Board of Health and of numerous municipalities and corporations. He was a member of the New York State Water Storage Commission of 1902-03 and of the State New York Bay Pollution Commission 1904-06.

Lang*, Andrew. He was made a fellow of the British Academy in 1906. He has written also "Essays in Little" (1891), "Green Fairy Book" (1892), "Homer and the Epic" (1893), "St. Andrews" (1893), "Yellow Fairy Book" (1894), "Cock Lane and Common Sense" (1894), "The Book of Dreams and Ghosts" (1897), "Pink Fairy Book" (1897), "The Making of Religion" (1898), "The Homeric Hymns" (1899), "A History of Scotland from the Roman Occupation" (vol. I., 1900), "Prince Charles Edward" (1900), "Magic and Religion" (1901), "Alfred Tennyson" (1901), "The Mystery of Mary Stuart" (1901), "John Knox and the Reformation" (1905), "Homer and His Age" (1906), "Olive Fairy Book" (1907), "The Maid of France" (1908), "Sir George Mackenzie" (1909), etc.

Langevin*, Sir **Hector Louis.** Died June 11, 1906. He was minister of public works 1879-91. Knighted 1881.

Langley*, Samuel Pierpont. Died at Aiken, S. C., Feb. 27, 1906.

Lankester*, Sir **Edwin Ray.** He was Linacre professor of comparative anatomy at Oxford 1891-98; Fullerian professor of physiology and comparative anatomy in the Royal Institution of London 1898-1900; and director of the natural history departments of the British Museum 1898-1907. He was knighted in 1907. Since 1869 he has been the editor of the "Quarterly Journal of Microscopical Science." He has written "Comparative Longevity" (1871), "Degeneration" (1880), "Spolia Maris" (1889), "The Advancement of Science" (1889), "A Treatise on Zoology" (1900-05), "Extinct Animals" (1905), "The Kingdom of Man" (1907), and many special monographs; and he has edited, with M. Foster, the "Scientific Memoirs of Th. H. Huxley" (1898-1902).

Laoag (lä-ō-äg′). **1.** A river in northwestern Luzon, Philippine Islands, flowing westward to the China Sea.—**2.** A municipality of Ilocos Norte province, northwestern Luzon. Civilized population (1903), 34,454.—**3.** A port and the capital of Ilocos Norte province, Luzon. It is situated on the Laoag river, in lat. 18° 13′ 5″ N., long. 120° 36′ E. Population (1903), 19,699.

Lapidoth-Swarth (läp′i-dōt-svärt′), Frau (**Hélène Swarth**). Born at Amsterdam, Oct. 25, 1859. A noted Dutch lyric poet. Among her works are "Blauwe Bloemen" (1884), "Beelden en Stemmen" (1887), "Sneeuwvlokken" (1888), "Rouwviolen" (1889), "Passiebloemen" (1891), a volume of collected poems (1892), "Poezij" (1896), "Diepe Wateren" (1897), and "Blanke Duiven" (1902). Her prose includes "Kleine Schetsen" (1893), "Ironisch en Tragisch" (1895), "Van Vrouwenleed" (1896), "Van Vrouwenlot" (1896), "Ernst" (1902), etc.

Lapparent (la-pä-rań′), **Albert de.** Born at Bourges, Dec. 30, 1839: died at Paris, May 5, 1908. A noted French geologist, professor of geology and mineralogy in the Institut Catholique, in Paris, from 1875. He was appointed assistant custodian of the École des Mines in 1864. In 1897 he became a member of the Académie des Sciences and was the successor of Berthelot as perpetual secretary of that body. Among his works are "Traité de géologie" (1882, 4th ed. 1899), "Cours de minéralogie" (3d ed. 1899), etc.

Laredo (lä-rā′dō). A city, the capital of Webb County, Texas. It is situated in the western part of the county on the Rio Grande, is the seat of Laredo Seminary and of an Ursuline Convent, and has car-, machine-, concentrating-, and sampling-works, brickyards, etc. Cattle, iron, wool, etc., are exported. Population (1900), 13,429.

Larmor (lär′mor), Sir **Joseph.** Born at Magheragall, County Antrim, Ireland, July 11, 1857. A British mathematician and physicist, professor of mathematics in the University of Cambridge from 1903. He is especially noted for his contributions to the theory of the ultimate constitution of matter. Knighted in 1909.

Larsson (lär′sōn), **Karl.** Born at Stockholm, Sweden, May 28, 1853. A Swedish painter and etcher. In 1876 he won the royal medal at the Academy of Arts, Stockholm, and went to France, where for several years he was a member of a Swedish painter-colony at Grez near the forest of Fontainebleau. He has been especially successful in water-colors, and in mural painting in tempera. His most important performance in this manner is the decoration of the staircase of the National Museum at Stockholm.

La Salle College. A Roman Catholic institution of learning at Philadelphia for boys and young men. It is conducted by the Brothers of the Christian Schools and is named for their founder, Jean Baptiste de La Salle. It was incorporated and received power to confer degrees in 1863.

Lassalle, Jean. Died at Paris, Sept. 7, 1909.

Lassen*, Eduard. Died at Weimar, Jan. 15, 1904.

Lathrop*, Francis. He has executed portraits and mural paintings, of the last the most important being the reredos in St. Bartholomew's Church, New York City.

Lathrop*, George Parsons. Died at New York, April 19, 1898.

Latrobe (lä-trōb′), **Benjamin Henry.** Born in Yorkshire, England, May 1, 1764 (1767?): died at New Orleans, La., Sept. 3, 1820. An American architect. He was educated at a Moravian school in Saxony and in the University of Leipsic; in 1785 served in the Prussian army; returned to England in 1786; went to Norfolk, Virginia, in 1796; and to Philadelphia in 1798. He designed many important engineering works and buildings in Richmond, Philadelphia, and Baltimore. In 1803 Jefferson appointed him architect of the Capitol at Washington, to succeed Dr. William Thornton, whose designs he modified greatly. He rebuilt the Capitol after its partial destruction by the British in 1814, introducing in the north wing the six columns of the vestibule designed to represent bundles of corn-stalks, and similar tobacco-stalk columns in the circular colonnade. He had a large practice as an engineer, and in 1812 was interested with Fulton in introducing steam navigation.

Laughlin (laf′lin), **James Lawrence.** Born at Deerfield, Ohio, April 2, 1850. An American economist, professor of political economy in the University of Chicago from 1892. He was graduated at Harvard University in 1873; was assistant professor of political economy there 1883-87; was president of the Manufacturers' Mutual Fire Insurance Company of Philadelphia 1887-90; and was professor of political economy in Cornell University 1890-92. He has published "A Study of Political Economy" (1885), "A History of Bimetallism in the United States" (1886), "Elements of Political Economy" (1887), "Gold and Prices since 1873" (1887), "Facts about Money" (1895), "Report of the Monetary Commission" (1898), "Principles of Money" (1902), etc. He is editor of the "Journal of Political Economy."

La Union (lä ö-ni-ōn′). A coast province of western Luzon, Philippine Islands. It is bounded by Ilocos Sur on the north, Lepanto-Bontoc and Benguet (separated by a spur of the Cordillera Central) on the east, Pangasinan on the south, and the Gulf of Lingayen and the China Sea on the west. Capital, San Fernando. The best ports are San Fernando, safe for large vessels in the monsoons, and Santo Tomas, safe in the northeast monsoon for vessels not exceeding 15 feet draft. The highest peak is Santo Tomas (7,298 feet). Tobacco, coffee, pineapples, mangos, corn, rice, betel-nuts, and sugar-cane are produced. The inhabitants are chiefly Ilocanos. The census of 1903 gave also 9,820 Igorrotes. Area, 634 square miles. Population (1903), 137,839.

Launitz*, Robert Eberhard (**Schmidt von der**). Born at Grobin, Courland, Russia, Nov. 16, 1806.

Laurens (lō-rań′), **Jean Paul.** Born at Fourquevaux, Haute-Garonne, France, March 29, 1838. A French painter, especially of historical subjects. He studied at the art school of Toulouse, and with Léon Cogniet and Bida in Paris, making his début in the Salon of 1863 with his picture "The Death of Cato." His dignified and vigorous style reached its maturity about 1872. He has painted numerous portraits and a large number of powerful historical compositions and mural pictures. Among the latter may be noted "The Death of Ste. Geneviève" in the Panthéon, and the ceiling of the Odéon, both in Paris. He won a medal of honor at the Salon of 1877 and was elected to the Institut in 1891.

Laurier (lō′ri-ā), Sir **Wilfrid.** Born at St. Lin, Quebec, Nov. 20, 1841. A Canadian statesman. He was minister of inland revenue 1877-78; was appointed queen's counsel 1880; became leader of the Liberal party 1887; and premier of Canada (1896-). He was knighted in 1897.

Lavedan*, Henri Léon Émile. He was elected to the Academy in 1898.

Lavengro. A story by George Borrow, published in 1851.

Laveran (läv-räń′), **Charles Louis Alphonse.** Born at Paris, June 18, 1845. A French pathologist, especially noted as the discoverer of the plasmodium of malaria. He was appointed as agrégé on the faculty of the École du Val-de-Grâce in Paris in 1874; studied malaria in Algeria 1878-1883; was professor of military hygiene and clinical medicine at Val-de-Grâce 1884-94; and was medical director of the Eleventh Army Corps 1894-97. In 1907 he was awarded the Nobel prize for medicine. He has written "Traité des fièvres palustres" (1884), "Nouveaux éléments de pathologie médicale" (1880, with Teissier), "Du paludisme et de son hématozoaire" (1891), "Les hématozoaires de l'homme et des animaux" (1895, with Blanchard), "Traité du paludisme" (1897), "Traité d'hygiène militaire" (1896), "Prophylaxie du paludisme" (1903), and "Trypanosome et trypanosomiases" (1904).

La Villemarqué*, Vicomte de (**Théodore Claude Henri Hersart**). Died 1895.

Lavisse (lä-vēs′), **Ernest.** Born at Nouvion-en-Thiérache, Aisne, France, Dec. 17, 1842. A French historian and educator, professor of modern history at the University of Paris from 1888. He was elected a member of the French Academy in 1892, succeeding Admiral de la Gravière. Since 1894 he has been editor of the "Revue de Paris." Among his works are "Études sur l'histoire de Prusse" (1879), "Questions d'enseignement national" (1885), "Essais sur l'Allemagne impériale" (1887), "Trois empereurs d'Allemagne" (1888), "Vue générale de l'histoire politique de l'Europe" (1890), "La jeunesse du Grand Frédéric" (1891), "Le Grand Frédéric avant l'avènement" (1893), "Un ministre. Victor Duruy" (1895), etc. He edited, with Rambaud, "Histoire générale, du IV. siècle à nos jours" (1893-1901).

Law*, Thomas. He married, as his second wife, Eliza Parke Custis, granddaughter of Martha Washington.

Lawson*, Sir **Wilfrid.** Died at London, July 1, 1906. He sat for a division of Cumberland 1886-1900 and in 1906, and for a division of Cornwall 1903-05.

Lawton (lâ′ton), **Henry W.** Born at Toledo, Ohio, March 17, 1843: died at San Mateo, near Manila, Philippine Islands, Dec. 18, 1899. An American general. He served as a volunteer on the Union side in the Civil War, rising to the brevet rank of colonel; entered the regular army in 1866; served in the West against the Indians, and became famous for his successful operations against Geronimo; was commissioned brigadier-general of volunteers in 1898; commanded a division in the attack on Santiago; captured El Caney July 1; was promoted major-general of volunteers July 8; and was assigned to the command of a corps in the Philippines in the same year.

Lay down your arms. The title of the English translation by T. Holmes of "Die Waffen Nieder" (1889), by the Baroness von Suttner. The author was awarded the Nobel peace prize in 1905. The book is known also as "Ground Arms!"

Lazarus*, Moritz. Died at Meran, Tyrol, April 13, 1903.

Lea*, Henry Charles. His later works include "Chapters from the Religious History of Spain connected with the Inquisition" (1890), "History of Auricular Confession and Indulgences in the Latin Church" (1896), "The Moriscos of Spain" (1901), "History of the Inquisition of the Middle Ages" (1906), "History of the Inquisition of Spain" (1906), "The Inquisition in the Spanish Dependencies" (1908). Died Oct. 24, 1909.

League Island. An island in the Delaware below Philadelphia, at the mouth of the Schuylkill. On it is situated a United States navy yard.

Lecky*, William Edward Hartpole. Died at London, Oct. 22, 1903. He represented (Unionist) Dublin University in the House of Commons 1896-1903.

Le Conte*, Joseph. Died in the Yosemite Valley, July 6, 1901. He was professor of geology and natural history in the University of California 1869-1901.

Ledóchowski*, Count **Mieczyslaw.** Died at Rome, July 22, 1902.

Lee (lē), **Fitzhugh.** Born in Fairfax County, Va., Nov. 19, 1835: died at Washington, D. C., April 28, 1905. An American soldier and politician, nephew of General R. E. Lee. He was graduated at West Point in 1856; served as cavalry commander in all the campaigns of the Army of Northern Virginia (Confederate), rising to the rank of major-general in Aug., 1863; was governor of Virginia 1886–89; and was United States consul-general in Havana, Cuba, June, 1896,–April, 1898. He was appointed major-general of volunteers in 1898.

Lee (lē), **Sidney.** Born at London, Dec. 5, 1859. An eminent English scholar and editor. He was assistant editor of the “Dictionary of National Biography” 1883–90; was joint editor with (Sir) Leslie Stephen 1890–91; and upon the retirement of the latter in 1891 became editor-in-chief. He was Clark lecturer in English literature at Trinity College, Cambridge, 1901–02, and in 1903 was lecturer before the Lowell Institute at Boston, Johns Hopkins University, and Princeton University. Among his publications are “Stratford-on-Avon from the Earliest Times to the Death of Shakespeare” (1884), “Life of William Shakespeare” (1898), a biography of Queen Victoria (1902), “Shakespeare First Folio Facsimile, with Introduction and Census of Extant Copies” (1902), “Elizabethan Sonnets” (1904), “Great Englishmen of the Sixteenth Century” (1904), “Shakespeare and the Modern Stage” (1906), etc.

Lee (lē), **Stephen Dill.** Born at Charleston, South Carolina, Sept. 22, 1833: died at Vicksburg, Miss., May 28, 1908. An American soldier, lieutenant-general in the Confederate Army. He was graduated at West Point in 1854; entered the Confederate service as captain; and took part in numerous battles (including the Vicksburg campaign) during the Civil War. From 1899 he was commander of the Vicksburg National Military Park.

Leeds University. A university at Leeds, Yorkshire, chartered April 25, 1904. It is the outgrowth of Yorkshire College (founded in 1874), which formed part of Victoria University 1887–1903. It provides teaching and grants degrees to both men and women in arts, science, medicine, dental surgery, law, and commerce. It is attended by more than 900 registered students and in addition by over 200 evening students.

Lefebvre (lė-fāvr′), **Jules.** Born at Tournan, Seine-et-Marne, France, March 10, 1836. A noted French painter, a pupil of Cogniet.

Le Gallienne (lė gal-i-en′), **Richard.** Born at Liverpool, England, Jan. 20, 1866. An English journalist and author. Since 1898 he has resided in the United States. Among his works are “The Book-bills of Narcissus” (1891), “The Religion of a Literary Man” (1893), “Prose Fancies” (1894, 1896), “The Quest of the Golden Girl” (1896), “Painted Shadows” (1904), “Romances of Old France” (1905), “The Worshiper of the Images” (1906), etc.

Legations, Siege of the. See *Siege.*

Legge*, **James.** Died at Oxford, Nov. 29, 1897.

Legouvé*, **Gabriel Jean Baptiste Ernest Wilfred.** Died at Paris, March 14, 1903.

Legros*, **Alphonse.** He was Slade professor of fine arts at University College, London, 1876–93.

Lehigh University*. It has 64 instructors and over 660 students.

Leibl*, **Wilhelm.** Died at Würzburg, Dec. 4, 1900.

Leighton*, **Frederick,** Lord. Died Jan. 25, 1896. He was raised to the peerage Jan. 1, 1896.

Leipsic*. The university ranks as the third in size of the German universities. It has over 4,300 students and 234 instructors, and has a library of over 550,000 volumes.

Leland*, **Charles Godfrey.** Died at Florence, Italy, March 20, 1903. Among his later works are “Algonquin Legends of New England” (1884), “Gypsy Sorcery and Fortune Telling” (1890), “Memoirs” (1893), “Hans Breitmann in Germany” (1895), “Songs of the Sea and Lays of the Land” (1895), “Aradia, or, Gospel of the Witches” (1899), and, with J. D. Prince, “Kulóscap the Master, and other Algonkin poems” (1902). He wrote also a series of books on various arts and crafts.

Leland Stanford Junior University*. It has 138 instructors and over 1,700 students. Several of the university buildings were wrecked by earthquake April 18, 1906, the loss being estimated at $4,000,000.

Leleux*, **Adolphe.** Died at Paris, July 27, 1891.

Lemaître (lė-mātr′), **François Elie Jules:** known as **Jules.** Born at Vennecy, Loiret, France, April 27, 1853. A French critic, poet, novelist, and dramatist. He was a teacher 1875–84; became reviewer for the “Revue Bleue” in 1884; and joined the staff of the “Journal des Débats” in 1888 and that of the “Revue des Deux Mondes” in 1895. In 1888 he was made a chevalier of the Legion of Honor, and was admitted to the French Academy in 1895, succeeding Duruy. His critical work has been collected under the titles “Les contemporains” (1885–95), and “Impressions du théâtre” (1888–98). He is the author also of several volumes of fiction, “Sérénus” (1886), “Dix contes” (1889), “Les bois” (1893), and “Myrrha” (1894); two books of verse, “Les Médaillons” (1880), and “Petites orientales” (1882); a number of plays, “La Révoltée” (1889), “Le député Leveau,” (1890), “Le mariage blanc” (1891), “Flipote” (1893), “Les rois” (1893), “L'âge difficile” (1895), and “Le pardon” (1895); “Théories et impressions” (1904), and “En marge des vieux livres” (1905).

Lemoinne (lė-mwän′), **John Émile.** Born at London, Oct. 17, 1815: died at Paris, Dec. 14, 1892. A French journalist. He was on the staff of the “Journal des Débats” for 52 years; was elected to the French Academy in 1875; and was appointed a life senator in 1880. He also wrote for the “Revue des Deux Mondes” and “Le Matin,” and published a collection of his articles under the title “Études critiques et biographiques” (1862), etc.

Lenard (le-närd′), **Philipp von.** Born at Presburg, June 7, 1862. A German physicist, professor in the University of Kiel 1898–1907, and in the University of Heidelberg 1907–. From 1896 to 1898 he was professor in the University of Heidelberg. He is best known for his researches in the cathode rays and electricity. In 1905 he received the Nobel prize for physics.

Lenbach*, **Franz von.** Died at Munich, May 6, 1904.

Lenox Library*. It has been combined with the Astor and the proposed Tilden Library as the New York Public Library (which see).

Lens*. In March, 1906, a disaster occurred in the Courrières mine in which over 1,000 persons lost their lives.

Leo XIII.* **(Giacchino Pecci).** Died at Rome, July 20, 1903.

Leoncavallo (lā-ōn-kä-väl′ō), **Ruggiero.** Born at Naples, March 8, 1858. An Italian operatic composer. His first opera, “Chatterton,” he composed at the age of eighteen. After some years of wandering he returned to Italy with the plan of an operatic trilogy, the first part of which, “I Medici” (the only part published), he could not bring out till he had made his first success with “Pagliacci,” which was produced at Milan in 1892 and has been one of the most popular of modern Italian operas. His “La Bohème” appeared in 1897, “Zaza” in 1900, “Der Roland,” written at the command of the German emperor, in 1904, and “The Youth of Figaro” in 1906. He has written the librettos of all his operas.

Leopoldville*. A railway has been constructed between this place and Matadi.

Lepanto-Bontoc (lā-pän′tō-bōn-tōk′). An irregularly shaped inland province in the western part of Luzon, Philippine Islands. It is bounded by Abra and Cagayan (separated by a spur of the Cordillera Central) on the north; Cagayan, Isabela, and Nueva Vizcaya (separated by a collateral range of the Cordillera Sur) on the east; Nueva Vizcaya and Benguet (separated by spurs of the Cordillera Sur) on the south; and La Union and Abra (separated by the western range of Luzon) on the west. Capital, Cervantes. Mountains occupy a large part of the province. A branch of the Cordillera Sur runs from northeast to southwest, separating the western part (Lepanto) from the eastern part (Bontoc). Monserrat, Mitra, Cuirayan, Tantaguan, and Data range from 5,617 to 7,364 feet in height. Tributaries of the Rio Grande de Cagayan are fed by streams in the eastern part of Lepanto-Bontoc. Other streams flow west to the Abra. Mineral lands have been prospected in the southern part of the province. Gold and copper have long been mined by the Igorrotes, the native race. The chief productions are coffee, rice, and tobacco. Area, 2,006 square miles. Population (1903), 72,750.

Le Play (lė plī′), **Pierre Guillaume Frédéric.** Born at Honfleur, France, April 11, 1806: died April 5, 1882. A French engineer, economist, and sociologist, the founder of the modern school of social economy in France. He was educated at the École Polytechnique; was professor at the School of Mines; was actively connected with the administration of various expositions; and for several years occupied a seat in the Senate. He founded the International Society of Social Economy, and various associations of workmen. Among the more important of his works are “Les ouvriers européens” (1855), “La réforme sociale en France” (1864), “L'organisation du travail” (1870), “Programme de gouvernement et d'organisation sociale” (1880), “La constitution essentielle de l'humanité” (1881), and “L'école de la paix sociale” (1882).

Leroy-Beaulieu*, **Pierre Paul.** In 1880 he became professor of political economy at the Collège de France. Among his later works are “De la colonisation chez les peuples modernes” (1873), “Essai sur la répartition des richesses” (1880), “La collectivisme” (1884), “L'Algérie et la Tunisie” (1887), “Précis d'économie politique” (1888), “L'état modernes et ses fonctions” (1889), “Traité théorique et practique d'économie politique” (1895), “Le Sahara, le Soudan et les chemins de fer transsahariens” (1904), “L'art de placer et gérer sa fortune” (1906), etc.

Leschetitzky (lesh-e-tits′ki), **Theodor.** Born at Lancut, Poland, June 22, 1830. A distinguished teacher of the piano and composer. He was for some time professor in the Conservatory at St. Petersburg, but retired in 1878 and has since lived in Vienna. Among his pupils have been Mme. Essipoff (whom he married in 1880: divorced 1892), Paderewski, Mark Hambourg, and Gabrilovitch.

Lettres à une inconnue. [F., ‘Letters to an unknown (woman).’] A collection of letters by Prosper Mérimée, published posthumously in 1873.

Leuckart*, **Karl Georg Friedrich Rudolf.** Died at Leipsic, Feb. 6, 1898.

Lewis and Clark Centennial Exposition. An international exposition held in Portland, Oregon, in 1905 to celebrate the centennial of the exploration of the Oregon country by Meriwether Lewis and William Clark. It was opened May 28.

Leyden*. The university is attended by over 1,400 students, and has a library of 190,000 volumes.

Leyte. 2. A province of the Philippines. It consists of Leyte, Biliran, Panaon, and numerous small islands southwest of Samar, from which Leyte is separated by the narrow and winding strait of San Juanico, and by Daram Channel. Capital, Tacloban. The chief bays are Carigara on the north, San Pedro and San Pablo on the east, Sogod on the south, and Ormoc on the west of Leyte. Maasin, at the southeastern point, has good anchorage. Mountain-ranges traverse the larger islands from northwest to southeast. Volcanic cones exceeding 3,000 feet in height are Cabalian and Sacripante in the southern part of Leyte and Mabui in the northern part of Biliran. Among the rivers are the Leyte and the Cabayong in the north. In the south is the Maasin, which flows to the Surigao Sea. The Bináhaan, flowing east to San Pedro and San Pablo bay, is navigable by cascos to Dagami, 15 miles from its mouth. Leyte has three small mountain lakes, the largest of which has an area of about 8 square miles. Coal is found in northeastern Leyte and in Biliran, and gold in Biliran and Panaon. Agriculture flourishes. The productions include copra, rice, bananas, sweet potatoes, sugar-cane, and a very large yield of hemp. The race is Visayan. Area, 3,008 square miles. Population (1903), 388,922.

3. A river of Leyte flowing north to an inlet on the northern coast.

Liais*, **Emmanuel.** Born at Cherbourg, Feb. 15, 1826: died there, March 5, 1900.

Liancourt (lē-oṅ-kōr′) **Rocks.** A group of small islands in the Japan Sea, situated about lat. 37° N., long. 132° E. Near them a part of the Russian fleet surrendered to the Japanese in the battle of the Sea of Japan. Also called *Hornet Islands.*

Liao (lyou). A river which rises in the northern part of the province of Chi-li, China, and flows northeastwardly nearly to the Mongolian border, then eastwardly into Manchuria (near Chang-tu), and then southwestwardly into the Gulf of Liao-tung.

Liao-tung (lyou-tōng′). A peninsular region in southern Manchuria, lying between the Gulf of Liao-tung and Korea Bay. It came under the control of the Japanese as a result of the Russo-Japanese war (1904–05).

Liao-tung (lyou-tōng′), **Gulf of.** An extension northward into southern Manchuria of the Gulf of Pe-chi-li.

Liao-yang (lyou-yäng′). A town in the province of Sheng-king, Manchuria, southwest of Mukden, on a branch of the Siberian Railroad. Here the Japanese under Marshal Oyama defeated the Russians under General Kuropatkin Aug. 25–Sept. 4, 1904. It was opened to foreign trade in 1907.

Libas (lē-bäs′), **Port.** A bay and harbor on the eastern coast of Samar Island, in the Philippines: safe for large vessels in all weather.

Liberia*. By the Franco-Liberian agreement of 1907 as to the boundary with the French Ivory Coast, Liberia has lost about 2,000 square miles of territory. Area, about 40,000 square miles. Population, estimated at 1,500,000 to 2,120,000.

Liberty Party. In United States politics, an antislavery party, founded 1839–40. It opposed the annexation of Texas, and nominated James G. Birney for President of the United States in 1840, and again in 1844, when he polled 62,263 votes. This vote incidentally caused the defeat of Henry Clay and the election of James K. Polk.

Libmanan (lēb-mä′nän). A municipality of Ambos Camarines province, in the southeastern part of Luzon, Philippine Islands. Civilized population (1903), 17,416.

Library of Congress. The national library, situated in Washington, D. C. It was established in 1800, originally for the use of the members of the Senate and House of Representatives, but is freely open to the public. In 1814 the collection of books was destroyed by the British troops, but a new one was begun with the purchase by Congress of a large portion of the library of Thomas Jefferson. On June 30, 1908, the library contained 1,535,008 printed books and pamphlets; 106,118 maps and charts; 483,411 pieces of music; and 279,567 engravings, etchings, photographs, and other prints. It also contains a valuable collection of historical manuscripts. Work on the present building, situated southeast of the Capitol, was begun in 1889 and was completed in 1897 at a cost of $6,345,000. It is in the form of a quadrangle inclosing four courts and a central rotunda surmounted by a dome. The length of the building (which faces west) is 470 feet, from north to south, and its depth, from west to east, 340 feet. The interior is lavishly decorated with the work of American artists.

Lick (lik), **James.** Born at Fredericksburg, Pa., Aug. 25, 1796: died at San Francisco, Cal., Oct. 1, 1876. An American business man and philanthropist. He went to California in 1847 and amassed a large fortune there. In 1874 he set apart $3,000,000 for public and charitable uses, including $700,000 for an astronomical observatory for the University of California.

Liddell*, **Henry George.** Died at Ascot, Berks, Jan. 18, 1898.

Lie*, **Jonas Lauritz Edemil.** Born at Drammen, Nov. 6, 1833: died at Bærum, near Christiania, July 5, 1908.

Liebknecht*, **Wilhelm.** Died at Berlin, Aug. 7. 1900.

Liechtenstein (lēch′ten-stīn) **Gallery.** An art gallery in Vienna, Austria, the most important private collection of paintings in the city. It is especially strong in the works of Rubens and Vandyke. It is situated in the old summer palace of the princes of Liechtenstein and contains about 800 notable pictures besides many of less importance.

Liège*. The state university has over 2,500 students.

Ligao (lē-gä′ō). A municipality of Albay province, southeastern Luzon, in the Philippine Islands. Civilized population (1903), 17,687.

Li Hung Chang*. Died at Peking, Nov. 7, 1901. He was prime minister of China 1895–98. He visited Europe and the United States in 1896. In July, 1900, he was appointed governor of Chi-li, and played an important part in the negotiations which accompanied and followed the siege of the legations. He was one of the Chinese peace commissioners.

Lilley (lil′i), **Robert.** Born at Greenock, Scotland, Aug. 24, 1839. A Scotch-American Orientalist and editor. During 1867–75 he traveled extensively in China and Manchuria; resided in Japan 1875–81, occupied with the publication of Christian and other works in Japanese; introduced the system of printing for the blind now in use in Japan; and came to the United States in 1881. He was on the editorial staff of the "Century Dictionary"; was managing editor of the "Universal Cyclopædia"; was editor of "Investigations and Studies in Jade, based on the Heber R. Bishop Collection of Jades"; and of the descriptive catalogue of the collection, etc.

Lincoln Park. A park in Chicago, situated on the lake front in the northern part of the city. Area, 300 acres.

Lingayen (lēn-gä-yān′). A town, the capital of Pangasinan province, in the western part of Luzon, Philippine Islands. It is situated on the delta at the mouth of the Agno, on Lingayen Gulf in lat. 16° 4′ N., long. 120° 14′ E. Civilized population of municipality (1903), 21,529.

Lingayen (lēn-gä-yān′) **Gulf.** An arm of the China Sea, indenting the provinces of La Union and Pangasinan on the western coast of Luzon, Philippine Islands. The river Agno enters it by several mouths.

Linievitch (lin′ie-vich), **Nikolai Petrovitch.** Born in the government of Tchernigoff, Russia, Dec. 24, 1838: died at St. Petersburg, April 23, 1908. A Russian lieutenant-general. He served in the Russo-Turkish war, attaining the rank of colonel; in 1900, as commander of the first Siberian army corps in Manchuria, conducted the Russian campaign in China; and until March, 1904 (when he was superseded by Kuropatkin), remained in command of the Manchurian army. He commanded the Russian left at the battle of Mukden, and upon the dismissal of Kuropatkin, March, 1905, was appointed his successor as commander-in-chief in the Far East.

Linton*, Mrs. (**Eliza Lynn**). Died at London, July 14, 1898.

Linton*, **William James.** Died at New Haven, Conn., Dec. 29, 1897.

Lipa (lē-pä′). A municipality of Batangas province, in southwestern Luzon, Philippine Islands. It is east of the southern part of Lake Bombon or Taal. Civilized population (1903), 37,934.

Lippincott*, Mrs. (**Sara Jane Clarke**). Died at New Rochelle, N. Y., April 20, 1904.

Lippmann (lip′män), **Friedrich.** Born at Prague, Bohemia, Oct. 6, 1838: died at Berlin, Oct. 2, 1903. A German connoisseur, curator of the cabinet of engravings at Berlin from 1876. The present great importance of the Berlin collection is due largely to his efforts. He published much, especially in periodical literature. His important independent works are "Der italienische Holzschnitt im XV. Jahrhundert" (1884), "Zeichnungen alter Meister im königlichen Kupferstichkabinet zu Berlin" (1882), "Atlas" (1879–82), "Zeichnungen von Sandro Botticelli zu Dante's göttlicher Komödie" (1884–87).

Lipton (lip′ton), Sir **Thomas Johnstone.** Born at Glasgow, Scotland, 1850. A British merchant and sportsman. He began his business career with a single provision-shop in Glasgow, and extended his operations until he controlled large interests in Great Britain, with branches in Germany, the United States, India, etc. He has contributed largely to charitable enterprises, and is well known as a yachtsman, having competed unsuccessfully in 1899, 1901, and 1903 for the America's cup. He was knighted in 1898 and created a baronet in 1902.

Lister*, **Joseph**, first **Baron Lister.** He was professor of surgery at Glasgow University 1860–69, professor of clinical surgery at Edinburgh University 1869–77, and at King's College, London, 1877–93, and was president of the Royal Society 1895–1900. He was made a baronet in 1883 and a baron in 1897.

Livermore (liv′ėr-môr), Mrs. (**Mary Ashton Rice**). Born at Boston, Dec. 19, 1821: died at Melrose, Mass., May 23, 1905. An American abolitionist, lecturer, and female suffragist. During the Civil War she was a leader in the work of the United States Sanitary Commission. She founded and edited "The Agitator," a woman-suffrage paper, in 1869; merged it in "The Woman's Journal" in 1870; was first president of the Illinois Woman Suffrage Association and later president of the Massachusetts Woman Suffrage Association; and lectured much on temperance reform, etc. She published "What Shall We Do With Our Daughters?" (1883), "My Story of the War" (1888), etc.

Lloyd-George (loid′jôrj), **David.** Born at Manchester, 1863. A British Liberal member of Parliament, chancellor of the exchequer 1908–. He became a solicitor in 1884; has sat for Carnarvon District in the House of Commons since 1890; and was appointed president of the Board of Trade with a seat in the cabinet in December, 1905. He led the Welsh educational agitation and attracted attention by his effective speeches in behalf of the Boers.

Loango. 2. A seaport in French Kongo, situated in lat. 4° 39′ S.

Lobachevsky (lō-bä-chefs′ki), **Nikolaus Ivanovitch.** Born at Makarief, government of Nijni Novgorod, Russia, Nov. 2 (N. S.), 1793: died at Kazan, Feb. 24 (N. S.), 1856. A famous Russian mathematician, the founder of the non-Euclidean geometry. He was professor at Kazan from 1814.

Lockroy*, **Édouard Étienne Antoine.** He was minister of commerce 1886–87, of education 1888–89, and of marine 1895–96 and 1898–99, and vice-president of the chamber of deputies 1902–05. He has written "Les aigles du capitole" (1869), "A bas le progrès" (1870), "La Commune et l'Assemblée" (1871), "L'île révoltée" (1877), "Ahmed le Boucher: La Syrie et l'Égypte au XVIII. siècle" (1888), "M. de Moltke" (1891), "La marine de guerre" (2nd ed. 1897), "La défense navale" (1899), "Du Weser à la Vistule" (1901), "Les marines française et allemande" (1904), and "Le programme naval" (1906).

Lockwood (lok′wu̇d), **James Booth.** Born at Annapolis, Md., Oct. 9, 1852: died at Cape Sabine, Ellesmere Land, April 9, 1884. An American arctic explorer. He was educated at St. John's College, Annapolis, and joined the army as second lieutenant in 1873. In 1881 he joined, as second in command, Greely's expedition to Lady Franklin bay, and in May, 1882, with D. L. Brainard, attained lat. 83° 24′ N., the highest then reached. He crossed Grinnell Land with Brainard in 1883.

Lockyer*, Sir (**Joseph**) **Norman.** His later works are "The Sun's Place in Nature" (1897), "Recent and Coming Eclipses" (1897), "Inorganic Evolution" (1900), "Stonehenge and other British Stone Monuments Astronomically Considered" (1907). Knighted 1897.

Lodge (loj), Sir **Oliver Joseph.** Born in Staffordshire, June 12, 1851. An English physicist, principal of the University of Birmingham from 1900, especially noted for his investigations in electricity. He was professor of physics in University College, Liverpool, 1881–1900. The coherer employed in wireless telegraphy is his invention. He has published "Elementary Mechanics" (1877), "Modern Views of Electricity" (1889), "Pioneers of Science" (1893), "Electrons" (1907), "Science and Mortality" (1908), "The Ether of Space" (1909), etc. He was knighted in 1902.

Loeb (lėb), **Jacques.** Born in Germany, April 7, 1859. A German-American physiologist, professor in the University of California from 1902. His works include "The Heliotropism of Animals" (1890), "Physiological Morphology" (1891–92), "Comparative Physiology of the Brain" (1900), "Studies in General Physiology" (1905), "Dynamics of Living Matter" (1906), etc., and numerous papers on experimental biology.

Loeb (lėb), **Louis.** Born at Cleveland, O., 1866: died at Canterbury, N. H., July 12, 1909. An American artist and illustrator. He was a painter of imaginative and poetic quality, and also did much work in black and white for the magazines. In 1906 he was elected a member of the National Academy of Design.

Loeffler (lėf′lėr), **Charles Martin.** Born at Mülhausen, Alsace-Lorraine, Jan. 30, 1861. A composer and violinist. He is a strongly imaginative composer of the most modern tendencies. Among his works are the symphonic poems "La Mort de Tintagiles" (1897: after Maeterlinck), "Avant que tu ne t'en ailles," and "Vilanelle du Diable"; a suite for violin and orchestra, "Les Veillées d'Ukraine" (1891: after Gogol); chamber music; and songs.

Loftus*, Lord **Augustus William Frederick Spencer.** Died March 7, 1904.

Logan, Mount. A mountain situated in Yukon, Canada, 26 miles northeast of Mount St. Elias, in lat. 60° 34′ N., long. 140° 24′ W. Height, 19,514 feet: after Mount McKinley, probably the highest in North America.

Logroscino (lō-grō-shē′nō), **Niccola.** Born at Naples, about 1700: died there, 1763. An operatic composer of the eighteenth century, distinguished as the creator of the opera buffa, and as the first to devise extended ensembles as the finales for acts.

London*. In its widest extent (the Metropolitan Police District with the City of London Police District, which together form "Greater London") it occupies an area of 699.42 square miles and contains (1908), 7,323,327 inhabitants. Of these, according to the census of 1908, 4,795,757 reside within the "Inner Ring" (see *County of London*) or Registration District and 2,527,570 within the "Outer Ring" or suburban district. For administrative purposes this vast center of population is variously subdivided. The City of London proper (generally called "the City") is little over a square mile in extent, and had in 1901 a population of only 26,923. It has a distinct administration under the lord mayor, with 19 other aldermen and a court of common council. The rest of "Inner" London forms an administrative county, which since 1888 has been under the control of the London County Council of 118 members. For parliamentary purposes London is divided into 58 constituencies with 1 member each, except the City, which returns 2 members (West Ham is sometimes included in parliamentary London, making 60 divisions): Battersea, Bermondsey, Bethnal Green (2), Bow and Bromley, Brixton, Camberwell North, Chelsea, City of London, Clapham, Deptford, Dulwich, Finsbury (2), Fulham, Greenwich, Hackney (3), Haggerston, Hammersmith, Hampstead, Holborn, Hoxton, Islington (4), Kennington, Kensington (2), Lambeth North, Lewisham, Limehouse, Marylebone (2), Mile End, Newington West, Norwood, Paddington (2), Peckham, Poplar, Rotherhithe, St. George (Hanover Square), St. George's-in-the-East, St. Pancras (4), Southwark West, Stepney, Strand, Walworth, Wandsworth, West Ham (2), Westminster, Whitechapel, Woolwich. The University of London is also represented. The London Government Act of 1899 divided the administrative county of London (with the exception of the City) into 28 municipal boroughs: Battersea, Bermondsey, Bethnal Green, Camberwell, Chelsea, Deptford, Finsbury, Fulham, Greenwich, Hackney, Hammersmith, Hampstead, Holborn, Islington, Kensington, Lambeth, Lewisham, Marylebone, Paddington, Poplar, St. Pancras, Shoreditch, Southwark, Stepney, Stoke Newington, Wandsworth, Westminster, Woolwich.

London (lun′don), **Jack.** Born at San Francisco, Cal., Jan. 12, 1876. An American author, journalist, socialist, and lecturer. He has been at various times a sailor, miner, salmon-fisher, longshoreman, fish-patrolman, etc., and has traveled in search of adventure over much of the United States and Canada, in the East End of London, etc. In 1904 he acted as war-correspondent in Japan, Korea, and Manchuria. His works include "The Son of the Wolf" (1900), "The God of his Fathers" (1901), "A Daughter of the Snows" (1902), "The Cruise of the Dazzler" (1902), "Children of the Frost" (1902), "The Call of the Wild" (1903), "The Kempton-Wace Letters" (1903: with Anna Strunsky), "The People of the Abyss" (1903), "The Faith of Men" (1904), "The Sea-Wolf" (1904), "The Game" (1905), "War of the Classes" (1905), "Tales of the Fish-Patrol" (1905), "Moon-Face" (1906), "Iron Heel" (1908), "Martin Eden" (1909), etc.

London*, **University of.** Since 1900 the university has provided also courses of instruction. The faculties are those of theology, arts, laws, music, medicine, science, engineering, and economics. There is also an academic department for the control of its various schools and institutions. The students number over 3,000.

Lone Star, The. A secret society, formed in 1848, for the annexation of Cuba and other islands to the United States. It flourished chiefly in the Southern States and was denounced by the United States Government. Three filibustering expeditions were organized and ended in failure. See *Lopez, Narciso.*

Lone-star State. A name given to the State of Texas, from the single star on the flag adopted during its struggle for freedom from Mexico. The device is now used in the State seal.

Long, John Davis. Born at Buckfield, Maine, Oct. 27, 1838. An American statesman. He was a member of the Massachusetts House of Representatives 1875–78, and three times speaker of the House; lieutenant-governor 1879; governor 1880–82; United States congressman 1883–89; and secretary of the navy 1897–1902. He published a translation of Vergil's "Æneid" in 1879, "After-dinner and Other Speeches" (1895), "The New American Navy" (1903), etc.

Longstreet*, **James.** Died at Gainesville, Ga., Jan. 2, 1904.

Loon (lō-ōn′). A municipality of Bohol province in the Philippine Islands. It is on the western coast of Bohol Island. Civilized population (1903), 18,114.

Lorain (lō-rān′). A city in Lorain County, Ohio, situated on Lake Erie at the mouth of the Black River. It has an excellent harbor and is a shipping point for iron, coal, lumber, and grain. It has stove-, brick-, and steel-works, a large ship-building establishment, etc. Population (1900), 16,028.

Lord (lôrd), **John.** Born at Portsmouth, N. H., Dec. 27, 1810: died at Stamford, Conn., Dec. 15, 1894. An American historian. He was pastor of Congregational churches in New Marlborough, Massachusetts, and Utica, New York; lecturer on history at Dartmouth College 1866–76; and public lecturer from 1843. He wrote "Modern History" (1850), "The Old Roman World" (1867), "Ancient States and Empires" (1869), "Ancient History" (1876), "Beacon Lights of History" (1883–94), etc.

Loreburn, Lord. See *Reid.*

Lorentz (lō′rentz), **Hendrik Antoon.** Born at Arnheim, Netherlands, July 18, 1853. A Dutch physicist, professor in the University of Leyden from 1878. He is best known as the founder of the theory of electrons by means of which he explained Zeemann's effect. With Zeemann he received the Nobel prize in physics in 1902.

Lorenz (lō′rentz), **Adolf.** Born in Silesia, April 21, 1854. An Austrian surgeon, chief of the orthopedic department of the Imperial Royal General Hospital in Vienna. He is especially noted for his method of reducing congenital dislocation of the hip-joint without recourse to the knife. In 1902 he visited the United States.

Lorenz*, **Ottokar.** Died at Jena, May 13, 1904. He was professor of history at Vienna 1860–85, and at Jena 1885–1904.

Lorenzo Marques*. (*a*) It is now the capital of the province of Portuguese East Africa. (*b*) It is now one of the five districts into which Portuguese East Africa is divided.

Lorne*, **Marquis of** (John Douglas Sutherland Campbell), ninth **Duke of Argyll.** He succeeded to the dukedom in 1900. From 1895 to 1900 he was (Unionist) member of Parliament for South Manchester.

Lotta (lot′a). See *Crabtree.*

Loubet (lö-bā′), **Émile.** Born at Marsanne, France, Dec. 31, 1838. A French statesman. He was elected in 1876 to the chamber as a Republican, and was reelected in 1877 and 1881; elected to the senate in 1885; minister of public works Dec., 1887,–April, 1888; president of the council and minister of the interior 1892; minister of the interior (under M. Ribot) Dec. 5–10, 1892; president of the senate 1896–99; president of France Feb. 18, 1899,–Feb. 18, 1906.

Lou Dillon (lö dil′on). An American trotting mare, foaled in 1898 by Lou Milton, sire Sidney Dillon. On October 24, 1903, she won the world's championship at Memphis, Tennessee, by trotting a mile in one minute and fifty-eight and a half seconds.

Louis Alexander, Prince of Battenberg. Born at Gratz, Austria, May 24, 1854. An English vice-admiral, the eldest son of Prince Alexander of Hesse, and the brother of Alexander I., Prince of Bulgaria, and Prince Henry of Battenberg. In 1868 he was naturalized a British subject and entered the Royal Navy as naval cadet. He served in the Egyptian campaign of 1882. In 1884 he married Princess Victoria of Hesse, granddaughter of Queen Victoria. He was director of naval intelligence 1902–05, and was appointed second in command of the Mediterranean fleet in 1907 and to the command of the Atlantic fleet in 1908.

Louisiana*. It sends 2 senators and 7 representatives to Congress, and has 9 electoral votes.

Louisiana Purchase Exposition. A universal exposition at St. Louis, Missouri, opened April 30, 1904, in commemoration of the purchase of Louisiana. Forty-two States and fifty-three foreign governments exhibited. Among the principal features of the exposition were the departments of education, social economy, and physical culture, the international press parliament, the international congress of jurists, and the world congress of arts and sciences.

Lounsbury (lounz′be-ri), **Thomas Raynesford.** Born at Ovid, N. Y., Jan. 1, 1838. An American scholar and critic. He was on the editorial staff of the "New American Cyclopædia" 1860–62; was instructor at Yale 1870–71; and has been professor of English there since 1871. Among his works are "A History of the English Language" (1879), "Life of James Fenimore Cooper" (1882), "Studies in Chaucer" (1891), "Shakespearean Wars" (1901), "Shakespeare and Voltaire" (1902), and "The Standard of Pronunciation in English" (1904).

Louvain*. The university is attended by over 2,200 students.

Low*, **Seth.** In 1901 he resigned the presidency of Columbia University and was mayor of New York 1902–03.

Lowell (lō′el), **Abbott Lawrence.** Born at Boston, Mass., Dec. 13, 1856. An American educator, president of Harvard University from 1909. He was graduated at Harvard in 1877; practised law in Boston; and became professor of the science of government in Harvard University in 1900. He has published "Essays on Government" (1889), "Governments and Parties in Continental Europe" (1896), "The Influence of Party upon Legislation in England and America" (1902), "The Government of England" (1908).

Lowell (lō′el), Mrs. (**Josephine Shaw**). Born at West Roxbury, Mass., Dec. 16, 1843: died at New York, Oct. 12, 1905. An American philanthropist. She was the sister of Robert Gould Shaw, and the wife (married 1863) of Charles Russell Lowell, who was killed at the battle of Cedar Creek, Oct., 1864. After her husband's death she devoted her life to charitable work; was a member of the New York State Board of Charities 1876–89; and was largely instrumental in founding the Charity Organization Society and the New York State Charities Aid Association. She also aided in prison reform, etc. She published "Public Relief and Private Charity" (1884), "Industrial Arbitration and Conciliation" (1893), etc.

Lowell Institute. An educational institution in Boston, Massachusetts. John Lowell (1799–1836) provided in his will that one half of his property (amounting to about $250,000) should go "to the maintenance and support of public lectures . . . in Boston . . . for the promotion of the moral and intellectual and physical instruction and education of the inhabitants.' The management of the fund was left to one trustee, preferably a male descendant of John Lowell (grandfather of the testator). The free lectures were begun, December 31, 1839, by a memorial address on John Lowell by Edward Everett. The trustee of the Lowell Institute also established, under the auspices of the Natural History Society, a Teachers' School of Science; under those of the Massachusetts Institute of Technology, a School of Practical Design (1872) —now transferred to the Boston Museum of Fine Arts— and a School for Industrial Foremen; and under those of the Wells' Memorial Institute, free courses for workingmen. Other courses of a special nature have been established from time to time.

Loyal Legion (official title: **Military Order of the Loyal Legion of the United States**). A society organized at Philadelphia, April 15, 1865, to commemorate the services and perpetuate the memory of those who served in the Union army, and to afford relief to soldiers who survived the war. Membership descends to the eldest male lineal descendant according to the rules of primogeniture.

Lualaba-Kasai. An administrative district of the Kongo Free State.

Lubang (lö-bäng′) **Islands.** A group of islands in the Philippines, belonging to Mindoro province, and lying northwest of Mindoro and west of the southern part of Luzon. It contains 11 named and 48 unnamed islands and rocks. The largest of the group is Lubang. Population (1903), 6,370. Area of group, 87.6 square miles.

Lubao (lö-bä′ō). A municipality of Pampanga province, in the southern part of Luzon, Philippine Islands. Civilized population (1903), 19,063.

Lubbock*, Sir **John,** Baron **Avebury.** He was raised to the peerage in 1900. He represented the University of London 1880–1900. His later works include "The Beauties of Nature and the Wonders of the World We Live In" (1892), "Seedlings" (1893), "The Scenery of Switzerland" (1896), "On Buds and Stipules" (1899), "Short History of Coins and Currency" (1902), "Essays and Addresses" (1903), "Notes on the Life History of the British Flowering Plants" (1905), etc.

Lucas (lū′kas), **Edward Verrall.** Born June 12, 1868. An English author and critic. He was connected with the London "Globe" 1893–1900 and with the "Academy" 1896–1901, and is on the staff of "Punch." He is the compiler of "The Open Road" (1899), and the author of "Wisdom While You Wait" (1903: with O. L. Graves), "Highways and Byways in Sussex" (1904), "A Wanderer in Holland" (1905), "The Life of Charles Lamb" (1905), "A Wanderer in London" (1906), "Listener's Lure" (1906), "The Hambledon Men" (1907), "The Gentlest Art" (1907), "Her Infinite Variety" (1908), "Over Bemerton's" (1908), "A Wanderer in Paris" (1909), etc.

Lucas (lū′kas), **Frederic Augustus.** Born at Plymouth, Mass., March 25, 1852. An American naturalist, curator-in-chief of the Museums of the Brooklyn Institute from 1904. He was curator of anatomy in the United States National Museum 1893–1904 and acting curator of vertebrate fossils 1901–04. He has published papers upon osteological topics, besides books and articles in a popular style on paleontological subjects.

Lucca*, **Pauline.** Born at Vienna, April 25. 1841: died there, Feb. 28, 1908. She married Baron Rahden in 1865, and was divorced from him. Later she married M. de Wallhofen (died 1899).

Luce (lūs), **Stephen Bleecker.** Born at Albany, N. Y., March 25, 1827. An American naval officer, promoted rear-admiral in 1885. He was appointed midshipman in 1841; served in the Union navy during the Civil War (commanding the monitor Nantucket and other vessels); and retired in 1889. From 1884–86 he was president of the Naval War College, of which he was the founder. He is the author of "Seamanship" (1866), and "Naval Songs" (1902).

Lucena (lö-thā′nä). **1.** A river in Tayabas province, southeastern Luzon, Philippine Islands, flowing south to Tayabas Bay: navigable for 3 miles to Lucena.—**2.** A town, the capital of Tayabas province, situated on the Lucena river near Tayabas bay in lat. 13° 55′ N., long. 121° 26′ 30″ E. Civilized population of municipality (1903), 9,375.

Ludwig*, **Karl Friedrich Wilhelm.** Died at Leipsic, April 23, 1895.

Lumber State, The. A popular name of the State of Maine.

Lummi*. They are now on the Lummi reservation, on Bellingham Bay, Whatcom County, Washington. They number about 300.

Lummis (lum′is), **Charles Fletcher.** Born at Lynn, Mass., March 1, 1859. An American author and editor. He was graduated at Harvard in 1881; was the city editor of the Los Angeles "Daily Times" 1885–88; and has been the editor of "Out West" (until 1902 "The Land of Sunshine") from 1893. He was appointed librarian of the Los Angeles public library in 1905. Among his works are "Birch Bark Poems" (1878), "A New Mexico David" (1891), "A Tramp across the Continent" (1892), "Some Strange Corners of Our Country" (1892), "The Land of Poco Tiempo" (1893), "The Spanish Pioneers" (1893), "The Man who Married the Moon, and other Pueblo Folk Stories" (1896), "The Gold Fish of Gran Chimu" (1896), "The King of the Broncos, and other New Mexico Stories" (1897), "The Enchanted Burro" (1897), and "The Awakening of a Nation: Mexico Today" (1898).

Lund*. The university was founded in 1666 and has over 900 students.

Luristan*. An earthquake occurred here on Jan. 23, 1909, in which, it is reported, over five thousand people were killed.

Luska (lus′kạ), **Sidney.** A pseudonym used by Henry Harland in his earlier work.

Luxemburg* (grand duchy). Adolf of Nassau was succeeded in 1905 by his son William.

Lydekker (lī-dek′ėr), **Richard.** Born 1849. A British geologist, connected with the Geological Survey of India 1874–82. He has published "A Manual of Palæontology" (with H. A. Nicholson), etc.

Maasin (mä-ä′sēn). **1.** A river in the southern part of Leyte Island, in the Philippines, flowing south to the Surigao Sea.—**2.** A municipality of Leyte province, Leyte Island. Civilized population (1903), 16,805.

Mabie (mā′bi), **Hamilton Wright.** Born at Coldspring, N. Y., Dec. 13, 1846. An American author, critic, editor, and lecturer. He was on the editorial staff of the "Christian Union" (later the "Outlook") from 1879, and became its associate editor in 1884. His works include "My Study Fire" (1890: second series 1894), "Short Studies in Literature" (1891), "Under the Trees and Elsewhere" (1891), "In the Forest of Arden" (1891), "Memorial Story of America" (1892: with M. H. Bright), "Essays in Literary Interpretation" (1892), "Old English Ballads" (1896), "Essays on Nature and Culture" (1896), "Essays on Books and Culture" (1896), "Old English Love Songs" (1897), "Essays on Work and Culture" (1898), "The Life of the Spirit" (1898), "Shakespeare, Poet, Dramatist, and Man" (1900), "A Child of Nature" (1901), "Works and Days" (1902), "Parables of Life" (1902), "In Arcady" (1903), "Backgrounds of Literature" (1903), and "The Great Word" (1905).

MacArthur (mak-är′thėr), **Arthur.** Born at Springfield, Mass., June 2, 1845. An American soldier, lieutenant-general in the United States army from 1906. He served in the Union army in the Civil War, rising to the (volunteer) rank of lieutenant-colonel in 1865; entered the regular army in 1866 as lieutenant; served in the Philippines 1898–1901; and was military governor of the Philippines May, 1900,–July, 1901. He was promoted brigadier-general in 1900 and major-general in 1901. Retired in 1909.

McCalla (ma-kal′ạ), **Bowman H.** Born at Camden, N. J., June 19, 1844. An American naval officer, promoted rear-admiral in 1903. He was graduated from the United States Naval Academy in 1864; was promoted captain in 1898, and commanded the cruiser Marblehead during the war with Spain; served in the Philippines in 1899; and in 1900 took part in the Seymour expedition for the relief of the legations in Peking. He was appointed commandant of the Mare Island Navy Yard (California) in 1903. He retired in June, 1906.

M'Carthy*, **Justin.** He was a Home Rule member of Parliament 1879–1900 and was chairman of the Irish Parliamentary Party 1890–96 (resigned). His later works include "Pope Leo XIII." (1896), "Story of Gladstone's Life" (1897), "Story of the People of England in the 19th Century" (1899), "Reminiscences" (1899), "Mononia" (1901), "Reign of Queen Anne" (1902), "Portraits of the Sixties" (1903), "An Irishman's Story" (1904), and "History of Our Own Times" (vols. 4 and 5, 1905).

McClellan (mạ-klel′ạn), **George Brinton.** Born at Dresden, Saxony, Nov. 23, 1865. An American Democratic politician, son of General George B. McClellan. He was graduated at Princeton in 1886; was admitted to the bar in 1892; was president of the New York board of aldermen 1893–94; served as representative in Congress 1895–1903; and was elected mayor of New York in 1903 and again in 1905. He has published "The Oligarchy of Venice" (1904).

McClernand*, **John Alexander.** Died Sept. 20, 1900.

M'Clintock*, Sir **Francis Leopold.** Born at Dundalk, Ireland, July 8, 1819: died at London, Nov. 17, 1907.

McCook*, **Alexander McDowell.** Died June 12, 1903. He was promoted brigadier-general 1890, and major-general 1894, and retired 1895.

MacCracken (ma̤-krak′e̤n), **Henry Mitchell.** Born at Oxford, Ohio, Sept. 28, 1840. An American clergyman, author, and educator, vice-chancellor and chancellor of New York University since 1885. He was graduated at Miami University in 1857, and at Princeton Theological Seminary in 1863; was chancellor and professor of philosophy in the Western University of Pennsylvania 1881–84; and has been professor of philosophy in New York University since 1884. Among his publications are "A Tercentenary of Presbyterianism" (1870), "Leaders of the Church Universal" (1879), "Kant and Lotze" (1885), "A Metropolitan University" (1892), "Hall of Fame" (1901), etc.

Macdonald (mak-don′ald), Sir **Claude Maxwell.** Born June 12, 1852. A British soldier and diplomatist, ambassador to Japan from 1905 (minister 1900–05). He served in the Egyptian campaign (1882) and in the Suakin expedition (1884–85); held various diplomatic positions 1887–96; and was minister at Peking 1896–1900. During the siege of the foreign legations in Peking, June–August, 1900, he was in command, and was promoted colonel for his services.

Macdonald*, **George.** Died Sept. 18, 1905.

MacDowell (ma̤k-dou′el), **Edward Alexander.** Born at New York, Dec. 18, 1861: died there, Jan. 24, 1908. An American pianist and composer. His studies were carried on in New York and Paris, and in Frankfort, where he was much influenced by Raff. In 1888 he returned to America, and in 1896 was appointed professor of music in Columbia University, a post which he resigned in 1904. His compositions show imagination and originality. The most important are the orchestral tone poems "Hamlet and Ophelia," "Lancelot and Elaine," "Lamia," "The Saracens," and "The Fair Aldâ"; two suites, of which the second, Op. 48, is based largely on Indian melodies; choruses; and many songs and piano pieces, among which are the sonatas "Eroica," "Tragica," and "Keltic," two suites, and two concertos with orchestra.

Maceo (mä-sä′ō), **Antonio.** Born at Santiago de Cuba, July 14, 1848: died near Mariel, Dec. 2, 1896. A Cuban military leader, distinguished in the ten years' war against Spain. He defeated Martinez Campos at Demajagua and La Galleta, and Santocildes at San Ulpiano. At the peace of Zanjon, in 1878, he refused to lay down his arms, and continued fighting for two months. He lived successively in Jamaica, the United States, South America, and Costa Rica, returning to Cuba in 1895 to support the rebellion of that year. Until his death in the following year he conducted a brilliant campaign in the province of Pinar del Rio.

Maceo (mä-sä′ō), **José.** Born at Santiago de Cuba, 1846: died at La Lama del Gato, July 5, 1896. A Cuban patriot, of mulatto parentage, brother of Antonio Maceo. He fought in the ten years' war (1868–78); was one of the leaders of the insurrection of 1879; and was deported to Spain but escaped from the Balearic Isles, where he was imprisoned, and went to Costa Rica in 1885. In 1895 he went to Cuba, raised a large force, and, with his brother, defeated the Spaniards at Jobito in May, and at Sao del Indio in September, 1895. He bore the rank of colonel.

McEwen (ma̤k-ū′en), **Walter.** Born at Chicago, 1860. An American painter. He was trained in Munich, at the Academy of Art and under Frank Duveneck, and in Paris under Robert-Fleury. He has painted portraits and many landscapes and genre subjects, notably a series done in Holland, and he assisted in the decoration of the buildings of the Columbian Exposition in Chicago in 1893. He was created a chevalier of the Legion of Honor in 1896, and was elected a member of the National Academy of Design in 1903.

McFall (ma̤k-fâl′), Mrs. (**Frances Elizabeth Clarke**): pseudonym **Sarah Grand.** Born at Donaghadee, County Down, Ireland. An English novelist. She is actively interested in woman suffrage and social work. Among her books are "Ideala" (1888), "The Heavenly Twins" (1893), "The Beth Book" (1897), "The Modern Man and Maid" (1898), "Babs the Impossible" (1900), "Emotional Moments" (1908), etc.

McGee (ma̤-gē′), **W J.** Born in Dubuque County, Iowa, April 17, 1853. An American geologist and anthropologist, director of the St. Louis Public Museum 1905–07. He was geologist of the United States Geological Survey 1883–93, and ethnologist in charge of the Bureau of American Ethnology 1893–1903. He has published numerous monographs and papers on geological, ethnological, and archæological topics. In 1907 he was appointed a member of the Inland Waterways Commission.

McGiffert (ma̤k-gif′ėrt), **Arthur Cushman.** Born at Sauquoit, N. Y., March 4, 1861. An American theologian, professor of ecclesiastical history in Union Theological Seminary (New York) from 1893. He was graduated at Western Reserve College in 1882, and at Union Seminary in 1885, and studied in Germany, France, and Italy 1885–1888. From 1888 to 1890 he was an instructor, and from 1890 to 1893 a professor in Lane Theological Seminary (Cincinnati). He is the author of "A Dialogue between a Christian and a Jew" (1889), "The Church History of Eusebius" (1890), "A History of Christianity in the Apostolic Age" (1897), "The Apostles' Creed" (1902), etc.

McGill University. An institution of learning founded at Montreal, Canada, by the will of James McGill (1744–1813), chartered in 1821, and opened in 1829. The faculties are five in number: arts, applied science, law, medicine, and agriculture; there is also a conservatory of music. Educational work is carried on in McGill College, the Royal Victoria College for Women (founded by Lord Strathcona and opened in 1900), and other university buildings in Montreal; and also in the affiliated colleges, Vancouver College (Vancouver, B. C.), Victoria College (Victoria, B. C.), and the four theological colleges, etc. The student enrolment in the undergraduate courses at Montreal is over 1,600.

Mach (mäċh), **Ernst.** Born at Turas, Feb. 18, 1838. An Austrian physicist, professor in the University of Vienna 1895–1901. In 1901 he retired and became a member of the Upper House of the Reichsrath. Among his works are "Optischakustische Versuche" (1873–1908), "Die Mechanik in ihrer Entwickelung" (1883), "Beiträge zur Analyse der Empfindungen" (1886: republished in 1903 as "Die Analyse der Empfindungen und das Verhältnis des Physischen zum Psychischen"), "Die Prinzipien der Wärmelehre" (1900), and "Erkenntnis und Irrtum: Skizzen zur Psychologie der Forschung" (1905).

McKelway (ma̤-kel′wā), **St. Clair.** Born at Columbia, Mo., March 15, 1845. An American journalist, a regent of the University of the State of New York from 1883 and the vice-chancellor from 1899. He was admitted to the bar in 1866, but did not practise. In 1870 he became assistant editor of the Brooklyn "Eagle" and in 1878 the editor of the Albany "Argus," which he left in 1885 to become the editor-in-chief of the "Eagle," which position he now holds. He is a writer and speaker on educational, civic, and historical questions.

McKendree (ma̤-ken′drē), **William.** Born in King William County, Va., July 6, 1757: died near Nashville, Tenn., March 5, 1835. The first American-born bishop of the Methodist Episcopal Church. He became presiding elder in 1796 and bishop in 1808.

McKenna (ma̤-ken′a̤), **Joseph.** Born at Philadelphia, Aug. 10, 1843. An American jurist. He was admitted to the bar in 1865; was a member of the California legislature 1875–76 and a member of Congress 1885–93; was United States circuit judge 1893–97; was attorney-general 1897–98; and was associate justice of the United States Supreme Court 1898–.

M'Kenna (ma̤-ken′ä̤), **Reginald.** Born in London, July 6, 1863. A British statesman, first lord of the admiralty 1908–. He was appointed financial secretary of the treasury in 1905 and was president of the Board of Education 1907–08.

Mackenzie (ma̤-ken′zi). A district of the Northwestern Territories of Canada. It is bounded by Beaufort Sea and other arctic waters on the north; Keewatin on the east; Saskatchewan, Alberta, and British Columbia on the south; and Yukon (separated by the Rocky Mountains) on the west. It has many lakes, the Great Slave and the Great Bear being the largest. The Great Slave River flows northwest from northern Alberta (formerly Athabasca) into Great Slave Lake, and the Mackenzie northwest from Great Slave Lake into Mackenzie Bay. Other rivers are the Liard or Mountain, an affluent of the Mackenzie, the Coppermine, the upper waters of the Great Fish or Back, the Telzoa, the Rocky, and the Kazan. The western part of the district is densely forested. The climate is severe. Area 562,182 square miles. Population (1901), 5,216.

Mackenzie (ma̤-ken′zi), Sir **Alexander Campbell.** Born at Edinburgh, Aug. 22, 1847. A British composer, since 1888 principal of the Royal Academy of Music in London. He has composed three operas, oratorios, and cantatas, orchestral overtures, a 'pibroch' for violin and orchestra, songs, and piano pieces. He was knighted in 1895.

McKim (ma̤-kim′), **Charles Follen.** Born in Chester County, Pa., Aug. 24, 1847: died at St. James, L. I., N. Y., Sept. 14, 1909. An American architect. From 1867 until 1870 he studied in Paris. Returning to America in 1870 he entered the office of H. H. Richardson in New York, and in 1872 commenced practice on his own account. He was joined by W. R. Mead in 1877, and by Stanford White in 1879, thus forming the firm of McKim, Mead, and White, of New York. In 1897 he organized the American Academy in Rome, of which he was chosen the first president. In 1901 he was appointed to the commission intrusted with the rearrangement of the city of Washington. Among the buildings erected by this firm are the Century Club, Madison Square Garden, and the Metropolitan Club, New York; Battle Monument, West Point; the Boston Public Library; the Agricultural Building, World's Fair, Chicago, 1893; the group of buildings of Columbia University, New York, and of the New York University; the reconstruction of the White House in Washington, etc. He became a member of the National Academy of Design in 1907.

McKinley (ma̤-kin′li), **Mount.** A mountain in south-central Alaska, about lat. 63° 30′ N., long. 151° W., the highest summit in the United States. In 1906 Dr. Frederick A. Cook reported that he had ascended the mountain on Sept. 15 of that year. Height, 20,464 feet.

McKinley*, **William.** Died at Buffalo, N. Y., Sept. 14, 1901. He was elected president in 1896, and again in 1900. On Sept. 6, 1901, while attending the Pan-American Exposition at Buffalo, he was shot by Leon Czolgosz, an anarchist.

McLane*, **Robert Milligan.** Died at Paris, April 16, 1898.

Maclaren, Ian. Pseudonym of Dr. John Watson.

McLaughlin (ma̤k-laf′lin), **Andrew Cunningham.** Born at Beardstown, Ill., Feb. 14, 1861. An American educator, professor of history in the University of Chicago from 1906. He was assistant professor and professor of history in the University of Michigan 1888–1906. His works include "Lewis Cass" (1891), "A History of the American Nation" (1899), "The Confederation and the Constitution" (1905), etc. From 1901 to 1905 he was managing editor of the "American Historical Review" and from 1903 to 1904 director of the bureau of historical research in the Carnegie Institution at Washington.

McLaws*, **Lafayette.** Died at Savannah, Ga., July 23, 1897.

Macleod (ma̤k-loud′), **Fiona.** The name under which William Sharp published many of his tales and poems relating to the Scottish Highlands. After the publication of "Pharais," in 1894, there was much conjecture as to the personality of Fiona Macleod, until the illusion was finally established (by means of a carefully conducted correspondence) that she was a young Highland woman writing under her maiden name. The secret of her identity with William Sharp was not disclosed until after his death in 1905. Under her name he published "Pharais" (1894), "The Mountain Lovers" (1895), "The Sin-eater" (1895), "The Washer of the Ford" (1896), "Green Fire" (1896), "From the Hills of Dream" (1896), "The Laughter of Peterkin" (1897), "The Dominion of Dreams" (1899), "The Divine Adventure" (1900), and "The Winged Destiny" (1904), and was preparing at the time of his death "The Immortal Hour," and "The Magic Kingdoms." The best poetic-prose tales were collected and re-issued under the titles "Spiritual Tales," "Barbaric Tales," and "Tragic Romances," in 1897.

MacLeod*, **Henry Dunning.** Died July 16, 1902.

McLoughlin (ma̤k-loth′lin), **John.** Born in La Rivière du Loup Parish, Canada, Oct. 19, 1784: died at Oregon City, Ore., Sept. 3, 1857. One of the pioneers of Oregon. He went to the Oregon country as chief factor of the Hudson's Bay Company in 1824, remaining in its employ until 1846.

MacManus (ma̤k-man′us), **Seumas**: pseudonym **Mac.** Born at Donegal. A contemporary Irish writer of prose and verse. He is the author of "Through the Turf Smoke" (1899), "In Chimney Corners" (1899), "Donegal Fairy Stories" (1900), "The Bewitched Fiddle, and Other Tales" (1900), "A Lad of the O'Friels" (1903), "The Red Poocher" (1903), and many shorter stories.

McMaster*, **John Bach.** His later works include "With the Fathers" (1896), "Origin, Meaning, and Application of the Monroe Doctrine" (1896), "School History of the United States" (1897), "Daniel Webster" (1902), "The Acquisition of Political, Social, and Industrial Rights of Man in America" (1903), "Brief History of the United States" (1907), etc.

MacNeil (ma̤k-nēl′), **Hermon Atkins.** Born at Chelsea, Mass., Feb. 27, 1866. An American sculptor. He was trained in Paris, and in Rome He assisted in the decoration of the buildings of the Columbian Exposition in Chicago in 1893, and has executed many monumental works, the most important being the McKinley memorial at Columbus, Ohio. His most interesting statues have been of Indian subjects, "The Moqui Runner," "The Sun Vow," "Coming of the White Man," etc. He was elected a member of the National Academy of Design in 1906.

Mactan (mäk-tän′). An island of the Philippines, east of Cebu, belonging to Cebu province. Here Magalhães, the discoverer of the Philippines, was killed in an attack on the natives on April 27, 1521. Area, 25 square miles. Population (1903), 17,540.

MacVeagh*, **Wayne.** He was ambassador to Italy 1893–97, and was chief counsel to the United States in the Venezuelan arbitration before the Hague tribunal in 1903.

Madagascar*. In 1896 it became a French colony, and in February, 1897, the queen was deposed. Government is administered by a governor-general, assisted by a council of administration. Diégo-Suarez and the islands of Nossi Bé and Sainte Marie are dependencies of the colony.

Madison University. See *Colgate University.*

Maeterlinck*, **Maurice** (**Mooris**). Born at Ghent, Aug. 29, 1862. He has written also "La mort de Tintagiles" (1894), "Aglavaine et Sélysette" (1896), "Le trésor des humbles" (1896), "La sagesse et la destinée" (1898), "La vie des abeilles" (1901), "Monna Vanna" (1902), "Le temple enseveli" (1902), "Joyzelle" (1903), "Le double jardin" (1904), "Le miracle de saint Antoine" (1905).

Mafeking (maf′e-king). A town in British Bechuanaland, in lat. 25° 51′ S., long. 23° 41′ E. It is the seat of government of the protectorate.

Mafeking (maf′e-king), **Siege of.** The siege of Mafeking, in Bechuanaland, during the Boer war, begun by the Boers October 15, 1899, and abandoned May 18, 1900. The defense was conducted by Colonel (later Major-General) R. S. S. Baden-Powell.

Magersfontein (mä-gėrz-fon′tān). A locality in Orange River Colony, South Africa, near the western boundary and north of the Modder

River. Here on Dec. 11, 1899, the British under Lord Methuen were disastrously defeated by the Boers under General Cronje.

Magnard (män-yär′), **Francis.** Born at Brussels, Feb. 11, 1837: died at Neuilly, Seine, Nov. 18, 1894. A French journalist. He entered the office of "Le Figaro" in 1863, became managing editor of that journal in 1876, and was editor-in-chief from 1879 until his death. Besides contributing to other journals he wrote a novel, "L'Abbe Jerôme" (1869), "Vie et aventures d'un positiviste, histoire paradoxale" (1876), etc.

Magnin*, **Charles.** Died at Paris, Oct. 8, 1862.

Magoon (ma-gön′), **Charles E.** Born in Minnesota, Dec. 5, 1861. An American administrator, provisional governor of Cuba Oct., 1906,–Jan., 1909. He was general counsel of the Isthmian Canal Commission, 1904–1905, and governor of the Canal Zone from May, 1905.

Magruder (ma-grö′dėr), **Julia.** Born at Charlottesville, Va., Sept. 14, 1854: died at Richmond, Va., June 9, 1907. An American novelist. Her works include "Across the Chasm" (1885), "Princess Sonia" (1895), "The Violet" (1896), "A Realized Ideal" (1898), "Dead Selves" (1898), "Struan" (1899), "A Beautiful Alien" (1900), "A Manifest Destiny" (1900), "A Sunny Southerner" (1901), etc.

Mahaffy*, **John Pentland.** He was professor of ancient history at Trinity College, Dublin, 1871–1901. He wrote also "Greek Antiquities" (1876), "The Story of Alexander's Empire" (1890), "Problems in Greek History" (1892), "The Petrie Papyri Deciphered and Explained" (1891–1905), "Empire of the Ptolemies" (1896), "An Epoch in Irish History" (1904), "The Silver Age of the Greek World" (1906), etc.

Mahamaya (mä-hä-mä′yä). The mother of Buddha. She was the daughter of the raja of Koli and she and her younger sister were the principal wives of Suddhodana, raja of the Sakhyas. Many legendary stories are told of the immaculate conception, the miracles performed, etc.

Mahan*, **Alfred Thayer.** He retired in 1896. In 1906 he attained the rank of rear-admiral. Among his later works are "Life of Nelson" (1897), "Interest of America in Sea Power" (1897), "Lessons of the War with Spain" (1899), "Problem of Asia" (1900), "The War in South Africa" (1901), "Retrospect and Prospect" (1902), "Sea Power in its Relations to the War of 1812" (1905), "From Sail to Steam" (1907), "Some Neglected Aspects of War" (1907), "Naval Administration and Warfare" (1908), etc.

Mahler (mä′lėr), **Gustav.** Born at Kalischt, Bohemia, July 7, 1860. A noted conductor and composer. He conducted the opera in various German cities from 1883 to 1897. From 1897 to 1907 he was the chief conductor at the Imperial Opera in Vienna. He has composed six symphonies, which have aroused controversy over their unconventional methods and structure, and several songs with orchestra. In 1888 he brought out the opera "Die drei Pintos," which he finished after Weber's sketches. Among his most important works are a set of "Humoresken" for orchestra, and a cantata, "Das klagende Lied." He was conductor at the Metropolitan Opera House in New York in 1908.

Maine. A United States battle-ship, blown up in the harbor of Havana, Feb. 15, 1898. She was of 6,682 tons displacement, and was launched in 1890. The naval court of inquiry appointed by the United States government reported (March 22) that "the Maine was destroyed by the explosion of a submarine mine, which caused the partial explosion of two or more of her forward magazines."

Maisonneuve*, **Jules Germain François.** Died in 1894.

Maitland (māt′land), **Frederic William.** Born May 28, 1850: died Dec. 21, 1906. An eminent English jurist, professor of English law at Cambridge from 1888. His works include "Gloucester Pleas" (1884), "Justice and Police" (1885), "Bracton's Note-book" (1887), "History of English Law," (with Sir F. Pollock, 1895), "Domesday Book and Beyond" (1897), "Township and Borough" (1898), "Canon Law in England" (1898), "Political Theories of the Middle Ages" (trans., 1900), "English Law and the Renaissance" (1901), "Life and Letters of Leslie Stephen" (1907), "Constitutional History of England" (1908), etc.

Maitland (māt′land), **John Alexander Fuller: known as Fuller-Maitland.** Born at London, April 7, 1856. An English critic and historian of music. He succeeded Francis Hueffer as musical critic of the London "Times" in 1890. He has written a biography of Schumann (1884), "Masters of German Music" (1894), "English Music in the Nineteenth Century" (1902), and volume IV. of the "Oxford History of Music" on "The Age of Bach and Handel" (1902); and has edited the revision of "Grove's Dictionary of Music" (1904–09).

Majaijai (mä-hī-hī′). See *Banajao.*

Makarof (mä′kä-rof), **Stephen Ossipovitch.** Born at Kief, Dec. 29, 1848: died off Port Arthur, April 12, 1904. A noted Russian admiral. He entered the Russian navy in 1864; was in command of a cruiser in the Russo-Turkish war of 1877–78; and in 1890 was made inspector-general of artillery. He introduced a number of inventions and improvements in guns and projectiles, and was the inventor of the ice-breaker Ermak. For a time he was military governor of Kronstadt; commanded the division in the Far East 1894–96; and in 1896 was made vice-admiral and afterward commander-in-chief of the Baltic. He took command of the Russian fleet at Port Arthur in 1904, and was killed in the destruction of the battle-ship Petropavlovsk by a mine off the mouth of the harbor.

Malakand, or **Malakhand** (mal′a-kand), **Pass.** A pass in the Northwest Frontier Province of India, north of Peshawar.

Malaspina. See *Canlaon.*

Malay Peninsula*. A treaty between Great Britain and Siam, signed March 10, 1909, provided for the transfer to British protection of Kelantan, Trengganu, and Keda.

Malaysia, or **Malasia** (ma-lā′siä). Same as *Malay Archipelago.*

Malinao (mä-lē′nä-ō). An extinct volcano in Albay province, southeastern Luzon, Philippine Islands, approximately in lat. 13° 26′ N., long. 123° 34′ E. Height, 3,066 feet.

Malindang (mä-lēn-däng′). A volcano in northern Mindanao, Philippine Islands. Height, 9,364 feet.

Mall (mâl), **Franklin Paine.** Born at Belle Plaine, Iowa, Sept. 28, 1862. An American anatomist, professor of anatomy at Johns Hopkins University from 1893. He was adjunct professor of vertebrate anatomy at Clark University 1889–92 and professor of anatomy at the University of Chicago 1892–93. He has published numerous papers on anatomical and embryological topics.

Mallarmé (mä-lär-mā′), **Stéphane.** Born at Paris, March 18, 1842: died at Fontainebleau, Sept. 8, 1898. A French poet, one of the most prominent of the group known as décadents, and the leader of the symbolist movement. He wrote much for "Le Décadent" and "Le Parnasse Contemporain." Among his works are "L'après-midi d'un faune" (1876), "Les dieux antiques" (1880), "Poésies" (1887), "Pages" (1890), "Vers et prose" (1892), "Les divagations" (1897), and a translation of the poems of Poe.

Mallee (mal′ē) **Country,** or **The Mallee.** [Name of a species of eucalyptus.] A region in southern Australia, including parts of Victoria, New South Wales, and South Australia, characterized by the growth of mallee scrub.

Mallet (mal′et), **John William.** Born at Dublin, Ireland, Oct. 10, 1832. A British chemist, long resident in the United States, professor of chemistry in the University of Virginia 1868 to 1883 and since 1885. He served in the Confederate army in the Civil War, rising to the rank of lieutenant-colonel of artillery and superintendent of ordnance laboratories. After the war he was successively professor in the universities of Louisiana, Virginia, and Texas, and in Jefferson Medical College, Philadelphia. He has published numerous scientific papers.

Mallet (mal′et), Sir **Louis.** Born at London, March 14, 1823: died at Bath, Feb. 16, 1890. An English economist. In 1860 he was appointed an assistant commissioner, under Cobden, to draw up a tariff in accordance with the provisions of the treaty of commerce with France; and he was connected with the Board of Trade until 1872. In 1874 he became permanent under-secretary of state for India, retiring in 1883. He was knighted in 1868. His occasional writings were collected, under the title "Free Exchange," in 1891.

Mallock*, **William Hurrell.** His later works include "Labour and the Popular Welfare" (1893), "Classes and Masses" (1896), "Aristocracy and Evolution" (1898), "Tristram Lacy" (1899), "Doctrine and Doctrinal Disruption" (1900), "Religion as a Credible Doctrine" (1902), "The Veil of the Temple" (1904), "The Reconstruction of Belief" (1905), "Critical Examination of Socialism" (1907), "Immortal Soul" (1908), etc.

Malolos (mä-lō′lōs). A town, the capital of Bulacan province, Luzon, Philippine Islands. It is situated at the head of the Pampanga delta, in lat. 140° 51′ N., long. 120° 48′ E. Civilized population of municipality (1903), 12,575.

Malot (mä-lō′), **Hector Henri.** Born at La Bouille, May 20, 1830: died at Fontenay-sous-Bois, July 19, 1907. A French novelist. His works include "La vie moderne en Angleterre" (1862), a trilogy entitled "Les victimes de l'amour" (1859), "Souvenirs d'unblessé" (1872), "Sans famille" (1878: crowned by the French Academy), "Mondaine" (1888), "Justice" (1889), "Mère" (1890), "Le prince" (1894), "Amours de jeune" (1895), "Amours de vieux" (1895), "Le roman de mes romans" (an autobiography, 1896), "La beauté" (1897), etc.

Mamanuas (mä-mä-nö′äs). A Negrito people living in the interior of Surigao Peninsula, northeastern Mindanao.

Mamertine Prison. A name applied to the Carcer Tullianum, the oldest prison in Rome, situated on the eastern slope of the Capitoline Hill. Its erection was attributed to Ancus Marcius (fourth king of Rome, 640–616 B. C.), and it was originally built over a well. The name 'Mamertinus' was given to it in medieval times. According to a tradition St. Peter and St. Paul were imprisoned here. The Tullianum consists of a large oblong upper and a small underground circular chamber, built at different periods. Jugurtha, Lentulus, and others met death in this prison.

Manaoag (mä-nä′ō-äg). A municipality of Pangasinan province, western Luzon, Philippine Islands. Civilized population (1903), 16,793.

Manati (mä-nä-tē′). A city in the northern part of Arecibo department, Porto Rico, situated on Manati river. Population (1899), 4,494.

Manchester University. See *Victoria University of Manchester.*

Manchuria*. It was occupied by Russia as a result of the "Boxer" uprising in 1900, but was restored to China by the provisions of the Treaty of Portsmouth (Sept. 5, 1905). By the treaty of Dec. 22, 1905, between China and Japan, the lease of the southern part of the Liao-tung peninsula was transferred from Russia to Japan. The treaty also provided for various railway concessions and the opening of a number of Manchurian ports and cities to foreign trade. Population, about 16,000,000.

Mancini*, **Pasquale Stanislao.** Died at Rome, Dec. 26, 1888.

Mandayas (män-dä′yäs). A pagan, or but slightly Christianized, people of eastern Mindanao, Philippine Islands, by some regarded as Indonesian.

Mangaldan (män-gäl-dän′). A municipality of Pangasinan province, in the western part of Luzon, Philippine Islands. Civilized population (1903), 15,841.

Manila*. It was captured by the United States forces Aug. 13, 1898. The Spanish fleet was destroyed by a United States squadron under Commodore (Admiral) Dewey off Cavité, near Manila, May 1, 1898. Battles with the Philippine insurgents occurred near Manila Feb. 6, 1899, and later, in which the American troops were victorious.

Manila (mä-nē′lä) **Bay.** A large bay, an arm of the China Sea, indenting the southwestern coast of Luzon, Philippine Islands, and bordered by Bataan, Pampanga, Bulacan, Rizal, and Cavité provinces. It is about 120 miles in circumference, and is a fine harbor. It receives the waters of many rivers, including the Rio Grande de Cagayan and the Pasig, which drains Laguna de Bay. On May 1, 1898, the Spanish fleet under Admiral Montojo was destroyed here by the Asiatic squadron of the United States Navy, under Commodore Dewey.

Manitoba*. It sends to the Dominion parliament 4 senators and 10 representatives.

Manners*, **John James Robert,** seventh duke of Rutland. Died Aug. 4, 1906.

Manoel II. Born at Lisbon, Nov. 15, 1889. King of Portugal from February 1, 1908, when his father, Carlos I., and his elder brother were assassinated. [illegible] 1910

Mansfield*, **Mount.** Its height as determined by the United States Geological Survey is 4,406 feet. *Bull. Amer. Geog. Soc.*, June, 1908.

Mansfield*, **Richard.** Died at New London, Conn., Aug. 30, 1907.

Man without a Country, The. A story designed to promote patriotism, written by Edward Everett Hale, and first published in the "Atlantic Monthly," December, 1863.

Man with the Muck-rake. A character in the second part of "The Pilgrim's Progress" shown by the Interpreter to Christiana and her company. Bunyan describes him as follows: "a man that could look no way but downwards, with a muck-rake in his hand. There stood also one over his head with a celestial crown in his hand, and proffered him that crown for his muck-rake; but the man did neither look up nor regard, but raked to himself the straws, the small sticks, and dust of the floor." The explanation given is that he is a man of the world who prefers things carnal to things celestial.

Maoriland (mä′ō-ri-land). The land of the Maoris; New Zealand.

Maqueda (mä-kā′dä) **Channel.** A strait between Catanduanes and Luzon Islands, in the Philippines. It is the northern connection between Lagonoy Gulf and the Pacific Ocean.

Maquiling (mä-kē′ling). A volcano in La Laguna province, southern Luzon, Philippine Islands. It is south of Laguna de Bay and a few miles northeast of Taal volcano, and is approximately in lat. 14° 8′ N., long. 121° 10′ E. There are signs of activity in pools of boiling mud at a height of about 900 feet on the eastern side and in thermal medicinal springs on the slopes and at the foot of the volcano. Height, 3,724 feet.

Marburg*. The university has about 1,600 students, and a library of 220,000 volumes.

March*, **Francis Andrew.** In 1906 he became professor emeritus. He was a pioneer in the philological study of the English classics and the historical study of the English language and ranks among the most eminent of philologists.

Marchand (mär-shäṅ′), **Jean Baptiste.** Born at Thoissey, Aisne, France, Nov. 22, 1863. A French officer and explorer. He entered the army in 1883, and attended the military school of Saint-Maixent until 1887. In 1889 he went to Africa and took part in expeditions to the sources of the Niger and elsewhere. He returned to France in 1892, with the rank of captain, and went again to Africa in 1893 and explored from the Ivory Coast to Tengrela. In 1897 he was placed in command of an expedition which was to start from the coast of French Kongo, cross the continent, and gain the reaches of the upper Nile. He left Brazzaville, March 21, 1897, and reached Fashoda, July 10, 1898, after establishing a chain of posts in the Bahr-el-Ghazal province. His occupation of Fashoda was disputed by General Kitchener, who arrived at the head of an Anglo-Egyptian force

Sept. 19, and demanded its evacuation. The affair was referred to the respective governments for settlement, and a declaration was signed by which France agreed to withdraw from the Nile valley, and the frontiers of French and British possessions in Central Africa were defined. Marchand, promoted major, returned to Fashoda, leaving there with his men Dec. 11, 1898, and marching through Abyssinia reached Jibuti in May, and by the end of the month arrived in Paris. In 1899 he was made a commander of the Legion of Honor, and was awarded by the Academy of Moral and Political Sciences the Audiffret prize of 15,000 francs, given annually for the greatest act of devotion.

Marchesi de Castrone (mär-kā′sē dā käs-trō′nā), Mme. (**Mathilde Graumann**), Marquesa della Rajata. Born at Frankfort-on-the-Main, Germany, March 26, 1826. A German singer and teacher. She was a pupil of Nicolai in Vienna and of Manuel Garcia in Paris. She became well known as a concert singer; taught singing at the Vienna Conservatoire 1854–61 and then at Paris; was professor at the Cologne Conservatorium 1865–68 and again at Vienna 1869–81; and finally settled in Paris, where she established the École Marchesi. Among her pupils have been Antoinetta Fricci, Gabriele Krauss, Tremelli, Caroline Sulla, Schuch-Proska, Antoinette Sterling, Etelka Gerster, Ilma de Murska, Melba, Calvé, Emma Eames, Blanche Marchesi, and others. She is the author of "L'Art du Chant," "Marchesi and Music," and has published a large number of vocal exercises

Marconi (mär-kō′nẹ̄), **Guglielmo.** Born at Griffone, near Bologna, Italy, April 25, 1874. An Italian electrician, noted as the perfecter of a system of wireless telegraphy. He studied at Bologna, Florence, and Leghorn, and for short periods at Bedford and Rugby, England. His experiments in wireless telegraphy were begun in 1895, and in March, 1899, he succeeded in sending messages across the English Channel between Dover and Boulogne.

Marcou*, Jules. Died at Cambridge, Mass., April 17, 1898.

Maria Christina. Born July 21, 1858. Queen Regent of Spain Nov., 1885,–1902, mother of Alfonso XIII. She is the second daughter of Archduke Karl Ferdinand of Austria, and married Alfonso XII., King of Spain, Nov. 29, 1879.

Mariage de Loti, Le. [F., 'The Marriage of Loti.'] A novel by L. M. J. Viaud (Pierre Loti), published in 1880.

Marinduque (mä-rēn-dö′kā). **1.** A hilly island of the Philippines, south of Luzon and west of northern Mindoro. Area, 352 square miles. Population (1903), 50,601.—**2.** A subprovince of Tayabas, southern Luzon, consisting of Marinduque and smaller adjacent islands. Capital, Boac. It has two good ports, Santa Cruz on the northeastern and Banacalan on the northwestern coast. Both are safe harbors in all weather, Santa Cruz for large vessels, Banacalan for those of not more than 15 feet draft. The hills are well wooded. Over 17 per cent. of the land is agricultural and produces hemp in large quantities, and abundance of rice and of fruit. The inhabitants are Tagalogs. Area of subprovince, 361 square miles. Population (1903), 51,674.

Marinette (mar-i-net′). A city, the capital of Marinette County, Wisconsin. It is situated in the southeastern part of the county, on Green Bay at the mouth of the Menominee river, and opposite Menominee, Michigan, with which it is connected by bridges. Among its industries are saw-mills, paper- and flour-mills, iron- and machine-works, manufactures of boxes, doors, etc. It has large lumber-interests, good water-power, and a fine harbor. Population (1900) ,16.195.

Marion (mar′i-ọn). A city, the capital of Grant County, Indiana. It is situated in the north-central part of the county on the Mississineva river. It is the seat of a normal college, and has a large public library. A soldiers home is near it. It has glass- and iron-works, paper- and flour-mills, etc., and various other manufactures. It is in a natural gas region. Population (1900), 17,337.

Mariveles (mä-rē-vā′läs). **1.** A group of peaks in Bataan province, southwestern Luzon, Philippine Islands.—**2.** An extinct truncated volcano, the highest of the Mariveles group. Height, 4,615 feet.

Mariveles (mä-rē-vā′läs) **Bay.** A bay and port on the southern coast of Bataan province, southwestern Luzon, Philippine Islands. It is a safe harbor in all weather.

Marjoribanks (märch′bangks), **Edward,** second Baron Tweedmouth. Born July 8, 1849: died Sept. 15, 1909. An English Liberal statesman. He was educated at Harrow and at Christ Church, Oxford, and was admitted to the bar of the Inner Temple in 1874. He sat for Berwick in the House of Commons 1880–94, and was second Liberal whip 1886–92, parliamentary secretary to the treasury and chief Liberal whip 1892–94, lord privy seal and chancellor of the Duchy of Lancaster 1894–95, first lord of the admiralty Dec., 1905,–08, and lord president of the council in 1908.

Marjorie Daw. A story with an imaginary heroine by Thomas Bailey Aldrich, published in 1873 in the collection "Marjorie Daw and other People."

Markham (märk′am), **Edwin.** Born at Oregon City, Ore., April 23, 1852. An American poet, writer, and lecturer. He is best known as the author of "The Man with the Hoe" (published, with other poems, in 1899), referring to a celebrated picture by Millet. His other work includes "Lincoln, and Other Poems" (1901), and "Field Folk — Interpretations of Millet" (1906). Among his chief single poems contributed to various magazines are "The End of the Century" (1899), "The Muse of Brotherhood" (1899), "The Mighty Hundred Years" (1900), "The Chant of the Vultures" (1905), "Virgilia" (1905), and "The Homing Heart" (1906).

Marlatt (mär′lat), **Charles Lester.** Born at Atchison, Kansas, Sept. 26, 1863. An American entomologist, first assistant and assistant chief entomologist of the United States Department of Agriculture from 1894. He has published numerous entomological papers.

Marmorek (mär′mō-rek), **Alexander.** Born Feb. 19, 1865. An Austrian bacteriologist, discoverer of an antistreptococcic serum employed in erysipelas and puerperal fever and also of a serum thought to be efficacious as a remedy in tuberculosis. He was connected with the Pasteur Institute of Paris 1894–1903.

Marr*, Carl. Born at Milwaukee, Wis., 1859. Since 1893 he has been professor at the Academy of Fine Arts in Munich.

Marryat*, Florence. Died at London, Oct. 27, 1899.

Mars*. A planetoid has been discovered whose orbit falls within that of Mars.

Marseilles*. It is the second city in France in population.

Marsh*, Othniel Charles. Died at New Haven, Conn., March 18, 1899. He was professor of paleontology at Yale University 1866–99.

Marshall (mär′shal), **Alfred.** Born at London, July 26, 1842. An English economist, professor of political economy in the University of Cambridge 1885–1908. He has published "Economics of Industry" (1879: with Mary Paley), "Principles of Economics" (vol. i., 1890), "Elements of Economics of Industry" (vol. i., 1891), "The New Cambridge Curriculum in Economics" (1903), etc. He was elected fellow of the British Academy in 1902.

Marshall (mär′shal), **Henry Rutgers.** Born at New York, July 22, 1852. An American architect and philosophical writer. His publications include "Pain, Pleasure, and Esthetics" (1894), "Esthetic Principles" (1895), and "Instinct and Reason" (1898).

Martens (mär′tenz), **Frederic de.** Born at Pernau, Russia, Aug. 27, 1845: died at St. Petersburg, June 20, 1909. A Russian diplomatist and authority on international law. He was educated at the University of St. Petersburg, in which he was professor of international law 1873–1907. In 1868 he entered the office of the ministry of foreign affairs and later became legal adviser of the Russian foreign office. He has represented his government at many international conferences; was arbitrator between England and France in the New Zealand dispute in 1891; was a delegate to the peace conference held at The Hague in 1899; and was legal adviser of the Russian negotiators of the treaty of Portsmouth in 1905. In 1902 he was awarded a Nobel prize for his services in the cause of peace. Among his published works are "Recueil de traités et conventions conclus par la Russie avec les puissances étrangères" (1874–1905), and "Völkerrecht: das internationale Recht der civilisierten Nationen" (1883–84).

Marti (mär′tē), **José Julian.** Born at Havana, Cuba, 1853: died at Dos Rios, May 22, 1895. A Cuban patriot. He studied law in Spain; was professor of literature and philosophy in the University of Guatemala for several years; and represented the Argentine Republic, Uruguay, and Paraguay as consul in New York, where he also published "La Patria," a journal devoted to Cuban interests. In 1894 he attempted the transport of three armed vessels from the United States to Cuba, but was captured at Fernandina, Florida. In 1895 he succeeded in landing at Cabonico, and marched inland. He was shot during an attack by the Spanish at Dos Rios.

Martin*, Homer D. Died at St. Paul, Minn., Feb. 12, 1897.

Martin*, Sir **Theodore.** Died Aug. 18, 1909. His best known works are the "Life of the Prince Consort" (1874–80), and "Queen Victoria as I Knew Her" (1908). He was knighted in 1880.

Martin (mär′tin), **William Alexander Parsons.** Born at Livonia, Ind., April 10, 1827. An American clergyman, missionary, and educator. In 1850 he went to China as a missionary; founded the Presbyterian mission at Peking in 1863; was appointed professor of international law at Tung Wen College in Peking in 1868; and became its president in 1869, resigning in 1898. In 1900 he became head of the New Imperial University of China, which was broken up during the Boxer uprising, and he was president of the University of Wu-chang 1902–05. He has been adviser to the Chinese government in matters of international dispute, and was made a mandarin of the third class in 1885, and of the second class in 1898. He edited, in Chinese, the Peking "Scientific Magazine" 1875–78, and the "Science Monthly" 1897–98. Among his publications are "The Lore of Cathay" (1901), "The Chinese" (1881), "A Cycle of Cathay" (1896), "The Siege in Peking" (1900), and works in Chinese on Christianity, science, international law, etc.

Martineau*, James. Died at London, Jan. 11, 1900.

Martinez Campos*, Arsenio. Died at Zarauz, Sept. 23, 1900.

Martinique*. It is represented in the parliament at Paris by 1 senator and 2 deputies. On May 8, 1902, an eruption of Mount Pelée, in the northern part of the island, entirely destroyed St. Pierre and the surrounding district, with the loss of about 40,000 lives.

Maryland*. It has 24 counties.

Masaba Heights. A range of hills in northeastern Minnesota, famous for their iron-ores.

Masaraga (mä-sä-rä′gä). An extinct volcano in Albay, southeastern Luzon, Philippine Islands, in lat. 13° 18′ N., long. 123° 35′ E. Height, 5,244 feet.

Masbate (mäs-bä′tā). **1.** A mountainous island of the Philippines, situated in the Visayan Sea, west of Samar. The southern coast is deeply indented by the Bay of Asid. Other bays are Barrera on the north, and Cataingan, Masbate or Palanog, and Uson on the east. There are evidences of a seismic center near Masbate, or between this island and the coast of Luzon. Area, 1,236 square miles. Population (1903), 29,451.

2. A province of the Philippines, consisting of Masbate, Burias, Ticao, and adjacent islands in the Visayan Sea. The islands have excellent harbors, Barrera, Cataingan, and Palanog of Masbate, and Boca Engaño, Busin, and Busuanga of Burias, being safe in all weather. San Jacinto and San Miguel of Ticao are safe in the monsoons. Coal, copper, and gold are found in various parts of the province. The chief productions are hemp, copra, corn, and sweet potatoes. Large herds of domestic animals are raised. The inhabitants are chiefly Tagalogs. Area, 1,569 square miles. Population (1903), 43,675.

3. A town, the capital of Masbate province, situated on Palanog Bay, Masbate Island, in lat. 12° 33′ N., long. 123° 37′ E. Civilized population of municipality (1903), 4,018.

Mascagni*, Pietro. He was director of the Conservatory at Pesaro 1895–1903, and in the latter year made a tour of the United States. He has written also "Guglielmo Ratcliff" (1895), "Zanetto' (1896), "Iris" (1898), "Le Maschere" (1901), and "Amica" (1905).

Mascari (mäs-kä′ri), **Antonino.** Born Dec. 4, 1862: died Oct. 18, 1906. An Italian astronomer, best known from his work in solar physics. His observations were made chiefly at the observatory of Catania.

Mascart (mäs-kär′), **Eleuthère Elie Nicolas.** Born at Quarouble, Nord, France, Feb. 20, 1837: died at Paris, Aug. 26, 1908. A French scientist, best known for his work in electricity, magnetism, and radioactivity. He was appointed professor of physics at the Collège de France in 1872 and director of the Central Meteorological Bureau 1878–1907. Among his publications are "Traité d'électricité statique" (1876), "La météorologie appliquée à la prévision du temps" (1881), "Leçons sur l'électricité et le magnétisme" (1882–86: with Joubert), "Traité d'optique" (1889–93), and "Traité du magnétisme terrestre" (1900).

Mashonaland*. It is now one of the two provinces of Southern Rhodesia. Salisbury is the capital of Southern Rhodesia. The Rhodesian Railway from Vryburg to Bulawayo was opened in 1897, and the railway from Beira to Umtali was extended to Salisbury in 1899. Bulawayo is also connected with Salisbury.

Mason*, John. Died at Norwich, Conn., 1672.

Mason (mā′sọn), **Otis Tufton.** Born at Eastport, Maine, April 10, 1838: died at Washington, D. C., Nov. 5, 1908. An American ethnologist, head curator of the department of anthropology of the United States National Museum from 1903. He was curator of the division of ethnology in the museum 1884–1903. He published "Woman's Share in Primitive Culture" (1894), "Origin of Inventions" (1895), and many scientific papers.

Mason*, William. Died at New York, July 14, 1908. He was a son of Lowell Mason. In 1901 he published "Memories of a Musical Life."

Massachusetts*. It sends 2 senators and 14 representatives to Congress, and has 16 electoral votes.

Massachusetts Institute of Technology. A body incorporated in 1861 "for the purpose of instituting and maintaining a society of arts, a museum of arts, and a school of industrial science." The society held its first meeting Dec. 17, 1862. Its School of Industrial Science was opened in Boston in 1865 and has a student body of about 1,500. It provides instruction in various branches of science and engineering, the curriculum embracing also such general studies as are essential to a liberal education. It has an endowment of about $2,000,000 and an annual income of about $500,000.

Massena (ma-sē′nä̤). A village situated on the La Grasse river in the northern part of Saint Lawrence County, New York. It is the seat of a power-plant generating electric energy of 35,000 horse-power. Population (1900), 2,032. Population of town, 3,904.

Massenet*, Jules Frédéric Émile. He was professor of advanced composition at the Conservatoire 1878–96. He was the youngest member ever elected to the Académie des Beaux-Arts. His later works include "Esclarmonde" (1889), "Le mage" (1891), "Werther" (1892), "Le carillon" (1892), "Thaïs" (1894), "Le portrait de Manon" (1894), "La Navarraise" (1894), "Sapho" (1897), "Cendrillon" (1899), "Griselidis" (1901), music to "Phèdre" (1901), "Le jongleur de Notre-Dame" (1902), "Chérubin" (1905), "Ariane" (1906), and "Bacchus" (1909).

Massey*, **Gerald.** Died at South Norwood, Oct. 29, 1907.

Masson*, **David.** Died at Edinburgh, Oct. 6, 1907. He was professor of rhetoric and English literature at the University of Edinburgh 1865–95.

Masson (mä-sôn′), **Frédéric.** Born at Paris, March 8, 1847. A French historian and writer. He was elected a member of the French Academy in 1903, succeeding Gaston Paris. He is best known as the author of a series of works dealing intimately with the life of Napoleon and his family, based on papers given to him by Prince Napoleon, of whom he was the secretary and friend. They are as follows: "Napoléon et les femmes" (1894), "Napoleon chez lui" (1894), "En campagne" (1894), "Aventure de guerre" (1894), "Les cavaliers de Napoléon" (1895), "Napoléon inconnu" (1895), "Marie Valewska" (1898), "Joséphine impératrice et reine" (1899), "Joséphine de Beauharnais" (1899), "Napoléon et sa famille" (1897–1906), "Josephine répudiée" (1901), "L'imperatrice Marie Louise" (1902), "Napoléon et son fils" (1904), "Le sacre et le couronnement de Napoléon" (1908), etc. He has written also "Le Marquis de Grignan" (1881: crowned by the French Academy), "Les diplomates de la révolution" (1883), "Le Cardinal de Bernis depuis son ministère" (1884), etc.

Massowah*, or **Massawa.** It is now a part of the Italian colony of Eritrea.

Mastriani (mäs-trē-ä′nē), **Francesco.** Born at Naples, Nov. 13, 1819: died there, Jan. 15, 1891. An Italian dramatist and novelist. He produced forty plays and over a hundred novels, besides many short stories, etc. His work was very popular, particularly among Socialists. Among his novels are "I vermi" (1864), "I lazzari" (1865), "I figli del lusso" (1866), "Le Ombre" (1868), and "I misteri di Napoli" (1870).

Matabeleland*. It is now a province of Southern Rhodesia. Chief town, Bulawayo.

Matanzas. 2. A province of Cuba. It is bounded on the north by the Florida straits, on the south and east by the province of Santa Clara, and on the west by the province of Havana. Capital, Matanzas. Area, 3,256 square miles. Population (1907), 239,812.

Matsukata (mät-sö-kä′tä), Marquis **Masayoshi.** Born at Kagoshima, 1840. One of the Japanese 'elder statesman,' especially noted as a financier. He has been connected with the treasury from about the time of the accession of the present emperor and became minister of finance in 1881, retaining this office for more than ten years. He was premier 1891–92 and 1896–97, and during the latter term placed Japan upon a gold basis. From 1898 to 1900 he continued as minister of finance under Yamagata. In 1903 he was appointed a privy councillor. He was created count in 1884 and marquis in 1907.

Matta*, **Guillermo.** Died 1899.

Matteucci (mät-tā-ö′chē), **Vittorio Raffaello.** Died July 16, 1909. An Italian geologist, instructor in geology in the University of Naples and physical and meteorological director of the Royal Observatory on Mount Vesuvius. He remained at his post in the observatory during the eruption of the volcano in April, 1906.

Matthews*, **James Brander.** He has been professor of dramatic literature at Columbia University, New York, from 1892. His works include "French Dramatists of the 19th Century" (1881), "Pen and Ink" (1888), "Americanisms and Briticisms" (1892), "Studies of the Stage" (1894), "Vignettes of Manhattan" (1894), "Bookbindings Old and New" (1895), "Introduction to the Study of American Literature" (1896), "Aspects of Fiction" (1896), "Action and the Word" (1900), "Parts of Speech" (1901), "The Historical Novel, and other essays" (1901), "Development of the Dramá" (1903). "Recreations of an Anthologist" (1904), "Inquiries and Opinions" (1907), "The Short Story" (1908), etc., besides comedies and stories.

Matthews (math′ūz), **William.** Born at Aberdeen, Scotland, March 29, 1822: died at Brooklyn, N. Y., April 15, 1896. An American bookbinder. He came to New York in 1843, established a bindery of his own in 1846, and was connected with the bindery of D. Appleton and Company 1854–90. He was the author of "Modern Bookbinding Practically Considered" (1889), and "A Short Historical Sketch of the Art of Bookbinding" (1895: written with W. L. Andrews).

Mauna Loa*. There was a notable eruption in 1899. Height, 13,650 feet.

Maurel (mō-rel′), **Victor.** Born at Marseilles, June 17, 1848. A French dramatic baritone. He made his début at the Opéra in Paris in 1868; rejoined it in 1879; and remained a member of it till 1894, except 1885–86, when he was at the Opéra Comique. He created Iago in Verdi's "Otello" in 1887, and Falstaff in 1893.

Maurer*, **Konrad von.** Died at Munich, Sept. 16, 1902.

Mauritania (mâ-rē-tā′ni-ä), or **Mauritanie.** A civil territory of French West Africa, formed in 1903–04. It comprises the regions on the right bank of the Senegal, and includes the districts of Trarga, Brakna, Gorgol, and Guidimaka. Government is administered by a commissioner. It is to be made a French protectorate. Area, 344,967 square miles. Population, 223,000.

Mauve (mōv), **Anton.** Born at Zaandam, North Holland, Sept. 18, 1838: died at Arnhem, Gelderland, Feb. 5, 1888. A celebrated Dutch painter. He received medals at Vienna, Philadelphia, Antwerp, Amsterdam, and Paris. Among his principal works are "Crepuscule" (formerly in the George I. Seney and David H. King, Jr., collections), "Cattle in the Haarlem Meadows" (owned by S. Untermyer, New York City), "A Summer Day in Holland" (owned by H. N. Slater, Boston), "The Departure of the Flock" (owned by Joseph Jefferson), "Returning to the Fold" (formerly in the Mrs. F. C. Crosby collection), etc.

Maxim (mak′sim), Sir **Hiram Stevens.** Born at Sangerville, Me., Feb. 5, 1840. An American-English engineer and inventor. He invented the automatic system of firearms, etc., and has devoted much time to the study of explosives and of aërial navigation. Knighted 1901.

May (mā), Mrs. (**Georgiana Marian Craik**). See *Craik.*

Mayaguez. 2. A department in the southeastern part of Porto Rico. It is bounded by Aguadilla on the north and northeast, Ponce on the east, the Caribbean Sea on the south, and the Atlantic Ocean on the west. Capital, Mayaguez. Area, 407 square miles. Population (1899), 127,566.

Maynard (mā′närd), **George Willoughby.** Born at Washington, D. C., March 5, 1843. An American painter, son of Edward Maynard, the inventor of the Maynard rifle. He was elected a member of the National Academy in 1885 and is also a member of the American Society of Water-Color Painters.

Mažuranić*, **Ivan.** Born at Novi, Aug. 11, 1813: died at Budapest, Aug. 3, 1890.

Medill*, **Joseph.** Died at San Antonio, Texas, March 16, 1899.

Meding*, **Johann Ferdinand Martin Oskar.** Died at Charlottenburg, July 11, 1903.

Mehmed (me′med) **V.** Born at Constantinople, Nov. 3, 1844. Sultan of Turkey. He succeeded his brother, Abdul Hamid II., when the latter was dethroned April 27, 1909.

Meilhac*, **Henri.** Died at Paris, July 6, 1897.

Melba*, Mme. (Lady **Armstrong, Nellie Porter Mitchell**). Born at Burnley, near Melbourne, May 19, 1859. Her greatest successes have been in "Lucia," as Juliette in "Romeo and Juliette," Elsa in "Lohengrin," Esmeralda, Violetta in "La Traviata," Michaela in "Carmen," Rosina in "Il Barbiere," the Queen in "Les Huguenots," Nedda in "Pagliacci," and "Hélène." She has made tours in many countries. In 1882 she was married to Captain Charles Armstrong.

Melchior (mel′ki-ôr). The legendary name of one of the three Magi who came from the East to welcome the infant Jesus. See *Cologne, Three Kings of*, and *Magi*.

Melilla (me-lēl′yä). A seaport on the Mediterranean coast of Morocco, lat. 35° 20′ N., long. 3° W., belonging to Spain. Severe fighting between the Spanish troops and the Moors occurred here in August, 1909. Population, 8,956.

Mello*, **Custodio José de.** Died in March, 1902.

Melville (mel′vil), **George Wallace.** Born at New York, Jan. 10, 1841. An American naval officer and arctic explorer, promoted rear-admiral in 1899. He entered the navy as assistant engineer in 1861; served in the Civil War; and became engineer-in-chief of the navy in 1887. He joined the Jeanette Expedition to the arctic regions in 1879; commanded the boat's crew which escaped from the ship to the Lena delta; and later led a relief expedition which recovered the records of the Jeanette and the bodies of its commander, De Long, and others. He retired in 1903.

Melville (mel′vil) **Land.** An island in the arctic regions lying immediately north of Greenland, from which it is separated by Peary Channel and Independence Bay. It was discovered and named by R. E. Peary.

Menabrea*, Count **Luigi Federigo,** Marchese di Valdora. Died at Chambéry, May 26, 1896.

Ménant*, **Joachim.** Died at Paris, Aug. 30, 1899.

Mendel (men′del), **Johann Gregor.** Born at Heinzendorf, near Odrau, Austrian Silesia, July 22, 1822: died at Brünn, Jan. 6, 1884. An Austrian botanist, noted for his experimental study of the problem of heredity, the results of which he formulated in a law of ancestral inheritance which bears his name. He entered the order of Augustinians, at Brünn, in 1843 and later became abbot. He published "Versuche über Pflanzenhybriden" (1865), and "Über einige aus künstlicher Befruchtung gewonnene Hieracium-Bastarde" (1869). The scientific importance of these essays was not recognized until about 1900.

Mendeléjef (men-dā-lā′yef), **Dmitrii Ivanovitch.** Born at Tobolsk, Siberia, Feb. 7, 1834: died at St. Petersburg, Feb. 2, 1907. A celebrated Russian chemist, professor of chemistry at the University of St. Petersburg from 1866. He discovered the periodic system of the chemical elements.

Mendenhall*, **Thomas Corwin.** He was president of the Worcester Polytechnic Institute 1894–1901.

Mendès (mon-dās′), **Catulle.** Born at Bordeaux, May 22, 1841: died at Saint-Germain, Feb. 7, 1909. A French poet, novelist, and dramatist, one of the founders of the Parnassian school of poetry. From 1893 he was dramatic critic of the Paris "Journal." Among his works are "Poésies" (1872); the romances "Le roi vierge" (1880), "Mephistophela" (1890), "La maison de la vieille" (1894), and "Gog" (1896); the dramas "Les mères ennemies" (1882), "La femme de Tabarin" (1887), "La reine Fiammette" (1889), "Médée" (1898), and "Scarron" (1904); the librettos "Gwendoline" (1886: music by Chabrier), "Isoline" (1888: music by Messager), "La Carmélite" (1902: music by Hahn), "Le fils de l'étoile" (1904: music by Erlanger), and "Ariane" (1906: music by Massenet); and "Le mouvement poétique 1867–1900" (1903).

Menelek (men′e-lek), or **Menelik, II.** Born at Ankober, Aug. 17, 1844. Emperor of Abyssinia, son of Haëli Melikoth, king of Shoa. He succeeded Johannes II. as Emperor of Ethiopia in 1889. In 1889 he signed the Treaty of Uccialli (Uchali), which placed the empire of Abyssinia under Italian domination. He abrogated this treaty in 1893 and, after the defeat of the Italians at Adowa, March 1, 1896, established the independence of Abyssinia. He concluded a commercial treaty with France in 1897 and in the same year accorded the 'most-favored-nation' treatment to Great Britain and her colonies. He signed an agreement delimiting the boundary between Abyssinia and the British Sudan in 1902, and one with Italy defining the limits of Italian Somaliland in 1908.

Menominee (me-nom′i-nē). A city, the capital of Menominee County, Michigan. It is situated in the southern part of the county on Green Bay at the mouth of the Menominee river, opposite Marinette, Wisconsin. It has a large lumber-shipping business, saw-mills, and manufactures of glass, machinery, etc. Population (1900), 12,818.

Menpes (mem′pes), **Mortimer.** Born in Australia. A British artist. He studied at the schools in South Kensington and afterward in Paris, but formed himself chiefly on Whistler. He is a technician of great versatility, using every medium freely—oil, water-color, ivory, etching in black and color, dry-point, lithography, pastel, pen, pencil, and stump. He has worked in France, Italy, Spain, Morocco, Japan, Burma, Kashmir, Mexico, and Africa, where he was war correspondent for "Black and White" in 1900. His publications include "War Impressions" (1901), "Japan" (1901), "Whistler as I Knew Him" (1904), "India" (1905; with Flora Annie Steel), "Rembrandt" (1905), etc.

Menzel*, **Adolf Friedrich Erdmann von.** Died at Berlin, Feb. 9, 1905.

Meredith*, **George.** He was born in Hampshire, Eng., Feb. 12, 1828: died at London, May 18, 1909. His later works include "Lord Ormont and his Aminta" (1894), "The Amazing Marriage" (1895), "Essay on the Comedy and the Uses of the Comic Spirit" (1897), "Reading of Life, with other poems" (1901).

Mergenthaler (mer′gen-tä-lėr), **Ottmar.** Born in Würtemburg, Germany, May 10, 1854: died at Baltimore, Oct. 28, 1899. A German-American inventor. He came to the United States in 1872, and a few years later began experiments with type-setting machines which resulted in the linotype. This machine was practically completed in 1885, though it was subsequently improved.

Merriam (mer′i-am), **Augustus Chapman.** Born at Locust Grove, N. Y., May 30, 1843: died at Athens, Greece, Jan. 19, 1895. An American classical scholar and archæologist, professor in Columbia University. He was director of the American School of Classical Studies at Athens 1887–88.

Merrimac. 2. A collier sunk by Assistant Naval-Constructor Hobson June 3, 1898, in an attempt to block the entrance to Santiago harbor.

Merriman, Henry Seton. The pseudonym of Hugh S. Scott.

Merritt (mer′it), **Wesley.** Born at New York, June 16, 1836. An American general. He was graduated at the United States Military Academy in 1860; promoted captain in 1862, and brigadier-general of volunteers June 29, 1863; breveted major-general of volunteers Oct. 19, 1864, and major-general in the United States army March 13, 1865; and appointed major-general of volunteers April 1, 1865, brigadier-general April, 1887, and major-general April, 1895. He was superintendent of the United States Military Academy Sept., 1882,–June, 1887; and commanded the Department of the Missouri 1887–91 and 1895–1897, the Department of Dakota 1891–95, and the Department of the East 1897–98. He was in command of the United States troops at the capture of Manila, Aug. 13, 1898; retired June, 1900.

Merry del Val (mer′i dāl väl′), **Raphael.** Born at London, Oct. 10, 1865. A cardinal of the Roman Catholic Church and pontifical secretary of state.

Merton (mėr′ton) **Abbey.** The factory and community of art workers established by William Morris at Merton, Surrey, England, in 1881, under the best attainable artistic conditions.

Mesaba (me-sä′bä̤) **Range.** A range of metalliferous hills in northeastern Minnesota, northwest of Lake Superior, in one of the most important iron-producing regions of the world. The output exceeds 50,800,000 tons. Height, 2,400 feet. Also *Masaba Heights, Mesabi.*

Meshach (mē′shak). One of the three Hebrews cast by Nebuchadnezzar into the fiery furnace. His Hebrew name was Mishael, Meshach being substituted for it by the prince of the eunuchs of the king of Babylon.

Messenia. 2. A nomarchy of modern Greece, situated between Triphylia and Lacedæmon. Area, 667 square miles. Population (1896), 119,327.

Messina*. 2. The city was totally destroyed by an earthquake on Dec. 28, 1908, with the loss of probably over 100,000 lives.

Metcalf (met′käf), **Victor Howard.** Born at Utica, N. Y., Oct. 10, 1853. An American lawyer and cabinet officer. He was graduated at the Yale Law School in 1876; was admitted to the Connecticut bar in 1876 and to the New York bar in 1877; practised law for many years; was Republican member of Congress for California 1899–1904; was secretary of the Department of Commerce and Labor 1904–06; and was secretary of the navy 1906–08.

Metchnikof (metch′ni-kof), **Iliya.** Born at Livanovka, Province of Kharkof, Russia, May 15, 1845. A noted Russian physiologist and cytologist, the discoverer of phagocytes and phagocytosis. He has been connected with the Pasteur Institute in Paris from 1892, succeeding Pasteur as director in 1895. In 1908 he received, with Dr. Paul Ehrlich, the Nobel prize in medicine. He is the author of "The Nature of Man" (1903), "Immunity in Infective Diseases" (1905), "The Prolongation of Human Life" (1908), etc.

Methuen (meth′ū̦-en), **Paul Sanford,** third Baron Methuen. Born Sept. 1, 1845. A British general, commander of the first division of the first army corps in the Boer war 1899–1902. He was opposed by General Cronje at the Modder River and was disastrously defeated by him at Magersfontein. In March, 1902, he was captured by De la Rey but was soon released. In May, 1907, he was appointed commander-in-chief in South Africa.

Meunier (mė-nyā′), **Constantin.** Born at Etterbeck, a suburb of Brussels, Belgium, April 12, 1831: died at Brussels, April 4, 1905. A Belgian sculptor and painter. In 1882 he visited Spain and made many interesting studies of Spanish painting. He preferred to model subjects from the working classes—miners, founders, and the like—and produced a series of powerful statues including the "Puddleur" and the "Marteleur." His last work is a monumental group, "Le Travail," showing a central figure, "Le Semeur," surrounded by four others, "La Mine," "La Moisson," "Le Port," and "L'Industrie." It has been acquired by the Belgian government.

Meurice (mė-rēs′), **François Paul.** Born at Paris, February, 1820: died there, Dec. 10, 1905. A French author and dramatist. His first drama, "Falstaff," written with Théophile Gautier and Vacquerie, appeared in 1842. After this followed "Le Capitaine Paroles" (1843), and "Antigone," from Sophocles (1844), both in collaboration with Vacquerie, and a metrical version of Shakspere's "Hamlet," written with Dumas and Maquet (1847). In 1848 he became editor of Victor Hugo's paper "L'Événement"; assisted in founding the new journal of the Hugo family, "Le Rappel," in 1869; and was one of the executors of Hugo, having charge of the definitive edition of the latter's works (1880–85). He has written, besides the works mentioned, "Benvenuto Cellini" (1852), "Schamyl" (1855), "Struensee" (1898), and other dramas; the romances "La famille Aubry" (1854), "Le songe de l'amour" (1869); etc.

Mexico*. It is divided into 27 states, 3 territories, and the federal district. Representatives to the lower house of congress are elected in the proportion of 1 to 40,000 inhabitants.

Meyer (mī′ėr), **George von Lengerke.** Born at Boston, June 24, 1858. An American diplomatist. He was graduated at Harvard in 1879; was a member of the Massachusetts legislature 1892–96; and speaker of the house 1894–96; was United States ambassador to Italy 1900–05; was appointed United States ambassador to Russia, March 6, 1905–07; was postmaster-general 1907–09; and was secretary of the navy 1909–.

Meyer*, Jürgen Bona. Died at Bonn, June 22, 1897.

Meyer*, Leo. He was professor at Dorpat 1865–99, and since 1899 has been honorary professor of comparative languages at the University of Gottingen.

Meyer (mī′ėr), **Lothar Julius.** Born at Varel, Aug. 19, 1830: died at Tübingen, April 11, 1895. A noted German chemist, professor in the University of Tübingen from 1876.

Meyer (mī′ėr), **Victor.** Born at Berlin, Sept. 8, 1848: died at Heidelberg, Aug. 8, 1897. An eminent German chemist, professor of chemistry in the University of Heidelberg from 1889.

Meynell (men′el), Mrs. (**Alice Christiana Thompson**). Born at London, 1853. An English poet and essayist. Her works include "Preludes" (1875: later published as "Poems," 1893), "The Rhythm of Life, and Other Essays" (1893), "The Colour of Life, and Other Essays on Things Seen and Heard" (1896), "The Children" (1896), "London Impressions" (1898), "The Spirit of Place, and Other Essays" (1898), "John Ruskin" (1900), "Later Poems" (1901), "The Children of the Old Masters: Italian School" (1903), and "A Seventeenth Century Anthology" (1904).

Miagao (mē-ä-gä′ō). A municipality of Iloilo province, Panay, Philippine Islands. Civilized population (1903), 20,656.

Miami (mī-am′ē) **University.** A non-sectarian coeducational institution of learning situated at Oxford, Ohio. It was established under its present name in 1809. Since 1896 it has received annual appropriations from the State. There are about 800 students in attendance, of whom more than 100 are in the Academy and Normal School.

Michel*, Francisque Xavier. Died at Paris, May 18, 1887.

Michel*, Louise. Died at Paris, Jan. 9, 1905.

Michelson (mik′el-so̤n), **Albert Abraham.** Born at Strelno, Germany, Dec. 19, 1852. An American physicist, professor of physics in the University of Chicago from 1892, best known for his work in optics. He was graduated at the United States Naval Academy in 1873; studied in Germany and France; was instructor in the Naval Academy 1875–79; and was professor of physics in the Case Scientific School 1883–89 and Clark University 1889–92. He has published "Light Waves and Their Uses" (1902), besides numerous scientific papers. In 1907 he was awarded the Nobel prize for physics.

Michigan*. It has 83 counties.

Michigan*, University of. It comprises a collegiate department and departments of medicine, law, engineering, dentistry, and pharmacy; scientific museums; and a library of 260,000 volumes. The attendance is about 5,000.

Middlebury*. Middlebury College is nonsectarian.

Milan I.* King of Servia 1882–89. Died Feb. 11, 1901.

Milanesi (mē-lä-nā′sē), **Gaetano.** Born at Siena, Italy, Sept. 9, 1813: died at Florence, March 12, 1895. An Italian critic and historian of art. In 1856 he was made resident academician of the Accademia della Crusca in Florence and in 1858 second director of the Tuscan Archives, becoming superintendent in 1889. He devoted himself to the study of the history, chiefly artistic, of Italy, and published frequently in the "Archivio Storico Italiano," "Archivio Storico dell' Arte," and other periodicals. Among his leading books are "Documenti per la storia dell' arte senese" (1854–56), "Lettere di Michelangelo Buonarroti" (1875), and the standard edition of Vasari's "Lives."

Miles*, Nelson Appleton. In 1895 he was appointed general-in-chief. During the Spanish-American war he led a successful expedition to Porto Rico, landing at Guanica July 25, 1898. Retired August, 1903.

Millais*, Sir **John Everett.** Died at London, Aug. 13, 1896. He became president of the Royal Academy in 1896.

Miller (mil′ėr), Mrs. (**Harriet Mann**): pen-name **Olive Thorne Miller.** Born at Auburn, N. Y., June 25, 1831. An American writer and lecturer on birds. Among her works are "Little People of Asia" (1882), "Bird Ways" (1885), "Four-handed Folk" (1890), "Our Home Pets" (1894), "The First Book of Birds" (1899), "The Second Book of Birds" (1901), "With the Birds in Maine" (1904), "Kristy's Surprise Party" (1905), "Bird Our Brother" (1908), etc.

Mills*, Roger Quarles. He represented Texas in the United States Senate 1892–98.

Milne (miln), **John.** Born at Liverpool, England, 1850. An English seismologist, for many years employed by the Japanese government as geologist and mining engineer. He has traveled widely in Asia, Australasia, the United States, etc. His most notable work was the establishment of the seismic survey of Japan, with nearly a thousand stations, and the projecting of a similar survey of the world. He has published "Earthquakes" (1883), "Seismology" (1898), and numerous scientific papers.

Milne Edwards*, Alphonse. Born at Paris, Oct. 13, 1835: died there, April 21, 1900.

Milner (mil′nėr), Sir **Alfred,** first Viscount Milner. Born March 23, 1854. A British administrator. He was educated at King's College, London, and at Balliol College, Oxford, and was called to the bar of the Inner Temple in 1881. He was under-secretary for finance, Egypt, 1889–92; was governor of Cape Colony 1897–1901; was administrator (1901–02) and governor (1902–05) of the Transvaal and Orange River colonies; and was high commissioner for South Africa 1897–1905. He was knighted in 1895, raised to the peerage as Baron Milner in 1901, and created a viscount in 1902. The last two honors were bestowed upon him in recognition of his services in South Africa, particularly in the peace settlement. He has written "England in Egypt" (1892).

Mindanao*. It came into the possession of the United States in 1898.

Mindanao (mēn-dä-nä′ō) **Sea.** A sea in the Philippine Islands, lying north of Mindanao and south of Bohol, and connected on the east with the Surigao Sea and on the west with the Jolo (Sulu) Sea.

Mindoro. 2. A province of the Philippines, consisting of Mindoro and adjacent islands lying south of the western part of Luzon (separated by Verde Island Passage). Capital, Puerto Galera. Mount Halcon, the culminating peak, is 8,800 feet high. The mountains are covered with valuable forests. Rivers are numerous but small. The best harbors are Puerto Galera on the north, and Mangarin on the southwest coast, both safe for large craft in all weather. Varadero bay, on the north, is good in the southwest monsoon, and Paluan bay, on the west, in the northeast monsoon. Coal is found in the south, and gold in various parts of the province. Rice and hemp are the chief productions. The natives are Mangyans. Area of province, 4,024 square miles. Population (1903), 39,582, of which the census gave 7,264 as wild.

Mindoro (mēn-dō′rō) **Sea.** Same as *Visayan Sea.*

Mindoro (mēn-dō′rō) **Strait.** A strait in the Philippines, separating Mindoro from the Calamianes Islands. Apo Reef and Island divide it into two channels.

Minnesota*. It has 85 counties, sends 2 senators and 9 representatives to Congress, and has 11 electoral votes.

Minnesota*, University of. It is attended by about 4,600 students, and has a library of about 118,000 volumes.

Minot (mī′no̤t), **Charles Sedgwick.** Born at Boston, Mass., Dec. 23, 1852. An American biologist, professor of comparative anatomy in the Harvard Medical School. He was instructor 1883–87, and assistant professor 1887–92. Among his works are "Human Embryology" (1892), "A Laboratory Text-book of Embryology" (1903), and numerous scientific papers. He is the inventor of the rotary automatic microtome.

Minto (min′tō), fourth **Earl of (Gilbert John Elliot-Murray-Kynynmound).** Born July 9, 1845. A British soldier and administrator. He served with the Turkish army in 1877, in the Afghan war in 1879, in the Egyptian campaign in 1882, and as chief of staff in the rebellion in northwest Canada in 1885. He succeeded to the title in 1891; was governor-general of Canada 1898–1904; and was viceroy and governor-general of India 1905–.

Miquel*, Johannes. Died at Frankfort-on-the-Main, Sept. 8, 1901. He was Prussian minister of finance 1890–1901.

Mirbeau (mēr-bō′), **Octave Henri.** Born at Trévières, France, Feb. 16, 1848. A French journalist, critic, and author. He went to Paris; became a contributor to various periodicals; founded the "Paris-Midi"; and, with others, founded "Les Grimaces," a satirical journal. Among his works are "Lettres de la chaumière" (1886), "Le Calvaire" (1886), "Sébastien Roch" (1890), "Le jardin des supplices" (1899), "Les mémoires d'une femme de chambre" (1901), "Les vingt-et-un jours d'un neurasthénique" (1902); and several plays, "Les mauvais bergers" (1898), "Le portefeuille" (1902), "Les affaires sont les affaires" (1903), and "Farces et moralités" (1904).

Mirs Bay (mērz bā). A bay on the southeastern coast of China, now included in the British colony of Hong-Kong.

Misamis (mē-sä′mēs). A province of the Philippines, in northern Mindanao. It is bounded by the Mindanao and Surigao seas on the north, Surigao province (separated by mountains) on the east, Cotabato on the south, and Lanao and Dapitan on the west. Capital, Cagayan. Iligan bay separates the eastern from the western part of the province. Port Misamis, or Panguil bay, is a deep inlet from the southwestern part of this bay. Macajalar bay indents the northern coast. The province is mountainous, the highest peaks being the Gran Malindang, 8,580 feet, and Camiguin Island, 5,383 feet in height. Coal and gold are found. Cocoa, coffee, hemp, corn, copra, rice, and sugar-cane are among the productions. Large numbers of domestic animals are raised. The native race is Visayan. The census of 1903 gave also 3,418 Subanos. Area of province, including Camiguin and other adjacent islands, 3,017 square miles. Population (1903), 153,707.

Misamis (mē-sä′mēs), **Port.** A deep inlet from the southwestern part of Iligan bay, northern Mindanao: a good harbor in all weather.

Mischianza (mis-ki-an′zä̤), **The.** A farewell banquet and festival given in Philadelphia, May 18, 1778, in honor of Sir William Howe, then commander-in-chief of the British armies in America. It consisted of a regatta on the Delaware river to which four hundred persons were invited. They landed at the country-seat of Thomas Wharton and there took part in a mock tournament, a banquet, and a ball. Major André took a prominent part in the festival and wrote two accounts of it.

Mission Range. A range of mountains east and southeast of Flathead Lake, Montana.

Mississippi*. It has 78 counties, sends 2 senators and 8 representatives to Congress, and has 10 electoral votes.

Missouri*. It has 115 counties, sends 2 senators and 16 representatives to Congress, and has 18 electoral votes.

Mistí (mēs-tē′), **El.** The mountain of Arequipa (which see). Near its summit was established a meteorological station (discontinued) conducted by the Arequipa branch of the Harvard Observatory.

Mistral*, Frédéric. In 1904 he received, with Echegaray, the Nobel prize for literature. His later works include "La Reino-Jano" (1890), "Lou pouèmo dou Rose" (1897), and a volume of memoirs (1906).

Mitchell*, **Donald Grant.** Died at Edgewood, near New Haven, Conn., Dec. 15, 1908.

Mitchell (mich′el), **John.** Born at Braidwood, Ill., Feb. 4, 1870. An American labor leader. He worked for several years in the coal-mines; joined the Knights of Labor in 1885; and was president of the United Mine-Workers of America from 1898 to 1908. He directed the strikes of the anthracite coal-miners in 1900 and 1902, and the negotiations with the operators in 1906. He wrote "Organized Labor" (1903).

Mitchell*, **Silas Weir.** His later works include "When All the Woods are Green" (1894), "A Madeira Party" (1895), "Collected Poems" (1896), "Hugh Wynne" (1897), "The Adventures of François" (serially, 1898), "Autobiography of a Quack" (1900), "Dr. North and His Friends" (1900), "The Wager, and other poems" (1900), "Circumstance" (1901), "Comedy of Conscience" (1903), "Little Stories" (1903), "Mr. Kris Kringle" (1904), "New Samaria" (1904), "Youth of Washington" (1904), "Constance Trescot" (1905), "A Diplomatic Adventure" (1906), "The Red City" (1908), "Venture in 1777" (1908), etc.

Mitra (mē′trä). A peak near the western boundary of Lepanto-Bontoc province, Luzon, Philippine Islands. Height, 5,699 feet.

Mitre*, **Bartolomé.** Died at Buenos Aires, Jan. 19, 1906.

Mivart*, **St. George Jackson.** Died at London, April 1, 1900. He was professor of the philosophy of natural history in the University of Louvain in 1890.

M. Lecocq. A detective story by Émile Gaboriau, published in 1869.

Möbius (mė′bi-ös), **Karl.** Born in Eilenburg, Germany, Feb. 7, 1825: died in Berlin, April 26, 1908. A German zoölogist, director of the Museum of Natural History in Berlin 1887–1905.

Modder (mod′ėr). A river in the Orange River Colony, South Africa, which empties into the Riet, a tributary of the Vaal The passage of the Modder was forced by Lord Methuen against the Boers under Cronje, with great loss, on Nov. 28, 1899, in his unsuccessful attempt to relieve Kimberley.

Modjeska*, **Helena.** Born Oct. 12, 1839: died at Bay City, Orange Co., Cal., April 8, 1909.

Mogollon (mō-gō-yōn′) **Mesa.** An extensive mesa or plateau in east-central Arizona, north of the Salt River and east of the Rio Verde. Elevation about 8,000 feet above the sea, and 5,000 feet above the Rio Verde.

Mohler (mō′lėr), **John Robbins.** Born at Philadelphia, May 9, 1875. An American bacteriologist, chief of the pathological division of the United States Bureau of Animal Industry from 1902.

Moissan (mwä-säṅ′), **Henri.** Born at Paris, Sept. 28, 1852: died there, Feb. 20, 1907. A noted French chemist, professor of chemistry in the Sorbonne: best known for the artificial production of diamonds. He wrote "Reproduction du diamant" (1893), etc. In 1906 he received the Nobel prize for chemistry.

Molesworth (mōlz′wėrth), Mrs. (**Mary Louisa Stewart**): pseudonym **Ennis Graham.** Born at Rotterdam, Holland, May 29, 1839. An English author, best known as a writer of children's stories. Among her works are "Tell me a Story" (1875), "Carrots" (1876), "The Cuckoo Clock" (1877), "The Grim House" (1899), "The Woodpigeons and Mary" (1901), and "The Wrong Envelope" (1906).

Möllhausen*, **Balduin.** Died at Berlin, May 28, 1905.

Molo (mō′lō). A town in the southern part of Iloilo province, Panay, Philippine Islands. Population (1903), 8,551.

Molokai*. A noted leper settlement is maintained here.

Mombasa*. Nairobi is now the administrative center of the British East Africa Protectorate.

Mommsen*, **Theodor.** Died at Charlottenburg, Nov. 1, 1903.

Montana*. It has 27 counties The chief metals are copper and silver

Montealegre*, **José Maria.** Died at Mission San José, Cal., Sept. 26, 1887

Montégut*, **Jean Baptiste Joseph Émile.** Died Dec. 11, 1895.

Montenegro*. According to the terms of the constitution granted Dec. 19, 1905, the form of government has been changed. It is now a hereditary constitutional monarchy with popular representation. The legislative is vested in a council of state and a national assembly (skupshtina) of 74 members.

Montépin*, **Xavier Aymon de.** Died at Passy, Paris, April 30, 1902.

Monticelli (mon-ti-chel′i), **Adolphe Joseph Thomas.** Born at Marseilles, France, Oct. 14, 1824: died there, May 26, 1886. A French painter, of Italian descent. He studied in the art school at Marseilles, and at Paris, where he was especially influenced by the Impressionist school. In 1870 he returned to Marseilles and remained there the rest of his life. He produced a large number of easel pictures exhibiting great brilliancy and harmony of color. He painted with a palette-knife and also directly from the tubes without the assistance of brushes.

Monvel, Louis Maurice Boutet de. See *Boutet de Monvel.*

Moody*, **Dwight Lyman.** Died Dec. 22, 1899.

Moody (mö′di), **William Henry.** Born at Newbury, Mass., Dec. 23, 1853. An American lawyer, attorney-general of the United States 1904–06. He was graduated at Phillips Academy, Andover, in 1872, and at Harvard University in 1876. He was district attorney for the Massachusetts Eastern District 1890–95, a Republican member of Congress 1895–1902, and secretary of the navy 1902–1904. In December, 1906, he was appointed associate justice of the supreme court.

Moody (mö′di), **William Vaughn.** Born at Spencer, Ind., July 8, 1869. An American poet and critic. From 1895 to 1903 he served as instructor in the department of English in the University of Chicago. Among his works are "Poems" (1901), including the "Ode in Time of Hesitation" (1900); "The Fire-Bringer" (1904), "The Masque of Judgment" (1900), the first and second parts respectively of a dramatic trilogy; "The Sabine Woman," a play (1906); with Robert Morss Lovett, "A History of English Literature" (1902), "First View of English Literature" (1905); "The Great Divide," a play (1906), and "The Faith Healer" (1909).

Moore (mör), **George.** Born at Moore Hall, County Mayo, Ireland, 1853. A British novelist, poet, dramatist, and art critic. He has published two volumes of verse, "Flowers of Passion" (1877), and "Pagan Poems" (1881). As a critic he was one of the first in England to champion the Impressionist school of painters and the naturalistic school in literature. He was associated with Edward Martyn and William Butler Yeats in founding the Irish Literary Theater in Dublin, and has written two plays, "The Strike at Arlingford" (1893), and "The Bending of the Bough" (1900). His other works include "A Modern Lover" (1883), "A Mummer's Wife" (1884), "Literature at Nurse" (1885), "A Drama in Muslin" (1886), "Parnell and his Ireland" (1887), "Confessions of a Young Man" (1888), "Mike Fletcher" (1889), "Vain Fortune" (1891), "Modern Painting" (1893), "Esther Waters" (1894), "Impressions and Opinions" (1895), "Celibates" (1895), "Evelyn Innes," a musical novel (1898), "Sister Teresa" (1901: a continuation of "Evelyn Innes"), "The Untilled Field" (1903), "The Lake" (1905), "Memoirs of My Dead Life" (1906), etc.

Moore (mör), **George Foot.** Born at West Chester, Pa., Oct. 15, 1851. An American Orientalist and biblical scholar, professor of the history of religions in Harvard University from 1902. He was professor of Hebrew in Andover (Massachusetts) Theological Seminary 1883–1902. His works include a commentary on the Book of Judges (1895), numerous scientific papers, etc. He was appointed visiting professor at the University of Berlin 1909–10.

Moore (mör), **George Thomas.** Born at Indianapolis, Ind., Feb. 23, 1871. An American cryptogamic botanist. He was graduated at Wabash College in 1894 (Harvard A. B. 1895); was physiologist and algologist of the Bureau of Plant Industry of the United States Department of Agriculture 1901–02; and was head of the laboratory of plant physiology 1902–05. He is best known for his work in perfecting methods of destroying algæ and certain bacteria in water-supplies (by means of sulphate of copper) and of cultivating the root-tubercle organisms which, in certain plants, aid the appropriation of nitrogen.

Moore (mör), **John Bassett.** Born at Smyrna, Del., Dec. 3, 1860. An American publicist, professor of international law and diplomacy in Columbia University from 1891. He was third assistant secretary of state 1886–91; was assistant secretary April–Sept., 1898, during the Spanish war; and was secretary and counsel of the American peace commissioners in Paris. His works include "Extradition and Interstate Rendition" (1891), "History and Digest of International Arbitrations" (1898), "American Diplomacy" (1905), "Digest of International Law" (1906), etc.

Moqui (mō′kē). The Navajo name for a Hopi Indian. Until recently these Indians were known as Moqui, the name Hopi being a late introduction into literature.

Moraes Barros*, **Prudente de.** Died at Piracicaba, Dec. 3, 1902.

Moran*, **Edward.** Died at New York, June 9, 1901.

Moran (mō-ran′), **Patrick Francis.** Born at Leighlinbridge, County Carlow, Ireland, Sept. 16, 1830. A British Roman Catholic prelate, archbishop of Sydney, Australia, from 1884, and cardinal from 1885. He was bishop of Ossory 1872–84. Among his publications are "History of the Catholic Archbishops of Dublin" (1864), "Irish Saints in Great Britain" (1879), "History of the Catholic Church in Australia" (1894), "The Priests and People of Ireland" (1905), etc.

Morelli (mō-rel′i), **Giovanni.** Born at Verona, Italy, Feb. 25, 1816: died at Milan, Feb. 28, 1891. An Italian art critic. Beginning in 1860 he represented Bergamo in four successive Italian parliaments, and used this opportunity to secure a law, which bears his name, to regulate the preservation of Italian art. In 1861 he was associated with Cavalcaselle on a commission appointed to register all works of art in public institutions in Umbria and the Marches. In his works he established certain facts which have revolutionized Italian art criticism, among them the fact that the old masters frequently dropped into uniform conventional ways of representing details (as hair, ears, fingers, etc.), which are useful in identification.

Morgan (môr′gan), **Conwy Lloyd.** Born at London, Feb. 6, 1852. An English biologist, principal of University College, Bristol, from 1887. He was appointed professor of zoölogy and geology there in 1884 and of psychology in 1901. Among his publications are "Animal Biology" (1887), "Animal Life and Intelligence" (1890), "Introduction to Comparative Psychology" (1895), "Habit and Instinct" (1896), "Animal Behaviour" (1900), "The Interpretation of Nature" (1905), etc.

Morgan (môr′gan), **John Pierpont.** Born at Hartford, Conn., April 17, 1837. An American banker and financier. He was educated at the English High School, Boston, and at the University of Göttingen. As a financier he has been particularly connected with the reorganization of railways, the floating of the United States bond issue in the administration of President Cleveland, the Atlantic shipping combination, etc. He is known also as a collector of works of art, and has contributed largely to the founding and support of hospitals and other charities.

Morgan (môr′gan), **John Tyler.** Born at Athens, Tenn., June 20, 1824: died June 11, 1907. An American lawyer and statesman, United States senator (Democratic) from Alabama from 1877. He entered the Confederate army in 1861 and rose to the rank of brigadier-general and after the war resumed the practice of law. In 1892 he was appointed one of the arbitrators of the Bering Sea fisheries dispute.

Morley (môr′li), **Edward Williams.** Born at Newark, N. J., Jan. 29, 1838. An American chemist and educator, professor of chemistry in Western Reserve University 1869–1906. He was graduated at Williams College in 1860. He has published papers upon chemical and physical topics, especially upon the atomic weight of oxygen.

Morley*, **John,** first Viscount Morley of Blackburn. He was member of Parliament for Newcastle-on-Tyne 1883–95 and for Montrose Burghs 1896–1908; and has been secretary of state for India since 1905. He was raised to the peerage in 1908. His later works include "Studies in Literature" (1891), "Oliver Cromwell" (1900), "Life of Gladstone" (1903), "Life of Richard Cobden" (1908), "Critical Miscellanies" (1908).

Moro (mō′rō). A province of the Philippines created by an act of the Philippine Commission, June 1, 1903. By this act Misamis and Cotabato were reduced and Zamboanga was increased in area, and a new district, Lanao, was created. The province as now constituted consists of the island of Mindanao, except Misamis and Surigao provinces with their adjacent islands, of all other islands adjacent to Mindanao, of Basilan, Cagayan de Jolo, and Sibutu, and of the groups included in the Sulu (Jolo) Archipelago. The province thus contains all of the Moro territory except that in the southern part of Palawan (Paragua) Island. Each of its five districts—Cotabato, Davao, Jolo, Lanao, and Zamboanga—is under a district governor appointed by the governor of the province. Capital, Zamboanga. Area, 28,886 square miles. Population (1903), 402,014.

Moros (mō′rōs). One of the Mohammedan Malay tribes which inhabit the southern islands of the Philippine Archipelago, especially Mindanao and the Jolo Archipelago. They are a seafaring and warlike people, and were formerly much given to piracy.

Morrill*, **Justin Smith.** Died at Washington, D. C., Dec. 28, 1898.

Morris (mor′is), **Lewis.** Born on Manhattan Island, New York, 1671: died at Trenton, N. J., May 21, 1746. An American statesman, first governor of New Jersey. He was appointed to the bench of the superior court of New Jersey 1692, and was active in effecting the separation of that colony from New York. He served as chief justice of both New York and New Jersey 1715–33, and was governor of the colony from 1738 until his death.

Morris*, Sir **Lewis.** Died Nov. 12, 1907. His later works include "Songs without Notes" (1894), "Idylls and Lyrics" (1896), "Harvest Tide" (1901), and "The New Rambler from Desk to Platform" (1905).

Morris*, **William.** Died at London, Oct. 3, 1896.

Morrison (mor′i-sọn), **George Ernest.** Born at Geelong, Victoria, Australia, Feb. 4, 1862. An English journalist and traveler. He was educated at Melbourne and Edinburgh universities, and has been special correspondent for the London "Times" in China and various parts of Asia. He is the author of "An Australian in China" (1895), etc.

Morrow (mor′ō), **William W.** Born near Milton, Ind., July 15, 1843. An American jurist, judge of the ninth United States judicial circuit from 1897. He was assistant United States attorney for California 1870–74; served as special counsel for the United States before the French and American claims commissions (1881–83) and the Alabama claims commission (1882–85); was a member of the House of Representatives 1885–91; and was United States judge of the Northern California district 1891–97. He is a trustee of the Carnegie Institution of Washington, D. C., and one of the incorporators of the American National Red Cross Society.

Morton (môr′tọn), **Julius Sterling.** Born at Adams, N. Y., April 22, 1832: died at Lake Forest, Ill., April 27, 1902. An American cabinet officer. He was graduated at Union College, Schenectady, New York, in 1854; was a member of the territorial legislature of Nebraska in 1856 and 1857; was secretary and acting governor of Nebraska in 1858; and was secretary of the United States Department of Agriculture 1893–97. He instituted Arbor Day in Nebraska in 1872. In politics he was a Democrat, affiliated later with the gold-standard wing of the party.

Morton*, Levi Parsons. He was governor of the State of New York 1895–96.

Morton (môr′tọn), **Paul.** Born at Detroit, May 22, 1857. An American railroad man, administrator, and financier, son of Julius Sterling Morton. He was connected with the Burlington railway system 1872–90, and was third vice-president 1896–98 and second vice-president 1898–1904 of the Atchison, Topeka, and Santa Fé Railroad. He was secretary of the navy July 1, 1904,–July 1, 1905, and chairman of the board of directors and later president of the Equitable Life Assurance Society 1905–.

Mosby (mōz′bi), **John Singleton.** Born in Powhatan County, Va., Dec. 6, 1833. A noted American soldier. He was graduated at the University of Virginia in 1852; practised law in Bristol, Virginia, 1855–61; joined the Confederate army in 1861; and became famous (1862–65) as colonel of independent cavalry ('Mosby's Rangers'), inflicting serious damage upon the Union army by cutting its communications. After the close of the war he resumed the practice of law and was United States consul at Hong-Kong 1878–85.

Moscow*. The university has a library of 321,610 volumes.

Mosquitia*. The Mosquitia reserve now forms a department (Zelaya) of Nicaragua.

Mosso (mōs′sō), **Angelo.** Born at Turin, May 31, 1846. An Italian physiologist, professor in the University of Turin from 1879, especially noted for his investigations in psychophysiology.

Moszkowski (mōs-kof′ski), **Moritz.** Born at Breslau, Aug. 23, 1854. A pianist and composer, chiefly of piano music. His opera "Boabdil" was produced in 1892.

Motien (mō′ti-en) **Pass.** A mountain pass in southern Manchuria, southeast of Mukden. It was of great strategic importance in the Russo-Japanese war (1904–05) and a number of sanguinary engagements were fought in its vicinity. It was in the line of the advance of General Kuroki's army upon Liao-yang.

Mottl (mōtl), **Felix.** Born near Vienna, Aug. 29, 1856. A noted Austrian orchestral conductor. He succeeded Dessoff as court conductor at Carlsruhe, frequently conducting in Bayreuth, and has a high reputation as a Wagnerian. In 1903 he came to New York. On his return to Germany he was appointed to the Royal Opera in Munich.

Moulton*, Mrs. (**Ellen Louise Chandler**). Died at Boston, Mass., Aug. 10, 1908. Her later works include "Random Rambles" (1881), "Firelight Stories" (1883), "Ourselves and Our Neighbors" (1887), "Miss Eyre from Boston, and other stories" (1889), "In the Garden of Dreams" (1889), "Stories Told at Twilight" (1890), "In Childhood's Country" (1896), "At the Wind's Will" (1899), "Poems and Sonnets" (1909), etc.

Moulton (mōl′tọn), **Richard Green.** Born at Preston, England, May 5, 1849. An English author, critic, and educator, professor in the University of Chicago from 1892. He was engaged as a lecturer in university extension work in England and America 1874–92. Among his works are "Shakespeare as a Dramatic Artist" (1885), "Ancient Classical Drama" (1890), "The Literary Study of the Bible" (1896), "A Short Introduction to the Literature of the Bible" (1901), and "The Moral System of Shakespeare" (1903). He has edited "The Modern Reader's Bible" (1895–98).

[illegible] in Toronto — [illegible] times.

Mount Carmel (mount kär′mel). A borough in the southeastern part of Northumberland County, Pennsylvania. It has coal-mines and manufactures of coal-mining machinery, etc. Population (1900), 13,179.

Mount McKinley. See *McKinley, Mount.*

Mudcat State. A popular nickname of the State of Mississippi: from the number of catfish taken from the Mississippi river.

Muir*, Sir **William.** Died July 11, 1905. He was principal of the University of Edinburgh 1885–1902.

Mukden*. It is on a branch of the Siberian Railroad. A battle was fought south of and about Mukden Feb. 23–March 10, 1905, between the Russians under General Kuropatkin and the Japanese under Marshal Oyama, which resulted in a disastrous defeat of the Russians and the capture of the city by the Japanese.

Müller*, Charles Louis. Died at Paris, Jan. 10, 1892.

Müller*, Frederick (Friedrich) Maximilian, generally called **Max Müller.** Died at Oxford, Oct. 28, 1900. He was professor of comparative philology at Oxford 1868–1900.

Müller*, Friedrich. Died at Vienna, May 25, 1898.

Müller*, George. Died at Bristol, May 10, 1898.

Müller*, Otto. Died at Stuttgart, Aug. 7, 1894.

Mundella*, Anthony John. Died at London, July 21, 1897.

Munger (mung′gėr), **Theodore Thornton.** Born March 5, 1830: died Jan. 11, 1910. An American Congregational clergyman and writer, pastor in New Haven, Connecticut, from 1885. He had pastorates in Dorchester, Haverhill, Lawrence, and North Adams, Massachusetts, and San José, California. He had published "On the Threshold" (1880), "The Freedom of Faith" (1883), "Lamps and Paths" (1883), "The Appeal to Life" (1887), "Horace Bushnell" (1899), "Essays for the Day" (1904), etc.

Munich*, University of. It has over 5,900 students and a library of 500,000 volumes. X

Munkácsy*, or **Muncaczy, Mihály.** Died at Endenich, near Bonn, May 1, 1900.

Munroe (mun-rō′), **Henry Smith.** Born at Brooklyn, N. Y., March 25, 1850. An American geologist and mining engineer, professor of mining in the School of Mines of Columbia University from 1891. He was assistant geologist of the geological survey of the State of Ohio 1870–71, and of the geological survey of Yesso, Japan, 1872–75; was professor of geology and mining in the University of Tokio 1875–76; and was adjunct professor in the School of Mines 1877–91.

Münster* (Westphalia). It is the seat of a university (discontinued in 1818 and revived in 1902).

Münsterberg (mün′stėr-berg), **Hugo.** Born at Dantzic, Germany, June 1, 1863. A German psychologist, professor in Harvard University from 1892. He was educated at Dantzic, Leipsic, and Heidelberg, and was professor in the University of Freiburg. Among his publications are "Psychology and Life" (1899), "Grundzüge der Psychologie" (1900), "American Traits" (1902), "The Americans" (1904), "Eternal Life" (1905), "Principles of Art Education" (1905), "Science and Idealism" (1906), "On the Witness Stand" (1908), "Psychotherapy" (1909), "The Eternal Values" (1909), etc. [illegible]

Murchison (mėr′chi-sọn) **Goldfield.** A gold-mining region in the western part of Western Australia.

x [illegible]

Murfree*, Mary Noailles: pseudonym **Charles Egbert Craddock.** Her later works include "The Despot of Broomsedge Cove" (1888), "In the Stranger People's Country" (1891), "His Vanished Star" (1894), "The Young Mountaineers" (1897), "The Champion" (1902), "The Spectre of Power" (1903), "Storm Center" (1905), "The Amulet" (1906), "The Windfall" (1907), "A Fair Mississippian" (1908), etc.

Murray (mur′ā), **David Christie.** Born at West Bromwich, Staffordshire, April 13, 1847: died at Hampstead, Aug. 1, 1907. A British novelist. His works include "A Life's Atonement" (1880), "Joseph's Coat" (1881), "Aunt Rachel" (1886), "One Traveller Returns" (with Henry Herman, 1887), "Old Blazer's Hero" (1887), "A Dangerous Catspaw" (1889) and 'He Fell Among Thieves" (1891) with Henry Herman, "The Martyred Fool" (1895), "A Capful of Nails" (1897), "A Race for Millions" (1898), "The Church of Humanity" (1901), "Despair's Last Journey" (1901), a volume of memoirs entitled "Recollections of a Lifetime" (1907), etc.

Murray*, Sir **James Augustus Henry.** He was knighted in 1908.

Murray (mur′ā), **John,** fourth Earl of Dunmore. Born 1732: died at Ramsgate, England, May, 1809. An English colonial governor. He was appointed governor of the colony of New York in 1770, and of Virginia in 1771. He prorogued the House of Assembly at Williamsburg, Virginia, in 1772; convened it in March, 1773, but immediately dissolved it because of its recommendation of concerted action on the part of the colonies against the mother country; and again dissolved it in 1774 upon its action after the passing of the Boston Port Act. In the autumn of 1774 he commanded a division of Virginia troops in the war against the Ohio Indians, called 'Dunmore's War.' In 1775 he removed part of the powder stores at Williamsburg to the war-ship Magdalen, thereby provoking armed resistance by the colonists under the leadership of Patrick Henry, and peace was restored temporarily by payment for the powder. Later in the same year, during a riot in the House of Assembly, he transferred the seat of government to the man-of-war Fowey, an act which the burgesses declared to be an abdication. Thereupon he equipped a flotilla, made an unsuccessful attack upon Hampton, reduced Norfolk to ashes, and was finally defeated at Gwynn's Island in the Chesapeake, July 8, 1776. He then disbanded his troops and returned to England. He sat in the House of Lords until 1787, and was governor of the Bahamas 1787–96.

Murray (mur′ā), Sir **John.** Born at Coburg, Ontario, March 3, 1841. An eminent British zoölogist, one of the naturalists of the Challenger expedition 1872–76. In 1882 he became editor of the reports of the scientific results of this expedition; later published a summary of its results; and (with others) wrote a narrative of the cruise.

Murray*, William Henry Harrison. Died at Guilford, Conn., March 3, 1904.

Mutsuhito (mŏt-sŏ-hē′tō). Born at Kioto, Nov. 3, 1852. The Emperor of Japan. He succeeded to the throne Feb. 3, 1867, and has been identified, after the earlier years of his reign, with the development of constitutional government and the appropriation by his people of the results of western civilization. + Sep. 19

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Myers (mī′ėrz), **Frederic William Henry.** Born at Keswick, Cumberland, Feb. 6, 1843: died at Rome, Jan. 17, 1901. An English man of letters and philosophical writer. He studied at Trinity College, Cambridge, taking his degree in 1864, and became a fellow of Trinity in 1865. When the Society for Psychical Research was established in 1882 he was one of its founders, and he remained until his death one of the most important of the workers in this field. With Podmore and Gurney he published, in 1886, "Phantasms of the Living." "Science and a Future Life" appeared in 1893 and "Human Personality and its Survival of Bodily Death" in 1901. He also published poems of considerable merit (collected 1870 and 1882).

Nabua (nä′bö-ä). **1.** A municipality of Ambos Camarines province, in the southeastern part of Luzon, Philippine Islands. Civilized population (1903), 18,893.—**2.** A town in Ambos Camarines. Population (1903), 5,387.

Nadaillac*, Jean François Albert du Pouget, Marquis **de.** Died at the Château de Rougemont, Loir-et-Cher, Oct. 2, 1904. He wrote also "Mœurs et monuments des peuples préhistoriques" (1888), "Les problèmes de la vie" (1892), and "Unité de l'espèce humaine" (1899).

Naga (nä′gä). A municipality of Cebu province, near the eastern coast of Cebu, Philippine Islands. Civilized population (1903), 16,884.

Nagel (nā′gl), **Charles.** Born in Colorado County, Texas, Aug. 9, 1849. An American lawyer and politician. He was a member of the Missouri legislature 1881–83; president of the St. Louis city council 1893–97; a member of the faculty of the St. Louis Law School from 1886; and was appointed Secretary of Commerce and Labor by President Taft in 1909.

Namaland (nä′mä-land), **German.** A name given by the German Colonial Society for Southwest Africa to the southern part of the region controlled by it.

Nansen*, Fridtjof. He sailed from Christiania in June, 1893, at the head of an arctic expedition, intending to drift in a specially constructed vessel, the Fram, from the Siberian coast, across the north pole to the coast of Greenland. He returned in 1896, having reached with sledges lat. 86° 14′ N., 2° 50′ farther than Lockwood's farthest. In 1905 he was appointed minister and later ambassador at the Court of St. James, retiring in 1908, and he has been professor of oceanography at the University of Christiania since 1908. He has written "Farthest North" (1897), "The Norwegian North Polar Expedition 1893–96, Scientific Results" (with others, 1900–04), "Norway and the Union with Sweden" (1905), etc.

Nan-shan (nän-shän′). A hill on the isthmus which connects the Kwang-tung peninsula in southern Manchuria with the mainland south of Kin-chau. It was fortified by the Russians and was assaulted by the Japanese, May 27, 1904, and captured after a sanguinary conflict.

Nanticoke (nan′ti-kōk). A borough in Luzerne County, Pennsylvania, situated on the Susquehanna river. Its chief industry is the mining of anthracite coal and its preparation for market. It has manufactures of hosiery, etc. Population (1900), 12,116.

National Forests. The name given the United States forest reserves by Congress in 1907. These forests comprise about 195,000,000 acres, including about 27,000,000 acres in Alaska and Porto Rico.

Napier*, Sir **Francis**, ninth Baron Napier. Died Dec. 18, 1898.

Narvacan (när-vä-kän′). A municipality of Ilocos Sur province, northwestern Luzon, Philippine Islands. Civilized population (1903), 19,575.

Nassr-ed-Din*, or **Nasr-ed-Din.** Killed near Teheran, May 1, 1896.

Nast*, **Thomas.** Died at Guayaquil, Ecuador, Dec. 7, 1902. He was appointed consul-general to Ecuador, May, 1902.

National Academy of Design*. The Society of American Artists united with it in 1906.

National Civic Federation. An American organization composed of representatives of labor, capital, and the general public. It was formed for the purpose of studying questions of national import which have to do with social, political, and industrial progress, and, when desirable, of promoting legislation in accordance with enlightened public opinion. Its educational work is carried on through national conferences and through the organization of six separate departments, namely, public ownership, immigration, industrial conciliation, industrial economics, welfare work, and primary election and ballot-reform. The "National Civic Federation Review," published monthly, is its official organ.

Naval Academy*, **United States.** The number of midshipmen is two for each senator, representative, and delegate in Congress, and (appointed by the President) two from the District of Columbia, five each year at large, and one from Porto Rico (nominated by the governor). The course is four years, followed by two at sea.

Naval War College. A United States government institution established at Newport, Rhode Island, in 1884 for the study, by officers, of naval strategy, tactics, and international law. Commodore S. B. Luce, U. S. N., was the first president and under his direction Captain Mahan, U. S. N., who was subsequently president, took up the historical studies which led to his works on sea-power. The navy regulations of 1905 coördinated the college with the General Board of the Navy for general staff work, besides pursuing its original purpose.

Neale (nēl), **Edward Vansittart.** Born at Bath, England, April 2, 1810: died Sept. 16, 1892. An English Christian Socialist. He was graduated at Oriel College, Oxford, in 1831; entered at Lincoln's Inn in 1837; and was called to the bar. He founded the first coöperative stores in London and assisted in the establishment of various industrial enterprises on a coöperative basis. He wrote "The Characteristic Features of Some of the Principal Systems of Socialism" (1851), "The Analogy of Thought and Nature Investigated" (1863), "A Manual for Cooperators" (1879), etc. In 1890 a scholarship at Oriel College for the sons of coöperators was founded in his honor.

Nebraska, University of. See *University of Nebraska.*

Negley*, **James Scott.** Died Aug. 7, 1901.

Negros Occidental (nā′grōs ōk-thi-dān-täl′). A province of the Philippines, occupying all of the northern and most of the western part of Negros Island. Capital, Bacolod. It is bounded by the Visayan Sea on the north, the Strait of Tañon (separating it from Cebu) and Negros Oriental (separated by mountains) on the east and the southeast, the Jolo (Sulu) Sea on the southwest, and the Visayan Sea and Guimaras Strait (separating it from Guimaras and Panay) on the west. There are many rivers, most of them unimportant for navigation. Coal, gold, and iron are found. The mountains are covered with forests. The valleys and coasts are fertile and produce hemp, pineapples, bananas, betel-nuts, corn, rice, sweet potatoes, and a large yield of sugar-cane. The inhabitants are Visayans and Negritos Area, 3,130 square miles. Population (1903), 308,272.

Negros Oriental (nā′grōs ō-ri-ān-täl′). A province of the Philippines, occupying the southern and most of the eastern part of Negros and including Siquijor and several other small islands. It is bounded by the Strait of Tañon (separating it from Cebu) on the east, the Jolo (Sulu) Sea on the south, and Negros Occidental (separated by mountains) on the west. The highest mountains of the island—Canlaon, Tepasi or Aug, and Cuernos de Negro, are within Negros Oriental. The best harbors are Port Bombonon on the southern and South Bais bay on the eastern coast, both well sheltered and safe in all weather. There are many small rivers. The mountains are densely wooded, and the broad strip of coast is adapted to the raising of sugar-cane. Other productions are bananas, mangoes, copra, corn, sweet potatoes, and hemp, of which last the yield is very large. Deposits of coal are found. The native race is Visayan. Area, 1,864 square miles. Population (1903), 201,494.

Nelidof (nel′i-dof), Count **Alexander Ivanovitch.** A Russian diplomatist. He took part in the Berlin Congress, and became ambassador to Turkey in 1883, to Italy in 1897, and to France in 1903. In 1907 he was a delegate to the second peace conference.

Nelson (nel′sọn). A town in the southern part of British Columbia, situated on the Kootenay river in the Kootenay silver-mining district. It has smelting-works, machine-shops, etc. Population (1901), 5,273.

Nemours*, **Duc de** (Prince **Louis Charles Philippe Raphael d'Orléans**). Died at Versailles, June 26, 1896.

Nernst (nernst), **Walther.** Born at Briesen, West Prussia, June 25, 1864. A German physical chemist, director of the Physical-Chemical Institute of the University of Berlin: best known as the inventor of an incandescent electric lamp which employs a bar of magnesia.

Nero Deep. An oceanic depression near the Island of Guam, in the Pacific Ocean, which has afforded the deepest sounding yet made (31,614 feet).

Nesbit, Edith. See *Bland.*

Nessler*, **Victor.** Died at Strasburg, May 28, 1890.

Neuendorf*, **Adolf.** Died at New York, May 12, 1898.

Nevada (nẹ-vä′dạ). A city, the capital of Vernon County, Missouri. It has sawmills, flour- and lumber-mills, zinc-smelting works, iron-works, etc., and is the seat of a college for women, a convent school, and a state lunatic asylum. Population (1901), 7,461.

Nevin (nev′in), **Ethelbert.** Born at Edgeworth, Pa., Nov. 25, 1862: died at New Haven, Conn., Feb. 17, 1901. An American composer and pianist. His works are chiefly songs and piano pieces, some of which have had great popularity. Among them are "Narcissus," "Water Sketches," "The Rosary," etc.

Newberry (nū′ber-i) **Library.** A library situated on Walton Place on the north side of Chicago, Illinois. It was endowed by Mr. Walter Loomis Newberry with $3,000,000 and contains a reference library of 250,000 volumes.

Newbolt (nū′bōlt), **Henry John.** Born at Bilston, Staffordshire, June 6, 1862. An English editor, author, and poet. He was admitted to the bar in 1887, and practised law until 1899. In 1900 he founded the "Monthly Review," of which he was editor until 1904. Among his publications are "Mordred, a tragedy" (1895), "Admirals All" (1897), "The Island Race" (1898), "The Sailing of the Long-ships" (1902), "Songs of the Sea," with music by Sir Charles Villiers Stanford (1904), "The Year of Trafalgar" (1905), "The New June" (1909), etc.

New Brunswick*. Government is administered by a lieutenant-governor, an advisory council, and a legislative assembly (of 46 members); and it is represented in the Dominion parliament by 10 senators and 13 members of the House of Commons.

Newcomb*, **Simon.** Died at Washington, D. C., July 11, 1909. He was director of the Nautical Almanac Office 1877–97, resigning in the latter year. His later works include "Elements of Astronomy" (1900), "His Wisdom the Defender" (1900), "The Stars" (1901), "Astronomy for Everybody" (1902), "Reminiscences of an Astronomer" (1903), "Compendium of Spherical Astronomy" (1906), "Side Lights on Astronomy" (1906), and many shorter scientific papers.

Newell (nū′el), **Robert Henry:** pseudonym **Orpheus C. Kerr.** Born at New York, Dec. 13, 1836: died at Brooklyn, July, 1901. An American journalist and humorist. He wrote "The Orpheus C. Kerr Papers" (1862–68), "There Was Once a Man" (1884), etc.

New England of the West. A popular title of the State of Minnesota.

New Guinea*. British Guinea is administered by the government of the Commonwealth of Australia, and by proclamation of Sept. 1, 1906, the name has been changed to the Territory of Papua. It includes also the islands of the D'Entrecasteaux and Louisade groups, and all those between 8° and 12° S. lat., and 141° and 155° long. It is administered by a governor-general. Area, 90,540 square miles; population, over 500,000. The administration of Kaiser Wilhelm's Land was transferred in 1899 to the imperial government. Area, about 70,000 square miles; population, over 110,000.

New Hebrides*. They are administered by a joint French and English commission, and subjects of the two powers enjoy equal rights. Vila, in Efate, is the seat of government.

New Jersey*. It sends 2 senators and 10 representatives to Congress, and has 12 electoral votes.

New Jersey*, **College of,** now **Princeton University.** It is attended by about 1,300 students, and the library contains over 342,000 volumes.

Newman*, **Francis William.** Died at Weston-super-Mare, Oct. 4, 1897.

New Mexico*. The territory has 25 counties.

New South Wales*. A state of the Commonwealth of Australia. The executive power is vested in a governor, with a cabinet of 10 members. The legislative power is vested in a parliament of two houses, called the Legislative Council (to consist of not less than 21 members, appointed by the crown for life) and the Legislative Assembly (elected). It is represented in the federal parliament by 6 senators and 27 representatives.

Newton*, **Alfred.** Died at London, June 7, 1907.

New Whatcom (nū hwot′kọm). A former city and the capital of Whatcom County, Washington. Since 1903 it has been united with Fairhaven to form the city of Bellingham. Population (1900), 6,834.

New York*. It has 61 counties, sends 2 senators and 37 representatives to Congress, and has 39 electoral votes.

New York, Greater. The popular name of the new municipality which includes New York, Brooklyn (Kings County), Long Island City, Staten Island, Westchester, Flushing, Newtown, Jamaica, and parts of East Chester, Pelham, and Hempstead. In 1894 the question of consolidation was submitted to the vote of these places, and they declared in its favor. A bill for that purpose was introduced in the legislature in 1896, and became a law on May 11 of that year. The charter was adopted in 1897. It comprises five boroughs: Manhattan, Bronx, Brooklyn, Queens, and Richmond. Population (1900), 3,437,202; est. (1909), 4,422,685.

New York Public Library. A library, founded by consolidation of the Astor, Lenox, and Tilden foundations, in May, 1895. It contains, in the reference department, about 724,894 volumes and 273,205 pamphlets. There are 621,390 volumes in the circulation department.

New York University*. It has over 260 instructors and 4,000 students.

New Zealand*. In September, 1907, the name was changed to the Dominion of New Zealand. It includes North Island, South Island, Stewart Island, Cook Island, and several other small outlying islands. There are nine provincial districts.

Niblo's Garden*. It was taken down in 1895.

Nicaragua*. Under the constitution adopted March 30, 1905, the president is chosen for 6 years and the congress consists of one house of 36 members elected by universal suffrage for 6 years. The country is divided administratively into 13 provinces: Carazo, Chinandega, Esteli, Granada, Jerez, Jinotega, Leon, Managua, Masaya, Matagalpa, Nueva Segovia, Rivas, and Zelaya (formerly the Mosquitia reservation); 3 districts, Rio Grande, Prinzapolka, and Siquia; and 2 comarcas, San Juan del Norte, and Cape Gracias a Dios. See also *Central American Arbitration Treaty.*

Nichols (nik′ọlz), **Edward Leamington.** Born at Leamington, England, Sept. 14, 1854. An American physicist, professor of physics in Cornell University from 1887. He was graduated at Cornell in 1875 and studied at Leipsic, Berlin, and Göttingen. He has published "The Galvanometer" (1894), "A Laboratory Manual of Physics and Applied Electricity" (1895: with others), "The Elements of Physics" (1896: with W. S. Franklin), "Outlines of Physics" (1897), etc.; and is the founder and editor of the "Physical Review."

Nichols (nik′ọlz), **Ernest Fox.** Born at Leavenworth, Kan., June 1, 1869. An American physicist. He was professor of physics at Colgate University 1892–98, and at Dartmouth College 1898–1903; was professor of experimental physics at Columbia University 1903–09; and was chosen president of Dartmouth College in 1909. He received the Rumford medal in 1905. He is especially known for his work in measuring planetary light and heat.

Nicholson's (nik′ọl-sọnz) **Neck.** A locality in Natal, a few miles north of Ladysmith. Here on Oct. 30, 1899, about one thousand British soldiers were surrounded and captured by the Boers.

Nicodé (nē-kō-dā′), **Jean Louis.** Born near Posen, Aug. 12, 1853. A pianist and composer. From 1878 to 1885 he was a teacher in the Dresden Conservatory. His best known works are a set of symphonic variations for the orchestra; "Das Meer," a symphonic ode for solo, male chorus, orchestra, and organ; and "Maria Stuart," a symphonic poem.

Nicol*, **Erskine.** Died at Feltham, March 8, 1904.

Nicolay*, **John George.** Died Sept. 26, 1901.

Nicoll (nik′ọl), **William Robertson:** pseudonym **Claudius Clear.** Born at Lumsden, Scotland, Oct. 10, 1851. A British clergyman, author, and editor. He has been editor (and was also the founder) of the "British Weekly" and the "Bookman" since 1886, and of the "British Monthly" since 1900. Among his works are "Literary Anecdotes of the Nineteenth Century" (1895–96: with T. J. Wise), "James Macdonell" (1890), "Letters on Life" (1901), "A Garden of Nuts" (1905), "The Key of the Blue Closet" (1906), "Life of Ian Maclaren" (1908), etc.

Niehaus (nē′hous), **Charles Henry.** Born at Cincinnati, Ohio, Jan. 24, 1855. An American sculptor. He studied at the Royal Academy of Art in Munich, and in Rome. Among his works are the statue of President Garfield in Cincinnati; the Hahnemann statue and monument in Washington; statues of Garfield, Morton, and Ingalls in the Capitol; statues of Moses and Gibbon in the Congressional Library, Washington; the equestrian statue of St. Louis for the Louisiana Purchase Exposition at St. Louis, 1904; etc. He was elected a member of the National Academy of Design in 1906.

Nietzsche (nētz′she), **Friedrich Wilhelm.** Born near Lützen, Saxony, Oct. 15, 1844: died Aug. 25, 1900. A noted German philosopher, professor of classical philology at Basel 1869–79. Among his works are "Die Geburt der Tragödie aus dem Geiste der Musik" (1872), "Unzeitgemässen Betrachtungen" (1873–76), "Menschliches, Allzumenschliches. Ein Buch für freie Geister" (1878–80), "Morgenröte" (1881), "Die fröhliche Wissenschaft" (1882), "Also sprach Zarathustra" (parts 1–3, 1883–84; part 4, 1891), "Jenseits von Gut und Böse" (1886), "Zur Genealogie der Moral" (1887), "Der Fall Wagner" (1888), "Götzendämmerung oder Wie man mit dem Hammer philosophiert" (1889), etc.

Niger Territories*. Nigeria is now a British protectorate. It is bounded on the east by the German Kamerun, and on the west and north by Dahomey and the French military territories. It is divided for administrative purposes into Northern Nigeria and Southern Nigeria. The boundary between the two protectorates extends from the Ogpese river, through Egpeni, Iduani, Ogpe, and Shete, to the Niger a little north of Ida, thence westward to a point near Ashaku. Northern Nigeria is divided into 12 provinces. Zungeru is the seat of government. Area, 256,400 square miles; population (est.), 7,164,751. The Colony and Protectorate of Southern Nigeria now (since May 1, 1906) includes the old Colony and Protectorate of Lagos. It is divided into 3 provinces. The seat of government is at Lagos. Area, about 77,260 square miles; population, about 6,000,000.

Nigeria (nī-jē′ri-ạ̈). The official name of the Niger Territories, which see.

Nigra*, Count **Costantino.** Died at Rapallo, July 1, 1907. In 1890 he became a member of the Senate. He was also known as a student of Italian dialects and popular poetry ("Canti popolari del Piemonte").

Niki, or **Nikki** (nē′ki). A town in Dahomey, Africa, about 200 miles north of Abomey.

Nissel (nis′el), **Franz.** Born at Vienna, March 14, 1831: died at Gleichenberg, July 20, 1893. An Austrian dramatist. Among his works are "Heinrich der Löwe" (1858), "Perseus von Macedonien" (1862), "Die Zauberin am Stein" (1864), "Rudolf von Erlach" (1874), etc.

Nitobe (nē′tō-bā), **Inazo.** Born at Iwateken, 1863. A Japanese scholar, professor at the College of Agriculture, Tokio University, from 1906. He studied at the Sapporo Agricultural College, at Johns Hopkins University, Baltimore, and at Bonn; was professor in the Sapporo Agricultural College; was later an official in Formosa; and was professor of economy at the University of Kioto 1904–06. He has written "Bushido" (1898: published in America as "Bushido, the Soul of Japan," 1900), etc.

Niu-chuang. See *New-Chwang.*

Noailles*, Marquis **Emmanuel Henri Victurnien de.** Died at Paris, Feb. 16, 1909.

Nobel (nō′bel), **Alfred Bernhard.** Born at Stockholm, Sweden, Oct. 21, 1833: died at San Remo, Italy, Dec. 10, 1896. A Swedish chemist and engineer. He was educated at St. Petersburg, and studied engineering for a number of years. Among his many inventions are those of dynamite, explosive gelatin, ballistite, and artificial gutta-percha. He acquired large wealth through the manufacture of dynamite and other explosives, and the exploitation of the Baku oil-fields. By the terms of his will, the bulk of his fortune was devoted to the establishment of a prize fund, known as the 'Nobel gift,' the interest of which is to be divided annually into five parts and awarded to the persons who have rendered to humanity the greatest services during the preceding year (or, in exceptional cases, earlier) as follows: (1) by the most important discovery or invention in the physical sciences; (2) by the most important discovery or the greatest improvement in chemistry; (3) by the most important discovery in physiology or medicine; (4) by the most remarkable literary work of an idealistic tendency; and (5) to the person who has done most, or labored best, for the cause of fraternity among different peoples, for the suppression or reduction of standing armies, or for the formation and promotion of peace congresses. The first two prizes are awarded by the Swedish Academy of Sciences, the third by the Caroline Institute of Stockholm, the fourth by the Stockholm Academy, and the fifth by a commission of five members elected by the Norwegian Storthing. The terms of the will have not been strictly observed. Statutes have been drawn up providing that only 60 per cent. of the income need be used for the prizes and that they need be awarded only once in five years. Provision has also been made for the establishment of Nobel institutes for research work, etc.

Noble (nō′bl), **Alfred.** Born at Livonia, Mich., Aug. 7, 1844. An American civil engineer. He served in the Army of the Potomac during the Civil War; was graduated at the University of Michigan in 1870; was a member of the Nicaragua Canal Board in 1895, and of the United States board of engineers on deep waterways 1897–1900; served on the Isthmian Canal Commission 1899–1903; was on the board of engineers to decide upon the type of canal to be dug at Panama 1905–06; and has been engaged in important engineering work in New York City and elsewhere.

Nocquet (nō-kā′), **Paul Ange.** Born at Brussels, Belgium, April 1, 1877: died (of exposure after a balloon ascension) near Jones's Beach, Long Island, N. Y., April 3, 1906. A Belgian sculptor. He was a pupil of Lambeaux, Antonin Mercié, and Gérôme in Paris, and won the Belgian Grand Prix de Rome. He was a member of the Société Nationale des Beaux-Arts in Paris.

Nodzu (nọ̄d′zö), Marquis **Michitsura.** Born in Satsuma, Nov. 30, 1840: died at Tokio, Oct. 16, 1908. A Japanese field-marshal, commander of the Fourth Army in the war with Russia. He fought in the Chinese war (1894–95), winning, at the head of the Hiroshima division, the battle of Pieng-an, and succeeding Yamagata in the command of the First Army.

Nogi (nō′gi), Count **Kiten.** Born in Choshu, November, 1849. A noted Japanese general, commander of the Third Army in the war with Russia (1904–05). He fought in the civil war (1877), and, as brigade commander, in the war with China (1894–95). In 1904 he was promoted general; was placed in command of the troops investing Port Arthur; and effected the capture of that fortress January 1, 1905. Later he played an important part in the battle of Mukden, outflanking the Russian right. He has been a member of the supreme military council 1905–.

Nome (nōm). A mining town in Alaska, situated near Cape Nome. Gold was discovered there in 1898. Population (1900), 12,486.

Nome, Cape. A point on the northern shore of Norton Sound, Alaska, about long. 165° W., lat. 64° 30′ N.

Nordau*, **Max.** His later works include "Gefühlskomödie" (1891), "Das Recht zu lieben' (1892), "Die Kugel" (1895), "Doktor Kohn" (1898), "Drohnenschlacht" (1898), "Zeitgenossische Franzosen" (1901), "Morganatisch" (1904), "Von Kunst und Künstlern" (1905), "Mahá-Rôg" (1905).

Nordenskjöld*, Baron **Nils Adolf Erik.** Died near Lund, Aug. 12, 1901.

Nordhoff*, **Charles.** Died July 14, 1901.

Norfolk Island*. It is administered as a dependency of New South Wales. The chief village is Kingston.

Norman (nôr′man), Sir **Henry.** Born at Leicester, England, Sept. 19, 1858. An English journalist, author, and traveler. He was graduated at Harvard University, and studied at Leipsic; was on the editorial staff of the "Pall Mall Gazette" and on that of the London "Daily Chronicle"; and was assistant editor of the latter 1895–99. In 1902 he founded the "World's Work,' of which he is editor. He has been Liberal member of Parliament for South Wolverhampton since 1900. Among his publications are "The Real Japan" (1892), "The Peoples and Politics of the Far East" (1895), "All the Russias" (1902), "Motors and Men" (1905), etc. He was knighted in 1906.

Norris*, **William Edward.** His later works include "The Dancer in Yellow" (1896), "Clarissa Furiosa" (1897), "The Fight for the Crown" (1898), "Giles Ingilby" (1899), "An Octave" (1900), "The Flower of the Flock" (1900), "His Own Father" (1901), "The Credit of the County" (1902), "Lord Leonard the Luckless" (1903), "Nature's Comedian" (1904), "Barham of Beltana" (1905), "Pauline" (1908), etc.

North Carolina*. It has 98 counties, sends 2 senators and 10 representatives to Congress, and has 12 electoral votes.

North Carolina, University of. See *University of North Carolina.*

Northcote (nôrth′kōt), Sir **Henry Stafford**, first Lord Northcote. Born November 18, 1846. A British colonial governor, second son of Sir Stafford Northcote (first Earl of Iddesleigh). He was Conservative member of the House of Commons for Exeter 1880–99; was created a baronet in 1887; was raised to the peerage in 1900; was governor of Bombay 1899–1903; and was governor-general of the Commonwealth of Australia 1903–08.

North Dakota*. It has 44 counties, sends 2 senators and 2 representatives to Congress, and has 4 electoral votes.

Northfield (nôrth′fēld). A town in the northern part of Franklin County, Massachusetts. It is the birthplace of Dwight L. Moody, and the seat of the Northfield Seminary for Young Ladies and the Northfield Training School, to the building up of which Mr. Moody devoted much of his later life. With the Northfield work is associated the Mount Hermon School for Boys, situated in the adjoining town of Gill. The religious and educational work of Northfield has made the town a summer resort. Population (1900), 1,966.

Northrop (nôr′thrọp), **Cyrus.** Born at Ridgefield, Conn., Sept. 30, 1834. An American educator, president of the University of Minnesota 1884–1909. He was graduated at Yale in 1857; studied law; and was professor of rhetoric and English literature in Yale 1863–84.

North Sea Incident. The attack, on the night of October 21, 1904, of the Russian Baltic fleet under command of Rear-Admiral Rozhestvensky, while on its way to the Far East, upon a Hull fishing-fleet which was trawling on the Doggerbank. The steam trawler Crane was sunk, other boats were injured, two men were killed, and a number were seriously wounded. The affair was submitted, on the proposition of the Czar, to an international committee of inquiry. The Russian admiral had submitted that his officers had seen two Japanese torpedo-boats among the trawlers. This was disproved by the commission sitting at Paris January-February, 1905, and Russia paid Great Britain an indemnity of £65,000, the amount of compensation due the Hull fishermen as assessed by the Board of Trade Commission.

Northwestern University*. It has about 360 instructors and 4,000 students.

Northwest Frontier Province. A province of British India, created in November, 1901, and comprising the four trans-Indus districts of Peshawar, Kohat, Bannu, and Dera Ismail Khan, portions of the district of Hazara, and the political agencies Kurram, Malakand (Dir, Swat, and Chitral), Khaibar, Tochi, Gomal, and Shirani. The chief city is Peshawar. It is administered by a chief commissioner. Area, 16,466 square miles. Population, 2,125,480.

Northwest Passage*. Between 1903 and 1907 the whole of the Northwest Passage was navigated by Roald Amundsen, in the Gjöa.

Northwest Territories. Formerly the territories of British America which lay to the northwest of the older part of Canada. The name was used with a political, rather than a geographical, signification to include the districts of Alberta, Assiniboia, Athabasca, Franklin, Keewatin, Mackenzie, Saskatchewan, and Ungava, which were united under a lieutenant-governor and a legislative assembly. Yukon received a separate government in 1898 and the provinces of Alberta and Saskatchewan were admitted to the Union in 1905. It now comprises all of the unorganized portion of British North America north of the provinces of Quebec, Ontario, Manitoba, Saskatchewan, and Alberta. It includes the districts of Mackenzie, Franklin, and Ungava. It is administered by the officers of the Royal North-West Mounted Police, the comptroller of the force being also commissioner of the Territories.

Norton*, **Charles Eliot.** Died at Cambridge, Mass., Oct. 21, 1908. He was professor of the history of art at Harvard University 1874–98 (emeritus).

Norway*. On June 7, 1905, the separation of Norway and Sweden was effected. Prince Carl of Denmark was elected king and ascended the throne Nov. 18, 1905, as Haakon VII.

Nottebohm (nōt′e-bōm), **Martin Gustav.** Born at Lüdenscheid, Westphalia, Nov. 12, 1817: died at Gratz, Oct. 29, 1882. A German musical scholar and historian. He established himself in Vienna, where he made a special study of Beethoven. His works include "Ein Skizzenbuch von Beethoven" (1865), "Thematisches Verzeichniss der im Druck erschienenen Werke von Ludwig van Beethoven" (1868), "Beethoveniana" (1872), "Beethovens Studien" (1873), "Thematisches Verzeichniss der im Druck erschienenen Werke Franz Schuberts" (1874), "Mozartiana" (1880), and "Zweite Beethoveniana" (1887).

Nova Scotia*. It is represented in the Dominion parliament by 10 senators and 18 members of the House of Commons.

Novello*, **Clara Anastasia.** Died at Rome, March 15, 1908.

Novello*, **Joseph Alfred.** Died July 17, 1896.

Noyes (noiz), **Alfred.** Born Sept. 16, 1880. An English poet. His works include "The Loom of Years" (1902), "The Flower of Old Japan" (1903), "Poems" (1904), "The Forest of Wild Thyme" (1905), "Drake, an English Epic" (1906), "Forty Singing Seamen" (1907), "William Morris" (1907), "The Magic Casement" (1908), "The 'Golden Hynde'" (1908), etc.

Noyes (noiz), **Arthur Amos.** Born at Newburyport, Mass., Sept. 13, 1866. An American chemist and educator, professor of theoretical chemistry in the Massachusetts Institute of Technology and director of its research laboratory of physical chemistry. He was graduated at this institution in 1886, and has since then been a member of its instructing staff and since 1894 one of its faculty. He was acting president of the Institute 1907–09. He has published chemical text-books and numerous scientific and educational papers.

Noyes (noiz), **William Albert.** Born at Independence, Iowa, Nov. 6, 1857. An American chemist, professor of chemistry in the University of Illinois from 1907. He was professor of chemistry in the University of Tennessee 1883–86, and in Rose Polytechnic Institute, Terre Haute, Indiana, 1886–1903, and was chemist of the United States Bureau of Standards 1903–07. He has published "Qualitative Analysis" (1887), "Organic Chemistry for the Laboratory" (1897), "Organic Chemistry" (1903), and numerous scientific papers; and has been the editor of the journal of the American Chemical Society from 1902.

Nubar Pasha*. Died at Paris, Jan. 14, 1899. He was premier 1878–79, 1884–88, and April, 1894,-Nov., 1895.

Nueva Caceres (nö-ā′vä kä′thā-rās). **1.** A municipality of Ambos Camarines province, Luzon, Philippine Islands. Civilized population (1903), 17,943.—**2.** A town, the capital of Ambos Camarines province. It is situated in the southern part of the province on the Bicol or Naga river, in lat. 13° 35′ N., long. 122° 11′ E. Population (1903), 10,201.

Nueva Ecija (nö-ā′vä ā′thē-нä). A province in south-central Luzon, Philippine Islands. It is bounded by Pangasinan and Nueva Vizcaya (separated by the Caraballos Sur) on the north, Isabela and Principe (separated by the Sierra Madre) on the east, Bulacan and Pampanga on the south, and Pampanga, Tarlac, and Pangasinan on the west. Capital, San Isidro. Most of the province lies in the valley of south-central Luzon, and is fertilized by many rivers. Tobacco, coffee, sugar-cane, rice, and mangos are among the productions. Gold, copper, and gypsum are found, the first two in the southern and central, the last in various parts of the province. The inhabitants are Tagalogs, Ilocanos, Pampangans, Pangasinanes, and a few Igorrotes. Area, 2,169 square miles. Population (1903), 134,147.

Nueva Vizcaya (nö-ā′vä vēth-kī′ä). An inland, almost central, province of Luzon, in the Philippine Islands. It is bounded by Lepanto-Bontoc (separated by a spur of the Cordillera Sur) on the north, Isabela (separated by a branch of the Sierra Madre) on the northeast, east, and southeast, Nueva Ecija (separated by the Caraballos Sur) on the south, and Benguet (separated by the Cordillera Sur) and Lepanto-Bontoc (separated by a spur of the Cordillera Sur) on the west. Capital, Bayombong. The central valley, watered by the Magat and other rivers, is very fertile, and produces large crops of coffee. The native races are chiefly Igorrotes and Ilongots. Area, 1,950 square miles. Population (1903), 62,541.

Nuitter*: anagram of the surname of Charles Louis Etienne Truinet. Died in 1899.

Nuñez*, **Rafael.** Died in Cartagena, Sept. 18, 1894.

Nuñez de Arce*, **Gaspar.** Died at Madrid, June 9, 1903.

Nyasaland Protectorate. The present name (since July 6, 1907) of the region formerly known as the British Central Africa Protectorate. It comprises British Nyasaland, the Shiré Highlands, and the greater part of the basin of the Shiré. It is divided into 13 districts, and is administered by a governor, with an executive and a legislative council. The seat of government is at Zomba. Area, 40,980 square miles. Population, over 928,000.

Nye*, **Edgar Wilson.** Died near Asheville, N. C., Feb. 22, 1896.

Oakeley*, Sir **Herbert Stanley.** Died Oct. 26, 1903.

Oberlin College*. It is a nonsectarian institution, and has about 130 instructors and over 1,800 students.

Obok*. It is now a part of the French Somali Coast, and with the surrounding district (the former colony) has been incorporated in that protectorate.

O'Brien (ō-brī'en), **James:** later **James Bronterre O'Brien.** Born in 1805: died Dec. 23, 1864. An Irish Chartist. He was graduated at Dublin University in 1829; became the editor of the "Poor Man's Guardian" in 1831; and was a writer for the "Poor Man's Conservative." He signed his articles 'Bronterre' and later adopted this name. He edited various journals; was a prominent member of the Chartist Party from its beginning in 1838; was imprisoned for seditious speaking 1840–41; but later became a personal enemy and opponent of Feargus O'Connor. In 1885 a series of his articles was published under the title "The Rise, Progress, and Phases of Human Slavery."

Ochtman (ocht'man), **Leonard.** Born at Zonnemaire, Holland, Oct. 21, 1854. A Dutch-American painter, resident in the United States from 1866. He has devoted himself to American landscapes, and his work shows well-balanced composition and quiet harmonious color. He has won numerous medals. He became a member of the National Academy of Design in 1904.

O'Connor*, **Thomas Power.** He was born at Athlone, Ireland, Oct. 5, 1845. Since 1885 he has represented the Scotland Division of Liverpool. He established and edited the "Star," "Sun," "Sunday Sun," "M. A. P.," and "T. P.'s Weekly," and is the author of "Lord Beaconsfield," "The Parnell Movement," "Gladstone's House of Commons," "Napoleon," etc.

O'Connor (ō-kon'or), **William Douglas.** Born at Boston, Mass., Jan. 2, 1832: died at Washington, D. C., May 9, 1889. An American journalist and writer. He was assistant editor of the Philadelphia "Saturday Evening Post" 1854–60, and in 1878 was appointed assistant general superintendent of the United States life-saving service. He was a personal friend of Walt Whitman and in 1866 published "The Good Gray Poet," a vindication of Whitman's poetry. He wrote in 1886 "Hamlet's Note-book," a reply to Richard Grant White on the main points of the Bacon-Shakspere controversy, and also many stories and poems.

Oglesby*, **Richard James.** Died at Elkhart, Ill., April 24 1899.

O'Hara (ō-har'ä), **Theodore.** Born at Danville, Ky., Feb. 11, 1820: died near Guerryton, Ala., June 6, 1867. An American soldier and poet. He served in the Mexican and Civil wars, rising to the rank of colonel in the Confederate service. He wrote "The Bivouac of the Dead," "The Old Pioneer," etc.

Ohio Wesleyan University*. It has about 124 instructors and 1,300 students.

Okakura (ō-kä'kö-rä), **Kakuzo.** Born in Fukui, 1863. A Japanese connoisseur, an authority on the art of Japan. In 1886 he was sent with the Imperial Art Commission to study art history and movements in Europe and the United States. Returning to Japan he was made director of the new art school at Ueno (Veno), Tokio, but resigned in 1898. He then opened, with other young artists, the Nippon Fine Art Institute near Tokio, an establishment similar to that of William Morris at Merton Abbey in England: it later fell into financial difficulties and was removed to a village in Ibaraki Ken. He is the author of "The Ideals of the East" (1904), "The Awakening of Japan" (1905), "The Book of Tea" (1906), etc. He is adviser to the department of Chinese and Japanese art at the Museum of Fine Arts in Boston.

Oklahoma*. In 1907 it was incorporated with Indian Territory as the State of Oklahoma. It has 75 counties, sends 2 senators and 5 representatives to Congress, and has 7 electoral votes. Area, 70,470 square miles. Population (1907), 1,414,179.

Oku (ō'kö), Count **Yasukato.** Born in Fukuoka-ken, November, 1844. A Japanese general, commander of the Second Army in the Russo-Japanese war. He won distinction in the civil war of 1877; commanded the Fifth Division in the war with China 1894–95; and was promoted general in 1903. He was appointed chief of staff in July, 1906. He is a member of the supreme council of war. He was created baron in 1895, and a count in 1907.

Okuma*, Count **Shigenobu.** He was minister of foreign affairs 1889–91 and 1896–97; minister of agriculture and commerce 1897; and premier June–Nov., 1898. He resigned the leadership of the Progressive Party in February, 1907.

Old-line State. The State of Maryland, so called with reference to Mason and Dixon's survey.

Old Rowley. A nickname of Charles II. He is said to have been so named from a good-humored goat which used to live in the Privy Garden. The name is also said to have been that of the king's favorite race-horse and is preserved in the name of the race-course, the Rowley Mile, at Newmarket.

Old South Church. A church built in Boston in 1729, on the site of an earlier meeting-house on the corner of Washington and Milk streets. It is famous as the scene of some of the most stirring meetings of Revolutionary times. The British turned it into a riding-school in 1775, but it was afterward restored to its proper use. The annual election sermons were delivered here, with few interruptions, from 1712 to 1872. After the latter date it was for some time used as a post-office, and now contains an interesting collection of historical relics.

Oldtown Folks. A story by Harriet Beecher Stowe, published in 1869.

Olean (ō-lẹ-an'). A city in the southeastern part of Cattaraugus County, New York, at the junction of Olean Creek and the Allegheny river. It has large interests in oil, lumber, and leather, storage for petroleum, refineries, marble-, glass-, and iron-works, flour- and planing-mills, tanneries, etc. Population (1900), 9,462.

Oliphant*, Mrs. (**Margaret Oliphant Wilson**). Died at London, June 25, 1897.

Olmsted*, **Frederick Law.** Died at Waverly, Mass., Aug. 28, 1903.

Olney (ol'ni), **Louis Atwell.** Born at Providence, R. I., April 21, 1874. An American chemist, professor of chemistry and head of the department of textile chemistry and dyeing in the Lowell (Massachusetts) Textile School from 1897. He was graduated from Lehigh University in 1896. He has published "Textile Chemistry and Dyeing," etc.

Olney (ol'ni), **Richard.** Born at Oxford, Mass., 1835. An American lawyer and statesman. He graduated from Brown University in 1856, and from the Harvard Law School in 1858. In 1893 President Cleveland appointed him attorney-general, and in 1895 (on the death of Walter Q. Gresham) secretary of state (retired 1897).

Olympia (ō-lim'pi-ạ̈). An American armored cruiser, of 5,870 tons' displacement, launched in 1892. She was the flagship of the Asiatic squadron during the Spanish-American war and later troubles in the Philippines.

Olympic Games, The. 2. A series of athletic games inaugurated in 1896 at Athens by the International Olympic Committee as a modern revival of the old Olympic Games. They are celebrated every four years and competition is international.

Omdurman (om-dör-män'). A city in the Sudan, situated on the Nile opposite Khartum. It was built by the Mahdi in 1885, after his seizure and destruction of Khartum. Here, Sept. 2, 1898, the dervishes were defeated by the British and Egyptian troops under Sir Herbert Kitchener.

Ontario*. It sends 24 members to the Dominion senate, and 86 to the House of Commons.

O'Neill, Mrs. (**Olive Logan**). See *Sykes*.

Oppert*, **Jules.** Died at Paris, Aug. 21, 1905.

Orange Free State*. It became the Orange River Colony (which see) in 1900.

Orange River Colony. A British colony, formerly the Orange Free State (which see). As a result of its defeat in the Boer War it was annexed by Great Britain, May 24, 1900. Self-government was established June 5, 1907, under a governor and a legislature consisting of a Legislative Council of 11 members (at first appointive, but to be elective) and a Legislative Assembly of 38 (elected) members. Area, 50,392 square miles. Population (1890), 207,503.

Orbilius Pupillus (ôr-bil'i-us pū-pil'us). A Roman grammarian and schoolmaster, the teacher of Horace. The epithet 'plagosus' was given to him by Horace on account of the floggings which his pupils received from him, and the name 'Orbilius' is often used in literature for a teacher of this type.

Order of Merit, The. A British order instituted by letters patent, June 26, 1902. It consists of the British sovereign and of not more than twenty-four subjects of the Crown (in ordinary membership) who may have rendered exceptionally meritorious service in the army or navy, or in art, literature, or science. The honorary membership is conferred upon foreigners and is unlimited. The badge of the order is an eight-pointed cross of red and blue enamel bearing the motto "For Merit" within a laurel wreath, the whole surmounted by an imperial crown and suspended by a party-colored blue and crimson ribbon.

Oregon*. It has 34 counties.

Oregon. An American battle-ship, built in San Francisco, launched in 1893. She is of 10,288 tons' displacement, and on her trial trip maintained for four hours a speed of 16.79 knots. Under Captain Charles E. Clark she made a famous run of 14,511 knots from the Pacific to the Atlantic, leaving Puget Sound March 6, 1898, and reaching Key West May 26. She took a prominent part in the battle off Santiago July 3, with the Brooklyn forcing the surrender of the Cristóbal Colón. She left New York for the Philippines Oct. 12, and joined the Asiatic squadron at Manila in March, 1899.

O'Reilly (ō-rī'li), **Miles.** The pseudonym of Charles G. Halpine.

Oriente (ō-rẹ-än'tā). A province of Cuba comprising the easterly end of the island. Population (1907), 455,086.

Orizaba*, **Peak of.** It is surpassed in height, among the mountains of North America, by both Mount Logan and Mount McKinley.

Ormoc (ōr-mōk'). 1. A municipality of Leyte province, Leyte, Philippines. Civilized population (1903), 16,126.—2. A town on the northeastern shore of Ormoc Bay. Population (1903), 5,419.

Oroquieta (ō-rō-kē-ā'tä). A municipality of Misamis province, Mindanao, Philippine Islands. Civilized population (1903), 15,156.

Orton*, **Arthur.** Died at London, April 1, 1898.

Orton (ôr'ton), **Edward.** Born at Deposit, New York, March 9, 1829: died at Columbus, Ohio, Oct. 16, 1899. An American educator and geologist. He was graduated at Hamilton College in 1848; was president of Antioch College 1872–73, and of the Ohio State Agricultural and Mechanical College (now Ohio State University) 1873–81; and was professor of geology at the latter from 1873 to 1899. He was assistant state geologist of Ohio 1869–75, and had entire charge of the survey 1881–99.

Osborn (oz'bėrn), **Henry Fairfield.** Born at Fairfield, Conn., Aug. 8, 1857. An American biologist and paleontologist, professor of zoology in Columbia University from 1890, and president of the American Museum of Natural History from 1908. He was graduated at Princeton in 1877; studied in England (under Huxley and Balfour); was professor of comparative anatomy at Princeton 1882–90; and has been curator of vertebrate paleontology in the American Museum of Natural History (New York) from 1890, geologist and paleontologist of the United States Geological Survey from 1900, and honorary paleontologist of the Canadian Geological Survey from 1900. He has published numerous scientific papers.

Osbourne (oz'bėrn), **Lloyd.** Born at San Francisco, Cal., April 7, 1868. An American writer, stepson of Robert Louis Stevenson. His work includes three books written in collaboration with his stepfather, "The Wrong Box" (1889), "The Wrecker" (1892), and "The Ebb Tide" (1894); "Memories of Vailima" (1902: with his sister, Isobel Strong), "The Queen versus Billy" (1900), "Love, the Fiddler" (1903), "Baby Bullet" (1905), "The Motormaniacs" (1905), "Wild Justice" (1906), "Harm's Way" (1909), "Infatuation" (1909); and two plays written with Austin Strong, "The Exile" and "The Little Father of the Wilderness."

Oscar II.* (King of Sweden). On Dec. 14, 1906, he relinquished the government, appointing Prince Gustav (crown prince) as regent; but resumed power in June, 1907. He died at Stockholm, Dec. 8, 1907.

Osler (ōs'lėr), **William.** Born at Bond Head, Ontario, July 12, 1849. A British physician, regius professor of medicine in the University of Oxford from 1905. He was educated at Toronto University, McGill University, Montreal, University College, London, and at Berlin and Vienna. He was professor at the Institute of Medicine in McGill University

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1874–84, of clinical medicine in the University of Pennsylvania 1884–89, and of medicine in Johns Hopkins University 1889–1905. He has published "The Principles and Practice of Medicine" (1892: 6th ed. 1905), numerous monographs and papers, "Science and Immortality" (1904), "Æquanimitas and other Addresses" (1904), "Counsels and Ideals" (1905), "Alabama Student, and other biographical essays" (1908), "Thomas Linacre" (1908), etc., and with T. McCrae has edited "Modern Medicine, its Theory and Practice" (1907–09).

Osman Digna*. He took part in the defense of the Sudan against General Kitchener in 1898, and in 1900 was captured and imprisoned.

Osman Pasha*. Died at Constantinople, April 4, 1900.

Ossining (os'i-ning). The name for which that of Sing Sing (which see) was changed in 1901.

Ostwald (ōst'väld), **Wilhelm.** Born at Riga, Russia, Sept. 2 (N. S.), 1853. A noted German chemist, professor of physical chemistry in the University of Leipsic 1887–1906. He is regarded as one of the founders of that science. With van't Hoff he founded in 1887 the "Zeitschrift für physikalische Chemie" and in 1901 the "Annalen der Naturphilosophie." He was first exchange professor at Harvard University in 1905. He has published "Lehrbuch der allgemeinen Chemie" (1885–87), "Elektrochemie" (1894–95), "Grundlinien der anorganischen Chemie" (1900), "Vorlesungen über Naturphilosophie" (1902), "Die Schule der Chemie" (1904), "Malerbriefe" (1904), "Elemente und Verbindungen" (1904), "R. W. Bunsen" (1905), "Kunst und Wissenschaft" (1905), "Ikonoskopische Studien" (1905), "Individuality and Immortality" (1906), "Prinzipien der Chemie" (1907), "Die Energie" (1908), etc.

Otis (ō'tis), **Elwell Stephen.** Born at Frederick, Md., March 25, 1838. An American general. He entered the Union army as a volunteer in Sept., 1862; was brevetted brigadier-general of volunteers March 13, 1865; was appointed lieutenant-colonel in the regular army in 1867; was promoted brigadier-general Nov. 23, 1893; was appointed major-general of volunteers May, 1898; and was promoted major-general 1900. He served on the frontier against the Indians 1867–81; then organized the United States infantry and cavalry school at Leavenworth, Kan., which he conducted until 1885. In 1898 he was placed in command of the Department of the Pacific and was military governor of the Philippines until April, 1900. Retired in 1902.

Overbeck*, **Johannes Adolf.** Died at Leipsic, Nov. 8, 1895.

Oxford*, **University of.** The number of undergraduate students is over 3,742.

Oxyrhynchus (ok-si-ring'kus). [Named from a species of fish which was venerated there.] An ancient town of Upper Egypt, situated between the western bank of the Nile and the Bahr Yûsuf in lat 28° 6′ N. The modern village of Behnesa occupies its site. Excavations there have brought to light a number of important papyri, including fragments of the "Logia" or "Sayings" of Jesus.

Oyama (ō-yä'mä), Prince **Iwao.** Born in Satsuma, October, 1842. A noted Japanese general, commander-in-chief of the Manchurian army, with the rank of marshal, in the Russo-Japanese war 1904–05. He is a nephew of Saigo Takamon; fought against his uncle when the latter joined the rebellion in 1877; was promoted lieutenant-general in 1878 and general in 1891; commanded the Second Army in the Chinese war 1894–95, capturing Port Arthur and Wei-hai-wei; and was promoted marshal in 1898. In the Russian war he repeatedly defeated the Russian army under Kuropatkin. See *Russo-Japanese War.* He was created count in 1884, marquis in 1895, and prince in 1907.

Oyster (ois'tėr) **Bay.** A town in Nassau County, New York. It is situated on a bay on the northern shore of Long Island, and is a summer resort. The town includes the village of Sea Cliff. Population of town (1900), including Sea Cliff, 16,334; of Sea Cliff, 1,558.

Ozark plateau. The plateau in northwestern Arkansas and southern Missouri. *U. S. Geog. Board*, Feb. 6, 1907.

Paardeberg (pär'de-berg). An elevation in the western part of Orange River Colony north of the Modder river. Near here, in the bed of the Modder, at Koodoosrand Drift, the Boers under Cronje defended themselves against the English under Lord Roberts, but were forced to surrender, Feb. 27, 1900.

Packard*, **Alpheus Spring.** Died Feb. 14, 1905. He was professor of zoölogy and geology at Brown University 1878–1905.

Paderewski*, **Ignace Jan.** Born at Kuryłówka, in Podolia, Russian Poland, Nov. 6, 1860. He has written compositions for the piano, etc., and an opera, "Manru," produced in Dresden in May, 1901.

Padua*, **University of.** It has about 200 instructors and over 1,600 students.

Page*, **Thomas Jefferson.** Died at Rome, Italy, Oct. 26, 1899.

Page*, **Thomas Nelson.** His later works include "The Old Gentleman of the Black Stock" (1896), "Social Life in Old Virginia Before the War" (1897), "Red Rock" (1898), "A Captured Santa Claus" (1902), "Gordon Keith" (1903), "Bred in the Bone" (1904), "The Negro, the Southerner's Problem" (1904), "The Coast of Bohemia" (1906), "Under the Crust" (1907), "The Old Dominion" (1908), "Robert E. Lee" (1908).

Paget (paj'et), **Francis.** Born March 20, 1851. Bishop of Oxford from 1901. He was vicar of Bromsgrove 1882–85; regius professor of pastoral theology and canon of Christ Church, Oxford, 1885–92; chaplain to the Bishop of Oxford 1889–1901; and dean of Christ Church 1892–1901.

Paget*, Sir **James.** Died at London, Dec. 30, 1899.

Pagsan (päg-sän'). A mountain in Cagayan province, northern Luzon, Philippine Islands. It is near the western boundary line of Cagayan at the northeastern extremity of Abra province. Height, 7,261 feet.

Pahang*. It is now one of the Federated Malay States. Area, 14,000 square miles. Population, 100,000.

Pailleron*, **Édouard Jules Henri.** Died at Paris, April 20, 1899.

Paine*, **John Knowles.** Died at Cambridge, Mass., April 25, 1906.

Painted Chamber, The. A chamber in the old Westminster Palace, originally called the 'Chamber of St. Edward.' It was the kernel of the palace, which grew around it, and later received the name of the Painted Chamber from the decorations placed there by Henry III.

Palace of Peace. See *Peace, Palace of.*

Palacio*, **Raimundo Andueza.** Died at Caracas, Aug. 18, 1900.

Palacio Valdés (pä-lä'thē-ō väl-dās'), **Armando.** Born at Entralgo, Spain, Oct. 4, 1853. A Spanish novelist and critic. Among his novels are "El Señor Octavio" (1881), "Marta y Maria" (1883), "El idilio de un enfermo" (1884), "José" (1885), "Riverita" (1886), "Maximina" (1887), "La hermana de San Sulpicio" (1889), "El cuarto poder" (1888), "La espuma" (1892), "La fé" (1892), "Los majos de Cadiz" (1896), "La Alegría del Capitán Ribot" (1899), and "Tristán o el pesimismo" (1906).

Palanan (pä-lä-nän'). A town in Isabela province, eastern Luzon, in the Philippine Islands, situated on a river flowing into Palanan Bay. Here Aguinaldo was captured by General Funston on March 23, 1901. Civilized population of municipality (1903), 1,080.

Palgrave*, **Francis Turner.** Died at London, Oct. 24, 1897. He was professor of poetry at Oxford 1885–97.

Palm (pälm), **Johann Philipp.** Born in Schorndorf, Germany, Nov. 17, 1768: died Aug. 26, 1806. A bookseller of Nuremberg, executed by a military tribunal, under the orders of Napoleon, for the publishing of a pamphlet ("Deutschland in seiner tiefen Erniedrigung"), by another hand, in which the French emperor and the conduct of the French troops in Germany were attacked.

Palma (päl'mä), **Tomas Estrada.** Born near Bayamo, Cuba, July 9, 1835: died at Santiago, Nov. 4, 1908. A Cuban statesman, first president of the Cuban republic. He studied law at the University of Seville; fought in the insurgent army in the ten years' war between Spain and Cuba (1868–78); gained the rank of general; and was made president of the provisional republic but was captured and imprisoned in Spain. After his release he went to Honduras and became postmaster-general. Later he settled in Central Valley, New York, and established a school for Latin-Americans. He was elected President of Cuba Feb. 24, 1902, was reëlected March 19, 1906, and resigned in Sept., 1906.

Palmer (päm'ėr), Mrs. (**Alice Freeman**). Born at Colesville, N. Y., Feb. 21, 1855: died at Paris, Dec. 6, 1902. An American educator. She was graduated from the University of Michigan in 1876; was professor of history at Wellesley College 1879–81; was acting president of Wellesley in 1881, and president 1882–87; and was dean of the woman's department (non-resident) of the University of Chicago 1892–95. In 1887 she married George Herbert Palmer, professor of philosophy in Harvard University.

Palmer*, **Charles Ferrers.** Died Oct. 27, 1900.

Palmer*, **Edwin.** Died Oct. 17, 1895.

Palmer*, **Erastus Dow.** Died at Albany, N. Y., March 9, 1904.

Palmer*, **John McCauley.** Died Sept. 25, 1900.

Palmer (päm'ėr), **John Williamson.** Born at Baltimore, Md., April 4, 1825: died there, Feb. 26, 1906. An American journalist and author. He was graduated from the University of Maryland in 1847; was first city physician in San Francisco in 1849; traveled in the Far East; was Confederate correspondent of the New York "Tribune" during the Civil War; and later was engaged in general editorial work. He wrote "The Golden Dagon; or, Up and Down the Irrawaddi" (1856), "The New and the Old" (1859), "After his Kind. By John Coventry" (1886), "For Charlie's Sake, and other Lyrics and Ballads" (1901), etc. His ballad "Stonewall Jackson's Way" was popular in the South.

Palmieri*, **Luigi.** Died at Naples, Sept. 9, 1896.

Palo Alto (pä'lō äl'tō). A post-town of Santa Clara County, California, on San Francisco Bay, near Redwood City: the seat of Leland Stanford Junior University.

Pampanga (päm-pän'gä). A southern province of Luzon, Philippine Islands. It is bounded by Tarlac (partly separated by the Paruao river) on the north; Nueva Ecija (partly separated by the Rio Chico de la Pampanga) on the northeast; Bulacan on the east and the southeast; Manila Bay on the south; and Bataan (partly separated by the Aba) and Zambales (separated by the Aba river and the Zambales mountains) on the west. Capital, Bacolor. The southern part bordering Manila bay is a broad delta extending beyond the original coast-line. In the west are the Mabanga mountains parallel with the Zambales range; in the northeast is Mount Arayat and in the northwest Mount Pinatubo, extinct volcanoes 3,564 feet and 6,040 feet in height. The Rio Grande de la Pampanga flows through the eastern part of the province. Bananas, mangos, sweet potatoes, sugar-cane, corn, and rice are among the productions. The native tribes are Pampangans. Area, 868 square miles. Population (1903), 223,754.

Panama*. 1. A Central American republic, formerly a department of Colombia, comprising (nearly) the Isthmus of Panama. Panama proclaimed its independence on Nov. 3, 1903, and its government was recognized by the United States on Nov. 13, and later by other powers. It is governed by a president, elected for four years (and ineligible for the succeeding term) and a Chamber of Deputies consisting of 32 members. There are also two vice-presidents and a cabinet of five ministers. The country is divided into seven provinces. By a treaty signed Nov. 18, 1903 (ratified Feb. 23, 1904), Panama ceded to the United States for $10,000,000 the perpetual control of a strip ten miles wide (the Canal Zone) upon which the interoceanic canal is being constructed. The cities of Panama and Colon (lying within the zone) were placed under the control of the United States as regards sanitation and quarantine only; but the coast-line of the zone and the outlying islands were ceded to the United States for purposes of defense. Area, 32,380 square miles. Population, 361,000.

Panama Canal*. After the establishment of the Republic of Panama (1903) a treaty between it and the United States was negotiated by which the latter undertook to build the canal, the rights of the French company having been acquired by purchase. The amount paid by the United States for the property and rights of the French company was $40,000,000. The control of a strip of land ten miles wide, constituting the Canal Zone, was obtained from the Republic of Panama for $10,000,000. Work was organized in 1904 for the construction of a canal of the lock type, and this type, which had been accepted by Congress in 1901, was adopted by it in 1906. The plan includes a channel from deep water on the Caribbean to Gatun, where an ascent to the 85-foot level is to be made by means of three (twin) locks, each lock being 110 feet wide and 1,000 feet long; a dam at Gatun about 7,700 feet long, one half mile wide at the base, 100 feet wide at the top, and 135 feet above mean tide; a lock at Pedro Miguel; and two locks at Miraflores. The lake formed by the Gatun dam is about 171 square miles in extent. The deepest part of the cut is at Culebra (4½ miles long and 300 feet wide at bottom). Total length of canal 49.72 miles.

Panama Canal Zone. See *Isthmian Canal Zone.*

Pan-American Congress. 2. A similar congress held in the city of Mexico, October, 1901,–January, 1902.—3. A congress held in Rio de Janeiro in July, 1906.

Pan-American Exposition. An exposition of the work of the peoples of North and South America, held at Buffalo, N. Y., in 1901.

Panamint Mountains. A range of mountains in Inyo County, California, bounding Death Valley on the west.

Panaon (pä-nä-ōn'). An island lying south of Leyte Island, in the Philippines, and belonging to Leyte province. Area, 71 square miles. Population (1903), 8,610.

Pangasinan (pän-gä-sē-nän'). A province in the western part of Luzon, Philippine Islands. It is bounded by the China Sea, Lingayen Gulf, La Union, and Benguet on the north; Nueva Vizcaya and Nueva Ecija (partly separated by the Agno) on the east; Nueva Ecija, Tarlac (partly separated by the Agno), and Zambales on the south; and the China Sea on the west. Capital

Lingayen. The northern part of the Zambales range, formerly the boundary between Zambales and Pangasinan, now lies wholly within the latter province. In the northeast the land is mountainous, sloping to the center and to the low flat coast of Lingayen Gulf, which deeply indents the province. The Agno traverses Pangasinan, flowing into Lingayen Gulf. The soil is very fertile. Among the productions are pineapples, bananas, mangos, sweet potatoes, betel-nuts, corn, sugar-cane, and rice, the last two being especially important. Gold, copper, and salt are found. The native races are mainly Pangasinanes and Ilocanos. The census of 1903 gives also 3,386 Igorrotes. Area of province, 1,193 square miles. Population (1903), 397,902.

Panglao (pän-glä′ō). An island southwest of Bohol, Philippine Islands. Area, 31 square miles. Population (1903), 14,437.

Pango-Pango*. It was ceded to the United States as a naval and coaling-station in 1872, was occupied in 1887, and in Jan., 1900 (with the island of Tutuila), was annexed. This annexation by the United States was in accordance with the Anglo-German agreement of Nov. 14, 1899.

Paolo and Francesca (pä′ō-lō and frän-ches′kä). A drama by Stephen Phillips, published in 1899. The theme, the love of Paolo for his elder brother's wife, Francesca, is a favorite one in literature and has been used by many writers from Dante onward. See *Francesca da Rimini*.

Papua (pap′ö-ä̤, or pa-pö′ä̤), **Territory of.** The official title, since Sept. 1, 1906, of British New Guinea.

Paragua (pä-rä′gwä). 2. A province of the Philippine Islands. It is bounded by Mindoro (separated by Mindoro Strait) on the north; the Visayan Sea and the Sulu (Jolo) Sea on the east; Balabac Strait (separating it from islands north of Borneo) on the south; and the China Sea on the west. Capital, Puerto Princesa. It includes Paragua (Palawan) and more than 500 other islands, the most important of which are the Calamianes on the north, the Cagayanes and Cuyos groups, and Dumaran on the east, and Balabac and adjacent islands on the south. The southern part of the province was formerly a military district, Paragua Sur. The principal harbors are Puerto Princesa (Port Royalist) on the eastern, Malampaya and Port Barton on the northwestern, and Ulugan on the western coast of Paragua (Palawan), all safe for large vessels in all weather. A mountain-range of considerable altitude, except near lat. 10° N., extends through the island from northeast to southwest. The loftiest peaks are Cleopatra's Needle, 5,200 feet, Landargun, 5,397 feet, Victoria, 5,680 feet, Mantalingajan, 6,843 feet, and Cantarag, 5,868 feet in height. The mountains are covered with forests of valuable woods. The rivers are short. Pineapples, sweet potatoes, nutmegs, rice, and tobacco are produced. Cattle, goats, and fowls are raised. The inhabitants are chiefly Tagbanuas, Bataks, and Moros. Area of Paragua (Palawan) Island, 4,027 square miles; population (1903), 10,918; area of province, 5,238 square miles; population (1903), 35,696.

Paris*. It is the third largest city in the world. Population (1906), 2,763,393.

Paris*, **Gaston Bruno Paulin.** Died at Cannes, March 5, 1903. He became administrator of the Collège de France in 1895. He was elected a member of the Academy of Inscriptions in 1876 and of the French Academy in 1896.

Park*, **Edwards Amasa.** Died at Andover, Mass., June 4, 1900.

Parker (pär′kėr), **Alton Brooks.** Born at Cortland, N. Y., May 14, 1852. An American jurist. He was graduated from the Albany Law School; was surrogate of Ulster County, New York, 1877–85; was chairman of the New York State Democratic committee in 1885; was elected justice of the Supreme Court of New York in 1886; was a member of the Court of Appeals, second division, 1889–92, of the general term 1893–96, and of the appellate division, 1896–97; and was chief justice of the Court of Appeals, New York, from Jan. 1, 1898, until August 5, 1904, when he resigned to accept the Democratic nomination for the Presidency. He polled a popular vote of 5,082,754 against the 7,624,489 cast for President Roosevelt and resumed (in New York City) the practice of law.

Parker (pär′kėr), Sir **Horatio Gilbert George**: known as **Gilbert.** Born at Camden East, Ontario, Nov. 23, 1862. A Canadian author. He established a residence in England and has been Conservative member of Parliament for Gravesend since 1900. He was knighted in 1902. His works include "Pierre and his People" (1893), "The Translation of a Savage" (1893), "A Lover's Diary: Songs in Sequence" (1894), "When Valmond Came to Pontiac" (1895), "The Seats of the Mighty" (1896), "The Pomp of the Lavilettes" (1897), "The Battle of the Strong" (1897), "The Lane that Had no Turning" (1900), "The Right of Way" (1901), "Donovan Pasha" (1902), "Old Quebec" (1903: with Claude G. Bryan), "A Ladder of Swords" (1904), "The Weavers" (1907), "Northern Lights" (1909), etc.

Parker (pär′kėr), **Horatio William.** Born at Auburndale, Mass., Sept. 15, 1863. An American composer, organist, and teacher. His first work was a cantata, "King Trojan," brought out in Munich in 1885. He has been organist in a number of churches in New York City. In 1894 he was made professor of music in Yale University. His most important works are "Hora Novissima," an oratorio (1893), "St. Christopher" (1898), and a concerto for organ and orchestra.

Parker (pär′kėr), **Joseph.** Born at Hexham-on-Tyne, Northumberland, April 9, 1830: died at London, November 28, 1902. An English Congregational minister and pulpit orator. He was minister of the Cavendish Chapel, Manchester, 1858–69, and of the City Temple, London, 1869–1902. He published several books on religious subjects and his autobiography, "A Preacher's Life" (1899).

Parkes (pärks), Sir **Henry.** Born in Warwickshire, May 27, 1815: died at Sydney, April 27, 1896. An Australian statesman. He emigrated to Sydney, Australia, in 1839; founded and edited (1850–57) the "Empire" newspaper as the organ of Liberalism in New South Wales; and was colonial secretary 1866–68 and premier of New South Wales 1872–75, 1878–82, and 1887–89. He was knighted in 1877. In 1891 he presided over the Federation Conference. He published volumes of poems, political speeches, "Fifty Years in the Making of Australian History" (1892), etc.

Parks, Mrs. **George Richmond.** See *Robins, Elizabeth.*

Parliament*. The House of Lords comprises peers who hold their seats by hereditary right, or by creation of the sovereign, or by election for life (Irish peers), or by election for a given parliament (Scottish peers), or by virtue of their office (English bishops). The number in 1908 was 615. Of the elected peers 16 are Scottish and 28 are Irish. The House of Commons consists of representatives of county, borough, and university constituencies in England, Scotland, and Ireland. In 1908 the total number was 670, of which 377 represented counties, 284 boroughs, and 9 universities. There were 465 English, 30 Welsh, 72 Scottish, and 103 Irish members.

Parrish (par′ish), **Maxfield.** Born at Philadelphia, July 25, 1870. An American painter and illustrator. He studied art at the Pennsylvania Academy of Fine Arts and under Howard Pyle; was elected associate of the National Academy of Design in New York in 1905 and member in 1906; and is also a fellow of the Pennsylvania Academy of Fine Arts. He has developed a style of dignity and power in color and design which is best shown in his colored illustrations.

Parrish (par′ish), **Stephen.** Born at Philadelphia, July 9, 1846. An American landscape-painter and etcher. He first exhibited pictures at the Pennsylvania Academy in 1878 and at the National Academy in New York in 1879. His first plate was etched in December, 1879. He belongs to the New York Etching Club, and to the Royal Society of Painter-Etchers, London.

Parry*, Sir **Charles Hubert Hastings.** He was professor of music at Oxford University 1899–1908. He was knighted in 1898 and created a baronet in 1902.

Parsons*, **Alfred William.** He was created a member of the Royal Academy in 1897.

Partridge (pär′trij), **William Ordway.** Born at Paris, France, April 11, 1861. An American sculptor and author. He studied art in Rome, Florence, and Paris; was professor of fine arts in Columbian University, Washington; and has executed an equestrian statue of General Grant and a statue of Hamilton for Brooklyn, a statue of Shakspere for Chicago, and a large number of other statues and busts. His published works include "Art for America" (1895), "The Song of Life of a Sculptor" (1895), "Technique of Sculpture" (1895), "The Angel of Clay" (1900), "Nathan Hale" (1902), and "The Czar's Gift" (1906).

Pasig (pä′sig). 1. A river in Luzon, Philippine Islands, connecting Laguna de Bay with Manila Bay. The city of Manila is situated at its mouth. It is navigable, even at low water, by cascos and by launches of 5 or 6 feet draft.

2. A town, the capital of Rizal province, Luzon, Philippine Islands, situated in lat. 14° 33′ N., long. 121° 5′ E. Civilized population of municipality (1903), 11,278.

Pasini*, **Alberto.** Died at Turin, Dec. 15, 1899.

Patin (pä-taṅ′), **Henri Joseph Guillaume.** Born at Paris, Aug. 21, 1793: died there, Feb. 19, 1876. A French writer. He was elected a member of the French Academy in 1843 and became its perpetual secretary in 1871. His most noted work is "Études sur les tragiques grecs ou examen critique d'Eschyle, etc." (1841–43).

Patmore*, **Coventry Kearsey Dighton.** Died at Lymington, Hampshire, Nov. 26, 1896. His later work included "The Unknown Eros and other odes" (1877), "Amelia" (1878), collected poems (1886), "Principle in Art" (1889), "Religio Poetæ" (1893), and "Rod, Root, and Flower" (1895).

Paton*, Sir **Joseph Noel.** Died at Edinburgh, Dec. 26, 1901.

Patti*, **Adelina.** She married Baron Cederstrom in 1899.

Pattison (pat′i-sọn), **Dorothy Wyndlow**: known as **Sister Dora.** Born at Haukswell, Yorkshire, Jan. 16, 1832: died at Walsall, Staffordshire, Dec. 24, 1878. An English philanthropist, sister of Mark Pattison. She joined the sisterhood of the Good Samaritan at Coatham, Yorkshire, in 1864; was connected with its cottage hospital at Walsall; and became an excellent surgical nurse and devoted herself to the care of the poor. In 1877 she took charge of the Municipal Epidemic Hospital in Walsall.

Patton*, **Francis Landey.** He was president of Princeton University 1888–1902, and became president of Princeton Theological Seminary in 1903.

Pauer*, **Ernst.** Died at Jugenheim, Darmstadt, May 9, 1905.

Paul (pâl), **Herbert Woodfield.** Born 1853. An English essayist and historian. He was educated at Eton and at Corpus Christi College, Oxford; was admitted to the bar of Lincoln's Inn in 1878; and was Liberal member of Parliament for South Edinburgh 1892–95 and for Northampton 1906–. He has published "Men and Letters" (1901), "Life of Rt. Hon. W. E. Gladstone" (1901), "Matthew Arnold" (1902), "History of Modern England" (vols. i, ii, 1904; iii, 1905; iv, v, 1906), "Lord Acton" (1904), "Life of Froude" (1905), "Stray Leaves" (1906), "Queen Anne" (1906), etc.

Paulsen (poul′sen), **Friedrich.** Born at Langenhorn, North Friesland, July 16, 1846: died at Steglitz, near Berlin, Aug. 14, 1908. A German scholar, professor of philosophy and pedagogics in the University of Berlin from 1878. His works include "Gründung, Organisation, und Lebensordnungen der deutschen Universitäten im Mittelalter" (1881), "Geschichte des gelehrten Unterrichts auf den deutschen Schulen und Universitäten" (1885), "Einleitung in die Philosophie" (1891), "Immanuel Kant" (1898), etc.

Pauncefote (pâns′fụt), Sir **Julian,** Lord Pauncefote. Born Sept. 13, 1828: died at Washington, D. C., May 24, 1902. An English diplomatist. He was knighted in 1874 and raised to the peerage as Baron Pauncefote in 1899; was British minister to the United States 1889–93 and ambassador 1893–1902; conducted the negotiations at Washington which led to the settlement of the Bering Sea controversy, the Anglo-Venezuelan boundary arbitration, etc.; and was senior British delegate at the Hague Peace Conference in 1899. Throughout his life he did much for the cause of international arbitration.

Pauwels*, **Ferdinand.** Died at Dresden, March 26, 1904.

Pavia*. The university is attended by over 1,600 students and has a library of over 250,000 volumes.

Payn*, **James.** Died at London, March 25, 1898.

Payne*, **Henry B.** Died Sept. 9, 1896.

Payne (pān), **Henry Clay.** Born at Ashfield, Mass., Nov. 23, 1843: died at Washington, D. C., Oct. 4, 1904. An American business man and politician. He was a member of the Republican National Committee from 1880; and was postmaster of Milwaukee 1876–86 and postmaster-general 1902–04.

Payne*, **John Howard.** Born at New York, June 9, 1791: died at Tunis, April 9, 1852.

Peace Conference. 1. A conference proposed by the Czar of Russia which met at The Hague, May 18, 1899. It urged the avoidance of force as far as is possible in international relations, adopted rules for international arbitration, and established a permanent court of arbitration.

2. An international conference, proposed by the president of the United States in 1904, which sat at The Hague June 15–Oct. 18, 1907: the invitation was given by the Czar of Russia. Conventions relating to the following subjects were agreed upon: the pacific settlement of international disputes; an international prize court; the rights and duties of neutrals on land, and at sea; the laying of submarine mines; the discharge of projectiles and explosives from balloons; the bombardment of towns from the sea; the forcible collection of debts; the use of merchantmen as war-ships; the extension of the Geneva Convention and the Red Cross to warfare at sea; and the regulation of land warfare.

Peace, Palace of. A building at The Hague, to be occupied by the International Arbitration Court. The money for its erection was given by Andrew Carnegie. The foundation stone was laid July 30, 1907.

Pearl Islands*. They now belong to the Republic of Panama.

Pearson (pēr′sọn), **Karl.** Born 1857. An English mathematician, professor of applied mathematics and mechanics in University College, London, from 1885. He has written "The Ethic of Free Thought" (1888), "Grammar of Science" (1892: enlarged 1899), "The Chances of Death and Other Studies in Evolution" (1897), "National Life from the Standpoint of Science" (1901), "Scope and Importance to the State of the Science of National Eugenics" (1907), etc. He was one of the editors of "Biometrika" 1902–04.

Peary*, **Robert Edwin.** In July, 1893, he sailed again, in the Falcon, intending to survey the northeastern coast of Greenland, and if possible to push on toward the north pole. He was unsuccessful and returned in September, 1895. In 1898 he again returned to the attack upon the pole. He made his winter quarters at Etah, near Smith Sound, and established caches of supplies as far as Fort Conger. In the spring of 1900 he set out from Fort Conger, and traced the northern limit of the Greenland archipelago, reaching the highest latitude (83° 50′ N.) then attained on the western hemisphere. His intention was to renew the attempt to reach the pole each spring until he should succeed. But he returned in Sept., 1902, having reached lat. 84° 17′ N. His wife, Josephine Diebitsch Peary, author of "My Arctic Journal" (1893), accompanied the expeditions of 1891–92, 1893–94, and 1900–01 (relief expedition) as far as the winter quarters. In July, 1905, he again set out for the pole in the Roosevelt. He wintered on the northeast coast of Grant Land and in February, 1906, started north. He reached lat. 87° 6′ N. on April 21. He was obliged to return owing to lack of supplies. During this expedition he traced the north coast of Grant Land and discovered new land at about long. 100 W. He planned another attempt to reach the pole in 1907, but was obliged to postpone it until 1908. He set sail in the Roosevelt from Sydney, Cape Breton, on July 17, intending to winter in the north of Grant

Land. On his return he announced, by wireless message from Indian Harbor, Labrador, on Sept. 6, 1909, that he had reached the pole April 6, 1909. He arrived in the Roosevelt at Cape Sheridan, Grant Land, where he wintered, on Sept. 1, 1908. The sledge expedition (including 7 members of the exploring party and 59 Esquimos) was begun Feb. 15–22, Peary himself starting on the latter date, and arrived at Cape Columbia. On March 1 the dash from Cape Columbia for the pole was begun. The pole was reached by Peary, Henson, and four Eskimos on April 6 and was left on April 7, and Cape Columbia was reached on April 23. He has written "Northward Over the Great Ice" (1898), and "Nearest the Pole" (1907).

Peary (pē'ri) **Channel.** The channel which separates Markham Island and Melville Land from northern Greenland: named for the arctic explorer R. E. Peary.

Pecht*, Friedrich. Died at Munich, April 24, 1903.

Peck (pek), **Annie Smith.** Born at Providence, Rhode Island. An American explorer, especially noted as a mountain-climber. She was graduated at the State Normal School, University of Michigan, in 1878, and studied in the American School of Classical Studies at Athens. She climbed the Matterhorn in 1895, and Popocatepetl and Orizaba in 1897, and in 1908 made the first ascent of Huascarán in Peru (height 24,000 feet ?). She had previously (1904) climbed the last-named mountain to the height of 19,000 feet. In this year she also attained an altitude of about 20,500 feet on Sorata, in Bolivia.

Peckham (pek'ham), **Rufus William.** Born Nov. 8, 1838: died Oct. 24, 1909. An American jurist. He was admitted to the bar in 1859; was justice of the Supreme Court of New York 1883–86; was associate judge of the Court of Appeals, New York, 1886–95; and associate justice of the United States Supreme Court 1895–1909. He was a delegate to the Democratic national conventions of 1876 and 1880.

Peel*, Arthur Wellesley, first Viscount Peel. He was raised to the peerage in 1895.

Peg Woffington (wof'ing-ton). A story by Charles Reade, published in 1852. See *Woffington, Margaret.*

Peirce*, James Mills. Died March 21, 1906. He was professor of mathematics in Harvard University 1869–1906.

Peking*. It was captured by the allied European and American forces Aug. 14, 1900.

Pelasgicon (pe-las'ji-kon). A kind of terraced outwork at the western end of the Acropolis at Athens: also called *Enneapylon*, from its nine gates.

Pelée (pe-lā'), **Mount.** [Fr. *Montagne Pelée*, 'bald mountain.'] **1.** A volcano in the northern part of the island of Martinique. On May 8, 1902, an eruption of Pelée destroyed the city of St. Pierre and about 40,000 people.—**2.** See *Point Pelée.*

Pelew* Islands. They were purchased from Spain by Germany in 1899.

Pellegrini*, Carlos. Died July 17, 1906.

Pelletier (pe-le-tyā'), Sir **Charles Alphonse Pantaléon.** Born at Rivière Ouelle, Quebec, Jan. 22, 1837. A Canadian Liberal statesman, lieutenant-governor of the Province of Quebec 1908–. He was graduated at Laval University in 1858; was called to the bar in 1860; was appointed queen's counsel in 1879; and was made a companion of the Order of St. Michael and St. George in 1898. He sat for Kamouraska in the House of Commons 1869–77, and for Quebec, East, in the Quebec Legislative Assembly 1874–75; was minister of agriculture in the Mackenzie administration 1877–78; was called to the Senate in 1877 and was its speaker 1896–1901; and resigned his seat in 1905. He was judge of the Superior Court of the Province of Quebec from 1905–08.

Peloubet (pe-lö'bet), **Francis Nathan.** Born at New York, Dec. 2, 1831. An American clergyman and author of works on the Bible for Sunday-school teachers and scholars. He was graduated at Williams College in 1853, and at the Bangor Theological Seminary in 1857; and was minister to various Congregational churches from 1857 to 1883. He is best known for his "Select Notes on the International Sunday School Lessons" (1875–). His other works include "The Teacher's Commentary on Matthew and on Acts," "The Book of Job, a Drama," etc.

Pemberton*, John Clifford. After the surrender of Vicksburg he returned on parole to Richmond, where he remained until he was exchanged. He then resigned, but was reappointed as inspector of artillery, with the rank of colonel, in which capacity he served until the end of the war.

Pemberton (pem'bėr-ton), **Max.** Born at Birmingham, England, June 19, 1863. An English novelist and editor. He has been editor of "Cassell's Magazine" since 1896. Among his works are "The Iron Pirate" (1893), "The Impregnable City" (1895), "The Little Huguenot" (1895), "A Puritan's Wife" (1896), "The Garden of Swords" (1899), "Pro Patria" (1901), "My Sword for Lafayette" (1906), "Wheels of Anarchy" (1908), "Sir Richard Escombe" (1908), "The Show Girl" (1909), etc.

Pembroke (pem'brụk). **3.** A town, the capital of Renfrew County, Ontario, Canada. It is in the northeastern part of the county, on the Ottawa river. The Muskrat river flows through the town and supplies power for sawmills, flour-mills, etc. Population (1901), 5,156.

Penck (pengk), **Albrecht.** Born at Reudnitz, a suburb of Leipsic, Sept. 25, 1858. A noted German geographer, professor of geography in the University of Vienna from 1885–1906 and in the University of Berlin 1906–. He has written "Morphologie der Erdoberfläche," (1894), etc., and numerous scientific papers.

Pender (pen'dėr), Sir **John.** Born Sept. 10, 1816: died at Footscray Place, Kent, July 7, 1896. An English merchant, one of the earliest promoters of submarine telegraphy. He was one of the contributors to the formation of the first Atlantic Cable Company in 1856, and was a liberal supporter of the enterprise through the difficulties which for many years beset it. Its final success was largely due to his efforts.

Penfield (pen'fēld), **Samuel Lewis.** Born at Catskill, N. Y., Jan. 16, 1856: died Aug. 12, 1906. An American mineralogist, professor of mineralogy in Yale University 1893–1906. He was instructor and assistant professor 1880–93. He published "Determinative Mineralogy and Blowpipe Analysis" (1898: with Brush), and numerous scientific papers.

Pennell*, Joseph. He was elected a member of the National Academy of Design in May, 1909. He has written "A Canterbury Pilgrimage" (1885), "An Italian Pilgrimage" (1886), "Two Pilgrims' Progress" (1887), "Our Sentimental Journey Through France and Italy" (1888), "Pen Drawing and Pen Draughtsmen" (1889), "Our Journey to the Hebrides" (1889), "The Stream of Pleasure" (1891), "The Jew at Home" (1892), "Play in Provence" (1892), "To Gypsyland" (1893), "Modern Illustration" (1895), "The Illustration of Books" (1896), "The Alhambra" (1896), "The Work of Charles Keene" (1897), "Lithography and Lithographists" (1900), and, with Mrs. Pennell, "Life of James McNeil Whistler' (1908).

Pennsylvania*. It sends 2 senators and 32 representatives to Congress and has 34 electoral votes

Pennsylvania*, University of. An institution of learning situated in Philadelphia. It began in 1740 as a charity school and became an academy and college in 1749 and a university in 1771. It has departments of arts and science, education, medicine, law, dentistry, veterinary medicine, mechanical and electrical engineering, civil engineering, chemical engineering, and chemistry, and a graduate school. It has 372 instructors and 4,000 students.

Pennsylvania Academy of the Fine Arts. An institution, founded in 1805, consisting of a museum of paintings, sculptures, and engravings, and an art school. Its building stands on Cherry and North Broad streets, Philadelphia. Annual exhibitions of the works of living artists are held here in winter.

People's Party*. In 1896 they accepted the Democratic nominee for president, W. J. Bryan, but nominated their own candidate, Thomas E. Watson, for the vice-presidency. Among their aims are an increase of the circulating medium, free coinage of silver, free trade, an income tax, suppression of monopolies, etc. In 1904 and 1908 they nominated Thomas E. Watson for president.

Pepper*, William. Died at Pleasanton, Cal., July 28, 1898.

Perak*. It is now a part of the Federated Malay States.

Perch, Philemon. A pseudonym of Richard Malcolm Johnston.

Pereda (pā-rā'ᴛʜä), **José María de.** Born at Polanco, near Santander, Spain, Feb. 7, 1834: died at Madrid, March 2, 1906. A Spanish novelist. Among his works are "Escenas montañesas" (1864), "El buey suelto" (1877), "Don Gonzalo Gonzalez de la Gonzalera" (1878), "De tal palo, tal astilla" (1879), "Pedro Sanchez" (1883), "Sotileza" (1885), "La Puchera" (1889), "La Montalvez" (1891), "Peñas arriba' (1895), etc.

Pereira da Silva*, João Manuel. Born at Rio Janeiro, Aug. 30, 1817: died 1898.

Perez*, José Joaquin. Died 1890.

Perez*, Santiago. Died 1900.

Périer*, Jean Paul Pierre Casimir. Died at Paris, March 11, 1907.

Perosi (pā-rō'si), **Lorenzo.** Born at Tortona, Italy, Dec. 23, 1872. A priest and musical composer. From 1897 to 1903 he was musical director at St. Mark's, Venice, and was then taken to St. Peter's by Pope Pius X. His most important works are "The Passion of Christ,' "The Transfiguration," "The Resurrection of Lazarus," and "The Birth of the Redeemer."

Perowne*, John James Stewart. Born March 13, 1823: died Nov. 6, 1904.

Perraud (pe-rō'), **Adolphe Louis Albert.** Born at Lyons, Feb. 7, 1828: died Feb. 11, 1906. A French prelate and ecclesiastical writer, bishop of Autun, Châlons, and Mâcon. In 1865 he was appointed professor of ecclesiastical history at the Sorbonne, from which he retired in 1874 to become bishop of Autun. He was elected to the French Academy in 1882, succeeding Auguste Barbier. In 1884 he became superior-general of the Oratory, and was created cardinal by Pope Leo XIII. in 1893. Among his works are "Études sur l'Irlande contemporaine" (1862), "L'Oratoire de France aux XVIIe et XIXe siècles" (1865), "Les paroles de l'heure présente" (1872), "Le Cardinal de Richelieu" (1882), "Œuvres pastorales et oratoires" (1883–86), "Le Cardinal Lavigerie" (1893), "Le Père Gratry" (1900), etc.

Perry*, Arthur Latham. Died July 9, 1905.

Perry (per'i), **Bliss.** Born at Williamstown, Mass., Nov. 25, 1860. An American editor, author, and critic, son of Arthur Latham Perry. He was professor of English in Williams College 1886–93, and in Princeton University 1893–1900. In 1906 he was appointed professor of English literature at Harvard University, a chair which replaced the one held by Ticknor, Longfellow, and Lowell. He has been editor of the "Atlantic Monthly" since 1899. He was appointed Harvard lecturer at the University of Paris for the year 1909–10. Among his works are "The Broughton House" (1890), "Salem Kittredge, and Other Stories" (1894), "The Plated City" (1895), "The Powers at Play" (1899), a chapter on poetry in "Counsel Upon the Reading of Books" (1900), "A Study of Prose Fiction" (1902), "The Amateur Spirit" (1904), "Walt Whitman" (1906), and "Park Street Papers" (1908).

Perry*, William Stevens. Died May 13, 1898.

Persia*. Until 1906 the government was an absolute monarchy, the Shah, who is generally regarded as the vicegerent of the Prophet, being subject only to the rules of the Mohammedan faith. In that year a National Council was established, consisting of 156 (elected) members, 60 for Teheran and 96 for the provinces. Provision was made later for a senate of 60 members, 30 to be appointed by the Shah and 30 to be elected by the National Council. The constitution as finally adjusted was signed by the Shah on Oct. 8, 1907. Conflict between the Council and the Shah (Mohammed Ali) resulted in the dissolution of the parliament on June 23, 1908, the parliament-house being attacked and destroyed by the military. A Council of State was then established in the place of the National Council. In 1909 a proclamation was issued by the Shah establishing a representative assembly and appointing the date of a general election. On July 16, 1909, the Shah was dethroned by the constitutionalists and the Crown Prince, Ahmed Mirza, was chosen as his successor. An agreement between Great Britain and Russia, with regard to their respective spheres of influence in Persia, was reached in May, 1907, each country limiting its sphere in the provinces adjoining its frontier.

Peru*. Including Tacna, it comprises 19 departments and 3 provinces. Tacna and Arica are still occupied by Chile. A boundary dispute with Bolivia which was referred to the president of the Argentine Republic was decided by him in favor of Peru in 1909.

Peruvian Corporation*. (See *Grace Contract, The.*) On April 2, 1907, an agreement was signed (annulling the terms previously in force) by which the lease of the corporation was extended for 17 years, the government to pay annually, for 30 years, £80,000 and to receive one half the net receipts. Provision was made for the continuation of the work on the Oroya-Huancayo and Secani-Cuzco lines, and the construction of the Jonan-Chilete line. The works at Mollendo, the Chiro canal, the silver-mines at Cerro de Pasco, and a debt of £200,000 to Chile were reserved.

Pescadores*. 1. They were ceded by China to Japan by the treaty of Shimonoseki in 1895.

Peter (pē'tėr) **I.** Born at Belgrade, June 29 (O.S.), 1844. King of Servia, 1903–. He is the son of Alexander Karageorgevitch, and was proclaimed king by the army after the murder of King Alexander I. and Queen Draga, June 10, 1903. He married Princess Zorka of Montenegro in 1883.

Petrie*, William Matthews Flinders. His excavations in Egypt, 1880–1906, covered the exploration of the Greek city at Naukratis and the towns of Am and Daphnæ, the discovery of prehistoric Egyptians at Nagada, the discovery at Medum of the earliest temple, excavations of the temples at Tanis, Koptos, and Thebes, records of kings of the earliest dynasties at Abydos, etc. He has been Edwards professor of Egyptology at University College, London, since 1893. In 1894 he founded the Egyptian Research Account (developed in 1905 to the British School of Archæology in Egypt). His later works include "History of Egypt" (1894–1905), "Egyptian Tales" (1895), "Religion and Conscience in Ancient Egypt" (1898), "Methods and Aims in Archæology" (1904), "Religion of Ancient Egypt" (1906), "Janus in Modern Life" (1907), "Personal Religion in Egypt Before Christianity" (1909), and many volumes of special reports.

Pettenkofer*, Max von. Died at Munich, Feb. 10, 1901.

Pettus (pet'us), **Edmund Winston.** Born in Limestone County, Ala., July 6, 1821: died July 27, 1907. An American lawyer and statesman, United States senator (Democratic) from Alabama from 1897–1907.

Petty-Fitzmaurice*, Henry Charles Keith, fifth Marquis of Lansdowne. He was governor-general of Canada 1883–88, governor-general of India 1888–93, secretary of state for war 1895–1900, secretary of state for foreign affairs 1900–05.

Pfleiderer (pflī'dėr-ėr), **Otto.** Born at Stetten, Germany, Sept. 1, 1839: died at Grosslichterfelde, near Berlin, July 20, 1908. A German Liberal theologian, professor of practical theology in the University of Berlin from 1875. He published "Moral und Religion" (1872), "Geschichte der Religionsphilosophie von Spinoza bis auf die Gegenwart" (third edition 1893), "Der Paulinismus" (1873), "Das Urchristentum" (1887), "The Development of Theology since Kant" (1890), "Philosophy and Development of Religion" (1894), "Das Christusbild des urchristlichen Glaubens in religionsgeschichtlicher Beleuchtung" (1903), "Die Vorbereitung des Christentums in der griechischen Philosophie" (1904), "Die Entstehung des Christentums" (1905), etc.

Pflüger (pflü'ger), **Eduard Friedrich Wilhelm.** Born at Hanau, June 7, 1829. A German physiologist, professor in the University at Bonn from 1859. He founded and edited from 1868 the "Archiv fur die gesamte Physiologie."

Phaon (fā'on). A boatman of Mytilene, the favorite of the poetess Sappho. According to the legend, when old and ugly he carried the goddess Aphrodite across the sea and would accept no payment. For this she rewarded him with youth and beauty.

Phelps*, Edward John. Died at New Haven, Conn., March 9, 1900.

Philip, John Woodward. Born at Kinderhook, N. Y., Aug. 26, 1840: died at Brooklyn, N. Y., June 30, 1900. An American naval officer. He was graduated at the U. S. Naval Academy in 1856; and was promoted commander in 1874, captain in 1889, commodore Aug. 10, 1898, and rear-admiral in 1899. He commanded the Texas in the battle off Santiago, July 3, 1898; was temporary commander of the North Atlantic Squadron; and on Jan. 15, 1899, took command of the navy-yard, New York.

Philippine Islands*. The group was ceded to the United States by Spain by the treaty of Paris, Dec. 10, 1898. The sum of $20,000,000 was paid to Spain by the United States. See *Spanish-American War.* A native insurrection against Spanish rule broke out in 1896, was quelled by Jan., 1898, but again broke out under the leadership of Aguinaldo, after the battle of Manila, in May, 1898. In Feb., 1899, the insurgents turned their arms against the United States; the insurrection came to an end with the capture of Aguinaldo, March 23, 1901. Civil government was established in July, 1902. A Philippine Assembly was elected in July and opened on Oct. 16, 1907. The government consists of a governor-general, appointed by the president of the United States, and a legislative assembly. The assembly comprises an upper house consisting of the Philippine Commission (nine members, including the governor, three of them Filipinos), and a lower house of 79 representatives. There are four executive departments. The islands are divided into 39 provinces.

Phillips, Stephen. Born at Somerton, near Oxford, July 28, 1868. An English poet and playwright. He was on the stage 1886–92. He has written "Poems" (1897), "Paolo and Francesca" (1899), "Herod" (1900), "Ulysses" (1902), "The Sin of David" (1904), "Nero" (1906), "The Last Heir" (1908), etc.

Phillpotts (fil'potz), **Eden.** Born at Mount Abu, India, Nov. 4, 1862. An English novelist. He is the author of "Down Dartmoor Way" (1895), "Lying Prophets" (1897), "Children of the Mist" (1898), "Sons of the Morning" (1900), "The Good Red Earth" (1901), "The Striking Hours" (1901), "The River" (1902), "My Devon Year" (1903), "The Golden Fetich" (1903), "The American Prisoner" (1904), "The Farm of the Dagger" (1904), "The Secret Woman" (1905), "Knock at a Venture" (1905), "The Portreeve" (1906), "The Sinews of War" (1906: with Arnold Bennett), "The Mother of the Man" (1908), "The Virgin in Judgment" (1908), "The Statue," with E. A. Bennett (1908), "The Three Brothers" (1909), etc.

Piazza del Campidoglio (pē-ät'sä del käm-pi-dōl'yō). [It., 'oil market.'] The open square on the Capitoline Hill in Rome, the Area Capitolina of the old city. Until 1477 it was the general market of the city and remained the center of civic life after the market was removed to the Piazza Navona. The Senatorial Palace or city hall is mentioned as early as 1150. In 1538 the equestrian statue of Marcus Aurelius was placed in its present position and in 1559 a plan was made, under the direction of Michelangelo, according to which the present arrangement of the buildings has been carried out,—the Senatorial Palace in the center, the Palace of the Conservatori on the right, and the Museum of the Capitol on the left.

Picciola (pēt-chē-ō'lä). The story of the love of a prisoner for a flower, written by Saintine (J. Xavier Boniface) and published about 1836. The sketch won for its author the Montyon prize and the cross of the Legion of Honor. It has been translated into many languages.

Piccolomini*, Maria. Died at Florence, Dec. 25, 1899.

Pickering (pik'ėr-ing), **William Henry.** Born at Boston, Mass., Feb. 15, 1858. An American astronomer, assistant professor of astronomy at the Harvard Observatory from 1887. He established the Arequipa station of the Harvard Observatory in 1891 and a station in Jamaica in 1900, and led eclipse expeditions in 1878 (Colorado), 1886 (West Indies), 1889 (California), 1893 (Chile), and 1900 (Georgia). The Lalande prize of the French Academy was awarded to him in 1905 for the discovery of the ninth and tenth satellites of the planet Saturn.

Picou*, Henri Pierre. Died at Nantes, July 18, 1895.

Picquart (pē-kär'), **Marie George.** Born at Strasburg, Sept. 6, 1854. A French general and statesman, minister of war under Clemenceau 1906–09. He was prominent in the defense of Dreyfus, in connection with which he was retired from the army in 1898 and later imprisoned. He was restored to active service in 1905, with the rank of brigadier-general.

Pierola*, Nicolas de. He was president 1895–99.

Pike's Peak*. Its height, according to the determination of 1907, is 14,107 feet.

Pilar (pē-lär') **Islands.** A group of 24 islands in the Sulu (Jolo) Archipelago. The largest of them is only 8.2 square miles in area. They belong to the Zamboanga district of Moro province. Area of group, 17.1 square miles.

Pilbarra Goldfield. A gold-mining region in the northwestern part of Western Australia.

Pilot, The. A nautical romance by James Fenimore Cooper, published in 1823.

Piloty*, Ferdinand. Died at Munich, Dec. 21, 1895.

Pinar del Rio (pē-när'del rē'ō). The westernmost province of Cuba. It is bounded on the north by the Gulf of Mexico, on the east by the province of Havana, on the south by the Caribbean Sea, and on the west by the Yucatan Channel. Capital, Pinar del Rio. Area, 5,206 square miles. Population (1907), 240,372.

Pinatubo (pē-nä-tö'bō), or **Pinalubo.** A volcano in the northwestern part of Pampanga province, southern Luzon, Philippine Islands. Height, 6,040 feet.

Pinchot (pin'chō), **Gifford.** Born at Simsbury, Conn., Aug. 11, 1865. An American naturalist, forester of the United States Department of Agriculture from 1898, and later chief of the Forest Service. He was graduated at Yale University in 1889; began the first systematic forest work in the United States at Biltmore, North Carolina, 1892–94; was a member of the national forest commission 1895–96; and was appointed by the President a member of the committee on organization of government scientific work in 1903, of the commission on the public lands in the same year, and of the committee on department methods in 1905. He was appointed a member of the Inland Waterways Commission in 1907. He has published "The White Pine" (1896: with H. S. Graves), "The Adirondack Spruce" (1898), "A Primer of Forestry" (1899), etc.

Pinero (pin'e-rō), Sir **Arthur Wing.** Born at London, May 24, 1855. An English dramatist. He was an actor 1874–81. His plays include "The Squire" (1881), "The Magistrate" (1885), "Sweet Lavender" (1888), "The Profligate" (1892), "The Cabinet Minister" (1890), "Lady Bountiful" (1891), "The Second Mrs. Tanqueray" (1893), "The Notorious Mrs. Ebbsmith" (1895), "The Benefit of the Doubt" (1895), "The Princess and the Butterfly" (1897), "Trelawney of the 'Wells'" (1898), "The Gay Lord Quex" (1899), "Iris" (1901), "Letty" (1903), "A Wife Without a Smile" (1904), "His House in Order" (1906), "The Thunderbolt" (1908), and others.

Pines*, Isle of. In April, 1907, the United States Supreme Court decided that the Isle of Pines (Cuba) is not United States territory. It is now a municipality of the province of Havana.

Pirsson (pėr'sọn), **Louis Valentine.** Born at New York, Nov. 3, 1860. An American geologist, professor of geology in the Sheffield Scientific School of Yale University from 1897. He was graduated from Yale in 1882; studied in Heidelberg and Paris; and has been connected with the faculty of the Sheffield School since 1885. He is assistant editor of the "American Journal of Science," and is connected with the United States Geological Survey. His publications include "Rocks and Rock Minerals" (1908), and numerous geological and mineralogical papers.

Pisa*. The university has over 100 instructors and 1,160 students.

Pitcher, Molly. The wife of a Revolutionary soldier who distinguished herself at the battle of Monmouth, June 28, 1778. She took the place of her husband, who was killed while discharging a cannon. Washington commended her bravery and gave her a commission as sergeant.

Pitlochry (pit-loċh'ri). A village and health-resort in the county of Perth, Scotland, near the Pass of Killiecrankie.

Pitman*, Sir **Isaac.** Died at Bath, Jan. 22, 1897.

Pittsburg. 2. A city in the southeastern part of Crawford County, Kansas. It is situated in a coal-mining district and has zinc-works, iron-works, mills, machine-shops, etc. Population (1900), 10,112.

Pius X. (**Giuseppe Sarto**). Born at Riese, near Treviso, Italy, June 2, 1835. Pope since August, 1903. He was ordained priest in 1858; was made bishop of Mantua in 1884; cardinal and patriarch of Venice in 1893; and was elected pope August 4, 1903.

Pivot City. A nickname of Geelong, in Victoria, Australia: so named from its supposed importance in the future of the colony.

Plancus (plang'kus). A Roman soldier, orator, and consul (42 B. C.). He served under Julius Cæsar in the Gallic and civil wars; attached himself successively to Brutus, Antony, and Octavius; and proposed in the senate that the title of Augustus should be bestowed on the last named. Horace addressed to him Ode vii., Book I.

Platt (plat), **Orville Hitchcock.** Born at Washington, Conn., July 19, 1827: died there, April 21, 1905. An American lawyer and statesman, United States senator (Republican) from Connecticut 1879–1905.

Platt*, Thomas Collier. U. S. senator from New York 1897–1909. Died March 6, 1910.

Playfair*, Sir **Lyon,** first Lord Playfair. Died at London, May 29, 1898.

Pleasonton*, Alfred. Died at Washington, D. C., Feb. 17, 1897.

Plehve (plā've), **Vjacheslaf Konstantinovitch.** Born about 1846: died at Warsaw, July 28, 1904. A Russian official. He was educated at Warsaw and at St. Petersburg and held various positions in the ministry of justice, becoming prosecutor at St. Petersburg. In 1881 he was appointed director of the state police, in 1883 assistant to the minister of the interior, and in 1894 secretary of state for Finland, and a member of the council of the empire. As governor of Finland he was hostile to the Finnish nationalists and inaugurated a policy of repression. In 1902 he became minister of the interior. His administration was marked by the massacre of the Jews at Kishinef, the spoliation of the Armenian Church, the exile of Russian noblemen holding liberal opinions, and a policy of ruthless severity toward the peasantry and working-classes. He was killed by a bomb thrown under his carriage as he was leaving Warsaw to make his weekly report to the Czar.

Plimsoll*, Samuel. Died June 3, 1898.

Plummer (plum'ėr), **William Edward.** Born at Deptford, England, March 26, 1849. An English astronomer, director of the Liverpool Observatory. In 1895 he became examiner in astronomy to the University of Edinburgh.

Pobiedonostsef (pō-bē-dọ-nōst'sef), **Constantini Petrovitch.** Born at Moscow, 1827: died at St. Petersburg, March 23, 1907. A Russian jurist and statesman, procurator of the Holy Synod of Russia 1880–1905. He studied at the Imperial School of Law at St. Petersburg; became an official of the senate in Moscow; was professor of civil law in the University of Moscow 1860–65; was instructor in the theory of law and administration to the sons of Alexander II.; and became a senator in St. Petersburg in 1868, and a member of the Council of the Empire in 1872. He was always an active and uncompromising advocate of absolutism in government and an opposer of all liberal reform, and he did much to strengthen the influence of the Orthodox Greek Church on Russian policy. He was the author of "Kursus des Civilrechts" (1868), and "Gerichtsleitfaden" (1872).

Poincaré (pwäṅ-kä-rā'), **Jules Henri.** Born at Nancy, April 29, 1854. An eminent French mathematician, professor in the Faculty of Sciences at Paris from 1881. He has written "Cours de physique mathématique" (1890), "Électricité et optique" (1890–91), "Thermodynamique" (1892), "Les méthodes nouvelles de la méchanique céleste" (1892–99), "Théorie des tourbillons" (1893), "Les oscillations électriques" (1894), "Capillarité" (1895), "Calcul des probabilités" (1896), "La science et l'hypothèse" (1902), etc. He was elected a member of the French Academy in 1908, succeeding Sully-Prudhomme.

Point Loma (lō'mạ̈). A promontory on the southern coast of California, projecting into the Pacific in a southerly direction and forming a part of the northern boundary, and covering on the west the entrance of the bay of San Diego.

Poiré, Emmanuel. A French illustrator, known under his pseudonym of Caran d'Ache (which see).

Pollock (pol'ọ̈k), Sir **Frederick.** Born at London, Dec. 10, 1845. An eminent English jurist and philosophical writer. He was professor of jurisprudence in University College, London, 1882–83; of common law in the Inns of Court 1884–90; and of jurisprudence in the University of Oxford 1883–1903. He was elected a fellow of the British Academy in 1902. He is the author of "Principles of Contract" (1876), "Digest of the Law of Partnership" (1877), "Spinoza" (1880), "The Land Laws" (1882), "Introduction to the History of the Science of Politics" (1890), etc.

Pomeroy (pom'ẹ̈-roi), **Seth.** Born at Northampton, Mass., May 20, 1706: died at Peekskill, N. Y., February, 1777. A noted American soldier. He was by trade a gunsmith, and entered the military service of the colony early in life. He was a major in the Massachusetts forces at the capture of Louisburg in 1745, and in 1755 was a lieutenant-colonel under Ephraim Williams, at whose death he succeeded to the command of the regiment and gained a victory over Baron Dieskau in the battle of Lake George. From 1774 to 1775 he served as a delegate to the Massachusetts provincial congress, by which he was elected a general officer in 1774 and a brigadier-general in 1775. He served as a volunteer private in the battle of Bunker Hill in 1775, and a few days later was named by Congress senior brigadier-general, but declined the appointment. In 1776 he led a force of militia to the relief of the army under Washington, and marched to the Hudson river.

Ponce. 2. A department in the south-central part of Porto Rico. It is bounded by Arecibo, San Juan, and Guayama on the north; Guayama on the east; the Caribbean Sea on the south; and Mayaguez and Aguadilla on the west. Capital, Ponce. Area, 822 square miles. Population (1899), 203,191.

Pooh-Bah (pö'bä'). A character in the comic opera "The Mikado," by Gilbert and Sullivan, who fills a large number of offices.

Poole (pöl), **Reginald Lane.** Born at London, March 29, 1857. An English historian and educator. He was assistant in the department of manuscripts at the British Museum 1880–81; has been assistant editor, later joint editor with S. R. Gardiner, and finally sole editor, of the "English Historical Review" from 1885; and has been lecturer on modern history at Jesus College, Oxford, from 1886. In 1904 he was made a fellow of the British Academy. Among his publications are "A History of the Huguenots of the Dispersion at the Recall of the Edict of Nantes" (1880), "Sebastian Bach" (1882), "Illustrations of the History of Mediæval Thought" (1884), and "Wycliffe and Movements for Reform" (1889). He has edited a "Historical Atlas of Modern Europe"

(1897–1902), and is one of the editors of "The Political History of England" (1906–07).

Popayan*. It is now the capital of the department of Popayan.

Pope (pōp), **Franklin Leonard.** Born at Great Barrington, Mass., Dec. 2, 1840: died there, Oct. 13, 1895. An American electrician. He became assistant engineer of the American Telegraph Company in 1862, and of the Russo-American Telegraph Company in 1864, and while in the latter service made the first exploration of the country between British Columbia and Alaska in surveying a route for an overland telegraph. He was one of the inventors of the 'ticker' used in stock-exchanges, and was the inventor of the rail circuit for automatically controlling electric block-signals on railroads. In 1884 he became editor of the "Electrical Engineer."

Populists. See *People's Party*.

Portaels*, **Jean François.** Died at Brussels, Feb. 8, 1895.

Portalá. See *Portolá*.

Port Arthur (pōrt är'thėr). A town and naval station near the extremity of the Liao-tung peninsula, Manchuria, the terminus of a branch of the Siberian Railway. It was captured by the Japanese Nov. 24, 1894. It was leased to Russia in 1898 and the lease was transferred to Japan by the Treaty of Portsmouth in 1905. The Russians under General Stössel were successfully besieged here by the Japanese under General Nogi July, 1904,–Jan. 1, 1905.

Porter*, **Fitz-John.** Born Aug. 31, 1822: died May 21, 1901.

Porter*, **Horace.** He was ambassador to France 1897–1905, and a delegate to the Second Peace Conference at The Hague in 1907.

Port Gabo. See *Gabo, Port.*

Port Gubat. See *Gubat, Port.*

Port Libas. See *Libas, Port.*

Portolá (pōr-tō-lä'), Don **Gaspar de.** A Spanish captain serving in Mexico and California: sometimes called "first governor" of the latter. By government order he transferred the Baja California missions, 1767–68, from the expelled Jesuits to the Franciscans, and went with Father Junipero Serra, Franciscan president, from Loreto overland to San Diego when the latter place was founded in 1769. Thence he led a party to Monterey but arrived at the bay of San Francisco by mistake. He returned to San Diego by Monterey and in 1770 reached Monterey again. San Carlos Mission being then organized he departed for Mexico by ship in July of that year, having been in Alta California little more than a twelvemonth assisting Junipero. Since no government existed and the settlements were barely started the title "governor" is hardly appropriate. Also *Portalá*.

Porto Novo*. It is the capital of Dahomey.

Porto Rico*. It was ceded by Spain to the United States in 1898. See *Spanish-American War*. A constitution was granted to it by Congress in 1900. The government consists of a governor and executive council (6 heads of departments and 5 natives) appointed for 4 years by the President of the United States, and a House of Delegates of 35 members elected for 2 years. The Council and the House of Delegates form the assembly.

Port Royalist. See *Puerto Princesa*, 1.

Portsmouth, Treaty of. A treaty of peace between Japan and Russia, signed at Portsmouth, New Hampshire, September 5, 1905. The Czar and the Mikado signed duplicate copies October 14, 1905. The conference was held in the United States in response to an invitation issued by President Roosevelt. Russia sent as peace commissioners Count Witte and Baron Rosen; Japan sent Baron Komura and Kogoro Takahira. The treaty contains 15 articles and 2 additional articles in conformity with provisions of articles III. and IX. Article I. established peace between Japan and Russia; II. established Japanese supremacy in Korea; III. (with addition I.) engaged Japan and Russia to have evacuated Manchuria (except the Liao-tung peninsula) 18 months after the signing of the treaty and to restore to the administration of China all portions under occupation; IV. engaged Japan and Russia not to obstruct any general measures, common to all countries, which China may take for the development of the commerce and industry of Manchuria; V. transferred from Russia to Japan, with the consent of China, the lease of Port Arthur, Ta-lien, and adjacent territory; VI. transferred, with the consent of the Chinese government, from Russia to Japan the railway and its branches between Chang-chun (Kwang-cheng-tsze) and Port Arthur; VII. engaged both powers to exploit their railways in Manchuria for commercial and industrial purposes only; VIII. provided for the regulation of the connecting railway services of Japan and Russia in Manchuria; IX. ceded from Russia to Japan the island of Saghalin and adjacent islands south of lat. 50° N. on condition that neither power shall erect fortifications on the island; X. established the status of Russian subjects in the ceded territory; XI. arranged for Japanese fishing rights along the coasts of the Russian possessions in the Japan, Okhotsk, and Bering seas; XII. provided for temporary commercial and navigation relations between the two powers; XIII. arranged for the restoration of prisoners of war and for expenses connected with them; XIV. arranged for the ratification of the treaty; and XV. provided that the treaty should be signed in duplicate in French and in English, and that in cases of discrepancy of interpretation the French text should prevail.

Port Subic. See *Subic, Port.*

Portugal*. Continental Portugal is divided into 6 provinces and 17 districts; the Azores have 3 districts and Madeira has one. Carlos I. and his elder son, Luiz Philip, were assassinated Feb. 1, 1908, and the younger son succeeded to the throne as Manoel II.

Portuguese Hymn. See *Adeste fideles*.

Potocka (pō-tots'kä), **Sophie.** Born at Constantinople, about 1766: died at Berlin in 1822. The wife of the Polish count Stanislas Felix Potocki. She was the child of Greek (Fanariot) parents. Her mother sold her at the age of twelve for 1,500 piasters ($375) to the French ambassador at Constantinople, who adopted her as his ward. She married Count de Witt, the commandant of Kemenets, Podolia, who some three years later divorced her at the request of Potocki and on the receipt of two million gulden. She then (1790) married Potocki and became noted throughout Russia and Germany for her beauty and cleverness.

Pototan (pō-tō'tän). 1. A municipality in the eastern part of Iloilo province, Panay, Philippine Islands. Civilized population (1903), 20,964.—2. A town of Iloilo province, situated on the Jalaur river. Population (1903), 5,062.

Potter*, **Eliphalet Nott.** Died Feb. 6, 1901.

Potter*, **Henry Codman.** Died at Cooperstown, N. Y., July 21, 1908. His later works included "Sermons of the City" (1881), "Waymarks" (1892), "The Scholar and the State" (1897), "The East of To-day and To-morrow" (1902), "The Citizen in his Relation to the Industrial Situation" (1902), "Law and Loyalty" (1903), "Modern Man and his Fellow Man" (1903), "The Drink Problem in Modern Life" (1905), "Reminiscences of Bishops and Archbishops" (1906), "Man, Men, and their Master" (1907).

Powell*, **John Wesley.** Died at Haven, Me., Sept. 23, 1902. His later works include "Studies in Sociology" (1887), "Canyons of the Colorado" (1895), "Truth and Error" (1898), and many special scientific reports.

Poynter*, Sir **Edward John.** In November, 1896, he was elected president of the Royal Academy, and he was director of the National Gallery 1894–1905. He was knighted in 1896 and created a baronet in 1902.

Poynting (poin'ting), **John Henry.** Born at Monton, near Manchester, England, Sept. 9, 1852. An English physicist, professor of physics in the University of Birmingham (formerly Mason University College) from 1880 and dean of the faculty of science. He has published "A Text-book of Physics" (with J. J. Thomson), etc.

Prado*, **Mariano Ignacio.** Died 1901.

Prague*. The university contains two departments, German and Czech (the former with about 68 instructors and 868 students, and the latter with about 126 instructors and 2,300 students), and has a library of over 354,000 volumes.

Prairie City. A popular name of Chicago, as the chief city of the Prairie State.

Premier Diamond. A white diamond, weighing in the rough 3,024¾ carats, found by the superintendent of the Premier Mine, Johannesburg, January, 1905.

Prentiss*, **Benjamin Mayberry.** Died Feb. 8, 1901.

Prestwich*, Sir **Joseph.** Died at Shoreham, Kent, June 23, 1896.

Prévost (prā-vō'), **Eugène Marcel.** Born at Paris, May 1, 1862. A French novelist. He was educated by the Jesuits; studied at the École Polytechnique in Paris; and followed the profession of civil engineer until 1890. In 1909 he was chosen a member of the French Academy, succeeding Victorien Sardou. Among his works are "Le scorpion" (1887), "Mademoiselle Jauffre" (1889), "Lettres des femmes" (1892), "Les demi-vierges" (1894), "Les vierges fortes" (1900), "L'heureux ménage" (1901), "Lettres à Françoise" (1902), "Le pas révélé" (1903), "La plus faible" (1904), "La Princesse d'Erminge" (1904), "L'accordeur aveugle" (1905), "Monsieur et Madame Moloch" (1906), "Femmes" (1907), "Lettres à Françoise mariée" (1908), etc.

Pribylof, or **Pribilof** (prib'i-lof), **Gerassim.** A Russian navigator who in 1786 discovered the group of islands in Bering Sea which bears his name.

Price (prīs), **Bruce.** Born at Cumberland, Md., Dec. 12, 1845: died at Paris, May 29, 1903. An American architect. In 1897 he was elected president of the Architectural League of America and in 1889 fellow of the American Institute of Architects. Among his more important works are the St. James Building, the Century Building, and the Hunt Memorial in New York City; Georgian Court at Lakewood, New Jersey; several dormitories of Yale University; the Château Frontenac hotel in Quebec; and the Royal Victoria College in Montreal.

Prime*, **William Cowper.** Died Feb. 13, 1905. He edited the New York "Journal of Commerce" 1861–69, and was professor of the history of art at Princeton University 1884–1905.

Prince Edward Island*. It sends 4 members to the Dominion senate, 4 members to the House of Commons.

Princeton*. It is the seat of Princeton University (see *New Jersey, College of*).

Pringle Pattison. See *Seth, Andrew.*

Prinsep (prin'sep), **Valentine Cameron.** Born at Calcutta, Feb. 14, 1838: died at London, Nov. 11, 1904. An English painter. He abandoned the Indian civil service for art at the suggestion of G. F. Watts, and was elected associate of the Royal Academy in 1879 and academician in 1894. In 1877 he was commissioned to paint "The Declaration of Victoria as Empress of India" in commemoration of the Durbar at Delhi. He was also professor of painting at the Royal Academy. His work is distinctly English and academic in style. He published several plays.

Pritchett (prich'et), **Henry Smith.** Born at Fayette, Mo., April 16, 1857. An American astronomer and geodesist, superintendent of the United States Coast and Geodetic Survey 1897–1900. He was assistant astronomer in the United States Naval Observatory 1878–80; was astronomer of the Morrison Observatory, Glasgow, Missouri, 1880–81; was professor of astronomy in Washington University, St. Louis, 1881–97; was president of the Massachusetts Institute of Technology (Boston) 1900–06; and has been president of the Carnegie Foundation for the Advancement of Teaching from 1906.

Prix de Rome. See *Grand Prix de Rome.*

Proctor (prok'tọr), **Edna Dean.** Born at Henniker, N. H., Oct. 10, 1838. An American author and poet. During the Civil War she did much to arouse public sentiment in the North by her patriotic prose and verse. Among her works are "Poems" (1867), "A Russian Journey" (1872), "The Song of the Ancient People" (1893), "A Mountain Maid, and Other Poems of New Hampshire" (1900), "Songs of America" (1906), etc.

Proctor (prok'tọr), **Redfield.** Born at Proctorsville, Vt., June 1, 1831: died at Washington, D. C., March 4, 1908. An American statesman. He was graduated at Dartmouth College in 1851 and at the Albany Law School in 1859; was appointed a lieutenant in the Union army in 1861, and rose to the rank of colonel; was several times a member of the Vermont legislature; was lieutenant-governor of Vermont 1876–78 and governor 1878–80; was secretary of war 1889–91; and was United States senator (Republican) from Vermont from 1891. He visited Cuba in 1898 and his speech on the condition of affairs in the island strongly influenced the policy of the United States government.

Prohibition Party. A political party in the United States founded upon the demand for the prohibition by the Federal Constitution, as well as by the laws of the several States, of the "manufacture, sale, importation, exportation, or transportation of alcoholic liquors for beverage purposes." Organization was begun in 1868 and the first national convention was held in 1872.

Prothero (proth'ẹ-rō), **George Walter.** Born in Wiltshire, England, Oct. 14, 1848. An English historian, writer, and editor. He was university lecturer in history and tutor at King's College, Cambridge, 1876–94; was professor of history at the University of Edinburgh 1894–99; and was Rede lecturer at Cambridge in 1903. In 1899 he succeeded his brother, Rowland Edmund Prothero, as editor of the "Quarterly Review," retiring in 1907. He was made a fellow of the British Academy in 1903. Among his publications are "Life and Times of Simon de Montfort" (1877), "Memoir of Henry Bradshaw" (1889), and "British History Reader" (1898).

Prothero (proth'ẹ-rō), **Rowland Edmund.** Born at Clifton on Teme, Worcestershire, England, Sept. 6, 1852. An English writer. He was editor of the "Quarterly Review" 1894–99. Among his works are "Life and Correspondence of Dean Stanley" (1893: with G. G. Bradley), "Letters and Journals of Lord Byron" (1898–1901), "The Psalms in Human Life" (1903), "Letters of Richard Ford" (1905), "The Pleasant Land of France" (1908), etc.

Prudden (prö'dẹn), **Theophil Mitchell.** Born at Middlebury, Conn., July 7, 1849. An American pathologist and bacteriologist, professor of pathology in the College of Physicians and Surgeons of Columbia University from 1891. He has published "A Manual of Normal Histology" (1881), "A Handbook of Pathology" (seventh edition, 1904), "Story of Bacteria" (1889), "Dust and its Dangers" (1890), and results of researches, in technical journals, and popular articles on science and travel.

Prudhomme*, **René François Armand Sully-.** Died near Paris, Sept. 7, 1907. He was elected a member of the French Academy in 1881, and in 1901 received the Nobel prize for literature. His later works include "L'expression dans les beaux arts" (1884), "Le bonheur" (1888), "Réflexions sur l'art des vers" (1892), "Que sais-je? Examen de conscience. Sur l'origine de la vie terrestre" (1895), and "Psychologie du libre arbitre" (1907).

Pryor (prī'ọr), **Roger Atkinson.** Born near Petersburg, Va., July 19, 1828. An American jurist. He was graduated from Hampden Sidney College in 1845; was special minister to Greece under President Pierce in 1855; sat in Congress 1857–59; and was again elected in 1860 but did not take his seat on account of the secession of Virginia. He entered the Confederate service as colonel in 1861 and was brevetted brigadier-general in 1863: but resigned his commission and entered the service as a private soldier. He was a member of the Confederate Congress in 1862. In 1865 he began the practice of law in the city of New York, and in 1890 was appointed judge of the Court of Common Pleas, to which office he was elected in 1891 for fourteen years. By the revised constitution of 1894 the Court of Common Pleas was abolished and for the remainder of his term after Jan. 1, 1896, he was a justice of the Supreme Court of New York.

Puccini (pöt-chē'nē), **Giacomo.** Born at Lucca, June 22, 1858. An Italian operatic composer, a pupil of Ponchielli at the Milan Conservatory. His most important operas are "Manon Lescaut" (1893), "La Bohème" (1896), "Tosca" (1900), and "Madame Butterfly" (1904; revised 1905). He is considered one of the most talented and original of the younger school of Italian composers.

Puerto Galera (pö-ãr′tō gä-lā′rä). 1. A small bay on the northern coast of Mindoro Island, Philippines: safe for large craft in all weather.—2. A town, the capital of Mindoro province, situated on the bay of the same name, approximately in lat. 13° 32′ N., long. 120° 56′ E.

Puerto Princesa (pö-ãr′tō prēn-thā′sä). 1. A bay and harbor on the eastern coast of Paragua (Palawan) Island: safe for large vessels in all weather. Also called *Port Royalist*.—2. A town, the capital of Paragua province, situated on the eastern coast of Paragua (Palawan) Island, Philippines, at the entrance of Puerto Princesa Bay, approximately in lat. 9° 41′ 30″ N., long. 118° 45′ E. It was the capital of Paragua Sur before the union of that district with Paragua province. Civilized population of municipality (1903), 1,208.

Pulitzer (pū′lit-zėr), **Joseph.** Born at Budapest, Hungary, April 10, 1847. An American journalist, proprietor of the New York "World" from 1883. He came to the United States in 1864; served in the Union army during the last year of the Civil War; and after its close devoted himself to journalism in St. Louis. In 1903 he endowed a school of journalism in Columbia University.

Pupin (pū′pin), **Michael Idvorsky.** Born at Idvor, Hungary, Oct. 4, 1858. An American physicist, professor of electromechanics in Columbia University from 1901, especially known for his work in electricity. He was graduated at Columbia in 1883; studied in Berlin; and became instructor at Columbia in 1889. He has published numerous technical papers. By an invention involving the use of non-uniform conductors he has greatly increased the distance over which telephonic and telegraphic messages can be transmitted.

Putnam (put′na̤m), **Frederic Ward.** Born at Salem, Mass., April 16, 1839. An American anthropologist, professor of American archæology and ethnology in Harvard University from 1886, and professor of anthropology in the University of California from 1903. He has been curator of the Peabody Museum (Harvard) from 1875, and was curator of the department of anthropology in the American Museum of Natural History (New York) 1894–1903. He has published numerous papers on anthropology, in the reports of the Peabody Museum and in various scientific journals.

Putnam (put′na̤m), **George Haven.** Born at London, England, April 2, 1844. An American publisher and writer. He studied in the universities of Paris and of Göttingen 1860–62; served in the United States army, from private to major, 1862–65; and was a prisoner in Libby Prison and at Danville, Virginia, during the winter of 1864–65. He was a leader in the reorganization of the American Copyright League and was largely instrumental in securing the passage of the international copyright bill of March, 1891. In 1891 he received the cross of the Legion of Honor. He is the author of "Authors and Publishers" (1883), "Question of Copyright" (1891–96), "Authors and Their Public in Ancient Times" (1893), "The Artificial Mother" (1894), "Books and Their Makers During the Middle Ages" (1896), and "The Censorship of the Church and its Influence on the Production and Distribution of Literature" (1906).

Putnam (put′na̤m), **Herbert.** Born at New York, Sept. 20, 1861. An American librarian. He was librarian of the Minneapolis Athenæum 1884–89; of the Minneapolis Public Library 1889–91, and of the Boston Public Library 1895–99. He was admitted to the bar in 1885 and practised law in Boston 1892–95. Since 1899 he has been librarian of Congress.

Putnam*, Mrs. (**Mary Lowell**). Died at Boston in 1898.

Putnam (put′na̤m), **Rufus.** Born at Sutton, Mass., April 9, 1738: died at Marietta, Ohio, May 1, 1824. A noted American soldier and military engineer. He served as a private through the campaign of 1757–60, and in 1775 entered the Continental army as a lieutenant-colonel. He was appointed chief engineer of the army, with the rank of colonel, in 1776; had charge of the defense of New York by fortifications, and superintended the construction of the fortifications at West Point, with his cousin, Israel Putnam; was placed in command of the 5th Massachusetts regiment, serving with distinction in the campaign against Burgoyne; and in 1783 was appointed brigadier-general. He was for several terms a member of the Massachusetts legislature; was aide to General Benjamin Lincoln during Shay's Rebellion in 1787; formed the Ohio Land Company and in 1788 founded the town of Marietta, Ohio, the first permanent settlement in the eastern part of the Northwest Territory; became judge of the supreme court of that territory in 1789; was appointed a brigadier-general under General Wayne to act against the Indians, and as United States commissioner concluded an important treaty with eight tribes at Port Vincent (now Vincennes) in 1792; was surveyor-general of the United States 1793–1803; and in 1803 was a member of the Ohio constitutional convention. To him was due the credit of the ordinance of 1787 which excluded slavery from the settlement of Ohio, and he has been called "the founder and father of Ohio."

Puttkamer*, **Robert Victor von.** Died at Karzin in Pomerania, March 15, 1900. He was lord-lieutenant of Pomerania 1891–99.

Puvis de Chavannes*, **Pierre.** Died at Paris, Oct. 24, 1898.

Pu-yi (pö′yē′); reign title **Hsüan-t'ung.** Born Feb. 11, 1906. Emperor of China. He succeeded to the throne upon the death of his uncle, Nov. 14, 1908. His father, Prince Ch'un, is regent of the empire.

Pyeshkof (pyesh′kof), **Aleksyei Maksimovitch:** pseudonym **Maxim Gorky.** Born at Nijni Novgorod, March 14, 1868. A Russian writer. He led a vagabond life for many years, working and tramping with the poorest classes in Russia, and his writings record the tragedy of poverty and crime as he found it. Among the best known of his works are "Makar Chudra" (1890), "Emilian Pibgai," "Chelkash," "Oshybka" (1895), "Tyenovya Kartinki" (1895), "Toska," "Konovalov" (1896), "Malva" (1896), "Foma Gordyeev" (1901), "Mujiki" (1901), three volumes of short stories (1898–99), "Miestchanye" (1902), "Comrades" (1907), "The Spy" (1908), and "In the Depths," a play.

Pyle (pīl), **Howard.** Born at Wilmington, Del., March 5, 1853. An American painter, illustrator, and writer. He was educated in private schools, and studied at the Art Students' League in New York City. The greater part of his work has been done for magazines, the subjects being usually chosen from the Colonial and Revolutionary periods, which he treats with sympathy and knowledge. He has written and illustrated many stories.

Pyne*, **Louisa Fanny.** Born at London, Aug. 27, 1832: died there, March 20, 1904.

Q The pseudonym of Arthur Thomas Quiller-Couch.

Quay*, **Matthew Stanley.** Died at Beaver, Pa., May 28, 1904.

Queechy (kwē′chi). A story by Susan Warner, published in 1852.

Queensland*. It is now a state of the Commonwealth of Australia. It sends 6 senators and 9 representatives to the federal parliament.

Queiroz*, **José Maria Eça de.** Died at Paris, Aug. 16, 1900. His later works include "O primo Basilio" (1877), "A reliquia" (1886), "Os Maias" (1889), "A correspondencia de Fradique Mendes" (1891), "A illustre casa Ramires" (1900), "Cidades e serras" (1903), etc.

Quiller-Couch (kwil′ėr-köch), **Arthur Thomas:** pseudonym **Q.** Born in Cornwall, Nov. 21, 1863. An English author. He was lecturer in classics at Trinity College, Oxford, 1886–87; was on the editorial staff of the "Speaker" from its start until 1899; and since 1891 has lived in Cornwall. Among his publications are "The Splendid Spur" (1889), "The Blue Pavilions" (1891), "The Warwickshire Avon" (1892), "The Delectable Duchy" (1893), "Wandering Heath" (1895), "Poems and Ballads" (1896), "Fairy Tales from Far and Near" (1896), "Adventures in Criticism" (1896), "The Ship of Stars" (1899), "Old Fires and Profitable Ghosts" (1900), "Hetty Wesley" (1903), "George Eliot" (1906), "The Mayor of Troy" (1906), "Major Vigoureux" (1907), etc. In 1897 he was selected to finish Robert Louis Stevenson's uncompleted novel "St. Ives."

Quo Vadis (kwō vā′dis). [L., 'whither goest thou?'] A story of life at Rome in the time of Nero, by Henryk Sienkiewicz. The licentiousness of paganism and the spiritual beauty of Christianity are drawn in strong contrast. An English translation was published in 1896.

Radcliffe College*. It has over 400 students.

Radisson (rä-dē-soṅ′), Sieur **Pierre Esprit:** known as **Pierre d'Esprit.** Born at Saint-Malo, France: died, probably in England, after 1687. An early Canadian explorer. He was the brother-in-law of Medard Chouart (Sieur des Groseilliers), with whom he discovered the Upper Mississippi and explored the Hudson Bay region. He wrote an account of his travels and experiences among the North American Indians, which was published from the manuscript by the Prince Society in 1885.

Raffaelli (rä-fä-el′li), **Jean François.** Born at Paris, April 20, 1850. A French painter, of Italian parentage. He began as a singer at a lyric theater; studied at the atelier Gérôme in leisure hours; and made his début at the Salon in 1870. He has been especially attracted by the effects found in the streets and suburbs of Paris. He has also produced many lithographs and etchings.

Raffet (rä-fā′), **Denis Auguste Marie.** Born at Paris, March 2, 1804: died at Genoa, Italy, Feb. 16, 1860. A French painter and lithographer. His first collection of lithographs appeared in 1827. He was much employed to illustrate the popular books of the period. His reputation rests mainly upon his lithographs of military scenes and battle-pieces. He was also an excellent caricaturist.

Ragay (rä-gī′), **Gulf of.** A gulf which indents the southern coast of Luzon, Philippine Islands, and partly separates Ambos Camarines from Tayabas province.

Ragozin (rä-gō′zēn), **Zénaïde Alexéievna.** Born in Russia, 1835. A Russian-American author, historian, and Orientalist. She came to the United States in 1874 and became an American citizen. Among her works are "Chaldea," "Assyria," "Vedic India," "History of the World," "Siegfried," "Beowulf," "Frithjof," "Roland," "Salammbô," etc.

Raimond, C. E. A pseudonym of Elizabeth Robins.

Raine, Allen. The pseudonym of Mrs. Beynon Puddicombe (died 1907), a writer of Welsh stories.

Rainier*, **Mount.** It is 14,526 feet high.

Raleigh (râ′li), **Walter.** A contemporary English essayist and biographer. He was educated at University College, London, and at King's College, Cambridge; and has been professor of modern literature at University College, Liverpool, of the English language and literature at Glasgow University, and since 1904 of English literature at Oxford. He has published "The English Novel" (1894), "Robert Louis Stevenson" (1895), "Style" (1897), "Milton" (1900), "Wordsworth" (1903), "English Voyages of the Sixteenth Century" (1905), "Shakespeare" (1907), etc.

Ralik Islands*. They were annexed by Germany in 1885.

Ralph (ralf), **Julian.** Born at New York, May 27, 1853: died there, Jan. 20, 1903. An American journalist and author. He was with the Turkish army as correspondent in the war of 1897 and in 1899 went to South Africa as war correspondent. He wrote "On Canada's Frontier" (1892), "Chicago and the World's Fair" (1892), "Our Great West" (1893), "People We Pass" (1895), "Towards Pretoria" (1900), "An American with Lord Roberts" (1901), "War's Brighter Side" (1901), "The Millionairess" (1902), etc.

Rambaud (räm-bō′), **Alfred Nicolas.** Born at Besançon, France, July 2, 1842: died at Paris, Nov. 10, 1905. A French historian and author. He was minister of public instruction in the

Jules Ferry cabinet 1879–80, and in the Méline cabinet 1896–98. In 1883 he was appointed professor of contemporary history in the University of Paris. He was elected a member of the Academy of Moral and Political Sciences in 1897, succeeding the Duc d'Aumale. Among his works are "La domination française en Allemagne 1792-1804" (1873), "Histoire de la Russie" (1878), "Histoire de la révolution française 1789–1799" (1883), "Histoire de la civilisation française" (1885–87), "La France coloniale" (1886), "Histoire de la civilisation contemporaine en France" (1888), "L'anneau de César" (1893), "Russes et Prussiens" (1895), "Jules Ferry, 1832-1893" (1903), etc. With Lavisse, he edited the "Histoire générale du IV. siècle jusqu' à nos jours" (1893-1901).

Ramée, Louise de la. See *De la Ramée.*

Rampolla (räm-pōl′lä), **Mariano,** Marchese del Tindaro. Born at Polizzi, Sicily, Aug. 17, 1843. An Italian prelate, arch-priest of the Vatican Basilica and cardinal. He entered the service of the Pope in 1870 and was appointed councilor of the Papal Embassy at Madrid in 1875, secretary of the Propaganda (Oriental rites) in 1877, secretary of ecclesiastical affairs in 1880, nuncio at Madrid in 1882, and secretary of state in 1887. He retired in 1903.

Ramsay (ram′zi), Sir **William.** Born at Glasgow, Scotland, Oct. 2, 1852. A British chemist, professor of chemistry in University College, London, from 1887. He is especially noted for the discovery (with Lord Rayleigh) of argon, and of helium, neon, krypton, and xenon (atmospheric gases). Among his publications are text-books of chemistry and numerous scientific papers. He wrote also "Essays, Biographical and Chemical" (1909).

Ramsey*, **Alexander.** Died April 22, 1903.

Rand, The. See *Witwatersrand.*

Randall*, **James Ryder.** Died at Augusta, Ga., Jan. 14, 1908.

Randall*, **Samuel Jackson.** Died at Washington, D. C., April 13, 1890.

Ranger (rān′jėr), **Henry Ward.** Born in western New York, January, 1858. An American landscape-painter. He received his technical training during several years of study in France, England, and Holland. His work is marked by richness of effect and depth of tone. In 1901 he was elected associate of the National Academy of Design in New York, and a member in 1906.

Raoult (rä-ōl′), **François Marie.** Born at Fournès, Nord, France, May 10, 1830: died at Grenoble, April 1, 1901. An eminent French chemist, professor at the University of Grenoble from 1870. He is best known for his work in physical chemistry, and especially for his researches on the freezing-point and the boiling-point of solutions.

Raphael of Pigs, The. A name given to the French painter and etcher Charles Émile Jacque.

Rarey (rãr′i), **John S.** Born in Franklin County, Ohio, 1828: died at Cleveland, Ohio, Oct. 4, 1866. A noted American horse-tamer. He had great success in managing horses after a training system of his own, and gave many exhibitions both in America and Europe. In 1863 he was employed by the government to inspect the horses of the Army of the Potomac. He was the author of a "Treatise on Horse-Taming" (1858).

Rasle (räl), **Sébastien.** Born at Dôle, France, 1658: died at Norridgewock, Me., Aug. 12, 1724. A French missionary. After completing his studies at Dijon, he joined the Order of the Jesuits; taught Greek for a time in the college of that society at Nimes; became attached to the missions of Canada in 1689; and was placed in charge of the station at Norridgewock in 1689. Here he studied the Abenaki language, of which he compiled a valuable dictionary in three volumes (now preserved in the library at Harvard). He had much influence with the Indians, which he exerted to secure their allegiance to the French against the English. Public opinion in New England was aroused against him, and a price was placed upon his head. He was attacked a number of times and escaped, but finally was surprised in 1724 by a party from Fort Richmond and shot. A monument to his memory was raised by the citizens of Norridgewock in 1833.

Rathbun (rath′bun), **Richard.** Born at Buffalo, N. Y., Jan. 25, 1852. An American zoölogist, assistant secretary of the Smithsonian Institution from 1897 and in charge of the United States National Museum from 1899. He was geologist on the Imperial Geological Commission of Brazil 1875–78, and scientific assistant of the United States Fish Commission 1878–96. He has written various scientific papers on paleontology, marine invertebrates, and fisheries.

Rat Portage (rat pōr′tāj). A former name of Kenora, a town of Algoma, Ontario, situated on the Canadian Pacific Railway at the northern end of the Lake of the Woods. Population (1901), 5,202.

Ravenshoe (rā′venz-hō). A romance by Henry Kingsley, published in 1862.

Rawlinson*, **George.** Born Nov. 23, 1812: died at Canterbury, Oct. 6, 1902.

Rawnsley (rânz′li), **Hardwicke Drummond.** Born at Henley-on-Thames, Sept. 28, 1850. An English clergyman, author, and poet, grandnephew of Sir John Franklin, the arctic explorer. He was educated at Balliol College, Oxford; took orders in 1875; was curate in charge of Clifton College Mission; was vicar of Wray, Windermere, 1878–83; has been vicar of Crosthwaite, Keswick, and rural dean since 1883; and is honorary canon of Carlisle. Among his works are "Valete Tennyson, and Other Poems" (1893), "Literary Associations of the English Lakes" (1894), "Life and Nature at the English Lakes" (1899), "Memories of the Tennysons" (1900), "A Rambler's Note-book at the English Lakes" (1902), "Sermons on the Sayings of Jesus" (1905), "Months at the Lakes" (1906), "A Sonnet Chronicle" (1906), "Round the Lake Country" (1909), etc.

Raymond (rā′mọnd), **Andrew Van Vranken.** Born at Vischer Ferry, Saratoga County, N. Y., Aug. 8, 1854. An American educator, president of Union College 1894–1907. He was graduated from Union College in 1875, and from New Brunswick Theological Seminary in 1878, and held pastorates in Paterson and Plainfield, New Jersey, and Albany, New York.

Raymond (rā′mọnd), Mrs. (**Annie Louise Cary**). Born at Wayne, Me., Oct. 22, 1842. A noted American contralto. She made her début at Copenhagen, and in 1868 was engaged in Hamburg at the opera. After that she sang in theaters at Brussels, London, and, from 1870, in New York; in 1875 in St. Petersburg. After her marriage with C. M. Raymond of New York she retired.

Raymond (rā′mọnd), **Bradford Paul.** Born at Stamford, Conn., April 22, 1846. An American educator and Methodist clergyman, president of Wesleyan University 1889–1908. He has held pastorates in New Bedford, Massachusetts, Providence, Rhode Island, and Nashua, New Hampshire, and was president of Lawrence University, Appleton, Wisconsin, 1883–89.

Raymond (rā′mọnd), **Rossiter Worthington.** Born at Cincinnati, Ohio, April 27, 1840. An American mining engineer. He was United States commissioner of mining statistics 1868–76; editor of the New York "American Journal of Mining" (later called the "Engineering and Mining Journal") 1867–93; president of the American Institute of Mining Engineers 1872–75, and vice-president in 1871, 1876, and 1877; and secretary and editor of its "Transactions" since 1884. Among his works, besides official reports and numerous essays on the United States mining laws, are "A Glossary of Mining and Metallurgical Terms" (1881) and "Life of Peter Cooper" (1901).

Reagan*, **John Henninger.** Died at Palestine, Texas, March 6, 1905.

Reay (rā), **Donald James Mackay,** eleventh Baron. Born at The Hague, Dec. 22, 1839. A British statesman and scholar. He was governor of Bombay 1885–90; president of the Royal Asiatic Society; first president of the British Academy (1902); and delegate to the second Peace Conference 1907.

Reclus*, **Jean Jacques Elisée.** Died at Thourout, West Flanders, July 4, 1905.

Red Cross Society. A philanthropic society founded to carry out the views of the Geneva Convention of 1864. Its objects are to care for the wounded in war and secure the neutrality of nurses, hospitals, etc., and to relieve suffering occasioned by pestilence, floods, fire, and other calamities. The society was established through the efforts of Henri Dunant. The founder and first president of the American National Red Cross Society was Clara Barton. The distinctive flag is a red cross on a white ground.

Redonda (re-don′dạ̈). A small island of the Leeward group lying between Montserrat and Nevis. It belongs to Great Britain.

Red Peak*. Its height is 13,333 feet.

Reds of the Midi, The. An English translation, by Mrs. Thomas A. Janvier, of the Provençal tale "Li Rouge dóu Miejour," written by Félix Gras in 1896. It was published in 1898, before the appearance of the original or of its author's French translation, "Les Rouges du Midi." The scene is laid in the south of France, and the time is that of the French Revolution.

Red Sunday. January 22, 1905. On this date the workmen of St. Petersburg, disappointed by the Czar's manifesto of December 26, 1904, and led by Father Gapon, attempted to hold a mass-meeting before the Winter Palace in order that they might petition the Czar for liberty of assembly, speech, self-government, etc. The military refused admission to the square, and fired on the people, causing considerable loss of life.

Reed*, Sir **Edward James.** Died Nov. 30, 1906.

Reed*, **Thomas Brackett.** Died at Washington, D. C., Dec. 7, 1902. He was speaker of the House of Representatives 1889–91, 1895–97, and 1897–99.

Reed (rēd), **Walter.** Born in Gloucester County, Va., Sept. 13, 1851: died in Washington, D. C., Nov. 23, 1902. An American physician, surgeon in the United States Army with the rank of major (1893). During the Spanish-American war he was the head of a board appointed to study the causation and spread of typhoid fever in the camps of the volunteer troops in the United States. In June, 1900, he was sent to Cuba at the head of a commission to study yellow fever. As a result of decisive experiments instituted by him it was proved that the germs of the disease are transmitted by a mosquito, *Stegomyia fasciata.*

Rees (rēs), **John Krom.** Born at New York, Oct. 27, 1851: died there, March 9, 1907. An American astronomer, instructor, adjunct professor, and professor of astronomy in Columbia University from 1881. He was graduated at Columbia in 1872 and was professor of mathematics in Washington University, St. Louis, 1876–81. In 1902 he was made a chevalier of the Legion of Honor.

Reeve*, **Henry.** Died Oct. 21, 1895.

Reeves*, **John Sims.** Born Sept. 26, 1818: died Oct. 25, 1900.

Reger (rā′gėr), **Max.** Born at Brand, Bavaria, March 19, 1873. A German composer. From 1901 to 1906 he was professor of counterpoint in the Munich conservatory. He has composed many organ pieces, chamber works, songs, and a sinfonietta. His music is marked by extreme complication in counterpoint and by the avoidance of the prevailing tendency toward the use of imposing mass effects and instrumental color.

Reggio di Calabria*. It was destroyed, with great loss of life, by an earthquake, which also destroyed Messina, Dec. 28, 1908.

Regina (re-jī′nạ̈). The former capital of Assiniboia, Canada, and present capital of Saskatchewan. Population (1901), 2,645.

Régnier (rā-nyā′), **Henri de.** Born at Honfleur, France, Dec. 28, 1864. A noted French poet, one of the leaders of the modern Symbolists. His verse includes "Lendemains" (1886), "Sites" (1887), "Episodes" (1888), "Poèmes anciens et romanesques" (1900), "Tel qu'en songe" (1892), "Aréthuse" (1895), "Les médailles d'argile" (1900), "La cité des eaux" (1902), "La sandale ailée" (1906), etc. He is also known as a critic, and has published several books of fiction, "La canne de jaspe" (1895), "Le trèfle blanc" (1899), "La double maitresse" (1900), "Les amants singuliers" (1901), "Le bon plaisir" (1902), "Les vacances d'un jeune homme sage" (1903), "Le passé vivant" (1905), "La peur de l'amour" (1907), etc.

Reid*, Sir **George.** He was president of the Royal Scottish Academy 1891–1902.

Reid (rēd), **George Houstoun.** Born at Johnstone, Scotland, Feb. 25, 1845. An Australian Liberal statesman. He went to Melbourne in 1852; was called to the bar of New South Wales in 1879; was a member of the Legislative Assembly of New South Wales 1880–99 (except 1884–85), and was elected to the Commonwealth Parliament in 1901; and was prime minister and colonial treasurer of New South Wales 1894–99, and premier of the Commonwealth 1904–05. He has published "Five Free Trade Essays," "New South Wales," etc.

Reid*, **Mayne.** His later works include "The Ocean Waifs" (1871), "The Death Shot" (1874), "The Flag of Distress" (1875), "The Vee Boers" (1880), "Gaspar the Gaucho" (1880), "The Free Lances" (1881), etc.

Reid (rēd), Sir **Robert Threshie,** first Baron Loreburn. Born April 3, 1846. A British jurist. He was educated at Cheltenham College and at Balliol College, Oxford; was called to the bar of the Inner Temple in 1871; was appointed queen's counsel in 1882; and was knighted in 1894. He was Liberal member of the House of Commons for Hereford 1880–85 and for Dumfries 1886–1905. He was solicitor-general in 1894; attorney-general 1894–95; lord high chancellor Dec., 1905–; and was one of the British counsel before the Venezuelan Commission. He was created Baron Loreburn, Dec. 30, 1905.

Reid*, **Whitelaw.** He was editor-in-chief of the New York "Tribune" 1872–1905. He was United States minister to France 1889–92, was appointed special ambassador to England to represent the President at the Queen's jubilee 1897, was member of the Spanish Peace Commission 1898, and has been ambassador to Great Britain from 1905. He has written "Ohio in the War" (1868), "Schools of Journalism" (1870), "Our New Duties," "Later Aspects of Our New Duties" (1899), "A Continental Union" (1900), "Problems of Expansion" (1900), "Greatest Fact in Modern History" (1907), etc.

Reinecke (rī′nek-e), **Karl.** Born at Altona, June 23, 1824. A German pianist, composer, conductor, and teacher of music. After filling various posts in smaller cities, he became conductor of the Gewandhaus concerts in Leipsic in 1860, and at the same time was made professor of the piano and of composition at the Conservatory. In 1895 he was succeeded as conductor by Nikisch and in 1902 retired from his post at the Conservatory. His compositions are very numerous.

Reinhart*, **Charles Stanley.** Died at New York, Aug. 30, 1896.

Reinkens*, **Joseph Hubert.** Died at Bonn, Jan. 5, 1896.

Reiss*, **Wilhelm.** Died near Pössneck, Saxe-Meiningen, Sept. 29, 1908.

Réjane*, **Gabrielle Charlotte Réju,** called. She founded in 1905 the Théâtre Réjane, of which she is the directrix.

Reliance. An American racing yacht, the successful defender, in 1903, of the America's cup against Shamrock III. She was built by the Herreshoffs, sailed by Captain Barr, and owned by a syndicate represented by C. Oliver Iselin.

Remenyi (rā-men′yi), **Eduard.** Born at Heves, Hungary, in 1830: died at San Francisco, Cal., May 15, 1898. A Hungarian violinist. He traveled in many parts of the world.

Remsen*, **Ira.** He was professor of chemistry at Johns Hopkins University 1876–1901 and president 1901–. His later works include "Inorganic Chemistry" (1889), "Chemical Experiments" (1895), "College Text-book of Chemistry" (1901), etc.

Rémy*, **Jules.** Died Dec. 5, 1893.

Rendall (ren′dal), **Gerald Henry.** Born at Harrow, Middlesex, 1851. An English classical scholar, headmaster of the Charterhouse School from 1897. He was graduated at the University of Cambridge in 1874; was vice-chancellor of Victoria University 1890-94, and was the first principal of University College, Liverpool. His writings include "The Cradle of the Aryans" (1889), a translation of the "Meditations" of Marcus Aurelius (1897), etc.

Rensselaer (ren'se-lėr). A city in Rensselaer County, New York. It is situated on the Hudson opposite Albany, with which it is connected by bridges. It has large freight-yards and round-houses, and manufactures of leather, felt, coal-elevators, colors, etc. Population (1900), 7,446.

Rensselaer (ren'se-lėr) **Polytechnic Institute.** A school at Troy, N. Y., founded in 1824 by the Hon. Stephen Van Rensselaer. It was reorganized upon the basis of a general polytechnic institute in 1849. It offers courses of four years each, leading to the degrees of civil engineer, mechanical engineer, electrical engineer, and bachelor of science, and is attended by about 700 students.

Repplier (rep'li-ėr), **Agnes.** Born at Philadelphia, Pa., April 1, 1858. An American essayist. She has written "Books and Men" (1888), "Points of View" (1891), "Essays in Miniature" (1892), "Essays in Idleness" (1893), "In the Dozy Hours" (1895), "Varia" (1897), "Philadelphia: the Place and the People" (1898), "The Fireside Sphinx" (1901), "Compromises" (1904), "In Our Convent Days" (1905), "Philadelphia" (1907), "Happy Half-century" (1908), etc.

Representatives*, House of. There are at present (1909) 391 members.

Reszke*, Jean de. He sang in America in 1892, 1893–94, 1895–96, 1896–97, 1898–99, and 1900–01. He is now engaged in teaching at Paris.

Return of the Native, The. A story by Thomas Hardy, published in 1878.

Reveries of a Bachelor. A book by Ik Marvel (Donald Grant Mitchell), published in 1850.

Réville, Albert. Died at Paris, Oct. 25, 1906.

Révillon*, Antoine. Died Feb. 12, 1898.

Revolution of February. The French revolution of 1848 which overthrew the government of Louis Philippe.

Reyer (rā-yãr'), **Louis Étienne Ernst.** (Originally **Rey.**) Born at Marseilles, Dec. 1, 1823: died Jan. 15, 1909. A French composer. His most important works are the operas "Sigurd" (1884), and "Salammbô" (1890). For some years he was musical critic of the "Journal des Débats," and in 1875 published "Notes de musique." He was made a member of the French Academy in 1876.

Reyes (rā'yās), **Rafael.** A South American explorer, soldier, and statesman. He explored the Amazon and its tributaries with his brothers, Henry and Nestor; became commander-in-chief of the Colombian army; was sent to Washington to represent Colombian interests in connection with the new Republic of Panama; and was officially proclaimed president of Colombia, July 4, 1904, and inaugurated August 7, 1904. By a resolution of the General Assembly in March, 1905, his term of office was extended until December 31, 1914. He resigned July 28, 1909.

Rheinberger (rīn'bėr-gėr), **Joseph Gabriel.** Born at Vaduz, Liechtenstein, March 17, 1839: died at Munich, Nov. 25, 1901. A German composer and teacher. From 1859 to the time of his death he was professor of the theory of music in the Munich Conservatory, where he trained many well-known musicians, including a number of Americans. Among his chief works are the symphonic tone poem "Wallenstein," several chamber compositions, and organ pieces, among which are twenty sonatas and two concertos.

Rhode Island*. Capital, Providence, and formerly also Newport.

Rhodes*, Cecil John. Born at Bishop Stortford, Herts, England, July 5, 1853: died at Cape Town, March 26, 1902. He resigned his position as prime minister of Cape Colony in 1896, as also that of chairman of the British South Africa Company, on account of his connection with the Jameson raid into the Transvaal. (See *Jameson, L. S.*) He was created a member of the Privy Council in 1895.

Rhodes (rōdz), **James Ford.** Born at Cleveland, Ohio, May 1, 1848. A noted American historian. He was educated at the universities of New York and Chicago, and pursued special studies in France and Germany. From 1870 to 1885 he was engaged in business in Cleveland. In 1901 he was awarded the Loubat prize by the Berlin Academy of Science. He is known as the author of a "History of the United States from the Compromise of 1850 to the Final Restoration of Home Rule at the South in 1877" (1892-1906).

Rhodes Scholarships. Scholarships established at Oxford University by the will of Cecil J. Rhodes (died 1902), to be held by students (78 in all) from the most important British colonies; from each of the states and territories of the United States (2 each); and from Germany (5). They are held for 3 consecutive years. The value of the Colonial and American scholarships is £300 a year; that of the German, £250.

Rhodesia (rō-dē'siạ̈). A region in southern Africa, under British domination. It extends from the Kongo State and German East Africa on the north to the Transvaal on the south, and is bounded on the east by Portuguese East Africa, Nyasaland, and German East Africa, and on the west by the Kongo State, Portuguese West Africa, and Bechuanaland. The portion north of the Zambesi is divided into Northwestern Rhodesia (Barotseland) and Northeastern Rhodesia; that south of the Zambesi is Southern Rhodesia. Since 1889 it has been administered by the British South Africa Company.

Rhondda (ron'thạ̈). A district and municipality in Glamorganshire, Wales. It is situated in an important iron-mining center, and has large iron interests. Population (1901), 113,735.

Ribbeck*, Johann Karl Otto. Died at Leipsic, July 18, 1898. His later works include "Friedrich Wilhelm Ritschl" (1879–81), "Kolax" (1883), "Agroikos" (1885), and "Reden und Vorträge" (1899).

Ribot (rē-bō'), **Théodule Armand.** Born at Guingamp, Côtes-du-Nord, France, Dec. 18, 1839. A noted French psychologist, professor in the Collège de France from 1888, and founder (1876) and editor of the "Revue Philosophique." He has published "La psychologie anglaise contemporaine" (1870), "L'hérédité" (1873), "La philosophie de Schopenhauer" (1874), "La psychologie allemande contemporaine" (1879), "Les maladies de la volunté" (1883), "Les maladies de la personalité" (1885), "La psychologie de l'attention" (1889), "La psychologie des sentiments" (1896), "L'évolution des idées générales" (1897), "Essai sur l'imagination créatrice" (1900), "La logique des sentiments" (1904), "Essai sur les passions" (1906), etc.

Ricci (rēt'chē), **Corrado.** Born at Ravenna, Italy, April 18, 1858. An Italian connoisseur and critic. He was for many years director of the Brera Gallery in Milan, and in 1903 was appointed director of the museums of Florence. Among his many publications on the history and art of Italy are "Ravenna e suoi dintorni" (1878), "Cronache e documenti per la storia Ravennate del secolo XVI." (1882), and "Antonio Allegri da Correggio" (English translation by Florence Simmonds, (1896).

Rice (rīs), Mrs. (**Alice Caldwell Hegan**). Born at Shelbyville, Ky., Jan. 11, 1870. An American novelist. She has published "Mrs. Wiggs of the Cabbage Patch" (1901), "Lovey Mary" (1903), "Sandy" (1905), "Captain June" (1907), "Mr. Opp" (1909), etc.

Richards (rich'ärdz), Sir **Frederick William.** Born Nov. 30, 1833. A British naval officer, promoted admiral in 1893. He served in the Zulu and Boer wars 1879–81, and in the Burmese war 1885–86; was commander-in-chief on the India station 1885-88, and on the China station 1890–92; and was admiral of the fleet 1898–1903.

Richards*, Thomas Addison. Died June 29, 1900. He was corresponding secretary of the Academy 1852-92, and was professor of art in the University of New York 1867–1900 (emeritus 1887).

Richards*, William Trost. Died Nov. 8, 1905.

Richardson (rich'ạ̈rd-sọn), Sir **Benjamin Ward.** Born at Somerby, Leicestershire, Oct. 31, 1828: died at London, Nov. 21, 1896. A noted English physician, practising in London from 1853. He was a prolific writer and made many important contributions to the science of medicine.

Richardson (rich'ạ̈rd-sọn), **Rufus Byam.** Born at Westford, Mass., April 18, 1845. An American classical archæologist and educator, director of the American School of Classical Studies at Athens 1893–1903. He was graduated at Yale University in 1869; studied in Berlin; served in the Union Army 1862–63; and was professor of Greek in the University of Indiana 1880–82, and in Dartmouth College 1882–93. He has conducted explorations at Eretria and on the site of ancient Corinth. His publications include "Vacation Days in Greece" (1903), "Greece Through the Stereoscope" (1907), and numerous archæological papers.

Richmond (rich'mọnd), Sir **William Blake.** Born at London, Nov. 29, 1842. An English painter. He was trained in the schools of the Royal Academy; was Slade professor of art at Oxford 1879–82; and became an associate of the Royal Academy in 1888, and a member in 1895. Among his works are many compositions of classic and poetical subjects in an academic style and several notable portraits. He also designed the mosaic decorations of the choir of St. Paul's Cathedral. Knighted 1897.

Richmond and Gordon*, Duke of (**Charles Henry Gordon Lennox**). Died at Gordon Castle, Banffshire, Sept. 27, 1903.

Richter*, Eugen. Died at Berlin, March 10, 1906.

Richter*, Hans. He was first court kapellmeister at Vienna 1893–98, and has conducted the Hallé concerts in Manchester, England, since 1900.

Richthofen (richt'hō-fen), Baron **Ferdinand von.** Born at Karlsruhe, in Silesia, May 5, 1833: died at Berlin, Oct. 6, 1905. A noted German geologist and traveler. He accompanied, as geologist, the Prussian expedition to Japan, China, and Siam, and visited Java, the Philippines, India, California, Nevada, and again China and Japan, returning to Europe in 1872. In 1875 he became professor of geography in Bonn, in 1883 at Leipsic, and in 1886 at Berlin. He wrote "China, Ergebnisse eigener Reisen und darauf gegründeter Studien" (1877–83), etc.

Rico*, Martin. Died 1908.

Riddell*, Mrs. (**Charlotte Eliza Lawson Cowan**). Born Sept. 30, 1832: died Sept. 24, 1906. Her later works include "The Head of the Firm" (1892), "A Silent Tragedy" (1893), "A Rich Man's Daughter" (1897), "Footfall of Fate" (1900), "Poor Fellow" (1902), etc.

Ridgeway (rij'wā), **William.** Born in Ireland, 1853. A British archæologist, professor of archæology in the University of Cambridge from 1892. He has written "The Origin and Influence of Metallic Currency and Weight Standards" (1892), "The Early Age of Greece" (1901), "The Origin and Influence of the Thoroughbred Horse" (1905), etc.

Ridgway (rij'wā), **Robert.** Born at Mount Carmel, Ill., July 2, 1850. An American naturalist, curator of the division of birds of the United States National Museum from 1876. He was zoölogist of the United States geological exploration of the 40th parallel 1867–69. Among his publications are "A History of North American Birds" and "Water Birds of North America" (3 volumes, 1874, and 2 vols., 1884: with Baird and Brewer), "Nomenclature of Colors" (1886), "A Manual of North American Birds" (1887), "The Ornithology of Illinois" (1889), "The Birds of North and Middle America" (1901–1904), etc.

Ridpath (rid'pȧth), **John Clark.** Born in Putnam County, Ind., April 26, 1841: died at New York, July 31, 1900. An American educator and historian. He was graduated from Asbury (now DePauw) University, and in 1869 was appointed to a professorship in that institution and later became its vice-president. He was one of the editors of the "People's Cyclopædia" (1881), and published "Academic History of the United States" (1874–75), "A Popular History of the United States" (1877), "Cyclopedia of Universal History" (1880–84), "Great Races of Mankind" (1893), "History of the World" (1898), "History of the United States" (1900), etc.

Riehl*, Wilhelm Heinrich. Died at Munich, Nov. 16, 1897.

Riemann (rē'män), **Hugo.** Born at Grossmehlra, near Sondershausen, Germany, July 18, 1849. A German musical historian and critic. In 1878 he became university lecturer on music at Leipsic, and, after teaching elsewhere, returned to Leipsic in 1895. Among his many works are "Studien zur Geschichte der Notenschrift" (1878), "Musikalische Dynamik und Agogik" (1884), "Geschichte der Musiktheorie im ix.–xix. Jahrhundert" (1898), "Geschichte der Musik seit Beethoven" (1901), "Grosse Kompositionslehre" (1902–03), and a "Musiklexikon" that has been published (1882–1904) in six revisions.

Rigg*, James Harrison. Died April 18, 1909.

Riggs*, Elias. Died Jan. 17, 1901.

Riggs (rigz), Mrs. (**Kate Douglas Smith**): pen-name **Kate Douglas Wiggin** (from her first marriage). Born at Philadelphia, Pa. A contemporary American author. She has been interested in kindergarten work and organized the first free kindergarten on the Pacific coast. Among her publications are "The Birds' Christmas Carol" (1886), "Timothy's Quest" (1890), "A Cathedral Courtship" (1893), "Penelope's English Experiences" (1893), "Penelope's Progress" (1898), "Penelope's Irish Experiences" (1901), "Rebecca of Sunnybrook Farm" (1903), "Rose o' the River" (1905), "New Chronicles of Rebecca" (1907), and "The Old Peabody Pew" (1907).

Riis*, Jacob. His later works include "A Ten Years War" (1900; rewritten as "The Battle With the Slum," 1902), "The Making of an American" (1901), "Children of the Tenements" (1903), "The Peril and the Preservation of the Home" (1903), "Is There a Santa Claus?" (1904), and "Theodore Roosevelt the Citizen" (1904).

Riley*, Charles Valentine. Died Sept. 14, 1895.

Riley*, James Whitcomb. Born 1854. Among his later works are "Child-World" (1897), "Rubáiyát of Doc Sifers" (1897), "Child-rhymes" (1899), "Love Lyrics" (1899), "Farm-rhymes" (1901), "Book of Joyous Children" (1902), "An Old Sweetheart of Mine" (1902), "A Defective Santa Claus" (1904), "Out to Old Aunt Mary's" (1904), "His Pa's Romance" (1904), "Songs o' Cheer" (1905), "While the Heart Beats Young" (1906), "Morning" (1907), "The Raggedy Man" (1907), "Boys of the Old Glee Club" (1908), "Home Again With Me" (1908), "Orphant Annie Book" (1908), "Songs of Summer" (1908).

Rimsky-Korsakof (rimz'ki-kôr-sä-kōf'), **Nikolas Andrejevitch.** Born at Tikhvin, Russia, March 18 (N. S.), 1844: died at St. Petersburg, June 22, 1908. A Russian composer, professor of instrumentation at the St. Petersburg Conservatory from 1871, and inspector of naval bands 1873–1884. Among his compositions are several operas, including "La nuit de mai" (1880), "Snegorotchka" (1882), "Mlada" (1892), "La nuit de Noël" (1895), "Le conte du roi Sabtan" (1900), "La fiancée du tsar" (1901), "Servilia" (1902); three symphonies; symphonic poems, including "Sadko" and "Scheherazade"; and songs. He also wrote a treatise on harmony, and was noted as a conductor.

Rio de Janeiro* (city). The city, with its environs, forms the federal district. The district is governed by a prefect, assisted by a council. Area, 538 square miles. Population, 730,951.

Rio de Janeiro* (state). The present capital is Nictheroy.

Rio Grande de Cagayan (rē'ō grän'dā dā kä-gä-yän'). The largest river in Luzon, Philippine Islands. It rises in the southern mountains of Isabela province and flows first northeast and then north by west to Aparri on the northern coast of Cagayan province. It has a drainage of about 10,000 square miles, and is the medium of transportation to the coast of all the products of both provinces. Length, about 220 miles. It is navigable by vessels of 3 feet draft as far as Tuguegarao, the capital of Cagayan; by native boats about 160 miles; and by rafts 40 miles farther.

Rio Grande de la Pampanga (rē′ō grän′dā dā lä päm-pän′gä). A river, the second in size in Luzon, Philippine Islands.

Rio Grande de Mindanao (rē′ō grän′dā dā mēn-dä-nä′ō), or **Pulangui** (pö-län′gē). A river, the largest in Mindanao and the second in size in the Philippines.

Rio Negro . 4. A territory of the Argentine Republic. Capital, Viedma. Area, 75,924 square miles. Population, 28,166.—5. A department of Uruguay. Capital, Fray Bentos or Independencia. Area, 3,269 square miles. Population, 39,667.

Ripley (rip′li), **William Zebina.** Born at Medford, Mass., Oct. 13, 1867. An American economist and ethnologist, professor of political economy in Harvard University from 1902. He was graduated at the Massachusetts Institute of Technology in 1890, and was a member of its faculty 1893-1902. In 1900 he served as expert on railroads for the United States Industrial Commission, drafting its final report on that subject. His works include a "Financial History of Virginia" (1893), "The Races of Europe" (1900), "Trusts, Pools, and Corporations" (1905), "Railway Problems" (1907), etc.

Risley (riz′li), Sir **Herbert Hope.** Born 1851. An English anthropologist, home secretary of the government of India from 1902, and director of ethnography for India from 1901. His works include "Primitive Marriage in Bengal," "Widow and Infant Marriage," "Tribes and Castes of Bengal," etc. He was knighted in 1907.

Ristori*, Adelaide. Died at Rome, Oct. 9, 1906. In 1847 she married the Marchese Capranica del Grillo. Her autobiography ("Ricordi e studi artistici") was published in 1887.

Ritchey (rich′i), **George Willis.** Born at Tupper's Plains, Ohio, Dec. 31, 1864. An American astronomer, superintendent of instrument construction and astronomer of the Solar Observatory of the Carnegie Institution from 1905. He was optician of the Yerkes Observatory 1896–99, superintendent of instrument construction 1899–1904, instructor in practical astronomy 1901–04, and assistant professor 1904–05.

Rittershaus*, Friedrich Emil. Died at Barmen, Prussia, March 8, 1897.

Riva Palacio*, Vicente. Born Oct. 16, 1832: died Nov. 22, 1896.

Rivas*, Patricio. Born 1798: died 1867.

Rives (rēvz), **Amélie.** See *Troubetzkoy.*

Rizal (rē-thäl′). A province in southern Luzon, Philippine Islands. It is bounded by Bulacan on the north, Infanta and La Laguna (partly separated by mountains) on the east, Laguna de Bay and Cavite on the south, and Manila Bay and Bulacan on the west. It includes Talim and other small islands in Laguna de Bay. Capital, Pasig. The surface is diversified by short mountain-ranges and fertile plains. The highest mountain is Talim, an extinct volcano, 1,519 feet in height. The chief river, the Pasig, drains Laguna de Bay, and empties by several mouths into Manila Bay. It has numerous tributaries, and is an important means of communication with the interior of the island. Coal is found in the southern, and gold in the northern part of Rizal. Among the productions are mangos, corn, and sugar-cane. The inhabitants are Tagalos. Area, 733 square miles. Population (1903), 150,923.

Rizal (rē-thäl′), **José.** Born at Calamba, La Laguna, Luzon, Philippine Islands: died at Manila, Dec. 30, 1896. A Filipino patriot and author. He received degrees in medicine and philosophy from the University of Madrid and was elected a member of the Berlin Anthropological Society. He returned to the Philippines and published a political story, "Noli me tangere," on account of which he was forced by the party in power to emigrate. When abroad he wrote another political novel, "El Filibusterismo." He subsequently practised medicine in Hong-Kong, and obtained permission to visit the Philippines, but on his arrival there was arrested. A native insurrection against Spain having broken out, he was accused of being its instigator, and was condemned and shot.

Roanoke. A manufacturing city of Roanoke County, Virginia. Population (1900), 21,495.

Robben Island. A small island in the Sea of Okhotsk in lat. 48° N., long. 144° E., near Saghalin Island. It has a length of 1,900 feet and a width of about 120 feet. It contains a fur-seal rookery.

Roberts (rob′ėrts), **Charles George Douglas.** Born at Fredericton, New Brunswick, Jan. 10, 1860. A Canadian poet and prose writer. He was editor of the Toronto "Week" 1883–84; was professor of the English and French literatures at King's College, Nova Scotia, 1885–87, and of English and economics 1887–95; and was associate editor of the New York "Illustrated American" (1897-98). His verse includes "Orion, and Other Poems" (1880), "In Divers Tones" (1887), "Ave: an Ode for the Shelley Centenary" (1892), "Songs of the Common Day" (1893), "The Book of the Native" (1896), "New York Nocturnes" (1898), "Collected Poems" (1900), and "The Book of the Rose" (1903). Among his prose works are "Earth's Enigmas" (1896), "A History of Canada" (1897), "The Forge in the Forest" (1897), "By the Marshes of Minas" (1900), "The Heart of the Ancient Wood" (1900), "The Kindred of the Wild" (1902), "Red Fox" (1905), "The Cruise of the Yacht *Dido*" (1906), "Haunters of the Silences" (1907), "The House in the Water" (1908), etc.

Roberts*, Ellis Henry. He was treasurer of the United States 1897–1905.

Roberts*, Frederick Sleigh, first Earl Roberts. He was appointed field-marshal in 1895. He was commander of the forces in Ireland 1895–99, commander-in-chief in South Africa 1899–1900, and commander-in-chief of the British army 1901–04. He was created a baronet in 1881, Baron Roberts 1892, and Earl Roberts of Kandahar, Pretoria, and Waterford in 1901.

Roberts (rob′ėrts), **Morley.** Born at London, Dec. 29, 1857. An English novelist and journalist. For many years he led an adventurous life as a cattleman and railroad-man in Australia, the United States, Canada, and South Africa, and as a sailor in various parts of the world. His works include "The Western Avernus" (1887), "Songs of Energy" (1891), "Red Earth" (1894), "A Son of Empire" (1899), "The Colossus" (1899), "The Plunderers" (1900), "The Way of a Man" (1902), "The Promotion of the Admiral" (1903), "Rachel Marr" (1903), "A Tramp's Notebook" (1904), "The Idlers" (1905), "The Prey of the Strongest" (1906), "The Blue Peter" (1907), "The Flying Cloud" (1907), "Lady Anne" (1907), "Captain Spink" (1908), "David Bran" (1909).

Robeson*, George Maxwell. Born in 1829: died at Trenton, N. J., Sept. 27, 1897.

Robins (rob′inz), **Elizabeth** (Mrs. **George Richmond Parks**): pseudonym **C. E. Raimond.** A contemporary American actress and author. She has played principally in dramas written by Ibsen. Her works include "Below the Salt" (1896), "The Open Question" (1898), "The Magnetic North" (1904), "A Dark Lantern" (1905), "Come and Find Me" (1908), "The Mills of the Gods" (1908), etc.

Robinson*, George Frederick Samuel, first Marquis of Ripon. Died July 9, 1909. He was first lord of the admiralty in 1886, secretary for the colonies 1892–95, and lord privy seal 1905–08.

Robinson*, John Cleveland. Died at Binghamton, N. Y., Feb. 18, 1897.

Robinson Crusoe's Island. An (imaginary) uninhabited island on the northern coast of South America, off the mouth of the Orinoco, described in Defoe's tale of "The Life and Strange Surprising Adventures of Robinson Crusoe, of York, Mariner." Often erroneously identified with Juan Fernandez. See *Selkirk, Alexander.*

Robson*, Stuart. Died at New York, April 29, 1903.

Roca*, Julio A. He was again president of the Argentine Republic 1898–1904.

Roche (rōsh), Sir **Boyle.** Born 1743: died at Dublin, June 5, 1807. An Irish politician. He entered the army and served in the American war; was a member of the Irish Parliament from 1777 until the Union in 1801; and was created a baronet in 1782 for his services to the government, which later were particularly valuable in connection with the volunteer convention of 1783. He is known chiefly as a perpetrator of 'bulls.'

Roche (rōsh), **James Jeffrey.** Born at Mountmellick, Queen's County, Ireland, May 31, 1847: died April 3, 1908. An American journalist and author. He was editor of "The Pilot" (Boston) 1890–95; United States consul at Genoa 1904–07; and consul at Berne, Switzerland, 1907–08. His works include "Songs and Satires" (1886), "Life of John Boyle O'Reilly" (1891), "The Story of the Filibusters" (1891), "Ballads of Blue Water" (1895), "Her Majesty the King" (1898), "By-ways of War" (1904), etc.

Roche (rōsh), Mrs. (**Regina Maria Dalton**). Born in the south of Ireland, about 1764: died at Waterford, May 17, 1845. An Irish novelist. She published many romances, the best known of which is "The Children of the Abbey" (1798).

Rochefort*, Henri (**Victor Henri,** Comte **de Rochefort-Luçay**). He was editor of "L'intransigeant" from its founding in 1880 to 1907, and of "La Patrie" 1907–. His memoirs, "Les aventures de ma vie," appeared 1895–96.

Rochet*, Louis. Died at Paris, Jan. 21, 1878.

Rockefeller (rok′e-fel-ėr), **John Davison.** Born at Richford, N. Y., July 8, 1839. An American merchant and philanthropist, founder and president of the Standard Oil Company. He went to Cleveland, Ohio, in 1853 and later established himself in the oil business there. The Standard Oil Company was formed in 1870 and in 1882 was transformed into a trust (dissolved in 1892). Among his gifts to public institutions are upward of $10,000,000 to the University of Chicago and over $53,000,000 to the General Education Board. He has also endowed the Rockefeller Institute for Medical Research in New York City.

Rockhill (rok′hil), **William Woodville.** Born at Philadelphia in 1854. An American traveler, diplomat, and author. He was secretary of legation in Peking 1885–86; first assistant secretary of state of the United States 1896–97; minister to Greece 1897–99; special envoy to China July, 1900; minister to China 1905–09; and ambassador to Russia 1909. He has written "The Land of the Lamas" (1891), etc.

Rocky Mountains*. The name is defined by the United States Geographic Board as including, within the United States, the ranges of Montana, Idaho, Wyoming, Colorado, New Mexico, and Western Texas. The highest peak is Mount Massive, in Colorado, 14,424 feet high. Blanca Peak, which is often given as the highest point in the State, is only 14,390 feet.

Rod (rōd), **Edouard.** Born May 31, 1857: died Jan. 29, 1910. A French critic and author. He studied at Berlin; became editor of the Paris "Revue Contemporaine" in 1884; and was professor of comparative literature in the University of Geneva 1887–93. Among his critical works are "Études sur le XIXe siècle" (1888–), and "Les idées morales du temps présent" (1891); and his novels include "La course à la mort" (1885), "Le sens de la vie" (1889), "La vie privée de Michel Tessier" (1893), "La seconde vie de Michel Tessier" (1894), "Le ménage du pasteur Naudié" (1898), "Au milieu du chemin" (1900), "Mlle. Annette" (1901), "L'eau courante" (1902), "Inutile effort" (1903), "Un vainqueur" (1905), "L'incendie" (1906), "Les unis" (1909), etc.

Rogers*, Fairman. Died Aug. 23, 1900.

Rogers*, John. Died July 26, 1904.

Rogers*, William Augustus. Died at Waterville, Me., March 1, 1898.

Rogers (roj′ėrz), **William Barton.** Born at Philadelphia, Dec. 7, 1804: died at Boston, May 30, 1882. An American educator and geologist. He was professor of natural philosophy in William and Mary College 1828–35; in 1835 was appointed head of the Virginia State geological survey; was professor of natural philosophy in the University of Virginia 1835–53; in 1853 went to Boston, where he was instrumental in founding the Massachusetts Institute of Technology; and was the president of this institution 1865–68 and 1878–81, holding the chair of physics and geology. He wrote "Strength of Materials" (1838), "Elements of Mechanical Philosophy" (1852), and many scientific papers.

Rohlfs (rolfs), Mrs. (**Anna Katherine Green**). Born at Brooklyn, N. Y., Nov. 11, 1846. An American novelist, known chiefly as a writer of stories of crime. Among her works are "The Leavenworth Case" (1878), "Hand and Ring" (1883), "The Forsaken Inn" (1890), "The Filigree Ball" (1903), "The Millionaire Baby" (1905), "The Woman in the Alcove" (1906), "The Circular Study" (1906), "The Mayor's Wife" (1907), and others, including a volume of poems, "The Defense of the Bride" (1882).

Rohlfs*, Friedrich Gerhard. Died at Godesberg, Prussia, June 2, 1896.

Rojas Paúl*, José Pablo. Died July 23, 1905.

Rojestvensky. See *Rozhestvensky.*

Rolfe (rolf), **William James.** Born at Newburyport, Mass., Dec. 10, 1827. An American Shaksperian scholar, editor, author, and educator. His editorial work includes "Handbook of Latin Poetry" (1865: with J. H. Hanson), Craik's "English of Shakespeare" (1867); select poems of Goldsmith (1875), Gray (1876), Robert Browning (1886), and Wordsworth (1889); the complete works of Shakspere (1870–83: revised ed. 1902–06), poems of Scott (1887), and of Tennyson (1895–98); a series of English classics for school reading (1887–91), a students' series of standard poetry (1882–87), and various English classics. He is the author of "A Satchel Guide to Europe" (1872–1906), "The Elementary Study of English" (1896), "Shakespeare the Boy" (1896), and "Life of Shakespeare" (1902).

Roll (rōl), **Alfred Philippe.** Born at Paris, March 10, 1847. A French painter and sculptor. He was trained in the atelier of Léon Bonnat, and first exhibited in the Salon of 1870. Some of his most important paintings are "Don Juan and Haydée," in the Musée d'Avignon; "Halte-là," a souvenir of the Franco-Prussian war, in the Musée de Laval; the "Fête de Silène," in the Musée de Gano; the "Grève des Mineurs," in the Musée de Valenciennes; and the "Joies de la Vie," a decoration of the Hôtel de Ville in Paris. He is a pleinairiste and brilliant technician.

Romany Rye, The. A story by George Borrow, published in 1857. It is a sequel to "Lavengro."

Romblon (rōm-blōn′). 1. An island of the Philippines, the third in size in the province to which it gives the name. It lies between Sibuyan and Tablas of the same group. Area, 37 square miles. Population (1903), 9,347.—2. A province of the Philippines. It is situated in the Visayan Sea, and is bounded by Marinduque and Luzon on the north, Masbate on the east, Panay on the south, and Mindoro on the west. It consists of Tablas, Sibuyan, Romblon, and other islands. Capital, Romblon. The best harbors are Romblon Bay, on the western coast of Romblon Island, and Port Loog, on the western coast of Tablas Island. The surface of the province as a whole is elevated. The highest peak is Guitiguitin, in Sibuyan Island. Gold is found in the province. Among the productions are tobacco, hemp, copra, corn, and sweet potatoes. The inhabitants are Visayans. Area, 573 square miles. Population (1903), 52,848.

3. A town, the capital of Romblon province, situated on Romblon Bay in lat. 12° 35′ N., long. 122° 17′ E. Civilized population of municipality (1903), 10,095.

Romero*, Matias. Died at Washington, D. C., Dec. 30, 1898. He was minister to the United States 1863–68 and 1882–98.

Röntgen (rėnt′gen), **Wilhelm Konrad.** Born at Lennep, March 27, 1845. An eminent German scientist. He was educated at Zurich and Utrecht. Since 1870 he has taught at Würzburg, Strasburg, and elsewhere, and in 1888 was made director of the Physical Institute of the University of Würzburg. Professor at Munich since 1899. His discovery of the X-rays was announced in December, 1895.

Rood (röd), **Ogden Nicholas.** Born at Danbury, Conn., Feb. 3, 1831: died at New York, Nov. 12, 1902. An American physicist, professor of physics in Columbia University from 1863, best known for his work in optics. His chief work is "Modern Chromatics" (1881).

Roof of the World. See *Pamir.*

Roosevelt (rō'ze-velt). A steam-vessel, with auxiliary sails, specially constructed to meet the requirements of arctic work in the search for the north pole conducted by Commander Robert E. Peary. She is 184 feet long, 35.5 feet wide, and 16.2 feet deep, with a maximum load displacement of 1,500 tons. She was built by Captain Charles B. Dix at Bucksport, Maine, and was launched March 23, 1905.

Roosevelt*, Robert Barnwell. Died June 14, 1906.

Roosevelt*, Theodore. He was president of the New York board of police commissioners 1895–97; assistant secretary of the navy 1897-98; fought as lieutenant-colonel of the First Volunteer Cavalry (Rough Riders) at Las Guasimas June 24, 1898, and San Juan July 1; was appointed colonel July 8; was elected governor of New York in 1898 and vice-president of the United States in 1900: and on the death of President McKinley, Sept. 14, 1901, became president of the United States. He was elected president in 1904, retiring in 1909. His later works include "Hunting Trips of a Ranchman" (1885), "Ranch Life and the Hunting Trail" (1888), "Essays on Practical Politics" (1888), "The Winning of the West" (1889–96), "The Wilderness Hunter" (1893), "American Ideals, and other essays" (1897), "Rough Riders" (1899), "Oliver Cromwell" (1900), "The Strenuous Life" (1900), "Addresses and Presidential Messages" (1904), "Outdoor Pastimes of an American Hunter" (1905), "Good Hunting" (1907), etc.

Root (röt), **Elihu.** Born at Clinton, N. Y., Feb. 15, 1845. An American lawyer and statesman. He was graduated at Hamilton College in 1864 and at the New York University Law School in 1867. He was United States district attorney in New York City 1883–85; was chairman of the judiciary committee in the New York constitutional convention 1894; was a member of the Alaska Boundary Tribunal which sat in London in 1903; was secretary of war 1899–1904; was president of the New York Bar Association 1904–05; was secretary of state 1905–09; and United States senator from New York 1909–.

Root (röt), **John Wellborn.** Born at Lumpkin, Ga., Jan. 10, 1850: died at Chicago, Jan. 15, 1891. An American architect. In 1873 he went to Chicago and associated himself with Daniel Hudson Burnham. He was appointed consulting architect of the World's Fair Commission but died while the work was in progress.

Ropes (rōps), **John Codman.** Born at St. Petersburg, Russia, April 28, 1836: died at Boston, Mass., Oct. 28, 1899. An American military historian. He was graduated at Harvard in 1857 and was admitted to the bar in 1861. His works include "The Army under Pope: Campaigns of the Civil War Series" (1881), "The First Napoleon" (1885), "The Campaign of Waterloo" (1892–93), "The Story of the Civil War" (parts 1 and 2, 1894, 1898), etc.

Roquette*, Otto. Died at Darmstadt, March 18, 1896.

Rosalie Peak*. It is about 14,340 feet high.

Rosecrans*, William Starke. Died at Rosecrans, near Los Angeles, Cal., March 11, 1898.

Roselly de Lorgues*, Antoine François Félix. Died Jan. 2, 1898.

Rosen (rō'zen), Baron **Roman Romanovitch de.** A contemporary Russian diplomatist. He was secretary of the Russian legation, and later minister, at Tokio; was consul-general in New York; was first secretary of the Russian embassy at Washington during President Cleveland's administration; and was Russian ambassador to Washington June 13, 1905,–. He was associated with Count Witte in the peace negotiations between Japan and Russia which resulted in the Treaty of Portsmouth, Sept. 5, 1905.

Rosetta Stone*. In its present broken condition it measures 3 feet 9 inches in height, 2 feet 4½ inches in width, and 11 inches in thickness.

Ross*, Alexander Milton. Died at Detroit, Mich., Oct. 27, 1897.

Ross (ros), **Edward Alsworth.** Born at Virden, Ill., Dec. 12, 1866. An American sociologist, professor of sociology in the University of Wisconsin. He has been professor in the universities of Indiana, Cornell, Stanford, and Nebraska, and lecturer at Chicago and Harvard. He was professor of sociology in Stanford University, California, 1893–1900, and his resignation of this position was reported to be due to an attempt on the part of the university to restrict the freedom of academic discussion of economic and sociological questions. He has published "Social Control" (1901), "The Foundations of Sociology" (1905), "Sin and Society" (1907), "Social Psychology," (1908), etc.

Ross, Mrs. (**Elizabeth** (**Betsy**) **Griscom**). Born at Philadelphia, Jan. 1, 1752: died there, Jan. 30, 1836. An American woman, who, at the suggestion of Washington, made the first American flag, adopted by Congress June 14, 1777. The house, 239 Arch Street, Philadelphia, in which the flag was made is now the property of the American Flag House and Betsy Ross Memorial Association.

Ross (ros), Major **Ronald.** Born May 13, 1857. A British pathologist, professor of tropical medicine in the University of Liverpool and the Liverpool School of Tropical Medicine. He is best known for his investigations in malaria, and especially for his discoveries with regard to the development of the malarial parasites in mosquitos (1897–98). He received the Nobel prize for medicine in 1902.

Rossi*, Ernesto. Died at Pescara, June 4, 1896.

Rostand (ros-tän'), **Edmond.** Born at Marseilles, April 1, 1864. A French poet and playwright. He has written "Les Romanesques" (1894), "La Princesse Lointaine" (1895), "La Samaritaine" (1897), "Cyrano de Bergerac" (1897), "L'Aiglon" (1900), "Un soir à Hernani" (1902), "Les Mots" (1905), "Chanticler" (1907–09), "Le bois sacré" (1909), etc. He became a member of the French Academy in 1903.

Rostock*. The university has about 700 students, and a library of about 240,000 volumes.

Rotch (rōch), **Abbott Lawrence.** Born at Boston, Mass., Jan. 6, 1861. An American meteorologist, founder and director of the Blue Hill Meteorological Observatory from 1885 and professor of meteorology in Harvard University from 1906. He has published reports of meteorological work at Blue Hill and elsewhere since 1887, "Sounding the Ocean of Air" (1900), etc.

Rough Riders. The popular name of the First United States Volunteer Cavalry, organized by Theodore Roosevelt and Leonard Wood for service in the Spanish-American war. It consisted of 1,000 men, recruited mainly from western States. They fought (dismounted) at Las Guasimas June 24, and San Juan July 1, 1898.

Roundabout Papers, The. A work by Thackeray, published in 1862.

Rousse (rös), **Aimé Joseph Edmond.** Born at Paris, May 17, 1817: died Aug. 1, 1906. A French barrister and author. In 1881 he was admitted to the French Academy, succeeding Jules Favre. Among his works are "Consultations sur les décrets du 29 Mars 1880" (1880), "Discours, plaidoyers, et œuvres diverses" (1884), "Discours académiques" (1881–89), "Avocats et magistrats" (1903), etc.

Rouvier*, Maurice. He was minister of finance 1889–92 and 1902–05; became minister of finance and president of the council in 1905; and was minister of foreign affairs 1905–06, succeeding Delcassé.

Rowland*, Henry Augustus. Died April 16, 1901. He was professor of physics at Johns Hopkins University 1876–1901.

Rowley (rō'li) **Mile.** A famous race-course (1 mile, 11 yards) at Newmarket, England, said to be named for a favorite race-horse of Charles II. The majority of the races finish at the Rowley Mile post.

Rowson (rou'son), Mrs. (**Susanna Haswell**). Born at Portsmouth, England, 1762: died at Boston, Mass., March 2, 1824. An English author, actress, and educator, best known for her story of "Charlotte Temple" (which see). Her husband becoming bankrupt, she went on the stage, appeared in Edinburgh 1792–93, and toured in America 1793–97. She superintended a school for girls in Boston, Mass., 1797–1822. Among her publications are "The Inquisitor" (1788), "Charlotte Temple" (1790), "Reuben and Rachel" (1798), etc.

Royal Academy of Arts. A society founded in 1768 by George III. for the establishment of a school of design and the holding of an annual exhibition of the works of living artists. Its first rooms were in Somerset House, London; thence it removed to Trafalgar Square (1834); and it now occupies Burlington House. The society consists of 40 royal academicians, at least 30 associates, and not more than 4 associate engravers. Its first president was Sir Joshua Reynolds.

Royalist, Port. See *Puerto Princesa*, 1.

Royal Scottish Museum, The. The name given in 1904 to the Edinburgh Museum of Science and Art. The museum stands on Chambers Street, behind the University, and contains collections of natural history, industrial art, and technology. It was founded in 1861.

Royal Victorian Order. A British order instituted by Queen Victoria, April 21, 1896. It consists of the sovereign, honorary members, and ordinary members. The members are divided into five classes: knights grand cross, knights commanders, commanders, members of the fourth class, and members of the fifth class. The ordinary members (numbering over 700) are appointed from subjects of the British Crown who have rendered extraordinary, or important, or personal services to His Majesty, his heirs and successors. The abbreviations are G.C.V.O., K.C.V.O., C.V.O., and M.V.O.

Roybet (rwä-bā'), **Ferdinand Victor Léon.** Born at Uzès, April 20, 1840. A French painter and engraver. He studied at the École des Beaux-Arts in Lyons; settled in Paris, where he first exhibited at the Salon in 1865; and became professor of engraving at Lyons. In 1866 his "Un fou sous Henri III." took a medal at the Salon. His subjects are chiefly historical.

Royce (rois), **Josiah.** Born at Grass Valley, Cal., Nov. 20, 1855. An American philosophical writer and psychologist, professor of the history of philosophy in Harvard University from 1892. He was graduated at the University of California in 1875; studied at Leipsic and Göttingen; was fellow of Johns Hopkins University 1876–78; and was assistant professor of philosophy at Harvard 1882–92. He has written "The Spirit of Modern Philosophy" (1892), "The Conception of God" (1897: with others), "The World and the Individual" (1899: second series, 1901), "The Conception of Immortality" (1900), "Studies of Good and Evil" (1898), "Outlines of Psychology" (1903), "Herbert Spencer" (1904), "Philosophy of Loyalty" (1908), "Race Questions" (1908), etc.

Rozhestvensky (rō-zhest'ven-ski). A Russian rear-admiral. In 1904 he was placed in command of the Baltic fleet ordered for service in the Far East, and became involved in the North Sea incident (which see). He was defeated, seriously wounded, and captured by the Japanese under Admiral Togo in the battle of the Sea of Japan, May 27–28, 1905, and was tried by court-martial, July 4–10, 1906, for his surrender and acquitted.

Ruckstuhl (ruk'stöl), **Frederic Wellington.** Born at Breitenbach, Alsace, May 22, 1853. An American sculptor. He came to the United States when young; attended the public schools of St. Louis; and later studied art in Paris. Among his best works are "Evening," a nude female statue in the Metropolitan Museum, New York; "Solon," a bronze figure in the Congressional Library, Washington; equestrian statues of General Hartranft in Harrisburg, Pennsylvania, and of General Wade Hampton in Columbia, South Carolina; several figures on the appellate court building in New York; the Confederate monument at Baltimore, etc.

Rudder Grange. A humorous story by F. R. Stockton, published in 1879.

Ruger*, Thomas Howard. Died at Stamford, Conn., June 3, 1907. He was promoted major-general in 1895 and retired in 1897.

Ruskin*, John. Died at Brantwood, Jan. 20, 1900.

Russell*, Charles, first Lord Russell of Killowen. Born at Newry, Ireland, Nov. 10, 1832: died Aug. 10, 1900.

Russell*, Henry. Died Dec. 7, 1900.

Russell (rus'el), **Israel Cook.** Born at Garrattsville, N. Y., Dec. 10, 1852: died at Ann Arbor, Mich., May 1, 1906. An American geologist, professor of geology in the University of Michigan 1892–1906. He was geologist of the United States Geological Survey 1880–1906. Among his works are "Geological History of Lake Lahontan" (1885), "Lakes of North America" (1894), "Glaciers of North America" (1897), "Volcanoes of North America" (1897), "Rivers of North America" (1898), "North America" (1900), etc.

Russell*, Sir **William Howard.** Died at London, Feb. 10, 1907.

Russia*. A war with Japan took place Feb., 1904,–Sept., 1905 (see *Russo-Japanese War*). A revolutionary movement occurred 1905–06 which resulted in the partial grant of popular government and the election of a parliament (Duma) 1906.

Russo-Japanese War. A war between Russia and Japan, waged in Manchuria 1904–05. The chief cause of the war was the occupation (continued notwithstanding repeated promises of withdrawal by the Russian government) of Manchuria by Russia after the Boxer uprising of 1899–1900, with the consequent endangerment of the Japanese preponderance in Korea, which was regarded by Japan as essential to her safety. An earlier cause of irritation was the action of Russia, Germany, and France in preventing the retention by Japan of Port Arthur and the Liao-tung peninsula after the Chinese-Japanese war of 1894–95, and the subsequent leasing of this territory from China by Russia. The principal events of the war were the following: rupture of diplomatic relations with Russia by Japan, Feb. 6, 1904; attack by torpedo-boats of the Japanese fleet under Admiral Togo upon the Russian squadron under Admiral Stark at Port Arthur, Feb. 8, 1904; general attack by the Japanese fleet, Feb. 9, 1904: these two attacks resulting in great injury to the Russians; naval fight off Chemulpo, resulting in the destruction of the Russian cruiser Variag and the gunboat Korietz, Feb. 9, 1904; war declared by Japan, Feb. 10, 1904; Admiral Makaroff succeeded Admiral Stark, Feb. 17, 1904; General Kuropatkin appointed Russian commander-in-chief in Manchuria, Feb. 21, 1904; agreement between Japan and Korea signed at Seul, Feb. 23, 1904; Vladivostok bombarded by Admiral Kamimura, March 6, 1904; Port Arthur bombarded March 21–22, 1904; Wiju occupied by the Japanese, April 6–7, 1904; destruction of the Russian battle-ship Petropavlovsk by a mine and death of Admiral Makaroff, April 13, 1904; Russian Vladivostok squadron appeared off Yuen-san, April 25, 1904; defeat of the Russians under Sassulitch by the Japanese First Army under Kuroki, May 1, 1904; the entrance to Port Arthur blocked for battle-ships and cruisers, May 3, 1904; Japanese battleship Hatsuse sunk by a mine, May 15, 1904; Japanese victory at Kin-chau (capture of Nan-shan Hill), May 27–28, 1904; occupation of Dalny by the Japanese, May 29–30, 1904; Russians defeated at Telissu and Wafangkau, June 14–15, 1904; unsuccessful sortie of Russian fleet from Port Arthur, June 23, 1904; investment of Port Arthur (after severe preliminary fighting), July 31, 1904,–Jan. 1, 1905; sortie of the Port Arthur fleet, resulting in a sea battle in which most of the Russian vessels were driven back to Port Arthur and the rest dispersed (with the death of Admiral Withöft), Aug. 10, 1904; Vladivostok squadron defeated by Admiral Kamimura (Rurik sunk), Aug. 14, 1904; battle of Liao-yang, resulting in the success of the Japanese under Oyama, the Russians retiring upon Mukden, Aug. 27–Sept. 4, 1904; battle of the Shaho, in which the Russian attack was repulsed, Oct. 9–14, 1904; the Baltic fleet under Rozhestvensky sailed for the Far East, October, 1904, and attacked the Hull fishing fleet on the Doggerbank on the night of Oct. 21–22, 1904; Port Arthur surrendered, Jan. 1, 1905; Russians crossed the Hun river and attacked the Japanese at Haikautai but were repulsed Jan. 25–29, 1905; battle of Mukden, resulting in the complete defeat of Kuropatkin and the capture of the city, Feb. 19–March 10, 1905; Kuropatkin relieved of his command and succeeded by Linievitch, March 16, 1905; the Baltic fleet reached Kam-ranh Bay, April 12, 1905; battle of the Sea of Japan and the annihilation of the Baltic fleet by Admiral Togo, May 27–28, 1905; President Roosevelt urged the Russian and Japanese governments to negotiate for peace, June 8, 1905; plenipotentiaries met at Portsmouth, New Hampshire, Aug. 9, 1905; treaty of peace signed, Sept. 5, 1905.

Rutgers College*. It now includes, besides the original classical school, the New Jersey State College for the Benefit of Agriculture and the Mechanic Arts. It also maintains the College Experiment Station and the Rutgers College Preparatory School. It has about 35 instructors and about 250 students.

Rutherford (ruᴛʜ′ėr-fọ̄rd), **Ernest.** Born at Nelson, New Zealand, Aug. 30, 1871. A British physicist, professor of physics in McGill University, Montreal, 1898–1907, and Langworthy professor and director of the physical laboratories at the University of Manchester 1907–. In 1908 he received the Nobel prize for chemistry. He is especially noted for his studies in radioactivity and the ionization of gases by the Röntgen and Becquerel rays. He received the Rumford medal of the Royal Society in 1904. He has written "Radio-activity" (1904), etc.

Ruwenzori*, Mount. It was determined to be a mountain range by the Duke of Abruzzi, who ascended the peaks in 1906. The highest point is 16,816 feet.

Ryan (rī′an), **Abram Joseph:** better known as **Father Ryan.** Born at Norfolk, Va., Aug. 15, 1839: died at Louisville, Ky., April 22, 1886. An American poet and Roman Catholic priest. Shortly after his ordination he entered the Confederate Army and served through most of the Civil War as a chaplain and sometimes in the ranks. In Augusta, Georgia, he founded and edited "The Banner of the South" (1868). In 1880 he published his "Poems, Patriotic, Religious, and Miscellaneous" among the most popular of which are "The Conquered Banner," "The Sword of Robert E. Lee," "Gather the Sacred Dust," "The Lost Cause," and "The Flag of Erin."

Ryan (rī′an), **Patrick John.** Born at Thurles, County Tipperary, Ireland, Feb. 20, 1831. A Roman Catholic prelate, archbishop of Philadelphia from 1884. He was consecrated in 1872 titular bishop of Tricomia, Palestine, and coadjutor bishop and later (1883) archbishop of St. Louis. He has published "What Catholics do not Believe" (1877), "Some of the Causes of Modern Religious Skepticism" (1883), etc.

Rydberg (rēd′berg), **Abraham Viktor:** known as **Viktor.** Born at Jönköping, Sweden, Dec. 18, 1828: died at Stockholm, Sept. 21, 1895. A Swedish author and critic, professor of the history of civilization at Stockholm from 1884. He was elected a member of the Swedish Academy in 1877. Among his works are "Fribytaren på Östersjön" (1857), "Den siste Athenaren" (1859), "Bibelns lära om Kristus" (1862), "Romerska Dagar" (1877), "Undersökningar i germansk Mythologi" (1886–89), "Wapensmeden" (1891), "Varia: Tankar och bilder" (1894), and "Singoalla" (1895).

Ryle*, John Charles. Died June 10, 1900.

Saar (zär), **Ferdinand von.** Born at Vienna, Sept. 30, 1833: died at Döbling, near Vienna, July 24, 1906. A noted Austrian poet and dramatist. His works include the tragedies "Hildebrand" (1865) and "Heinrich's Tod" (1867), combined as "Kaiser Heinrich IV" (1872); "Die beiden de Witt" (1875), "Tempesta" (1881), "Novellen aus Österreich" (1877), "Gedichte" (1882), "Schicksale" (1888), "Frauenbilder" (1892), "Nachklänge" (1899), "Ginevra" (1904), "Tragik des Lebens" (1906). He committed suicide.

Sabatier (sä-bä-tyā′), **Paul.** Born at Saint Michel-de-Chabrillonoux, France, Aug. 3, 1858. A noted French theologian and historian. He became vicar of the Church of St. Nicolas at Strasburg in 1885, and pastor at Saint Cierge in 1889, retiring from active pastoral work four years later. His best known work is the "Vie de Saint François d'Assise" (1893), based on long-lost documents discovered by him. In 1899 he was elected a member of the Royal Academy of Rome and in 1902 founded the Société Internationale des Études Franciscaines. Among his other publications are "La Didaché" (1885), "Collection d'études et de documents sur l'histoire religieuse et litteraire du moyen-âge" (1900–), "Disestablishment in France" (English translation, 1906), "Les modernistes" (1909), etc.

Sachs (säċhs), **Julius von.** Born at Breslau, Oct. 2, 1832: died at Würzburg, May 29, 1897. A noted German botanist, professor in the University of Würzburg from 1868, the founder of experimental vegetable physiology. He wrote "Handbuch der Experimentalphysiologie der Pflanzen" (1865), "Lehrbuch der Botanik" (1868), "Vorlesungen über Pflanzenphysiologie" (1882), "Geschichte der Botanik" (1875), "Gesammelten Abhandlungen über Pflanzenphysiologie" (1892–93), etc.

Sackville-West*, Lionel Sackville, second Baron Sackville. Died at Sevenoaks, Sept. 3, 1908.

Saddle Mountain*. Its chief peak (Greylock) is 3,635 feet high.

Saenz Peña*, Luis. Died Dec. 4, 1907.

Safford*, Truman Henry. Died at Newark, N. J., June 13, 1901.

Sagasta*, Praxedes Mateo. Died at Madrid, Jan. 5, 1903. He was premier 1872, 1874, 1881–83, 1885–90, 1893–95, 1897–99, and March, 1901,–1902.

Sage-hen State. A popular nickname of the State of Nevada.

Saghalin*. That part of the island south of lat. 50° N. was, with adjacent islands, ceded back to Japan by the Treaty of Portsmouth in 1905.

Sahara*. In accordance with a convention between Great Britain and France the latter controls all that part of the Sahara, with Wadai, which lies west of the basin of the Nile.

Said Pasha*, **Mehemet.** Born at Erzerum, 1835. He was grand vizier 1882–85 and 1901–03.

St. Aldwyn, Viscount. See *Hicks-Beach.*

Saint Andrews*. The university is attended by over 300 students. University College, at Dundee, has been affiliated with it since 1897.

St. Andrew's Night. The 29th of November. It is celebrated in some parts of Germany by forms of divination very similar to those which are practised in Scotland on Hallow E'en. *Taylor,* Notes to Faust.

Sainte Cunégonde (saṅt kö-nā-gond′). A city in Hochelaga County, Quebec, Canada, adjoining Montreal. Population (1901), 10,912.

St. Elias*, Mount. 2. This peak is in Alaska, close to the Canadian boundary. It is surpassed in height by Mt. McKinley (20,464 feet). The first ascent of it was made by the Duke of the Abruzzi in 1897.

St. Francis Xavier, College of. See *College of St. Francis Xavier.*

Saint-Gaudens*, Augustus. Died at Cornish, N. H., Aug. 3, 1907.

St. George (sānt jôrj). The second island in importance of the Pribylof group in Bering Sea. It is famous for its fur-seal rookeries, which are about one third as populous as those of St. Paul. The village of St. George numbers about 100 Aleuts, the sealers and their families. It has a Greek-Russian church, a company store, and an English school. Length, 12 miles. Breadth, 4½ miles. Area, about 39 square miles.

St. Helier. See *Jeune.*

St. Gotthard*, Tunnel of the. It is surpassed by the Simplon tunnel, 12¼ miles in length.

St. John* (West Indies). The island belongs to Denmark.

St. John's College. A Roman Catholic institution of learning situated in Fordham, New York City. It was opened in 1841, and in 1846 was raised to the rank of a university and passed under the control of the Fathers of the Society of Jesus. It offers classical and non-classical courses and has about 110 collegiate and 440 academic and grammar students.

St. Lawrence*. The great bridge under construction across the river below Quebec collapsed on Aug. 29, 1907, killing a number of workmen. The Dominion Government has undertaken its reconstruction.

St. Louis*. It is the fourth city in size in the United States.

St. Paul (sānt pâl). The principal island of the Pribylof group in Bering Sea. It is famous for its fur-seal rookeries, which occupy about seven miles of its coast line. The village of St. Paul numbers about 200 inhabitants, natives of the Aleutian Islands brought over to carry on the fur-seal industry. It has a church of the Greek-Russian faith, an English school, and a company store. Extreme length, 13½ miles. Breadth, about 7⅗ miles. Area, about 43 square miles.

St. Paul's School. An English public school founded by John Colet (1466–1519), dean of St. Paul's Cathedral. The design of the founder was to establish a school where 153 boys of good capacity, without restriction as to nationality, should receive a sound Christian education and a knowledge of Greek as well as of Latin. The first head-master, William Lily (1468–1522), was appointed in 1512. The school was removed from its original site in St. Paul's Churchyard, London, to Hammersmith Road, West Kensington, in 1884. Capitation scholars (paying a tuition fee) have been added to the foundation scholars, and the number of pupils is now about 580.

St. Petersburg*. The university is attended by over 9,000 students.

St. Pierre*. It was totally destroyed by an eruption of Mount Pelée on May 8, 1902. About 40,000 people in St. Pierre and vicinity were killed.

Saintsbury*, George Edward Bateman. His later works include "Miscellaneous Essays" (1892), "Corrected Impressions" (1895), "Nineteenth Century Literature" (1896), "The Flourishing of Romance and the Rise of Allegory" (1897), "Sir Walter Scott" (1897), "A Short History of English Literature" (1898), "Matthew Arnold" (1899), "A History of Criticism" (3 vols., 1900–04), "The Earlier Renaissance" (1901), "Loci Critici" (1903), "Minor Caroline Poets" (2 vols., 1905–06), "History of Elizabethan Literature" (1906), "A History of English Prosody" (Vol. I., 1906; Vol. II., 1908), "History of XIX. Century Literature" (1906), "The Later Nineteenth Century" (1907), etc.

St. Thomas* (West Indies). In 1902 a treaty ceding the Danish West Indies to the United States was defeated in the Rigsdag.

St. Vincent*. In 1902 there was a violent and destructive eruption of the Soufrière volcano.

Saionji (sī′ōn-ji), Marquis **Kin-mochi.** Born at Kioto, October, 1849. A Japanese statesman, premier 1906–08. He studied in Paris 1870–80; was appointed minister to Austria in 1885 and to Germany in 1887; was minister of education 1894–96, and again in the third administration of Marquis Ito; and has several times been prime minister *ad interim.*

Sakhalin. See *Saghalin.*

Sala*, George Augustus Henry. Died Dec. 8, 1895. He wrote also "Things I Have Seen and People I Have Known" (1894) and "Life and Adventures of George Augustus Sala" (1895).

Salisbury (sâlz′bu-ri). The capital of southern Rhodesia, in South Africa, situated about lat. 18° S., long. 31° E. It is on the railway from the Cape and is also connected with Beira on the coast of Lorenzo Marques. Formerly *Fort Salisbury.*

Salisbury*, Third **Marquis of (Robert Arthur Talbot Gascoyne Cecil).** Born Feb. 3, 1830: died at Hatfield House, Herts., Aug. 22, 1903. He held office as prime minister in four administrations — June, 1885,–Feb., 1886, Aug., 1886,–Aug., 1892, July, 1885,–Nov., 1900, and Nov., 1900,–July, 1902. In the first, during the greater part of the second, and the third he was foreign secretary as well as premier.

Salisbury (sâlz′bu-ri), **Rollin D.** Born at Spring Prairie, Wis., Aug. 17, 1858. An American geologist, professor of geographic geology in the University of Chicago from 1892, dean of the Ogden School of Science from 1897, and head of the department of geography from 1903. He was professor in the University of Wisconsin 1891–92, and in Beloit College 1884–91. He has published a treatise on geology (with Chamberlin), several volumes on the geology of New Jersey, etc.

Salmon*, George. Died at Dublin, Jan. 22, 1904.

Salome. 3. An opera ('drama') in one act, music by Richard Strauss, founded on a play by Oscar Wilde. The leading characters are Salome (the daughter of Herodias) and John the Baptist. It was first produced in Dresden, Dec. 9, 1905, and in New York in 1907.

Salona*. It is the capital of the nomarchy of Phocis.

Salt Lake City*. The capital of the State of Utah. It is the seat of the University of Utah (formerly of Deseret).

Salton Sea. A lake in southern California (Colorado desert) formed by the overflow of the Colorado river. The valley in which the Salton Sea lies is, at its lowest point, about three hundred feet below sea-level, and the waters of the Colorado have often found their way into it. A notable incursion occurred in 1891, forming a lake about 30 miles long, 10 miles wide, and very shallow, which rapidly diminished. In the spring of 1905 the river, in flood, enlarged a passage which had been cut, for purposes of irrigation, four miles below the Mexican border, and by August was discharging the greater part of its waters into the Salton Sea, which enlarged until it attained an area of over 400 square miles and a depth of about 90 feet. After several unsuccessful attempts and the expenditure of vast sums of money (required for the protecting of agricultural property and that of the Southern Pacific Railroad), the inflow of water was stopped in July, 1907.

Salvador*. The republic is divided into 14 departments: Ahuachapan, Cabañas, Chalatenanga, Cuscatlan, La Libertad, La Paz, La Union, Morazan, San Miguel, San Salvador, San Vincente, Santa Ana, Sonsonate, and Usulutan. The capital is San Salvador. See also *Central American Arbitration Treaty.*

Salvini (säl-vē′nē), **Allesandro.** Born at Rome, Dec. 21, 1861: died at Florence, Dec. 15, 1896. An actor, son of Tommaso Salvini. He was educated in Switzerland and at Florence as a civil engineer; came to America in 1881, and made his first appearance on the stage in New York at the Union

Square Theater in 1882. His best known rôles were those of the Count in "Monte Cristo," D'Artagnan in "The Three Guardsmen," and Hamlet.

Salzburg*. 1. It has 7 representatives in the Austrian Reichsrat, and has a Landtag of 28 members.

Samal (sä′mäl). An island in the Gulf of Davao, southern Mindanao, Philippine Islands. Area, 147 square miles. Population (1903), 1,096.

Samar (sä′mär). 2. A province of the Philippines consisting of Samar and numerous small islands, of which Daram is the largest. It is bounded by the Strait of San Bernardino (separating it from Luzon) on the northwest; the Pacific Ocean on the north and east; the Pacific Ocean and San Pedro and San Pablo bay (separating it from Leyte) on the south; and San Pedro and San Pablo bay, the Strait of San Juanico (separating it from Leyte), Daram Channel (separating it from Biliran Island), and the Visayan Sea (separating it from Masbate) on the west. Capital, Catbalogan. The coast of Samar Island is indented by many bays. The principal harbors are Borongon bay, Port Libas, and Pambujan bay, all on the eastern coast and all safe for large vessels in all weather. The surface is mountainous, but without great elevations. Few of the rivers are navigable even for native boats. Iron, lead, and gold are found. Cocoa, hemp, bananas, copra, corn, sugar-cane, and sweet potatoes are the chief productions. The inhabitants are Visayans. Area of the province, 5,276 square miles. Population (1903), 266,237.

Samoan Islands*. After the death of Malietoa, in 1898, trouble arose over the succession, which resulted in the bombardment, in March, 1899, of Apia and villages along the coast by American and British war-ships. Later Great Britain withdrew from the islands and Upolu and Savaii were ceded to Germany (1899), and Tutuila and the other islands east of long. 171° W. to the United States (1900).

Sampaloc (säm-pä′lōk). A suburb of the city of Manila, Luzon, Philippine Islands. Civilized population (1903), 18,772.

Sampson, William Thomas. Born at Palmyra, N. Y., Feb. 9, 1840: died at Washington, D. C., May 6, 1902. An American naval officer. He entered the United States Naval Academy in 1857, served in the Union navy during the Civil War, and was promoted lieutenant-commander in 1866, commander in 1874, captain in 1889, commodore July 3, 1898, and rear-admiral Aug. 10, 1898. He was superintendent of the Naval Academy 1886–90; chief of the Bureau of Naval Ordnance 1893–97; and president of the board of inquiry into the Maine disaster 1898. He was appointed commander-in-chief of the North Atlantic naval station in April, 1898; bombarded San Juan de Porto Rico May 12; and conducted the blockade of Santiago. The fleet under his command destroyed the Spanish squadron under Cervera off the latter port July 3, 1898. Retired 1902.

San Bernardino (sän ber-när-dē′nō), **Strait of.** A strait in the Philippines, separating Luzon and Samar islands and connecting the Visayan Sea with the Pacific Ocean.

Sanborn (san′born), **Franklin Benjamin.** Born at Hampton Falls, N. H., Dec. 15, 1831. An American journalist, author, and social reformer. He was graduated at Harvard in 1855; was a member of the Free Soil Party in New Hampshire and Massachusetts; became secretary to the Massachusetts State Kansas Committee in 1856; and was one of the founders of the American Social Science Association, of the National Prison Association, and of the National Conference of Charities. He was an editor of the Boston "Commonwealth" 1863–67, of the Springfield "Republican" 1868–1906, and of the "Journal of Social Science" 1876–97. In 1879 he founded, with Bronson Alcott and W. T. Harris, the Concord School of Philosophy (closed in 1888). Among his works are biographies of Emerson, Thoreau, Alcott, Dr. S. G. Howe, and Dr. Pliny Earle, "Life and Letters of John Brown" (1885), "The Personality of Thoreau" (1901), "The Personality of Emerson" (1903), a "History of New Hampshire" (1904), "Life and Earliest Writings of Thoreau" (1906), "Bronson Alcott at Alcott House, England, and Fruitlands, New England" (1908), "Hawthorne and his Friends" (1908), and "Recollections of Seventy Years" (1909).

San Carlos (sän kär′lōs). A municipality of Pangasinan province in the western part of Luzon, Philippine Islands. Civilized population (1903), 27,166.

San Cristobal*. It was formerly the capital of the state of Chiapas.

Sanday (san′dā), **William.** Born at Holme Pierrepont, Nottinghamshire, Aug. 1, 1843. An English theologian and historian, professor of divinity and canon of Christ Church, Oxford, from 1895. His works include "Authorship and Historical Character of the Fourth Gospel" (1872), "The Gospels in the Second Century" (1876), "The Oracles of God" (1891), "Commentary on the Epistle to the Romans" (1895), etc.

San Fernando (sän fãr-nän′dō). 1. A port and the capital of La Union province, in the western part of Luzon, Philippine Islands. It is situated on San Fernando Bay in lat. 16° 39′ N., long. 120° 19′ 30″ E. Civilized population of municipality (1903), 16,095.

2. A municipality of Cebu province, in the Philippine Islands. It is situated in the eastern part of Cebu Island. Population (1903), 15,451.

Sanford (san′fọrd), **Edmund Clark.** Born at Oakland, Cal., Nov. 10, 1859. An American psychologist. He was assistant professor 1892–1901, and professor of experimental and comparative psychology in Clark University 1901–09, and was elected president in 1909. He has published "A Course in Experimental Psychology" (1898), etc.

San Francisco*. It was, in large part, destroyed by earthquake and fire on April 18, 1906, and the following days, the loss amounting to upward of $250,000,000.

Sangre de Cristo Range*. According to the United States Geographic Board, the range extends from Poncha Pass, Colorado, to the neighborhood of Santa Fé, New Mexico, thus including the southern portion, locally known as the Culebra Range. Blanca Peak, in this range, is 14,390 feet high, and is surpassed by Mount Massive (14,424).

Sangster (sang′stėr), Mrs. (**Margaret Elizabeth Munson**). Born at New Rochelle, N. Y., Feb. 22, 1838. An American journalist, poet, and writer of juveniles. She was associate editor of "Hearth and Home" 1871–73, of "The Christian at Work" 1873–79, and of "The Christian Intelligencer" 1879–; 'Postmistress' of "Harper's Young People" 1882–89; and editor of "Harper's Bazaar" 1889–99. She has been on the staff of the "Christian Herald" since 1894, of the "Ladies' Home Journal" 1899–1904, and of the "Woman's Home Companion" 1904–. Among her works are "Poems of the Household" (1882), "Winsome Womanhood" (1900), "Lyrics of Love" (1901), "Good Manners for all Occasions" (1905), "The Story Bible" (1905), "Happy School Days" (1909), etc.

San Isidro (sän ē-sē′drō). A town, the capital of Nueva Ecija province, Luzon, Philippine Islands. It is situated on the Rio Grande de la Pampanga, in lat. 15° 18′ 30″ N., long. 120° 51′ 30″ E. Civilized population of municipality (1903), 9,800.

San José de Buenavista (sän ʜō-sā′ dā bwā-nä-vēs′tä). A town, the capital of Antique province, Panay Island, in the Philippines. It is in lat. 10° 44′ N., long. 121° 54′ E. Civilized population of municipality (1903), 6,768.

San Juan (sän ʜö-än′). A department in the northern part of Porto Rico, bounded by the Atlantic Ocean on the north, Humacao on the east, Guayama and Ponce on the south, and Arecibo on the west. Area, 542 square miles. Population (1899), 160,046. Formerly *Bayamon.*

San Juan. A locality about 4 miles southeast of Santiago de Cuba. It was attacked and captured by United States troops July 1, 1898.

San Juan Range*. It includes all the mountains of southwest Colorado south of Gunnison river, west of San Luis Valley, and east of the Rio Grande Southern Railroad. *U. S. Geographic Board.*

Sankey*, **Ira David.** Died at Brooklyn, N. Y., Aug. 13, 1908.

San Marino*. It is governed by a great council of 60 members, two of whom (appointed every six months) are captains regent, with executive power. The ancient Aringo, a general council of heads of families, was revived as a part of the constitution in 1906.

San-mun Bay (sän-mön′ bā). A bay on the coast of Che-kiang, China, containing several islands, among them Niu-tau. On February 28, 1899, Italy presented to China a demand for its lease as a coaling-station and naval base, with the adjacent territory as a sphere of influence. The demand was supported by the British minister, Sir Claude Macdonald, but was not granted by the Chinese government.

San Nicolas (sän nē′kō-läs). 1. A division of the city of Manila, Luzon, Philippine Islands. Civilized population (1903), 29,055.—2. A town in the western part of Ilocos Norte province, Luzon. Population (1903), 8,527.

San Pablo (sän päb′lō). A municipality in the southern part of La Laguna province, Luzon, Philippine Islands. Civilized population (1903), 22,612.

Sansovino (sän-sō-vē′nō), or **Sansavino, Jacopo,** or **Giacomo** (**Jacopo Tatti**). Born near Florence, 1479: died at Venice, Nov. 27, 1570. An Italian sculptor and architect. His first master was Andrea Sansovino, whose name he assumed. About 1507 he went to Rome and entered the service of Pope Julius II. and Bramente. On the sack of Rome in 1527 he went to Venice, where he spent the remainder of his life, and designed a large number of splendid buildings. He had charge of the Piazza di San Marco with the church, campanile, and adjacent public buildings, except the Doges' Palace.

Santa Barbara (sän′tä bär′bä-rä). A municipality in the southeastern part of Iloilo province, Panay, Philippine Islands. Civilized population (1903), 15,149.

Santa Clara (sän′tä klä′rä). A province of Cuba, situated between the provinces of Matanzas and Camagüey. Capital, Santa Clara. Area, 8,257 square miles. Population (1907), 457,431.

Santa Cruz (sän′tä kröth). 1. A district of the city of Manila, Luzon, Philippine Islands. Civilized population (1903), 35,030.—2. A town, the capital of La Laguna province, Luzon. It is situated on the eastern shore of Laguna de Bay in lat. 14° 18′ N., long. 121° 24′ 30″ E. Civilized population of municipality (1903), 12,747.

3. A municipality of Marinduque subprovince in the Philippine Islands. It is situated on Port Santa Cruz, in the northern part of Marinduque Island. Civilized population (1903), 16,350.

Santa Fé* (New Mexico). It was founded by the Spanish in 1605.

Santa Fé (san′tạ̈ fā′) **Trail.** A route of travel in the southwestern United States, of great importance before the construction of the transcontinental railways, extending from Fort Leavenworth, Kansas, to Santa Fé, New Mexico. It passed south of Topeka and after reaching the Arkansas river near Great Bend followed approximately the course later taken by the Atchison, Topeka, and Santa Fé railroad. From Cimarron Crossing, near Fort Dodge, a branch trail followed a more southerly and direct route to Santa Fé.

Santayana (sän-tä-yä′nä), **George.** Born at Madrid, Spain, Dec. 16, 1863, of Spanish parentage. An American poet, essayist, educator, and philosopher, assistant professor of philosophy in Harvard University from 1889 and professor 1907–. He was Hyde lecturer at the Sorbonne, Paris, 1905–06. Among his works are "Sonnets and Other Verses" (1894), "The Sense of Beauty: Outlines of Æsthetic Theory" (1896), "Lucifer: a Theological Tragedy" (1899), "Interpretations of Poetry and Religion" (1900), "The Hermit of Carmel, and other Poems" (1901), and "The Life of Reason," a work in five volumes: "Reason in Common Sense" (1905), "Reason in Society" (1905), "Reason in Religion" (1905), "Reason in Art" (1905), and "Reason in Science" (1906).

Santee (san-tē′). [Dakota *I-san-a-ti.*] A division of the Dakota Indians.

Santiago de Cuba*. 1. It is now the capital of the province of Oriente (formerly Santiago de Cuba). It surrendered to the United States troops July 17, 1898. The campaign lasted from June 20, and included the battles of Las Guasimas, June 24, and of San Juan and El Caney, July 1–2. Population, about 46,000.

2. The former name of the province of Oriente, Cuba.

Santley*, Sir **Charles.** He was knighted in 1907.

Santos-Dumont (sän′tōs-dü-môṅ′), **Alberto.** Born at São Paulo, Brazil, July 20, 1873. A Brazilian aëronaut. He made his first ascent at Paris in 1897, and in 1898 began the construction of his first dirigible air-ship, consisting of a cylindrical balloon propelled by a motor. Since then he has invented many improvements in steering devices, propelling mechanism, etc. In 1900 he received the prize of 4,000 francs from the Paris Aëro Club, and in 1901 was awarded the Deutsch prize of 100,000 francs for the first dirigible balloon or flying-machine to make a prescribed circuit between Saint-Cloud and the Eiffel Tower in a maximum time of thirty minutes, receiving at the same time 125,000 francs and a gold medal from the government of Brazil. Later he turned his attention to the construction and use of aëroplanes, and on Sept. 15, 1909, in a monoplane, made the fast speed of about five miles in seven minutes. He has written "My Air-ships" (1904).

Santo Tomas (sän′tō tō-mäs′). 1. A bay on the coast of La Union province, western Luzon, Philippine Islands: safe in the northeast monsoon for vessels not exceeding 15 feet draft.—2. A peak in the eastern part of La Union province, Luzon. Height, 7,298 feet.

Sarangani (sä-rän-gä′nē) **Islands.** A group of small islands in the Philippines, lying south-southeast of the most southern point of Mindanao, from which they are separated by Sarangani Channel. They belong to Davao district, Moro province. Balut, the largest, contains Sarangani volcano, 3,100 feet in height. Area of group, about 65 square miles.

Sarasate y Navascues*, **Pablo Martin Meliton.** Died at Biarritz, Sept. 21, 1908.

Sarcey*, **Francisque.** Died at Paris, May 15, 1899.

Sardou*, **Victorien.** Died at Paris, Nov. 8, 1908. His later works include "Madame Sans-Gêne" (1893), "Gismonda" (1894), "Marcelle" (1895), "Spiritisme" (1897), "Pamela" (1898), "Robespierre" (1899), "Le Dante" (1903), "La sorcière" (1903), "La Piste" (1906), "Le drame des poisons" (1907).

Sarrien (sä-riaṅ′), **Jean Marie Ferdinand.** Born at Bourbon-Lancy, France, Oct. 13, 1840. A French statesman. He was minister of posts and telegraphs April 6–Dec. 28, 1885, in the ministry of Brisson; minister of the interior Jan. 7–Dec. 11, 1886, in the cabinet of Freycinet; and again Dec. 12, 1887,–April 3, 1888, in that of Tirard; and again under Bourgeois, in 1896; was minister of justice under Brisson in 1898; and was premier and minister of justice, March–October, 1906.

Sartain*, **John.** Died at Philadelphia, Oct. 25, 1897.

Saskatchewan. 2. A former district constituted in 1882 from part of the Northwest Territories of Canada. It lay north of Manitoba and Assiniboia and east of Alberta. The province of Saskatchewan, comprising the eastern half of Athabasca and the greater part of the old districts of Assiniboia and

Saskatchewan, was created Sept. 1, 1905. It sends 4 senators to the Dominion Parliament and 6 representatives. Capital, Regina. Area, 250,650 square miles. Population of district (1901), 25,679; of province (1901), 91,460.

Satolli (sä-tōl′lē), **Francesco.** Born at Maiscieno, near Perugia, July 21, 1839. An Italian prelate. In 1880 he was appointed professor of theology in the College of the Propaganda at Rome; was appointed titular archbishop of Lepanto in 1883; and was papal representative at the centenary of the establishment of the see of Baltimore in 1889. He returned to the United States in 1892 as appellate judge with extraordinary discretion; and in the same year was made permanent apostolic delegate to the United States. In 1895 he was elevated to the cardinalate.

Satow (sat′ō), Sir **Ernest Mason.** Born June 30, 1843. A British diplomatist, minister at Peking 1900–06. He was envoy extraordinary and minister plenipotentiary to Morocco in 1893 and was transferred to Tokio, Japan, in 1895. In 1907 he was a delegate to the Second Peace Conference. He has written a handbook of Japan (with A. G. S. Hawes), an English-Japanese dictionary (with M. Ishibashi), "Jesuit Mission Press in Japan, 1591–1610," etc.

Saturn*. It has 10 satellites: Mimas, Enceladus, Tethys, Dione, Rhea, Titan, Hyperion, Iapetus, Themis, and Phœbe.

Sauk. Same as *Sac.*

Sault Sainte Marie (sö sānt mā′ri: F. pron. sō sañ mä-rē′) **Canals.** Two canals, situated in Michigan and Ontario near the falls in the Saint Mary's River. They connect Lake Superior and Lake Huron and lower or raise vessels from one level to another (16½–20½ feet). One (in Michigan) was begun in 1853 and opened in 1855. It was enlarged by the United States government 1870–81. The improvements included the Weitzel lock (515 feet long). The State of Michigan relinquished control in 1881 and in 1887 the state locks were torn down and replaced by a single lock (the Poe lock, 800 feet long, 100 feet wide, and 22 feet deep on the sills), opened in 1896. The American canal is 1⅝ miles in length, is to be widened to 295 feet by June, 1911, and is 25 feet in depth. The other (Canadian) canal was built 1888–95. It is 1⅛ miles long, 150 feet wide, and 22 feet deep, with a lock 900 feet long, 60 feet wide, and 22 feet deep on the sills. In 1908, 9,891 vessels passed through the American canal and 5,290 through the Canadian.

Saunders*, Frederick. Died Dec. 12, 1902.

Saussier*, Félix Gustave. Died in Luzarches near Pontoise, Dec. 20, 1905. He retired in 1898.

Savage (sav′āj), **Richard Henry.** Born at Utica, N. Y., June 12, 1846: died at New York, Oct. 11, 1903. An American author and military engineer. He was graduated at West Point in 1868; served in the corps of engineers; was in the Egyptian army 1871–74; and later became a railway engineer. In 1898 he was appointed senior major of the Second United States Volunteer Engineers and served through the Spanish-American war. He published a large number of stories.

Savaii*. It has belonged to Germany since 1899.

Say*, Jean Baptiste Léon. Died at Paris, April 30, 1896.

Saypan. One of the Ladrone Islands.

Sayre*, Lewis Albert. Died Sept. 21, 1900.

Scarfoglio, Signora **Eduardo.** See *Serao, Matilde.*

Scartazzini*, Johann Andreas. Died in Fahrwangen, Feb. 10, 1901.

Schack*, Adolf Friedrich von. Died at Rome, April 14, 1894.

Schäffle*, Albert Eberhard Friedrich. Died at Stuttgart, Dec. 25, 1903.

Scharf*, John Thomas. Died at New York, Feb. 28, 1898.

Scherzer*, Karl von. Died at Görz, Feb. 20, 1903.

Schiaparelli*, Giovanni Virginio. He was director of the observatory at Milan 1862–1900. His later works include "De la rotation de la terre sous l'influence des actions géologiques" (1889), "Rubra canicola" (1896–97), "Origine del sistema planetario eliocentrico presso i Greci" (1898), "L'astronomia nell' Antico Testamento" (1903).

Schilling*, Johannes. He was professor at Dresden 1868–1906.

Schinkel (shing′kel), **Karl Friedrich.** Born at Neuruppin, Germany, March 13, 1781: died at Berlin, Oct. 9, 1841. A noted German architect and painter. He was a pupil of David and Friedrich Gilly in Berlin, and also studied in Italy and Paris. In 1820 he was created professor in the Architectural Academy at Berlin. He was especially interested in the introduction of Greek forms and details in modern buildings. Among the buildings which he designed are the old Museum, the Royal Theater, the Schlossbrücke, the School of Artillery and Engineering, etc., in Berlin; the St. Nicolai-Kirche in Potsdam; and various buildings in Dresden and other German cities. He built many churches in a revised Gothic style.

Schley*, Winfield Scott. He was promoted captain in 1888, commodore Feb. 6, 1898, and rear-admiral Aug. 10, 1898. In the Spanish-American War he commanded the "Flying Squadron" (Brooklyn, Massachusetts, Texas, etc.), and directed the fighting off Santiago July 3, 1898. Retired 1901.

Schlotterbeck (shlot′ėr-bek), **Julius Otto.** Born at Ann Arbor, Mich., Sept. 1, 1865. An American pharmacist, chemist, and educator, professor of pharmacognosy and botany in the University of Michigan from 1896. Since 1905 he has been dean of the School of Pharmacy there. He has published various technical papers upon the chemistry of plant alkaloids.

Schofield*, John McAllister. Died at St. Augustine, Fla., March 4, 1906.

Schomburgk Line. The boundary between British Guiana and Venezuela and Brazil surveyed by Sir Robert Schomburgk 1841–44. The part bounding Venezuela runs from a point west of the mouth of the river Barima, in about long. 60° 30′ W., in a generally southerly direction to Mount Roraima. It was not accepted by the Venezuelans, who claimed all the territory held by the British to the river Essequibo; nor did the latter hold to it, but enlarged their claims to include a large tract extending as far west as long. 63°. The settlement of the boundary dispute by arbitration was urged by the United States government, most forcibly in 1895–96, and its attitude for a time threatened serious complications with England. Arbitration was agreed to by England in the latter year, and a decision was reached in 1899 which established the Schomburgk Line as the boundary, with the exception of Barima Point, at the mouth of the Orinoco, and a strip of land between the Wenamu and Cuyuni rivers, which go to Venezuela.

Schrader*, Eberhard. Died at Berlin, July 4, 1908.

Schrader*, Julius. Died at Grosslichterfelde, near Berlin, Feb. 16, 1900.

Schreiner*, Olive (Mrs. **S. C. Cronwright Schreiner**). Her later works include "Trooper Peter Halket of Mashonaland" (1897), "The Political Situation" (1895; written jointly with her husband), "An English South African's View of the Situation" (1898).

Schreyer*, Adolf. Died at Kronberg, Prussia, July 30, 1899.

Schuchert (shuk′ėrt), **Charles.** Born at Cincinnati, Ohio, July 3, 1858. An American naturalist, professor of paleontology in Yale University and curator of the geological collections at the Peabody Museum from 1904. He was assistant paleontologist of the United States Geological Survey 1893–94, and assistant curator of the United States National Museum 1894–1904.

Schumann*, Madame (**Clara Josephine Wieck**). Died at Frankfort, May 20, 1896.

Schurman (shür′man), **Jacob Gould.** Born at Freetown, Prince Edward Island, May 22, 1854. An American scholar, author, and educator. He was professor of English literature, political economy, and psychology at Acadia College 1880–82; was professor of metaphysics and English literature at Dalhousie College 1882–86; and since 1886 has been connected with Cornell University, as Sage professor of philosophy 1886–92, as dean of the Sage School of Philosophy 1891, and as president since 1892. In 1899 he was apppointed chairman of the United States Philippine Commission. Among his published works are "Kantian Ethics and the Ethics of Evolution" (1881), "The Ethical Import of Darwinism" (1888), "Belief in God" (1890), "Agnosticism and Religion" (1896), "Report of the Philippine Commission," of which he was joint author (1900), and "Philippine Affairs —A Retrospect and Outlook" (1900).

Schurz*, Carl. Died at New York, May 14, 1906. His "Reminiscences of a Long Life" appeared 1905–08.

Schütz (shütz), **Heinrich.** Born at Köstritz, Oct. 8, 1585: died at Dresden, Nov. 6, 1672. A German musician. He was the most influential composer of the 17th century in the development of church music and was also the composer of the first German opera, "Dafne" (1627). In 1615 he was kapellmeister of the court orchestra at Dresden, and later was conductor at Copenhagen.

Schwartz*, Mme. (**Marie Sophie Birath**). Died at Stockholm, May 7, 1894.

Schweinitz*, Hans Lothar von. Died at Cassel, Prussia, June 23, 1901.

Scidmore (sid′mōre), **Eliza Ruhamah.** Born at Madison, Wis., Oct. 14, 1856. An American traveler and author. Among her works are "Alaska: its Southern Coast and the Sitkan Archipelago" (1885: republished in 1889 as "Journeyings in Alaska"), "Westward to the Far East" (1890), "From East to West" (1890), "Jinriksha Days in Japan" (1890), "Appleton's Guide-book to Alaska and the Northwest Coast," "Java: the Garden of the East" (1898), "China: the Long-lived Empire" (1900), and "Winter India" (1903).

Scollard (skol′ärd), **Clinton.** Born at Clinton, N. Y., Sept. 18, 1860. An American author and poet. He was associate professor of rhetoric and elocution at Hamilton College 1889–1891, and professor of English literature 1891–1896. He has written "With Reed and Lyre" (1886), "Songs of Sunrise Lands" (1892), "Under Summer Skies" (1892), "On Sunny Shores" (1893), "The Hills of Song" (1895), "Skenandoa" (1896), "A Man at Arms" (1898), "The Lutes of Morn" (1901), "The Cloistering of Ursula" (1902), "Lyrics and Legends of Christmastide" (1904), "Odes and Elegies" (1905), etc.

Scott (skot), **Austin.** Born at Maumee, Ohio, Aug. 10, 1848. An American historian and educator, president of Rutgers College 1890–1906. He was graduated at Yale in 1869; studied at the University of Michigan and in Berlin and Leipsic; was private secretary to George Bancroft 1872–73 and 1875–81; was associate in history at Johns Hopkins University 1876–82; and was professor of history in Rutgers 1883–90 and of history and political science 1906.

Scott*, Clement. Died at London, June 25, 1904.

Scott, Hugh Stowell: pseudonym **Henry Seton Merriman.** Died at Melton, Suffolk, Nov. 19, 1903. A British novelist. He wrote "From One Generation to Another" (1892), "With Edged Tools" (1894), "The Sowers" (1896), "In Kedar's Tents" (1897), "Roden's Corner" (serially, 1898), etc.

Scott (skot), **John,** first Earl of Eldon. Born at Newcastle-upon-Tyne, June 4, 1751: died at London, Jan. 13, 1838. An English jurist. He was appointed solicitor-general in 1788, attorney-general in 1793, and chief justice of common pleas in 1799, and was lord chancellor of England 1801–06 and 1807–27.

Scott (skot), **Robert Falcon.** Born at Devonport, England, June 6, 1868. An English naval officer and explorer. He entered the navy in 1882; was promoted captain in 1904, and commanded the national antarctic expedition 1900–04. He published an account of his voyage in "The Voyage of the Discovery" (1905).

Scott (skot), **William Berryman.** Born at Cincinnati, Ohio, Feb. 12, 1858. An American paleontologist, professor of geology and paleontology in Princeton University from 1884. He has published "An Introduction to Geology" (1897), and numerous scientific monographs and papers, and is editor and joint author of the "Reports of the Princeton University Expeditions to Patagonia" (8 volumes).

Scriabin (skrẹ̄-ä-bin′), **Alexander Nicholaivitch.** Born at Moscow, Jan. 10, 1872. A noted Russian composer and pianist. He was professor of the pianoforte at the Moscow Conservatory 1898–1903. His orchestral works include two symphonies, "Reverie," and a concerto, and he has written numerous piano pieces.

Scripture (skrip′tūr), **Edward Wheeler.** Born at Mason, N. H., May 21, 1864. An American experimental psychologist and phonetician. He was connected with Yale University as instructor, director of the psychological laboratory, and assistant professor, 1892–1903. His publications include "Thinking, Feeling, Doing" (1895), "The New Psychology" (1897), "Elements of Experimental Phonetics" (1902), "Researches in Experimental Phonetics: Study of Speech Curves" (1907), etc.

Scudder*, Horace Elisha. Died at Cambridge, Mass., Jan. 11, 1902. He was editor of the "Atlantic Monthly" 1890–98.

Seabury (sē′bu-ri), **Samuel.** Born at Groton, Conn., Nov. 30, 1729: died at New London, Conn., Feb. 25, 1796. An American clergyman, the first bishop of the Episcopal Church in America. He was graduated at Yale in 1748; studied at Edinburgh; was ordained deacon and priest in 1753; held pastorates in New Brunswick, New Jersey, Jamaica, Long Island, and Westchester, New York; and in 1783 was elected bishop by fourteen Connecticut clergymen. He went to England to secure consecration and finally received it in 1784 at the hands of Scotch bishops. The validity of this consecration was contested in America, but the dispute was settled in his favor in 1789.

Seaman (sē′ma̤n), **Owen.** Born 1861. An English humorist and editor. He was educated at the Shrewsbury School and at Clare College, Cambridge; was appointed professor of literature at the Durham College of Science, Newcastle-upon-Tyne, in 1890; joined the staff of "Punch" in 1897; and became its subeditor in 1902 and editor-in-chief in 1906. He has written "Horace at Cambridge" (1894), "The Battle of the Bays" (1896), "In Cap and Bells" (1899), "Borrowed Plumes" (1902), "A Harvest of Chaff" (1904), etc.

Sea of Japan, Battle of the. A great naval battle fought by the Japanese fleet under Admiral Togo and the Russian squadron under Admiral Rozhestvensky in the eastern channel of the Strait of Korea, off the island of Tsu Shima, May 27–28, 1905. Of the thirty-eight vessels of the Russian fleet, twenty-two were sunk and six were captured.

Seawell (sē′wel), **Molly Elliot.** Born at The Shelter, Gloucester County, Va., Oct. 23, 1860. An American novelist and playwright. She is the author of "Throckmorton" (1890), "Children of Destiny" (1893), "The Sprightly Romance of Marsac" (1895), "The History of The Lady Betty Stair" (1896), "The Loves of the Lady Arabella" (1898), "The House of Egremont" (1900), "Papa Bouchard" (1901), "Francezka" (1902), "The Fortunes of Fifi" (1903), "The Château of Monplaisir" (1905), "The Victory" (1906), "The Secret of Toni" (1907), "Imprisoned Midshipmen" (1908), and "Last Duchess of Belgrade" (1908), and of several plays and many juvenile stories.

Seddon (sed′o̤n), **Richard John.** Born at Eccleston, Lancashire, England, 1845: died near Sydney, N. S. W., June 10, 1906. A British colonial statesman, premier of New Zealand 1893–1906. He emigrated to Melbourne, Australia, in 1863, removed to New Zealand, and was elected a member of the House of Representatives in 1879. For various periods since 1891 he held the positions of postmaster-general; minister of mines, of public works, native affairs, defense, education, immigration, and labor; and colonial treasurer. He was responsible for the Old-Age Pensions Act, in 1898, and favored Joseph Chamberlain's fiscal policy in 1903.

Sedgwick (sej′wik), **William Thompson.** Born at West Hartford, Conn., Dec. 29, 1855. An American biologist and sanitarian, professor in the Massachusetts Institute of Technology from 1891. He was assistant professor there 1883–87, and associate professor 1887–91, and has been curator of the Lowell Institute, Boston, since 1897. He has published "General Biology" (1886: in collaboration with E. B. Wilson), "Principles of Sanitary Science and Public Health" (1892), "The Human Mechanism" (1906: in collaboration with T. Hough), etc.

See (sē), **Thomas Jefferson Jackson.** Born at Montgomery City, Mo., Feb. 19, 1866. An American astronomer, professor of mathematics in the United States Navy from 1899. He was graduated at the University of Missouri in 1889, and at the University of Berlin in 1892; was instructor in charge of the department of astronomy in the University of Chicago 1893–96; and was astronomer of the Lowell Observatory 1896–98. He is best known for his researches on the evolution of stellar systems and on the physical constitution of the heavenly bodies. In 1905 he published an important memoir on the theory of the sun, viewed as a mass of gas reduced to the state of single atoms; and in 1906 generalized Kelvin's and Darwin's work on the rigidity of the earth, and showed how the rigidity of any body may be calculated from the theory of gravity alone. He concluded that the earth's average rigidity approaches that of nickel-steel, while that of the sun is more than 2,000 times greater. Most of his recent researches are published in the "Astronomische Nachrichten."

Seebohm (sē′bōm), **Henry.** Born July 12, 1832: died Nov. 26, 1895. A noted English ornithologist. He was the author of "Siberia in Europe" (1880), "A History of British Birds and their Eggs" (1883–85), "Classification of Birds" (1890: supplement 1895), "The Birds of the Japanese Empire" (1890), "Geographical Distribution of British Birds" (1893), etc.

Seeley (sē′li), **Harry Govier.** Born in London, Feb. 18, 1839: died there, Jan. 8, 1909. A noted British paleontologist, professor of geology, geography, and mineralogy in King's College, London. He published many technical works and papers.

Seelye*, **Laurens Clark.** He resigned the presidency of Smith College in 1909, the resignation to take effect in 1910.

Segantini (sā-gän-tē′nē), **Giovanni.** Born at Arco, Jan. 15, 1858: died near Samaden, Sept. 28, 1899. A Tyrolese painter. He was especially interested in the analysis of color and light according to the methods of the French Impressionists. His pictures, full of refinement and imagination, attracted much attention in the exhibitions and especially in that of Venice in 1895. He was one of the strongest and most original of modern painters.

Seidl*, **Anton.** Died at New York, March 28, 1898.

Selangor*. It is now a part of the Federated Malay States.

Selfridge (self′rij), **Thomas Oliver.** Born at Charlestown, Mass., Feb. 6, 1836. An American naval officer, promoted rear-admiral in 1896. He was graduated at the United States Naval Academy in 1854; served in the Union Navy throughout the Civil War (was on board the Cumberland when she was sunk by the Merrimac and commanded vessels on the Mississippi and in the attacks on Fort Fisher); was promoted commodore 1894; commanded the European Squadron 1895–98; and retired in 1898.

Sellers (sel′ėrz), **Coleman.** Born in Philadelphia, Jan. 28, 1827: died there, Dec. 28, 1907. An American engineer and inventor, best known from his work as a member of the International Niagara Commission.

Sellier*, **Henri.** Died June 26, 1899.

Sembrich, Marcella. See *Stengel.*

Senate*. **2.** The Senate of the United States numbers (1909) 92 members. The name senate has been adopted by the upper houses of the Canadian Parliament and of the Commonwealth of Australia.

Senegal*. There is a fortified naval station at Dakar, which is also the seat of government for French West Africa. A railway has been constructed connecting Dakar, Rufisque, and St. Louis, and one from Kayes to the Niger. Total area of colony, 806,000 square miles. Population, 1,130,000.

Senegal-Niger Colony, Upper. A French colony in West Africa, formed in 1904 from the Territories of Senegambia and the Niger. It is bounded on the north by French Algeria, on the east by a line running north from Lake Chad, on the south by the Ivory Coast, Gold Coast, Togoland, and Dahomey, and on the west by French Guinea. It includes part of the Sahara, the valley of the upper Senegal, and the great bend of the Niger, with the territories within it. The Military Territories have been broken up, the second being under the civil administration, and the first and third being formed into the Military Territory of the Niger, under a colonel. The colony is administered by a lieutenant-governor. Bamako, on the Niger, is the seat of government. Area, about 370,000 square miles. Population, over 5,000,000.

Sennar*. **1.** Now a province of the Anglo-Egyptian Sudan. Capital, Wad Medani.

Sepp*, **Johann Nepomuk.** Died at Munich, June 11, 1909.

Serao (sā-rä′ō), **Matilde** (Signora **Eduardo Scarfoglio**). Born at Patras, Greece, March 7, 1856. A noted Italian novelist and editor. Her father was a political refugee and her mother a Greek. From 1880 to 1886 she lived in Rome, where she founded, with her husband, a daily paper, the "Corriere di Roma." It was short lived, and was later brought out as "Il Corriere di Napoli." During this period she published "Cuore Infermo" (1881), "Piccole anime" (1883), "Fantasia" (1883), "Fior di passione" (1883), "La virtù di Checchina" (1884), "La conquista di Roma" (1885), "Il ventre di Napoli" (1885), and "Riccardo Joanna" (1886). In Naples she founded "Il Mattino" (1902), one of the most important daily papers of southern Italy. Since 1890 she has written "Il paese di Cuccagna," "Addio amore," "All erta sentinella," "Castigo," "La ballerina," "Suor Giovanna della Croce," and "Al paese di Gesú." A number of her stories have been translated.

Serapis (se-rā′pis). A British man-of-war which surrendered to the Bonhomme Richard, Sept. 23, 1779. See *Bonhomme Richard.*

Serpa Pinto*, **Alexandre Alberto da Rocha.** Died at Lisbon, Dec. 21, 1900.

Serra*, **Miguel José** (**Junipero**). A Franciscan friar, who took the name "Junipero" on receiving holy orders. He was born in the island of Majorca in 1713, and died at Monterey, California, in 1784. He arrived in Mexico in 1749, and eventually became president of the missions of California. In the spring of 1769 he went overland from Loreto, on the west shore of the Gulf of California, with Portolá and others and cattle, sheep, and horses to the site of San Diego, sending ships around; and immediately (1769) founded San Diego, the first European settlement in Alta California. He then established many other missions; San Carlos de Monterey, 1770; San Antonio de Padua and San Gabriel, 1771; San Luis Obispo, 1772; San Francisco and San Juan Capistrano, 1776; Santa Clara, 1777, etc.

Servia*. King Alexander was assassinated May 29, 1903, and on June 15 the throne was ascended by Peter I.

Seth (seth), **Andrew** (**Andrew Seth Pringle Pattison**). Born at Edinburgh, Dec. 20, 1856. A Scottish philosophical writer, professor of logic and metaphysics in the University of Edinburgh from 1891. He was appointed professor of logic and philosophy in University College, Cardiff, in 1883, and of logic, rhetoric, and metaphysics in St. Andrews in 1887. In 1898 he assumed the name of Pringle Pattison. Among his works are "The Development from Kant to Hegel" (1882), "Scottish Philosophy" (1885), "Hegelianism and Personality" (1887), "Man's Place in the Cosmos" (1897), "Two Lectures on Theism" (1897), "The Philosophical Radicals" (1907), etc.

Seton (sē′ton), **Ernest Evan Thompson.** Born at South Shields, England, Aug. 14, 1860. A writer and illustrator of animal stories. He was educated at the Toronto Collegiate Institute, and studied art at the Royal Academy, London, 1879–81, and at Paris 1890–96. In 1891 he was appointed official naturalist to the government of Manitoba. Among his works are "Mammals of Manitoba" (1886), "Birds of Manitoba" (1891), "Art Anatomy of Animals" (1896), "Wild Animals I Have Known" (1898), "The Trail of the Sandhill Stag" (1899), "The Biography of a Grizzly" (1900), "Wild Animal Play for Children" (1900), "Lobo, Rag, and Vixen" (1900), "Lives of the Hunted" (1901), "Pictures of Wild Animals" (1901), "Krag and Johnny Bear" (1902), "Two Little Savages" (1903), "Monarch, the Big Bear of Tallac" (1904), "Woodmyth and Fable" (1905), "Animal Heroes" (1905), "Biography of a Silver Fox" (1909), etc.

Seven Seas, The. A volume of verse by Rudyard Kipling, published in 1896. It is named for the seven oceans—the North and the South Atlantic, the North and the South Pacific, the Arctic, the Antarctic, and the Indian. The book is the apotheosis of British imperialism. In a poem contained in it, "The Flowers," the author speaks of the British as "Masters of the Seven Seas."

Sewall (sū′al), **Arthur.** Born at Bath, Maine, Nov. 25, 1835: died at Small Point, near Bath, Me., Sept. 5, 1900. An American ship-builder and banker. He was an advocate of the free coinage of silver, and as such he received the nomination of the Democratic party for Vice-President at the Chicago Convention of July, 1896.

Seymour (sē′mōr), Sir **Edward Hobart.** Born April 30, 1840. A British naval officer, admiral of the fleet from 1904. He entered the navy in 1852; served in the Crimean (1854–55), Chinese (1857–60, and 1862), West African (1870), and Egyptian (1882) wars; and was promoted vice-admiral in 1895 and admiral in 1902. In 1900 he commanded the expedition of the allies for the relief of the legations in Peking. He was made a member of the Order of Merit in 1902 and of the Royal Victorian Order in 1906.

Sgambati (sgäm-bä′tē), **Giovanni.** Born at Rome, May 18, 1843. An Italian composer and pianist. In 1877 he was appointed chief piano teacher in the music school of the Saint Cecilia Academy in Rome. His works show traces of the influence of Liszt and Wagner. He is one of the very few modern Italian instrumental composers. Three symphonies, two piano quintets, a string quartet, many piano pieces and songs are the most important of his compositions.

Sha (shä). A small river of Manchuria which rises southeast of Mukden and flows into the Tai-tze about five miles northwest of Liaoyang. On its banks a battle between the Japanese under Oyama and the Russians under Kuropatkin was fought, October 9–14, 1904. It resulted in the defeat of the latter, who had advanced from their position below Mukden in an attempt to defeat the Japanese and relieve Port Arthur.

Shackleton (shak′l-ton), Sir **Ernest H.** Born at Kildare, 1874. A British explorer. He conducted an expedition to the antarctic which landed on MacMurd's Sound in the winter of 1908; ascended Mount Erebus (13,120 feet) in March; and later pushed on toward the south, reaching lat. 88° 23′ S., within one hundred and eleven miles of the pole (the farthest point ever gained), on Jan. 9, 1909. A party lead by Professor David determined the position of the south magnetic pole (lat. 72° 25′ S., long. 154° E.), Jan. 16, 1909. He published "The Heart of the Antarctic" (1909).

Shafter (shaf′tėr), **William Rufus.** Born at Galesburg, Mich., Oct. 16, 1835: died Nov. 12, 1906. An American general. He served in the Union army, and was brevetted brigadier-general of volunteers March 13, 1865. He was appointed lieutenant-colonel in the regular army in 1866; was promoted brigadier-general in May, 1897; and was appointed major-general of volunteers May 4, 1898. He led the expedition to Cuba which effected the surrender of Santiago July 17, 1898. Retired 1899.

Shaler*, **Nathaniel Southgate.** Died April 10, 1906. His later works include "Sea and Land" (1894), "Domesticated Animals" (1895), "American Highways" (1896), "Outlines of the Earth's History" (1898), "The Individual" (1900), "Elizabeth of England" (1903), "The Neighbor" (1904), "The Citizen" (1904), "Man and the Earth" (1905), and "From Old Fields: poems of the Civil War" (1906). His "Autobiography" appeared in 1909.

Shamrock (sham′rok). A sloop yacht, the unsuccessful challenger for the America's cup in 1899. She was owned by Sir Thomas Lipton and designed by William Fife, Jr. Her dimensions were: length over all, 128 feet; water-line length, 87 feet 8¼ inches (for the last race, 88 feet 11⅞ inches); beam, 25 feet 5 inches.

Shamrock II. A sloop yacht, the unsuccessful challenger for the America's cup in 1901, designed by George L. Watson and owned by Sir Thomas Lipton. She failed to win a race.

Shamrock III. A sloop yacht, the unsuccessful challenger for the America's cup in 1903. She was designed by William Fife and owned by Sir Thomas Lipton. She lost the race to the Reliance (which see).

Shannon (shan′on), **James Jebusa.** Born at Auburn, N. Y., 1862. An American portrait-painter, resident in England since 1878. He became an associate of the Royal Academy in 1897 and a Royal Academician in 1909.

Sharp (shärp), **Luke.** A pseudonym of Robert Barr.

Sharp (shärp), **William.** Born at Paisley, Scotland, Sept. 12, 1855: died at Castello di Maniace, Bronte, Sicily, Dec. 12, 1905. A British poet, critic, and novelist. He was brought up in the Highlands; was educated at Glasgow University; settled in London as a literary worker; and became one of the circle of Dante G. Rossetti. Among his many published works are "The Human Inheritance" (1882), biography of Dante Gabriel Rossetti (1883), "Earth's Voices" (1884), "A Fellowe and his Wife" (1892: with Blanche Willis Howard), "Vistas" (1894), and "Flower o' the Vine" (1894). He also wrote monographs on Browning, Shelley, and Heine, and "Literary Geography" (1904). For the work which he published under the name of 'Fiona Macleod,' see *Macleod.*

Shasta*, **Mount.** Height, 14,380 feet.

Shavano*, **Mount.** Height, 14,239 feet.

Shaw (shâ), **Albert.** Born at Shandon, Ohio, July 23, 1857. An American editor and writer on economics. He was appointed professor of international law in Cornell University in 1890, resigning in 1891 to take charge of the American "Review of Reviews," of which he has been editor since that date. Among his publications are "Icaria: a chapter in the History of Communism" (1884), "Coöperation in a Western City" (1886), "History of Coöperation in the United States" (1888: with others), "Municipal Government in Great Britain" (1895), "Municipal Government in Continental Europe" (1895), "The Business Career in its Public Relations" (1904), "Political Problems of American Development" (1908), etc.

Shaw (shâ), **George Bernard.** Born at Dublin, Ireland, July 26, 1856. A British dramatist, critic, and novelist. His works include the novels "The Irrational Knot," "Love Among the Artists," "Cashel Byron's Profession," and "An Unsocial Socialist"; "Fabianism and the Empire" (1900), "Fabianism and the Fiscal Question" (1904), and various articles on socialistic subjects; essays on "The Quintessence of Ibsenism" (1891), and "The Perfect Wagnerite" (1898); and plays, including "Plays, Pleasant and Unpleasant" (1898), "Three Plays for Puritans" (1900), "The Admirable Bashville" (1901), "Man and Super-man" (1903), "Major Barbara" (1905), "Getting Married" (1908), "Press Cuttings" (1909), etc.

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Shaw (shâ), **Leslie Mortier.** Born at Morristown, Vt., Nov. 2, 1848. An American lawyer and cabinet officer. He was governor of Iowa 1898–1902 and secretary of the treasury 1902–07. He is the author of "Current Issues" (1908), etc.

Shaw-Lefevre (shâ′lė-fāvr′), **Charles,** Viscount Eversley. Born Feb. 22, 1794: died at Heckfield, Hants., Dec. 28, 1888. An English Whig politician. He sat in the House of Commons for Downton, Wilts., in 1830, for Hampshire in 1831, and for the northern division of Hampshire 1832–57, and was speaker 1839–57. He was raised to the peerage in 1857. A volume of his decisions was published by Robert Bourke in 1857 and the House is indebted to him for the removal of many unsuitable forms of procedure.

Shawmut (shâ'mut). The Indian name for the peninsula on which Boston now stands. It was used by the early settlers in Massachusetts.

Shear (shēr), **Cornelius Lott.** Born at Coeymans Hollow, N. Y., March 26, 1865. An American botanist, pathologist of the United States Bureau of Plant Industry from 1902. He has published various technical papers relating to agrostology, mycology, and pathology.

Sheffield, University of. See *University of Sheffield.*

Sheldon (shel'don), **Charles Monroe.** Born at Wellsville, N. Y., Feb. 26, 1857. An American clergyman and author. He was ordained in 1886; was pastor of the Congregational Church at Waterbury, Vermont, 1886–88; and since 1889 has been pastor of the Central Congregational Church at Topeka, Kan. In 1900 he undertook to edit the Topeka "Daily Capital" for one week "in accordance with the principles of Christianity," an experiment which attracted wide attention. He is the author of a number of books, of which the best known is "In His Steps" (1896).

Shemakha*. The new town was overthrown by earthquakes in 1859, 1872, and 1902.

Shepstone (shep'stōn), Sir **Theophilus.** Born at Westbury, near Bristol, Jan. 8, 1817: died at Pietermaritzburg, June 23, 1893. A British colonial administrator. His parents emigrated to the Cape in 1820. For many years he held official positions in which his knowledge of the native languages and customs was of great value. In January, 1877, with a small personal staff and twenty-five policemen, he rode into the Transvaal, and on April 18 declared it British territory. He administered the Transvaal until 1879 and was appointed administrator of Zululand in 1884.

Sheraton (sher'a-ton), **Thomas.** Born at Stockton-on-Tees, 1751: died at London, 1806. A noted English furniture-maker and -designer.

Sherlock Holmes, The Adventures of. A series of stories by (Sir) Arthur Conan Doyle, published in 1891. They were named for the hero, a brilliant amateur detective, and were followed by "The Memoirs of Sherlock Holmes" (1893), and "The Return of Sherlock Holmes" (1904).

Sherman (shėr'man), **Frank Dempster.** Born at Peekskill, N. Y., May 6, 1860. An American poet and educator. He has been professor of graphics at Columbia University since 1891. Among his works are "Madrigals and Catches" (1887), "Lyrics for a Lute" (1890), "Little-Folk Lyrics" (1892), "Lyrics of Joy" (1904), and "A Southern Fight" (1905: with Clinton Scollard).

Sherman (shėr'man), **James Schoolcraft.** Born in Utica, N. Y., Oct. 24, 1855. An American politician, vice-president of the United States 1909–. He was graduated at Hamilton College, 1878; studied law; was mayor of Utica, 1884; and was a (Republican) member of Congress, 1887–99.

Sherman*, John. Died at Washington, Oct. 22, 1900. He was secretary of state under President McKinley 1897–98.

Sherrington*, Madame **Lemmens.** Died May 9, 1906.

Shields*, Charles Woodruff. Died at Newport, R. I., Aug. 26, 1904.

Shiras (shi'ras), **George.** Born at Pittsburg, Pa., Jan. 26, 1832. An American jurist. He was graduated from Yale in 1853, was admitted to the Pennsylvania bar in 1856, and was associate justice of the United States Supreme Court 1892–1902.

Shirlaw (shėr'lâ), **Walter.** Born at Paisley, Scotland, Aug. 6, 1838: died Dec. 26, 1909. An American painter. He studied art in Munich under the painters Raab, Wagner, Ramberg, and Lindenschmidt; was one of the founders of the Society of American Artists and its president for two terms; and was elected a member of the National Academy of Design in 1888. Among his works are "Toning of the Bell," "Good Morning," "Sheepshearing," "Harmonies," "A Melody," etc.

Shorter (shôr'tėr), **Clement King.** Born at London, July 19, 1858. An English journalist and critic. He was editor of the "Illustrated London News" 1891–1900, of the "Sketch," which he founded, 1893–1900, and of the "English Illustrated Magazine" 1893–1900. Since 1900 he has been editor of the "Sphere," which he also founded, and of the "Tatler." Among his publications are "Charlotte Brontë and her Circle" (1896), "Victorian Literature" (1897), "Charlotte Brontë and her Sisters" (1905), "George Borrow" (1905), "Immortal Memories" (1908), etc.

Shorthouse (shôrt'hous), **Joseph Henry.** Born at Birmingham, Sept. 9, 1834: died at London, March 4, 1903. An English author. His works include "John Inglesant" (1881), "The Platonism of Wordsworth" (1882), "The Little School-Master Mark" (1883–84), "Sir Percival" (1886), "A Teacher of the Violin" (1888), "The Countess Eve" (1888), "Blanche, Lady Falaise" (1891), etc.

Shufeldt*, Robert Wilson. Died Nov. 7, 1895.

Shuvalof*, Count **Paul.** Died in Jalta, Russia, April 20, 1908.

Siam*. The Franco-Siamese treaty of March 23, 1907, provides for the cession to France of Battambang, Siem Reap, and Sisophon, the retention by Siam of the port of Krat and the region of Wansai, while 4 ports on the Mekong are to be held by France on perpetual lease. On March 10, 1909, the tributary states of Kelantan, Trengganu, and Keda, on the Malay Peninsula, were ceded to Great Britain. There is a legislative council (created in 1895), composed of the ministers of state and others appointed by the crown.

Siang-tan (siäng-tän'). A city in the province of Hu-nan, China, situated on the Siang river in lat. 27° 52′ N., long. 112° 42′ E. Population, about 100,000.

Siargao (sē-är-gä'ō). One of the Philippine Islands, lying in the Pacific Ocean northeast of Mindanao and belonging to Surigao province. Coal is found in the island. Area, 151 square miles. Population (1903), 9,556.

Siberia*. That part of the island of Saghalin south of lat. 50° N. was ceded to Japan in 1905.

Siberian Railway*. The work was practically completed in 1899. The line runs from Cheliabinsk, via Omsk and Irkutsk, around the southern end of Lake Baikal to Udinsk, to Onon, and southwest to Vladivostok on the Pacific — over 4,000 miles — with a branch from Harbin to Port Arthur (finished in 1902).

Sibonga (sē-bōng'gä). A municipality in the eastern part of Cebu Island, Philippines. Civilized population (1903), 25,848.

Sibuguey (sē-bö-gā') **Bay.** A large bay indenting the southern coast of Mindanao, in the Philippine Islands. Coal found in its vicinity is said to be of good quality.

Sibutu (sē-bö'tö) **Islands.** A group of islands lying southwest of the Tawi Tawi group in the Sulu (Jolo) Archipelago. It consists of 12 islands, of which Sibutu is the largest. They were ceded by Spain to the United States by a treaty signed Nov. 7, 1900. They are a part of the Jolo district of Moro province. Area of Sibutu, 34 square miles. Population (1903), 280. Area of the group, 42.2 square miles.

Sibuyan (sē-bö-yän'). A mountainous island in the Philippines, the second in size of the Romblon group, situated southeast of Romblon. Gold is found in the northern part of the island. Mount Guitiguitin, or Sibuyan, rises in the center. Area, 171 square miles. Population (1903), 10,716.

Sicily*. Messina and adjacent regions were visited by a destructive earthquake on Dec. 28, 1908. The city was totally destroyed and upward of 100,000 people were killed.

Siddons*, Mrs. **Scott.** Died at Paris, Nov. 19, 1896.

Sidgwick*, Henry. Died Aug. 28, 1900. He was Knightbridge professor of moral philosophy at Cambridge 1883–1900.

Siege of the Legations. The siege of the foreign legations in Peking by Boxers and Chinese troops during the summer of 1900. It lasted from June 21 until Aug. 14, when it was raised by the capture of Peking by the allied forces.

Sienkiewicz*, Henryk. His later works include "Quo Vadis?" (1895), and "Krzyzacy" (1901). In 1905 he was awarded the Nobel prize for literature.

Sierra Blanca*. The highest peak in Colorado is Mt. Massive (14,424 feet). Blanca Peak is only 14,390 feet high.

Sierra Leone*. In 1896 a protectorate was proclaimed by Great Britain over the territory lying inland between lat. 7° and 10° N., long. 11° and 13° W. It is divided into 6 administrative districts. Area, about 30,000 square miles. Population, over 1,000,000. Area of the colony proper, about 4,000 square miles. Population, 76,655.

Sierra Nevada*. The highest peak is Mulahacen (11,660 feet).

Sigel*, Franz. Died at New York, Aug. 21, 1902.

Sigsbee (sigs'bē), **Charles Dwight.** Born at Albany, N. Y., Jan. 13, 1845. An American naval officer. He was graduated from the United States Naval Academy in 1863; served under Farragut at the battle of Mobile bay, Aug. 5, 1864; and was promoted commander in 1882, and captain in 1897. He commanded the United States battleship Maine at the time of her destruction in Havana harbor, Feb. 15, 1898. During the Spanish-American war he commanded the auxiliary cruiser St. Paul, and was later transferred to the Texas. He was chief intelligence officer 1900–03; was commandant of the navy yard at League Island 1903–04; commanded the South Atlantic squadron 1904–05, and the Second Division of the North Atlantic fleet 1905–06; and retired in 1907.

Silay (sē-lī'). A municipality in the northwestern part of Negros Occidental province, Negros, Philippine Islands. Civilized population (1903), 15,649.

Silesia*, or **Austrian Silesia.** It sends 15 members to the Reichsrat.

Silver State, The. The State of Nevada: so named from the richness of its silver-mines.

Simon (sī'mon), **Charles Edmund.** Born at Baltimore, Md., Sept. 23, 1866. An American physician, physiological chemist, and hematologist. He was assistant resident physician at Johns Hopkins Hospital 1890–91; opened the first clinical laboratory in Baltimore in 1897; and has been professor of clinical pathology in the Baltimore Medical College since 1905. He is the author of "Clinical Diagnosis" (1896) and "Physiological Chemistry" (1901).

Simon*, Jules. Died at Paris, June 8, 1896. His later works include "La politique radicale" (1868), "Le libre-échange" (1870), "Souvenirs du 4 septembre" (1874), "La réforme de l'enseignement secondaire" (1874), "Le gouvernement de M. Thiers" (1878), "Dieu, patrie, liberté" (1883), "Une académie sous le Directoire" (1884), "La femme du vingtième siècle" (1891, with Gustave Simon), many biographical studies, and two volumes of memoirs, "Le soir de ma journée" and "Premières années" (1901).

Simon's Bay (sī'monz bā). A bay on the westerly side of False Bay, Cape of Good Hope, Africa. Upon it Simon's Town is situated. It is a British naval base.

Simplon Railway. A railway projected in 1889, running from Brieg, Switzerland, to Iselle, Italy, through a tunnel in the Simplon Mountain. The money was furnished by the Jura-Simplon Company (Swiss) and the Italian and Swiss governments. Work on the tunnel was begun in 1898 and was completed in 1906. The length of the tunnel is about 12¼ miles, the altitude about 2,300 feet.

Sinclair (sin-klãr'), **May.** A contemporary British novelist. She has published "Audrey Craven" (1897), "Mr. and Mrs. Nevill Tyson" (1898), "Two Sides of a Question" (1901), "The Divine Fire" (1904), "The Helpmate" (1907), "Immortal Moment" (1908), "The Judgment of Eve" (1908), etc.

Sinding (sin'ding), **Christian.** Born at Kongsberg, Norway, Jan. 11, 1856. A Norwegian composer. His most important works are a symphony in D minor, a violin concerto, and chamber music. Many of his piano pieces are popular.

Singleton, Mrs. (**Mary Montgomerie Lamb**). See *Currie.*

Sing Sing*. The name was changed to Ossining in 1901.

Sinna (sin'ä). A city of Persia, capital of the district of Ardelan in Kurdistan, situated about lat. 35° N., long. 47° E. Also *Sena, Senna, Sihna.*

Sisley (sis'li), **Alfred.** Born at Paris, Oct. 30, 1840, of English parents: died at Moret-sur-Loing, France, Jan. 29, 1899. An Anglo-French painter. He was a pupil of Gleyre and much influenced by Corot. About 1875 he became one of the most brilliant leaders of the Impressionist movement. His pictures are widely distributed, several being in the Musée du Luxembourg in Paris.

Sister Dora. The name under which Dorothy Wyndlow Pattison was known in her philanthropic work. See *Pattison.*

Sitka*. It was the capital of Alaska prior to 1906.

Sivutch Rock (sē-vöch' rok). A small islet just off the shore of St. Paul Island, Bering Sea, containing a fur-seal rookery.

Skagit*. It flows into Puget Sound 52 miles north of Seattle.

Skraelings (skrā'lingz). [Nor. *skraelling,* a feeble or puny person.] The name given by the early Norse discoverers of America to the North American Indians. In Icelandic literature it is the common name of the Eskimos, and is probably a general term meaning simply an 'inferior people.'

Sloane*, William Milligan. He was professor of history at Princeton University 1883–96 and at Columbia University 1896–. His later works include "The French Revolution and Religious Reform" (1901).

Smalley (smâl'i), **George Washburn.** Born at Franklin, Mass., June 2, 1833. An American journalist. He was graduated at Yale University in 1853 and at the Harvard Law School in 1855; practised law in Boston 1856–61; joined the staff of the New York "Tribune" in 1861, acting as war-correspondent in the Civil War 1861–62; organized and directed the European bureau of the "Tribune" in London 1866–67; and had charge of its European correspondence until 1895. He was American correspondent of the London "Times" 1895–1906. His publications include a "Review of Bright's Speeches" (1868), "London Letters" (1890), and "Studies of Men" (1895).

Smedley (smed'li), **William Thomas.** Born in Chester County, Pa., March 26, 1858. An American painter. He was educated at the Philadelphia Academy of Fine Arts and under J. P. Laurens in Paris. In 1905 he was elected a member of the National Academy of Design in New York. He has been chiefly occupied as an illustrator.

Smiles*, Samuel. Died at London, April 16, 1904.

Smillie*, James David. Died at New York, Sept. 14, 1909.

Smith*, Andrew Jackson. Died Jan. 30, 1897.

Smith (smith), **Arthur Henderson.** Born at Vernon, Conn., July 18, 1845. An American clergyman, missionary, and author. He has been engaged in missionary work in China almost continuously since 1872, and was in Peking during the siege in 1900. Among his works are "Chinese Characteristics" (1890), "Village Life in China" (1899), "China in Convulsion" (1901), "Rex Christus, an Outline Study of China" (1903), "The Uplift of China" (1907), etc.

Smith*, Charles Emory. Died at Philadelphia, Jan. 19, 1908. He was postmaster-general 1898–Dec., 1901.

Smith (smith), **George**: later **George M.** (**Murray**) **Smith.** Born at London, March 19, 1824: died at Byfleet, near Weybridge, April 6, 1901. An English publisher. He joined the firm of Smith, Elder, and Company, founded by his father with Alexander Elder, and upon the death of his father in 1846 became its head. Among the authors whose works he published were Ruskin, Charlotte Brontë, Thackeray, Trollope, Mrs. Gaskell, Wilkie Collins, Robert Browning and Mrs. Browning, Leigh Hunt, Matthew Arnold, Sir Leslie Stephen, and Mrs. Humphry Ward. In 1859 he started the "Cornhill Magazine," with Thackeray as editor, and in 1865 founded the "Pall Mall Gazette." His most noted publication was the monumental "Dictionary of National Biography" (1885–1901: supplement and index volume, 1901–03).

Smith*, Goldwin. His later works include "Essays on Questions of the Day" (1894), "Guesses at the Riddle of Existence" (1896), "The United Kingdom" (1899), "Shakespeare — the Man" (1900), "Commonwealth or Empire" (1902), "In the Court of History" (1902), "The Founder of Christendom" (1903), "Lines of Religious Inquiry" (1904), "My Memory of Gladstone" (1904), "Irish History and the Irish Question" (1905), and "Labour and Capital" (1907).

Smith*, Gustavus Woodson. Died June 23, 1896.

Smith*, Walter Chalmers. Died Sept. 19, 1908.

Smith*, William Farrar. Died Feb. 28, 1903.

Smith College*. It has over 1,500 students.

Smith's Falls (smiths fâlz′). A town in Lanark County, Ontario, Canada, situated on the Rideau Canal. It has manufactures of woolens, farm implements, stoves, etc. Population (1901), 5,155.

Smithsonian Institution*. Under its direction are the United States National Museum, the Bureau of American Ethnology, the Bureau of International Exchanges, the National Zoölogical Park, the Astrophysical Observatory, and the Regional Bureau for the United States of the International Catalogue of Scientific Literature. It has a library of over 250,000 volumes. Samuel Pierpont Langley was secretary 1887–1906. The present secretary, Charles D. Walcott, was appointed in January, 1907.

Smithwick (smith′wik), **John George Carlton.** Born in Ireland, Oct. 6, 1844: died at New York, July 1, 1904. An American wood-engraver, one among the first successfully to engrave photographs on wood. He has been represented in all the leading American magazines and illustrated journals, and was for many years manager of the engraving department of "Harper's Magazine."

Smyth*, Charles Piazzi. Died at Edinburgh, Feb. 21, 1900.

Smyth*, Egbert Coffin. Died April 12, 1904.

Snoilsky*, Carl Johan Gustav. Died at Stockholm, May 19, 1903.

Snow (snō), **Lorenzo.** Born at Mantua, Ohio, 1814: died at Salt Lake City, Oct. 10, 1901. The president of the Mormon church 1898–1901. He studied at Oberlin College; became a Mormon in 1836; was a missionary of that church in Great Britain 1840–43, in Italy in 1849, and in the Hawaiian Islands in 1864; and was elected president of the Twelve Apostles in 1889.

Sohn*, Wilhelm. Died at Pützchen, near Bonn, March 16, 1899.

Sokoto*. It is now included in Northern Nigeria.

Sollas*, William Johnson. He was professor of geology and mineralogy in the University of Dublin 1883–97, and professor of geology and paleontology at the University of Oxford 1897–.

Sololá*. It is now the capital of the department of Solola.

Solomon Islands*. The northern part of the group, with an area of 4,200 square miles and a population of 45,000, belongs to Germany. Some of the smaller islands east of Bougainville were transferred to Great Britain in 1899. The islands are administered by the officials of Kaiser Wilhelm Land.

Somali Coast Protectorate*, or **Somaliland.** About 15,000 square miles were ceded to Abyssinia in 1897. It is administered by a commissioner. Chief town and seaport, Berbera. Area, 68,000 square miles. Population, over 300,000.

Somali Coast Protectorate, French, or **French Somaliland.** A French colony in North Africa, on the Gulf of Aden, between the British Somali Coast Protectorate and the Italian colony of Eritrea. The territory extends inland about 57 miles, and has a coast line of 60 miles. It includes the ports of Obok and Jibuti, the latter being the seat of government. The native races are the Danakil and Somali. The colony is administered by a governor and a privy council. Area, about 13,400 square miles. Population, over 200,000.

Somerset (sum′ėr-set), Lady **Henry** (**Isabella Caroline Somers**). Born 1851. An English philanthropist and writer, daughter of the third Earl Somers. She has taken a prominent part in temperance reform and the advancement of women's work, and established the first industrial farm colony for inebriate women and various training-schools and missions. She is the founder and editor of the "Woman's Signal," and has written "Studies in Black and White," "A Book for Children," "Our Village Life," "Under the Arch of Life," etc.

Sommer (sō-mãr′), **Roger.** Born at Pierrepont, Meurthe-et-Moselle, Aug. 4, 1877. A French aviator. He made a world's record in a Farman aëroplane on August 7, 1909, by a flight lasting 2 hrs., 27 min., 15 sec., at Camp de Chalons.

Sons of the American Revolution. An association similar to that of the Sons of the Revolution, but limited to lineal descendants of those who rendered actual service in the War of the Revolution. The national society was organized in New York April 30, 1889. The total membership is about 11,000.

Sons of the Revolution. A patriotic society originated in New York in 1876 by John A. Stevens and others. The aggregate membership of its thirty-one State societies is now about 8,000 and is limited to adult male descendants of those who helped to establish American independence between the dates of April 19, 1775, and April 19, 1783. The object of the society is to perpetuate the memory of the men who achieved American independence, to preserve documents relating to the War of the Revolution, to inspire a patriotic spirit, and to assist in the commemorative celebration of great historic events.

Sorel (sō-rel′), **Albert.** Born at Honfleur, France, Aug. 13, 1842: died at Paris, June 29, 1906. A noted French historian and author. In 1893 he was elected a member of the French Academy, succeeding Taine, of whom he was a disciple. The most important of his works are "Histoire diplomatique de la guerre franco-allemande" (1875), "La question d'orient au XVIIIe siècle: origine de la triple alliance" (1878), and "L'Europe et la révolution française" (1885–1903), for the last of which the French Academy awarded him the Gobert prize in 1887 and 1888. He is the author also of two novels, "La grande Falaise" (1872), and "Le docteur Egra" (1873); "Essais d'histoire et de critique" (1882, 1888); and biographies of Montesquieu (1887) and Madame de Staël (1891). He was made an officer of the Legion of Honor in 1885, and received the Prix Osiris in 1906.

Sorolla y Bastida (sō-rōl′yä i bäs-tē′dä), **Joaquín.** Born at Valencia, Spain, Feb. 27, 1863. A noted Spanish painter. He studied in Valencia and Madrid, and later in Rome, Paris, and again in Italy. In 1909 a large number of his paintings were exhibited in New York and elsewhere in the United States.

Sorsogon (sōr-sō-gōn′). 1. A province of the Philippine Islands, situated in the southeastern extremity of Luzon, and including several small adjacent islands. It is bounded by Albay (partly separated by mountains) on the north; the Pacific Ocean on the east; the Strait of San Bernardino (separating it from Samar) on the southeast; and the Visayan Sea on the south and west. Among its bays are Port Gubat on the eastern and Port Sorsogon on the southwestern coast, the latter a fine harbor safe for large vessels in all weather. Sorsogon is in an active seismic center, and earthquakes are frequent. The volcano Bulusan, 4,053 feet in height, is solfataric, and there are numerous hot springs near its foot. The chief rivers are the Donsol, the Putiao, and the Irocin, which are navigable by native boats for from 10 to 13 miles. Coal is found in several parts of the province. Lead, sulphur, and gypsum are also reported. Almost half of the land (45.5 per cent.) is agricultural. Among the productions are sweet potatoes, sugar-cane, and hemp, the last abundant in yield and excellent in quality. The inhabitants are Bicols. Area of province, 755 square miles. Population (1903), 120,495.

2. A town, the capital of Sorsogon province, situated at the northeastern angle of Port Sorsogon in lat. 12° 58′ N., long. 123° 58′ E. Civilized population (1903), 13,511.

Sothern (suᴛʜ′ėrn), **Edward H.** Born Dec. 6, 1859. An American actor, son of Edward Askew Sothern. Among the plays in which he has appeared are "One of Our Girls," "The Highest Bidder," "The Maister of Woodbarrow," "The Dancing Girl," "Lord Chumley," "The Prisoner of Zenda," "Under the Red Robe," and "Henry Esmond,' and he is well known as an interpreter of Shakspere. In 1896 he married Virginia Harned, the actress.

Sousa (sö′zä), **John Philip.** Born at Washington, D. C., Nov. 6, 1854. An American band-master, best known as a composer of marches. In 1880 he was appointed director of the United States Marine Band and in 1892 organized Sousa's Band. Among his marches are "The Stars and Stripes Forever," "The Washington Post," "The High School Cadets," "King Cotton," "Manhattan Beach," "Hands Across the Sea," and "Liberty Bell." He has also written the comic operas "The Smugglers," "Désirée," "The Queen of Hearts," "El Capitan," "The Bride-Elect," "The Charlatan," and "Chris and the Wonderful Lamp"; orchestral suites; and a large number of miscellaneous compositions.

South Africa*. The chief political divisions are Cape Colony, Natal (including Zululand), the Transvaal Colony, the Orange River Colony, Southern Rhodesia, Basutoland, Bechuanaland, and Swaziland.

South Africa, United States of. See *United States of South Africa.*

South African Republic*, now **Transvaal Colony.** A British colony. It is bounded on the north by Rhodesia, on the east by Portuguese East Africa, on the south by Natal and the Orange River Colony, and on the west by Cape Colony and the Bechuanaland protectorate. It contains 16 districts. A constitution granted in 1906 provides for a legislative council of 25 members (elected by the governor), and a legislative assembly of 69 members (elected by registered vote). In 1900–01 it was conquered and annexed by Great Britain. Area, 111,196 square miles. Total population, 1,347,227.

South Australia*. It is now a state of the Commonwealth of Australia.

Southbridge (south′brij). A town in Worcester County, Massachusetts, situated on the Quinebaug river. It has cotton- and woolen-mills, and manufactures of cutlery, optical glasses, etc. Population (1900), 10,025.

South Carolina*. It has 42 counties.

South Dakota*. It has 62 counties.

South Omaha (south ō′ma̤-hâ). A city in Douglas County, Nebraska, situated on the Missouri river, adjoining Omaha. It has a large business in slaughtering and meat-packing, and in the manufacture of barrels, tubs, etc. Population (1900), 26,001.

South Orkney Islands*. They form a dependency of the Falkland Islands.

South Shetland*. The group of islands form a dependency of the Falkland Islands.

Southworth*, Mrs. (**Emma D. E. Nevitt**). Died at Washington, D. C., June 30, 1899.

Spain*. The foreign dependencies of Spain were reduced, by the Spanish-American War and the sale of the Carolines and Ladrones to Germany, to her possessions in western and northern Africa.

Spanish-American War. A war between Spain and the United States in 1898, waged by the latter for the liberation of Cuba. Its chief events were the breaking off of diplomatic relations by Spain April 21; beginning of the blockade of Cuba April 22; declaration of war by Spain April 24, and by the United States April 25; destruction of Spanish fleet in the Bay of Manila May 1; arrival of Cervera's squadron at Santiago May 19; sinking of the Merrimac in the entrance to Santiago harbor June 3; landing of United States troops at Baiquiri June 20–22; battles of San Juan and El Caney July 1–2; attempted escape and destruction of Cervera's squadron July 3; surrender of Santiago July 17; campaign in Porto Rico July 25–Aug. 12; signing of peace protocol Aug. 12; capture of Manila Aug. 13; signing of treaty of peace at Paris Dec. 10. By the treaty Spain relinquished her sovereignty over Cuba, and ceded Porto Rico, Guahan in the Ladrones, and the Philippines to the United States.

Spartanburg (spär′ta̤n-berg). A city, the capital of Spartanburg County, South Carolina. It contains Converse College, Wofford College, a public library, and the State Institute for the Deaf, Dumb, and Blind; and has cotton- and lumber-mills, iron-works, and manufactures of rope, brooms, etc. Population (1900), 11,395.

Spencer*, Herbert. Died at Brighton, Dec. 8, 1903.

Spencer*, John Poyntz, fifth Earl Spencer. He was lord lieutenant of Northamptonshire 1872–1908; was keeper of the privy seal of the Duke of Cornwall 1901–07; and in 1902 was appointed Liberal leader in the House of Lords to succeed the Earl of Kimberley.

Sperry (sper′i). **Charles Stillman.** Born at Brooklyn, N. Y., Sept. 3, 1847. An American naval officer. He was graduated from the United States Naval Academy in 1866; was promoted captain in 1900 and rear-admiral in 1906; and was in command of the battle-ship fleet in its cruise around the world (1908–09) from its departure from San Francisco, July 7, 1908. He has been president of the Naval War College, and was a delegate to the second peace conference in 1907. Retired 1909.

Spiegel*, Friedrich von. Died at Munich, Dec. 15, 1905.

Spofford*, Ainsworth Rand. Died at Holderness, N. H., Aug. 11, 1908. He was librarian of the Congressional Library 1865–97.

Spooner (spön′ėr), **John Coit.** Born at Lawrenceburg, Ind., Jan. 6, 1843. An American lawyer and statesman. He was graduated at the University of Wisconsin in 1864; served in the Civil War; was admitted to the bar in 1867; and was (Republican) United States senator from Wisconsin 1885–91, and 1897–.

Sprague (sprāg), **Frank Julian.** Born at Milford, Conn., July 25, 1857. A noted American electrical engineer and inventor. He was graduated at the United States Naval Academy in 1878; resigned from the navy in 1883; and later formed the Sprague Electric Railway and Motor Company, and actively developed electric motors. He is recognized as the pioneer of the modern electric trolley system because of his installation of the road at Richmond, Virginia, 1887–88, the first on a large scale, the features of which became general standards. He then introduced high-speed and automatic electric elevators; formed the Sprague Electric Company; and in 1887 invented the 'multiple-unit system' of electric train operation, now generally adopted.

Springer*, William M. Died at Washington, D. C., Dec. 4, 1903.

Spring Hill (spring hil′). A town in Cumberland County, Nova Scotia, Canada. It is situated a few miles from the Spring Hill coal-mines. Its main interests are in the mining and transportation of coal. Population (1901), 5,178.

Spuller*, Eugène. Died at Combernon, Côte-d'Or, July 23, 1896.

Squatter State, The. A popular name of the State of Kansas.

Stabiæ*. Castellamare occupies its site.

Stainer*, Sir **John.** Died March 31, 1901. He was organist of the University of Oxford 1863–72, and of St. Paul's, London, 1872–88, and was professor of music at Oxford University 1889–99.

Stanford*, Sir Charles Villiers. He was conductor of the Cambridge University Musical Society 1872–93, of the Bach Choir 1885–1902, of the Leeds Philharmonic Society, and of the Leeds Festival since 1901. He was knighted in 1902.

Stanford (stan′fọ̄rd), Mrs. (**Jane Lathrop**). Born at Albany, N. Y., Aug. 25, 1825: died at Honolulu, Feb. 28, 1905. An American philanthropist, wife of Leland Stanford. She joined her husband in founding the Leland Stanford Junior University and after his death aided it liberally.

Stanford University. See *Leland Stanford Junior University.*

Stanley*, Frederick Arthur (Earl of Derby). Died at London, June 14, 1908.

Stanley*, Sir **Henry Morton** (originally **John Rowlands**). Died at London, May 10, 1904. He was made K. G. C. B. in 1899.

Stanley, Sir Hubert. An impoverished squire in Thomas Morton's comedy "A Cure for the Heart Ache" (1797). The phrase "Approbation from Sir Hubert Stanley is praise indeed" occurs in Act v., scene 2.

Stannard (stan′ärd), Mrs. (**Henrietta Eliza Vaughan Palmer**): pseudonyms **John Strange Winter** and **Violet Whyte.** Born at York, England, Jan. 13, 1856. An English novelist. She has written many tales of army life, some of which attained wide popularity. Among her works are "Houp-la" (1885), "Bootles' Baby" (1885), "Beautiful Jim" (1888), "A Blameless Woman" (1895), "A Name to Conjure With" (1899), "A Self-made Countess" (1900), "A Blaze of Glory" (1902), "Marty" (1903), and "A Simple Gentleman" (1906).

Stanton*, Mrs. (**Elizabeth Cady**). Died at New York, Oct. 26, 1902.

Stark (stärk), Mrs. (**Elizabeth Page**). Born Feb. 16, 1737 (1738?): died June 29, 1814. The wife of General John Stark (1728–1822). Her name has become historic from the words (variously reported) said to have been spoken by General Stark to his soldiers at the battle of Bennington: "My men, yonder are the Hessians. They were bought for seven pounds and ten pence a man. Are you worth more? Prove it. To-night the American flag floats from yonder hill or Molly [sic] Stark sleeps a widow!"

Stark (stärk), **Molly.** See *Stark, Mrs.*

Star of the Sea. A title given to the Virgin Mary.

Starr (stär), **Frederick.** Born at Auburn, N. Y., Sept. 2, 1858. An American anthropologist, assistant professor 1892–95 and associate professor from 1895 in the University of Chicago. He was curator of ethnology in the American Museum of Natural History (New York) 1889–91. His investigations have related chiefly to the ethnology of southern Mexico. He is the author of "American Indians" (1899), "Strange Peoples" (1900), "The Truth About the Congo" (1907), etc.

Staten Island*. It forms the borough of Richmond in the enlarged city of New York.

Stedman*, Edmund Clarence. Died at New York, Jan. 18, 1908. His later works include "The Nature and Elements of Poetry" (1892), collected poems (1894), "Mater Coronata" (1900), and "The Inland City" (1906). He edited also "A Victorian Anthology" (1895), "An American Anthology" (1900), "History of the New York Stock Exchange" (1905), "Poems" (1908), etc.

Stedman (sted′man), **Thomas Lathrop.** Born at Cincinnati, Ohio, Oct. 11, 1853. An American physician, editor, and author. He has written "A Chinese and English Phrase Book in the Canton Dialect" (1888: with K. P. Lee), and "Modern Greek Mastery" (1896), and has edited "The Twentieth Century Practice of Medicine" (1895–1903) and "Dunglison's "Medical Dictionary" (1903). Since 1904 he has been editor of the New York "Medical Record."

Steel (stēl), Mrs. (**Flora Annie Webster**). Born at Harrow, April 2, 1847. An English novelist. In 1867 she went to India, where she was connected with the government schools of the Panjab for a number of years. Many of her stories deal with Anglo-Indian life. Among her publications are "Tales of the Punjab" (1894), "The Potter's Thumb" (1895), "Red Rowans" (1895), "On the Face of the Waters" (1896), "In the Tideway" (1897), "Voices in the Night" (1900), "India" (1906: with Mortimer Menpes), "Sovereign Remedy" (1906), "India Through the Ages" (1908), etc.

Steffens (stef′ẹnz), **Joseph Lincoln.** Born at San Francisco, April 6, 1866. An American journalist. He has been city editor of the New York "Commercial Advertiser"; was managing editor of "McClure's Magazine" 1901–06; and is associate editor of the "American Magazine." He is the author of "The Shame of the Cities," "The Struggle for Self-government," etc.

Steinitz*, William. Died at New York, Aug. 12, 1900.

Steinmetz (stīn′metz), **Charles Proteus.** Born at Breslau, Germany, April 9, 1865. A German-American electrician, professor of electrical engineering in Union College (Schenectady, New York) from 1903, and electrician of the General Electric Company (Schenectady) from 1893. He has published "Alternating Current Phenomena" (1897), "Theoretical Elements of Electrical Engineering" (1900–02), "General Lectures on Electrical Engineering" (1908), "Theory and Calculations of Transient Electric Phenomena and Oscillations" (1909), and numerous technical papers.

Steinthal*, Heymann. Died at Berlin, March 14, 1899. His later works include "Grammatik, Logik, Psychologie" (1855), "Geschichte der Sprachwissenschaft bei den Griechen und Römern" (1863), "Die Mande-Negersprachen" (1867), "Abriss der Sprachwissenschaft" (1871), "Allgemeine Ethik" (1885), "Zu Bibel und Religionsphilosophie" (1890), etc.

Stengel (steng′el), Frau (**Praxede Marcelline Kochanska**): known as **Marcella Sembrich.** Born at Wisniowczyk, Austria, Feb. 15, 1858. A noted soprano singer. She made her début at Athens in "I Puritani" in 1877; has sung in opera in Dresden, London, Milan, Vienna, Warsaw, St. Petersburg, etc.; and has made a number of tours in America. The name of 'Sembrich' was that of her maternal grandfather.

Stephen*, Sir **Leslie.** Died at Kensington, Feb. 22, 1904. He was knighted in 1902.

Stephens*, George. Died at Copenhagen, Aug. 9, 1895.

Stephens*, James. Died March 29, 1901.

Stepniak*, Sergius. Died Dec. 23, 1895.

Sterling*, Antoinette. Died at Hampstead, England, Jan. 10, 1904.

Sternberg (stėrn′bėrg), **George Miller.** Born at Hartwick Seminary, Otsego County, N. Y., June 8, 1838. An American bacteriologist, surgeon-general and brigadier-general in the United States Army 1893–1902. He was connected with the army as surgeon from 1861. During the war with Spain in 1898 he had charge of the medical service. His researches have related chiefly to the ætiology of infectious diseases. Among his works are "A Text-book of Bacteriology" (1895), "Immunity" (1897), etc. He retired in 1902.

Stevens*, Abel. Died at San José, Cal., Sept. 12, 1897.

Stevens*, Alfred. Died at Paris, Aug. 24, 1906.

Stevens*, Benjamin Franklin. Died at Surbiton, Surrey, March 5, 1902.

Stevens (stē′vẹnz), **Durham White.** Born at Washington, Feb. 1, 1852: died at San Francisco, March 25, 1908. An American diplomatist. He was secretary of the United States legation at Tokio 1873–83, and in the latter year resigned to enter the Japanese diplomatic service, as counselor, in which he remained until his death, serving in Japan, at Washington, and in Korea. In 1904 he became diplomatic adviser of the Korean government, under its agreement with Japan. He was shot in San Francisco by a Korean.

Stevens Institute of Technology. A college of mechanical engineering at Hoboken, New Jersey, founded by the will of Edwin A. Stevens in 1870. It has an endowment of $850,000, an annual income of about $110,000, and a student body of about 400. It confers the degree of mechanical engineer (M. E.). An academic department is associated with the institute.

Stevenson*, Adlai Ewing. He was vice-president of the United States 1893–97.

Stevenson*, Robert Louis Balfour. His later works include "Vailima Letters" (1895), "Fables" (1896), "In the South Seas" (1896), "A Mountain Town in France" (1897), and "St. Ives" (unfinished: completed by A. T. Quiller-Couch, 1897).

Stevenson (stē′vẹn-sọn), **Thomas.** Born at Edinburgh, July 22, 1818: died there, May 8, 1887. A noted Scotch engineer and meteorologist, son of Robert Stevenson and father of Robert Louis Stevenson. He was engineer, with his brother David, to the board of northern lighthouses 1853–85; was one of the originators of the Scottish Meteorological Society in 1855; and made improvements in lighthouse illumination. He was the author of "Lighthouse Illumination" (1859: expanded into "Lighthouse Construction and Illumination" in 1881), "Design and Construction of Harbours" (1864), "Proposal for the Illumination of Beacons and Buoys" (1870), etc.

Stewart*, Alexander Peter. Died at Biloxi, Miss., Aug. 30, 1908.

Steyn (stīn), **Martinus Theunis.** Born at Winburg, Orange River Colony, Oct. 2, 1857. A South African statesman, the last president of the Orange Free State. He was called to the bar of the Inner Temple in 1882; practised as an advocate in Bloemfontein 1883–89; was appointed state attorney for the Orange Free State in 1889; was second puisne judge 1889–93 and first puisne judge 1893–96; and was State president 1896–1900. Under his leadership the Orange Free State joined the Transvaal in the war against Great Britain. He took part in the peace conference in 1902.

Stiles (stīlz), **Charles Wardell.** Born at Spring Valley, N. Y., May 15, 1867. An American medical zoölogist, zoölogist of the United States Public Health and Marine Hospital Service from 1902. He has been special lecturer on medical zoölogy in Johns Hopkins University from 1897 and in the United States Navy Medical School from 1902. Since 1896 he has been secretary of the international commission on zoölogical nomenclature. His works include "Sheep Scab" (1898), "Trichinosis in Germany" (1901), "Hookworm Disease" (1902), etc.

Stillé*, Alfred. Died Sept. 24, 1900.

Stillé*, Charles Janeway. Died at Atlantic City, N. J., Aug. 11, 1899.

Stillman (stil′mạn), **William James.** Born at Schenectady, N. Y., June 1, 1828: died at Frimley Green, Surrey, England, July 6, 1901. An American painter, journalist, and critic. He was graduated at Union College, Schenectady, in 1848, and studied art in England and Paris, being much influenced by the Preraphaelites and by Ruskin. He edited "The Crayon," an art journal, 1855–57; was United States consul at Rome 1861–65, and at Crete 1865–68; and was correspondent of the London "Times" 1876–98. He wrote "The Cretan Insurrection of 1866–68" (1874), "Herzegovina and the late Uprising" (1877), "On the Track of Ulysses" (1888), "Old Italian Masters" (1892), "Francesco Crispi" (1899), "Autobiography of a Journalist" (1901), "Billy and Hans" (1902), etc.

Stirling*, James Hutchison. Died March 19, 1909.

Stockton*, Frank Richard. Born April 5, 1834: died at Washington, D. C., April 20, 1902.

Stoddard*, Charles Warren. Died at Monterey, Cal., April 24, 1909. His later works include "A Troubled Heart" (1885), "Hawaiian Life: Lazy Letters from Low Latitudes" (1894), "The Wonder Worker from Padua" (1896), "A Cruise Under the Crescent from Suez to San Marco" (1898), "Over the Rocky Mountains to Alaska" (1900), "In the Footprints of the Padres" (1902), "Exits and Entrances" (1903), "For the Pleasure of His Company" (1903), "Father Damien — A Sketch" (1903), "The Island of Tranquil Delights" (1904), "The Confessions of a Reformed Poet" (1907), and "The Dream Lady" (1907).

Stoddard*, Mrs. (**Elizabeth Barstow**). Died at New York, Aug. 1, 1902.

Stoddard*, Richard Henry. Died at New York, May 12, 1903.

Stokes*, Sir **George Gabriel.** Died at Cambridge, Feb. 1, 1903. He represented Cambridge University in Parliament 1887–92.

Stokes*, Whitley. Died at London, April 13, 1909. He was joint editor of the "Irische Texte," the "Thesaurus Palæohibernicus," and the "Archiv für keltische Lexicographie."

Stolypin (stō′li-pin), **Peter Arkadevitch.** Born in 1863. A Russian statesman, president of the council and minister of the interior 1906–. He has served in various official positions since 1884, when he obtained a place in the ministry of the interior. An attempt was made, Aug. 25, 1906, to assassinate him by exploding a bomb in his residence. The explosion killed 28 persons, but he escaped.

Stone (stōn), **William Joel.** Born in Madison County, Ky., May 7, 1848. An American lawyer and politician. He was graduated at the University of Missouri; was a member of Congress 1885–91; was governor of Missouri 1893–97; and has been Democratic United States Senator from that State since 1903.

Stone*, William Leete. Died at Mount Vernon, N. Y., June 11, 1908.

Storrs*, Richard Salter. Died at Brooklyn, N. Y., June 5, 1900.

Story*, William Wetmore. Died at Vallombrosa, Italy, Oct. 7, 1895.

Stosch*, Albrecht von. Died Feb. 29, 1896.

Stössel (stės′el), **Anatoli Mikhailovitch.** Born at St. Petersburg, July 10 (N. S.), 1848. A Russian general. He was educated at the Pavlov Military School at St. Petersburg and entered the army in 1864; served with distinction in the Russo-Turkish war 1877–78; and, after holding various positions in the army, became commander of the ninth brigade of the East Siberian Sharpshooters. He was made a lieutenant-general for his services during the Boxer campaign in 1900, and at the outbreak of the Russo-Japanese war in 1904 was appointed commander of Port Arthur, and later of the entire force sent to the defense of that fortress. After a long siege he surrendered Port Arthur to the Japanese Jan. 1, 1905. For this he was condemned by court martial and imprisoned, but was released in May, 1909.

Stout (stout), **George Frederick.** Born at South Shields, England, Jan. 6, 1859. A British philosophical writer and psychologist, professor of logic and metaphysics at St. Andrews from 1903. He has written "Analytical Psychology" (1896), "Manual of Psychology" (1899), "Groundwork of Psychology" (1903), etc.

Stowe*, Mrs. (**Harriet Elizabeth Beecher**). Died at Hartford, Conn., July 1, 1896.

Strait of Tañon. See *Tañon, Strait of.*

Straits Settlements*. The colony includes also the Cocos Islands (annexed, 1903), Christmas Island (1900), and the colony of Labuan (1907). Perak, Selangor, Negri Sembilan, and Pahang have been amalgamated as the Federated Malay States.

Strang (strang), **William.** Born at Dumbarton, Scotland, Feb. 13, 1859. A noted Scotch engraver, etcher, and painter. He has practised many forms of graphic reproduction, especially etching, and has produced a large number of illustrations and independent pieces, among which are illustrations to Bunyan's "Pilgrim's Progress," Milton's "Paradise Lost," and Coleridge's "Rhyme of the Ancient Mariner" (his masterpiece), and portraits of Robert Louis Stevenson, Thomas Hardy, Rudyard Kipling, Cosmo Monkhouse, and others. He has painted easel pictures, and for a private library a decoration of fifty pictures from the "Life of Adam and Eve."

Straus (strous), **Oscar Solomon.** Born at Otterberg, Germany, Dec. 23, 1850. An American diplomatist. He was brought to Georgia by his parents in 1854, remaining there until 1865, and was graduated at Columbia College in 1871 and at Columbia Law School in 1873. He was United States minister to Turkey 1887–89, 1898–1900, and 1909–. In 1902 he was appointed by President Roosevelt to fill the vacancy in the permanent court of arbitration at The Hague caused by the death of Benjamin Harrison. He was secretary of commerce and labor 1906–09. He has written “The Origin of the Republican Form of Government in the United States” (1885), “Roger Williams, the Pioneer of Religious Liberty” (1894), “The Development of Religious Liberty in the United States” (1896), “Reform in the Consular Service” (1897), “The United States Doctrine of Citizenship and Expatriation” (1901), “Our Diplomacy; A Survey” (1902), “Industrial Peace” (1903), “The Hague Tribunal, its Scope and Meaning” (1904), and “The United States and Russia, their Historical Relations” (1905).

Strauss*, **Johann** (son of Johann Strauss, 1804–49). Died at Vienna, June 3, 1899.

Strauss (strous), **Richard.** Born at Munich, June 11, 1864. A noted German composer, conductor of the Royal Opera in Berlin from 1898. In 1885 he became court music director at Meiningen, and in 1886 was appointed third conductor of the Royal Opera at Munich. He has developed the demands made upon the numbers and sonority of the orchestra; has wrought out a style of great complexity in orchestral writing, as well as a bold and radical use of harmonic discords; and has carried the delineative and pictorial purpose in music to its extreme. His symphonic poems are “Aus Italien” (1889), “Don Juan” (1888), “Tod und Verklärung” (1890), “Macbeth” (1891), “Till Eulenspiegel” (1895), “Also Sprach Zarathustra” (1896), “Don Quixote” (1897), “Ein Heldenleben” (1898), and “Sinfonia domestica” (1904). He has composed three operas, “Guntram” (1894), “Feuersnot” (1901), and “Salomé” (1905), and many songs.

Streator (strē´tọr). A city in Lasalle County, Illinois. It is situated in a farming district on the east bank of the Vermilion river, where there are coal- and clay-beds, and has railroad and coal interests, brick- and tile-yards, and manufactures of glass, hardware, vehicles, etc. Population (1900), 14,079.

Stretton*, **Hesba.** Died Jan. 21, 1909.

Strindberg (strind´berg), **August.** Born at Stockholm, Jan. 22, 1849. A Swedish dramatist and novelist, a leader of modern Swedish literature. Among his plays are “Mäster Olof” (1872), “Gillets hemlighet” (1880), “Fadren” (1887), “Fröken Julie” (1888), “Gläubiger” (1889), “Till Damaskus” (1898), and a series of historical dramas, including “Gustavus Wasa,” “Erik XIV.,” “Gustavus Adolphus,” and “Carol XII.” He has written also “Röda rummet” (1879); “Det nya riket” (1882), which provoked so much criticism that the author left Sweden for a number of years; “Svenska folket i helg och söken” (1882); “Giftas” (1884); “Die Beichte eines Thoren” (1893); “Inferno” (1897), written after one of his periodical attacks of insanity; “Einsam” (1903), an autobiographical novel; “Die Gotischen Zimmer” (1904); and many other volumes. He has been called “the Shakspere of Sweden.’

Strong (strông), **Josiah.** Born at Naperville, Ill., Jan. 19, 1847. An American clergyman, social economist, and author. He was graduated at Western Reserve College in 1869; in 1871 was ordained to the Congregational ministry; and was chaplain to Western Reserve College 1873–76 and instructor in natural theology and rhetoric. From 1886 to 1898 he was general secretary of the Evangelical Alliance for the United States, and has been president of the American Institute of Social Service since its organization in 1898. Among his works are “Our Country” (1886), “The New Era” (1893), “The Twentieth Century City” (1898), “Religious Movements for Social Betterment” (1900), “Expansion” (1900), “The Times and Young Men” (1901), “The Next Great Awakening” (1902), “The Challenge of the City” (1908), etc.

Strong-Bows (strông´bōz). An Athapascan tribe located near the Liard river.

Strutt*, **John William,** third Baron Rayleigh. He was lord lieutenant of Essex 1892–1901; was professor of natural philosophy at the Royal Institution 1887–96; and in 1908 was appointed lord chancellor of Cambridge University. In 1895 he, with Professor William Ramsay, discovered argon in the atmosphere.

Struve*, **Otto Wilhelm von.** Died at Karlsruhe, April 14, 1905.

Stuart*, **John Patrick Crichton-,** third Marquis of Bute. Died Oct. 9, 1900.

Stuart (stū´ärt), Mrs. (**Ruth McEnery**). Born at Marksville, Avoyelles Parish, La., 1856. An American author, chiefly of stories of Southern life. She has written “A Golden Wedding, and Other Tales” (1893), “Carlotta's Intended, and Other Tales” (1894), “The Story of Babette” (1894), “Sonny” (1894), “Solomon Crow's Christmas Pockets” (1896), “Gobolinks” (1896: with Albert Bigelow Paine), “In Simpkinsville” (1897), “Moriah's Mourning” (1898), “Holly and Pizen” (1898), “The Snowcap Sisters” (1901), “Napoleon Jackson, the Gentleman of the Plush Rocker” (1902), “George Washington Jones” (1903), “The River's Children” (1904), and “The Second Wooing of Salina Sue, and Other Stories” (1905).

Stubbs (stubz), **Charles William.** Born at Liverpool, Sept. 3, 1845. An English clergyman and author, dean of Ely from 1894 to 1906 and bishop of Truro from 1906. He was educated at Cambridge; was vicar of Granboro, Buckinghamshire, 1871–74, and of Stokenham, south Devon, 1884–88; and was rector of Wavertree, Liverpool, 1888–94. He is the author of “Christ and Democracy” (1884), “The Land and the Labourers” (1884–85), “Christus Imperator” (1894), “Historical Memorials of Ely Cathedral” (1897), “Handbook of Ely Cathedral” (1898), “In a Minster Garden” (1901), “Cambridge and its Story” (1903), “Castles in the Air, and Other Poems” (1904), “The Christ of English Poetry” (Hulsean lectures: 1905), etc.

Stubbs*, **William.** Died at Cuddesdon, Oxfordshire, April 22, 1901.

Stuck (stök), **Franz.** Born at Tettenweis, Bavaria, Feb. 23, 1863. A Bavarian painter. He made his first success as a draftsman for the comic paper “Fliegende Blätter,” and as a painter made his debut at the Munich international exhibition of 1889, where he won a medal. He was early appointed professor in the Royal Academy of Art. His picture of the “Crucifixion” is in the Museum of Stuttgart; the “Allegory of War” in the Munich Pinakothek; the “Sphinx” in the National Museum at Budapest; and a bronze statue of an athlete in the National Gallery in Berlin. He is one of the leaders in the Munich ‘Secession.’

Stundists (stön´dists). [< G. *stunde*, hour, lesson; from their meetings for Bible-reading.] A Russian sect which originated about 1860. Its tenets and practices are in the main evangelical and Protestant in character. Since 1870 the Stundists have been objects of persecution by the government. The sect has rapidly increased in numbers.

Sturgis (stėr´jis), **Russell.** Born in Baltimore County, Md., Oct. 16, 1836: died at New York, Feb. 11, 1908. An American architect and writer. He was graduated from the College of the City of New York in 1856; studied architecture in Europe; and practised it in New York until 1880. Among the buildings which he designed are Battell Chapel, Farnam Hall, Durfee Hall, and Lawrance Hall, in Yale University, and the Homeopathic Medical College and Flower Hospital in New York. Since 1890 he has devoted himself to critical and other writing on art. He has edited “A Dictionary of Architecture and Building: Biographical, Historical, and Descriptive” (3 vols., 1901–1902), and has written “European Architecture: a Historical Study” (1896), “Annotated Bibliography of Fine Art” (1897), “How to Judge Architecture” (1903), “The Appreciation of Sculpture” (1904), “The Interdependence of the Arts of Design” (1905), “The Appreciation of Pictures” (1905), “A Study of the Artist's Way of Working” (1905), “A History of Architecture” (Vol. 1, 1906; Vol. 2, 1909; Vol. 3 to be completed by A. L. Frothingham), “A Short History of Architecture” (1908).

Sturm*, **Julius Karl Reinhold.** Died at Leipsic, May 2, 1896. His later works include “Zwei Rosen” (1854), “Neue Gedichte” (1856), “Neue fromme Lieder und Gedichte” (1858), “Für das Haus” (1862), “Israelitische Lieder” (1881), “Von der Pilgerfahrt” (1868), “Lieder und Bilder” (1870), “1870. Kampf- und Siegesgedichte” (1870), “Spiegel der Zeit in Fabeln” (1872), “Gott grüsse dich” (1876), “Das Buch für meine Kinder” (1877), “Immergrün” (1879), “Märchen” (1881), “Aufwärts!” (1881), “Dem Herrn mein Lied” (1884), “Natur, Liebe, Vaterland” (1884), “Bunte Blätter” (1885), “Palme und Krone” (1887), “Neue lyrische Gedichte” (1894), and “In Freud und Leid” (1896).

Styria*. It has 30 members in the Reichsrat, and a Landtag of 71 members.

Suakim*. It is now the capital of the Red Sea province of the Anglo-Egyptian Sudan.

Subic Bay. Same as *Port Subic.*

Subic (sö´bēk), **Port.** A bay on the southwestern coast of Luzon, Philippine Islands, partly separating Bataan and Zambales provinces: a safe harbor for large vessels in all weather. Also called *Subic Bay.*

Suburban*. One of the principal American horse-races. It is for horses three years old and upward. The distance is 1¼ miles. The winners from 1895 have been: 1895, Lazzarone; 1896, Henry of Navarre; 1897, Ben Brush; 1898, Tillo; 1899, Imp; 1900, Kinley Mack; 1901, Alcedo; 1902, Gold Heels; 1903, Africander; 1904, Hermis; 1905, Beldame; 1906, Go-Between; 1907, Nealon; 1908, Ballot; 1909, Fitz Herbert.

Sucker State, The. A nickname of the State of Illinois.

Sudan*. The Eastern or Egyptian Sudan extends southward from the frontier of Egypt to Lake Albert Nyanza, eastward to the Red Sea and Abyssinia, and westward to Wadai. It is divided into 13 provinces (mudirias): Bahr-el-Ghazal, Berber, Blue Nile, Dongola, Halfa, Kassala, Khartum, Kordofan, Mongalla, Red Sea, Sennar, Upper Nile, and White Nile. Its area is about 950,000 square miles, and its population about 10,000,000. Of the central Sudan states Wadai, Baghirmi, and Kanem are within the French sphere of influence, and a part of Bornu, with Sokoto and Gando, within the British. Adamawa falls within the German Kamerun Hinterland. The boundaries between the English and the French possessions and spheres of influence both west and east of the Niger were determined by a convention between the United Kingdom and France ratified June 13, 1899.

Sudbury (sud´bu-ri). A town in Nipissing district, Ontario, Canada. In the vicinity are deposits of nickeliferous ore which yield a large part of the world's supply of nickel. Population (1901), 2,027.

Sudermann*, **Hermann.** His later works include the dramas “Die Schmetterlingsschlacht” (1894), “Das Glück im Winkel” (1895), three one-act plays — “Teja,” “Fritzchen,” and “Das ewig Männliche” — published under the title of “Morituri” (1896), “Johannes” (1898), “Die drei Reiherfedern” (1899), “Johannisfeuer” (1900), “Es lebe das Leben” (1902), “Sturmgeselle Sokrates” (1903), “Stein unter Steinen” (1905), “Das Blumenboot” (1905), four one-act plays — “Rosen” (1907). His prose includes “Frau Sorge” (1888), “Der Katzensteg” (1889), “Im Zwielicht” (1890), “Iolanthes Hochzeit” (1893), and “Es war” (1894).

Suez Canal*. It is 99 miles long (66 actual canal and 21 miles lakes), 121 feet, 5 inches wide, and 28 feet deep. The cost of construction, with enlargements, was £24,000,000. The canal was exempted from blockade by a convention signed in 1888, and vessels of all nations, armed or unarmed, are to be allowed to pass through it at all times. In 1907 the number of vessels passing through the canal was 4,273, gross tonnage 20,553,241, receipts £4,640,000.

Suffren de Saint-Tropez (su-fraṅ´ dė saṅ-trọ-pā´), **Pierre André de.** Born at Saint-Cannat, France, July 13, 1726: died at Paris, Dec. 8, 1788. A French vice-admiral. He entered the French navy in 1743; was twice captured by the English; and was made captain in 1772. For ten years he was in the service of Malta. In 1781 he was sent to protect French interests in the East Indies. After an action at the Cape Verde Islands (April 16, 1781), he outsailed Commodore Johnstone to the Cape of Good Hope, and so prevented an attack of the English upon Cape Town. He fought five hard but indecisive battles against the English under Admiral Hughes: off Sadras (Feb. 17, 1782), off Trincomalee (April 12 and Sept. 3, 1782), off Negapatam (July 6, 1782), off Cuddalore (June 20, 1783). He was recalled to France by the treaty of Versailles, and was received with the highest honors and created a vice-admiral.

Suliman Mountains*. The highest point is 11,300 feet high.

Sullivan*, Sir **Arthur Seymour.** Died at London, Nov. 22, 1900.

Sullivan (sul´i̤-va̤n), **Louis Henry.** Born at Boston, Mass., Sept. 3, 1856. An American architect. His most interesting designs have been those for high office buildings in which he has allowed the extreme height and verticality to dominate the scheme. The best known of these experiments is the Bayard Building in Bleecker Street, New York. He also built the Transportation Building at the World's Fair at Chicago in 1893.

Sully-Prudhomme. See *Prudhomme, Sully-.*

Sulu Islands*. They were acquired by the United States in 1898.

Sulu Sea. Same as *Jolo Sea.*

Sunflower State, The. A popular name for Kansas.

Sungei Ujong*. In 1895 it was amalgamated, with Sri Menanti, Johol, Jelebu, Rembau, and Tampin, to form the confederation of Negri Sembilan, now a part of the Federated Malay States.

Surigao (sö-rē-gä´ō). **1.** A province of the Philippine Islands consisting of the northeastern part of Mindanao and numerous adjacent islands of which Dinagat, Siargao, and Bucas are the most important. It is bounded by the Pacific Ocean on the north and east; Davao on the south; and Misamis (separated by mountains), the Surigao Sea, and the Strait of Surigao (separating it from Panaon and Leyte) on the west. Capital, Surigao. Butuan Bay indents the northwestern coast. Its southeastern angle, Port Nasipit, is an excellent harbor, safe for large vessels in all weather. Port Surigao, on the northern coast of Mindanao, Port Gabo, on the southeastern coast of Dinagat, and Port Sibonga, on the eastern coast of Bucas Grande, are also good harbors. The mountain-range of the western boundary is paralleled by a range near the Pacific coast extending to the northern extremity of the main island. The loftiest peaks are Legaspi, Tendido, and Urdaneta, all in the northern part of the ranges. Coal is found in the eastern, southeastern, and southern parts of the province, and gold in many places in the north, among the eastern mountains, and in Dinagat Island. Among the productions are cacao, hemp, copra, corn, sugar-cane, sweet potatoes, and mangos. The inhabitants are chiefly Visayans. Area of province, 6,988 square miles. Population (1903), 115,112.

2. A town, the capital of Surigao province, situated in lat. 9° 48′ N., long. 125° 30′ E. Civilized population of municipality (1903), 7,749.

Surigao (sö-rē-gä´ō) **Sea.** A branch of the Mindanao Sea, in the Philippine Islands, lying east of that sea and west of the eastern peninsula of Mindanao Island. It is connected on the east by Surigao Strait with the Pacific Ocean.

Surigao (sö-rē-gä´ō) **Strait.** A strait in the Philippines separating Mindanao from Panaon, Dinagat, Bucas, and other islands, and forming the northeastern passage between the Surigao Sea and the Pacific Ocean.

Suspension Bridge*. It is now a part of Niagara Falls.

Sutro*, **Adolph Heinrich Joseph.** Died Aug. 8, 1898. He was elected mayor of San Francisco in 1894.

Suttner (söt´ner), Baroness **von** (**Bertha von Kinsky**). Born at Prague, Austria, June 9, 1843. An Austrian novelist, wife of Baron Arthur von Suttner (1850–1902). In 1891 she founded the Austrian Society of Peace-lovers and, as its president, took part in the peace congresses at Rome (1891), Berne (1892), Antwerp (1894), and Hamburg (1897). Her works include “Inventarium einer Seele” (1883), “Die Waffen Nieder” (1889: translated as “Lay down your Arms”), for which she was awarded the Nobel peace prize in 1905, “Das Machinenzeitalter” (1891), “Die Haager Friedenskonferenz,” a journal (1900), “Marthas Kinder” (1902: a sequel to “Die Waffen Nieder”), and “Briefe an einen Toten” (1904). She is the editor of the monthly organ of the peace movement, “Die Waffen Nieder,” established in Dresden in 1892.

Svendson (svend′sōn), **Johann Severin.** Born at Christiania, Sept. 30, 1840. A Norwegian composer, conductor at Copenhagen from 1883. He has composed two symphonies and other orchestral works; but the music by which he is best known is his octet for strings and his romance for violin.

Sverdrup (svãr′dröp), **Otto.** Born in the district of Helgeland, Norway, Oct. 31, 1854. A Norwegian arctic explorer. He was a member of Nansen's expedition to Greenland in 1888 and of his polar expedition 1893–96, bringing the "Fram" back to Norway after Nansen started north over the ice. From 1898 to 1902 he conducted an expedition to the northern extremity of Baffin Bay. He is the author of "Nyt Land" (1903).

Swahili (swä-hē′lē). [Properly, *Waswahili*, coast people.] **1.** An African people who inhabit the island of Zanzibar and the neighboring coasts. They are the descendants of the original Bantu inhabitants of the region, mixed with Arab traders and slaves from all parts of the continent.

2. The language of the Swahilis. It is a Bantu tongue with a very large admixture of foreign, mostly Arabic, words. Properly *Kiswahili*.

Swainson*, **William.** Died in Hutt Valley, New Zealand, Dec. 7, 1855.

Swanhild (svän′hild). In German legend, the wife of Hermanric, famous for her beauty. She was guilty of adultery and was torn in pieces by four horses. In the northern legend she is the daughter of Sigurd and Gudrun.

Swarth (swärt), **Hélène.** See *Lapidoth*.

Swarthmore College*. It has about 36 instructors and over 300 students.

Swaziland*. It became subject to Great Britain in 1900. The administration is under the control of the High Commissioner for South Africa, but jurisdiction in civil matters between natives is allowed the native chiefs. The capital of the protectorate is Mbabane. Area, 6,536 square miles. Population, about 86,000.

Sweden*. The union of Sweden and Norway was declared by Norway June 7, 1905, to be dissolved, and an agreement with Sweden repealing it was reached Oct. 26, 1905.

Sweet (swēt), **Henry.** Born at London, 1845. A noted English philologist and phonetician. He was educated at King's College, London, at Heidelberg, and at Oxford. In 1901 he was appointed reader in phonetics in the last named university. His works include editions of Old and Middle English texts, Old and Middle English readers and primers, "A History of English Sounds from the Earliest Period" (1875), "A Handbook of Phonetics" (1877), "A Primer of Spoken English" (1890), "A Primer of Phonetics" (1890), "A New English Grammar" (1892–98), "A Student's Dictionary of Anglo-Saxon" (1897), "The Practical Study of Languages" (1899), "A History of Language" (1900), etc.

Swinburne*, **Algernon Charles.** Died at London, April 10, 1909. His later works include "Sistern: a Tragedy" (1892), "Studies in Prose and Poetry" (1894), "A Tale of Balen" (1896), "Rosamund, Queen of the Lombards" (1899), collected works (1904–05), "Love's Cross Currents," a novel (1905), "The Duke of Gardia" (1908).

Sykes*, Mrs. (**Olive Logan**). Died at Banstead, England, April 27, 1909. In 1892 she married James O'Neill.

Sylvester*, **James Joseph.** Died at London, March 15, 1897.

Symons (sī′mọnz), **Arthur.** Born at Milford Haven, Wales, Feb. 28, 1865. A British poet, author, and critic. His works include "An Introduction to the Study of Browning" (1886), "Days and Nights" (1889), "Silhouettes" (1892), "London Nights" (1895), "Amoris Victima" (1897), "Studies in Two Literatures" (1897), "The Symbolist Movement in Literature" (1900), "Images of Good and Evil" (1900), "Collected Poems" (1901), "Plays, Acting, and Music" (1903), "Cities" (1903), "Studies in Prose and Verse" (1904), "Spiritual Adventures" (1905), "The Fool of the World," a morality play (1906), "Studies in Seven Arts" (1906), "William Blake" (1907), "Cities of Italy" (1907), "The Romantic Movement in English Poetry" (1909), etc.

Taal (tä-äl′). **1.** A volcano situated on Volcan Island in Lake Bombon, southern Luzon, Philippine Islands, approximately in lat. 14° 2′ N., long. 120° 57′ E. It has several craters, two of which show activity. Within the central crater are two hot pools and an active cone which emit steam and sulphurous vapors. The volcano has been subject to many changes and the cause of many disasters. The greatest recorded eruptions occurred in 1749 and 1754. Less violent eruptions occurred in 1808, 1874, 1878, 1880, and 1903. Height, 1,050 feet.

2. A municipality of Batangas province, in the southern part of Luzon. Civilized population (1903), 17,525.

Taal (tä-äl′), **Lake.** Same as *Lake Bombon*.

Tabaco (tä-bä′kō). A municipality of Albay province, in the southeastern part of Luzon, Philippine Islands. Civilized population (1903), 21,946.

Tacloban (täk-lō′bän). A port and the capital of Leyte province, in the Philippine Islands. It is situated in Leyte Island on San Pedro and San Pablo Bay at the entrance to the Strait of San Juanico, in lat. 11° 15′ N., long. 124° 59′ 30″ E. It has an excellent harbor. Civilized population of municipality (1903), 11,948.

Taft (taft), **Lorado.** Born at Elmwood, Peoria County, Ill., April 29, 1860. An American sculptor. He was graduated at the State University, Champaign, Illinois, in 1879 and studied at the Ecole des Beaux-Arts in Paris. In 1886 he settled in Chicago and became instructor in sculpture at the Art Institute, giving public lectures at the Institute and at the University of Chicago. He has made many portrait busts, statues and military monuments, and has published a "History of American Sculpture" (1903).

Taft (taft), **William Howard.** Born at Cincinnati, Ohio, Sept. 15, 1857. An American statesman and jurist, son of Alphonso Taft; President of the United States 1909–. He was graduated at Yale in 1878 and was admitted to the Ohio bar in 1880; was judge of the superior court of Cincinnati 1887–90; was solicitor-general of the United States 1890–1892; and was United States circuit judge, sixth circuit, 1892–1900. From 1896–1900 he was dean and professor in the law department of the University of Cincinnati; was president of the United States Philippine Commission 1900–04; was first civil governor of the Philippine Islands 1901–04; in 1906 was sent to Cuba to adjust the insurrection there and was for a short time provisional governor; and was secretary of war 1904–08.

Tagalogs (tä-gä′lōgz). Same as *Tagalos*.

Tagalos (tä-gä′lōs). A Malay people, numbering about 1,500,000, occupying the central portion of Luzon, the coasts of Mindoro, and some smaller islands in the Philippines. They are now Christians, and their culture is largely Spanish, though before the Spanish conquest they possessed a certain civilization and an art of writing of their own.

Tagals (tä-gälz′). Same as *Tagalos*.

Tagaytay (tä-gī-tī′) **Mountains.** A short mountain-range in the southern part of Luzon, Philippine Islands, partly separating Batangas and Cavité provinces.

Tagbilaran (täg-bē-lä′rän). A town, the capital of Bohol province, Philippine Islands. It is situated on the narrow strait of the same name which separates Bohol and Panglao Islands, in lat. 9° 38′ N., long. 123° 50′ 1″ E. Civilized population of municipality (1903), 10,108.

Tahiti*. It was annexed to France in 1897.

Tairen (tī-ren′). See *Dalny*.

Tait*, **Peter Guthrie.** Died July 4, 1901.

Tai-tse (tī′tze), or **Thai-tsu.** A river in southern Manchuria. It rises in the mountains north of the Motien Pass, flows westwardly by Liao-yang, which is situated on its southern bank, and empties into the Liao river about fifty miles above its mouth. It played an important part in the battle of Liao-yang in the Russo-Japanese war.

Tajurrah*. It is now a part of the French Somali Coast Protectorate. It was ceded to France in 1884.

Tajurrah*, **Gulf of.** It is now within the French Somali Coast Protectorate.

Takahira (tä-kä-hē′rä), Baron **Kogoro.** Born in Iwate-ken, January, 1854. A Japanese diplomatist. He became a translator of the Foreign Office in 1876; was secretary of legation at Washington 1879–84; was sent to Seul in 1884; was consul at Shanghai 1887–90; was consul-general in New York 1891; was appointed minister at The Hague in 1892 and at Rome in 1894, and shortly afterward at Vienna; and was minister to the United States 1900–1905. He was junior Japanese plenipotentiary in the negotiation of the treaty of Portsmouth in 1905; was ambassador to Rome 1907–08; and ambassador extraordinary and minister plenipotentiary to the United States 1908–09.

Takamine (tä-kä-mē′ne), **Jokichi.** Born at Kaga, 1853. A Japanese chemist, since 1884 a resident of the United States. He is the discoverer of adrenalin.

Taku Forts*. They were taken by the allies June 17, 1900.

Taku-shan (tä-kö-shän′). A city of southern Manchuria, situated on Korea Bay about sixty miles west of the mouth of the Yalu. It was used as a military base by the Japanese in the Russo-Japanese war (1904–05). Population, about 40,000.

Ta-lien-wan (tä-lyen-wän′) **Bay.** A bay on the southern side of the Kwang-tung Peninsula, southern Manchuria. Dalny is situated at its westerly extremity. It was leased by Russia from China in 1898, and the lease was ceded to Japan by the Treaty of Portsmouth in 1905.

Talim (tä-lēm′). An island in Laguna de Bay, southern Luzon, Philippine Islands, belonging to Rizal province.

Talmage*, **Thomas DeWitt.** Died at Washington, D. C., April 12, 1902. He was pastor of the Central Presbyterian Church in Brooklyn 1869–94, and of the First Presbyterian Church of Washington 1895–99.

Tamagno (tä-män′yō), **Francesco.** Born at Turin, 1851: died at Varese, Aug. 31, 1905. An Italian dramatic tenor. He made his début in 1873, and is best known as the creator of the part of Otello, in Verdi's opera.

Tambobong (täm-bō′bōng). A municipality in Rizal province, southern Luzon, Philippine Islands. Civilized population (1903), 20,136.

Tanauan (tä-nä′wän). **1.** A municipality in the northeastern part of Batangas province, southwestern Luzon, Philippine Islands. Civilized population (1903), 18,263.— **2.** A municipality in the eastern part of Leyte Island and province, Philippine Islands, situated near San Pedro and San Pablo Bay. Civilized population (1903), 18,256.

T'ang (täng). The Chinese dynasty which reigned from 618 to 907 A. D. During this period the arts and literature flourished.

Tañon (tän-yōn′), **Strait of.** A strait in the Philippine Islands separating Cebu and Negros and connecting the Visayan Sea and the Mindanao Sea.

Tapul (tä-pöl′) **Islands.** A group of 43 islands in the Sulu (Jolo) Archipelago, lying between the Sulu (Jolo) and Tawi Tawi groups and belonging to the Jolo district of Moro province, in the Philippine Islands. Siasi is the largest of the group. Area, 90.3 square miles.

Taranis (tar′a̤-nis). [L., < Old Celtic **taran*, W. *taran*, thunder?] A god of evil, called the Celtic Jupiter, said to have been worshiped with human sacrifices by ancient Celts.

Tarbell (tär-bel′), **Ida Minerva.** Born in Erie County, Pa., Nov. 5, 1857. An American author and editor. She was associate editor of the "Chautauquan" 1883–91, and was on the editorial staff of "McClure's Magazine" 1894–1906, and on that of the "American Magazine" 1906–. Among her publications are a "Short Life of Napoleon Bonaparte" (1895), "Life of Madame Roland" (1896), "Early Life of Abraham Lincoln" (1896: with J. McCan Davis), "Life of Abraham Lincoln" (1900), and a "History of the Standard Oil Company" (1904).

Tarkington (tär′king-tọn), **Newton Booth.** Born at Indianapolis, Ind., July 29, 1869. An American author. He was graduated at Exeter Academy in 1889 and at Princeton in 1893. He has written "The Gentleman from Indiana" (1899), "Monsieur Beaucaire" (1900), "The Two Vanrevels" (1902), "Cherry" (1903), "In the Arena" (1905), "The Beautiful Lady" (1905), "The Conquest of Canaan" (1905), "The Man From Home," with H. L. Wilson (1908), etc.

Tarlac (tär′läk). **1.** A river in Tarlac province, Luzon, Philippine Islands.— **2.** An inland province in the western part of Luzon, Philippine Islands. It is bounded by Pangasinan on the north; Nueva Ecija on the east; Pampanga on the south; and Zambales (separated by the Zambales Mountains) on the west. Capital, Tarlac. The forests are of great value. Over twenty-five per cent. of the land is agricultural. Rice is raised in large quantities. Among the other productions are coffee, pineapples, betel-nuts, corn, sugar-cane, and sweet potatoes. The inhabitants are Ilocanos, Tagalos, Pampangans, and Pangasinanes, with a mixture of other races. Area, 1,205 square miles. Population (1903), 135,107.

3. A town, the capital of Tarlac province, situated on the Tarlac river, in lat. 15° 31′ N., long. 120° 36′ E. Civilized population of municipality (1903), 12,340.

Tarr (tär), **Ralph Stockman.** Born at Gloucester, Mass., Jan. 15, 1864. An American geologist, professor of dynamic geology and physical geography in Cornell University from 1897–1906 and of physical geography 1906–. He was assistant professor there 1892–96, and is special field assistant on the United States Geological Survey. Among his publications are "Economic Geology of the United States" (1893), "Elementary Geology" (1897), geographical text-books (with McMurry), text-books on physical geography, and numerous scientific papers.

Taschereau*, Elzear Alexandre. Died at Quebec, April 12, 1898.

Taschereau (täsh-rō′), Sir **Henri Elzéar.** Born at Ste. Marie de la Beauce, Quebec, Oct. 7, 1836. A Canadian jurist. He was called to the bar in 1857; was created a queen's counsel in 1867; and was knighted in 1902. He sat, as a Conservative, in the Canadian Legislative Assembly for Beauce County, Quebec, 1861–67, and was appointed a judge of the superior court of Quebec in 1871 and a judge of the Supreme Court of Canada in 1878. He was chief justice of the Supreme Court 1902–06 and was appointed in 1904 a member of the Imperial Privy Council and of the judicial committee to hear appeals from the colonies. He has published several books on Canadian law.

Tasmania*. In 1901 it became one of the states of the Commonwealth of Australia. It sends one senator and five representatives to the Federal Parliament. It has a Legislative Council and House of Assembly (the Parliament) and a governor (appointed by the Crown).

Tate (tāt), Sir **Henry.** Born at Chorley, England, March 11, 1819: died at Streatham Hill, London, Dec. 5, 1899. An English merchant and philanthropist. He presented his collection of modern paintings, one of the finest in England, to the nation. See *Tate Gallery.*

Tate Gallery. The popular name of the National Gallery of British Art in London. The building, designed in the classic style by Sidney R. J. Smith, and fronting on the river Thames about half a mile above the Houses of Parliament, was presented to the British people, and opened to the public by the Prince of Wales (now King Edward VII.), July 21, 1897. Sir Henry Tate gave the building and with it sixty-five pictures and two important bronzes. To these have been added, by act of the president and council of the Royal Academy, the works bought with the Chantrey Bequest Fund, including eighty-four oil-paintings, eight water-colors, one pastel, and sixteen pieces of sculpture. George Frederick Watts presented twenty-two of his most important paintings and one piece of sculpture to form the Watts collection. The Vernon collection of fifty-three pictures has been added. From time to time representative works by British artists are acquired. It occupies the site of the old Millbank Penitentiary.

Tatin (tä-tañ′), **Victor.** Born at Paris, in 1843. A French student of aviation and the inventor and constructor of many scientific instruments. He has been occupied since 1874 with the problems of mechanical flight. In 1879 he constructed a compressed-air model which flew, and in 1890 and 1896–7 built a successful steam model. He is the author of a standard work on the elements of aviation, and is a member of the Academy of Sciences. He has built many propellers for flying-machines which have been successful. He was made chevalier of the Legion of Honor, July 25, 1909.

Tatti (tät′tē), **Jacopo.** See *Sansovino, Jacopo.*

Taunay*, Alfredo d' Escragnolle. Died at Rio de Janeiro, Feb., 1899.

Tausig (tou′sig), **Karl.** Born at Warsaw, Nov. 4, 1841: died at Leipsic, July 17, 1871. A noted piano virtuoso, a pupil of Liszt and a player of remarkable technique and strong powers of interpretation.

Tawi Tawi (tä′wē tä′wē). The largest island of the Tawi Tawi group in the Sulu (Jolo) Archipelago. Area, 232 square miles. Population (1903), 1,179.

Tawi Tawi (tä′wē tä′wē) **Islands.** A group of 159 islands in the Sulu (Jolo) Archipelago, lying between the Tapul and Sibutu groups and belonging to the Jolo district of Moro province, Philippine Islands. Tawi Tawi is the largest of the group. Area of the group, 358.7 square miles. Population (1903), about 7,896.

Tayabas (tä-yä′bäs). A province of the Philippine Islands. It embraces a large part of the eastern coast of Luzon (Principe and Infanta), a part of the southeastern peninsula, and numerous islands east and south, including Polillo and Marinduque, with adjacent islands. It is bounded by Isabela, the Pacific Ocean, and Ambos Camarines (separated by mountains) on the north; the Pacific Ocean and Ambos Camarines (partly separated by the Gulf of Ragay) on the east; the Visayan Sea and Batangas on the southwest; and La Laguna, Rizal, Bulacan, Nueva Ecija, Nueva Vizcaya, and Isabela on the west. Capital, Lucena. The principal bays on the eastern coast are Dilasac, Dingalan, Baler, and Casiguran, the last a fine harbor for large vessels in all weather. Lamon and Sogod bays indent the northern coast, and inlets from the deep Gulf of Ragay the eastern coast of the peninsula. South of the province is Tayabas Bay. The surface is very mountainous, and the mountains are densely wooded. Rivers are numerous, but short and of little importance. Coal is found in the peninsular part of the province and in Pagbilao, Polillo, and other islands. Among the productions are hemp, pineapples, bananas, mangos, sweet potatoes, sugar-cane, rice, and copra. The inhabitants are chiefly Tagalos and Bicols. Area of province, 6,354 square miles. Population (1903), 204,739.

Tayabas (tä-yä′bäs) **Bay.** A wide bay indenting the southern and southwestern coast of Tayabas and the eastern coast of Batangas provinces, Luzon, Philippine Islands.

Taylor (tā′lọr), **Hannis.** Born at New Berne, N. C., Sept. 12, 1851. An American lawyer and legal writer, professor of constitutional and international law in the George Washington University 1904–06. From 1893 to 1897 he was United States minister to Spain; was special counsel for the government before the Spanish Treaty Claims Commission in 1902; and was one of the counsel for the United States in the Alaska Boundary Case in 1903. His works include "Origin and Growth of the English Constitution" (1889), "International Public Law" (1901), "Jurisdiction and Procedure of the Supreme Court of the United States" (1905), and "The Science of Jurisprudence" (1908).

Taylor (tā′lọr), **Henry Clay.** Born at Washington, D. C., March 4, 1845: died at Sudbury, Ont., July 26, 1904. An American rear-admiral. He was graduated at the United States Naval Academy in 1863; served in the Civil War; and was promoted captain in 1894. During the war with Spain he commanded the battle-ship Indiana, and took part in the battle off Santiago, July 3, 1898. In 1902 he became chief of the bureau of navigation.

Taylor*, Isaac. Died at Settrington, Yorkshire, Oct. 18, 1901. He was rector of Settrington 1875–1901, and a canon of York 1885–1901.

Taylor (tā′lọr), **J. Hudson.** Born in 1832: died at Chang-sa, Hu-nan, China, June 3, 1905. An English Protestant missionary. He first sailed for China in 1853. In 1865 he published "China's Spiritual Need and Claims," a book which aided him in founding the China Inland Mission.

Taylor*, William. Died at Palo Alto, Cal., May 18, 1902.

Tchadyr-Dagh*. Height, 5,131 feet.

Tehuantepec*, Isthmus of. The Tehuantepec Railway, connecting the ports of Coatzacoalcos and Salina Cruz, was opened Jan. 23, 1907.

Telissu (tel-is-sö′). A locality in the Liao-tung Peninsula, in southern Manchuria, south of Kai-ping. Here the Japanese defeated the Russians under General Stackelberg, who was attempting to relieve Port Arthur, June 14–15, 1904.

Temple, Charlotte. See *Charlotte Temple.*

Temple*, Frederick. Died Dec. 23, 1902. He was archbishop of Canterbury from 1896.

Tenda*, Col di. Height, 6,195 feet.

Tenderloin, The. The popular name of a section of New York City, a part of which is notorious for the number of haunts of vice which it contains. It is included in the nineteenth police precinct (now bounded by Fourth and Seventh avenues and by Fourteenth and Forty-second streets), especially in that part of it which lies north of Twenty-third Street and west of Broadway and (above Thirty-fourth Street) of Sixth Avenue.

Tennessee, University of. See *University of Tennessee.*

Tenniel (ten′i-el), Sir **John.** Born at London, 1820. An English artist and cartoonist. He was a member of the staff of "Punch" 1851–1901. He illustrated "Alice's Adventures in Wonderland," "Through the Looking Glass," etc. Knighted in 1893.

Tennyson*, Frederick. Died at Kensington, London, Feb. 26, 1898.

Tennyson (ten′i-sọn), **Hallam,** second Baron Tennyson. Born at Twickenham, Aug. 11, 1852. An English author and colonial governor, son of Alfred, Lord Tennyson. He was private secretary to his father; was governor and commander-in-chief of South Australia 1899–1902; was first acting governor-general of the Commonwealth of Australia 1902; and was governor-general of Australia 1902–03. He has published "Alfred Lord Tennyson: a Memoir" (1897), etc.

Ternina (tãr-nē′nä), **Milka.** Born in Croatia, Dec. 19, 1864. A distinguished dramatic soprano. She made her début at Leipsic in 1883, and has sung in Gratz, Bremen, and Munich, and also in New York, London, and Bayreuth.

Terry*, Ellen (Mrs. **James Carew**). She has visited America with Mr. Irving on his tours in 1886, 1893, 1895, 1899, 1901. Her memoirs, "The Story of My Life," appeared in 1908.

Tess of the D'Urbervilles; a Pure Woman. A novel by Thomas Hardy, published in 1892.

Tetrazzini (tet-rä-zē′nẹ), **Luisa** (Signora **Bazelli**). Born at Florence in 1874. A contemporary Italian opera singer. She made her début in 1895, and has toured in South America, Europe, England, and America. She has won great success by her brilliant rendering of such rôles as Elvira in "Puritani," the Queen in "Les Huguenots," Lucia, Violetta, etc.

Texas*. It has 246 counties, sends 2 senators and 16 representatives to Congress, and has 18 electoral votes.

Texas, University of. See *University of Texas.*

Thaulow (tou′lō), **Fritz.** Born at Christiania, Norway, Oct. 20, 1847: died at Paris, Nov. 5, 1906. A Norwegian painter. He was a pupil of Sörensen at the Academy in Copenhagen and of Gude in Karlsruhe. He was one of the organizers of the Salon du Champ de Mars in Paris in 1890. Until 1892 he painted Norwegian subjects almost exclusively, but after that date worked in France. His subjects were usually landscapes. He was appointed Norwegian commissioner for the fine arts at the Exposition Universelle in Paris in 1900.

Thayer (thãr), **Alexander Wheelock.** Born at South Natick, Mass., Oct. 22, 1817: died at Trieste, July 15, 1897. An American author, best known as the biographer of Beethoven. He was graduated from Harvard in 1843, and at the law school there in 1848; was for a number of years assistant librarian at Harvard; and in 1849 went to Germany, where he spent most of the remainder of his life. He was for a time music critic of the New York "Tribune," and from 1859 to 1882 was United States consul at Trieste.

Thayer (thãr), **Eli.** Born at Mendon, Mass., June 11, 1819: died at Worcester, April 15, 1899. An American educator, inventor, and anti-slavery agitator. He was graduated at Brown University in 1845, and in 1848 founded Oread Institute, a collegiate school for young women, in Worcester, Massachusetts. He has been called 'the Father of Kansas' on account of his efforts so to influence colonization that it should be admitted as an anti-slavery State. From 1857 to 1861 he was a Republican member from Massachusetts of the House of Representatives.

Thayer*, Joseph Henry. Died Nov. 26, 1901. He was professor at the Divinity School, Harvard, 1884–1901.

Théâtre Antoine. See *Antoine, André.*

Théâtre Français*. It was almost entirely destroyed by fire March 8, 1900.

Thélème (tā-lām′), **Abbey of.** In the "Gargantua" of Rabelais, an imaginary abbey of freewill situated in Thelema by the river Loire. The customs in force there were to be in direct opposition to those of any convent in existence. The one rule of its order was 'do what you wish.'

Theotocopuli (tā-ō-tō-kō′pö-lē), **Domenico:** surnamed **El Greco.** Died 1625. A Spanish painter, architect, and sculptor. His signature on a picture in the Escorial indicates that he came from the island of Crete. It is probable that he learned to paint in Venice, as his pictures show Venetian influence; but he is not definitely connected with any known master. His arrival in Toledo before 1577 is fixed by the date of the termination of his great retable in the church of San Domingo el Antiquo in that city. His methods were original and modern, making him a true forerunner of Velasquez.

Thesiger*, Frederic Augustus, second Baron Chelmsford. Died April 9, 1905.

Theuriet*, André. Died at Bourg-la-Reine, April 22, 1907. His works include "Mademoiselle Guignon" (1874), "Une Ondine" (1875), "La fortune d' Angèle" (1876), "Raymonde" (1877), "Le filleul d'un marquis" (1878), "Le fils Maugars" (1879), "La maison des deux Barbeaux" (1879), "Sauvageonne" (1880), "Tante Aurélie," "Mariage de Gérard" (1884), "Bigarreau" (1886), "Deux sœurs" (1889), "Reine des bois" (1890), "Jeunes et vielles barbes" (1892), "La Chanoinesse" (1893), "Flavie" (1895), "Dans les Roses" (1899), "Mon oncle Flo" (1906). He was elected to the French Academy in 1896.

Thomas (tom′as), **Arthur Goring.** Born in Sussex, Nov. 20, 1850: died March 20, 1892. An English composer. His most important works are the operas "Esmeralda" (1883), and "Nadeshda" (1885); the choral ode "The Sun Worshippers" (1881); the cantata "The Swan and the Skylark" (1894); and songs.

Thomas (tom′as), **Augustus.** Born at St. Louis, Jan. 8, 1859. An American playwright. For a number of years he was engaged in journalism, and was the editor of the Kansas City "Mirror." His plays include "Alabama," "In Mizzoura," "Arizona," "The Earl of Pawtucket," "Mrs. Leffingwell's Boots," "The Witching Hour," etc.

Thomas (tom′as), **Calvin.** Born near Lapeer, Mich., Oct. 28, 1854. An American scholar and educator, professor of Germanic languages and literatures in Columbia University from 1896. He was graduated at the University of Michigan in 1874; studied in Germany 1877–78; and was connected with the University of Michigan as, successively, instructor, assistant professor, and professor of German, 1878–96. His publications include a German grammar (1895), "The Life and Works of Schiller" (1901), "An Anthology of German Literature" (1907), "History of German Literature" (1909), and editions of Goethe's "Faust" and other German classics.

Thomas*, Charles Ambroise. Died at Paris, Feb. 12, 1896.

Thomas (tom′as), **Cyrus.** Born at Kingsport, Tenn., July 27, 1825. An American entomologist and ethnologist, archæologist of the Bureau of American Ethnology from 1882. He was professor of natural history in the Southern Illinois Normal University 1872–75; was entomologist of the State of Illinois 1874–75; and was a member of the United States entomological commission 1877–79. He has published numerous monographs and papers upon economic entomology, and upon North American ethnology and archæology; and also a "History of the Indians of North America."

Thomas (tom′as), **M. Carey.** Born at Baltimore, Md., Jan. 2, 1857. An American scholar and educator. She was graduated at Cornell University in 1877, and studied at Johns Hopkins University and at the universities of Leipsic, Zurich, and Paris. She was the first woman to obtain the doctorate of arts *summa cum laude* from a European university. In 1885 she was appointed dean and professor of English at Bryn Mawr College, and has been president since 1894. She is the author of "Sir Gawayne and the Green Knight" (1883), "Education of Women" (1900), "The College" (1905), etc.

Thomas*, Theodore. Died at Chicago, Jan. 4, 1905.

Thompson (tomp′sọn), Sir **Edward Maunde.** Born in Jamaica, West Indies, May 4, 1840. A British librarian and editor, principal librarian of the British Museum since 1888. He was educated at Rugby and at University College, Oxford; entered the service of the British Museum in 1861; and was admitted to the bar of the Middle Temple in 1867. He was knighted in 1895.

Thompson (tomp′sọn), **James Maurice** (called **Maurice**). Born at Fairfield, Ind., Sept. 9, 1844: died at Crawfordsville, Ind., Feb. 15, 1901. An American writer. In his youth he lived in Georgia; served in the Confederate army; was a member of the Indiana legislature in 1878, and State geologist of Indiana 1885–89; and for some years was literary editor of the New York "Independent." He wrote "The Witchery of Archery" (1878), "By-ways and Bird Notes" (1885), "A Tallahassee Girl" (1887), "The Story of Louisiana" (1888), "The King of Honey Island" (1893), "Alice of Old Vincennes" (1900), etc.

Thompson (tomp′sọn), Sir **John Sparrow David.** Born at Halifax, Nova Scotia, Nov. 10, 1844: died at Windsor Castle, England, Dec. 13, 1894. A Canadian statesman. He entered the Nova Scotia legislature in 1877; was elected to the Canadian Parliament in 1885, 1887, and 1891; was appointed minister of justice in 1885; and became premier of Canada in 1892. In 1887 he was legal adviser to the British plenipotentiaries on the fisheries commission at Washington and in 1888 was knighted for his services. In 1893 he was a British arbitrator on the Bering Sea Commission at Paris.

Thompson*, **Richard Wigginton.** Died at Terre Haute, Ind., Feb. 9, 1900.

Thompson (tomp′sọn), **Silvanus Phillips.** Born at York, England, June 19, 1851. An English physicist, principal and professor of physics in the City and Guilds Technical College, Finsbury, from 1885. He has published "Elementary Lessons in Electricity and Magnetism" (1881), "Dynamo-electric Machinery" (1885), "Light, Visible and Invisible" (1897), "Michael Faraday" (1898), "Design of Dynamos" (1903), etc.

Thomsen (tom′sen), **Julius.** Born in Copenhagen, Feb. 16, 1826: died there, Feb. 13, 1909. An eminent Danish chemist, professor in the University of Copenhagen 1866–91. He was especially noted for his studies in thermochemistry. His works include "Thermochemische Untersuchungen" (4 vols., 1882–86), etc.

Thomson (tôn-sôn′), **César.** Born at Liège, Belgium, March 17, 1857. A noted Belgian violinist, a pupil of Vieuxtemps, Léonard, Wieniawski, and Massart. He was a teacher in the Liège Conservatory, and in 1898 succeeded Ysaye as professor of the violin in the Brussels Conservatory. He has written a number of studies for the violin.

Thomson (tom′sọn), **Elihu.** Born at Manchester, England, March 29, 1853. An American electrical engineer and inventor, electrician of the Thomson-Houston and General Electric companies from 1880. His researches and inventions have covered a wide range in electricity and electrical engineering. He was made officer of the Legion of Honor in 1889, and has received the Rumford medal.

Thomson (tom′sọn), Sir **Joseph John.** Born near Manchester, England, Dec. 18, 1856. A noted English physicist and mathematician, professor of experimental physics in the University of Cambridge from 1884, and professor of physics at the Royal Institution, London, 1905–. He has published "The Motion of Vortex-Rings" (1883), "The Applications of Dynamics to Physics and Chemistry" (1888), "Recent Researches in Electricity and Magnetism" (1893), "Elements of the Mathematical Theory of Electricity and Magnetism" (1895), "The Discharge of Electricity through Gases" (1898), "Conduction of Electricity through Gases" (1903), "Electricity and Matter" (1904), etc. He was awarded the Nobel prize for physics in 1906. He was knighted in 1908.

Thomson*, Sir **William**, Baron Kelvin. Died at London, Dec. 17, 1907. He was professor of natural philosophy at Glasgow University 1846–99. His works include "On the Electrodynamic Properties of Metals" (1885), "Navigation" (1876), "Mathematical and Physical Papers" (1882–90), "Treatise on Natural Philosophy," with P. G. Tait (1879–83), and "Lectures and Addresses" (1889–91).

Thornton*, Sir **Edward.** Died at London, Jan. 26, 1906.

Thornycroft*, Mrs. (**Mary Francis**). Died Feb. 1, 1895.

Thursday Island. A small island in Queensland, Australia, just north of Prince of Wales Island at the extremity of the Cape York Peninsula. It has pearl-fisheries.

Thurston*, **Robert Henry.** Died at Ithaca, N. Y., Oct. 25, 1903.

Thwaites (thwātz), **Reuben Gold.** Born at Dorchester, Mass., May 15, 1853. An American historian, secretary and superintendent of the Wisconsin Historical Society from 1886. He is the author of "Down Historic Waterways" (1888), "The Story of Wisconsin" (1890), "The Colonies, 1492–1750" (1891), "On the Storied Ohio" (1897), "Stories of the Badger State" (1900), "A History of the University of Wisconsin" (1900), "Father Marquette" (1902), "Daniel Boone" (1902), "How George Rogers Clark Won the Northwest, and other Essays in Western History" (1903), "A Brief History of Rocky Mountain Exploration" (1904), "France in America" (1905), etc.; and has edited "Wisconsin Historical Collections," (volumes 10–17: 1888–1906), "Chronicles of Border Warfare" (1895), "The Jesuit Relations and Allied Documents" (73 volumes: 1896–1901), "Kinzie's Wau-Bun" (1901), "Early Western Travels, 1748–1846" (31 volumes: 1904–06), Hennepin's "A New Discovery" (1903), Lahontan's "New Voyages to North America" (1905), "Documentary History of Dunmore's War" (1905), "Original Journals of the Lewis and Clark Expedition" (8 volumes: 1904–06), "Wisconsin" (1908), etc.

Thwing (twing), **Charles Franklin.** Born at New Sharon, Maine, Nov. 9, 1853. An American educator, president of Adelbert College and Western Reserve University from 1890. He was graduated at Harvard in 1876, and at Andover Theological Seminary in 1879, and held pastorates in Cambridge, Massachusetts, and Minneapolis. He is also secretary of the Carnegie Foundation for the Advancement of Teaching. Among his publications are "American Colleges" (1878), "Within College Walls" (1893), "The American College in American Life" (1897), "College Administration" (1900), "A Liberal Education and a Liberal Faith" (1903), "History of Higher Education in America" (1906), "Education in the Far East" (1909), etc.

Tibet*. In 1904 the British government in India sent an armed 'mission' to Lhasa, in order to enforce certain treaty stipulations and other demands, which, after considerable fighting, accomplished its purpose, entering Lhasa and executing a convention with Tibet there (Sept. 7).

Ticao (tē-kä′ō). An island in the Philippines, lying northeast of Masbate and belonging to Masbate province. Port San Miguel on its northern coast is an excellent harbor in all weather. Area, 121 square miles. Population (1903), 10,183.

Tie-ling (tiā-ling′). A town in Manchuria situated on the railroad north of Mukden in a strategically important pass. After the defeat of the Russians in the battle of Mukden it was captured by the Japanese, March 16, 1905. It was opened to international trade in 1906.

Tientsin*. It was captured by the allies July 14, 1900.

Tiffany (tif′ạ-ni), **Charles Louis.** Born at Killingly, Conn., Feb. 15, 1812: died at Irvington on the Hudson, New York, Feb. 18, 1902. An American merchant. In 1837 he came to New York, and, with John B. Young, established a stationery and fancy-goods business. The firm became "Tiffany and Company" in 1851, established a branch house at Paris, and began the manufacture of sterling silver. In succeeding years it developed an extensive business in gold and silver work and precious stones.

Tiffany (tif′ạ-ni), **Louis Comfort.** Born at New York, Feb. 18, 1848. An American painter and decorator, son of Charles L. Tiffany. He studied art in New York under George Inness and Samuel Coleman, and in Paris under Leon Bailly. He has painted in both oil- and water-color, making a specialty of Oriental scenes. Among his principal canvases are "The Dock Scene" (1869), "Street Scene in Tangiers" (1876), "Study of Quimper, Brittany" (1877), "Duane Street, New York" (1878), "The Cobblers at Boufarick" (1888), "Feeding the Flamingoes" (1888), and "Market Day at Nuremberg" (1892). His other important art works include the Tiffany Chapel exhibited at the Columbian Exposition, Chicago, 1893, which is now in the crypt of the New York Cathedral of St. John the Divine; and the electric fountain in the Grand Court of the Manufactures and Fine Arts Building at the Pan-American Exposition, Buffalo, New York, 1901. He discovered the formula for making the decorative glass which is known as Tiffany favrile glass.

Tillman (til′mạn), **Benjamin Ryan.** Born in Edgefield County, S. C., Aug. 11, 1847. An American politician. For many years he was occupied exclusively with farming. In 1890 and again in 1892 he was elected governor of South Carolina, and he has been (Democratic) United States senator from that State since 1895. He was the originator of the state dispensary system of selling liquor. In 1906 he had charge of the Railroad Rate Bill in the Senate.

Tilton, Theodore. Died at Paris, May 25, 1907.

Timbuktu. 2. The name of one of the two districts into which the Military Territory of the Niger is divided. See *Senegal-Niger Colony, Upper.*

Tinel (tē-nel′), **Edgar.** Born at Sinay, Belgium, March 27, 1854. A Belgian composer and pianist. In 1882 he became director of the Church Music Institute at Mechlin, in 1889 inspector of the state music-schools, in 1896 professor of counterpoint and fugue at Brussels, and in 1909 director of the Brussels Conservatoire. His most important work is the oratorio "Franciscus" (1898).

Tinguianes (tẹ̄n-gē-ä′nās), or **Tingues.** A Malay tribe in the interior of northwestern Luzon, in the provinces of Lepanto-Bontoc and Abra.

Tippoo Tib*. Born about 1837 or 1838: died at Zanzibar, June 14, 1905.

Tissot*, **James Joseph Jacques.** Died at the Abbey of Buillon, Doubs, France, Aug. 9, 1902. He painted (1893–96) a series of water-colors illustrating the life of Christ.

Tisza*, **Kálmán.** Died at Budapest, March 23, 1902.

Titchener (tich′ẹ-nėr), **Edward Bradford.** Born at Chichester, England, Jan. 11, 1867. An English-American psychologist, assistant professor (1892–95) and professor (1895–) of psychology in Cornell University. He was educated at Oxford and Leipsic, and was extension lecturer in biology at Oxford in 1892. Among his works are "An Outline of Psychology" (1896), "A Primer of Psychology" (1898), "Experimental Psychology" (1901–05), "Lectures on the Elementary Psychology of Feeling and Attention" (1908), "Lectures on the Experimental Psychology of the Thought Processes" (1909), "Text-book of Psychology" (1909–), etc. He is associate editor of "The American Journal of Psychology," and the American editor of "Mind."

Todd (tod), **David.** Born at Lake Ridge, N. Y., March 19, 1855. An American astronomer, professor of astronomy in Amherst College and director of the observatory from 1881. He was chief assistant in the Nautical Almanac office 1878–81; was in charge of the transit of Venus observations at Lick Observatory in 1882; and has conducted eclipse expeditions to Texas (1878), Japan (1887), West Africa (1889–90), Japan (1896), Tripoli (1900), Dutch East Indies (1901), and Tripoli (1905). He has published text-books on astronomy, and numerous technical papers. He was the leader of the Lowell expedition to the Andes in 1907.

Togo (tō′gō), Count **Heihachiro.** Born in Kagoshima, Dec. 22, 1847. A famous Japanese admiral, commander of the Japanese fleet in the Russo-Japanese war 1904–05. He entered the navy in 1868; studied naval affairs at Greenwich, England, 1871–78; served in the Chinese war as commander of the Naniwa, sinking the transport Kow Shing before the actual rupture with China; attacked Port Arthur on the night of Feb. 8, 1904, in this and subsequent attacks inflicting great damage on the Russian fleet; scattered the Russian Port Arthur squadron in a sea-battle on Aug. 10, 1904; and annihilated the Russian Baltic fleet under Rozhestvensky in the Strait of Korea May 27–28, 1905.

Tolima*. A former department of Columbia. A new political division was made in 1909.

Tolstoi*, **Count Lyeff.** He has written also "Resurrection" (1900), and "The End of the Age" (1906).

Toluca (tō-lö′kä), **Nevado de.** A volcano near Toluca, Mexico. It was first ascended by Humboldt in 1803. Altitude, 14,833 feet.

Tomb of Agamemnon. A popular name for the Treasury of Atreus (which see, under *Treasury*).

Tom Burke of Ours. A story by Lever, published in 1844.

Tondo (ton-dō′). A division of the city of Manila, Luzon, Philippine Islands. Civilized population (1903), 39,043

Tonga Islands*, or **Friendly Islands.** A group of islands in the South Pacific, south of the Samoan Islands. They belong to Great Britain. They are ruled by a native king, who is subject to the control of the British high commissioner. The kingdom consists of three groups of islands, Tonga, Haapai, and Vavau. Capital, Nukualofa. Area, 390 square miles. Population, about 22,000.

Tongaland*. In 1897 it was incorporated with the colony of Natal.

Toole (töl), **John Lawrence.** Born at London, March 12, 1832: died at Brighton, July 30, 1906. A noted English comedian. His first public appearance was at the Haymarket Theatre in London in 1852, and he appeared at the St. James Theatre in 1854. In 1858 he became leading comedian at the Adelphi, and after five years engagements followed at the Queen's Theatre, the Gaiety, etc. He made a tour of America in 1874, and of the Australian colonies in 1890. In 1879 he became manager of the Folly Theatre, later (1882) renamed Toole's Theatre, and managed it until his retirement in 1895. Among the best known of his róles are Paul Pry, Spriggins in "Ici on parle français," Caleb Plummer in "The Cricket on the Hearth," the 'Artful Dodger,' Uncle Dick in "Uncle Dick's Darling," etc.

Topelius*, **Zachris.** Died at Björkudden, near Helsingfors, March 12, 1898.

Topinard (tō-pi-när′), **Paul.** Born at Isle-Adam, Seine-et-Oise, France, Nov. 4, 1830. A French anthropologist, professor in the School of Anthropology, Paris, since 1876. He lived in the United States in his youth; studied medicine in Paris; entered the anthropological laboratory of Broca in 1871; was conservator of the collections of the Société d'Anthropologie 1872–80; and on the death of Broca, in 1880, succeeded him as secretary general of the "Revue d'Anthropologie." Among his works are "L'anthropologie" (1879), "Éléments d'anthropologie générale" (1885), "L'homme daus la nature" (1891), "Science et foi" (1900), numerous contributions to scientific publications, etc.

Toronto, University of. See *University of Toronto.*

Torrey (tor′i), **Bradford.** Born at Weymouth, Mass., Oct. 9, 1843. An American author, editor, and ornithologist. For some years he was on the editorial staff of the "Youth's Companion." Among his works are "Birds in the Bush" (1885), "A Florida Sketch-book" (1894), "Spring Notes from Tennessee" (1895), "A World of Green Hills" (1898), "Every-Day Birds" (1901), "Footing it in Franconia" (1901), "The Clerk of the Woods" (1903), and "Nature's Invitation" (1904).

Torrington (tor′ing-tọn). A borough in Litchfield County, Connecticut, situated on the Naugatuck river. Its chief manufactures are woolen goods, hardware, articles of brass and plated ware, needles, tools, bicycles, etc. Population (1900), 8,360.

Tourgée*, **Albion Winegar.** Died at Bordeaux, France, May 21, 1905. He was United States consul to Bordeaux 1897–1903, and to Halifax, N. S., 1903–05. His later works include "Button's Inn" (1887), "Letters to a King" (1888), "Black Ice" (1888), "With Gauge and Swallow" (1889), "Murvale Eastman, Christian Socialist" (1889), "Pactolus Prime" (1890), "Out of the Sunset Sea" (1893), "An Outing with the Queen of Hearts" (1894), "The Man Who Outlived Himself" (1898), etc.

Tower (tou′ėr), **Charlemagne.** Born at Philadelphia, April 17, 1848. An American business man and diplomatist. He was graduated at Harvard in 1872 and was admitted to the (Pennsylvania) bar in 1878. He was United States minister to Austria-Hungary 1897–99, ambassador to Russia 1899–1902, and ambassador to Germany 1902–08. He has published "The Marquis de La Fayette in the American Revolution" (1895), etc.

Toynbee (toin′bē), **Arnold.** Born at London, Aug. 23, 1852: died at Wimbledon, Surrey, March 9, 1883. An English sociologist and political economist. He studied at Pembroke College, and at Balliol College, Oxford; was graduated in 1878; and was appointed a tutor and later bursar of Balliol. His lectures on economics were collected and published after his death under the title of "The Industrial Revolution" (1884). Toynbee Hall (which see), London, was established in his memory.

Toynbee (toin′bē), **Paget.** Born at Wimbledon, Jan. 20, 1855. An English philologist, author, and critic, brother of Arnold Toynbee. He was educated at Balliol College, Oxford, and was a private tutor 1878–92. He is best known as a Dante scholar. Among his publications are "Specimens of Old French, with Notes and Glossary" (1892), a "Dictionary of Proper Names and Notable Matters in the Works of Dante" (1898), "Dante Alighieri" (1900), "Dante Studies and Researches" (1902), "Dante in English Literature from Chaucer to Cary" (1909), etc.

Traherne (trą-hėrn′), **Thomas.** Born at Hereford, about 1636: died in 1674. An English clergyman and writer. He studied at Oxford in 1656 and became rector of Credwell, in Hereford, in 1657. His "Poetical Works" were edited by Bertram Dobell in 1906, and his "Centuries of Meditation" in 1908.

Transcaucasia*. It comprises the governments of Baku, Black Sea, Elizabethpol, Erivan, Kutais, and Tiflis; the provinces of Batum and Daghestan; and the districts of Sukhum and Zakataly. Total area, 95,402 square miles. Population, 6,199,100.

Transhimalayan Range. A range of mountains in Tibet, north of the Brahmaputra river: the most massive mountain range in the world. It was explored by Dr. Sven Hedin 1907–08.

Trans-Siberian Railway. See *Siberian Railway*.

Transvaal (tranz-väl′), **The.** A British colony, the former South African Republic. See *Boer War*. It was annexed by Great Britain Sept. 1, 1900. Representative government was established in 1906. The Legislature consists of a Legislative Council of 15 members (to be elective) and a Legislative Assembly of 69 (elected) members. See also *United States of South Africa*.

Transvaal War. 2. See *Boer War*.

Transylvania University. See *Kentucky University*.

Trask (trask), Mrs. (**Kate Nichols**): pen-name **Katrina Trask.** Born at Brooklyn, N. Y., May 30, 1853. An American author and poet. Her works include "Under King Constantine" (1893), "Sonnets and Lyrics" (1895), "John Leighton, Jr." (1898), "Lessons in Love" (1900), "Free, not Bound" (1903), "Christalan" (1903), "In My Lady's Garden" (1907), "King Alfred's Jewel" (1909), etc.

Travis (trav′is), **Walter J.** Born at Maldon, Victoria, Australia, January 10, 1862. An American authority on golf. He has written "Practical Golf" (1901), "The Art of Putting" (1904: with J. White), and is editor of "The American Golfer."

Tree (trē), Sir **Herbert Beerbohm.** Born at London, Dec. 17, 1853. An English actor and theatrical manager. He first appeared on the stage in 1878; managed the Haymarket Theatre, London, 1887–96; and is now manager of His Majesty's Theatre, London. He has published lectures on topics connected with the drama. He was knighted in 1909.

Treitschke*, **Heinrich Gotthard von.** Died at Berlin, April 28, 1896.

Trepof (trep′of), **Dimitrii Feodorovitch.** Born 1855: died Sept. 15, 1906. A Russian general, chief of the Imperial police, commandant of the Palace, and assistant minister of the interior. An unsuccessful attempt to assassinate him was made on March 30, 1905.

Trescot*, **William Henry.** Died at Pendleton, S. C., May 4, 1898.

Treves (trēvz), Sir **Frederick.** Born at Dorchester, England, Feb. 15, 1853. An English physician, sergeant surgeon to the King from 1901. He was professor of anatomy and pathology in the Royal College of Surgeons 1881–86; examiner in surgery in the University of Cambridge 1891–96; and consulting surgeon to the forces in South Africa in 1900. He has published "A System of Surgery," "A German-English Dictionary of Medical Terms," "Tale of a Field Hospital," "The Other Side of the Lantern," "Highways and Byways in Dorset," "The Cradle of the Deep," etc.

Trikoupis*, or **Tricoupis, Charilaos.** Died at Cannes, April 11, 1896.

Trinity College* (Hartford, Conn.). It has over 200 students and a library of 56,000 volumes.

Triple Alliance*. 3. It was renewed in June, 1902.

Trobriand*, **Philippe Regis de.** Died at Bayport, L. I., N. Y., July 15, 1897.

Trochu*, **Louis Jules.** Died at Tours, France, Oct. 7, 1896.

Troubetzkoy (trö-bets′koi), Princess (**Amélie Rives**). Born at Richmond, Va., Aug. 23, 1863. An American novelist. She is best known as the author of "The Quick or the Dead" (1889). Her other works include "A Brother to Dragons, and Other Old-time Tales" (1888), "Virginia of Virginia" (1888), "Witness of the Sun" (1889), "Herod and Mariamne," a drama in verse (1889), "According to St. John" (1891), "Barbara Dering: a sequel to The Quick or the Dead" (1892), "Athelwold," a play (1893), "Tanis, the Sang-digger" (1893), "Damsel Errant" (1897), "Seléné" (1905), "Augustine the Man," a drama (1906), "Golden Rose" (1908), etc.

Troubetzkoy (trö-bets′koi), Prince **Paul.** Born at Intra, Italy, Feb. 16, 1866. A Russian sculptor. He is an extreme realist, in theory and practice. On his appointment to a professorship in the School of Sculpture at Moscow his first act was to remove all models and casts of ancient sculpture. His work exhibits power and sometimes refinement, as in certain statuettes of women.

Trumbull (trum′bul), **Henry Clay.** Born at Stonington, Conn., June 8, 1830: died at Philadelphia, Dec. 8, 1903. An American Congregational clergyman and religious writer, editor of the "Sunday-School Times" from 1875: brother of James Hammond Trumbull (1821–97). He was chaplain of the tenth Connecticut regiment (1862–65), and was made a prisoner by the Confederates. His writings include a large number of works on religious themes.

Trumbull*, **James Hammond.** Died at Hartford, Conn., Aug. 5, 1897.

Tschaikovsky*, **Peter Ilitch.** Died at St. Petersburg, Nov. 6, 1893.

Tsu-hsi (tsö-shē′). Born Nov. 17, 1834: died at Peking, Nov. 15, 1908. Empress dowager of China. She was the favorite of the Emperor Hsien-fêng, and the sister of the mother of Kwang-su, emperor of China (1875–1908). She was regent of China during the minority of the Emperor and again assumed the regency in September, 1898.

Tubigon (tö-bē′gōn). A municipality of Bohol province, in the Philippines, situated in the western part of Bohol Island near the coast. Civilized population (1903), 15,168.

Tübingen*. The university has over 100 instructors and about 1,600 students.

Tuburan (tö-bö′rän). A town of Cebu province, situated on the western coast of Cebu, Philippine Islands. Population (1903), 6,859. Civilized population of municipality (1903), 19,158.

Tucker (tuk′ėr), **William Jewett.** Born at Griswold, Conn., July 13, 1839. An American educator and Congregational clergyman, president of Dartmouth College 1893–09. He was graduated at Dartmouth in 1861, and at Andover Theological Seminary in 1866; has held pastorates in Manchester, New Hampshire, and New York City (Madison Square Church); and was professor of homiletics at Andover 1880–93.

Tugela (tö-gā′lä). A river in Natal, South Africa, rising in the Drakensberg mountains and flowing southeastwardly into the Indian Ocean. Near Ladysmith, it was the scene of severe fighting in the Boer war (Dec., 1899,–Feb., 1900).

Tuguegarao (tö-gā-gä-rä′ō). A town, the capital of Cagayan province, Luzon, Philippine Islands. It is situated near the Rio Grande de Cagayan, approximately in lat. 17° 37′ 30″ N., long. 121° 38′ 20″ E. Civilized population of municipality (1903), 16,105.

Tulane University of Louisiana. A non-sectarian university located in New Orleans, Louisiana, founded by the State in 1845 as the University of Louisiana. In 1884 it was transferred to the administrators of the Tulane Educational Fund and the name was changed in honor of Paul Tulane, who endowed the academic department. In addition to the usual academic instruction, courses are offered in engineering, law, medicine, pharmacy, and art. There is a separate department for women. The endowment of the university is over $5,000,000, and its annual income exceeds $350,000. Over 1,400 students are in attendance.

Tullianum. See *Mamertine Prison*.

Tunja*. It is now the capital of the department of Tunja.

Tupper*, Sir **Charles.** He was prime minister of Canada in 1896, and leader of the Opposition in the House of Commons 1896–1900.

Turkestan* (Russia). It comprises the provinces of Ferghana, Samarkand, Sir-Daria, and Semiryechensk. Area, 400,770. Population, 5,856,400.

Turkey*. In a war with Greece, 1897, Turkey was victorious. Constitutional government, which had been attempted in 1876 (1876–Feb., 1878), was reëstablished in 1908 as a result of the influence of the Young Turk party. The reactionary attitude of the Sultan, Abdul Hamid II., in the winter of 1909 led to the capture of Constantinople (April 24), by the army of the Young Turks (starting from Salonika) and the deposition of the Sultan (April 27). He was succeeded by his brother Mehmed V

Turks, or **Turk, Islands.** A group of small islands in the Bahamas, north of Haiti The largest is Grand Turk, or Turk island. They are a dependency of Jamaica.

Turner (tėr′nėr), Sir **William.** Born at Lancaster, England, 1832. An English anatomist, principal of the University of Edinburgh from 1903. He was demonstrator of anatomy at Edinburgh 1854–67, and professor of anatomy 1867–1903. He has published numerous technical papers and is editor of the "Journal of Anatomy and Physiology." In 1886 he was made a knight bachelor, and was created K. C. B. in 1901.

Tuskegee (tus-kē′gẹ̄). A town, the capital of Macon County, Alabama, situated on the Tuskegee river. It is the seat of the Alabama Conference Female College, and of the Tuskegee Normal and Industrial Institute founded by Booker T. Washington. Population (1900), 2,170.

Tuskegee (tus-kē′gẹ̄) **Institute.** A non-sectarian institution at Tuskegee Institute, near Tuskegee, Alabama, organized in 1881 by Booker T. Washington for the practical education of the negro race in the United States. It is attended by 1,500 students who receive domestic, agricultural, and mechanical, in addition to academic training. It has an endowment fund of over $1,513,400 and an annual income of over $200,000. The special object of the school is to train negroes to educate their own race.

Tutuila* (tö-tö-ē′lä). It was annexed by the United States in 1900. A naval station has been established there, and the commandant of the station is also governor of the islands.

Twachtman (twoċht′mạ̈n), **John Henry.** Born at Cincinnati, Ohio, Aug. 4, 1853: died at Gloucester, Mass., Aug. 8, 1902. An American painter. He studied art in the Academy at Munich, under Professor Loefftz, and was also a pupil of Frank Duveneck. His work is based on modern impressionist principles treated with great breadth and fine feeling.

Tweedmouth, Lord. See *Marjoribanks*

Two Thousand Guineas. A race for three-year-old colts and fillies, established in 1809 and run annually at Newmarket, England, on a Wednesday during the Spring Meeting. The name does not represent the entire value of the stakes, which is usually about five thousand pounds. It is run over the Rowley Mile (which see).

Tyler*, **Moses Coit.** Died Dec. 28, 1900.

Ubangi-Shari-Chad Colony. A colony of the French Kongo, formed in 1906. Capital, Fort-de-Possel.

Uganda* (ö-gän′dä). A protectorate in British East Africa, at the northwest end of Lake Victoria, bordering on German East Africa on the south and the Kongo State on the west. It was definitely placed in the British sphere of influence in 1890. In March, 1893, the British East Africa Company retired from Uganda. It is divided administratively into 5 provinces: Eastern Province (Karamojo, Busoga, Bukedi, and Lobor), Rudolf Province (Turkwel, Turkana, and Dabossa), Northern Province (Bari, Unyoro, Achole, Latuka, and Lango), Western Province (Toro and Ankole), and the kingdom of Uganda. The seat of government is Entebbe. The capital of Uganda proper is Kampala. A railway has been built between Uganda and Mombasa in the East Africa Protectorate. Area, about 117,681 square miles. Population, estimated, over 3,000,000. Altitude of plateau, about 4,000 feet. See *Ganda*.

Ujfalvy*, Charles Eugène. Died at Florence, Jan. 31, 1904.

Ukamba (ö-käm′bä). A province of the East Africa Protectorate. It comprises the districts of Kitui, Kikuyu, and Ulu. Capital, Nairobi.

Undercliff. A region in the Isle of Wight, lying along the English Channel from Bonchurch to Blackgang Chine. It is a rocky plateau from one quarter to one and one half miles in width and from six to seven miles in length, due to a series of landslides. It is remarkable for its beauty and mild climate.

Ungava (ung-gä′vä). A province of Canada, comprising the northern part of the Labrador Peninsula except the Atlantic sea-coast. Area, 349,109 square miles. Population (1901), 5,113.

Union (ū′nyọn). A town in Hudson County, New Jersey. It has manufactures of silk, cotton, cotton-seed oil, etc. The water-works and the electric-light plant are owned by the town. Population (1900), 15,187.

Union, La. See *La Union*.

Union College. A college at Schenectady, New York, chartered in 1795 with full university powers. In 1873 the Albany Medical College, the Albany Law School, and the Dudley Observatory (at Albany) were incorporated with Union College as Union University. The Albany College of Pharmacy was incorporated as a department in 1881. The number of students in the university is 690, in the college over 334. The college offers courses leading to the degrees of A.B., Ph.B., B.S., B.E., M.C.E., and M.E.E.

Union University. See *Union College*.

United African Company*. It became the National African Company in 1882, and the Royal Niger Company in 1886. In 1900 the territories under its administration came under the protection of Great Britain.

United States*. There are in all 46 States and 4 Territories (New Mexico, Arizona, District of Alaska, and Hawaii), besides the District of Columbia, Porto Rico, the Philippine Islands, Guahan, Tutuila (including the other Samoan Islands east of long. 171° W.), and the Isthmian Canal Zone. Oklahoma and Indian Territory were admitted to the Union as the State of Oklahoma Nov. 16, 1907. The largest cities are New York, Chicago, Philadelphia, and St. Louis. Congress consists of a Senate, 2 members of which are returned by each State, and a House of Representatives, at present (1909) of 391 members, returned by the States in the proportion of one for about every 194,182 inhabitants. The Spanish-American War took place in 1898, resulting in the acquisition of Porto Rico, Guahan, and the Philippine Islands. Tutuila and the other Samoan Islands were assigned to the United States in 1900. The Panama Canal Zone was ceded to the United States by the Republic of Panama in 1904. Population (1909), including Alaska, Philippines, Porto Rico, Hawaii, Guahan, and American Samoa, estimated, 96,250,000.

United States Christian Commission. An organization, formed in November, 1861, by members of the Young Men's Christian Association, for the purpose of promoting the physical and spiritual welfare of the Federal soldiers and sailors in the American Civil War. The public responded to the request for contributions, and besides money, etc., nearly $3,000,000 worth of stores were given. About a million and a half Bibles and Testaments were distributed, besides much other reading matter, and upward of 5,000 delegates carried on the active work of the organization. It received government support.

United States of South Africa. The federal union of the British self-governing colonies in South Africa, the Transvaal Colony, Cape Colony, Orange River Colony, and Natal. A convention, attended by delegates from the different colonies, was held in 1908 for the purpose of drafting a constitution, etc. Resolutions in favor of the union were carried by the assemblies of the colonies and confirmed by the referendum held in June, 1909. A bill was referred to the Imperial Parliament at London for ratification and passed Aug. 19, 1909. Provision was made for the future admission of Rhodesia.

University College*. It is now incorporated in the University of London.

University of Alabama. A State institution of learning, situated near Tuscaloosa, Ala. It was opened in 1831 and now consists of three departments: the department of academic instruction; the department of professional instruction, comprising the departments of education, engineering, law, medicine (at Mobile), and pharmacy (at Mobile); and the summer school for teachers (established in 1904). There are about 600 students in the first two departments and about 300 in the summer school.

University of Birmingham. A university at Birmingham, England, incorporated by royal charter March 24, 1900. It is an outgrowth of Mason University College, Birmingham (founded in 1875), and has besides the endowment of that university (£200,000) upward of £500,000. The university includes faculties of science, arts, medicine, and commerce, and is attended by about 1,000 students. It grants degrees to women.

University of California. A State university established in 1868 as the outgrowth of the College of California (established in 1860). It comprises the following departments: at Berkeley, California, philosophy, education, jurisprudence, history, political science, economics, anthropology, music, Semitic languages, Oriental languages, Sanskrit, Greek, Latin, English, German, Romanic languages, Slavic languages, mathematics, physics, astronomy, geography, chemistry, botany, zoölogy, physiology, hygiene, geology, mineralogy, mechanical and electrical engineering, civil engineering, irrigation, mining and metallurgy, drawing, architecture, agriculture, horticulture, entomology, military science and tactics, and physical culture; at Mount Hamilton, the Lick Observatory; at Santiago, Chile, the D. O. Mills Observatory; at Davis, Cal., the university farm; at San Diego and Pacific Grove, marine laboratories; and at San Francisco, the San Francisco Institute of Art and the colleges of law, medicine, dentistry, and pharmacy. About 3,500 students are in attendance. The endowment exceeds $5,000,000; the annual income exceeds $1,250,000.

University of Cincinnati. A university at Cincinnati, Ohio, founded by the will of Charles McMicken in 1858 and opened (with aid from the city) in 1873. It comprises the college of liberal arts, the graduate department, the college of engineering, the college of medicine, the college of law, and the department of clinical medicine. It is attended by about 1,300 students and has an endowment of $1,600,000 and an annual income of over $250,000.

University of Georgia. A State institution situated at Athens, Georgia. It consists of the Franklin College (the college of arts: chartered in 1785, and established in 1801), the Georgia State College of Agriculture and the Mechanic Arts (the college of science: established 1872), graduate schools, a law department, and a pharmacy department. The enrolment of students at Athens is 500. The following are branches of the university and under the general control of its trustees: the Georgia Medical College, at Augusta (established in 1829); the North Georgia Agricultural College, at Dahlonega (established in 1871); the Georgia School of Technology, at Atlanta (established in 1885); the Georgia Normal and Industrial College for Girls, at Milledgeville (established in 1889); the Georgia Industrial College for Colored Youths, near Savannah (established in 1890); and the State Normal School, near Athens (established in 1895). The total enrolment of students is about 3,500.

University of Kansas. A State institution of learning, at Lawrence, Kansas, organized in 1864 and opened in 1866. Besides the college of liberal arts and sciences it comprises schools of engineering, law, pharmacy, the fine arts, medicine, a graduate school, and a summer session. About 2,260 students are enrolled.

University of Nebraska. A State university situated at Lincoln, Nebraska, founded in 1869. It comprises a graduate college, a teachers' college, a college of arts and sciences, a college of agriculture, a college of engineering, a college of law, a college of medicine, a school of fine arts, an affiliated school of music, and a summer session. Under the charge of the regents of the university are also the Nebraska agricultural experiment stations, the State museum, the botanical and geological surveys, and the superintendency of the farmers' institutes. The students number over 3,400.

University of North Carolina. A non-sectarian institution of learning situated at Chapel Hill, North Carolina, founded in 1789 and opened in 1795. It offers courses in arts, philosophy, science, law, medicine, and pharmacy. In 1908–09 the teaching staff numbered 92 and the student body 794.

University of Sheffield. A university situated at Sheffield, Yorkshire, England, chartered May 31, 1905. It is the outgrowth of University College, Sheffield (incorporated in 1897), which was formed by the amalgamation of Firth College (founded in 1879), the Sheffield School of Medicine (founded in 1828), and the Sheffield Technical School. The new buildings, situated near Weston Park, Sheffield, were opened in 1905. The university, while offering courses in arts, science, medicine, and law, specializes in applied science (metallurgy and engineering). It is attended by 734 day and 1,436 evening students, and degrees are granted without distinction of sex.

University of Tennessee. A State university situated at Knoxville, Tennessee. Blount College (chartered in 1794) was merged with East Tennessee College (chartered in 1807), which became East Tennessee University in 1840 and the University of Tennessee in 1879. It comprises a graduate department, a college of liberal arts, a college of engineering, a college of agriculture, an industrial department for colored students in Knoxville College, a law department, a medical department, a school of pharmacy, and a dental department. The departments of medicine and dentistry are situated in Nashville. It is attended by more than 700 students.

University of Texas. A State coeducational institution of learning, opened in 1883. It consists of the main university, situated at Austin (made up of the College of Arts and the departments of engineering, law, and education), and the department of medicine, situated at Galveston. The total attendance of students is 2,462.

University of Toronto. An institution of learning in Toronto, Canada, established in 1827 by royal charter as King's College, the name being changed to that of the University of Toronto in 1849. It has six faculties: arts, medicine, applied science and engineering, household science, education, and forestry. The following universities and colleges are federated or affiliated with it: (federated) the universities of Victoria and Trinity; (federated) the colleges of Knox, Wycliffe, and St. Michael's; and (affiliated) Albert College, Ontario Agricultural College, Royal College of Dental Surgeons, Toronto College of Music, Ontario College of Pharmacy, Toronto Conservatory of Music, Hamilton Conservatory of Music, Western Canada College, Columbian Methodist College, Ontario Veterinary College, Ontario Ladies' College, Alma College, and St. Hilda's College. The number of students is about 3,900.

Unyoro*. It is now a district of the Northern Province of the Uganda Protectorate.

Upham (up′am), **Warren.** Born at Amherst, N.H., March 8, 1850. An American geologist, secretary and librarian of the Minnesota Historical Society (St. Paul) from 1895. He was assistant on the Geological Survey of New Hampshire 1875–78; of Minnesota 1879–85, and 1893–94; and of the United States 1885–95. His investigations have been concerned chiefly with glaciology. Among his publications are "The Glacial Lake Agassiz" (1895), "Greenland Ice-fields" (1896: with G. F. Wright), and many geological reports and papers in scientific magazines. He has edited the Minnesota Historical Society "Collections," vols. 8–10 (1898–1905), contributing papers on Groseilliers and Radisson, the first white men in Minnesota, and the progress of the discovery of the Mississippi river.

Upjohn (up′jon), **Richard.** Born at Shaftesbury, England, Jan. 22, 1802: died at Garrison's, Putnam County, N. Y., Aug. 16, 1878. An American architect. He came to America in 1829 and in 1839 came to New York to undertake alterations in the old Trinity Church building. This project was soon abandoned, however, and the construction of the present church was intrusted to him. He was one of the founders of the American Institute of Architects and its first president 1857–1876.

Upjohn (up′jon), **Richard Mitchell.** Born at Shaftesbury, England, March 7, 1828: died at Brooklyn, N. Y., March 4, 1903. An American architect, son of Richard Upjohn. Among the buildings which he designed are St. Paul's Church in Brooklyn, the Central Congregational Church in Boston, St. Peter's Church in Albany, the Capitol building in Hartford, Connecticut, and the Cathedral in Fond du Lac, Wisconsin.

Upolu*. Upolu and Savaii were awarded to Germany by the Anglo-German agreement of Nov. 14, 1899.

Upper Nile. One of the provinces of the Anglo-Egyptian Sudan. Capital, Kodok.

Upper Senegal and the Niger. See *Senegal-Niger Colony, Upper*.

Urdaneta (ör-dä-nā′tä). A municipality in the eastern part of Pangasinan province, Luzon, Philippine Islands. Civilized population (1903), 20,544.

Uriu, or Uryu (ŏ′ri-ŏ), **Sotokichi.** Born at Kanazawa, 1854. A Japanese vice-admiral. He studied at the United States Naval Academy; was promoted captain in the Japanese navy in 1891, and rear-admiral in 1900; commanded the squadron which attacked the Russian vessels, the Variag and Korietz, in the harbor of Chemulpo, Feb. 9, 1904; took part in the battle of the Sea of Japan May 27–28, 1905; and was promoted vice-admiral in that year.

Urso (ör′sō), **Camilla** (Mme. **Frederic Luere**). Born at Nantes, France, June 13, 1842: died at New York, Jan. 20, 1902. An Italian violinist. She studied at the Paris Conservatoire, and was a pupil of Massart. She came to America in 1852, playing with great success in the concerts of Mmes. Albani and Sontag. After her marriage she retired, but reappeared in 1863 and played till her later years.

Utah*. It contains 27 counties. It has 3 electoral votes.

Vacherot*, **Etienne.** Died at Paris, July 28, 1897.

Valkyrie III. A cutter built in 1895 for Lord Dunraven to compete for the America's cup. The cup was defended by the Defender. In the first race, Sept. 7, the Defender won; in the second, Sept. 10, the yachts fouled and the race was awarded to the Defender, which was injured, though the Valkyrie's time was 47 seconds less; in the third race the Valkyrie withdrew immediately after crossing the line, while the Defender sailed over the course. The cup was awarded to the latter.

Valnay, Raoul. A pseudonym of A. M. É. Hervé.

Valparaiso*. It was visited by a destructive earthquake Aug. 17, 1906.

Vanderbilt University*. It has 115 instructors and over 900 students.

Van der Poorten-Schwartz*, **Joost Marius Willem.** Born at Amsterdam, Aug. 15, 1858. His later works include "My Lady Nobody" (1895), "Her Memory" (1898), "Some Women I Have Known" (1901), "My Poor Relations" (1903), "Dorothea" (1904), "The Healers" (1906), "The Woman's Victory" (1906), and "The New Religion" (1907). His "The Jail-bird," a one-act play, was produced in 1904.

Van Dyck (van dīk′), **Cornelius Van Alen.** Born 1818: died 1895. An eminent American Orientalist and Congregational missionary. He was stationed at Beirut, Syria, and after the death of Eli Smith in 1857 undertook the completion of the latter's translation of the Bible into Arabic. He was manager of the Mission Press at Beirut 1857–80. He gave instruction in Hebrew in Union Theological Seminary, New York, 1866–67.

Van Dyke (van dīk′), **Henry.** Born at Germantown, Pa., Nov. 10, 1852. An American clergyman, educator, and author, professor of English literature in Princeton University from 1900. He was pastor of the United Presbyterian Congregational Church, Newport, R. I., 1878–82 and of the Brick Presbyterian Church, New York, 1883–1900, and in 1902. He is the author of "The Poetry of Tennyson" (1889), "Little Rivers" (1895), "The Story of the Other Wise Man" (1896), "The Gospel for an Age of Doubt" (1896), "The First Christmas Tree" (1897), "The Builders, and Other Poems" (1897), "Ships and Havens" (1897), "The Lost Word" (1898), "The Gospel for a World of Sin" (1899), "Fisherman's Luck" (1899), "The Toiling of Felix, and Other Poems" (1900), "The Ruling Passion" (1901), "The Blue Flower" (1902), "Music, and Other Poems" (1904), "The School of Life" (1905), "Essays in Application" (1905), "House of Rimmon" (1908), "Out of Doors in the Holy Land" (1908), etc.

Vane-Tempest-Stewart*, **Charles Stewart,** sixth Marquis of Londonderry. He was postmaster-general 1900–02, president of the board of education 1902–05, and lord president of the council 1903–05.

Van Hise (van hīs′), **Charles Richard.** Born at Fulton, Wisconsin, May 29, 1857. An American geologist, president of the University of Wisconsin from 1903. He was connected as assistant professor and professor with the university 1883–1903; was non-resident professor of structural geology in the University of Chicago 1892–1903; and has served as assistant geologist and geologist in the United States Geological Survey from 1883. He has published a treatise on metamorphism, and other scientific works and papers.

Van Horne (van hôrn′), Sir **William Cornelius.** Born near Joliet, Ill., Feb. 3, 1843. An American administrator of railroads. He entered the railroad service in 1857 and held various supervising and executive positions in connection with railroads in the United States 1867–81, but is most closely identified with the Canadian Pacific Railway, of which he was general manager 1881–84, vice-president 1884–88, president 1888–99, and chairman of the board of directors 1899–. He was created knight commander (honorary) of the Order of St. Michael and St. George in 1894.

Van Laun (van lân′), **Henri.** Born in Holland, 1820: died at London, Jan. 19, 1896. A British author and educator. He was educated in France; in 1848 settled in England; and was French master successively at King William's College, Isle of Man, at Cheltenham College, and at the Edinburgh Academy. Later, in London, he was for twenty years examiner in French for the civil service commission and the War Office. Among his works are a number of text-books, a "History of French Literature" (1876–77), "The French Revolutionary Epoch" (1878), and translations of Taine's "History of English Literature" (1871), Molière's works (1875–76), the "Caractères" of La Bruyère (1885), and "Gil Blas" (1886).

Van Rensselaer (van ren′se-lėr), Mrs. (**Mariana Griswold**). Born at New York. A contemporary American art critic and author. Among her works are "Henry Hobson Richardson and his Work" (1888), "English Cathedrals" (1893), "Six Portraits" (1889), "Art Out of Doors" (1893), "One Man Who Was Content" (1896), "History of the City of New York in the Seventeenth Century" (1909).

Vapereau*, **Louis Gustave.** Died April 18, 1906.

Varela*, **Hector Florencio.** Died 1891.

Vaux*, **Calvert.** Died at Bensonhurst, N. Y., Nov. 19, 1895.

Veintemilla*, **Ignacio.** Died July 19, 1909.

Veitch (vēch), **John.** Born at Peebles, Scotland, Oct. 24, 1829: died there, Sept. 3, 1894. A Scotch philosophical writer and historian, professor of logic, rhetoric, and metaphysics at St. Andrews 1860–64 and of logic and rhetoric at Glasgow 1864–94. He wrote "The Tweed, and Other Poems" (1875), "The Feeling for Nature in Scottish Poetry" (1887), "Merlin, and Other Poems" (1889), "The History and Poetry of the Scottish Border" (1893), "Dualism and Monism" (1895), etc.

Veitch (vēch), **William.** Born at Spittal-on-Rule, Roxburghshire, 1794: died at Edinburgh, July 8, 1885. A Scotch classical scholar. He was educated at Edinburgh, and worked as a private tutor at the university. He is best known for his work on "Greek Verbs, Irregular and Defective" (1848).

Venables (ven′a-blz), **George.** Born 1821: died Dec. 30, 1906. An English clergyman, canon of Norwich from 1881. He published a number of works on ecclesiastical and religious themes.

Venezuela*. It is now divided into 13 states, Aragua, Bermudez, Bolivar, Carabobo, Falcon, Guarico, Lara, Merida, Miranda, Tachira, Trujillo, Zamora, and Zulia; five territories, Amazonas, Colon, Cristobal Colon, Delta Amacuro, and Yuruari; and a federal district, the city of Caracas. The executive is vested in a president chosen for 6 years and 7 responsible ministers. See *Schomburgk line.* Population, 2,644,298.

Venn*, **John.** Born 1834: died 1883.

Verde (vãr′dã) **Island Passage.** A strait in the Philippine Islands, separating the southern coast of Luzon and the northern coast of Mindoro.

Verdi*, **Giuseppe.** Died at Milan, Jan. 27, 1901.

Vereshchagin*, **Vasili.** Died off Port Arthur, April 13, 1904. He was killed in the destruction of the Russian battle-ship Petropavlosk.

Verhaeren (vãr-hä′ren), **Émile.** Born at Saint-Armand, Belgium, May 21, 1855. A noted Flemish poet and dramatist. His verse includes "Les flamandes" (1880), "Les moines" (1886); a trilogy of life, "Les soirs" (1887), "Les débâcles" (1888), and "Les flambeaux noirs" (1890); "Les apparus dans mes chemins" (1891), "Les campagnes hallucinées" (1893), "Les villages illusoires" (1895), "Les villes tentaculaires" (1895), "Les heures claires" (1899), "Petites légendes" (1900), and "Forces tumultueuses" (1902). He has also written lyrical dramas, "Les aubes" (1898), "Le cloître" (1900), and "Philippe II." (1901).

Verlaine*, **Paul.** Died at Paris, Jan. 8, 1896.

Verne*, **Jules.** Died at Amiens, March 24, 1905.

Vernon-Harcourt. See *Harcourt.*

Vesuvius*, **Mount.** A notable eruption took place in 1906.

Via Sacra (vī′ä̤ sä′krä̤). [L., 'Sacred Way.'] A street in Rome leading from the arch of Titus, by the Forum, to the Capitol, along which public processions passed.

Vibert*, **Jehan Georges.** Died at Paris, July 27, 1902.

Viccmte de Bragelonne (vē-koṅt′ dė bräzh-lon′). A novel by Dumas père, published 1848–50: a sequel to "Vingt ans après" (which see).

Victor Emmanuel (or **Emanuel**) **III.** Born at Naples, Nov. 11, 1869. King of Italy. He ascended the throne on the death of his father, Humbert I., July 29, 1900.

Victoria*: full name **Alexandrina Victoria.** Queen of England. Died at Osborne House, Isle of Wight, Jan. 22, 1901.

Victoria*. It is now a state of the Commonwealth of Australia. The state is represented in the federal parliament by 6 senators and 22 representatives.

Victoria and Albert Museum. The name by which since 1899 the South Kensington Museum has been known. See *South Kensington Museum.*

Victoria Eugénie Julia Ena (vik-tō′ri-ä̤ ū-zhā′nē̤ jö′lyä̤ ē′nä̤). Born at Balmoral Castle, Scotland, Oct. 24, 1887. Daughter of Prince Henry of Battenburg (1858–96) and Princess Beatrice of Great Britain, and wife of Alfonso XIII., king of Spain, whom she married May 31, 1906.

Victoria University. An English institution of learning founded in 1880, originally a federal university consisting of Owens College, Manchester, University College, Liverpool, and Yorkshire College, Leeds. In 1903 a separate charter was granted for a University of Liverpool and in 1904 for a University of Leeds. The Victoria University was reconstituted in 1903 under the title of the 'Victoria University of Manchester,' and Owens College was incorporated with it in 1904.

Vienna*, **University of.** The teachers number over 600 and the students over 7,000.

Vierge (vē-ãrzh′), **Daniel Urrabieta.** Born at Madrid, Spain, March 5, 1851: died at Boulogne-sur-Seine, May 10, 1904. A Spanish painter and illustrator. Shortly before the war of 1870 he went to Paris and found employment on the illustrated papers. In 1876 his illustrations (1,000 drawings) for Michelet's "History of France" were published. By a paralytic stroke he lost the use of his right hand, substituted the left, and thereafter produced several of his most important works — illustrations for "Pablo de Segovia," "On the Trail of Don Quixote" (published in America), "Lazarillo de Tormes," "Bachelier de Salamanque," and a 4-volume edition of "Don Quixote."

Vigan (vē′gän). A town, the capital of Ilocos Sur province, Luzon, Philippine Islands, on the Abra river not far from the coast, in lat. 17° 35′ N., long. 120° 25′ E. Population (1903), 5,749.

Vilas*, **William Freeman.** Died at Madison, Wis., Aug. 27, 1908. He was senator from Wisconsin 1891–97.

Villari*, **Pasquale.** Born at Naples, Oct. 3, 1827. From 1866–1906 he was professor at the Institute of Higher Studies at Florence. He was elected senator in 1884, was minister of public instruction 1891–92. His later works include "Arte, storia, e filosofia" (1884), "Saggi storici e critici" (1890), "I primi due secoli della storia di Firenze" (1893), "Scritti vari" (1894), "Le invasioni barbariche in Italia" (1900), "Scritti sulla questione sociale in Italia" (1902), "Discussioni critiche e discorsi" (1905).

Villiers (vil′yėrz), **Frederic.** Born at London, April 23, 1852. An English journalist, artist, and lecturer. He was educated in France and studied also at the South Kensington School of Art and the Royal Academy. Since 1896 he has been war-correspondent for various journals in most of the important campaigns of the time. His publications include "Pictures of Many Wars" (1902), and "Port Arthur" (1905).

Vincent (vin′sẹnt), **John Heyl.** Born at Tuscaloosa, Ala., Feb. 23, 1832. An American clergyman and educator, bishop of the Methodist Episcopal Church and one of the founders of the Chautauqua Assembly (1874). He is also the originator and chancellor of the Chautauqua Literary and Scientific Circle (1878). He has published "The Modern Sunday School," "Studies in Young Life," "Our Own Church," "The Church School and Its Officers," "Sunday School Institutes and Normal Classes," "The Chautauqua Movement," etc.

Vincent (vin′sẹnt), **Marvin Richardson.** Born at Poughkeepsie, N. Y., Sept. 11, 1854. An American clergyman, author, and educator, professor of New Testament exegesis and criticism in Union Theological Seminary from 1888. He was graduated at Columbia in 1854, and entered the ministry of the Methodist Episcopal Church in 1860 and that of the Presbyterian Church in 1865. From 1858 to 1862 he was professor of Latin in Troy University, New York. He is the author of "Word-Studies in the New Testament" (1887–1900), "The Age of Hildebrand" (1896), etc.

Viner (vī′nėr), **Charles.** Born at Salisbury, England, 1678: died at Aldershot, June 5, 1756. An English jurist, founder of the Vinerian common-law professorship, scholarships, and fellowships at Oxford University. He published "A General Abridgment of Law and Equity" in 23 volumes (1742–53).

Vinton (vin′tọn), **Frederic Porter.** Born at Bangor, Maine, Jan. 29, 1846. An American painter. He was a pupil of William Morris Hunt and Dr. William Rimmer in Boston, and studied also in the Royal Academy in Munich and under Léon Bonnat and Jean Paul Laurens in Paris. In 1880 he was elected a member of the Society of American Artists and in 1891 of the National Academy of Design, and has painted many important portraits.

Viotti (vē-ot′tē), **Giovanni Battista.** Born at Fontanetto, Piedmont, May 23, 1753: died at London, March 3, 1824. An Italian violinist and composer for the violin. He exerted a notable influence upon the modern style of violin playing. His time was spent chiefly in Paris and London, where he was engaged partly in managing operatic enterprises. His concertos for the violin are still valued.

Virchow*, **Rudolf.** Died at Berlin, Sept. 5, 1902. He was professor at the University of Berlin 1856–1902; and was a member of the Prussian Landtag 1862–1902, and of the German Reichsrat 1880–93.

Virginia*. It has 100 counties.

Visayan (vē-sä′yạn) **Islands.** A group of islands in the Philippines, lying south of Luzon and north of Mindanao. The most important of them are Bohol, Cebu, Leyte, Masbate, Negros, Romblon, and Samar. See *Bohol, Cebu,* etc. Also *Bisayas.*

Visayan (vē-sä′yạn) **Sea.** The northern part of the sea inclosed by the Philippine Islands, the Sulu Archipelago, and Borneo. It is connected on the east by the Straits of San Bernardino and San Juanico with the Pacific Ocean, and on the west by Mindoro Strait and Verde Island Passage with the China Sea.

Viti Levu*. Area, 4,250 square miles.

Vittoria (vit-tō′ri-ä̤). A novel by George Meredith, published in 1866. It is a sequel to "Sandra Belloni." The scene is the Italian insurrection of 1848.

Vittorio Emanuele III. See *Victor Emmanuel III.*

Vivien de Saint-Martin*, **Louis.** Died at Paris, Jan. 3, 1897.

Vizcaya (vēth-kä′yä). A Spanish armored cruiser of 7,000 tons and a nominal speed of 20 knots. She was a sister ship of the Almirante Oquendo and the Infanta Maria Teresa. Under Captain Eulate she surrendered to the Iowa off Aserraderos, Santiago de Cuba, July 3, 1898.

Vladivostok*. It is a terminus of the Trans-Siberian Railway.

Voigt (foigt), Frau (**Johanna Ambrosius**). Born at Lengwethen, East Prussia, Aug. 3, 1854. A German poet. She is the daughter of a mechanic, and her only education was obtained from a village school, which she attended until her eleventh year. In 1905 her collected poems ("Gedichte") reached the 41st edition. A second volume appeared in 1897.

Voisin (vwo-zañ′), **Gabriel**. Born at Lyon, France, Feb. 5, 1889. A French aviator. He made his first aëronautical apparatus — which was tried over the waters of the Seine — under the patronage of M. Archdeacon in 1903–04. With his brother Charles he established the first aëroplane factory and constructed the biplanes used by Farman, Delagrange, and Paulhan. On July 25, 1909, he was made chevalier of the Legion of Honor and divided with M. Bleriot the Osiris prize of 100,000 francs which was given this year (1909) for the most notable contribution to aëronautics.

Vokes*, Rosina. Died at Babbacombe, near Torquay, Jan. 29, 1894.

Volcan (vōl-kän′). An island in Lake Bombon, southern Luzon, Philippine Islands. It is the seat of Taal volcano. The name is also applied to the volcano itself.

Vollon*, Antoine. Died at Paris, Aug. 27, 1900.

Volsungs. See *Volsunga Saga.*

Voorhees*, Daniel Wolsey. Died April 10, 1897. He was United States senator from Indiana 1877–97.

Vorarlberg*. It sends 4 members to the Reichsrat, and has a Diet of 24 members.

Voynich (voi′nich), Mrs. (**Ethel Lilian Boole**). Born 1864. An English novelist, daughter of the mathematician George Boole. She has written "The Gadfly" (1897), "Jack Raymond" (1901), and "Olive Latham" (1904).

Vries (vrēs), **Hugo de.** Born at Haarlem, Feb. 16, 1848. An eminent Dutch botanist, professor of plant anatomy and physiology in the University of Würzburg. He is noted for his contributions to the theory of evolution and especially for his researches on mutation in plants. He studied at the universities of Leyden, Heidelberg, and Würzburg, and became professor of botany at the University of Amsterdam in 1878, and at the University of Würzburg in 1897. He has published various works on botanical subjects, among them "Eine Methode zur Analyse der Turgorkraft" (1884), "Plasmolytische Studien über die Wand der Vacuolen" (1885), "Leerboek der Plantenphysiologie" (1885), "Intracellulare Pangenesis" (1889), "Monographie der Zwangsdrehungen" (1892), "Die Mutationstheorie" (1900–03), "Species and Varieties" (1905), "Plant Breeding" (1907), etc.

Wabash College. An institution of learning in Crawfordsville, Indiana, founded in 1832 by four pioneer missionaries and three elders of the Presbyterian Church, and chartered in 1834. It is attended by about 300 students, and has an endowment of about $500,000.

Wace (wās), **Henry.** Born at London, Dec. 10, 1836. An English scholar, dean of Canterbury from 1903. He was principal of King's College, London, 1883–97, and rector of St. Michael's, Cornhill, London, 1896–1903. With Sir William Smith he edited the "Dictionary of Christian Biography" (1877–87).

Wadai*. In 1903 it became a French protectorate. The capital is Abeshr. Area, about 170,000 square miles. Population, about 2,000,000.

Waganda (wä-gän′dä). The most important of the native Bantu tribes of the former kingdom of Uganda, now included in the Uganda Protectorate.

Wagner (väg′ner), **Charles.** Born in Alsace, Jan. 3, 1852. A Protestant pastor and author. He was graduated at the Sorbonne in 1869; studied theology in Strasburg and Gottingen; and went to preach in Paris in 1882. In 1904 he made a lecture-tour of the United States. Translations of his works have been published as "Youth," "The Soul of Things," "By the Fireside," "The Better Way," "The Simple Life," "On Life's Threshold," "The Gospel of Life," "Wayside Talks," etc.

Wahsatch Mountains*. According to the United States Geographic Board, the Wahsatch range includes on the north the Bear River Range, extending to the bend of Bear river at Soda Springs, Idaho, and on the south extends to the mouth of San Pete river near Gunnison, Utah. The highest point, Mount Nebo, is 11,680 feet high.

Wainwright (wān′rīt), **Richard.** Born at Washington, D. C., Dec. 17, 1849. An American naval officer, promoted rear-admiral in 1908. He was graduated at the United States Naval Academy in 1868; was executive officer of the Maine when she was blown up in the harbor of Havana; and commanded the Gloucester in the battle of Santiago, July 3, 1898, being engaged with the Spanish destroyers.

Wake (wāk) **Island.** An island in the Pacific Ocean, situated in lat. 19° 12′ N., long. 167° 35′ E. It belongs to the United States.

Walcott (wâl′kot), **Charles Doolittle.** Born at New York Mills, N. Y., March 31, 1850. An American geologist and paleontologist, secretary of the Smithsonian Institution 1907–. He has been connected with the Survey since 1879; was director of the United States Geological Survey 1894–1907; was secretary of the Carnegie Institution 1901–05; and has been honorary curator of the department of paleontology in the United States National Museum since 1892. His researches have related chiefly to the stratigraphy and paleontology of the Lower Paleozoic formations.

Waldeck-Rousseau (väl-dek′rö-sō′), **Pierre Marie.** Born at Rennes, Dec. 2, 1846: died at Paris, Aug. 10, 1904. A French barrister and statesman. He was counsel for de Lesseps in the Panama case; was member of the Chamber of Deputies for Rennes 1879–89; and in 1891 was elected to the Senate. He was minister of the interior under Gambetta 1881–82 and under Ferry 1883–85, and president of the council (premier) and minister of the interior 1899–1902.

Waldersee*, Count **Alfred von.** Died at Hannover, March 5, 1904. He was inspector-general of the 3rd army corps in 1898, became field-marshal in 1899, and was commander-in-chief of the European forces in China in 1900.

Walfish Bay*. The territory of Walfish Bay is a part of Cape Colony. Area, 430 square miles. Population, 997.

Walford (wâl′fōrd), Mrs. (**Lucy Bethia Colquhoun**). Born at Portobello, Scotland, April 17, 1845. A British novelist. Her works include "Mr. Smith" (1874), "Pauline" (1877), "The Baby's Grandmother" (1885), "A Mere Child" (1888), "One of Ourselves" (1900), "Charlotte" (1902), "The Stay-at-Homes" (1903), "Leonore Stubbs" (1908), etc.

Walke*, Henry. Died March 8, 1896.

Walker*, Francis Amasa. Died at Boston, Jan. 5, 1897.

Walker (wâ′kėr), **Frederick.** Born at London, May 26, 1840: died at Saint Fillans, Perthshire, Scotland, June 4, 1875. An English painter and illustrator. In 1863 he exhibited his first oil-painting at the Royal Academy, and in 1871 was elected an associate of that institution. Two of his pictures are in the National Gallery.

Walker (wâ′kėr), **Henry Oliver.** Born at Boston, Mass., May 14, 1843. An American artist, a pupil of Bonnat. He is best known for his mural paintings.

Walker (wâ′kėr), **Horatio.** Born at Listowel, Canada, 1858. An American painter, the son of an English army officer. He has found his material in Canada, where he has been attracted by the French inhabitants, who have retained much of the character of the peasantry of France. The formation of his style has been most influenced by Millet and Troyon, especially the latter. He was elected a member of the National Academy of Design in New York in 1891, and is also a member of the Royal Institute of Painters in Water-colour in London, and was a member of the Society of American Artists in New York, etc.

Wallace*, Alfred Russel. His later works include "Darwinism" (1889), "The Wonderful Century" (1898), "Studies, Scientific and Social" (1900), "Man's Place in the Universe" (1903), "My Life" (1905), "Is Mars Habitable?" (1908), etc.

Wallace*, Sir **Donald Mackenzie.** Born Nov. 11, 1841. He was knighted in 1887. He wrote also "Egypt and the Egyptian Question" (1883), and "The Web of Empire" (1902), and edited the tenth edition of the "Encyclopædia Britannica."

Wallace*, Lewis. Died at Crawfordsville, Ind., Feb. 15, 1905.

Wallace (wol′ās), **William Vincent.** Born at Waterford, Ireland, July 1, 1813: died at Château de Bagen, in the Pyrenees, France, Oct. 12, 1865. A violinist and composer. His English operas, "Maritana" (1845) and "Lurline" (1860), were the most successful of his works, though many of his piano pieces were popular at one time.

Wallace Collection, The. A collection of paintings and other works of art at Hertford House, London, presented to the British nation by the will of Lady Wallace (died 1897). It was formed by Francis Charles, third Marquis, and Richard, fourth Marquis of Hertford, and was willed to and enlarged by Sir Richard Wallace. It is especially famous for its fine examples of French paintings of the eighteenth century, and contains also good Italian paintings (including important works by Canaletto and Francesco Guardi), and Spanish, Dutch, English, and modern French pictures. The collection is especially strong in its examples of the secondary arts of France (Limoges enamels, Sèvres porcelains, snuff-boxes, etc). There are many miniatures and fine bronzes by French sculptors of the eighteenth century.

Wallis (wol′is) **Archipelago.** A group of islands in the South Pacific, northeast of Fiji, forming a dependency of New Caledonia. The islands were placed under French protection in 1887. Area, 40 square miles. Population, about 4,500.

Wallon*, Henri Alexandre. Died at Paris, Nov. 13, 1904.

Walrus Island. A small islet of the Pribylof group, lying about seven miles off the shore of St. Paul Island. It is a narrow ridge of rock about half a mile in length by a few hundred yards in width, the home of countless sea-birds and once occupied by the walrus as a breeding-ground.

Walter (wâl′tėr), **Thomas Ustick.** Born at Philadelphia, Sept. 4, 1804: died there, Oct. 30, 1887. An American architect. He designed Girard College, in Philadelphia, one of the finest monuments in America, in 1833, and, by appointment of President Fillmore, superseded Robert Mills as architect of the United States Capitol in Washington, June 10, 1851. To the old building of Charles Bulfinch he added the two wings for the sessions of the Senate and House of Representatives. He rebuilt the western front, added the library, and in 1855 began the new dome. Suspension of work on the Capitol was ordered in 1861, but the contractors continued until 1865, when the building was completed and Walter retired.

Warburton (wâr′bėr-tọn), **Peter Egerton.** Born at Northwich, Cheshire, Aug. 15, 1813: died at Adelaide, Australia, Dec. 16, 1889. A British military officer and Australian explorer. He entered the army in 1829; went to Australia in 1853 and was appointed commissioner of police for South Australia; was colonel commandant of volunteers 1869–72; and in 1872–74 led an expedition to open up overland communication between South and Western Australia.

Ward*, Adolphus William. He was principal of Owens College, Manchester, 1888–97, and has been master of Peterhouse, Cambridge, since 1900. In 1898 he was Ford lecturer at Oxford.

Ward*, Elizabeth Stuart Phelps. Her later works include "Jack, the Fisherman" (1887), "Austin Phelps, a memoir" (1891), "A Singular Life" (1894), "Chapters From a Life" (1896), "The Story of Jesus Christ" (1897), "Within the Gates" (1901), "Successors to Mary the First" (1901), "Avery" (1902), "Trixy" (1904), "The Man in the Case" (1906), "Walled in" (1907), "Though Life Do Us Part" (1908), "Jonathan and David" (1909), etc.

Ward*, Genevieve (**Lucia Genoveva Teresa Ward,** Countess **Guerbel**). She appeared with Sir Henry Irving in "Becket," "King Arthur," "Richard III.," etc. She appeared as the "Blind Queen" in "The Virgin Goddess" at the Adelphi in 1906, and as "Volumnia" in "Coriolanus" at the Shakspere Festival at Stratford-on-Avon in 1907.

Ward*, Mrs. **Humphry** (**Mary Augusta Arnold**). Her later works include "The Story of Bessie Costrell" (1895), "Sir George Tressady" (1896), "Helbeck of Bannisdale" (1898), "Eleanor" (1900), "Lady Rose's Daughter" (1903), "The Marriage of William Ashe" (1905), "Fenwick's Career" (1906), "William Thomas Arnold, journalist and historian" (1907), "The Testing of Diana Mallory" (1908), "Marriage à la Mode" (1909), etc.

Ward (wârd), **James.** Born at Hull, Jan. 27, 1843. An English philosophical writer, professor of mental philosophy in the University of Cambridge from 1897. He has written "Naturalism and Agnosticism" (1899), and numerous articles and papers on philosophical topics. In 1902 he was elected a fellow of the British Academy.

Ward*, Lester Frank. He was geologist of the United States Geological Survey 1888–1905, and in 1906 became professor of sociology in Brown University. His later works include "Psychic Factors of Civilization" (1893), "Outlines of Sociology" (1898), "Principles of Sociology" (1898), "Pure Sociology" (1903), "Applied Sociology" (1906), etc.

Waring (wãr′ing), **George Edwin.** Born at Poundridge, N. Y., July 4, 1833: died at New York, Oct. 29, 1898. An American sanitary engineer. In 1861 he joined the army; served with distinction through the Civil War; and was mustered out with the rank of colonel. He installed improved methods of drainage and sewerage in many cities, notably in Memphis, Tennessee, after the outbreak of yellow fever in 1878, and the system adopted there, called the 'Waring System,' has been widely copied; was for several years a member of the National Board of Health; and in 1894 was appointed commissioner of street-cleaning for New York City. In 1898 he was made a member of the commission for improving the sanitary condition of Havana and during his stay in that city contracted yellow fever, of which he died. Among his published works are "Sanitary Condition of City and Country Dwelling Houses" (1877), "How to Drain a House" (1885), "Modern Methods of Sewage Disposal for Towns" (1894), etc.

Warman (wär′man), **Cy.** Born at Greenup, Ill., June 22, 1855. An American author and journalist, best known as a writer of railroad stories. Among his works are "Tales of an Engineer" (1895), "The Express Messenger" (1897), "The Story of the Railroad" (1898), "The White Mail" (1898), "Snow on the Headlight" (1899), "Short Rails" (1900), "Frontier Stories" (1901), and "The Last Spike" (1906).

Warner*, Charles Dudley. Died at Hartford, Conn., Oct. 20, 1900.

Warner*, Olin Levi. Died at New York, Aug. 14, 1896.

Warren (wor′en), Sir **Charles.** Born at Bangor, Wales, Feb. 7, 1840. A British general and engineer, commander of the fifth division in the Boer War 1899–1900. He was engaged as commissioner (Griqualand West) and in military operations in South Africa 1876–79; served in the Egyptian campaign in 1882; commanded the Bechuanaland expedition 1884–85; led the troops in the Suakim expedition 1886; and commanded the Metropolitan Police force (London) 1886–88. He served under General Buller in the campaign for the relief of Ladysmith.

Warwick (wär′wik or wor′ik). A town including several villages in Kent County, Rhode Island. It is situated on Narragansett Bay and is divided by the Pawtuxet and Providence rivers. It has large cotton manufactures. Population (1900), 21,316.

Washington*. The State has 37 counties, sends 2 senators and 3 representatives to Congress, and has 5 electoral votes.

Washington*. The White House became too small for the official and social needs of the chief of the government and was remodeled in 1902, the offices being removed to a new executive building. Population of the city, estimated (1909), 340,000.

Washington (wosh′ing-tọn), **Booker Taliaferro.** Born near Hale's Ford, Va., about 1858. An Afro-American educator, author, and lecturer. He was born a slave; worked his way through Hampton Institute; and, after teaching and studying for several years, founded (1881) the Tuskegee Institute for the practical training of negroes, the growth and success of which is largely due to his efforts. He is the author of "The Future of the American Negro" (1899), "Sowing and Reaping" (1900), "Up From Slavery," an autobiography (1900), "Character Building" (1902), "The Story of My Life and Work" (1903), "Working With the Hands: Experiences With Industrial Training at Tuskegee" (1904), "Tuskegee and Its People" (1905), a "Life of Frederick Douglass" (1906), "The Negro in Business" (1907), "The Story of the Negro" (1909), etc.

Washington*, Mount. The height is 6,290 feet.

Washington and Jefferson College*. It is non-sectarian, and is attended by about 440 students.

Washington and Lee University*. It has about 560 students.

Washington University. A non-sectarian institution of learning at St. Louis, Missouri, chartered in 1853 as Eliot Seminary. The name was changed to Washington Institute, and this became in 1857 Washington University. In addition to the college, the institution comprises a law school (organized in 1867), a school of engineering and architecture (founded in 1870), a school of fine arts (founded in 1879), and a school of botany (founded in 1885). The St. Louis Medical College (founded in 1842) was admitted in 1891, and in 1899 the Missouri Medical College (founded in 1840) was united with it to form the medical department. The Missouri Dental College was admitted in 1892. About 850 students attend the university and nearly 1,000 attend the three secondary schools under university control. The endowment is $5,200,000, and the annual net income about $400,000.

Wasielewski (vä-syä-lef′ski), **Wilhelm Joseph von.** Born at Gross Lessen, near Dantzig, Germany, June 17, 1822: died at Sondershausen, Dec. 13, 1896. A German violinist and musical biographer and historian. He wrote the first biography of Schumann (1858), "Die Violine und ihre Meister" (1869), "Die Violine im 17. Jahrhundert" (1874), "Geschichte der Instrumentalmusik im 16. Jahrhundert" (1878), "Schumanniana" (1883), a biography of Reinecke (1892), and "Aus 70 Jahren. Lebenserinnerungen" (1897).

Waters (wâ′tėrz), Mrs. (**Clara Erskine**). Born at St. Louis, Aug. 28, 1834. An American author. She married James Hazen Clement (died 1881), and Edwin Forbes Waters (died 1894), publisher of the Boston "Daily Advertiser." She is the author of "Handbook of Legendary and Mythological Art," "Painters, Sculptors, Architects, Engravers, and their Works," "Artists of the Nineteenth Century" (in collaboration with Laurence Hutton), "Stories of Art and Artists," "Venice, the Queen of the Adriatic," "Naples, the City of Parthenope," "Constantinople," "Rome, the Eternal City," "Eleanor Maitland," a novel, and "Women in the Fine Arts."

Watervliet (wâ′tėr-vlēt). A city in Albany County, New York. It is situated on the Hudson north of Albany. Population (1900), 14,321.

Watrous (wot′rus), **Harry Wilson.** Born at San Francisco, Cal., Sept. 17, 1857. An American painter. He studied at the Académie Julian and the Atelier Bonnat in Paris; was elected associate of the National Academy of Design in 1894, and a member in 1895; and since 1898 has been corresponding secretary of that institution. He won the Clarke prize at the Academy in 1894, and a gold medal at the Louisiana Purchase Exposition in St. Louis in 1904.

Watson (wot′sọn), **John.** Born at Glasgow, Scotland, Feb. 25, 1847. A Scotch philosophical writer, professor of moral philosophy in Queen's University, Kingston, Canada. In 1872 he was appointed professor of logic, metaphysics, and ethics, and, upon the division of the chair, to his present position. He has published "Kant and his English Critics" (1881), "Schelling's Transcendental Idealism" (1882), "The Philosophy of Kant" (1888), "Comte, Mill, and Spencer" (1895), "Hedonistic Theories" (1895), "An Outline of Philosophy" (1898), "The Philosophical Basis of Religion" (1907), "The Philosophy of Kant Explained" (1908), etc.

Watson (wot′sọn), **John:** pseudonym **Ian Maclaren.** Born at Manningtree, Essex, Nov. 3, 1850: died at Mount Pleasant, Iowa, May 6, 1907. A Scottish clergyman and author. He was assistant in churches in Edinburgh and Glasgow; pastor of the Free Church, Logiealmond, Perthshire; and from 1880 to 1905 pastor of the English Presbyterian Church, Sefton Park, Liverpool. He wrote "Beside the Bonnie Brier Bush" (1894), "The Days of Auld Lang Syne" (1895), "The Upper Room" (1896), "The Mind of the Master" (1896), "Kate Carnegie" (1896), "The Cure of Souls" (1896: Yale lectures on Practical Theology), "A Doctor of the Old School" (1897), "The Potter's Wheel" (1897), "Afterwards, and other stories" (1898), "Young Barbarians" (1901), "The Life of the Master" (1901), "The Homely Virtues" (1902), "Our Neighbors" (1903), "God's Message to the Human Soul" (1907: Cole lectures for 1907), "The Scot of the Eighteenth Century" (1907), etc. The University of St. Andrews conferred upon him the degree of Doctor of Divinity in April, 1896.

Watson (wot′sọn), **John Crittenden.** Born at Frankfort, Ky., Aug. 24, 1842. An American naval officer, promoted rear-admiral in 1899. He was graduated at the United States Naval Academy in 1860; served through the Civil War, taking part in the fighting below New Orleans, the passage of the Vicksburg batteries, the battle of Mobile Bay, etc.; was promoted commodore in 1897; during the war with Spain (1898) commanded the blockading squadron on the north coast of Cuba, May–June; and on June 27 was placed in command of the Eastern Squadron. From June 15, 1899,–April 19, 1900, he was commander-in-chief on the Eastern Station. He retired in 1904.

Watson (wot′sọn), **Thomas Edward.** Born in Columbia County, Ga., Sept. 5, 1856. An American politician and historian. He was admitted to the bar in 1875, and was a Democratic member of the Georgia legislature 1882–83, and Populist member of Congress 1891–93. He was nominated for Vice-President at the St. Louis Populist convention which indorsed W. J. Bryan for President in 1896, and was nominated for President by the People's Party in 1904 and polled a popular vote of 117,935. He published at Atlanta "The People's Party Paper," in 1905 began the publication of "Tom Watson's Magazine" in New York, and since 1906 has published "Watson's Jeffersonian Magazine" and "The Weekly Jeffersonian." He has published "The Story of France" (1899), "Napoleon" (1902), "Life and Times of Thomas Jefferson" (1903), "Bethany, a Study and Story of the Old South" (1904), "Life and Speeches" (1908), "Political and Economic Handbook" (1908), "Waterloo" (1908), etc.

Watts*, George Frederick. Born Feb. 23, 1817: died at London, July 1, 1904.

Watts-Dunton (wotz′dun′tọn), **Walter Theodore.** Born at St. Ives, Huntingdon, 1836. An English poet, critic, and novelist. His family surname is Watts, to which he added in 1896 his mother's name of Dunton. He studied law, and practised it for many years, and has been connected as critic with the London "Examiner" since 1874, and with the "Athenæum" since 1875. He made a special study of the folk-lore and customs of the East Anglian and Welsh gipsies, among whom he has lived. He is the author of "Aylwin," a romance (1883), "The Coming of Love," a collection of poems (1897), "The Christmas Dream," a dramatic idyl (1901), "The Renascence of Wonder," a treatise on the romantic movement (1903), and "Studies of Shakespeare" (1903).

Weatherford (weᴛʜ′ėr-fọrd), **William.** Born about 1780: died 1826. A chief of the Creek Indians, of mixed blood, leader in the Creek war of 1813–14. He attacked Fort Mims, Aug. 30, 1813, and was defeated in the battle of Horseshoe Bend, Jan. 27, 1814, and surrendered to General Jackson.

Webb (web), **Sidney.** Born at London, July 13, 1859. An English writer on sociology and economics. He was for a time connected with the War Office and the Colonial Office, and is a member of the economic faculty of London University. His publications include "Socialism in England" (1890), "The London Programme" (1892), and "London Education" (1904); and with his wife, Beatrice Potter, he wrote "The History of Trade Unionism" (1894), "Industrial Democracy" (1897), "Problems of Modern Industry" (1898), "History of Liquor Licensing" (1903), "The Parish and the County" (1906), "The Manor and the Borough" (1907), etc.

Weber*, Albrecht Friedrich. Died at Berlin, Nov. 30, 1901. He was professor at the University of Berlin 1856–1901.

Webster (web′stėr), Sir **Richard Everard,** first Baron Alverstone. Born Dec. 22, 1842. An English jurist. He was educated at the Charterhouse and at Trinity College, Cambridge; was called to the bar in 1868; and was made a queen's counsel in 1878. He was knighted in 1885, and created a baronet in 1899 and a baron in 1900. He was Conservative member of the House of Commons for Launceston in 1885 and for the Isle of Wight 1885–1900; was attorney-general 1885, 1886–92, and 1895–1900; and has been lord chief justice of England since 1900.

Weelkes (wēlkz), **Thomas.** Born probably between 1570 and 1580: died before 1641. An English madrigal writer. In 1600 he was organist of Winchester College and in 1608 organist of Chichester Cathedral.

Weems (wēmz), **Mason Locke.** Born at Dumfries, Va., about 1760: died at Beaufort, S. C., May 23, 1825. An American clergyman and author. He studied theology in London and took orders in the Protestant Episcopal Church, and was for several years rector of Pohick church, near Mount Vernon, Virginia, of which Washington was a member. He is best known for his "Life of Washington" (published as a pamphlet in 1800, and enlarged in later editions), which is responsible for many of the popular anecdotes about Washington, including that of the cherry-tree and the hatchet. He published a number of tracts which became very popular, among them "The Drunkard's Looking-Glass," "God's Revenge Against Murder," and "Hymen's Recruiting Sergeant"; and he was the author of lives of General Francis Marion, Benjamin Franklin, William Penn, etc.

Weierstrass (vī′er-sträs), **Karl.** Born at Ostenfelde, in Westphalia, Oct. 31, 1815: died at Berlin, Feb. 19, 1897. A noted German mathematician, professor of mathematics in the University of Berlin from 1864. He is best known from his studies on the theory of functions.

Wei-hai-wei (wā′i-hī-wā′i). A seaport on the north shore of the Shan-tung peninsula, China, leased to Great Britain in 1898.

Weingartner (vīn′gärt-nėr), **Paul Felix.** Born at Zara, Dalmatia, June 2, 1863. A noted German conductor and composer. He was conductor at the Royal Opera in Berlin 1891–98; became conductor of the Kaim concerts in Munich in 1898; and in 1907 was appointed director of the Royal Opera in Vienna. He has composed two symphonies, symphonic poems, songs, and the operas "Sakuntala" (1884), "Malawika" (1886), "Genesius" (1892), and "Orestes," a trilogy (1902).

Weir*, Harrison William. Died at Appledore, Kent, Jan. 3, 1906.

Welch (welch), **William Henry.** Born at Norfolk, Conn., April 8, 1850. An American pathologist and bacteriologist, professor of pathology in Johns Hopkins University from 1884 and pathologist of Johns Hopkins Hospital (Baltimore) from 1889. Among his publications are "The General Pathology of Fever" (1888), and numerous scientific papers.

Wellesley College*. It has a library of about 60,000 volumes, about 100 instructors, and 1,200 students.

Wellman (wel′mạn), **Walter.** Born at Mentor, Ohio, Nov. 3, 1858. An American journalist and arctic explorer. He led an expedition to Spitzbergen in 1894 and in 1898–99 one to Franz Joseph Land, attaining lat. 82° 45′ N. His voyage to the pole in a dirigible balloon, planned in 1906, but deferred to 1907, had to be abandoned through unfavorable weather conditions. Another attempt was made in August, 1909, but it failed through an accident to the balloon soon after starting.

Wells*, David Ames. Died at Norwich, Conn., Nov. 5, 1898.

Wells (welz), **Herbert George.** Born at Bromley, Sept. 21, 1866. An English writer of romances dealing chiefly with imaginary future scientific results. Among the best known of his works are "The Time Machine" (1895), "The War of the Worlds" (1898), "Anticipations" (1901), "The Food of the Gods" (1904), "Kipps" (1905), "In the Days of the Comet" (1906), "New Worlds for Old" (1908), "First and Last Things" (1908), "Tono-Bungay" (1909), etc. He has also written several scientific text-books.

Wendell (wen′dẹl), **Barrett.** Born at Boston, Mass., Aug. 23, 1855. An American man of letters, professor of English in Harvard University from 1898. He was instructor in English at Harvard 1880–88 and assistant professor 1888–98; and was Clark lecturer at Trinity College, Cambridge, England, 1902–03, and lecturer at the Sorbonne and other French universities 1904–05. His works include "The Duchess Emilia" (1885), "Rankell's Remains" (1886), "Cotton Mather, the Puritan Priest" (1891), "English Composition" (1891), "Stelligeri, and Other Essays Concerning America" (1893), "William Shakspere: a Study in Elizabethan Literature" (1894), "A Literary History of America" (1900), "Raleigh in Guiana," "Rosamond," and "A Christmas Masque" (1902), "The Temper of the Seventeenth Century in English Literature" (1904), "History of Literature in America" (1904: with Chester N. Greenough), "The France of To-day" (1907), "The Privileged Classes" (1908), etc.

Werner (ver′nėr), **E.** The pseudonym of Elisabeth Bürstenbinder.

Wesleyan University*. It has about 34 instructors and over 300 students.

West African Colonies*. They comprise the Northern Nigeria Protectorate, Southern Nigeria, the Gold

Coast Colony with Ashanti and Northern Territories, Sierra Leone Colony and Protectorate, and the Gambia Colony and Protectorate.

Westcott*, Brooke Foss. Died July 27, 1901. He was bishop of Durham 1890–1901.

Westcott (west′kọt), **Edward Noyes.** Born at Syracuse, N. Y., Sept. 24, 1847: died there, March 31, 1898. An American author. His only work, "David Harum" (1898), published after his death, achieved wide popularity.

Westermarck (ves′tėr-märk), **Edward Alexander.** Born at Helsingfors, Finland, Nov. 20. 1862. A Finnish anthropologist, professor of sociology in the University of London, 1907–. He was connected with the faculty of the University of Finland (Helsingfors) 1890–97. His publications include "The Origin of Human Marriage" (1889), "The History of Human Marriage" (1891), "The Origin and Development of the Moral Ideas" (vol. 1, 1906; vol. 2, 1908), etc.

Western Australia*. It is now a state of the Commonwealth of Australia. It is represented in the Federal Parliament by 6 senators and 5 representatives.

Western Reserve. The popular name for that part of Ohio, on Lake Erie, reserved by Connecticut. (See *Ohio.*) It contains Cleveland.

Western Reserve University. A non-sectarian institution of learning situated at Cleveland, Ohio. It consists of Adelbert College (formerly Western Reserve College, founded at Hudson, Ohio, in 1826, and removed to Cleveland in 1882), a college for women (established in 1888), the graduate school (established 1892), a medical department (founded in 1843 and formerly known as Cleveland Medical College), a law school (opened in 1892), a library school (opened in 1904), and a school of pharmacy (formerly the Cleveland School of Pharmacy). The total attendance is about 1,011, the faculty and officers 214, and the resources $4,000,000.

West Hoboken (west hō′bō-kẹn). A town in Hudson County, New Jersey, adjoining Hoboken and Jersey City. Its chief industry is the manufacture of silk. Other manufactures are artificial flowers, braid, buttons, sashes, doors, etc. Population (1900), 23,094.

West Indies*. In 1898 Cuba was freed from the domination of Spain, and Porto Rico passed to the United States.

Westinghouse (wes′ting-hous), **George.** Born at Central Bridge, N. Y., Oct. 6, 1846 A noted American inventor and manufacturer, best known for his inventions (1868) of an air-brake extensively used on railways, and of automatic railway signals. He has also made important improvements and applications of electrical machinery.

Westminster*. A city and borough of London.

West Point*: United States Military Academy. Since 1779 a military school has existed at West Point. In 1794 the grade of cadet was created and a few cadets were trained here in the years 1794–1796, and again in 1801. The founders of the school were Washington, Hamilton, and Knox. In 1802 an act of Congress organized the United States Military Academy as a part of the Corps of Engineers, with ten cadets. In 1812 the Academy was re-organized and 250 cadets authorized. In 1817, under Major Sylvanus Thayer as Superintendent, the present era of the Academy began. Acts of Congress of 1900, 1902, and 1903 authorized the appointment of 523 cadets. These are all appointed by the President: forty from the United States at large; one from each Congressional district; one from each territory; one from the District of Columbia; one from Porto Rico; two from each State at large. The academic instruction is given by permanent professors assisted by officers detailed for the purpose. The four years' course of study is that of a scientific school with especial reference to war. Practical military training is given throughout the course. Graduates receive commissions as lieutenants in the army The total number of graduates 1802–1908 is 4,749.

Westralia (wes-trā′liạ̈). A popular abbreviation of Western Australia.

West Superior*. It is now a part of the city of Superior.

West Troy*. It is now Watervliet city. See *Watervliet.*

West Virginia*. It has 55 counties, sends 2 senators and 5 representatives to Congress, and has 7 electoral votes.

Weyler (wī′ler) **y Nicolau, Valeriano,** Marquis of Teneriffe. Born at Palma of Majorca (Baleares), Sept. 17, 1838. A Spanish general. He served in the Carlist war and the war against the Moors, and for two years fought for Spain in the Cuban insurrection of 1868–78. He was recalled from Cuba on account of the charges of extreme cruelty made against him, but was sent there again to succeed Campos as captain-general of the Spanish forces in Jan., 1896. He was succeeded by Blanco in Oct., 1897. He was minister of war in the Liberal government under Sagasta and was re-appointed in December, 1906. He completed a volume of memoirs in 1909

Weyman*, Stanley John. His later works include "From the Memoirs of a Minister of France" (1895), "The Red Cockade" (1895), "The Man in Black" (1896), "For the Cause" (1897), "Shrewsbury" (1897), "The Castle Inn" (1898), "Sophia" (1900), "Count Hannibal" (1901), "In Kings' Byways" (1902), "The Long Night" (1903), "The Abbess of Vlaye" (1904), "Starvecrow Farm" (1905), "Chippinge Borough" (1906), "Laid Up in Lavender" (1907), and "The Wild Geese" (1908).

Wharton (hwâr′tọn), Mrs. (**Edith Newbold Jones**). Born at New York, 1862. An American novelist. She is the author of "Decoration of Houses" (1897: with O. Codman), "The Greater Inclination" (1899), "The Touchstone" (1900), "Crucial Instances" (1901), "The Valley of Decision" (1902), "Sanctuary" (1903), "The Descent of Man, and Other Stories" (1904), "The House of Mirth" (1905), "Italian Villas and their Gardens" (1904), "Italian Backgrounds" (1905), "Fruit of the Tree" (1907), "A Motor-flight Through France" (1908), "Artemis to Actæon, and other verse" (1909), and various shorter stories and sketches.

Wheeler (hwē′lėr), **Benjamin Ide.** Born at Randolph, Mass., July 15, 1854. An American classical scholar, president of the University of California from 1899. He was graduated at Brown University in 1875; was instructor there 1879–81, and at Harvard 1885–86; was professor of comparative philology and later of Greek in Cornell University 1886–99; and was professor of Greek in the American School of Classical Studies at Athens 1895–96. Among his works are "Introduction to the History of Language" (1890), and "Life of Alexander the Great" (1900).

Wheeler (hwē′lėr), **Joseph.** Born Sept. 10, 1836: died Jan. 25, 1906. An American soldier and politician. He was graduated at the United States Military Academy in 1859, and entered the Confederate army in 1861, rising to the rank of lieutenant-general in Feb., 1865. From 1881 to 1900 he was a member of Congress from Alabama. He was appointed major-general of volunteers in May, 1898, and commanded the dismounted cavalry in the Santiago campaign. Appointed brigadier-general U. S. A. in 1900. Retired in 1900.

Wheeler (hwē′lėr), **William Morton.** Born at Milwaukee, Wis., March 19, 1865. An American naturalist, professor of economic entomology at Harvard University from 1908. He studied at Clark University, Würzburg, Liège, and the Zoological Station at Naples; was successively instructor and assistant professor of embryology in the University of Chicago 1892–99; was professor of zoölogy in the University of Texas 1899–1903; and curator of invertebrate zoology in the American Museum of Natural History (New York) 1903–08. His researches and publications have been concerned chiefly with insects, comparative psychology, and cytology.

Whipple (hwip′l), **Harry Benjamin.** Born at Adams, Jefferson County, N. Y., Feb. 15, 1822: died at Faribault, Minn., Sept. 16, 1901. An American clergyman, first Episcopal bishop of Minnesota 1859–1901. He was rector of Zion Church in Rome, New York, 1850–57, and of the Church of the Holy Communion in Chicago 1857–59. He was interested in educational work, especially among the Indians, and took an active part in the reform and direction of the conduct of Indian affairs by the national government. He published "Lights and Shadows of a Long Episcopate" (1899), etc.

Whipple (hwip′l), **William.** Born at Kittery, Me., Jan. 14, 1730: died at Portsmouth, N. H., Nov. 28, 1785. An American statesman, one of the signers of the Declaration of Independence. He was a member of the provincial congress of New Hampshire in 1775, and of the Continental Congress 1776–79; was general of one of the brigades of New Hampshire troops in 1777, serving with distinction at the battles of Stillwater and Saratoga; was one of the two representatives of General Gates who arranged the terms of capitulation at the surrender of Burgoyne; and assisted General Sullivan at the siege of Newport in 1778.

Whistler*, James Abbott McNeill. Died at London, July 17, 1903.

White*, Andrew Dickson. He was ambassador to Germany 1897–1902. His later works include "Democracy and Education" (1891), "A History of the Warfare of Science with Theology in Christendom" (1896), "The Warfare of Humanity with Unreason" (1903–07), "Autobiography" (1905).

White (hwīt), **Charles David.** Born at Palmyra, N. Y., July 1, 1862. An American paleobotanist. He has been connected, as assistant paleontologist, assistant geologist, and geologist, with the United States Geological Survey from 1886, and is associate curator of paleobotany at the Smithsonian Institution. His researches have been concerned chiefly with Paleozoic fossil plants and geological climate

White (hwīt), **Edward Douglass.** Born in the parish of Lafourche, La., Nov. 3, 1845. An American jurist. He served in the Confederate army during a part of the Civil War; was admitted to the (Louisiana) bar in 1868; was State senator 1874–78; was associate justice of the Supreme Court of Louisiana 1878–91; was United States senator (Democratic) from Louisiana 1891–94; and was associate justice of the United States Supreme Court 1894–.

White (hwīt), Sir **George Stuart.** Born July 6, 1835. A British field-marshal, noted for the defense of Ladysmith, Natal, against the Boers from Nov. 2, 1899, to Feb. 28, 1900. He served in the Afghan War 1879–80, in the Nile expedition 1884–85, and in Burma 1885–89, and was commander-in-chief in India 1893–97. During the Boer war, 1899–1900, he commanded the troops in Natal. He was governor of Gibraltar 1900–04.

White (hwīt), **Henry.** Born at Baltimore, Md., March 29, 1850. An American diplomatist. He was secretary of the American legation at Vienna 1883–84; second secretary (1884–86) and secretary (1886–93) of legation at London; secretary of embassy at London 1897–1905; and ambassador to Italy 1905–07 and to France 1907–.

White (hwīt), **Horace.** Born at Colebrook N. H., Aug. 10, 1834. An American journalist and author. He became city editor of the Chicago "Evening Journal" in 1854 and agent of the Associated Press in 1855; joined the editorial staff of the Chicago "Tribune" in 1857; accompanied Abraham Lincoln in his campaign against Stephen A. Douglas in 1858; and was Washington correspondent 1861–65, and editor and one of the proprietors of the Chicago "Tribune" 1865–74. In 1884 he purchased an interest in the New York "Evening Post" and became president of the company and a member of the editorial staff, succeeding E. L. Godkin as its chief editor in 1899 and retiring in 1903. He is the author of "Money and Banking, Illustrated by American History" (1895), and the translator, from the Greek, of Appian's history of Rome (1899).

White*, Stanford. Died at New York, June 25, 1906. He was shot in the roof-garden of the Madison Square Garden by Harry K. Thaw.

White (hwīt), **Stewart Edward.** Born at Grand Rapids, Mich., March 12, 1873. An American novelist. His works include "The Westerners" (1901), "The Claim Jumpers" (1901), "The Blazed Trail" (1902), "Conjuror's House" (1903), "The Forest" (1903), "The Magic Forest" (1903), "Blazed Trail Stories and Stories of the Wild Life" (1904), "The Mountains" (1904), "The Silent Places" (1904), "The Pass" (1906), "The Mystery" (1907: with S. H. Adams), "Arizona Nights" (1907), "Camp and Trail" (1907), "The Riverman" (1908), etc.

White (hwīt), **William Allen.** Born at Emporia, Kansas, in 1868. An American editor and author. He is the owner and editor of the Emporia "Gazette" (from 1894). His publications include "The Real Issue, and other stories" (1896), "The Court of Boyville" (1899), "Stratagems and Spoils" (1901), "In Our Town" (1906).

Whiteing (hwī′ting), **Richard.** Born at London, July 27, 1840. An English author and journalist. He has been writer and correspondent for many of the leading English newspapers. Among his publications are "No. 5 John Street" (1899), "Paris of To-day" (1900), "The Yellow Van" (1903), "Ring in the New" (1906), "Little People" (1909), etc.

White Mountains*. The highest point, Mount Washington, is 6,290 feet high.

White Rose. The emblem of the House of York in the Wars of the Roses (which see).

Whitman (hwit′mạn), **Marcus.** Born at Rushville, N. Y., Sept. 4, 1802: died near Walla Walla, Oregon, Nov. 29, 1847. An American pioneer. In 1836 he went to Oregon for the American Board as missionary physician. Convinced of the value of the country, he returned (1842–43) to Washington, and by his representations practically succeeded in securing Oregon for the United States. To prove its accessibility to settlers, he led back in the same year a large train of wagons to the valley of the Columbia. He was murdered by Indians.

Whitney*, Mrs. (**Adeline Dutton Train**). Died March 21, 1906.

Whitney*, Josiah Dwight. Died Aug. 19, 1896.

Whitney*, Mount. Its height is 14,502 feet. The highest peak in the United States is Mt. McKinley (20,464 feet) in Alaska.

Whitney (hwit′ni), **Myron William.** Born at Ashby, Mass., Sept. 5, 1835. An American bass singer. He first appeared in oratorio in Boston in 1858, and sang frequently in concert and oratorio in America and Great Britain. In 1879 he began to sing in light opera, and was also with the American Opera Company in serious opera 1886–87.

Whitney*, William Collins. Died at New York, Feb. 2, 1904.

Whyte (hwīt), **Violet.** A pseudonym of Mrs. Stannard.

Wichert*, Ernst Alexander August Georg. Died at Berlin, Jan. 21, 1902.

Wicked Bible. An edition of the Bible printed in 1631 in which the word *not* is omitted from the seventh commandment. A copy survives in the Bodleian.

Wickersham (wik′ėr-shạm), **George Woodward.** Born at Pittsburg, Pa., Sept. 19, 1858. An American lawyer, attorney-general of the United States from 1909. He was graduated from the University of Pennsylvania in 1880, and practised law in Pittsburg until 1882 and in New York until 1909.

Widor (wē-dōr′), **Charles Marie.** Born at Lyons, Feb. 22, 1845. A noted French organist and composer, organist at St.-Sulpice, Paris, from 1860. In 1890 he became professor of the organ at the Conservatory and in 1896 professor of counterpoint and fugue. His best known works are ten symphonies for the organ and the ballet "La Korrigane" (1880). He has written operas and chamber music.

Wiju (wē-jö′). A town of Korea situated near the mouth of the Yalu river. In the Russo-Japanese War General Kuroki's army effected from this point the passage of the river and defeated the Russians under General Sassulitch, May 1, 1904.

Wilde*, James Plaisted, Baron Penzance. Died at Godalming, Dec. 9, 1899.

Wilde*, **Oscar Fingall O'Flahertie Wills.** Died at Paris, Nov. 30, 1900.

Wildenbruch*, **Ernst von.** Died at Berlin, Jan. 15, 1909. His later writings include the dramatic works "Meister Balzer" (1893), "Jungfer Immergrun" (1896), "Der Junge von Hemmersdorf" (1896), "Heinrich und Heinrichs Geschlecht" (1895), "Willehalm" (1897), "Gewitternacht" (1899), "Die Tochter des Erasmus" (1900), "Konig Laurin" (1902), "Die Lieder des Euripides" (1905), and "Die Rabensteinerin" (1907). He wrote also many poems and romances, among them "Vionville" (1874), "Sedan" (1875), "Lieder und Gesange" (1877), "Kindertranen" (1884), "Der Meister von Tanagra" (1880), "Novellen" (1883), "Lieder und Balladen" (1884), "Neue Novellen" (1885), "Humoresken" (1886), "Der Astronom" (1887), "Das edle Blut" (1893), "Franceska von Rimini" (1892), "Eifernde Liebe" (1893), "Schwester-Seele" (1894), "Claudias Garten" (1896), "Tiefe Wasser" (1898), "Unter der Geissel" (1901), "Vize-Mama" (1902), "Semiramis" (1904), "Das schwarze Holz" (1905), and "Lukrezia" (1907).

Wildstrubel*. Height, 10,679 feet.

Wiles (wīlz), **Irving Ramsay.** Born at Utica, N. Y., 1861. An American painter. He is a son of Lemuel Maynard Wiles (1826–1905), a painter of note, from whom he received his earliest instruction. Later he studied under Carroll Beckwith and William M. Chase in America, and with Carolus Duran in Paris. He has exhibited many genre pictures and portraits, and is a member of the National Academy of Design, etc.

Wiley (wī'li), **Harvey Washington.** Born near Kent, Ind., Oct. 18, 1844. An American chemist, chief chemist of the United States Department of Agriculture from 1883, and professor of agricultural chemistry in the George Washington University (Washington, D. C.) from 1899. He was state chemist of Indiana 1874–83. His publications include "Principles and Practice of Agricultural Chemistry" (1894–97), "Foods and Their Adulterations" (1907), and numerous papers and government bulletins.

Wilhelmina (vil-hel-mē'nä) **I.** (**Wilhelmina Helena Paulina Maria**). Born Aug. 31, 1880. Queen of the Netherlands. She is the daughter of William III. and his second wife, Emma, daughter of Prince George Victor of Waldeck and Pyrmont. She succeeded to the throne upon the death of her father, Nov. 23, 1890, but her mother acted as queen regent until she became of age, Aug. 31, 1898. On Feb. 7, 1901, she married Duke Henry of Mecklenburg-Schwerin.

Wilhelmj*, **August.** Died in London, Jan. 22, 1908.

Wilkins*, **Mary Eleanor** (**Mrs. Charles Manning Freeman**). Her later work includes "Madelon" (1896), "Jerome; a Poor Man" (1897), "Silence, and other stories" (1898), "The Jamesons" (1899), "The Love of Parson Lord, and other stories" (1900), "The Heart's Highway" (1900), "Understudies" (1901), "The Portion of Labor" (1901), "Six Trees" (1903), "The Wind in the Rose Bush" (1903), "The Givers" (1904), "The Debtor" (1905), "Doc' Gordon" (1906), "By the Light of the Soul" (1907), "Fair Lavinia and Others" (1907), "The Shoulders of Atlas" (1908), etc.

Wilkinsburg (wil'kinz-bėrg). A borough in Allegheny County, Pennsylvania, a residential suburb of Pittsburg, seven miles distant. Population (1900), 11,886.

Willard (wil'ärd), Mrs. (**Emma Hart**). Born at Berlin, Conn., Feb. 23, 1787: died at Troy, N. Y., April 15, 1870. An American educator. She opened a school for girls in Middlebury, Vermont, in 1814; and one in Waterford, New York, in 1819, which was removed to Troy, New York, in May, 1821, and was carried on under her management until 1838. This school, known as the 'Troy Female Seminary,' is now carried on under the name of the 'Emma Willard School.' She wrote the hymn "Rocked in the Cradle of the Deep" (1830), "Journal and Letters from France and Great Britain" (1833), and many educational works. Her fame rests on the fact that she was one of the pioneer educators of women in America.

Willard*, **Frances Elizabeth.** Died at New York, Feb. 18, 1898.

Willcox*, **Orlando Bolivar.** Died at Coburg, Ontario, May 10, 1907.

Willems*, **Florent.** Died Oct. 23, 1905.

Willey*, **Mount.** It is 4,261 feet high.

William and Mary College*. It has about 22 instructors and over 200 students.

William Penn Charter School. A school for boys in Philadelphia, founded in 1689 and chartered first by William Penn's lieutenant-governor, Markham, in 1698 and by Penn himself in 1701, on the same day (Oct. 25) on which he chartered Philadelphia. Other charters were issued in 1708 and 1711. The school is attended by about 500 students.

Williams (wil'yamz), Sir **George.** Born 1821: died at London, Nov. 6, 1905. The founder (1844) and president, in Great Britain, of the Young Men's Christian Association. He was knighted in 1894.

Williams (wil'yamz), **George Huntington.** Born at Utica, N. Y., Jan. 28, 1856: died there, July 12, 1894. An American petrologist, professor of inorganic geology in Johns Hopkins University 1892–94. He was graduated at Amherst College in 1878; studied at Gottingen and Heidelberg; and became an associate professor in Johns Hopkins University in 1885. He published "Elements of Crystallography" (1890), and various technical papers.

Williams (wil'yamz), **John Sharp.** Born at Memphis, Tenn., July 30, 1854. An American lawyer and statesman. He studied at the University of Virginia and at that of Heidelberg; removed to Mississippi in 1878; was a (Democratic) member of Congress from that State 1893–1909; and was senator 1909–.

Williams*, Sir **Monier Monier-.** Died April 11, 1899.

Williams College*. It is non-sectarian, and has 46 instructors and 480 students.

Wilson (wil'son), Sir **Arthur Knyvet.** Born March 4, 1842. A British naval officer, admiral of the fleet from 1907. He served in the Crimean War, the Chinese War of 1865, the Egyptian campaign of 1882, and the Sudan campaign of 1884. He was comptroller of the navy 1897–1901, and commanded the Channel Squadron 1901–03.

Wilson*, Mrs. (**Augusta J. Evans**). Died in Mobile, Alabama, May 9, 1909.

Wilson (wil'son), **James.** Born in Ayrshire, Scotland, Aug. 16, 1835. An American cabinet officer. He came to the United States in 1852; was a member of the Iowa Assembly 1867–69, and during his last term was speaker; was Republican member of Congress 1873–77 and 1883–85; was director of the Agricultural Experiment Station, at Ames, Ia., 1890–97; was professor of agriculture in the Iowa State College 1891–97, and was secretary of agriculture 1897–.

Wilson*, **William Lyne.** Died Oct. 17, 1900. He was postmaster-general 1895–97.

Wilson*, **Woodrow.** He was professor of finance and political economy at Princeton University 1890–1902, and president since 1902. His later work includes "Mere Literature, and other essays" (1896), "George Washington" (1897), "History of the American People" (1902), "Constitutional Government in the United States" (1908), "Free Life" (1908), etc.

Winchell (win'chel), **Newton Horace.** Born at Northeast, Dutchess County, N. Y., Dec. 17, 1839. An American geologist and mineralogist, head of the Geological Survey of the State of Minnesota 1872–1900. He has published numerous papers on Pleistocene and Archæan geology. In 1888 he established the "American Geologist," and edited it for eighteen years.

Wind River Mountains*. The highest point is Gannett Peak, 13,775 feet, the height of Frémont Peak being only 13,720 feet.

Windy City, The. A nickname of Chicago.

Winsor*, **Justin.** Died at Cambridge, Mass., Oct. 22, 1897.

Winston (win'ston). A city, the capital of Forsyth County, North Carolina. It is situated in the south-central part of the county contiguous to Salem, the community being known as Winston Salem. The chief industries of Winston are the manufacture of tobacco, flour, cotton and woolen goods, furniture, vehicles, etc. Population (1900), 10,008.

Winter*, **William.** He was dramatic critic of the New York "Tribune' 1865–1909. His later works include "Other Days" (1908), "Old Friends" (1909), etc.

Wisconsin*. It has 71 counties, sends 2 senators and 11 representatives to Congress, and has 13 electoral votes.

Wisconsin*, **University of.** It comprises colleges of letters and arts, a law school, a graduate school, a college of engineering, a college of agriculture, and a school of music. The number of instructors is 327, and of students 3,659. It is coeducational.

Wissman*, **Hermann von.** Died at Weissenbach, in Steiermark, June 15, 1905.

Wister (wis'tėr), **Owen.** Born at Philadelphia, Pa., July 14, 1860. An American author, best known for his stories of Western life. Among his works are "Red Men and White" (1896), "Lin McLean" (1897), "The Jimmyjohn Boss, and Other Stories" (1900), a biography of Ulysses S. Grant (1901), "The Virginian" (1902), "Philosophy 4" (1903), and "Lady Baltimore" (1906).

With Fire and Sword. See *Deluge, The.*

Witte (vit'e), Count **Sergius** (**Sergiei Julievitch**). Born at Tiflis, June 29, 1849. A Russian statesman. He was graduated from the Imperial New University at Odessa in 1870. As an official of the southwestern railways he rendered great service to Russia in the Russo-Turkish war in 1878, and after holding various administrative offices in connection with the Russian railway systems was appointed in February, 1892, minister of ways of communication, and was minister of finance 1892–1903. To his efforts is largely due the completion of the Trans-Siberian Railway. He was appointed secretary of state in 1896, actual privy councilor in 1899, and president of the committee of ministers in 1903. In 1905 he was sent to the United States to negotiate with Japan the terms of peace which were formulated in the Treaty of Portsmouth. In October, 1905, the Emperor intrusted him with the forming of the new cabinet; he resigned the premiership, May 2, 1906, and was appointed a member of the Council of the Empire, May 11, 1906. He has published "Principles of Railway Tariffs" (1884).

Witu*. It became a British protectorate in 1890.

Witwatersrand (vit-vä'ters-ränd). A hilly region of the Transvaal, west of Johannesburg, containing extensive gold-fields.

Wodehouse*, **John,** first Earl of Kimberley. Died at London, April 8, 1902. He was leader of the Liberal party in the House of Lords 1897–1902.

Wolf (vōlf), **Hugo.** Born at Windischgraz, Austria, March 13, 1860: died at Vienna, Feb. 22, 1903. A noted Austrian composer, chiefly of songs. He lived mostly in Vienna in poverty and privation, and died insane. Not till after his death were his songs, about 175 in number, generally known. He also composed the opera, "Der Corregidor" (1896), and left an unfinished opera, "Manuel Venegas." A symphonic poem, "Penthesilea," an "Italian Serenade" for a small orchestra (also for a string quartet), and a string quartet, as well as several choruses, have attracted attention.

Wolff*, Sir **Henry Drummond.** Died at Brighton, England, Oct. 11, 1908. He was ambassador extraordinary and minister plenipotentiary at Madrid 1892–1900. His memoirs, "Rambling Recollections," appeared in 1908.

Wolseley*, **Garnet Joseph,** first Viscount Wolseley. He was commander-in-chief of the army 1895–1900. His "The Story of a Soldier's Life" appeared in 1903.

Wolverene State. A nickname of the State of Michigan.

Wolverhampton, Viscount. See *Fowler, Sir Henry Hartley.*

Woman's Christian Temperance Union, National. A society organized in Cleveland, Ohio, in 1874. It has 40 distinct departments of work in the United States, and the 10,000 local unions which comprise it have a membership and following (including the children's societies) of half a million. The World's Woman's Christian Temperance Union was founded by Frances E. Willard in 1883. It has auxiliaries in more than 50 countries and provinces. The badge is a white ribbon. Abbreviated *W. C. T. U.*

Won-san. See *Yuen-san.*

Wood*, Sir **Henry Evelyn.** A British field-marshal. He was quartermaster-general 1893–97, and adjutant-general to the forces 1897–1901 and to the Second Army Corps District 1901–05. He has written "The Crimea in 1854–94," "Cavalry at Waterloo," "Achievements of Cavalry," "From Midshipman to Field Marshall" (1906), "The Revolt in Hindustan" (1908).

Wood (wůd), **Henry J.** Born at London, March 3, 1870. An English conductor. He began in minor English opera companies. In 1895 he instituted the first series of promenade concerts in Queen's Hall, London.

Wood (wůd), **Leonard.** Born at Winchester, N. H., Oct. 9, 1860. An American soldier, appointed major-general in the United States army in 1903. He was graduated at the Medical School of Harvard University in 1884; entered the army as lieutenant and assistant surgeon in 1886; served in the West in the campaign against Geronimo in 1886; at the beginning of the war with Spain (1898) recruited and was appointed colonel of the "Rough Riders" (First United States Volunteer Cavalry); served in the Santiago campaign (Las Guasimas and San Juan Hill) and was promoted brigadier-general and then major-general of volunteers; was military governor of Santiago, July, 1898,-December, 1899, and of Cuba December, 1899,-May, 1902; was sent to the Philippines in 1903, where he was placed in command of the Department of Mindanao; was governor of Moro Province 1903–06; commander of the Philippines Division 1906–08, and commander of the Department of the East 1908–.

Wood*, **Thomas Waterman.** Died at New York, April 14, 1903.

Woodberry (wůd'bu-ri), **George Edward.** Born at Beverly, Mass., May 12, 1855. An American poet, critic, and educator. He was professor of English in the University of Nebraska 1877–78 and 1880–82, and professor of comparative literature at Columbia University 1891–1904. In 1904 he became lecturer in English literature at Amherst College and in 1908 professor of English literature at Cornell University. Among his publications are a "History of Wood Engraving" (1883), "Life of Edgar Allan Poe" (1885), "The North Shore Watch, and Other Poems" (1890), "Studies in Letters and Life" (1890), "Heart of Man" (1899), "Wild Eden" (1899), "Makers of Literature" (1900), "Nathaniel Hawthorne" (1902), "Poems" (1903), "America in Literature" (1903), "Swinburne" (1905), "The Torch: Eight Lectures on Race Power in Literature" (1905), "The Life of Poe" (1909), etc.

Woodward (wůd'wärd), **Arthur Smith.** Born at Macclesfield, England, May 24, 1864. An English geologist and paleontologist, keeper of the geological department of the British Museum. He has published a "Catalogue of Fossil Fishes in the British Museum" (1889–1901), "Outlines of Vertebrate Palæontology" (1898), etc.

Woodward (wůd'wärd), **Robert Simpson.** Born at Rochester, Mich., July 21, 1849. An American astronomer and mathematical physicist, president of the Carnegie Institution of Washington from 1905. He was astronomer of the United States Geological Survey 1884–90; was assistant in the United States Coast and Geodetic Survey 1890–93; and was professor of mechanics and mathematical physics in Columbia University 1893–1905. He has published numerous scientific memoirs and papers.

Woolsey*, **Sarah Chauncey:** pseudonym **Susan Coolidge.** Died at Newport, R. I., April 9, 1905.

Woolsey (wůl'si), **Theodore Salisbury.** Born at New Haven, Conn., Oct. 22, 1852. An American jurist and educator. He was graduated at Yale University in 1872; was instructor in public law there 1877–78; and has been professor of international law since 1878. A number of his published papers have been collected under the title “America's Foreign Policy” (1898).

Worcester (wůs'tėr), **Dean Conant.** Born at Thetford, Vt., Oct. 1, 1866. An American zoölogist, secretary of the interior in the Philippine government from 1901. He was graduated at the University of Michigan in 1889, took part in scientific expeditions to the Philippines 1887–88 and 1890–93, and was a member of the First United States Philippine Commission 1899–1900, and of the Second United States Philippine Commission April, 1900,–. He has written “The Philippine Islands and their People” (1898), etc.

Worden*, **John Lorimer.** Born at Mount Pleasant, Westchester Co., N. Y., March 12, 1818: died at Washington, D. C., Oct. 18, 1897.

World's Columbian Exposition. An international exposition of arts, industries, manufactures, and the products of the soil, mines, and sea, held at Chicago, Illinois, May 1–Oct. 30, 1893, for the purpose of commemorating the four hundredth anniversary of the discovery of America by Christopher Columbus. It was participated in by the principal nations of the world, as well as by the different States of the Union, nearly all of which were represented by special buildings. The grounds covered an area of 666 acres, including Jackson Park, in the southeastern part of Chicago, fronting on Lake Michigan. The principal buildings were constructed of a white composition called ‘staff,’ giving the appearance of marble, which led to the adoption of the name of the ‘White City,’ by which the exposition came to be generally known. The present Field Columbian Museum was formed from the Fine Arts Building. A notable feature of the exposition was a series of international congresses representing the progress of the world in the various branches of science, religion, art, education, etc. The amusement features were collected in a strip of land, extending westward from the main grounds, called the ‘Midway Plaisance,’ which contained also representations of native life in various foreign countries. Awards were made by an international jury. The total attendance was 27,539,041.

World's Fairs. A series of international expositions, the most important of which were those held in London (1851 and 1862), Paris (1855, 1867, 1878, 1889, and 1900), Vienna (1873), Philadelphia (1876), and Chicago (1893). The first universal exhibition was held in the Crystal Palace, Hyde Park, London, at the instigation of the Prince Consort (May 1 to Oct. 11, 1851). The total number of visitors to it was 6,039,195. The total attendance at the World's Columbian Exposition at Chicago (May 1 to Oct. 30, 1893) was 27,539,041; at the Paris Exposition (April 15 to Nov. 12, 1900) it was about 50,000,000.

Wormeley (wėrm'li), **Katharine Prescott.** Born at Ipswich, England, Jan. 14, 1830: died at Jackson, N. H., Aug. 5, 1908. An American writer, best known for her translations of Balzac, Molière, Daudet, etc.

Worth (wėrth), **William Scott.** Born at Albany, N. Y., Jan. 6, 1840: died at Clifton, Staten Island, N. Y., Oct. 16, 1904. An American soldier, son of General William Jenkins Worth. He entered the army in 1861; served with the Army of the Potomac from 1862; was engaged in frontier duty 1872–91; and rose to the rank of colonel in 1898. He served in the Santiago campaign, was severely wounded at San Juan Hill, and was promoted brigadier-general in 1898.

Wright (rīt), **Arthur Williams.** Born at Lebanon, Conn., Sept. 8, 1836. An American physicist, professor in Yale University from 1872. He was graduated at Yale in 1859; studied in Heidelberg and Berlin; and was professor of physics and chemistry in Williams College 1869–72. Since 1883 he has been in charge of the Sloane physical laboratory at Yale. His researches have been concerned chiefly with electricity, spectroscopy, radioactivity, and astrophysics.

Wright*, **Carroll Davidson.** Died at Worcester, Mass., Feb. 20, 1909. He was United States commissioner of labor 1885–92; honorary professor of social economics in the Catholic University of America 1895–1904; professor of statistics and social economics in Columbian University 1900; and president of Clark College 1902–09. His later works include “Industrial Evolution of the United States” (1895), “Outline of Practical Sociology” (1899), “Some Ethical Phases of the Labor Question” (1902), “Battles of Labor” (1906), and many monographs on social and economic questions.

Wright*, **Horatio Governeur.** Died at Washington, D. C., July 2, 1899.

Wright (rīt), **Joseph.** Born Oct. 31, 1855. An English scholar, professor of comparative philology in Oxford University from 1901 (deputy professor, 1891–1901). He has published “Primer of the Gothic Language” (1892), “Middle High-German Primer” (1888), “Old High-German Primer” (1888), “The English Dialect Grammar” (1905), “Old English Grammar” (1908), etc.; and has edited “The English Dialect Dictionary” (1896–1905).

Wright (rīt), Mrs. (**Mabel Osgood**). Born at New York, 1859. An American author and writer of nature books. She is one of the editors of “Bird Lore.” Among her works are “Birdcraft” (1895), “Tommy-Anne and the Three Hearts” (1896), “Four-footed Americans and Their Kin” (1898), and “The Flowers and Ferns in their Haunts” (1901). She is the author also of a series of books, the first four of which were published anonymously. These include “The Garden of a Commuter's Wife” (1901), “The People of the Whirlpool” (1903), “The Woman Errant” (1904), “At the Sign of the Fox” (1905), “The Garden, You, and I” (1906), “Gray Lady and the Birds” (1907), “The Open Window” (1908), “Poppea of the Post-office” (1909), etc.

Wright (rīt), **Orville.** Born at Dayton, Ohio, Aug. 16, 1871. A noted American aviator. See *Wright, Wilbur.*

Wright (rīt), **Wilbur.** Born at Dayton, Ohio, April 16, 1867. A noted American aviator, with his brother Orville the first to attain practical success with the aëroplane. The attention of the Wrights was turned to aëronautics by the experiments of Otto Lilienthal and Octave Chanute with gliding-machines. In 1902 they built a gliding-machine with two surfaces and carried on their experiments among the sand-dunes at Kitty Hawk, near Cape Hatteras, on the Atlantic coast of North Carolina. In 1903 they added a motor to their gliding-machine, and on Dec. 17 of that year made the first successful mechanical flight (260 meters in 59 seconds) that had ever been accomplished. They used a biplane with warpable wings and a motor of their own construction. One hundred flights were made during the season of 1904. In 1905 a new machine was built with improvements, and 49 flights were made near Dayton, Ohio, and in September and October flights of 10, 11, 12, 15, 21, and 24½ miles were made. The 24½-mile flight on Oct. 5th was made in 38 minutes and 3 seconds, the machine making a speed of 38 miles an hour and only stopping on account of exhaustion of fuel. In 1908 Wilbur Wright went to France and made flights at the Camp of Auvours, near Le Mans, and at Pau. On Dec. 31, 1908, he won the Michelin trophy by making the longest flight (2 hours and 20 minutes) of the year, covering 124 kilometers. He then went to Rome. Orville Wright remained in America to fulfil a contract which had been made with the United States government. This called for a flight of one hour with a passenger, and a cross-country speed-test of five miles and return. The preparations for these tests were terminated on Sept. 17, 1908, by an accident to the machine (the breaking of one of its propellers), which resulted in the death of the passenger, Lieutenant Thomas E. Selfridge. Wright returned to Washington in 1909 and successfully completed the required government tests. On July 27, 1909, with Lieutenant Frank P. Lahm as a passenger, he made a world's record flight of one hour, 12 minutes, and 40 seconds. On July 30, 1909, with Lieutenant Benjamin D. Foulois as a passenger, he flew 10 miles (from Ft. Myer to Shuter's Hill near Alexandria and return) in 14 minutes and 40 seconds, at an average speed of 42½ miles an hour. On Oct. 4, 1909, Wilbur Wright flew from Governor's Island, New York city, up the Hudson to Grant's Tomb and return, a distance of 20 miles in 33 min. 33 sec., and in the flights at the Signal Corps School of Instruction at College Park, Md., Oct. 9, he attained a speed of 55.82 miles an hour.

Wundt*, **Wilhelm.** His later works include “System der Philosophie” (1889), “Grundriss der Psychologie” (1896), “Völkerpsychologie” (Vol. 1, “Die Sprache,” 1900; Vol. 2, “Mythus und Religion,” 1905–06), and “Einleitung in die Philosophie” (1901). He has edited the series of “Philosophische Studien” 1883–1902 and 1905–.

Wu Ting Fang (wö ting fang). Born in the province of Kwangtung, China. A contemporary Chinese scholar and diplomat. He was educated at Canton, Hong-Kong, and Lincoln's Inn, London, and was called to the English bar. He was appointed viceroy of Chi-li in 1882, was minister of China to the United States, Spain, and Peru, 1897–1902, and was minister to the United States 1907–09.

Wyckoff (wī'kof), **Walter Augustus.** Born at Mainpuri, India, April 12, 1865: died at Princeton, N. J., May 15, 1908. An American political economist, assistant professor of political economy in Princeton University from 1898. He is best known from his practical studies (as a worker and tramp) of the life of the wage-earners and “tramps.” He published “The Workers—The East” (1897), “The Workers—The West” (1898), “A Day with a Tramp and Other Days” (1900), etc.

Wyman (wī'man), **Walter.** Born at St. Louis, Mo., August 17, 1848. An American physician and sanitarian, surgeon-general of the Public Health and Marine-Hospital Service since 1891 (prior to July 1, 1902, known as Marine-Hospital Service). He administers the quarantine laws and establishments, the national laboratory for the investigation of infectious and contagious diseases and matters pertaining to the public health, the leprosy investigation station at Molokai, Hawaii, and the marine hospitals, including a sanatorium for consumptives at Fort Stanton, New Mexico; and has charge of the medical examination of immigrants. He was president of the first and second international sanitary conventions of American republics (1902–1905); is chairman of the International Sanitary Bureau of American Republics; and is the author of numerous articles on public health and sanitation.

Wyndham*, Sir **Charles.** Since 1876 he has managed the Criterion Theatre. He was knighted in 1902.

Wyndham (win'dam), **George.** Born at London, Aug. 29, 1863. A British statesman. He has been Conservative member of Parliament for Dover since 1889. He was educated at Eton and at Sandhurst; served in the Sudan in 1885; was private secretary to A. J. Balfour when the latter was chief secretary for Ireland 1887–92; was under-secretary of state for war 1898–1900; and was chief secretary for Ireland 1900–05. He carried the Irish Land Act through the House of Commons in 1903, and resigned his place in the cabinet in March, 1905.

Wyoming*. It has 13 counties (besides the National Park Reservation). It has 3 electoral votes.

Yale University*. The library contains about 550,000 volumes. The university has about 400 instructors and 3,450 students.

Yalu (yä-lö'). A river which forms the boundary between Korea and Manchuria from about lat. 42° N., southward. It flows south, then west, and then southwest and empties into Korea Bay.

Yalu River, Battle of the. A battle fought May 1, 1904, by the Japanese under Kuroki and the Russians under Sassulitch, on the Manchurian bank of the Yalu at and above An-tung. The Japanese concentrated at Wiju, crossed the river and its affluent the Ai, and attacked the Russians in fortified positions, driving them out and inflicting heavy loss upon them.

Yamagata (yä-mä-gä'tä), Prince **Aritomo.** Born in Choshu, April, 1838. A Japanese soldier and statesman, one of the ‘elder statesmen.’ He was promoted lieutenant-general in 1872; became minister of war in 1873; and was later raised to the rank of marshal. He played an important part in the civil war of 1877, being chief of staff of the army of subjugation. In 1888–89 he visited the United States and Europe. On the outbreak of the Chinese war (1894) he took command of the First Army, but was obliged to retire on account of ill-health. Since 1896 his career has been chiefly that of a diplomat and statesman. He has twice been premier, 1889–91 and 1898–1900. At the beginning of the war with Russia he was appointed chief of the general staff.

Yap*. In 1899 the Caroline group was purchased by Germany.

Yauco (yä-ö'kō). A city in the southwestern part of Ponce department, Porto Rico. Population (1899), 6,108.

Yeats (yātz), **William Butler.** Born at Dublin, June 13, 1865. An Irish poet, dramatist, and critic, son of John Butler Yeats, the artist. He was one of the founders of the Irish Literary Theatre and of the National Theatre Society in Dublin, and is identified with the movement for the revival of Irish national literature. He is a representative exponent of the “literary drama.” His works include “The Celtic Twilight” (1893), “Poems” (1895), “The Secret Rose” (1897), “The Wind among the Reeds” (1899), “The Shadowy Waters” (1900), “Ideas of Good and Evil” (1903), “Where There is Nothing” (1903), “In the Seven Woods” (1903), “The Hour Glass, and Other Plays” (1904), “The King's Threshold, and Other Plays” (1904), “Stories of Red Hanrahan” (1904), “Deirdre” (1907), etc.

Yellowstone National Park*. It contains about 3,500 square miles.

Yentai (yen-tī'). A town in Manchuria, about twelve miles northeast of Liao-yang, near the railway. It was an important position in the battle of Liao-yang and subsequent operations in the Russo-Japanese war. There are coal-mines near it.

Yerkes (yėr'kēz), **Charles Tyson.** Born at Philadelphia, June 25, 1837: died at New York, Dec. 29, 1905. An American business man, prominent in the development of street railways in Chicago and underground railways in London. He founded the Yerkes Observatory of the University of Chicago.

Yerkes (yėr'kēz) **Observatory.** The astronomical observatory of the University of Chicago, founded by Charles Tyson Yerkes in 1892 and completed about 1896. It is situated at Williams Bay, Wisconsin. It possesses a fine equipment, including a 40-inch telescope. G. E. Hale was its director until 1905, when he was succeeded by E. B. Frost.

Yi Hi (yē hē). Born Sept. 8, 1852. The Emperor of Korea. He ascended the throne Jan. 21, 1864, and assumed the title of emperor in October, 1897. In July, 1907, he abdicated and was succeeded by his son, Yi Syek.

Yildiz Kiosk. A pleasure resort of the sultans of Turkey, adopted as a permanent abode by Abdul-Hamid II. soon after his accession in 1876. It stands on a hill on the northern border of Constantinople, overlooking the Bosporus. Within the park walls are numerous buildings (an observatory, armories, etc.) and within a second wall the kiosk, designed by the Sultan, which he occupied with his four principal wives.

Yonge*, Charlotte Mary. Died at Otterbourne, England, March 24, 1901.

York*, Duke of. The title is at present borne by the second son of Edward VII., through the death of his elder brother heir to the crown of England.

Yosemite Valley*. Its length is about 8 miles. In 1905 the State ceded it back to the United States Government, and it was accepted by Congress in 1906. Yosemite National Park includes the water-sheds and basins of the rivers of the Yosemite Valley.

Yoshiwara (yō-shi-wä′rä). The quarter of Tokio which is occupied by courtezans. The name is sometimes applied by foreigners to similar districts in other Japanese cities, but is not so used by the Japanese themselves.

Youmans (yö′manz), **William Jay.** Born at Milton, N. Y., Oct. 14, 1838: died at Mount Vernon, N. Y., April 10, 1901. An American scientist, brother of Edward Livingstone Youmans. He became the associate editor of "The Popular Science Monthly" in 1872, and editor in 1887.

Young*, Charles Augustus. Died at Hanover, N. H., Jan. 4, 1908.

Young*, John Russell. Died at Washington, D. C., Jan. 17, 1899.

Younghusband (yung′huz-band), Sir **Francis Edward.** Born at Murree, Panjab, India, May 31, 1863. A British soldier, traveler, and writer, head of the British mission to Tibet 1902–04. In 1882 he joined the army and in 1900 was promoted major. He was knighted in 1904. He was resident of Indore, Central India, 1902–03; British commissioner to Tibet 1903–04; Rede lecturer at Cambridge in 1905; and resident of Kashmir 1906–. He has traveled in Manchuria, China, Turkestan, the Pamirs, and South Africa, and was political officer in Chitral 1893–94. Among his works are "The Relief of Chitral" (1895), "The Heart of a Continent" (1896), "South Africa of To-day" (1898), etc.

Young Men's Christian Association. An organization formed in London in 1844 by (Sir) George Williams. The first associations in North America were organized in 1851, and the first international convention was held at Buffalo, N Y. June 7, 1854. The object of the organization is to promote the spiritual, intellectual, physical, and social well-being of young men. There are nearly 8,000 associations in the world, of which 2,000 are in North America. The total membership in North America is about 450,000; in the world, over 800,000. Active controlling membership is limited to men in communion with some evangelical church; associate membership is not so limited. Abbreviated *Y.M.C.A.*

Young Women's Christian Association. A voluntary organization for the physical, social, intellectual, and spiritual development of young women. The first association was formed in London in 1855, the first American city association in Boston in 1866, and the first student association in the Illinois Normal University in 1873. Seventeen national associations are now affiliated in the world's association, formed in 1892. The headquarters are in London. The total world's membership is 460,000. The American headquarters are at 125 East 27th Street, New York City, and there are 187 associations in cities and industrial centers and 601 student associations with a combined membership of 185,501. The official organ of the American associations is the "Association Monthly." The National Board conducts a training school for secretaries in New York City.

Yriarte (ē-ri-är′tā), **Charles.** Born at Paris, Dec. 5, 1832: died there, April 5, 1898. A French litterateur. He was a prolific writer, and was especially interested in the Italian Renaissance. Among his works are "Venise, histoire, art, industrie; la ville, la vie" (1877), "Florence, l'histoire, les Medicis, les humanistes, les lettres, les arts" (1880), "Un condottiere au XVe siècle; Rimini" (1882), "Françoise de Rimini dans la légende et dans l'histoire" (1882), "Matteo Civitali, sa vie et son œuvre" (1885), "Paul Veronese" (1888), "César Borgia" (1889), "J. F. Millet" (1885), "Fortuny" (1886), etc.

Yuen-san (yö-en′sän′). A treaty-port in eastern Korea, situated on Broughton Bay about lat. 39° N. It has a considerable commerce, which is mostly in the hands of the Japanese. Population about 15,000. Also *Won-san, Gen-san.*

Yukon. A territory of British North America, situated in the extreme northwest. It was organized in 1898. It has large mineral deposits. It sends to the Dominion Parliament one representative. It is administered by a commissioner and a council of 10 members. Area, 196,327 square miles. Population (1901), 27,219.

Zalinski*, Edmund Louis Gray. Died at New York, March 10, 1909.

Zambales (thäm-bä′lās). 1. A province in western Luzon, Philippine Islands. It is bounded by Pangasinan on the north; Pangasinan, Tarlac, and Pampanga (separated by the Zambales Mountains) on the east; Bataan and the China Sea on the south; and the China Sea on the west. Capital, Iba. Port Subic indents the southern coast and separates Zambales from Bataan, the boundary-line coming to the northeast angle of the bay. It is an excellent harbor for large vessels in all weather. The Zambales Mountains on the eastern boundary contain several peaks exceeding 3,000 feet in height. The loftiest are Abu, 5,540, Iba, 5,262, and Lingo, 5,530 feet. The rivers flow west to the China Sea or south to Port Subic. Rice, sugar, mangos, and pineapples are among the productions. The inhabitants are chiefly Zambalans and Ilocanos. Area, 2,125 square miles. Population (1903), 104,549.

2. A civilized and Christianized Malay people living in the province of the same name in Luzon, Philippine Islands.

Zambales (thäm-bä′lās) **Mountains.** A mountain-range in western Luzon, Philippine Islands, parallel with the coast. It extends from Lingayen Gulf on the north to the southern extremity of Zambales province, and reappears in Bataan as the Mariveles Peaks. Mount Iba, near the middle, and Mount Lingo, in the southern part of the range, exceed 5,000 feet in height. Also called *Cabusilan.*

Zamboanga (thäm-bō-än′gä). 1. A district of Moro province, Philippine Islands, embracing the southwestern part of Mindanao, the Basilan group, most of the Pilas group, and many small islands on the southwest coast of Mindanao. It is bounded by Dapitan and Misamis (separated from both by mountains) on the north; Lanao (partly separated by Illana Bay) and the Celebes Sea on the east; the Celebes Sea on the south; and the Sulu (Jolo) Sea on the west. Capital, Zamboanga. The southern part of the mainland is indented by three large bays, Illana, Dumanquilas, and Sibuguey, in the shores of which are smaller bays affording good harbor. Of the bays on the western coast Sibuco and Panabutan are safe for large vessels in the northeast monsoon. The mountain-range that forms the northern boundary of Zamboanga extends through the western peninsula and sends spurs of hills into the central and eastern peninsulas. Coal is found at the head of Sibuguey Bay and elsewhere, gold in the western peninsula. The forests contain valuable woods. Considerable sugar-cane is produced. Fruits grow in abundance. The inhabitants are Subanos and Moros. Area of province, 6,085 square miles. Population (1903), 98,078.

2. A town, the capital of Zamboanga district and of Moro province. It is situated on the Strait of Basilan at the southern extremity of the western peninsula of Mindanao, in lat. 6° 53′ N., long. 123° 5′ E. Civilized population of municipality (1903), 3,281.

Zangwill (zang′wil), **Israel.** Born at London, Feb. 24, 1864. An English novelist, poet, lecturer, and man of letters, of Jewish birth. He is prominently identified with the Zionist movement. He is the author of "The Big Bow Mystery" (1891), "Children of the Ghetto" (1892), "Merely Mary Ann" (1893), "Ghetto Tragedies" (1893), "The King of the Schnorrers" (1894), "Without Prejudice" (1896), "Dreamers of the Ghetto," a series of sketches of great Jewish thinkers (1898), "They that Walk in Darkness" (1899), "The Mantle of Elijah" (1900), "The Grey Wig" (1903), "Blind Children," a book of verse (1903), "The Celibates' Club" (1905), "The Melting Pot" (1908), a number of plays, etc.

Zanzibar*. The sultanate comprises the islands of Zanzibar, Pemba, and smaller islands, and the coast of the British East Africa Protectorate up to 10 miles inland.

Zeller*, Eduard. Died at Stuttgart, March 19, 1908.

Zeller*, Jules Sylvain. Born at Paris, April 23, 1820: died there, July 25, 1900.

Zenger (zeng′ėr), **John Peter.** Born in Germany, about 1697: died 1746. An American printer and publisher. He was brought to America in his childhood, and in 1726 engaged in the printing business in New York. In 1734 he was arrested and tried for libel because of the criticisms which appeared in his paper, the New York "Weekly Journal," on the occasion of the removal from office of Chief-justice Lewis Morris by Governor William Cosby. The defense was conducted by Andrew Hamilton and resulted in the acquittal of Zenger, the decision being regarded as momentous in establishing the freedom of the press in America.

Zeppelin (tsep′e-lin), Count **Ferdinand von.** Born in Constance, July 8, 1838. A German general of cavalry and aëronaut. He came to the United States in 1863, during the Civil War; took part in the Franco-Prussian war of 1870–71; and has been a member of the Bundesrat (1885–90). He is the inventor of a large dirigible balloon which (after many experiments and mishaps) has been shown to be capable of long flights under good control.

Zerrahn (tser-rän′), **Carl.** Born at Malchow, Germany, July 28, 1826. A well-known German-American conductor. He came to America in 1848 as a member of the orchestra of the Germania Musical Society and later established himself in Boston. In 1854 he became conductor of the Handel and Haydn Society; was conductor of the Harvard Symphony Concerts 1866–82; and for many years conducted the Worcester Music Festivals.

Zimmermann*, Reinhard Sebastian. Died at Munich, Nov. 16, 1893.

Zimmern (zim′ėrn), **Helen.** Born at Hamburg, Germany, March 25, 1846. An English author, translator, and art critic. She was taken to England as a child, and became a British subject at her majority. She has been a correspondent for various English, German, and Italian periodicals. Her works include "Life and Philosophy of Schopenhauer" (1876), "Life and Works of Lessing" (1878), "Sir Laurence Alma-Tadema" (1886), "Hansa Towns" (1889), "Irish Element in Mediæval Culture" (1891), "Italy of the Italians" (1906), and various translations.

Zion*. The name was probably given originally to the Lower City or Acra, and then transferred to Mount Moriah, the Temple Hill. It has also been applied to the Upper City, and to Jerusalem as a whole.

Zirkel (tsēr′kel), **Ferdinand.** Born at Bonn, May 20, 1838. A German mineralogist and geologist, professor in the University of Leipsic from 1870. His works include "Lehrbuch der Petrographie" (1866, 1893–95), "Die Mikroskopische Beschaffenheit der Mineralien und Gesteine" (1873), "Microscopical Petrography" (1876), "Über Urausscheidungen in rheinischen Basalten" (1903), etc. He retired from active service in 1909.

Zittel (tsit′tel), **Karl Alfred von.** Born at Bahlingen, Baden, Sept. 25, 1839: died at Munich, Jan. 5, 1904. A German paleontologist, professor in the University of Munich from 1866. He published "Handbuch der Paläontologie" (1876–93: with Schimper and Schenk), etc.

Zogbaum (zōg′boum), **Rufus Fairchild.** Born at Charleston, S. C., Aug. 28, 1849. An American artist and writer. He studied at the Art Students' League, New York, 1878–79, and under Bonnat at Paris 1880–82. He is best known as a delineator of military and naval subjects. Among his historical pictures are "Manila Bay," and "The First Minnesota Regiment at Gettysburg" (the latter painted by commission of the State of Minnesota for the Capitol at St. Paul). He has written "Horse, Foot, and Dragoons," "All Hands," and "Ships and Sailors."

Zola*, Émile. Died at Paris, Sept. 29, 1902. His "Trilogy of the Three Cities" includes "Lourdes" (1894), "Rome" (1896), and "Paris" (1898). On Feb. 23, 1898, he was sentenced to a year's imprisonment and the payment of a fine of 3,000 francs for libeling the court martial which tried and acquitted Major Esterhazy. The sentence was annulled by the Court of Cassation. He was again tried and sentenced to twelve months' imprisonment and the payment of a fine. He left France before notification of judgment in order to secure a retrial later, but soon returned.

Zorn (tsōrn), **Anders.** Born at Mora, Sweden, Feb. 15, 1860. A Swedish painter. At the age of fifteen he entered the Academy in Stockholm to study sculpture, but soon turned his attention to water-color painting, in which he has been especially successful. He has traveled and painted in Spain, England, France, Italy, North Africa, Russia, and Poland. In 1893, the year of the Columbian Exposition in Chicago, he visited the United States and painted many portraits there. In 1890 he joined the Société Nationale des Beaux-Arts in Paris and assisted in the organization of the first Salon du Champ de Mars. The picture which he contributed to this exhibition now hangs in the Louvre. He is a realist of great power.

Zuloaga (thō-lō-ä′gä), **Ignacio.** Born at Eibar, Spain, July 26, 1870. A noted Spanish painter, son of Placidio Zuloaga, famous as the rediscoverer of the art of damascening. Among his works are "Daniel Zuloaga and his Daughters," "A Spanish Gipsy," "Promenade After the Bull-fight," "Spanish Dancers," "El Coriano," "Segovians Drinking," and "The Penitents."

Zululand*. In Dec., 1897, it was incorporated with Natal, of which it forms a province. The Amaputaland Protectorate was annexed to Zululand in 1897.

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